



IndraDyn S – MS2N

Synchronous servo motors

Product information electrical connections – preliminary edition 03

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Edition 03

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1. Cables for MS2N motors

MS2N synchronous servo motors are connected to drive controllers with ready-made cables for motor power, encoders or with hybrid cables combining power and encoder function.

- RL2 motor power cables
- RG2 motor encoder cables
- RH2 hybrid cables (power + encoder)

Cable type code

Sample type RL2-001CBB-NN-005,0

R	L	2	-	0	0	1	C	B	B	-	N	N	-	0	0	5	,	0
R L 2		Power cable							→ optional RG2, RH2									
0 0 1		Cable number							→ see selection lists on following pages									
C		Code for cable cross-section							→ optional codes see list below									
B		Cable type, defined by Rexroth																
B		Cable design option "B" option "T"							→ "Basic", standard for all cross-sections → "Torsion-proof", available only for 1,0 mm² cross-section									
N N		not specified																
0 0 5 , 0		sample length 5,0 m							→ all lengths orderable from 0,5 m minimum length with 0,1 m step									

Notes

Maximum general cable length is 75 m, but for some drive equipment the maximum length is limited, for details see respective drive controller manual.

Cable cross-sections

The cable cross-section code of multi-conductor cables is defined by the cross-section of the largest conductor. For cable sizing please observe notes on next page.

Rexroth cable cross- section code	Cable design	Internal motor cable			Ø IEC / DIN EN 60228		Strombelastbarkeit Current load <i>A_{eff}</i>
		Power	Encoder	Hybrid	mm²	AWG	
A	Basic	-	REG0012 REG0013	-	0,5	20	-
	Torsion		REG0748				
B	Basic	-	-	-	0,75	18	-
C	Basic	REL0105	-	-	1,0	17	13,05
	Torsion	REL0753					
D	Basic	REL0106	-	REH0804	1,5	16	15,66
E	Basic	REL0107	-	-	2,5	14	22,62
F	Basic	REL0108	-	-	4	12	29,58
G	Basic	REL0109	-	-	6	10	38,28
H	Basic	REL0110	-	-	10	8	53,07
J	Basic	REL0111	-	-	16	6	71,34
K	Basic	REL0112	-	-	25	4	93,96

Notes

Indicated current load is only a guiding value for motor power cables in flexible installation, conductor material Cu, installation type E, conductor temperature $T_L = 70\text{ °C}$, ambient temperature $T_A = 40\text{ °C}$, acc. to DIN VDE 0298-4:2013-06, table 11, column 5.

Check cable sizing acc. to application conditions and installation, see general notes in cable manual R911322949. Local standards as well as local directives for installation and sizing must be observed. Observe maximum permissible cable lengths, depending on drive equipment and installation. See IndraDrive product manuals for further details.

For appropriate use of products use only original cables from Bosch Rexroth. When using other equipment than original Rexroth-cables, Bosch Rexroth is neither liable for such equipment and its compatibility with Rexroth drive and motor products nor will any malfunction or service and trouble-shooting actions be covered by Bosch Rexroth AG product warranty.

Hinweise

Angegebene Strombelastbarkeit ist nur ein Richtwert für Motorleistungskabel in flexibler Verlegung, Leitermaterial Cu, Verlegeart E, Leitertemperatur $T_L = 70\text{ °C}$, Umgebungstemperatur $T_A = 40\text{ °C}$, nach DIN VDE 0298-4:2013-06, Tabelle 11, Spalte 5.

Kabeldimensionierung nach Einsatzbedingungen und Verlegeart prüfen, allgemeine Hinweise siehe Kabeldoku R911322848. Regionale Normen sowie Installations- und Bemessungsvorschriften sind zu beachten. Maximal zulässige Kabellängen je nach Antriebsausrüstung und Installationsbedingungen beachten. Hinweise siehe IndraDrive-Produktdokumentationen.

Für den bestimmungsgemäßen Gebrauch der Produkte verwenden Sie ausschließlich Originalkabel von Bosch Rexroth. Bei Verwendung von anderen Nicht-Originalprodukten ist Bosch Rexroth weder für diese Produkte noch für deren Kompatibilität zu Rexroth-Regelgeräten und Motoren verantwortlich. Störungen und Serviceanforderungen oder Störungsbeseitigungen sind von der Produktgarantie der Bosch Rexroth AG nicht abgedeckt.

2. Cable selection

For general selection of cables following pages present several lists. These lists are separated into individual sheets for

- RL2 power cables
 - 60K operation
 - 100K operation
 - force-ventilated motors
 - water-cooled motors
- RG2 encoder cables
- RH2 hybrid cables for motors with single-cable connection

→ Note the **yellow markings** in selection table indicating certain limitations:

If the drive controller's rated current is lower than the rated current of the motor, then the cable cross-section does not need to be larger than necessary for the drive controller's current.

If the motor's rated current is lower than the drive controller's current, then the motor determines the necessary cable cross-section.

Cable cross-sections and the reference code are indicated in chap. 1 of this document.

- Choose operating conditions/motor version → choose motor type from list → choose drive controller column → pick indicated cable number → complete cable type code with desired length
- Some cable types have already been added to the selection list, but are not orderable at the time this document has been published. Before finalizing equipment and order scope please check availability of desired cable type and length with your Rexroth sales partner

Please keep in mind that the cable types indicated in this document are only basic guiding information for motor power cable selection.

Check cable sizing acc. to application conditions and installation, see general notes in cable manual [R911322949](#) (EN) or [R911322948](#) (DE), chapter 4. Local technical standards as well as local directives for installation and sizing must be observed. Observe maximum permissible cable lengths, depending on drive equipment and installation, see IndraDrive product manuals for further details. Rexroth product manuals are available online under www.boschrexroth.com/mediadirectory

The cable material, cable design and cable shields of genuine Rexroth-cables are tailor-made and tested for Indradyn motors and IndraDrive controllers. Using third-party cables may cause functional faults, unsafe operation or equipment damage. Bosch Rexroth does not provide any kind of warranty for safety, operability or functions of the drive equipment when third-party cables are used.

RL2 cable for 60K operation

60K Coding N	Ø [mm²]	Stecker Plug	Type Code Electr. Conn.	RLS0745	RLS0722	RLS0746	RLS0749	RLS0721	RLS0723	RLS0724	RLS0727	RLS0725	RLS2302	Extension
MS2N03-60BY	1.0	M17	D	001CB	002CB	003CB	004CB	005CB				009CB	010CB	500CB
MS2N03-60BY	1.0	M17	D											
MS2N04-60BN	1.0	M17	D											
MS2N04-60BT	1.0	M17	D											
MS2N04-60BN	1.0	M17	D											
MS2N04-60BT	1.0	M17	D											
MS2N04-60BH	1.0	M17	D											
MS2N04-60BQ	1.0	M17	D											
MS2N05-60BN	1.0	M17	D											
MS2N05-60BT	1.0	M17	D											
MS2N05-60BH	1.0	M17	D	021CB	022CB	023CB	024CB	025CB				029CB	521CB	521CB
MS2N05-60BT	1.0	M17	D											
MS2N06-61BN	1.0	M23	U											
MS2N06-61BN	1.0	M23	U											
MS2N06-60BT	1.0	M23	U											
MS2N06-60BT	1.0	M23	U											
MS2N06-60BN	1.0	M23	U											
MS2N06-60BT	1.0	M23	U											
MS2N06-60BR	1.0	M23	U											
MS2N06-60BT	1.0	M23	U											
MS2N06-61BN	1.0	M23	U	042CB	042DB	043DB	044CB	045DB	046DB			049DB	050CB	542DB
MS2N07-61BN	1.0	M23	U											
MS2N07-60BN	1.0	M23	U											
MS2N07-60BQ	1.0	M23	U											
MS2N07-61BN	1.0	M23	U											
MS2N07-61BR	1.0	M23	U											
MS2N07-60BH	1.0	M23	U											
MS2N07-60BN	1.0	M23	U											
MS2N07-61BH	1.0	M23	U											
MS2N07-61BN	1.0	M23	U											
MS2N07-60BH	1.0	M23	U	042CB	042EB	043DB	044CB	045EB	046EB			049EB	542EB	542EB
MS2N07-61BH	1.0	M23	U											
MS2N07-60BN	1.0	M23	U											
MS2N07-60BN	1.0	M23	U											
MS2N07-61BH	1.0	M23	U											
MS2N07-61BN	1.0	M23	U											
MS2N07-60BH	1.0	M23	U											
MS2N07-61BH	1.0	M23	U											
MS2N07-60BN	1.0	M23	U											
MS2N07-60BN	1.0	M23	U											
MS2N07-61BQ	1.0	M23	U	042CB	042DB	043DB	044CB	045DB	046DB			049DB	050CB	542DB
MS2N07-61BN	1.5	M40	V											
MS2N07-61BN	1.5	M40	V											
MS2N10-60BN	1.5	M40	V											
MS2N10-61BN	1.5	M40	V											
MS2N10-61BF	1.5	M40	V											
MS2N10-61BD	1.5	M40	V											
MS2N07-60BR	2.5	M40	V											
MS2N07-60BQ	2.5	M40	V											
MS2N10-60BN	2.5	M40	V											
MS2N10-61BN	2.5	M40	V	042CB	042EB	043DB	044CB	045EB	046EB			049EB	542EB	542EB
MS2N10-60BN	2.5	M40	V											
MS2N10-61BF	2.5	M40	V											
MS2N10-61BF	2.5	M40	V											
MS2N10-60BD	2.5	M40	V											
MS2N10-60BD	2.5	M40	V											
MS2N10-60BN	4.0	M40	V											
MS2N10-61BN	4.0	M40	V											
MS2N10-60BH	4.0	M40	V											
MS2N10-60BN	6.0	M58	A or B											
MS2N10-61BN	6.0	M58	A or B	042CB	042DB	043DB	044CB	045GB	066GB			049EB	563GB	563GB
MS2N10-60BH	6.0	M58	A or B											

RL2 cable for 100K operation

100K Coding N	∅ [mm²]	Stecker Plug	Type Code Electr. Conn.	RLS0745	RLS0722	RLS0746	RLS0749	RLS0721	RLS0723	RLS0724	RLS0727	RLS0725	RLS2302	Extension
MS2N03-60BY	1.0	M17	D	001CB	002CB	003CB	004CB	005CB				009CB	010CB	500CB
MS2N03-DOB Y	1.0	M17	D											
MS2N04-60BN	1.0	M17	D											
MS2N04-80BT	1.0	M17	D											
MS2N04-C0BN	1.0	M17	D											
MS2N04-C0BT	1.0	M17	D											
MS2N04-DOBH	1.0	M17	D											
MS2N04-DOBQ	1.0	M17	D											
MS2N05-60BN	1.0	M17	D											
MS2N05-80BT	1.0	M17	D											
MS2N05-C0BN	1.0	M17	D	021CB	022CB	023CB	024CB	025CB				029CB	521CB	521CB
MS2N05-C0BT	1.0	M17	D											
MS2N05-DOBH	1.0	M17	D											
MS2N05-DOB R	1.0	M17	D											
MS2N06-61BN	1.0	M23	U											
MS2N06-60BN	1.0	M23	U											
MS2N06-C0BT	1.0	M23	U											
MS2N06-DOB R	1.0	M23	U											
MS2N06-DOBH	1.0	M23	U											
MS2N06-DOBQ	1.0	M23	U											
MS2N07-61BN	1.0	M23	U	021CB	022CB	023CB	024CB	025CB				029DB	521CB	521CB
MS2N07-C1BR	1.0	M23	U											
MS2N07-DOBH	1.0	M23	U											
MS2N07-DOB R	1.0	M23	U											
MS2N07-DOBQ	1.0	M23	U											
MS2N07-DOBH	1.0	M23	U											
MS2N07-DOB R	1.0	M23	U											
MS2N07-DOBQ	1.0	M23	U											
MS2N07-DOBH	1.0	M23	U											
MS2N07-DOB R	1.0	M23	U											
MS2N07-DOBQ	1.0	M23	U	021CB	022DB	023CB	024DB	025DB				049DB	050CB	542DB
MS2N08-DOB R	1.5	M40	V											
MS2N08-DOBH	1.5	M40	V											
MS2N07-DOB R	1.5	M40	V											
MS2N07-DOBH	1.5	M40	V											
MS2N10-61BQ	1.5	M40	V											
MS2N10-C0BH	1.5	M40	V											
MS2N10-C1BH	1.5	M40	V											
MS2N07-DOB R	2.5	M40	V											
MS2N07-DOBH	2.5	M40	V											
MS2N10-C0BN	2.5	M40	V	042EB	042EB	043DB	044EB	045EB	046EB			049EB	542EB	542EB
MS2N10-C1BN	2.5	M40	V											
MS2N10-C0BF	2.5	M40	V											
MS2N10-C1BF	2.5	M40	V											
MS2N10-F0BD	2.5	M40	V											
MS2N10-F1BD	2.5	M40	V											
MS2N07-DOBQ	4.0	M40	V											
MS2N10-DOBH	4.0	M40	V											
MS2N10-DOB R	6.0	M40	V											
MS2N10-DOBH	6.0	M40	V											
MS2N10-DOB R	6.0	M40	V	042EB	042EB	043DB	044EB	045GB	046GB	067HB		049EB	542GB	563HB
MS2N10-DOBH	6.0	M40	V											
MS2N10-DOB R	6.0	M40	V											
MS2N10-DOBH	6.0	M40	V											
MS2N10-DOB R	6.0	M40	V											
MS2N10-DOBH	6.0	M40	V											
MS2N10-DOB R	6.0	M40	V											
MS2N10-DOBH	6.0	M40	V											
MS2N10-DOB R	6.0	M40	V											
MS2N10-DOBH	6.0	M40	V											
MS2N10-DOB R	10.0	M58	A or B	042EB	042EB	043DB	044EB	045HB	066HB	067HB		049EB	542GB	563HB
MS2N10-DOBH	10.0	M58	A or B											
MS2N10-DOB R	10.0	M58	A or B											
MS2N10-DOBH	10.0	M58	A or B											
MS2N10-DOB R	10.0	M58	A or B											
MS2N10-DOBH	10.0	M58	A or B											
MS2N10-DOB R	10.0	M58	A or B											
MS2N10-DOBH	10.0	M58	A or B											
MS2N10-DOB R	10.0	M58	A or B											
MS2N10-DOBH	10.0	M58	A or B											

Cable cross-section limited by rated current of motor or drive controller

RL2 cable for force-ventilated motors with power plug

Motor power cable RL2-xxxxxB-NN-xxx,x																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Forced Cooling A or B	Ø [mm²]	Stecker Plug	Type Code Electr. Conn.	RLS0745	RLS0722	RLS0746	RLS0749	RLS0721	RLS0723	RLS0724	RLS0727	RLS0725	RLS2302																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
MS2N07-C0BN	1,5	M40	V					HCS02.1E-W0012	HCS01.1E-W0018	HCS01.1E-W0028	HCS01.1E-W0054	HCS02.1E-W0054	HCS03.1E-W0100	HCS03.1E-W0210	HCS03.1E-W0280	HMS01.1E-W0350	KMS03.1	KMS02.1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
MS2N07-C1BN	1,5	M40	V					HMD01.1N-W0012	HCS02.1E-W0070	HCS03.1E-W0150	HMS01.1N-W0110	HMS01.1N-W0150	HMS01.1N-W0210	HMS01.1N-W0300																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								

Cable cross-section limited by rated current of motor or drive controller

RL2 cable for force-ventilated motors with terminal box

Motor power cable RL2-XXXXXB-NN-xxx,x										Extension 1)
Forced Coding A or B	Ø [mm²]	Klemmenkasten Terminal box Fitting size	Type Code Electr. Conn.	RLS0745	RLS0722	RLS0746	RLS0749	RLS0721	RLS0723	
MS2N10-C0BH	2,5	M32	T		102EB		104EB	105EB		601EB
MS2N10-C1BH	2,5	M32	T							02xEB
MS2N10-C0BN	4,0	M32	T		102EB		104EB	105FB		602FB
MS2N10-F0BD	4,0	M32	T		102EB		104EB	105GB		603GB
MS2N10-D0BH	6,0	M32	T					085HB	086HB	583HB
MS2N10-D0BN	10,0	N40	T							06xHB
MS2N10-E0BH	10,0	N40	T					085HB	086JB	583JB
MS2N10-E0BN	16,0	N40	T						087JB	06xJB
MS2N10-F0BH	16,0	N40	T							

Cable cross-section limited by rated current of motor or drive controller

1) Choose second cable acc. to drive controller type

RL2 cable for water-cooled motors with power plug

Motor power cable RL2-xxxxxB-NN-xxx,x														
Water Cooling L	Ø [mm]	Stecker Plug	Type Code Electr. Conn.	RLS0745	RLS0722	RLS0746	RLS0749	RLS0721	RLS0723	RLS0724	RLS0727	RLS0725	RLS2302	Extension
MS2N07-C0BN	2,5	M40	V	HCS01.1E-W0003	HCS02.1E-W0012	HCS01.1E-W0018	HCS01.1E-W0054	HCS02.1E-W0054	HCS03.1E-W0100	HCS03.1E-W0210	HMS01.1E-W0350	KMS03.1	KMS02.1	
MS2N07-C0BQ	2,5	M40	V	HCS01.1E-W0028	HMD01.1N-W0028	HCS01.1E-W0028								542EB
MS2N07-C1BN	2,5	M40	V	HCS01.1E-W0005	HMD01.1N-W0020		044EB	045EB	046EB			049EB		
MS2N07-C1BR	2,5	M40	V	HCS01.1E-W0006	HMD01.1N-W0036									
MS2N07-C1BH	2,5	M40	V	HCS01.1E-W0008	HMS01.1N-W0020									
MS2N07-D0BH	4,0	M40	V	HCS01.1E-W0009	HMS01.1N-W0036									
MS2N07-D1BN	4,0	M40	V				044EB	045FB	046FB			049EB		542FB
MS2N07-ELBH	4,0	M40	V											
MS2N07-C0BN	6,0	M40	V				044EB	045GB	046GB			049EB		542GB
MS2N07-E0BH	6,0	M40	V		042EB									
MS2N10-C1BH	2,5	M68	A or B					065EB	066EB			069EB		563GB
MS2N10-C0BH	4,0	M68	A or B					065GB	066GB			069EB		
MS2N10-C1BN	6,0	M68	A or B											
MS2N10-C0BN	6,0	M68	A or B					065GB	066GB					563GB
MS2N10-C1BF	6,0	M68	A or B											
MS2N07-C0BR	10,0	M68	A or B											
MS2N07-E0BN	10,0	M68	A or B											
MS2N07-ELBN	10,0	M68	A or B											
MS2N10-C0BH	10,0	M68	A or B											
MS2N10-E1BF	10,0	M68	A or B											
MS2N10-C0BD	10,0	M68	A or B											
MS2N10-F1BD	10,0	M68	A or B							067HB				563HB
MS2N07-E0BQ	16,0	M68	A or B											
MS2N10-P0BN	16,0	M68	A or B					065HB						
MS2N10-C1BN	16,0	M68	A or B											
MS2N10-E0BN	16,0	M68	A or B											
MS2N10-P0BN	25,0	M68	A or B											
MS2N10-C1BN	25,0	M68	A or B											
MS2N10-F0BH	25,0	M68	A or B							067KB	068KB			563JB
MS2N10-F1BH	25,0	M68	A or B											563KB

Cable cross-section limited by rated current of motor or drive controller

[illegible]

Motor power cable RL2-xxxxxB-NIN-xxx,x														
W-Kühlung Water cooled	Ø [mm²]	Klemmenkasten Terminal box Fitting	Type Code Electr. Conn.	RLS0745	RLS0722	RLS0746	RLS0749	RLS0721	RLS0723	RLS0724	RLS0727	RLS0725	RLS2302	Extension 1)

Cable cross-section limited by rated current of motor or drive controller

1) Choose second cable acc. to drive controller type

RG2 encoder cables

Motor encoder cable RG2-xxxxxB-NN-xxx,x			Steuerterle V1 Contr. sect. V1		Steuerterle V2 Control sections V2		KMS03.1	KMS01.2 KMS02.1	Verlängerung
			ENS		EC		END	ENH	
GeberEncoder	Ø [mm²]	Stecker Plug	RGS0009		RGS0010		RGS0725	RGS2302	
Ax/Bx (analog)	0,5	M17	002AB		002AB		003AB	004AB	Extension
Cx/Dx (digital)	0,5	M17			002AA		003AA		500AB
									510AA

RH2 hybrid cables

[illegible]

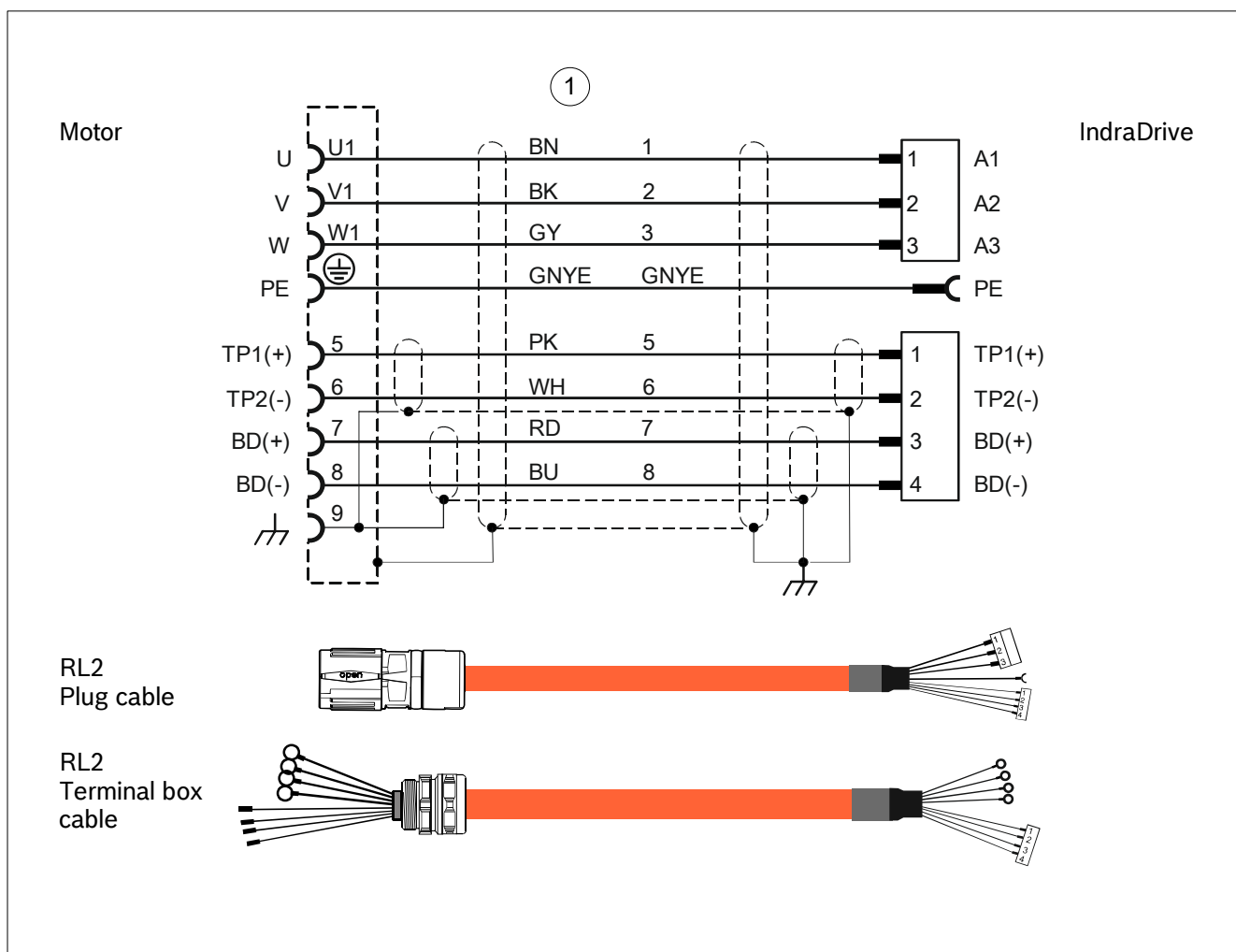
3. MS2N motor connections

Electrical connections for MS2N motors follow a general wiring scheme for all motor and cable sizes. The cable material, cable design and cable shields of genuine Rexroth-cables are tailor-made and tested for Indradyn motors and IndraDrive controllers.

Notes

Using third-party cables may cause functional faults, unsafe operation or equipment damage. Bosch Rexroth does not provide any kind of warranty for safety, operability or functions of the drive equipment when third-party cables are used.

Power cables RL2 for dual-cable connection



① Notes

Power cable 1,0 mm²:

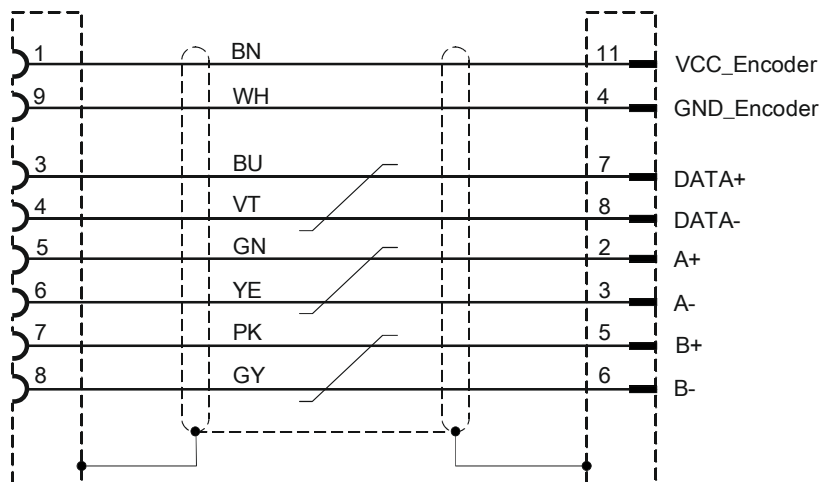
colored wires

Power cables ≥ 1,5 mm²:

numbered wires

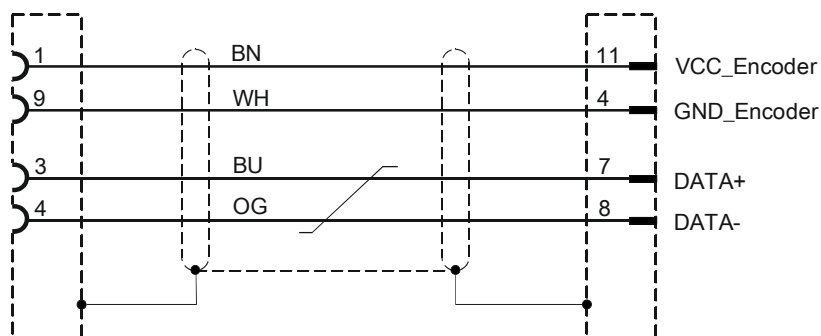
Encoder cables RG2 for dual-cable connection

Encoder A or B
Hiperface®
RG2-002AB...



IndraDrive

Encoder C or D
ACURO®link
RG2-002AA...

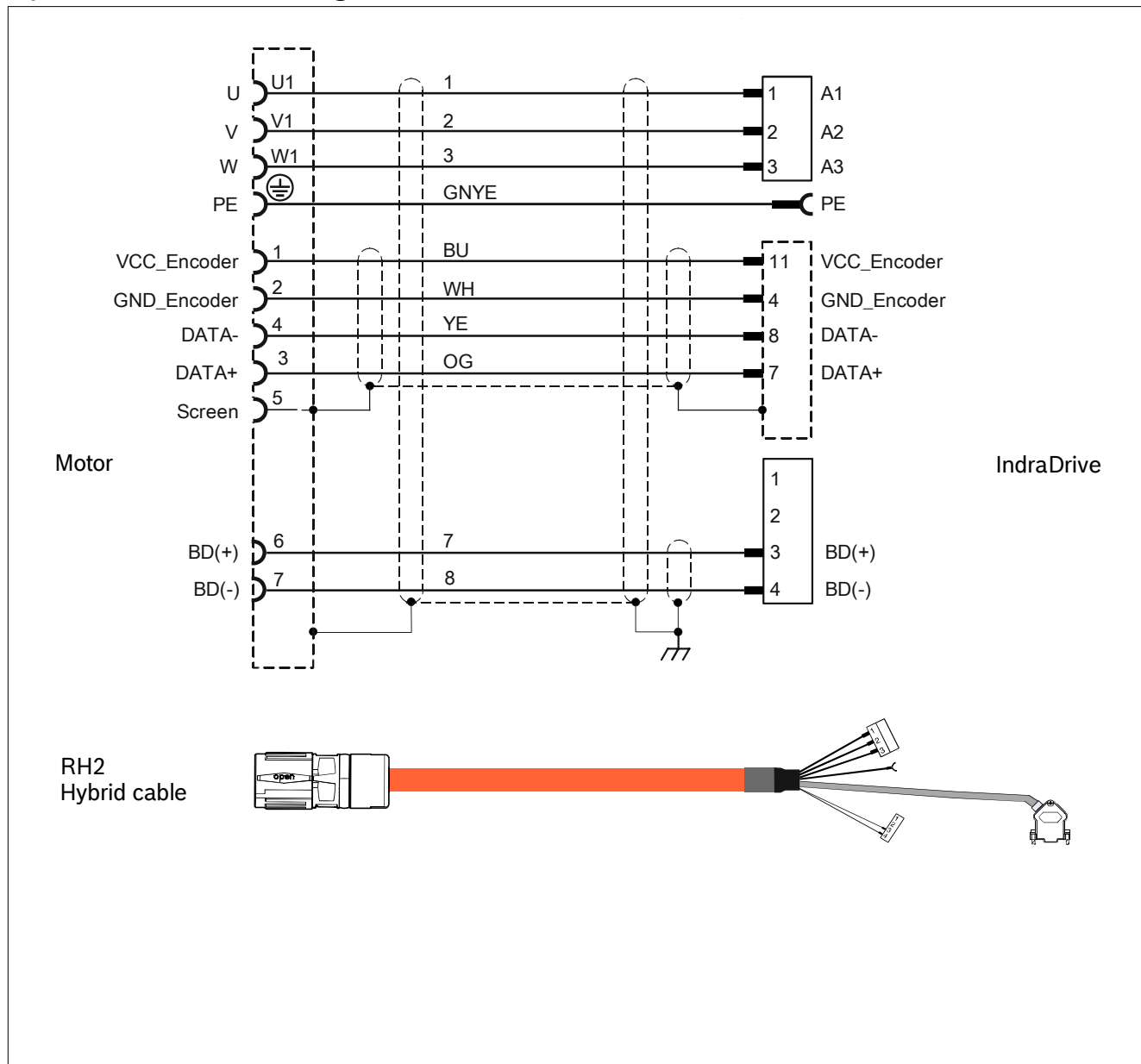


IndraDrive

RG2-002
Plug cable



Hybrid cable RH2 for single-cable connection



4. Cable data

Cable specifications RL2 Basic

Rated voltage of power wires U_0/U	600/1000 V
Rated voltage of signal wires U_0/U	450/750 V
Insulation resistance (+20°C)	$\geq 20 \text{ M}\Omega/\text{km}$
Temperature range flexible use	-20 ... +60 °C
Temperature range fixed installation	-30 ... +80 °C
Conductor max. temperature (flexible/fixed)	+80 / +90 °C
Storage temperature	-30 ... +80 °C
Cable jacket	PUR (orange RAL 2003)
Conductor insulation	PP
Certification, Approbation	CE, cURus (UL/CSA)
UL/CSA style (rating)	21223 (1000 V/AC 80°C)
RoHS	compliant to EU-directive 2011/65/EU
Chemical characteristics	Halogen-free acc. to VDE 0472, Part 815 Silicone-free, CFC-free Oil resistance acc. to EN 60811-2-1, EN 50363-10-2
Flammability ratings	IEC/DIN EN 60332-1/2 UL AWM 758 VW1/FT1, UL 1581/2556, CSA C22.2/2556
Bending cycles	> 5 Mio
Bending radius min. (flexible installation)	7,5 x D
Bending radius min. (fixed installation)	5 x D
Travel speed horizontal	$\leq 300 \text{ m/min}$
Travel distance horizontal	$\leq 50 \text{ m}$
Acceleration	$\leq 50 \text{ m/s}^2$
Torsion	$\leq \pm 30 \text{ }^\circ/\text{m}$

Cable data

Cable	Design	Outer diameter D	Cable weight (ca.)
REL0105	(4 x 1,0 mm ² + 2 x (2 x 0,75 mm ²))	12,0 +/-0,5 mm	0,2 kg/m
REL0106	(4 x 1,5 mm ² + 2 x (2 x 0,75 mm ²))	12,2 +/-0,5 mm	0,23 kg/m
REL0107	(4 x 2,5 mm ² + 2 x (2 x 1,0 mm ²))	14,8 +/-0,5 mm	0,33 kg/m
REL0108	(4 x 4,0 mm ² + 2 x (2 x 1,0 mm ²))	17,0 +/-0,5 mm	0,45 kg/m
REL0109	(4 x 6,0 mm ² + (2 x 1,0 mm ²) + (2 x 1,5 mm ²))	18,2 +/-0,6 mm	0,58 kg/m
REL0110	(4 x 10,0 mm ² + (2 x 1,0 mm ²) + (2 x 1,5 mm ²))	22,2 +/- 1,0 mm	0,84 kg/m
REL0111	(4 x 16,0 mm ² + 2 x (2 x 1,5 mm ²))	25,5 +/- 1,0 mm	1,2 kg/m
REL0112	(4 x 25,0 mm ² + 2 x (2 x 1,5 mm ²))	29,8 +/- 1,0 mm	1,5 kg/m
REL0113	(4 x 35,0 mm ² + 2 x (2 x 1,5 mm ²))	30,8 +/- 1,0 mm	1,9 kg/m

Cable specifications RL2 Torsion

Rated voltage of power wires U_0/U	600/1000 V
Rated voltage of signal wires U_0/U	450/750 V
Insulation resistance (+20°C)	$\geq 20 \text{ M}\Omega/\text{km}$
Temperature range flexible use	-20 ... +60 °C
Temperature range fixed installation	-30 ... +80 °C
Conductor max. temperature (flexible/fixed)	+80 / +90 °C
Storage temperature	-30 ... +80 °C
Cable jacket	PUR (orange RAL 2003)
Conductor insulation	PP
Certification, Approbation	CE, cURus (UL/CSA)
UL/CSA style (rating)	21223 (1000 V/AC 80°C)
RoHS	compliant to EU-directive 2011/65/EU
Chemical characteristics	Halogen-free acc. to VDE 0472, Part 815 Silicone-free, CFC-free Oil resistance acc. to EN 60811-2-1, EN 50363-10-2
Flammability ratings	IEC/DIN EN 60332-1/2 UL AWM 758 VW1/FT1, UL 1581/2556, CSA C22.2/2556
Bending cycles	$\leq 5 \text{ Mio}$
Bending radius min. (flexible installation)	7,5 x D
Bending radius min. (fixed installation)	5 x D
Travel speed horizontal	$\leq 180 \text{ m/min}$
Travel distance horizontal	$\leq 5 \text{ m}$
Acceleration	$\leq 20 \text{ m/s}^2$
Torsion	$\leq \pm 180^\circ/30 \text{ cm}$

Cable data

Cable	Design	Outer diameter D	Cable weight (ca.)
REL0753	(4 x 1,0 mm ² + 2 x (2 x 0,75 mm ²))	12,2 +/-0,5 mm	0,2 kg/m

Cable specifications RG2 Basic

Rated voltage of power wires U_0/U	300 V
Rated voltage of signal wires U_0/U	300 V
Insulation resistance (+20°C)	$\geq 500 \text{ M}\Omega/\text{km}$
Temperature range flexible use	-20 ... +60 °C
Temperature range fixed installation	-30 ... +80 °C
Conductor max. temperature (flexible/fixed)	+80 / +90 °C
Storage temperature	-30 ... +80 °C
Cable jacket	PUR (orange RAL 2003)
Conductor insulation	PP
Certification, Approbation	CE, cURus (UL/CSA)
UL/CSA style (rating)	21223
RoHS	compliant to EU-directive 2011/65/EU
Chemical characteristics	Halogen-free acc. to VDE 0472, Part 815 Silicone-free, CFC-free Oil resistance acc. to EN 60811-2-1, EN 50363-10-2
Flammability ratings	IEC/DIN EN 60332-1/2 UL AWM 758 VW1/FT1, UL 1581/2556, CSA C22.2/2556
Bending cycles	> 5 Mio
Bending radius min. (flexible installation)	7,5 x D
Bending radius min. (fixed installation)	4 x D
Travel speed horizontal	$\leq 300 \text{ m/min}$
Travel distance horizontal	$\leq 50 \text{ m}$
Acceleration	$\leq 50 \text{ m/s}^2$
Torsion	$\leq \pm 30 \text{ }^\circ/\text{m}$

Cable data

Cable	Design	Outer diameter D	Cable weight (ca.)
REG0012	(2 x 2 x 0,20 mm ² + 2 x 0,5 mm ²)	7,2 +/-0,2	0,08 kg/m
REG0013	(4 x 2 x 0,25 mm ² + 2 x 0,5 mm ²)	8,5 +/-0,3	0,1 kg/m

Cable specifications RG2 Torsion

Rated voltage of power wires U_0/U	300 V
Rated voltage of signal wires U_0/U	300 V
Insulation resistance (+20°C)	$\geq 20 \text{ M}\Omega/\text{km}$
Temperature range flexible use	-20 ... +60 °C
Temperature range fixed installation	-30 ... +80 °C
Conductor max. temperature (flexible/fixed)	+80 / +90 °C
Storage temperature	-30 ... +80 °C
Cable jacket	PUR (orange RAL 2003)
Conductor insulation	PP
Certification, Approbation	CE, cURus (UL/CSA)
UL/CSA style (rating)	20317
RoHS	compliant to EU-directive 2011/65/EU
Chemical characteristics	Halogen-free acc. to VDE 0472, Part 815 Silicone-free, CFC-free Oil resistance acc. to EN 60811-2-1, EN 50363-10-2
Flammability ratings	IEC/DIN EN 60332-1/2 UL AWM 758 VW1/FT1, UL 1581/2556, CSA C22.2/2556
Bending cycles	$\leq 5 \text{ Mio}$
Bending radius min. (flexible installation)	7,5 x D
Bending radius min. (fixed installation)	5 x D
Travel speed horizontal	$\leq 180 \text{ m/min}$
Travel distance horizontal	$\leq 5 \text{ m}$
Acceleration	$\leq 20 \text{ m/s}^2$
Torsion	$\leq \pm 180^\circ/30 \text{ cm}$

Cable data

Cable	Design	Outer diameter D	Cable weight (ca.)
REG0748	(4 x 2 x 0,25 mm ² + 2 x 0,5 mm ²)	8,5 +/-0,3 mm	0,2 kg/m

Cable specifications RH2 Basic

Rated voltage of power wires U_0/U	600/1000 V
Rated voltage of signal wires U_0/U	450/750 V
Insulation resistance (+20°C)	$\geq 500 \text{ M}\Omega/\text{km}$
Temperature range flexible use	-20 ... +80 °C
Temperature range fixed installation	-30 ... +80 °C
Conductor max. temperature (flexible/fixed)	+80 / +90 °C
Storage temperature	-30 ... +80 °C
Cable jacket	PUR (orange RAL 2003)
Conductor insulation	PP
Certification, Approbation	CE, cURus (UL/CSA)
UL/CSA style (rating)	21223 (1000 V/AC 80°C)
RoHS	compliant to EU-directive 2011/65/EU
Chemical characteristics	Halogen-free acc. to VDE 0472, Part 815 Silicone-free, CFC-free Oil resistance acc. to EN 60811-2-1, EN 50363-10-2
Flammability ratings	IEC/DIN EN 60332-1/2 UL AWM 758 VW1/FT1, UL 1581/2556, CSA C22.2/2556
Bending cycles	> 5 Mio
Bending radius min. (flexible installation)	7,5 x D
Bending radius min. (fixed installation)	5 x D
Travel speed horizontal	$\leq 240 \text{ m/min}$
Travel distance horizontal	$\leq 50 \text{ m}$
Acceleration	$\leq 20 \text{ m/s}^2$
Torsion	$\leq \pm 30 \text{ }^\circ/\text{m}$

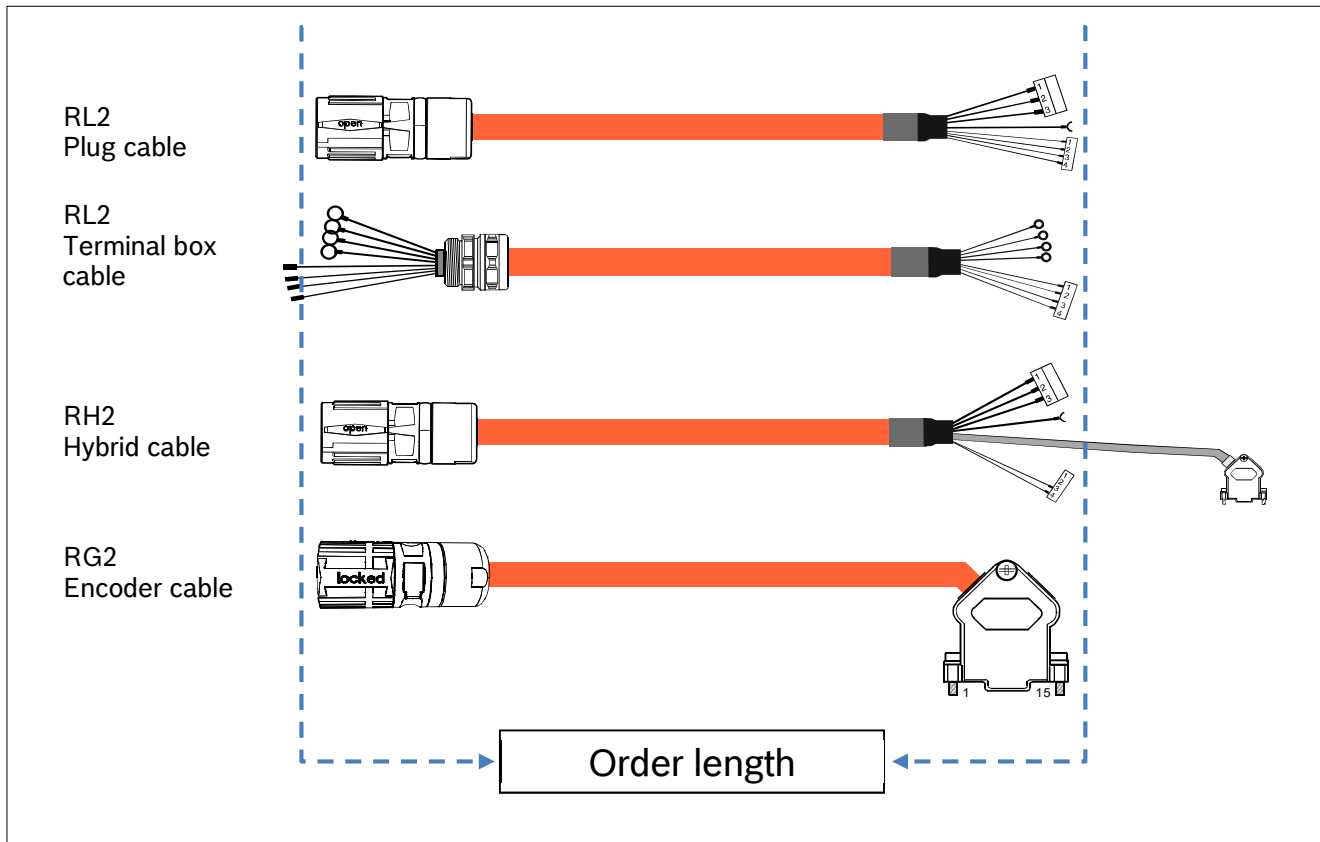
Cable data

Cable	Design	Outer diameter D	Cable weight (ca.)
REH0804	(4 x 1,5 mm ² + (2 x 0,75 mm ²) + (4 x AWG24))	13,0 +/-0,3	0,26 kg/m

5. Cable length specifications

Order length

The effective cable order length is measured from end to end, as indicated in the picture below.



Limits

The cable lengths have certain technical limits

- Minimum orderable length per cable 0,5 m
- Maximum orderable length per cable 75,0 m
- Minimum length increment 0,1 m

Notes

The total cable length for the entire distance from motor to drive controller is limited to 75 m, including all cable joints and extensions. In some configurations the effectively permitted maximum length of cables depends on the used type of equipment and may be limited to shorter lengths than 75 m → Consult the product manual of the equipment in use for details

→ Consult your Rexroth sales partner if you are in doubt about appropriate length definition.

The encoder wire extension on hybrid cables RH2 is designed to suit the individual terminal distances given by the drive design.

Tolerances

The cable length tolerance is specified as a positive value only, thus a cable should never be delivered shorter than ordered.

- Cable length ≤ 5 m + 0,05 m
- Cable length ≥ 5 m + 1 % of ordered length

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