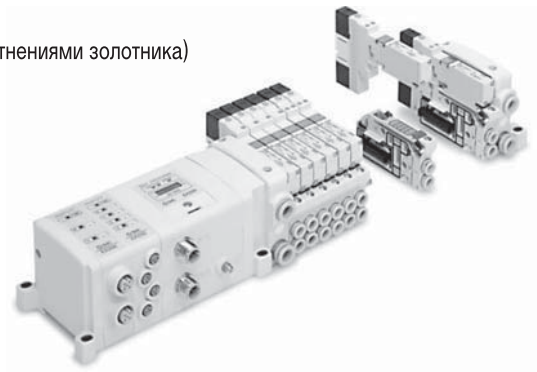
# 5/2, 5/3, 2x3/2 пневмораспределители с электропневматическим управлением

# *VQC1000/2000/4000*

- Исполнения с притертым стальным золотником и с эластичными уплотнениями золотника
- Простота сборки пневмораспределителей в блок благодаря многоконтактным разъемам на каждом модуле
- Возможность прямого использования в промышленных управляющих сетях (Profibus, DeviceNet, CANOpen, Asi)
- Высокая пропускная способность при компактной конструкции
- Ресурс более 200 млн. циклов (для исполнения со стальным золотником)
- Высокая скорость срабатывания (время реакции менее 10 мс)
- Наличие сдвоенных пневмораспределителей 2x3/2 (для VQC1000/2000 с эластичными уплотнениями золотника)



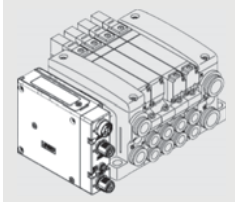
**Технические характеристики**

| Исполнение | | | С притертым стальным золотником | С эластичными уплотнениями золотника |
|---|---|---|---|---|
| Среда | | | Очищенный сжатый воздух с содержанием масла или без него, инертный газ | |
| VQC 1000/ 2000 | Макс. рабочее давление (МПа) | | 0.7 | |
| | Мин. рабочее давление (МПа) | 5/2 моностабильный | 0.1 | 0.2 |
| | | 5/2 бистабильный | 0.1 | |
| | | 5/3 | 0.1 | 0.2 |
| VQC 4000 | Макс. рабочее давление (МПа) | | 1.0 | |
| | Мин. рабочее давление (МПа) | 5/2 моностабильный | 0.15 | 0.2 |
| | | 5/2 бистабильный | 0.15 | |
| | | 5/3 | 0.15 | 0.2 |
| Испытательное давление (МПа) | | | 1.5 | |
| Температура рабочей и окружающей среды (°C) | | | -10 ~ 50 | |
| Вспомогательное ручное управление | | | С блокировкой | |
| Устойчивость к удару/вибрации (м/с$^2$) | | | 150/30 [1)] | |
| Степень защиты | | | IP67 [2)] | |
| Напряжение питания (В, DC) | | | 24 | |
| Допуск по напряжению | | | ±10% от номинального значения | |
| Класс изоляции | | | B | |
| Искрогашение | | | Стандартное исполнение | |
| Индикатор рабочего состояния | | | Стандартное исполнение | |

1) Условия испытаний: вибрация с частотой от 8.3 до 2000 Гц в осевом и перпендикулярном направлениях, во включенных и выключенном состояниях; однократный удар в осевом и перпендикулярном направлениях, во включенном и выключенном состояниях.
2) Для исполнений с терминальной коробкой и интерфейсными модулями EX500/250/260.

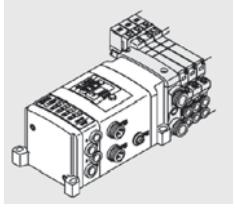
**Варианты электрического подключения**

**Интерфейсный модуль EX260**



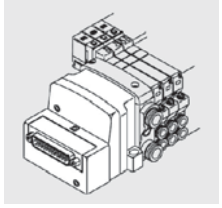
**IP67**

**Интерфейсный модуль EX250**



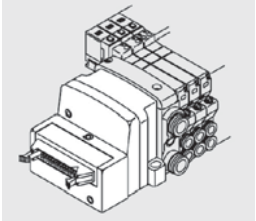
**IP67**

**Стандартный 25-контактный разъем**



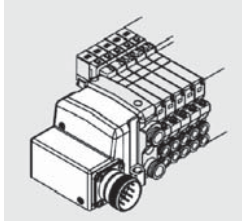
**IP40**

**20, 26-контактный плоский разъем (по запросу)**



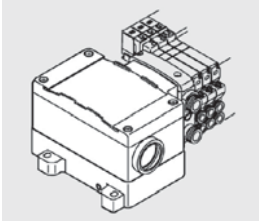
**IP67**

**26-контактный круглый разъем (по запросу)**



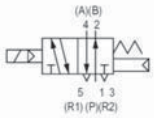
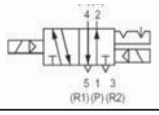
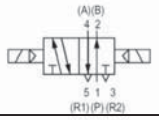
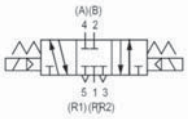
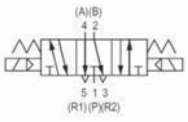
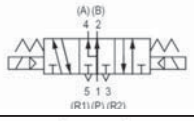
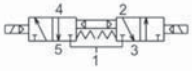
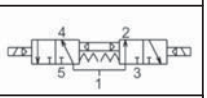
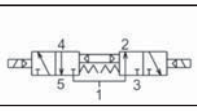
**IP67**

**Терминальная коробка**

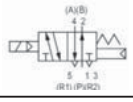
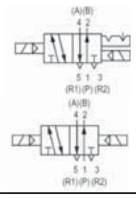


# 5/2, 5/3, 2x3/2 пневмораспределители с электропневматическим управлением
# VQC1000/2000/4000

## *Номера для заказа*

| Принцип действия | | Условное обозначение | Конструктивное исполнение | Для VQC1000 Номер для заказа | Расход (норм. л/мин) | Время реакции (мс) * | Вес (г) | Для VQC2000 Номер для заказа | Расход (норм. л/мин) | Время реакции (мс) * | Вес (г) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5/2 | Моно-стабильный |  | Стальной золотник | VQC1100N-5B | 160 | 12 | 64 | VQC2100N-5B | 451 | 22 | 90 |
| | | | Золотник с эластичными уплотнениями | VQC1101N-5B | 210 | 15 | | VQC2101N-5B | 540 | 24 | |
| | Би-стабильный |  | Стальной золотник | VQC1200N-5B | 160 | 10 | 78 | VQC2200N-5B | 451 | 15 | 110 |
| | |  | Золотник с эластичными уплотнениями | VQC1201N-5B | 210 | 15 | | VQC2201N-5B | 540 | 20 | |
| 5/3 | Закрытый центр |  | Стальной золотник | VQC1300N-5B | 160 | 20 | | VQC2300N-5B | 451 | 29 | |
| | | | Золотник с эластичными уплотнениями | VQC1301N-5B | | 25 | | VQC2301N-5B | 481 | 34 | |
| | Открытый центр |  | Стальной золотник | VQC1400N-5B | | 20 | | VQC2400N-5B | 451 | 29 | |
| | | | Золотник с эластичными уплотнениями | VQC1401N-5B | | 25 | | VQC2401N-5B | 481 | 34 | |
| | Центр под давлением |  | Стальной золотник | VQC1500N-5B | | 20 | | VQC2500N-5B | 560 | 29 | |
| | | | Золотник с эластичными уплотнениями | VQC1501N-5B | 210 | 25 | | VQC2501N-5B | 785 | 34 | |
| 2x3/2 | Н.З./Н.З. |  | Золотник с эластичными уплотнениями | VQC1A01N-5B | 160 | 25 | | VQC2A01N-5B | 451 | 34 | |
| | Н.О./Н.О. |  | | VQC1B01N-5B | | | | VQC2B01N-5B | | | |
| | Н.З./Н.О. |  | | VQC1C01N-5B | | | | VQC2C01N-5B | | | |

* При давлении 0.5 МПа

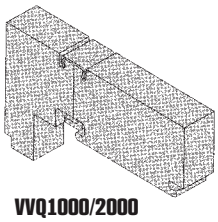
| Принцип действия | | Условное обозначение | Конструктивное исполнение | Для VQC4000 Номер для заказа | Расход (норм.л/мин) | Время реакции (мс) * | Вес (г) |
|---|---|---|---|---|---|---|---|
| 5/2 | Моностабильный |  | Стальной золотник | VQC4100-5B | 1472 | 20 | 230 |
| | | | Золотник с эластичными уплотнениями | VQC4101-5B | 2061 | 25 | |
| | Бистабильный |  | Стальной золотник | VQC4200-5B | 1472 | 12 | 260 |
| | | | Золотник с эластичными уплотнениями | VQC4201-5B | 2061 | 15 | |
| 5/3 | Закрытый центр |  | Стальной золотник | VQC4300-5B | 1472 | 45 | 280 |
| | | | Золотник с эластичными уплотнениями | VQC4301-5B | 1865 | 50 | |
| | Открытый центр |  | Стальной золотник | VQC4400-5B | 1472 | 45 | |
| | | | Золотник с эластичными уплотнениями | VQC4401-5B | 1865 | 50 | |
| | Центр под давлением |  | Стальной золотник | VQC4500-5B | 1865 | 45 | |
| | | | Золотник с эластичными уплотнениями | VQC4501-5B | | 50 | |

## Принадлежности / Номера для заказа

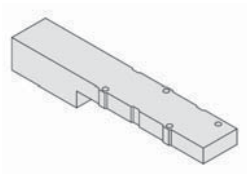
### Крышка

| Серия | Номер для заказа |
|---|---|
| VQC1000 | **VVQ1000-10A-1** |
| VQC2000 | **VVQ2000-10A-1** |
| VQC4000 | **VVQ4000-10A-1** |

Используется как заглушка, устанавливаемая на монтажную плиту вместо отсутствующего пневмораспределителя.



**VVQ1000/2000**

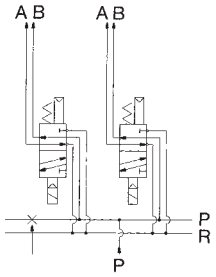


**VVQ4000**

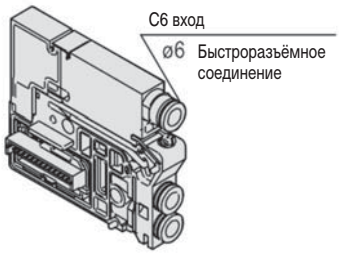
### Индивидуальный подвод P

| Серия | Присоединение | Номер для заказа |
|---|---|---|
| VQC1000 | C6 | **VVQ1000-P-1-C6** |
| VQC2000 | C8 | **VVQ2000-P-1-C8** |
| VQC4000 | Rc 1/4 | **VVQ4000-P-1-02** |
| | Rc 3/8 | **VVQ4000-P-1-03** |

Используется в комбинации с разделительной заглушкой, когда требуется подавать различные давления на пневмораспределители, собранные в блок.



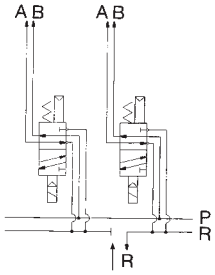

разделительная заглушка



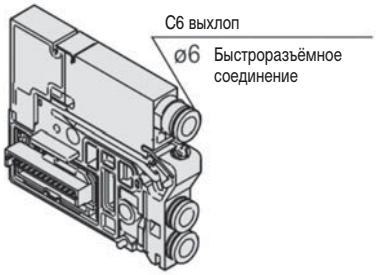

### Индивидуальный выпуск

| Серия | Присоединение | Номер для заказа |
|---|---|---|
| VQC1000 | C6 | **VVQ1000-R-1-C6** |
| VQC2000 | C8 | **VVQ2000-R-1-C8** |
| VQC4000 | Rc 1/4 | **VVQ4000-R-1-02** |
| | Rc 3/8 | **VVQ4000-R-1-03** |

Если деаэрация какого-либо пневмораспределителя неблагоприятно влияет на работу других пневмораспределителей, следует использовать модуль индивидуального выпуска.



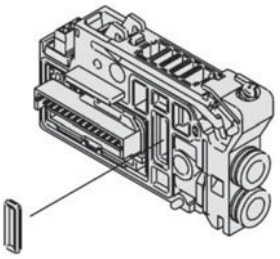

разделительная заглушка




### Разделительная заглушка для изоляции канала P

| Серия | Номер для заказа |
|---|---|
| VQC1000 | **VVQ1000-16A** |
| VQC2000 | **VVQ2000-16A** |
| VQC4000 | **VVQ4000-16A** |

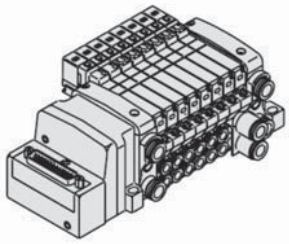
Используется для разделения каналов подачи воздуха, чтобы обеспечить возможность работы одного блока пневмораспределителей с двумя различными давлениями.



### Фитинг для соединения двух модулей

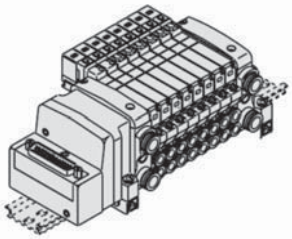
| Серия | Номер для заказа |
|---|---|
| VQC1000 | **VVQ1000-52A-C8** |
| VQC2000 | **VVQ2000-52A-C10** |

Используется для параллельного соединения двух соседних пневмораспределителей с целью увеличения расхода.
Применяются быстроразъемные соединения.



### Комплект для монтажа на DIN-рейке

| Серия | Номер для заказа |
|---|---|
| VQC1000 | **VVQ1000-57A** |
| VQC2000 | **VVQ2000-57A** |

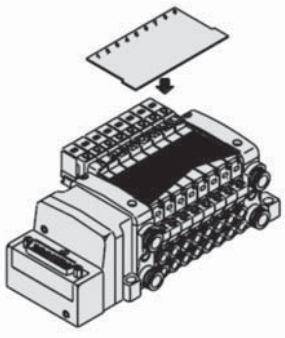


### Маркировочная пластина

| Серия | Номер для заказа* |
|---|---|
| VQC1000 | **VVQ1000-N-□** |
| VQC2000 | **VVQ2000-N-□** |

* □ – количество секций.

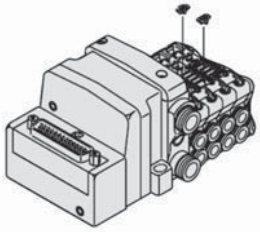
Используется для маркировки пневмораспределителей в блоке.



### Обратные клапаны

| Серия | Номер для заказа |
|---|---|
| VQC1000 | **VVQ1000-18A** |
| VQC2000 | **VVQ2000-18A** |

Предотвращают перемещение штока пневмоцилиндра, вызванное деаэрационным давлением других пневмораспределителей.
Устанавливаются в канале выхлопа (R).
Используются в 5/3 пневмораспределителях с открытым центром.

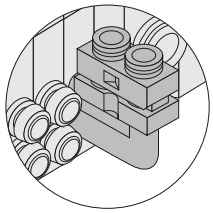


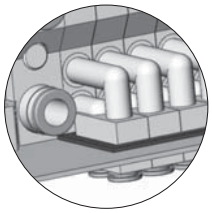
Компания SMC сохраняет за собой право на внесение технических и размерных изменений

## *Принадлежности / Номера для заказа*

### Соединение угловое

| Серия | Присоединенит. размер | Номер для заказа |
|---|---|---|
| VQC1000 | ⌀3.2 | **VVQ1000-F-LC3** |
| | ⌀4 | **VVQ1000-F-LC4** |
| | ⌀ 6 | **VVQ1000-F-LC6** |
| | M5 | **VVQ1000-F-LM5** |
| VQC2000 | ⌀4 | **VVQ2000-F-LC4** |
| | ⌀6 | **VVQ2000-F-LC6** |
| | ⌀8 | **VVQ2000-F-LC8** |

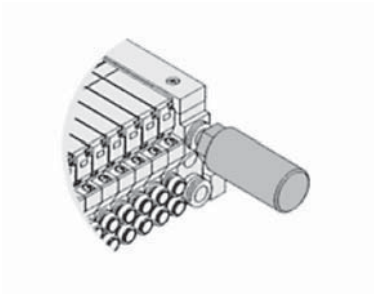




Обеспечивает присоединение трубок
под углом 90° к оси выходных портов пневмораспределителя.

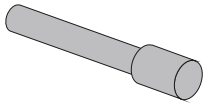
### Пневмоглушитель

| Серия | Номер для заказа |
|---|---|
| VQC1000 | **AN200-KM8** |
| VQC2000 | **AN200-KM10** |
| VQC4000 | **ANA1-06** |



### Заглушка

| Серия | Присоединит. размер (мм) | Номер для заказа |
|---|---|---|
| VQC1000 | ⌀3.2 | **KQ2P-23** |
| VQC2000 | ⌀4 | **KQ2P-04** |
| | ⌀6 | **KQ2P-06** |
| | ⌀8 | **KQ2P-08** |

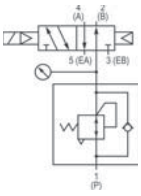
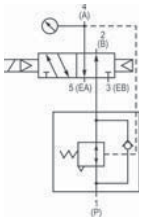
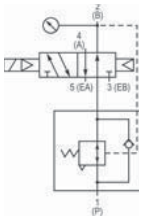


Используется для закрытия неиспользуемых портов A и B.

### Интерфейсный регулятор

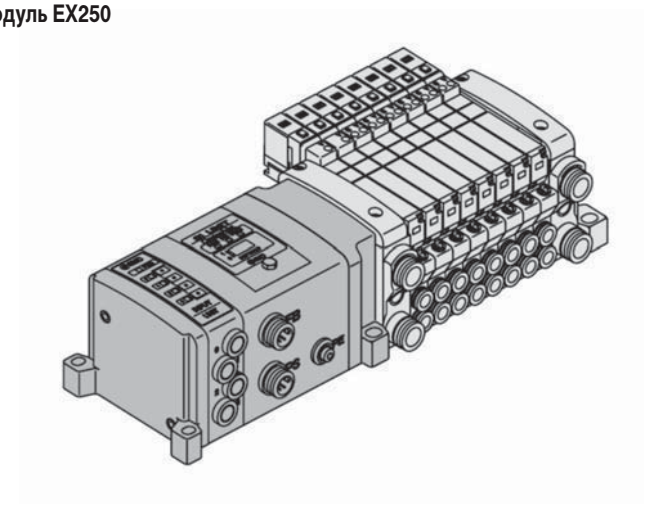
Применяется для пневмораспределителей серии VQC4000.

Регулирует подачу воздуха на пневмораспределитель,
обеспечивая заданный уровень давления:
- на входе (тип P),
- на выходе A (тип A),
- на выходе B (тип B).

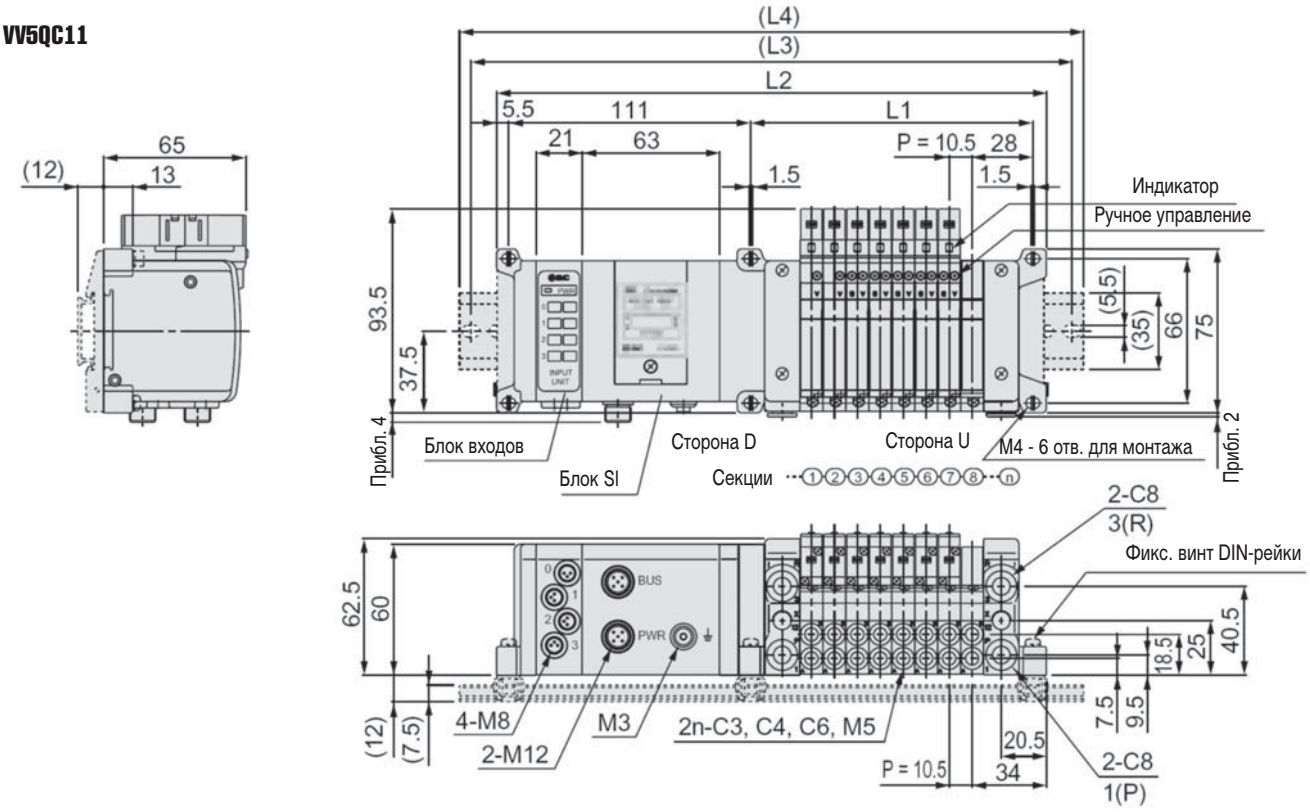
| Тип | P | A | B |
|---|---|---|---|
| Схема |  |  |  |
| **Номер для заказа** | **ARBQ4000-00-P-1** | **ARBQ4000-00-A-1** | **ARBQ4000-00-B-1** |

## *Блок пневмораспределителей (IP67)*

**VQC1000/2000/4000**
**Тип электрического подключения – интерфейсный модуль EX250**



**VV5QC11**




**Расчетная формула**: L1 = 10.5n + 45,
L2 = 10.5n + 167.5
(для одного блока входов; каждый дополнительный блок входов увеличивает размер на 21 мм)

n: количество секций (максимум 24)

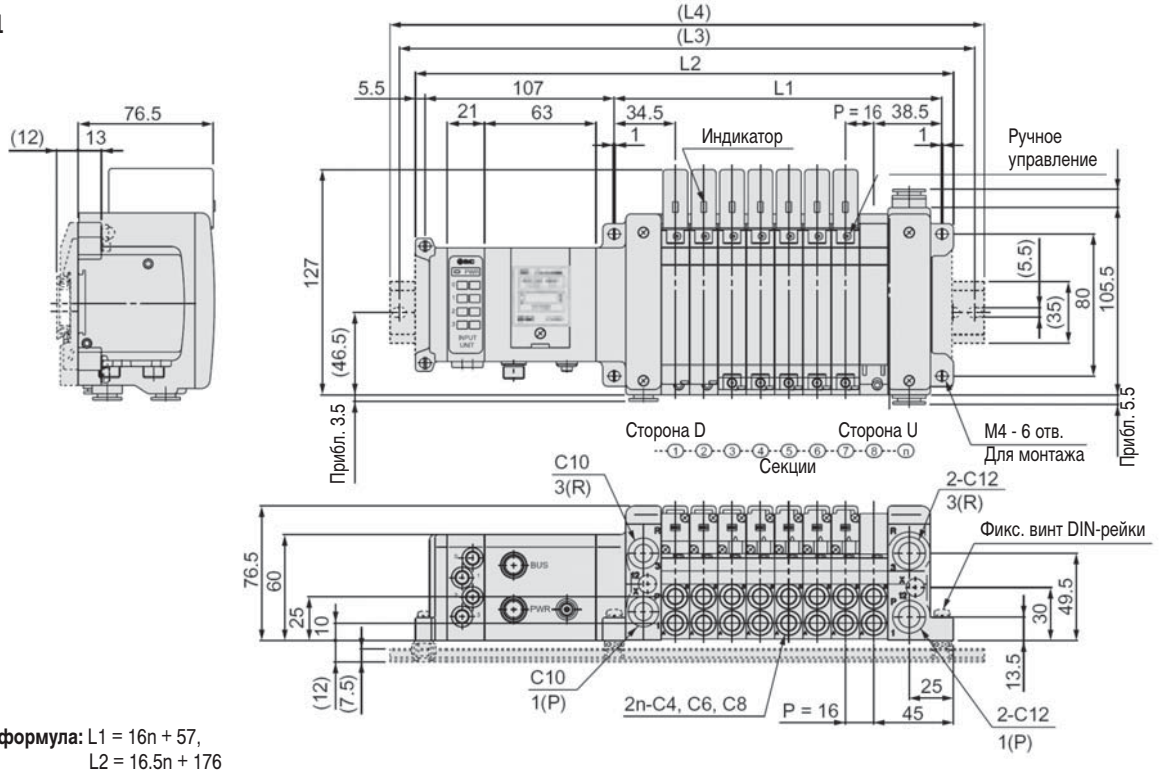
| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L1 | 55.5 | 66 | 76.5 | 87 | 97.5 | 108 | 118.5 | 129 | 139.5 | 150 | 160.5 | 171 | 181.5 | 192 | 202.5 | 213 | 223.5 | 234 | 244.5 | 255 | 265.5 | 276 | 286.5 | 297 |
| L2 | 178 | 188.5 | 199 | 209.5 | 220 | 230.5 | 241 | 251.5 | 262 | 272.5 | 283 | 293.5 | 304 | 314.5 | 325 | 335.5 | 346 | 356.5 | 367 | 377.5 | 388 | 398.5 | 409 | 419.5 |
| L3 | 200 | 212.5 | 225 | 237.5 | 250 | 250 | 262.5 | 275 | 287.5 | 300 | 312.5 | 325 | 325 | 337.5 | 350 | 362.5 | 375 | 387.5 | 387.5 | 400 | 412.5 | 425 | 437.5 | 450 |
| L4 | 210.5 | 223 | 235.5 | 248 | 260.5 | 260.5 | 273 | 285.5 | 298 | 310.2 | 323 | 335.5 | 335.5 | 348 | 360.5 | 373 | 385.5 | 398 | 398 | 410.5 | 423 | 435.5 | 448 | 448 |

Компания SMC сохраняет за собой право на внесение технических и размерных изменений

# 5/2, 5/3, 2x3/2 пневмораспределители с электропневматическим управлением
# VQC1000/2000/4000

## *Размеры*

**VV5QC21**

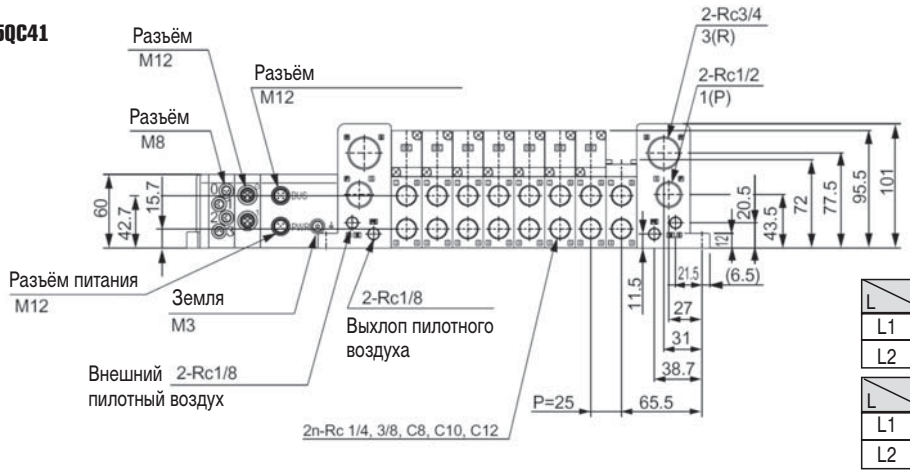



**Расчетная формула:** L1 = 16n + 57,
L2 = 16.5n + 176
(для одного блока входов; каждый дополнительный блок входов увеличивает размер на 21 мм)

n: количество секций (максимум 24)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L1 | 73 | 89 | 105 | 121 | 137 | 153 | 169 | 185 | 201 | 217 | 233 | 249 | 265 | 281 | 297 | 313 | 329 | 345 | 361 | 377 | 393 | 409 | 425 | 441 |
| L2 | 192 | 208 | 224 | 240 | 256 | 272 | 288 | 304 | 320 | 336 | 352 | 368 | 384 | 400 | 416 | 432 | 448 | 464 | 480 | 496 | 512 | 528 | 544 | 560 |
| L3 | 212.5 | 237.5 | 250 | 262.5 | 275 | 287.5 | 312.5 | 325 | 337.5 | 362.5 | 375 | 387.5 | 400 | 425 | 437.5 | 450 | 462.5 | 487.5 | 500 | 512.5 | 537.5 | 550 | 562.5 | 587.5 |
| L4 | 223 | 248 | 260.5 | 273 | 285.5 | 298 | 323 | 335.5 | 348 | 373 | 385.5 | 398 | 410.5 | 435.5 | 448 | 460.5 | 473 | 498 | 510.5 | 523 | 548 | 560.5 | 573 | 598 |

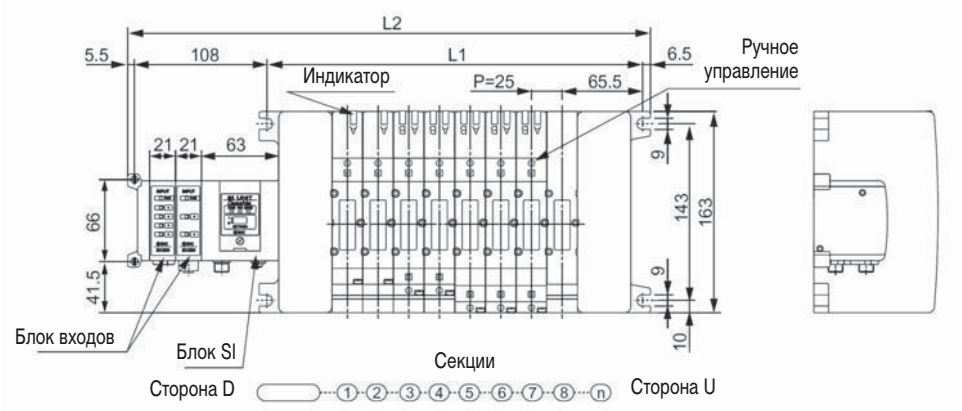
**VV5QC41**




**Расчетная формула:**
L1 = 25n + 106 (максимум 16 секций).
L2: Для одного блока входов;
каждый дополнительный блок входов увеличивает размер на 21 мм.

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| L1 | 131 | 156 | 181 | 206 | 231 | 256 | 281 | 306 |
| L2 | 230 | 255 | 280 | 305 | 330 | 355 | 380 | 405 |

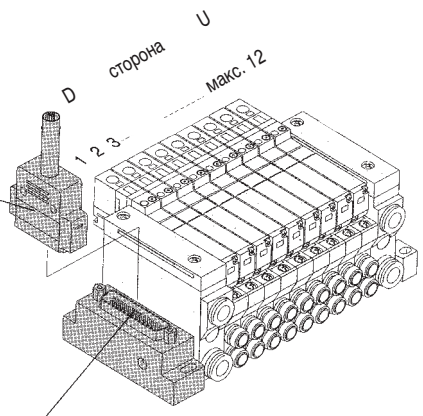
| L \ n | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|
| L1 | 331 | 356 | 381 | 406 | 431 | 456 | 481 | 506 |
| L2 | 430 | 455 | 480 | 505 | 530 | 555 | 580 | 605 |



## Блок пневмораспределителей (IP40)

### VQC1000/2000/4000
**Тип электрического подключения – 25-контактный разъем**

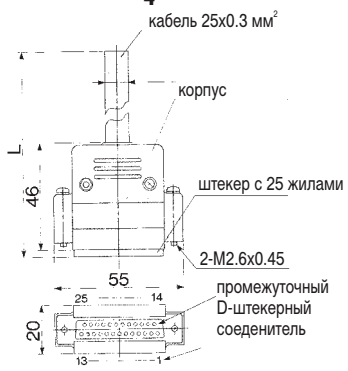
- Центральное подключение блока пневмораспределителей посредством разъема по DIN.
- Штекерное соединение по стандарту MIL (25-контактный).
- Макс. 12 пневмораспределителей с двусторонним управлением.
- Мин. возможный радиус изгиба 55 мм.




**Ответная часть разъема с кабелем**

| № контакта | Цветовой код по DIN47100 | |
|---|---|---|
| | Основной цвет жилы | Маркировка жилы |
| 1 | белый | - |
| 2 | коричневый | - |
| 3 | зеленый | - |
| 4 | желтый | - |
| 5 | серый | - |
| 6 | розовый | - |
| 7 | синий | - |
| 8 | красный | - |
| 9 | черный | - |
| 10 | фиолетовый | - |
| 11 | серый | розовая |
| 12 | красный | синяя |
| 13 | белый | зеленая |
| 14 | коричневый | зеленая |
| 15 | белый | желтая |
| 16 | желтый | коричневая |
| 17 | белый | серая |
| 18 | серый | коричневая |
| 19 | белый | розовая |
| 20 | розовый | коричневая |
| 21 | белый | синяя |
| 22 | коричневый | синяя |
| 23 | белый | красная |
| 24 | коричневый | красная |
| 25 | белый | черная |

**GVVZS3000-21A-** 2 / 4

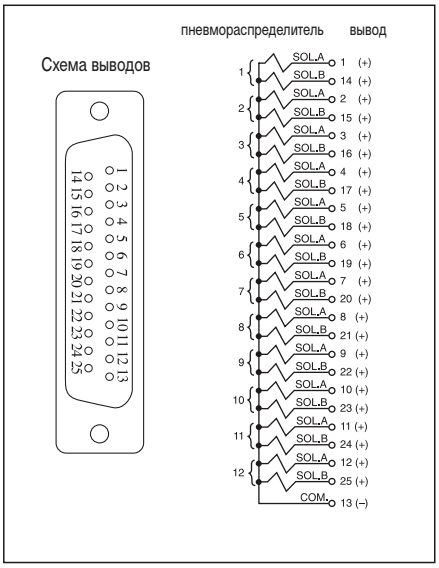



**Обозначение длины L**

| Номер для заказа | Длина L |
|---|---|
| GVVZS3000-21A-2 | 3м |
| GVVZS3000-21A-3 | 5м |
| GVVZS3000-21A-4 | 8м |

**Электрические свойства**

| Позиция | Свойства |
|---|---|
| Сопротивление проводника | ~57 (Ом/км 20° C) |
| Прочность на пробой по VDE 0472 | 1500 В свыше 5 мин |
| Сопротивление изоляции | 20 МОм |

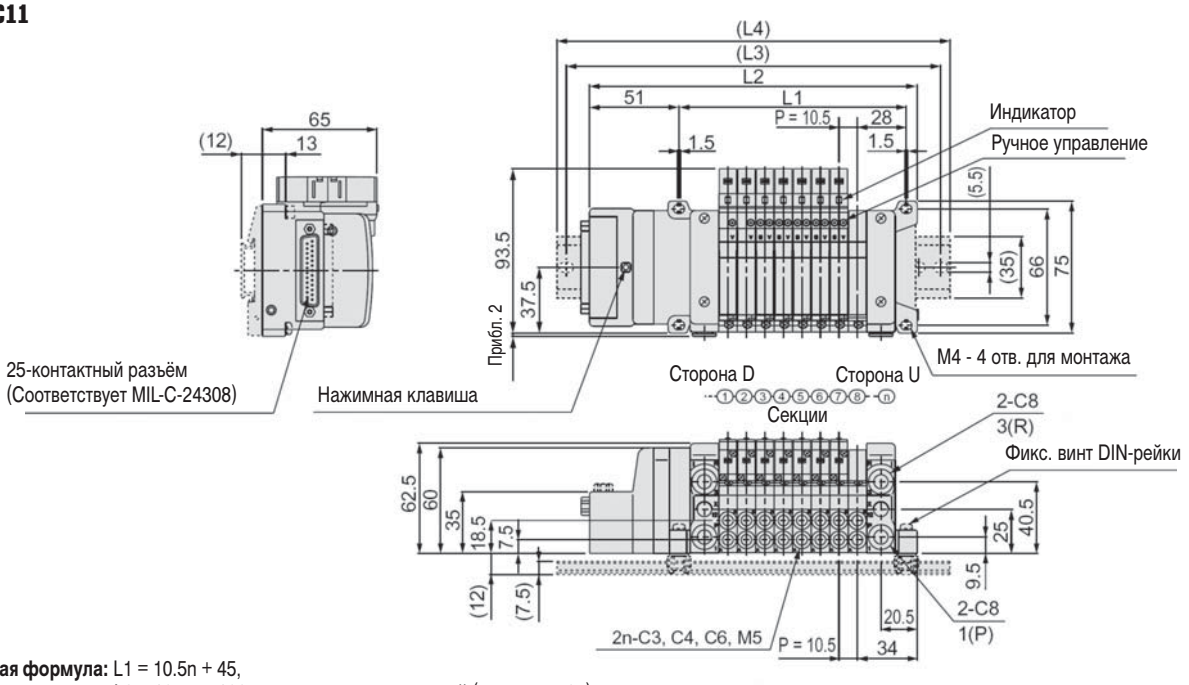



Компания SMC сохраняет за собой право на внесение технических и размерных изменений

# 5/2, 5/3, 2x3/2 пневмораспределители с электропневматическим управлением
# VQC1000/2000/4000

## *Размеры*

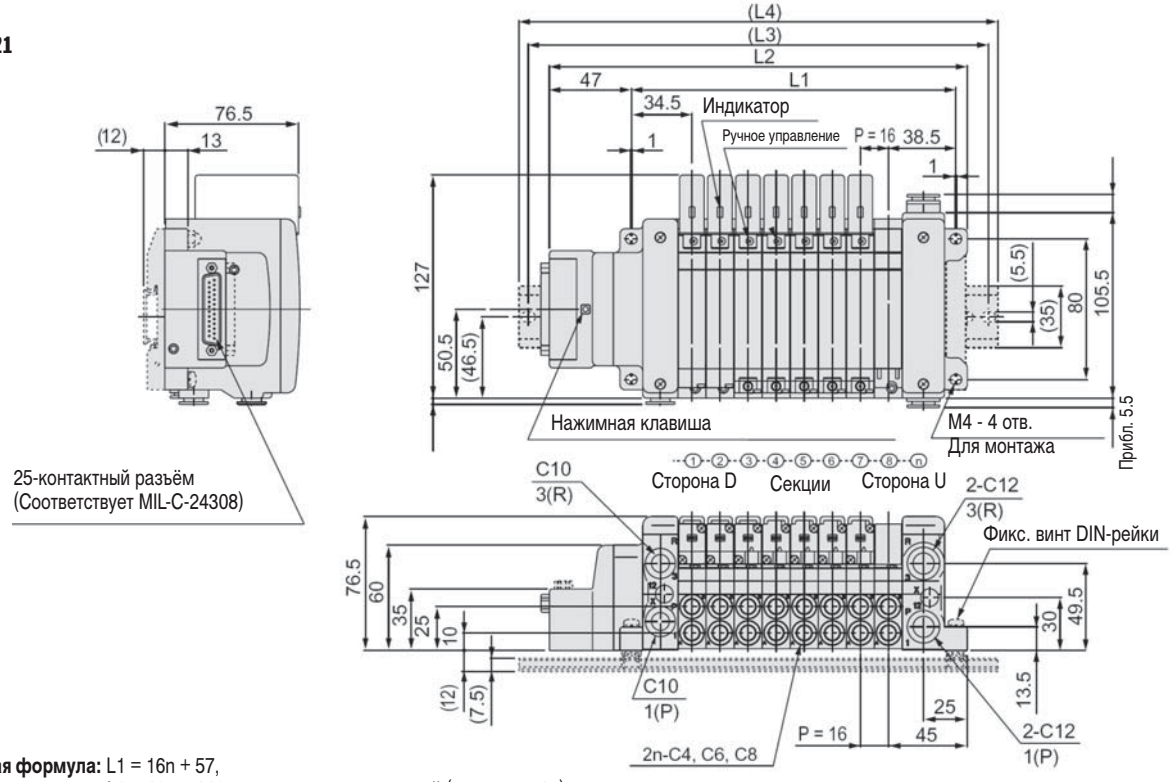
### VV5QC11




**Расчетная формула:** L1 = 10.5n + 45,
L2 = 10.5n + 102 n: количество секций (максимум 24)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L1 | 55.5 | 66 | 76.5 | 87 | 97.5 | 108 | 118.5 | 129 | 139.5 | 150 | 160.5 | 171 | 181.5 | 192 | 202.5 | 213 | 223.5 | 234 | 244.5 | 255 | 265.5 | 276 | 286.5 | 297 |
| L2 | 112.5 | 123 | 133.5 | 144 | 154.5 | 165 | 175.5 | 186 | 196.5 | 207 | 217.5 | 228 | 238.5 | 249 | 259.5 | 270 | 280.5 | 291 | 301.5 | 312 | 322.5 | 333 | 343.5 | 354 |
| L3 | 137.5 | 150 | 162.5 | 175 | 175 | 187.5 | 200 | 212.5 | 225 | 237.5 | 237.5 | 250 | 262.5 | 275 | 287.5 | 300 | 300 | 312.5 | 325 | 337.5 | 350 | 362.5 | 375 | 375 |
| L4 | 148 | 160.5 | 173 | 185.5 | 185.5 | 198 | 210.5 | 223 | 235.5 | 248 | 248 | 260.5 | 273 | 285.5 | 298 | 310.5 | 310.5 | 323 | 335.5 | 348 | 360.5 | 373 | 385.5 | 385.5 |

### VV5QC21

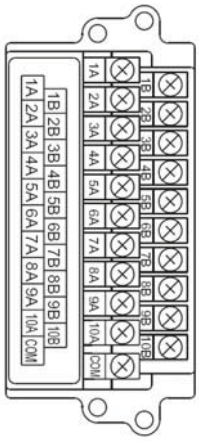


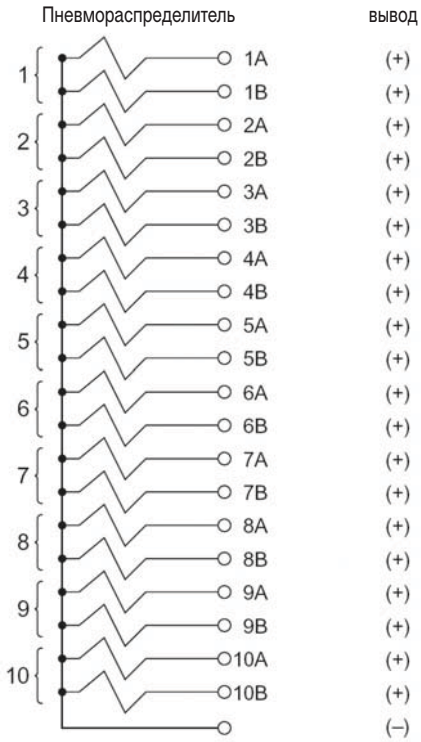

**Расчетная формула:** L1 = 16n + 57,
L2 = 16n + 110.5 n: количество секций (максимум 24)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L1 | 73 | 89 | 105 | 121 | 137 | 153 | 169 | 185 | 201 | 217 | 233 | 249 | 265 | 281 | 297 | 313 | 329 | 345 | 361 | 377 | 393 | 409 | 425 | 441 |
| L2 | 126.5 | 142.5 | 158.5 | 174.5 | 190.5 | 206.5 | 222.5 | 238.5 | 254.5 | 270.5 | 286.5 | 302.5 | 318.5 | 334.5 | 350.5 | 366.5 | 382.5 | 398.5 | 414.5 | 430.5 | 446.5 | 462.5 | 478.5 | 494.5 |
| L3 | 150 | 162.5 | 187.5 | 200 | 212.5 | 237.5 | 250 | 262.5 | 275 | 300 | 312.5 | 325 | 350 | 362.5 | 375 | 387.5 | 412.5 | 425 | 437.5 | 450 | 475 | 487.5 | 500 | 525 |
| L4 | 160.5 | 173 | 198 | 210.5 | 223 | 248 | 260.5 | 273 | 285.5 | 310.5 | 323 | 335.5 | 360.5 | 373 | 385.5 | 398 | 423 | 435.5 | 448 | 460.5 | 485.5 | 498 | 510.5 | 535.5 |

## Блок пневмораспределителей (IP67)

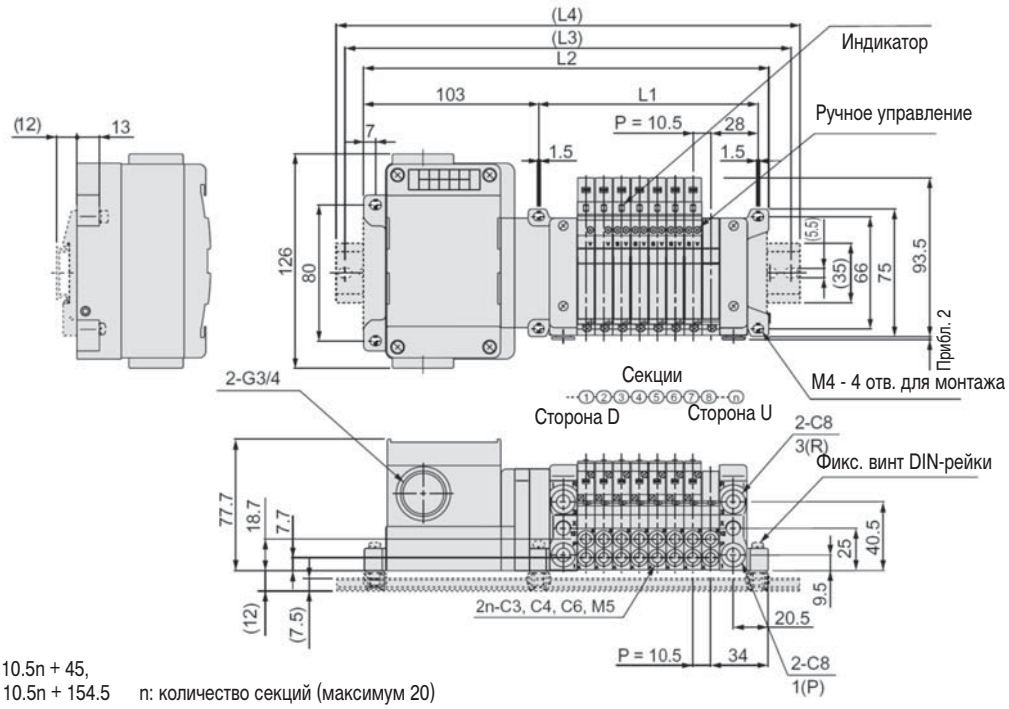
**VQC1000/2000/4000**
**Тип электрического подключения – терминальная коробка**




## Размеры

**VV5QC11**




**Расчетная формула:** L1 = 10.5n + 45,
L2 = 10.5n + 154.5 n: количество секций (максимум 20)

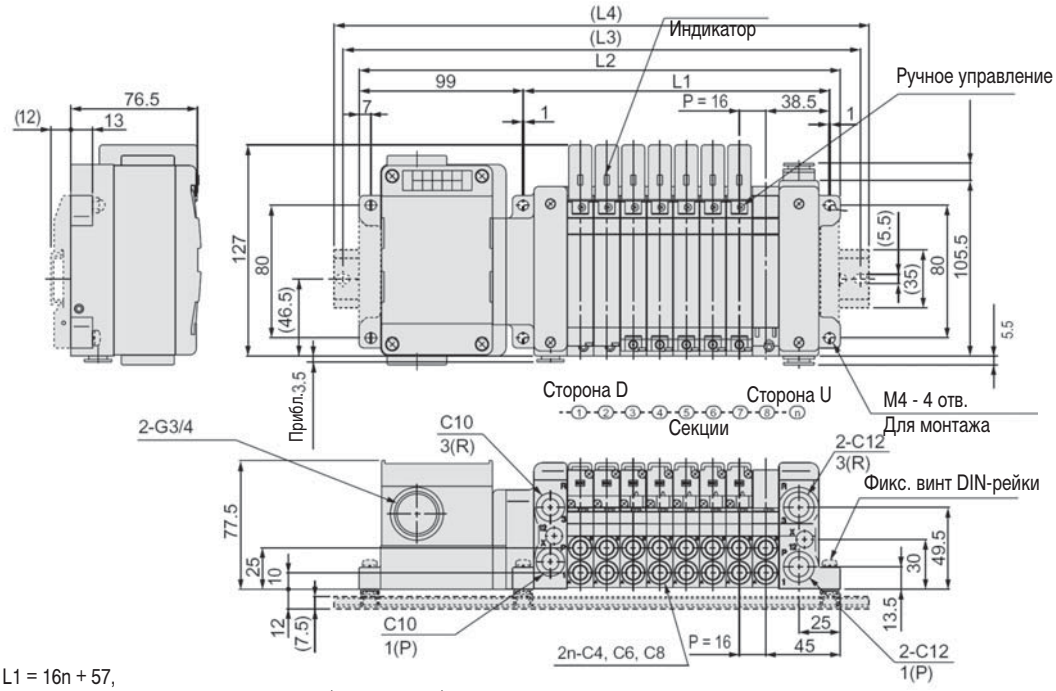
| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L1 | 55.5 | 66 | 76.5 | 87 | 97.5 | 108 | 118.5 | 129 | 139.5 | 150 | 160.5 | 171 | 181.5 | 192 | 202.5 | 213 | 223.5 | 234 | 244.5 | 255 |
| L2 | 165 | 175.5 | 186 | 196.5 | 207 | 217.5 | 228 | 238.5 | 249 | 259.5 | 270 | 280.5 | 291 | 301.5 | 312 | 322.5 | 333 | 343.5 | 354 | 364.5 |
| L3 | 187.5 | 200 | 212.5 | 212.5 | 225 | 237.5 | 250 | 262.5 | 275 | 275 | 287.5 | 300 | 312.5 | 325 | 337.5 | 337.5 | 350 | 362.5 | 375 | 387.5 |
| L4 | 198 | 210.5 | 223 | 223 | 235.5 | 248 | 260.5 | 273 | 285.5 | 285.5 | 298 | 310.5 | 323 | 335.5 | 348 | 348 | 360.5 | 373 | 385.5 | 398 |

Компания SMC сохраняет за собой право на внесение технических и размерных изменений

# 5/2, 5/3, 2x3/2 пневмораспределители с электропневматическим управлением
# VQC1000/2000/4000

## *Размеры*

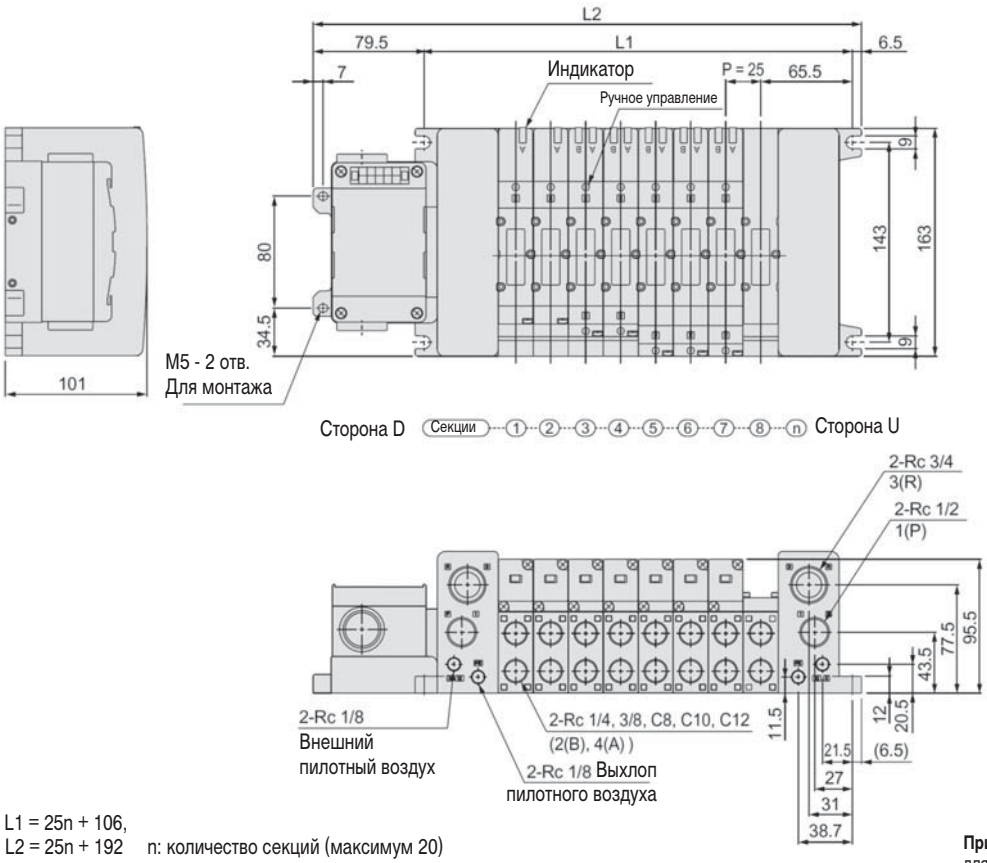
**VV5QC21**




**Расчетная формула:** L1 = 16n + 57,
L2 = 16n + 163 n: количество секций (максимум 20)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L1 | 73 | 89 | 105 | 121 | 137 | 153 | 169 | 185 | 201 | 217 | 233 | 249 | 265 | 281 | 297 | 313 | 329 | 345 | 361 | 377 |
| L2 | 179 | 195 | 211 | 227 | 243 | 259 | 275 | 291 | 307 | 323 | 339 | 355 | 371 | 387 | 403 | 419 | 435 | 451 | 467 | 483 |
| L3 | 200 | 212.5 | 237.5 | 237.5 | 262.5 | 262.5 | 287.5 | 312.5 | 325 | 371 | 362.5 | 375 | 408.5 | 412.5 | 425 | 437.5 | 462.5 | 496 | 487.5 | 500 |
| L4 | 210.5 | 223 | 248 | 248 | 273 | 273 | 298 | 323 | 335.5 | 360.5 | 373 | 385.5 | 398 | 423 | 435.5 | 448 | 473 | 485.5 | 498 | 510.5 |

**VV5QC41**




**Расчетная формула:** L1 = 25n + 106,
L2 = 25n + 192 n: количество секций (максимум 20)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L1 | 131 | 156 | 181 | 206 | 231 | 256 | 281 | 306 | 331 | 356 | 381 | 406 | 431 | 456 | 481 | 506 | 531 | 556 | 581 | 606 |
| L2 | 217 | 242 | 267 | 292 | 317 | 342 | 367 | 392 | 417 | 442 | 467 | 492 | 517 | 542 | 567 | 592 | 617 | 642 | 667 | 692 |

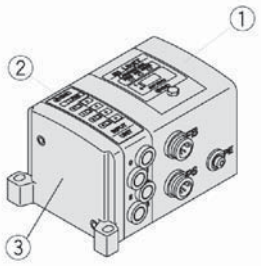
**Примечание:**
для обеспечения степени защиты IP67 следует применять кабельный ввод **FGA26S-14G** (по запросу).

## Блок пневмораспределителей

**Спецификация**

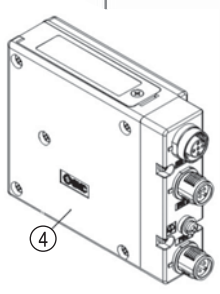
EX250

VQC1000
VQC2000
VQC4000

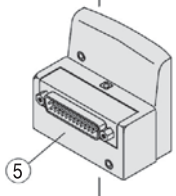



EX260

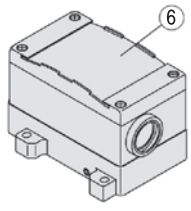
VQC1000
VQC2000
VQC4000

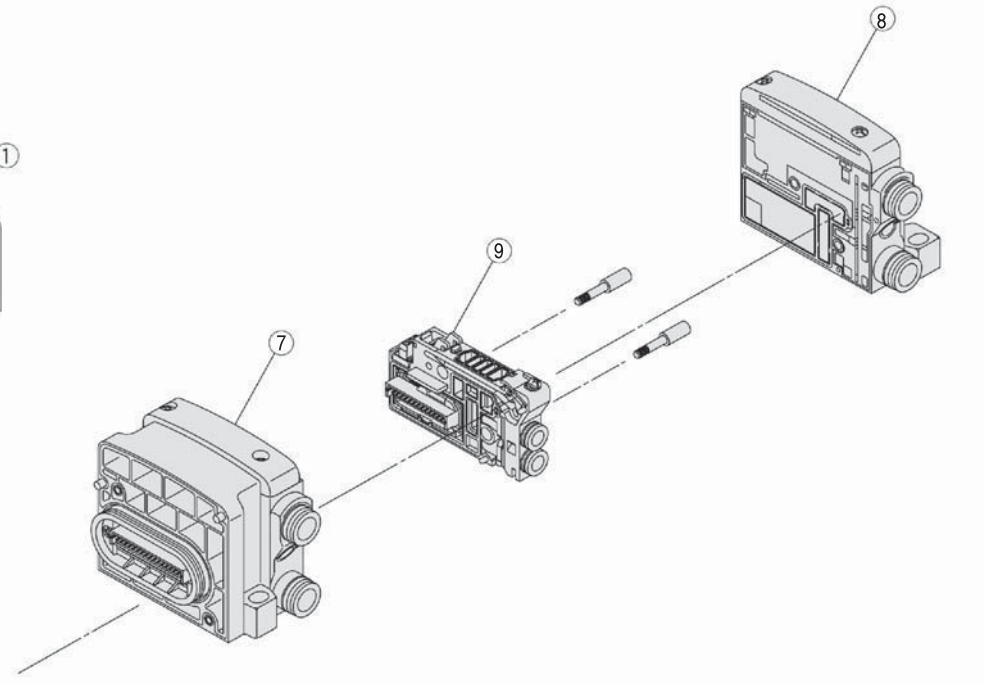



VQC1000
VQC2000
VQC4000




VQC1000
VQC2000
VQC4000




| № | Название | Номер для заказа | Примечание | | |
|---|---|---|---|---|---|
| 1 | Интерфейсный модуль EX250 | **EX250-SDN1** | DeviceNet (-COM) | | |
| | | **EX250-SPR1** | PROFIBUS DP (-COM) | | |
| | | **EX250-SCA1A** | CANOpen (-COM) | | |
| | | **EX250-SAS3** | AS-I (-COM) | 8 входов/8 выходов | Система с двумя подводами питания |
| | | **EX250-SAS5** | | 4 входа/4 выхода | |
| | | **EX250-SAS7** | | 8 входов/8 выходов | Система с одним подводом питания |
| | | **EX250-SAS9** | | 4 входа/4 выхода | |
| | | **EX250-SCN1** | ControlNet (-COM) | | |
| | | **EX250-SEN1** | EtherNet/IP (-COM) | | |
| 2 | Модуль входов | **EX250-IE1** | M12, 2 входа | | |
| | | **EX250-IE2** | M12, 4 входа | | |
| | | **EX250-IE3** | M8, 4 входа | | |
| 3 | Концевая плита | **EX250-EA1** | Стандартная | | |
| | | **EX250-EA2** | Монтаж на DIN-рейке | | |
| 4 | Компактный интерфейсный модуль EX260 | **EX260-SDN1** | DeviceNet (-COM) | 32 выхода (PNP) | M12 |
| | | **EX260-SDN2** | | 32 выхода (NPN) | |
| | | **EX260-SDN3** | | 16 выходов (PNP) | |
| | | **EX260-SDN4** | | 16 выходов (NPN) | |
| | | **EX260-SPR1** | PROFIBUS DP | 32 выхода (PNP) | |
| | | **EX260-SPR2** | | 32 выхода (NPN) | |
| | | **EX260-SPR3** | | 16 выходов (PNP) | |
| | | **EX260-SPR4** | | 16 выходов (NPN) | |
| | | **EX260-SPR5** | | 32 выхода (PNP) | 25-контактный разъем (D-sub) |
| | | **EX260-SPR6** | | 32 выхода (NPN) | |
| | | **EX260-SPR7** | | 16 выходов (PNP) | |
| | | **EX260-SPR8** | | 16 выходов (NPN) | |
| | | **EX260-SEC1** | EtherCAT | 32 выхода (PNP) | M12 |
| | | **EX260-SEC2** | | 32 выхода (NPN) | |
| | | **EX260-SEC3** | | 16 выходов (PNP) | |
| | | **EX260-SEC4** | | 16 выходов (NPN) | |
| 5 | 25-контактный разъем (D-sub) | **VVQC1000-F25-1** | IP40 | | |
| 6 | Терминальная коробка | **VVQC1000-T0-1** | IP67 (с кабельным вводом FGA26S-14G) | | |

Примечание: разъемы для подключения интерфейсных модулей поставляются по запросу

| 7 | Концевая плита левая |
|---|---|

**VQC1000/2000**

| Серия | **Номер для заказа** | Присоединение * |
|---|---|---|
| VQC1000 | **VVQC1000-3A-1-C8** | C8 |
| VQC2000 | **VVQC2000-3A-1-C10** | C10 |

* "C" быстроразъемное соединение, например: "C8" – ⌀8 мм

**VQC4000**

| Тип электр. подвода | **Номер для заказа** |
|---|---|
| Интерфейсный модуль, 25-контактный разъем, терминальная коробка | **VVQC4000-3A-2F** |

## Блок пневмораспределителей

8. Концевая плита правая

**VQC1000/2000/4000**

| Серия | Номер для заказа | Присоединение * | Расположение канала подвода/отвода воздуха |
|---|---|---|---|
| VQC1000 | **VVQC1000-2A-1-C8** | C8 | Спереди |
| VQC2000 | **VVQC2000-2A-1-C10** | C10 | Спереди |
| | **VVQC2000-2A-2-C10** | | Спереди и сзади |
| | **VVQC2000-2A-2-C12** | C12 | |
| VQC4000 | **VVQC4000-2A-1F** | P: G1/2, R: G3/4 | Спереди |

* "C" быстроразъемное соединение, например: "C8" – ⌀8 мм

9. Индивидуальная плита пневмораспределителя

| Серия | Номер для заказа | Тип | Присоединение * |
|---|---|---|---|
| VQC1000 | **VVQC1000-1A-D-C3** | Для бистабильного пневмораспределителя | C3 |
| | **VVQC1000-1A-D-C4** | | C4 |
| | **VVQC1000-1A-D-C6** | | C6 |
| | **VVQC1000-1A-D-M5** | | M5 |
| | **VVQC1000-1A-S-C3** | Для 5/2 моностабильного пневмораспределителя | C3 |
| | **VVQC1000-1A-S-C4** | | C4 |
| | **VVQC1000-1A-S-C6** | | C6 |
| | **VVQC1000-1A-S-M5** | | M5 |
| VQC2000 | **VVQC2000-1A-D-C4** | Для бистабильного пневмораспределителя | C4 |
| | **VVQC2000-1A-D-C6** | | C6 |
| | **VVQC2000-1A-D-C8** | | C8 |
| | **VVQC2000-1A-S-C4** | Для 5/2 моностабильного пневмораспределителя | C4 |
| | **VVQC2000-1A-S-C6** | | C6 |
| | **VVQC2000-1A-S-C8** | | C8 |
| VQC4000 | **VVQC4000-1A-D-C8** | Для бистабильного пневмораспределителя | C8 |
| | **VVQC4000-1A-D-C10** | | C10 |
| | **VVQC4000-1A-D-C12** | | C12 |
| | **VVQC4000-1A-D-02F** | | G 1/4" |
| | **VVQC4000-1A-D-03F** | | G 3/8" |
| | **VVQC4000-1A-D-BF** | | G 1/4" порт снизу |
| | **VVQC4000-1A-S-C8** | Для 5/2 моностабильного пневмораспределителя | C8 |
| | **VVQC4000-1A-S-C10** | | C10 |
| | **VVQC4000-1A-S-C12** | | C12 |
| | **VVQC4000-1A-S-02F** | | G 1/4" |
| | **VVQC4000-1A-S-03F** | | G 3/8" |
| | **VVQC4000-1A-S-BF** | | G 1/4" порт снизу |

* "C" быстроразъемное соединение, например: "C8" – ⌀8 мм

Компания SMC сохраняет за собой право на внесение технических и размерных изменений

# 5 Port Solenoid Valve

## Connector Type Manifold

### Metal Seal / Rubber Seal

**IP67 enclosure compatible**

CE [Option]

RoHS compliant

**Power saving**

**Standard: 0.4 W**

(Reduced by 60% compared to existing model)

High-pressure (1 MPa, Metal seal): 0.95 W



## Series VQC1000/2000

SMC

CAT.ES11-101A

# Connector Type Manifold

# Series VQC1000/2000

## Power saving

Standard: **0.4** W (Reduced by **60**% compared to existing model)

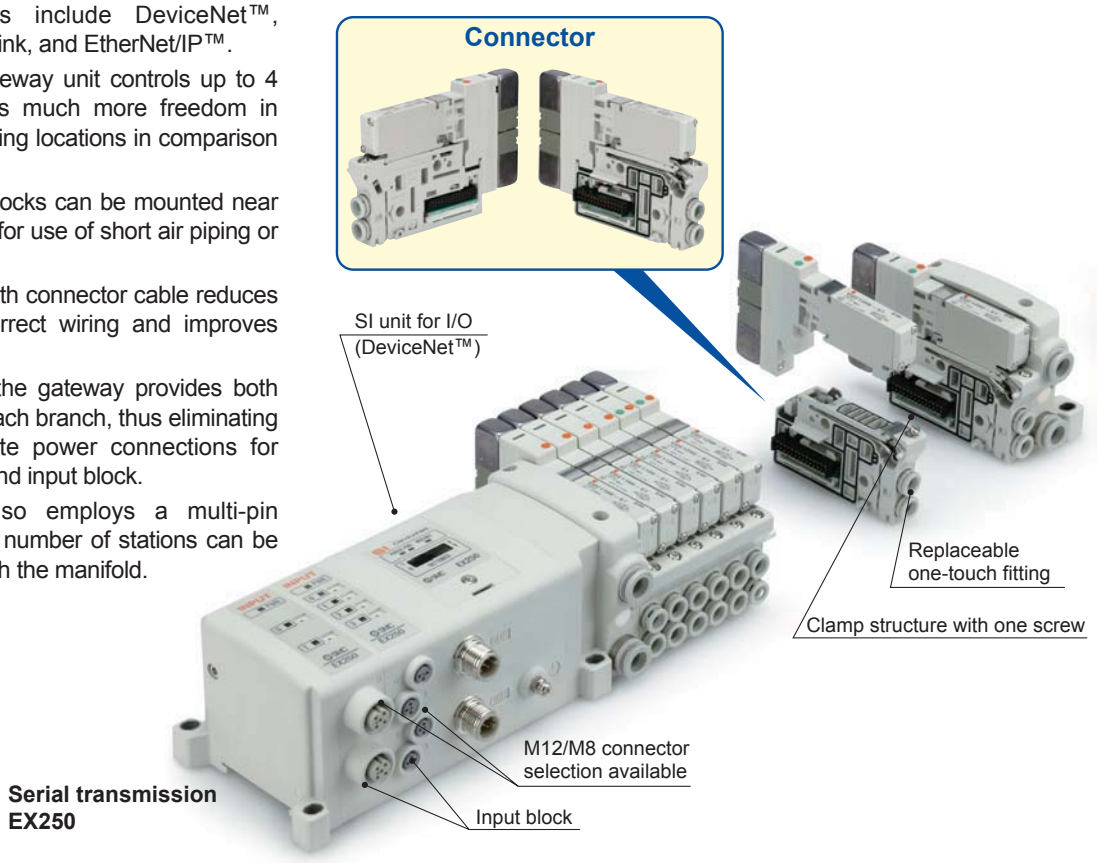
High-pressure (1 MPa, Metal seal): **0.95** W

## IP67 enclosure compatible Dust-tight, Immersion-proof

(Based on IEC60529) (S/T/L/M kit)

## Accommodates gateway-type serial wiring.

- Gateway unit types include DeviceNet™, PROFIBUS DP, CC-Link, and EtherNet/IP™.
- Because just one gateway unit controls up to 4 branch lines, it offers much more freedom in choosing valve mounting locations in comparison with other serial units.
- Manifolds and input blocks can be mounted near the actuator, allowing for use of short air piping or electric wiring.
- The package wiring with connector cable reduces the potential for incorrect wiring and improves wiring efficiency.
- A single cable from the gateway provides both signal and power to each branch, thus eliminating the need for separate power connections for each manifold valve and input block.
- The input block also employs a multi-pin connector so that the number of stations can be changed easily, as with the manifold.




**Serial transmission**
**EX250**

## Applicable to EX600 (Input/Output) serial transmission system (Fieldbus system)

- Available for DeviceNet™, PROFIBUS DP and CC-Link fieldbus protocols
- **Max. 9 units** Note) **can be connected in any order.**
  The unit to connect input device such as an auto switch, pressure switch and flow switch, and the unit to connect output device such as a solenoid valve, relay and indicator light can be connected in any order.
  Note) Except SI unit
- **Analogue Input Unit can be connected with analogue input device.**
  As well as a Digital (switch) Input/Output Unit, a unit applicable to analogue signal is provided, and can be connected with various device for control.
- **Self-diagnosis function**
  It is possible to ascertain the maintenance period and identify the parts that require maintenance, by an input (sensor) open circuit detecting function and an input/output signal of ON/OFF counter function. Also, the monitoring of input/output signal and the setting of parameters can be performed with a Handheld Terminal.



**Serial transmission**
**EX600**

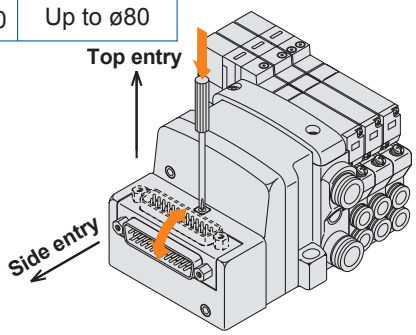
# Compact and high flow

| Series | Manifold pitch (mm) | Flow-rate characteristics Note) | | | | | | Applicable cylinder bore size (mm) |
|---|---|---|---|---|---|---|---|---|
| | | Metal seal | | | Rubber seal | | | |
| | | C [dm³/(s·bar)] | b | Cv | C [dm³/(s·bar)] | b | Cv | |
| **VQC1000** | 10.5 | 0.72 | 0.25 | 0.18 | 1.0 | 0.30 | 0.25 | Up to ø50 |
| **VQC2000** | 16 | 2.6 | 0.15 | 0.60 | 3.2 | 0.30 | 0.80 | Up to ø80 |

Note) Flow-rate characteristics: 2-position single, 4/2 → 5/3 (A/B → R1/R2)

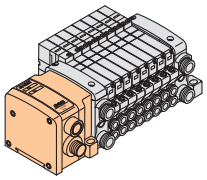
# Connector entry direction can be changed with a single push. (F/P kit)

The connector entry direction can be changed from the top to the side by simply pressing the manual release button.
It is not necessary to use the manual release button when switching from the side to the top.



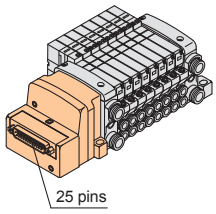

# A wide variety of prepackaged wiring configurations

**S kit (Serial transmission)**

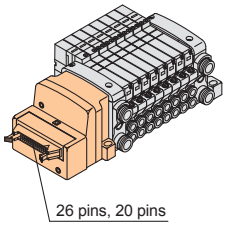


IP67 enclosure compatible

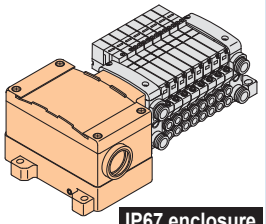
**F kit (D-sub connector)**




**P kit (Flat ribbon cable)**

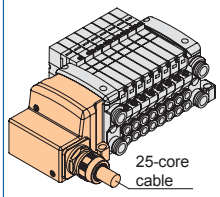



**T kit (Terminal block box)**



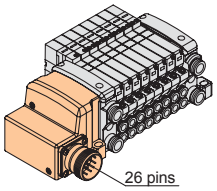
IP67 enclosure compatible

**L kit (Lead wire)**




IP67 enclosure compatible

**M kit (Circular connector)**




IP67 enclosure compatible

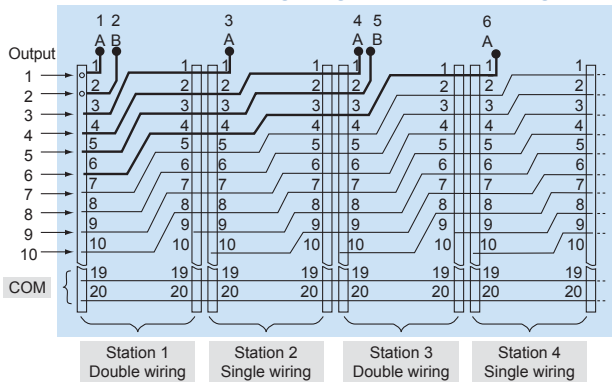
- Our six standard wiring packages bring a world of ease to wiring and maintenance work, while the protective enclosures of four of them conform to IP67 standards.
- The S kit is compatible with a combined I/O unit. (Not applicable to Gateway unit)

# Connector type manifold

- The use of multi-pin connectors to replace wiring inside manifold blocks provides flexibility when adding stations or changing manifold configuration.
- All kits use multi-pin connectors, so switching from the F kit (D-sub connector) to the S kit (serial transmission) can be done simply by changing the kit section.

(Refer to the connector wiring diagram.)
Printed circuit board patterns between connectors are shifted at every station. This allows for viable connections to take place without necessarily specifying whether the manifold station is double, single, or mixed wiring.

**Connector wiring diagram (Mixed wiring)**

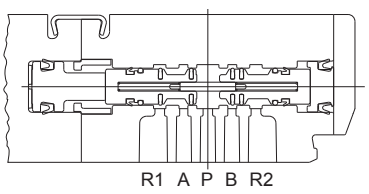


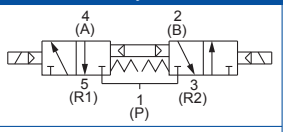
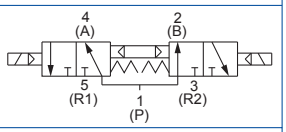
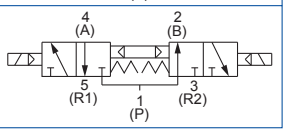

# Dual 3-port valves, 4 positions

VQC1000/2000 (Rubber seal only)

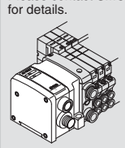
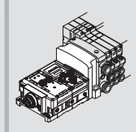
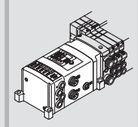
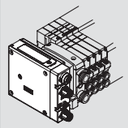
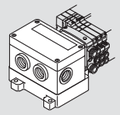
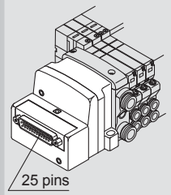
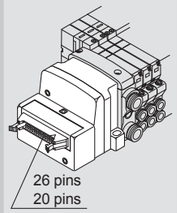
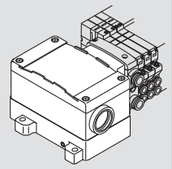
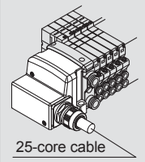
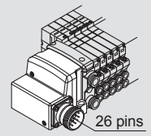
- Two 3-port valves built into one body
- The 3-port valves on the A and B sides can operate independently.
- When used as 3-port valves, only half the number of stations is required.
- Can also be used as a 4-position, 5-port type valve.

Exhaust center : **VQC1A01**
: **VQC2A01**
Pressure center : **VQC1B01**
: **VQC2B01**



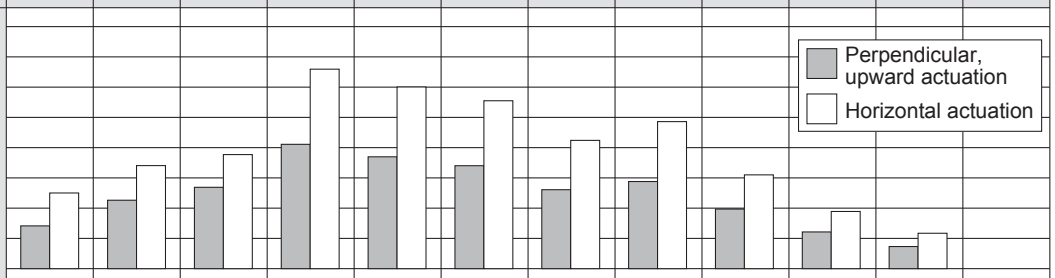
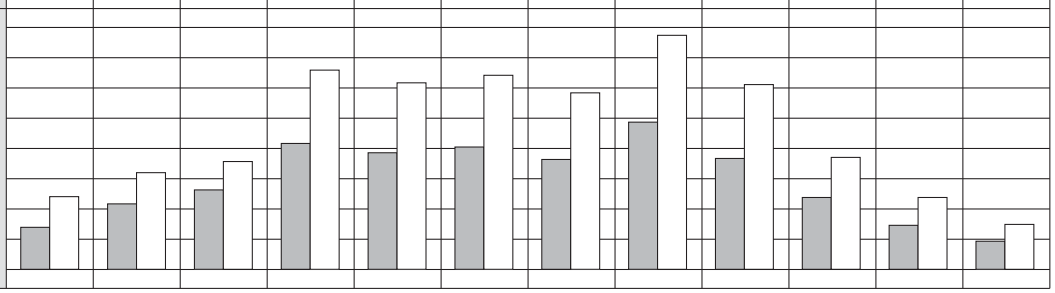

| Model | A side | B side | JIS symbol |
|---|---|---|---|
| **VQC1A01**<br>**VQC2A01** | N.C. valve | N.C. valve |  |
| **VQC1B01**<br>**VQC2B01** | N.O. valve | N.O. valve |  |
| **VQC1C01**<br>**VQC2C01** | N.C. valve | N.O. valve |  |

# *Series VQC*/Base Mounted: Variations

| | | | Sonic conductance C [dm³/(s·bar)] (CYL → EXH / 4/2 → 5/3) | | Applicable cylinder bore size | **S kit** Serial transmission: Gateway application | **S kit** Serial transmission: Compatible network • DeviceNet™ • PROFIBUS DP • CC-Link • EtherNet/IP™ I/O | **S kit** Serial transmission: Compatible network • DeviceNet™ • PROFIBUS DP • CC-Link • AS-Interface • CANopen • EtherNet/IP™ I/O | **S kit** Serial transmission: Compatible network • DeviceNet™ • PROFIBUS DP • EtherCAT Output | **S kit** Serial transmission: Compatible network • CC-Link Output | **F kit** D-sub connector | **P kit** Flat ribbon cable | **T kit** Terminal block box | **L kit** Electrical entry | **M kit** Circular connector | Port size: SUP/EXH port | Port size: Cylinder port |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Single/Double | 3-position (Closed center) | | Gateway application<br>Compatible network<br>• DeviceNet™<br>• PROFIBUS DP<br>• CC-Link<br>• EtherNet/IP™<br>Decentralized Serial Wiring<br>Gateway application requires a gateway unit and communication cable separately. Please contact SMC for details.<br><br>Serial unit:<br>**EX500**<br>IP67 compliant | Compatible network<br>• DeviceNet™<br>• PROFIBUS DP<br>• CC-Link<br>• EtherNet/IP™<br>I/O<br><br>Serial unit (Fieldbus system):<br>**EX600**<br>IP67 compliant | Compatible network<br>• DeviceNet™<br>• PROFIBUS DP<br>• CC-Link<br>• AS-Interface<br>• CANopen<br>• EtherNet/IP™<br>I/O<br><br>Serial unit:<br>**EX250**<br>IP67 compliant | Compatible network<br>• DeviceNet™<br>• PROFIBUS DP<br>• EtherCAT<br>Output<br><br>Serial unit:<br>**EX260**<br>IP67 compliant | Compatible network<br>• CC-Link<br>Output<br><br>Serial unit:<br>**EX126**<br>IP67 compliant | D-sub connector<br>(Conforming to MIL D-sub connector)<br><br>25 pins | Flat ribbon cable<br>(Conforming to MIL flat ribbon cable connector)<br><br>26 pins<br>20 pins | Terminal block box (Terminal block)<br>(Terminal block is compactly arranged on one side.)<br><br>IP67 compliant | Lead wire<br>(IP67 enclosure with use of multiple wire cable with sheath and waterproof connector)<br><br>25-core cable<br>IP67 compliant | Circular connector<br>(IP67 enclosure with use of waterproof circular connector)<br><br>26 pins<br>IP67 compliant | | |
| *Series VQC1000* P. 5 | Metal seal | VQC1□00 | 0.72 | 0.72 | Up to ø50 | ● | ● | ● | ● | ● | | ● | ● | ● | ● | ● | C8 (ø8)<br>N9 (ø5/16") | C3 (ø3.2)<br>C4 (ø4)<br>C6 (ø6)<br>M5 (M5 thread)<br>N1 (ø1/8")<br>N3 (ø5/32")<br>N7 (ø1/4") |
| | Rubber seal | VQC1□01 | 1.0 | 0.65 | | | | | | | | | | | | | | |
| *Series VQC2000* P. 9 | Metal seal | VQC2□00 | 2.6 | 2.0 | Up to ø80 | ● | ● | ● | ● | ● | | ● | ● | ● | ● | ● | C10 (ø10)<br>N11 (ø3/8")<br>In case of branch type<br>C12 (ø12)<br>N13 (ø1/2") | C4 (ø4)<br>C6 (ø6)<br>C8 (ø8)<br>N3 (ø5/32")<br>N7 (ø1/4")<br>N9 (ø5/16") |
| | Rubber seal | VQC2□01 | 3.2 | 2.2 | | | | | | | | | | | | | | |

## Cylinder Speed Chart

This chart is provided as guidelines only.
For performance under various conditions, use SMC's Model Selection Program before making a judgment.

| Series | Average speed (mm/s) | Bore size | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Series CJ2 Pressure 0.5 MPa Load factor 50% Stroke 60 mm | | | Series CM2 Pressure 0.5 MPa Load factor 50% Stroke 300 mm | | | | Series MB, CA2 Pressure 0.5 MPa Load factor 50% Stroke 500 mm | | | | |
| | | ø6 | ø10 | ø16 | ø20 | ø25 | ø32 | ø40 | ø40 | ø50 | ø63 | ø80 | ø100 |
| **VQC1101** | 800<br>700<br>600<br>500<br>400<br>300<br>200<br>100<br>0 |  | | | | | | | | | | | |
| **VQC2101** | 800<br>700<br>600<br>500<br>400<br>300<br>200<br>100<br>0 |  | | | | | | | | | | | |



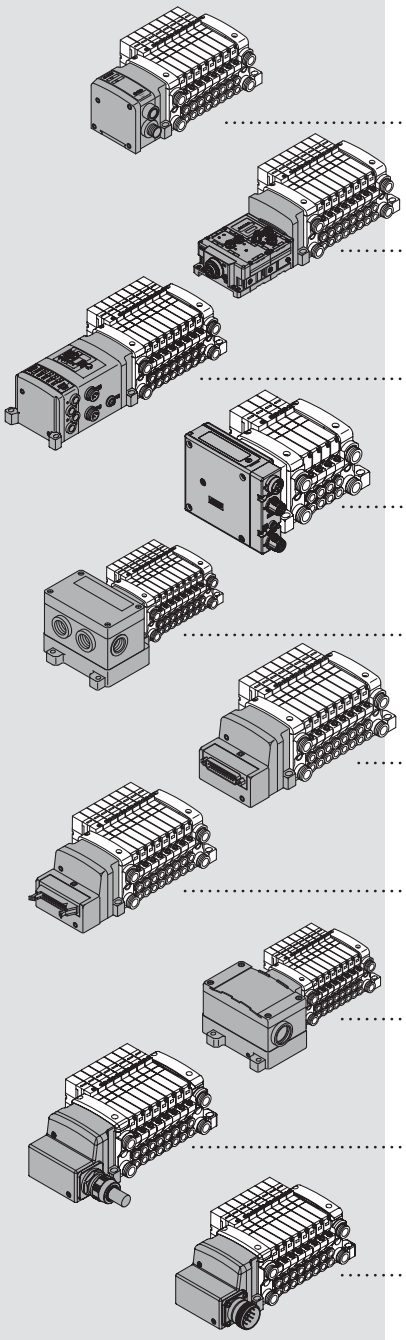
∗ It is when the cylinder is extending that is meter-out controlled by speed controller which is directly connected with cylinder, and its needle valve with being fully open.
∗ The average velocity of the cylinder is what the stroke is divided by the total stroke time.
∗ Load factor: ((Load mass x 9.8)/Theoretical force) x 100%

## Conditions

| Series | Conditions | Series CJ2 | Series CM2 | Series MB, CA2 |
|---|---|---|---|---|
| **VQC1101** | Tube x Length | T0604 (O.D. ø6/I.D. ø4) x 1 m | | |
| | Speed controller | AS3001F-06 | | |
| | Silencer | AN200-KM8 | | |
| **VQC2101** | Tube x Length | T0806 (O.D. ø8/I.D. ø6) x 1 m | | |
| | Speed controller | AS3001F-08 | | |
| | Silencer | AN200-KM10 | | |

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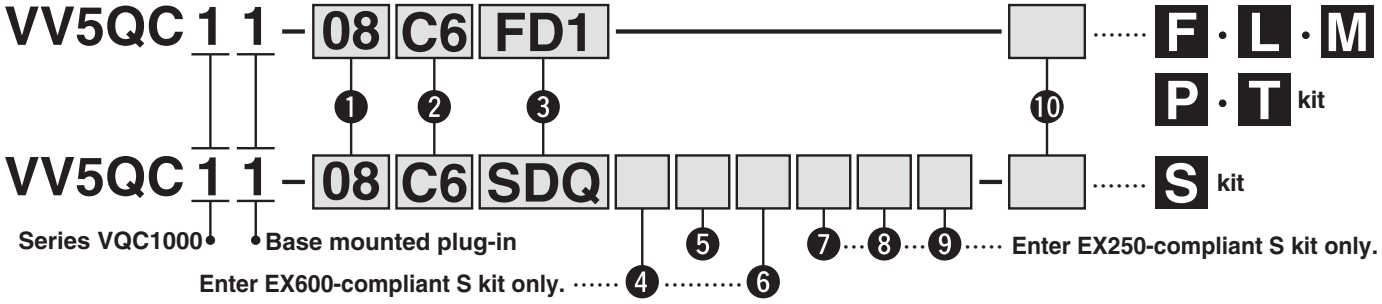
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# Base Mounted
# Plug-in Unit
# Series VQC1000

## How to Order Manifold




### ❶ Stations

| | |
|---|---|
| 01 | 1 station |
| ⋮ | ⋮ |

The maximum number of stations differs depending on the electrical entry. (Refer to ❸ Kit type/Electrical entry/Cable length.)

Note) In case of compatibility with the S kit/AS-Interface, the maximum number of solenoids is as shown below, so please be careful of the number of stations.
- 8 in/8 out: Maximum 8 solenoids
- 4 in/4 out: Maximum 4 solenoids

### ❷ Cylinder port size

| | |
|---|---|
| C3 | With ø3.2 One-touch fitting |
| C4 | With ø4 One-touch fitting |
| C6 | With ø6 One-touch fitting |
| M5 | M5 thread |
| CM | Mixed sizes and with port plug |
| L3 | Top ported elbow with ø3.2 One-touch fitting |
| L4 | Top ported elbow with ø4 One-touch fitting |
| L6 | Top ported elbow with ø6 One-touch fitting |
| L5 | M5 thread |
| B3 | Bottom ported elbow with ø3.2 One-touch fitting |
| B4 | Bottom ported elbow with ø4 One-touch fitting |
| B6 | Bottom ported elbow with ø6 One-touch fitting |
| B5 | M5 thread |
| LM | Elbow port, mixed sizes |
| MM Note 2) | Mixed size for different types of piping, option installed |

Note 1) Indicate the size by means of the manifold specification sheet in case of "CM", "LM", "NM".

Note 2) When selecting the mixed size for different types of piping or dual flow fitting assembly, enter "MM" and give instructions in the manifold specification sheet.

Note 3) Symbols for inch sizes are as follows:
- N1: ø1/8" • N3: ø5/32"
- N7: ø1/4" • NM: Mixed

The top ported elbow is LN□ and the bottom ported elbow is BN□.

### ❹ End plate type
**(Enter EX600-compliant S kit only.)**

| | |
|---|---|
| Nil | Without end plate |
| 2 | M12 connector power supply (Max. supply current 2A) |
| 3 | 7/8 inch connector power supply (Max. supply current 8A) |

Note) Without SI unit, the symbol is nil.

### ❻ I/O unit stations
**(Enter EX600-compliant S kit only.)**

| | |
|---|---|
| Nil | None |
| 1 | 1 station |
| ⋮ | ⋮ |
| 9 | 9 stations |

Note 1) Without SI unit, the symbol is nil.

Note 2) SI unit is not included in I/O unit stations.

Note 3) When I/O unit is selected, it is shipped separately, and assembled by customer. Refer to the attached operation manual for mounting method.

### ❼ Number of input blocks
**(Enter EX250-compliant S kit only.)**

| | |
|---|---|
| Nil | Without SI unit/input block (SD0) |
| 0 | Without input block |
| 1 | With 1 input block |
| ⋮ | ⋮ |
| 8 | With 8 input blocks |

Note) For the S kit compatible with AS-Interface, the maximum number of stations is limited. Refer to page 6 for details.

### ❽ Input block type
**(Enter EX250-compliant S kit only.)**

| | |
|---|---|
| Nil | Without input block |
| 1 | M12, 2 inputs |
| 2 | M12, 4 inputs |
| 3 | M8, 4 inputs (3 pins) |

### ❾ Input block specification
**(Enter EX250-compliant S kit only.)**

| | |
|---|---|
| Nil | PNP sensor input (Positive common) or without input block |
| N | NPN sensor input (Negative common) |

### ❿ Option

| | |
|---|---|
| Nil | None |
| B Note 2) | All stations with back pressure check valve |
| D | With DIN rail (Rail length: Standard) Note 7) |
| D□ Note 3) | With DIN rail (Rail length: Special) Note 7) |
| K Note 4) | Special wiring spec. (Except double wiring) |
| N | With name plate |
| R Note 5) | External pilot |
| S Note 6) | Direct EXH outlet with built-in silencer |

Note 1) When two or more symbols are specified, indicate them alphabetically. Example: -BRS

Note 2) When a back pressure check valve is desired, and is to be installed only in certain manifold stations, specify the mounting position by means of the manifold specification sheet.

Note 3) For special DIN rail length, indicate "D□". (Enter the number of stations inside □.) Example: -D08
In this case, stations will be mounted on a DIN rail for 8 stations regardless of the actual number of manifold stations.
The specified number of stations must be larger than the number of stations on the manifold.
Indicate "-D0" for the option without DIN rail.

Note 4) When single wiring and double wiring are mixed, specify wiring type of each station by means of the manifold specification sheet.

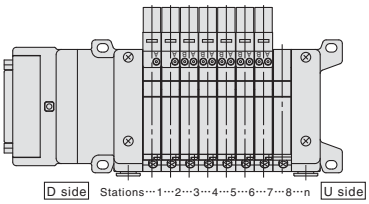
Note 5) For external pilot option, "-R", indicate the external pilot specification "R" for the applicable valves as well.

Note 6) Built-in silencer type does not satisfy IP67.

Note 7) When "Without SI unit (SD0, SD60)" is specified, "With DIN rail (D)" cannot be selected.

Note 8) When changing the specifications of the EX600 from no DIN rail to DIN rail mounting, please consult SMC.

Note 9) DIN rail is not attached (but shipped together) on the manifold in case of the EX600 with DIN rail. Refer to back page 5 for mounting method.




∗ Stations are counted from station 1 on the D-side.

### ❺ SI unit COM

| SI unit COM | | EX250 integrated-type (I/O) serial transmission system | | | | | |
|---|---|---|---|---|---|---|---|
| | | DeviceNet™ | PROFIBUS DP | CC-Link | AS-Interface | CANopen | EtherNet/IP™ |
| Nil | Positive common | — | — | ○ | — | — | — |
| N | Negative common | ○ | ○ | — | ○ | ○ | ○ |

| SI unit COM | | EX500 gateway-type serial transmission system | | | | EX260 integrated-type (for output) serial transmission system | | | EX126 integrated-type (for output) serial transmission system |
|---|---|---|---|---|---|---|---|---|---|
| | | DeviceNet™ | PROFIBUS DP | CC-Link | EtherNet/IP™ | DeviceNet™ | PROFIBUS DP | EtherCAT | CC-Link |
| Nil | Positive common | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| N | Negative common | ○ | ○ | ○ | ○ | ○ | ○ | ○ | — |

| SI unit COM | | EX600 integrated-type (I/O) serial transmission system (Fieldbus system) | | | |
|---|---|---|---|---|---|
| | | DeviceNet™ | PROFIBUS DP | CC-Link | EtherNet/IP™ |
| Nil | Positive common | ○ | ○ | ○ | ○ |
| N | Negative common | ○ | ○ | ○ | ○ |

Note) Without SI unit (SD0□), the symbol is nil.

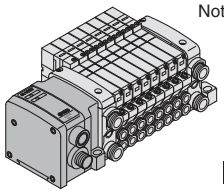


SMC

## ③ Kit type/Electrical entry/Cable length

∗ Numbers in parentheses represent the maximum number of solenoids in case of mixed single and double wiring. The maximum number of stations is determined by the total number of solenoids. When ordering mixed wiring, please add the option symbol "-K".

### S kit (Serial transmission: EX500 gateway type)



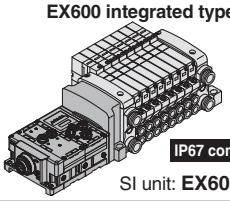
Note) A separate gateway unit and communication cable are required.

IP67 compliant

SI unit: **EX500**

| | | |
|---|---|---|
| SD0 | Without SI unit | 1 to 8 stations (16) |
| SDA2 | DeviceNet™, PROFIBUS DP, CC-Link, EtherNet/IP™ | |

### S kit (Serial transmission (Fieldbus system): EX600 integrated type (I/O))

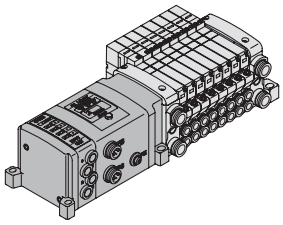


IP67 compliant

SI unit: **EX600**

| | | |
|---|---|---|
| SD60 | Without SI unit | 1 to 12 stations (24) |
| SD6Q | DeviceNet™ | |
| SD6N | PROFIBUS DP | |
| SD6V | CC-Link | |
| SD6ZE | EtherNet/IP™ | |

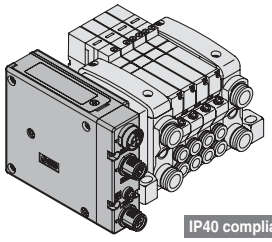
### S kit (Serial transmission: EX250 integrated type (I/O))



SI unit: **EX250** IP67 compliant

| | | |
|---|---|---|
| SD0 | Without SI unit | 1 to 12 stations (24) |
| SDQ | DeviceNet™ | |
| SDN | PROFIBUS DP | |
| SDV | CC-Link | |
| SDTA | AS-Interface, 8 in/8 out, 31 slave modes, 2 power supply systems | 1 to 4 stations (8) |
| SDTB | AS-Interface, 4 in/4 out, 31 slave modes, 2 power supply systems | 1 to 2 stations (4) |
| SDTC Note 1) | AS-Interface, 8 in/8 out, 31 slave modes, 1 power supply systems | 1 to 4 stations (8) |
| SDTD Note 1) | AS-Interface, 4 in/4 out, 31 slave modes, 1 power supply systems | 1 to 2 stations (4) |
| SDY | CANopen | 1 to 12 stations (24) |
| SDZEN | EtherNet/IP™ | |

### S kit (Serial transmission: EX260 integrated type (for output))

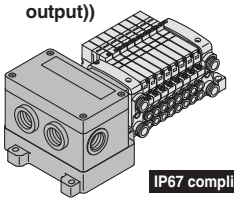


IP40 compliant

SI unit: **EX260** IP67 compliant

| Symbol | Protocol | Number of outputs | Communication connector | Stations |
|---|---|---|---|---|
| SD0 | Without SI unit | | | 2 to 12 stations (24) |
| SQA | DeviceNet™ | 32 | M12 | |
| SQB | | 16 | | 2 to 8 stations (16) |
| SNA | PROFIBUS DP | 32 | M12 | 2 to 12 stations (24) |
| SNB | | 16 | | 2 to 8 stations (16) |
| SNC | | 32 | D-sub Note 3) | 2 to 12 stations (24) |
| SND | | 16 | | 2 to 8 stations (16) |
| SDA | EtherCAT | 32 | M12 | 2 to 12 stations (24) |
| SDB | | 16 | | 2 to 8 stations (16) |

### S kit (Serial transmission: EX126 integrated type (for output))

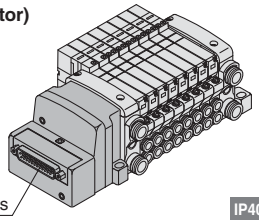


IP67 compliant

SI unit: **EX126**

| | | |
|---|---|---|
| SDVB | CC-Link | 1 to 8 stations (16) |

### F kit (D-sub connector)



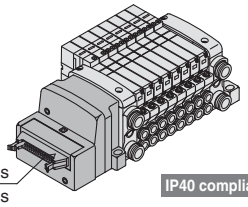
26 pins

IP40 compliant

| | | |
|---|---|---|
| FD0 | D-sub connector (25P) without cable | 1 to 12 stations (24) |
| FD1 | D-sub connector (25P) with 1.5 m cable | |
| FD2 | D-sub connector (25P) with 3.0 m cable | |
| FD3 | D-sub connector (25P) with 5.0 m cable | |

### P kit (Flat ribbon cable)

Note) For a 20P flat ribbon cable, the cable assembly must be ordered separately.

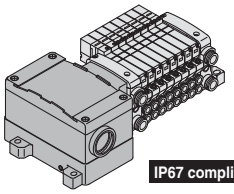


26 pins
20 pins

IP40 compliant

| | | |
|---|---|---|
| PD0 | Flat ribbon cable (26P) without cable | 1 to 12 stations (24) |
| PD1 | Flat ribbon cable (26P) with 1.5 m cable | |
| PD2 | Flat ribbon cable (26P) with 3.0 m cable | |
| PD3 | Flat ribbon cable (26P) with 5.0 m cable | |
| PDC | Flat ribbon cable (20P) without cable | 1 to 9 stations (18) |

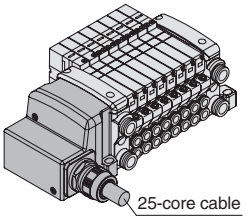
### T kit (Terminal block box)



IP67 compliant

| | | |
|---|---|---|
| TD0 | Terminal block box | 1 to 10 stations (20) |

### L kit (Lead wire)

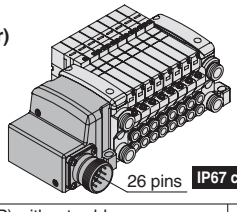


25-core cable

IP67 compliant

| | | |
|---|---|---|
| LD0 | Lead wire (25 cores) 0.6 m lead wire | 1 to 12 stations (24) |
| LD1 | Lead wire (25 cores) 1.5 m lead wire | |
| LD2 | Lead wire (25 cores) 3.0 m lead wire | |

### M kit (Circular connector)



26 pins

IP67 compliant

| | | |
|---|---|---|
| MD0 | Circular connector (26P) without cable | 1 to 12 stations (24) |
| MD1 | Circular connector (26P) with 1.5 m cable | |
| MD2 | Circular connector (26P) with 3.0 m cable | |
| MD3 | Circular connector (26P) with 5.0 m cable | |

∗ The maximum number of stations displayed in parentheses is applied to the special wiring specifications. (Option "-K")

Note 1) When selecting SI units with SDTC or SDTD specifications, there are limits to the supply current from the SI unit to the input block or valve. Refer to Best Pneumatics No. ① for details.

Note 2) When selecting SI units with SDZCN specifications only, IP40 is compatible. (All other SI units are IP67 compliant.)

Note 3) For the SI unit part no., refer to page 6-1.

Refer to catalog CAT.E02-24, Fieldbus System (I/O), for details on the EX600 integrated-type (I/O).
Refer to Best Pneumatics No. ① for details on the EX500 gateway-type serial transmission system, EX250 integrated-type (I/O) serial transmission system and EX126 integrated-type (for output) serial transmission system.
For details about EX260 integrated type (for output), refer to SMC Information 09-E556.

## SI Unit Part No.

### EX500

| Symbol | Protocol | SI unit part no. | | Page |
|---|---|---|---|---|
| | | Positive common (NPN) | Negative common (PNP) | |
| SDA2 | DeviceNet™ | EX500-Q001 | EX500-Q101 | Best Pneumatics No. ① |
| | PROFIBUS DP | | | |
| | CC-Link | | | |
| | EtherNet/IP™ | | | |

### EX600

| Symbol | Protocol | SI unit part no. | | Page |
|---|---|---|---|---|
| | | Positive common (NPN) | Negative common (PNP) | |
| SD6Q | DeviceNet™ | EX600-SDN2A | EX600-SDN1A | Fieldbus system catalog (I/O) CAT.E02-24 |
| SD6V | CC-Link | EX600-SMJ2 | EX600-SMJ1 | |
| SD6N | PROFIBUS DP | EX600-SPR2A | EX600-SPR1A | |
| SD6ZE | EtherNet/IP™ | EX600-SEN2 | EX600-SEN1 | |

### EX260

| Symbol | Protocol | Number of outputs | SI unit part no. | | Communication connector | Page |
|---|---|---|---|---|---|---|
| | | | Positive common (NPN) | Negative common (PNP) | | |
| SQA | DeviceNet™ | 32 | EX260-SDN2 | EX260-SDN1 | M12 | SMC Information 09-E556 |
| SQB | | 16 | EX260-SDN4 | EX260-SDN3 | | |
| SNA | PROFIBUS DP | 32 | EX260-SPR2 | EX260-SPR1 | | |
| SNB | | 16 | EX260-SPR4 | EX260-SPR3 | | |
| SNC | | 32 | EX260-SPR6 | EX260-SPR5 | D-sub Note) | |
| SND | | 16 | EX260-SPR8 | EX260-SPR7 | | |
| SDA | EtherCAT | 32 | EX260-SEC2 | EX260-SEC1 | M12 | |
| SDB | | 16 | EX260-SEC4 | EX260-SEC3 | | |

Note) When the communication connector specification is D-sub, the enclosure is IP40. (IP67 for other specifications)

### EX250

| Symbol | Protocol | SI unit part no. | Page |
|---|---|---|---|
| SDQ | DeviceNet™ | EX250-SDN1 | Best Pneumatics No. ① |
| SDN | PROFIBUS DP | EX250-SPR1 | |
| SDV | CC-Link | EX250-SMJ2 | |
| SDTA | AS-Interface, 8 in/8 out, 31 slave modes, 2 power supply systems | EX250-SAS3 | |
| SDTB | AS-Interface, 4 in/4 out, 31 slave modes, 2 power supply systems | EX250-SAS5 | |
| SDTC | AS-Interface, 8 in/8 out, 31 slave modes, 1 power supply systems | EX250-SAS7 | |
| SDTD | AS-Interface, 4 in/4 out, 31 slave modes, 1 power supply systems | EX250-SAS9 | |
| SDY | CANopen | EX250-SCA1A | |
| SDZEN | EtherNet/IP™ | EX250-SEN1 | |

### EX126

| Symbol | Protocol | SI unit part no. | Page |
|---|---|---|---|
| SDVB | CC-Link | EX126D-SMJ1 | Best Pneumatics No. ① |

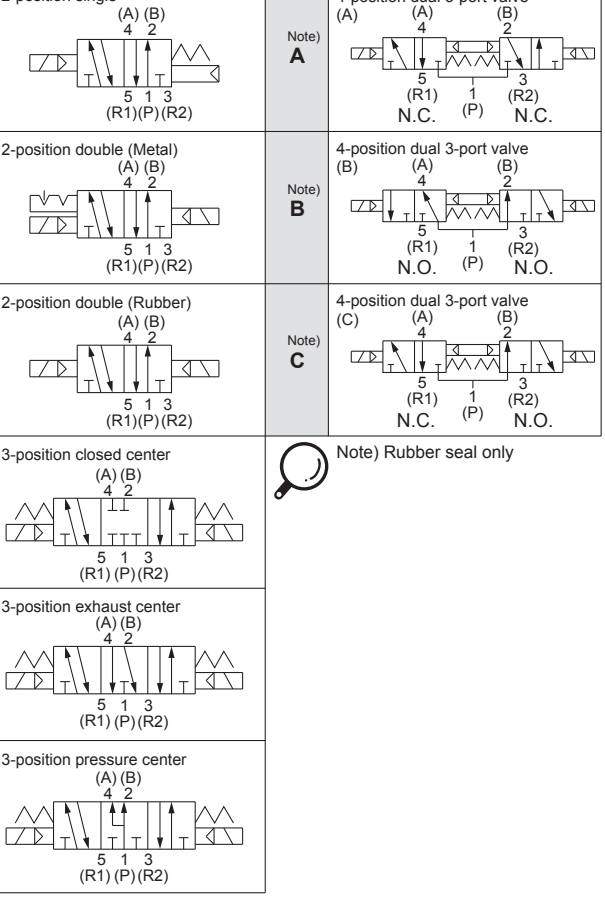
## How to Order Valves

**VQC 1 1 0 0 □ – 5 □ □ 1**

Series VQC1000 — Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ

### Ⓐ Type of actuation

| | | | |
|---|---|---|---|
| 1 | 2-position single | Note) A | 4-position dual 3-port valve |
| 2 | 2-position double (Metal) | Note) B | 4-position dual 3-port valve |
| | 2-position double (Rubber) | Note) C | 4-position dual 3-port valve |
| 3 | 3-position closed center | Note) Rubber seal only | |
| 4 | 3-position exhaust center | | |
| 5 | 3-position pressure center | | |




### Ⓑ Seal

| | |
|---|---|
| **0** | Metal seal |
| **1** | Rubber seal |

### Ⓒ Function

| | |
|---|---|
| **Nil** | Standard (0.4 W) |
| **B** | High-speed response type (0.95 W) |
| **K** Note 2) | High-pressure type (1.0 MPa, 0.95 W) |
| **N** Note 3) | Negative common |
| **R** Note 4) | External pilot |

Note 1) When two or more symbols are specified, indicate them alphabetically. However, combination of "B" and "K" is not possible.
Note 2) Metal seal only
Note 3) When "-COM." is specified for the SI unit, select and mount the valve of negative common.
Note 4) Dual 3-port is not applicable.

### Ⓓ Coil voltage

| | |
|---|---|
| **5** Note) | 24 VDC |
| **6** | 12 VDC |

Note) Only 24 VDC is available with the S kit.

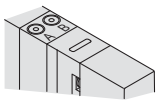
### Ⓔ Light/surge voltage suppressor

| | |
|---|---|
| **Nil** | Yes |
| **E** Note) | None |

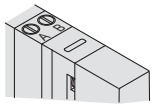
Note) Not applicable to the S kit.

### Ⓕ Manual override

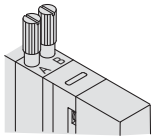
**Nil**: Non-locking push type (Tool required)



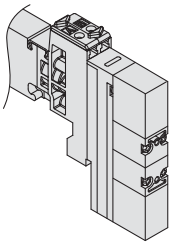
**B**: Locking type (Tool required)



**C**: Locking type (Manual)



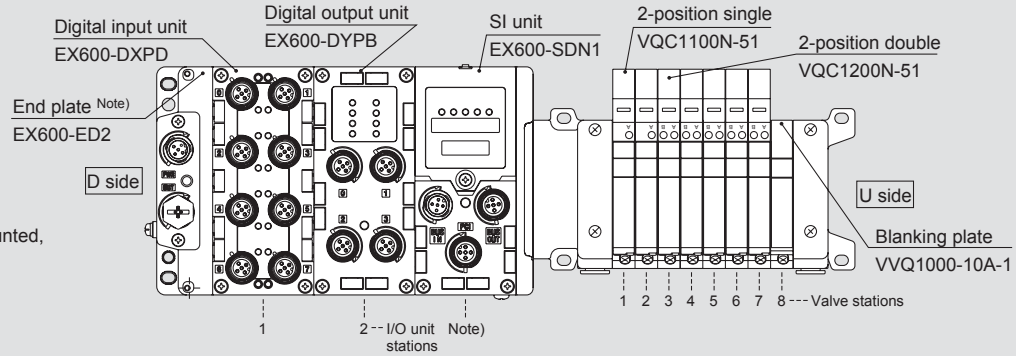
**D**: Slide locking type (Manual)



## How to Order Manifold Assembly

### Example

**Manifold**
**Power supply with**
**M12 connector**




For the I/O unit part number mounted, refer to catalog CAT.E02-24.

- Digital input unit
- Digital output unit
- Analog input unit

**Serial transmission kit**

**VV5QC11-08C6SD6Q2N2 ···· 1 set Manifold base part number**

Enter in order starting from the first station on the D-side. When entry of part numbers becomes complicated, indicate with the manifold specification sheet.

- ✳ **VQC1100N-51 ····· 2 sets Valve part number (Stations 1 to 2)**
- ✳ **VQC1200N-51 ····· 5 sets Valve part number (Stations 3 to 7)**
- ✳ **VVQ1000-10A-1 ····· 1 set Blanking plate number (Station 8)**

Enter in order starting from the first station on the D-side. When entry of part numbers becomes complicated, indicate with the manifold specification sheet.

- ✳ **EX600-DXPD ····· 1 set I/O unit part number (Station 1)**
- ✳ **EX600-DYPB ····· 1 set I/O unit part number (Station 2)**

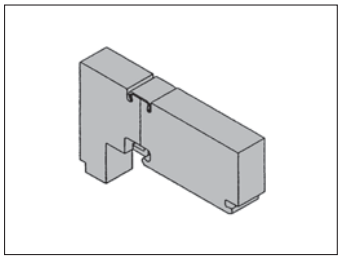
**The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.**

Note) Do not enter the SI unit part number and the end plate part number together.

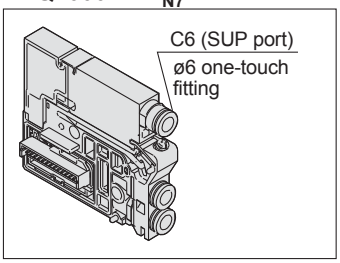
## Manifold Options

Refer to pages 40 through to 43 for details.

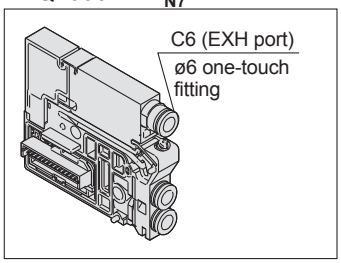
**Blanking plate assembly**
**VVQ1000-10A-1**



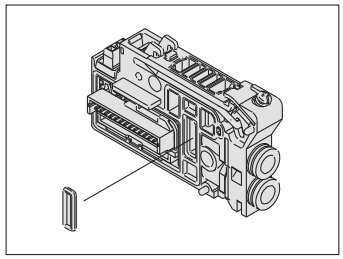
**Individual SUP spacer**
**VVQ1000-P-1-$^{C6}_{N7}$**



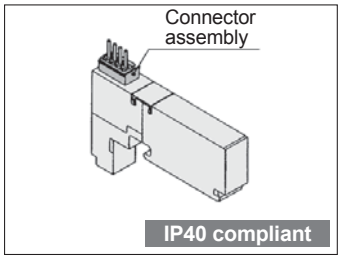

**Individual EXH spacer**
**VVQ1000-R-1-$^{C6}_{N7}$**



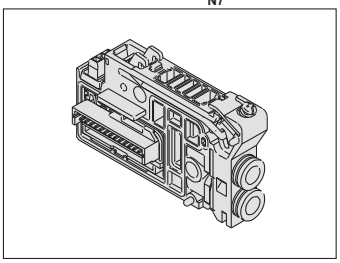

**SUP block plate**
**VVQ1000-16A**



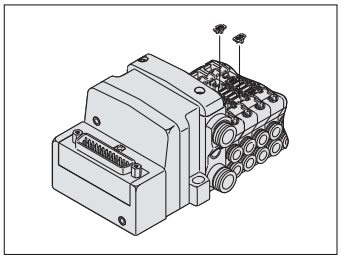
**Blanking plate with connector**
**VVQ1000-1C□-□**



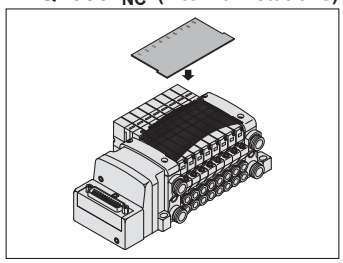

**EXH block plate assembly**
**VVQC1000-19A-$^{S}_{D}$-$^{C3,\ C4\ C6,\ M5\ N1,\ N3\ N7}$**



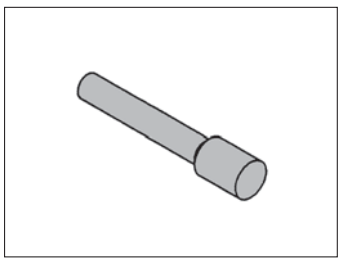
**Back pressure check valve assembly [-B]**
**VVQ1000-18A**



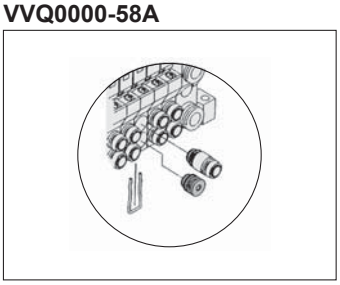
**Name plate [-N]**
**VVQ1000-$^{N}_{NC}$-(1 to Max. stations)**



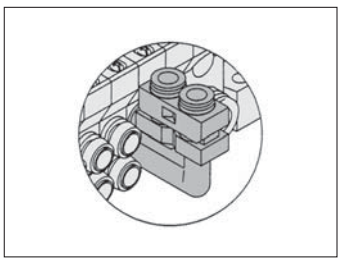
**Blanking plug**
**KQ2P-□**



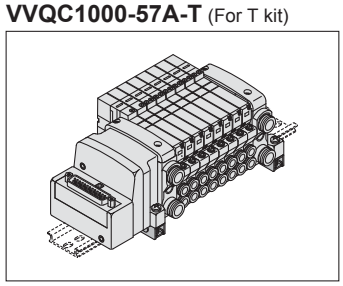
**Port plug**
**VVQ0000-58A**



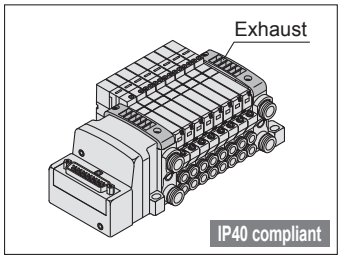
**Elbow fitting assembly**
**VVQ1000-F-L□**



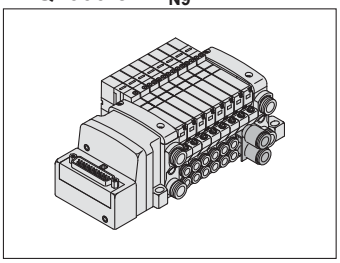
**DIN rail mounting bracket [-D]**
**VVQ1000-57A**
{For F/L/M/P/S (EX500) kit}
**VVQC1000-57A-S**
{For S (EX250) kit}
**VVQC1000-57A-T** (For T kit)



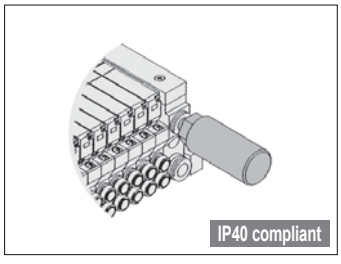
**Direct EXH outlet with built-in silencer [-S]**



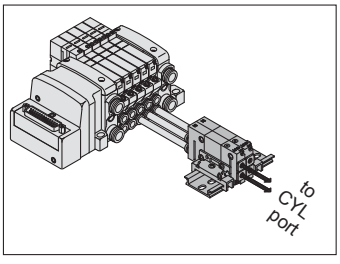

**Dual flow fitting assembly**
**VVQ1000-52A-$^{C8}_{N9}$**



**Silencer (For EXH port)**
**AN200-KM8**
**AN203-KM8**

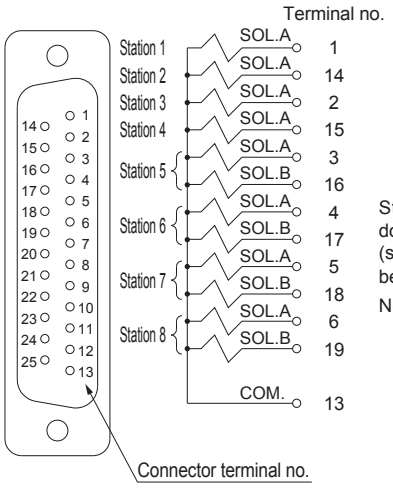



**Double check block**
**VVQ1000-FPG-□□-□**




**Special electrical wiring specifications [-K]**

Wiring example)
D-sub connector




Standard manifolds are for double wiring, but mixed wiring (single and double wiring) can be specified as an option.

Note) Refer to the pages of each kit for details.

F kit ····· P. 25
P kit ····· P. 27
T kit ····· P. 29
L kit ····· P. 31
M kit ····· P. 33

# Base Mounted
# Plug-in Unit
# Series VQC2000

## How to Order Manifold

VV5QC 2 1 – 08 C8 FD1 ❶ ❷ ❸ ⋯⋯ ❿ F · L · M / P · T kit

VV5QC 2 1 – 08 C8 SDQ ❹ ❺ ❻ ❼ ❽ ❾ – ⋯⋯ ❿ S kit

Series VQC2000 • • Base mounted plug-in

Enter EX600-compliant S kit only. ⋯⋯ ❹ ⋯⋯ ❻

❺ ❼ ⋯ ❽ ⋯ ❾ ⋯⋯ Fill out for I/O serial kits only.

### ❶ Stations

| | |
|---|---|
| 01 | 1 station |
| ⋮ | ⋮ |

The maximum number of stations differs depending on the electrical entry. (Refer to ❸ Kit type/Electrical entry/Cable length.)

Note) In case of compatibility with the S kit/AS-Interface, the maximum number of solenoids is as shown below, so please be careful of the number of stations.
- 8 in/8 out: Maximum 8 solenoids
- 4 in/4 out: Maximum 4 solenoids

### ❷ Cylinder port size

| | |
|---|---|
| C4 | With ø4 One-touch fitting |
| C6 | With ø6 One-touch fitting |
| C8 | With ø8 One-touch fitting |
| CM | Mixed sizes and with port plug |
| L4 | Top ported elbow with ø4 One-touch fitting |
| L6 | Top ported elbow with ø6 One-touch fitting |
| L8 | Top ported elbow with ø8 One-touch fitting |
| B4 | Bottom ported elbow with ø4 One-touch fitting |
| B6 | Bottom ported elbow with ø6 One-touch fitting |
| B8 | Bottom ported elbow with ø8 One-touch fitting |
| LM | Elbow port, mixed sizes |
| MM Note 2) | Mixed size for different types of piping, option installed |

Note 1) Indicate the size by means of the manifold specification sheet in case of "CM", "LM", "NM".

Note 2) When selecting the mixed size for different types of piping or dual flow fitting assembly, enter "MM" and give instructions in the manifold specification sheet.

Note 3) Symbols for inch sizes are as follows:
- N3: ø5/32" • N7: ø1/4"
- N9: ø5/16" • NM: Mixed

The top ported elbow is LN□ and the bottom ported elbow is BN□.

### ❹ End plate type
**(Enter EX600-compliant S kit only.)**

| | |
|---|---|
| Nil | Without end plate |
| 2 | M12 connector power supply (Max. supply current 2A) |
| 3 | 7/8 inch connector power supply (Max. supply current 8A) |

Note) Without SI unit, the symbol is nil.

### ❻ I/O unit sations
**(Enter EX600-compliant S kit only.)**

| | |
|---|---|
| Nil | None |
| 1 | 1 station |
| ⋮ | ⋮ |
| 9 | 9 stations |

Note 1) Without SI unit, the symbol is nil.

Note 2) SI unit is not included in I/O unit stations.

Note 3) When I/O unit is selected, it is shipped separately, and assembled by customer. Refer to the attached operation manual for mounting method.

### ❼ Number of input blocks
**(Enter EX250-compliant S kit only.)**

| | |
|---|---|
| Nil | Without SI unit/input block (SD0) |
| 0 | Without input block |
| 1 | With 1 input block |
| ⋮ | ⋮ |
| 8 | With 8 input blocks |

Note) For the S kit compatible with AS-Interface, the maximum number of stations is limited. Refer to page 10 for details.

### ❽ Input block type
**(Enter EX250-compliant S kit only.)**

| | |
|---|---|
| Nil | Without input block |
| 1 | M12, 2 inputs |
| 2 | M12, 4 inputs |
| 3 | M8, 4 inputs (3 pins) |

### ❾ Input block specification
**(Enter EX250-compliant S kit only.)**

| | |
|---|---|
| Nil | PNP sensor input (Positive common) or without input block |
| N | NPN sensor input (Negative common) |

### ❿ Option

| | |
|---|---|
| Nil | None |
| B Note 2) | All stations with back pressure check valve |
| D | With DIN rail (Rail length: Standard) Note 9) |
| D□ Note 4) | With DIN rail (Rail length: Special) Note 9) |
| K Note 5) | Special wiring spec. (Except double wiring) |
| N | With name plate |
| R Note 6) | External pilot |
| S Note 7) | Direct EXH outlet with built-in silencer |
| T Note 8) | Branched P and R ports on U-side |

Note 1) When two or more symbols are specified, indicate them alphabetically. Example: -BRS

Note 2) When a back pressure check valve is desired, and is to be installed only in certain manifold stations, specify the mounting position by means of the manifold specification sheet.

Note 3) When DIN rail mounting (with DIN rail) is selected with a power supply 7/8 inch connector for end plate of the VQC2000 series, and I/O unit station number is 9, and max. valve station number is 23. DIN rail mount cannot be specified for 24 stations. (Refer to the DIN rail full length on page 20.)

Note 4) For special DIN rail length, indicate "D□". (Enter the number of stations inside □.) Example: -D08
In this case, stations will be mounted on a DIN rail for 8 stations regardless of the actual number of manifold stations.
The specified number of stations must be larger than the number of stations on the manifold. Indicate "-D0" for the option without DIN rail.

Note 5) When single wiring and double wiring are mixed, specify wiring type of each station by means of the manifold specification sheet.

Note 6) For external pilot option, "-R", indicate the external pilot specification "R" for the applicable valves as well.

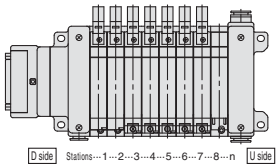
Note 7) Built-in silencer type does not satisfy IP67.

Note 8) SUP and EXH ports on the U-side (on cylinder port side and coil side is branched.) Port is equipped with one-touch fitting for ø12.

Note 9) When "Without SI unit (SD0, SD60)" is specified, "With DIN rail (D)" cannot be selected.

Note 10) When changing the specifications of the EX600 from no DIN rail to DIN rail mounting, please consult SMC.

Note 11) DIN rail is not attached (but shipped together) on the manifold in case of the EX600 with DIN rail. Refer to back page 5 for mounting method.




* Stations are counted from station 1 on the D-side.

### ❺ SI unit COM

| SI unit COM | | EX250 integrated-type (I/O) serial transmission system | | | | | |
|---|---|---|---|---|---|---|---|
| | | DeviceNet™ | PROFIBUS DP | CC-Link | AS-Interface | CANopen | EtherNet/IP™ |
| Nil | Positive common | — | — | ○ | — | — | — |
| N | Negative common | ○ | ○ | — | ○ | ○ | ○ |

| SI unit COM | | EX500 gateway-type serial transmission system | | | | EX260 integrated-type (for output) serial transmission system | | | EX126 integrated-type (for output) serial transmission system |
|---|---|---|---|---|---|---|---|---|---|
| | | DeviceNet™ | PROFIBUS DP | CC-Link | EtherNet/IP™ | DeviceNet™ | PROFIBUS DP | EtherCAT | CC-Link |
| Nil | Positive common | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| N | Negative common | ○ | ○ | ○ | ○ | ○ | ○ | ○ | — |

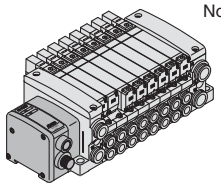
| SI unit COM | | EX600 integrated-type (I/O) serial transmission system (Fieldbus system) | | | |
|---|---|---|---|---|---|
| | | DeviceNet™ | PROFIBUS DP | CC-Link | EtherNet/IP™ |
| Nil | Positive common | ○ | ○ | ○ | ○ |
| N | Negative common | ○ | ○ | ○ | ○ |

Note) Without SI unit (SD0□), the symbol is nil.

## ❸ Kit type/Electrical entry/Cable length

∗ Numbers in parentheses represent the maximum number of solenoids in case of mixed single and double wiring. The maximum number of stations is determined by the total number of solenoids. When ordering mixed wiring, please add the option symbol "-K".

### S kit (Serial transmission: EX500 gateway type)



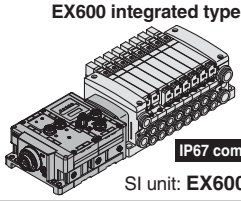
Note) A separate gateway unit and communication cable are required.

IP67 compliant

SI unit: **EX500**

| | | |
|---|---|---|
| SD0 | Without SI unit | 1 to 8 stations (16) |
| SDA2 | DeviceNet™,PROFIBUS DP, CC-Link,EtherNet/IP™ | |

### S kit (Serial transmission (Fieldbus system): EX600 integrated type (I/O))

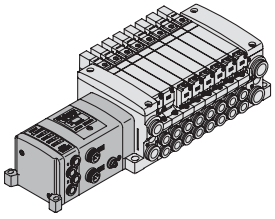


IP67 compliant

SI unit: **EX600**

| | | |
|---|---|---|
| SD60 | Without SI unit | 1 to 12 stations (24) |
| SD6Q | DeviceNet™ | |
| SD6N | PROFIBUS DP | |
| SD6V | CC-Link | |
| SD6ZE | EtherNet/IP™ | |

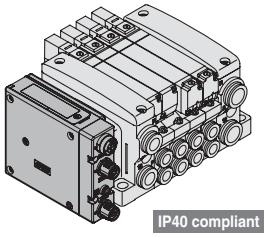
### S kit (Serial transmission: EX250 integrated type (I/O))



SI unit: **EX250** IP67 compliant

| | | |
|---|---|---|
| SD0 | Without SI unit | 1 to 12 stations (24) |
| SDQ | DeviceNet™ | |
| SDN | PROFIBUS DP | |
| SDV | CC-Link | |
| SDTA | AS-Interface, 8 in/8 out, 31 slave modes, 2 power supply systems | 1 to 4 stations (8) |
| SDTB | AS-Interface, 4 in/4 out, 31 slave modes, 2 power supply systems | 1 to 2 stations (4) |
| SDTC Note 1) | AS-Interface, 8 in/8 out, 31 slave modes, 1 power supply systems | 1 to 4 stations (8) |
| SDTD Note 1) | AS-Interface, 4 in/4 out, 31 slave modes, 1 power supply systems | 1 to 2 stations (4) |
| SDY | CANopen | 1 to 12 stations (24) |
| SDZEN | EtherNet/IP™ | |

### S kit (Serial transmission: EX260 integrated type (for output))

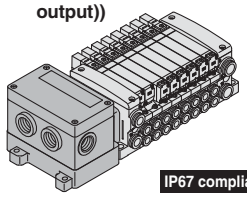


IP40 compliant

SI unit: **EX260** IP67 compliant

| Symbol | Protocol | Number of outputs | Communication connector | Stations |
|---|---|---|---|---|
| SD0 | Without SI unit | | | 2 to 12 stations (24) |
| SQA | DeviceNet™ | 32 | M12 | |
| SQB | | 16 | | 2 to 8 stations (16) |
| SNA | PROFIBUS DP | 32 | M12 | 2 to 12 stations (24) |
| SNB | | 16 | | 2 to 8 stations (16) |
| SNC | | 32 | D-sub Note 3) | 2 to 12 stations (24) |
| SND | | 16 | | 2 to 8 stations (16) |
| SDA | EtherCAT | 32 | M12 | 2 to 12 stations (24) |
| SDB | | 16 | | 2 to 8 stations (16) |

### S kit (Serial transmission: EX126 integrated type (for output))

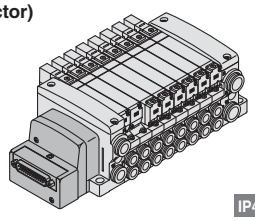


IP67 compliant

SI unit: **EX126**

| | | |
|---|---|---|
| SDVB | CC-Link | 1 to 8 stations (16) |

### F kit (D-sub connector)

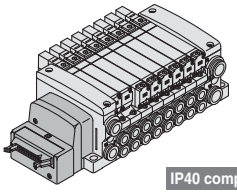


IP40 compliant

| | | |
|---|---|---|
| FD0 | D-sub connector (25P) without cable | 1 to 12 stations (24) |
| FD1 | D-sub connector (25P) with 1.5 m cable | |
| FD2 | D-sub connector (25P) with 3.0 m cable | |
| FD3 | D-sub connector (25P) with 5.0 m cable | |

### P kit (Flat ribbon cable)

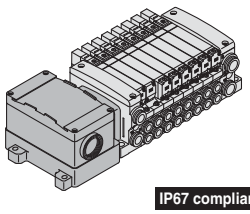
Note) For a 20P flat ribbon cable, the cable assembly must be ordered separately.



IP40 compliant

| | | |
|---|---|---|
| PD0 | Flat ribbon cable (26P) without cable | 1 to 12 stations (24) |
| PD1 | Flat ribbon cable (26P) with 1.5 m cable | |
| PD2 | Flat ribbon cable (26P) with 3.0 m cable | |
| PD3 | Flat ribbon cable (26P) with 5.0 m cable | |
| PDC | Flat ribbon cable (20P) without cable | 1 to 9 stations (18) |

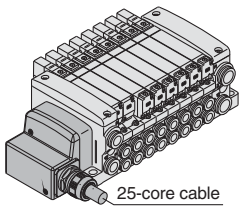
### T kit (Terminal block box)



IP67 compliant

| | | |
|---|---|---|
| TD0 | Terminal block box | 1 to 10 stations (20) |

### L kit (Lead wire)

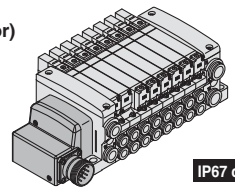


25-core cable

IP67 compliant

| | | |
|---|---|---|
| LD0 | Lead wire (25 cores) 0.6 m lead wire | 1 to 12 stations (24) |
| LD1 | Lead wire (25 cores) 1.5 m lead wire | |
| LD2 | Lead wire (25 cores) 3.0 m lead wire | |

### M kit (Circular connector)



IP67 compliant

| | | |
|---|---|---|
| MD0 | Circular connector (26P) without cable | 1 to 12 stations (24) |
| MD1 | Circular connector (26P) with 1.5 m cable | |
| MD2 | Circular connector (26P) with 3.0 m cable | |
| MD3 | Circular connector (26P) with 5.0 m cable | |

∗ The maximum number of stations displayed in parentheses is applied to the special wiring specifications. (Option "-K")

Note 1) When selecting SI units with SDTC or SDTD specifications, there are limits to the supply current from the SI unit to the input block or valve. Refer to Best Pneumatics No. ① for details.

Note 2) When selecting SI units with SDZCN specifications only, IP40 is compatible. (All other SI units are IP67 compliant.)

Note 3) For the SI unit part no., refer to page 10-1.

Refer to catalog CAT.E02-24, Fieldbus System (I/O), for details on the EX600 integrated-type (I/O).
Refer to Best Pneumatics No. ① for details on the EX500 gateway-type serial transmission system, EX250 integrated-type (I/O) serial transmission system and EX126 integrated-type (for output) serial transmission system.
For details about EX260 integrated type (for output), refer to SMC Information 09-E556.

## SI Unit Part No.

### EX500

| Symbol | Protocol | SI unit part no. | | Page |
|---|---|---|---|---|
| | | Positive common (NPN) | Negative common (PNP) | |
| SDA2 | DeviceNet™ | EX500-Q001 | EX500-Q101 | Best Pneumatics No. ① |
| | PROFIBUS DP | | | |
| | CC-Link | | | |
| | EtherNet/IP™ | | | |

### EX600

| Symbol | Protocol | SI unit part no. | | Page |
|---|---|---|---|---|
| | | Positive common (NPN) | Negative common (PNP) | |
| SD6Q | DeviceNet™ | EX600-SDN2A | EX600-SDN1A | Fieldbus system catalog (I/O) CAT.E02-24 |
| SD6V | CC-Link | EX600-SMJ2 | EX600-SMJ1 | |
| SD6N | PROFIBUS DP | EX600-SPR2A | EX600-SPR1A | |
| SD6ZE | EtherNet/IP™ | EX600-SEN2 | EX600-SEN1 | |

### EX260

| Symbol | Protocol | Number of outputs | SI unit part no. | | Communication connector | Page |
|---|---|---|---|---|---|---|
| | | | Positive common (NPN) | Negative common (PNP) | | |
| SQA | DeviceNet™ | 32 | EX260-SDN2 | EX260-SDN1 | M12 | SMC Information 09-E556 |
| SQB | | 16 | EX260-SDN4 | EX260-SDN3 | | |
| SNA | PROFIBUS DP | 32 | EX260-SPR2 | EX260-SPR1 | | |
| SNB | | 16 | EX260-SPR4 | EX260-SPR3 | | |
| SNC | | 32 | EX260-SPR6 | EX260-SPR5 | D-sub Note) | |
| SND | | 16 | EX260-SPR8 | EX260-SPR7 | | |
| SDA | EtherCAT | 32 | EX260-SEC2 | EX260-SEC1 | M12 | |
| SDB | | 16 | EX260-SEC4 | EX260-SEC3 | | |

Note) When the communication connector specification is D-sub, the enclosure is IP40. (IP67 for other specifications)

### EX250

| Symbol | Protocol | SI unit part no. | Page |
|---|---|---|---|
| SDQ | DeviceNet™ | EX250-SDN1 | Best Pneumatics No. ① |
| SDN | PROFIBUS DP | EX250-SPR1 | |
| SDV | CC-Link | EX250-SMJ2 | |
| SDTA | AS-Interface, 8 in/8 out, 31 slave modes, 2 power supply systems | EX250-SAS3 | |
| SDTB | AS-Interface, 4 in/4 out, 31 slave modes, 2 power supply systems | EX250-SAS5 | |
| SDTC | AS-Interface, 8 in/8 out, 31 slave modes, 1 power supply systems | EX250-SAS7 | |
| SDTD | AS-Interface, 4 in/4 out, 31 slave modes, 1 power supply systems | EX250-SAS9 | |
| SDY | CANopen | EX250-SCA1A | |
| SDZEN | EtherNet/IP™ | EX250-SEN1 | |

### EX126

| Symbol | Protocol | SI unit part no. | Page |
|---|---|---|---|
| SDVB | CC-Link | EX126D-SMJ1 | Best Pneumatics No. ① |

## How to Order Valves

**VQC 2 1 0 0 □ – 5 □ □ 1**

Series VQC2000 — Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ

### Ⓐ Type of actuation

| | | | |
|---|---|---|---|
| 1 | 2-position single | Note) A | 4-position dual 3-port valve |
| 2 | 2-position double (Metal) | Note) B | 4-position dual 3-port valve |
| | 2-position double (Rubber) | Note) C | 4-position dual 3-port valve |
| 3 | 3-position closed center | | |
| 4 | 3-position exhaust center | | |
| 5 | 3-position pressure center | | |

Note) Rubber seal only

### Ⓑ Seal

| | |
|---|---|
| 0 | Metal seal |
| 1 | Rubber seal |

### Ⓒ Function

| | |
|---|---|
| Nil | Standard (0.4 W) |
| B | High-speed response type (0.95 W) |
| K Note 2) | High-pressure type (1.0 MPa, 0.95 W) |
| N Note 3) | Negative common |
| R Note 4) | External pilot |

Note 1) When two or more symbols are specified, indicate them alphabetically. However, combination of "B" and "K" is not possible.
Note 2) Metal seal only
Note 3) When "-COM." is specified for the SI unit, select and mount the valve of negative common.
Note 4) Dual 3-port type is not applicable.

### Ⓓ Coil voltage

| | |
|---|---|
| 5 Note) | 24 VDC |
| 6 | 12 VDC |

Note) Only 24 VDC is available with the S kit.

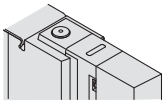
### Ⓔ Light/surge voltage suppressor

| | |
|---|---|
| Nil | Yes |
| E Note) | None |

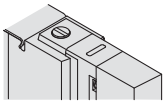
Note) Not applicable to the S kit.

### Ⓕ Manual override

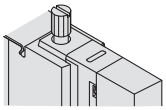
**Nil**: Non-locking push type (Tool required)



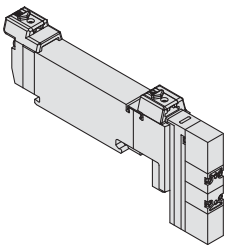
**B**: Locking type (Tool required)



**C**: Locking type (Manual)

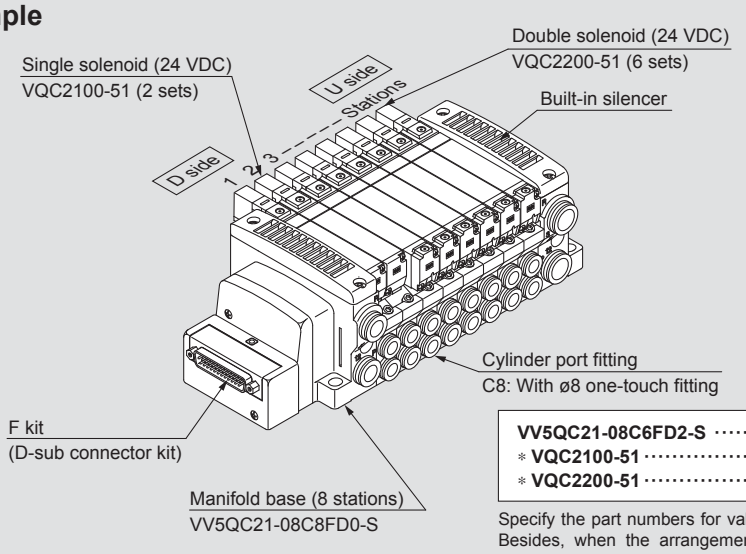


**D**: Slide locking type (Manual)



## How to Order Manifold Assembly

### Example



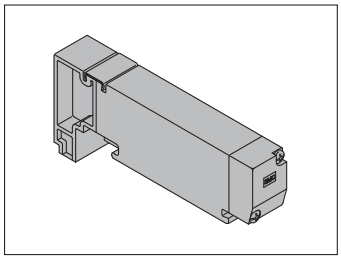

**VV5QC21-08C6FD2-S ····· 1 set (F kit, built-in silencer 8-station manifold base part no.)**
**∗ VQC2100-51 ····· 2 sets (Single solenoid part no.)**
**∗ VQC2200-51 ····· 6 sets (Double solenoid part no.)**

Specify the part numbers for valves and options together beneath the manifold base part number. Besides, when the arrangement will be complicated, specify them by means of the manifold specification sheet.

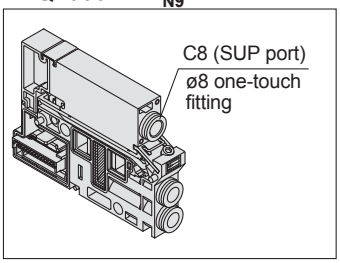
## Manifold Options

Refer to pages 44 through to 46 for details.

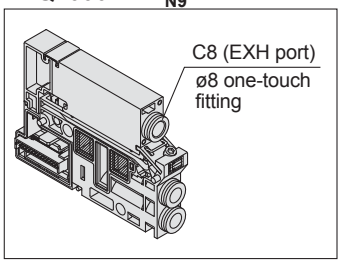
**Blanking plate assembly**
**VVQ2000-10A-1**



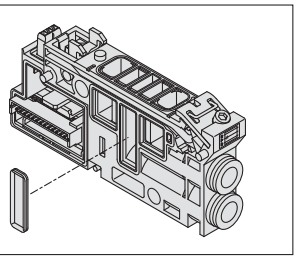
**Individual SUP spacer**
**VVQ2000-P-1-$^{C8}_{N9}$**



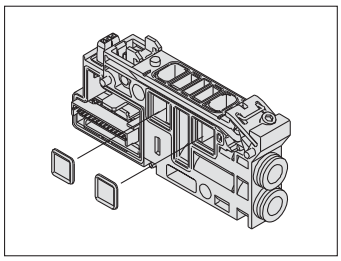

**Individual EXH spacer**
**VVQ2000-R-1-$^{C8}_{N9}$**



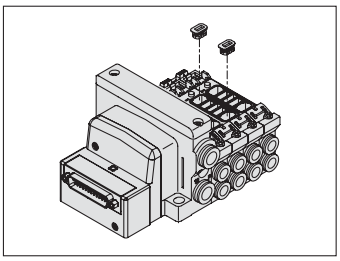

**SUP block plate**
**VVQ2000-16A**



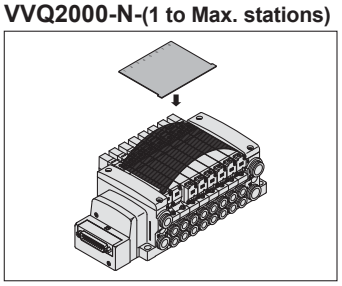
**EXH block plate**
**VVQ2000-19A**



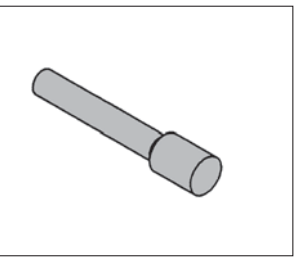
**Back pressure check valve assembly [-B]**
**VVQ2000-18A**



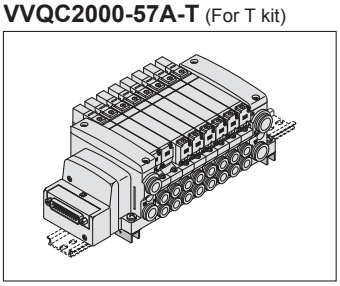
**Name plate [-N]**
**VVQ2000-N-(1 to Max. stations)**



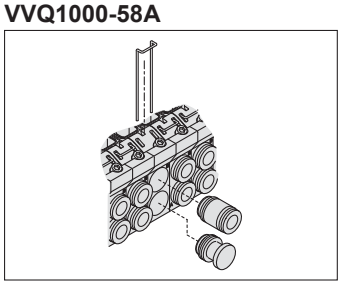
**Blanking plug**
**KQ2P-□**



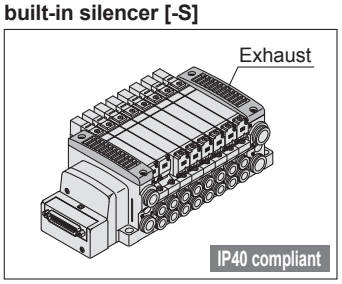
**DIN rail mounting bracket [-D]**
**VVQ2000-57A**
{For F/L/M/P/S (EX500) kit}
**VVQC2000-57A-S**
{For S (EX250) kit}
**VVQC2000-57A-T** (For T kit)



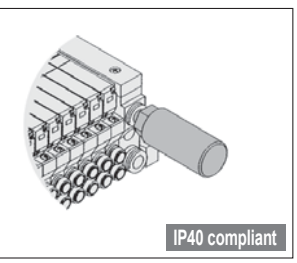
**Port plug**
**VVQ1000-58A**



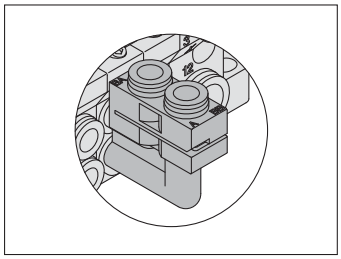
**Direct EXH outlet with built-in silencer [-S]**



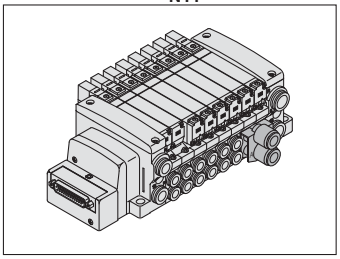

**Silencer (For EXH port)**
**AN200-KM10**



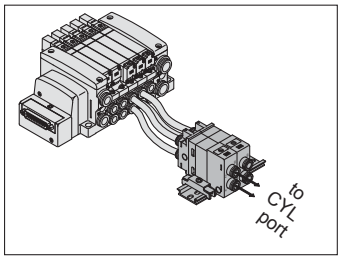

**Elbow fitting assembly**
**VVQ2000-F-L□**



**Dual flow fitting assembly**
**VVQ2000-52A-$^{C10}_{N11}$**

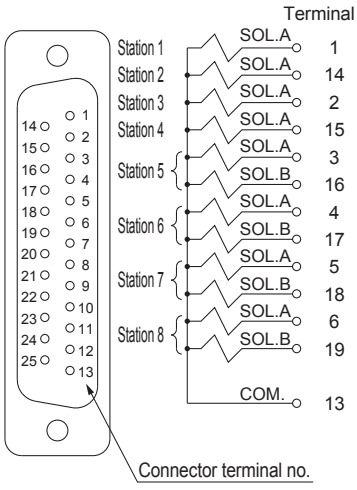


**Double check block**
**VVQ2000-FPG-□□-□**




**Special electrical wiring specifications [-K]**

Wiring example)
D-sub connector




Standard manifolds are for double wiring, but mixed wiring (single and double wiring) can be specified as an option.

Note) Refer to the pages of each kit for details.

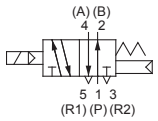
F kit ····· P. 25
P kit ····· P. 27
T kit ····· P. 29
L kit ····· P. 31
M kit ····· P. 33

# Plug-in Unit

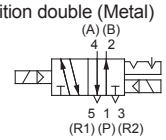
## Model

**Symbol**

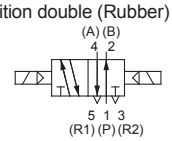
2-position single



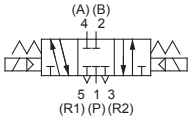

2-position double (Metal)



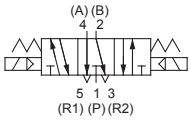

2-position double (Rubber)



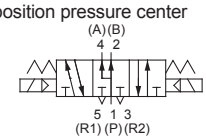

3-position closed center



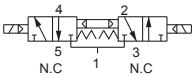

3-position exhaust center



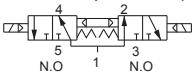

3-position pressure center



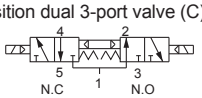

4-position dual 3-port valve (A)




4-position dual 3-port valve (B)




4-position dual 3-port valve (C)




| Series | Type of actuation | | Model | | Flow-rate characteristics | | | | | | Response time Note 2) (ms) | | Mass (g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1 → 4, 2 (P → A, B) | | | 4, 2 → 5, 3 (A, B → R1, R2) | | | Standard: 0.4 W | High-speed response: 0.95 W | |
| | | | | | C [dm³/(s·bar)] | b | Cv | C [dm³/(s·bar)] | b | Cv | | | |
| VQC1000 | 2-position | Single | Metal seal | VQC1100 | 0.70 | 0.15 | 0.16 | 0.72 | 0.25 | 0.18 | 15 or less | 12 or less | 67 |
| | | | Rubber seal | VQC1101 | 0.85 | 0.20 | 0.21 | 1.0 | 0.30 | 0.25 | 20 or less | 15 or less | |
| | | Double | Metal seal | VQC1200 | 0.70 | 0.15 | 0.16 | 0.72 | 0.25 | 0.18 | 13 or less | 10 or less | 77 |
| | | | Rubber seal | VQC1201 | 0.85 | 0.20 | 0.21 | 1.0 | 0.30 | 0.25 | 20 or less | 15 or less | |
| | 3-position | Closed center | Metal seal | VQC1300 | 0.68 | 0.15 | 0.16 | 0.72 | 0.25 | 0.18 | 26 or less | 20 or less | |
| | | | Rubber seal | VQC1301 | 0.70 | 0.20 | 0.16 | 0.65 | 0.42 | 0.18 | 33 or less | 25 or less | |
| | | Exhaust center | Metal seal | VQC1400 | 0.68 | 0.15 | 0.16 | 0.72 | 0.25 | 0.18 | 26 or less | 20 or less | |
| | | | Rubber seal | VQC1401 | 0.70 | 0.20 | 0.16 | 1.0 | 0.30 | 0.25 | 33 or less | 25 or less | |
| | | Pressure center | Metal seal | VQC1500 | 0.70 | 0.15 | 0.16 | 0.72 | 0.25 | 0.18 | 26 or less | 20 or less | |
| | | | Rubber seal | VQC1501 | 0.85 | 0.20 | 0.21 | 0.65 | 0.42 | 0.18 | 33 or less | 25 or less | |
| | 4-position | Dual 3-port valve | Rubber seal | VQC1(A/B/C)01 | 0.70 | 0.20 | 0.16 | 0.70 | 0.20 | 0.16 | 33 or less | 25 or less | |
| VQC2000 | 2-position | Single | Metal seal | VQC2100 | 2.0 | 0.15 | 0.46 | 2.6 | 0.15 | 0.60 | 29 or less | 22 or less | 95 |
| | | | Rubber seal | VQC2101 | 2.2 | 0.28 | 0.55 | 3.2 | 0.30 | 0.80 | 31 or less | 24 or less | |
| | | Double | Metal seal | VQC2200 | 2.0 | 0.15 | 0.46 | 2.6 | 0.15 | 0.60 | 20 or less | 15 or less | 105 |
| | | | Rubber seal | VQC2201 | 2.2 | 0.28 | 0.55 | 3.2 | 0.30 | 0.80 | 26 or less | 20 or less | |
| | 3-position | Closed center | Metal seal | VQC2300 | 2.0 | 0.15 | 0.46 | 2.0 | 0.18 | 0.46 | 38 or less | 29 or less | |
| | | | Rubber seal | VQC2301 | 2.0 | 0.28 | 0.49 | 2.2 | 0.31 | 0.60 | 44 or less | 34 or less | |
| | | Exhaust center | Metal seal | VQC2400 | 2.0 | 0.15 | 0.46 | 2.6 | 0.15 | 0.60 | 38 or less | 29 or less | |
| | | | Rubber seal | VQC2401 | 2.0 | 0.28 | 0.49 | 3.2 | 0.30 | 0.80 | 44 or less | 34 or less | |
| | | Pressure center | Metal seal | VQC2500 | 2.4 | 0.17 | 0.57 | 2.0 | 0.18 | 0.46 | 38 or less | 29 or less | |
| | | | Rubber seal | VQC2501 | 3.2 | 0.28 | 0.80 | 2.2 | 0.31 | 0.60 | 44 or less | 34 or less | |
| | 4-position | Dual 3-port valve | Rubber seal | VQC2(A/B/C)01 | 1.8 | 0.28 | 0.46 | 1.8 | 0.28 | 0.46 | 44 or less | 34 or less | |

Note 1) Values represented in this column are in the following conditions:
VQC1000: Cylinder port size C6 without a back pressure check valve
VQC2000: Cylinder port size C8 without a back pressure check valve

Note 2) Values represented in this column are based on JIS B 8375-1981 (operating with clean air and a supply pressure of 0.5 MPa. Equipped with light/surge voltage suppressor. Values vary depending on the pressure as well as the air quality.) Values for double type are when the switch is turned ON.



## Standard Specifications

| | | | | |
|---|---|---|---|---|
| Valve specifications | Valve type | | Metal seal | Rubber seal |
| | Fluid | | Air, Inert gas | |
| | Maximum operating pressure | | 0.7 MPa (High-pressure type: 1.0 MPa) | 0.7 MPa |
| | Minimum operating pressure | Single | 0.1 MPa | 0.15 MPa |
| | | Double | 0.1 MPa | |
| | | 3-position | 0.1 MPa | 0.2 MPa |
| | | 4-position | —— | 0.15 MPa |
| | Ambient and fluid temperature | | –10 to 50°C Note 1) | |
| | Lubrication | | Not required | |
| | Manual override | | Push type, Locking type (Tool required) semi-standard | |
| | Impact/Vibration resistance | | 150/30 m/s² Note 2) | |
| | Enclosure | | Dustproof (IP67 compatible) Note 3) | |
| Electrical specifications | Rated coil voltage | | 24 VDC | |
| | Allowable voltage fluctuation | | ±10% of rated voltage | |
| | Coil insulation type | | Equivalent to Class B | |
| | Power consumption (Current) | 24 VDC | 0.4 W DC (17 mA), 0.95 W DC (40 mA) Note 4) | |
| | | 12 VDC | 0.4 W DC (34 mA), 0.95 W DC (80 mA) Note 4) | |

Note 1) Use dry air to prevent condensation when operating at low temperatures.
Note 2) Impact resistance ····· No malfunction resulted from the impact test using a drop impact tester. Test was performed one time each in the axial and right angle directions of the main valve and armature for both energized and de-energized states.
Vibration resistance ··· No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed in the axial and right angle directions of the main valve and armature for both energized and de-energized states.
Note 3) Refer to page 1 and 2 for applicable variations.
Note 4) Value for high-speed response, high-pressure type (0.95 W)

## Manifold Specifications

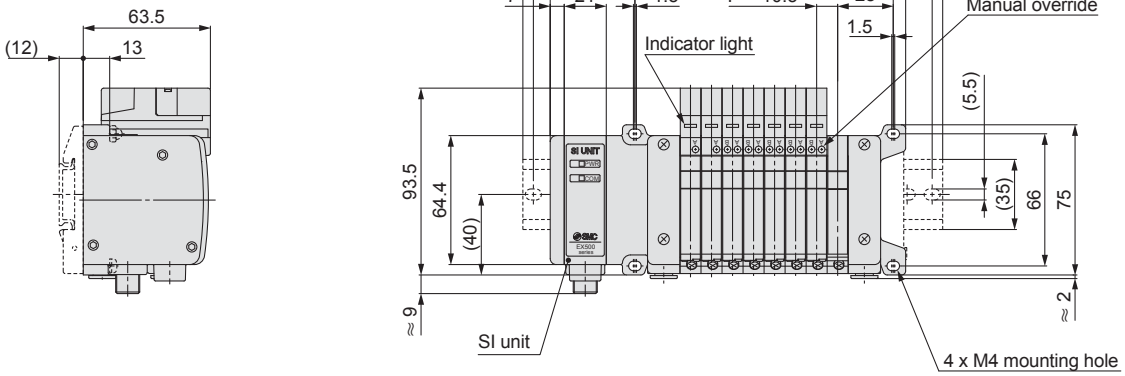
| Series | Base model | Connection type | Piping specifications | | | Applicable stations Note 2) | Applicable solenoid valves | 5-station mass (g) |
|---|---|---|---|---|---|---|---|---|
| | | | Port direction | Port size Note 1) | | | | |
| | | | | 1, 3 (P, R) | 2, 4 (A, B) | | | |
| VQC1000 | VV5QC11-□□□ | F kit: D-sub connector<br>P kit: Flat ribbon cable<br>T kit: Terminal block box<br>S kit: Serial transmission<br>L kit: Lead wire<br>M kit: Circular connector | Side | C8 (ø8)<br>[Option: Direct EXH outlet with built-in silencer] | C3 (ø3.2)<br>C4 (ø4)<br>C6 (ø6)<br>M5 (M5 thread) | (F/L/M/P kit 1 to 12 stations)<br>(T kit 1 to 10 stations)<br>(S kit 1 to 8 stations: EX500, 1 to 12 stations: EX250) | VQC1□00-5<br>VQC1□01-5 | 643 (Single)<br>754 (Double, 3-position) |
| VQC2000 | VV5QC21-□□□ | | Side | C10 (ø10)<br>[Option: Direct EXH outlet with built-in silencer]<br>Branch type C12 (ø12) | C4 (ø4)<br>C6 (ø6)<br>C8 (ø8) | | VQC2□00-5<br>VQC2□01-5 | 1076 (Single)<br>1119 (Double, 3-position) |

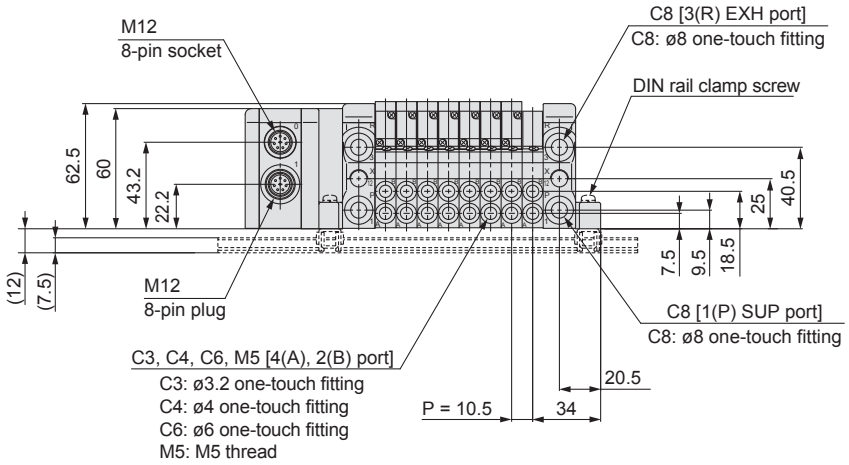
Note 1) Inch-size one-touch fittings are also available.
Note 2) Special wiring specifications are available as semi-standard to increase the maximum number of stations.

# S Series VQC1000/2000

**kit (Serial transmission) For EX500 Gateway-type serial transmission system** **IP67 compliant**

## VV5QC11
## S kit (Serial transmission kit: EX500)




The dashed lines indicate DIN rail mounting [-D] (with DIN rail mounting bracket).

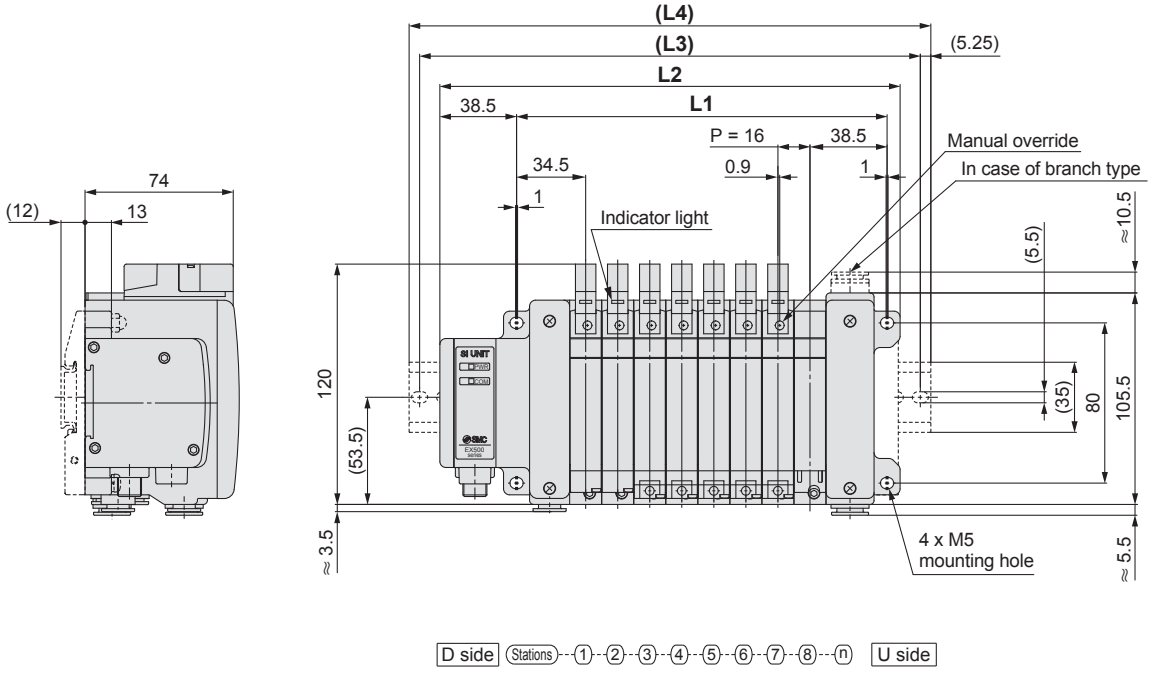
Formula: L1 = 10.5n + 45, L2 = 10.5n + 93.5 n: Stations (Maximum 16 stations)

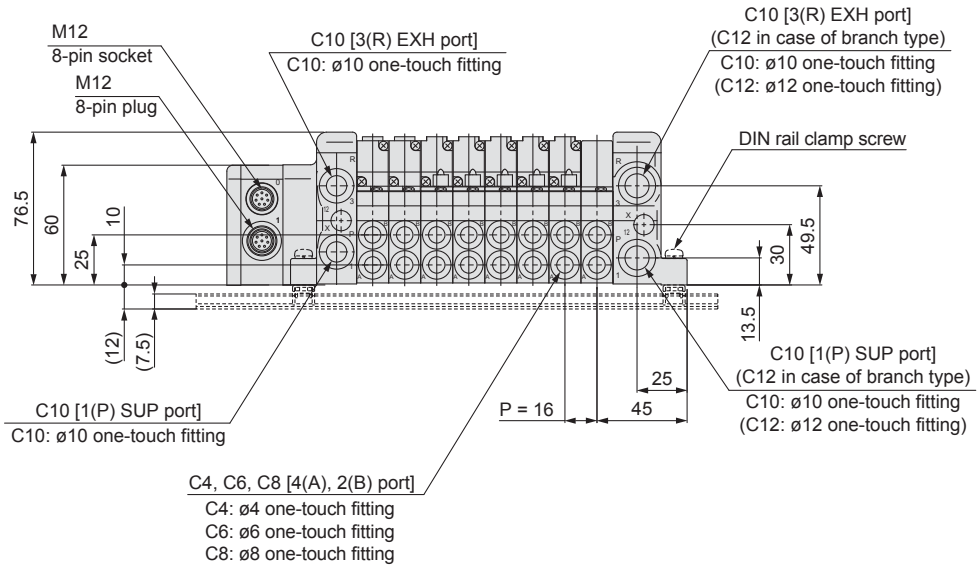
| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 55.5 | 66 | 76.5 | 87 | 97.5 | 108 | 118.5 | 129 | 139.5 | 150 | 160.5 | 171 | 181.5 | 192 | 202.5 | 213 |
| **L2** | 104 | 114.5 | 125 | 135.5 | 146 | 156.5 | 167 | 177.5 | 188 | 198.5 | 209 | 219.5 | 230 | 240.5 | 251 | 261.5 |
| **L3** | 125 | 137.5 | 150 | 162.5 | 175 | 187.5 | 187.5 | 200 | 212.5 | 225 | 237.5 | 250 | 250 | 262.5 | 275 | 287.5 |
| **L4** | 135.5 | 148 | 160.5 | 173 | 185.5 | 198 | 198 | 210.5 | 223 | 235.5 | 248 | 260.5 | 260.5 | 273 | 285.5 | 298 |

# S Series VQC1000/2000

**kit (Serial transmission) For EX500 Gateway-type serial transmission system** IP67 compliant

## VV5QC21
## S kit (Serial transmission kit: EX500)




The dashed lines indicate DIN rail mounting [-D] (with DIN rail mounting bracket).

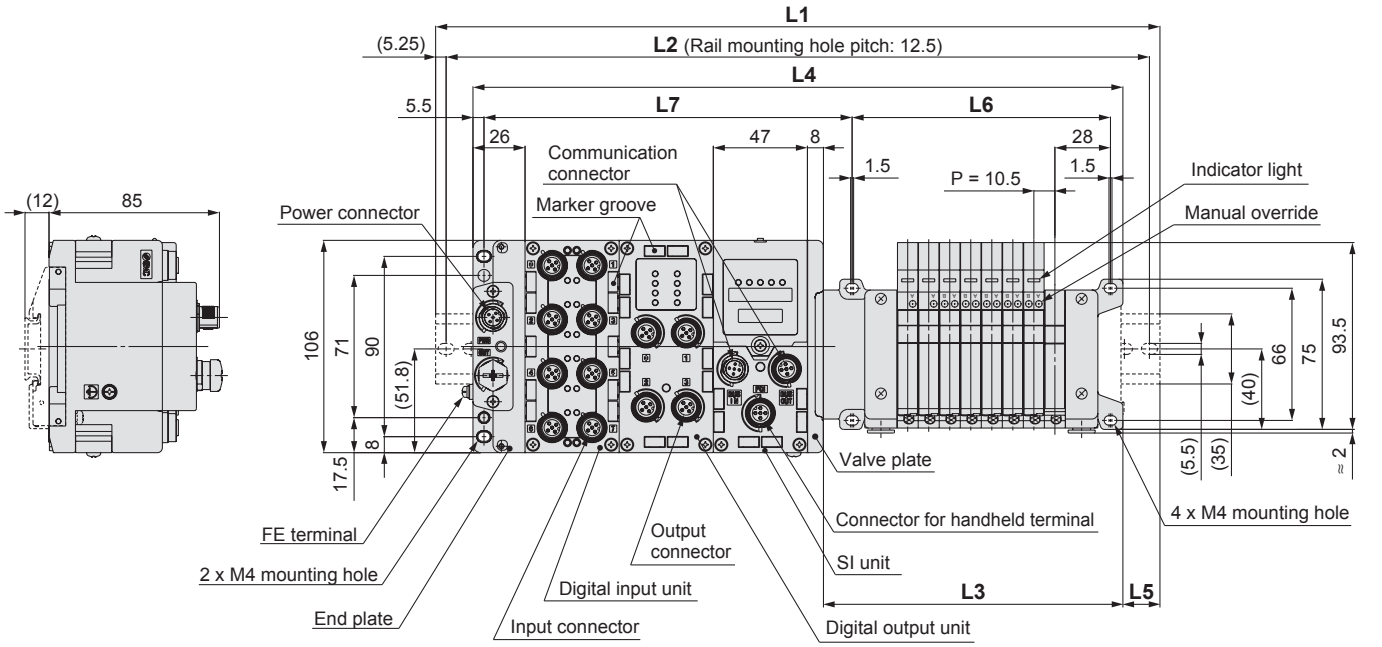
Formula: L1 = 16n + 57, L2 = 16n + 102 n: Stations (Maximum 16 stations)

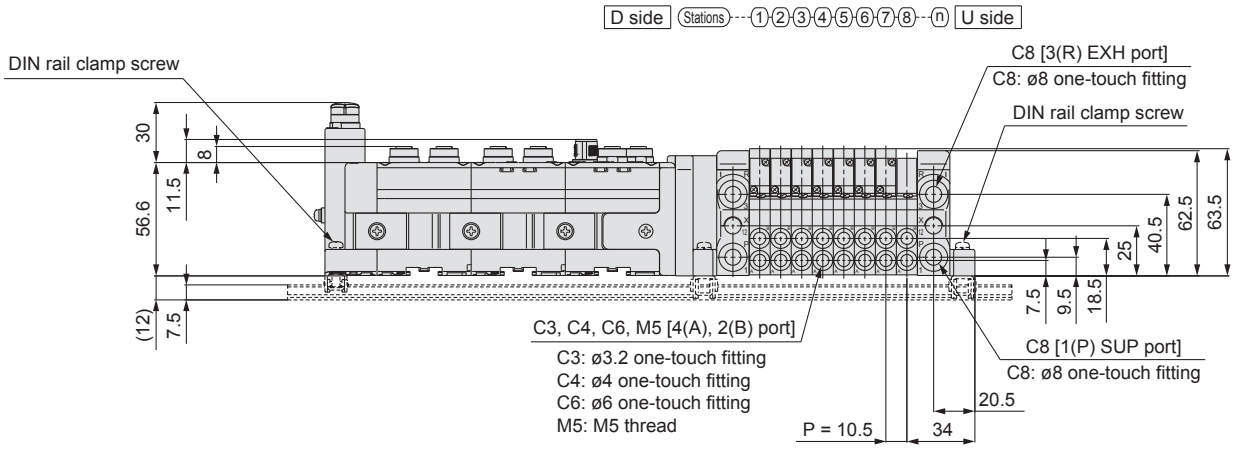
| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 73 | 89 | 105 | 121 | 137 | 153 | 169 | 185 | 201 | 217 | 233 | 249 | 265 | 281 | 297 | 313 |
| **L2** | 118 | 134 | 150 | 166 | 182 | 198 | 214 | 230 | 246 | 262 | 278 | 294 | 310 | 326 | 342 | 358 |
| **L3** | 137.5 | 150 | 175 | 187.5 | 200 | 212.5 | 237.5 | 250 | 262.5 | 287.5 | 300 | 312.5 | 337.5 | 350 | 362.5 | 375 |
| **L4** | 148 | 160.5 | 185.5 | 198 | 210.5 | 223 | 248 | 260.5 | 273 | 298 | 310.5 | 323 | 348 | 360.5 | 373 | 385.5 |

# S Series VQC1000

**kit (Serial transmission) For EX600 Integrated-type (I/O) serial transmission system** **IP67 compliant**

## VV5QC11
## S kit (Serial transmission kit: EX600)
### Power supply with M12 connector




L2 = L1 – 10.5
L3 = 10.5 x n1 + 65.5
L4 = L3 + 81 + 47 x n2
L5 = (L1 – L4)/2
L6 = 10.5 x n1 + 45
L7 = 47 x n2 + 89.8

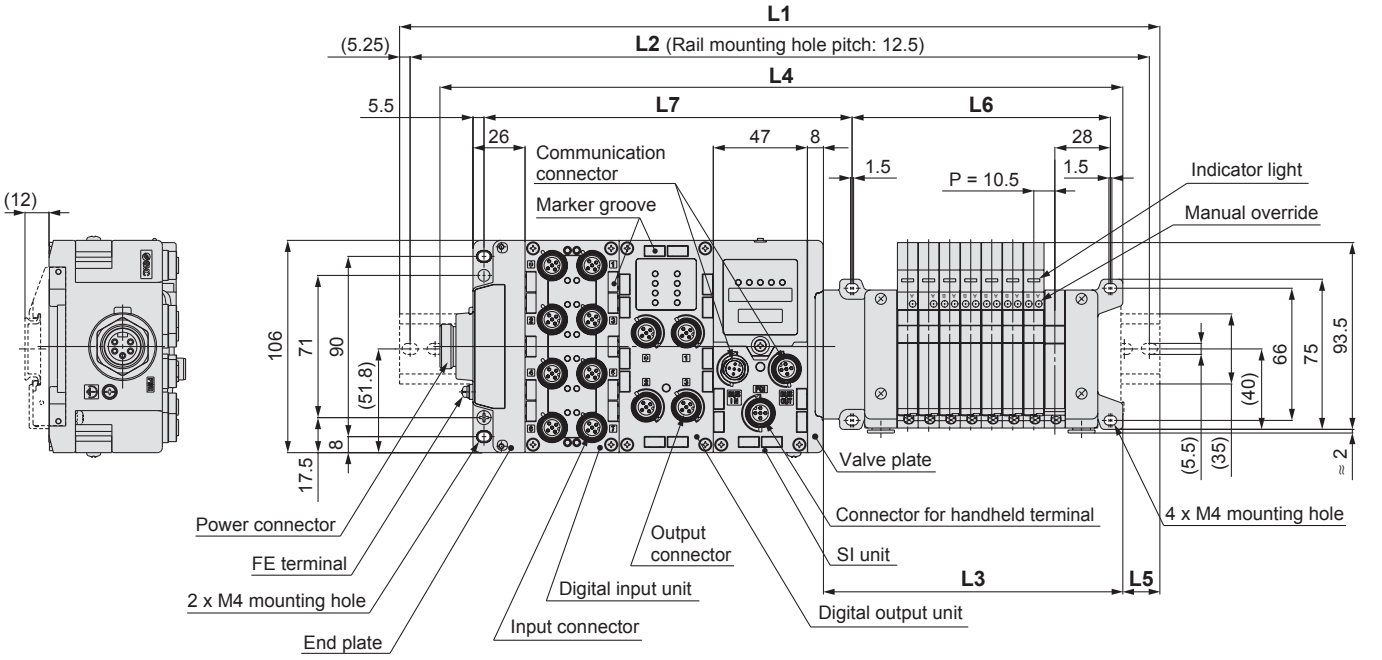
**L1: DIN Rail Full Length**

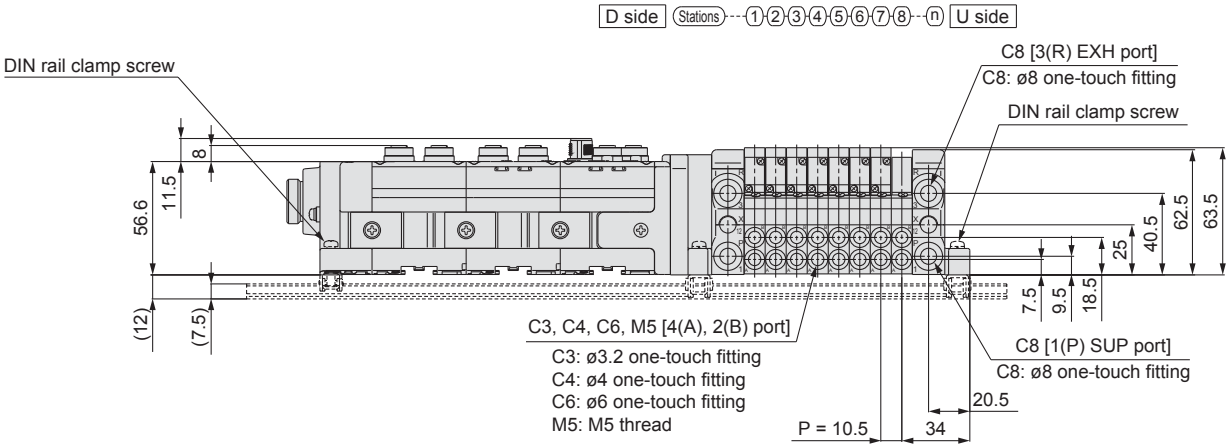
| I/O unit stations (n2) \ Valve stations (n1) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0** | 198 | 198 | 210.5 | 223 | 235.5 | 248 | 260.5 | 260.5 | 273 | 285.5 | 298 | 310.5 | 323 | 335.5 | 335.5 | 348 | 360.5 | 373 | 385.5 | 398 | 398 | 410.5 | 423 | 435.5 |
| **1** | 235.5 | 248 | 260.5 | 273 | 285.5 | 298 | 298 | 310.5 | 323 | 335.5 | 348 | 360.5 | 360.5 | 373 | 385.5 | 398 | 410.5 | 423 | 423 | 435.5 | 448 | 460.5 | 473 | 485.5 |
| **2** | 285.5 | 298 | 310.5 | 323 | 323 | 335.5 | 348 | 360.5 | 373 | 385.5 | 398 | 398 | 410.5 | 423 | 435.5 | 448 | 460.5 | 460.5 | 473 | 485.5 | 498 | 510.5 | 523 | 523 |
| **3** | 335.5 | 348 | 360.5 | 360.5 | 373 | 385.5 | 398 | 410.5 | 423 | 423 | 435.5 | 448 | 460.5 | 473 | 485.5 | 485.5 | 498 | 510.5 | 523 | 535.5 | 548 | 560.5 | 560.5 | 573 |
| **4** | 385.5 | 385.5 | 398 | 410.5 | 423 | 435.5 | 448 | 460.5 | 460.5 | 473 | 485.5 | 498 | 510.5 | 523 | 523 | 535.5 | 548 | 560.5 | 573 | 585.5 | 585.5 | 598 | 610.5 | 623 |
| **5** | 423 | 435.5 | 448 | 460.5 | 473 | 485.5 | 485.5 | 498 | 510.5 | 523 | 535.5 | 548 | 548 | 560.5 | 573 | 585.5 | 598 | 610.5 | 623 | 623 | 635.5 | 648 | 660.5 | 673 |
| **6** | 473 | 485.5 | 498 | 510.5 | 523 | 523 | 535.5 | 548 | 560.5 | 573 | 585.5 | 585.5 | 598 | 610.5 | 623 | 635.5 | 648 | 648 | 660.5 | 673 | 685.5 | 698 | 710.5 | 710.5 |
| **7** | 523 | 535.5 | 548 | 548 | 560.5 | 573 | 585.5 | 598 | 610.5 | 610.5 | 623 | 635.5 | 648 | 660.5 | 673 | 685.5 | 685.5 | 698 | 710.5 | 723 | 735.5 | 748 | 748 | 760.5 |
| **8** | 573 | 585.5 | 585.5 | 598 | 610.5 | 623 | 635.5 | 648 | 648 | 660.5 | 673 | 685.5 | 698 | 710.5 | 710.5 | 723 | 735.5 | 748 | 760.5 | 773 | 773 | 785.5 | 798 | 810.5 |
| **9** | 610.5 | 623 | 635.5 | 648 | 660.5 | 673 | 673 | 685.5 | 698 | 710.5 | 723 | 735.5 | 748 | 748 | 760.5 | 773 | 785.5 | 798 | 810.5 | 810.5 | 823 | 835.5 | 848 | 860.5 |

# S Series VQC1000

**kit (Serial transmission) For EX600 Integrated-type (I/O) serial transmission system** IP67 compliant

## VV5QC11
## S kit (Serial transmission kit: EX600)
### Power supply with 7/8 inch connector




L2 = L1 – 10.5
L3 = 10.5 x n1 + 65.5
L4 = L3 + 81 + 47 x n2
L5 = (L1 – L4)/2
L6 = 10.5 x n1 + 45
L7 = 47 x n2 + 89.8

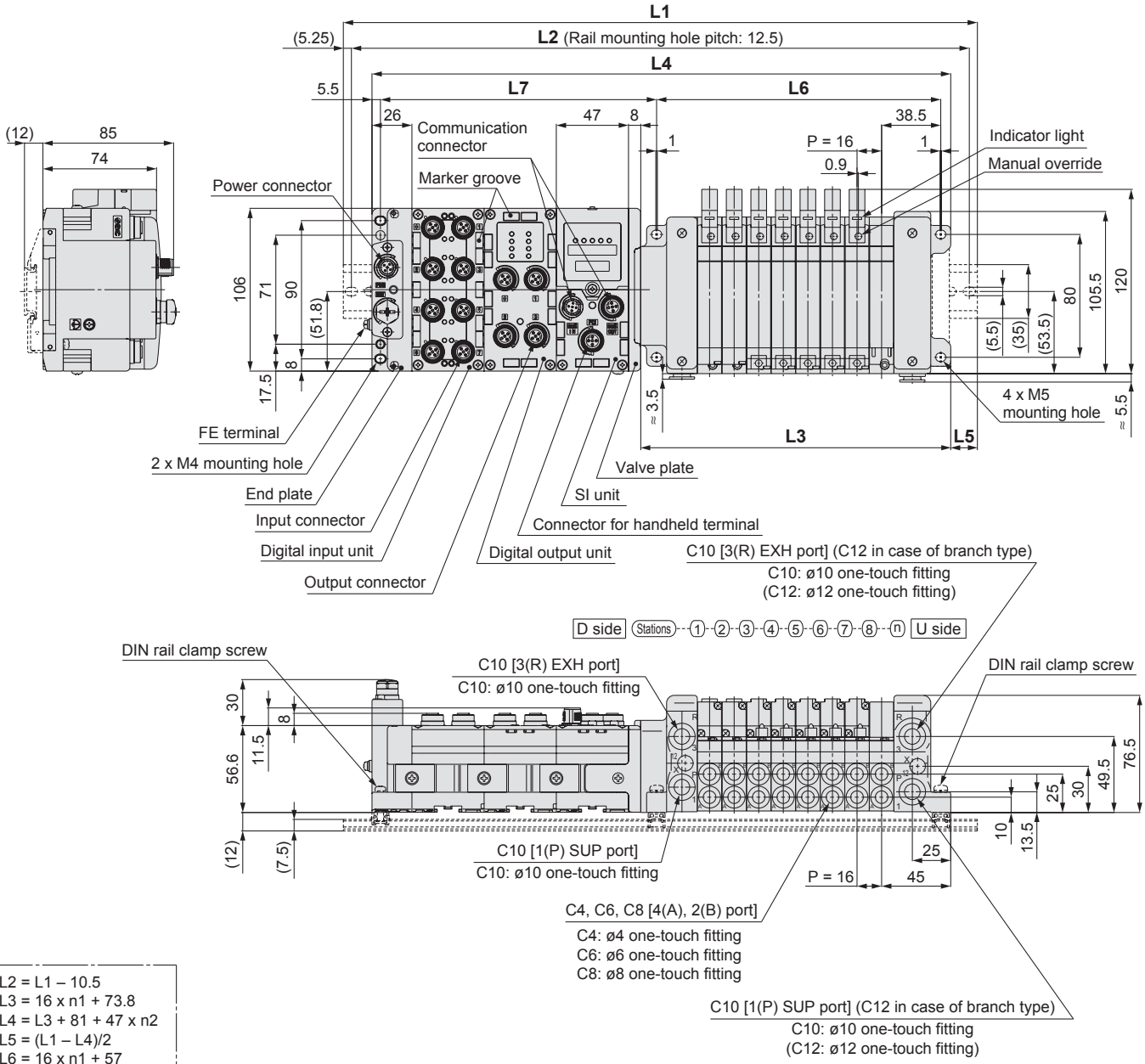
**L1: DIN Rail Full Length**

| I/O unit stations (n2) \ Valve stations (n1) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0** | 210.5 | 223 | 235.5 | 235.5 | 248 | 260.5 | 273 | 285.5 | 298 | 298 | 310.5 | 323 | 335.5 | 348 | 360.5 | 373 | 373 | 385.5 | 398 | 410.5 | 423 | 435.5 | 435.5 | 448 |
| **1** | 260.5 | 273 | 273 | 285.5 | 298 | 310.5 | 323 | 335.5 | 335.5 | 348 | 360.5 | 373 | 385.5 | 398 | 398 | 410.5 | 423 | 435.5 | 448 | 460.5 | 460.5 | 473 | 485.5 | 498 |
| **2** | 298 | 310.5 | 323 | 335.5 | 348 | 360.5 | 360.5 | 373 | 385.5 | 398 | 410.5 | 423 | 435.5 | 435.5 | 448 | 460.5 | 473 | 485.5 | 498 | 498 | 510.5 | 523 | 535.5 | 548 |
| **3** | 348 | 360.5 | 373 | 385.5 | 398 | 398 | 410.5 | 423 | 435.5 | 448 | 460.5 | 460.5 | 473 | 485.5 | 498 | 510.5 | 523 | 523 | 535.5 | 548 | 560.5 | 573 | 585.5 | 598 |
| **4** | 398 | 410.5 | 423 | 423 | 435.5 | 448 | 460.5 | 473 | 485.5 | 498 | 498 | 510.5 | 523 | 535.5 | 548 | 560.5 | 560.5 | 573 | 585.5 | 598 | 610.5 | 623 | 623 | 635.5 |
| **5** | 448 | 460.5 | 460.5 | 473 | 485.5 | 498 | 510.5 | 523 | 523 | 535.5 | 548 | 560.5 | 573 | 585.5 | 585.5 | 598 | 610.5 | 623 | 635.5 | 648 | 660.5 | 660.5 | 673 | 685.5 |
| **6** | 485.5 | 498 | 510.5 | 523 | 535.5 | 548 | 560.5 | 560.5 | 573 | 585.5 | 598 | 610.5 | 623 | 623 | 635.5 | 648 | 660.5 | 673 | 685.5 | 685.5 | 698 | 710.5 | 723 | 735.5 |
| **7** | 535.5 | 548 | 560.5 | 573 | 585.5 | 585.5 | 598 | 610.5 | 623 | 635.5 | 648 | 648 | 660.5 | 673 | 685.5 | 698 | 710.5 | 723 | 723 | 735.5 | 748 | 760.5 | 773 | 785.5 |
| **8** | 585.5 | 598 | 610.5 | 623 | 623 | 635.5 | 648 | 660.5 | 673 | 685.5 | 685.5 | 698 | 710.5 | 723 | 735.5 | 748 | 748 | 760.5 | 773 | 785.5 | 798 | 810.5 | 810.5 | 823 |
| **9** | 635.5 | 648 | 648 | 660.5 | 673 | 685.5 | 698 | 710.5 | 710.5 | 723 | 735.5 | 748 | 760.5 | 773 | 785.5 | 785.5 | 798 | 810.5 | 823 | 835.5 | 848 | 848 | 860.5 | 873 |

# S *Series VQC2000*

**kit (Serial transmission) For EX600 Integrated-type (I/O) serial transmission system** **IP67 compliant**

## VV5QC21
## S kit (Serial transmission kit: EX600)
### Power supply with M12 connector




L2 = L1 – 10.5
L3 = 16 x n1 + 73.8
L4 = L3 + 81 + 47 x n2
L5 = (L1 – L4)/2
L6 = 16 x n1 + 57
L7 = 47 x n2 + 85.8

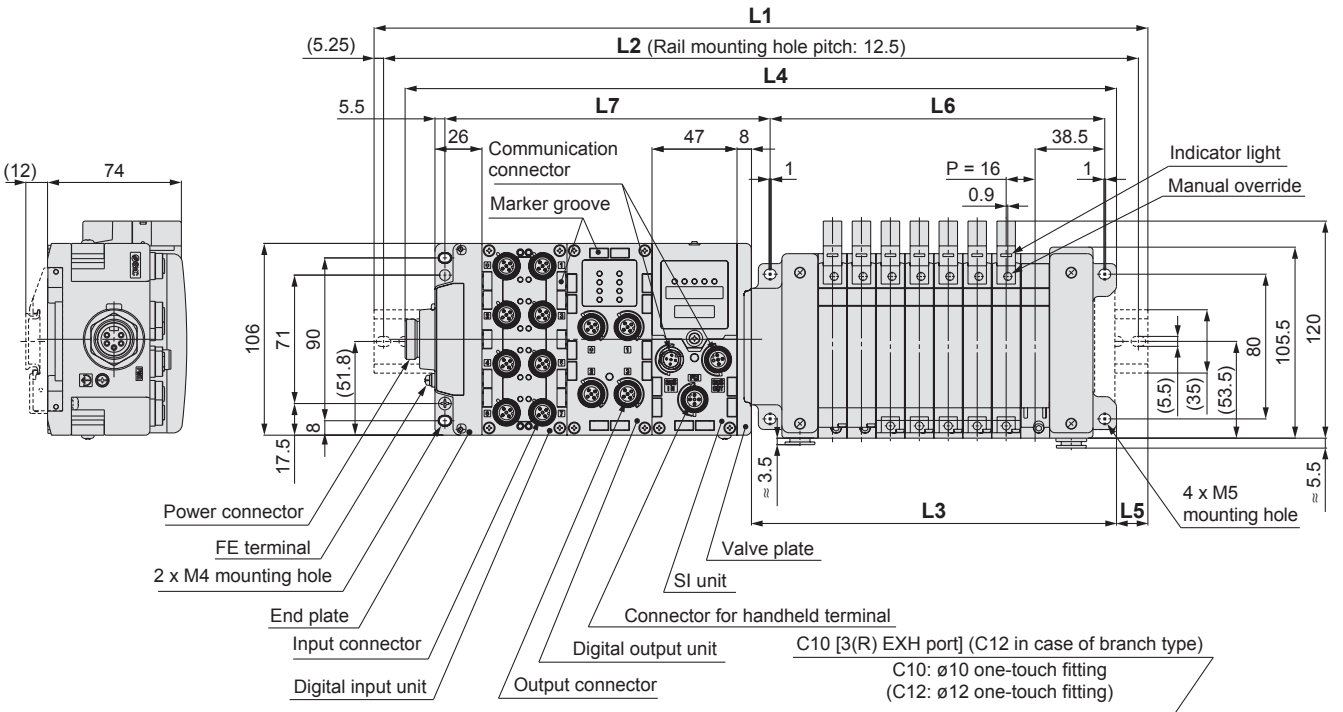
**L1: DIN Rail Full Length**

| I/O unit stations (n2) \ Valve stations (n1) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0** | 210.5 | 223 | 235.5 | 260.5 | 273 | 285.5 | 298 | 323 | 335.5 | 348 | 373 | 385.5 | 398 | 410.5 | 435.5 | 448 | 460.5 | 473 | 498 | 510.5 | 523 | 548 | 560.5 | 573 |
| **1** | 248 | 273 | 285.5 | 298 | 323 | 335.5 | 348 | 360.5 | 385.5 | 398 | 410.5 | 435.5 | 448 | 460.5 | 473 | 498 | 510.5 | 523 | 548 | 560.5 | 573 | 585.5 | 610.5 | 623 |
| **2** | 298 | 323 | 335.5 | 348 | 360.5 | 385.5 | 398 | 410.5 | 423 | 448 | 460.5 | 473 | 498 | 510.5 | 523 | 535.5 | 560.5 | 573 | 585.5 | 610.5 | 623 | 635.5 | 648 | 673 |
| **3** | 348 | 360.5 | 385.5 | 398 | 410.5 | 423 | 448 | 460.5 | 473 | 498 | 510.5 | 523 | 535.5 | 560.5 | 573 | 585.5 | 598 | 623 | 635.5 | 648 | 673 | 685.5 | 698 | 710.5 |
| **4** | 398 | 410.5 | 423 | 448 | 460.5 | 473 | 485.5 | 510.5 | 523 | 535.5 | 560.5 | 573 | 585.5 | 598 | 623 | 635.5 | 648 | 673 | 685.5 | 698 | 710.5 | 735.5 | 748 | 760.5 |
| **5** | 448 | 460.5 | 473 | 485.5 | 510.5 | 523 | 535.5 | 548 | 573 | 585.5 | 598 | 623 | 635.5 | 648 | 660.5 | 685.5 | 698 | 710.5 | 735.5 | 748 | 760.5 | 773 | 798 | 810.5 |
| **6** | 485.5 | 510.5 | 523 | 535.5 | 548 | 573 | 585.5 | 598 | 623 | 635.5 | 648 | 660.5 | 685.5 | 698 | 710.5 | 723 | 748 | 760.5 | 773 | 798 | 810.5 | 823 | 835.5 | 860.5 |
| **7** | 535.5 | 548 | 573 | 585.5 | 598 | 610.5 | 635.5 | 648 | 660.5 | 685.5 | 698 | 710.5 | 723 | 748 | 760.5 | 773 | 798 | 810.5 | 823 | 835.5 | 860.5 | 873 | 885.5 | 898 |
| **8** | 585.5 | 598 | 610.5 | 635.5 | 648 | 660.5 | 673 | 698 | 710.5 | 723 | 748 | 760.5 | 773 | 785.5 | 810.5 | 823 | 835.5 | 860.5 | 873 | 885.5 | 898 | 923 | 935.5 | 948 |
| **9** | 635.5 | 648 | 660.5 | 673 | 698 | 710.5 | 723 | 748 | 760.5 | 773 | 785.5 | 810.5 | 823 | 835.5 | 848 | 873 | 885.5 | 898 | 923 | 935.5 | 948 | 960.5 | 985.5 | 985.5 |

# S *Series VQC2000*

**kit (Serial transmission) For EX600 Integrated-type (I/O) serial transmission system** IP67 compliant

## VV5QC21
## S kit (Serial transmission kit: EX600)
### Power supply with 7/8 inch connector




L2 = L1 – 10.5
L3 = 16 x n1 + 73.8
L4 = L3 + 81 + 47 x n2
L5 = (L1 – L4)/2
L6 = 16 x n1 + 57
L7 = 47 x n2 + 85.8

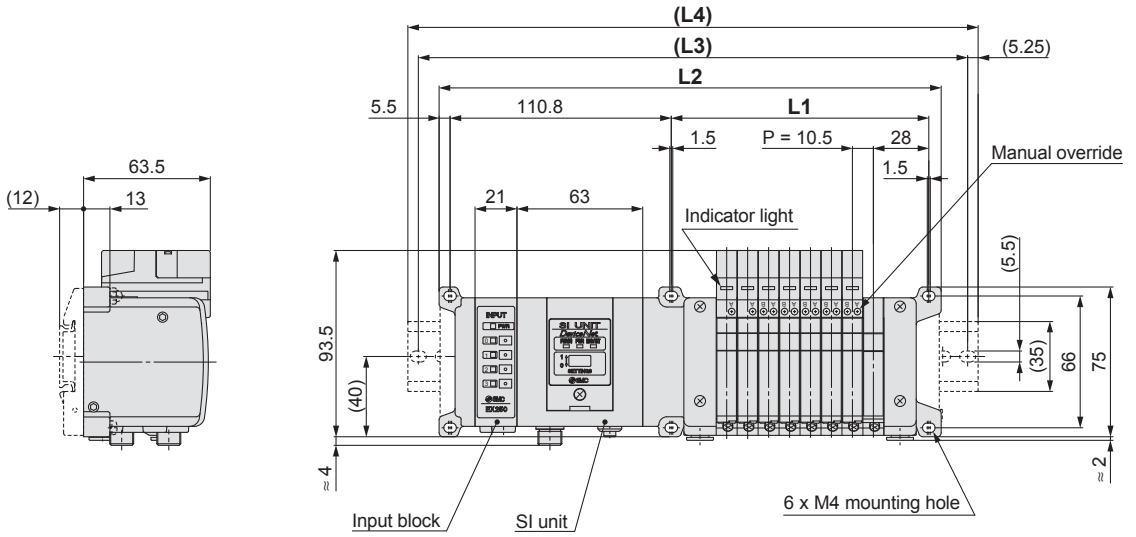
**L1: DIN Rail Full Length**

| I/O unit stations (n2) \ Valve stations (n1) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0** | 223 | 235.5 | 260.5 | 273 | 285.5 | 298 | 323 | 335.5 | 348 | 373 | 385.5 | 398 | 410.5 | 435.5 | 448 | 460.5 | 485.5 | 498 | 510.5 | 523 | 548 | 560.5 | 573 | 585.5 |
| **1** | 273 | 285.5 | 298 | 323 | 335.5 | 348 | 360.5 | 385.5 | 398 | 410.5 | 435.5 | 448 | 460.5 | 473 | 498 | 510.5 | 523 | 548 | 560.5 | 573 | 585.5 | 610.5 | 623 | 635.5 |
| **2** | 323 | 335.5 | 348 | 360.5 | 385.5 | 398 | 410.5 | 435.5 | 448 | 460.5 | 473 | 498 | 510.5 | 523 | 535.5 | 560.5 | 573 | 585.5 | 610.5 | 623 | 635.5 | 648 | 673 | 685.5 |
| **3** | 360.5 | 385.5 | 398 | 410.5 | 423 | 448 | 460.5 | 473 | 498 | 510.5 | 523 | 535.5 | 560.5 | 573 | 585.5 | 610.5 | 623 | 635.5 | 648 | 673 | 685.5 | 698 | 710.5 | 735.5 |
| **4** | 410.5 | 423 | 448 | 460.5 | 473 | 485.5 | 510.5 | 523 | 535.5 | 560.5 | 573 | 585.5 | 598 | 623 | 635.5 | 648 | 673 | 685.5 | 698 | 710.5 | 735.5 | 748 | 760.5 | 785.5 |
| **5** | 460.5 | 473 | 485.5 | 510.5 | 523 | 535.5 | 560.5 | 573 | 585.5 | 598 | 623 | 635.5 | 648 | 660.5 | 685.5 | 698 | 710.5 | 735.5 | 748 | 760.5 | 773 | 798 | 810.5 | 823 |
| **6** | 510.5 | 523 | 535.5 | 548 | 573 | 585.5 | 598 | 623 | 635.5 | 648 | 660.5 | 685.5 | 698 | 710.5 | 735.5 | 748 | 760.5 | 773 | 798 | 810.5 | 823 | 835.5 | 860.5 | 873 |
| **7** | 548 | 573 | 585.5 | 598 | 610.5 | 635.5 | 648 | 660.5 | 685.5 | 698 | 710.5 | 723 | 748 | 760.5 | 773 | 798 | 810.5 | 823 | 835.5 | 860.5 | 873 | 885.5 | 910.5 | 923 |
| **8** | 598 | 610.5 | 635.5 | 648 | 660.5 | 685.5 | 698 | 710.5 | 723 | 748 | 760.5 | 773 | 785.5 | 810.5 | 823 | 835.5 | 860.5 | 873 | 885.5 | 898 | 923 | 935.5 | 948 | 973 |
| **9** | 648 | 660.5 | 673 | 698 | 710.5 | 723 | 748 | 760.5 | 773 | 785.5 | 810.5 | 823 | 835.5 | 860.5 | 873 | 885.5 | 898 | 923 | 935.5 | 948 | 960.5 | 985.5 | 985.5 | – |

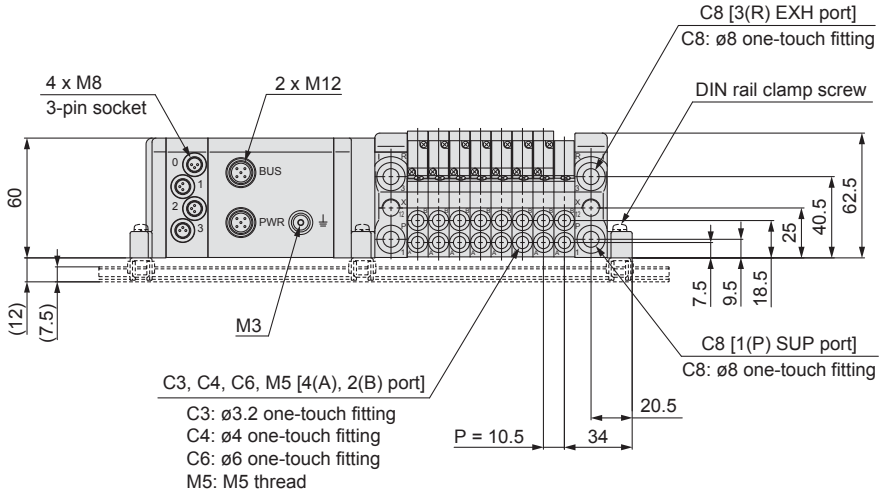
# S Series VQC1000/2000

**kit (Serial transmission) For EX250 Integrated-type (I/O) serial transmission system** **IP67 compliant**

## VV5QC11
## S kit (Serial transmission kit: EX250)




D side Stations ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⓝ U side




The dashed lines indicate DIN rail mounting [-D] (with DIN rail mounting bracket).

Formula: L1 = 10.5n + 45, L2 = 10.5n + 167.5 (For one input block. Add 21 mm for each additional input block.) n: Stations (Maximum 24 stations)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 55.5 | 66 | 76.5 | 87 | 97.5 | 108 | 118.5 | 129 | 139.5 | 150 | 160.5 | 171 | 181.5 | 192 | 202.5 | 213 | 223.5 | 234 | 244.5 | 255 | 265.5 | 276 | 286.5 | 297 |
| **L2** | 178 | 188.5 | 199 | 209.5 | 220 | 230.5 | 241 | 251.5 | 262 | 272.5 | 283 | 293.5 | 304 | 314.5 | 325 | 335.5 | 346 | 356.5 | 367 | 377.5 | 388 | 398.5 | 409 | 419.5 |
| **L3** | 200 | 212.5 | 225 | 237.5 | 250 | 250 | 262.5 | 275 | 287.5 | 300 | 312.5 | 325 | 325 | 337.5 | 350 | 362.5 | 375 | 387.5 | 387.5 | 400 | 412.5 | 425 | 437.5 | 450 |
| **L4** | 210.5 | 223 | 235.5 | 248 | 260.5 | 260.5 | 273 | 285.5 | 298 | 310.2 | 323 | 335.5 | 335.5 | 348 | 360.5 | 373 | 385.5 | 398 | 398 | 410.5 | 423 | 435.5 | 448 | 448 |

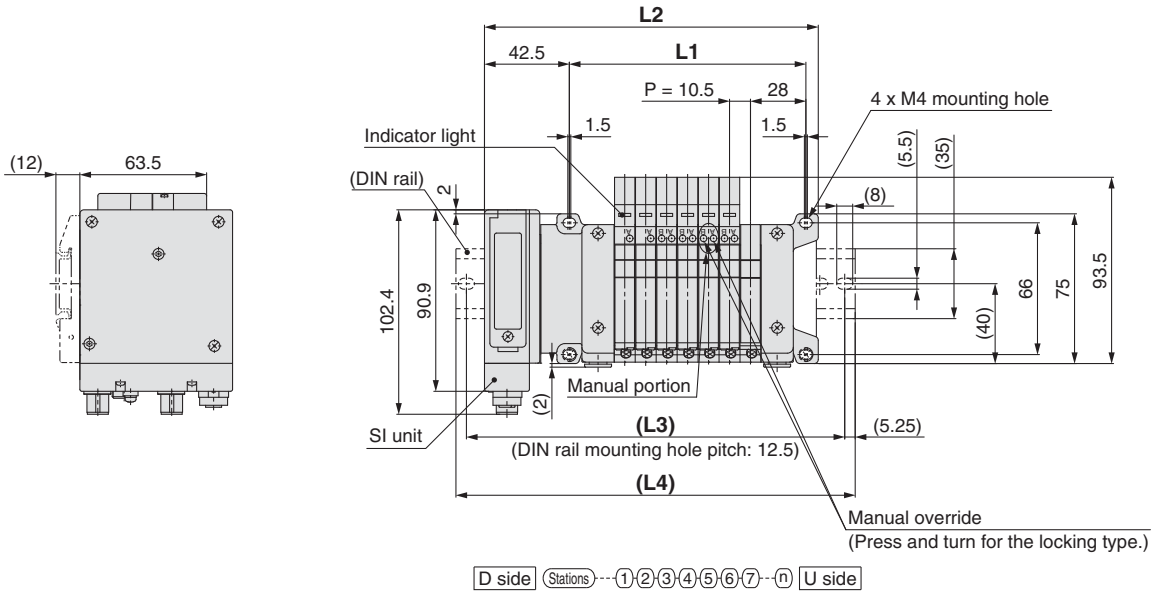
# S *Series VQC1000*

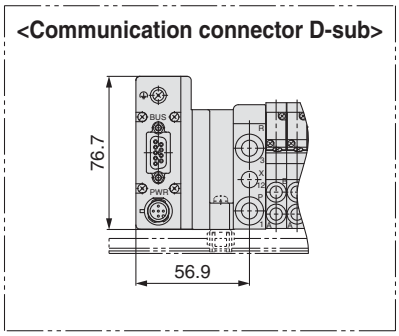
**kit (Serial transmission) For EX260 Integrated-type (for output) serial transmission system**

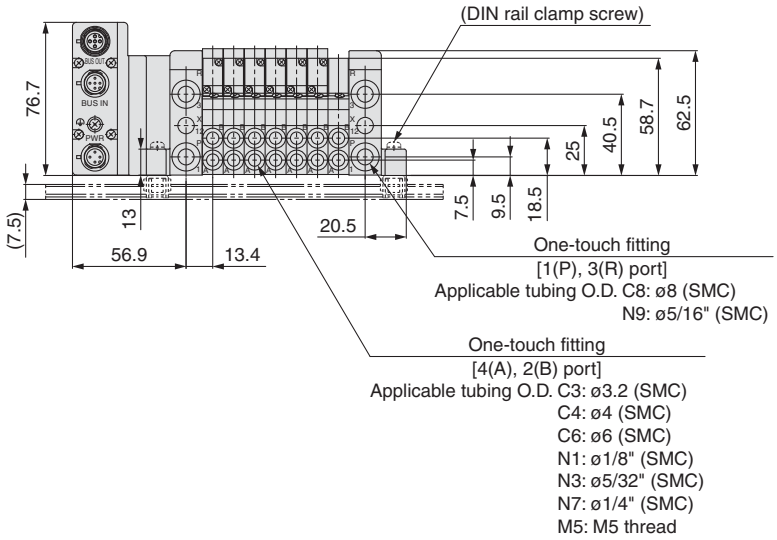
IP40 compliant

IP67 compliant

## VV5QC11
## S kit (Serial transmission kit: EX260)




n: Stations (Maximum 24 stations)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 55.5 | 66 | 76.5 | 87 | 97.5 | 108 | 118.5 | 129 | 139.5 | 150 | 160.5 | 171 | 181.5 | 192 | 202.5 | 213 | 223.5 | 234 | 244.5 | 255 | 265.5 | 276 | 286.5 | 297 |
| **L2** | 104.2 | 114.7 | 125.2 | 135.7 | 146.2 | 156.7 | 167.2 | 177.7 | 188.2 | 198.7 | 209.2 | 219.7 | 230.2 | 240.7 | 251.2 | 261.7 | 272.2 | 282.7 | 293.2 | 303.7 | 314.2 | 324.7 | 335.2 | 345.7 |
| **L3** | 127 | 139.5 | 152 | 164.5 | 177 | 177 | 189.5 | 202 | 214.5 | 227 | 239.5 | 239.5 | 252 | 264.5 | 277 | 289.5 | 302 | 314.5 | 314.5 | 327 | 339.5 | 352 | 364.5 | 377 |
| **L4** | 137.5 | 150 | 162.5 | 175 | 187.5 | 187.5 | 200 | 212.5 | 225 | 237.5 | 250 | 250 | 262.5 | 275 | 287.5 | 300 | 312.5 | 325 | 325 | 337.5 | 350 | 362.5 | 375 | 387.5 |

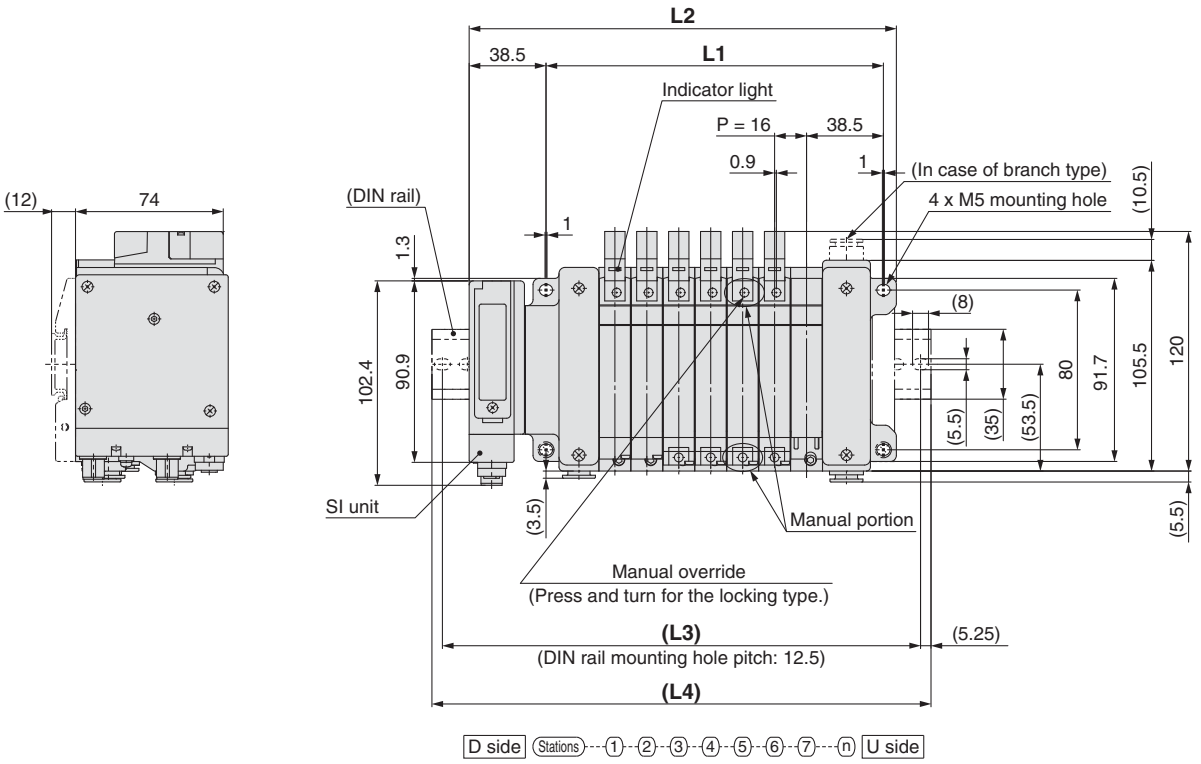
# S *Series VQC2000*

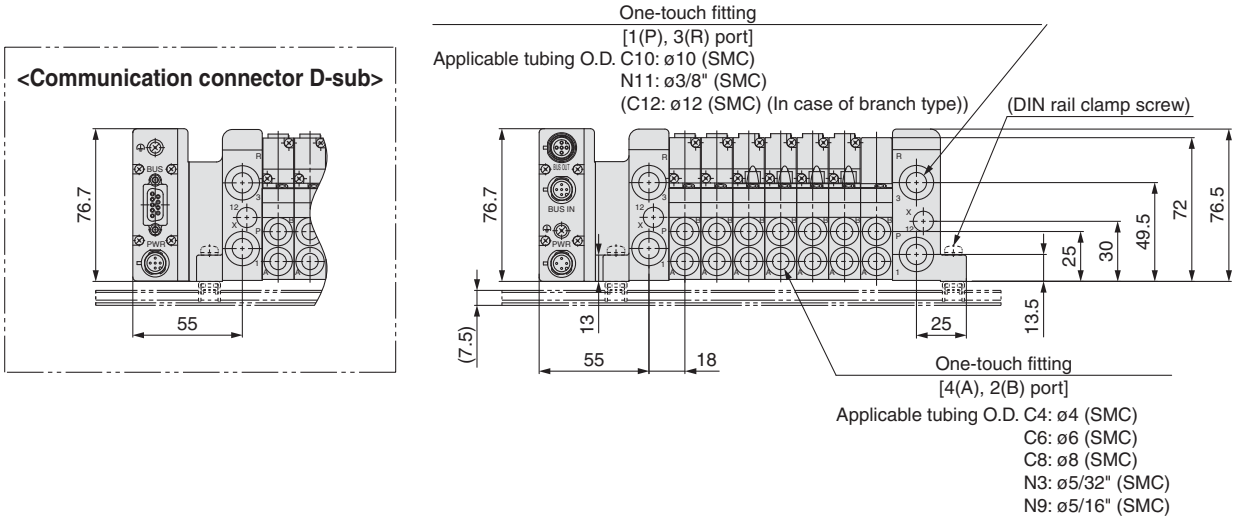
**kit (Serial transmission) For EX260 Integrated-type (for output) serial transmission system**

IP40 compliant

IP67 compliant

## VV5QC21
## S kit (Serial transmission kit: EX260)



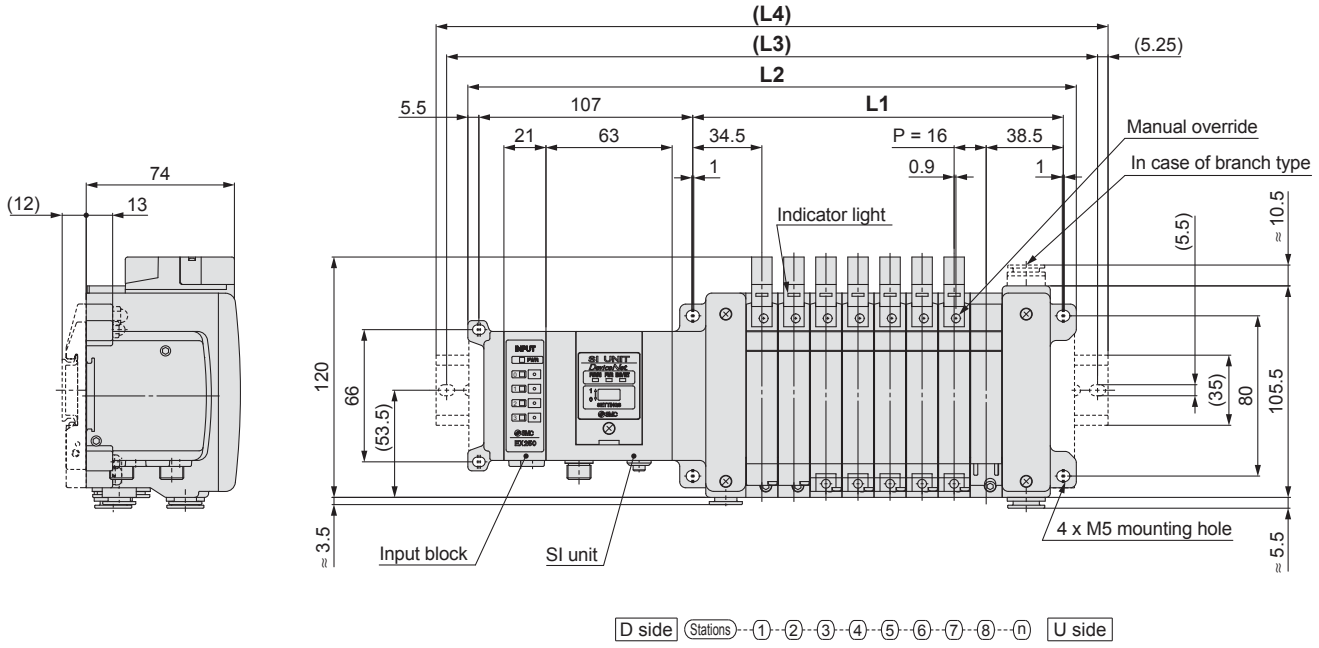

n: Stations (Maximum 24 stations)

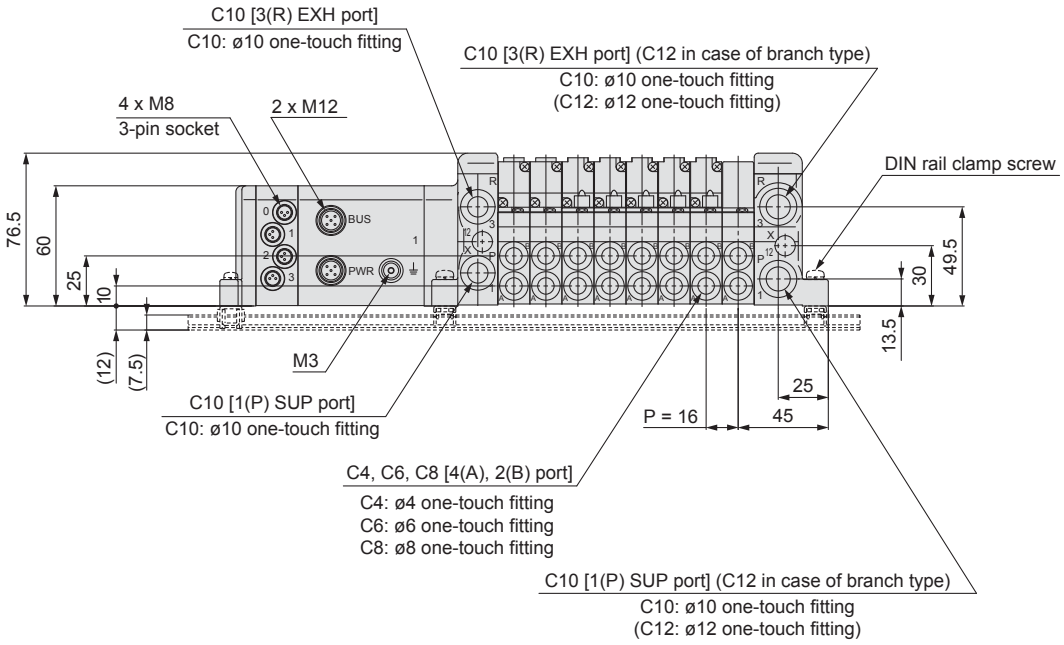
| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 73 | 89 | 105 | 121 | 137 | 153 | 169 | 185 | 201 | 217 | 233 | 249 | 265 | 281 | 297 | 313 | 329 | 345 | 361 | 377 | 393 | 409 | 425 | 441 |
| **L2** | 118 | 134 | 150 | 166 | 182 | 198 | 214 | 230 | 246 | 262 | 278 | 294 | 310 | 326 | 342 | 358 | 374 | 390 | 406 | 422 | 438 | 454 | 470 | 486 |
| **L3** | 139.5 | 164.5 | 177 | 189.5 | 202 | 227 | 239.5 | 252 | 277 | 289.5 | 302 | 314.5 | 339.5 | 352 | 364.5 | 389.5 | 402 | 414.5 | 427 | 452 | 464.5 | 477 | 489.5 | 514.5 |
| **L4** | 150 | 175 | 187.5 | 200 | 212.5 | 237.5 | 250 | 262.5 | 287.5 | 300 | 312.5 | 325 | 350 | 362.5 | 375 | 400 | 412.5 | 425 | 437.5 | 462.5 | 475 | 487.5 | 500 | 525 |

# S *Series* VQC1000/2000

**kit (Serial transmission) For EX250 Integrated-type (I/O) serial transmission system** IP67 compliant

## VV5QC21
## S kit (Serial transmission kit: EX250)




The dashed lines indicate DIN rail mounting [-D] (with DIN rail mounting bracket).

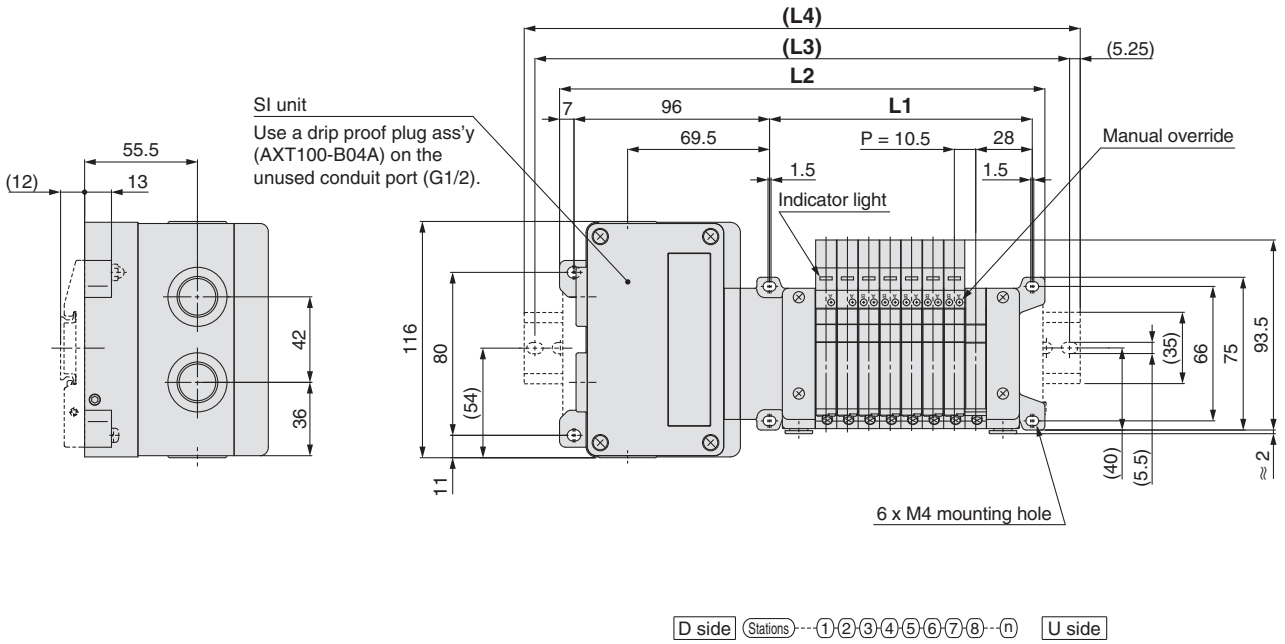
Formula: L1 = 16n + 57, L2 = 16n + 176 (For one input block. Add 21 mm for each additional input block.) n: Stations (Maximum 24 stations)

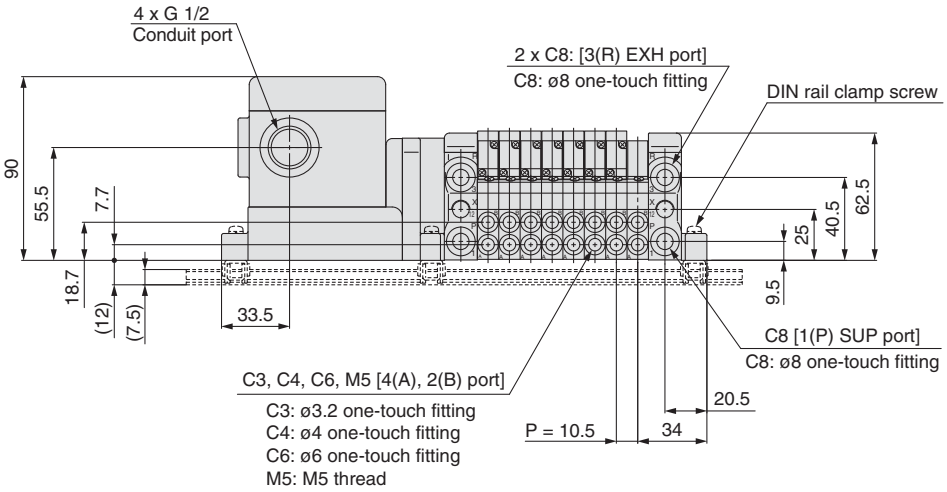
| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 73 | 89 | 105 | 121 | 137 | 153 | 169 | 185 | 201 | 217 | 233 | 249 | 265 | 281 | 297 | 313 | 329 | 345 | 361 | 377 | 393 | 409 | 425 | 441 |
| **L2** | 192 | 208 | 224 | 240 | 256 | 272 | 288 | 304 | 320 | 336 | 352 | 368 | 384 | 400 | 416 | 432 | 448 | 464 | 480 | 496 | 512 | 528 | 544 | 560 |
| **L3** | 212.5 | 237.5 | 250 | 262.5 | 275 | 287.5 | 312.5 | 325 | 337.5 | 362.5 | 375 | 387.5 | 400 | 425 | 437.5 | 450 | 462.5 | 487.5 | 500 | 512.5 | 537.5 | 550 | 562.5 | 587.5 |
| **L4** | 223 | 248 | 260.5 | 273 | 285.5 | 298 | 323 | 335.5 | 348 | 373 | 385.5 | 398 | 410.5 | 435.5 | 448 | 460.5 | 473 | 498 | 510.5 | 523 | 548 | 560.5 | 573 | 598 |

# S Series VQC1000/2000

**kit (Serial transmission) For EX126 Integrated-type (Output) serial transmission system** **IP67 compliant**

## VV5QC11
## S kit (Serial transmission kit: EX126)




The dashed lines indicate DIN rail mounting [-D] (with DIN rail mounting bracket).

Formula: L1 = 10.5n + 45, L2 = 10.5n + 154.5 n: Stations (Maximum 16 stations)

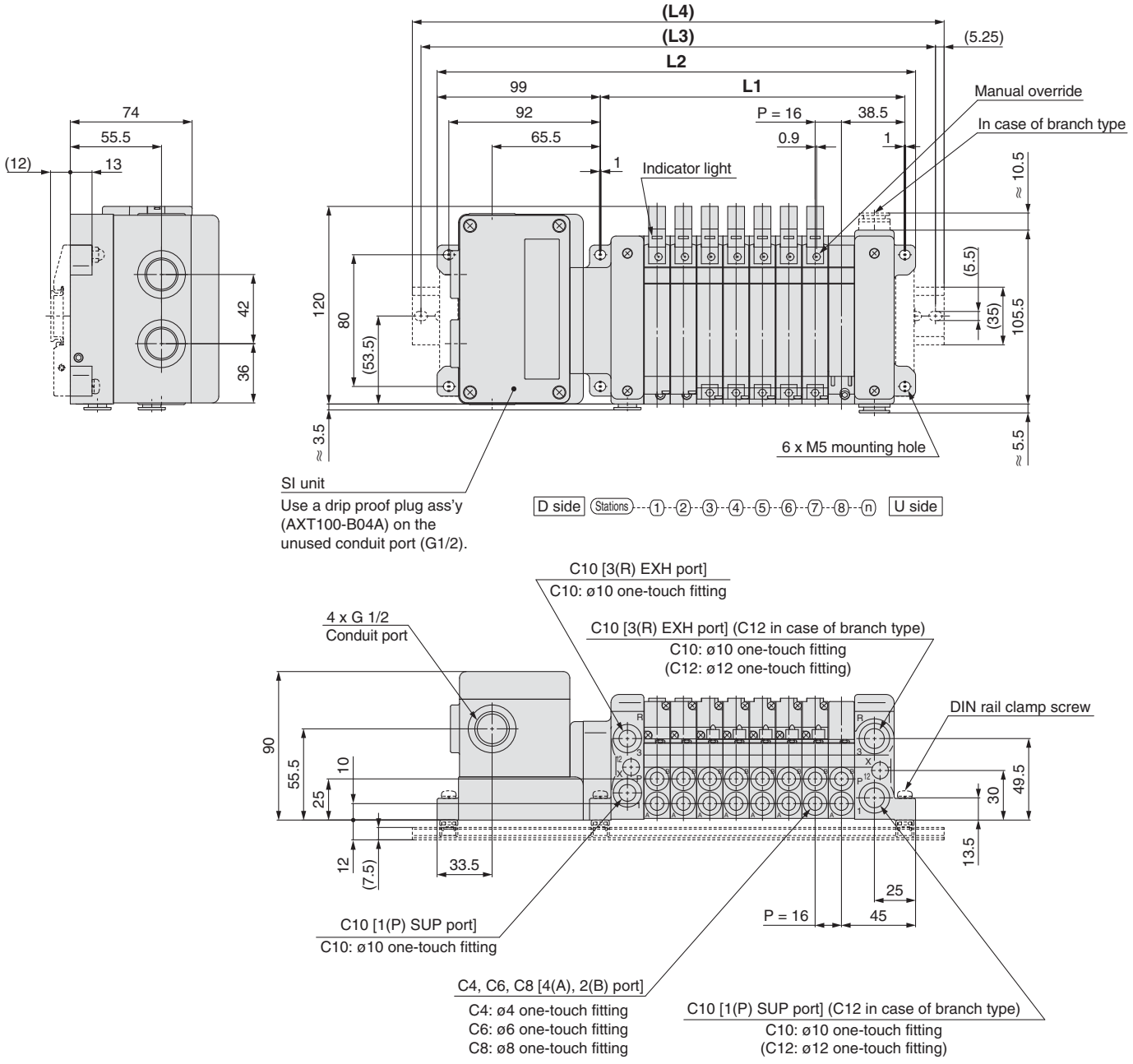
| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 55.5 | 66 | 76.5 | 87 | 97.5 | 108 | 118.5 | 129 | 139.5 | 150 | 160.5 | 171 | 181.5 | 192 | 202.5 | 213 |
| **L2** | 165 | 175.5 | 186 | 196.5 | 207 | 217.5 | 228 | 238.5 | 249 | 259.5 | 270 | 280.5 | 291 | 301.5 | 312 | 322.5 |
| **L3** | 187.5 | 200 | 212.5 | 212.5 | 225 | 237.5 | 250 | 262.5 | 275 | 275 | 287.5 | 300 | 312.5 | 325 | 337.5 | 337.5 |
| **L4** | 198 | 210.5 | 223 | 223 | 235.5 | 248 | 260.5 | 273 | 285.5 | 285.5 | 298 | 310.5 | 323 | 335.5 | 348 | 348 |

∗ With signal cut block, L4 is L2 plus about 30 mm.

# S Series VQC1000/2000

**kit (Serial transmission) For EX126 Integrated-type (Output) serial transmission system** IP67 compliant

## VV5QC21
## S kit (Serial transmission kit: EX126)



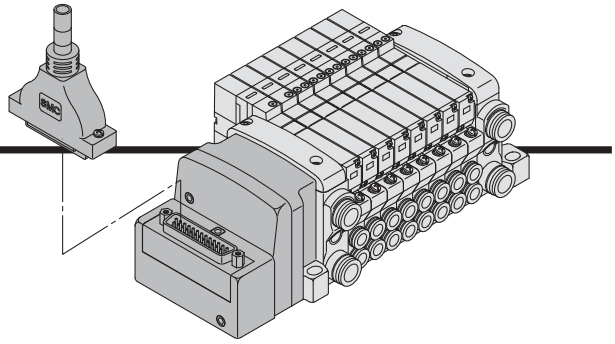

The dashed lines indicate DIN rail mounting [-D] (with DIN rail mounting bracket).

Formula: L1 = 16n + 57, L2 = 16n + 163 n: Stations (Maximum 16 stations)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 73 | 89 | 105 | 121 | 137 | 153 | 169 | 185 | 201 | 217 | 233 | 249 | 265 | 281 | 297 | 313 |
| **L2** | 179 | 195 | 211 | 227 | 243 | 259 | 275 | 291 | 307 | 323 | 339 | 355 | 371 | 387 | 403 | 419 |
| **L3** | 200 | 212.5 | 237.5 | 237.5 | 262.5 | 262.5 | 287.5 | 312.5 | 325 | 371 | 362.5 | 375 | 408.5 | 412.5 | 425 | 437.5 |
| **L4** | 210.5 | 223 | 248 | 248 | 273 | 273 | 298 | 323 | 335.5 | 360.5 | 373 | 385.5 | 398 | 423 | 435.5 | 448 |

∗ With signal cut block, L4 is L2 plus about 30 mm.

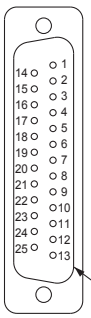
# F Series VQC1000/2000
## kit (D-sub connector) IP40 compliant



- **Using our D-sub connector for electrical connections greatly reduces labor, while it also minimizes wiring and saves space.**
- **We use a D-sub connector (25P) that conforms to MIL standards and is therefore widely compatible with many standard commercial models.**
- **Top or side entry for the connector can be changed freely, allowing for changes even after mounting, to meet any changing needs for space.**

## Electrical Wiring Specifications

**D-sub connector**




As the standard electrical wiring specifications, double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station for 12 stations or less, regardless of valve and option types.
Mixed single and double wiring are available as an option. Refer to the below special wiring specifications (option).

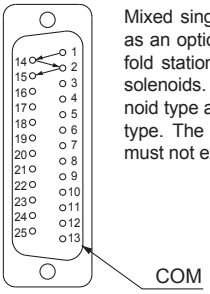
**Lead wire colors for D-sub connector assembly (AXT100-DS25-$^{015}_{030}$ $^{}_{050}$)**

| | | Terminal no. | Polarity | | Lead wire color | Dot marking |
|---|---|---|---|---|---|---|
| Station 1 | SOL.A | 1 | (–) | (+) | Black | None |
| | SOL.B | 14 | (–) | (+) | Yellow | Black |
| Station 2 | SOL.A | 2 | (–) | (+) | Brown | None |
| | SOL.B | 15 | (–) | (+) | Pink | Black |
| Station 3 | SOL.A | 3 | (–) | (+) | Red | None |
| | SOL.B | 16 | (–) | (+) | Blue | White |
| Station 4 | SOL.A | 4 | (–) | (+) | Orange | None |
| | SOL.B | 17 | (–) | (+) | Purple | None |
| Station 5 | SOL.A | 5 | (–) | (+) | Yellow | None |
| | SOL.B | 18 | (–) | (+) | Gray | None |
| Station 6 | SOL.A | 6 | (–) | (+) | Pink | None |
| | SOL.B | 19 | (–) | (+) | Orange | Black |
| Station 7 | SOL.A | 7 | (–) | (+) | Blue | None |
| | SOL.B | 20 | (–) | (+) | Red | White |
| Station 8 | SOL.A | 8 | (–) | (+) | Purple | White |
| | SOL.B | 21 | (–) | (+) | Brown | White |
| Station 9 | SOL.A | 9 | (–) | (+) | Gray | Black |
| | SOL.B | 22 | (–) | (+) | Pink | Red |
| Station 10 | SOL.A | 10 | (–) | (+) | White | Black |
| | SOL.B | 23 | (–) | (+) | Gray | Red |
| Station 11 | SOL.A | 11 | (–) | (+) | White | Red |
| | SOL.B | 24 | (–) | (+) | Black | White |
| Station 12 | SOL.A | 12 | (–) | (+) | Yellow | Red |
| | SOL.B | 25 | (–) | (+) | White | None |
| | COM. | 13 | (+) | (–) Note) | Orange | Red |
| | | | **Positive COM spec.** | **Negative COM spec.** | | |

Note) When using the negative COM specification, use valves for negative COM.

## Special Wiring Specifications (Option)

(25P)

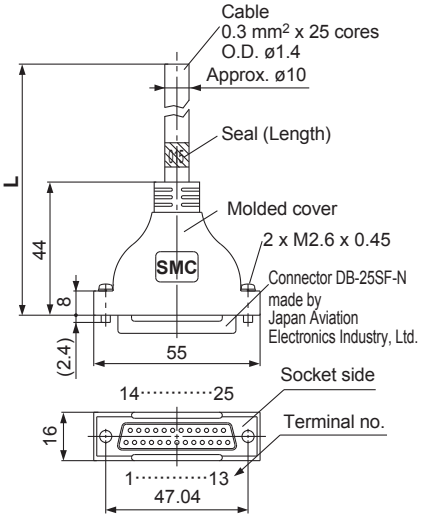



Mixed single and double wiring are available as an option. The maximum number of manifold stations is determined by the number of solenoids. Count one point for a single solenoid type and two points for a double solenoid type. The total number of solenoids (points) must not exceed 24.

## Cable Assembly

**AXT100-DS25-$^{015}_{030}$ $^{}_{050}$**

(D-sub connector cable assembly can be ordered with manifolds. Refer to "How to Order Manifold.")




**Lead wire colors for D-sub connector cable assembly terminal numbers**

| Terminal no. | Lead wire color | Dot marking |
|---|---|---|
| 1 | Black | None |
| 2 | Brown | None |
| 3 | Red | None |
| 4 | Orange | None |
| 5 | Yellow | None |
| 6 | Pink | None |
| 7 | Blue | None |
| 8 | Purple | White |
| 9 | Gray | Black |
| 10 | White | Black |
| 11 | White | Red |
| 12 | Yellow | Red |
| 13 | Orange | Red |
| 14 | Yellow | Black |
| 15 | Pink | Black |
| 16 | Blue | White |
| 17 | Purple | None |
| 18 | Gray | None |
| 19 | Orange | Black |
| 20 | Red | White |
| 21 | Brown | White |
| 22 | Pink | Red |
| 23 | Gray | Red |
| 24 | Black | White |
| 25 | White | None |

**D-sub connector cable assembly**

| Cable length (**L**) | Assembly part no. | Note |
|---|---|---|
| 1.5 m | AXT100-DS25-015 | Cable 0.3 mm² x 25 cores |
| 3 m | AXT100-DS25-030 | |
| 5 m | AXT100-DS25-050 | |

∗ When using a standard commercial connector, use a type 25P female connector conforming to MIL-C-24308.
∗ Cannot be used for transfer wiring.
∗ Lengths other than the above is also available. Please contact SMC for details.

**Electrical characteristics**

| Item | Property |
|---|---|
| Conductor resistance Ω/km, 20°C | 65 or less |
| Voltage limit V, 1 minute, AC | 1000 |
| Insulation resistance MΩ/km, 20°C | 5 or more |

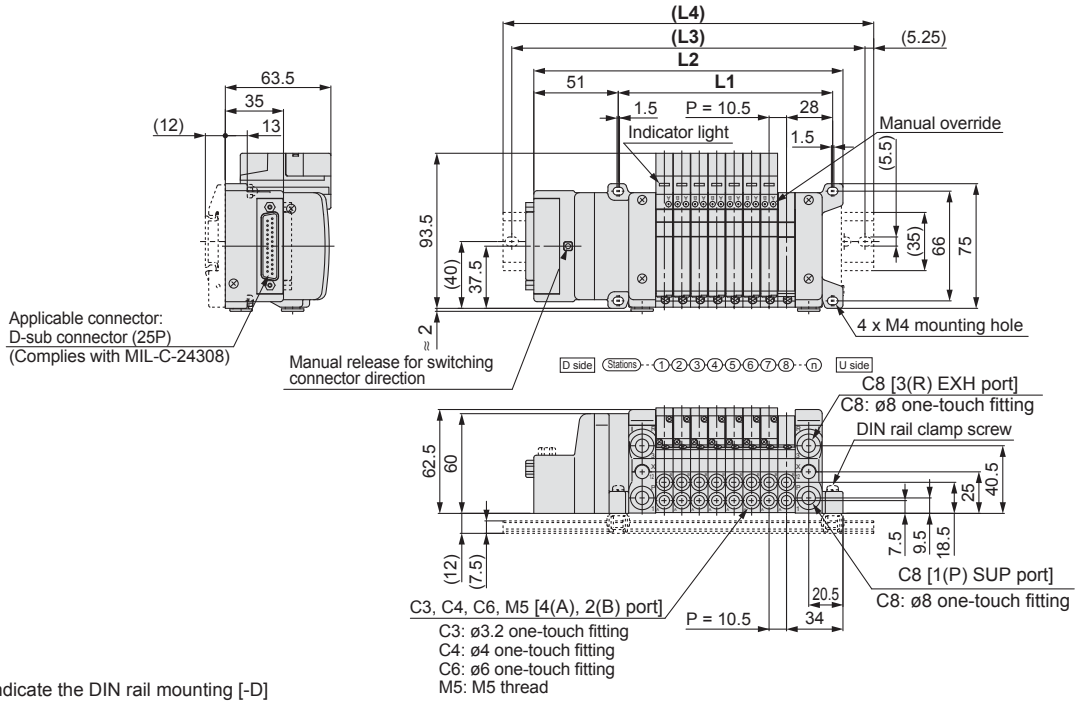
Note) The minimum bending radius of the D-sub connector cable is 20 mm.

**Connector Manufacturers' Example**

- Fujitsu, Ltd.
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Hirose Electric Co., Ltd.

# F *Series VQC1000/2000*
## kit (D-sub connector) IP40 compliant

### VV5QC11

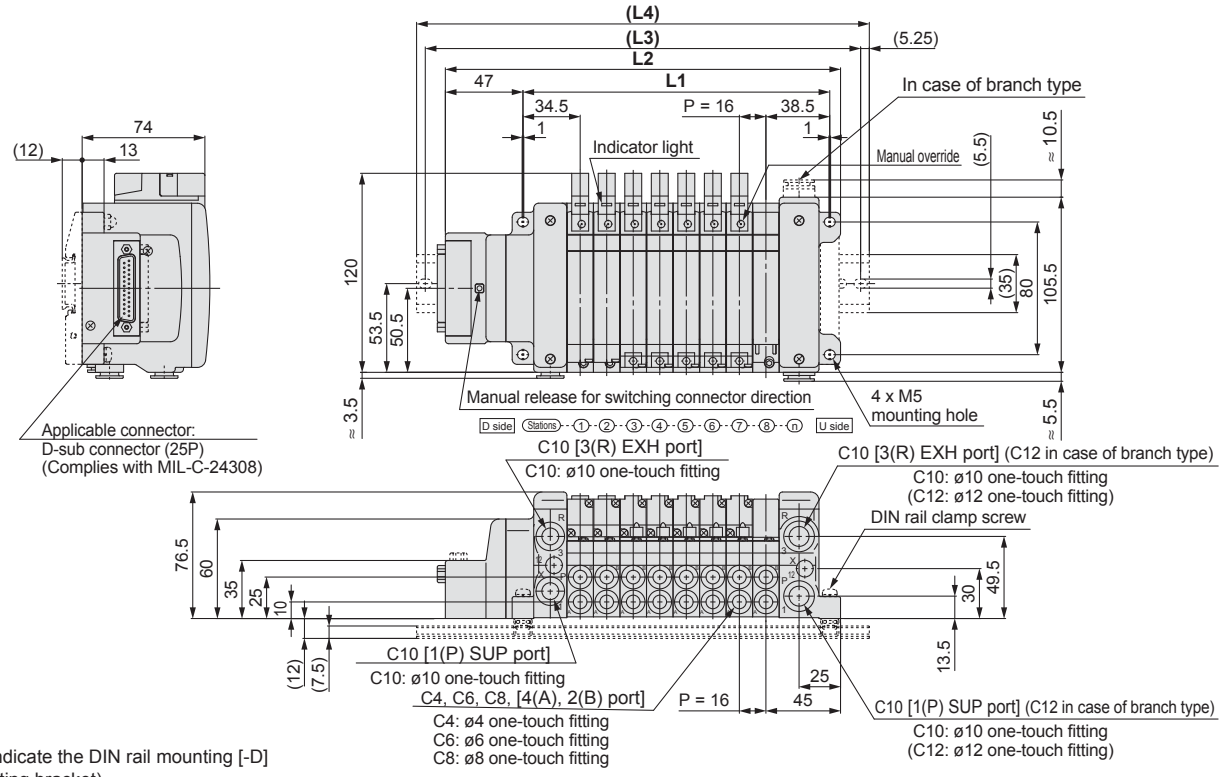



The dashed lines indicate the DIN rail mounting [-D] (with DIN rail mounting bracket).

Formula: L1 = 10.5n + 45, L2 = 10.5n + 102 n: Stations (Maximum 24 stations)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 55.5 | 66 | 76.5 | 87 | 97.5 | 108 | 118.5 | 129 | 139.5 | 150 | 160.5 | 171 | 181.5 | 192 | 202.5 | 213 | 223.5 | 234 | 244.5 | 255 | 265.5 | 276 | 286.5 | 297 |
| **L2** | 112.5 | 123 | 133.5 | 144 | 154.5 | 165 | 175.5 | 186 | 196.5 | 207 | 217.5 | 228 | 238.5 | 249 | 259.5 | 270 | 280.5 | 291 | 301.5 | 312 | 322.5 | 333 | 343.5 | 354 |
| **L3** | 137.5 | 150 | 162.5 | 175 | 175 | 187.5 | 200 | 212.5 | 225 | 237.5 | 237.5 | 250 | 262.5 | 275 | 287.5 | 300 | 300 | 312.5 | 325 | 337.5 | 350 | 362.5 | 375 | 375 |
| **L4** | 148 | 160.5 | 173 | 185.5 | 185.5 | 198 | 210.5 | 223 | 235.5 | 248 | 248 | 260.5 | 273 | 285.5 | 298 | 310.5 | 310.5 | 323 | 335.5 | 348 | 360.5 | 373 | 385.5 | 385.5 |

### VV5QC21

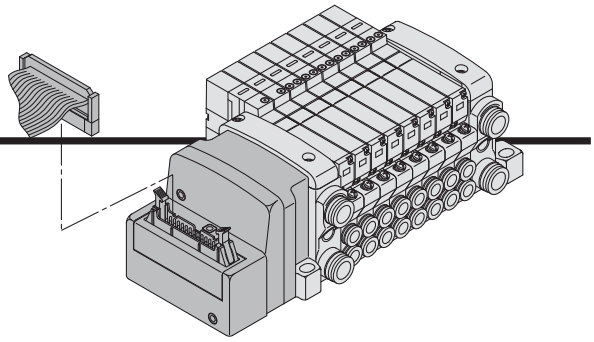



The dashed lines indicate the DIN rail mounting [-D] (with DIN rail mounting bracket).

Formula: L1 = 16n + 57, L2 = 16n + 110.5 n: Stations (Maximum 24 stations)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 73 | 89 | 105 | 121 | 137 | 153 | 169 | 185 | 201 | 217 | 233 | 249 | 265 | 281 | 297 | 313 | 329 | 345 | 361 | 377 | 393 | 409 | 425 | 441 |
| **L2** | 126.5 | 142.5 | 158.5 | 174.5 | 190.5 | 206.5 | 222.5 | 238.5 | 254.5 | 270.5 | 286.5 | 302.5 | 318.5 | 334.5 | 350.5 | 366.5 | 382.5 | 398.5 | 414.5 | 430.5 | 446.5 | 462.5 | 478.5 | 494.5 |
| **L3** | 150 | 162.5 | 187.5 | 200 | 212.5 | 237.5 | 250 | 262.5 | 275 | 300 | 312.5 | 325 | 350 | 362.5 | 375 | 387.5 | 412.5 | 425 | 437.5 | 450 | 475 | 487.5 | 500 | 525 |
| **L4** | 160.5 | 173 | 198 | 210.5 | 223 | 248 | 260.5 | 273 | 285.5 | 310.5 | 323 | 335.5 | 360.5 | 373 | 385.5 | 398 | 423 | 435.5 | 448 | 460.5 | 485.5 | 498 | 510.5 | 535.5 |

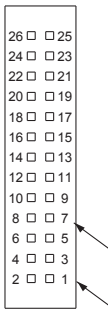
# P Series VQC1000/2000
## kit (Flat ribbon cable) IP40 compliant



- **Using our flat ribbon cable for electrical connections greatly reduces labor, while it also minimizes wiring and saves space.**
- **We use flat ribbon cables whose connectors (26P and 20P) conform to MIL standards, and are therefore widely compatible with many standard commercial models.**
- **Top or side entry for the connector can be changed freely, allowing for changes even after mounting, to meet any changing needs for space.**

## Electrical Wiring Specifications

**Flat ribbon cable connector**




Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types.
Mixed single and double wiring are available as an option.
Refer to the below special wiring specifications (option).

**<26P>**

| Station | | Terminal no. | Polarity | |
|---|---|---|---|---|
| Station 1 | SOL.A | 1 | (–) | (+) |
| | SOL.B | 2 | (–) | (+) |
| Station 2 | SOL.A | 3 | (–) | (+) |
| | SOL.B | 4 | (–) | (+) |
| Station 3 | SOL.A | 5 | (–) | (+) |
| | SOL.B | 6 | (–) | (+) |
| Station 4 | SOL.A | 7 | (–) | (+) |
| | SOL.B | 8 | (–) | (+) |
| Station 5 | SOL.A | 9 | (–) | (+) |
| | SOL.B | 10 | (–) | (+) |
| Station 6 | SOL.A | 11 | (–) | (+) |
| | SOL.B | 12 | (–) | (+) |
| Station 7 | SOL.A | 13 | (–) | (+) |
| | SOL.B | 14 | (–) | (+) |
| Station 8 | SOL.A | 15 | (–) | (+) |
| | SOL.B | 16 | (–) | (+) |
| Station 9 | SOL.A | 17 | (–) | (+) |
| | SOL.B | 18 | (–) | (+) |
| Station 10 | SOL.A | 19 | (–) | (+) |
| | SOL.B | 20 | (–) | (+) |
| Station 11 | SOL.A | 21 | (–) | (+) |
| | SOL.B | 22 | (–) | (+) |
| Station 12 | SOL.A | 23 | (–) | (+) |
| | SOL.B | 24 | (–) | (+) |
| | COM. | 25 | (+) | (–) |
| | COM. | 26 | (+) | (–) |
| | | | Positive COM spec. | Negative COM spec. |

Note)

**<20P>**

| Station | | Terminal no. | Polarity | |
|---|---|---|---|---|
| Station 1 | SOL.A | 1 | (–) | (+) |
| | SOL.B | 2 | (–) | (+) |
| Station 2 | SOL.A | 3 | (–) | (+) |
| | SOL.B | 4 | (–) | (+) |
| Station 3 | SOL.A | 5 | (–) | (+) |
| | SOL.B | 6 | (–) | (+) |
| Station 4 | SOL.A | 7 | (–) | (+) |
| | SOL.B | 8 | (–) | (+) |
| Station 5 | SOL.A | 9 | (–) | (+) |
| | SOL.B | 10 | (–) | (+) |
| Station 6 | SOL.A | 11 | (–) | (+) |
| | SOL.B | 12 | (–) | (+) |
| Station 7 | SOL.A | 13 | (–) | (+) |
| | SOL.B | 14 | (–) | (+) |
| Station 8 | SOL.A | 15 | (–) | (+) |
| | SOL.B | 16 | (–) | (+) |
| Station 9 | SOL.A | 17 | (–) | (+) |
| | SOL.B | 18 | (–) | (+) |
| | COM. | 19 | (+) | (–) |
| | COM. | 20 | (+) | (–) |
| | | | Positive COM spec. | Negative COM spec. |

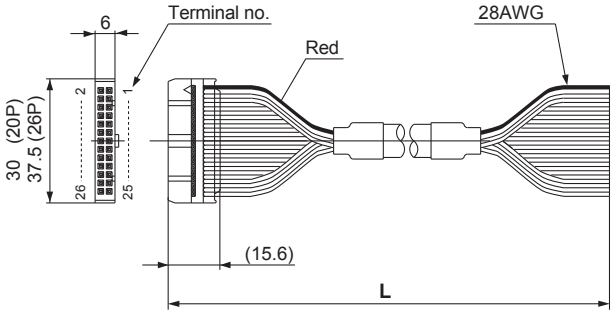
Note)

Note) When using the negative COM specification, use valves for negative COM.

## Cable Assembly

**AXT100-FC** $\begin{matrix}20\\26\end{matrix}$ **-** $\begin{matrix}1\\2\\3\end{matrix}$

(Type 26P flat ribbon cable connector assembly can be ordered with manifolds. Refer to "How to Order Manifold.")




**Flat ribbon cable connector assembly**

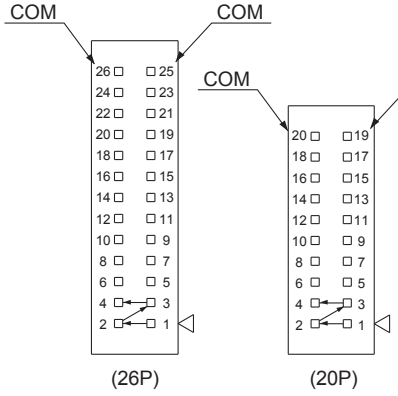
| Cable length (**L**) | Assembly part no. | |
|---|---|---|
| | 26P | 20P |
| 1.5 m | AXT100-FC26-1 | AXT100-FC20-1 |
| 3 m | AXT100-FC26-2 | AXT100-FC20-2 |
| 5 m | AXT100-FC26-3 | AXT100-FC20-3 |

∗ When using a standard commercial connector, use a type 26P connector conforming to MIL-C-83503 or a type 20P with strain relief.
∗ Cannot be used for transfer wiring.
∗ Lengths other than the above is also available. Please contact SMC for details.

**Connector Manufacturers' Example**

- Hirose Electric Co., Ltd.
- Sumitomo 3M Limited
- Fujitsu, Ltd.
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Oki Electric Cable Co., Ltd.

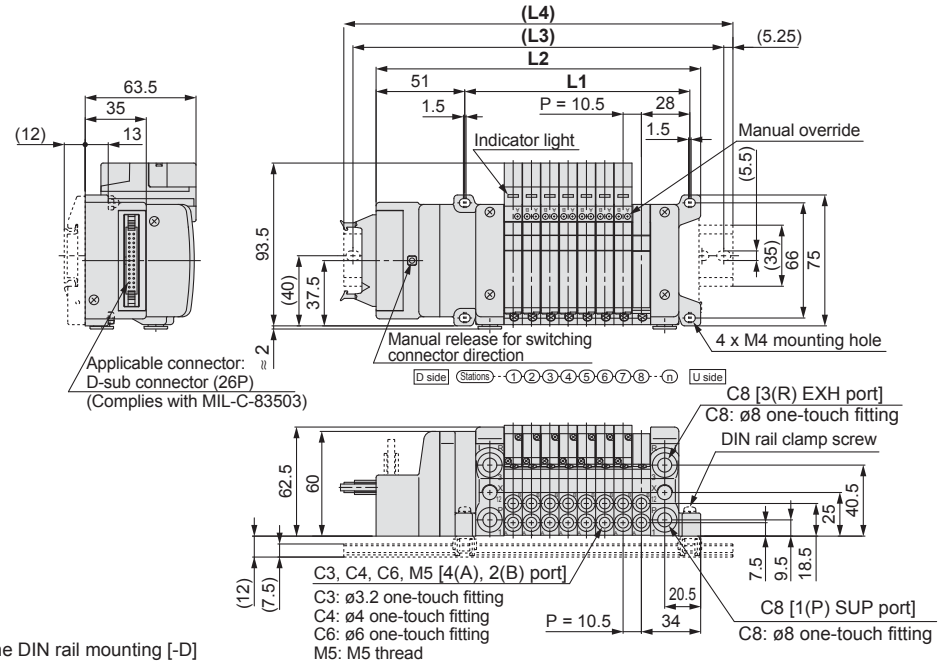
## Special Wiring Specifications (Option)




Mixed single and double wiring are available as an option. The maximum number of manifold stations is determined by the number of solenoids. Count one point for a single solenoid type and two points for a double solenoid type. The total number of solenoids (points) must not exceed 24.

# P *Series* VQC1000/2000
## kit (Flat ribbon cable) IP40 compliant

## VV5QC11

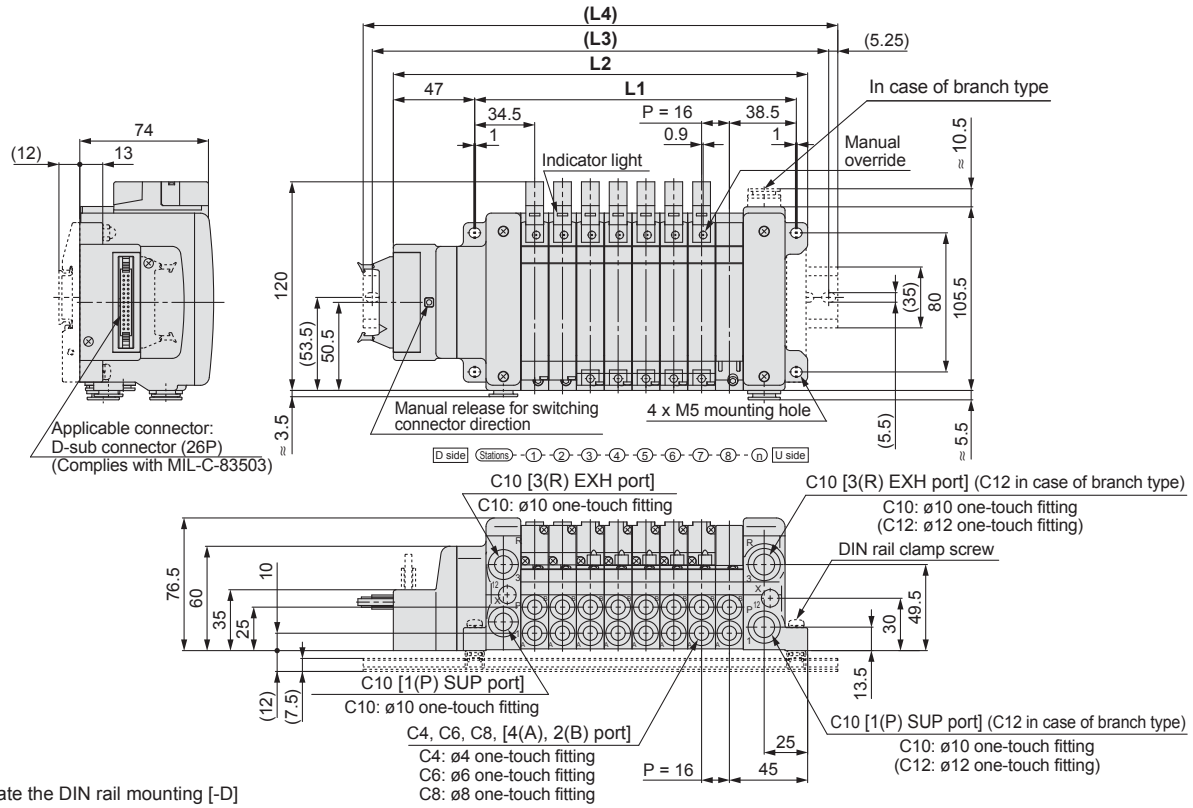



The dashed lines indicate the DIN rail mounting [-D] (with DIN rail mounting bracket).

Formula: L1 = 10.5n + 45, L2 = 10.5n + 102 n: Stations (Maximum 24 stations)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 55.5 | 66 | 76.5 | 87 | 97.5 | 108 | 118.5 | 129 | 139.5 | 150 | 160.5 | 171 | 181.5 | 192 | 202.5 | 213 | 223.5 | 234 | 244.5 | 255 | 265.5 | 276 | 286.5 | 297 |
| **L2** | 112.5 | 123 | 133.5 | 144 | 154.5 | 165 | 175.5 | 186 | 196.5 | 207 | 217.5 | 228 | 238.5 | 249 | 259.5 | 270 | 280.5 | 291 | 301.5 | 312 | 322.5 | 333 | 343.5 | 354 |
| **L3** | 137.5 | 150 | 162.5 | 175 | 175 | 187.5 | 200 | 212.5 | 225 | 237.5 | 237.5 | 250 | 262.5 | 275 | 287.5 | 300 | 300 | 312.5 | 325 | 337.5 | 350 | 362.5 | 375 | 375 |
| **L4** | 148 | 160.5 | 173 | 185.5 | 185.5 | 198 | 210.5 | 223 | 235.5 | 248 | 248 | 260.5 | 273 | 285.5 | 298 | 310.5 | 310.5 | 323 | 335.5 | 348 | 360.5 | 373 | 385.5 | 385.5 |

## VV5QC21

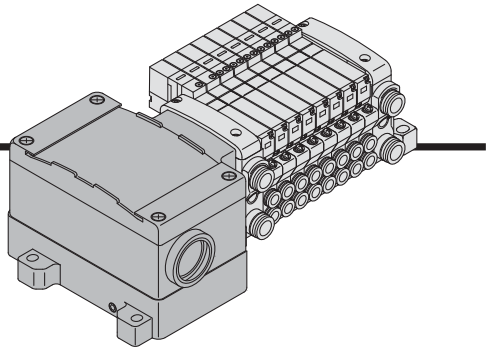



The dashed lines indicate the DIN rail mounting [-D] (with DIN rail mounting bracket).

Formula: L1 = 16n + 57, L2 = 16n + 110.5 n: Stations (Maximum 24 stations)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 73 | 89 | 105 | 121 | 137 | 153 | 169 | 185 | 201 | 217 | 233 | 249 | 265 | 281 | 297 | 313 | 329 | 345 | 361 | 377 | 393 | 409 | 425 | 441 |
| **L2** | 126.5 | 142.5 | 158.5 | 174.5 | 190.5 | 206.5 | 222.5 | 238.5 | 254.5 | 270.5 | 286.5 | 302.5 | 318.5 | 334.5 | 350.5 | 366.5 | 382.5 | 398.5 | 414.5 | 430.5 | 446.5 | 462.5 | 478.5 | 494.5 |
| **L3** | 150 | 162.5 | 187.5 | 200 | 212.5 | 237.5 | 250 | 262.5 | 275 | 300 | 312.5 | 325 | 350 | 362.5 | 375 | 387.5 | 412.5 | 425 | 437.5 | 450 | 475 | 487.5 | 500 | 525 |
| **L4** | 160.5 | 173 | 198 | 210.5 | 223 | 248 | 260.5 | 273 | 285.5 | 310.5 | 323 | 335.5 | 360.5 | 373 | 385.5 | 398 | 423 | 435.5 | 448 | 460.5 | 485.5 | 498 | 510.5 | 535.5 |

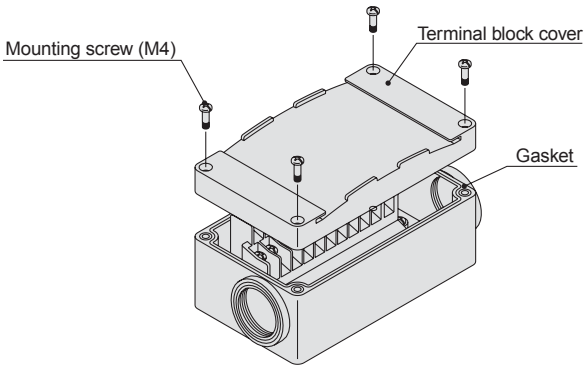
# T Series VQC1000/2000
## kit (Terminal block box) IP67 compliant



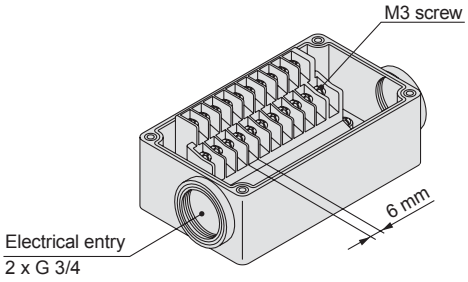
- **This kit has a small terminal block inside a junction box. The electrical entry port of a G 3/4 permits connection of conduit fittings.**

## Terminal Block Connection

**Step 1. Removing the terminal block cover**
Loosen the 4 mounting screws (M4) and remove the terminal block cover.




**Step 2. The diagram below shows the terminal block wiring. All stations are provided with double wiring regardless of the valves which are mounted.**
Connect each wire to the power supply side, according to the markings provided inside the terminal block.

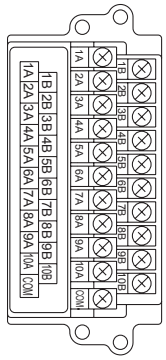



**Step 3. Mounting the terminal block cover**
Securely tighten the screws to the torque shown in the table below, after confirming that the gasket is installed correctly.

| Proper tightening torque (N·m) |
|---|
| 0.7 to 1.2 |

- Applicable crimped terminal: 1.25-3S,1.25Y-3,1.25Y-3N,1.25Y-3.5
- Name plate: VVQ5000-N-T
- Drip-proof plug assembly (for G 3/4): AXT100-B06A

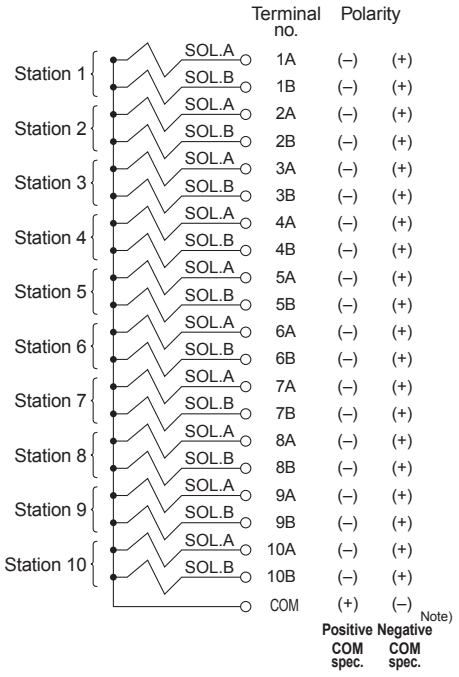
## Electrical Wiring Specifications (IP67 compatible)




Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types.
Mixed single and double wiring are available as an option.

Note) When using the negative COM specification, use valves for negative COM.

**Standard wiring**

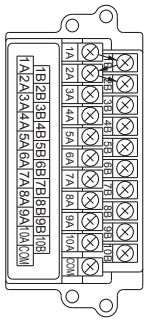



### Special Wiring Specifications (Option)

Mixed single and double wiring are available as an option. The maximum number of manifold stations is determined by the number of solenoids. Count one point for a single solenoid type and two points for a double solenoid type. The total number of solenoids (points) must not exceed 20.

#### 1. How to Order
Indicate option symbol "-K" in the manifold part number and be sure to specify station positions for single or double wiring on the manifold specification sheet.

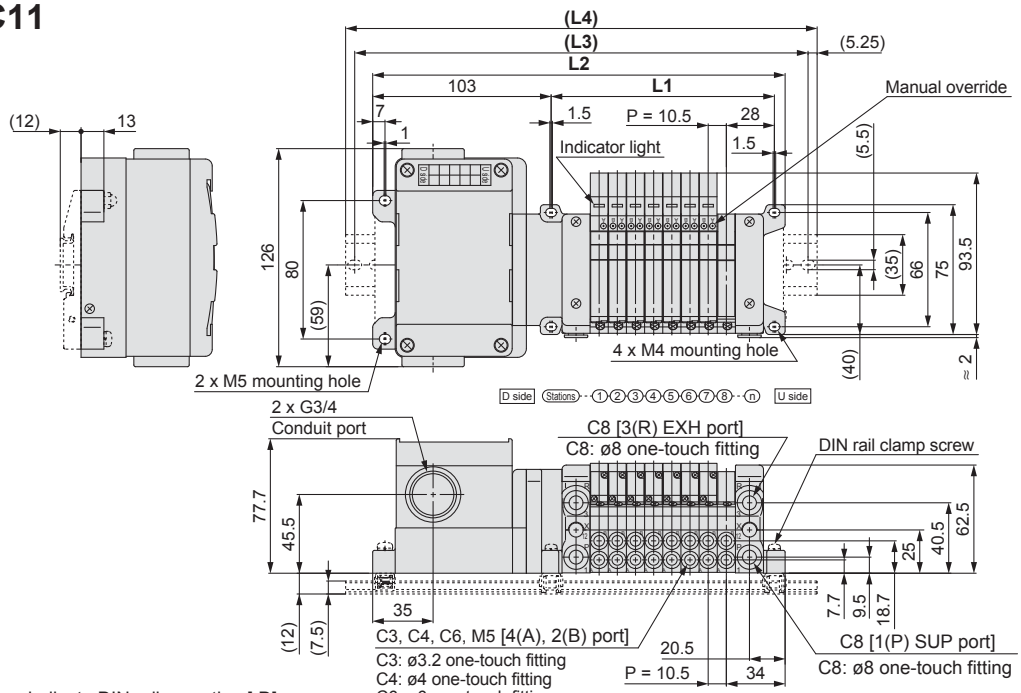
#### 2. Wiring specifications
Connector terminal numbers are connected from solenoid station 1 on the A side in the order indicated by the arrows without skipping any terminal numbers.



# T Series VQC1000/2000
## kit (Terminal block box) IP67 compliant



### VV5QC11

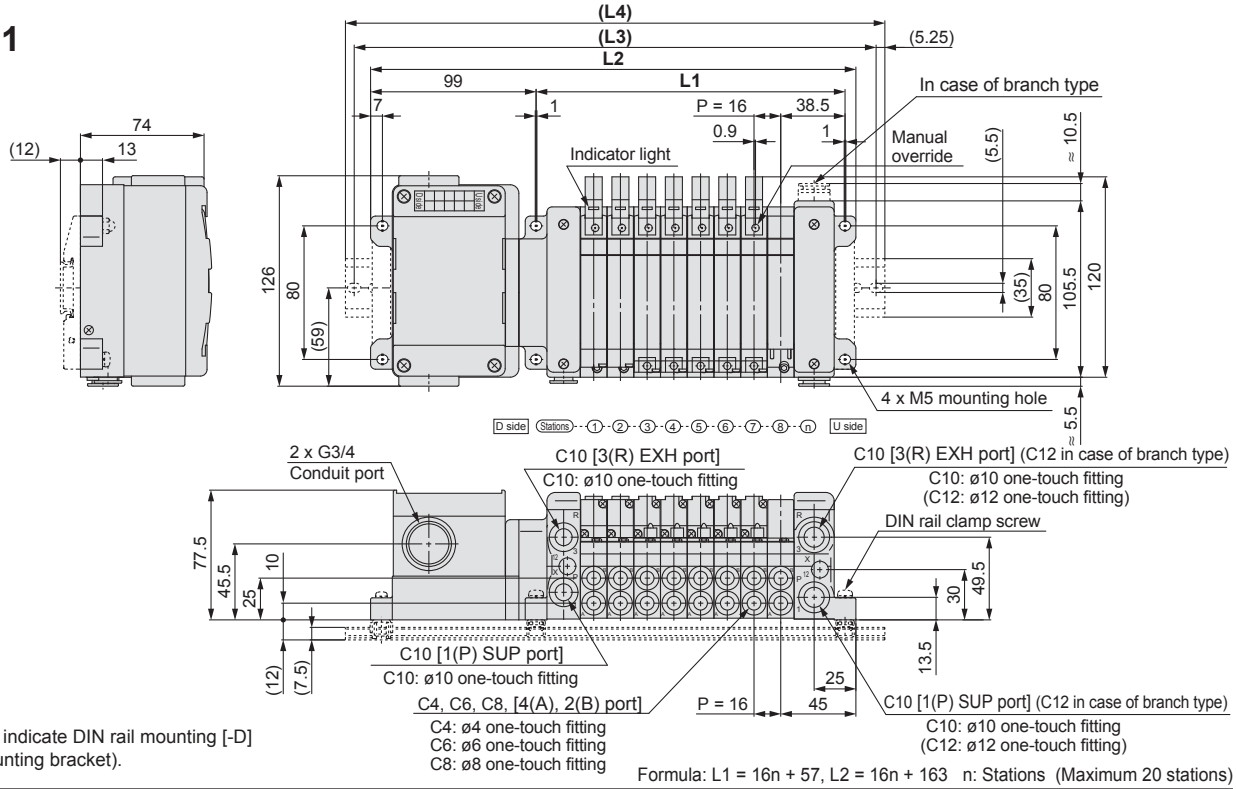



The dashed lines indicate DIN rail mounting [-D] (with DIN rail mounting bracket).

Formula: L1 = 10.5n + 45, L2 = 10.5n + 154.5 n: Stations (Maximum 20 stations)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L1 | 55.5 | 66 | 76.5 | 87 | 97.5 | 108 | 118.5 | 129 | 139.5 | 150 | 160.5 | 171 | 181.5 | 192 | 202.5 | 213 | 223.5 | 234 | 244.5 | 255 |
| L2 | 165 | 175.5 | 186 | 196.5 | 207 | 217.5 | 228 | 238.5 | 249 | 259.5 | 270 | 280.5 | 291 | 301.5 | 312 | 322.5 | 333 | 343.5 | 354 | 364.5 |
| L3 | 187.5 | 200 | 212.5 | 212.5 | 225 | 237.5 | 250 | 262.5 | 275 | 275 | 287.5 | 300 | 312.5 | 325 | 337.5 | 337.5 | 350 | 362.5 | 375 | 387.5 |
| L4 | 198 | 210.5 | 223 | 223 | 235.5 | 248 | 260.5 | 273 | 285.5 | 285.5 | 298 | 310.5 | 323 | 335.5 | 348 | 348 | 360.5 | 373 | 385.5 | 398 |

### VV5QC21

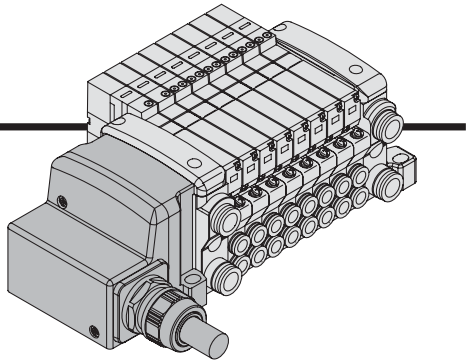



The dashed lines indicate DIN rail mounting [-D] (with DIN rail mounting bracket).

Formula: L1 = 16n + 57, L2 = 16n + 163 n: Stations (Maximum 20 stations)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L1 | 73 | 89 | 105 | 121 | 137 | 153 | 169 | 185 | 201 | 217 | 233 | 249 | 265 | 281 | 297 | 313 | 329 | 345 | 361 | 377 |
| L2 | 179 | 195 | 211 | 227 | 243 | 259 | 275 | 291 | 307 | 323 | 339 | 355 | 371 | 387 | 403 | 419 | 435 | 451 | 467 | 483 |
| L3 | 200 | 212.5 | 237.5 | 237.5 | 262.5 | 262.5 | 287.5 | 312.5 | 325 | 371 | 362.5 | 375 | 408.5 | 412.5 | 425 | 437.5 | 462.5 | 496 | 487.5 | 500 |
| L4 | 210.5 | 223 | 248 | 248 | 273 | 273 | 298 | 323 | 335.5 | 360.5 | 373 | 385.5 | 398 | 423 | 435.5 | 448 | 473 | 485.5 | 498 | 510.5 |

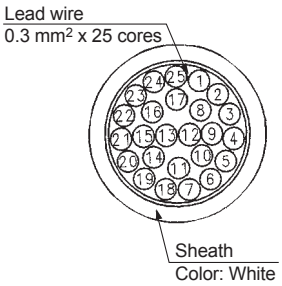
# L Series VQC1000/2000
## kit (Lead wire) IP67 compliant



- **Direct electrical entry type**
- **IP67 enclosure is available with use of cables with sheath and waterproof connectors.**

## Electrical Wiring Specifications

**Lead wire specifications**




As the standard electrical wiring specifications, double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station for 12 stations or less, regardless of valve and option types.
Mixed single and double wiring are available as an option. Refer to the below special wiring specifications (option).

| | | Terminal no. | Polarity | | Lead wire color | Dot marking |
|---|---|---|---|---|---|---|
| Station 1 | SOL.A | 1 | (–) | (+) | Black | None |
| | SOL.B | 14 | (–) | (+) | Yellow | Black |
| Station 2 | SOL.A | 2 | (–) | (+) | Brown | None |
| | SOL.B | 15 | (–) | (+) | Pink | Black |
| Station 3 | SOL.A | 3 | (–) | (+) | Red | None |
| | SOL.B | 16 | (–) | (+) | Blue | White |
| Station 4 | SOL.A | 4 | (–) | (+) | Orange | None |
| | SOL.B | 17 | (–) | (+) | Purple | None |
| Station 5 | SOL.A | 5 | (–) | (+) | Yellow | None |
| | SOL.B | 18 | (–) | (+) | Gray | None |
| Station 6 | SOL.A | 6 | (–) | (+) | Pink | None |
| | SOL.B | 19 | (–) | (+) | Orange | Black |
| Station 7 | SOL.A | 7 | (–) | (+) | Blue | None |
| | SOL.B | 20 | (–) | (+) | Red | White |
| Station 8 | SOL.A | 8 | (–) | (+) | Purple | White |
| | SOL.B | 21 | (–) | (+) | Brown | White |
| Station 9 | SOL.A | 9 | (–) | (+) | Gray | Black |
| | SOL.B | 22 | (–) | (+) | Pink | Red |
| Station 10 | SOL.A | 10 | (–) | (+) | White | Black |
| | SOL.B | 23 | (–) | (+) | Gray | Red |
| Station 11 | SOL.A | 11 | (–) | (+) | White | Red |
| | SOL.B | 24 | (–) | (+) | Black | White |
| Station 12 | SOL.A | 12 | (–) | (+) | Yellow | Red |
| | SOL.B | 25 | (–) | (+) | White | None |
| | COM. | 13 | (+) | (–) Note) | Orange | Red |
| | | | Positive COM spec. | Negative COM spec. | | |

Note) When using the negative COM specification, use valves for negative COM.

**Lead wire length**

**VV5QC11−08 C6 LD 0**

**Lead wire length**

| | |
|---|---|
| **0** | 0.6 m |
| **1** | 1.5 m |
| **2** | 3.0 m |

**Electrical characteristics**

| Item | Property |
|---|---|
| Conductor resistance Ω/km, 20°C | 65 or less |
| Voltage limit V, 1 minute, AC | 1000 |
| Insulation resistance MΩ/km, 20°C | 5 or more |

Note) Cannot be used for transfer wiring.
The minimum bending radius of the cable is 20 mm.

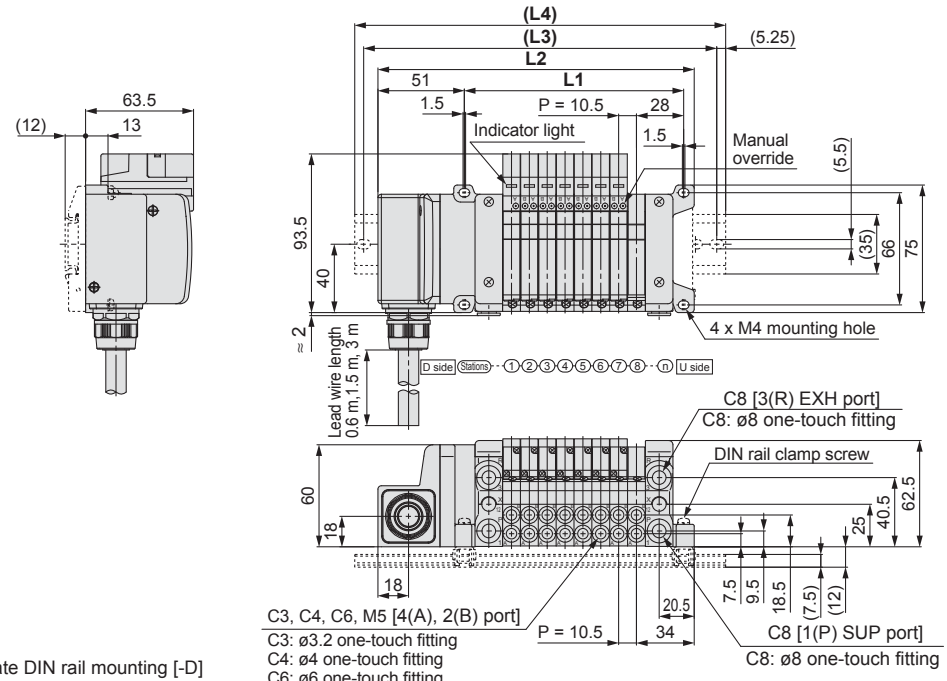
## Special Wiring Specifications (Option)

Mixed single and double wiring are available as an option. The maximum number of manifold stations is determined by the number of solenoids. Count one point for a single solenoid type and two points for a double solenoid type. The total number of solenoids (points) must not exceed 24.

# L Series VQC1000/2000
## kit (Lead wire) IP67 compliant



### VV5QC11

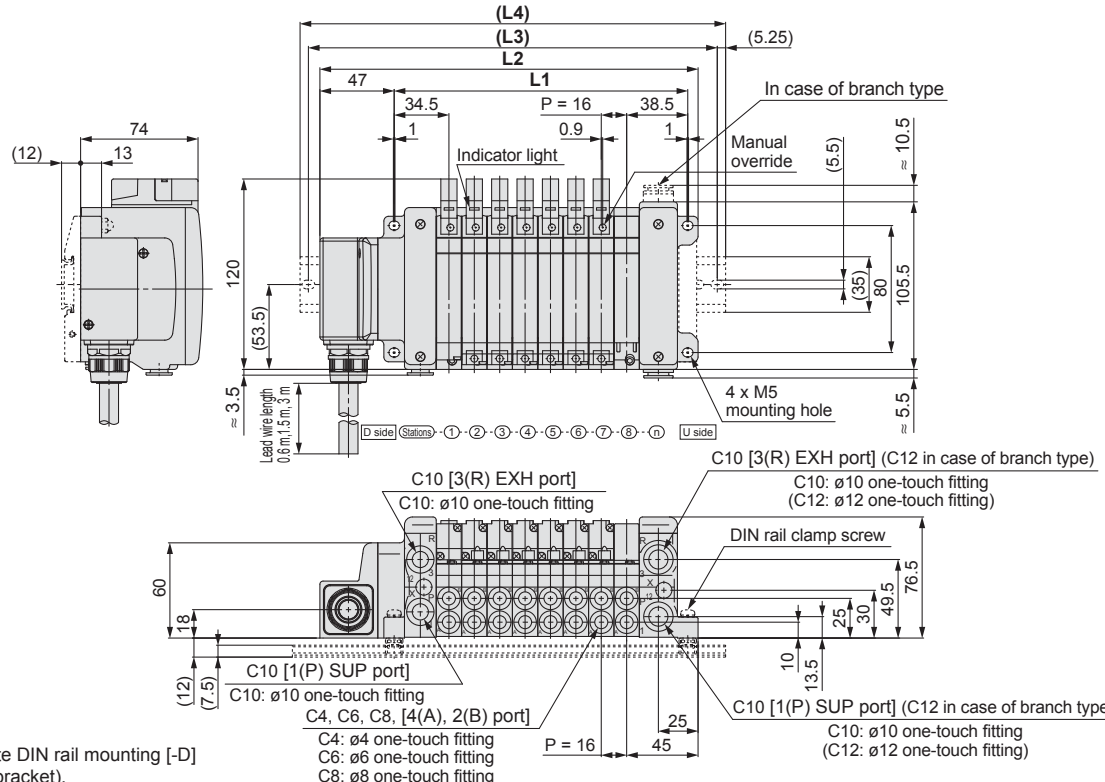



The dashed lines indicate DIN rail mounting [-D] (with DIN rail mounting bracket).

Formula: L1 = 10.5n + 45, L2 = 10.5n + 102 n: Stations (Maximum 24 stations)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 55.5 | 66 | 76.5 | 87 | 97.5 | 108 | 118.5 | 129 | 139.5 | 150 | 160.5 | 171 | 181.5 | 192 | 202.5 | 213 | 223.5 | 234 | 244.5 | 255 | 265.5 | 276 | 286.5 | 297 |
| **L2** | 112.5 | 123 | 133.5 | 144 | 154.5 | 165 | 175.5 | 186 | 196.5 | 207 | 217.5 | 228 | 238.5 | 249 | 259.5 | 270 | 280.5 | 291 | 301.5 | 312 | 322.5 | 333 | 343.5 | 354 |
| **L3** | 137.5 | 150 | 162.5 | 175 | 175 | 187.5 | 200 | 212.5 | 225 | 237.5 | 237.5 | 250 | 262.5 | 275 | 287.5 | 300 | 300 | 312.5 | 325 | 337.5 | 350 | 362.5 | 375 | 375 |
| **L4** | 148 | 160.5 | 173 | 185.5 | 185.5 | 198 | 210.5 | 223 | 235.5 | 248 | 248 | 260.5 | 273 | 285.5 | 298 | 310.5 | 310.5 | 323 | 335.5 | 348 | 360.5 | 373 | 385.5 | 385.5 |

### VV5QC21

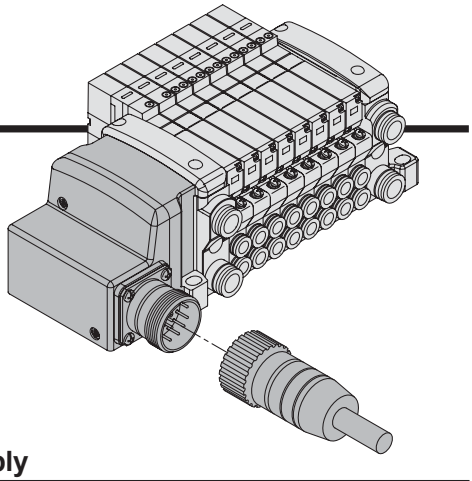



The dashed lines indicate DIN rail mounting [-D] (with DIN rail mounting bracket).

Formula: L1 = 16n + 57, L2 = 16n + 110.5 n: Stations (Maximum 24 stations)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 73 | 89 | 105 | 121 | 137 | 153 | 169 | 185 | 201 | 217 | 233 | 249 | 265 | 281 | 297 | 313 | 329 | 345 | 361 | 377 | 393 | 409 | 425 | 441 |
| **L2** | 126.5 | 142.5 | 158.5 | 174.5 | 190.5 | 206.5 | 222.5 | 238.5 | 254.5 | 270.5 | 286.5 | 302.5 | 318.5 | 334.5 | 350.5 | 366.5 | 382.5 | 398.5 | 414.5 | 430.5 | 446.5 | 462.5 | 478.5 | 494.5 |
| **L3** | 150 | 162.5 | 187.5 | 200 | 212.5 | 237.5 | 250 | 262.5 | 275 | 300 | 312.5 | 325 | 350 | 362.5 | 375 | 387.5 | 412.5 | 425 | 437.5 | 450 | 475 | 487.5 | 500 | 525 |
| **L4** | 160.5 | 173 | 198 | 210.5 | 223 | 248 | 260.5 | 273 | 285.5 | 310.5 | 323 | 335.5 | 360.5 | 373 | 385.5 | 398 | 423 | 435.5 | 448 | 460.5 | 485.5 | 498 | 510.5 | 535.5 |

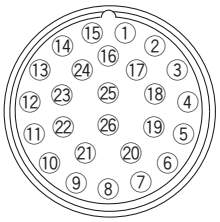
# M Series VQC1000/2000
## kit (Circular connector) IP67 compliant



- **Use of circular connectors helps streamline wiring procedure to save labor.**
- **IP67 enclosure is available with use of waterproof circular connectors.**

## Electrical Wiring Specifications

**Circular connector**




Double wiring (connected to SOL.A and SOL.B) is used for the internal wiring of each station, regardless of valve and option types. Mixed single and double wiring are available as an option. Refer to the below special wiring specifications (option).

| | | Terminal no. | Polarity | |
|---|---|---|---|---|
| Station 1 | SOL.A | 1 | (–) | (+) |
| | SOL.B | 2 | (–) | (+) |
| Station 2 | SOL.A | 3 | (–) | (+) |
| | SOL.B | 4 | (–) | (+) |
| Station 3 | SOL.A | 5 | (–) | (+) |
| | SOL.B | 6 | (–) | (+) |
| Station 4 | SOL.A | 7 | (–) | (+) |
| | SOL.B | 8 | (–) | (+) |
| Station 5 | SOL.A | 9 | (–) | (+) |
| | SOL.B | 10 | (–) | (+) |
| Station 6 | SOL.A | 11 | (–) | (+) |
| | SOL.B | 12 | (–) | (+) |
| Station 7 | SOL.A | 13 | (–) | (+) |
| | SOL.B | 14 | (–) | (+) |
| Station 8 | SOL.A | 15 | (–) | (+) |
| | SOL.B | 16 | (–) | (+) |
| Station 9 | SOL.A | 17 | (–) | (+) |
| | SOL.B | 18 | (–) | (+) |
| Station 10 | SOL.A | 19 | (–) | (+) |
| | SOL.B | 20 | (–) | (+) |
| Station 11 | SOL.A | 21 | (–) | (+) |
| | SOL.B | 22 | (–) | (+) |
| Station 12 | SOL.A | 23 | (–) | (+) |
| | SOL.B | 24 | (–) | (+) |
| | COM. | 25 | (+) | (–) |
| | COM. | 26 | (+) | (–) |
| | | | Note) Positive COM spec. | Negative COM spec. |

Note) When using the negative COM specification, use valves for negative COM.

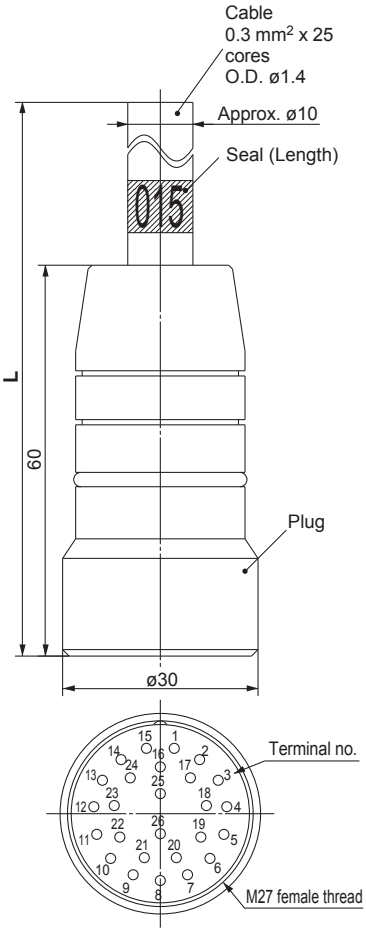
## Special Wiring Specifications (Option)

Mixed single and double wiring are available as an option. The maximum number of manifold stations is determined by the number of solenoids. Count one point for a single solenoid type and two points for a double solenoid type. The total number of solenoids (points) must not exceed 24.

## Cable Assembly

**AXT100-MC26-015 / 030 / 050**

(Type 26P circular connector cable assembly can be ordered with manifolds. Refer to "How to Order Manifold.")




**Lead wire colors for circular connector cable assembly terminal numbers**

| Terminal no. | Lead wire color | Dot marking |
|---|---|---|
| 1 | Black | None |
| 2 | Brown | None |
| 3 | Red | None |
| 4 | Orange | None |
| 5 | Yellow | None |
| 6 | Pink | None |
| 7 | Blue | None |
| 8 | Purple | White |
| 9 | Gray | Black |
| 10 | White | Black |
| 11 | White | Red |
| 12 | Yellow | Red |
| 13 | Orange | Red |
| 14 | Yellow | Black |
| 15 | Pink | Black |
| 16 | Blue | White |
| 17 | Purple | None |
| 18 | Gray | None |
| 19 | Orange | Black |
| 20 | Red | White |
| 21 | Brown | White |
| 22 | Pink | Red |
| 23 | Gray | Red |
| 24 | Black | White |
| 25 | White | None |
| 26 | White | None |

**Electrical characteristics**

| Item | Property |
|---|---|
| Conductor resistance Ω/km, 20°C | 65 or less |
| Voltage limit V, 1 minute, AC | 1000 |
| Insulation resistance MΩ/km, 20°C | 5 or more |

Note) The minimum bending radius of the circular connector cable is 20 mm.

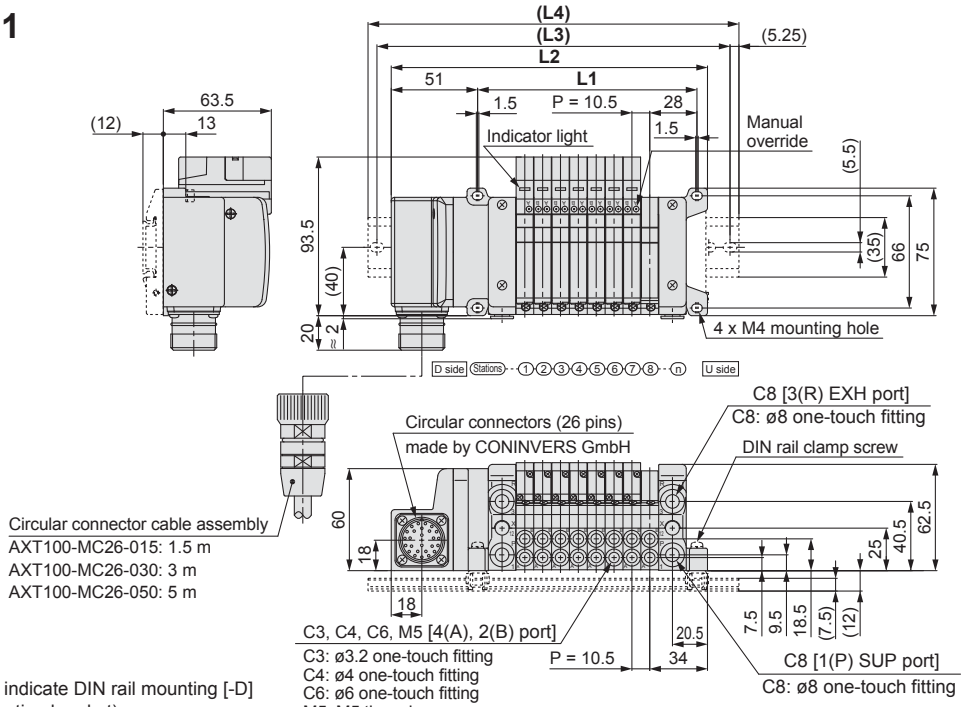
**Circular connector cable assembly**

| Cable length (L) | Assembly part no. |
|---|---|
| | 26P |
| 1.5 m | AXT100-MC26-015 |
| 3 m | AXT100-MC26-030 |
| 5 m | AXT100-MC26-050 |

∗ Cannot be used for transfer wiring.
∗ Lengths other than the above is also available. Please contact SMC for details.

# M *Series VQC1000/2000*
## kit (Circular connector) IP67 compliant

### VV5QC11

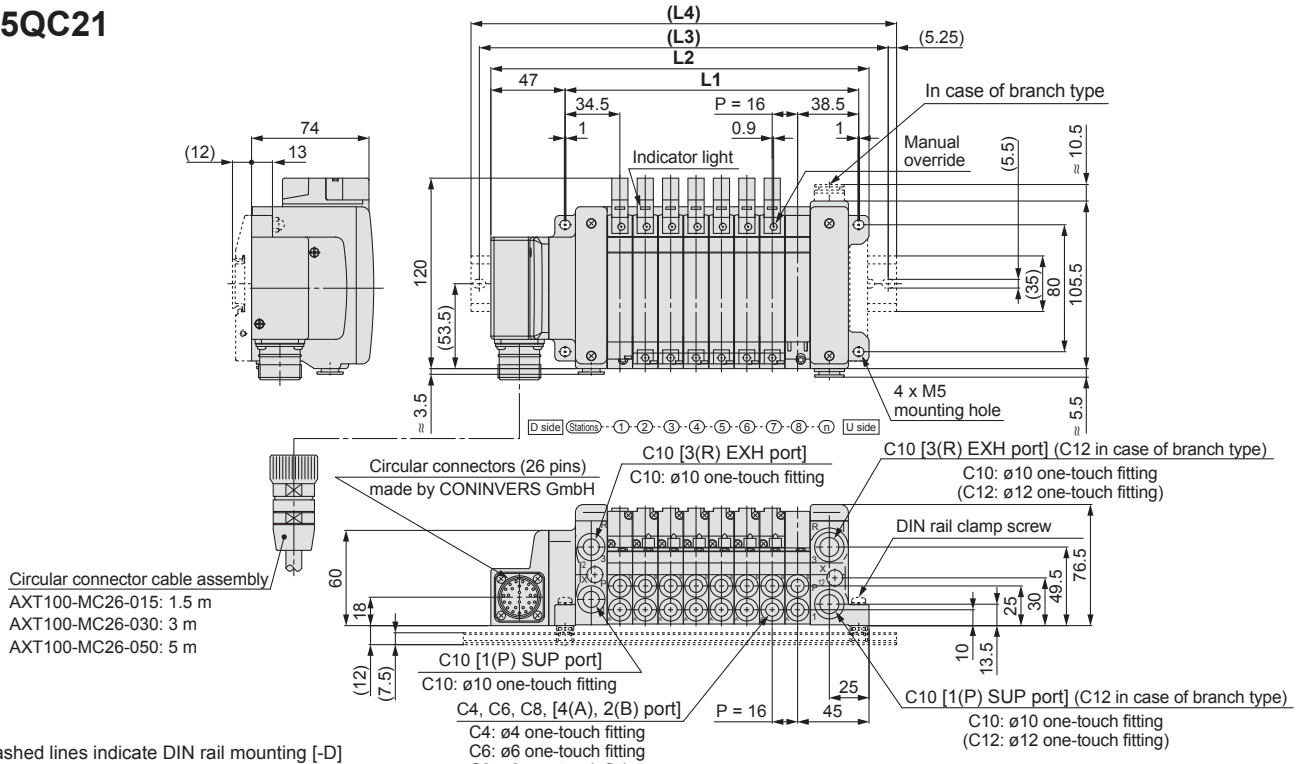



The dashed lines indicate DIN rail mounting [-D] (with DIN rail mounting bracket).

Formula: L1 = 10.5n + 45, L2 = 10.5n + 102 n: Stations (Maximum 24 stations)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 55.5 | 66 | 76.5 | 87 | 97.5 | 108 | 118.5 | 129 | 139.5 | 150 | 160.5 | 171 | 181.5 | 192 | 202.5 | 213 | 223.5 | 234 | 244.5 | 255 | 265.5 | 276 | 286.5 | 297 |
| **L2** | 112.5 | 123 | 133.5 | 144 | 154.5 | 165 | 175.5 | 186 | 196.5 | 207 | 217.5 | 228 | 238.5 | 249 | 259.5 | 270 | 280.5 | 291 | 301.5 | 312 | 322.5 | 333 | 343.5 | 354 |
| **L3** | 137.5 | 150 | 162.5 | 175 | 175 | 187.5 | 200 | 212.5 | 225 | 237.5 | 237.5 | 250 | 262.5 | 275 | 287.5 | 300 | 300 | 312.5 | 325 | 337.5 | 350 | 362.5 | 375 | 375 |
| **L4** | 148 | 160.5 | 173 | 185.5 | 185.5 | 198 | 210.5 | 223 | 235.5 | 248 | 248 | 260.5 | 273 | 285.5 | 298 | 310.5 | 310.5 | 323 | 335.5 | 348 | 360.5 | 373 | 385.5 | 385.5 |

### VV5QC21




The dashed lines indicate DIN rail mounting [-D] (with DIN rail mounting bracket).

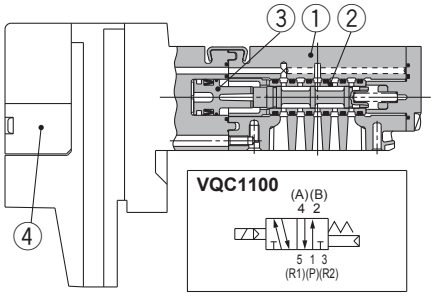
Formula: L1 = 16n + 57, L2 = 16n + 110.5 n: Stations (Maximum 24 stations)

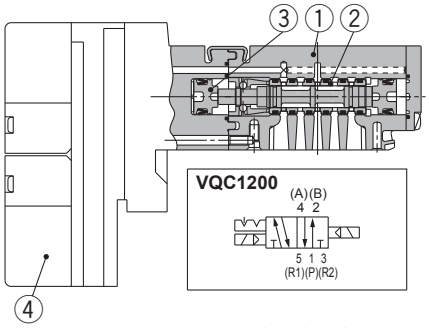
| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 73 | 89 | 105 | 121 | 137 | 153 | 169 | 185 | 201 | 217 | 233 | 249 | 265 | 281 | 297 | 313 | 329 | 345 | 361 | 377 | 393 | 409 | 425 | 441 |
| **L2** | 126.5 | 142.5 | 158.5 | 174.5 | 190.5 | 206.5 | 222.5 | 238.5 | 254.5 | 270.5 | 286.5 | 302.5 | 318.5 | 334.5 | 350.5 | 366.5 | 382.5 | 398.5 | 414.5 | 430.5 | 446.5 | 462.5 | 478.5 | 494.5 |
| **L3** | 150 | 162.5 | 187.5 | 200 | 212.5 | 237.5 | 250 | 262.5 | 275 | 300 | 312.5 | 325 | 350 | 362.5 | 375 | 387.5 | 412.5 | 425 | 437.5 | 450 | 475 | 487.5 | 500 | 525 |
| **L4** | 160.5 | 173 | 198 | 210.5 | 223 | 248 | 260.5 | 273 | 285.5 | 310.5 | 323 | 335.5 | 360.5 | 373 | 385.5 | 398 | 423 | 435.5 | 448 | 460.5 | 485.5 | 498 | 510.5 | 535.5 |

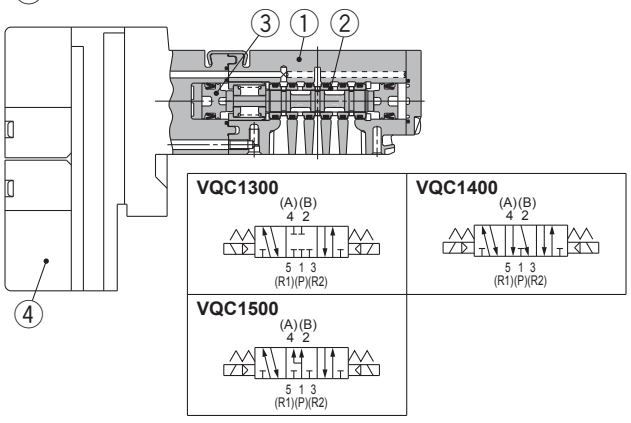
# Construction

## VQC1000 Plug-in Unit: Main Parts/Replacement Parts

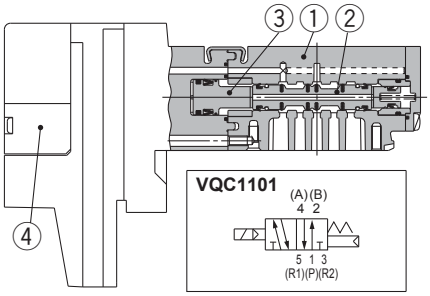
### Metal seal

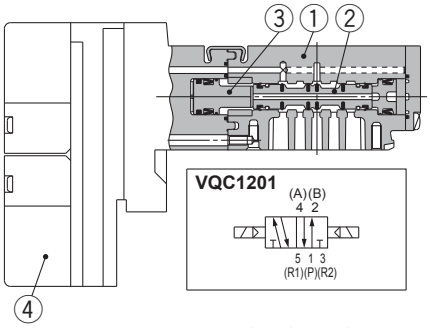


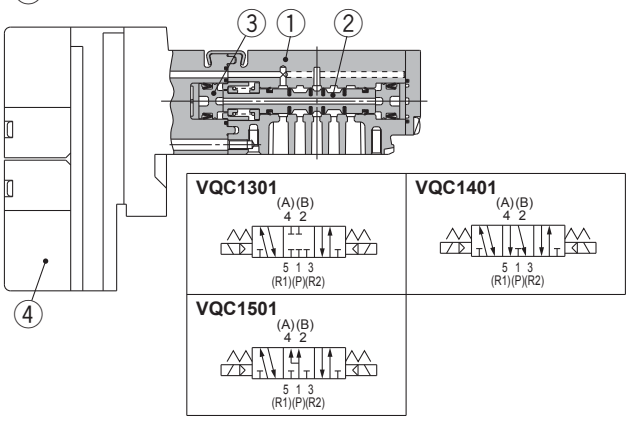



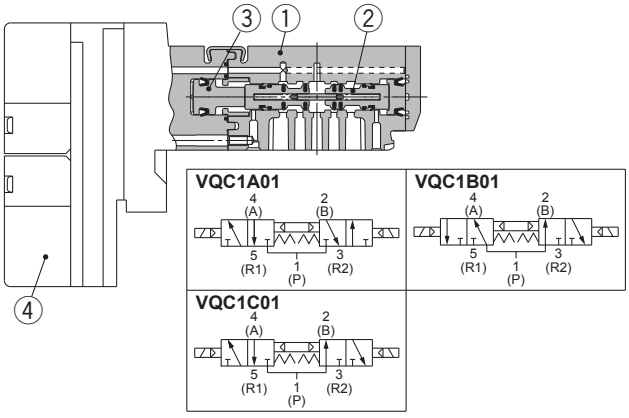




### Rubber seal




### Component Parts

| No. | Description | Material | Note |
|---|---|---|---|
| 1 | **Body** | Zinc die-casted | |
| 2 | **Spool/Sleeve** | Stainless steel | |
| 3 | **Piston** | Resin | |
| 4 | **Pilot valve assembly** | — | |

Note) Refer to page 39 for “How to Order Pilot Valve Assembly.”

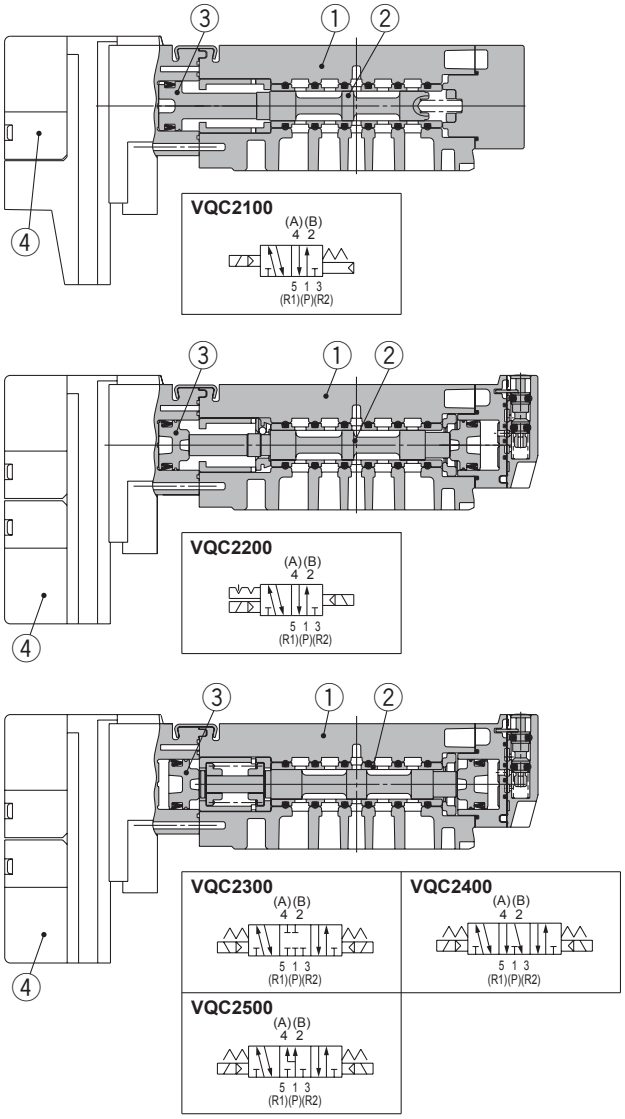
### Component Parts

| No. | Description | Material | Note |
|---|---|---|---|
| 1 | **Body** | Zinc die-casted | |
| 2 | **Spool valve** | Aluminum, HNBR | |
| 3 | **Piston** | Resin | |
| 4 | **Pilot valve assembly** | — | |

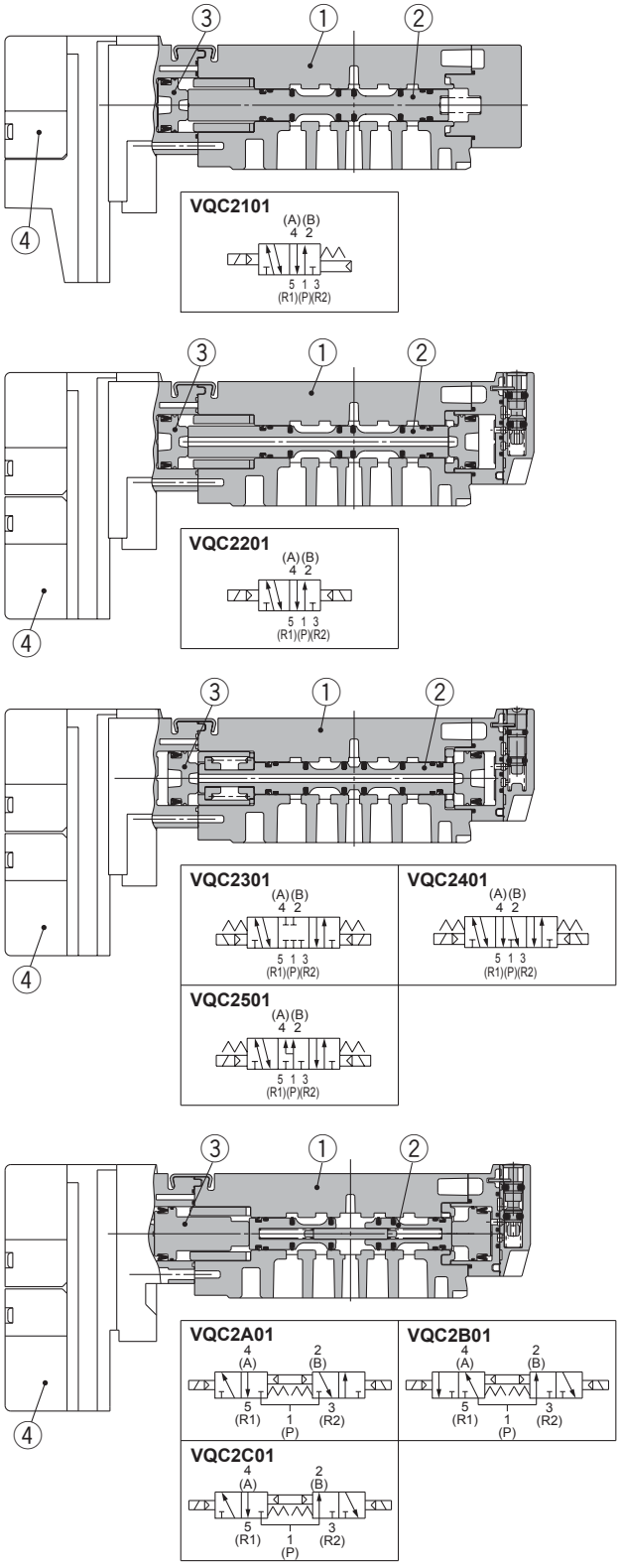
Note) Refer to page 39 for “How to Order Pilot Valve Assembly.”

## VQC2000 Plug-in Unit: Main Parts/Replacement Parts

### Metal seal




### Rubber seal




### Component Parts

| No. | Description | Material | Note |
|---|---|---|---|
| 1 | **Body** | Zinc die-casted | |
| 2 | **Spool/Sleeve** | Stainless steel | |
| 3 | **Piston** | Resin | |
| 4 | **Pilot valve assembly** | — | |

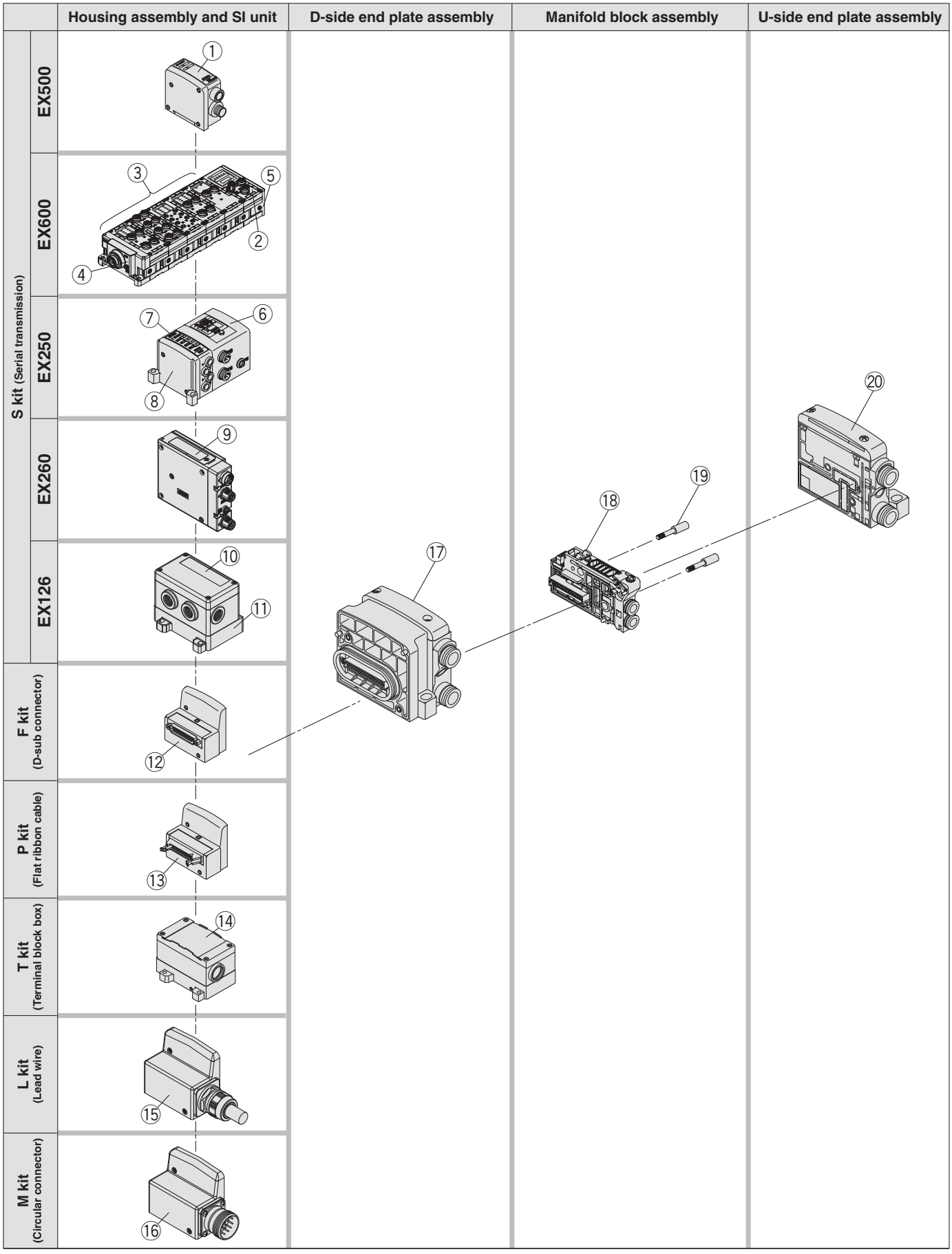
Note) Refer to page 39 for “How to Order Pilot Valve Assembly.”

### Component Parts

| No. | Description | Material | Note |
|---|---|---|---|
| 1 | **Body** | Zinc die-casted | |
| 2 | **Spool valve** | Aluminum, HNBR | |
| 3 | **Piston** | Resin | |
| 4 | **Pilot valve assembly** | — | |

Note) Refer to page 39 for “How to Order Pilot Valve Assembly.”

# Exploded View of Manifold



## Manifold Assembly Part No.

### Housing Assembly and SI Unit/Input Block

| No. | Description | Part no. | Note |
|---|---|---|---|
| ① | **SI unit** | **EX500-Q001** | DeviceNet™, PROFIBUS DP, CC-Link, EtherNet/IP™ (Positive common) |
| | | **EX500-Q101** | DeviceNet™, PROFIBUS DP, CC-Link, EtherNet/IP™ (Negative common) |
| ② | **SI unit** | **EX600-SDN1A** | DeviceNet™ PNP (Negative common) |
| | | **EX600-SDN2A** | DeviceNet™ NPN (Positive common) |
| | | **EX600-SMJ1** | CC-Link PNP (Negative common) |
| | | **EX600-SMJ2** | CC-Link NPN (Positive common) |
| | | **EX600-SPR1A** | PROFIBUS DP PNP (Negative common) |
| | | **EX600-SPR2A** | PROFIBUS DP NPN (Positive common) |
| | | **EX600-SEN1** | EtherNet/IP™ PNP (Negative common) |
| | | **EX600-SEN2** | EtherNet/IP™ NPN (Positive common) |
| ③ | **Digital input unit** | **EX600-DXNB** | NPN input, M12 connector, 5 pins (4 pcs.), 8 inputs |
| | | **EX600-DXPB** | PNP input, M12 connector, 5 pins (4 pcs.), 8 inputs |
| | | **EX600-DXNC** | NPN input, M8 connector, 3 pins (8 pcs.), 8 inputs |
| | | **EX600-DXNC1** | NPN input, M8 connector, 3 pins (8 pcs.), 8 inputs, with open circuit detection |
| | | **EX600-DXPC** | PNP input, M8 connector, 3 pins (8 pcs.), 8 inputs |
| | | **EX600-DXPC1** | PNP input, M8 connector, 3 pins (8 pcs.), 8 inputs, with open circuit detection |
| | | **EX600-DXND** | NPN input, M12 connector, 5 pins (8 pcs.), 16 inputs |
| | | **EX600-DXPD** | PNP input, M12 connector, 5 pins (8 pcs.), 16 inputs |
| | | **EX600-DXNE** | NPN input, D-sub connector, 25 pins, 16 inputs |
| | | **EX600-DXPE** | PNP input, D-sub connector, 25 pins, 16 inputs |
| | | **EX600-DXNF** | NPN input, Spring type terminal box, 32 pins, 16 inputs |
| | | **EX600-DXPF** | PNP input, Spring type terminal box, 32 pins, 16 inputs |
| | **Digital output unit** | **EX600-DYNB** | NPN output, M12 connector, 5 pins (4 pcs.), 8 outputs |
| | | **EX600-DYPB** | PNP output, M12 connector, 5 pins (4 pcs.), 8 outputs |
| | | **EX600-DYNE** | NPN output, D-sub connector, 25 pins, 16 outputs |
| | | **EX600-DYPE** | PNP output, D-sub connector, 25 pins, 16 outputs |
| | | **EX600-DYNF** | NPN output, Spring type terminal box, 32 pins, 16 outputs |
| | | **EX600-DYPF** | NPN output, Spring type terminal box, 32 pins, 16 outputs |
| | **Digital input/output unit** | **EX600-DMNE** | NPN input/output, D-sub connector, 25 pins, 8 inputs/outputs |
| | | **EX600-DMPE** | PNP input/output, D-sub connector, 25 pins, 8 inputs/outputs |
| | | **EX600-DMNF** | NPN input/output, Spring type terminal box, 32 pins, 8 inputs/outputs |
| | | **EX600-DMPF** | PNP input/output, Spring type terminal box, 32 pins, 8 inputs/outputs |
| | **Analog input unit** | **EX600-AXA** | M12 connector, 5 pins (2 pcs.), 2-channel input |
| | **Analog output unit** | **EX600-AYA** | M12 connector, 5 pins (2 pcs.), 2-channel output |
| | **Analog input/output unit** | **EX600-AMB** | M12 connector, 5 pins (4 pcs.), 2-channel inputs/outputs |
| ④ | **End plate** | **EX600-ED2** | M12 connector, 5 pins, Max. supply current 2 A |
| | | **EX600-ED2-2** | M12 connector, 5 pins, Max. supply current 2 A, with DIN rail mounting bracket |
| | | **EX600-ED3** | 7/8 inch connector, 5 pins, Max. supply current 8 A |
| | | **EX600-ED3-2** | 7/8 inch connector, 5 pins, Max. supply current 8 A, with DIN rail mounting bracket |
| ⑤ | **Valve plate** | **EX600-ZMV1** | Enclosed parts: round head screws (M4 x 6) 2 pcs., round head screws (M3 x 8) 4 pcs. |

## Manifold Assembly Part No.

### Housing Assembly and SI Unit/Input Block

| No. | Description | Part no. | Note |
|---|---|---|---|
| ⑥ | **SI unit** | **EX250-SPR1** | PROFIBUS DP PNP (Negative common) |
| | | **EX250-SMJ2** | CC-LinkNPN (Positive common) |
| | | **EX250-SAS3** | AS-Interface, 8 in/8 out, 31 slave modes, 2 power supply systems PNP (Negative common) |
| | | **EX250-SAS5** | AS-Interface, 4 in/4 out, 31 slave modes, 2 power supply systems PNP (Negative common) |
| | | **EX250-SAS7** | AS-Interface, 8 in/8 out, 31 slave modes, 1 power supply system PNP (Negative common) |
| | | **EX250-SAS9** | AS-Interface, 4 in/4 out, 31 slave modes, 1 power supply system PNP (Negative common) |
| | | **EX250-SCA1A** | CANopen PNP (Negative common) |
| | | **EX250-SDN1** | DeviceNet™ PNP (Negative common) |
| | | **EX250-SEN1** | EtherNet/IP™ PNP (Negative common) |
| ⑦ | **Input block** | **EX250-IE1** | M12, 2 inputs |
| | | **EX250-IE2** | M12, 4 inputs |
| | | **EX250-IE3** | M8, 4 inputs |
| ⑧ | **End plate assembly** | **EX250-EA1** | Standard |
| | | **EX250-EA2** | For DIN rail mounting |
| ⑨ | **SI unit** | **EX260-SDN1** | DeviceNet™, M12 connector, 32 pins PNP (Negative common) |
| | | **EX260-SDN2** | DeviceNet™, M12 connector, 32 pins NPN (Positive common) |
| | | **EX260-SDN3** | DeviceNet™, M12 connector, 16 pins PNP (Negative common) |
| | | **EX260-SDN4** | DeviceNet™, M12 connector, 16 pins NPN (Positive common) |
| | | **EX260-SPR1** | PROFIBUS DP, M12 connector, 32 pins PNP (Negative common) |
| | | **EX260-SPR2** | PROFIBUS DP, M12 connector, 32 pins NPN (Positive common) |
| | | **EX260-SPR3** | PROFIBUS DP, M12 connector, 16 pins PNP (Negative common) |
| | | **EX260-SPR4** | PROFIBUS DP, M12 connector, 16 pins NPN (Positive common) |
| | | **EX260-SPR5** | PROFIBUS DP, D-sub connector, 32 pins PNP (Negative common) |
| | | **EX260-SPR6** | PROFIBUS DP, D-sub connector, 32 pins NPN (Positive common) |
| | | **EX260-SPR7** | PROFIBUS DP, D-sub connector, 16 pins PNP (Negative common) |
| | | **EX260-SPR8** | PROFIBUS DP, D-sub connector, 16 pins NPN (Positive common) |
| | | **EX260-SEC1** | EtherCAT, M12 connector, 32 pins PNP (Negative common) |
| | | **EX260-SEC2** | EtherCAT, M12 connector, 32 pins NPN (Positive common) |
| | | **EX260-SEC3** | EtherCAT, M12 connector, 16 pins PNP (Negative common) |
| | | **EX260-SEC4** | EtherCAT, M12 connector, 16 pins NPN (Positive common) |
| ⑩ | **SI unit** | **EX126D-SMJ1** | CC-Link NPN (Positive common) |
| ⑪ | **Terminal block plate** | **VVQC1000-74A-2** | For EX126 SI unit mounting |
| ⑫ | **D-sub connector housing assembly** | **VVQC1000-F25-1** | F kit, 25 pins |
| ⑬ | **Flat ribbon cable housing assembly** | **VVQC1000-P26-1** | P kit, 26 pins |
| | | **VVQC1000-P20-1** | P kit, 20 pins |
| ⑭ | **Terminal block box housing assembly** | **VVQC1000-T0-1** | T kit |
| ⑮ | **Lead wire housing assembly** | **VVQC1000-L25-0-1** | L kit with 0.6 m lead wire |
| | | **VVQC1000-L25-1-1** | L kit with 1.5 m lead wire |
| | | **VVQC1000-L25-2-1** | L kit with 3.0 m lead wire |
| ⑯ | **Circular connector housing assembly** | **VVQC1000-M26-1** | M kit, 26 pins |

## Manifold Assembly Part No.

### <D-Side End Plate Assembly>

⑰ **D-side end plate assembly part no.**

**VVQC 1 000 − 3A − 1 − □ − □**

**Series**

| | |
|---|---|
| 1 | VQC1000 |
| 2 | VQC2000 |

**Port size**

| Symbol | VQC1000 | VQC2000 |
|---|---|---|
| C8 | ● | |
| C10 | | ● |
| N9 | ● | |
| N11 | | ● |

**Option**

| | |
|---|---|
| Nil | Common EXH |
| R | External pilot |
| S | Direct EXH outlet with built-in silencer |

### <U-Side End Plate Assembly>

⑳ **U-side end plate assembly part no.**

**VVQC 1 000 − 2A − 1 − C8 − □**

**Series**

| | |
|---|---|
| 1 | VQC1000 |
| 2 | VQC2000 |

**Supply/Exhaust port entry direction**

| | |
|---|---|
| 1 | Cylinder port side |
| 2 Note) | Branch type |

Note) VQC2000 only

**Port size**

| Symbol | VQC1000 | VQC2000 |
|---|---|---|
| C8 | ● | |
| C10 | | ● |
| C12 | | ● |
| N9 | ● | |
| N11 | | ● |
| N13 | | ● |

**Option**

| | |
|---|---|
| Nil | Common EXH |
| R | External pilot |
| S | Direct EXH outlet with built-in silencer |

### <Manifold Block Assembly>

⑱ **Manifold block assembly part no.**

**VVQC 1 000 − 1A − D − C6 − □**

**Series**

| | |
|---|---|
| 1 | VQC1000 |
| 2 | VQC2000 |

Note) Tie-rods (2 pcs.) for additional stations included.

**Wiring specifications**

| | |
|---|---|
| D | Double wiring |
| S | Single wiring |

**Port size**

| Symbol | Port size | VQC1000 | VQC2000 |
|---|---|---|---|
| C3 | For ø3.2 one-touch fitting | ● | |
| C4 | For ø4 one-touch fitting | ● | ● |
| C6 | For ø6 | ● | ● |
| C8 | For ø8 | | ● |
| N1 | For ø1/8" | ● | |
| N3 | For ø5/32" | ● | ● |
| N7 | For ø1/4" | ● | ● |
| N9 | For ø5/16" | | ● |
| M5 | For M5 thread | ● | |

**Option**

| | |
|---|---|
| Nil | None |
| B | With back pressure check valve |

### <Replacement Parts>

**Pilot valve assembly**

**V112 □ − 5 A**

**Coil voltage**

| | |
|---|---|
| 5 | 24 VDC |
| 6 | 12 VDC |

**Function**

| | |
|---|---|
| Nil | Standard (0.4 W) |
| B | High-speed response type (0.95 W) |
| K | High-pressure type (1.0 MPa, 0.95 W) |

Note) Common to single solenoid and double solenoid

⑲ **Tie-rod assembly part no. (2 pcs.)**

| | |
|---|---|
| VQC1000 | VVQC1000-TR-□ |
| VQC2000 | VVQC2000-TR-□ |

Note 1) Please order when reducing the number of manifold stations. When increasing the number of stations, additional orders are not required since they are included in the manifold block assembly.
Note 2) □: Stations 02 to 24

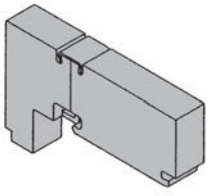
# VQC1000: Manifold Optional Parts

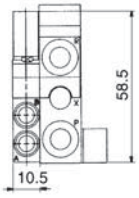
## Blanking plate assembly
**VVQ1000-10A-1**

**JIS symbol**



It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.

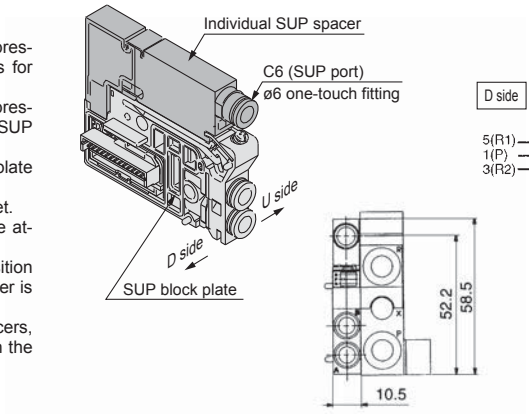





## Individual SUP spacer
**VVQ1000-P-1-$^{C6}_{N7}$**

When the same manifold is to be used for different pressures, individual SUP spacers are used as SUP ports for different pressures. (One station space is occupied.)
Block both sides of the station, for which the supply pressure from the individual SUP spacer is used, with SUP block plates. (Refer to the application example.)

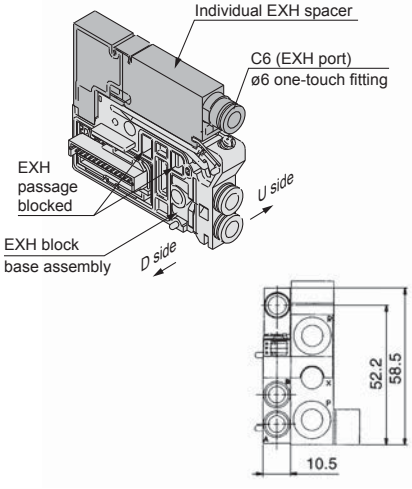
* Specify the spacer mounting position and SUP block plate position by means of the manifold specification sheet. The block plate is used in one or two places for one set. (Two SUP block plates for blocking SUP passage are attached to the individual SUP spacer.)
* As a standard, electric wiring is connected to the position of the manifold station where the individual SUP spacer is mounted.
* If wiring is not required for stations equipped with spacers, enter "X" in the special wiring specifications column in the manifold specification sheet.




## Individual EXH spacer
**VVQ1000-R-1-$^{C6}_{N7}$**

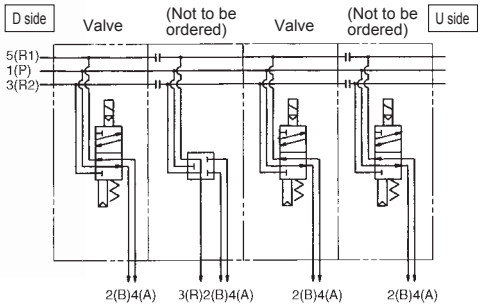
When valve exhaust affects other stations due to the circuit configuration, this spacer is used for individual valve exhaust. (One station space is occupied.)
Block both sides of the individual valve EXH station. (Refer to the application example.)

* Specify the spacer mounting position, as well as the EXH passage blocking position by means of the manifold specification sheet. The block plate is used in one or two places for one set.
* An EXH block base assembly is used in the blocking position when ordering an EXH spacer incorporated with a manifold. However, do not order an EXH block base assembly because it is attached to the spacer.
  When separately ordering an individual EXH spacer, separately order an EXH block base assembly because it is not attached to the spacer.
* As a standard, electric wiring is connected to the position of the manifold station where the individual EXH spacer is mounted.
* If wiring is not required for stations equipped with spacers, enter "X" in the special wiring specifications column in the manifold specification sheet.




| Description/Model | | Stations 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|
| Valve | Single | ● | | ● | ● | | | |
| | ⋮ | | | | | | | |
| Option | Individual EXH spacer VVQ1000-R-1-C6 | | ● | | | | | |
| | EXH blocking position: Specify 2 places. | ● | | ● | | | | |

**Individual EXH spacer + EXH block base assembly** | **Valve + EXH block base assembly**



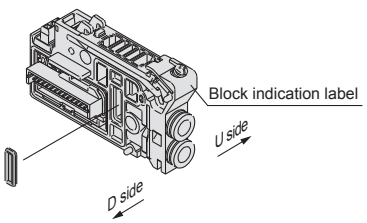

## SUP block plate
**VVQ1000-16A**

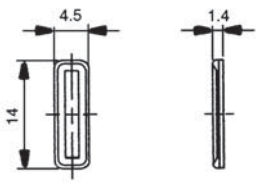
When different pressures are supplied to a manifold, a SUP block plate is used to block the stations under different pressures.

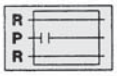
* Specify the mounting position by means of the manifold specification sheet.

**<Block indication label>**
Indication labels to confirm the blocking position are attached (Each for SUP passage and SUP/EXH passage blocking positions).

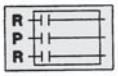
* When ordering a block plate incorporated with a manifold, a block indication label is attached to the manifold.




**SUP passage blocked**




**SUP/EXH passage blocked**

## VQC1000: Manifold Optional Parts

### Blanking plate with connector

**VVQ1000-1C□-□**

**Connector**

| | |
|---|---|
| **Nil** | Without connector |
| **1** | With connector/2-wire |
| **2** | With connector/4-wire |

**Connector lead wire length (mm)**

| | | | |
|---|---|---|---|
| **Nil** | 300 | **20** | 2000 |
| **6** | 600 | **25** | 2500 |
| **10** | 1000 | **30** | 3000 |
| **15** | 1500 | | |

JIS symbol






Blanking plate with a connector for individually outputting electricity to drive a single valve or equipment that are not on the manifold base.

∗ When "N" is suffixed to the end of the name plate, the plate will be different from a standard shape.

Note) Electric current should be 1A or less (including the mounted valves).

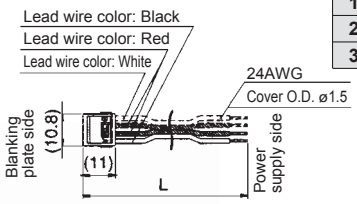
### Connector assembly part no.

**AXT661-43A-6**

| | |
|---|---|
| **43** | 4-wire |
| **44** | 2-wire |

**Lead wire length (mm)**

| | |
|---|---|
| **Nil** | 300 |
| **6** | 600 |
| **10** | 1000 |
| **20** | 2000 |
| **30** | 3000 |

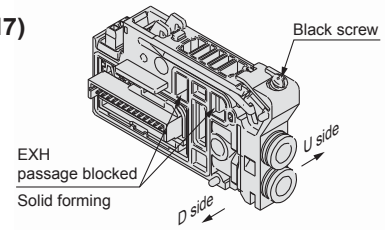


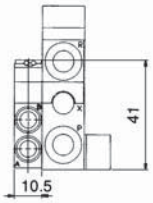

### EXH block base assembly

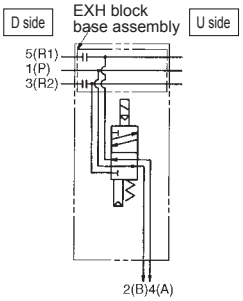
**VVQC1000-19A-□-(C3/C4/C6/M5/N1/N3/N7)**

**Wiring specifications**

| | |
|---|---|
| **S** | Single wiring |
| **D** | Double wiring |




The manifold block assembly is used between stations for which exhaust is desired to be divided when valve exhaust affects other stations due to the circuit configuration. The EXH passage on the D-side is blocked in the EXH block base assembly. It is also used in combination with an individual EXH spacer for individual exhaust.

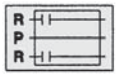
**<Block indication label>**

Indication labels to confirm the blocking position are attached (Each for EXH passage and SUP/EXH passage blocking positions).

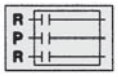
∗ When ordering this option incorporated with a manifold, a block indication label is attached to the manifold.

∗ Specify the mounting position by means of the manifold specification sheet.

∗ When ordering this option incorporated with a manifold, specify the EXH block base assembly part number with "∗" in front of it beneath the manifold part number.




**EXH passage blocked**




**SUP/EXH passage blocked**

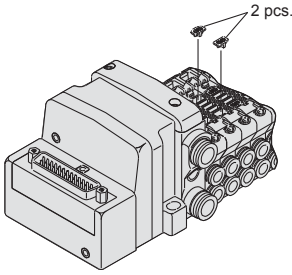
### Back pressure check valve assembly [-B]

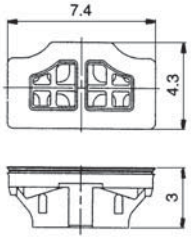
**VVQ1000-18A**

It prevents cylinder from malfunctioning by other valve's exhaust entry. Insert it into R (EXH) port on the manifold side of a valve which is affected. It is effective when a single-acting cylinder is used or an exhaust center type solenoid valve is used.

∗ When ordering it being mounted on all manifold stations, suffix "-B" to the end of the manifold part number.

Note) When a back pressure check valve is desired, and is to be installed only in certain manifold stations, clearly indicate the part number and specify the mounting station by means of the manifold specification sheet.




(Precautions)

1. The back pressure check valve assembly is the parts with a check valve structure. However, since the valve has slight air leakage, take precautions for the exhaust air not to be restricted at the exhaust port.
2. When a back pressure check valve is mounted, the effective area of the valve will decrease by about 20%.

### Name plate [-N]

**VVQ1000-$\frac{N}{NC}$-Station (1 to Max. stations)**

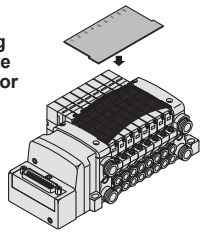
**N: Standard**
**NC: For mounting blanking plate with connector**

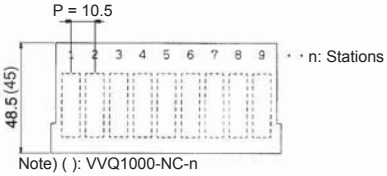
It is a transparent resin plate for placing a label that indicates solenoid valve function, etc.

Insert it into the groove on the side of the end plate and bend it as shown in the figure.

∗ When the blanking plate with connector is mounted, it automatically will be "VVQ1000-NC-n"

∗ When ordering this option incorporated with a manifold, suffix "-N" to the end of the manifold part number.



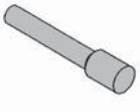


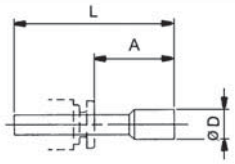

Note) ( ): VVQ1000-NC-n

### Blanking plug (For one-touch fittings)

**KQ2P-□**

It is inserted into an unused cylinder port and SUP/EXH ports. Purchasing order is available in units of 10 pieces.



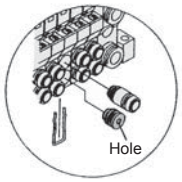


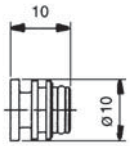

**Dimensions**

| Applicable fitting size ød | Model | A | L | D | Applicable fitting size ød | Model | A | L | D |
|---|---|---|---|---|---|---|---|---|---|
| 3.2 | **KQ2P-23** | 16 | 31.5 | 3.2 | 1/8" | **KQ2P-01** | 16 | 31.5 | 5 |
| 4 | **KQ2P-04** | 16 | 32 | 6 | 5/32" | **KQ2P-03** | 16 | 32 | 6 |
| 6 | **KQ2P-06** | 18 | 35 | 8 | 1/4" | **KQ2P-07** | 18 | 35 | 8.5 |
| 8 | **KQ2P-08** | 20.5 | 39 | 10 | 5/16" | **KQ2P-09** | 20.5 | 39 | 10 |

## Port plug
### VVQ0000-58A

The plug is used to block the cylinder port.
* When ordering this option incorporated with a manifold, indicate “CM” for the port size of the manifold part number, as well as, the mounting position and number of stations and cylinder port mounting positions, 4(A) and 2(B) by means of the manifold specification sheet.
* Gently screw an M3 screw in the port plug hole and pull it for removal.

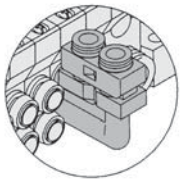


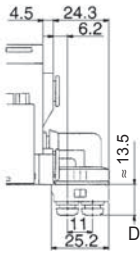



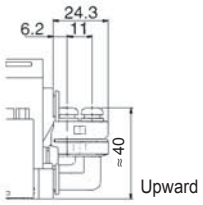

## Elbow fitting assembly
### VVQ1000-F-L(C3/C4/C6/M5/N1/N3/N7)

It is used for piping that extends upward or downward from the manifold.
* When ordering this option incorporated with a manifold, indicate “L□” or “B□” for the manifold port size (when installed in all stations.)

When installing it in part of the manifold stations, specify the elbow fitting assembly part number and the mounting position and number of stations by means of the manifold specification sheet.
* When mounting elbow fitting assembly on the edge of manifold station and a silencer on EXH port, select a silencer, AN203-KM8.
  A silencer (AN200-KM8) is interfered with fittings.



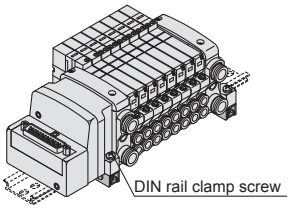


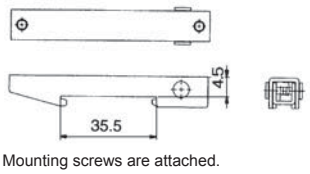




## DIN rail mounting bracket [-D]
### VVQ1000-57A
**{For F/L/M/P/S (EX500) kit}**
### VVQC1000-57A-S
**{For S (EX250) kit}**
### VVQC1000-57A-T (For T kit)

It is used for mounting a manifold on a DIN rail.
* When ordering this option incorporated with a manifold, suffix “-D” to the end of the manifold part number.

1 set of DIN rail mounting bracket is used for 1 manifold (2 DIN rail mounting brackets).

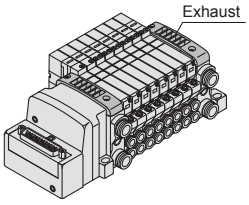



## Direct EXH outlet with built-in silencer [-S]

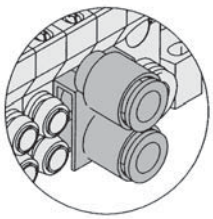
This is a type with an exhaust outlet atop the manifold end plate. The built-in silencer exhibits an excellent noise suppression effect. (Noise reduction: 30 dB)
* When ordering this option incorporated with a manifold, suffix “-S” to the end of the manifold part number.

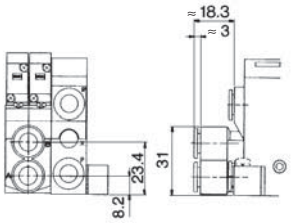
Note) A large quantity of drainage generated in the air source results in exhaust of air together with drainage.
● Refer to back page 5 for maintenance.




## Dual flow fitting assembly
### VVQ1000-52A-$^{C8}_{N9}$

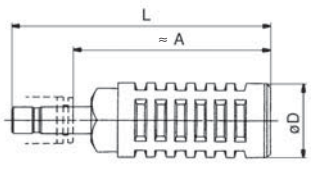
This is a fitting to multiply the flow rate by combining the outputs of 2-valve stations. It is used for driving a large bore cylinder. This is a one-touch fitting for a port size of ø8 or ø5/16”.
* The port size of the manifold part number is “CM”.
  Clearly indicate the dual flow fitting assembly part number and specify the mounting positions by means of the manifold specification sheet.
* In dual flow fitting assembly, a special clip which is combined in one-piece of 2 stations is attached as a holding clip.






## Silencer (For EXH port)

This silencer is to be inserted into the EXH port (one-touch fittings) of the common exhaust type.
* When mounting elbow fitting assembly (VVQ1000-F-L□) on the edge of manifold station, select a silencer, AN203-KM8. A silencer (AN200-KM8) is interfered with fittings.



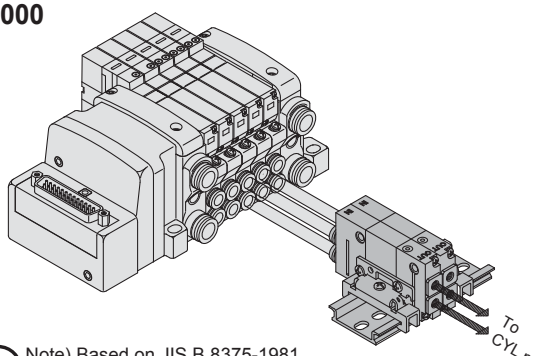

### Dimensions

| Series | Applicable fitting size ød | Model | A | L | D | Effective area (mm²) | Noise reduction (dB) |
|---|---|---|---|---|---|---|---|
| VQ1000 | 8 | AN200-KM8 | 59 | 78 | 22 | 20 | 30 |
| | | AN203-KM8 | 32 | 51 | 16 | 14 | 25* |

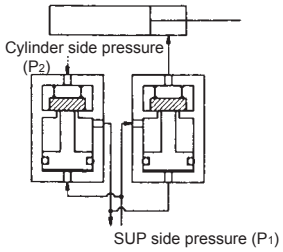
## VQC1000: Manifold Optional Parts

### Double check block (Separated) for VQC1000
### VQ1000-FPG-□□-□

It is used on the outlet side piping to keep the cylinder in the intermediate position for long periods of time. Combining the double check block with a built-in pilot type double check valve and a 3-position exhaust center solenoid valve will enable the cylinder to stop in the middle or maintain its position for a long time.
The combination with a 2-position single/double solenoid valve will permit this block to be used for preventing the dropping at the cylinder stroke end when the SUP residual pressure is released.




**<Circuit diagram>**




VVQ1000-FPG-02 1 set
∗ VQ1000-FPG-C6M5-D 2 pcs.

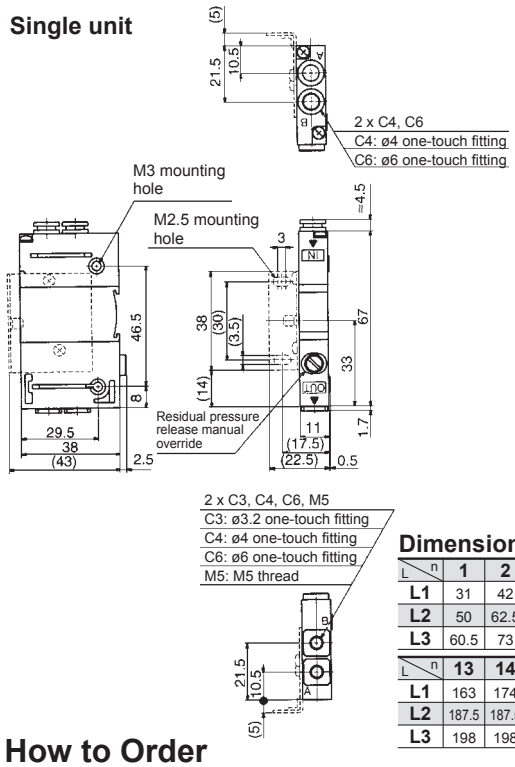
**Specifications**

| | |
|---|---|
| **Max. operating pressure** | 0.8 MPa |
| **Min. operating pressure** | 0.15 MPa |
| **Ambient and fluid temp.** | –5 to 50°C |
| **Flow characteristics: C** | 0.60 dm³/(s·bar) |
| **Max. operating frequency** | 180 c.p.m |

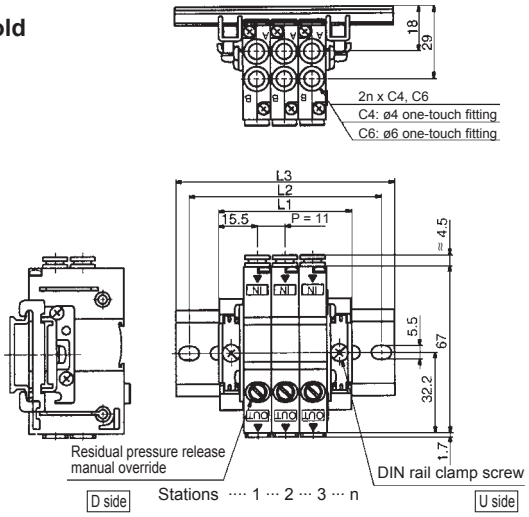
Note) Based on JIS B 8375-1981
(Supply pressure: 0.5 MPa)

## Dimensions

**Single unit**




**Manifold**



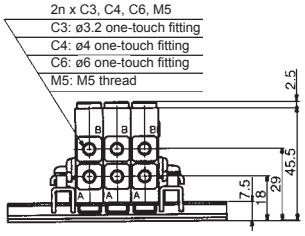




**Dimensions** Formula L1 = 11n + 20 n: Station (Maximum 24)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 31 | 42 | 53 | 64 | 75 | 86 | 97 | 108 | 119 | 130 | 141 | 152 |
| **L2** | 50 | 62.5 | 75 | 87.5 | 100 | 112.5 | 125 | 125 | 137.5 | 150 | 162.5 | 175 |
| **L3** | 60.5 | 73 | 85.5 | 98 | 110.5 | 123 | 135.5 | 135.5 | 148 | 160.5 | 173 | 185.5 |

| L \ n | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 163 | 174 | 185 | 196 | 207 | 218 | 229 | 240 | 251 | 262 | 273 | 284 |
| **L2** | 187.5 | 187.5 | 200 | 212.5 | 225 | 237.5 | 250 | 250 | 262.5 | 275 | 287.5 | 300 |
| **L3** | 198 | 198 | 210.5 | 223 | 235.5 | 248 | 260.5 | 260.5 | 273 | 285.5 | 298 | 310.5 |




## How to Order

### Double check block

**VQ1000-FPG- C4 M5 – F**

**IN side port size**

| | |
|---|---|
| **M5** | M5 thread |
| **C3** | ø3.2 one-touch fitting |
| **C4** | ø4 one-touch fitting |
| **C6** | ø6 one-touch fitting |
| **N3** | ø5/32" one-touch fitting |
| **N7** | ø1/4" one-touch fitting |

**OUT side port size**

| | |
|---|---|
| **M5** | M5 thread |
| **C3** | ø3.2 one-touch fitting |
| **C4** | ø4 one-touch fitting |
| **C6** | ø6 one-touch fitting |
| **N3** | ø5/32" one-touch fitting |
| **N7** | ø1/4" one-touch fitting |

**Option**

| | |
|---|---|
| **Nil** | None |
| **F** | With bracket |
| **D** | DIN rail mounting (For manifold) |
| **N** | Name plate |

Note) When two or more symbols are specified, indicate them alphabetically. Example) -DN

### Manifold (DIN rail mounting)

**VVQ1000-FPG- 06**

**Stations**

| | |
|---|---|
| **01** | 1 station |
| ⋮ | ⋮ |
| **16** | 16 stations |

When ordering a double check block, order the DIN rail mounting [-D].

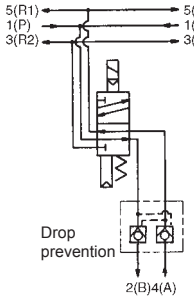
**<Ordering example>**
**VVQ1000-FPG-06···6-station manifold**
**∗VQ1000-FPG-C4M5-D, 3 sets**
**∗VQ1000-FPG-C6M5-D, 3 sets**
**Double check block**

**Bracket Assembly**

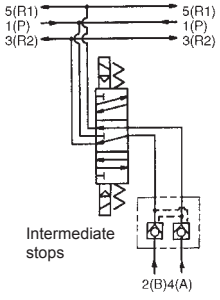
| Part no. | Tightening torque |
|---|---|
| **VQ1000-FPG-FB** | 0.22 to 0.25 N·m |

**<Example>**

**2-position**




**3-position exhaust center**




### ⚠ Caution

- Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping for long periods of time. Check the leakage using neutral household detergent, such as dish washing soap. Also, check the cylinder's tube gasket, piston packing and rod packing for air leakage.
- Since one-touch fittings allow slight air leakage, screw piping (with M5 thread) is recommended when stopping the cylinder in the middle for long periods of time.
- Combining double check block with 3-position closed center or pressure center solenoid valve will not work.
- M5 fitting assembly is attached, not incorporated into the double check block. After screwing in the M5 fittings, mount the assembly on the double check block. {Tightening torque: 0.8 to 1.2 N·m}
- If the exhaust of the double check block is restricted too much, the cylinder may not operate properly and may not stop intermediately.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.

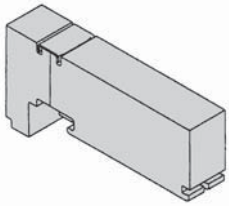
# VQC2000: Manifold Optional Parts

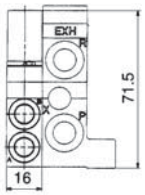
## Blanking plate assembly
**VVQ2000-10A-1**

**JIS symbol**



It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.

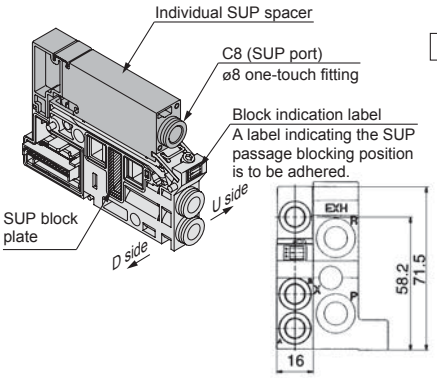


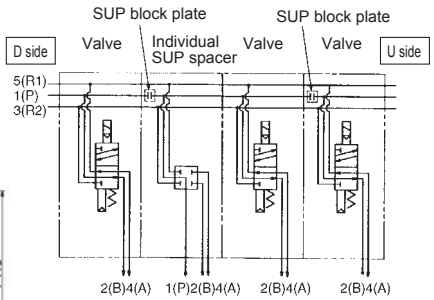



## Individual SUP spacer
**VVQ2000-P-1-$^{C8}_{N9}$**

When the same manifold is to be used for different pressures, individual SUP spacers are used as SUP ports for different pressures. (One station space is occupied.)
Block both sides of the station, for which the supply pressure from the individual SUP spacer is used, with SUP block plates. (Refer to the application example.)

- Specify the spacer mounting position and SUP passage blocking position by means of the manifold specification sheet. The block plate is used in one or two places for one set. (Two SUP block plates for blocking SUP passage are attached to the individual SUP spacer.)
- As a standard, electric wiring is connected to the position of the manifold station where the individual SUP spacer is mounted.
- If wiring is not required for stations equipped with spacers, enter "X" in the special wiring specifications column in the manifold specification sheet.

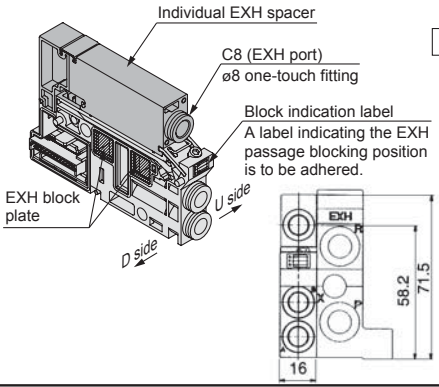


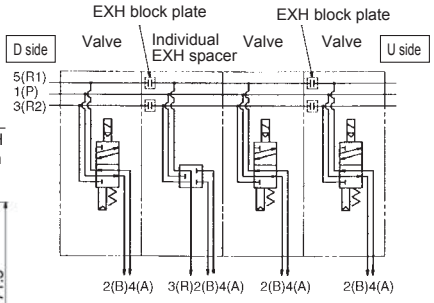




## Individual EXH spacer
**VVQ2000-R-1-$^{C8}_{N9}$**

When valve exhaust affects other stations due to the circuit configuration, this spacer is used for individual valve exhaust. (One station space is occupied.)
Block both sides of the individual valve EXH station. (Refer to the application example.)

- Specify the spacer mounting position, as well as the EXH passage blocking position by means of the manifold specification sheet. The block plate is used in one or two places for one set. (Four EXH block plates (2 sets) for blocking EXH passage are attached to the individual EXH spacer.)
- As a standard, electric wiring is connected to the position of the manifold station where the individual EXH spacer is mounted.
- If wiring is not required for stations equipped with spacers, enter "X" in the special wiring specifications column in the manifold specification sheet.

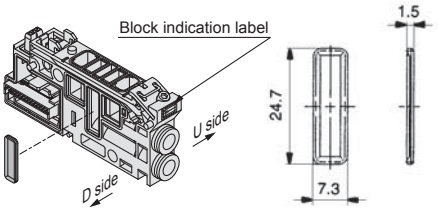


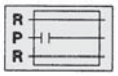

## SUP block plate
**VVQ2000-16A**

When different pressures are supplied to a manifold, a SUP block plate is used to block the stations under different pressures.

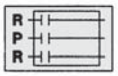
- Specify the mounting position by means of the manifold specification sheet.




**<Block indication label>**
Indication labels to confirm the blocking position are attached. (Each for SUP passage and SUP/EXH passage blocking positions)




**SUP passage blocked**



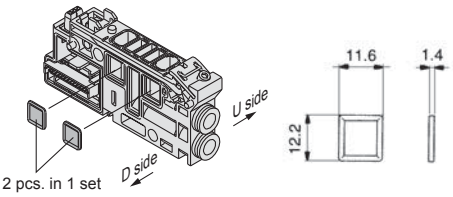

**SUP/EXH passage blocked**

- When ordering a block plate incorporated with a manifold, a block indication label is attached to the manifold.

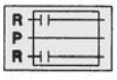
## EXH block plate
**VVQ2000-19A**

The EXH block plate is used between stations for which exhaust is desired to be divided when valve exhaust affects other stations configuration. It is also used in combination with an individual EXH spacer for individual exhaust.

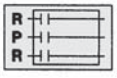
- Specify the mounting position by means of the manifold specification sheet.




**<Block indication label>**
Indication labels to confirm the blocking position are attached. (Each for EXH passage and SUP/EXH passage blocking positions)




**EXH passage blocked**




**SUP/EXH passage blocked**

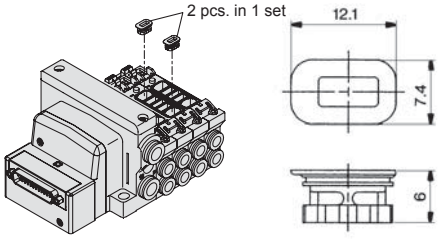
- When ordering a block plate incorporated with a manifold, a block indication label is attached to the manifold.

## Back pressure check valve assembly [-B]
**VVQ2000-18A**

It prevents cylinder malfunction caused by other valve exhaust entry. Insert it into R (EXH) port on the manifold side of a valve which is affected.
It is effective when a single-acting cylinder is used or an exhaust center type solenoid valve is used.

- When ordering this option incorporated with a manifold, suffix "-B" to the end of the manifold part number.

Note) When a back pressure check valve is desired, and is to be installed only in certain manifold stations, clearly indicate the part number and specify the mounting position by means of the manifold specification sheet.



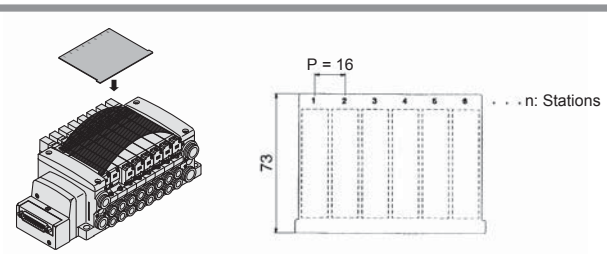

<Precautions>

1. The back pressure check valve assembly is assembly parts with a check valve structure. However, since the valve has sight air leakage, take precautions for the exhaust air not to be restricted at the exhaust port.
2. When a back pressure check valve is mounted, the effective area of the valve will decrease by about 20%.

## VQC2000: Manifold Optional Parts

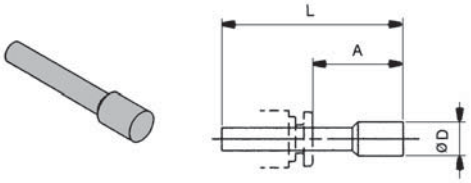
### Name plate [-N]
### VVQ2000-N-Station (1 to Max. stations)

It is a transparent resin plate for placing a label that indicates solenoid valve function, etc.
Insert it into the groove on the side of the end plate and bend it as shown in the figure.
* When ordering this option incorporated with a manifold, suffix "-N" to the end of the manifold part number.




### Blanking plug (For one-touch fittings)
### KQ2P-□

It is inserted into an unused cylinder port and SUP/EXH ports.
Purchasing order is available in units of 10 pieces.

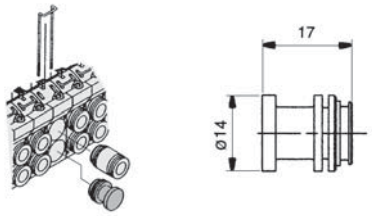



**Dimensions**

| Applicable fitting size **ød** | Model | A | L | D |
|---|---|---|---|---|
| 4 | **KQ2P-04** | 16 | 32 | 6 |
| 6 | **KQ2P-06** | 18 | 35 | 8 |
| 8 | **KQ2P-08** | 20.5 | 39 | 10 |
| 10 | **KQ2P-10** | 22 | 43 | 12 |
| 5/32" | **KQ2P-03** | 16 | 32 | 6 |
| 1/4" | **KQ2P-07** | 18 | 35 | 8.5 |
| 5/16" | **KQ2P-09** | 20.5 | 39 | 10 |
| 3/8" | **KQ2P-11** | 22 | 43 | 11.5 |

### Port plug
### VVQ1000-58A

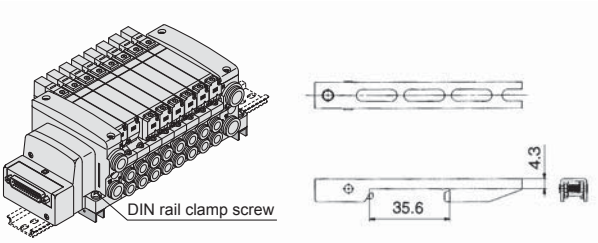
The plug is used to block the cylinder port.
* When ordering this option incorporated with a manifold, indicate "CM" for the port size of the manifold part number, as well as, the mounting station and cylinder port mounting positions, A and B, by means of the manifold specification sheet.




### DIN rail mounting bracket [-D]
### VVQC2000-57A
**{For F/L/M/P/S (EX500) kit}**
### VVQC2000-57A-S
**{For S (EX250) kit}**
### VVQC2000-57A-T (For T kit)

It is used for mounting a manifold on a DIN rail.
* When ordering this option incorporated with a manifold, suffix "-D" to the end of the manifold part number.

1 set of DIN rail mounting bracket is used for 1 manifold (2 DIN rail mounting brackets).

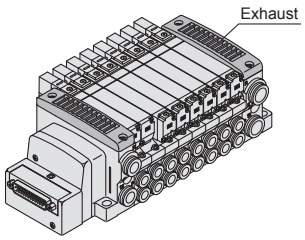



### Direct EXH outlet with built-in silencer [-S]

This is a type with an exhaust outlet atop the manifold end plate. The built-in silencer exhibits an excellent noise suppression effect. (Noise reduction: 30 dB)
* When ordering this option incorporated with a manifold, suffix "-S" to the end of the manifold part number.

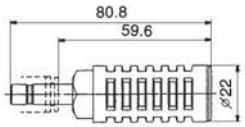
Note) A large quantity of drainage generated in the air source results in exhaust of air together with drainage.

● Refer to back page 5 for maintenance.




### Silencer (For EXH port)

This silencer is to be inserted into the EXH port (one-touch fittings).



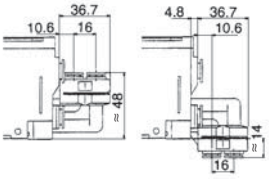

**Dimensions**

| Series | Applicable fitting size **ød** | Model | A | L | D | Effective area (mm²) (Cv factor) | Noise reduction (dB) |
|---|---|---|---|---|---|---|---|
| **VQ2000** | 10 | AN200-KM10 | 59.6 | 80.8 | 22 | 26 (1.4) | 30 |

### Elbow fitting assembly
### VVQ2000-F-L(C4/C6/C8/N3/N7/N9)

It is used for piping that extends upward or downward from the manifold.
When installing it only in some manifold stations, specify the elbow fitting assembly part number and the mounting position by means of the manifold specification sheet.

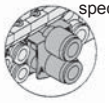


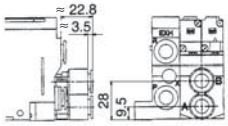



### Dual flow fitting assembly
### VVQ2000-52A-$^{C10}_{N11}$

This is a fitting to multiply the flow rate by combining the outputs of 2-valve stations. It is used for driving a large bore cylinder. This is a one-touch fitting for a port size of ø10 or ø3/8".

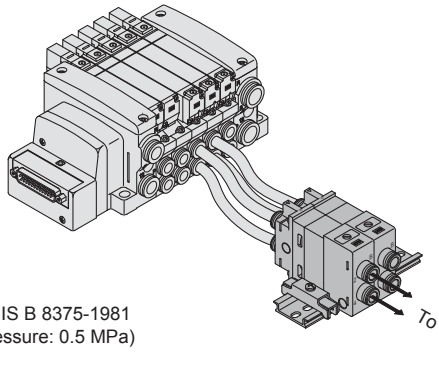
* The port size of the manifold part number is "CM". Clearly indicate the dual flow fitting assembly part number and specify the mounting position by means of the manifold specifications.



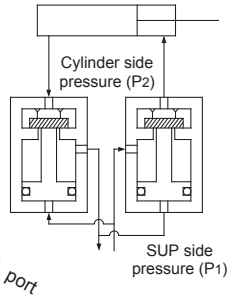


### Double check block (Separated) for VQC2000
### VQ2000-FPG-□□-□

It is mounted on the outlet side piping to keep the cylinder in the intermediate position for long periods of time. Combining with a 3-position exhaust center solenoid valve will enable the cylinder to stop in the middle or maintain its position for a long time. Combining with a 2-position single/double solenoid valve will prevent a cylinder from dropping at the stroke end when the residual pressure of SUP is released.




<Circuit diagram>



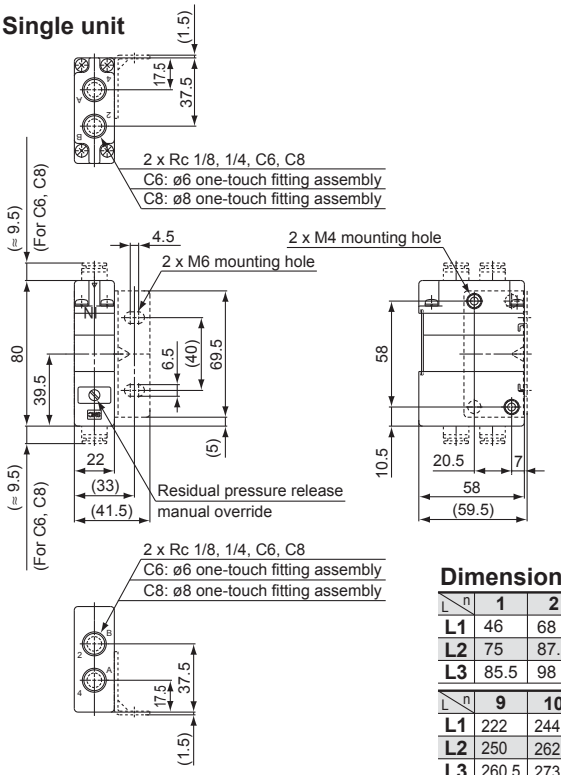

#### Specifications

| | |
|---|---|
| **Max. operating pressure** | 0.8 MPa |
| **Min. operating pressure** | 0.15 MPa |
| **Ambient and fluid temp.** | –5 to 50°C |
| **Flow characteristics: C** | 3.0 dm³/(s·bar) |
| **Max. operating frequency** | 180 c.p.m |

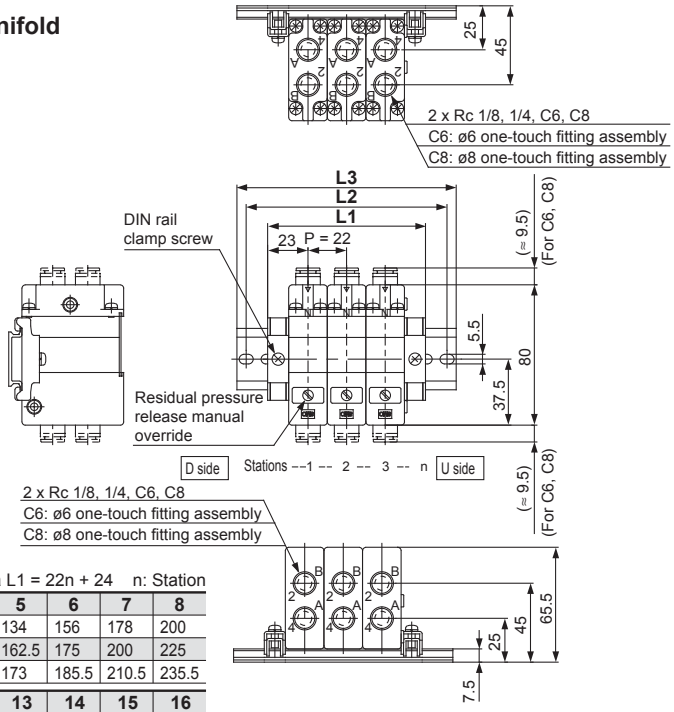
Note) Based on JIS B 8375-1981
(Supply pressure: 0.5 MPa)

## Dimensions

### Single unit




### Manifold




#### Dimensions

Formula L1 = 22n + 24 n: Station

| n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| **L1** | 46 | 68 | 90 | 112 | 134 | 156 | 178 | 200 |
| **L2** | 75 | 87.5 | 112.5 | 137.5 | 162.5 | 175 | 200 | 225 |
| **L3** | 85.5 | 98 | 123 | 148 | 173 | 185.5 | 210.5 | 235.5 |

| n | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|
| **L1** | 222 | 244 | 266 | 288 | 310 | 332 | 354 | 376 |
| **L2** | 250 | 262.5 | 287.5 | 312.5 | 337.5 | 362.5 | 375 | 400 |
| **L3** | 260.5 | 273 | 298 | 323 | 348 | 373 | 385.5 | 410.5 |

## How to Order

### Double check block

**VQ2000-FPG- 01 01 - F**

**IN side port size**

| | |
|---|---|
| **01** | Rc 1/8 |
| **02** | Rc 1/4 |
| **C6** | ø6 one-touch fitting |
| **C8** | ø8 one-touch fitting |
| **N7** | ø1/4" one-touch fitting |
| **N9** | ø5/16" one-touch fitting |

**OUT side port size**

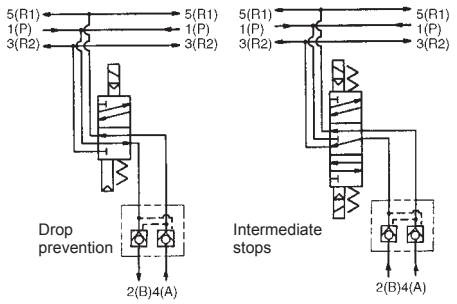
| | |
|---|---|
| **01** | Rc 1/8 |
| **02** | Rc 1/4 |
| **C6** | ø6 one-touch fitting |
| **C8** | ø8 one-touch fitting |
| **N7** | ø1/4" one-touch fitting |
| **N9** | ø5/16" one-touch fitting |

**Option**

| | |
|---|---|
| **Nil** | None |
| **D** | DIN rail mounting (For manifold) |
| **F** | With bracket |
| **N** | Name plate |

Note) When two or more symbols are specified, indicate them alphabetically.
Example) -DN

<Example>




### Manifold (DIN rail mounting)
### VVQ2000-FPG- 06

**Stations**

| | |
|---|---|
| **01** | 1 station |
| ⋮ | ⋮ |
| **16** | 16 stations |

When ordering a double check block, order the DIN rail mounting [-D].

**<Ordering example>**
**VVQ2000-FPG-06···6-station manifold**

- ∗**VQ2000-FPG-C6C6-D, 3set**
- ∗**VQ2000-FPG-C8C8-D, 3set**

**Double check block**

#### Bracket Assembly

| Part no. | Tightening torque |
|---|---|
| **VQ2000-FPG-FB** | 0.8 to 1.0 N·m |

## ⚠ Caution

- Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping for long periods of time. Check the leakage using neutral household detergent, such as dish washing soap. Also, check the cylinder's tube gasket, piston packing and rod packing for air leakage.
- Since one-touch fittings allow slight air leakage, screw piping is recommended when stopping the cylinder in the middle for long periods of time.
- Combining double check block with 3-position closed center or pressure center solenoid valve will not work.
- When fittings, etc. are being screwed to the double check block, tighten them with the torque below.

| Connection thread | Proper tightening torque (N·m) |
|---|---|
| Rc 1/8 | 7 to 9 |
| Rc 1/4 | 12 to 14 |

- If the exhaust of the double check block is restricted too much, the cylinder may not operate properly and may not stop intermediately.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.

# Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of **"Caution," "Warning"** or **"Danger."** They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC), Japan Industrial Standards (JIS)*1) and other safety regulations*2).

*1) ISO 4414: Pneumatic fluid power – General rules relating to systems.
ISO 4413: Hydraulic fluid power – General rules relating to systems.
IEC 60204-1: Safety of machinery – Electrical equipment of machines. (Part 1: General requirements)
ISO 10218-1992: Manipulating industrial robots - Safety.
JIS B 8370: General rules for pneumatic equipment.
JIS B 8361: General rules for hydraulic equipment.
JIS B 9960-1: Safety of machinery – Electrical equipment of machines. (Part 1: General requirements)
JIS B 8433-1993: Manipulating industrial robots – Safety.
etc.
*2) Labor Safety and Sanitation Law, etc.

**⚠ Caution:** **Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

**⚠ Warning:** **Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

**⚠ Danger :** **Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

## ⚠ Warning

1. **The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.**
   Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.
2. **Only personnel with appropriate training should operate machinery and equipment.**
   The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.
3. **Do not service or attempt to remove product and machinery/equipment until safety is confirmed.**
   1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
   2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
   3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.
4. **Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.**
   1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
   2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalog.
   3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
   4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

# Safety Instructions

## ⚠ Caution

**1. The product is provided for use in manufacturing industries.**

The product herein described is basically provided for peaceful use in manufacturing industries.

If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.

If anything is unclear, contact your nearest sales branch.

# Limited warranty and Disclaimer/Compliance Requirements

The product used is subject to the following “Limited warranty and Disclaimer” and “Compliance Requirements”.

Read and accept them before using the product.

## Limited warranty and Disclaimer

1. **The warranty period of the product is 1 year in service or 1.5 years after the product is delivered.**[*3)]

   **Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.**
2. **For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.**

   **This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.**
3. **Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalog for the particular products.**

***3) Vacuum pads are excluded from this 1 year warranty.**

A vacuum pad is a consumable part, so it is warranted for a year after it is delivered.

Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

## Compliance Requirements

**When the product is exported, strictly follow the laws required by the Ministry of Economy, Trade and Industry (Foreign Exchange and Foreign Trade Control Law).**

# *Series VQC1000/2000*
# Specific Product Precautions 1

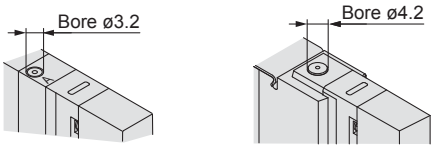
**Be sure to read before handling.**
**Refer to back pages 1 and 2 for Safety Instructions and Handling Precautions for SMC Products (M-E03-3) for 3/4/5 Port Solenoid Valves Precautions.**

## Manual Override

### ⚠Warning

**Connected actuator is started by manual operation. Use the manual override after confirming that there is no danger. Push type is standard. (Tool required) Locking type is semi-standard. (Tool required)**

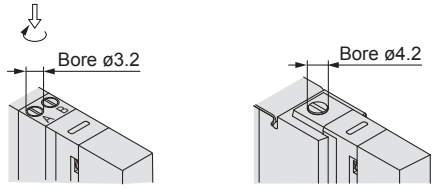
**Non-locking push type (Tool required)**




**VQC1000** **VQC2000**

Push down on the manual override with a small screwdriver until it stops. Release the screwdriver and the manual override will return.

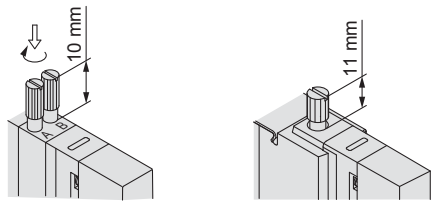
**Locking type (Tool required) <Semi-standard>**




**VQC1000** **VQC2000**

Push down on the manual override with a small flat head screwdriver until it stops. Turn it clockwise by 90° to lock it. Turn it counterclockwise to release it.

**Locking type (Manual) <Semi-standard>**




**VQC1000** **VQC2000**

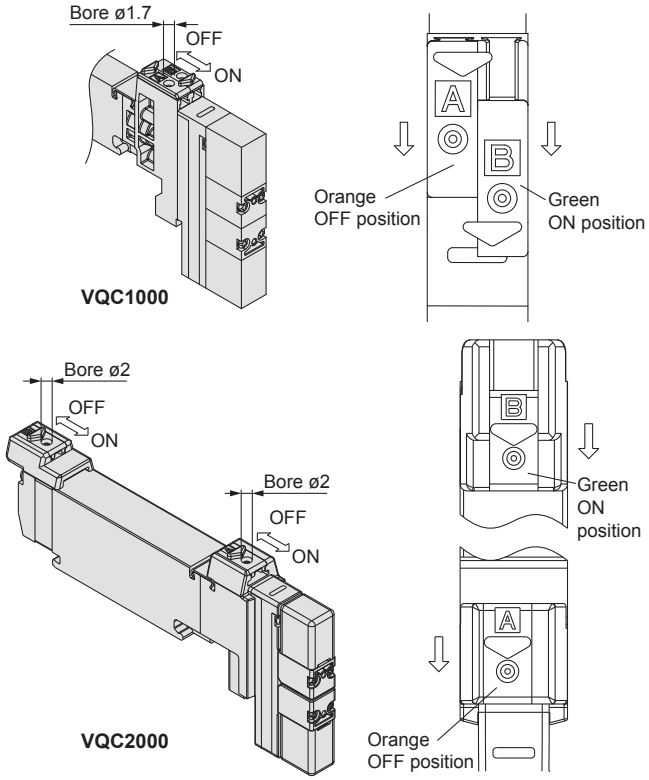
Push down on the manual override with a small screwdriver or with your fingers until it stops. Turn it clockwise by 90° to lock it. Turn it counterclockwise to release it.

### ⚠Caution

**Do not apply excessive torque when turning the locking type manual override. (0.1 N·m or less)**

### ⚠Warning

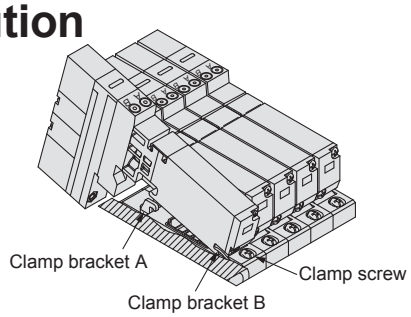
**Slide locking type (Manual) <Semi-standard>**




The manual override is locked by sliding it all the way to the pilot valve side (ON side) with a small flat head screwdriver or with your fingers. Slide it to the fitting side (OFF side) to release it. In addition, it can also be used as a push type by using a screwdriver, etc., of ø1.7 or less. (ø2 or less for VQC2000)

## How to Mount/Remove Solenoid Valves

### ⚠Caution




**Removing**

1. Loosen the clamp screw until it turns freely. (The screw is captive.)
2. Lift the coil side of the valve body while pressing down slightly on the screw head and remove it from the clamp bracket B. When the screw head cannot be pressed easily, gently press the area near the manual override of the valve.

**Mounting**

1. Press down on the clamp screw. Clamp bracket A opens. Diagonally insert the hook on the valve end plate side into clamp B.
2. Press the valve body downward. (When the screw is released, it will be locked by clamp bracket A.)
3. Tighten the clamp screw. (Proper tightening torque: VQC1000, 0.25 to 0.35 N·m; VQC2000, 0.5 to 0.7 N·m)

**⚠Caution**

Dust on the sealing surface of the gasket or solenoid valve can cause air leakage.

Back page 3

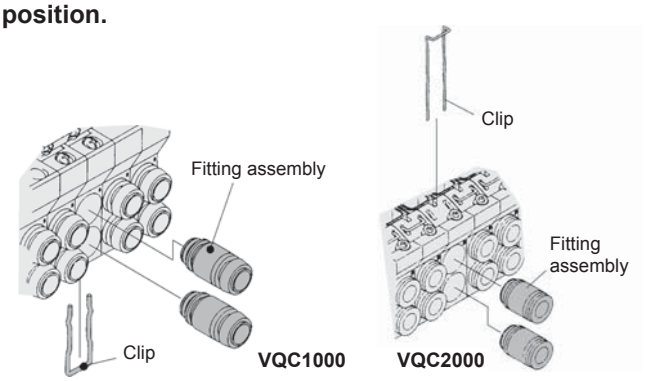
# Series VQC1000/2000
# Specific Product Precautions 2

**Be sure to read before handling.**
**Refer to back pages 1 and 2 for Safety Instructions and Handling Precautions for SMC Products (M-E03-3) for 3/4/5 Port Solenoid Valves Precautions.**

## Cylinder Port Fittings Replacement

### ⚠ Caution

**One-touch fittings on the cylinder port are a cassette for easy replacement. The fittings are blocked by a clip. After removing the corresponding valve and take out the clip with a flat head screwdriver, etc., then replace the fittings.**
**For mounting, insert the fitting until it strikes against the inside wall and then insert the clip to the specified position.**




| Applicable tubing O.D. | Fitting assembly part no. | |
|---|---|---|
| | **VQC1000** | **VQC2000** |
| Applicable tubing ø3.2 | VVQ1000-50A-C3 | —— |
| Applicable tubing ø4 | VVQ1000-50A-C4 | VVQ1000-51A-C4 |
| Applicable tubing ø6 | VVQ1000-50A-C6 | VVQ1000-51A-C6 |
| Applicable tubing ø8 | —— | VVQ1000-51A-C8 |
| M5 | VVQ1000-50A-M5 | —— |
| Applicable tubing ø1/8" | VVQ1000-50A-N1 | —— |
| Applicable tubing ø5/32" | VVQ1000-50A-N3 | VVQ1000-51A-N3 |
| Applicable tubing ø1/4" | VVQ1000-50A-N7 | VVQ1000-51A-N7 |
| Applicable tubing ø5/16" | —— | VVQ1000-51A-N9 |

∗ Refer to “Manifold Optional Parts” on pages 42 and 45 for other types of fittings.

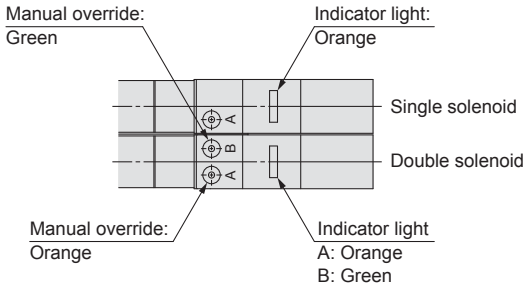
**⚠ Caution**

1) Use caution that O-rings must be free from scratches and dust. Otherwise, air leakage may result.
2) After screwing in the fittings, mount the M5 fitting assembly on the manifold base. (Tightening torque: 0.8 to 1.2 N·m)
3) Purchasing order is available in units of 10 pieces.

## Light/Surge Voltage Suppressor

### ⚠ Caution

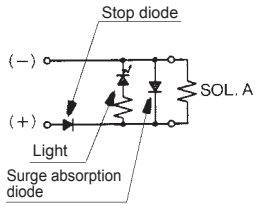
**The lighting positions are concentrated on one side for both single solenoid type and double solenoid type. In the double solenoid type, A side and B side energization are indicated by two colors which match the colors of the manual overrides.**



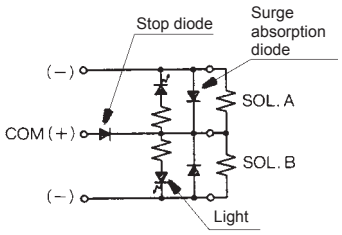

(Drawing shows a VQC1000 case.)

**DC circuit diagram**

**Single solenoid**




**Double solenoid**




Note) A-side energization:
A light (Orange) illuminates.
B-side energization:
B light (Green) illuminates.

With wrong wiring prevention (stop diode) mechanism
With a surge absorption (surge absorption diode) mechanism

# Series VQC1000/2000
# Specific Product Precautions 3

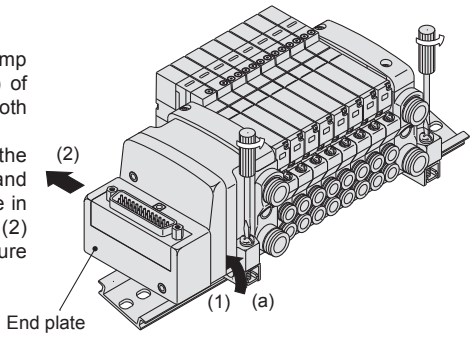
**Be sure to read before handling.**
**Refer to back pages 1 and 2 for Safety Instructions and Handling Precautions for SMC Products (M-E03-3) for 3/4/5 Port Solenoid Valves Precautions.**

## How to Mount/Remove DIN Rail

### ⚠Caution

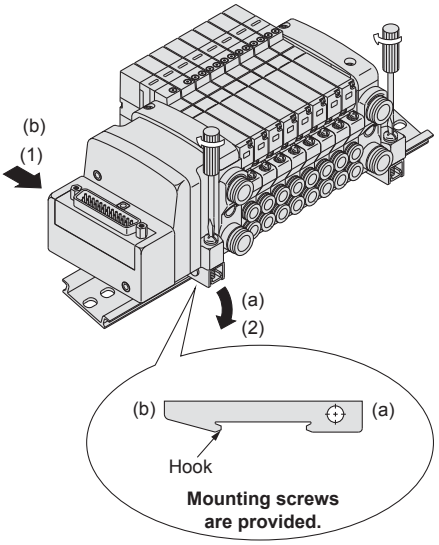
**Removing**

1. Loosen the clamp screw on side (a) of the end plate on both sides.
2. Lift side (a) of the manifold base and slide the end plate in the direction of (2) shown in the figure to remove.




**Mounting**

1. Hook side (b) of the manifold base on the DIN rail.
2. Press down side (a) and mount the end plate on the DIN rail. Tighten the clamp screw on side (a) of the end plate. The proper tightening torque for screws is 0.4 to 0.6 N·m.




## IP67 Enclosure

### ⚠Caution

Wiring connection for models conforming to IP67 should also have enclosures equivalent to or of stricter than IP67.

## Built-in Silencer Element

### ⚠Caution

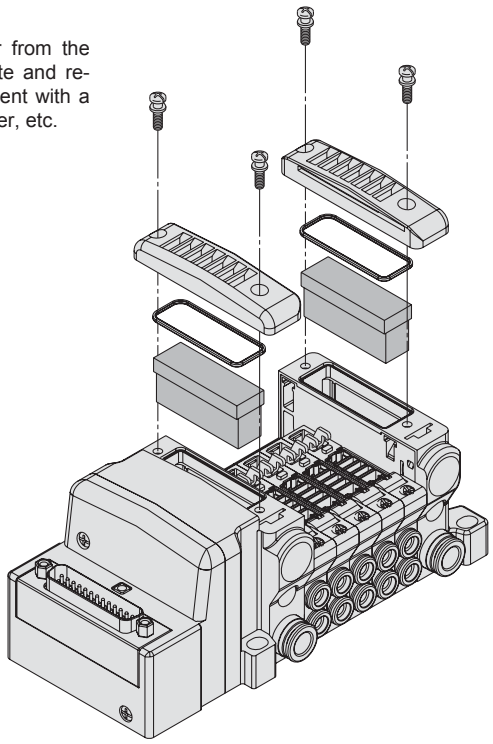
A filter element is incorporated in the end plate on both sides of the manifold base. A dirty and choked element may reduce cylinder speed or cause malfunction. Clean or replace the dirty element.

**Element Part No.**

| Type | Element part no. | |
|---|---|---|
| | **VQC1000** | **VQC2000** |
| Direct EXH outlet with built-in silencer | VVQ1000-82A-1 | VVQ2000-82A-1 |

The minimum order quantity is 10 pcs.

Remove the cover from the top of the end plate and remove the old element with a flat head screwdriver, etc.



## How to Calculate Flow Rate

Refer to Best Pneumatics No. ① for obtaining the flow rate.

# Series VQC1000/2000
# Specific Product Precautions 4

**Be sure to read before handling.**
**Refer to back pages 1 and 2 for Safety Instructions and Handling Precautions for SMC Products (M-E03-3) for 3/4/5 Port Solenoid Valves Precautions.**

## EX500/EX250/EX126 Precautions

## ⚠Warning

1. **These products are intended for use in general factory automation equipment.**
   Avoid using these products in machinery/equipment which affects human safety, and in cases where malfunction or failure can result in extensive damage.
2. **Do not use in explosive environments, in the presence of inflammable gases, or in corrosive environments. This can cause injury or fire.**
3. **Work such as transporting, installing, piping, wiring, operation, control and maintenance should be performed by knowledgeable and qualified personnel only. As handling involves the risk of a danger of electrocution, injury or fire.**
4. **Install an external emergency stop circuit that can promptly stop operation and shut off the power supply.**
5. **Do not modify these products. Modifications done to these products carry the risk of injury and damage.**

## ⚠Caution

1. **Read the instruction manual carefully, strictly observe the precautions and operate within the range of the specifications.**
2. **Do not drop these products or submit them to strong impacts. This can cause damage, failure or malfunction.**
3. **In locations with poor electrical conditions, take steps to ensure a steady flow of the rated power supply. Use of a voltage outside of the specifications can cause malfunction, damage to the unit, electrocution or fire.**
4. **Do not touch connector terminals or internal circuit elements when current is being supplied. There is a danger of malfunction, damage to the unit or electrocution if connector terminals or internal circuit elements are touched when current is being supplied.**
   Be sure that the power supply is OFF when adding or removing manifold valves or input blocks or when connecting or disconnecting connectors.
5. **Operate at an ambient temperature that is within the specifications. Even when the ambient temperature range is within the specifications, do not use in locations where there are rapid temperature changes.**
6. **Keep wire scraps and other extraneous materials from getting inside these products. This can cause fire, failure or malfunction.**
7. **Give consideration to the operating environment depending on the type of enclosure being used.**
   To achieve IP65 and IP67 protection class, provide appropriate wiring between all units using electrical wiring cables, communication connectors and cables with M12 connectors. Also, provide waterproof caps when there are unused ports, and perform proper mounting of input units, input blocks, SI units and manifold valves. Provide a cover or other protection for applications in which there is constant exposure to water.
8. **Use the proper tightening torques.**
   There is a possibility of damaging threads if tightening exceeds the tightening torque range.
9. **Provide adequate protection when operating in locations such as follows:**
   - Where noise is generated by static electricity
   - Where there is a strong electric field
   - Where there is a danger of exposure to radiation
   - When in close proximity to power supply lines

## ⚠Caution

10. **When these products are installed in equipment, provide adequate protection against noise by using noise filters.**
11. **Since these products are components whose end usage is obtained after installation in other equipment, the customer should confirm conformity to EMC directives for the finished product.**
12. **Do not remove the name plate.**
13. **Perform periodic inspections and confirm normal operation, otherwise it may be impossible to guarantee safety due to unexpected malfunction or erroneous operation.**

## Safety Instructions on Power Supply

## ⚠Caution

1. **Operation is possible with a single power supply or a separate power supply. However, be sure to provide two wiring systems (one for solenoid valves, and one for input and control units).**
2. **Use the UL-certified products below for combined direct current power supply.**
   (1) Circuit in which voltage and current are controlled in accordance with UL508
   Circuit which makes the winding wire in the secondary side of the insulation transformer (which meets the following conditions) to be as the power supply
   - Maximum voltage (with no load):
     30 Vrms (42.4 V at peak) or less
   - Maximum current:
     1. 8 A or less (including short-circuited)
     2. and in case of being controlled by circuit protection devices (fuse, etc) which meets the below rated voltages.

| Voltage with no load (V peak) | Maximum rated current |
|---|---|
| 0 to 20 (V) | 5.0 |
| Exceeding 20 (V) up to 30 (V) | $\frac{100}{\text{Voltage figure at peak}}$ |

   (2) Class 2 power supply unit in accordance with UL1310 or circuit (Class 2 circuit) in accordance with UL1585, that is powered by Class 2 transformer with the maximum of 30 Vrms (42.4 V at peak)

## Safety Instructions on Cable

## ⚠Caution

1. **Avoid miswiring, as this can cause malfunction, damage and fire in the unit.**
2. **To prevent noise and surge in signal lines, keep all wiring separate from power lines and high-voltage lines. Otherwise, this can cause malfunction.**
3. **Check wiring insulation, as defective insulation can cause damage to the unit when excessive voltage or current is applied.**
4. **Do not bend or pull cables repeatedly, and do not place heavy objects on them or allow them to be pinched. This can cause broken lines.**

# Series VQC1000/2000
# Specific Product Precautions 5

**Be sure to read before handling.**
**Refer to back pages 1 and 2 for Safety Instructions and Handling Precautions for SMC Products (M-E03-3) for 3/4/5 Port Solenoid Valves Precautions.**

## EX600 Precautions

### Design/Selection

## ⚠Warning

**1. Use this product within the specification range.**
Using beyond the specified specifications range can cause fire, malfunction, or damage to the system.
Confirm the specifications when operating.

**2. When using for an interlock circuit:**
- **Provide a multiple interlock system which is operated by another system (such as mechanical protection function).**
- **Perform an inspection to check that it is working properly.**

This may cause possible injury due to malfunction.

## ⚠Caution

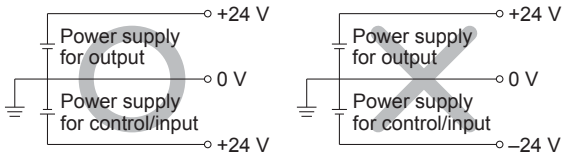
**1. Use the UL-certified products below for combined direct current power supply.**
(1) Circuit in which voltage and current are controlled in accordance with UL508
Circuit which makes the winding wire in the secondary side of the insulation transformer (which meets the following conditions) to be as the power supply
- Maximum voltage (with no load):
  30 Vrms (42.4 V at peak) or less
- Maximum current:
  1. 8 A or less (including short-circuited)
  2. and in case of being controlled by circuit protection devices (fuse, etc) which meets the below rated voltages.

| Voltage with no load (V peak) | Maximum rated current |
|---|---|
| 0 to 20 (V) | 5.0 |
| Exceeding 20 (V) up to 30 (V) | $\frac{100}{\text{Voltage figure at peak}}$ |

(2) Class 2 power supply unit in accordance with UL1310 or circuit (Class 2 circuit) in accordance with UL1585, that is powered by Class 2 transformer with the maximum of 30 Vrms (42.4 V at peak)

**2. Use this product within the specified voltage range.**
Using beyond the specified voltage range is likely to cause the units and connecting devices to be damaged or to malfunction.

**3. The power supply for the unit should be 0 V as the standard for both power supply for output as well as power supply for control/input.**




**4. Do not install a unit in a place where it can be used as a foothold.**
Applying any excessive load such as stepping on the unit by mistake or placing a foot on it, will cause it to break.

**5. Keep the surrounding space free for maintenance.**
When designing a system, take into consideration the amount of free space needed for performing maintenance.

**6. Do not remove the name plate.**
Improper maintenance or incorrect use of instruction manual can cause failure and malfunction. Also, there is a risk of losing conformity with safety standards.

**7. Beware of inrush current when the power supply is turned on.**
Some connected loads can apply an initial charge current which will trigger the over current protection function, causing the unit to malfunction.

### Mounting

## ⚠Caution

**1. When handling and assembling units:**
- **Do not touch the sharp metal parts of the connector or plug.**
- **Do not apply excessive force to the unit.**
  The connecting portions of the unit are firmly joined with seals.
- **When joining units, take care not to get fingers caught between units.**
  Injury can result.

**2. Do not drop, bump, or apply excessive impact.**
Otherwise, the unit can become damaged, malfunction, or fail to function.

**3. Observe the tightening torque range.**
Tightening outside of the allowable torque range will likely damage the product.
IP67 protection class cannot be guaranteed if the screws are not tightened to the specified torque.

**4. When lifting a large size manifold solenoid valve unit, take care to avoid causing stress to the valve connection joint.**
The connection parts of the unit may be damaged.
Because the unit may be heavy, carrying and installation should be performed by more than one operator to avoid strain or injury.

**5. When placing a manifold, mount it on a flat surface.**
Torsion in the whole manifold can lead to trouble such as air leakage or defective insulation.

### Wiring

## ⚠Caution

**1. Confirm grounding to maintain the safety of the reduced wiring system and for anti-noise performance.**
Provide a specific grounding as close to the unit as possible to minimize the distance to grounding.

**2. Avoid repeatedly bending or stretching the cable and applying a heavy object or force to it.**
Wiring applying repeated bending and tensile stress to the cable can break the circuit.

**3. Avoid miswiring.**
If miswired, there is a danger of malfunction or damage to the reduced wiring system.

**4. Do not wire while energizing the product.**
There is a danger of malfunction or damage to the reduced wiring system or input/output equipment.

Back page 7

# Series VQC1000/2000
# Specific Product Precautions 6

**Be sure to read before handling.**
**Refer to back pages 1 and 2 for Safety Instructions and Handling Precautions for SMC Products (M-E03-3) for 3/4/5 Port Solenoid Valves Precautions.**

## EX600 Precautions

### Wiring

## ⚠Caution

**5. Avoid wiring the power line and high-pressure line in parallel.**

Noise or surge produced by signal line resulting from the power line or high pressure line could cause malfunction.
Wiring of the reduced wiring system or input/output device and the power line or high-pressure line should be separated from each other.

**6. Confirm the wiring insulation.**

Defective insulation (contact with other circuits, improper insulation between terminals, etc.) may cause damage to the reduced wiring system or input/output device due to excessive voltage or current.

**7. When a reduced wiring system is installed in machinery/equipment, provide adequate protection against noise by using noise filters, etc.**

Noise in signal lines may cause malfunction.

**8. When connecting wires of input/output device or handheld terminal, prevent water, solvent or oil from entering inside from the connecter section.**

This can cause damage, equipment failure, or malfunction.

**9. Avoid wiring patterns in which excessive stress is applied to the connector.**

This may cause malfunction or damage to the unit due to contact failure.

### Operating Environment

## ⚠Warning

**1. Do not use in an atmosphere containing an inflammable gas or explosive gas.**

Use in such an atmosphere is likely to cause a fire or explosion. This system is not explosion-proof.

## ⚠Caution

**1. Select the proper type of enclosure according to the environment of operation.**

IP65/67 protection class is achieved when the following conditions are met.

1) The units are connected properly with wiring cable for power supply, communication connector, and cable with M12 connector.
2) Suitable mounting of each unit and manifold valve.
3) Be sure to mount a seal cap on any unused connectors.

If using in an environment that is exposed to water splashes, please take measures such as using a cover.
Also, the Handheld Terminal confirms to IP20, so prevent foreign matter from entering inside, and water, solvent or oil from coming in direct contact with it.

### Operating Environment

## ⚠Caution

**2. Provide adequate protection when operating in locations such as the following.**

Failure to do so may cause damage or malfunction.
The effect of countermeasures should be checked in individual equipment and machine.

1) Where noise is generated by static electricity, etc.
2) Where there is a strong electric field
3) Where there is a danger of exposure to radiation
4) When in close proximity to power supply lines

**3. Do not use in an environment where oil and chemicals are used.**

Operating in environments with coolants, cleaning solvents, various oils or chemicals may cause adverse effects (damage, malfunction) to the unit even in a short period of time.

**4. Do not use in an environment where the product could be exposed to corrosive gas or liquid.**

This may damage the unit and cause it to malfunction.

**5. Do not use in locations with sources of surge generation.**

Installation of the unit in an area around the equipment (electromagnetic lifters, high frequency induction furnaces, welding machine, motors etc.), which generates the large surge voltage could cause to deteriorate an internal circuitry element of the unit or result in damage. Implement countermeasures against the surge from the generating source, and avoid touching the lines with each other.

**6. Use the product type that has an integrated surge absorption element when directly driving a load which generates surge voltage by relay, solenoid valves or lamp.**

When a surge generating load is directly driven, the unit may be damaged.

**7. The product is CE marked, but not immune to lightning strikes. Take measures against lightning strikes in your system.**

**8. Keep dust, wire scraps and other extraneous material from getting inside the product.**

This may cause malfunction or damage.

**9. Mount the unit in such locations, where no vibration or shock is affected.**

This may cause malfunction or damage.

**10. Do not use in places where there are cyclic temperature changes.**

In case that the cyclic temperature is beyond normal temperature changes, the internal unit is likely to be adversely effected.

**11. Do not use in direct sunlight.**

Do not use in direct sunlight. It may cause malfunction or damage.

**12. Use this product within the specified ambient temperature range.**

This may cause malfunction.

**13. Do not use in places where there is radiated heat around it.**

Such a place is likely to cause malfunction.

# *Series VQC1000/2000*
# Specific Product Precautions 7

**Be sure to read before handling.**
**Refer to back pages 1 and 2 for Safety Instructions and Handling Precautions for SMC Products (M-E03-3) for 3/4/5 Port Solenoid Valves Precautions.**

## EX600 Precautions

### Adjustment/Operation

## ⚠Warning

**1. Do not perform operation or setting with wet hands.**
There is a risk of electrical shock.

**<Handheld Terminal>**

**2. Do not apply pressure to the LCD display.**
There is a possibility of the crack of LCD display and injuring.

**3. The forced input/output function is used to change the signal status forcibly. When operating this function, be sure to check the safety of the surroundings and installation.**
Otherwise, injury or equipment damage could result.

**4. Incorrect setting of parameters can cause malfunction. Be sure to check the settings before use.**
This may cause injury or equipment damage.

## ⚠Caution

**1. Use a watchmaker's screwdriver with thin blade for the setting of each switch of the SI unit.**
**When setting the switch, do not touch other unrelated parts.**
This may cause parts damage or malfunction due to a short circuit.

**2. Provide adequate setting for the operating conditions.**
Failure to do so could result in malfunction.
Refer to the instruction manual for setting of the switches.

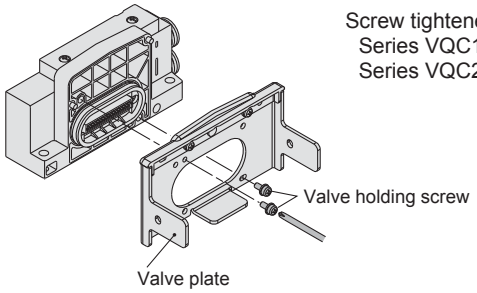
**3. For the details of programming and address setting, refer to the manual from the PLC manufacturer.**
The content of programming related to protocol is designed by the manufacturer of the PLC used.

**<Handheld Terminal>**

**4. Do not press the setting buttons with a sharp pointed object.**
This may cause damage or malfunction.

**5. Do not apply excessive load and impact to the setting buttons.**
This may cause damage, equipment failure or malfunction.

When the order does not include the SI unit, the valve plate to connect the manifold and SI unit is not mounted. Use attached valve fixing screws and mount the valve plate.
(Tightening torque: 0.6 to 0.7 N·m)




### Maintenance

## ⚠Warning

**1. Do not disassemble, modify (including circuit board replacement) or repair this product.**
Such actions are likely to cause injuries or breakage.

**2. When an inspection is performed,**
- **Turn off the power supply.**
- **Stop the air supply, exhaust the residual pressure in piping and verify that the air is released before performing maintenance work.**

Unexpected malfunction of system components and injury can result.

## ⚠Caution

**1. When handling and replacing the unit:**
- **Do not touch the sharp metal parts of the connector or plug.**
- **Do not apply excessive force to the unit.**
The connecting portions of the unit are firmly joined with seals.
- **When joining units, take care not to get fingers caught between units.**
Injury can result.

**2. Perform periodic inspection.**
Unexpected malfunction in the system composition devices is likely to occur due to malfunction of machinery or equipment.

**3. After maintenance, make sure to perform an appropriate functionality inspection.**
In cases of abnormality such as faulty operation, stop operation. Unexpected malfunction in the system composition devices is likely to occur.

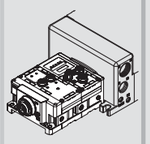
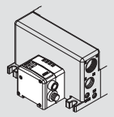
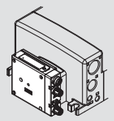
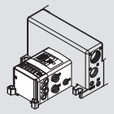
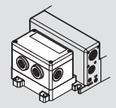
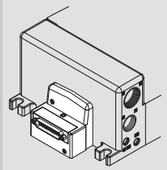
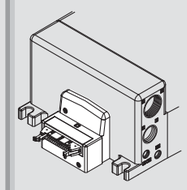
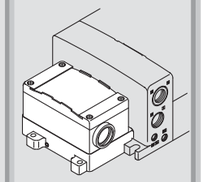
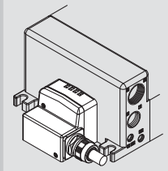
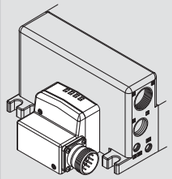
**4. Do not use benzene and thinner for cleaning units.**
Damage to the surface or erasure of the display can result. Wipe off any stains with a soft cloth.
If the stain is persistent, wipe off with a cloth soaked in a dilute solution of neutral detergent and wrung out tightly, and then finish with a dry cloth.

■ **Trademark**
DeviceNet™ is a trademark of ODVA.
Product names described in this catalog may be used as trademarks by each manufacturer.

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# *Series VQC4000*
# Base Mounted: Variations

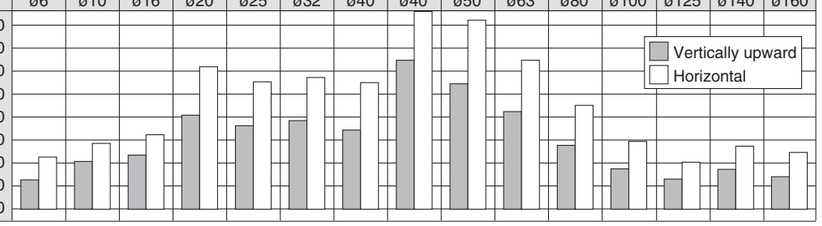


| | | | Sonic Conductance C[dm³/(s·bar)] (Values: CYL → EXH 4/2 → 5/3) | | Applicable bore size | S Kit – Serial transmission | | | | | F Kit | P Kit | T Kit | L Kit | M Kit | Port size | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Single/Double | 3 position (Closed center) | | Compatible network • DeviceNet™ • PROFIBUS DP • CC-Link • EtherNet/IP™ I/O  Serial unit: EX600 IP67 compliant | Gateway application Compatible network • DeviceNet™ • PROFIBUS DP • CC-Link • EtherNet/IP™ Decentralized Serial Wiring Gateway application requires a gateway unit and communication cable separately. Please contact SMC for more details.  Serial unit: EX500 IP67 compliant | Compatible network • DeviceNet™ • PROFIBUS DP • EtherCAT Output  Serial unit: EX260 IP40 compliant IP67 compliant | Compatible network • DeviceNet™ • PROFIBUS DP • CC-Link • AS-Interface • CANopen • EtherNet/IP™ I/O  Serial unit: EX250 IP67 compliant | Compatible network • CC-Link Output  Serial unit: EX126 IP67 compliant | D-sub connector D-sub connector (Compatible with D-sub connector that complies with MIL standard.)  | Flat ribbon cable Flat ribbon cable (Compatible with flat ribbon cable connector that complies with MIL standard.)  | Terminal block box Terminal block box (Terminal blocks) Terminals are concentrated in compact clusters within the terminal block box.  IP67 compliant | Electrical entry Lead wire (IP67 enclosure with use of multiple wire cable with sheath and waterproof connector)  IP67 compliant | Circular connector Circular connector (IP67 enclosure with use of waterproof multiple connector)  IP67 compliant | SUP EXH port 1, 3 (P, R) | Cylinder port 2, 4 (A, B) |
| *Series VQC4000* | Metal seal | VQC4□00 | 6.9 | 6.3 | to ø140 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | <SUP port> Rc 1/2 (NPT, NPTF, G) <EXH port> Rc 3/4 (NPT, NPTF, G) | C8 (For ø8) C10 (For ø10) C12 (For ø12) N7 (ø1/4") N9 (ø5/16") N11 (ø3/8") Rc 1/4 Rc 3/8 Rc 1/4 (Bottom ported) (NPT, NPTF, G) |
| | Rubber seal | VQC4□01 | 7.3 | 6.4 | | | | | | | | | | | | | |

## Cylinder Average Speed

This chart is provided as guidelines only.
For performance under various conditions, use SMC's Model Selection Program before making a judgment.

| Series | Average speed (mm/s) | Bore size | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Series CJ2 Pressure 0.5 MPa Load ratio 50% Stroke 60 mm | | | Series CM2 Pressure 0.5 MPa Load ratio 50% Stroke 300 mm | | | | Series MB, CA2 Pressure 0.5 MPa Load ratio 50% Stroke 500 mm | | | | Series CS1/CS2 Pressure 0.5 MPa Load ratio 50% Stroke 1000 mm | | |
| | | ø6 | ø10 | ø16 | ø20 | ø25 | ø32 | ø40 | ø40 | ø50 | ø63 | ø80 | ø100 | ø125 | ø140 | ø160 |
| VQC4000 | 800 | | | | | | | | | | | | | | | |
| | 700 | | | | | | | | | | | | | | | |
| | 600 | | | | | | | | | | | | | | | |
| | 500 | | | | | | | | | | | | | | | |
| | 400 | | | | | | | | | | | | | | | |
| | 300 | | | | | | | | | | | | | | | |
| | 200 | | | | | | | | | | | | | | | |
| | 100 | | | | | | | | | | | | | | | |
| | 0 | | | | | | | | | | | | | | | |




* Values at extension of a directly coupled cylinder when meter-out speed controllers are used with the needle full open.
* The average speed of the cylinder is obtained by dividing the stroke by the total stroke time.
* The load ratio is obtained by the following formula: ((Load weight x 9.8)/Theoretical output) x 100%

### Conditions

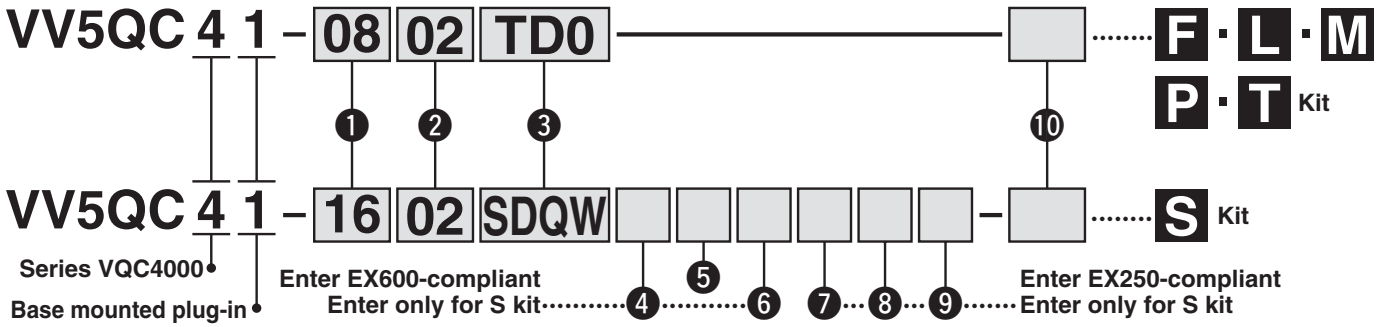
| Base piping | | Series CJ2 | Series CM2 | Series MB, CA2 | Series CS1/CS2 |
|---|---|---|---|---|---|
| VQC4000 | Tube x Length | T0604 x 1 m | T1075 x 1 m | T1209 x 1 m | |
| | Speed controller | AS3001F-06 | AS4001F-10 | AS4001F-12 | |
| | Silencer | AN400-04 | | | AN400-04 |

### Conditions (With SGP (Stainless steel gas piping))

| Direct piping | | Series MB, CA2 | Series CS1/CS2 |
|---|---|---|---|
| VQC4000 | Tube x Length | SGP10A x 1 m | |
| | Speed controller | AS420-03 | |
| | Silencer | AN400-04 | |

# Base Mounted
# Plug-in Unit
# Series VQC4000

## How to Order Manifold

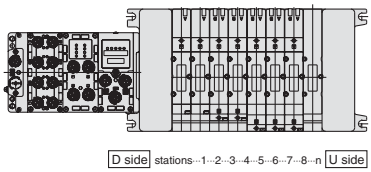



### ❶ Stations

| | |
|---|---|
| 01 | 1 Stations |
| ⋮ | ⋮ |

The minimum or maximum number of stations differs depending on the electrical entry. (Refer to ③)

Note) In the case of compatibility with the S kit/As Interface Athe maximum number of solenoids is as shown below, so please be careful of the number of stations.
8 in/8 out: Maximum 8 solenoids
4 in/4 out: Maximum 4 solenoids




∗ Stations are counted from station 1 on the D-side.

### ❷ Cylinder port size

| | |
|---|---|
| C8 | With ø8 One-touch fitting |
| C10 | With ø10 One-touch fitting |
| C12 | With ø12 One-touch fitting |
| 02 | Rc 1/4 Note) |
| 03 | Rc 3/8 Note) |
| B | Bottom ported Rc 1/4 Note) |
| CM | Mixed |

Note) Besides Rc, also compatible with G, NPT/NPTF. Part number displayed is as shown below.

**V5QC41-0803 □ TD0**

Cylinder port

Thread type

| | |
|---|---|
| Nil | Rc |
| F | G |
| T | NPT/NPTF |

### ❹ End plate type

(Enter EX600-compliant S kit only.)

| | |
|---|---|
| Nil | Without end plate |
| 2 | M12 connector power supply (Max. supply current 2A) |
| 3 | 7/8 inch connector power supply (Max. supply current 8A) |

Note) Without SI unit, the symbol is nil.

### ❺ SI unit COM

| SI unit COM | | EX250 integrated-type (for I/O) serial transmission system | | | | | |
|---|---|---|---|---|---|---|---|
| | | DeviceNet™ | PROFIBUS DP | CC-Link | AS-Interface | CANopen | EtherNet/IP™ |
| Nil | + COM | — | — | ○ | — | — | — |
| N | – COM | ○ | ○ | — | ○ | ○ | ○ |

| SI unit COM | | EX260 integrated-type (for output) serial transmission system | | |
|---|---|---|---|---|
| | | DeviceNet™ | PROFIBUS DP | EtherCAT |
| Nil | + COM | ○ | ○ | ○ |
| N | – COM | ○ | ○ | ○ |

| SI unit COM | | EX500 gateway type serial transmission system | | | |
|---|---|---|---|---|---|
| | | DeviceNet™ | PROFIBUS DP | CC-Link | EtherNet/IP™ |
| Nil | + COM | ○ | ○ | ○ | ○ |
| N | – COM | ○ | ○ | ○ | ○ |

| SI unit COM | | EX600 integrated-type (for I/O) serial transmission system (Fieldbus system) | | | |
|---|---|---|---|---|---|
| | | DeviceNet™ | PROFIBUS DP | CC-Link | EtherNet/IP™ |
| Nil | + COM | ○ | ○ | ○ | ○ |
| N | – COM | ○ | ○ | ○ | ○ |

Note) Leave the box blank for the SI unit COM without SI unit (SDO□).

### ❻ I/O unit stations

(Enter EX600-compliant S kit only.)

| | |
|---|---|
| Nil | None |
| 1 | With 1 input block |
| ⋮ | ⋮ |
| 9 | With 9 input blocks |

Note 1) Without SI unit, the symbol is nil.
Note 2) SI unit is not included in I/O unit stations.
Note 3) When I/O unit is selected, it is shipped separately, and assembled by customer. Refer to the attached operation manual for mounting method.
Note 4) Refer to page 50 for details of the enclosure.

### ❼ Number of input blocks

**(Enter only for S kit compliant with EX250)**

| Symbol | No. of blocks |
|---|---|
| Nil | Without SI unit |
| 0 | Without input block |
| 1 | With 1 input block |
| ⋮ | ⋮ |
| 4 | With 4 input blocks |
| ⋮ | ⋮ |
| 8 | With 8 input blocks |

### ❽ Number of input blocks

**(Enter only for S kit compliant with EX250)**

| | |
|---|---|
| Nil | Without input block |
| 1 | M12, 2 inputs |
| 2 | M12, 4 inputs |
| 3 | M8, 4 inputs |

### ❾ Input block COM

**(Enter only for S kit compliant with EX250)**

| | |
|---|---|
| Nil | PNP sensor input or without input block |
| N | NPN sensor input |

### ❿ Option

| | |
|---|---|
| Nil | None |
| K | Special wiring specifications (except for double wiring) |
| N | With name plate (available for T kit only) |

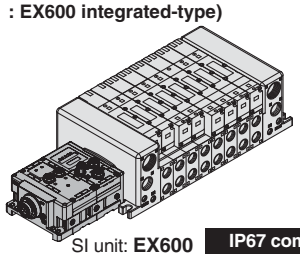


SMC

## ❸ Kit Designation/Electrical Entry/Cable Length

* Numbers in parentheses represent the maximum number of solenoids in the case of mixed single and double wiring. The total number of solenoids determines the maximum number of stations. When ordering mixed wiring, please add the option symbol "-K".

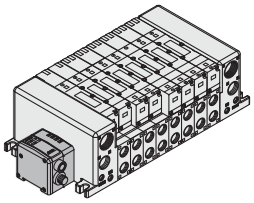
### S Kit (Serial transmission kit (Fieldbus system) : EX600 integrated-type)



SI unit: **EX600** IP67 compliant

| | | |
|---|---|---|
| SD60 | Serial kit without SI unit | 1 to 12 stations (24 stations) |
| SD6Q | Serial kit for DeviceNet™ | |
| SD6N | Serial kit for PROFIBUS-DP | |
| SD6V | Serial kit for CC-LINK | |
| SD6ZE | EtherNet/IP | |

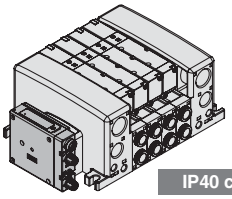
### S Kit (Serial transmission kit: EX500 gateway type)



SI unit: **EX500** IP67 compliant

| | | |
|---|---|---|
| SD0A | Serial kit without SI unit | 1 to 8 stations (16 stations) |
| SDA2 | Device Net™, PROFIBUS DP, CC-Link, Ether Net/IP | |

### S Kit (Serial transmission kit: EX260 integrated-type (I/O))

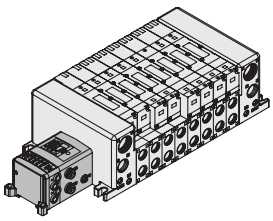


IP40 compliant

SI unit: **EX260** IP67 compliant

| Symbol | Protocol | Number of outputs | Communication connector | Stations |
|---|---|---|---|---|
| SD0A | Serial kit without SI unit | | | 1 to 12 stations (16 stations) |
| SQA | DeviceNet™ | 32 | M12 | |
| SQB | | 16 | | 1 to 8 stations (16 stations) |
| SNA | PROFIBUS DP | 32 | M12 | 1 to 12 stations (16 stations) |
| SNB | | 16 | | 1 to 8 stations (16 stations) |
| SNC | | 32 | D-sub Note 2) | 1 to 12 stations (16 stations) |
| SND | | 16 | | 1 to 8 stations (16 stations) |
| SDA | EtherCAT | 32 | M12 | 1 to 12 stations (16 stations) |
| SDB | | 16 | | 1 to 8 stations (16 stations) |

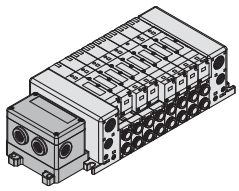
### S Kit (Serial transmission kit: EX250 integrated type (for I/O))



SI unit: **EX250** IP67 compliant

| | | |
|---|---|---|
| SD0 | Serial kit without SI unit | 1 to 12 stations (16 stations) |
| SDQ | Serial kit for DeviceNet™ | |
| SDN | Serial kit for PROFIBUS-DP | |
| SDV | Serial kit for CC-LINK | |
| SDTA | AS-i, 8 in/out, 31 slave modes, 2 power supply systems | 1 to 4 stations (8 stations) |
| SDTB | AS-i, 4 in/out, 31 slave modes, 2 power supply systems | 1 to 2 stations (4 stations) |
| SDTC Note 1) | AS-i, 8 in/out, 31 slave modes, 1 power supply systems | 1 to 4 stations (8 stations) |
| SDTD Note 1) | AS-i, 4 in/out, 31 slave modes, 1 power supply systems | 1 to 2 stations (4 stations) |
| SDY | For CANopen | 1 to 12 stations (16 stations) |
| SDZEN | For EtherNet/IP | |

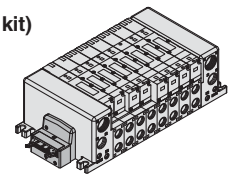
### S Kit (Serial transmission kit: EX126 integrated-type (for output))



SI unit: **EX126** IP67 compliant

| | | |
|---|---|---|
| SDVB | Serial kit for CC-LINK | 1 to 8 stations (16 stations) |

### P Kit (Flat ribbon cable kit)

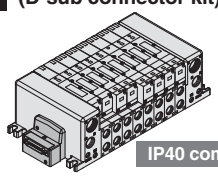


IP40 compliant

Note) For a 20P flat ribbon cable, the cable assembly must be ordered separately.

| | | |
|---|---|---|
| PD0 | Flat ribbon cable kit (26P) without cable | 1 to 12 stations (16 stations) |
| PD1 | Flat ribbon cable kit (26P) with 1.5 m cable | |
| PD2 | Flat ribbon cable kit (26P) with 3.0 m cable | |
| PD3 | Flat ribbon cable kit (26P) with 5.0 m cable | |
| PDC | Flat ribbon cable kit (20P) without cable (1) | 1 to 9 stations (16 stations) |

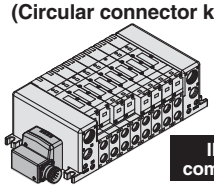
### F Kit (D-sub connector kit)



IP40 compliant

| | | |
|---|---|---|
| FD0 | D-sub connector kit (25P) without cable | 1 to 12 stations (16 stations) |
| FD1 | D-sub connector kit (25P) with 1.5 m cable | |
| FD2 | D-sub connector kit (25P) with 3.0 m cable | |
| FD3 | D-sub connector kit (25P) with 5.0 m cable | |

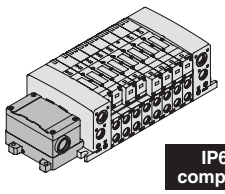
### M Kit (Circular connector kit)



IP67 compliant

| | | |
|---|---|---|
| MD0 | Circular connector kit (26P) without cable | 1 to 12 stations (16 stations) |
| MD1 | Circular connector kit (26P) with 1.5 m cable | |
| MD2 | Circular connector kit (26P) with 3.0 m cable | |
| MD3 | Circular connector kit (26P) with 5.0 m cable | |

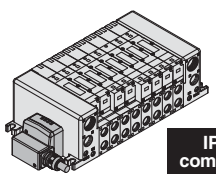
### T Kit (Terminal block box kit)



IP67 compliant

| | | |
|---|---|---|
| TD0 | Terminal block box kit | 1 to 10 stations (16 stations) |

### L Kit (Lead wire kit)



IP67 compliant

| | | |
|---|---|---|
| LD0 | Lead wire kit (25 core) 0.6 m lead wire | 1 to 12 stations (16 stations) |
| LD1 | Lead wire kit (25 core) 1.5 m lead wire | |
| LD2 | Lead wire kit (25 core) 3.0 m lead wire | |

* The maximum number of stations displayed in parentheses is applied to the special wiring specification (Option "-K").

Note 1) When selecting SI units with SDTC or SDTD specifications, there are limits to the supply current from the SI unit to the input block or valve. Refer to page 1667 for details.

Note 2) When selecting D-sub S kit specifications only, IP40 is compatible. (All other SI units are IP67 compliant.)

Note 3) For the SI unit part no., refer to page 5.

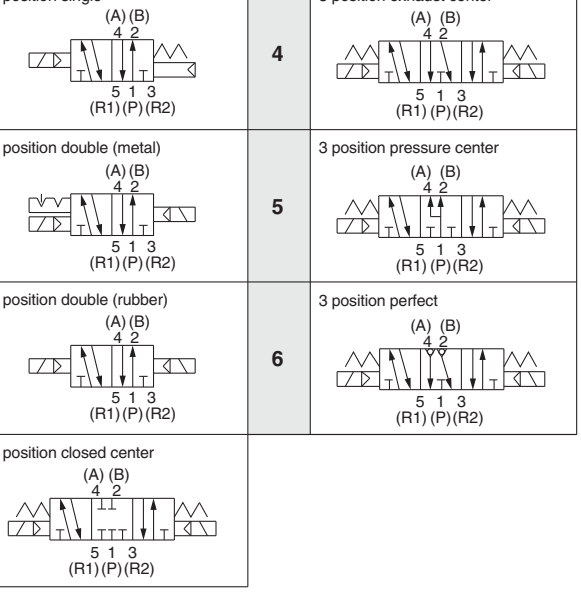
## How to Order Valves

**VQC 4 1 0 0 □ – 5 □ □**

Series VQC4000 — Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ

### Ⓐ Type of actuation

| | | | |
|---|---|---|---|
| 1 | 2 position single | 4 | 3 position exhaust center |
| 2 | 2 position double (metal) | 5 | 3 position pressure center |
| | 2 position double (rubber) | 6 | 3 position perfect |
| 3 | 3 position closed center | | |




### Ⓑ Seal type

| | |
|---|---|
| 0 | Metal seal |
| 1 | Rubber seal |

### Ⓒ Function

| | |
|---|---|
| Nil | Standard type (1 W) |
| R | External pilot |
| Y | Low wattage type (0.5 W) |

Note 1) When specifying more than one option, enter symbols in alphabetical order.
Note 2) Please select when you expect to energize the unit for extended periods of time. Refer to Best Pneumatics No. ① for details.

### Ⓓ Coil voltage

| | |
|---|---|
| 5 | 24 VDC Note) |
| 6 | 12 VDC |

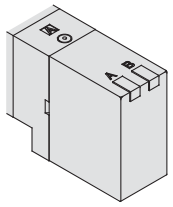
Note) S kit is only available for 24 VDC.

### Ⓔ Light/Surge voltage suppressor

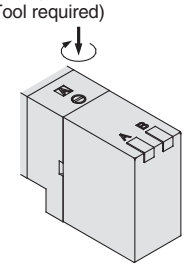
| | |
|---|---|
| Nil | With |
| E | Without light, with surge voltage supressor |

### Ⓕ Manual override

**Nil:** Non-locking push type (Tool required)



**B:** Locking type (Tool required)



## SI unit Part No. Table

### EX600

| Symbol | Protocol type | Serial unit No. | | Page |
|---|---|---|---|---|
| | | – COM. (PNP) | + COM. (NPN) | |
| SD6Q | DeviceNet™ | EX600-SDN1A | EX600-SDN2A | Fieldbus system catalog (I/O) |
| SD6N | CC-Link | EX600-SMJ1 | EX600-SMJ2 | |
| SD6V | PROFIBUS DP | EX600-SPR1A | EX600-SPR2A | |
| SD6ZE | EtherNet/IP™ | EX600-SEN1 | EX600-SEN2 | |

### EX500

| Symbol | Protocol type | Serial unit No. | | Page |
|---|---|---|---|---|
| | | + COM. (NPN) | – COM. (PNP) | |
| SDA2 | DeviceNet™ | EX500-Q001 | EX500-Q101 | Best Pneumatics No.① |
| | PROFIBUS DP | | | |
| | CC-Link | | | |
| | EtherNet/IP™ | | | |

### EX260

| Symbol | Protocol type | Number of outputs | Serial unit No. | | Communication connector | Page |
|---|---|---|---|---|---|---|
| | | | – COM. (PNP) | + COM. (NPN) | | |
| SQA | DeviceNet™ | 32 | EX260-SDN1 | EX260-SDN2 | M12 | SMC Information 09-556 |
| SQB | | 16 | EX260-SDN3 | EX260-SDN4 | | |
| SNA | PROFIBUS DP | 32 | EX260-SPR1 | EX260-SPR2 | | |
| SNB | | 16 | EX260-SPR3 | EX260-SPR4 | | |
| SNC | | 32 | EX260-SPR5 | EX260-SPR6 | D-sub | |
| SND | | 16 | EX260-SPR7 | EX260-SPR8 | | |
| SDA | EtherCAT | 32 | EX260-SEC1 | EX260-SEC2 | M12 | |
| SDB | | 16 | EX260-SEC3 | EX260-SEC4 | | |

### EX250

| Symbol | Protocol type | Serial unit No. | Page |
|---|---|---|---|
| SDQ | DeviceNet™ (– COM.) (PNP) | EX250-SDN1 | Best Pneumatics No.① |
| SDN | PROFIBUS DP (– COM.) (PNP) | EX250-SPR1 | |
| SDV | CC-Link (+ COM.) (NPN) | EX250-SMJ2 | |
| SDTA | AS-Interface (– COM.) (PNP), (8 in/8 out, 31 slave modes, 2 power supply systems) | EX250-SAS3 | |
| SDTB | AS-Interface (– COM.) (PNP), (4 in/4 out, 31 slave modes, 2 power supply systems) | EX250-SAS5 | |
| SDTC | AS-Interface (– COM.) (PNP), (8 in/8 out, 31 slave modes, 1 power supply systems) | EX250-SAS7 | |
| SDTD | AS-Interface (– COM.) (PNP), (4 in/4 out, 31 slave modes, 1 power supply systems) | EX250-SAS9 | |
| SDY | CANopen (– COM.) (PNP) | EX250-SCA1A | |
| SDZEN | EtherNet/IP™ (– COM.) (PNP) | EX250-SEN1 | |

### EX126

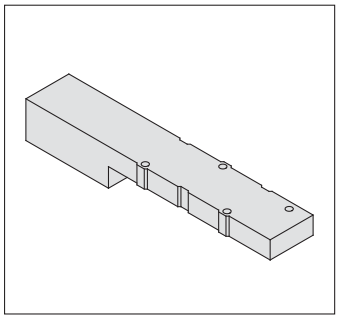
| Symbol | Protocol type | Serial unit No. | Page |
|---|---|---|---|
| SDVB | CC-Link (+ COM.) (NPN) | EX126D-SMJ1 | Best Pneumatics No.① |

Refer to catalog CAT.E02-24, Fieldbus System (I/O), for details on the EX600 integrated-type (I/O).
Refer to Best Pneumatics No. ① for details on the EX500 gateway-type serial transmission system, EX250 integrated-type (I/O) serial transmission system and EX126 integrated-type (for output) serial transmission system.
For details about EX260 integrated type (for output), refer to SMC Information 09-E556.

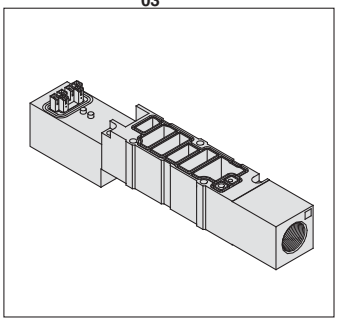
## Manifold Options

Refer to the catalog of series VQ4000 for further information of options.

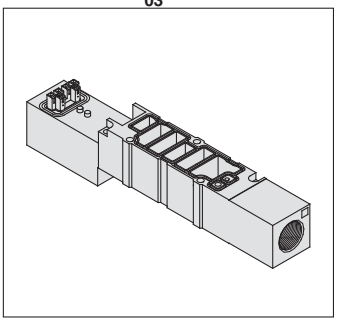
**Blanking plate assembly**
**VVQ4000-10A-1**



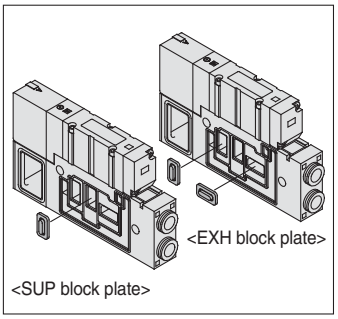
**Individual SUP spacer**
**VVQ4000-P-1-** $^{02}_{03}$



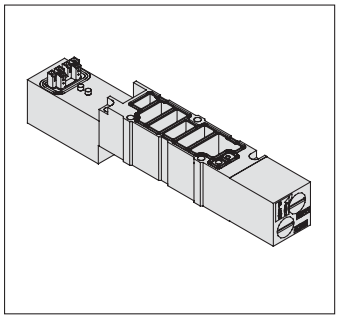
**Individual EXH spacer**
**VVQ4000-R-1-** $^{02}_{03}$



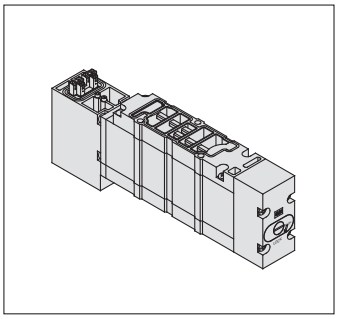
**SUP/EXH block plate**
**VVQ4000-16A**



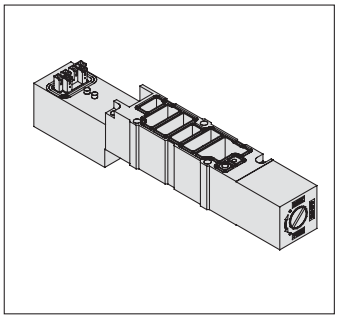

**Throttle valve spacer**
**VVQ4000-20A-1**



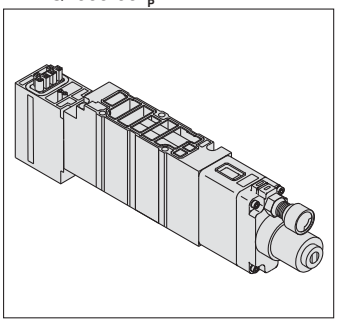
**Residual pressure release valve perfect spacer**
**VVQ4000-25A-1** Note 1)



**SUP stop valve spacer**
**VVQ4000-37A-1**

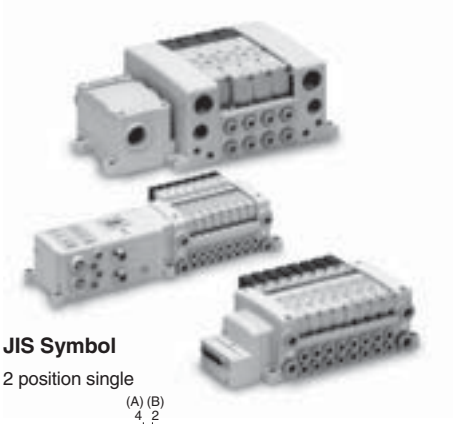


**Interface regulator**
**ARBQ4000-00-**$^{A}_{B}$**-1**



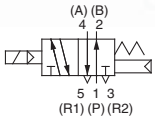
Note 1) Perfect spacers with residual pressure release valve cannot be combined with external pilot specifications.

# Series VQC4000 Base Mounted
# Plug-in Unit

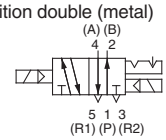


**JIS Symbol**

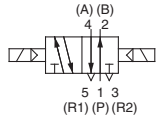
2 position single



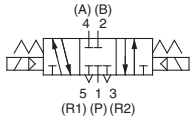

2 position double (metal)



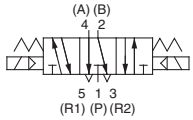

2 position double (rubber)



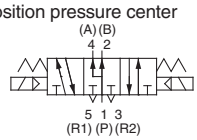

3 position closed center



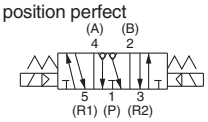

3 position exhaust center




3 position pressure center




3 position perfect




## Model

| Series | No. of solenoids | | Model | | Flow characteristics: 1 → 4, 2 (P → A, B) C[dm³/(s•bar)] | b | Cv | Flow characteristics: 4, 2 → 5, 3 (A, B → R1, R2) C[dm³/(s•bar)] | b | Cv | Response time (ms) Note 2): Standard: 1 W | Low wattage | weight (g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VQC4000 | 2 position | Single | Metal seal | VQC4100 | 6.2 | 0.19 | 1.5 | 6.9 | 0.17 | 1.7 | 20 or less | 22 or less | 230 |
| | | | Rubber seal | VQC4101 | 7.2 | 0.43 | 2.1 | 7.3 | 0.38 | 2.0 | 25 or less | 27 or less | |
| | | Double | Metal seal | VQC4200 | 6.2 | 0.19 | 1.5 | 6.9 | 0.17 | 1.7 | 12 or less | 12 or less | 260 |
| | | | Rubber seal | VQC4201 | 7.2 | 0.43 | 2.1 | 7.3 | 0.38 | 2.0 | 15 or less | 15 or less | |
| | 3 position | Closed center | Metal seal | VQC4300 | 5.9 | 0.23 | 1.5 | 6.3 | 0.18 | 1.6 | 45 or less | 47 or less | 280 |
| | | | Rubber seal | VQC4301 | 7.0 | 0.34 | 1.9 | 6.4 | 0.42 | 1.9 | 50 or less | 52 or less | |
| | | Exhaust center | Metal seal | VQC4400 | 6.2 | 0.18 | 1.5 | 6.9 | 0.17 | 1.7 | 45 or less | 47 or less | |
| | | | Rubber seal | VQC4401 | 7.0 | 0.38 | 1.9 | 7.3 | 0.38 | 2.0 | 50 or less | 52 or less | |
| | | Pressure center | Metal seal | VQC4500 | 6.2 | 0.18 | 1.9 | 6.4 | 0.18 | 1.6 | 45 or less | 47 or less | |
| | | | Rubber seal | VQC4501 | 7.0 | 0.38 | 1.9 | 7.1 | 0.38 | 2.0 | 50 or less | 52 or less | |
| | | Perfect | Metal seal | VQC4600 | 2.7 | — | — | 3.7 | — | — | 55 or less | 57 or less | 500 |
| | | | Rubber seal | VQC4601 | 2.8 | — | — | 3.9 | — | — | 62 or less | 64 or less | |

Note 1) VQC4000: Cylinder port size Rc 3/8
Note 2) Values represented in this column are based on JIS B 8375-1981 (operating with clean air and a supply pressure of 0.5 MPa. Equipped with light/surge voltage suppressor. Values vary depending on the pressure as well as the air quality.) Values for double types are when the switch is ON.

## Standard Specifications

| | | | Metal seal | Rubber seal |
|---|---|---|---|---|
| Valve specifications | Valve Configuration | | Metal seal | Rubber seal |
| | Fluid | | Air/Inert gas | |
| | Max. operating pressure Note 3) | | 1.0 MPa (0.7 MPa) | |
| | Min. operating pressure | Single | 0.15 MPa | 0.2 MPa |
| | | Double | 0.15 MPa | |
| | | 3 position | 0.15 MPa | 0.2 MPa |
| | Proof pressure | | 1.5 MPa | |
| | Ambient and fluid temperature | | –10 to 50°C Note 1) | |
| | Lubrication | | Not required | |
| | Manual override | | Push type/Locking type (tool required) option | |
| | Impact resistance/Vibration resistance | | 150/30 m/s² Note 2) | |
| | Enclosure | | Dust proof (IP67 compliant) | |
| Electrical specifications | Rated coil voltage | | 24 VDC | |
| | Allowable voltage fluctuation | | ±10% of rated voltage | |
| | Coil insulation type | | Equivalent to B type | |
| | Power consumption (Current) | 24 VDC | 1 W DC (42 mA), 0.5 W DC (21 mA) | |
| | | 12 VDC | 1 W DC (83 mA), 0.5 W DC (42 mA) | |

Note 1) Use dry air to prevent condensation at low temperatures.
Note 2) **Impact resistance:** No malfunction resulted from the impact test using a drop impact tester. The test was performed one time each in the axial and right angle directions of the main valve and armature, for both energized and de-energized states.
**Vibration resistance:** No malfunction occurred in a one-sweep test between 45 and 2000Hz. Test was performed in the axial and right angle directions of the main valve and armature for both energized and de-energized states.
Note 3) Values in ( ) are for the low wattage (0.5 W) specification.

## Manifold Specifications

| Series | Base model | Connection type | Piping specifications: Port direction | Port size Note 1): 1, 3 (P, R) | Port size Note 1): 2, 4 (A, B) | Applicable stations Note 2) | Applicable solenoid valves | 5 station mass (g) |
|---|---|---|---|---|---|---|---|---|
| VQC4000 | VV5QC41-□□□ | ■ F Kit: D-sub connector<br>■ P Kit: Flat cable<br>■ T Kit: Terminal block box<br>■ S Kit: Serial transmission<br>■ L Kit: Lead wire<br>■ M Kit: Circular connector | Side | P: Rc 1/2<br>R: Rc 3/4 | C8 (For ø8)<br>C10 (For ø10)<br>C12 (For ø12)<br>Rc 1/4<br>Rc 3/8 | (F, L, M and P kits: 1 to 12 stations)<br>(T kit: 1 to 10 stations)<br>(S kit: 1 to 12 stations: EX240, EX250; 1 to 8 stations: EX500) | VQC4□00-5<br>VQC4□01-5 | 4150<br>• S kit (without unit)<br>• Solenoid mass is not included. |
| | | | Bottom | | Rc 1/4 | | | |

Note 1) One-touch fittings in inch sizes are also available.
Note 2) An optional specification for special wiring is available to increase the maximum number of stations.

# S VQC4000

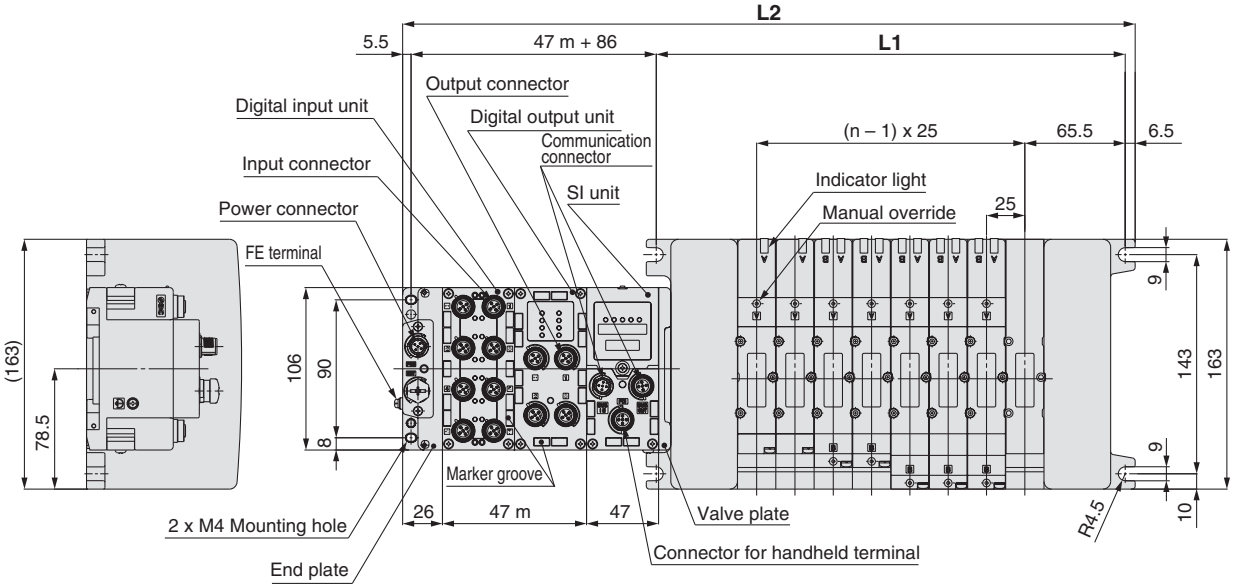
## kit (Serial transmission): For EX600 Integrated-type (I/O) serial transmission system

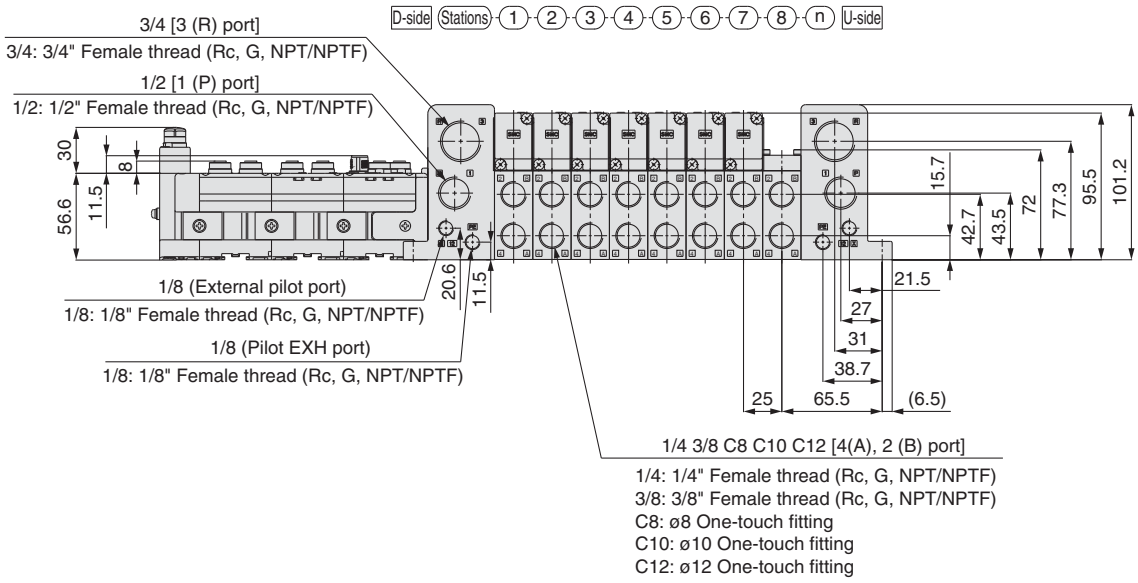
IP67 compliant

## VV5QC41

### S Kit (Serial transmission kit: EX250)

### Power supply with M12 connector




Formulas
L1 = 25n + 106
L2 = 25n + 184
L2 dimension: Without I/O unit For additional I/O unit, add 47 mm.
m: I/O unit stations

**Dimensions**

n: Stations (Maximum 16 stations)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 131 | 156 | 181 | 206 | 231 | 256 | 281 | 306 | 331 | 356 | 381 | 406 | 431 | 456 | 481 | 506 |
| **L2** | 209 | 234 | 259 | 284 | 309 | 334 | 359 | 384 | 409 | 434 | 459 | 484 | 509 | 534 | 559 | 584 |

# S VQC4000

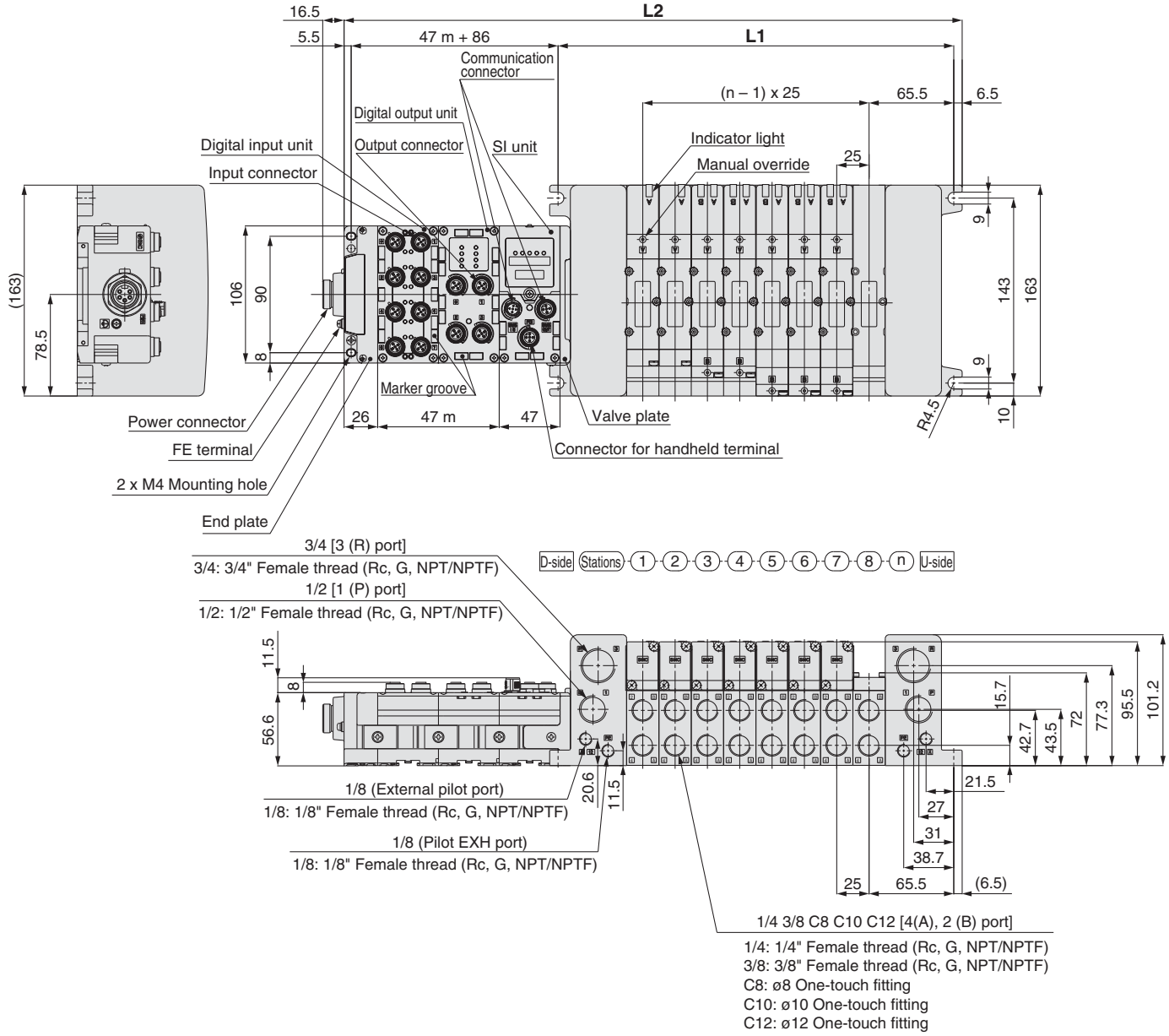
## kit (Serial transmission): For EX600 Integrated-type (I/O) serial transmission system

IP67 compliant

## VV5QC41

### S Kit (Serial transmission kit: EX600)

### Power supply with M12 connector




Formulas
L1 = 25n + 106
L2 = 25n + 184
L2 dimension: Without I/O unit For additional I/O unit, add 47 mm.
m: I/O unit stations

**Dimensions**

n: Stations (Maximum 16 stations)

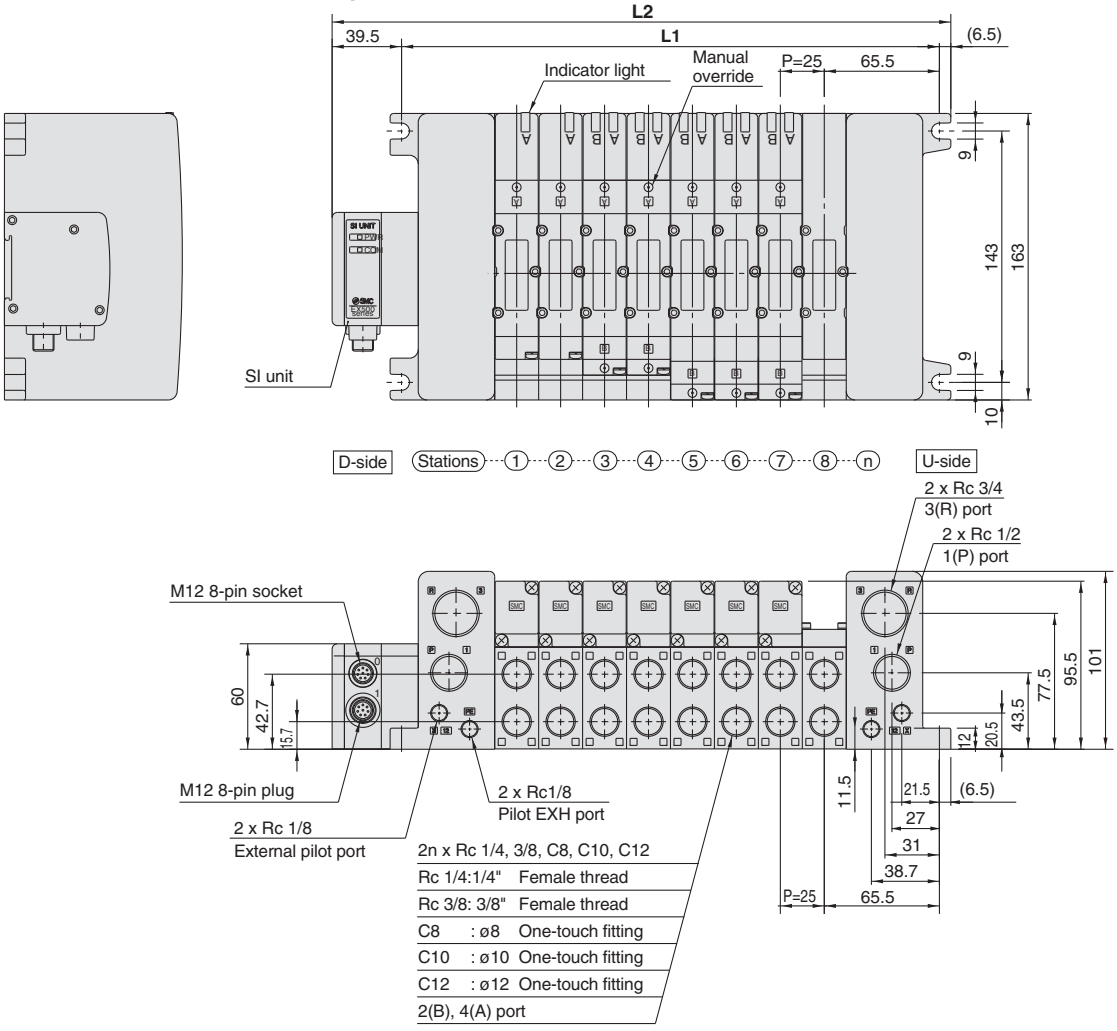
| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 131 | 156 | 181 | 206 | 231 | 256 | 281 | 306 | 331 | 356 | 381 | 406 | 431 | 456 | 481 | 506 |
| **L2** | 209 | 234 | 259 | 284 | 309 | 334 | 359 | 384 | 409 | 434 | 459 | 484 | 509 | 534 | 559 | 584 |

# S VQC4000

## kit (Serial transmission kit): For EX500 Gateway type serial transmission system

IP67 compliant

## VV5QC41
## S Kit (Serial transmission kit: EX500)




Formulas: L1 = 25n + 106, L2 = 25n + 152 n: Stations (Maximum 16 stations)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 131 | 156 | 181 | 206 | 231 | 256 | 281 | 306 | 331 | 356 | 381 | 406 | 431 | 456 | 481 | 506 |
| **L2** | 177 | 202 | 227 | 252 | 277 | 302 | 327 | 352 | 377 | 402 | 427 | 452 | 477 | 502 | 527 | 552 |

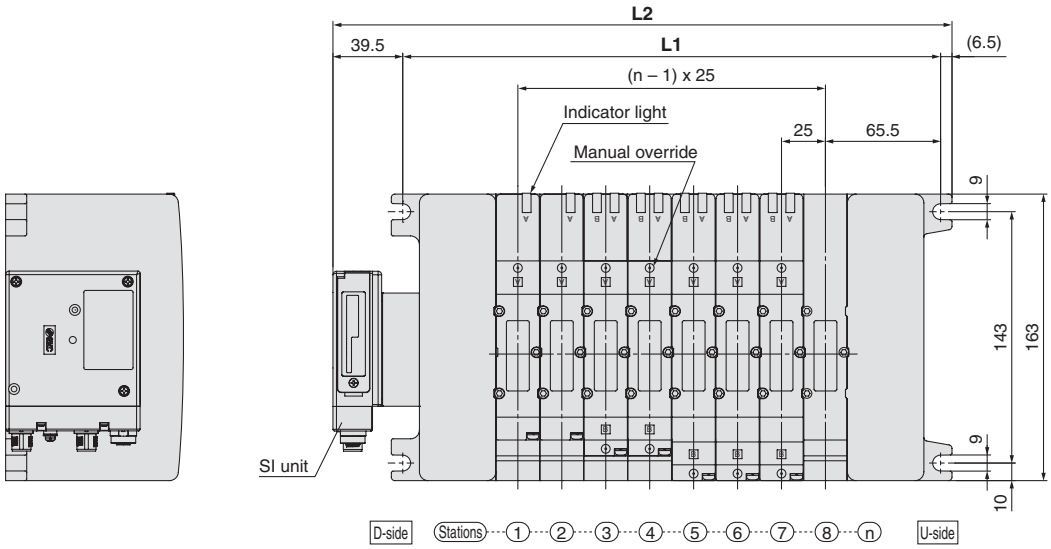
# S VQC4000

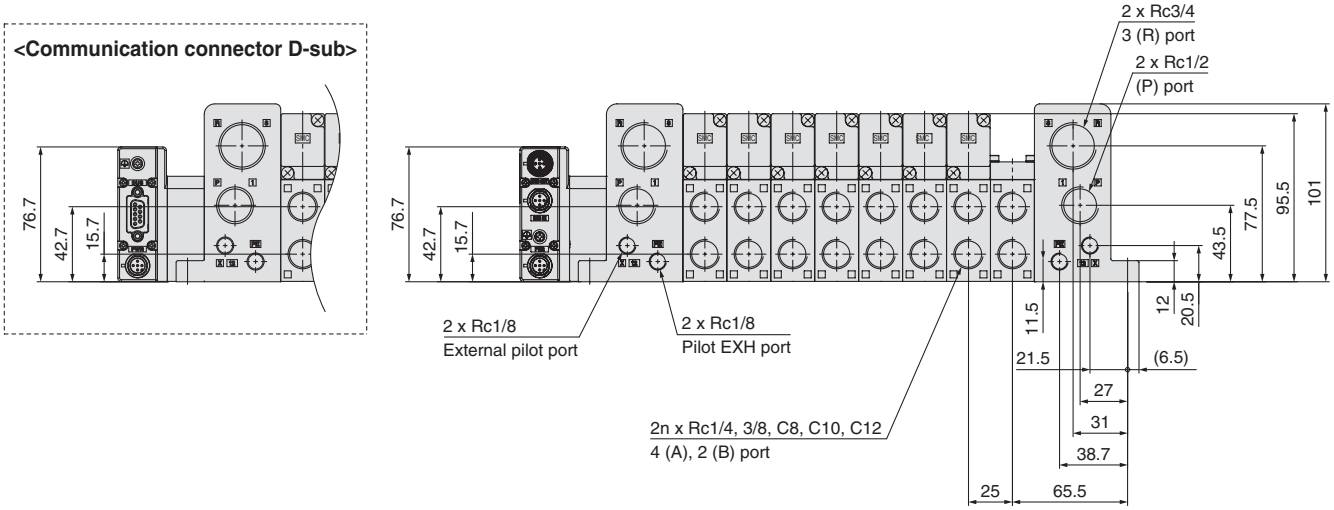
**kit (Serial transmission): For EX260 Integrated-type (I/O) serial transmission system**

IP40 compliant
IP67 compliant

## VV5QC41

### S Kit (Serial transmission kit: EX260)



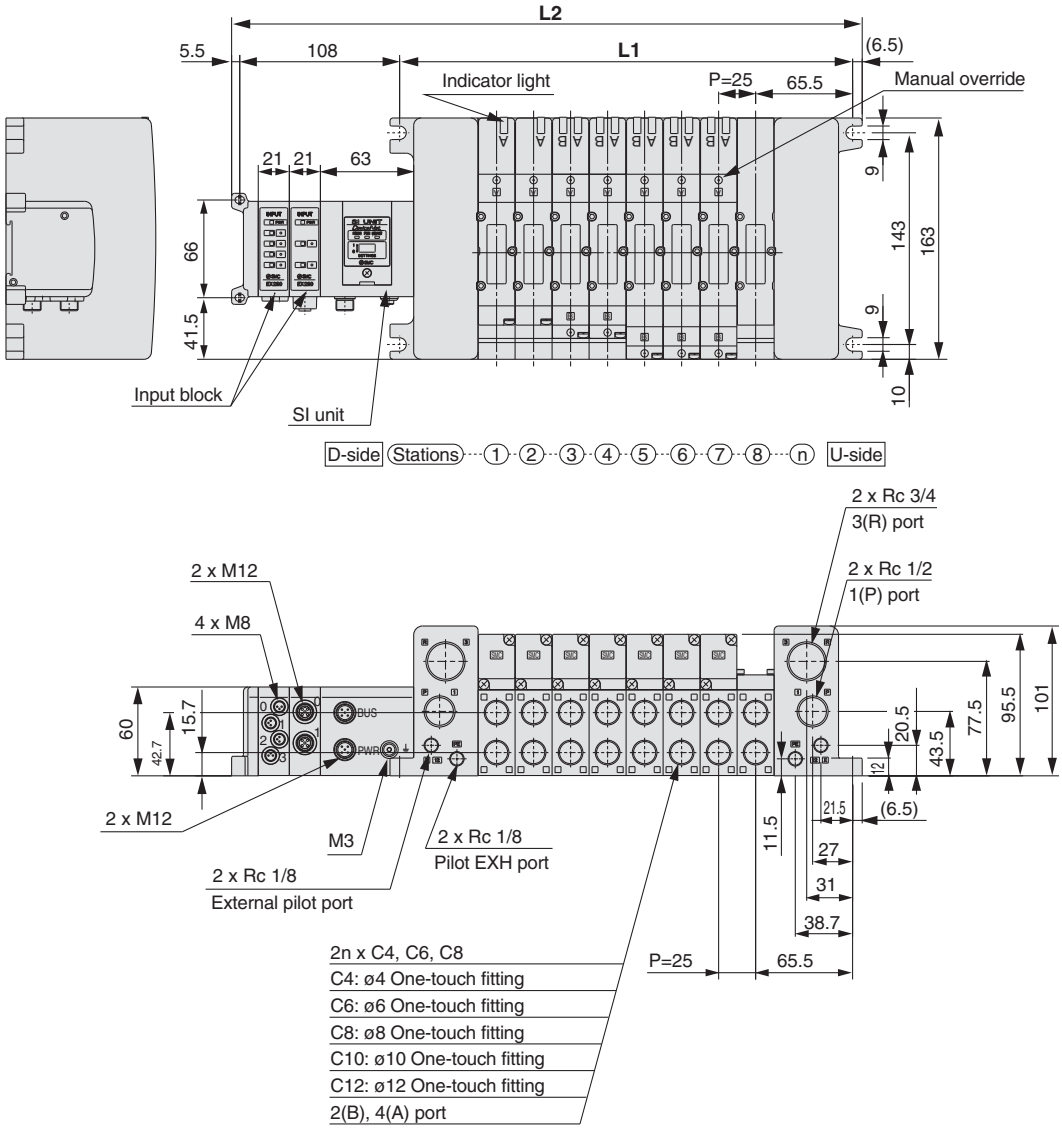

n: Stations (Maximum 16 stations)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 131 | 156 | 181 | 206 | 231 | 256 | 281 | 306 | 331 | 356 | 381 | 406 | 431 | 456 | 481 | 506 |
| **L2** | 177 | 202 | 227 | 252 | 277 | 302 | 327 | 352 | 377 | 402 | 427 | 452 | 477 | 502 | 527 | 552 |

# S VQC4000

**kit (Serial transmission kit): For EX250 Integrated-type (I/O) serial transmission system** IP67 compliant

## VV5QC41
## S Kit
## (Serial transmission kit: EX250)



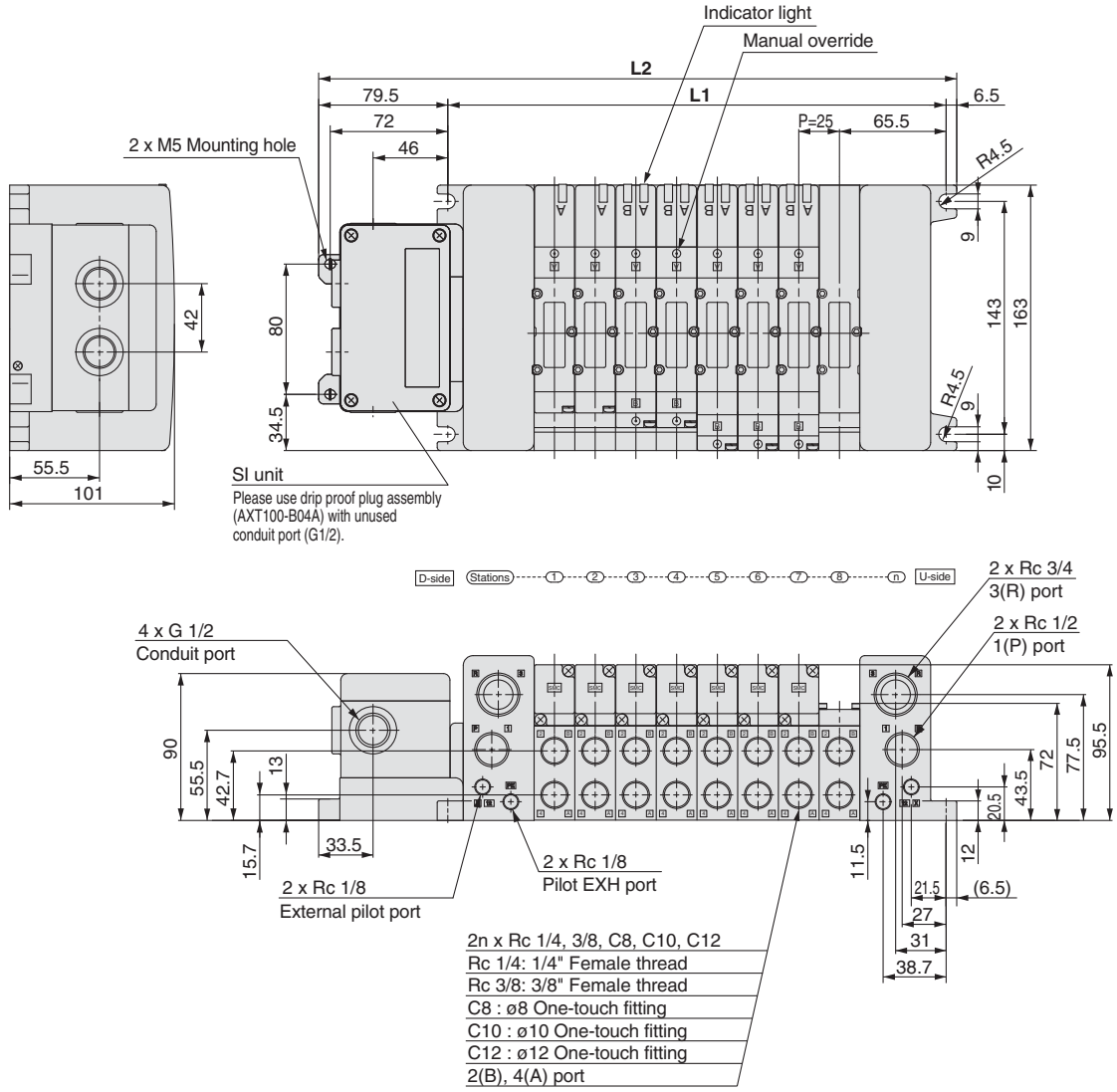

Formulas: L1 = 25n + 106, L2 = 25n + 205 (For one input block. Add 21 mm for each additional input block.) n: Stations (Maximum 16 stations)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 131 | 156 | 181 | 206 | 231 | 256 | 281 | 306 | 331 | 356 | 381 | 406 | 431 | 456 | 481 | 506 |
| **L2** | 230 | 255 | 280 | 305 | 330 | 355 | 380 | 405 | 430 | 455 | 480 | 505 | 530 | 555 | 580 | 605 |

# S VQC4000

**kit (Serial transmission kit): For EX126 Integrated-type (Output) serial transmission system** **IP67 compliant**

## VV5QC41
## S Kit (Serial transmission kit: EX126)

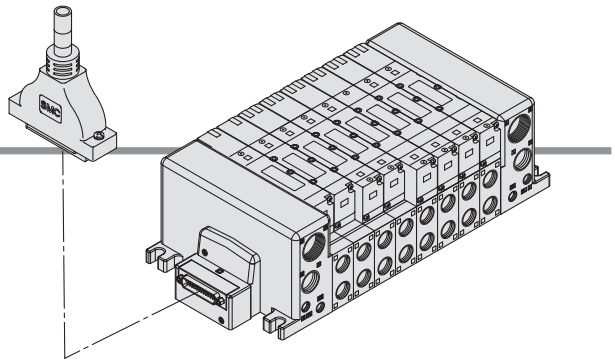



Formulas: L1 = 25n + 106, L2 = 25n + 192 n: Stations (Maximum 16 stations)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 131 | 156 | 181 | 206 | 231 | 256 | 281 | 306 | 331 | 356 | 381 | 406 | 431 | 456 | 481 | 506 |
| **L2** | 217 | 242 | 267 | 292 | 317 | 342 | 367 | 392 | 417 | 442 | 467 | 492 | 517 | 542 | 567 | 592 |

# Series VQC4000

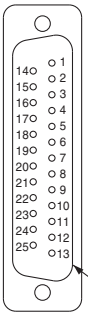
# F VQC4000
## kit (D-sub connector kit) IP40 compliant



- **Using our D-sub connector for electrical connections greatly reduces labor, while it also minimizes wiring and saves space.**
- **We use a D-sub connector (25P) that conforms to MIL standards and is therefore widely compatible with many standard commercial models.**
- **Top or side entry for the connector can be changed freely, allowing for changes even after mounting, to meet any changing needs for space.**

## Electrical Wiring Specifications

**D-sub connector**



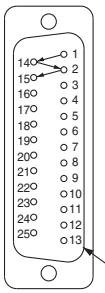

As the standard electrical wiring specification used is for 12 stations or less, double wiring (connected to SOL. A and SOL. B) is used for the internal wiring of each station regardless of valve and option types.
Mixed single and double wiring are available as options.
Refer to special wiring specifications (options) below.

**Lead wire colors for D-sub connector assemblies (AXT100-DS25-$^{015}_{030}_{050}$)**

| | | Terminal no. | Polarity | | Lead wire color | Dot marking |
|---|---|---|---|---|---|---|
| Station 1 | SOL.A | 1 | (–) | (+) | Black | None |
| | SOL.B | 14 | (–) | (+) | Yellow | Black |
| Station 2 | SOL.A | 2 | (–) | (+) | Brown | None |
| | SOL.B | 15 | (–) | (+) | Pink | Black |
| Station 3 | SOL.A | 3 | (–) | (+) | Red | None |
| | SOL.B | 16 | (–) | (+) | Blue | White |
| Station 4 | SOL.A | 4 | (–) | (+) | Orange | None |
| | SOL.B | 17 | (–) | (+) | Purple | None |
| Station 5 | SOL.A | 5 | (–) | (+) | Yellow | None |
| | SOL.B | 18 | (–) | (+) | Gray | None |
| Station 6 | SOL.A | 6 | (–) | (+) | Pink | None |
| | SOL.B | 19 | (–) | (+) | Orange | Black |
| Station 7 | SOL.A | 7 | (–) | (+) | Blue | None |
| | SOL.B | 20 | (–) | (+) | Red | White |
| Station 8 | SOL.A | 8 | (–) | (+) | Purple | White |
| | SOL.B | 21 | (–) | (+) | Brown | White |
| Station 9 | SOL.A | 9 | (–) | (+) | Gray | Black |
| | SOL.B | 22 | (–) | (+) | Pink | Red |
| Station 10 | SOL.A | 10 | (–) | (+) | White | Black |
| | SOL.B | 23 | (–) | (+) | Gray | Red |
| Station 11 | SOL.A | 11 | (–) | (+) | White | Red |
| | SOL.B | 24 | (–) | (+) | Black | White |
| Station 12 | SOL.A | 12 | (–) | (+) | Yellow | Red |
| | SOL.B | 25 | (–) | (+) | White | None |
| | COM. | 13 | (+) | (–) Note) | Orange | Red |
| | | | **Positive COM spec.** | **Negative COM spec.** | | |

## Special Wiring Specifications (Options)

(For 25P)

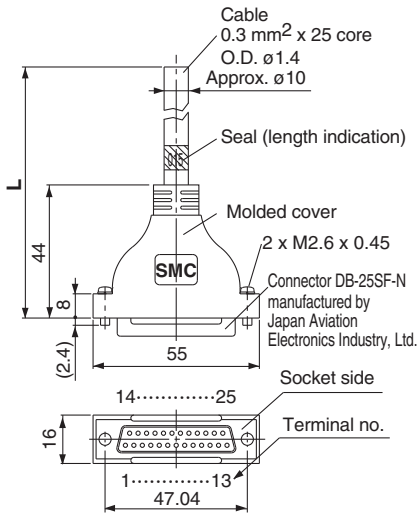



Mixed single and double wiring are available as options. The maximum number of manifold stations is determined by the number of solenoids. Count one point for a single solenoid type and two points for a double solenoid type. The total number of solenoids (points) must not exceed 24.

## Cable Assembly

**AXT100-DS25-$^{015}_{030}_{050}$**

(D-sub connector cable assemblies can be ordered with manifolds. Refer to manifold ordering.)




**Lead wire colors for D-sub connector cable assembly terminal numbers**

| Terminal no. | Lead wire color | Dot marking |
|---|---|---|
| 1 | Black | None |
| 2 | Brown | None |
| 3 | Red | None |
| 4 | Orange | None |
| 5 | Yellow | None |
| 6 | Pink | None |
| 7 | Blue | None |
| 8 | Purple | White |
| 9 | Gray | Black |
| 10 | White | Black |
| 11 | White | Red |
| 12 | Yellow | Red |
| 13 | Orange | Red |
| 14 | Yellow | Black |
| 15 | Pink | Black |
| 16 | Blue | White |
| 17 | Purple | None |
| 18 | Gray | None |
| 19 | Orange | Black |
| 20 | Red | White |
| 21 | Brown | White |
| 22 | Pink | Red |
| 23 | Gray | Red |
| 24 | Black | White |
| 25 | White | None |

**D-sub connector cable assemblies**

| Cable length (**L**) | Part no. | Note |
|---|---|---|
| 1.5 m | AXT100-DS25-015 | Cable 0.3 mm² x 25 cores |
| 3 m | AXT100-DS25-030 | |
| 5 m | AXT100-DS25-050 | |

∗ When using a standard commercial connector, use a type 25P female connector conforming to MIL-C-24308.
∗ Cannot be used for transfer wiring.
∗ Lengths other than the above is also available. Please contact SMC for details.

**Electrical characteristics**

| Item | Characteristic |
|---|---|
| Conductor resistance Ω/km, 20˚C | 65 or less |
| Voltage limit V, 1 minute, AC | 1000 |
| Insulation resistance MΩ/km, 20˚C | 5 or more |

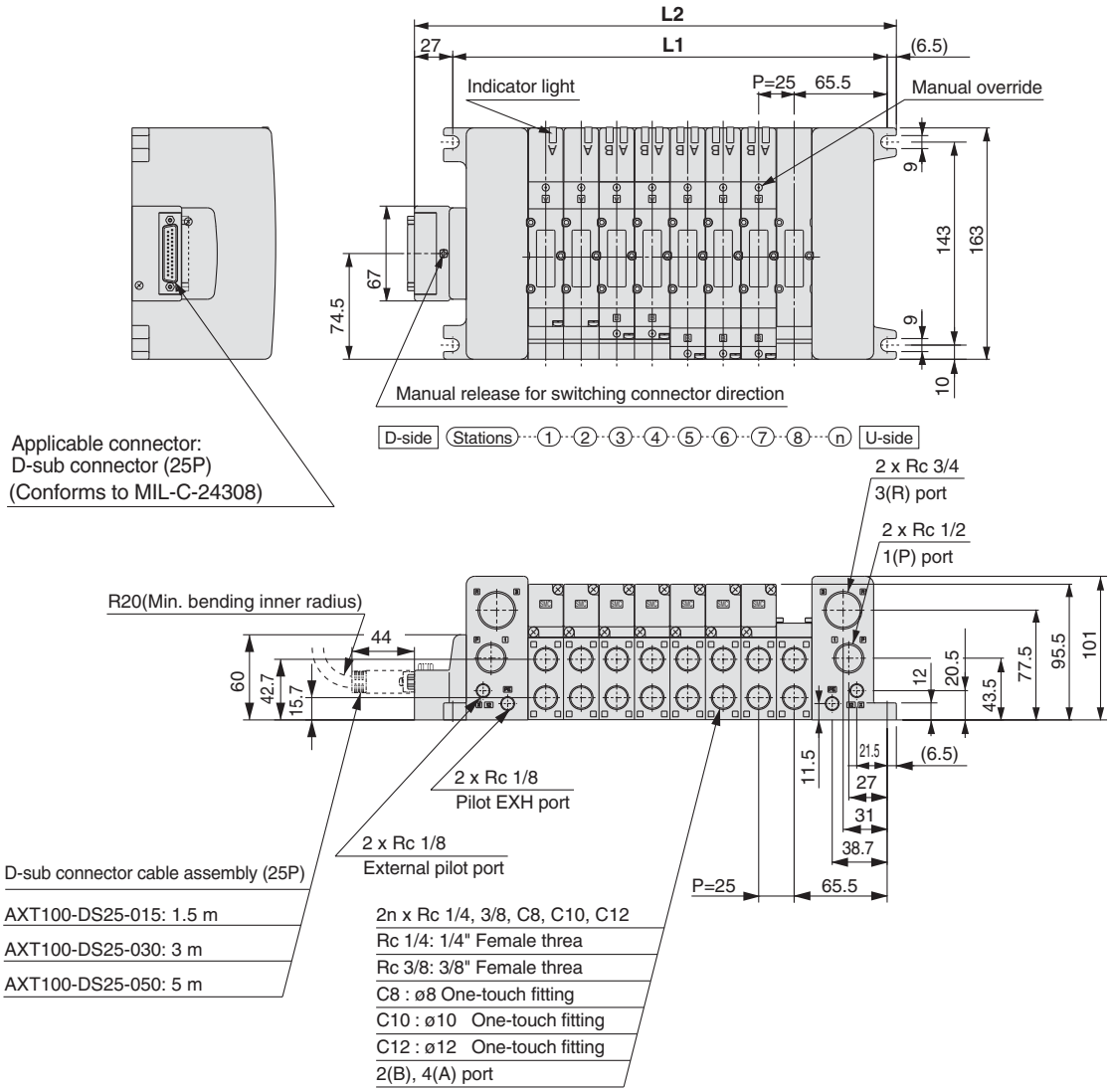
Note) The minimum bending radius for D-sub connector cables is 20 mm.

**Some connector manufacturers:**

· Fujitsu, Ltd.
· Japan Aviation Electronics Industry, Ltd.
· J.S.T. Mfg. Co., Ltd.
· HIROSE ELECTRIC CO., LTD.

# F VQC4000
## kit (D-sub connector kit) IP40 compliant

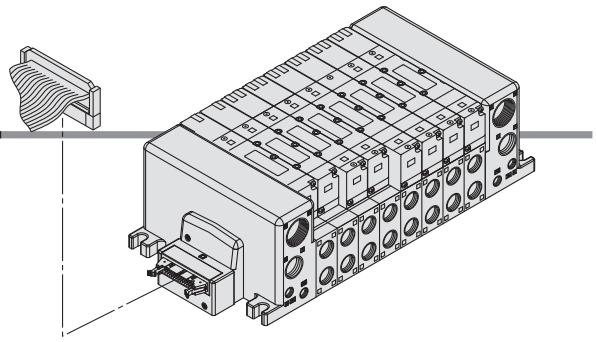
### VV5QC41




Formulas: L1 = 25n + 106, L2 = 25n + 139.5 n: Stations (Maximum 16 stations)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 131 | 156 | 181 | 206 | 231 | 256 | 281 | 306 | 331 | 356 | 381 | 406 | 431 | 456 | 481 | 506 |
| **L2** | 164.5 | 189.5 | 214.5 | 239.5 | 264.5 | 289.5 | 314.5 | 339.5 | 364.5 | 389.5 | 414.5 | 439.5 | 464.5 | 489.5 | 514.5 | 539.5 |

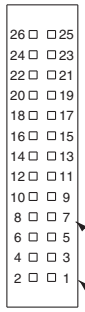
# P VQC4000
## kit (Flat ribbon cable kit) IP40 compliant



- **Using our flat ribbon cable for electrical connections greatly reduces labour, while it also minimizes wiring and saves space.**
- **We use flat ribbon cables whose connectors (26P and 20P) conform to MIL standards, and are therefore widely compatible with many standard commercial models.**
- **Top or side entry for the connector can be changed freely, allowing for changes even after mounting, to meet any changing needs for space.**

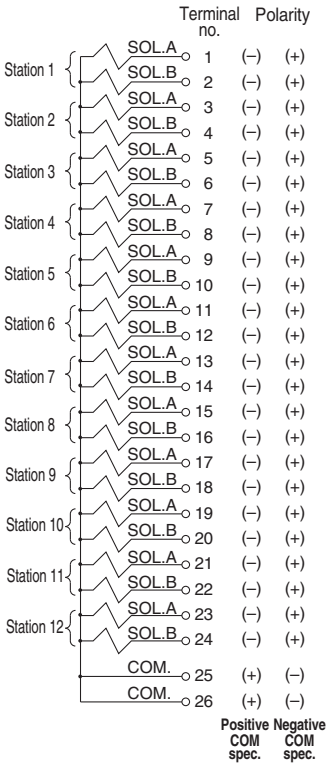
## Electrical Wiring Specifications

**Flat ribbon cable connector**

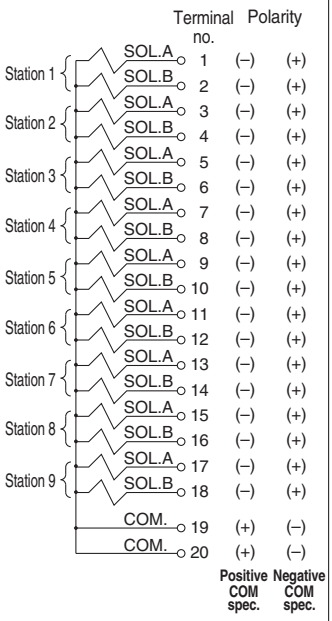



Double wiring (connected to SOL. A and SOL. B) is used for the internal wiring of each station regardless of valve and option types.
Mixed single and double wiring are available as options.
Refer to special wiring specifications (options) below.

**<26P>**



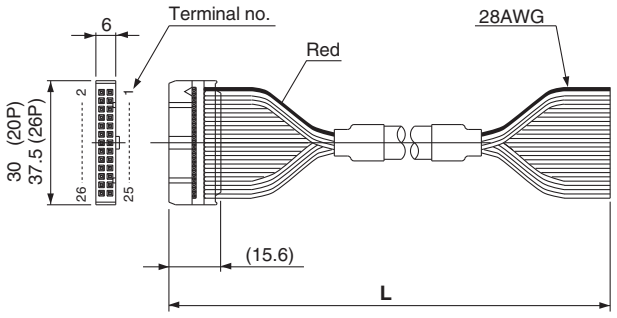

**<20P>**




## Cable Assembly

**AXT100-FC** $\begin{matrix}20\\26\end{matrix}$ **-** $\begin{matrix}1\\2\\3\end{matrix}$

Type 26P flat ribbon cable connector assemblies can be ordered with manifolds. Refer to manifold ordering.




**Flat ribbon cable connector assemblies**

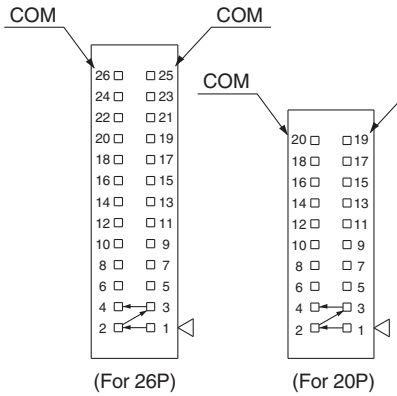
| Cable length (**L**) | Part no. | |
|---|---|---|
| | 26P | 20P |
| 1.5 m | AXT100-FC26-1 | AXT100-FC20-1 |
| 3 m | AXT100-FC26-2 | AXT100-FC20-2 |
| 5 m | AXT100-FC26-3 | AXT100-FC20-3 |

∗ When using a standard commercial connector, use a type 26P connector conforming to MIL-C-83503 or a type 20P with strain relief.
∗ Cannot be used for transfer wiring.
∗ Lengths other than the above is also available. Please contact SMC for details.

**Connector Manufacturers Example:**

· Hirose Electric CO., Ltd.
· Sumitomo/3-M Limited
· Fujitsu, Ltd.
· Japan Aviation Electronics Industry, Ltd.
· J.S.T. Mfg. Co., Ltd.
· Oki Electric Cable Co., Ltd.

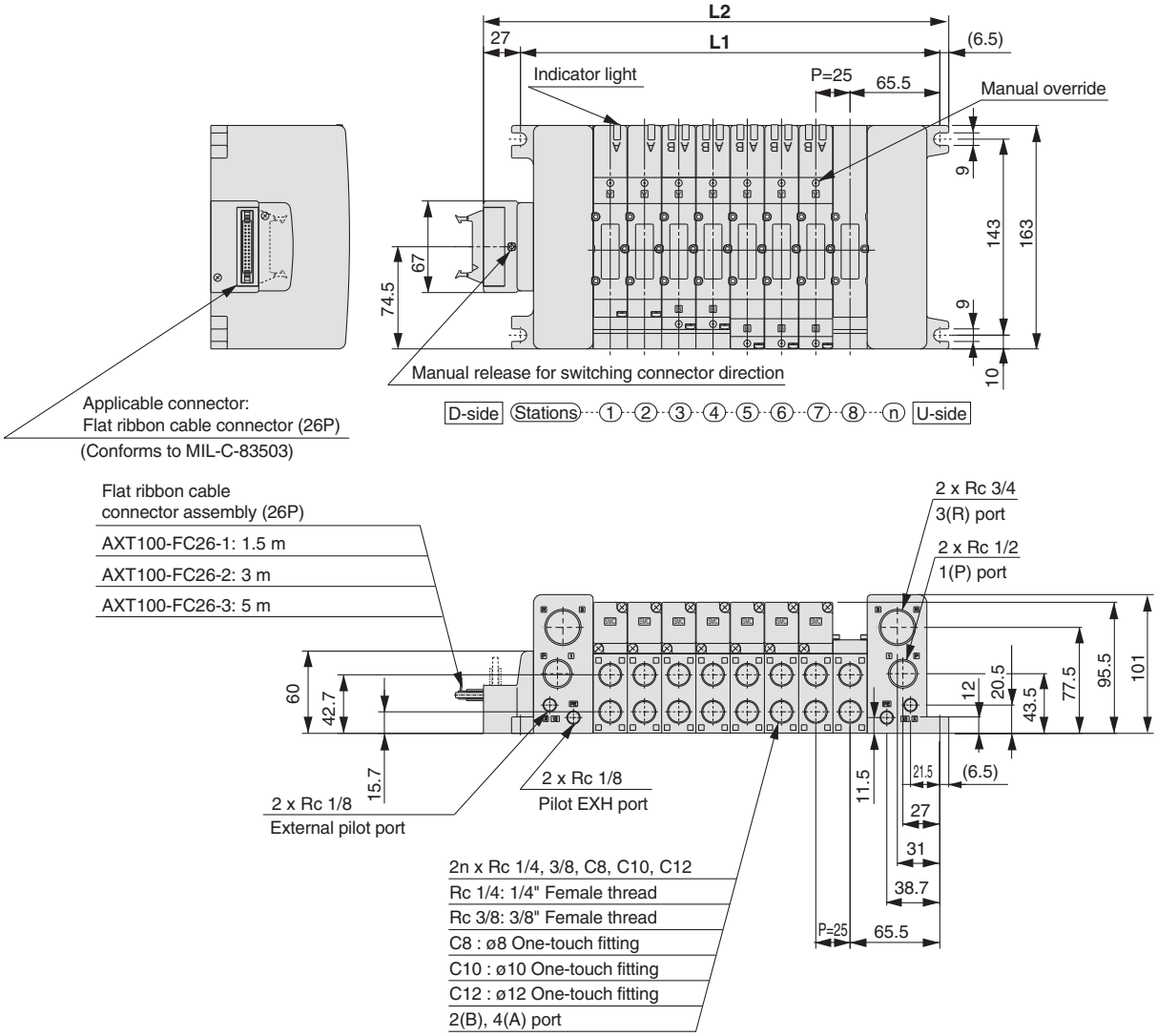
## Special Wiring Specifications (Option)




Mixed single and double wiring are available as options. The maximum number of manifold stations is determined by the number of solenoids. Count one point for a single solenoid type and two points for a double solenoid type. The total number of solenoids (points) must not exceed 24.

# P VQC4000
## kit (Flat ribbon cable kit) IP40 compliant

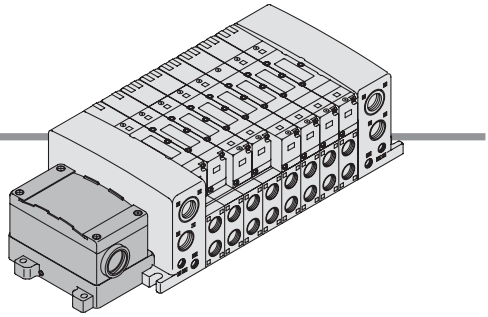
### VV5QC41




Formulas: L1 = 25n + 106, L2 = 25n + 139.5 n: Stations (Maximum 16 stations)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 131 | 156 | 181 | 206 | 231 | 256 | 281 | 306 | 331 | 356 | 381 | 406 | 431 | 456 | 481 | 506 |
| **L2** | 164.5 | 189.5 | 214.5 | 239.5 | 264.5 | 289.5 | 314.5 | 339.5 | 364.5 | 389.5 | 414.5 | 439.5 | 464.5 | 489.5 | 514.5 | 539.5 |

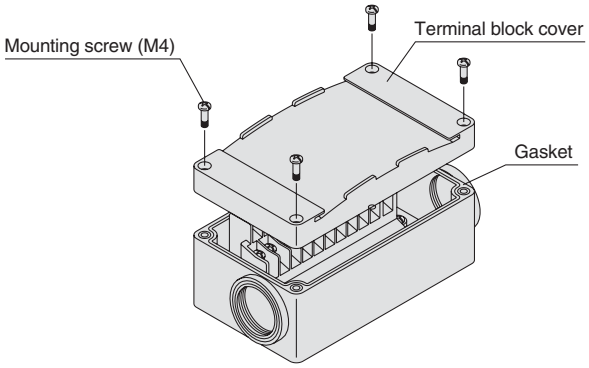
# T VQC4000
## kit (Terminal block box kit) IP67 compliant



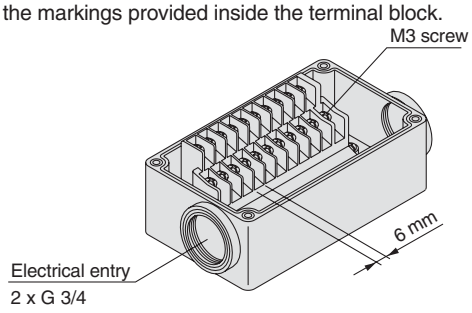
- **This kit has a small terminal block inside a junction box. The provision of a G 3/4 electrical entry allows connection of conduit fittings.**

## Terminal Block Connection

**Step 1. How to remove terminal block cover**
Loosen the 4 mounting screws (M4) and remove the terminal block cover.




**Step 2. The diagram below shows the terminal block wiring.**
**All stations are provided with double wiring regardless of the valves which are mounted.**
Connect each wire to the power supply side, according to the markings provided inside the terminal block.

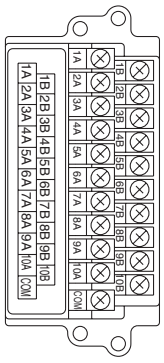



**Step 3. How to replace the terminal block cover**
Securely tighten the screws to the torque shown in the table below, after confirming that the gasket is installed correctly.

| Proper tightening torque (N·m) |
|---|
| 0.7 to 1.2 |

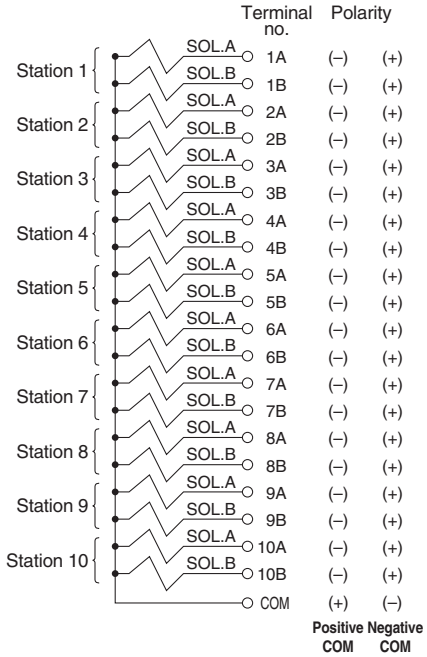
- Applicable crimped terminal: 1.25-3S,1.25Y-3,1.25Y-3N,1.25Y-3.5
- Name plate: VVQ5000-N-T
- Drip proof plug assembly (for G 3/4): AXT100-B06A

## Electrical Wiring Specifications (Conforms to IP67)




The internal wiring is double (connected to SOL. A and SOL. B) for all stations regardless of the type of valve or options.
Mixed single and double wiring are available as options.

**Standard wiring**

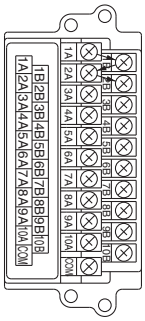



### Special Wiring Specifications (Option)

Mixed single and double wiring are available as options. The maximum number of manifold stations is determined by the number of solenoids. Count one point for a single solenoid type and two points for a double solenoid type. The total number of solenoids (points) must not exceed 20.

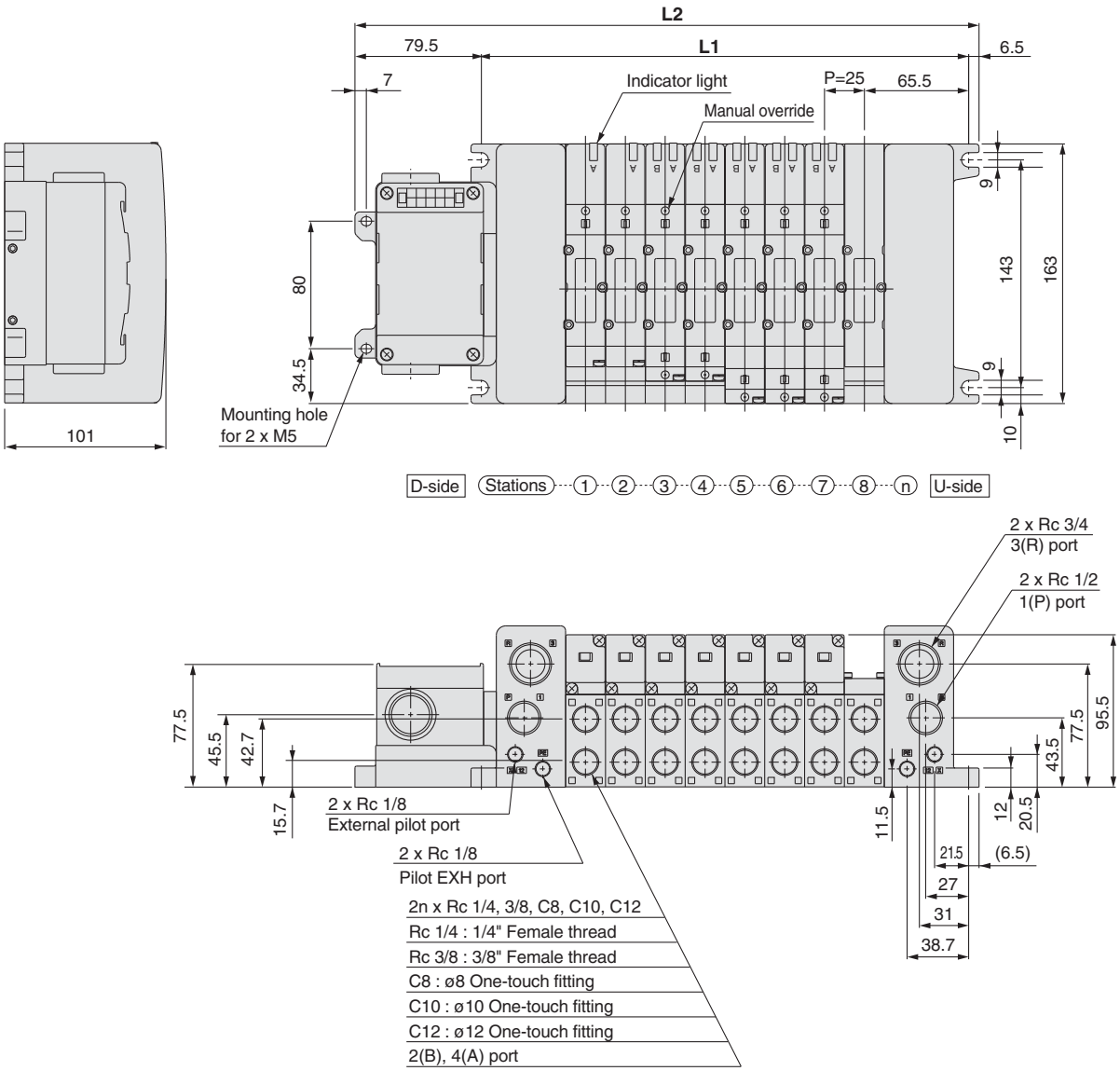
#### 1. How to order
Indicate option symbol "-K" in the manifold part number and be sure to specify station positions for single or double wiring on the manifold specification sheet.

#### 2. Wiring specifications
Connector terminal numbers are connected from solenoid station 1 on the A side in the order indicated by the arrows without skipping any terminal numbers.



# T VQC4000
## kit (Terminal block box kit) IP67 compliant

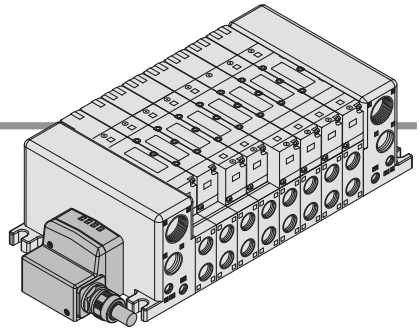
### VV5QC41




Formulas: L1 = 25n + 106, L2 = 25n + 192 n: Stations (Maximum 16 stations)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 131 | 156 | 181 | 206 | 231 | 256 | 281 | 306 | 331 | 356 | 381 | 406 | 431 | 456 | 481 | 506 |
| **L2** | 217 | 242 | 267 | 292 | 317 | 342 | 367 | 392 | 417 | 442 | 467 | 492 | 517 | 542 | 567 | 592 |

# L VQC4000
## kit (Lead wire kit) IP67 compliant

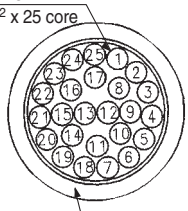


- **Direct electrical entry type.**
- **IP67 enclosure is available with use of cables with sheath and waterproof connectors.**

## Electrical Wiring Specifications

### Lead wire specifications

Lead wire
0.3 mm² x 25 core



Sheath
Colour: Urban white

As the standard electrical wiring specification used is for 12 stations or less, double wiring (connected to SOL. A and SOL. B) is used for the internal wiring of each station regardless of valve and option types.
Mixed single and double wiring are available as options.
Refer to special wiring specifications (options) below.

| | | Terminal no. | Polarity | | Lead wire colour | Dot marking |
|---|---|---|---|---|---|---|
| Station 1 | SOL.A | 1 | (–) | (+) | Black | None |
| | SOL.B | 14 | (–) | (+) | Yellow | Black |
| Station 2 | SOL.A | 2 | (–) | (+) | Brown | None |
| | SOL.B | 15 | (–) | (+) | Pink | Black |
| Station 3 | SOL.A | 3 | (–) | (+) | Red | None |
| | SOL.B | 16 | (–) | (+) | Blue | White |
| Station 4 | SOL.A | 4 | (–) | (+) | Orange | None |
| | SOL.B | 17 | (–) | (+) | Purple | None |
| Station 5 | SOL.A | 5 | (–) | (+) | Yellow | None |
| | SOL.B | 18 | (–) | (+) | Grey | None |
| Station 6 | SOL.A | 6 | (–) | (+) | Pink | None |
| | SOL.B | 19 | (–) | (+) | Orange | Black |
| Station 7 | SOL.A | 7 | (–) | (+) | Blue | None |
| | SOL.B | 20 | (–) | (+) | Red | White |
| Station 8 | SOL.A | 8 | (–) | (+) | Purple | White |
| | SOL.B | 21 | (–) | (+) | Brown | White |
| Station 9 | SOL.A | 9 | (–) | (+) | Grey | Black |
| | SOL.B | 22 | (–) | (+) | Pink | Red |
| Station 10 | SOL.A | 10 | (–) | (+) | White | Black |
| | SOL.B | 23 | (–) | (+) | Grey | Red |
| Station 11 | SOL.A | 11 | (–) | (+) | White | Red |
| | SOL.B | 24 | (–) | (+) | Black | White |
| Station 12 | SOL.A | 12 | (–) | (+) | Yellow | Red |
| | SOL.B | 25 | (–) | (+) | White | None |
| | COM. | 13 | (+) | (–) Note) | Orange | Red |
| | | | Positive COM spec. | Negative COM spec. | | |

### Lead wire length

**VV5QC11−08 C6 LD 0**

**Lead wire length**

| | |
|---|---|
| 0 | 0.6 m |
| 1 | 1.5 m |
| 2 | 3.0 m |

### Electrical characteristics

| Item | Characteristic |
|---|---|
| Conductor resistance Ω/km, 20˚C | 65 or less |
| Withstand pressure V, 1 minute, AC | 1000 |
| Insulation resistance MΩ/km, 20˚C | 5 or more |

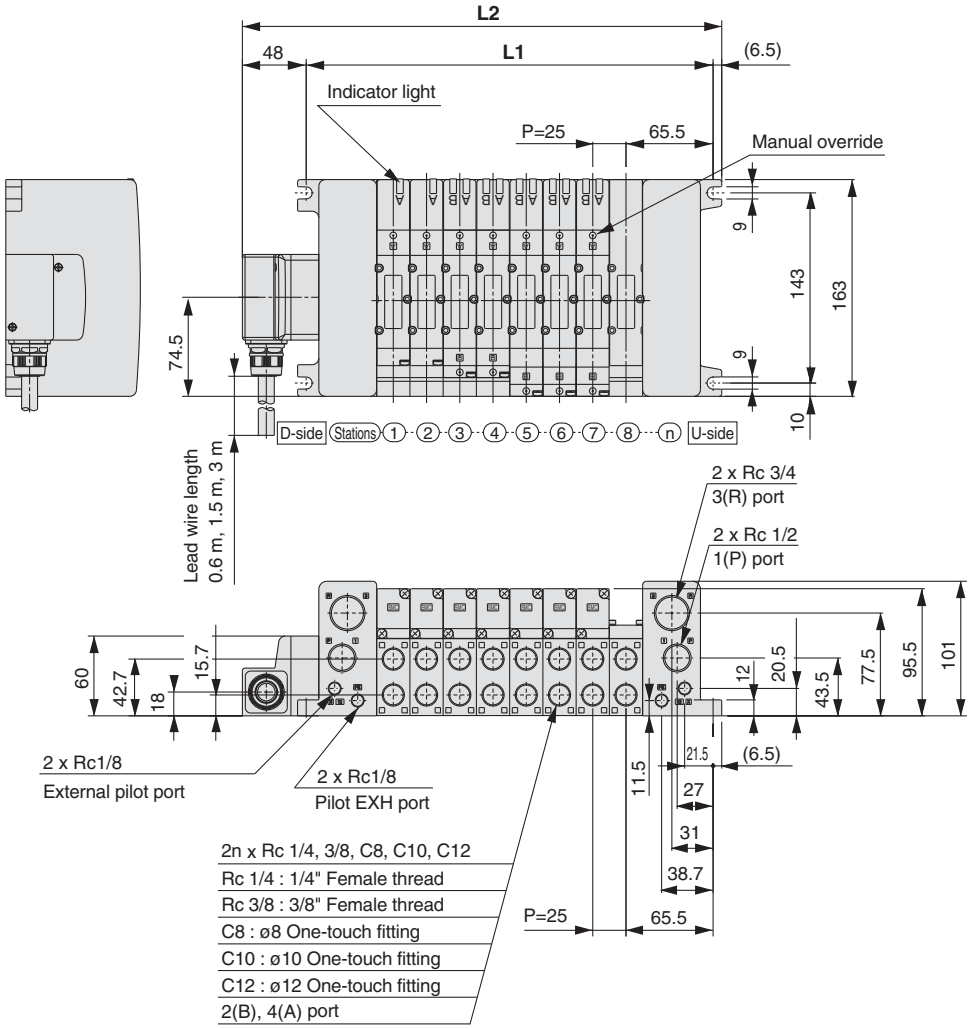
Note) Cannot be used for transfer wiring.
The minimum bending radius for cables is 20 mm.

## Special Wiring Specifications (Option)

Mixed single and double wiring are available as options. The maximum number of manifold stations is determined by the number of solenoids. Count one point for a single solenoid type and two points for a double solenoid type. The total number of solenoids (points) must not exceed 24.

# L VQC4000
## kit (Lead wire kit) IP67 compliant

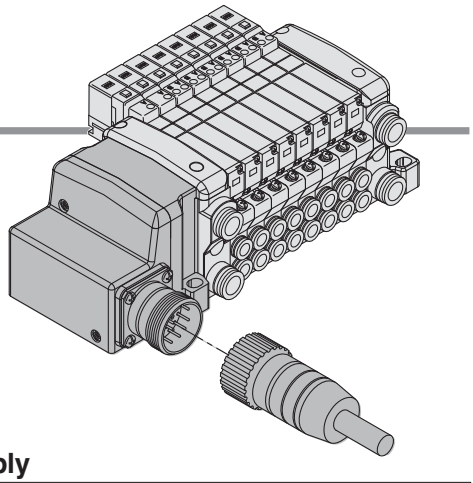
### VV5QC41




Formulas: L1 = 25n + 106, L2 = 25n + 160.5 n: Stations (Maximum 16 stations)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 131 | 156 | 181 | 206 | 231 | 256 | 281 | 306 | 331 | 356 | 381 | 406 | 431 | 456 | 481 | 506 |
| **L2** | 185.5 | 210.5 | 235.5 | 260.5 | 285.5 | 310.5 | 335.5 | 360.5 | 385.5 | 410.5 | 435.5 | 460.5 | 485.5 | 510.5 | 535.5 | 560.5 |

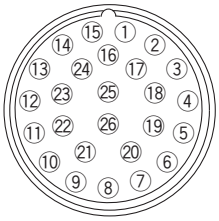
# M VQC4000
## kit (Circular connector kit) IP67 compliant



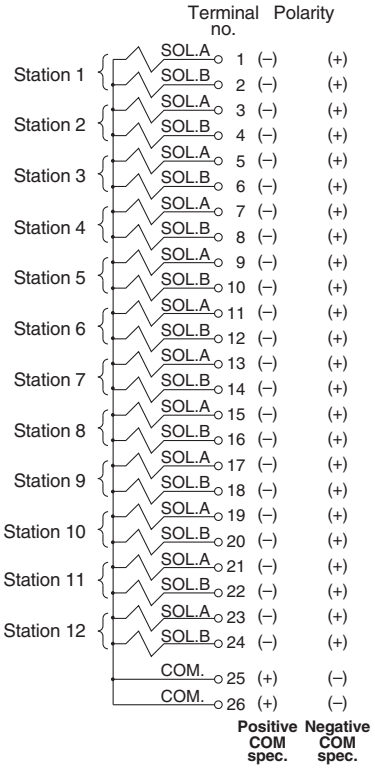
- **Use of circular connectors helps streamline wiring procedure to save labor.**
- **IP67 enclosure is available with use of waterproof multiple connectors.**

## Electrical Wiring Specifications

**Multiple connector**




Double wiring(connected to SOL.A and SOL.B) is used for the internal wiring of each staion regardless of valve and option types. Mixed single and double wiring are available as options. Refer to special wiring specifications(options) below.



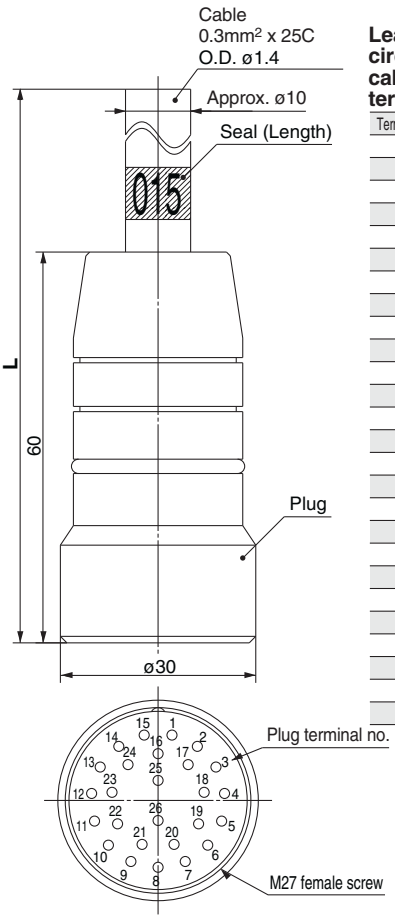

## Special Wiring Specifications (Option)

Mixed single and double wiring are available as an option. The maximum number of manifold stations is determined by the number of solenoids. Count one point for a single solenoid type and two points for a double solenoid type. The total number of solenoids (points) must not exceed 24.

## Cable Assembly

**AXT100-MC26-** 015 / 030 / 050

(Type 26P circular connector cable assemblies can be ordered with manifolds. Refer to manifolds ordering.)




**Lead wire colors for circular connector cable assembly terminal numbers**

| Terminal no. | Lead wire color | Dot marking |
|---|---|---|
| 1 | Black | None |
| 2 | Brown | None |
| 3 | Red | None |
| 4 | Orange | None |
| 5 | Yellow | None |
| 6 | Pink | None |
| 7 | Blue | None |
| 8 | Purple | White |
| 9 | Gray | Black |
| 10 | White | Black |
| 11 | White | Red |
| 12 | Yellow | Red |
| 13 | Orange | Red |
| 14 | Yellow | Black |
| 15 | Pink | Black |
| 16 | Blue | White |
| 17 | Purple | None |
| 18 | Gray | None |
| 19 | Orange | Black |
| 20 | Red | White |
| 21 | Brown | White |
| 22 | Pink | Red |
| 23 | Gray | Red |
| 24 | Black | White |
| 25 | White | None |
| 26 | White | None |

**Electric characteristics**

| Item | Property |
|---|---|
| Conductor resistance Ω/km, 20 C | 65 or less |
| Voltage limit V, 1 minute, AC | 1000 |
| Insulation resistance MΩ/km, 20 C | 5 or more |

Note) The minimum bending radius of the multiple connector cable is 20 mm.

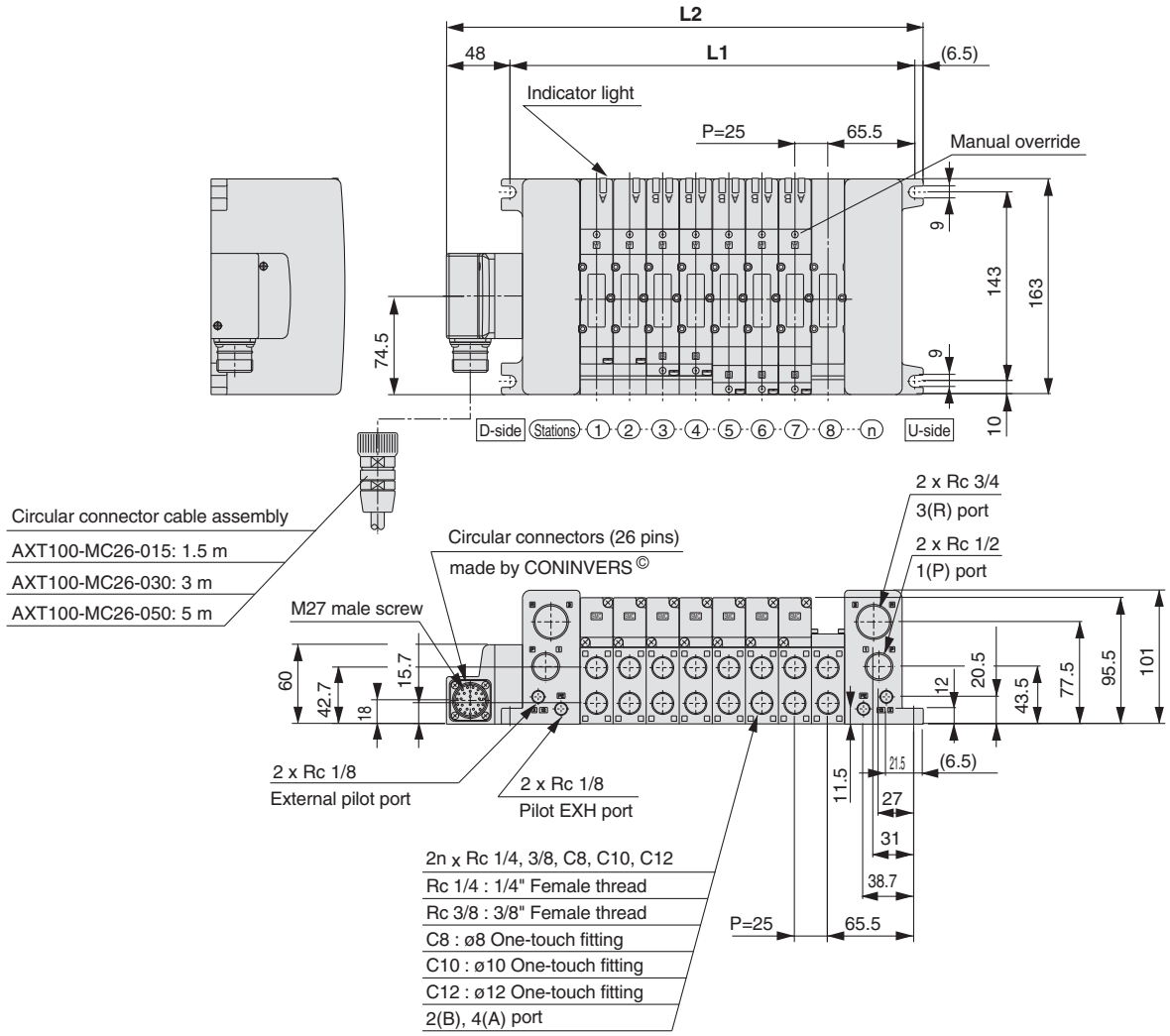
**Circular connector cable assemblies**

| Cable length (**L**) | Assembly no. |
|---|---|
| | 26P |
| 1.5 m | AXT100-MC26-015 |
| 3 m | AXT100-MC26-030 |
| 5 m | AXT100-MC26-050 |

∗ Cannot be used for transfer wiring.
∗ Lengths other than the above is also available. Please contact SMC for details.

# M VQC4000
## kit (Circular connector kit) IP67 compliant

### VV5QC41

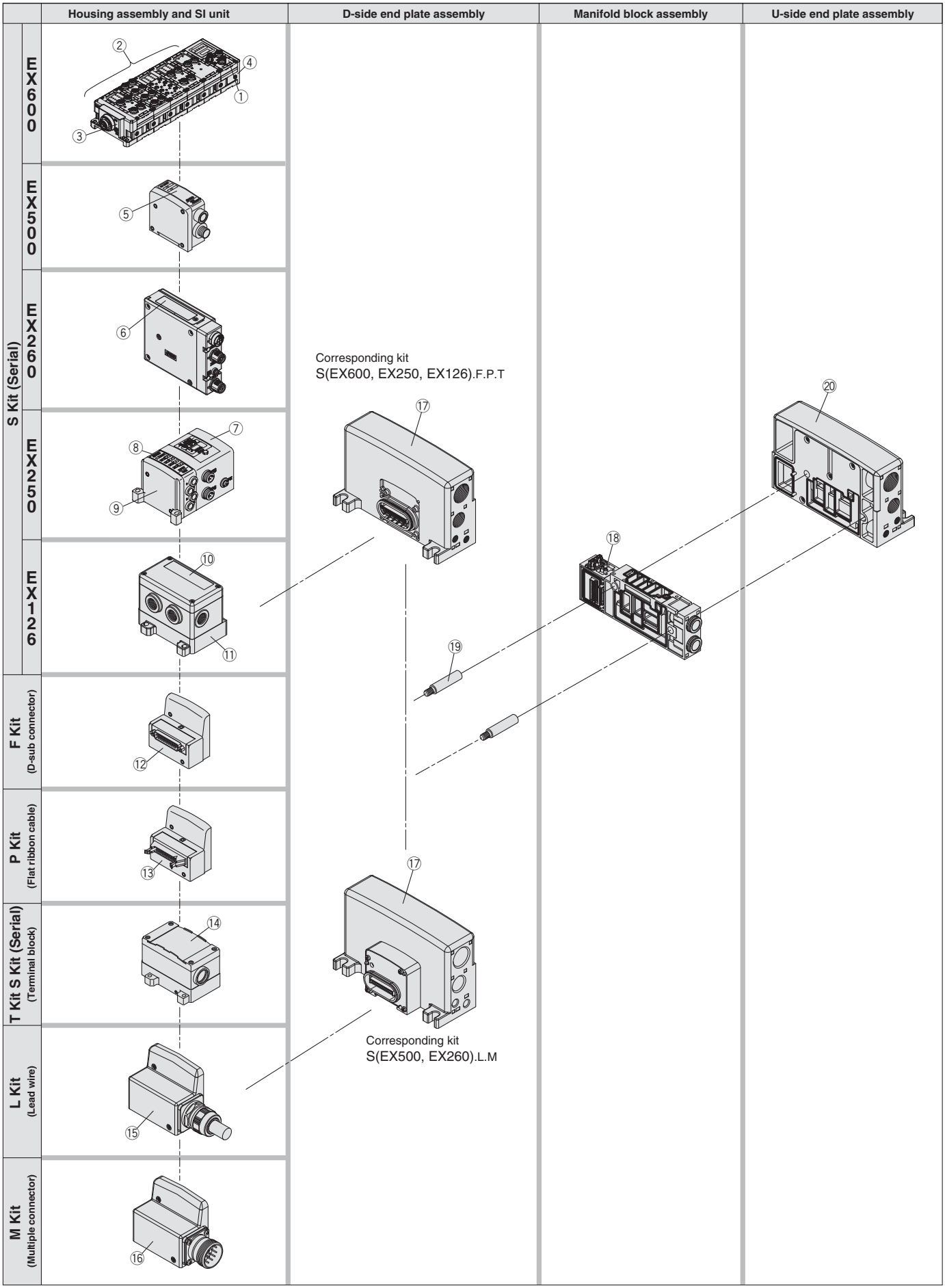



Formulas: L1 = 25n + 106, L2 = 25n + 150.5 n: Stations (Maximum 16 stations)

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 131 | 156 | 181 | 206 | 231 | 256 | 281 | 306 | 331 | 356 | 381 | 406 | 431 | 456 | 481 | 506 |
| **L2** | 185.5 | 210.5 | 235.5 | 260.5 | 285.5 | 310.5 | 335.5 | 360.5 | 385.5 | 410.5 | 435.5 | 460.5 | 485.5 | 510.5 | 535.5 | 560.5 |

## Series VQC4000

# Exploded View of Manifold






SMC

## Manifold Assembly Part No.

### Housing Assembly and SI Unit/Input Block

| No. | Description | Part no. | Note |
|---|---|---|---|
| 1 | SI unit | EX600-SDN1A | DeviceNet™ PNP (Negative common) |
| | | EX600-SDN2A | DeviceNet™ NPN (Positive common) |
| | | EX600-SMJ1 | CC-Link PNP (Negative common) |
| | | EX600-SMJ2 | CC-Link NPN (Positive common) |
| | | EX600-SPR1A | PROFIBUS DP (Negative common) |
| | | EX600-SPR2A | PROFIBUS DP (Positive common) |
| | | EX600-SEN1 | EtherNet/IP™ (Negative common) |
| | | EX600-SEN2 | EtherNet/IP™ (Positive common) |
| 2 | Digital Input Unit | EX600-DXNB | NPN input, M12 connector, 5 pins (4 pcs.), 8 inputs |
| | | EX600-DXPB | PNP input, M12 connector, 5 pins (4 pcs.), 8 inputs |
| | | EX600-DXNC | NPN input, M8 connector, 3 pins (8 pcs.), 8 inputs |
| | | EX600-DXNC1 | NPN input, M8 connector, 3 pins (8 pcs.), 8 inputs, with open circuit detection |
| | | EX600-DXPC | PNP input, M8 connector, 3 pins (8 pcs.), 8 inputs |
| | | EX600-DXPC1 | PNP input, M8 connector, 3 pins (8 pcs.), 8 inputs, with open circuit detection |
| | | EX600-DXND | NPN input, M12 connector, 5 pins (8 pcs.), 16 inputs |
| | | EX600-DXPD | PNP input, M12 connector, 5 pins (8 pcs.), 16 inputs |
| | | EX600-DXNE | NPN input, D-sub connector, 25 pins, 16 inputs |
| | | EX600-DXPE | PNP input, D-sub connector, 25 pins, 16 inputs |
| | | EX600-DXNF | NPN input, Spring type terminal box, 32 pins, 16 inputs |
| | | EX600-DXPF | PNP input, Spring type terminal box, 32 pins, 16 inputs |
| | Digital Output Unit | EX600-DYNB | NPN output, M12 connector, 5 pins (4 pcs.), 8 outputs |
| | | EX600-DYPB | PNP output, M12 connector, 5 pins (4 pcs.), 8 outputs |
| | | EX600-DYNE | NPN output, D-sub connector, 25 pins, 16 outputs |
| | | EX600-DYPE | PNP output, D-sub connector, 25 pins, 16 outputs |
| | | EX600-DYNF | NPN output, Spring type terminal box, 32 pins, 16 outputs |
| | | EX600-DYPF | NPN output, Spring type terminal box, 32 pins, 16 outputs |
| | Digital Input/Output | EX600-DMNE | NPN input/output, D-sub connector, 25 pins, 8 inputs/outputs |
| | | EX600-DMPE | PNP input/output, D-sub connector, 25 pins, 8 inputs/outputs |
| | | EX600-DMNF | NPN input/output, Spring type terminal box, 32 pins, 8 inputs/outputs |
| | | EX600-DMPF | PNP input/output, Spring type terminal box, 32 pins, 8 inputs/outputs |
| | Analog Input Unit | EX600-AXA | M12 connector, 5 pins (2 pcs.), 2-channel input |
| | Analog Output Unit | EX600-AYA | M12 connector, 5 pins (2 pcs.), 2-channel output |
| | Analog Input/Output Unit | EX600-AMB | M12 connector, 5 pins (4 pcs.), 2-channel inputs/outputs |
| 3 | End plate | EX600-ED2 | M12 connector, 5 pins, Max. supply current 2 A |
| | | EX600-ED2-2 | M12 connector, 5 pins, Max. supply current 2 A, with DIN rail mounting bracket |
| | | EX600-ED3 | 7/8 inch connector, 5 pins, Max. supply current 8 A |
| | | EX600-ED3-2 | 7/8 inch connector, 5 pins, Max. supply current 8 A, with DIN rail mounting bracket |
| 4 | Valve Plate | EX600-ZMV1 | Enclosed parts: round head screws (M4 x 6) 2 pcs., round head screws (M3 x 8) 4 pcs. |
| 5 | SI unit | EX500-Q001 | EX500 NPN (Positive common) |
| | | EX500-Q101 | EX500 PNP (Negative common) |
| 6 | SI unit | EX260-SDN1 | DeviceNet™, M12 connector, 32 outputs PNP (Negative common) |
| | | EX260-SDN2 | DeviceNet™, M12 connector, 32 outputs NPN (Positive common) |
| | | EX260-SDN3 | DeviceNet™, M12 connector, 16 outputs PNP (Negative common) |
| | | EX260-SDN4 | DeviceNet™, M12 connector, 16 outputs NPN (Positive common) |
| | | EX260-SRP1 | PROFIBUS DP, M12 connector, 32 outputs PNP (Negative common) |
| | | EX260-SRP2 | PROFIBUS DP, M12 connector, 32 outputs NPN (Positive common) |
| | | EX260-SRP3 | PROFIBUS DP, M12 connector, 16 outputs PNP (Negative common) |
| | | EX260-SRP4 | PROFIBUS DP, M12 connector, 16 outputs NPN (Positive common) |
| | | EX260-SRP5 | PROFIBUS DP, D-sub connector, 32 outputs PNP (Negative common) |
| | | EX260-SRP6 | PROFIBUS DP, D-sub connector, 32 outputs NPN (Positive common) |
| | | EX260-SRP7 | PROFIBUS DP, D-sub connector, 16 outputs PNP (Negative common) |
| | | EX260-SRP8 | PROFIBUS DP, D-sub connector, 16 outputs NPN (Positive common) |
| | | EX260-SEC1 | EtherCAT, M12 connector, 32 outputs PNP (Negative common) |
| | | EX260-SEC2 | EtherCAT, M12 connector, 32 outputs NPN (Positive common) |
| | | EX260-SEC3 | EtherCAT, M12 connector, 16 outputs PNP (Negative common) |
| | | EX260-SEC4 | EtherCAT, M12 connector, 16 outputs NPN (Positive common) |

## Manifold Assembly Part No.

### Housing Assembly and SI Unit/Input Block

| No. | Description | Part no. | Note |
|---|---|---|---|
| 7 | SI Unit | EX250-SPR1 | PROFIBUS DP PNP (Negative common) |
| | | EX250-SMJ2 | CC-LinkNPN (Positive common) |
| | | EX250-SAS3 | AS-Interface, 8 in/8 out, 31 slave modes, 2 power supply systems PNP (Negative common) |
| | | EX250-SAS5 | AS-Interface, 4 in/4 out, 31 slave modes, 2 power supply systems PNP (Negative common) |
| | | EX250-SAS7 | AS-Interface, 8 in/8 out, 31 slave modes, 1 power supply system PNP (Negative common) |
| | | EX250-SAS9 | AS-Interface, 4 in/4 out, 31 slave modes, 1 power supply system PNP (Negative common) |
| | | EX250-SCA1A | CANopen PNP (Negative common) |
| | | EX250-SDN1 | DeviceNet™ PNP (Negative common) |
| | | EX250-SEN1 | EtherNet/IP™ PNP (Negative common) |
| 8 | Input block | EX250-IE1 | M12, 2 inputs |
| | | EX250-IE2 | M12, 4 inputs |
| | | EX250-IE3 | M8, 4 inputs |
| 9 | End plate assembly | EX250-EA1 | Direct mounting |
| | | EX250-EA2 | DIN rail mounting |
| 10 | SI unit | EX126D-SMJ1 | CC-Link NPN (Positive common) |
| 11 | Terminal plate | VVQC1000-74A-2 | For EX126 SI unit mounting |
| 12 | D-sub connector housing assembly | VVQC1000-F25-1 | F kit, 25 pins |
| 13 | Flat ribbon cable housing assembly | VVQC1000-P26-1 | P kit, 26 pins |
| | | VVQC1000-P20-1 | P kit, 20 pins |
| 14 | Terminal block box housing assembly | VVQC1000-T0-1 | T kit |
| 15 | Lead wire housing assembly | VVQC1000-L25-0-1 | L kit with 0.6 m lead wire |
| | | VVQC1000-L25-1-1 | L kit with 1.5 m lead wire |
| | | VVQC1000-L25-2-1 | L kit with 3.0 m lead wire |
| 16 | Multiple connector housing assembly | VVQC1000-M26-1 | M kit 26 pins |

## Manifold Assembly Part No.

### D-side end plate assembly

⑰D-side end plate assembly part no.

VVQC4000-3A-[2] [ ]

Thread type

| | |
|---|---|
| Nil | Rc |
| F | G |
| T | NPT/NPTF |

Kit type

| | |
|---|---|
| 2 | F, P, T, S (EX126, EX250, EX600) kit |
| 3 | L, M, S (EX260, EX500) kit |

### U-side end plate assembly

⑳U-side end plate assembly part no.

VVQC4000-2A– 1 [ ]

Thread type

| | |
|---|---|
| Nil | Rc |
| F | G |
| T | NPT/NPTF |

### Manifold block assembly

⑱Manifold block assembly part no.

VVQC[4]000-1A-[D]-[C6]-[ ]

Wiring Specifications

| | |
|---|---|
| D | Double wiring |
| S | Single wiring |

Thread type

| | |
|---|---|
| Nil | Rc |
| F | G |
| T | NPT/NPTF |

Series

| | |
|---|---|
| 4 | VQC4000 |

Note) Tie-rods (2 pcs.) for additional stations Included.

Port size

| Symbol | Port size |
|---|---|
| C8 | For ø8 |
| C10 | For ø10 |
| C12 | For ø12 |
| N7 | For ø1/4" |
| N9 | For ø5/16" |
| N11 | For ø3/8" |
| 02 | Rc 1/4" |
| 03 | Rc 3/8" |
| B | Rc 1/4" bottom ported |

### Replacement parts

#### Pilot valve assembly

| | |
|---|---|
| VQC4000 | VQZ111P□-□-□<br>A: A side (Indicator light: Orange)<br>B: B side (Indicator light: Green)<br>E: Without indicator light<br>(In common for A side and B side)<br>5: 24 VDC<br>6: 12 VDC<br>Nil: standard (1 W)<br>Y : Low wattage (0.5 W) |

⑲Tie-rod assembly part no. (2 units)

| | |
|---|---|
| VQC4000 | VVQC4000-TR-□ |

Note 1) Please order when reducing the number of manifold stations. When increasing the number of stations, additional orders are not required since they are included in the manifold block assembly.

Note 2) Number of stations, 02 to 24 (VQC4000: 02 to 16)

# Series VQC4000
# Specific Product Precautions 1

**Be sure to read this before handling. Refer to Front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.**

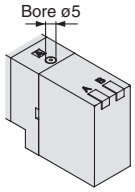
## Manual Override

### ⚠ Warning

**Since connected equipment will operate when the manual override is activated, confirm that conditions are safe prior to activation.**
**Push type (tool required) is standard, and locking type (tool required) is optional.**

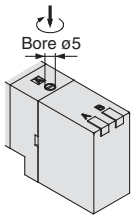
**■VQC4000**

**Push type (Tool required)**

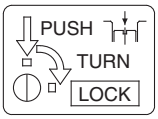



Push down the manual override button with a small screwdriver, etc., until it stops.
The manual override will return when released.

**Locking type (Tool required)**
**<Option>**




Push down the manual override button with a small flat head screwdriver or with your finger until it stops, and turn it clockwise 90˚ to lock it.
Turn it counterclockwise to release it.

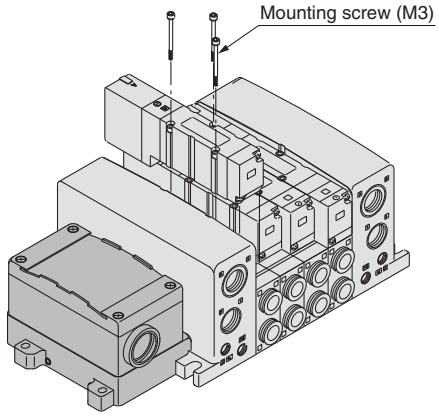



## Valve Mounting

### ⚠ Caution

**After confirming that the gasket is installed correctly, securely tighten the mounting screws according to the tightening torque shown below.**

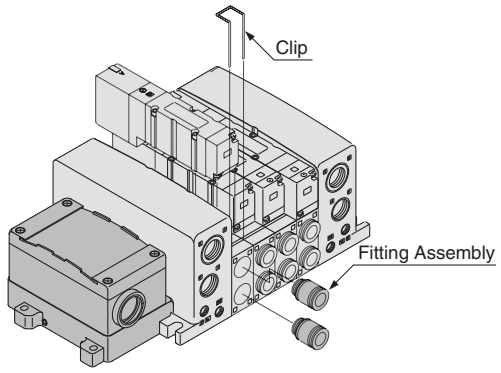
| Proper tightening torque (N·m) |
|---|
| 0.8 to 1.2 |




## Replacing One-touch Fittings

### ⚠ Caution

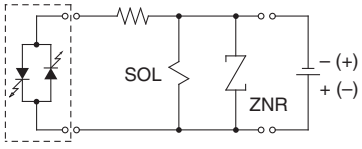
**Cylinder port fittings are available in cassette type and can be replaced easily. Fittings are secured with a retaining clip that is inserted from the top side of the valve. After removing the valve,remove the clip with a flat head screw driver to replace the fittings. To mount a fitting, insert the fitting assembly until it stops and reinsert the retaining clip to its designated position.**




| Applicable tube O.D. | Fitting assembly part no. |
|---|---|
| | VQC4000 |
| ø8 | VVQ4000-50B-C8 |
| ø10 | VVQ4000-50B-C10 |
| ø12 | VVQ4000-50B-C12 |
| ø1/4" | VVQ4000-50B-N7 |
| ø5/16" | VVQ4000-50B-N9 |
| ø3/8" | VVQ4000-50B-N11 |

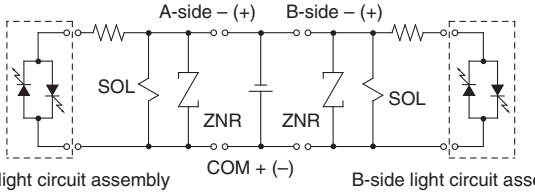
## Internal Wiring Specifications

### ⚠ Caution




Light circuit assembly (orange)

**DC: Single**




A-side light circuit assembly (orange)

**DC: Double**

B-side light circuit assembly (green)

Note) Coil surge voltage generated when OFF is about -60V. Please contact SMC separately for further suppression of the coil surge voltage.

## How to Calculate the Flow Rate

Refer to Front matters 44 to 47.

# Series VQC4000
# Specific Product Precautions 2

**Be sure to read this before handling. Refer to Front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.**

## Serial Wiring EX500/EX250/EX126 Precautions

### ⚠ Warning

1. **These products are intended for use in general factory automation equipment.**
   Avoid using these products in machinery/equipment which affects human safety, and in cases where malfunction or failure can result in extensive damage.
2. **Do not use in explosive environments, in the presence of inflammable gases, or in corrosive environments. This can cause injury or fire.**
3. **Work such as transporting, installing, piping, wiring, operation, control and maintenance should be performed by knowledgeable and qualified personnel only. As handling involves the risk of a danger of electrocution, injury or fire.**
4. **Install an external emergency stop circuit that can promptly stop operation and shut off the power supply.**
5. **Do not modify these products. Modifications done to these products carry the risk of injury and damage.**

### ⚠ Caution

1. **Read the instruction manual carefully, strictly observe the precautions and operate within the range of the specifications.**
2. **Do not drop these products or submit them to strong impacts. This can cause damage, failure or malfunction.**
3. **In locations with poor electrical conditions, take steps to ensure a steady flow of the rated power supply. Use of a voltage outside of the specifications can cause malfunction, damage to the unit, electrocution or fire.**
4. **Do not touch connector terminals or internal circuit elements when current is being supplied. There is a danger of malfunction, damage to the unit or electrocution if connector terminals or internal circuit elements are touched when current is being supplied.**
   Be sure that the power supply is OFF when adding or removing manifold valves or input blocks or when connecting or disconnecting connectors.
5. **Operate at an ambient temperature that is within the specifications. Even when the ambient temperature range is within the specifications, do not use in locations where there are rapid temperature changes.**
6. **Keep wire scraps and other extraneous materials from getting inside these products. This can cause fire, failure or malfunction.**
7. **Give consideration to the operating environment depending on the type of enclosure being used.**
   To achieve IP67 protection, provide appropriate wiring between all units using electrical wiring cables, communication connectors and cables with M12 connectors. Also, provide waterproof caps when there are unused ports, and perform proper mounting of input units, input blocks, SI units and manifold valves. Provide a cover or other protection for applications in which there is constant exposure to water.
8. **Use the proper tightening torques.**
   There is a possibility of damaging threads if tightening exceeds the tightening torque range.

### ⚠ Caution

9. **Provide adequate protection when operating in locations such as the following:**
   · Where noise is generated by static electricity
   · Where there is a strong electric field
   · Where there is a danger of exposure to radiation
   · When in close proximity to power supply lines
10. **When these products are installed in equipment, provide adequate protection against noise by using noise filters.**
11. **Since these products are components whose end usage is obtained after installation in other equipment, the customer should confirm conformity to EMC directives for the finished product.**
12. **Do not remove the name plate.**
13. **Perform periodic inspections and confirm normal operation, otherwise it may be impossible to guarantee safety due to unexpected malfunction or erroneous operation.**

## Power Supply Safety Instructions

### ⚠ Caution

1. **Operation is possible with a single power supply or a separate power supply. However, be sure to provide two wiring systems (one for solenoid valves, and one for input and control units). When it is UL compliant, use a class 2 power supply unit in accordance with UL1310 for a combined direct current power supply.**

## Cable Safety Instructions

### ⚠ Caution

1. **Avoid miswiring, as this can cause malfunction, damage and fire in the unit.**
2. **To prevent noise and surge in signal lines, keep all wiring separate from power lines and high voltage lines. Otherwise, this can cause a malfunction.**
3. **Check wiring insulation, as defective insulation can cause damage to the unit when excessive voltage or current is applied.**
4. **Do not bend or pull cables repeatedly, and do not place heavy objects on them or allow them to be pinched. This can cause broken lines.**

# Specific Product Precautions 3

**Be sure to read before handling. Refer to back pages 1 and 2 for Safety Instructions and back pages 3 to 6 for 5 Port Solenoid Valves Precautions.**

## EX600 Precautions

### Design/Selection

## ⚠Warning

**1. Use this product within the specification range.**

Using beyond the specified specifications range can cause fire, malfunction, or damage to the system.
Confirm the specifications when operating.

**2. When using for an interlock circuit:**

- **Provide a multiple interlock system which is operated by another system (such as mechanical protection function).**
- **Perform an inspection to check that it is working properly.**

This may cause possible injury due to malfunction.

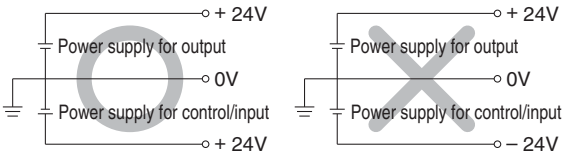
## ⚠Caution

**1. When it is UL compliant, use a class 2 power supply unit in accordance with UL1310 for a combined direct current power supply.**

**2. Use this product within the specified voltage range.**

Using beyond the specified voltage range is likely to cause the units and connecting devices to be damaged or to malfunction.

**3. The power supply for the unit should be 0 V as the standard for both power supply for output as well as power supply for control/input.**




**4. Do not install a unit in a place where it can be used as a foothold.**

Applying any excessive load such as stepping on the unit by mistake or placing a foot on it, will cause it to break.

**5. Keep the surrounding space free for maintenance.**

When designing a system, take into consideration the amount of free space needed for performing maintenance.

**6. Do not remove the name plate.**

Improper maintenance or incorrect use of operation manual can cause failure and malfunction.
Also, there is a risk of losing conformity with safety standards.

**7. Beware of inrush current when the power supply is turned on.**

Some connected loads can apply an initial charge current which will trigger the over current protection function, causing the unit to malfunction.

### Mounting

## ⚠Caution

**1. When handling and assembling units:**

- **Do not touch the sharp metal parts of the connector or plug.**
- **Do not apply excessive force to the unit.**

The connecting portions of the unit are firmly joined with seals.

- **When joining units, take care not to get fingers caught between units.**

Injury can result.

### Mounting

## ⚠Caution

**2. Do not drop, bump, or apply excessive impact.**

Otherwise, the unit can become damaged, malfunction, or fail to function.

**3. Observe the tightening torque range.**

Tightening outside of the allowable torque range will likely damage the product.

IP67 protection class cannot be guaranteed if the screws are not tightened to the specified torque.

**4. When lifting a large size manifold solenoid valve unit, take care to avoid causing stress to the valve connection joint.**

The connection parts of the unit may be damaged.

Because the unit may be heavy, carrying and installation should be performed by more than one operator to avoid strain or injury.

**5. When placing a manifold, mount it on a flat surface.**

Torsion in the whole manifold can lead to trouble such as air leakage or defective insulation.

### Wiring

## ⚠Caution

**1. Confirm grounding to maintain the safety of the reduced wiring system and for anti-noise performance.**

Provide a specific grounding as close to the unit as possible to minimize the distance to grounding.

**2. Avoid repeatedly bending or stretching the cable and applying a heavy object or force to it.**

Wiring applying repeated bending and tensile stress to the cable can break the circuit.

**3. Avoid miswiring.**

If miswired, there is a danger of malfunction or damage to the reduced wiring system.

**4. Do not wire while energizing the product.**

There is a danger of malfunction or damage to the reduced wiring system or input/output equipment.

**5. Avoid wiring the power line and high-pressure line in parallel.**

Noise or surge produced by signal line resulting from the power line or high pressure line could cause malfunction.

Wiring of the reduced wiring system or input/output device and the power line or high-pressure line should be separated from each other.

**6. Confirm the wiring insulation.**

Defective insulation (contact with other circuits, improper insulation between terminals, etc.) may cause damage to the reduced wiring system or input/output device due to excessive voltage or current.

# Specific Product Precautions 4

**Be sure to read before handling. Refer to back pages 1 and 2 for Safety Instructions and back pages 3 to 6 for 5 Port Solenoid Valves Precautions.**

## EX600 Precautions

### Wiring

## ⚠Caution

**7. When a reduced wiring system is installed in machinery/equipment, provide adequate protection against noise by using noise filters, etc.**

Noise in signal lines may cause malfunction.

**8. When connecting wires of input/output device or handheld terminal, prevent water, solvent or oil from entering inside from the connecter section.**

This can cause damage, equipment failure, or malfunction.

**9. Avoid wiring patterns in which excessive stress is applied to the connector.**

This may cause malfunction or damage to the unit due to contact failure.

### Operating Environment

## ⚠Warning

**1. Do not use in an atmosphere containing an inflammable gas or explosive gas.**

Use in such an atmosphere is likely to cause a fire or explosion.
This system is not explosion-proof.

## ⚠Caution

**1. Select the proper type of enclosure according to the environment of operation.**

IP65/67 protection class is achieved when the following conditions are met.

1) The units are connected properly with wiring cable for power supply, communication connector, and cable with M12 connector.
2) Suitable mounting of each unit and manifold valve.
3) Be sure to mount a seal cap on any unused connectors.

If using in an environment that is exposed to water splashes, please take measures such as using a cover.

For IP40 protection class, do not use in atmospheres with corrosive gas, chemicals, sea water, water, steam, or where there is direct contact with any of these.

When EX600-D□□E or EX600-D□□F are connected, the enclosure of the manifold should be IP40.

Also, the Handheld Terminal confirms to IP20, so prevent foreign matter from entering inside, and water, solvent or oil from coming in direct contact with it.

**2. Provide adequate protection when operating in locations such as follows.**

Failure to do so may cause damage or malfunction.
The effect of countermeasures should be checked in individual equipment and machine.

1) Where noise is generated by static electricity, etc.
2) Where there is a strong electric field
3) Where there is a danger of exposure to radiation
4) When in close proximity to power supply lines

### Operating Environment

## ⚠Caution

**3. Do not use in an environment where oil and chemicals are used.**

Operating in environments with coolants, cleaning solvents, various oils or chemicals may cause adverse effects (damage, malfunction) to the unit even in a short period of time.

**4. Do not use in an environment where the product could be exposed to corrosive gas or liquid.**

This may damage the unit and cause it to malfunction.

**5. Do not use in locations with sources of surge generation.**

Installation of the unit in an area around the equipment (electromagnetic lifters, high frequency induction furnaces, welding machine, motors etc.), which generates the large surge voltage could cause to deteriorate an internal circuitry element of the unit or result in damage. Implement countermeasures against the surge from the generating source, and avoid touching the lines with each other.

**6. Use the product type that has an integrated surge absorption element when directly driving a load which generates surge voltage by relay, solenoid valves or lamp.**

When a surge generating load is directly driven, the unit may be damaged.

**7. The product is CE marked, but not immune to lightning strikes. Take measures against lightning strikes in your system.**

**8. Keep dust, wire scraps and other extraneous material from getting inside the product.**

This may cause malfunction or damage.

**9. Mount the unit in such locations, where no vibration or shock is affected.**

This may cause malfunction or damage.

**10. Do not use in places where there are cyclic temperature changes.**

In case that the cyclic temperature is beyond normal temperature changes, the internal unit is likely to be adversely effected.

**11. Do not use in direct sunlight.**

Do not use in direct sunlight. It may cause malfunction or damage.

**12. Use this product within the specified ambient temperature range.**

This may cause malfunction.

**13. Do not use in places where there is radiated heat around it.**

Such a place is likely to cause malfunction.

# Specific Product Precautions 5

**Be sure to read before handling. Refer to back pages 1 and 2 for Safety Instructions and back pages 3 to 6 for 5 Port Solenoid Valves Precautions.**

## EX600 Precautions

### Adjustment/Operation

#### ⚠Warning

**1. Do not perform operation or setting with wet hands.**

There is a risk of electrical shock.

**<Handheld Terminal>**

**2. Do not apply pressure to the LCD display.**

There is a possibility of the crack of LCD display and injuring.

**3. The forced input/output function is used to change the signal status forcibly. When operating this function, be sure to check the safety of the surroundings and installation.**

Otherwise, injury or equipment damage could result.

**4. Incorrect setting of parameters can cause malfunction. Be sure to check the settings before use.**

This may cause injury or equipment damage.

#### ⚠Caution

**1. Use a watchmaker's screwdriver with thin blade for the setting of each switch of the SI unit.**
**When setting the switch, do not touch other unrelated parts.**

This may cause parts damage or malfunction due to a short circuit.

**2. Provide adequate setting for the operating conditions.**

Failure to do so could result in malfunction.
Refer to the operation manual for setting of the switches.

**3. For the details of programming and address setting, refer to the manual from the PLC manufacturer.**

The content of programming related to protocol is designed by the manufacturer of the PLC used.

**<Handheld Terminal>**

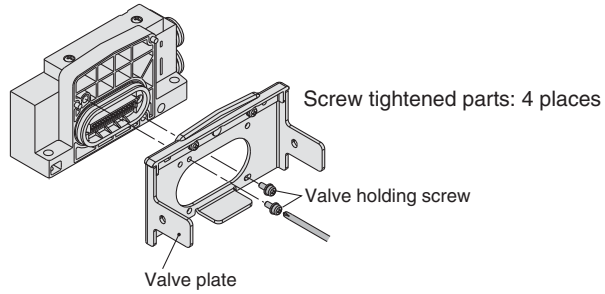
**4. Do not press the setting buttons with a sharp pointed object.**

This may cause damage or malfunction.

**5. Do not apply excessive load and impact to the setting buttons.**

This may cause damage, equipment failure or malfunction.

When the order does not include the SI unit, the valve plate to connect the manifold and SI unit is not mounted. Use attached valve fixing screws and mount the valve plate.
(Tightening torque: 0.6 to 0.7 N·m)




### Maintenance

#### ⚠Warning

**1. Do not disassemble, modify (including circuit board replacement) or repair this product.**

Such actions are likely to cause injuries or breakage.

**2. When an inspection is performed,**

- **Turn off the power supply.**
- **Stop the air supply, exhaust the residual pressure in piping and verify that the air is released before performing maintenance work.**

Unexpected malfunction of system components and injury can result.

#### ⚠Caution

**1. When handling and replacing the unit:**

- **Do not touch the sharp metal parts of the connector or plug.**
- **Do not apply excessive force to the unit.**

The connecting portions of the unit are firmly joined with seals.

- **When joining units, take care not to get fingers caught between units.**

Injury can result.

**2. Perform periodic inspection.**

Unexpected malfunction in the system composition devices is likely to occur due to malfunction of machinery or equipment.

**3. After maintenance, make sure to perform an appropriate functionality inspection.**

In cases of abnormality such as faulty operation, stop operation. Unexpected malfunction in the system composition devices is likely to occur.

**4. Do not use benzene and thinner for cleaning units.**

Damage to the surface or erasure of the display can result.
Wipe off any stains with a soft cloth.
If the stain is persistent, wipe off with a cloth soaked in a dilute solution of neutral detergent and wrung out tightly, and then finish with a dry cloth.

### Other

#### ⚠Caution

**1. For precautions and product specific precautions for manifold solenoid valves, refer to the catalog that includes each product series.**

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