rexroth
A Bosch Company

Reference Book

ctrlX
Motor Cables and Connectors



R911420100 Edition 07

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DOK-CONNEC-XDRV*******-RE07-EN-P DC/ESW-FA1 (jw)

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1 About this documentation

1.1 Edition and purpose of this documentation

This reference description is intended for project planners, service technicians and system operators and provides information on the selection of ready-made cables for ctrlX drive systems.

Table 1: Revision history

Edition	Release date	Notes
01	2023-04	First edition
02	2023-05 2023-07	Editorial revision, corrections. Not available combinations removed.
03	2023-12	Editorial revision, corrections. New: RLB2-043HDB New: double-shielded cable types RHB2-•••BBB, RHB2-5••BBB New: RLC2 Power cables, ready-made for ML3 V2.0 electrical connection M40
04	2024-05	Amended chapter “Further documentation” Revision type code **Update of chapter**: RLB2 Power cables, ready-made for MS2N electrical connections “D” (M17) RLB2 Power cables, ready-made for MS2N electrical connections “U” (M23) RLB2 Power cables, ready-made for MS2N, MS2E electrical connections “V” (M40) RLB2 Power cables, ready-made for MS2N electrical connections “A”, “B” (M58) RLB2 Power cables, ready-made for MS2N electrical connections “T” RLB2 Power cables, ready-made for MS2N electrical connections “C” RLB2 Power cables, ready-made for MS2N electrical connections “E” RLC2 Power cables, ready-made for ML3 V2.0 electrical connection M23 (double clamping) RLC2 Power cables, ready-made for ML3 V2.0 electrical connection M40 (double clamping) RHB2 Hybrid cables, ready-made for MS2N, MS2S electrical connections “H” (M17) RHB2 Hybrid cables, ready-made for MS2N, MS2E electrical connections “S” (M23) RG2 Encoder cables, ready-made Accessories **New**: RLE2 Power cables, ready-made for MAD100, MAF100 electrical connections A, B, L, R RLE2 Power cables, for MAD130-180, MAF130-180 with electrical connection A, B, L, R RLD5 Power cables, ready-made MS2M electrical connections “D” (M17)

Edition	Release date	Notes
05	2025-05	**Supplementing / updating existing chapters** • Amendment: ➦2.1 Overview of cables RHB5 (RHB6) • Amendment: ➦2.3.2 Hybrid cables RHB5 (RHB6) • Update: ➦3.1 RLB2 Power cables, ready-made for MS2N electrical connection "D" (M17, SPEEDCON) for dual-cable connection • Update: ➦3.2 RLB2 Power cables, ready-made for MS2N Electrical connection "U" (M23,SPEEDCON) for dual-cable connection • Update: ➦3.3 RLB2 Power cables, ready-made for MS2N, MS2E electrical connection "V" (M40, SPEEDCON) for dual-cable connection • Update: ➦3.4 RLB2 Power cables, ready-made for MS2N electrical connection "A", "B" (M58) for dual-cable connection • Update: ➦3.5 RLB2 Power cables, ready-made for MS2N electrical connection "T" for dual-cable connection • Update: ➦3.6 RLB2 Power cables, ready-made for MS2N electrical connection "C" for dual-cable connection • Update: ➦3.7 RLB2 Power cables, ready-made for MS2N electrical connection "E" for dual-cable connection • Update: ➦3.11 RLC2 Power cables, ready-made for ML3 electrical connection "A" (M23, double clamping) for dual-cable connection • Update: ➦3.12 RLC2 Power cables, ready-made for ML3 electrical connection "A" (M40, double clamping) for dual-cable connection • Update: ➦3.13 RLE2 Power cables, ready-made for MAD100, MAF100 with electrical connection "A,B,L,R" (B40) for dual-cable connection • Update: ➦3.14 RLE2 Power cables, ready-made for MAD130-180, MAF130-180 with electrical connection "A,B,L,R" (B58) for dual-cable connection • Update: ➦3.15 RLD5 Power cables, ready-made for MS2M electrical connection "D" (M17, SPEEDCON) for dual-cable connection • Update: ➦RHB2 Hybrid cables, ready-made for MS2N, MS2S Electrical connection "H" (M17, SpeedTec) for single-cable connection • New: ➦4.2 RHB5 Hybrid cables, ready-made for MS2N, MS2S motor connection "H" (M17, SpeedTec) for single-cable connection • New: ➦4.3RHB6 Hybrid cables, ready-made for MS2N, MS2S motor connection "H" (M17, SpeedTec) for single-cable connection • Update: ➦4.4 RHB2 Hybrid cables, ready-made for MS2N, MS2E Electrical connection "S" (M23, SPEEDCON) for single-cable connection • New: ➦4.5 RHB5 Hybrid cables, ready-made for MS2N, MS2E Electrical connection "S" (M23, SPEEDCON) for single-cable connection • New: ➦4.6 RHB6 Hybrid cables, ready-made for MS2N, MS2E Electrical connection "S" (M23, SPEEDCON) for single-cable connection • Update: ➦5.2 ctrlX DRIVE modular encoder cable, ready-made • Update: ➦6.2 Compatibility raw cables • New: ➦7.4 RHB2 Hybrid cables for single cable connection • New: ➦8 B40 Power • New: ➦8 B58 Power

Edition	Release date	Notes
06	2025-09	**Supplementing / updating existing chapters** ● Update: ➦4.1 ● New: ➦Chapter 3.8 RLB6 Power cables for MS2N motor connection "D" (M17, SPEEDCON) for dual-cable connection on page 36 ● New: ➦Chapter 3.9 RLB6 Power cables for MS2N motor connection "U" (M23, SPEEDCON) for dual-cable connection on page 38 ● New: ➦Chapter 3.10 RLB6 Power cables for MS2N motor connection "V" (M40, SPEEDCON) for dual-cable connection on page 40
07	2026-06	New: ● ➦Chapter 3.16 RLG7 Power cables, ready-made for MS2L electrical connection "K" (M23, threaded lock) for dual-cable connection on page 58 ● ➦Chapter 5.2 ctrlX DRIVE modular encoder cable, ready-made on page 80 ➦Chapter 5.3 ctrlX DRIVE cabinet-free Encoder cables, ready-made on page 81 ➦Chapter 5.4 ctrlX DRIVE compact encoder cable, ready-made on page 82 ● Editorial revision

1.2 Further documentation

Table 2: Documentation - Drive systems, system components

Title	Document type	Documentation type[1)]	Material number
ctrlX DRIVE Drive systems	Project Planning Manual	DOK-XDRV**-X**********-PRxx-EN-P	➦R911386579
ctrlX DRIVE DC/DC converter XMV	Application Manual	DOK-XDRV**-XMV********-APxx-EN-P	➦R911413650
Security Guidelines Electric Drives and Controls	Project Planning Manual	DOK-IWORKS-SECURITY***-PRxx-EN-P	➦R911342562
Control cabinet Climatization, EMC, Setup, Protection Class, IndraDrive Electric, Rexroth EFC/Fv, Sytronix	Project Planning Manual	DOK-DRIVE*-CABINET****-PRxx-EN-P	➦R911344988

1) In the documentation types, xx is a placeholder for the current issue status of the documentation (example: PR01 means the first issue of the project planning manual)

Table 3: Documentation - Motors

Title	Document type	Documentation type[1)]	Material number
MS2N Synchronous Servomotors	Project Planning Manual	DOK-MOTOR*-MS2N*******-PRxx-EN-P	➦R911347583
MS2S Synchronous Servomotors	Project Planning Manual	DOK-MOTOR*-MS2S*******-PRxx-EN-P	➦R911410075
MS2E Synchronous Servomotors ATEX Directive 2014/34/EU	Project Planning Manual	DOK-MOTOR*-MS2E*******-PRxx-EN-P	➦R911394140

Title	Document type	Documentation type[1)]	Material number
MKE Synchronous motors Synchronous Servomotors ATEX ■ UKEX ■ CCC	Project Planning Manual	DOK-MOTOR*-MKE*GEN3***-PRxx-EN-P	➦R911411017
MAD / MAF Asynchronous Housing Motors	Project Planning Manual	DOK-MOTOR*-MAD/MAF****-PRxx-EN-P	➦R911295781
MLF Synchronous linear motors	Project Planning Manual	DOK-MOTOR*-MLF********-PRxx-EN-P	➦R911293635
ML3 Self-Cooled Linear Motors	Project Planning Manual	DOK-MOTOR*-ML3********-PRxx-EN-P	➦R911389760
MCL Ironless Linear Motors MCL	Project Planning Manual	DOK-MOTOR*-MCL********-PRxx-EN-P	➦R911330592

1) In the documentation types, xx is a placeholder for the current issue status of the documentation (example: PR01 means the first issue of the project planning manual)

Table 4: Documentation - Cables

Title	Document type	Documentation type[1)]	Material number
ctrlX Motor Cables and Connectors	Reference	DOK-CONNEC-XDRV*******-RExx-EN-P	➦R911420100
IndraDrive ■ EFC ■ MTX micro Motor Cables and Connectors	Reference	DOK-CONNEC-MS2N*INDRV*-CAxx-EN-P	➦R911401938
Rexroth Connection Cables IndraDrive and IndraDyn	Selection Data	DOK-CONNEC-CABLE*INDRVCAxx-EN-P	➦R911322949

1) In the documentation types, xx is a placeholder for the current issue status of the documentation (example: CA03 means the third issue of the documentation catalog)

2 Product information

2.1 Overview of cables

Rexroth motors and controllers are connected via motor power and encoder cables or via hybrid cables that combine power and encoder functions. The following product series are actually available:

Cable type	Motor	Drive controller	Cable series	Extension cable
Encoder cable	BA1N, MS2N, MS2E, MS2S, MS2L MS2M, MAD, MAF,	ctrlX DRIVE modular ctrlX DRIVE cabinet-free ctrlX DRIVE compact	RG2	RG2-5...
Power cable	MAD, MAF	ctrlX DRIVE modular	RLE2	RLE2-5...
Power cable	ML3	ctrlX DRIVE modular	RLC2	RLC2-5...
Power cable	MS2E, MS2N	ctrlX DRIVE modular	RLB2	RL2-5...
Power cable	MS2E, MS2N	ctrlX DRIVE cabinet-free	RLB6	RL2-5...
Power cable	MS2L	ctrlX DRIVE compact	RLG7	-
Power cable	MS2M	ctrlX DRIVE modular	RLD5	RLD5-5...
Hybrid cables	MS2E, MS2N, MS2S	ctrlX DRIVE modular	RHB2	RH2-5..., RHB2-5...
Hybrid cables	MS2E, MS2N, MS2S	ctrlX DRIVE compact	RHB5	RH2-5..., RHB2-5...
Hybrid cables	MS2E, MS2N, MS2S	ctrlX DRIVE cabinet-free	RHB6	RH2-5..., RHB2-5...

Cable selection in conjunction with Rexroth drive and control devices requires knowledge of the relevant product manuals with regard to cable length limits or additional components. Refer to cable length specifications and other cable information in these manuals.

All product descriptions of Rexroth are available under ➦ Bosch Rexroth Mediadirectory.

2.2 Product guarantee or safety

The cable material, cable design and cable shield of original Rexroth cables are assembled and 100% tested for specified motor-controller combinations. Any modification to these cables may result in functional failures, unsafe operation or equipment damage.

The same applies to the use of self-assembled cables or cables and connectors from third parties in conjunction with Bosch Rexroth equipment. Bosch Rexroth does not provide any coverage, warranty or liability for the safety, functionality or functions of the entire drive and control equipment if cables, connectors or modified components from third parties or Bosch Rexroth are used, including in the event of service calls and resulting costs associated with the use of such components.

2.3 Type codes

2.3.1 Power cable

Table 5: Type code RL

Type short name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Example:	R	L	B	2	-	0	0	1	C	B	B	-	N	N	-	0	0	0	,	0																					
	①	②	③	④			⑤			⑥	⑦	⑧		⑨	⑩			⑪																								

①	**Product:** R = Rexroth cables
②	**Cable type:** L = Power cables
③	**Motor series:** B = MS2x C = ML3 D = MS2M E = MAD / MAF G = MS2L
④	**Controller series:** 2 = ctrlX DRIVE modular 3 = EFC 4 = HTC / HTQ 5 = ctrlX DRIVE compact 6 = ctrlX DRIVE cabinet-free
⑤	**Cable number:** 001 = 001 (example)
⑥	**Cross section:** C = Cross section code (example)
⑦	**Cable type:** A = 4x L + 2x 0.14 mm² B = 4x L + 4x 0.75 mm² C = 4x L + 4x 1.0 mm² D = 4x L + 4x 1.0 mm² + 2x 1.5 mm² E = 4x L + 4x 1.5 mm² F = 4x L + 4x 2.5 mm² G = 4x L + 2x 0.5 mm²
⑧	**Design:** B = Basic T = Torsion
⑨	**Connection 1:** N = assembled
⑩	**Connection 2:** N = assembled
⑪	**Length:** 000.0 = Lengths in meter

More information about the cross-section code ➦ Chapter 6.1 Cable specification on page 83

Table 6: Type code RL2

Type short name	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1	2	3	4	5	6	7	8	9	40
Example:	R	L	2	-	5	0	0	C	B	B	-	N	N	-	0	0	0	,	0																						
	①	②	③			④		⑤	⑥	⑦		⑧	⑨			⑩																										

①	**Product:** R = Rexroth cables
②	**Cable type:** L = Power cables
③	**Motor series:** 2 = Generation
④	**Cable number:** 001 = 001 (example)
⑤	**Cross section:** C = Cross section code (example)
⑥	**Cable type:** A = 4x L + 2x 0.14 mm² B = 4x L + 4x 0.75 mm² C = 4x L + 4x 1.0 mm² D = 4x L + 4x 1.0 mm² + 2x 1.5 mm² E = 4x L + 4x 1.5 mm² F = 4x L + 4x 2.5 mm² G = 4x L + 2x 0.5 mm²
⑦	**Design:** B = Basic T = Torsion
⑧	**Connection 1:** N = assembled
⑨	**Connection 2:** N = assembled
⑩	**Length:** 000.0 = Lengths in meter

More information about the cross-section code ➦ Chapter 6.1 Cable specification on page 83

2.3.2 Hybrid cables

Table 7: Type code RHB2

Type short name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Example:	R	H	B	2	-	0	1	1	D	D	B	-	N	N	-	0	0	0	,	0																					
	①	②	③	④			⑤			⑥	⑦	⑧		⑨	⑩				⑪																							

①	**Product:** R = Rexroth cables
②	**Cable type:** H = Hybrid cables
③	**Series connection 1:** B = MS2x
④	**Series connection 2:** 2 = ctrlX DRIVE modular 4 = HTC / HTQ 5 = ctrlX DRIVE compact 6 = ctrlX DRIVE cabinet-free
⑤	**Cable number:** 011 = 011 (example)
⑥	**Cross section:** B = 0.75 mm² D = 1.5 mm² E = 2.5 mm²
⑦	**Cable type:** B = 4x L + 2x 0.5 mm² + 4x AWG 24 - DS C = 4x L + 2x 0.75 mm² + 4x AWG 24 - DS F = 4x L + 2x 1.0 mm² + 4x AWG 24 - DS
⑧	**Design:** B = Basic T = Torsion
⑨	**Connection 1:** N = assembled
⑩	**Connection 2:** N = assembled
⑪	**Length:** 000.0 = Lengths in meter

More information about the cross-section code ➦ Chapter 6.1 Cable specification on page 83

2.3.3 Encoder cable

Table 8: Type code RG2

Type short name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Example:	R	G	2	-	0	0	1	A	B	B	-	N	N	-	0	0	0	,	0																						
	①	②	③			④		⑤	⑥	⑦		⑧	⑨				⑩																									

①	**Product:** R = Rexroth cables
②	**Cable type:** G = Encoder cables
③	**Generation:** 2 = Generation
④	**Cable number:** 001 = 001 (example)
⑤	**Cross section:** A = Cross-section code (example)
⑥	**Cable type:** A = Cable type digital B = Cable type analog
⑦	**Design:** B = Basic T = Torsion
⑧	**Connection 1:** N = assembled
⑨	**Connection 2:** N = assembled
⑩	**Length:** 000.0 = Lengths in meter

More information about the cross-section code ➥ Chapter 6.1 Cable specification on page 83

2.4 Cable selection

The following information is necessary and has to be observed when selecting cable connections among motor and drive controller:

Power cable

- Type identification motor according to product type code "**Motor**"
- Type identification drive controller according to product type code "**Drive controller**"

The required current load of the connecting cable must be determined.

- The determining factor here can be the motor or the control device. The current load can be used to determine the power wire cross-section of the cable➥ Chapter 6.1 Cable cross section and current carrying capacity on page 83. When making your selection, take into account the current values (standstill current) specified in the technical data of the motors as well as information from the relevant standards for cable routing ➥ Chapter 6.3 Cable dimension on page 85.

Encoder cable

- Encoder type according to product type code "**Motor**"
- Type identification drive controller including options according to product type code "**Drive controller**"

2.5 Cable extensions

The entire cable route between the controller and the motor can be set up with only one cable or with a limited number of extension segments. Segments with extension cables can be practically, if moved cable carrier systems are used.

Within a cable section, the length of all cable segments is added up to the total length L (➦ Total cable lengths “L” on page 86). The maximum permitted cable length and the number of cable segments for a specific motor-controller combination depend on various conditions:

- Technical specification of the controller or interface
- The PWM frequency set for this axis
- Local EMC conditions

– The maximum permitted cable length for a specified motor-controller combination applies to the total length of all cable segments in this axis. Additional cable extensions must not exceed the permitted maximum length of the total cable run.
– Observe the specifications in the control device documentation and do not exceed the specified limit values. ➦ Chapter 1.2 Further documentation on page 7

Exceeding the allowed cable length for their particular equipment may cause an unsafe operating condition. If you are unsure about the allowed length for your individual configuration, contact your responsible Bosch Rexroth sales partner.

The following illustrations show a schematic layout of the power cables. Extensions for encoder and hybrid cables are similar to cables with a power connector.

2.5.1 Cable arrangement for motors with power connector

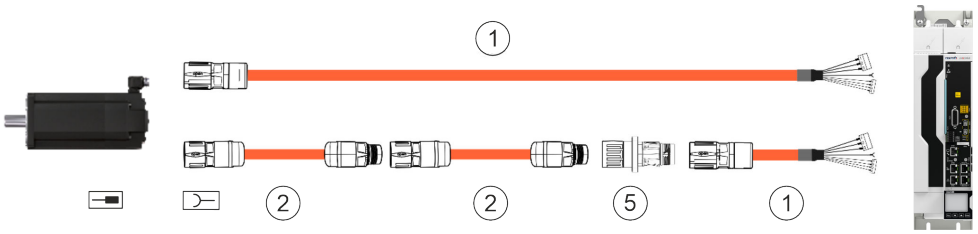


Fig. 1: Cable extensions connector

Standard connections:	Use standard cables as specified in the selection list ①.
Extension:	Add the extension cable ② from the cable selection list of the motor side and connect to the standard cable ①.
Further extension:	Insert optional cable segments ② of identical types in between.
Panel feed-through:	Add optional accessory connectors ⑤, no change of cable segment or cable type.

2.5.2 Cable arrangement for motors with terminal boxes

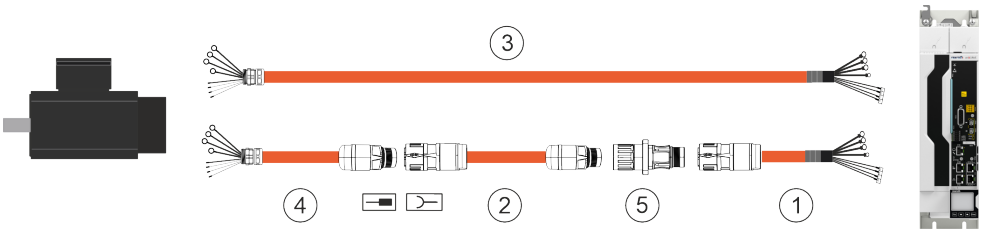


Fig. 2: Cable extensions terminal boxes

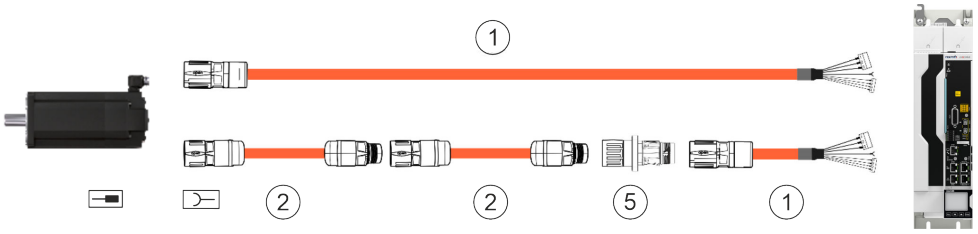
Standard connections:	Use standard cables ③ as specified in the selection list.
Extension:	Insert the first extension cable ④ from the selection list on the motor side and connect it to the standard cable ①. Select the power cable ① according to the motor and controller from the standard selection list.
Further extension:	Insert optional cable segments ② with new cable type. Select this type from the selection list of extension cables, note the cable cross-section and connector size selection.
Panel feed-through:	Add the optional accessory connector ⑤ no change of the cable segment or cable type.

3 Power cables for ctrlX

3.1 RLB2 Power cables, ready-made for MS2N electrical connection "D" (M17, SPEEDCON) for dual-cable connection

This selection is valid for the following motor types:

MS2N□□-□□□□□-□□**D**□□-□□□□□-□□ List of motor types including recommended power wire cross section ➦ Table 9 Power wire cross section, MS2N motor type on page 19.



ctrlX DRIVE modular	Power cables ① RLB2-□□□□□□-NN-xxx,x		Extension ② RL2-□□□□□□-NN-xxx,x
Example: XMS2 - W0016A - ...	[mm²]	□ B = Basic	□ B = Basic
XMS □ or XCS □ - □ 0006A □ 0010A □ 0016A □ 0023A □ 0030A □ 0036A	1.0	RLB2-011CBB	RL2-500CBB
XMD □ or XCD □ - □ 0606A □ 1010A □ 1616A □ 2323A			
XMS □ or XCS □ - □ 0054A □ 0070A □ 0090A	1.0	RLB2-012CBB	RL2-521CBB
XMD □ - □ 5454A □ 7070A			
XMS □ or XCS □ - □ 0100A □ 0120A	-	-	-
XMS □ or XCS □ - □ 0150A □ 0180A	-	-	-
XMS □ or XCS □ - □ 0210A □ 0250A □ 0280A □ 0330A □ 0375A	-	-	-

➦ Chapter 8 Accessories on page 93

Table 9: Power wire cross section, MS2N motor type

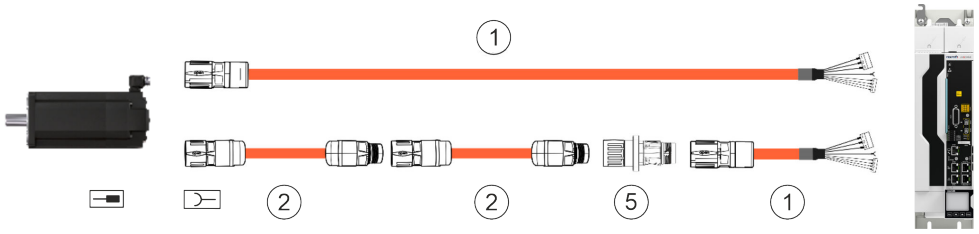
Motor	I_{o_60K} [A]	Power wire cross section * [mm²]	I_{o_100K} [A]	Power wire cross section * [mm²]	Connector
MS2N03-B0BYN-__D__-____-__	1.31	0.75 or 1.0	1.61	0.75 or 1.0	M17
MS2N03-D0BYN-__D__-____-__	2.07	0.75 or 1.0	2.6	0.75 or 1.0	M17
MS2N04-B0BNN-__D__-____-__	1.11	0.75 or 1.0	1.36	0.75 or 1.0	M17
MS2N04-B0BTN-__D__-____-__	2.2	0.75 or 1.0	2.7	0.75 or 1.0	M17
MS2N04-C0BNN-__D__-____-__	1.78	0.75 or 1.0	2.24	0.75 or 1.0	M17
MS2N04-C0BTN-__D__-____-__	3.11	0.75 or 1.0	3.9	0.75 or 1.0	M17
MS2N04-D0BHN-__D__-____-__	1.61	0.75 or 1.0	1.96	0.75 or 1.0	M17
MS2N04-D0BQN-__D__-____-__	2.86	0.75 or 1.0	3.48	0.75 or 1.0	M17
MS2N05-B0BNN-__D__-____-__	2.29	0.75 or 1.0	2.75	0.75 or 1.0	M17
MS2N05-B0BTN-__D__-____-__	4.55	0.75 or 1.0	5.45	0.75 or 1.0	M17
MS2N05-C0BNN-__D__-____-__	3.53	0.75 or 1.0	4.16	0.75 or 1.0	M17
MS2N05-C0BTN-__D__-____-__	7.1	0.75 or 1.0	8.35	0.75 or 1.0	M17
MS2N05-D0BHN-__D__-____-__	3.05	0.75 or 1.0	3.63	0.75 or 1.0	M17
MS2N05-D0BRN-__D__-____-__	6.05	0.75 or 1.0	7.2	0.75 or 1.0	M17

* Conditions according to ➥ Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

3.2 RLB2 Power cables, ready-made for MS2N Electrical connection "U" (M23,SPEEDCON) for dual-cable connection

This selection is valid for the following motor types:

MS2N□□-□□□□□-□□U□□-□□□□□-□□ List of motor types including recommended power wire cross section ➦ Table 10 Power wire cross section, MS2N motor type on page 21.



ctrlX DRIVE modular	Power cables ① RLB2-□□□□□□-NN-xxx,x		Extension ② RL2-□□□□□□-NN-xxx,x
Example: XMS2 - W0016A - ...	[mm²]	□ B = Basic	□ B = Basic
XMS □ or XCS □ - □ 0006A □ 0010A □ 0016A □ 0023A □ 0030A □ 0036A	1.0 1.5 2.5	RLB2-021CBB RLB2-021DBB RLB2-021ECB	RL2-521CBB RL2-521DBB -
XMD □ or XCD □ - □ 0606A □ 1010A □ 1616A □ 2323A	4.0	RLB2-021FCB	-
XMS □ or XCS □ - □ 0054A □ 0070A □ 0090A	1.0 1.5	RLB2-022CBB RLB2-022DBB	RL2-521CBB RL2-521DBB
XMD □ - □ 5454A □ 7070A	2.5 4.0	RLB2-022ECB RLB2-022FCB	- -
XMS □ or XCS □ - □ 0100A □ 0120A	-	-	-
XMS □ or XCS □ - □ 0150A □ 0180A	-	-	-
XMS □ or XCS □ - □ 0210A □ 0250A □ 0280A □ 0330A □ 0375A	-	-	-

➦ Chapter 8 Accessories on page 93

Table 10: Power wire cross section, MS2N motor type

Motor	I_{0_60K} [A]	Power wire cross section * [mm²]	I_{0_100K} [A]	Power wire cross section * [mm²]	Connector
MS2N06-B1BNN-__U__-____-__	2.22	0.75 or 1.0	2.47	0.75 or 1.0	M23
MS2N06-C0BNN-__U__-____-__	3.75	0.75 or 1.0	4.5	0.75 or 1.0	M23
MS2N06-C0BTN-__U__-____-__	7.5	0.75 or 1.0	9	0.75 or 1.0	M23
MS2N06-D0BNN-__U__-____-__	6.1	0.75 or 1.0	7.55	0.75 or 1.0	M23
MS2N06-D0BRN-__U__-____-__	7.85	0.75 or 1.0	9.75	0.75 or 1.0	M23
MS2N06-D0BTN-__U__-____-__	11.55	1.0	14	1.5	M23
MS2N06-D1BNN-__U__-____-__	5.05	0.75 or 1.0	6.25	0.75 or 1.0	M23
MS2N06-E0BHN-__U__-____-__	5.4	0.75 or 1.0	6.8	0.75 or 1.0	M23
MS2N06-E0BRN-__U__-____-__	10.85	1.0	13.7	1.5	M23
MS2N07-B1BNN-__U__-____-__	4.25	0.75 or 1.0	4.74	0.75 or 1.0	M23
MS2N07-C0BNN-__U__-____-__	6.9	0.75 or 1.0	8.8	0.75 or 1.0	M23
MS2N07-C0BQN-__U__-____-__	10.1	0.75 or 1.0	12.9	1.0	M23
MS2N07-C1BNN-__U__-____-__	6.6	0.75 or 1.0	8.35	0.75 or 1.0	M23
MS2N07-C1BRN-__U__-____-__	9.55	0.75 or 1.0	12.1	1.0	M23
MS2N07-D0BFN-__U__-____-__	5.8	0.75 or 1.0	7.55	0.75 or 1.0	M23
MS2N07-D0BHN-__U__-____-__	8.55	0.75 or 1.0	11.1	1.0	M23
MS2N07-D0BNN-__U__-____-__	11.55	1.0	15	1.5	M23
MS2N07-D0BQN-__U__-____-__	10.53	1.0	13.04	1.5	M23
MS2N07-D1BFN-__U__-____-__	5.45	0.75 or 1.0	6.9	0.75 or 1.0	M23
MS2N07-D1BHN-__U__-____-__	7.8	0.75 or 1.0	9.9	0.75 or 1.0	M23
MS2N07-D1BNN-__U__-____-__	9.9	0.75 or 1.0	12.5	1.0	M23
MS2N07-E0BDN-__U__-____-__	5.15	0.75 or 1.0	6.8	0.75 or 1.0	M23
MS2N07-E0BHN-__U__-____-__	10.35	0.75 or 1.0	13.7	1.5	M23
MS2N07-E1BDN-__U__-____-__	4.93	0.75 or 1.0	6.2	0.75 or 1.0	M23
MS2N07-E1BHN-__U__-____-__	9	0.75 or 1.0	11.3	1.0	M23
MS2N10-B1BQN-__U__-____-__	13.1	1.5	14.2	1.5	M23
MS2N10-C0BNN-__U__-____-__	16.8	2.5	19.3	2.5	M23
MS2N10-D0BHN-__U__-____-__	19.1	2.5	23.1	4.0	M23
MS2N10-E0BHN-__U__-____-__	25	4.0	31	6.0	M23

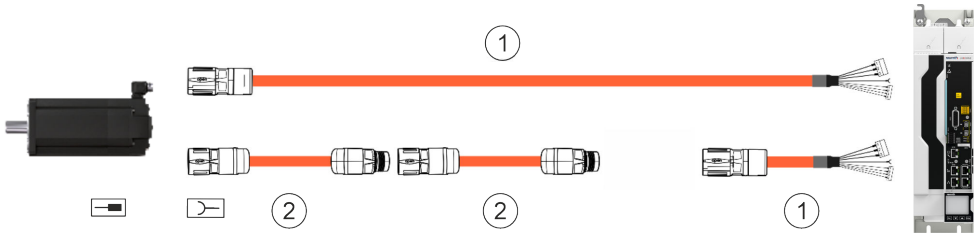
* Conditions according to ➥ Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

3.3 RLB2 Power cables, ready-made for MS2N, MS2E electrical connection "V" (M40, SPEEDCON) for dual-cable connection

This selection is valid for the following motor types:

MS2N□□-□□□□□-□□V□□-□□□□□-□□ List of motor types including recommended power wire cross section ➦ Table 11 Power wire cross section, MS2N motor type on page 23.

MS2E□□-□□□□□-□□V□□-□□□□□-□□ List of motor types including recommended power wire cross section ➦ Table 12 Power wire cross section, MS2E motor type on page 25.



ctrlX DRIVE modular	Power cables ① RLB2-□□□□□□-NN-xxx,x		Extension ② RL2-□□□□□□-NN-xxx,x
Example: XMS2 - W0016A - ...	[mm²]	□ B = Basic	□ B = Basic
XMS □ or XCS □ - □ 0006A □ 0010A □ 0016A □ 0023A □ 0030A □ 0036A	1.5	RLB2-041DBB	RL2-542DBB
	2.5	RLB2-041ECB	RL2-542EBB
	4.0	RLB2-041FDB	RL2-542FBB
XMD □ or XCD □ - □ 0606A □ 1010A □ 1616A □ 2323A	6.0	RLB2-041GDB	RL2-542GBB
XMS □ or XCS □ - □ 0054A □ 0070A □ 0090A	1.5	RLB2-042DBB	RL2-542DBB
	2.5	RLB2-042ECB	RL2-542EBB
	4.0	RLB2-042FDB	RL2-542FBB
XMD □ - □ 5454A □ 7070A	6.0	RLB2-042GDB	RL2-542GBB
	10.0	RLB2-042HDB	-
XMS □ or XCS □ - □ 0100A □ 0120A	1.5	-	RL2-542DBB
	2.5	RLB2-043ECB	RL2-542EBB
	4.0	RLB2-043FDB	RL2-542FBB
	6.0	RLB2-043GDB	RL2-542GBB
	10.0	RLB2-043HDB	-
XMS □ or XCS □ - □ 0150A □ 0180A	4.0	RLB2-044FDB	RL2-542FBB
	6.0	RLB2-044GDB	RL2-542GBB
XMS □ or XCS □ - □ 0210A □ 0250A □ 0280A □ 0330A □ 0375A	-	-	-

➦ Chapter 8 Accessories on page 93

Table 11: Power wire cross section, MS2N motor type

Motor	I_{0_60K} [A]	Power wire cross section * [mm²]	I_{0_100K} [A]	Power wire cross section * [mm²]	Connector
MS2N07-B1BNN-__V__-____-__	4.25	0.75 or 1.0	4.74	0.75 or 1.0	M40
MS2N07-C0BNA-__V__-____-__	-	-	11	1.0	M40
MS2N07-C0BNB-__V__-____-__	-	-	11	1.0	M40
MS2N07-C0BQA-__V__-____-__	-	-	15.8	2.5	M40
MS2N07-C0BQB-__V__-____-__	-	-	15.8	2.5	M40
MS2N07-C0BQL-__V__-____-__	-	-	22.3	2.5	M40
MS2N07-C1BNA-__V__-____-__	-	-	10.4	0.75 or 1.0	M40
MS2N07-C1BNB-__V__-____-__	-	-	10.4	0.75 or 1.0	M40
MS2N07-C1BNN-__V__-____-__	6.6	0.75 or 1.0	8.35	0.75 or 1.0	M40
MS2N07-C1BRA-__V__-____-__	-	-	14.9	1.5	M40
MS2N07-C1BRB-__V__-____-__	-	-	14.9	1.5	M40
MS2N07-C1BRL-__V__-____-__	-	-	20.8	2.5	M40
MS2N07-C1BRN-__V__-____-__	9.55	0.75 or 1.0	12.1	1.0	M40
MS2N07-D0BFA-__V__-____-__	-	-	9.55	0.75 or 1.0	M40
MS2N07-D0BHA-__V__-____-__	-	-	14.1	1.5	M40
MS2N07-D0BHB-__V__-____-__	-	-	14.1	1.5	M40
MS2N07-D0BHL-__V__-____-__	-	-	22.8	4.0	M40
MS2N07-D0BNA-__V__-____-__	-	-	19.1	2.5	M40
MS2N07-D0BNB-__V__-____-__	-	-	19.1	2.5	M40
MS2N07-D0BNL-__V__-____-__	-	-	31	6.0	M40
MS2N07-D0BRA-__V__-____-__	-	-	28.2	4.0	M40
MS2N07-D0BRB-__V__-____-__	-	-	28.2	4.0	M40
MS2N07-D0BRN-__V__-____-__	17.1	2.5	22.3	2.5	M40
MS2N07-D1BFA-__V__-____-__	-	-	9	0.75 or 1.0	M40
MS2N07-D1BHA-__V__-____-__	-	-	12.9	1.0	M40
MS2N07-D1BHB-__V__-____-__	-	-	12.9	1.0	M40
MS2N07-D1BNA-__V__-____-__	-	-	16.3	2.5	M40
MS2N07-D1BNB-__V__-____-__	-	-	16.3	2.5	M40
MS2N07-D1BNL-__V__-____-__	-	-	26.7	4.0	M40
MS2N07-E0BDA-__V__-____-__	-	-	8.9	0.75 or 1.0	M40
MS2N07-E0BDB-__V__-____-__	-	-	8.9	0.75 or 1.0	M40
MS2N07-E0BHA-__V__-____-__	-	-	17.9	2.5	M40
MS2N07-E0BHB-__V__-____-__	-	-	17.9	2.5	M40
MS2N07-E0BHL-__V__-____-__	-	-	31.5	6.0	M40
MS2N07-E0BNA-__V__-____-__	-	-	26.2	4.0	M40
MS2N07-E0BNB-__V__-____-__	-	-	26.2	4.0	M40
MS2N07-E0BNN-__V__-____-__	15.1	1.5	20	2.5	M40
MS2N07-E0BQA-__V__-____-__	-	-	33.3	6.0	M40
MS2N07-E0BQB-__V__-____-__	-	-	33.3	6.0	M40
MS2N07-E0BQN-__V__-____-__	19.1	2.5	25.3	4.0	M40
MS2N07-E1BDA-__V__-____-__	-	-	8.35	0.75 or 1.0	M40
MS2N07-E1BHA-__V__-____-__	-	-	15.2	1.5	M40
MS2N07-E1BHB-__V__-____-__	-	-	15.2	1.5	M40
MS2N07-E1BNA-__V__-____-__	-	-	23.9	4.0	M40

Motor	I_{0_60K} [A]	Power wire cross section * [mm²]	I_{0_100K} [A]	Power wire cross section * [mm²]	Connector
MS2N07-E1BNB-__V__-____-__	-	-	23.9	4.0	M40
MS2N07-E1BNL-__V__-____-__	-	-	42.1	10.0	M40
MS2N07-E1BNN-__V__-____-__	14.1	1.5	17.7	2.5	M40
MS2N10-C0BHA-__V__-____-__	-	-	18.8	2.5	M40
MS2N10-C0BHB-__V__-____-__	-	-	18.8	2.5	M40
MS2N10-C0BHN-__V__-____-__	12.6	1.0	14.5	1.5	M40
MS2N10-C0BNA-__V__-____-__	-	-	25.1	4.0	M40
MS2N10-C0BNB-__V__-____-__	-	-	25.1	4.0	M40
MS2N10-C0BNN-__V__-____-__	16.8	2.5	19.3	2.5	M40
MS2N10-C1BHA-__V__-____-__	-	-	16.7	2.5	M40
MS2N10-C1BHB-__V__-____-__	-	-	16.7	2.5	M40
MS2N10-C1BHN-__V__-____-__	11.1	1.0	12.75	1.0	M40
MS2N10-C1BNA-__V__-____-__	-	-	24.7	4.0	M40
MS2N10-C1BNB-__V__-____-__	-	-	24.7	4.0	M40
MS2N10-C1BNN-__V__-____-__	16.5	2.5	19	2.5	M40
MS2N10-D0BHA-__V__-____-__	-	-	32.4	6.0	M40
MS2N10-D0BHB-__V__-____-__	-	-	32.4	6.0	M40
MS2N10-D0BHN-__V__-____-__	19.1	2.5	23.1	4.0	M40
MS2N10-D0BNN-__V__-____-__	28.2	4.0	34.1	6.0	M40
MS2N10-D1BFA-__V__-____-__	-	-	24.2	4.0	M40
MS2N10-D1BFB-__V__-____-__	-	-	24.2	4.0	M40
MS2N10-D1BFN-__V__-____-__	14.3	1.5	17.2	2.5	M40
MS2N10-D1BNN-__V__-____-__	28.6	4.0	34.3	6.0	M40
MS2N10-E0BHA-__V__-____-__	-	-	46.1	10.0	M40
MS2N10-E0BHN-__V__-____-__	25	4.0	31	6.0	M40
MS2N10-E0BNN-__V__-____-__	34.5	6.0	42.8	10.0	M40
MS2N10-E1BFA-__V__-____-__	-	-	30.8	6.0	M40
MS2N10-E1BFB-__V__-____-__	-	-	30.8	6.0	M40
MS2N10-E1BFN-__V__-____-__	17.1	2.5	20.5	2.5	M40
MS2N10-E1BNN-__V__-____-__	34.2	6.0	41	10.0	M40
MS2N10-F0BDA-__V__-____-__	-	-	28.8	4.0	M40
MS2N10-F0BDB-__V__-____-__	-	-	28.8	4.0	M40
MS2N10-F0BDN-__V__-____-__	15.8	2.5	19.5	2.5	M40
MS2N10-F0BHN-__V__-____-__	32	6.0	39.4	10.0	M40
MS2N10-F0BNN-__V__-____-__	55.8	16.0	68.7	16.0	M40
MS2N10-F1BDA-__V__-____-__	-	-	29.5	4.0	M40
MS2N10-F1BDB-__V__-____-__	-	-	29.5	4.0	M40
MS2N10-F1BDN-__V__-____-__	15.9	2.5	19.5	2.5	M40

* Conditions according to ➥Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

Table 12: Power wire cross section, MS2E motor type

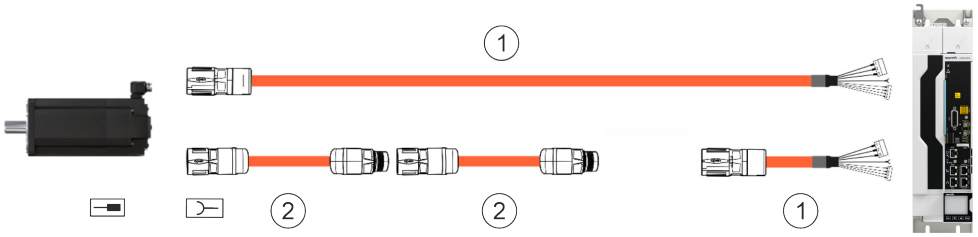
Motor	I_{o_60K} [A]	Power wire cross section * [mm²]	Connector
MS2E10-C0BHN-__V__-____-__	12.6	1.5	M40
MS2E10-D0BHN-__V__-____-__	19.1	2.5	M40
MS2E10-D0BNN-__V__-____-__	28.2	4.0	M40
MS2E10-D1BFN-__V__-____-__	14.3	1.5	M40
MS2E10-E1BFN-__V__-____-__	17.1	2.5	M40
MS2E10-F1BDN-__V__-____-__	15.9	2.5	M40

* Conditions according to ➥ Chapter 6.1 Cable specification on page 83, deviations may require other power wire cross sections. Select the next higher power wire cross section, subject to availability.

3.4 RLB2 Power cables, ready-made for MS2N electrical connection "A", "B" (M58) for dual-cable connection

This selection is valid for the following motor types:

MS2N□□-□□□□□-□□[A,B]□□-□□□□□-□□ List of motor types including recommended power wire cross section ➦ Table 13 Power wire cross section, MS2N motor type on page 27.



ctrlX DRIVE modular	Power cables ① RLB2-□□□□□□-NN-xxx,x		Extension ② RL2-□□□□□□-NN-xxx,x
Example: XMS2 - W0016A - ...	[mm²]	□ B = Basic	□ B = Basic
XMS □ or XCS □ - □ 0006A □ 0010A □ 0016A □ 0023A □ 0030A □ 0036A	-	-	-
XMD □ or XCD □ - □ 0606A □ 1010A □ 1616A □ 2323A			
XMS □ or XCS □ - □ 0054A □ 0070A □ 0090A	2.5	RLB2-062ECB	-
	4.0	RLB2-062FDB	-
XMD □ - □ 5454A □ 7070A	6.0	RLB2-062GDB	RL2-563GBB
	10.0	RLB2-062HDB	RL2-563HBB
XMS □ or XCS □ - □ 0100A □ 0120A	2.5	RLB2-063ECB	-
	4.0	RLB2-063FDC	-
	6.0	RLB2-063GDB	RL2-563GBB
	10.0	RLB2-063HDB	RL2-563HBB
	16.0	RLB2-063JEB	RL2-563JBB
	25.0	RLB2-063KEB	RL2-563KBB
	35.0	RLB2-063LEB	RL2-563LBB
XMS □ or XCS □ - □ 0150A □ 0180A	6.0	RLB2-064GDB	RL2-563GBB
	10.0	RLB2-064HDB	RL2-563HBB
	16.0	RLB2-064JEB	RL2-563JBB
	25.0	RLB2-064KEB	RL2-563KBB
	35.0	RLB2-064LEB	RL2-563LBB
XMS □ or XCS □ - □ 0210A □ 0250A □ 0280A □ 0330A □ 0375A	10.0	RLB2-065HDB	RL2-563HBB
	16.0	RLB2-065JEB	RL2-563JBB
	25.0	RLB2-065KEB	RL2-563KBB
	35.0	RLB2-065LEB	RL2-563LBB

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Table 13: Power wire cross section, MS2N motor type

Motor	I_{0_60K} [A]	Power wire cross section * [mm²]	I_{0_100K} [A]	Power wire cross section * [mm²]	Connector
MS2N07-D0BRL-__A__-____-__	-	-	45.8	10.0	M58
MS2N07-D0BRL-__B__-____-__	-	-	45.8	10.0	M58
MS2N07-E0BNL-__A__-____-__	-	-	46	10.0	M58
MS2N07-E0BNL-__B__-____-__	-	-	46	10.0	M58
MS2N07-E0BQL-__A__-____-__	-	-	58.3	16.0	M58
MS2N07-E0BQL-__B__-____-__	-	-	58.3	16.0	M58
MS2N07-E1BNL-__A__-____-__	-	-	42.1	10.0	M58
MS2N07-E1BNL-__B__-____-__	-	-	42.1	10.0	M58
MS2N10-C0BNA-__A__-____-__	-	-	25.1	4.0	M58
MS2N10-C0BNL-__A__-____-__	-	-	30.8	6.0	M58
MS2N10-C0BNL-__B__-____-__	-	-	30.8	6.0	M58
MS2N10-C1BNL-__A__-____-__	-	-	29.9	6.0	M58
MS2N10-C1BNL-__B__-____-__	-	-	29.9	6.0	M58
MS2N10-D0BHA-__B__-____-__	-	-	32.4	6.0	M58
MS2N10-D0BHL-__A__-____-__	-	-	43.7	10.0	M58
MS2N10-D0BHL-__B__-____-__	-	-	43.7	10.0	M58
MS2N10-D0BHN-__B__-____-__	19.1	2.5	23.1	4.0	M58
MS2N10-D0BNA-__A__-____-__	-	-	48	10.0	M58
MS2N10-D0BNA-__B__-____-__	-	-	48	10.0	M58
MS2N10-D0BNB-__A__-____-__	-	-	48	10.0	M58
MS2N10-D0BNB-__B__-____-__	-	-	48	10.0	M58
MS2N10-D0BNL-__A__-____-__	-	-	64.7	16.0	M58
MS2N10-D0BNL-__B__-____-__	-	-	64.7	16.0	M58
MS2N10-D1BNA-__A__-____-__	-	-	48.5	10.0	M58
MS2N10-D1BNA-__B__-____-__	-	-	48.5	10.0	M58
MS2N10-D1BNB-__A__-____-__	-	-	48.5	10.0	M58
MS2N10-D1BNB-__B__-____-__	-	-	48.5	10.0	M58
MS2N10-D1BNL-__A__-____-__	-	-	63.3	16.0	M58
MS2N10-D1BNL-__B__-____-__	-	-	63.3	16.0	M58
MS2N10-E0BHA-__A__-____-__	-	-	46.1	10.0	M58
MS2N10-E0BHA-__B__-____-__	-	-	46.1	10.0	M58
MS2N10-E0BHB-__A__-____-__	-	-	46.1	10.0	M58
MS2N10-E0BHB-__B__-____-__	-	-	46.1	10.0	M58
MS2N10-E0BHD-__A__-____-__	-	-	46.1	10.0	M58
MS2N10-E0BHL-__A__-____-__	-	-	65.4	16.0	M58
MS2N10-E0BHL-__B__-____-__	-	-	65.4	16.0	M58
MS2N10-E0BHN-__A__-____-__	25	4.0	31	6.0	M58
MS2N10-E0BNA-__A__-____-__	-	-	62.9	16.0	M58
MS2N10-E0BNA-__B__-____-__	-	-	62.9	16.0	M58
MS2N10-E0BNB-__A__-____-__	-	-	62.9	16.0	M58
MS2N10-E0BNB-__B__-____-__	-	-	62.9	16.0	M58
MS2N10-E0BNL-__A__-____-__	-	-	90	25.0	M58
MS2N10-E0BNL-__B__-____-__	-	-	90	25.0	M58
MS2N10-E0BNN-__A__-____-__	34.5	6.0	42.8	10.0	M58

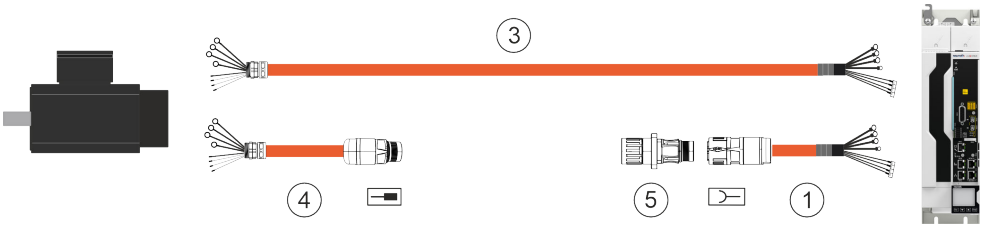
Motor	I_{o_60K} [A]	Power wire cross section * [mm²]	I_{o_100K} [A]	Power wire cross section * [mm²]	Connector
MS2N10-E0BNN-__B__-____-__	34.5	6.0	42.8	10.0	M58
MS2N10-E1BNA-__A__-____-__	-	-	61.7	16.0	M58
MS2N10-E1BNA-__B__-____-__	-	-	61.7	16.0	M58
MS2N10-E1BNB-__A__-____-__	-	-	61.7	16.0	M58
MS2N10-E1BNB-__B__-____-__	-	-	61.7	16.0	M58
MS2N10-E1BNL-__A__-____-__	-	-	88	25.0	M58
MS2N10-E1BNL-__B__-____-__	-	-	88	25.0	M58
MS2N10-E1BNN-__A__-____-__	34.2	6.0	41	10.0	M58
MS2N10-E1BNN-__B__-____-__	34.2	6.0	41	10.0	M58
MS2N10-F0BHA-__A__-____-__	-	-	58.6	16.0	M58
MS2N10-F0BHA-__B__-____-__	-	-	58.6	16.0	M58
MS2N10-F0BHB-__A__-____-__	-	-	58.6	16.0	M58
MS2N10-F0BHB-__B__-____-__	-	-	58.6	16.0	M58
MS2N10-F0BHD-__A__-____-__	-	-	58.6	16.0	M58
MS2N10-F0BHL-__A__-____-__	-	-	87.5	25.0	M58
MS2N10-F0BHL-__B__-____-__	-	-	87.5	25.0	M58
MS2N10-F0BHN-__A__-____-__	32	6.0	39.4	10.0	M58
MS2N10-F0BHN-__B__-____-__	32	6.0	39.4	10.0	M58
MS2N10-F0BNA-__A__-____-__	-	-	96	35.0	M58
MS2N10-F0BNB-__A__-____-__	-	-	96	35.0	M58
MS2N10-F0ENL-__A__-____-__	-	-	92	25.0	M58
MS2N10-F1BDL-__A__-____-__	-	-	42.8	10.0	M58
MS2N10-F1BDL-__B__-____-__	-	-	42.8	10.0	M58
MS2N10-F1BHA-__A__-____-__	-	-	58.6	16.0	M58
MS2N10-F1BHA-__B__-____-__	-	-	58.6	16.0	M58
MS2N10-F1BHB-__A__-____-__	-	-	58.6	16.0	M58
MS2N10-F1BHB-__B__-____-__	-	-	58.6	16.0	M58
MS2N10-F1BHL-__A__-____-__	-	-	86	25.0	M58
MS2N10-F1BHL-__B__-____-__	-	-	86	25.0	M58
MS2N10-F1BHN-__A__-____-__	31.8	6.0	38.9	10.0	M58
MS2N10-F1BHN-__B__-____-__	31.8	6.0	38.9	10.0	M58
MS2N10-R0BLA-__A__-____-__	-	-	72.4	25.0	M58
MS2N10-R0BLA-__B__-____-__	-	-	72.4	25.0	M58
MS2N10-R0BLB-__B__-____-__	-	-	72.4	25.0	M58
MS2N10-R0BLL-__A__-____-__	-	-	96.2	35.0	M58
MS2N10-R0BLL-__B__-____-__	-	-	96.2	35.0	M58
MS2N10-R0BQL-__A__-____-__	-	-	143	D	M58
MS2N10-R0BQN-__A__-____-__	58.7	16.0	69.8	16.0	M58
MS2N10-R0BQN-__B__-____-__	58.7	16.0	69.8	16.0	M58
MS2N10-R0EQL-__A__-____-__	-	-	92	25.0	M58

* Conditions according to ➥Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

3.5 RLB2 Power cables, ready-made for MS2N electrical connection "T" for dual-cable connection

This selection is valid for the following motor types:

MS2N□□-□□□□□-□□T□□-□□□□□-□□ List of motor types including recommended power wire cross section ➦ Table 14 Power wire cross section, MS2N motor type on page 31.



ctrlX DRIVE modular	Power cables ③ RLB2-□□□□□□-NN-xxx,x			Extension ④ RL2-□□□□□□NN-xxx,x	Extension ① RLB2-□□□□□□-NN-xxx,x
Example: XMS2 - W0016A - ...	[mm²]	MS2N... Terminal boxes T (M32) □ B = Basic	MS2N... Terminal boxes T (M40) □ B = Basic	Motor ⇨ junction □ B = Basic	Junction ⇨ Controller □ B = Basic
XMS □ or XCS □ - □ 0006A □ 0010A □ 0016A □ 0023A □ 0030A □ 0036A XMD □ or XCD □ - □ 0606A □ 1010A □ 1616A □ 2323A	2.5	RLB2-101ECB		RL2-601EBB [1]	RLB2-021ECB [1]
XMS □ or XCS □ - □ 0054A □ 0070A □ 0090A XMD □ - □ 5454A □ 7070A	2.5 4.0 6.0 10.0	RLB2-102ECB RLB2-102FDB RLB2-102GDB -	- - - RLB2-082HDB	RL2-601EBB [1] RL2-602FBB [2] RL2-603GBB [3] RL2-583HBB [3]	RLB2-022ECB [1] RLB2-042FDB [2] RLB2-062GDB [3] RLB2-063HDB [3]
XMS □ or XCS □ - □ 0100A □ 0120A	10.0 16.0	- -	RLB2-083HDB RLB2-083JEB	RL2-583HBB [3] RL2-583JBB [3]	RLB2-063HDB [3] RLB2-063JEB [3]
XMS □ or XCS □ - □ 0150A □ 0180A	10.0 16.0	- -	RLB2-084HDB RLB2-084JEB	RL2-583HBB [3] RL2-583JBB [3]	RLB2-064HDB [3] RLB2-064JEB [3]
XMS □ or XCS □ - □ 0210A □ 0250A □ 0280A □ 0330A □ 0375A	10.0 16.0	- -	RLB2-085HDB RLB2-085JEB	RL2-583HBB [3] RL2-583JBB [3]	RLB2-065HDB [3] RLB2-065JEB [3]

[1] Connector size for extension cable **M23**

[2] Connector size for extension cable **M40**

[3] Connector size for extension cable **M58**

⑤➦ Chapter 8 Accessories on page 93

Table 14: Power wire cross section, MS2N motor type

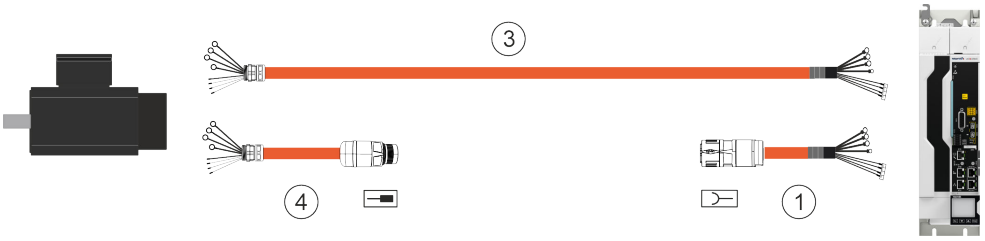
Motor	I_{0_60K} [A]	Power wire cross section * [mm²]	I_{0_100K} [A]	Power wire cross section * [mm²]	Connector
MS2N10-C0BHA-__T__-____-__	-	-	18.8	2.5	T (M32)
MS2N10-C0BHB-__T__-____-__	-	-	18.8	2.5	T (M32)
MS2N10-C0BNA-__T__-____-__	-	-	25.1	4.0	T (M32)
MS2N10-C0BNB-__T__-____-__	-	-	25.1	4.0	T (M32)
MS2N10-C0BNL-__T__-____-__	-	-	30.8	6.0	T (M32)
MS2N10-D0BHA-__T__-____-__	-	-	32.4	6.0	T (M32)
MS2N10-D0BHB-__T__-____-__	-	-	32.4	6.0	T (M32)
MS2N10-D0BHL-__T__-____-__	-	-	43.7	10.0	T (M40)
MS2N10-D0BHN-__T__-____-__	19.1	2.5	23.1	4.0	T (M32)
MS2N10-D0BNA-__T__-____-__	-	-	48	10.0	T (M40)
MS2N10-D0BNB-__T__-____-__	-	-	48	10.0	T (M40)
MS2N10-D0BNL-__T__-____-__	-	-	64.7	16.0	T (M40)
MS2N10-E0BHA-__T__-____-__	-	-	46.1	10.0	T (M40)
MS2N10-E0BHB-__T__-____-__	-	-	46.1	10.0	T (M40)
MS2N10-E0BHL-__T__-____-__	-	-	65.4	16.0	T (M40)
MS2N10-E0BNA-__T__-____-__	-	-	62.9	16.0	T (M40)
MS2N10-E0BNB-__T__-____-__	-	-	62.9	16.0	T (M40)
MS2N10-E1BNA-__T__-____-__	-	-	61.7	16.0	T (M40)
MS2N10-F0BDA-__T__-____-__	-	-	28.8	4.0	T (M32)
MS2N10-F0BDB-__T__-____-__	-	-	28.8	4.0	T (M32)
MS2N10-F0BHA-__T__-____-__	-	-	58.6	16.0	T (M40)
MS2N10-F0BHB-__T__-____-__	-	-	58.6	16.0	T (M40)
MS2N10-F0BNA-__T__-____-__	-	-	96	35.0	T (M40)
MS2N10-F0BNB-__T__-____-__	-	-	96	35.0	T (M40)
MS2N10-F1BHA-__T__-____-__	-	-	58.6	16.0	T (M40)
MS2N10-F1BHB-__T__-____-__	-	-	58.6	16.0	T (M40)
MS2N10-R0BLA-__T__-____-__	-	-	72.4	25.0	T (M40)

* Conditions according to ➥ Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

3.6 RLB2 Power cables, ready-made for MS2N electrical connection "C" for dual-cable connection

This selection is valid for the following motor types:

MS2N□□-□□□□□-□□C□□-□□□□□-□□ List of motor types including recommended power wire cross section ➦ Table 15 Power wire cross section, MS2N motor type on page 33.



ctrlX DRIVE modular	Power cables ③ RLB2-□□□□□□-NN-xxx,x		Extension ④ RL2-□□□□□□-NN-xxx,x	Extension ① RLB2-□□□□□□-NN-xxx,x
Example: XMS2 - W0016A - ...	[mm²]	MS2N... Terminal boxes C (M50) □ B = Basic	Motor ⇨ junction □ B = Basic	Junction ⇨ Controller □ B = Basic
XMS □ or XCS □ - □ 0006A □ 0010A □ 0016A □ 0023A □ 0030A □ 0036A	-	-	-	-
XMD □ or XCD □ - □ 0606A □ 1010A □ 1616A □ 2323A				
XMS □ or XCS □ - □ 0054A □ 0070A □ 0090A	-	-	-	-
XMD □ - □ 5454A □ 7070A				
XMS □ or XCS □ - □ 0100A □ 0120A	10.0	RLB2-113HDB	RL2-613HBB	RLB2-063HDB [3]
	16.0	RLB2-113JEB	RL2-613JBB	RLB2-063JEB [3]
	25.0	RLB2-113KEB	RL2-613KBB	RLB2-063KEB [3]
	35.0	RLB2-113LEB	RL2-613LBB	RLB2-063LEB [3]
XMS □ or XCS □ - □ 0150A □ 0180A	10.0	RLB2-114HDB	RL2-613HBB	RLB2-063HDB [3]
	16.0	RLB2-114JEB	RL2-613JBB	RLB2-063JEB [3]
	25.0	RLB2-114KEB	RL2-613KBB	RLB2-063KEB [3]
	35.0	RLB2-114LEB	RL2-613LBB	RLB2-063LEB [3]
	AWG1/0	RLB2-114MFB	-	-
XMS □ or XCS □ - □ 0210A □ 0250A □ 0280A □ 0330A □ 0375A	10.0	RLB2-115HDB	RL2-613HBB	RLB2-063HDB [3]
	16.0	RLB2-115JEB	RL2-613JBB	RLB2-063JEB [3]
	25.0	RLB2-115KEB	RL2-613KBB	RLB2-063KEB [3]
	35.0	RLB2-115LEB	RL2-613LBB	RLB2-063LEB [3]
	AWG1/0	RLB2-115MFB	-	-

[1)]Connector size for extension cable **M23**

[2)]Connector size for extension cable **M40**

[3)]Connector size for extension cable **M58**

➥ Chapter 8 Accessories on page 93

Table 15: Power wire cross section, MS2N motor type

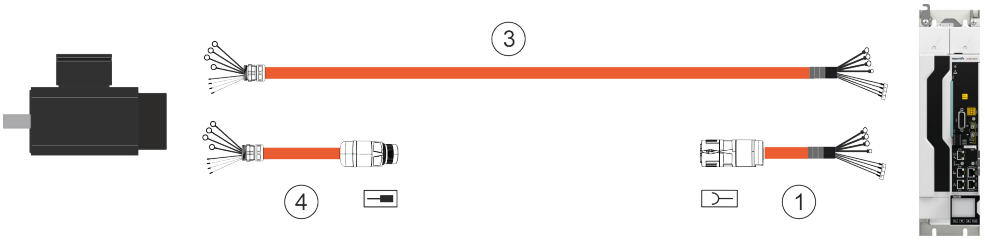
Motor	I_{0_60K} [A]	Power wire cross section * [mm²]	I_{0_100K} [A]	Power wire cross section * [mm²]	Connector
MS2N10-E0BNL-__C__-____-__	-	-	90	25.0	C (M50)
MS2N10-F0BHL-__C__-____-__	-	-	87.5	25.0	C (M50)
MS2N10-F0BNL-__C__-____-__	-	-	127	AWG1/0	C (M50)
MS2N10-F0CNL-__C__-____-__	-	-	120	AWG1/0	C (M50)
MS2N10-R0BLL-__C__-____-__	-	-	96.2	35.0	C (M50)
MS2N10-R0BQL-__C__-____-__	-	-	143	2 x 25	C (M50)
MS2N13-B1BHC-__C__-____-__	-	-	63	16.0	C (M50)
MS2N13-B1BHL-__C__-____-__	-	-	72.5	25.0	C (M50)
MS2N13-B1BHN-__C__-____-__	36.5	6.0	38.7	10.0	C (M50)
MS2N13-B1BNC-__C__-____-__	-	-	87.3	25.0	C (M50)
MS2N13-B1BNL-__C__-____-__	-	-	100	35.0	C (M50)
MS2N13-B1BNN-__C__-____-__	50.7	10.0	53.6	16.0	C (M50)
MS2N13-C1BHC-__C__-____-__	-	-	85	25.0	C (M50)
MS2N13-C1BHL-__C__-____-__	-	-	98	35.0	C (M50)
MS2N13-C1BHN-__C__-____-__	48.4	10.0	52.3	10.0	C (M50)
MS2N13-C1BNC-__C__-____-__	-	-	111.5	35.0	C (M50)
MS2N13-C1BNL-__C__-____-__	-	-	127.5	AWG1/0	C (M50)
MS2N13-D1BHC-__C__-____-__	-	-	101.5	35.0	C (M50)
MS2N13-E1BNL-__C__-____-__	-	-	183	D	C (M50)

* Conditions according to ➥ Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

3.7 RLB2 Power cables, ready-made for MS2N electrical connection "E" for dual-cable connection

This selection is valid for the following motor types:

MS2N□□-□□□□□-□□**E**□□-□□□□□-□□ List of motor types including recommended power wire cross section ➦ Table 16 Power wire cross section, MS2N motor type on page 35.



ctrlX DRIVE modular	Power cables ③ RLB2-□□□□□□-NN-xxx,x		Extension ④ RL2-□□□□□□-NN-xxx,x	Extension ① RLB2-□□□□□□-NN-xxx,x
Example: XMS2 - W0016A - ...	[mm²]	MS2N... Terminal boxes E (M50) □ B = Basic	Motor ⇨ junction □ B = Basic	Junction ⇨ Controller □ B = Basic
XMS □ or XCS □ - □ 0006A □ 0010A □ 0016A □ 0023A □ 0030A □ 0036A	-	-	-	-
XMD □ or XCD □ - □ 0606A □ 1010A □ 1616A □ 2323A				
XMS □ or XCS □ - □ 0054A □ 0070A □ 0090A	-	-	-	-
XMD □ - □ 5454A □ 7070A				
XMS □ or XCS □ - □ 0100A □ 0120A	16.0	RLB2-123JEB	RL2-613JBB	RLB2-063JEB [3]
	25.0	RLB2-123KEB	RL2-613KBB	RLB2-063KEB [3]
	35.0	RLB2-123LEB	RL2-613LBB	RLB2-063LEB [3]
XMS □ or XCS □ - □ 0150A □ 0180A	16.0	RLB2-124JEB	RL2-613JBB	RLB2-063JEB [3]
	25.0	RLB2-124KEB	RL2-613KBB	RLB2-063KEB [3]
	35.0	RLB2-124LEB	RL2-613LBB	RLB2-063LEB [3]
	AWG1/0	RLB2-124MFB	-	-
XMS □ or XCS □ - □ 0210A □ 0250A □ 0280A □ 0330A □ 0375A	16.0	RLB2-125JEB	RL2-613JBB	RLB2-063JEB [3]
	25.0	RLB2-125KEB	RL2-613KBB	RLB2-063KEB [3]
	35.0	RLB2-125LEB	RL2-613LBB	RLB2-063LEB [3]
	AWG1/0	RLB2-125MFB	-	-

[1] Connector size for extension cable **M23**

[2] Connector size for extension cable **M40**

[3] Connector size for extension cable **M58**

➥ Chapter 8 Accessories on page 93

Table 16: Power wire cross section, MS2N motor type

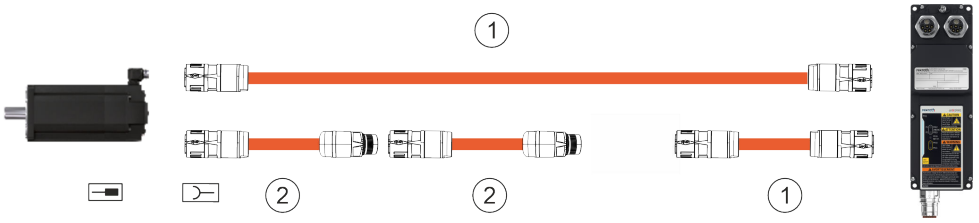
Motor	I_{0_60K} [A]	Power wire cross section * [mm²]	I_{0_100K} [A]	Power wire cross section * [mm²]	Connector
MS2N13-D1BHC-__E__-____-__	-	-	101.5	35.0	E (M50)
MS2N13-D1BHL-__E__-____-__	-	-	122	AWG1/0	E (M50)
MS2N13-D1BHN-__E__-____-__	56.5	16.0	62.5	16.0	E (M50)
MS2N13-D1BNC-__E__-____-__	-	-	134.5	AWG1/0	E (M50)
MS2N13-D1BNL-__E__-____-__	-	-	162	2 x 35.0	E (M50)
MS2N13-D1BNN-__E__-____-__	74.3	25.0	83	25.0	E (M50)
MS2N13-E1BHC-__E__-____-__	-	-	116	35.0	E (M50)
MS2N13-E1BHL-__E__-____-__	-	-	138	AWG1/0	E (M50)
MS2N13-E1BNC-__E__-____-__	-	-	152	2 x 35.0	E (M50)
MS2N13-E1BNL-__E__-____-__	-	-	183	2 x 35.0	E (M50)
MS2N13-E1BNN-__E__-____-__	83.8	25.0	94.8	35.0	E (M50)

* Conditions according to ➥ Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

3.8 RLB6 Power cables for MS2N motor connection "D" (M17, SPEEDCON) for dual-cable connection

This selection is valid for the following motor types:

MS2N□□-□□□□□-□□D□□-□□□□□-□□ List of motor types including recommended power wire cross section ➦ Table 17 Power wire cross section, MS2N motor type on page 36.



.

ctrlX DRIVE cabinet-free	Power cables ① RLB6-□□□□□□-NN-xxx,x		Extension ② RL2-□□□□□□-NN-xxx,x
Example: XMS2 - W0006B - ...	[mm²]	□ B = Basic	□ B = Basic
XMS □ - □ 0006B XMD □ - □ 0010B □ 0016B □ 0023B □ 0030B □ 0054B	1.0	RLB6-011CB	RL2-500CB

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Table 17: Power wire cross section, MS2N motor type

Motor	I_{0_60K} [A]	Power wire cross section * [mm²]	I_{0_100K} [A]	Power wire cross section * [mm²]	Connector
MS2N03-B0BYN-__D__-____-__	1.31	0.75 or 1.0	1.61	0.75 or 1.0	M17
MS2N03-D0BYN-__D__-____-__	2.07	0.75 or 1.0	2.6	0.75 or 1.0	M17
MS2N04-B0BNN-__D__-____-__	1.11	0.75 or 1.0	1.36	0.75 or 1.0	M17
MS2N04-B0BTN-__D__-____-__	2.2	0.75 or 1.0	2.7	0.75 or 1.0	M17
MS2N04-C0BNN-__D__-____-__	1.78	0.75 or 1.0	2.24	0.75 or 1.0	M17
MS2N04-C0BTN-__D__-____-__	3.11	0.75 or 1.0	3.9	0.75 or 1.0	M17
MS2N04-D0BHN-__D__-____-__	1.61	0.75 or 1.0	1.96	0.75 or 1.0	M17
MS2N04-D0BQN-__D__-____-__	2.86	0.75 or 1.0	3.48	0.75 or 1.0	M17
MS2N05-B0BNN-__D__-____-__	2.29	0.75 or 1.0	2.75	0.75 or 1.0	M17
MS2N05-B0BTN-__D__-____-__	4.55	0.75 or 1.0	5.45	0.75 or 1.0	M17
MS2N05-C0BNN-__D__-____-__	3.53	0.75 or 1.0	4.16	0.75 or 1.0	M17
MS2N05-C0BTN-__D__-____-__	7.1	0.75 or 1.0	8.35	0.75 or 1.0	M17
MS2N05-D0BHN-__D__-____-__	3.05	0.75 or 1.0	3.63	0.75 or 1.0	M17
MS2N05-D0BRN-__D__-____-__	6.05	0.75 or 1.0	7.2	0.75 or 1.0	M17

* Conditions according to ➦ Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

Table 18: Power wire cross section, MS2S motor type

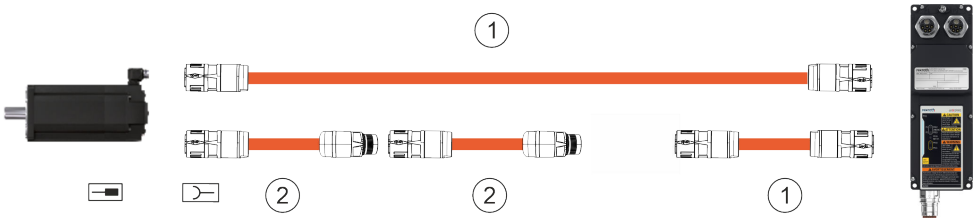
Motor	I_{o_60K} [A]	Power wire cross section * [mm²]	I_{o_100K} [A]	Power wire cross section * [mm²]	Connector
MS2S03-B0BYN-__H__-____-__	1.3	0.75	1.6	0.75	H (M17 Hybrid)
MS2S03-C0BYN-__H__-____-__	2.2	0.75	2.7	0.75	H (M17 Hybrid)
MS2S04-B0BTN-__H__-____-__	2.2	0.75	2.7	0.75	H (M17 Hybrid)
MS2S04-C0BTN-__H__-____-__	3.1	0.75	3.9	0.75	H (M17 Hybrid)
MS2S05-B0BTN-__H__-____-__	4.55	0.75	5.5	0.75	H (M17 Hybrid)
MS2S05-C0BTN-__H__-____-__	7.1	0.75	8.4	0.75	H (M17 Hybrid)

* Conditions according to ➥ Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

3.9 RLB6 Power cables for MS2N motor connection "U" (M23, SPEEDCON) for dual-cable connection

This selection is valid for the following motor types:

MS2N□□-□□□□□-□□U□□-□□□□□-□□ List of motor types including recommended power wire cross section ➦ Table 19 Power wire cross section, MS2N motor type on page 39.



.

ctrlX DRIVE cabinet-free	Power cables ① RLB6-□□□□□□-NN-xxx,x		Extension ② RL2-□□□□□□-NN-xxx,x
Example: XMS2 - W0006B - ...	[mm²]	□ B = Basic	□ B = Basic
XMS □ - □ 0006B XMD □ - □ 0010B □ 0016B □ 0023B □ 0030B □ 0054B	1.0 1.5 2.5	RLB6-021CBB RLB6-021DBB RLB6-021ECB	RL2-521CBB RL2-521DBB RL2-521EBB

➦ Chapter 8 Accessories on page 93

Table 19: Power wire cross section, MS2N motor type

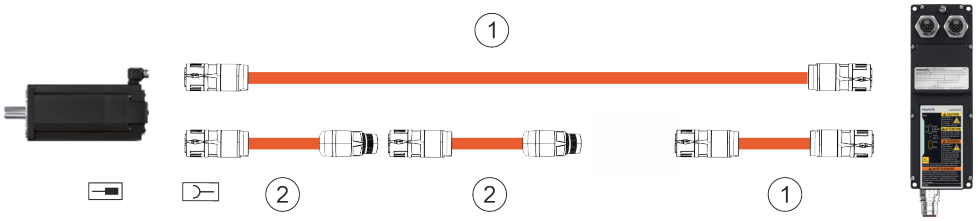
Motor	I_{o_60K} [A]	Power wire cross section * [mm²]	I_{o_100K} [A]	Power wire cross section * [mm²]	Connector
MS2N06-B1BNN-__U__-____-__	2.22	0.75 or 1.0	2.47	0.75 or 1.0	M23
MS2N06-C0BNN-__U__-____-__	3.75	0.75 or 1.0	4.5	0.75 or 1.0	M23
MS2N06-C0BTN-__U__-____-__	7.5	0.75 or 1.0	9	0.75 or 1.0	M23
MS2N06-D0BNN-__U__-____-__	6.1	0.75 or 1.0	7.55	0.75 or 1.0	M23
MS2N06-D0BRN-__U__-____-__	7.85	0.75 or 1.0	9.75	0.75 or 1.0	M23
MS2N06-D0BTN-__U__-____-__	11.55	1.0	14	1.5	M23
MS2N06-D1BNN-__U__-____-__	5.05	0.75 or 1.0	6.25	0.75 or 1.0	M23
MS2N06-E0BHN-__U__-____-__	5.4	0.75 or 1.0	6.8	0.75 or 1.0	M23
MS2N06-E0BRN-__U__-____-__	10.85	1.0	13.7	1.5	M23
MS2N07-B1BNN-__U__-____-__	4.25	0.75 or 1.0	4.74	0.75 or 1.0	M23
MS2N07-C0BNN-__U__-____-__	6.9	0.75 or 1.0	8.8	0.75 or 1.0	M23
MS2N07-C0BQN-__U__-____-__	10.1	0.75 or 1.0	12.9	1.0	M23
MS2N07-C1BNN-__U__-____-__	6.6	0.75 or 1.0	8.35	0.75 or 1.0	M23
MS2N07-C1BRN-__U__-____-__	9.55	0.75 or 1.0	12.1	1.0	M23
MS2N07-D0BFN-__U__-____-__	5.8	0.75 or 1.0	7.55	0.75 or 1.0	M23
MS2N07-D0BHN-__U__-____-__	8.55	0.75 or 1.0	11.1	1.0	M23
MS2N07-D0BNN-__U__-____-__	11.55	1.0	15	1.5	M23
MS2N07-D0BQN-__U__-____-__	10.53	1.0	13.04	1.5	M23
MS2N07-D1BFN-__U__-____-__	5.45	0.75 or 1.0	6.9	0.75 or 1.0	M23
MS2N07-D1BHN-__U__-____-__	7.8	0.75 or 1.0	9.9	0.75 or 1.0	M23
MS2N07-D1BNN-__U__-____-__	9.9	0.75 or 1.0	12.5	1.0	M23
MS2N07-E0BDN-__U__-____-__	5.15	0.75 or 1.0	6.8	0.75 or 1.0	M23
MS2N07-E0BHN-__U__-____-__	10.35	0.75 or 1.0	13.7	1.5	M23
MS2N07-E1BDN-__U__-____-__	4.93	0.75 or 1.0	6.2	0.75 or 1.0	M23
MS2N07-E1BHN-__U__-____-__	9	0.75 or 1.0	11.3	1.0	M23
MS2N10-B1BQN-__U__-____-__	13.1	1.5	14.2	1.5	M23
MS2N10-C0BNN-__U__-____-__	16.8	2.5	19.3	2.5	M23
MS2N10-D0BHN-__U__-____-__	19.1	2.5	23.1	4.0	M23
MS2N10-E0BHN-__U__-____-__	25	4.0	31	6.0	M23

* Conditions according to ➥ Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

3.10 RLB6 Power cables for MS2N motor connection "V" (M40, SPEEDCON) for dual-cable connection

This selection is valid for the following motor types:

MS2N□□-□□□□□-□□V□□-□□□□□-□□ List of motor types including recommended power wire cross section .



.

ctrlX DRIVE cabinet-free	Power cables ① RLB6-□□□□□□-NN-xxx,x		Extension ② RL2-□□□□□□-NN-xxx,x
Example: XMS2 - W0006B - ...	[mm²]	□ B = Basic	□ B = Basic
XMS □ - □ 0006B XMD □ - □ 0010B □ 0016B □ 0023B □ 0030B □ 0054B	2.5	RLB6-041ECB	RL2-542EBB

➥ Chapter 8 Accessories on page 93

Table 20: Power wire cross section, MS2N motor type

Motor	I_{0_60K} [A]	Power wire cross section * [mm²]	I_{0_100K} [A]	Power wire cross section * [mm²]	Connector
MS2N07-B1BNN-__V__-____-__	4.25	0.75 or 1.0	4.74	0.75 or 1.0	M40
MS2N07-C0BNA-__V__-____-__	-	-	11	1.0	M40
MS2N07-C0BNB-__V__-____-__	-	-	11	1.0	M40
MS2N07-C0BQA-__V__-____-__	-	-	15.8	2.5	M40
MS2N07-C0BQB-__V__-____-__	-	-	15.8	2.5	M40
MS2N07-C0BQL-__V__-____-__	-	-	22.3	2.5	M40
MS2N07-C1BNA-__V__-____-__	-	-	10.4	0.75 or 1.0	M40
MS2N07-C1BNB-__V__-____-__	-	-	10.4	0.75 or 1.0	M40
MS2N07-C1BNN-__V__-____-__	6.6	0.75 or 1.0	8.35	0.75 or 1.0	M40
MS2N07-C1BRA-__V__-____-__	-	-	14.9	1.5	M40
MS2N07-C1BRB-__V__-____-__	-	-	14.9	1.5	M40
MS2N07-C1BRL-__V__-____-__	-	-	20.8	2.5	M40
MS2N07-C1BRN-__V__-____-__	9.55	0.75 or 1.0	12.1	1.0	M40
MS2N07-D0BFA-__V__-____-__	-	-	9.55	0.75 or 1.0	M40
MS2N07-D0BHA-__V__-____-__	-	-	14.1	1.5	M40
MS2N07-D0BHB-__V__-____-__	-	-	14.1	1.5	M40
MS2N07-D0BHL-__V__-____-__	-	-	22.8	4.0	M40
MS2N07-D0BNA-__V__-____-__	-	-	19.1	2.5	M40
MS2N07-D0BNB-__V__-____-__	-	-	19.1	2.5	M40
MS2N07-D0BNL-__V__-____-__	-	-	31	6.0	M40
MS2N07-D0BRA-__V__-____-__	-	-	28.2	4.0	M40
MS2N07-D0BRB-__V__-____-__	-	-	28.2	4.0	M40
MS2N07-D0BRN-__V__-____-__	17.1	2.5	22.3	2.5	M40
MS2N07-D1BFA-__V__-____-__	-	-	9	0.75 or 1.0	M40
MS2N07-D1BHA-__V__-____-__	-	-	12.9	1.0	M40
MS2N07-D1BHB-__V__-____-__	-	-	12.9	1.0	M40
MS2N07-D1BNA-__V__-____-__	-	-	16.3	2.5	M40
MS2N07-D1BNB-__V__-____-__	-	-	16.3	2.5	M40
MS2N07-D1BNL-__V__-____-__	-	-	26.7	4.0	M40
MS2N07-E0BDA-__V__-____-__	-	-	8.9	0.75 or 1.0	M40
MS2N07-E0BDB-__V__-____-__	-	-	8.9	0.75 or 1.0	M40
MS2N07-E0BHA-__V__-____-__	-	-	17.9	2.5	M40
MS2N07-E0BHB-__V__-____-__	-	-	17.9	2.5	M40
MS2N07-E0BHL-__V__-____-__	-	-	31.5	6.0	M40
MS2N07-E0BNA-__V__-____-__	-	-	26.2	4.0	M40
MS2N07-E0BNB-__V__-____-__	-	-	26.2	4.0	M40
MS2N07-E0BNN-__V__-____-__	15.1	1.5	20	2.5	M40
MS2N07-E0BQA-__V__-____-__	-	-	33.3	6.0	M40
MS2N07-E0BQB-__V__-____-__	-	-	33.3	6.0	M40
MS2N07-E0BQN-__V__-____-__	19.1	2.5	25.3	4.0	M40
MS2N07-E1BDA-__V__-____-__	-	-	8.35	0.75 or 1.0	M40
MS2N07-E1BHA-__V__-____-__	-	-	15.2	1.5	M40
MS2N07-E1BHB-__V__-____-__	-	-	15.2	1.5	M40
MS2N07-E1BNA-__V__-____-__	-	-	23.9	4.0	M40

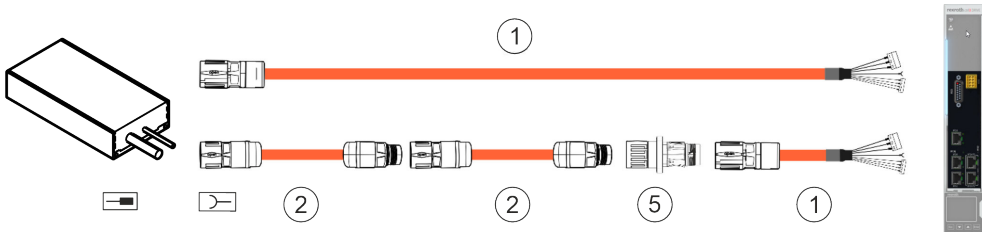
Motor	I_{o_60K} [A]	Power wire cross section * [mm²]	I_{o_100K} [A]	Power wire cross section * [mm²]	Connector
MS2N07-E1BNB-__V__-____-__	-	-	23.9	4.0	M40
MS2N07-E1BNL-__V__-____-__	-	-	42.1	10.0	M40
MS2N07-E1BNN-__V__-____-__	14.1	1.5	17.7	2.5	M40
MS2N10-C0BHA-__V__-____-__	-	-	18.8	2.5	M40
MS2N10-C0BHB-__V__-____-__	-	-	18.8	2.5	M40
MS2N10-C0BHN-__V__-____-__	12.6	1.0	14.5	1.5	M40
MS2N10-C0BNA-__V__-____-__	-	-	25.1	4.0	M40
MS2N10-C0BNB-__V__-____-__	-	-	25.1	4.0	M40
MS2N10-C0BNN-__V__-____-__	16.8	2.5	19.3	2.5	M40
MS2N10-C1BHA-__V__-____-__	-	-	16.7	2.5	M40
MS2N10-C1BHB-__V__-____-__	-	-	16.7	2.5	M40
MS2N10-C1BHN-__V__-____-__	11.1	1.0	12.75	1.0	M40
MS2N10-C1BNA-__V__-____-__	-	-	24.7	4.0	M40
MS2N10-C1BNB-__V__-____-__	-	-	24.7	4.0	M40
MS2N10-C1BNN-__V__-____-__	16.5	2.5	19	2.5	M40
MS2N10-D0BHA-__V__-____-__	-	-	32.4	6.0	M40
MS2N10-D0BHB-__V__-____-__	-	-	32.4	6.0	M40
MS2N10-D0BHN-__V__-____-__	19.1	2.5	23.1	4.0	M40
MS2N10-D0BNN-__V__-____-__	28.2	4.0	34.1	6.0	M40
MS2N10-D1BFA-__V__-____-__	-	-	24.2	4.0	M40
MS2N10-D1BFB-__V__-____-__	-	-	24.2	4.0	M40
MS2N10-D1BFN-__V__-____-__	14.3	1.5	17.2	2.5	M40
MS2N10-D1BNN-__V__-____-__	28.6	4.0	34.3	6.0	M40
MS2N10-E0BHA-__V__-____-__	-	-	46.1	10.0	M40
MS2N10-E0BHN-__V__-____-__	25	4.0	31	6.0	M40
MS2N10-E0BNN-__V__-____-__	34.5	6.0	42.8	10.0	M40
MS2N10-E1BFA-__V__-____-__	-	-	30.8	6.0	M40
MS2N10-E1BFB-__V__-____-__	-	-	30.8	6.0	M40
MS2N10-E1BFN-__V__-____-__	17.1	2.5	20.5	2.5	M40
MS2N10-E1BNN-__V__-____-__	34.2	6.0	41	10.0	M40
MS2N10-F0BDA-__V__-____-__	-	-	28.8	4.0	M40
MS2N10-F0BDB-__V__-____-__	-	-	28.8	4.0	M40
MS2N10-F0BDN-__V__-____-__	15.8	2.5	19.5	2.5	M40
MS2N10-F0BHN-__V__-____-__	32	6.0	39.4	10.0	M40
MS2N10-F0BNN-__V__-____-__	55.8	16.0	68.7	16.0	M40
MS2N10-F1BDA-__V__-____-__	-	-	29.5	4.0	M40
MS2N10-F1BDB-__V__-____-__	-	-	29.5	4.0	M40
MS2N10-F1BDN-__V__-____-__	15.9	2.5	19.5	2.5	M40

* Conditions according to ➥Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

3.11 RLC2 Power cables, ready-made for ML3 electrical connection "A" (M23, double clamping) for dual-cable connection

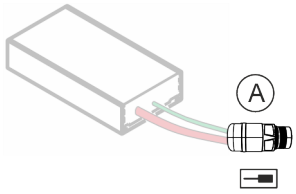
This selection is valid for the following motor types:

ML3□□□-□□□□□-□A□□□-□□ List of motor types including recommended power wire cross section ➦ Table 21 Power wire cross section, ML3 motor type on page 45.



ctrlX DRIVE modular	Power cables ① RLC2-□□□□□□-NN-xxx,x		Extension ② RLC2-□□□□□□-NN-xxx,x
Example: XMS2 - W0016A - ...	[mm²]	ML3... (M23-8p) □ B = Basic	□ B = Basic
XMS □ or XCS □ - □ 0006A □ 0010A □ 0016A □ 0023A □ 0030A □ 0036A	0.75 2.5	RLC2-121BGB RLC2-121ECB	RLC2-532BGB RLC2-532ECB
XMD □ or XCD □ - □ 0606A □ 1010A □ 1616A □ 2323A			
XMS □ or XCS □ - □ 0054A □ 0070A □ 0090A	0.75 2.5	RLC2-122BGB RLC2-122ECB	RLC2-532BGB RLC2-532ECB
XMD □ - □ 5454A □ 7070A			
XMS □ or XCS □ - □ 0100A □ 0120A	2.5	RLC2-123ECB	RLC2-532ECB
XMS □ or XCS □ - □ 0150A □ 0180A	-	-	-
XMS □ or XCS □ - □ 0210A □ 0250A □ 0280A □ 0330A □ 0375A	-	-	-

⑤➦ Chapter 8 Accessories on page 93



NOTICE

Connector (connector set to assemble the connection cable to the motor)

The prerequisite for connecting ready-made cables is the preparation of the ML3 motors. The connection cables of ML3 motors have to be prepared Ⓐ with connector sets. For further information refer to the ML3 motors documentation.

Table 21: Power wire cross section, ML3 motor type

Motors Installation mode A20/80K	I_{N_20} [A]	Power wire cross section * [mm²]	Connector set Ⓐ Material number, type
ML3P03-ANBWN-_A__-__	1.5	4x0.75	R911398822 RLS2352/CUB3 (M23)
ML3P03-BNBWN-_A__-__	3.0	4x0.75	R911398822 RLS2352/CUB3 (M23)
ML3P03-DNBWN-_A__-__	6.0	4x0.75	R911398822 RLS2352/CUB3 (M23)
ML3P03-FNBNN-_A__-__	4.5	4x0.75	R911398822 RLS2352/CUB3 (M23)
ML3P03-FNBUN-_A__-__	9.3	4x0.75	R911398822 RLS2352/CUB3 (M23)
ML3P06-BNBKU-_A__-__	2.15	4x0.75	R911398823 RLS2362/CUB3 (M23)
ML3P06-BNBRU-_A__-__	4.3	4x0.75	R911398823 RLS2362/CUB3 (M23)
ML3P06-CNBCU-_A__-__	2.15	4x0.75	R911398823 RLS2362/CUB3 (M23)
ML3P06-CNBRU-_A__-__	6.45	4x0.75	R911398823 RLS2362/CUB3 (M23)
ML3P06-DNBKU-_A__-__	4.3	4x0.75	R911398823 RLS2362/CUB3 (M23)
ML3P06-DNBRU-_A__-__	8.60	4x0.75	R911398823 RLS2362/CUB3 (M23)
ML3P06-ENBKU-_A__-__	4.46	4x0.75	R911398823 RLS2362/CUB3 (M23)
ML3P06-FNBKU-_A__-__	6.5	4x0.75	R911398823 RLS2362/CUB3 (M23)
ML3P06-HNBKU-_A__-__	8.60	4x0.75	R911398823 RLS2362/CUB3 (M23)
ML3P11-DNBFN-_A__-__	4.10	4x0.75	R911398824 RLS2372/CUB3 (M23)
ML3P11-DNBQN-_A__-__	8.20	4x0.75	R911398824 RLS2372/CUB3 (M23)
ML3P11-ENBCN-_A__-__	4.20	4x0.75	R911398824 RLS2372/CUB3 (M23)
ML3P11-ENBQN-_A__-__	10.2	4x0.75	R911398824 RLS2372/CUB3 (M23)
ML3P11-FNBFN-_A__-__	6.1	4x0.75	R911398824 RLS2372/CUB3 (M23)
ML3P11-HNBCN-_A__-__	6.6	4x0.75	R911398824 RLS2372/CUB3 (M23)
ML3P11-LNBCN-_A__-__	8.50	4x0.75	R911398824 RLS2372/CUB3 (M23)
ML3P06-ENBRU-_A__-__	10.75	4x2.5	R911398824 RLS2372/CUB3 (M23)
ML3P06-FNBRU-_A__-__	13.3	4x2.5	R911398824 RLS2372/CUB3 (M23)
ML3P06-HNBRU-_A__-__	17.20	4x2.5	R911398824 RLS2372/CUB3 (M23)
ML3P11-LNBQN-_A__-__	20.50	4x2.5	R911398824 RLS2372/CUB3 (M23)

* Conditions according to ➥ Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

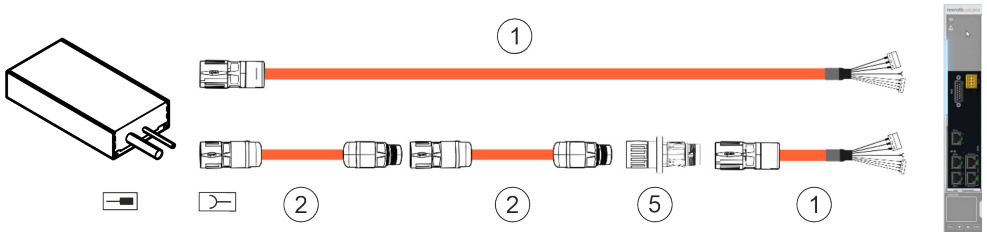
Motors Installation mode A40/60K	I_{N_40} [A]	Power wire cross section * [mm²]	Connector set Ⓐ Material number, type
ML3P03-ANBWN-_A__-__	1.3	4x0.75	R911398822 RLS2352/CUB3 (M23)
ML3P03-BNBWN-_A__-__	2.6	4x0.75	R911398822 RLS2352/CUB3 (M23)
ML3P03-DNBWN-_A__-__	5.20	4x0.75	R911398822 RLS2352/CUB3 (M23)
ML3P03-FNBNN-_A__-__	3.9	4x0.75	R911398822 RLS2352/CUB3 (M23)
ML3P03-FNBUN-_A__-__	8.1	4x0.75	R911398822 RLS2352/CUB3 (M23)
ML3P06-BNBKU-_A__-__	1.9	4x0.75	R911398823 RLS2362/CUB3 (M23)
ML3P06-BNBRU-_A__-__	3.7	4x0.75	R911398823 RLS2362/CUB3 (M23)
ML3P06-CNBCU-_A__-__	1.9	4x0.75	R911398823 RLS2362/CUB3 (M23)
ML3P06-CNBRU-_A__-__	5.6	4x0.75	R911398823 RLS2362/CUB3 (M23)
ML3P06-DNBKU-_A__-__	3.72	4x0.75	R911398823 RLS2362/CUB3 (M23)
ML3P06-DNBRU-_A__-__	7.4	4x0.75	R911398823 RLS2362/CUB3 (M23)
ML3P06-ENBKU-_A__-__	3.86	4x0.75	R911398823 RLS2362/CUB3 (M23)
ML3P06-ENBRU-_A__-__	9.31	4x0.75	R911398823 RLS2362/CUB3 (M23)
ML3P06-FNBKU-_A__-__	5.6	4x0.75	R911398823 RLS2362/CUB3 (M23)
ML3P06-HNBKU-_A__-__	7.45	4x0.75	R911398823 RLS2362/CUB3 (M23)
ML3P11-DNBFN-_A__-__	3.6	4x0.75	R911398824 RLS2372/CUB3 (M23)
ML3P11-DNBQN-_A__-__	7.1	4x0.75	R911398824 RLS2372/CUB3 (M23)
ML3P11-ENBCN-_A__-__	3.64	4x0.75	R911398824 RLS2372/CUB3 (M23)
ML3P11-ENBQN-_A__-__	8.83	4x0.75	R911398824 RLS2372/CUB3 (M23)
ML3P11-FNBFN-_A__-__	5.28	4x0.75	R911398824 RLS2372/CUB3 (M23)
ML3P11-HNBCN-_A__-__	5.71	4x0.75	R911398824 RLS2372/CUB3 (M23)
ML3P11-LNBCN-_A__-__	7.36	4x0.75	R911398824 RLS2372/CUB3 (M23)
ML3P06-FNBRU-_A__-__	11.5	4x2.5	R911398824 RLS2372/CUB3 (M23)
ML3P06-HNBRU-_A__-__	14.9	4x2.5	R911398824 RLS2372/CUB3 (M23)
ML3P11-LNBQN-_A__-__	17.75	4x2.5	R911398824 RLS2372/CUB3 (M23)

* Conditions according to ➥Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

3.12 RLC2 Power cables, ready-made for ML3 electrical connection "A" (M40, double clamping) for dual-cable connection

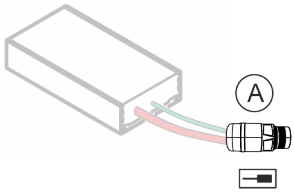
This selection is valid for the following motor types:

ML3□□□-□□□□□-□A□□□-□□ List of motor types including recommended power wire cross section ➦ Table 22 Power wire cross section, ML3 motor type on page 49.



ctrlX DRIVE modular	Power cables ① RLC2-□□□□□□-NN-xxx,x		Extension ② RLC22-□□□□□□-NN-xxx,x
Example: XMS2 - W0016A - ...	[mm²]	ML3... (M40-8p) □ B = Basic	□ B = Basic
XMS □ or XCS □ - □ 0006A □ 0010A □ 0016A □ 0023A □ 0030A □ 0036A	6.0	RLC2-141GDB	RLC2-542GDB
XMD □ or XCD □ - □ 0606A □ 1010A □ 1616A □ 2323A			
XMS □ or XCS □ - □ 0054A □ 0070A □ 0090A	6.0	RLC2-142GDB	RLC2-542GDB
XMD □ - □ 5454A □ 7070A			
XMS □ or XCS □ - □ 0100A □ 0120A	6.0	RLC2-143GDB	RLC2-542GDB
XMS □ or XCS □ - □ 0150A □ 0180A	-	-	-
XMS □ or XCS □ - □ 0210A □ 0250A □ 0280A □ 0330A □ 0375A	-	-	-

⑤➦ Chapter 8 Accessories on page 93



NOTICE

Connector (connector set to assemble the connection cable to the motor)

The prerequisite for connecting ready-made cables is the preparation of the ML3 motors. The connection cables of ML3 motors have to be prepared Ⓐ with connector sets. For further information refer to the ML3 motors documentation.

Table 22: Power wire cross section, ML3 motor type

Motors Installation mode A20/80K	I_{N_20} [A]	Power wire cross section * [mm²]	Connector set Ⓐ Material number, type
ML3P11-RNBQU-_A__-__	30.7	4x6.0	R911423737, RLS4052/CUB3 (M40)

* Conditions according to ➥ Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

Motors Installation mode A40/60K	I_{N_40} [A]	Power wire cross section * [mm²]	Connector set Ⓐ Material number, type
ML3P11-RNBQU-_A__-__	26.71	4x6.0	R911423737, RLS4052/CUB3 (M40)

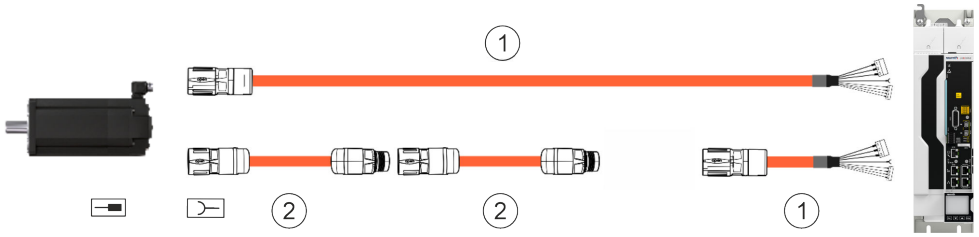
* Conditions according to ➥ Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

3.13 RLE2 Power cables, ready-made for MAD100, MAF100 with electrical connection "A,B,L,R" (B40) for dual-cable connection

This selection is valid for the following motor types:

MAD□□□□-□□□□-□□-□□-**[A,B,L,R]**□□-□□ List of motor types including recommended power wire cross section ➦ Table 23 Power wire cross section, MAD motor types on page 51.

MAF□□□□-□□□□-□□-□□-**[A,B,L,R]**□□-□□ List of motor types including recommended power wire cross section ➦ Table 24 Power wire cross section, MAF motor types on page 51.



ctrlX DRIVE modular	Power cables ① RLE2-□□□□□□-NN-xxx,x		Extension ② RLE2-□□□□□□-NN-xxx,x
Example: XMS2 - W0016A - ...	[mm²]	□ B = Basic	□ B = Basic
XMS □ or XCS □ - □ 0006A □ 0010A □ 0016A □ 0023A □ 0030A □ 0036A	1.5 2.5	RLE2-011DBB RLE2-011ECB	RLE2-510DBB RLE2-510ECB
XMD□ or XCD □ - □ 0606A □ 1010A □ 1616A □ 2323A			
XMS □ or XCS □ - □ 0054A □ 0070A □ 0090A	1.5 2.5 4.0	RLE2-012DBB RLE2-012ECB RLE2-012FDB	RLE2-510DBB RLE2-510ECB RLE2-510FDB
XMD □ - □ 5454A □ 7070A	6.0 10.0	RLE2-012GDB RLE2-012HDB	RLE2-510GDB RLE2-510HDB
XMS □ or XCS □ - □ 0100A □ 0120A	2.5 4.0 6.0 10.0	RLE2-013ECB RLE2-013FDB RLE2-013GDB -	RLE2-510ECB RLE2-510FDB RLE2-510GDB -
XMS □ or XCS □ - □ 0150A □ 0180A	-	-	-
XMS □ or XCS □ - □ 0210A □ 0250A □ 0280A □ 0330A □ 0375A	-	-	-

➦ Chapter 8 Accessories on page 93

Table 23: Power wire cross section, MAD motor types

Motors	I_N [A]	Power wire cross section * [mm²]	Connector
MAD100B-0050-__-__-[A,B,L,R]__-__-__	5.3	1.5	B40
MAD100B-0100-__-__-[A,B,L,R]__-__-__	8.9	1.5	B40
MAD100B-0150-__-__-[A,B,L,R]__-__-__	12.9	1.5	B40
MAD100B-0200-__-__-[A,B,L,R]__-__-__	14.6	1.5	B40
MAD100B-0250-__-__-[A,B,L,R]__-__-__	16.2	2.5	B40
MAD100C-0050-__-__-[A,B,L,R]__-__-__	8.2	1.5	B40
MAD100C-0100-__-__-[A,B,L,R]__-__-__	13.2	1.5	B40
MAD100C-0150-__-__-[A,B,L,R]__-__-__	19.7	2.5	B40
MAD100C-0200-__-__-[A,B,L,R]__-__-__	25.7	4.0	B40
MAD100C-0250-__-__-[A,B,L,R]__-__-__	27.8	4.0	B40
MAD100D-0050-__-__-[A,B,L,R]__-__-__	10.1	1.5	B40
MAD100D-0100-__-__-[A,B,L,R]__-__-__	19.3	2.5	B40
MAD100D-0150-__-__-[A,B,L,R]__-__-__	24.7	4.0	B40
MAD100D-0200-__-__-[A,B,L,R]__-__-__	27.18	4.0	B40
MAD100D-0250-__-__-[A,B,L,R]__-__-__	32.42	6.0	B40

* Conditions according to ➥ Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

Table 24: Power wire cross section, MAF motor types

Motors	I_N [A]	Power wire cross section * [mm²]	Connector
MAF100B-0050-__-__-[A,B,L,R]__-__-__	8.5	1.5	B40
MAF100B-0100-__-__-[A,B,L,R]__-__-__	15.2	1.5	B40
MAF100B-0150-__-__-[A,B,L,R]__-__-__	18.1	2.5	B40
MAF100B-0200-__-__-[A,B,L,R]__-__-__	23.9	4.0	B40
MAF100B-0250-__-__-[A,B,L,R]__-__-__	26.0	4.0	B40
MAF100C-0050-__-__-[A,B,L,R]__-__-__	12.1	1.5	B40
MAF100C-0100-__-__-[A,B,L,R]__-__-__	19.0	2.5	B40
MAF100C-0150-__-__-[A,B,L,R]__-__-__	27.9	4.0	B40
MAF100C-0200-__-__-[A,B,L,R]__-__-__	36.7	6.0	B40
MAF100C-0250-__-__-[A,B,L,R]__-__-__	40.2	10.0	B40
MAF100D-0050-__-__-[A,B,L,R]__-__-__	14.5	1.5	B40
MAF100D-0100-__-__-[A,B,L,R]__-__-__	27.1	4.0	B40
MAF100D-0150-__-__-[A,B,L,R]__-__-__	32.7	6.0	B40
MAF100D-0200-__-__-[A,B,L,R]__-__-__	43.1	10.0	B40
MAF100D-0250-__-__-[A,B,L,R]__-__-__	42.82	10.0	B40

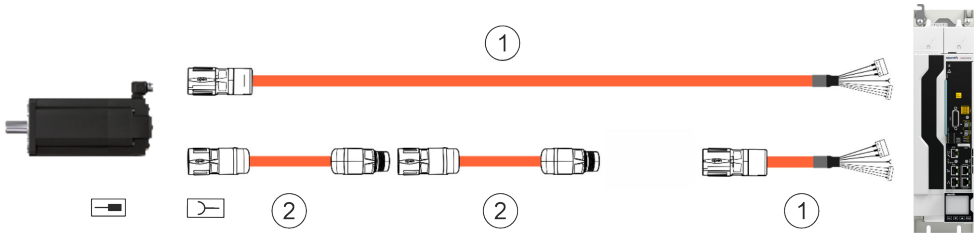
* Conditions according to ➥ Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

3.14 RLE2 Power cables, ready-made for MAD130-180, MAF130-180 with electrical connection "A,B,L,R" (B58) for dual-cable connection

This selection is valid for the following motor types:

MAD□□□□-□□□□-□□-□□-**[A,B,L,R]**□□-□□ List of motor types including recommended power wire cross section ➦ Table 25 Power wire cross section, MAD motor types on page 53.

MAF□□□□-□□□□-□□-□□-**[A,B,L,R]**□□-□□ List of motor types including recommended power wire cross section ➦ Table 26 Power wire cross section, MAF motor types on page 54.



ctrlX DRIVE modular	Power cables ① RLE2-□□□□□□-NN-xxx,x		Extension ② RLE2-□□□□□□-NN-xxx,x
Example: XMS2 - W0016A - ...	[mm²]	□ B = Basic	□ B = Basic
XMS □ or XCS □ - □ 0006A □ 0010A □ 0016A □ 0023A □ 0030A □ 0036A	-	-	-
XMD □ or XCD □ - □ 0606A □ 1010A □ 1616A □ 2323A			
XMS □ or XCS □ - □ 0054A □ 0070A □ 0090A	6.0 10.0	RLE2-022GDB RLE2-022HDB	RLE2-520GBB RLE2-520HBB
XMD □ - □ 5454A □ 7070A			
XMS □ or XCS □ - □ 0100A □ 0120A	6.0 10.0 16.0	- RLE2-023HDB RLE2-023JEB	- RLE2-520HBB RLE2-520JBB
XMS □ or XCS □ - □ 0150A □ 0180A	16.0 25.0	RLE2-024JEB RLE2-024KEB	RLE2-520JEB RLE2-520KEB
XMS □ or XCS □ - □ 0210A □ 0250A □ 0280A □ 0330A □ 0375A	-	-	-

➦ Chapter 8 Accessories on page 93

Table 25: Power wire cross section, MAD motor types

Motors	I_N [A]	Power wire cross section * [mm²]	Connector
MAD130B-0050-__-__-[A,B,L,R]__-__-__	12.8	1.5	B58
MAD130B-0100-__-__-[A,B,L,R]__-__-__	26.9	4.0	B58
MAD130B-0150-__-__-[A,B,L,R]__-__-__	34.9	6.0	B58
MAD130B-0200-__-__-[A,B,L,R]__-__-__	43.0	10.0	B58
MAD130B-0250-__-__-[A,B,L,R]__-__-__	47.2	10.0	B58
MAD130C-0050-__-__-[A,B,L,R]__-__-__	19.7	2.5	B58
MAD130C-0100-__-__-[A,B,L,R]__-__-__	36.2	6.0	B58
MAD130C-0150-__-__-[A,B,L,R]__-__-__	48.9	10.0	B58
MAD130C-0200-__-__-[A,B,L,R]__-__-__	57.0	16.0	B58
MAD130C-0250-__-__-[A,B,L,R]__-__-__	62.0	16.0	B58
MAD130D-0050-__-__-[A,B,L,R]__-__-__	24.2	4.0	B58
MAD130D-0100-__-__-[A,B,L,R]__-__-__	43.7	10.0	B58
MAD130D-0150-__-__-[A,B,L,R]__-__-__	61.5	16.0	B58
MAD130D-0200-__-__-[A,B,L,R]__-__-__	71.3	16.0	B58
MAD130D-0250-__-__-[A,B,L,R]__-__-__	72.4	25.0	B58
MAD160B-0050-__-__-[A,B,L,R]__-__-__	26.08	4.0	B58
MAD160B-0100-__-__-[A,B,L,R]__-__-__	50.8	10.0	B58
MAD160B-0150-__-__-[A,B,L,R]__-__-__	61.6	16.0	B58
MAD160B-0200-__-__-[A,B,L,R]__-__-__	75.8	25.0	B58
MAD160C-0050-__-__-[A,B,L,R]__-__-__	27.6	4.0	B58
MAD160C-0100-__-__-[A,B,L,R]__-__-__	52.9	10.0	B58
MAD160C-0150-__-__-[A,B,L,R]__-__-__	75.3	25.0	B58
MAD160C-0200-__-__-[A,B,L,R]__-__-__	93.9	25.0	B58

* Conditions according to ➥ Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

Table 26: Power wire cross section, MAF motor types

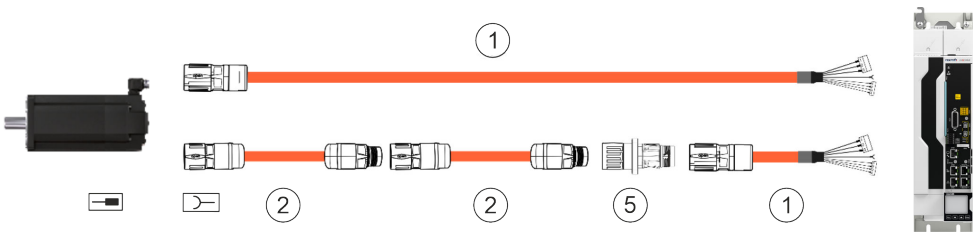
Motors	I_N [A]	Power wire cross section * [mm²]	Connector
MAF130B-0050-__-__-[A,B,L,R]__-__-__	14.7	1.5	B58
MAF130B-0100-__-__-[A,B,L,R]__-__-__	28.4	4.0	B58
MAF130B-0150-__-__-[A,B,L,R]__-__-__	43.7	10.0	B58
MAF130B-0200-__-__-[A,B,L,R]__-__-__	52.7	10.0	B58
MAF130B-0250-__-__-[A,B,L,R]__-__-__	58.8	16.0	B58
MAF130C-0050-__-__-[A,B,L,R]__-__-__	21.0	2.5	B58
MAF130C-0100-__-__-[A,B,L,R]__-__-__	38.0	6.0	B58
MAF130C-0150-__-__-[A,B,L,R]__-__-__	53.2	16.0	B58
MAF130C-0200-__-__-[A,B,L,R]__-__-__	69.8	16.0	B58
MAF130C-0250-__-__-[A,B,L,R]__-__-__	75.5	25.0	B58
MAF130D-0050-__-__-[A,B,L,R]__-__-__	32.3	6.0	B58
MAF130D-0100-__-__-[A,B,L,R]__-__-__	50.7	10.0	B58
MAF130D-0150-__-__-[A,B,L,R]__-__-__	72.6	25.0	B58
MAF130D-0200-__-__-[A,B,L,R]__-__-__	93.9	25.0	B58
MAF130E-0100-__-__-[A,B,L,R]__-__-__	82.77	25	B58
MAF160B-0050-__-__-[A,B,L,R]__-__-__	34.25	6.0	B58
MAF160B-0100-__-__-[A,B,L,R]__-__-__	73.7	25.0	B58
MAF160B-0150-__-__-[A,B,L,R]__-__-__	89.5	25.0	B58
MAF160C-0050-__-__-[A,B,L,R]__-__-__	47.4	10.0	B58
MAF160C-0100-__-__-[A,B,L,R]__-__-__	91.2	25.0	B58

* Conditions according to ➦Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

3.15 RLD5 Power cables, ready-made for MS2M electrical connection "D" (M17, SPEEDCON) for dual-cable connection

This selection is valid for the following motor types:

MS2M□□-□□□□□-□□D□□ List of motor types including recommended power wire cross section ➦ Table 27 Power wire cross section, MS2M motor type on page 56.



ctrlX DRIVE compact	Power cables ① RLD5-□□□□□□-NN-xxx,x		Extension ② RLD5-□□□□□□-NN-xxx,x
Example: XCS2 - W0010F - ...	[mm²]	□ B = Basic □ T = Torsion	□ B = Basic □ T = Torsion
XCS □ - □ 0005F □ 0007F □ 0010F □ 0019F □ 0028F	1.0	RLD5-011BGB	RLD5-500BGB

➦ Chapter 8 Accessories on page 93

Table 27: Power wire cross section, MS2M motor type

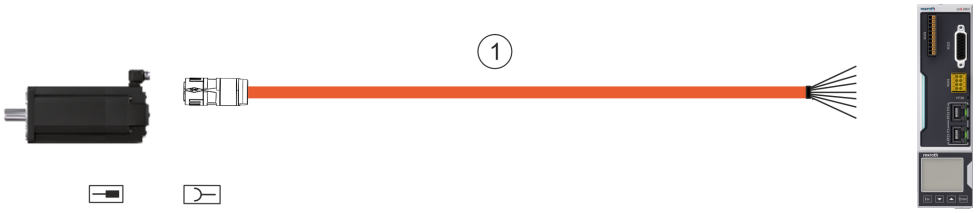
Motors Operating mode 60K	I_{0_60K} [A]	Power wire cross section *[mm²]	Connector
MS2M02-A0FNN-__D__	1.1	0.75	M17
MS2M02-B0FNN-__D__	1.1	0.75	M17
MS2M03-A0FNN-__D__	1.5	0.75	M17
MS2M03-B0FNN-__D__	2.4	0.75	M17
MS2M04-A0FNN-__D__	4.1	0.75	M17
MS2M04-B0FNN-__D__	5.7	0.75	M17
MS2M05-A0FNN-__D__	8.2	0.75	M17
MS2M02-A1FNN-__D__	1.1	0.75	M17
MS2M02-B1FNN-__D__	1.1	0.75	M17
MS2M03-A1FNN-__D__	1.4	0.75	M17
MS2M03-B1FNN-__D__	2.1	0.75	M17
MS2M04-A1FNN-__D__	3.8	0.75	M17
MS2M04-B1FNN-__D__	5.7	0.75	M17

* Conditions according to ➦ Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

3.16 RLG7 Power cables, ready-made for MS2L electrical connection "K" (M23, threaded lock) for dual-cable connection

This selection is valid for the following motor types:

MS2L□□-□□□□□-□□K□□ List of motor types including recommended power wire cross section ➦ Table 28 Power wire cross section, MS2L motor type on page 58.



ctrlX DRIVE compact	Power cables ① RLG7-□□□□□□-NN-xxx,x	
Example: XCS2 - W0010L - ...	[mm²]	□ B = Basic
XCS □ - □ 0005L □ 0007L □ 0012L □ 0026L □ 0035L □ 0055L	0.75 1.5 2.5	RLG7-021BIB RLG7-021DIB RLG7-021EJB

Table 28: Power wire cross section, MS2L motor type

Motors	I_N [A]	Power wire cross section *[mm²]	Connector
MS2L03-B0BNN-__K_0	1.43	0.75	M23
MS2L03-B0BNN-__K_1	1.43	0.75	M23
MS2L04-A0BNN-__K_0	2.00	0.75	M23
MS2L04-A0BNN-__K_1	2.00	0.75	M23
MS2L04-B0BNN-__K_0	3.86	0.75	M23
MS2L04-B0BNN-__K_1	3.86	0.75	M23
MS2L05-B0BNN-__K_0	6.30	0.75	M23
MS2L05-B0BNN-__K_1	6.30	0.75	M23
MS2L06-A0BNN-__K_0	10.00	1.5	M23
MS2L06-A0BNN-__K_1	10.00	1.5	M23
MS2L06-C0BNN-__K_0	13.90	2.5	M23
MS2L06-C0BNN-__K_1	13.90	2.5	M23

* Conditions according to ➦Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

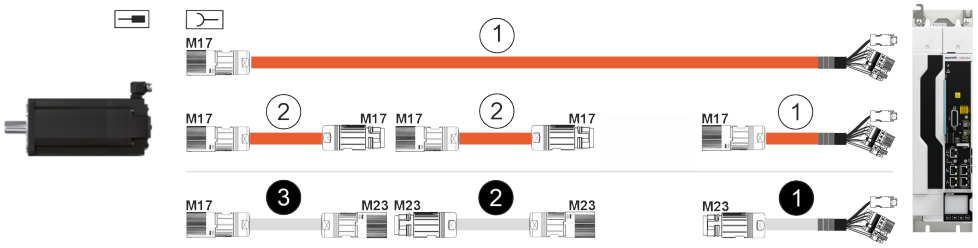
4 Hybrid cables for ctrlX

4.1 RHB2 Hybrid cables, ready-made for MS2N, MS2S Electrical connection "H" (M17, SpeedTec) for single-cable connection

This selection is valid for the following motor types:

MS2N□□-□□□□□-□□**H**□□-□□□□□-□□ List of motor types including recommended power wire cross section ➦ Table 29 Power wire cross section, MS2N motor type on page 61.

MS2S□□-□□□□□-□□**H**□□-□□□□□-□□ List of motor types including recommended power wire cross section ➦ Table 30 Power wire cross section, MS2S motor type on page 61.



ctrlX DRIVE modular	Power cables ① RHB2-□□□□□□-NN-xxx,x		Extension ② RHB2-□□□□□□-NN-xxx,x	Adapter cables ③ RHB2-□□□□□□-NN-xxx,x
Example: XMS2 - W0016A - ...	[mm²]	□ B = Basic	□ B = Basic	□ B = Basic
XMS □ or XCS □ - □ 0006A □ 0010A □ 0016A □ 0023A □ 0030A □ 0036A	0.75 ------ *0.75*	RHB2-011BBB [1] ----- -	RHB2-500BBB [1] ----- -	- ----- ❸ *RHB2-631BBB [3]*
XMD □ or XCD □ - □ 0606A □ 1010A □ 1616A □ 2323A	*1.5*	❶ *RHB2-031DCB [2]*	❷ *RHB2-531DCB [2]*	-
XMS □ or XCS □ - □ 0054A □ 0070A □ 0090A	0.75	RHB2-012BBB [1]	RHB2-500BBB [1]	-
XMD □ - □ 5454A □ 7070A				
XMS □ or XCS □ - □ 0100A □ 0120A	-	-	-	-
XMS □ or XCS □ - □ 0150A □ 0180A	-	-	-	-
XMS □ or XCS □ - □ 0210A □ 0250A □ 0280A □ 0330A □ 0375A	-	-	-	-

[1] Cable length 0.5, ... 45 m (total length of all segments)

[2] Connector size M23, cable length 0.5, ..., or 75 m (total length of all segments)

[3] Adapter cables M17➡M23, cable length 0.5 ... 5 m

❶❷❸ Alternative connection option

➦ Chapter 8 Accessories on page 93

Table 29: Power wire cross section, MS2N motor type

Motor	I_{0_60K} [A]	Power wire cross section * [mm²]	I_{0_100K} [A]	Power wire cross section * [mm²]	Connector
MS2N03-A0BYN-__H__-____-__	1.59	0.75 or 1.0	1.85	0.75 or 1.0	H (M17 Hybrid)
MS2N03-B0BYN-__H__-____-__	1.31	0.75 or 1.0	1.61	0.75 or 1.0	H (M17 Hybrid)
MS2N03-D0BYN-__H__-____-__	2.07	0.75 or 1.0	2.6	0.75 or 1.0	H (M17 Hybrid)
MS2N04-B0BNN-__H__-____-__	1.11	0.75 or 1.0	1.36	0.75 or 1.0	H (M17 Hybrid)
MS2N04-B0BTN-__H__-____-__	2.2	0.75 or 1.0	2.7	0.75 or 1.0	H (M17 Hybrid)
MS2N04-C0BNN-__H__-____-__	1.78	0.75 or 1.0	2.24	0.75 or 1.0	H (M17 Hybrid)
MS2N04-C0BTN-__H__-____-__	3.11	0.75 or 1.0	3.9	0.75 or 1.0	H (M17 Hybrid)
MS2N04-C0DTN-__H__-____-__	3.11	0.75 or 1.0	3.9	0.75 or 1.0	H (M17 Hybrid)
MS2N04-D0BHN-__H__-____-__	1.61	0.75 or 1.0	1.96	0.75 or 1.0	H (M17 Hybrid)
MS2N04-D0BQN-__H__-____-__	2.86	0.75 or 1.0	3.48	0.75 or 1.0	H (M17 Hybrid)
MS2N04-D0DQN-__H__-____-__	2.86	0.75 or 1.0	3.48	0.75 or 1.0	H (M17 Hybrid)
MS2N05-B0BNN-__H__-____-__	2.29	0.75 or 1.0	2.75	0.75 or 1.0	H (M17 Hybrid)
MS2N05-B0BTN-__H__-____-__	4.55	0.75 or 1.0	5.45	0.75 or 1.0	H (M17 Hybrid)
MS2N05-C0BNN-__H__-____-__	3.53	0.75 or 1.0	4.16	0.75 or 1.0	H (M17 Hybrid)
MS2N05-C0BTN-__H__-____-__	7.1	0.75 or 1.0	8.35	0.75 or 1.0	H (M17 Hybrid)
MS2N05-D0BHN-__H__-____-__	3.05	0.75 or 1.0	3.63	0.75 or 1.0	H (M17 Hybrid)
MS2N05-D0BRN-__H__-____-__	6.05	0.75 or 1.0	7.2	0.75 or 1.0	H (M17 Hybrid)

* Conditions according to ➥ Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

Table 30: Power wire cross section, MS2S motor type

Motor	I_{0_60K} [A]	Power wire cross section * [mm²]	I_{0_100K} [A]	Power wire cross section * [mm²]	Connector
MS2S03-B0BYN-__H__-____-__	1.3	0.75	1.6	0.75	H (M17 Hybrid)
MS2S03-C0BYN-__H__-____-__	2.2	0.75	2.7	0.75	H (M17 Hybrid)
MS2S04-B0BTN-__H__-____-__	2.2	0.75	2.7	0.75	H (M17 Hybrid)
MS2S04-C0BTN-__H__-____-__	3.1	0.75	3.9	0.75	H (M17 Hybrid)
MS2S05-B0BTN-__H__-____-__	4.55	0.75	5.5	0.75	H (M17 Hybrid)
MS2S05-C0BTN-__H__-____-__	7.1	0.75	8.4	0.75	H (M17 Hybrid)

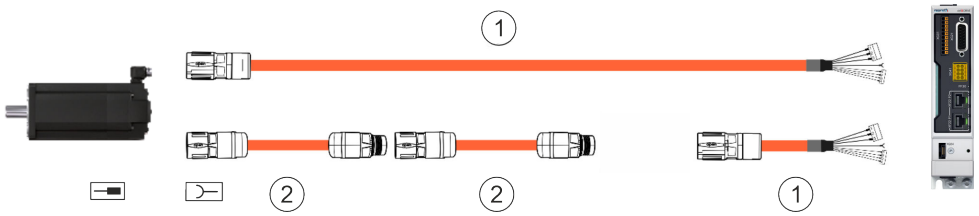
* Conditions according to ➥ Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

4.2 RHB5 Hybrid cables, ready-made for MS2N, MS2S motor connection "H" (M17, SpeedTec) for single-cable connection

This selection is valid for the following motor types:

MS2N□□-□□□□□-□□**H**□□-□□□□□-□□ List of motor types including recommended power wire cross section ➦ Table 31 Power wire cross section, MS2N motor type on page 63.

MS2S□□-□□□□□-□□**H**□□-□□□□□-□□ List of motor types including recommended power wire cross section ➦ Table 32 Power wire cross section, MS2S motor type on page 63.



ctrlX DRIVE compact	Power cables ① RHB5-□□□□□□-NN-xxx,x		Extension ② RHB2-□□□□□□-NN-xxx,x
Example: XCS2 - W0005F - ...	[mm²]	□ B = Basic	□ B = Basic
XCS □ - □ 0005F □ 0007F □ 0010F □ 0019F □ 0028F □ 0035F □ 0005H □ 0007H □ 0012H □ 0026H □ 0035H	0.75	RHB5-011BBB[1]	RHB2-500BBB[1]
[1] Cable length 0.5, ... 45 m (total length of all segments)			

➦ Chapter 8 Accessories on page 93

Table 31: Power wire cross section, MS2N motor type

Motor	I_{0_60K} [A]	Power wire cross section * [mm²]	I_{0_100K} [A]	Power wire cross section * [mm²]	Connector
MS2N03-A0BYN-__H__-____-__	1.59	0.75 or 1.0	1.85	0.75 or 1.0	H (M17 Hybrid)
MS2N03-B0BYN-__H__-____-__	1.31	0.75 or 1.0	1.61	0.75 or 1.0	H (M17 Hybrid)
MS2N03-D0BYN-__H__-____-__	2.07	0.75 or 1.0	2.6	0.75 or 1.0	H (M17 Hybrid)
MS2N04-B0BNN-__H__-____-__	1.11	0.75 or 1.0	1.36	0.75 or 1.0	H (M17 Hybrid)
MS2N04-B0BTN-__H__-____-__	2.2	0.75 or 1.0	2.7	0.75 or 1.0	H (M17 Hybrid)
MS2N04-C0BNN-__H__-____-__	1.78	0.75 or 1.0	2.24	0.75 or 1.0	H (M17 Hybrid)
MS2N04-C0BTN-__H__-____-__	3.11	0.75 or 1.0	3.9	0.75 or 1.0	H (M17 Hybrid)
MS2N04-C0DTN-__H__-____-__	3.11	0.75 or 1.0	3.9	0.75 or 1.0	H (M17 Hybrid)
MS2N04-D0BHN-__H__-____-__	1.61	0.75 or 1.0	1.96	0.75 or 1.0	H (M17 Hybrid)
MS2N04-D0BQN-__H__-____-__	2.86	0.75 or 1.0	3.48	0.75 or 1.0	H (M17 Hybrid)
MS2N04-D0DQN-__H__-____-__	2.86	0.75 or 1.0	3.48	0.75 or 1.0	H (M17 Hybrid)
MS2N05-B0BNN-__H__-____-__	2.29	0.75 or 1.0	2.75	0.75 or 1.0	H (M17 Hybrid)
MS2N05-B0BTN-__H__-____-__	4.55	0.75 or 1.0	5.45	0.75 or 1.0	H (M17 Hybrid)
MS2N05-C0BNN-__H__-____-__	3.53	0.75 or 1.0	4.16	0.75 or 1.0	H (M17 Hybrid)
MS2N05-C0BTN-__H__-____-__	7.1	0.75 or 1.0	8.35	0.75 or 1.0	H (M17 Hybrid)
MS2N05-D0BHN-__H__-____-__	3.05	0.75 or 1.0	3.63	0.75 or 1.0	H (M17 Hybrid)
MS2N05-D0BRN-__H__-____-__	6.05	0.75 or 1.0	7.2	0.75 or 1.0	H (M17 Hybrid)

* Conditions according to ➥ Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

Table 32: Power wire cross section, MS2S motor type

Motor	I_{0_60K} [A]	Power wire cross section * [mm²]	I_{0_100K} [A]	Power wire cross section * [mm²]	Connector
MS2S03-B0BYN-__H__-____-__	1.3	0.75	1.6	0.75	H (M17 Hybrid)
MS2S03-C0BYN-__H__-____-__	2.2	0.75	2.7	0.75	H (M17 Hybrid)
MS2S04-B0BTN-__H__-____-__	2.2	0.75	2.7	0.75	H (M17 Hybrid)
MS2S04-C0BTN-__H__-____-__	3.1	0.75	3.9	0.75	H (M17 Hybrid)
MS2S05-B0BTN-__H__-____-__	4.55	0.75	5.5	0.75	H (M17 Hybrid)
MS2S05-C0BTN-__H__-____-__	7.1	0.75	8.4	0.75	H (M17 Hybrid)

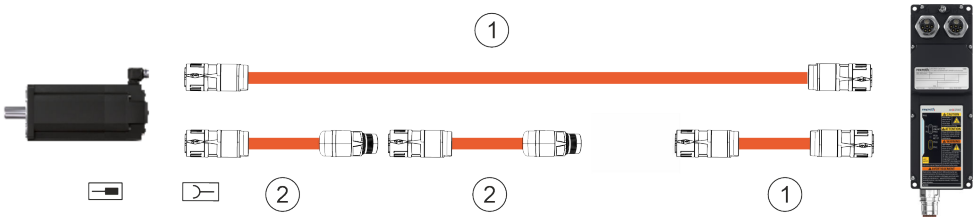
* Conditions according to ➥ Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

4.3 RHB6 Hybrid cables, ready-made for MS2N, MS2S motor connection "H" (M17, SpeedTec) for single-cable connection

This selection is valid for the following motor types:

MS2N□□-□□□□□-□□**H**□□-□□□□□-□□ List of motor types including recommended power wire cross section ➦ Table 33 Power wire cross section, MS2N motor type on page 65.

MS2S□□-□□□□□-□□**H**□□-□□□□□-□□ List of motor types including recommended power wire cross section ➦ Table 33 Power wire cross section, MS2N motor type on page 65.



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ctrlX DRIVE cabinet-free	Power cables ① RHB6-□□□□□□-NN-xxx,x		Extension ② RHB2-□□□□□□-NN-xxx,x
Example: XMS2 - W0006B - ...	**[mm²]**	**□ B = Basic**	**□ B = Basic**
XMS □ - □ 0006B □ 0010B □ 0016B □ 0023B □ 0030B □ 0054B	0.75	RHB6-011BBB	RHB2-500BBB

[1] Cable length 0.5, ... 45 m (total length of all segments)

➦ Chapter 8 Accessories on page 93

Table 33: Power wire cross section, MS2N motor type

Motor	I_{0_60K} [A]	Power wire cross section * [mm²]	I_{0_100K} [A]	Power wire cross section * [mm²]	Connector
MS2N03-A0BYN-__H__-____-__	1.59	0.75 or 1.0	1.85	0.75 or 1.0	H (M17 Hybrid)
MS2N03-B0BYN-__H__-____-__	1.31	0.75 or 1.0	1.61	0.75 or 1.0	H (M17 Hybrid)
MS2N03-D0BYN-__H__-____-__	2.07	0.75 or 1.0	2.6	0.75 or 1.0	H (M17 Hybrid)
MS2N04-B0BNN-__H__-____-__	1.11	0.75 or 1.0	1.36	0.75 or 1.0	H (M17 Hybrid)
MS2N04-B0BTN-__H__-____-__	2.2	0.75 or 1.0	2.7	0.75 or 1.0	H (M17 Hybrid)
MS2N04-C0BNN-__H__-____-__	1.78	0.75 or 1.0	2.24	0.75 or 1.0	H (M17 Hybrid)
MS2N04-C0BTN-__H__-____-__	3.11	0.75 or 1.0	3.9	0.75 or 1.0	H (M17 Hybrid)
MS2N04-C0DTN-__H__-____-__	3.11	0.75 or 1.0	3.9	0.75 or 1.0	H (M17 Hybrid)
MS2N04-D0BHN-__H__-____-__	1.61	0.75 or 1.0	1.96	0.75 or 1.0	H (M17 Hybrid)
MS2N04-D0BQN-__H__-____-__	2.86	0.75 or 1.0	3.48	0.75 or 1.0	H (M17 Hybrid)
MS2N04-D0DQN-__H__-____-__	2.86	0.75 or 1.0	3.48	0.75 or 1.0	H (M17 Hybrid)
MS2N05-B0BNN-__H__-____-__	2.29	0.75 or 1.0	2.75	0.75 or 1.0	H (M17 Hybrid)
MS2N05-B0BTN-__H__-____-__	4.55	0.75 or 1.0	5.45	0.75 or 1.0	H (M17 Hybrid)
MS2N05-C0BNN-__H__-____-__	3.53	0.75 or 1.0	4.16	0.75 or 1.0	H (M17 Hybrid)
MS2N05-C0BTN-__H__-____-__	7.1	0.75 or 1.0	8.35	0.75 or 1.0	H (M17 Hybrid)
MS2N05-D0BHN-__H__-____-__	3.05	0.75 or 1.0	3.63	0.75 or 1.0	H (M17 Hybrid)
MS2N05-D0BRN-__H__-____-__	6.05	0.75 or 1.0	7.2	0.75 or 1.0	H (M17 Hybrid)

* Conditions according to ➥ Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

Table 34: Power wire cross section, MS2S motor type

Motor	I_{0_60K} [A]	Power wire cross section * [mm²]	I_{0_100K} [A]	Power wire cross section * [mm²]	Connector
MS2S03-B0BYN-__H__-____-__	1.3	0.75	1.6	0.75	H (M17 Hybrid)
MS2S03-C0BYN-__H__-____-__	2.2	0.75	2.7	0.75	H (M17 Hybrid)
MS2S04-B0BTN-__H__-____-__	2.2	0.75	2.7	0.75	H (M17 Hybrid)
MS2S04-C0BTN-__H__-____-__	3.1	0.75	3.9	0.75	H (M17 Hybrid)
MS2S05-B0BTN-__H__-____-__	4.55	0.75	5.5	0.75	H (M17 Hybrid)
MS2S05-C0BTN-__H__-____-__	7.1	0.75	8.4	0.75	H (M17 Hybrid)

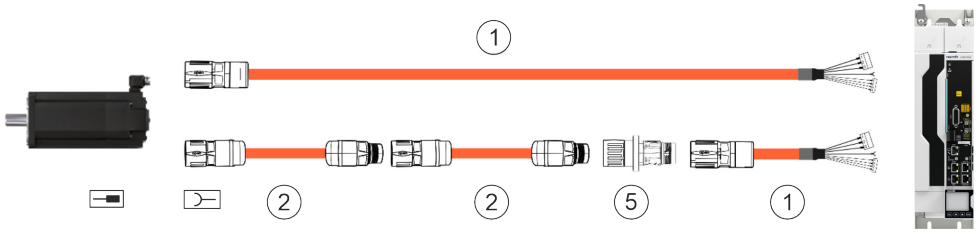
* Conditions according to ➥ Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

4.4 RHB2 Hybrid cables, ready-made for MS2N, MS2E Electrical connection "S" (M23, SPEEDCON) for single-cable connection

This selection is valid for the following motor types:

MS2N□□-□□□□□-□□S□□-□□□□□-□□ List of motor types including recommended power wire cross section ➦ Table 35 Power wire cross section, MS2N motor type on page 67.

MS2E□□-□□□□□-□□S□□-□□□□□-□□ List of motor types including recommended power wire cross section ➦ Table 36 Power wire cross section, MS2E motor type on page 68.



ctrlX DRIVE modular	Power cables ① RHB2-□□□□□□-NN-xxx,x		Extension ② RHB2-□□□□□□-NN-xxx,x
Example: XMS2 - W0016A - ...	[mm²]	□ B = Basic	□ B = Basic
XMS □ or XCS □ - □ 0006A □ 0010A □ 0016A □ 0023A □ 0030A □ 0036A	1.5 2.5	RHB2-021DCB RHB2-021EGB	RHB2-521DCB RHB2-521EGB
XMD □ or XCD □ - □ 0606A □ 1010A □ 1616A □ 2323A			
XMS □ or XCS □ - □ 0054A □ 0070A □ 0090A	1.5 2.5	RHB2-022DCB RHB2-022EGB	RHB2-521DCB RHB2-521EGB
XMD □ - □ 5454A □ 7070A			
XMS □ or XCS □ - □ 0100A □ 0120A	1.5 2.5	RHB2-023DCB RHB2-023EGB	RHB2-521DCB RHB2-521EGB
XMS □ or XCS □ - □ 0150A □ 0180A	-	-	-
XMS □ or XCS □ - □ 0210A □ 0250A □ 0280A □ 0330A □ 0375A	-	-	-

⑤➦ Chapter 8 Accessories on page 93

Table 35: Power wire cross section, MS2N motor type

Motor	I_{0_60K} [A]	Power wire cross section * [mm²]	I_{0_100K} [A]	Power wire cross section * [mm²]	Connector
MS2N03-B0BYN-__S__-____-__	1.31	0.75 or 1.0	1.61	0.75 or 1.0	S (M23 Hybrid)
MS2N03-D0BYN-__S__-____-__	2.07	0.75 or 1.0	2.6	0.75 or 1.0	S (M23 Hybrid)
MS2N04-B0BHN-__S__-____-__	0	0.75 or 1.0	0	0.75 or 1.0	S (M23 Hybrid)
MS2N04-B0BNN-__S__-____-__	1.11	0.75 or 1.0	1.36	0.75 or 1.0	S (M23 Hybrid)
MS2N04-B0BTN-__S__-____-__	2.2	0.75 or 1.0	2.7	0.75 or 1.0	S (M23 Hybrid)
MS2N04-C0BNN-__S__-____-__	1.78	0.75 or 1.0	2.24	0.75 or 1.0	S (M23 Hybrid)
MS2N04-C0BTN-__S__-____-__	3.11	0.75 or 1.0	3.9	0.75 or 1.0	S (M23 Hybrid)
MS2N04-D0BHN-__S__-____-__	1.61	0.75 or 1.0	1.96	0.75 or 1.0	S (M23 Hybrid)
MS2N04-D0BQN-__S__-____-__	2.86	0.75 or 1.0	3.48	0.75 or 1.0	S (M23 Hybrid)
MS2N05-B0BNN-__S__-____-__	2.29	0.75 or 1.0	2.75	0.75 or 1.0	S (M23 Hybrid)
MS2N05-B0BTN-__S__-____-__	4.55	0.75 or 1.0	5.45	0.75 or 1.0	S (M23 Hybrid)
MS2N05-C0BNN-__S__-____-__	3.53	0.75 or 1.0	4.16	0.75 or 1.0	S (M23 Hybrid)
MS2N05-C0BTN-__S__-____-__	7.1	0.75 or 1.0	8.35	0.75 or 1.0	S (M23 Hybrid)
MS2N05-D0BHN-__S__-____-__	3.05	0.75 or 1.0	3.63	0.75 or 1.0	S (M23 Hybrid)
MS2N05-D0BRN-__S__-____-__	6.05	0.75 or 1.0	7.2	0.75 or 1.0	S (M23 Hybrid)
MS2N06-B1BNN-__S__-____-__	2.22	0.75 or 1.0	2.47	0.75 or 1.0	S (M23 Hybrid)
MS2N06-C0BNN-__S__-____-__	3.75	0.75 or 1.0	4.5	0.75 or 1.0	S (M23 Hybrid)
MS2N06-C0BTN-__S__-____-__	7.5	0.75 or 1.0	9	0.75 or 1.0	S (M23 Hybrid)
MS2N06-D0BNN-__S__-____-__	6.1	0.75 or 1.0	7.55	0.75 or 1.0	S (M23 Hybrid)
MS2N06-D0BRN-__S__-____-__	7.85	0.75 or 1.0	9.75	0.75 or 1.0	S (M23 Hybrid)
MS2N06-D0BTN-__S__-____-__	11.55	1.0	14	1.5	S (M23 Hybrid)
MS2N06-D1BNN-__S__-____-__	5.05	0.75 or 1.0	6.25	0.75 or 1.0	S (M23 Hybrid)
MS2N06-E0BHN-__S__-____-__	5.4	0.75 or 1.0	6.8	0.75 or 1.0	S (M23 Hybrid)
MS2N06-E0BRN-__S__-____-__	10.85	1.0	13.7	1.5	S (M23 Hybrid)
MS2N07-B1BNN-__S__-____-__	4.25	0.75 or 1.0	4.74	0.75 or 1.0	S (M23 Hybrid)
MS2N07-C0BNN-__S__-____-__	6.9	0.75 or 1.0	8.8	0.75 or 1.0	S (M23 Hybrid)
MS2N07-C0BQN-__S__-____-__	10.1	0.75 or 1.0	12.9	1.0	S (M23 Hybrid)
MS2N07-C1BNN-__S__-____-__	6.6	0.75 or 1.0	8.35	0.75 or 1.0	S (M23 Hybrid)
MS2N07-C1BRN-__S__-____-__	9.55	0.75 or 1.0	12.1	1.0	S (M23 Hybrid)
MS2N07-D0BFN-__S__-____-__	5.8	0.75 or 1.0	7.55	0.75 or 1.0	S (M23 Hybrid)
MS2N07-D0BHN-__S__-____-__	8.55	0.75 or 1.0	11.1	1.0	S (M23 Hybrid)
MS2N07-D0BNN-__S__-____-__	11.55	1.0	15	1.5	S (M23 Hybrid)
MS2N07-D1BFN-__S__-____-__	5.45	0.75 or 1.0	6.9	0.75 or 1.0	S (M23 Hybrid)
MS2N07-D1BHN-__S__-____-__	7.8	0.75 or 1.0	9.9	0.75 or 1.0	S (M23 Hybrid)
MS2N07-D1BNN-__S__-____-__	9.9	0.75 or 1.0	12.5	1.0	S (M23 Hybrid)
MS2N07-E0BDN-__S__-____-__	5.15	0.75 or 1.0	6.8	0.75 or 1.0	S (M23 Hybrid)
MS2N07-E0BHN-__S__-____-__	10.35	0.75 or 1.0	13.7	1.5	S (M23 Hybrid)
MS2N07-E1BDN-__S__-____-__	4.93	0.75 or 1.0	6.2	0.75 or 1.0	S (M23 Hybrid)
MS2N07-E1BHN-__S__-____-__	9	0.75 or 1.0	11.3	1.0	S (M23 Hybrid)
Increased cross section	22.6	2.5	22.6	2.5	S (M23 Hybrid)

* Conditions according to ➥ Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

Table 36: Power wire cross section, MS2E motor type

Motor	I_{0_60K} [A]	Power wire cross section * [mm²]	Connector
MS2E03-B0BYN-C_S__-____-__	1.31	0.75 or 1.0	M23 Hybrid
MS2E04-B0BNN-C_S__-____-__	1.11	0.75 or 1.0	M23 Hybrid
MS2E04-C0BTN-C_S__-____-__	3.11	0.75 or 1.0	M23 Hybrid
MS2E05-B0BTN-C_S__-____-__	4.55	0.75 or 1.0	M23 Hybrid
MS2E05-C0BTN-C_S__-____-__	7.1	0.75 or 1.0	M23 Hybrid
MS2E06-C0BNN-C_S__-____-__	3.75	0.75 or 1.0	M23 Hybrid
MS2E06-D0BRN-C_S__-____-__	7.85	0.75 or 1.0	M23 Hybrid
MS2E07-C0BNN-C_S__-____-__	6.9	0.75 or 1.0	M23 Hybrid
MS2E07-C0BQN-C_S__-____-__	10.1	0.75 or 1.0	M23 Hybrid
MS2E07-E0CNN-C_S__-____-__	15.1	1.5	M23 Hybrid

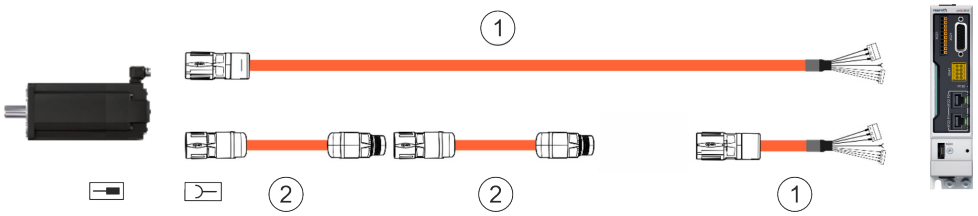
* Conditions according to ➦Chapter 6.1 Cable specification on page 83, deviations may require other power wire cross sections. Select the next higher power wire cross section, subject to availability.

4.5 RHB5 Hybrid cables, ready-made for MS2N, MS2E Electrical connection "S" (M23, SPEEDCON) for single-cable connection

This selection is valid for the following motor types:

MS2N□□-□□□□□-□□S□□-□□□□□-□□ List of motor types including recommended power wire cross section ➦ Table 37 Power wire cross section, MS2N motor type on page 71.

MS2E□□-□□□□□-□□S□□-□□□□□-□□ List of motor types including recommended power wire cross section ➦ Table 38 Power wire cross section, MS2E motor type on page 72.



ctrlX DRIVE compact	Power cables ① RHB5-□□□□□□-NN-xxx,x		Extension ② RHB2-□□□□□□-NN-xxx,x
Example: XCS2 - W0055H - ...	[mm²]	□ B = Basic	□ B = Basic
XCS □ - □ 0005F □ 0007F □ 0010F □ 0019F □ 0028F □ 0035F □ 0005H □ 0007H □ 0012H □ 0026H □ 0035H □ 0055H	1.5	RHB5-021DCB	RHB2-521DCB

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Table 37: Power wire cross section, MS2N motor type

Motor	I_{0_60K} [A]	Power wire cross section * [mm²]	I_{0_100K} [A]	Power wire cross section * [mm²]	Connector
MS2N03-B0BYN-__S__-____-__	1.31	0.75 or 1.0	1.61	0.75 or 1.0	S (M23 Hybrid)
MS2N03-D0BYN-__S__-____-__	2.07	0.75 or 1.0	2.6	0.75 or 1.0	S (M23 Hybrid)
MS2N04-B0BHN-__S__-____-__	0	0.75 or 1.0	0	0.75 or 1.0	S (M23 Hybrid)
MS2N04-B0BNN-__S__-____-__	1.11	0.75 or 1.0	1.36	0.75 or 1.0	S (M23 Hybrid)
MS2N04-B0BTN-__S__-____-__	2.2	0.75 or 1.0	2.7	0.75 or 1.0	S (M23 Hybrid)
MS2N04-C0BNN-__S__-____-__	1.78	0.75 or 1.0	2.24	0.75 or 1.0	S (M23 Hybrid)
MS2N04-C0BTN-__S__-____-__	3.11	0.75 or 1.0	3.9	0.75 or 1.0	S (M23 Hybrid)
MS2N04-D0BHN-__S__-____-__	1.61	0.75 or 1.0	1.96	0.75 or 1.0	S (M23 Hybrid)
MS2N04-D0BQN-__S__-____-__	2.86	0.75 or 1.0	3.48	0.75 or 1.0	S (M23 Hybrid)
MS2N05-B0BNN-__S__-____-__	2.29	0.75 or 1.0	2.75	0.75 or 1.0	S (M23 Hybrid)
MS2N05-B0BTN-__S__-____-__	4.55	0.75 or 1.0	5.45	0.75 or 1.0	S (M23 Hybrid)
MS2N05-C0BNN-__S__-____-__	3.53	0.75 or 1.0	4.16	0.75 or 1.0	S (M23 Hybrid)
MS2N05-C0BTN-__S__-____-__	7.1	0.75 or 1.0	8.35	0.75 or 1.0	S (M23 Hybrid)
MS2N05-D0BHN-__S__-____-__	3.05	0.75 or 1.0	3.63	0.75 or 1.0	S (M23 Hybrid)
MS2N05-D0BRN-__S__-____-__	6.05	0.75 or 1.0	7.2	0.75 or 1.0	S (M23 Hybrid)
MS2N06-B1BNN-__S__-____-__	2.22	0.75 or 1.0	2.47	0.75 or 1.0	S (M23 Hybrid)
MS2N06-C0BNN-__S__-____-__	3.75	0.75 or 1.0	4.5	0.75 or 1.0	S (M23 Hybrid)
MS2N06-C0BTN-__S__-____-__	7.5	0.75 or 1.0	9	0.75 or 1.0	S (M23 Hybrid)
MS2N06-D0BNN-__S__-____-__	6.1	0.75 or 1.0	7.55	0.75 or 1.0	S (M23 Hybrid)
MS2N06-D0BRN-__S__-____-__	7.85	0.75 or 1.0	9.75	0.75 or 1.0	S (M23 Hybrid)
MS2N06-D0BTN-__S__-____-__	11.55	1.0	14	1.5	S (M23 Hybrid)
MS2N06-D1BNN-__S__-____-__	5.05	0.75 or 1.0	6.25	0.75 or 1.0	S (M23 Hybrid)
MS2N06-E0BHN-__S__-____-__	5.4	0.75 or 1.0	6.8	0.75 or 1.0	S (M23 Hybrid)
MS2N06-E0BRN-__S__-____-__	10.85	1.0	13.7	1.5	S (M23 Hybrid)
MS2N07-B1BNN-__S__-____-__	4.25	0.75 or 1.0	4.74	0.75 or 1.0	S (M23 Hybrid)
MS2N07-C0BNN-__S__-____-__	6.9	0.75 or 1.0	8.8	0.75 or 1.0	S (M23 Hybrid)
MS2N07-C0BQN-__S__-____-__	10.1	0.75 or 1.0	12.9	1.0	S (M23 Hybrid)
MS2N07-C1BNN-__S__-____-__	6.6	0.75 or 1.0	8.35	0.75 or 1.0	S (M23 Hybrid)
MS2N07-C1BRN-__S__-____-__	9.55	0.75 or 1.0	12.1	1.0	S (M23 Hybrid)
MS2N07-D0BFN-__S__-____-__	5.8	0.75 or 1.0	7.55	0.75 or 1.0	S (M23 Hybrid)
MS2N07-D0BHN-__S__-____-__	8.55	0.75 or 1.0	11.1	1.0	S (M23 Hybrid)
MS2N07-D0BNN-__S__-____-__	11.55	1.0	15	1.5	S (M23 Hybrid)
MS2N07-D1BFN-__S__-____-__	5.45	0.75 or 1.0	6.9	0.75 or 1.0	S (M23 Hybrid)
MS2N07-D1BHN-__S__-____-__	7.8	0.75 or 1.0	9.9	0.75 or 1.0	S (M23 Hybrid)
MS2N07-D1BNN-__S__-____-__	9.9	0.75 or 1.0	12.5	1.0	S (M23 Hybrid)
MS2N07-E0BDN-__S__-____-__	5.15	0.75 or 1.0	6.8	0.75 or 1.0	S (M23 Hybrid)
MS2N07-E0BHN-__S__-____-__	10.35	0.75 or 1.0	13.7	1.5	S (M23 Hybrid)
MS2N07-E1BDN-__S__-____-__	4.93	0.75 or 1.0	6.2	0.75 or 1.0	S (M23 Hybrid)
MS2N07-E1BHN-__S__-____-__	9	0.75 or 1.0	11.3	1.0	S (M23 Hybrid)
Increased cross section	22.6	2.5	22.6	2.5	S (M23 Hybrid)

* Conditions according to ➥ Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

Table 38: Power wire cross section, MS2E motor type

Motor	I_{0_60K} [A]	Power wire cross section * [mm²]	Connector
MS2E03-B0BYN-C_S__-____-__	1.31	0.75 or 1.0	M23 Hybrid
MS2E04-B0BNN-C_S__-____-__	1.11	0.75 or 1.0	M23 Hybrid
MS2E04-C0BTN-C_S__-____-__	3.11	0.75 or 1.0	M23 Hybrid
MS2E05-B0BTN-C_S__-____-__	4.55	0.75 or 1.0	M23 Hybrid
MS2E05-C0BTN-C_S__-____-__	7.1	0.75 or 1.0	M23 Hybrid
MS2E06-C0BNN-C_S__-____-__	3.75	0.75 or 1.0	M23 Hybrid
MS2E06-D0BRN-C_S__-____-__	7.85	0.75 or 1.0	M23 Hybrid
MS2E07-C0BNN-C_S__-____-__	6.9	0.75 or 1.0	M23 Hybrid
MS2E07-C0BQN-C_S__-____-__	10.1	0.75 or 1.0	M23 Hybrid
MS2E07-E0CNN-C_S__-____-__	15.1	1.5	M23 Hybrid

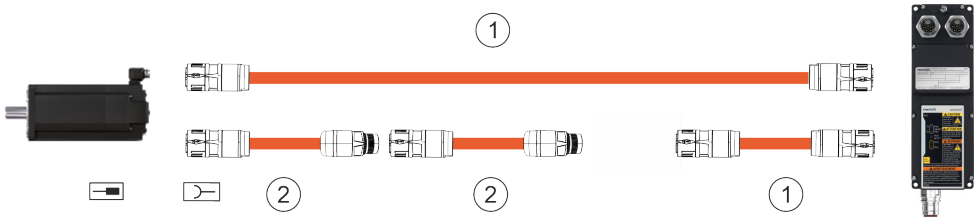
* Conditions according to ➦Chapter 6.1 Cable specification on page 83, deviations may require other power wire cross sections. Select the next higher power wire cross section, subject to availability.

4.6 RHB6 Hybrid cables, ready-made for MS2N, MS2E Electrical connection "S" (M23, SPEEDCON) for single-cable connection

This selection is valid for the following motor types:

MS2N□□-□□□□□-□□S□□-□□□□□-□□ List of motor types including recommended power wire cross section ➦ Table 39 Power wire cross section, MS2N motor type on page 75.

MS2E□□-□□□□□-□□S□□-□□□□□-□□ List of motor types including recommended power wire cross section ➦ Table 40 Power wire cross section, MS2E motor type on page 76.



ctrlX DRIVE cabinet-free	Power cables ① RHB6-□□□□□□-NN-xxx,x		Extension ② RHB2-□□□□□□-NN-xxx,x
Example: XMS2 - W0006B - ...	[mm²]	□ B = Basic	□ B = Basic
XMS □ - □ 0006B □ 0010B □ 0016B □ 0023B □ 0030B □ 0054B	1.5 2.5	RHB6-021DCB RHB6-021EGB	RHB6-521EGB RHB6-521EGB

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Table 39: Power wire cross section, MS2N motor type

Motor	I_{0_60K} [A]	Power wire cross section * [mm²]	I_{0_100K} [A]	Power wire cross section * [mm²]	Connector
MS2N03-B0BYN-__S__-____-__	1.31	0.75 or 1.0	1.61	0.75 or 1.0	S (M23 Hybrid)
MS2N03-D0BYN-__S__-____-__	2.07	0.75 or 1.0	2.6	0.75 or 1.0	S (M23 Hybrid)
MS2N04-B0BHN-__S__-____-__	0	0.75 or 1.0	0	0.75 or 1.0	S (M23 Hybrid)
MS2N04-B0BNN-__S__-____-__	1.11	0.75 or 1.0	1.36	0.75 or 1.0	S (M23 Hybrid)
MS2N04-B0BTN-__S__-____-__	2.2	0.75 or 1.0	2.7	0.75 or 1.0	S (M23 Hybrid)
MS2N04-C0BNN-__S__-____-__	1.78	0.75 or 1.0	2.24	0.75 or 1.0	S (M23 Hybrid)
MS2N04-C0BTN-__S__-____-__	3.11	0.75 or 1.0	3.9	0.75 or 1.0	S (M23 Hybrid)
MS2N04-D0BHN-__S__-____-__	1.61	0.75 or 1.0	1.96	0.75 or 1.0	S (M23 Hybrid)
MS2N04-D0BQN-__S__-____-__	2.86	0.75 or 1.0	3.48	0.75 or 1.0	S (M23 Hybrid)
MS2N05-B0BNN-__S__-____-__	2.29	0.75 or 1.0	2.75	0.75 or 1.0	S (M23 Hybrid)
MS2N05-B0BTN-__S__-____-__	4.55	0.75 or 1.0	5.45	0.75 or 1.0	S (M23 Hybrid)
MS2N05-C0BNN-__S__-____-__	3.53	0.75 or 1.0	4.16	0.75 or 1.0	S (M23 Hybrid)
MS2N05-C0BTN-__S__-____-__	7.1	0.75 or 1.0	8.35	0.75 or 1.0	S (M23 Hybrid)
MS2N05-D0BHN-__S__-____-__	3.05	0.75 or 1.0	3.63	0.75 or 1.0	S (M23 Hybrid)
MS2N05-D0BRN-__S__-____-__	6.05	0.75 or 1.0	7.2	0.75 or 1.0	S (M23 Hybrid)
MS2N06-B1BNN-__S__-____-__	2.22	0.75 or 1.0	2.47	0.75 or 1.0	S (M23 Hybrid)
MS2N06-C0BNN-__S__-____-__	3.75	0.75 or 1.0	4.5	0.75 or 1.0	S (M23 Hybrid)
MS2N06-C0BTN-__S__-____-__	7.5	0.75 or 1.0	9	0.75 or 1.0	S (M23 Hybrid)
MS2N06-D0BNN-__S__-____-__	6.1	0.75 or 1.0	7.55	0.75 or 1.0	S (M23 Hybrid)
MS2N06-D0BRN-__S__-____-__	7.85	0.75 or 1.0	9.75	0.75 or 1.0	S (M23 Hybrid)
MS2N06-D0BTN-__S__-____-__	11.55	1.0	14	1.5	S (M23 Hybrid)
MS2N06-D1BNN-__S__-____-__	5.05	0.75 or 1.0	6.25	0.75 or 1.0	S (M23 Hybrid)
MS2N06-E0BHN-__S__-____-__	5.4	0.75 or 1.0	6.8	0.75 or 1.0	S (M23 Hybrid)
MS2N06-E0BRN-__S__-____-__	10.85	1.0	13.7	1.5	S (M23 Hybrid)
MS2N07-B1BNN-__S__-____-__	4.25	0.75 or 1.0	4.74	0.75 or 1.0	S (M23 Hybrid)
MS2N07-C0BNN-__S__-____-__	6.9	0.75 or 1.0	8.8	0.75 or 1.0	S (M23 Hybrid)
MS2N07-C0BQN-__S__-____-__	10.1	0.75 or 1.0	12.9	1.0	S (M23 Hybrid)
MS2N07-C1BNN-__S__-____-__	6.6	0.75 or 1.0	8.35	0.75 or 1.0	S (M23 Hybrid)
MS2N07-C1BRN-__S__-____-__	9.55	0.75 or 1.0	12.1	1.0	S (M23 Hybrid)
MS2N07-D0BFN-__S__-____-__	5.8	0.75 or 1.0	7.55	0.75 or 1.0	S (M23 Hybrid)
MS2N07-D0BHN-__S__-____-__	8.55	0.75 or 1.0	11.1	1.0	S (M23 Hybrid)
MS2N07-D0BNN-__S__-____-__	11.55	1.0	15	1.5	S (M23 Hybrid)
MS2N07-D1BFN-__S__-____-__	5.45	0.75 or 1.0	6.9	0.75 or 1.0	S (M23 Hybrid)
MS2N07-D1BHN-__S__-____-__	7.8	0.75 or 1.0	9.9	0.75 or 1.0	S (M23 Hybrid)
MS2N07-D1BNN-__S__-____-__	9.9	0.75 or 1.0	12.5	1.0	S (M23 Hybrid)
MS2N07-E0BDN-__S__-____-__	5.15	0.75 or 1.0	6.8	0.75 or 1.0	S (M23 Hybrid)
MS2N07-E0BHN-__S__-____-__	10.35	0.75 or 1.0	13.7	1.5	S (M23 Hybrid)
MS2N07-E1BDN-__S__-____-__	4.93	0.75 or 1.0	6.2	0.75 or 1.0	S (M23 Hybrid)
MS2N07-E1BHN-__S__-____-__	9	0.75 or 1.0	11.3	1.0	S (M23 Hybrid)
Increased cross section	22.6	2.5	22.6	2.5	S (M23 Hybrid)

* Conditions according to ➥ Chapter 6.1 Cable specification on page 83, deviations may require other power cable cross sections.

Table 40: Power wire cross section, MS2E motor type

Motor	I_{0_60K} [A]	Power wire cross section * [mm²]	Connector
MS2E03-B0BYN-C_S__-____-__	1.31	0.75 or 1.0	M23 Hybrid
MS2E04-B0BNN-C_S__-____-__	1.11	0.75 or 1.0	M23 Hybrid
MS2E04-C0BTN-C_S__-____-__	3.11	0.75 or 1.0	M23 Hybrid
MS2E05-B0BTN-C_S__-____-__	4.55	0.75 or 1.0	M23 Hybrid
MS2E05-C0BTN-C_S__-____-__	7.1	0.75 or 1.0	M23 Hybrid
MS2E06-C0BNN-C_S__-____-__	3.75	0.75 or 1.0	M23 Hybrid
MS2E06-D0BRN-C_S__-____-__	7.85	0.75 or 1.0	M23 Hybrid
MS2E07-C0BNN-C_S__-____-__	6.9	0.75 or 1.0	M23 Hybrid
MS2E07-C0BQN-C_S__-____-__	10.1	0.75 or 1.0	M23 Hybrid
MS2E07-E0CNN-C_S__-____-__	15.1	1.5	M23 Hybrid

* Conditions according to ➦Chapter 6.1 Cable specification on page 83, deviations may require other power wire cross sections. Select the next higher power wire cross section, subject to availability.

5 Encoder cables for ctrlX

5.1 Motor encoder overview

ctrlX DRIVE drive controllers provide up to three encoder interfaces per axis to which the motor encoders can be connected:

- **XG20:** Onboard encoder interface (standard, always included)
- **XG21:** Hardware option 2, multi-encoder interface (configuration-dependent)
- **XG22:** Hardware option 3, multi-encoder interface (configuration-dependent)

For multi-axis devices, the interface identifiers are extended to include the axis number (e.g., XG20.1, XG20.2).

The drive controller must be selected so that each axis has the necessary encoder interfaces for the desired encoders. The XG20 onboard interface is always available and supports digital encoders such as ACURO®link, ctrlX SENSEmotor and Panasonic encoders. The optional XG21 and XG22 interfaces support analog and digital encoders such as resolvers, 1Vss, HIPERFACE®, SSI, and EnDat 2.x.

The ctrlX DRIVE runtime supports the following third-party encoder interfaces for connection of position encoders to the drive controllers:

- **Digital interfaces:** ACURO®link, ctrlX SENSEmotor, Panasonic encoders (as of AXS-V-0404), HIPERFACE®, SSI, Endat 2.x (Endat 2.1 and 2.2, depending on the version).
- **Analog interfaces:** Resolver, 1Vss (1 volt peak-to-peak) signals.

The drive controller must be selected so that each axis has the necessary encoder interfaces for the desired encoders. In addition, encoders with a TTL interface are supported; however, an optional encoder interface is required to connect them, and SafeMotion cannot evaluate their signals safely.

Digital encoder					Encoder cable for dual-cable connection
Interface	**Encoder**	**Safety**	**ctrlX**	**Motor**	**Direct connection**
Encoders with ACUROlink interface	CS	SIL 2	XG20	MS2N MS2E	RG2-007AA
Encoders with ACUROlink interface	CM	SIL 2	XG20	MS2N MS2E	RG2-007AA
Encoders with ACUROlink interface	HS	SIL 3	XG20	MS2N	RG2-007AA
Encoders with ACUROlink interface	HM	SIL 3	XG20	MS2N	RG2-007AA
Encoders with ACUROlink interface	DS	SIL 3	XG20	MS2N MS2E	RG2-007AA
Encoders with ACUROlink interface	DM	SIL 3	XG20	MS2N MS2E	RG2-007AA
Encoders with ctrlX SENSEmotor interface	MM	SIL 2	XG20	MS2N	RG2-007AA
Encoders with ctrlX SENSEmotor interface	MS	SIL 2	XG20	MS2N	RG2-007AA
Encoders with ctrlX SENSEmotor interface	JM	SIL 3	XG20	MS2N	RG2-007AA
Encoders with ctrlX SENSEmotor interface	JS	SIL 3	XG20	MS2N	RG2-007AA
Encoders with ctrlX SENSEmotor interface	IS	-	XG20		RG2-007AA
Encoders with ctrlX SENSEmotor interface	IM	-	XG20	MS2S	RG2-007AA
Encoder with Tamagawa interface	PB	-	XG20	MS2L	RG2-026DFB

Digital encoder					Encoder cable for dual-cable connection
Interface	**Encoder**	**Safety**	**ctrlX**	**Motor**	**Direct connection**
Encoder with Tamagawa interface	QM	-	XG20	MS2L	RG2-026DFB
Encoders with sine signals (1 Vpp) and SSI interface			XG20		On request
Encoders with EnDat 2.2 interface			XG20		On request
Encoder with Panasonic® interface			XG20		On request
Encoder with BISS-C interface			XG20		On request

Combination encoder					Encoder cable
Interface	**Encoder**	**Safety**	**ctrlX**	**Motor**	**Direct connection**
Encoders with sine signals (1 Vpp) and HIPERFACE interface	AS	-	XG21 / XG22	MS2N	RG2-002AB
Encoders with sine signals (1 Vpp) and HIPERFACE interface	AM	-	XG21 / XG22	MS2N	RG2-002AB
Encoders with sine signals (1 Vpp) and HIPERFACE interface	BS	SIL 2	XG21 / XG22	MS2N	RG2-002AB
Encoders with sine signals (1 Vpp) and HIPERFACE interface	BM	SIL 2	XG21 / XG22	MS2N	RG2-002AB
Encoders with sine signals (1 Vpp) and HIPERFACE interface	A	-	XG21 / XG22	MKE	SUP-M04-MKE0XX [1] SUP-M04-MKE1XX [2]
Encoders with sine signals (1 Vpp) and HIPERFACE interface	C	-	XG21 / XG22	MKE	SUP-M04-MKE0XX [1] SUP-M04-MKE1XX [2]
Encoders with sine signals (1 Vpp) and HIPERFACE interface	D	-	XG21 / XG22	MKE	SUP-M04-MKE0XX [1] SUP-M04-MKE1XX [2]
Encoders with sine signals (1 Vpp) and EnDat 2.1 interface	B	-	XG21 / XG22	MKE	SUP-M04-MKE0XX [1] SUP-M04-MKE1XX [2]
Encoders with sine signals (1 Vpp) and EnDat 2.1 interface	S2	-	XG21 / XG22	MAD / MAF	RG2-013ABB
Encoders with sine signals (1 Vpp) and EnDat 2.1 interface	M2	-	XG21 / XG22	MAD / MAF	RG2-013ABB
Encoders with sine signals (1 Vpp) and SSI interface			XG21 / XG22		On request
Encoder with Hall sensor digital and 1Vss signals			XG21 / XG22		On request

[1] Accessories for assembling the motor-side connection of the encoder cable MKE037, MKEC47, MKE098

[2] Accessories for assembling the motor-side connection of the encoder cable MKE118

Analog encoders					Encoder cable
Interface	**Encoder**	**Safety**	**ctrlX**	**Motor**	**Direct connection**
Encoders with sine signals (1 Vpp)	C0	-	XG21 / XG22	MAD / MAF	RG2-014BCB
Encoders with resolver signals			XG21 / XG22		On request
encoder with sqare-wave signals (TTL)			XG21 / XG22		On request

Encoder from third-party manufacturers				Encoder cable
Interface	**Flange socket on encoder**	**ctrlX**	**Motor**	**Direct connection**
Absolute 5V EnDat	M23 - 17-pin - union nut - socket	XG21 / XG22	unknown	RKG0036
Absolute 12V EnDat	M23 - 10-pin - union nut - socket	XG21 / XG22	unknown	RKG4200 RKG4202 [3]

Encoder from third-party manufacturers				Encoder cable
Interface	**Flange socket on encoder**	**ctrlX**	**Motor**	**Direct connection**
Absolute 12V Hiperface	M23 - 10-pin - union nut - socket	XG21 / XG22	unknown	RKG4200 RKG4202 [3]
	D1000 - 8-pin - socket	XG21 / XG22	unknown	RKG0047
Incremental 5V 1Vss	M23 - 12-pin - union nut - socket	XG21 / XG22	unknown	RKG0035
Incremental 12V 1Vss	M23 - 12-pin - union nut - socket	XG21 / XG22	unknown	RKG0017
Unknown	Free connection (open ends AEH)	XG21 / XG22	unknown	RKG0029

[3] Controller-side connection with open cable ends

5.2 ctrlX DRIVE modular encoder cable, ready-made

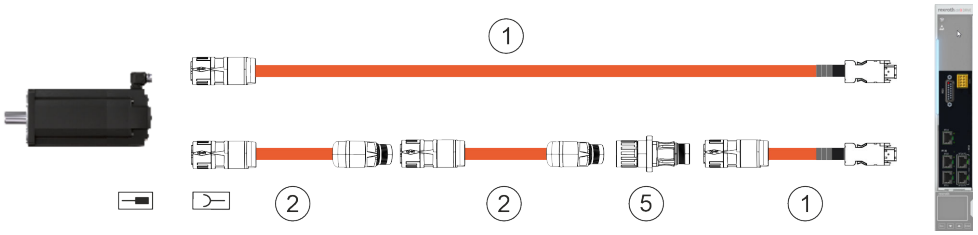


Table 41: ctrlX DRIVE modular: Encoder cable overview

Drive controller ctrlX DRIVE modular		Encoder cable ① RG2-□□□□□□-NN-xxx,x		Extension ② RG2-□□□□□□-NN-xxx,x
Example: XMS2 - W0016A - ...	Connection	Encoder	□ B = Basic □ T = Torsion	□ B = Basic □ T = Torsion
XMS □ or XCS □ - □ 0006A □ 0010A □ 0016A □ 0023A □ 0030A □ 0036A	XG20	CS	RG2-007AA □	RG2-510AA □
	XG20	CM	RG2-007AA □	RG2-510AA □
	XG20	HS	RG2-007AA □	RG2-510AA □
	XG20	HM	RG2-007AA □	RG2-510AA □
	XG20	DS	RG2-007AA □	RG2-510AA □
XMD □ or XCD □ - □ 0606A □ 1010A □ 1616A □ 2323A	XG20	DM	RG2-007AA □	RG2-510AA □
	XG20	IS	RG2-007AA □	RG2-510AA □
	XG20	IM	RG2-007AA □	RG2-510AA □
	XG20	JS	RG2-007AA □	RG2-510AA □
XMS □ or XCS □ - □ 0054A □ 0070A □ 0090A	XG20	JM	RG2-007AA □	RG2-510AA □
	XG20	MS	RG2-007AA □	RG2-510AA □
XMD □ - □ 5454A □ 7070A	XG20	MM	RG2-007AA □	RG2-510AA □
XMS □ or XCS □ - □ 0100A □ 0120A	XG21 / XG22	AS	RG2-002AB □	RG2-500AB □
	XG21 / XG22	AM	RG2-002AB □	RG2-500AB □
XMS □ or XCS □ - □ 0150A □ 0180A	XG21 / XG22	BS[1]	RG2-002AB □	RG2-500AB □
	XG21 / XG22	BM[1]	RG2-002AB □	RG2-500AB □
XMS □ or XCS □ - □ 0210A □ 0250A □ 0280A □ 0330A □ 0375A	XG21 / XG22	C0	RG2-014BCB	RG2-514BCB
	XG21 / XG22	S2	RG2-013ABB	RG2-513ABB
	XG21 / XG22	M2	RG2-013ABB	RG2-513ABB

[1] Recommended for safety applications **RG2-017BCB** (encoder cable), **RG2-515BCB** (extension)

⑤ ➦ Chapter 8 Accessories on page 93

5.3 ctrlX DRIVE cabinet-free Encoder cables, ready-made

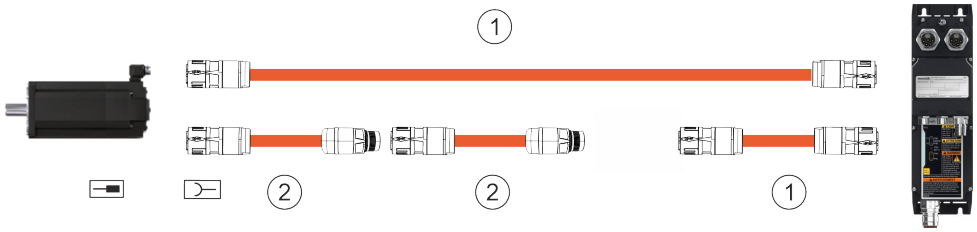


Table 42: ctrlX DRIVE cabinet-free: Encoder cable overview

ctrlX DRIVE cabinet-free		Encoder cable ① RG2-□□□□□□-NN-xxx,x		Extension ② RG2-□□□□□□-NN-xxx,x
Example: XMS2 - W0006B - ...	**Connection point**	**Encoder**	**□ B = Basic □ T = Torsion**	**□ B = Basic □ T = Torsion**
XMS □ - □ 0006B □ 0010B □ 0016B □ 0023B □ 0030B □ 0054B	XG24[1]	AS	RG2-015AB□	-
		AM	RG2-015AB□	-
		BS	RG2-015AB□	-
		BM	RG2-015AB□	-
	XZ03	CS CM HS HM DS DM IS IM JS JM MS MM	**Notice:** For connection via hybrid cable (single-cable connection), see RHB6...	

[1] Valid for control unit configuration: XMS02-xxxxxBNN-xxxxxM4**EC**DI-...

➦ Chapter 8 Accessories on page 93

5.4 ctrlX DRIVE compact encoder cable, ready-made

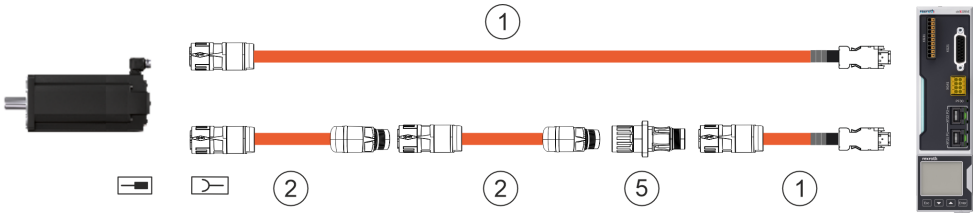


Table 43: ctrlX DRIVE compact: Encoder cable overview

Drive controller ctrlX DRIVE compact		Encoder cable ① RG2-□□□□□□-NN-xxx,x		Extension ② RG2-□□□□□□-NN-xxx,x
Example: XCS2 - W0005F - ...	**XCS2 connection**	**Encoder**	**□ B = Basic □ T = Torsion**	**□ B = Basic □ T = Torsion**
XCS2 - □ 0005F	XG20	KS	RG2-012AAB	RG2-512AAB
□ 0007F	XG20	KM	RG2-018AAB[1]	RG2-512AAB
□ 0010F	XG20	CS	RG2-007AA □	RG2-510AA □
□ 0019F	XG20	CM	RG2-007AA □	RG2-510AA □
□ 0028F	XG20	HS	RG2-007AA □	RG2-510AA □
□ 0035F	XG20	HM	RG2-007AA □	RG2-510AA □
□ 0005H	XG20	DS	RG2-007AA □	RG2-510AA □
□ 0007H	XG20	DM	RG2-007AA □	RG2-510AA □
□ 0012H	XG20	IS	RG2-007AA □	RG2-510AA □
□ 0026H	XG20	IM	RG2-007AA □	RG2-510AA □
□ 0035H	XG20	JS	RG2-007AA □	RG2-510AA □
□0055H	XG20	JM	RG2-007AA □	RG2-510AA □
	XG20	MS	RG2-007AA □	RG2-510AA □
	XG20	MM	RG2-007AA □	RG2-510AA □
	XG21	AS	RG2-002AB □	RG2-500AB □
	XG21	AM	RG2-002AB □	RG2-500AB □
	XG21	BS	RG2-002AB □	RG2-500AB □
	XG21	BM	RG2-002AB □	RG2-500AB □
	XG21	C0	RG2-014BCB	RG2-514BC
	XG21	S2	RG2-013ABB	RG2-513ABB
	XG21	M2	RG2-013ABB	RG2-513ABB

[1] with battery connection. Alternatively, the Batterybox SUP-E02-MSM-BATTERYBOX-**** can be used in connection with RG2-012AAB.

Drive controller ctrlX DRIVE compact		Encoder cable ① RG2-□□□□□□-NN-xxx,x		Extension ② RG2-□□□□□□-NN-xxx,x
Example: XCS2 - W0005L - ...	**XCS2 connection**	**Encoder**	**□ B = Basic □ T = Torsion**	**□ B = Basic □ T = Torsion**
XCS2 - W0005L				
W0007L				
W0012L	XG20	PB	RG2-026DFB	-
W0026L	XG20	QM	RG2-026DFB	-
W0035L				
W0055L				

6 Cable specification

6.1 Cable cross section and current carrying capacity

The cable cross-section of the largest conductor defines the cable's cross-section type code.

Power cable						
			Ø IEC / DIN EN 60228		Current carrying capacity	
Cross section type code	Type	Design	Ø mm²	Ø AWG	A_{eff}	Reference
B	➦ INK0670	Basic	0.75	18	10.4	[2]
B	RLG7-021BIB	Basic	0.75	18	10.4	AWM STYLE 2570
C	➦ REL0105	Basic	1.0	17	13.0	[3]
C	➦ REL0753	Torsion	1.0	17	13.0	[3]
D	➦ REL0106	Basic	1.5	16	15.6	[3]
D	RLG7-021DIB	Basic	1.5	16	15.6	AWM STYLE 2570
E	➦ REL0107	Basic	2.5	14	22.6	[3]
E	RLG7-021EJB	Basic	2.5	14	22.6	AWM STYLE 2570
F	➦ REL0108	Basic	4.0	12	29.5	[3]
G	➦ REL0109	Basic	6.0	10	38.2	[3]
H	➦ REL0110	Basic	10.0	8	53.0	[3]
J	➦ REL0111	Basic	16.0	6	71.3	[3]
K	➦ REL0112	Basic	25.0	4	93.9	[3]
L	➦ REL0113	Basic	35.0	2	116	[4]
M	➦ REL0114	Basic	(53.0)	AWG1/0	140	[4]

Hybrid cables						
			Ø IEC / DIN EN 60228		Current carrying capacity	
Cross section type code	Type	Design	Ø mm²	Ø AWG	A_{eff}	Reference
B	➦ REH0811	Basic	0.75	18	10.4	[2]
D	➦ REH0809	Basic	1.5	16	15.6	[3]
E	➦ REH0810	Basic	2.5	14	22.6	[3]

Encoder cable						
			Ø IEC / DIN EN 60228		Current carrying capacity	
Cross section type code	Type	Design	Ø mm²	Ø AWG	A_{eff}	Reference
A	➦ REG0012	Basic	0.5	20	not relevant	[1]
A	➦ REG0013	Basic	0.5	20	not relevant	[1]
A	➦ REG0748	Torsion	0.5	20	not relevant	[1]
A	➦ REG0012	Torsion	0.5	20	not relevant	[1]
D	RG2-026DF	Basic	0.2	24	not relevant	AWM Style 2464

[1] Not relevant for encoder cables

[2] Rexroth Standard

[3] DIN VDE 0298-4 (table 11), T_amb = 40 °C, T_L = 90 °C

[4] IEC 60364-5-52, installation type B, T_amb = 40 °C, T_L = 90 °C

For type codes of ready-made cables refer to ➦ Chapter 2.3 Type codes on page 10

6.2 Compatibility raw cables

Rexroth product sanitization for raw cables. INK raw cables are replaced by the current **REL** raw cable series. The REL cables are compatible with the INK cable types. For further details refer to the technical data of the REL cable. Ready-made cables **RKLxxxx/000,0** can still be ordered. The cables are manufactured and delivered with the compatible REL cable types.

Table 44: Power cable

Power wire cross-section [mm²]	End-of-life announcement / Phasing out		Replacements	
	Material number	Cable type	Material number	Cable type
1.0	R911245291	INK0653 [1]	R911345764	REL0105 [1]
1.5	R911245290	INK0650	R911370254	REL0106
2.5	R911245286	INK0602	R911346531	REL0107
4.0	R911245287	INK0603	R911346530	REL0108
6.0	R911239169	INK0604	R911346529	REL0109
10.0	R911237490	INK0605	R911346300	REL0110
16.0	R911245288	INK0606	R911369959	REL0111
25.0	R911245289	INK0607	R911371588	REL0112
35.0	R911245292	INK0667	R911371591	REL0113
50.0	R911245293	INK0668	R911388304	REL0114 [2]

[1] Wire designation changed:

INK0653	REL0105
(1)	(BN)
(2)	(BK)
(3)	(GY)
GNYE	GNYE
(5)	(PK)
(6)	(WH)
(7)	(RD)
(8)	(BU)

[2] Power wire cross-section AWG 1/0

Table 45: Encoder cables

End-of-life announcement / Phasing out		Replacements	
Material number	Cable type	Material number	Cable type
R911258380	INK0448 [1]	R911370321	REG0013 [1]

[1] Wire designation changed:

INK0448	REG0013
(WH) 0.5 mm²	(WH) 0.5 mm²
(BN) 0.5 mm²	(BN) 0.5 mm²
(BN) 0.25 mm²	(YE) 0.25 mm²
(GN) 0.25 mm²	(GN) 0.25 mm²
(PK) 0.25 mm²	(PK) 0.25 mm²
(GY) 0.25 mm²	(GY) 0.25 mm²
(RD) 0.25 mm²	(RD) 0.25 mm²
(BK) 0.25 mm²	(BK) 0.25 mm²

(BU) 0.25 mm²	(BU) 0.25 mm²
(VT) 0.25 mm²	(VT) 0.25 mm²

6.3 Cable dimension

The cable sizes given in this document are only basic information for the selection of motor power cables. Select each power cable and the size of each cable segment according to the respective technical standards.

Observe the standards:

- DIN VDE 0298-4
- HD 60364-5-52 (harmonized EC standard)
- IEC 60364-5-52

Current carrying capacity and cross-section refer to an ambient temperature of + 40°C at the place of use. For higher or lower ambient temperatures, there are correction factors for the current carrying capacity of cables that either derate (higher ambient temperature) or increase (lower ambient temperature) the current carrying capacity. Corresponding correction factors can be found in the specified standards.



Observe technical standards and guidelines for installation and sizing that apply in the respective country and place of use, as well as the specific local conditions for installation and environment.

6.4 Transport and storage

Observe the following ambient conditions for transport, handling and storage of all cable types.

General conditions	Transport and handling	Storage
Technical standard	DIN EN IEC 60721-3-2	DIN EN IEC 60721-3-1
Classification	2K11, 2B1, 2C1, 2S5, 2M4	1K21, 1B1, 1C1, 1S10, 1M11
Deviations to classification groups		
Ambient temperature	-25 ... +70 °C	-25 ... +55 °C
Relative humidity	5 ... 75 %	5 ... 75 %
Absolute humidity	-	1 ... 29 g/m³
Direct sunlight exposure	Not allowed	Not allowed

6.5 General installation directives

All cable installations must comply with the standards and requirements applicable at the place of use as well as the specified guidelines of the machine manufacturer and its equipment. Incorrect or inadequate installation can lead to increased wear, damage or unsafe operation.

Observe the following handling instructions:

- Consult the product manual of the machine equipment or the manufacturer for information on the appropriate use and installation of cables, e.g. the suitable arrangement of cables within movable cable guides or rigid cable supports.
- Lay out the cables without any twisting before installation.
- Always install the cables twist-free
- Keep the specified allowed bending radius. Do not bend the cable.
- Install proper cables only.
- Avoid any kind of tensile load or excessive torsion load onto the cables (for torsion load limit refer to data sheet)

- Check that there is no voltage before disconnecting electrical connections. Easily disconnect electrical connections without force. Always pull on the connector, never the cable.
- Observe the installation directives of the device manufacturers during installation of energy chains.
- Do not pack too many cables into movable or rigid cable carriers. Do not cross cables in moving or rigid cable trays.
- Maintain the minimum distances between power and encoder cables to maintain EMC immunity. Observe the installation directives for drive controllers specified in the respective documents.
- Only trained personnel may work on electrical equipment.
- Observe the safety regulations.

6.6 Cable carriers and drag chains

For cables and installations in moving energy chains or rigid cable trays, some additional guidelines must be followed.

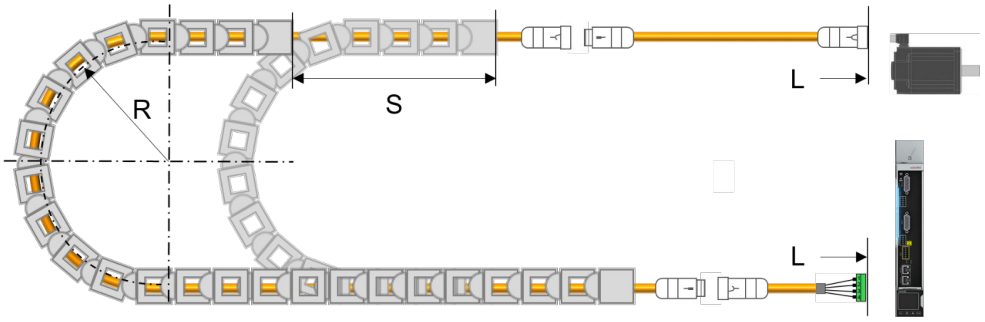


Fig. 3: Cables and cable carriers

Total cable lengths “L”

The cables between a motor and the drive controller are constructed from just one or more cable segments, combining motor cables with appropriate extension cables. The **total cable length "L"** comprises all cable segments from the drive controller to the motor.

The individual maximum cable length for a given motor-controller combination must not be exceeded. Refer to the particular documentation about drive-controllers for information about the maximum cable lengths.

Reducing the number of cable segments and keeping cable lengths as short as possible maintains noise immunity, operational reliability and helps reduce costs.

Travel distance "S"

The cable parameters for dynamic movement (cable acceleration, travel velocity, travel distance and bending cycles) may only be applied over the **travel distance "S"** and may not be exceeded.

Bending radius “R”

The effective bending radius always refers to the inner radius of the bent cable and must never fall below the specific minimum radius, see corresponding cable data sheet. This applies to movable or rigid installations as well as to transport and storage.

If several cables with different bending radius are installed in the same cable carrier, the cable with the largest outer diameter defines the minimum bending radius for all cables in this carrier.

Bending cycles

A bending cycle is a complete movement cycle over the travel distance "S" or a shorter distance with one cable movement forward and one cable movement backward.

6.7 Parameter of movable cables

In moving installations, individual parameters for acceleration, travel speed and travel distance apply and influence each other. Exceeding one or more of these parameter limitations may result in permanent wear, damage and unsafe operation. Observe the following parameter limitations:

Table 46: Parameter of movable cables

Cable type			Travel distance (S)	Travel velocity	Acceleration	Bending cycles
Power cable	BASIC	Cross section ≤ 16 mm²	50 m	5 m/s	50 m/s²	see data sheet
		Cross section ≥ 25 mm²	20 m			
Encoder cable	BASIC		50 m	5 m/s	50 m/s²	
Power cable	TORSION		5 m	3 m/s	20 m/s²	
Encoder cable	TORSION		5 m	3 m/s	20 m/s²	
Hybrid cables	BASIC		20 m	4 m/s	30 m/s²	

The acceleration limitation and the reference to the travel distance are given in the following diagram:

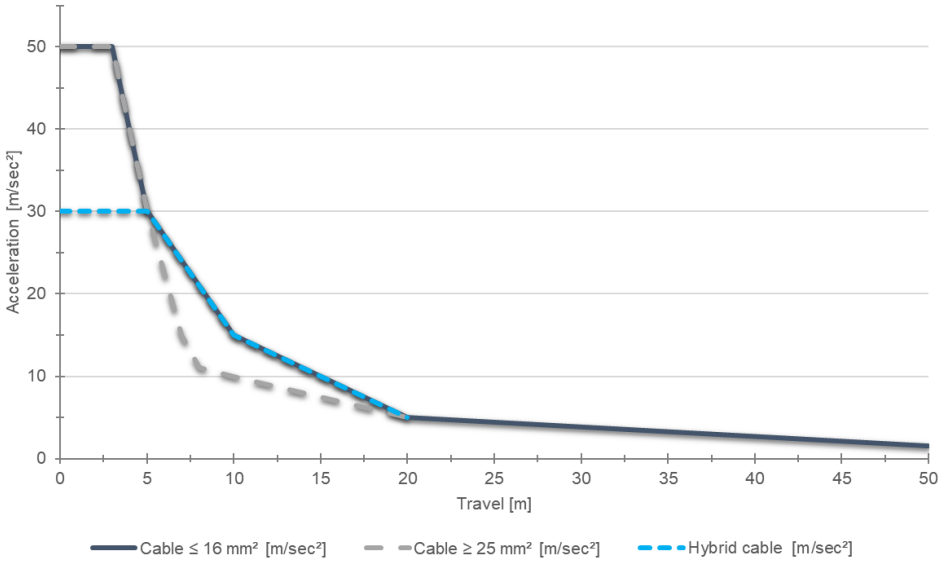


Fig. 4: Cable acceleration vs. travel

See single cable data sheets for complete specification.

6.8 Cable wear and lifetime

Cables are wear parts and suffer from mechanical, electrical, thermal and chemical stress. Lifetime is reduced when cables with different parameters than specified are used or subjected to conditions beyond the cable's individual specification, but may also improve under favorable conditions. There is no established method for predicting or calculating the effective useful life; it may vary in each individual case.

The standard lifetime parameters for cables are

- 30,000 operating hours
- 5 Mio bending cycles

These are only standard guideline values which vary depending on effective operating and environmental conditions and are therefore not valid for every possible application.

6.9 Cable length

Motor and encoder cables can be up to 75 m long. The effectively used cable length may vary depending on the individual combination of drive equipment, operating parameters, additional components and local installation conditions. For information about possible lenghts limitations refer to the documentation of the drive controller.

- The maximum cable length allowed for a specific motor-controller combination applies to the total length of all cable segments of this axis. Additional cable extensions must not exceed the permitted maximum length of the total cable run.
- Observe the guidelines in the drive controller documentation and do not exceed specified limitation values. ➦ Chapter 1.2 Further documentation on page 7

Exceeding the allowed cable length for the specified equipment may cause an unsafe operating condition. If you are unsure about the allowed length for your individual configuration, contact your responsible Bosch Rexroth sales partner.

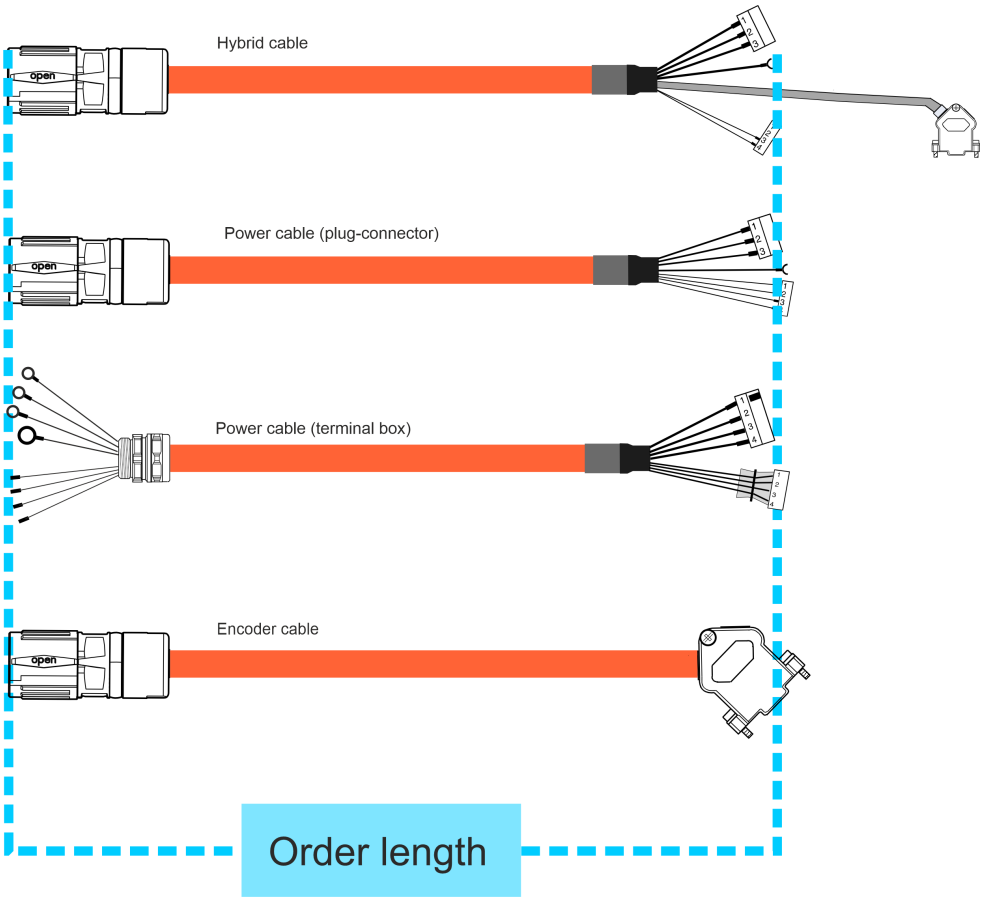


Fig. 5: Ordering length cable

Ordering length

Example:
RLB2-xxxxxx-NN-□□□, □ (ordering length 60.5 m)

RLB2-xxxxxx-NN-060.5

The minimum orderable length is 0.5 m, the minimum length increment is 0.1 m. The effective order length of the cables is measured from end to end.

Tolerances

The cable length tolerance is only specified as a positive value.

Cable length ≤ 5 m	+ 0.05 m
Cable length > 5 m	+ 1% of the ordered length

6.10 Identification



Fig. 6: Example of cable type plate

6.11 Maintenance

To maintain operational safety and the service life, observe the following cable maintenance procedures

- Regularly check all electrical cable connections and terminals for suitable, tight and secure connection, corrosion, breakages, proper installation, etc. in accordance with technical standards and safety regulations.
- Regularly check all electrical cables for signs of wear, e.g. abrasion of the cable jacket or corkscrew deformation in the cable carrier, etc.
- Immediately replace cables and connectors that show signs of wear or damage. They cannot be operated safely under certain circumstances.
- During operation, cables dissipate heat along the entire length of the cable. Keep the cables clean of dirt and dust to help dissipate heat and avoid temperature-related derating effects or overheating.
- For all maintenance instructions and intervals, refer to the machine manufacturer's maintenance schedule.

7 Cable connections

7.1 General

Cable and contact assignment of Rexroth motors and drive controllers follow a general wiring scheme for all motor and cable sizes, typical connection diagrams are given below.

7.2 RLB2 Power cables for double cable connection

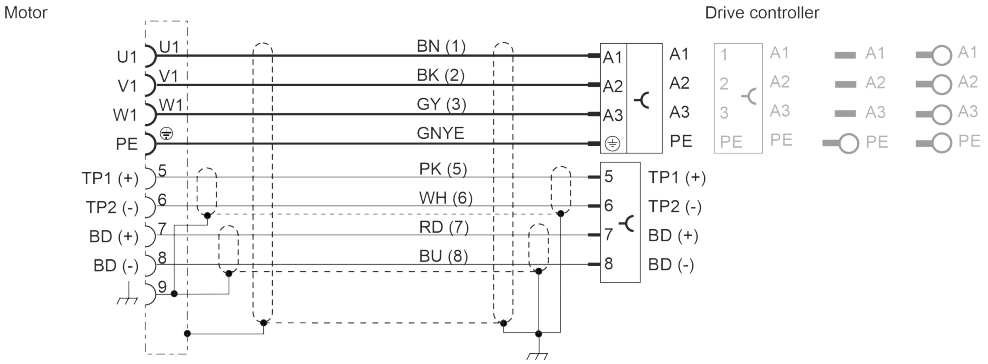


Fig. 7: Connection diagram RLB2

Labeling of power wires:

- 0.75 mm², 1.0 mm²: colored wires
- ≥ 1.5 mm²: Numbered wires

7.3 RG2 Encoder cable for double cable connection

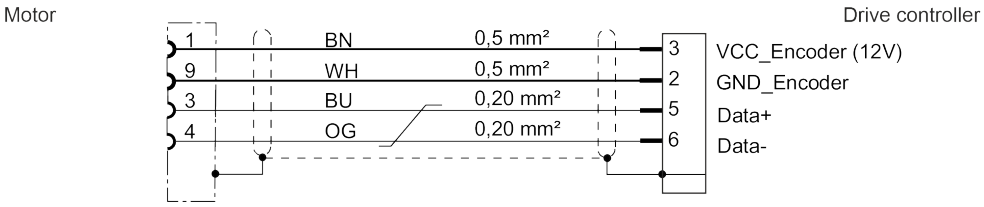


Fig. 8: Connection plan RG2-007AA (digital encoder)

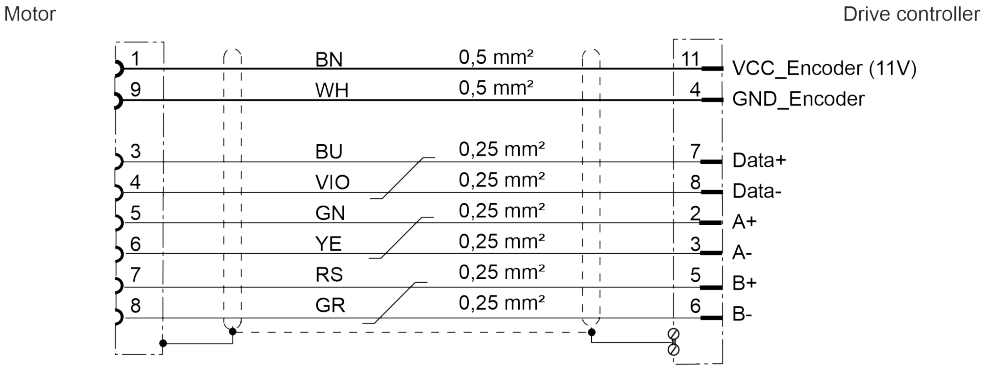


Fig. 9: Connection plan RG2-002AB (analog encoder)

7.4 RHB2 Hybrid cables for single cable connection

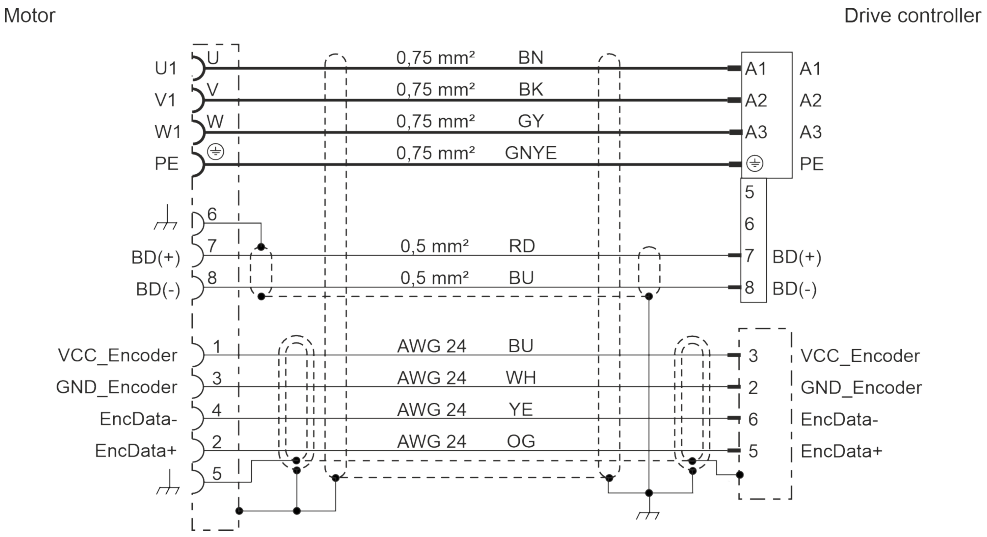


Fig. 10: Connection diagram RHB2-011BB (M17)

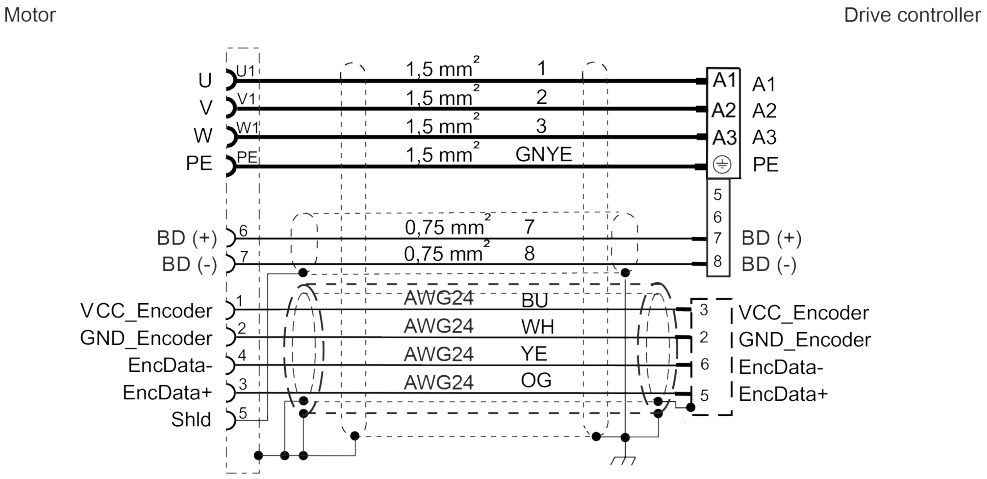


Fig. 11: Connection diagram RHB2-022DC (M23)

7.5 Extension cable

Extension cables have a similar design with connectors on both cable ends. Internal connections are routed 1:1 among both connectors. The maximum cable length allowed for a specific motor-controller combination applies to the total length of all cable segments of this axis. Additional cable extensions must not exceed the permitted maximum length of the total cable run.

8 Accessories

M17 Power

- M17 Power connector, data sheet [1)]
- M17 Cable connector Speedcon [2)]
- M17 Cable coupling Speedcon [2)]
- M17 Flange socket Speedcon [2)]
- M17 Flange connector Speedcon [2)]
- M17 Panel feed-through Speedcon [2)]
- M17 Square mounting flange Speedcon [2)]

M17 Hybrid

- M17 Hybrid connector, data sheet [1)]
- M17 Cable connector SpeedTec [2)]
- M17 Cable coupling SpeedTec [2)]
- M17 Square mounting flange SpeedTec [2)]

M23 Power

- M23 Power connector, data sheet [1)]
- M23 Cable connector Speedcon [2)]
- M23 Cable coupling Speedcon [2)]
- M23 Cable coupling SpeedTec [2)]
- M23 Flange socket Speedcon [2)]
- M23 Flange socket Speedcon [2)]
- M23 Panel feed-through Speedcon [2)]
- M23 Square mounting flange Speedcon [2)]
- M23 Square mounting flange SpeedTec [2)]

M23 Hybrid

- M23 Hybrid connector, data sheet [1)]
- M23 Cable connector Speedcon [2)]
- M23 Cable connector SpeedTec [2)]
- M23 Cable coupling Speedcon [2)]
- M23 Cable coupling SpeedTec [2)]
- M23 Device connector Speedcon [2)]
- M23 Panel feed-through Speedcon [2)]
- M23 Square mounting flange Speedcon [2)]
- M23 Square mounting flange SpeedTec [2)]

B40 Power

- B40 Power connector INS048*/***, data sheet [1)]
- B40 Cable connector Bayonet [2)]
- B40 Cable coupling Bayonet [2)]

M40 Power

- M40 Power connector, data sheet [1)]
- M40 Cable connector Speedcon [2)]
- M40 Cable coupling Speedcon [2)]
- M40 Cable coupling SpeedTec [2)]

- ➦M40 Flange socket [2)]
- ➦M40 Square mounting flange Speedcon [2)]

B58 Power

➦B58 Power connector INS038*/***, Data sheet [1)]

- ➦B58 Cable connector Bayonet [2)]
- ➦B58 Cable coupling Bayonet [2)]

M58 Power

➦M58 Power connector, data sheet [1)]

- ➦M58 Cable coupling screw thread [2)]
- ➦M58 Cable coupling screw thread [2)]
- ➦M58 Flange socket [2)]
- ➦M58 Square mounting flange screw thread [2)]



[1)] Link to the Bosch Rexroth Download Center .



[2)] Active link in Content Delivery Portal .

Mounting flanges offer a solid solution for cable fastening and strain relief clamp. This accessories are easy to mount.

NOTICE	**Adjust the fastening material to the installation situation.** Please note that mounting screws are not included in the scope of delivery, because they have to be adjusted to the specific installation situation.

9 Conformity

9.1 EU declaration of conformity

The EU declaration of conformity is published in the ➦Bosch Rexroth Media directory

Search term ➦DCTC-30317-025

9.2 UK declaration of conformity

The EU declaration of conformity is published in the ➦Bosch Rexroth Media directory.

Search term ➦DCTC-30317-053

9.3 CE

The CE conformity according to the EU directive is printed onto the cable type plate➥ Chapter 6.10 Identification on page 89

9.4 UL, CSA

RL2, RG2, RH2, RL and RH cables and associated connectors are "registered components", approved to UL (USA) and CSA (Canada) standards. The respective marking and UL file number are printed on the cable sheath. The UL file numbers of the connectors are E153698, E335019 and E151413. Details of file numbers are available from the UL File Database at www.ul.com.

9.5 RoHS

All cable and connector components of RL2, RG2, RH2, RL and RH comply with the European Directive 2011/65/EC "Restriction of the use of certain hazardous substances in electrical and electronic equipment".

9.6 China RoHS

All RL2, RG2, RH2, RL... and RH... Cables have been tested according to the Chinese directive RoHS SJ/T 11364. These cables do not require a China RoHS mark, just an intere list of materials used. This internal document is available from your Bosch Rexroth sales partner on demand.

The "EFUP" (Environment-Friendly Use Period) is 25 years in case one or more substances are above the limit.

9.7 CCC ("China Compulsory Certificate")

The assembled cables RL2, RG2, RH2, RL and RH are not covered by these CCC regulations. CCC lists other materials for cables and insulation that are not used in Rexroth cables. For more details or questions refer directly to ➥ CCC Authority. http://www.cqc.com.cn/www/english/ProductCertification/CCC/

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