



12 Prefabricated Cables

12.1 Description

SEW-EURODRIVE offers pre-fabricated cables with plugs for straightforward and reliable motor connection.

Cable and contact are connected using the crimp technique. The following cables are available in 1 m steps:

- Hybrid cable
- Encoder cable

Prefabricated cables are divided into:

- Power cables (motor cable, brakemotor cable, extension cable)
- Feedback cables (encoder cable, extension cable).

Preselection of cables

Prefabricated cables were preselected by SEW-EURODRIVE according to the standard EN 60204. The routing types "fixed installation" and "cable carrier installation" were considered.

Using other standards for the machine construction can result in diverging cross sections.

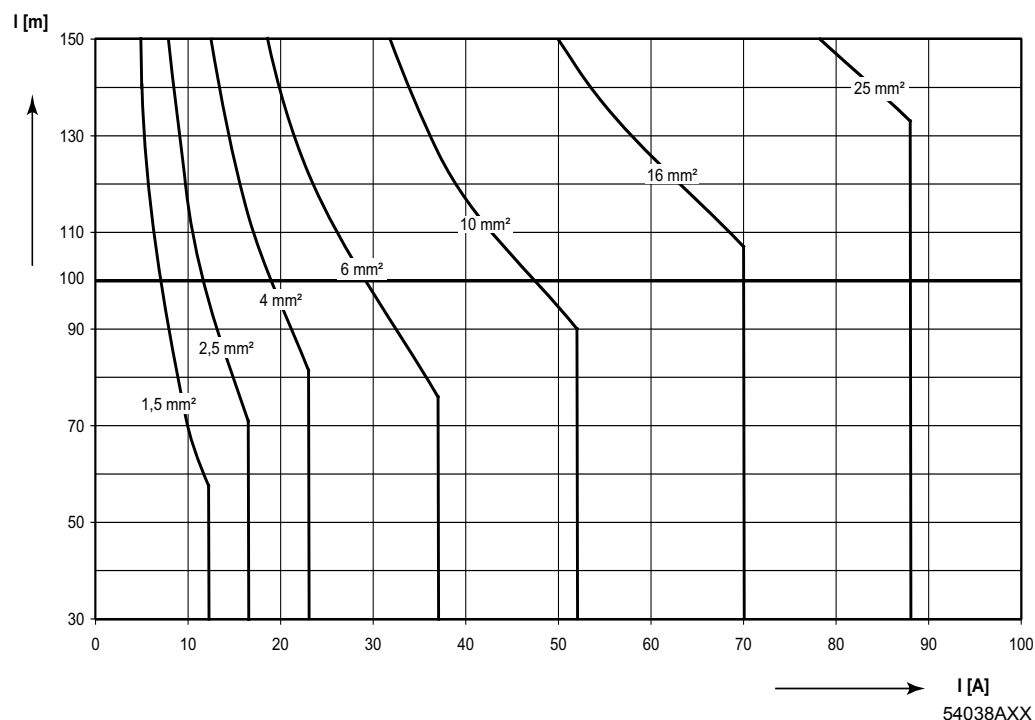


12.2 Dimensioning the cable cross section

Project planning for cable cross section

Cable dimensioning according to EN 60204

The following figure shows the minimum required cable cross section depending on cable length and current.



Hybrid cables with cross sections of 1.5 mm² to 10 mm² can be ordered from SEW-EURODRIVE.

Cable load table

Cable load through current I in [A] according to EN 60204-1 table 5, ambient temperature 40 °C.

Cable cross section [mm ²]	Three-core sheathed cable in pipe or cable [A]	Three-core sheathed cable on top of each other on wall [A]	Three-core sheathed cable lined up horizontally [A]
1.5	12.2	15.2	16.1
2.5	16.5	21.0	22
4	23	28.0	30
6	29	36.0	37
10	40	50.0	52
16	53	66.0	70
25	67	84.0	88
35	83	104.0	114

These data are merely recommended values and are **no substitute for the detailed project planning** of the cables depending on the concrete application considering the applicable regulations.

Observe the voltage drop that occurs along the cable in particular with the DC 24 V brake coil when dimensioning the cross sections for the brake cable. The accelerator current is decisive for the calculation.



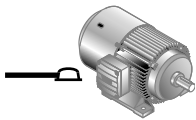
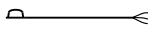
12.3 Key to the cable assignments

	Cable with plug connector on motor, fixed installation
	Cable with plug connector on motor, cable carrier installation
	Extension cable with plug connector on motor, fixed installation
	Extension cable with plug connector on motor, cable carrier installation
	Cable with conductor end sleeves, fixed installation
	Cable with conductor end sleeves, cable carrier installation
	Cable connected via encoder cover
	Cable connected via encoder cover, cable carrier installation
	Cable with ISU plug connector

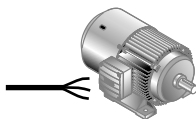
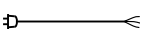
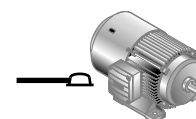
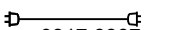


12.4 Cable assignments for DR motors at a glance

Brakemotor cable with IS

Motor type	Plug connectors	Motor	Cables	Control cabinet Field distributor	Details
DR71 - DR132	ISU		 0817 8127 W (cable type A) 0817 8178 m (cable type A)	I/O 	page 364 page 372 page 386

Motor cable for field-oriented MOVI-SWITCH®

Motor type	Plug connectors	Motor	Cables	MOVI-SWITCH® mounted in the field	Details
DR71 - DR100	--		 0817 8879 (cable type C) 0817 8860 (cable type C)	 /APG4 /ALA4	page 364 page 372 page 386
	/ASB4 /ISU		 0817 8887 (cable type C) 0817 8895 (cable type C) 0593 7558 (cable type A)		

Encoder cable

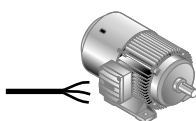
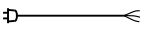
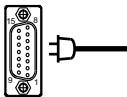
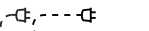
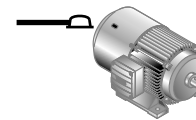
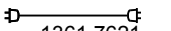
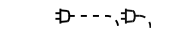
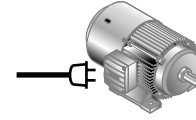
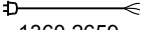
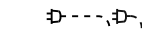
Encoder on DR series AC motors & MOVIDRIVE®					
Motor type	Encoders	Motor	Cables	MOVIDRIVE® inverter	Details
DR71 - DR132	ES7S ES7R AS7W		 1362 2021	 X15	page 367 page 376 page 389
DR160 - DR225	EG7S EG7R AG7W		 1362 2048		
DR71 - DR132	ES7S ES7R AS7W		 1361 7621		
DR160 - DR225	EG7S EG7R AG7W		 1361 7648		
DR315	EH7S		 1360 2659  1362 3206		

Table continued on next page

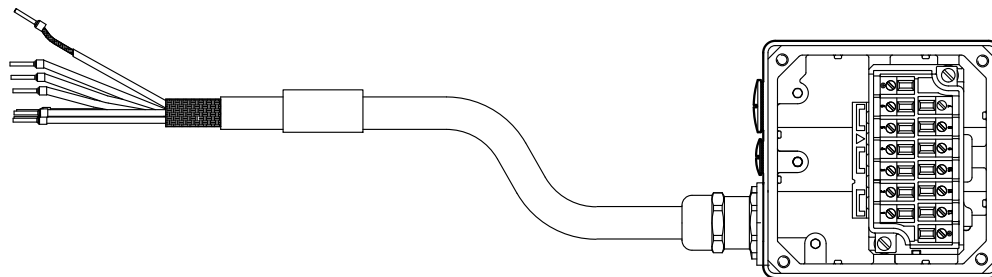


DR71 - DR132	AS7Y			 	page 367 page 376 page 389
DR160 - DR225	AG7Y				
DR315	AH7Y				
DR71 - DR132	AS7Y				page 369 page 381 page 389
DR160 - DR225	AG7Y				
DR71 - DR132	EI7C EI76 EI72 EI71				page 369 page 381 page 389
Encoder on DR series AC motors - intermediate sockets - MOVIDRIVE®					
Motor type	Encoders	Motor	Cables	M23	Details
DR71 - DR132	ES7S ES7R AS7W				page 370 page 382 page 389
DR160 - DR225	EG7S EG7R AG7W				
DR71 - DR132	ES7S ES7R AS7W				
DR160 - DR225	EG7S EG7R AG7W				
Motor type	Encoders	M23	Cables	M23	Details
DR71 - DR132	ES7S ES7R AS7W				page 370 page 382 page 389
DR160 - DR225	EG7S EG7R AG7W				
DR71 - DR132	ES7S ES7R AS7W				
DR160 - DR225	EG7S EG7R AG7W				



12.5 Description of power cables for DR motors

Brakemotor cable with IS



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Figure 1: IS brakemotor cable with motor protection, conductor end sleeves and ring-type cable lugs

Motor side

On the motor end, all 12 contacts of the integrated plug connector are used for connecting motor, brake, and motor protection.

The cables are available with variable terminal link in star or delta connection.

The brakemotor can then be supplied in ISU design.

Control cabinet /field distributor

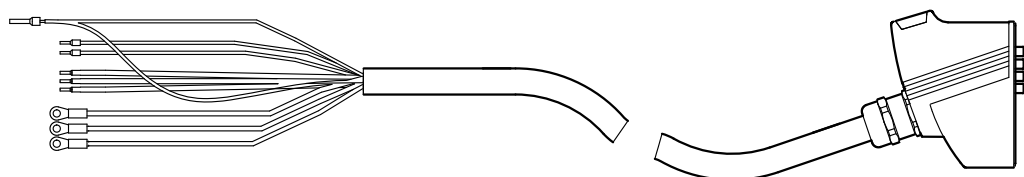
For wiring in the control cabinet and field distributors, the cores are fitted with ring-type cable lugs or conductor end sleeves.

Cable specification

The used cable types for fixed and cable carrier installation are listed in chapter "Cable specifications for power cables" page 386.

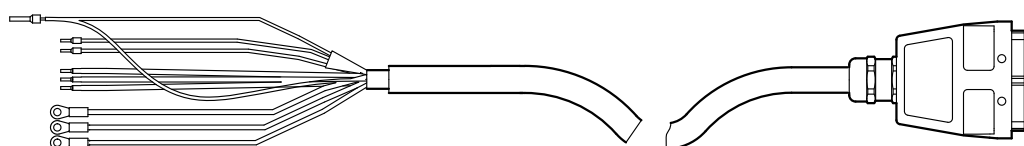


Brakemotor cable for decentralized MOVI-SWITCH®



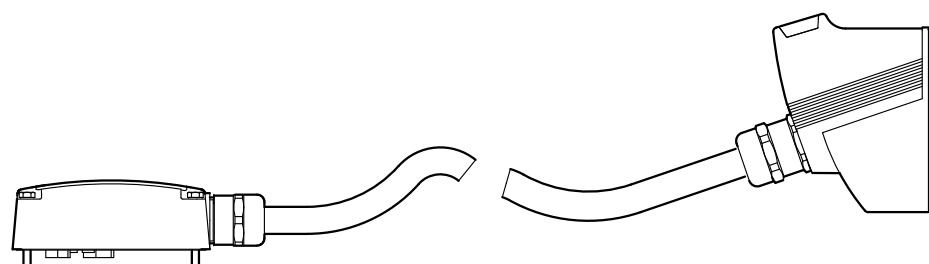
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Figure 2: Brakemotor cable with motor protection; conductor end sleeves/ring-type cable lugs, PLUSCON VC



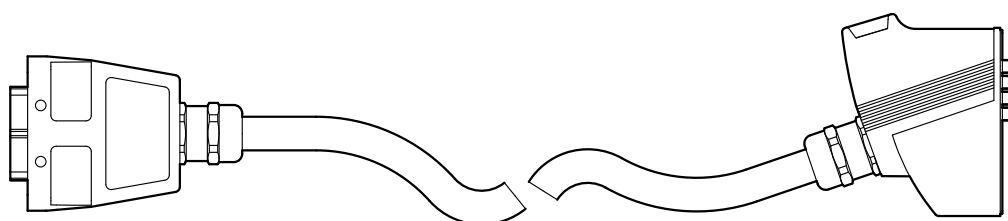
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Figure 3: Brakemotor cable with motor protection; conductor end sleeves/ring-type cable lugs, HAN 10E



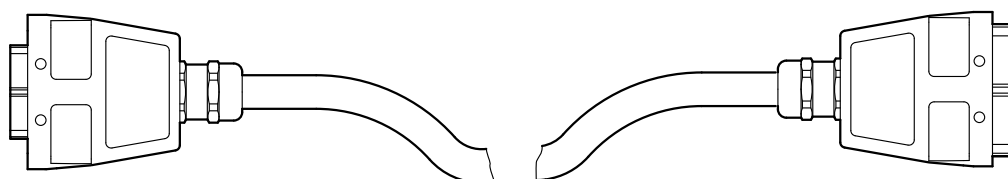
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Figure 4: Brakemotor cable with motor protection; IS and PLUSCON VC



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Figure 5: Brakemotor cable with motor protection; HAN 10E and PLUSCON VC



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Figure 6: Brakemotor cable with motor protection; HAN 10E and HAN 10E



Prefabricated Cables

Description of power cables for DR motors

Motor side

The connection options are available for the motor end:

Figure 2 and Figure 3: Conductor end sleeves are used for classical terminal box connection.

Figure 4: The integrated IS plug connector from SEW-EURODRIVE is used for connection to the motor.

Figure 5 and Figure 6: The mounted HAN 10E plug connectors are used for motor connection.

Decentralized MOVI-SWITCH®

The decentralized MOVI-SWITCH® offers two connection options:

At Figure 2, Figure 4, Figure 5 the PHOENIX PLUSCON VC plug connector is used for connection to MOVI-SWITCH®.

At Figure 3 and Figure 6 the mounted HAN 10E plug connector is used to connect MOVI-SWITCH®.

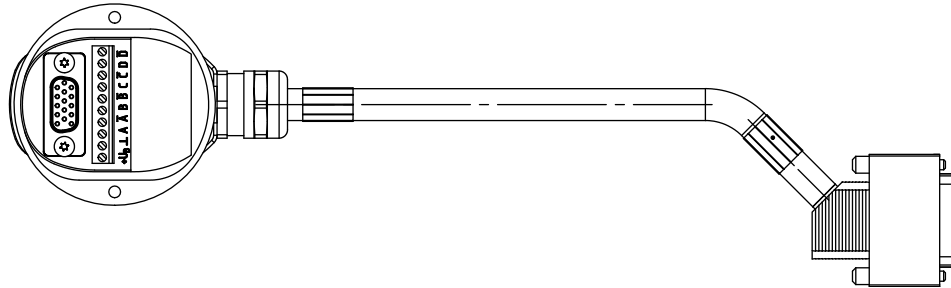
Cable specification

The used cable types for fixed and cable carrier installation are listed in chapter "Cable specifications for power cables" page 386.



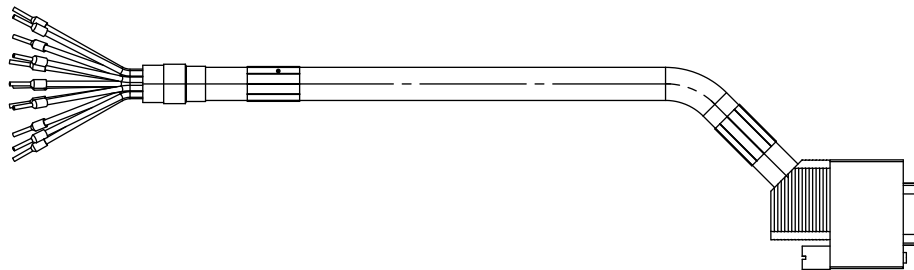
12.6 Description of add-on encoder cables for DR motors

Encoder cable with D-sub



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Figure 7: Connection cover with sub-D



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Figure 8: Conductor end sleeves with sub-D

Prefabrication on encoder/motor end

The prefabricated encoder cables for the add-on encoders on the DR motor are available with two different designs on the encoder/motor end.

- Figure 7: If the encoder on the motor is ordered and delivered without a connection cover, the prefabricated cable is fitted with a connection cover on the encoder end.
- Figure 8: If the encoder on the motor is ordered and delivered with a connection cover, the prefabricated cable is fitted with conductor end sleeves on the encoder end. The customer is responsible for connecting the terminal strip in the connection cover. The cable gland in the connection cover is included in the scope of delivery of the encoder.

Prefabrication on MOVIDRIVE®/ inverter end

A commercial sub-D EMC connector with pin contacts is used on the inverter end of the prefabricated encoder cable for connection to MOVIDRIVE®. A 15-pin plug is available that matches the inverter interface.

Cable specification

The used cable types for fixed and cable carrier installation are listed in chapter "Cable specifications for encoder cables" page 389.



Prefabricated Cables

Description of add-on encoder cables for DR motors

Encoder cable with 2 sub-D

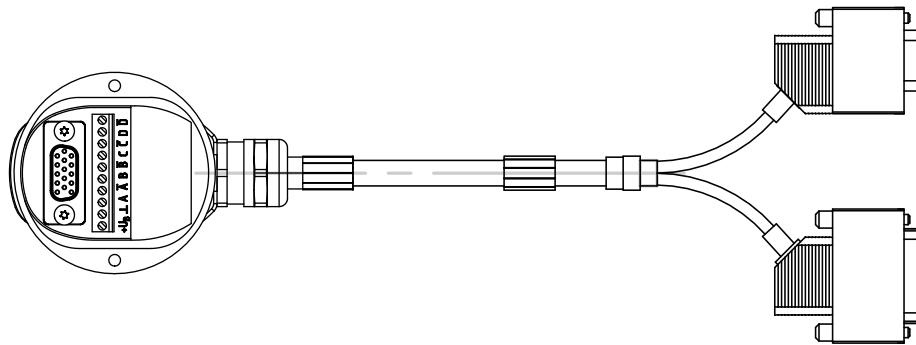


Figure 9: Connection cover with 2 D-sub (1 × 9-pole and 1 × 15-pole)

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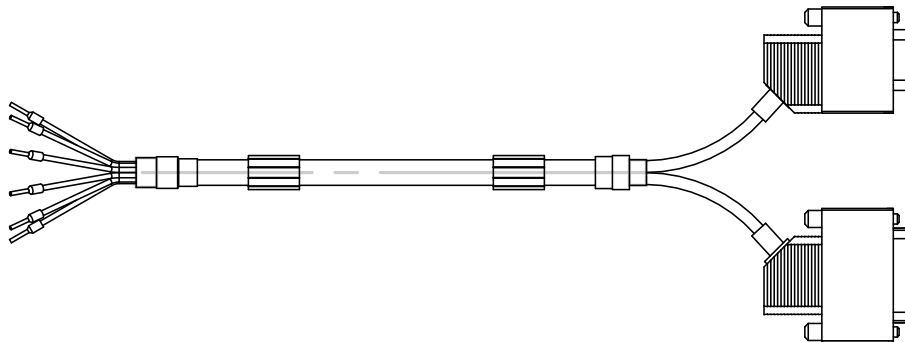


Figure 10: Connector end sleeves with 2 D-sub (1 × 9-pole and 1 × 15-pole)

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Prefabrication on encoder/motor end

The prefabricated encoder cables for the add-on encoders on the DR motor are available with two different designs on the encoder/motor end.

- Figure 9: If the encoder on the motor is ordered and delivered without a connection cover, the prefabricated cable is fitted with a connection cover on the encoder end.
- Figure 10: If the encoder on the motor is ordered and delivered with a connection cover, the prefabricated cable is fitted with conductor end sleeves on the encoder end. The customer is responsible for connecting the terminal strip in the connection cover. The cable gland in the connection cover is included in the scope of delivery of the encoder.

Prefabrication on MOVIDRIVE®/ inverter end

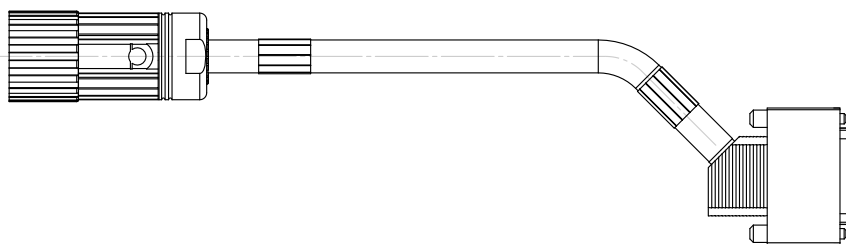
A commercial D-sub EMC connector with pin contacts is used on the inverter end of the prefabricated encoder cable for connection to MOVIDRIVE®. A 9-pin and 15-pin plug is available, depending on the inverter interface.

Cable specification

The used cable types for fixed and cable carrier installation are listed in chapter "Cable specifications for encoder cables" page 389.



Encoder cable with one M23



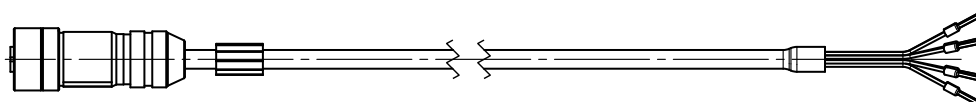
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Figure 11: M23 with sub-D

Prefabrication on encoder/motor end	Prefabricated encoder cables for add-on encoders on DR315 motors are available with a M23 coupling connector with socket contacts on the encoder/motor end.
Prefabrication on MOVIDRIVE®/ inverter end	A commercial sub-D EMC connector with pin contacts is used on the inverter end of the prefabricated encoder cable for connection to MOVIDRIVE®. A 15-pin plug is available that matches the inverter interface.
Cable specification	The used cable types for fixed and cable carrier installation are listed in chapter "Cable specifications for encoder cables" page 389.

12.7 Description of built-in encoder cables for DR motors

Encoder cable with M12



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Figure 12: M12 with conductor end sleeves

Prefabrication on encoder/motor end	Prefabricated encoder cables for built-in encoders on DR motors are available with an 8-pole M12 coupling connector with socket contacts on the encoder/motor end for connection to the terminal box.
Prefabrication on MOVIDRIVE®/ inverter end	Conductor end sleeves are used on the inverter end of the prefabricated encoder cable for connection to the digital inputs (DI02/DI03) of MOVIDRIVE®.
Cable specification	The used cable types for fixed and cable carrier installation are listed in chapter "Cable specifications for encoder cables" page 389.



12.8 Description of extensions of add-on encoder cables for DR motors

Intermediate sockets

Intermediate sockets are used whenever

- Part of the wiring is routed in a cable carrier, or
- Connecting several cable sections is easier for very long distances.

The encoder cables are available with intermediate sockets for this purpose.

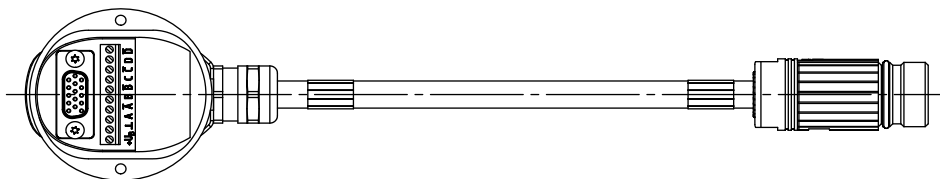


Figure 13: Connection cover with M23

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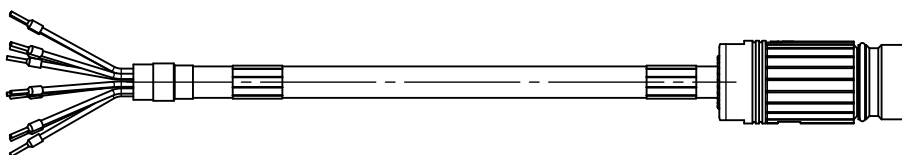


Figure 14: Conductor end sleeve with M23

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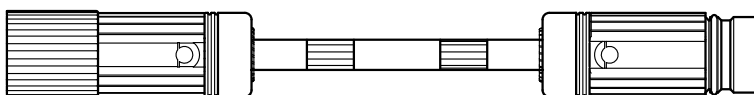


Figure 15: M23 with M23

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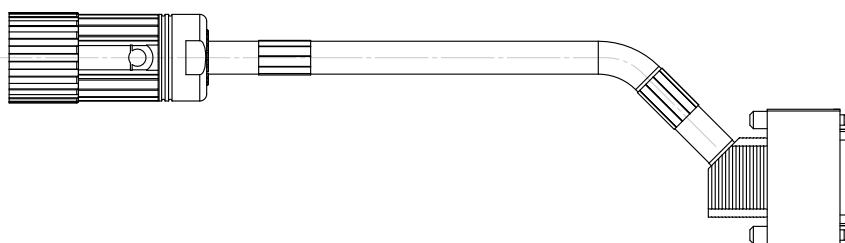


Figure 16: M23 with sub-D

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<i>Prefabrication on encoder/motor end</i>	The prefabricated encoder cables for the add-on encoders on the DR motor are available with two different designs on the encoder/motor end. • Figure 14: If the encoder on the motor is ordered and delivered with a connection cover, the prefabricated cable is fitted with conductor end sleeves on the encoder end. The customer is responsible for connecting the terminal strip in the connection cover. The cable gland in the connection cover is included in the scope of delivery of the encoder. • Figure 13: If the encoder on the motor is ordered and delivered without a connection cover, the prefabricated cable is fitted with a connection cover on the encoder end. Figure 13 and Figure 14: The cables now end in a M23 round plug connector with pin contacts.
<i>Extension</i>	Figure 15: The extension is fitted with 2 M23 round plug connectors. The cable has a coupling plug with socket contacts on the encoder end and a plug with pins on the inverter end.
<i>Prefabrication on MOVIDRIVE®/ inverter end</i>	Figure 16: A commercial sub-D EMC connector with pin contacts on the inverter end of the extension cable is used for connecting MOVIDRIVE®. A 15-pin plug is used that matches the inverter interface.
<i>Cable specification</i>	The used cable types for fixed and cable carrier installation are listed in chapter "Cable specifications for encoder cables" page 389.



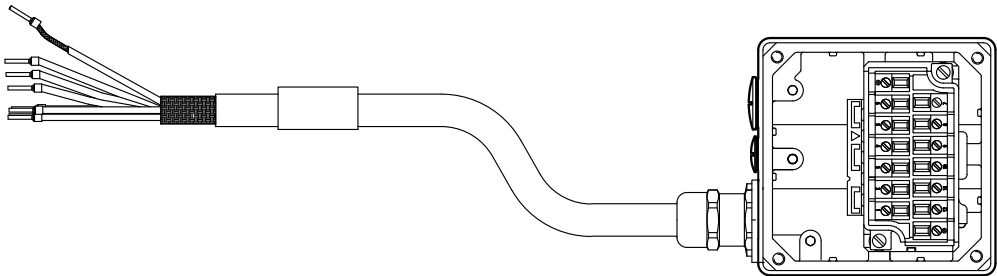
12.9 Power cables for DR motors

Brakemotor cable with IS

Brakemotor types

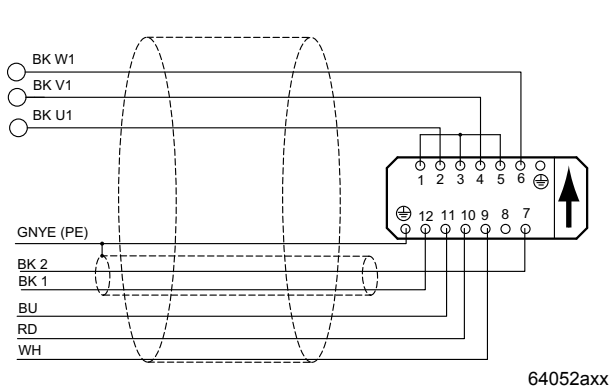
Motor type	Brake type	Plugs
DR.71	BE05, BE1	/ISU
DR.80	BE05, BE1, BE2	
DR.90	BE1, BE2, BE5	
DR.100	BE2, BE5	
DR.112	BE5, BE11	
DR.132	BE5, BE11	

Cable drawing,
wiring

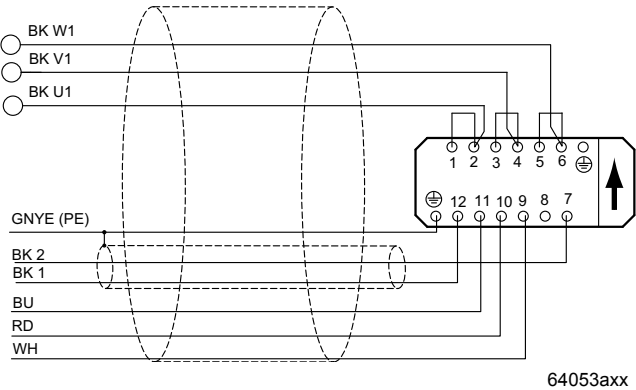


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Figure 17: IS brakemotor cable with motor protection, conductor end sleeves and ring-type cable lugs



Star connection



Delta connection

Part numbers

Variable terminal link	Star connection	Delta connection
	0817 8127	0817 8178



Brakemotor cable for decentralized MOVI-SWITCH®

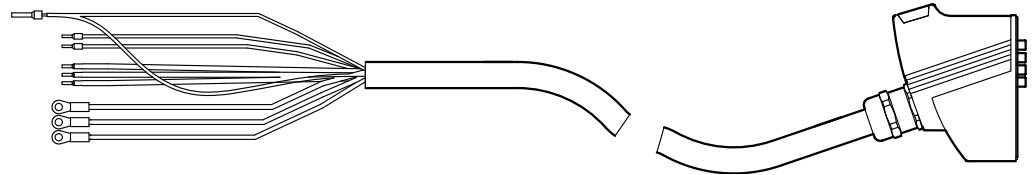
Brakemotor types

Motor type	Brake type	Plugs
DR.71	BE05, BE1	/ISU /ASB4
DR.80	BE05, BE1, BE2	
DR.90	BE1, BE2, BE5	
DR.100	BE2, BE5	

MOVI-SWITCH®

MOVI-SWITCH®	PLUSCON VC	HAN 10E
MSW-2S	.../APG4	.../ALA4

Cable drawing,
wiring

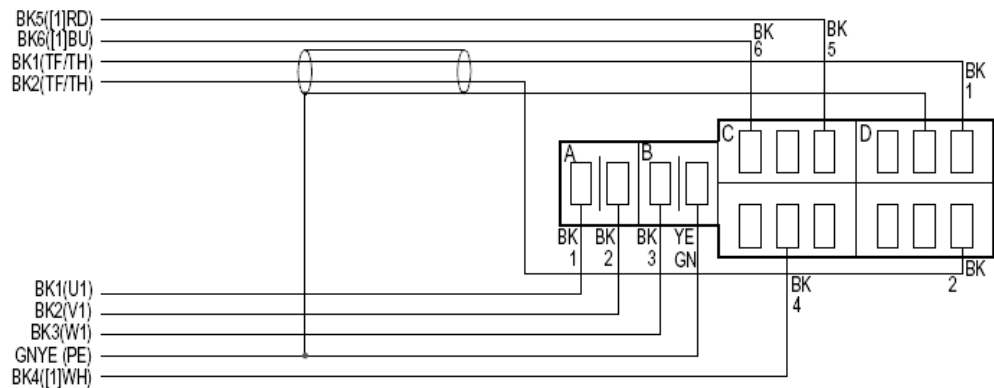


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Figure 18: Brakemotor cable with motor protection; conductor end sleeves/ring-type cable lugs, PLUSCON VC

Conductor end sleeves/ring-type cable lugs, PLUSCON VC

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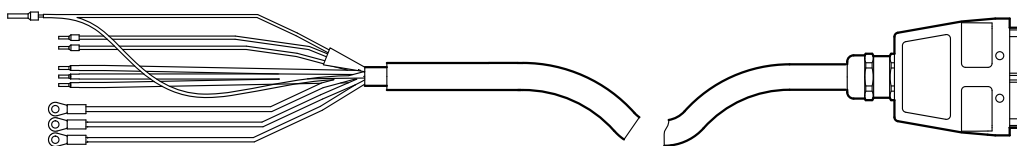


Figure 19: Brakemotor cable with motor protection; conductor end sleeves/ring-type cable lugs, HAN 10E

Conductor end sleeves/ring-type cable lugs, HAN 10E:

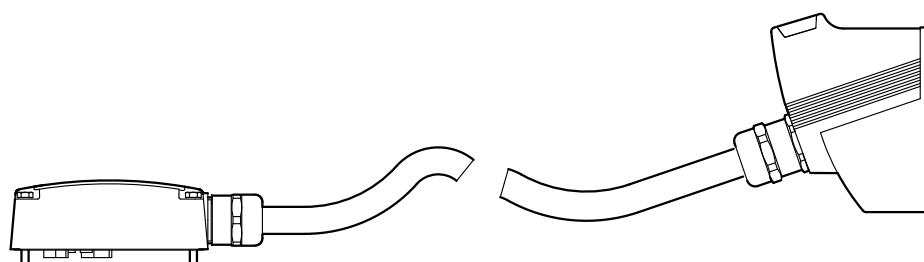
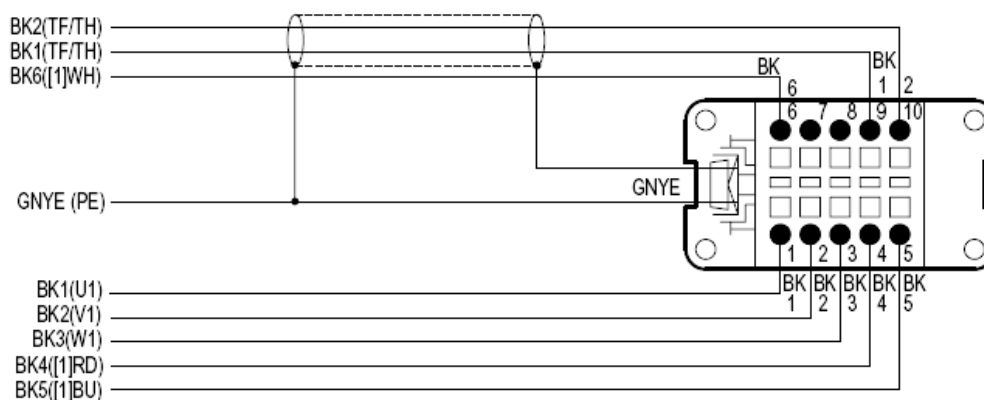
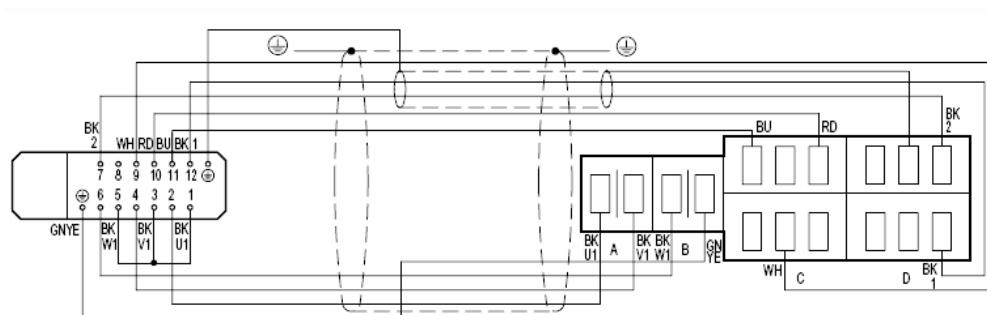
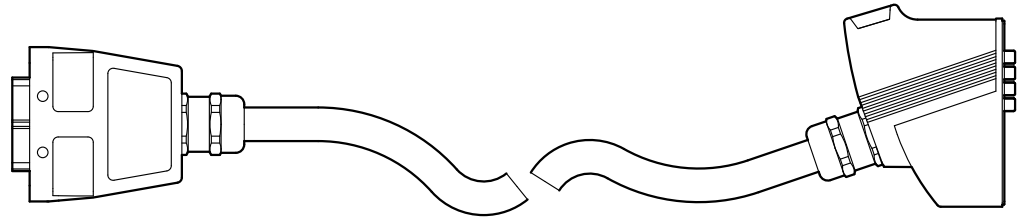


Figure 20: Brakemotor cable with motor protection; IS and PLUSCON VC

IS and PLUSCON VC:

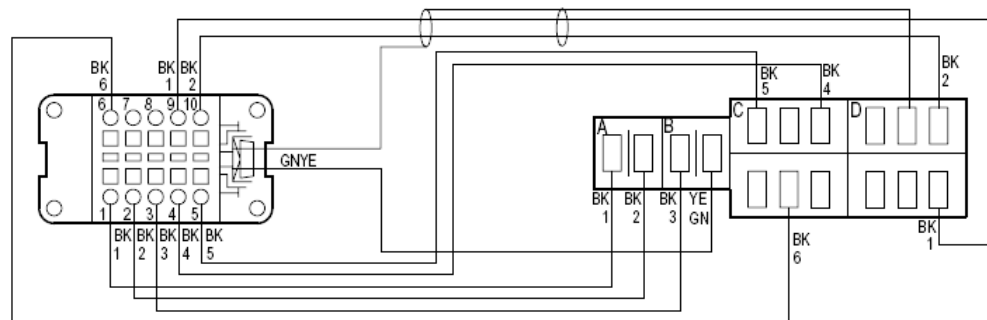




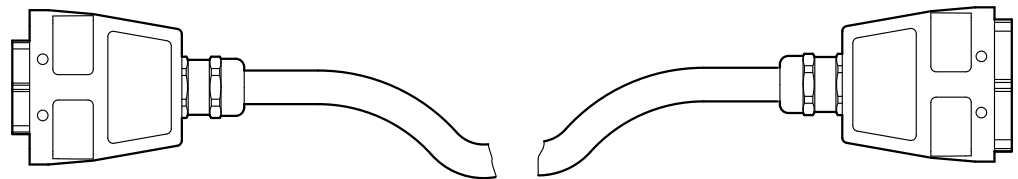
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Figure 21: Brakemotor cable with motor protection; HAN 10E and PLUSCON VC

HAN 10E and PLUSCON VC:



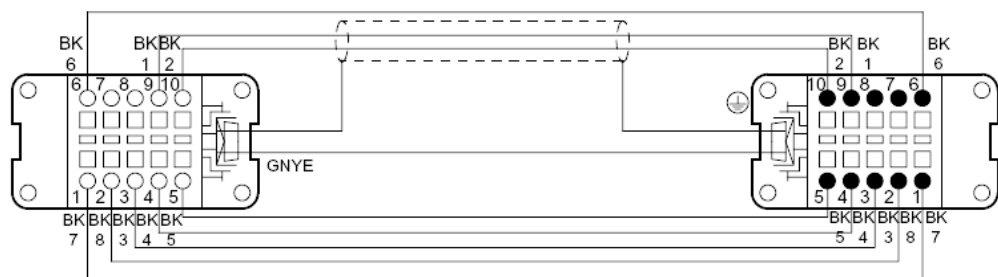
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Figure 22: Brakemotor cable with motor protection; HAN 10E and HAN 10E

HAN 10E and HAN 10E:



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Part numbers

Motor DR.71 - DR.100	MOVI-SWITCH®	
	PLUSCON VC	HAN 10E
	Figure 18: 0417 8879	Figure 19: 0817 8860
	Figure 20: 0593 7558	--
	Figure 21: 0817 8895	Figure 22: 0817 8887

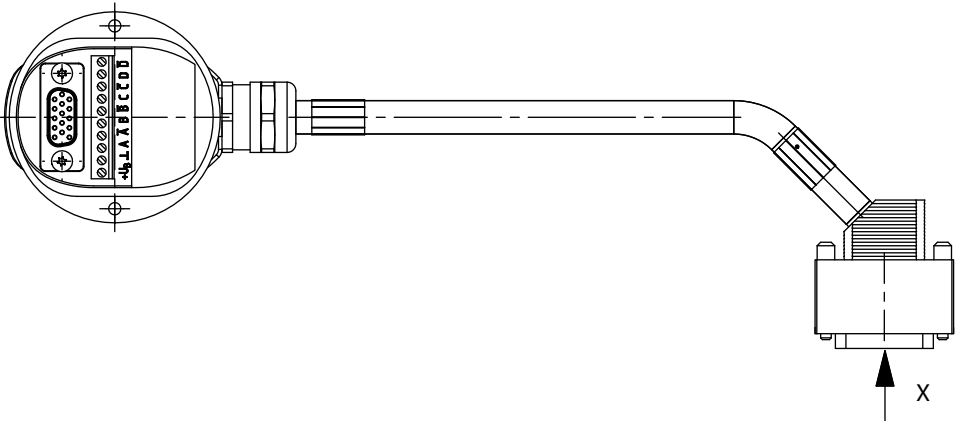
12.10 Add-on encoder cables for DR motors

Encoder cable with D-sub

Prefabricated
cables for
encoders

Encoder types	DR.71 - 132	DR.160 - 225
Sine encoder	ES7S	EG7S
TTL (U _B = DC 9-30 V)	ES7R	EG7R
RS485	AS7W	AG7W

Cable drawing,
wiring



Connector assignment						
A Contact	Signal		Cable Core color	Signal MDX	B Contact	
360° contact A-side			Stranding		360° contact B-side	
A	cos+		Shielding	A	1	
A	cos-		Red (RD)	A	9	
B	sin+		Blue (BU)	B	2	
B	sin-		Yellow (YE)	B	10	
C	C +		Green (GN)	C	3	
C	C -		Brown (BN)	C	11	
D	Data +		White (WH)	D	4	
D	Data -		Black (BK)	D	12	
UB	UB		Violet (VT)	UB	15	
	DGND		Red-blue-gray (RD-BU-GY)		8	
			Gray-pink-pink (GY-PK-PK)			
			Shielding			

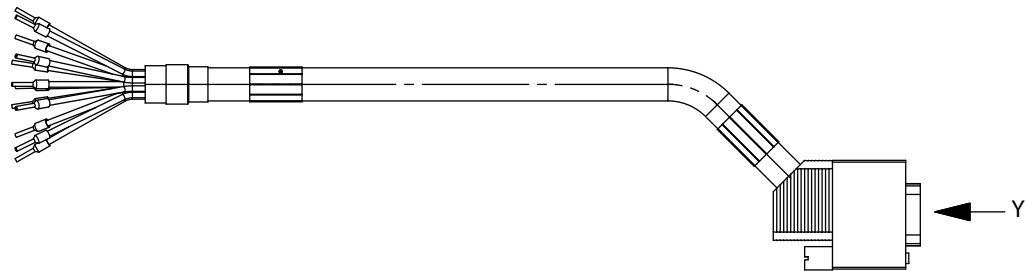


63951aen

Figure 23: Connection cover with sub-D



Cable drawing,
wiring



Connector assignment					
A Contact	Signal		Cable Core color	Signal MDX	B Contact
360°contact A-side		Stranding	Shielding	360°contact B-side	
	A (cos+)		Red (RD)	A (cos+)	1
	A (cos-)		Blue (BU)	A (cos-)	9
	B (sin+)		Yellow (YE)	B (sin+)	2
	B (sin-)		Green (GN)	B (sin-)	10
	C +		Brown (BN)	C +	3
	C -		White (WH)	C -	11
	D +		Black (BK)	D +	4
	D -		Violet (VT)	D -	12
	UB		Red-blue-gray (RD-BU-GY)	UB	15
	GND		Gray-pink-pink (GY-PK-PK)	GND	8
			Shielding		



63980aen

Figure 24: Conductor end sleeves with sub-D

Part numbers

Cable type	Connection cover or conductor end sleeves, D-sub
	Figure 24: 1362 2021
	Figure 23: 1361 7621
	Figure 24: 1362 2048
	Figure 23: 1361 7648

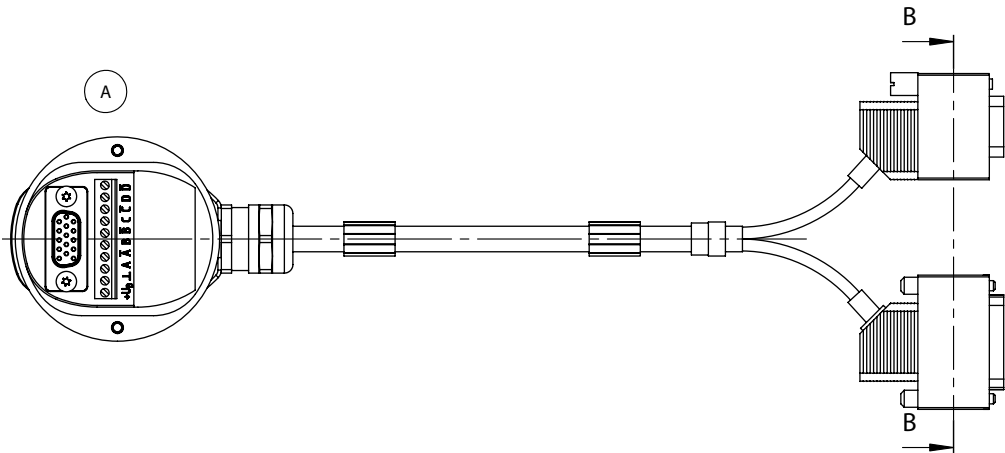


Encoder cable with 2 sub-D

Prefabricated
cables for
encoders

Encoder types	DR.71 - 132	DR.160 - 225	DR.315
M-SSI	AS7Y	AG7Y	AH7Y

Cable drawing,
wiring



A		Connector assignment			B-B	
Contact	Stranding	Cable core color		Signal	Pin	
A	R	Shielding		cos+	1	
A	B	Red (RD)		cos-	9	
B	G	Blue (BU)		sin+	2	
B		Yellow (YE)		sin-	10	
C+		Green (GN)		C+	3	
C-		Brown (BN)		C-	8	
D+		White (WH)		D+	1	
D-		Black (BK)		D-	6	
UB		Violet (VT)		UB	9	
GND		Red-blue-gray (RD-BU-GY)		GND	5	
		Gray-pink-pink (GY-PK-PK)				
		Shielding				

Figure 25: Connection cover with 2 D-sub (1 × 9-pole and 1 × 15-pole)

64138aen



Cable drawing,
wiring

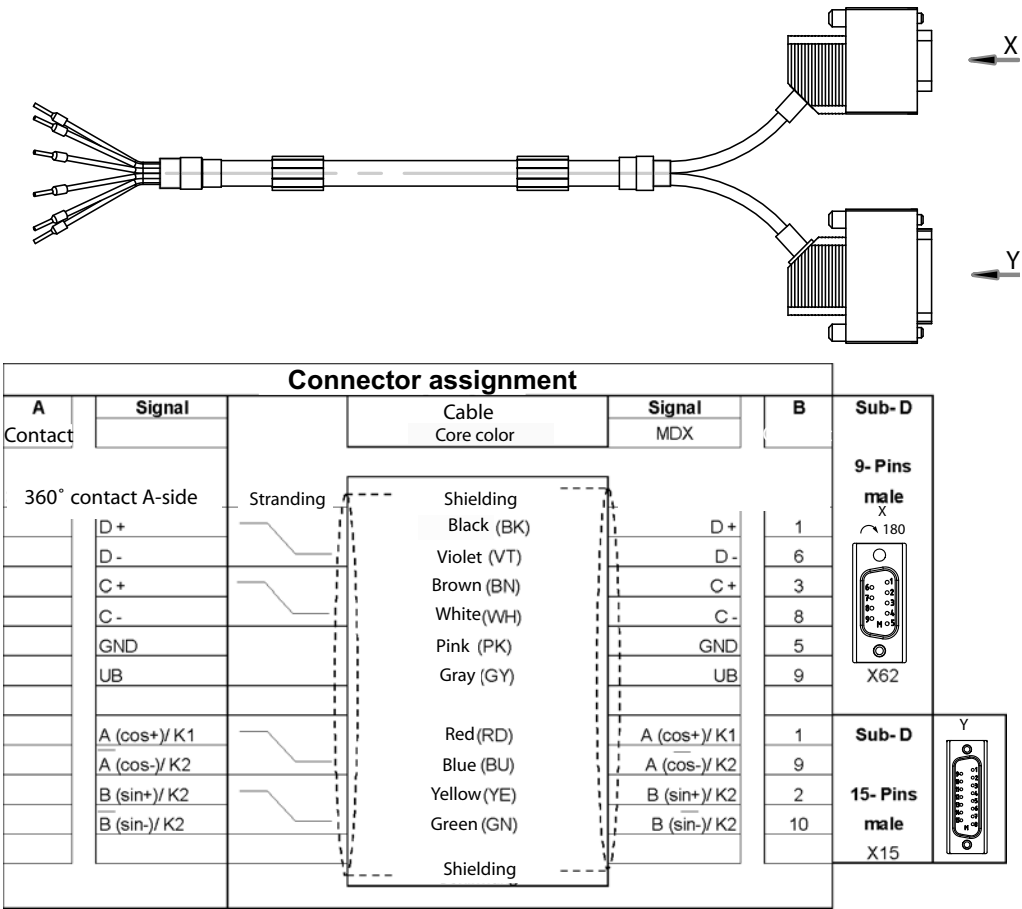


Figure 26: Connector end sleeves with 2 D-sub (1 × 9-pole and 1 × 15-pole)

63956aen

Part numbers

Cable type	Connection cover or conductor end sleeves, 2 × D-sub
	Figure 26: 1360 2640
	Figure 25: 1362 6299
	Figure 26: 1362 3265
	Figure 25: 1362 6302



Encoder cable with one M23

Prefabricated
cables for
encoders

Encoder types	DR.315
Sine encoder	EH7S

Cable drawing,
wiring

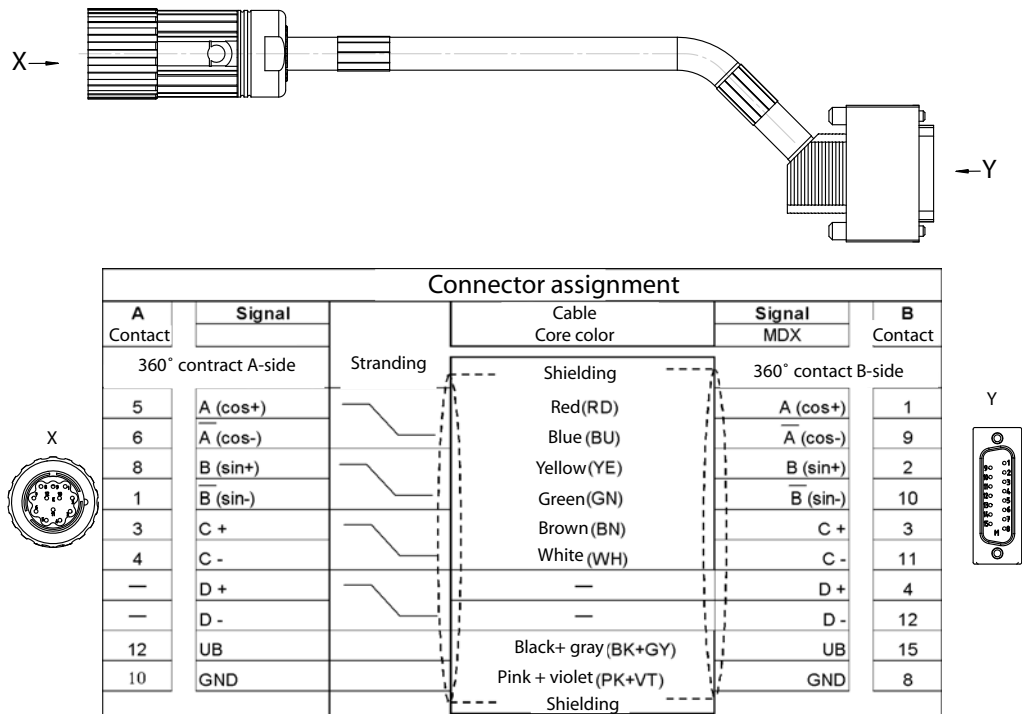


Figure 27: M23 with sub-D

63957aen

Part numbers

Cable type	M23, D-sub 15
	1360 2659
	1362 3206



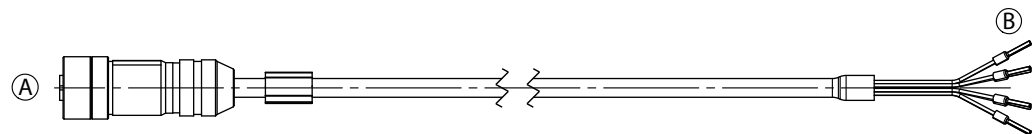
12.11 Built-in encoder cables for DR motors

Encoder cables on a M12

Prefabricated
cables

Encoder types	DR.71 - 132
HTL	EI7C EI76 EI72 EI71

Cable drawing,
wiring



Connector assignment					
A Contact	Signal		Cable Core color	Signal MDX	B Contact
360° contact A-side		Stranding	Shielding	360° contact B-side	
3	A (cos+)		Brown (BN)	A (cos+)	
4	A (cos-)		White(WH)	A (cos-)	
5	B (sin+)		Yellow (YE)	B (sin+)	
6	B (sin-)		Green (GN)	B (sin-)	
7	TF		Red (RD)	TF	
8	TF		Blue (BU)	TF	
1	UB		Gray (GY)	UB	
2	GND		Pink (PK)	GND	
			Shielding		

Figure 28: Encoder cable on a M12

64141aen

Part numbers

Cable type	M12, D-sub 15
	1362 3273
	1362 3281



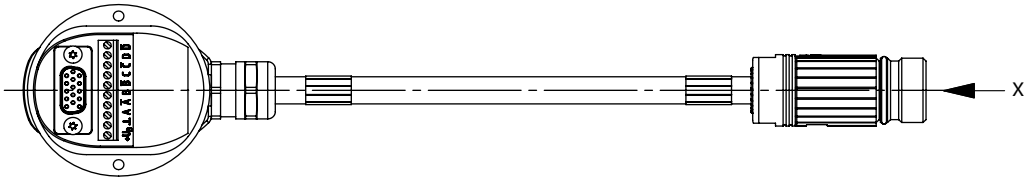
12.12 Extensions for add-on encoder cables for DR motors

Extensions with one M23

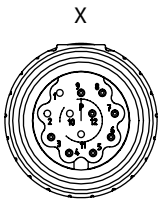
Prefabricated
cables for
encoders

Encoder types	DR.71 - 132	DR.160 - 225
Sine encoder	ES7S	EG7S
TTL ($U_B = DC\ 9-30\ V$)	ES7R	ES7R
RS485	AS7W	AG7W

Cable drawing,
wiring



Connector assignment					
A Contact	Signal		Cable Core color	Signal MDX	B Contact
360° contact A-side		Stranding	Shielding	360° contact B-side	
	A (cos+)		Red (RD)	A (cos+)	3
	A (cos-)		Blue (BU)	A (cos-)	4
	B (sin+)		Yellow (YE)	B (sin+)	5
	B (sin-)		Green (GN)	B (sin-)	6
	C +		Brown (BN)	C +	1
	C -		White (WH)	C -	2
	D +		Black (BK)	D +	8
	D -		Violet (VT)	D -	7
	UB		Red-blue-gray (RD-BU+GY)	UB	12
	GND		Gray-pink-pink (GY-PK+PK)	GND	11
			Shielding		

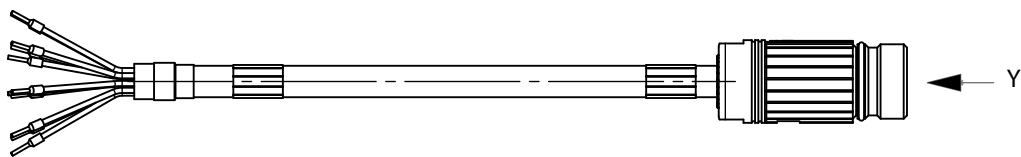


63952aen

Figure 29: Connection cover with M23



Cable drawing,
wiring



Connector assignment						
A	Signal		Cable	Signal	B	
Contact			Core color	MDX	Contact	
360° contact A-side		Stranding	Shielding	360° contact B-side		
	A (cos+)		Red (RD)	A (cos+)	3	
	A (cos-)		Blue (BU)	A (cos-)	4	
	B (sin+)		Yellow (YE)	B (sin+)	5	
	B (sin-)		Green (GN)	B (sin-)	6	
	C +		Brown (BN)	C +	1	
	C -		White (WH)	C -	2	
	D +		Black (BK)	D +	8	
	D -		Violet (VT)	D -	7	
	UB		Red-blue-gray (RD-BU+GY)	UB	12	
	GND		Gray-pink-pink (GY-PK+PK)	GND	11	
			Shielding			



AKUA 020

63979axx

Figure 30: Conductor end sleeves with M23

Part numbers

Cable type	Connection cover or conductor end sleeves, M23
	Figure 30: 1362 3184
	Figure 29: 1362 1963



Prefabricated Cables
Extensions for add-on encoder cables for DR motors

Extensions with two M23

Prefabricated
cables for
encoders

Encoder types	DR.71 - 132	DR.160 - 225
Sine encoder	ES7S	EG7S
TTL ($U_B = \text{DC } 9\text{-}30 \text{ V}$)	ES7R	ES7R
RS485	AS7W	AG7W

Cable drawing,
wiring

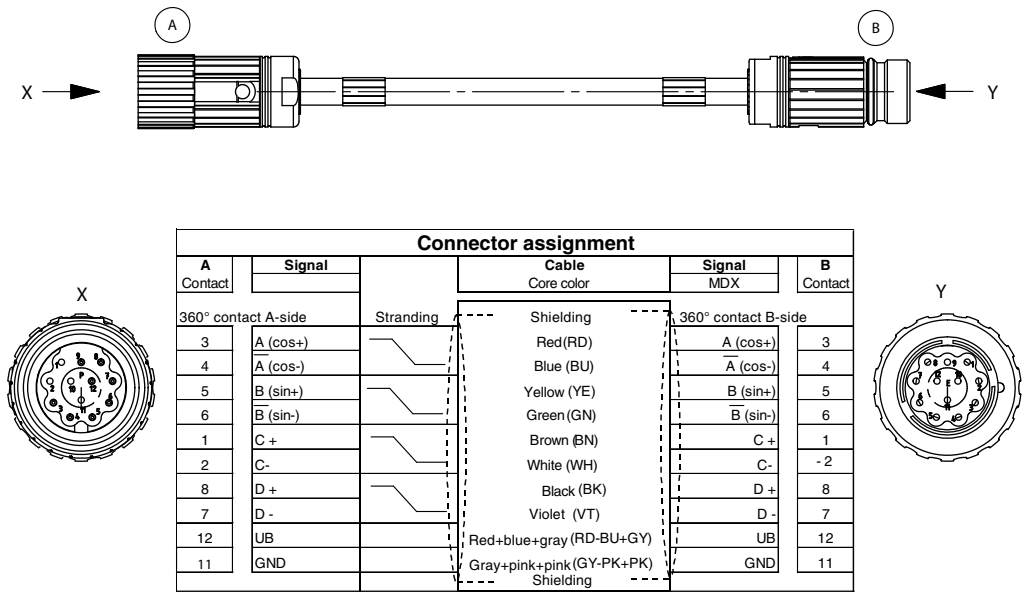


Figure 31:

64142aen

Part numbers

Cable type	M23 - M23
	1362 3192
	1362 1971



Extension with M23 with sub-D

Prefabricated
cables for
encoders

Encoder types	DR.71 - 132	DR.160 - 225
Sine encoder	ES7S	EG7S
TTL ($U_B = DC\ 9-30\ V$)	ES7R	ES7R
RS485	AS7W	AG7W

Cable drawing,
wiring

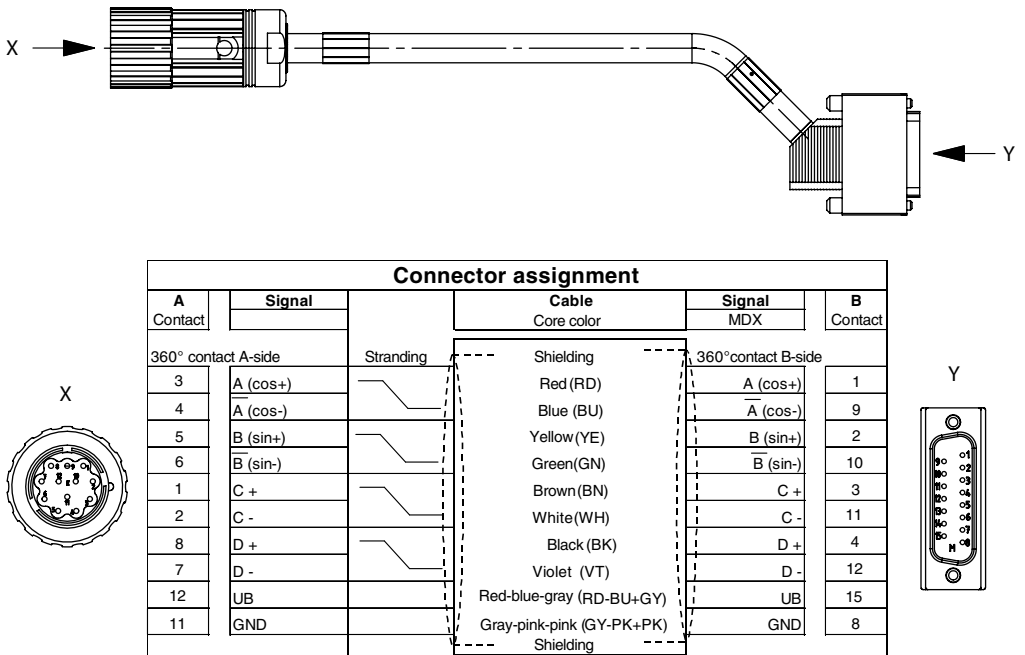


Figure 32: M23 with sub-D

63953aen

Part numbers

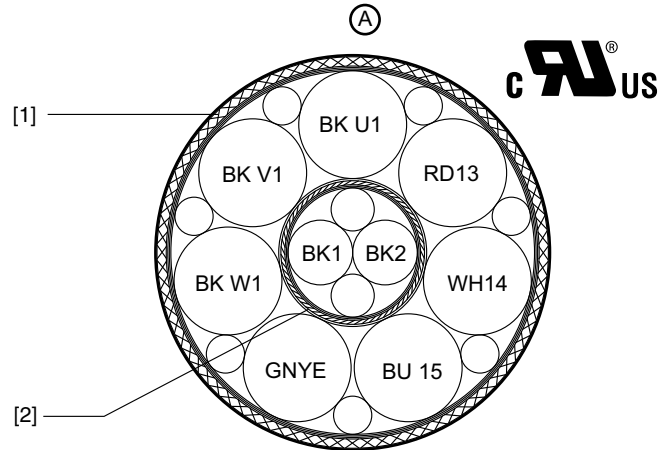
Cable type	M23 – Sub-D
	1362 1998



12.13 Cable specifications of DR. power cables

Cable type A

Mechanical design



55292AXX

Cable type (A) Connection between Z.7 or Z.8 field distributors and AC motors
Connection between MOVIMOT® or MOVI-SWITCH® 2S and AC motors
(for mounting close to the motor)

[1] Overall shield
[2] Shielding

- SEW works standard W3251 (817 953 0)
- Supply cores: 7 x 1.5 mm²
- Control core pair: 2 x 0.75 mm²
- Insulation: TPE-U (polyurethane)
- Conductor: Bare E-Cu strand, extra fine wires with individual wire ≤ 0.1 mm
- Shield: Tinned E-Cu wire.
- Overall diameter: 13.2 - 15.9 mm
- Color of outer cable sheath: Black

Electrical properties

- Conductor resistance for 1.5 mm² (at 20 °C): max. 13 Ω/km
- Conductor resistance for 0.75 mm² (at 20 °C): max. 26 Ω/km
- Operating voltage for 1.5 mm² core: max. 750 V (c  600 V)
- Operating voltage for 0.75 mm² core: max. 350 V (c  600 V)
- Insulation resistance at 20 °C: min. 20 MΩ x km



Mechanical properties

- Suitable for cable carriers
 - Bending cycles > 2.5 million
 - Traveling velocity ≤ 3 m/s
- Bending radius in the cable carrier: 10 x diameter
for fixed routing: 5 x diameter
- Torsional strength (e.g. rotary table applications)
 - Torsion ±180° at a cable length of > 1 m
 - Torsional cycles > 100.000



If reversed bending and high torsional load occur for a length of < 3 m, you must check the mechanical margin conditions more closely. Please contact SEW-EURODRIVE in such cases.

Thermal properties

- Processing and operation: -30 °C to +90 °C (cUL_{us}: -30 °C to +80 °C)
- Transport and storage: -40 °C Up to +90 °C (cUL_{us}: -30 °C to +80 °C)
- Flame-retardant according to UL1581 Vertical Wiring Flame Test (VW1)
- Flame-retardant according to CSA C22.2 Vertical Wiring Flame Test

Chemical properties

- Oil-resistant according to VDE 0472 part 803 method B
- General fuel resistance (such as diesel, gasoline) according to DIN ISO 6722 parts 1 and 2
- General resistance to acids, alkalis, cleaning agents
- General resistance against dusts (e.g. bauxite, magnesite)
- Insulation and cable jacket material is halogen free according to VDE 0472 part 815 as well as silicone free
- Within the specified temperature range, free from substances interfering with wetting agents

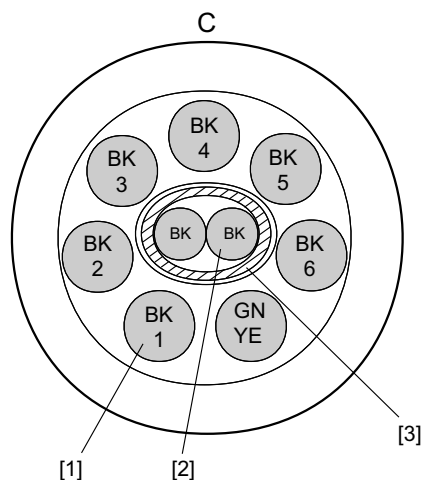


Prefabricated Cables

Cable specifications of DR. power cables

Cable type C

Mechanical design



52790AXX

Cable type © Connection between MOVI-SWITCH® 2S and AC motors
(for mounting close to the motor with option P2.A)

- [1] 2,5 mm cores²
- [2] 0.75 mm cores²
- [3] Shielding

- SEW works standard W3251 (015 207 2)
- Supply cores: 7 x 2.5 mm²
- Control cores: 2 x 0.75 mm²
- Insulation: PVC / special PVC
- Conductor: Fine wires to VDE class 5, copper strand conductor
- Shield: Braided tinned copper shield
- Overall diameter: 15.2 mm

Electrical properties

- Conductor resistance for 2.5 mm²: 8.5 Ω/km
- Conductor resistance for 0.75 mm²: 26 Ω/km
- Operating voltage for 2.5 mm² cores: 600 V/1000 V
- Operating voltage for cores 0.75 mm²: AC 48 V
- Insulation resistance: 20 MΩ x km

Mechanical properties

- Bending radius in the cable carrier: 20 x diameter
- for fixed routing: 6 x diameter

Thermal properties

- Processing and operation:
 - Flexible routing: -5 °C to +70 °C
 - Fixed routing: -30 °C to +80 °C
- Transport and storage: -30 °C Up to +80 °C



12.14 Cable specifications for encoder cables

Fixed installation of feedback cables

Accessory designation		ES7S / EG7S / ES7R / EG7R / ES7C / EG7C / AS7W / AG7W / AH7Y / AS7Y / AG7Y	EH7S / AH7Y / EI7C
Cable cross sections		6 x 2 x 0.25 mm ²	5 x 2 x 0.25 mm ²
Manufacturer		HELUKABEL	
Manufacturer designation		LI9YCY	
Operating voltage V ₀ / V AC	[V]	230 / 350	
Temperature range	[°C]	Fixed installation -40 to +80	
Max. temperature	[°C]	+ 80	
Min. bending radius	[mm]	43	36.5
Diameter D	[mm]	8.6 ± 0.2	7.3 ± 0.2
Core identification		DIN 47 100	
Sheath color		Green, similar to RAL 6018	
Approval(s)		DESINA/VDE/ 	
Capacitance core/shielding	[nF/km]	110	
Capacitance core / core	[nF/km]	70	
Halogen-free		no	
Silicone-free		yes	
CFC-free		yes	
Inner insulation (core)		PP	
Outer insulation (sheath)		PVC	
Flame-retardant/ self-extinguishing		no	
Conductor material		Cu blank	
Shielding		Braided tinned Cu	
Weight (cable)	[kg/km]	107	78

12

Cable carrier installation of feedback cables

Accessory designation		ES7S / EG7S / ES7R / EG7R / ES7C / EG7C / AS7W / AG7W / AH7Y / AS7Y / AG7Y	EH7S / AH7Y	EI7C
Cable cross sections		6 x 2 x 0.25 mm ²	5 x 2 x 0.25 mm ²	4 x 2 x 0.25 mm ²
Manufacturer		Nexans		
Manufacturer designation		SSL18YC11Y 6 x 2 x 0.25/ SSL11YC11Y 5 x 2 x 0.25		
Operating voltage V ₀ / V AC	[V]	300		
Temperature range	[°C]	-20 to +60		-20 to +80
Max. temperature	[°C]	+90 (on conductor)		+80
Min. bending radius	[mm]	100	95	63
Diameter D	[mm]	9.8 ± 0.2	9.5 ± 0.2	8.4 ± 0.2
Maximum acceleration	[m/s ²]	20		
Max. velocity	[m/min]	200		
Core identification		WH/BN, GN/YE, GY/PK, BU/RD, BK/VT, GY-PK/RD- BU	WH/BN, GN/YE, GY/PK, BU/RD, BK/VT	WH/BN, GN/YE, GY/PK
Sheath color		Green similar to RAL 6018		
Approval(s)		DESINA/VDE/ 		
Capacitance core/shielding	[nF/km]	100		110
Capacitance core / core	[nF/km]	55		70

Table continued on next page



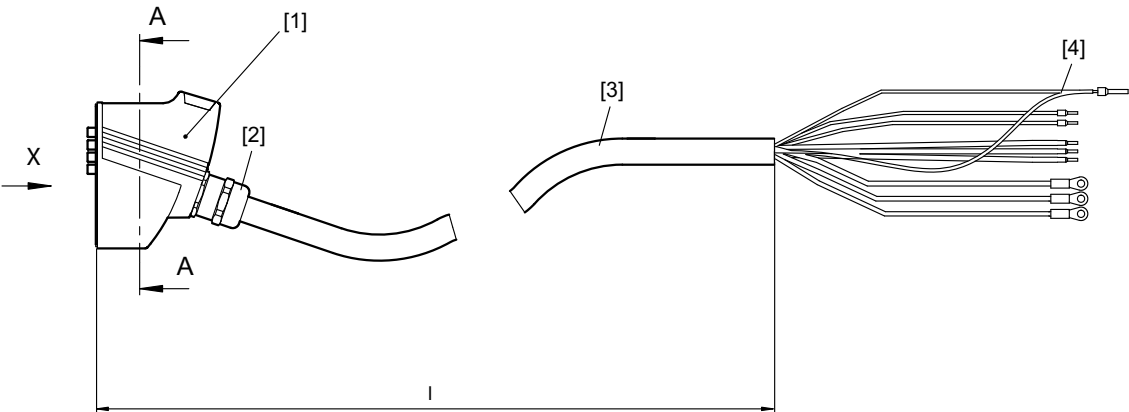
Prefabricated Cables

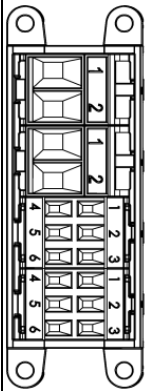
Cable specifications for encoder cables

Accessory designation		ES7S / EG7S / ES7R / EG7R / ES7C / EG7C / AS7W / AG7W / AH7Y / AS7Y / AG7Y	EH7S / AH7Y	EI7C
Cable cross sections		6 x 2 x 0.25 mm ²	5 x 2 x 0.25 mm ²	4 x 2 x 0.25 mm ²
Manufacturer		Nexans		
Halogen-free		yes		
Silicone-free		yes		
CFC-free		yes		
Inner insulation (core)		PP		TPE-EE
Outer insulation (sheath)		TPE-U		PUR
Flame-retardant/self-extinguishing		yes		
Conductor material		E-Cu blank		
Shielding		Braided tinned Cu		
Weight	[kg/km]	130	120	89
Min. bending cycles		≥ 5 million		

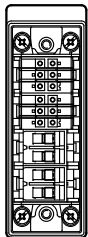


12.15 Prefabricated cables for MOVI-SWITCH®
Cable 0817 8879



A-A		Connector assignm.		B
	Pin	Cable Core color	Signal	Contact
	A1	BK \ U1	U1	CL
	A2	BK \ V1	V1	CL
	B1	BK \ W1	W1	CL
	B2	GNYE \	⏏	CES
	C1	BU \ 15	Brake 15	CES
	C3	RD \ 13	Brake 13	CES
	C5	WH \ 14	Brake 14	CES
	D2	Shielding		
	D3	BK \ 1	24V	CES
	D6	BK \ 2	TF / TH	CES
Cable gland		Shielding		Cable gland
C2, C4, C6, D1, D4, D5			n.c.	

View X

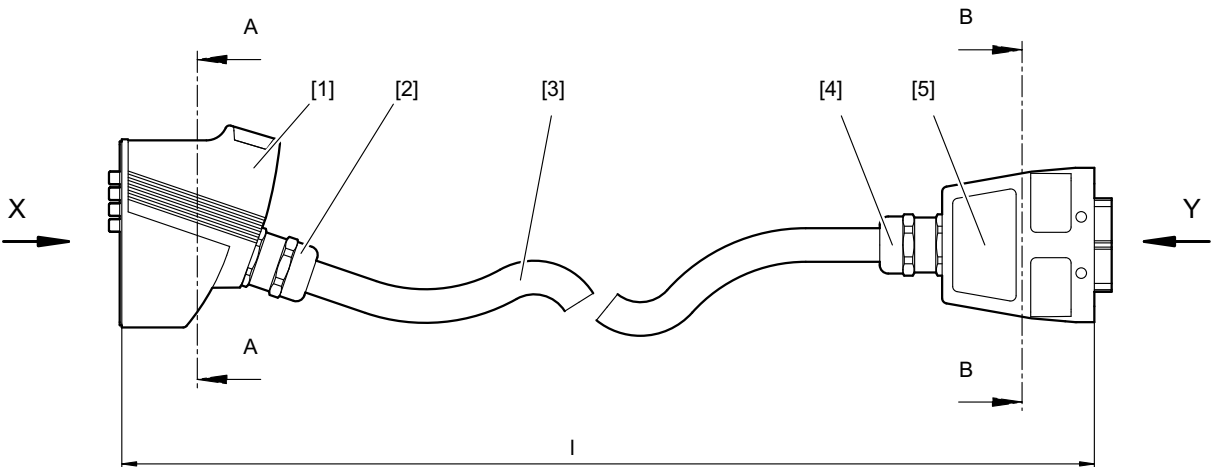


- [1] Phoenix - PLUSCON-VC VARIOCON T3 plug connector, female
- [2] EMC cable gland
- [3] Hybrid cable
- [4] Shield of control core group 2 x 0.75 mm²



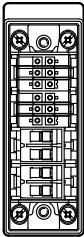
Prefabricated Cables
Prefabricated cables for MOVI-SWITCH®

Cable 0817 8895



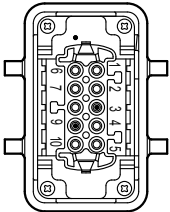
A-A		Connector assignment		B-B	
	Pin	Cable Core color	Signal	Pin	
	A1	BK \ 7	U1	1	
	A2	BK \ 8	V1	2	
	B1	BK \ 3	W1	3	
	B2	GNYE \	⏏	PE-Frame	
	C1	BK \ 6	Brake 15	5	
	C3	BK \ 5	Brake 13	4	
	C5	BK \ 4	Brake 14	6	
	D2	Shielding		PE-Frame	
	D3	BK \ 1	24V	10	
C2, C4, C6, D1, D4, D5	D6	BK \ 2	TF / TH	9	
			n.c.	7, 8	

View X



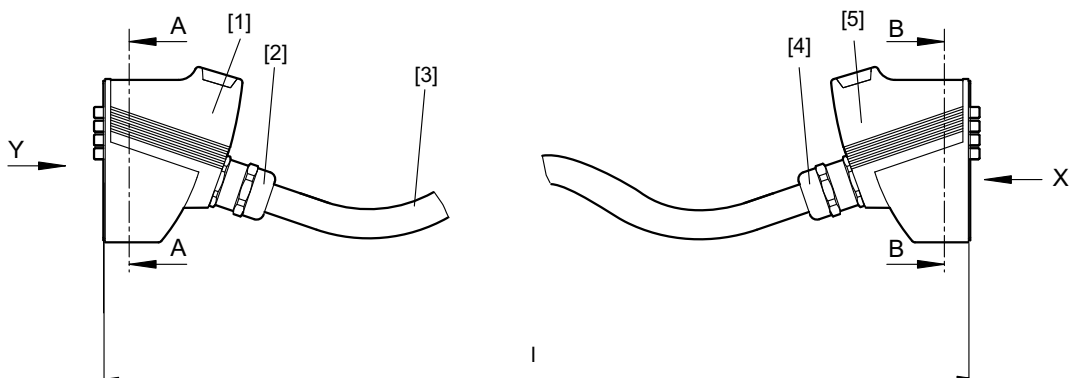
- [1] Phoenix - PLUSCON-VC VARIOCON T3 plug connector, female
- [2] EMC cable gland
- [3] Hybrid cable
- [4] EMC cable gland
- [5] HAN® 10 plug connector, female

View Y



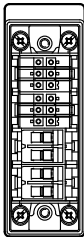


Cable 0186 7415



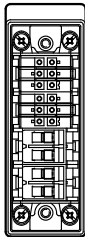
A-A		Connector assignment		B-B	
	Pin	Cable Core color	Signal	Pin	
A	A1	BK \ U1	U1	A1	A
	A2	BK \ V1	V1	A2	
	B1	BK \ W1	W1	B1	
	B2	GNYE \	⏏	B2	
B	C1	BU \ 15	Brake 15	C1	B
	C3	RD \ 13	Brake 13	C3	
	C5	WH \ 14	Brake 14	C5	
C	D2	Shielding (Control cable)		D2	C
	D3	BK \ 1	24V	D3	
D	D6	BK \ 2	TF / TH	D6	D
	Cable gland	Shielding (Outer)		Cable gland	
C2, C4, C6, D1, D4, D5			n.c.	C2, C4, C6, D1, D4, D5	

View Y



- [1] PLUSCON-VC VARIOCON T3 plug connector, female
- [2] EMC cable gland
- [3] Hybrid cable
- [4] EMC cable gland
- [5] PLUSCON-VC VARIOCON T3 plug connector, female

View X

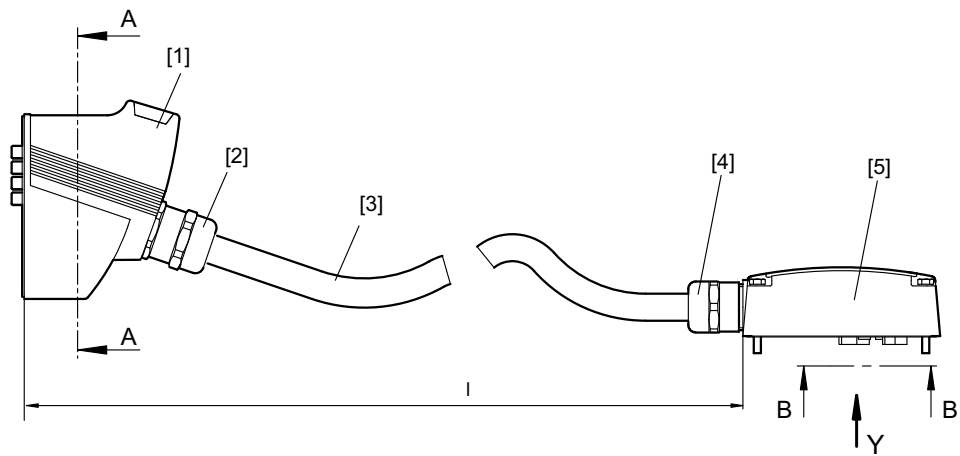




Prefabricated Cables

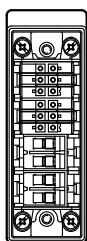
Prefabricated cables for MOVI-SWITCH®

Cable 0593 7558

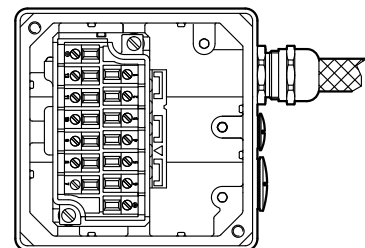


A-A		Connector assignm.			B-B	
	Pin	Cable Core color	Signal	Variable terminal link	Pin	
	A1	BK \ U1	U1		2	
	A2	BK \ V1	V1		4	
	B1	BK \ W1	W1		6	
	B2	GNYE \	PE		PE1	
	C1	BU \ 15	Brake 15		11	
	C3	RD \ 13	Brake 13		10	
	C5	WH \ 14	Brake 14		9	
	C2			E	1	
	C4				3	
	C6				5	
	D2	Shielding (Control cable)			PE2	
	D3	BK \ 1	24V		7	
	D6	BK \ 2	TF / TH		12	
	Cable gland	Shielding (Outer)			Cable gland	
	D1, D4, D5		n.c.		8	

View Y

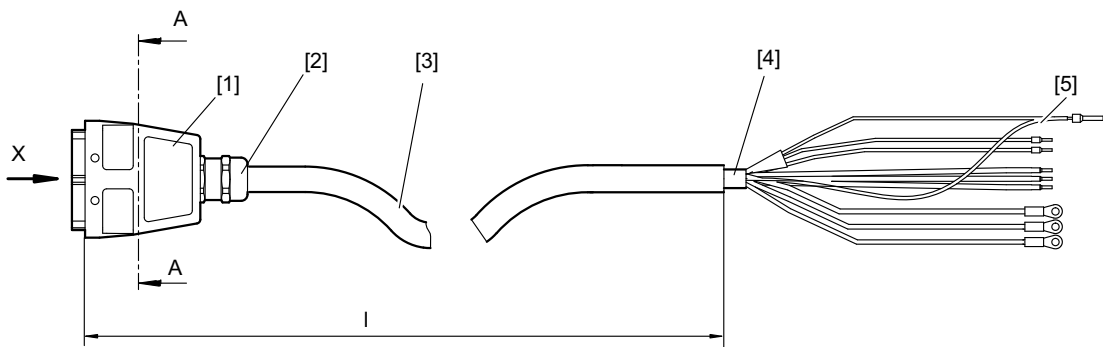


- [1] Phoenix - PLUSCON-VC VARIOCON T3 plug connector, female
- [2] EMC cable gland
- [3] Hybrid cable
- [4] EMC cable gland
- [5] IS upper part



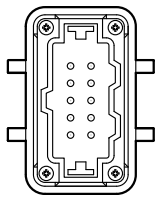


Cable 0817 8860



A-A		Connector assignment		B-B
	Pin	Cable Core color	Signal	Contact
	1	BK \ 7	U1	CL
	2	BK \ 8	V1	CL
	3	BK \ 3	W1	CL
	4	BK \ 5	Brake 13	CES
	5	BK \ 6	Brake 15	CES
	6	BK \ 4	Brake 14	CES
	9	BK \ 1	24V	CES
	10	BK \ 2	TF / TH	CES
	PE-Frame	Shielding (Control cable)		
	PE-Frame	GNYE \	⏏	CES
	7, 8		n.c.	

View X

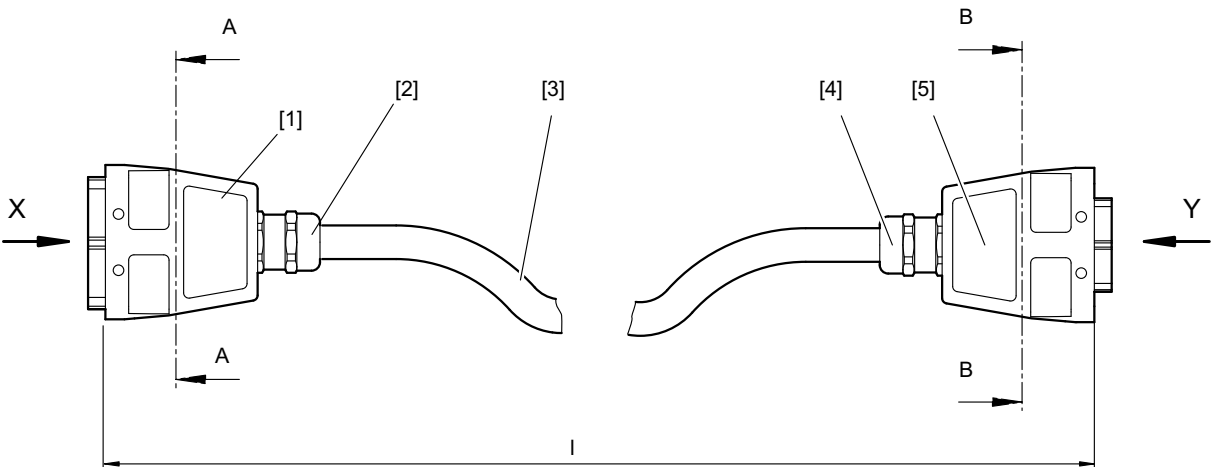


- [1] HAN® 10E plug connector, male
- [2] EMC cable gland
- [3] Hybrid cable
- [4] Stripped braided screen
- [5] Shield of control core group 2 x 0.75 mm²



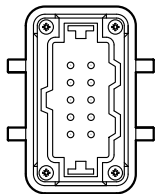
Prefabricated Cables
Prefabricated cables for MOVI-SWITCH®

Cable 0817 8887



A-A		Connector assignment		B-B	
	Pin	Cable Core color	Signal	Pin	
	1	BK \ 7	U1	1	
	2	BK \ 8	V1	2	
	3	BK \ 3	W1	3	
	4	BK \ 5	Brake 13	4	
	5	BK \ 6	Brake 15	5	
	6	BK \ 4	Brake 14	6	
	9	BK \ 1	24V	9	
	10	BK \ 2	TF / TH	10	
	PE-frame	Shielding (Control cable)		PE-frame	
	PE-frame	GNYE \	⏏	PE-frame	
	7, 8		n.c.	7, 8	

View X



- [1] HAN® 10 plug connector, male
- [2] EMC cable gland
- [3] Hybrid cable
- [4] EMC cable gland
- [5] HAN® 10 plug connector, female

View Y

