# Product data sheet
## Characteristics

# ABLS1A24050
## Regulated Power Supply, 100-240V AC, 24V 5 A, single phase, Optimized

Product availability : Non-Stock - Not normally stocked in distribution facility



## Main

| | |
|---|---|
| Range of product | Modicon Power Supply |
| Product or component type | Power supply |
| Power supply type | Regulated switch mode |
| Variant option | Optimized |
| Enclosure material | Aluminium |
| Nominal input voltage | 100...240 V AC single phase<br>100...240 V AC 2 phases<br>140...340 V DC |
| Input voltage limits | 85...264 V AC<br>120...375 V DC |
| Kw Rating | 120 W |
| Output voltage | 24 V DC |
| Power supply output current | 5 A |

## Complementary

| | |
|---|---|
| Nominal network frequency | 50…60 Hz |
| Network system compatibility | TN<br>TT<br>IT |
| Maximum leakage current | 1 mA 240 V AC |
| Input protection type | Integrated fuse (not interchangeable) 4 A<br>External protection (recommended) 20 A C<br>External protection (recommended) 13 A C |
| Inrush current | 30.0 A 115 V<br>60.0 A 230 V |
| Power factor | 0.55 at 115 V AC<br>0.45 at 230 V AC |
| Efficiency | 85 % 115 V AC |

* Price is “List Price” and may be subject to a trade discount – check with your local distributor or retailer for actual price.

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

| | |
|---|---|
| | 88 % 230 V AC |
| Output voltage adjustment | 22...28 V |
| Power dissipation in W | 25 W |
| Current consumption | < 2.5 A 115 V AC<br>< 1.4 A 230 V AC<br>< 1.3 A 140 V DC |
| Turn-on time | < 1 s |
| Holding time | > 20 ms 115 V AC<br>> 40 ms 230 V AC |
| Startup with capacitive loads | 8000 µF |
| Residual ripple | < 120 mV |
| Expected capacitor life time | 10 year(s) |
| Meantime between failure [MTBF] | 700000 h at 77 °F (25 °C), full load conforming to SR 332 |
| Output protection type | Against overload and short-circuits automatic reset<br>Against over temperature manual reset<br>Against overvoltage manual reset |
| Connections - terminals | Screw connection 0.5...4 mm², AWG 20...AWG 12) without wire end ferrule output<br>Screw connection 0.5...2.5 mm², AWG 20...AWG 14) with wire end ferrule output<br>Screw connection 0.75...4 mm², AWG 18...AWG 12) without wire end ferrule input<br>Screw connection 0.75...4 mm², AWG 18...AWG 12) with wire end ferrule input |
| Line and load regulation | < 0.5 %line<br>< 1 %load |
| Status LED | Output voltage 1 LED Green) |
| Maximum Depth | 4.63 in (117.6 mm) |
| Maximum Height | 4.87 in (123.6 mm) |
| Maximum Width | 1.57 in (40 mm) |
| Net Weight | 1.21 lb(US) (0.55 kg) |
| Output coupling | Parallel<br>Serial |
| Mounting support | Top hat type TH35-15 rail IEC 60715<br>Top hat type TH35-7.5 rail IEC 60715<br>Double-profile DIN rail |

## Environment

| | |
|---|---|
| Standards | EN 62368-1<br>EN/IEC 61204-3<br>EN 61000-6-1<br>EN 61000-6-2<br>EN 61000-6-3<br>EN 61000-6-4<br>EN 61000-3-2<br>EN 61000-3-3<br>UL 62368-1<br>CSA C22.2 No 62368-1<br>UL 508<br>CSA C22.2 No. 107.1 |
| Product certifications | CE<br>CUL Listed<br>CUL Recognized<br>RCM<br>CB Scheme<br>EAC<br>KC |
| Environmental characteristic | 3M4 IEC 60721-3-3 |
| Operating altitude | < 5000 m |
| Shock resistance | 100 m/s² 11 ms |
| IP degree of protection | IP20 |
| Ambient air temperature for operation | -4…14 °F (-20…-10 °C) with current derating of 2 % per °C)<br>104…158 °F (40…70 °C) with current derating of 1.8 % per °C)<br>122…158 °F (50…70 °C) with current derating of 2.5 % per °C) |
| Ambient air temperature for storage | -40…185 °F (-40…85 °C) |
| Relative humidity | 0…95 % without condensation |

| | |
|---|---|
| Overvoltage category | II |
| Electrical shock protection class | Class I |
| Pollution degree | 2 |
| Vibration resistance | 3 mm 2…9 Hz)IEC 60068-2-6<br>10 m/s² 9…200 Hz)IEC 60068-2-6 |
| Electromagnetic immunity | Immunity to electrostatic discharge 6 kV contact discharge) EN/IEC 61000-4-2<br>Immunity to electrostatic discharge 9 kV air discharge) EN/IEC 61000-4-2<br>Immunity to conducted RF disturbances 10 V/m 80 MHz...2 GHz) EN/IEC 61000-4-3<br>Immunity to conducted RF disturbances 5 V/m 2...2.7 GHz) EN/IEC 61000-4-3<br>Immunity to conducted RF disturbances 3 V/m 2.7...6 GHz) EN/IEC 61000-4-3<br>Immunity to fast transients 4 kV on input-output) EN/IEC 61000-4-4<br>Surge immunity test 3 kV between power supply and earth) EN/IEC 61000-4-5<br>Surge immunity test 1.5 kV between phases) EN/IEC 61000-4-5<br>Immunity to conducted RF disturbances 10 V 0.15...80 MHz) EN/IEC 61000-4-6<br>Immunity to magnetic fields 30 A/m 50...60 Hz) EN/IEC 61000-4-8<br>Immunity to voltage dips EN/IEC 61000-4-11<br>Disturbing field emission EN 55016-2-3<br>Limits for harmonic current emissions EN 61000-3-2<br>Conducted disturbance emission EN 55016-1-2<br>Conducted disturbance emission EN 55016-2-1 |
| Electromagnetic emission | Conducted emissions EN 61000-6-3<br>Radiated emissions EN 61000-6-4 |
| Dielectric strength | 3000 V AC input to output |

## Ordering and shipping details

| | |
|---|---|
| Category | 22525 - ABL8 AND ABL7 POWER SUPPLIE |
| Discount Schedule | CP12 |
| GTIN | 03606481500236 |
| Package weight(Lbs) | 1 lb(US) (0.45 kg) |
| Returnability | Yes |

## Offer Sustainability

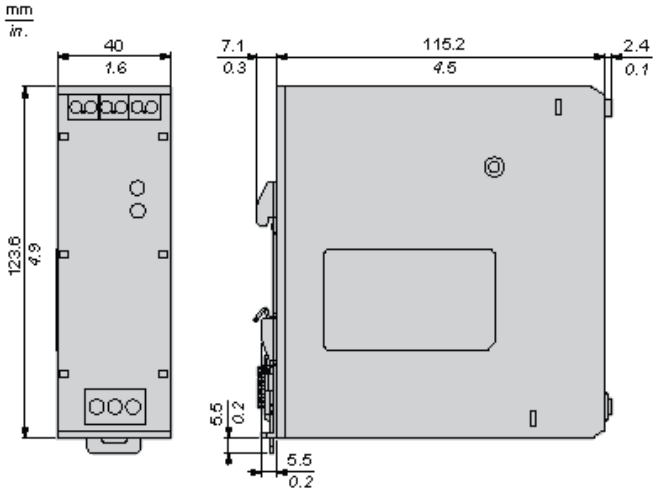
| | |
|---|---|
| Sustainable offer status | Green Premium product |
| REACh Regulation | REACh Declaration |
| EU RoHS Directive | Pro-active compliance (Product out of EU RoHS legal scope)<br>EU RoHS Declaration |
| Mercury free | Yes |
| RoHS exemption information | Yes |
| China RoHS Regulation | China RoHS declaration |
| Environmental Disclosure | Product Environmental Profile |
| Circularity Profile | End of Life Information |
| WEEE | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins. |

## Electrical Safety

- If the unit is use in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
- For means of disconnection a switch or circuit breaker, located near the product, must be included in the installation. A marking as disconnecting device for t
- The device has an internal fuse. The unit is tested and approved with branch circuit protective device up to 20A. This circuit breaker can be used as disconne
- The power supply is only suitable for audio, video, information, communication, industrial and control equipment.

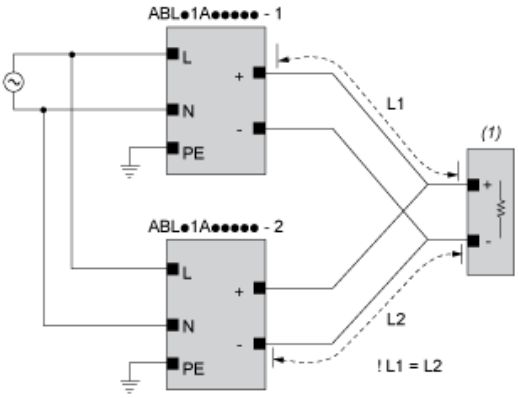
## Dimensions

### Front and Side Views



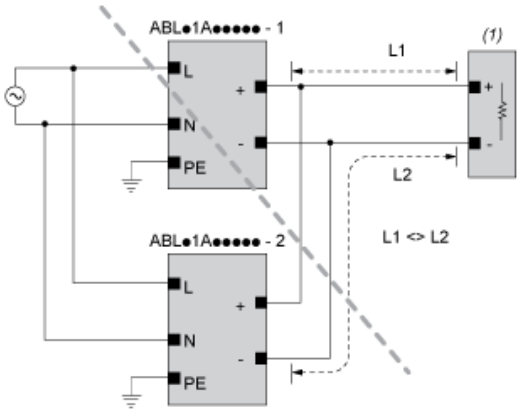
## Connections and Schema

### Correct Parallel Connection




(1) : Load

### Incorrect Parallel Connection




(1) : Load

ABLx1Axxxxx-1 = ABLx1Axxxxx-2

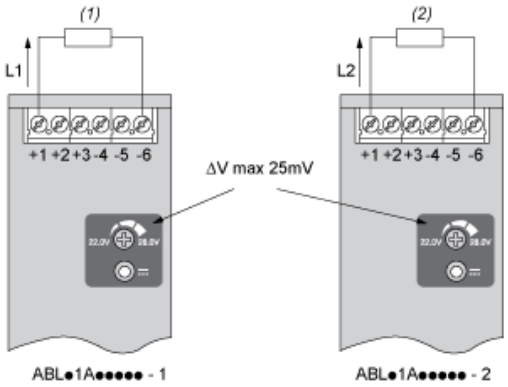
max 2 x ABLx1Axxxxx

L1 = L2

$\Delta V$ max 25 mV

$L_{Load}$ < 90% 2 x $L_{nom}$

## Output Voltage Balancing

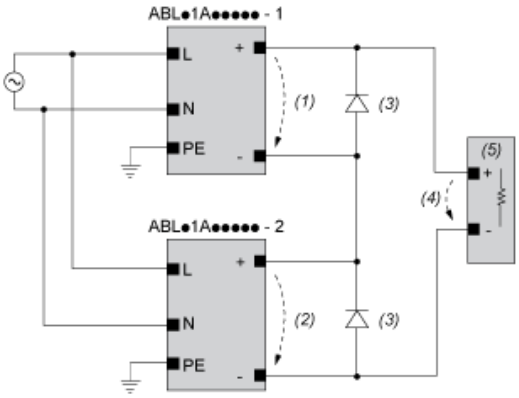



(1) : $R_{Load1}$
(2) : $R_{Load2}$

$R_{Load1} = R_{Load2}$

$I_1 = I_2 = \sim I_{nom}$

## Series Connection




(1) : $V_{out1}$
(2) : $V_{out2}$
(3) : 2 x Diode, $V_{RRM} > 2 \times V_{out1/2}$, $I_F > 2 \times I_{nom1/2}$
(4) : $V_{Load} = 2 \times V_{out}$
(5) : Load

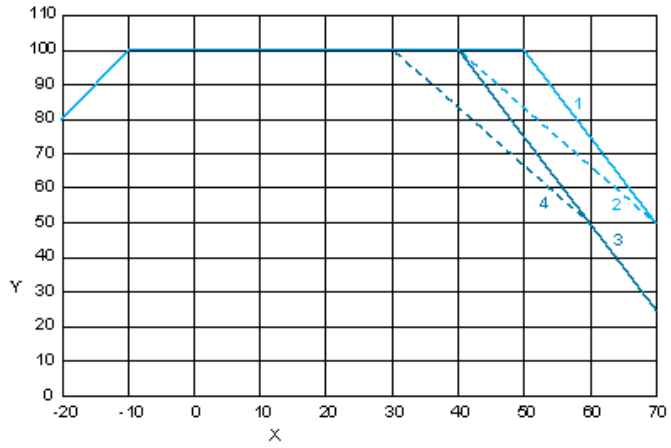
## Connections and Schema

| | (1) | | |
|---|---|---|---|
| | <40°C | <50°C | <70°C |
| ABLS1A24021 | 50°C | 60°C | 75°C |
| ABLS1A24038 | 50°C | 60°C | 75°C |
| ABLS1A12062 | 50°C | 60°C | 80°C |
| ABLS1A24031 | 50°C | 60°C | 80°C |
| ABLS1A12100 | 60°C | 70°C | 90°C |
| ABLS1A24050 | 60°C | 70°C | 90°C |
| ABLS1A48025 | 60°C | 70°C | 90°C |
| ABLS1A24100 | 60°C | 70°C | 90°C |
| ABLS1A24200 | 95°C | 95°C | 90°C |

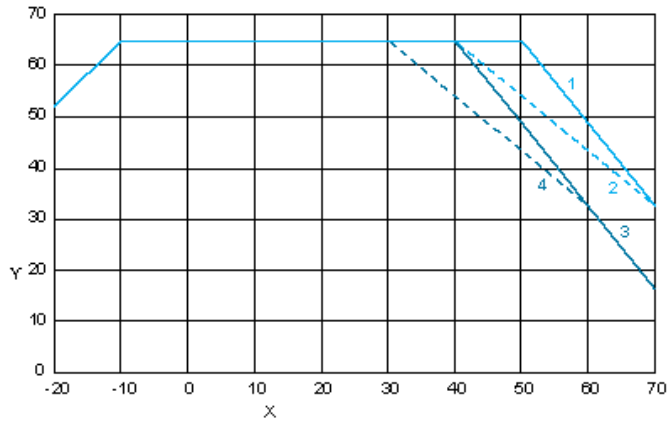
(1) : Ambient

## Performance Curve

### Mounting Position A



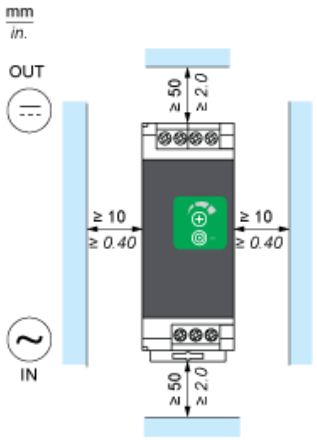

### Mounting Position B



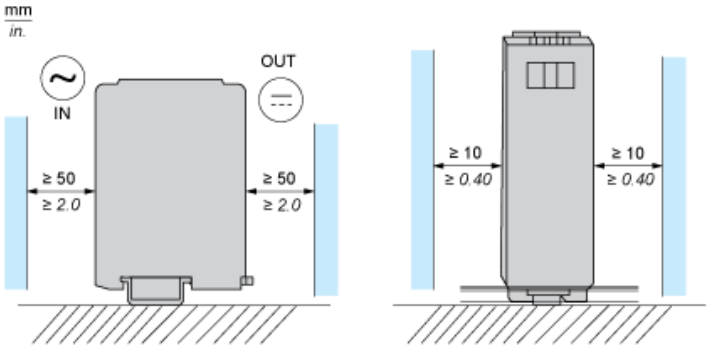

X : Surrounding Air Temperature
Y : Percentage of Max Load (%)
1 : Altitude 2000m, Input voltage = 230 VAC / 325 VDC
2 : Altitude 2000m, 115 VAC / 162 VDC
3 : Altitude 5000m, Input voltage = 230 VAC / 325 VDC
4 : Altitude 5000m, 115 VAC / 162 VDC

## Mounting

### Mounting Position A




### Mounting Position B




### Incorrect Mounting

