8ECH0005.1111A-0

Information:

Due to their assembly, these cables can only be used with the following ACOPOS P3 servo drives:

- **8EI1X6xxSxx.xxxx-1**
- **8EI2X2xxxxx.xxxx-1**
- **8EI4X5xxxxx.xxxx-1**
- **8EI8X8xxxxx.xxxx-1**

1 General information

- Can be used in cable drag chains
- Motor and encoder lines in one cable
- Assembled specifically for use with ACOPOS P3 servo drives and B&R servo motors with option "Single-cable solution (hybrid)"
- speedtec - Innovative connector system for secure connections

2 Order data

Order number	Short description	Figure
	1.5 mm² hybrid motor cables	
8ECH0005.1111A-0	ACOPOS P3 hybrid motor cable, length 5 m, 4x 1.5 mm² + 2x 0.75 mm² + 2x 0.30 mm² + 2x 2x 0.15 mm², 13-pin female speedtec hybrid motor connector size 1, can be used in cable drag chains	

Table 1: 8ECH0005.1111A-0 - Order data

3 Technical data

Order number	8ECH0005.1111A-0
General information	
Cable cross section	4x 1.5 mm² + 2x 0.75 mm² + (2x 1x 0.30 mm² + 2x 2x 0.15 mm²)
Durability	Oil resistance per EN 60811-2-1 [1]
Certification [2]	UL AWM style 21223, 80°C, 1000 V and CSA C22.2 no. 210 I/II A/B FT1 UL AWM style 22381, 90°C, 1000 V and CSA C22.2 no. 210 I/II A/B FT1 UL AWM style 21209, 90°C, 1000 V and CSA C22.2 no. 210 I/II A/B FT1
Certifications	
CE	Yes
UKCA	Yes
Cable construction	
Power lines	
Quantity	4
Wire insulation	PP
Wire colors	Black, brown, blue, yellow/green
Variant	Copper stranded wire
Cross section	1.5 mm²
Shield	No
Stranding	No
Supply lines	
Quantity	2
Wire insulation	PP
Wire colors	White/Blue, white/green
Variant	Tinned copper stranded wire
Cross section	0.75 mm²
Shield	No
Stranding	No

Table 2: 8ECH0005.1111A-0 - Technical data

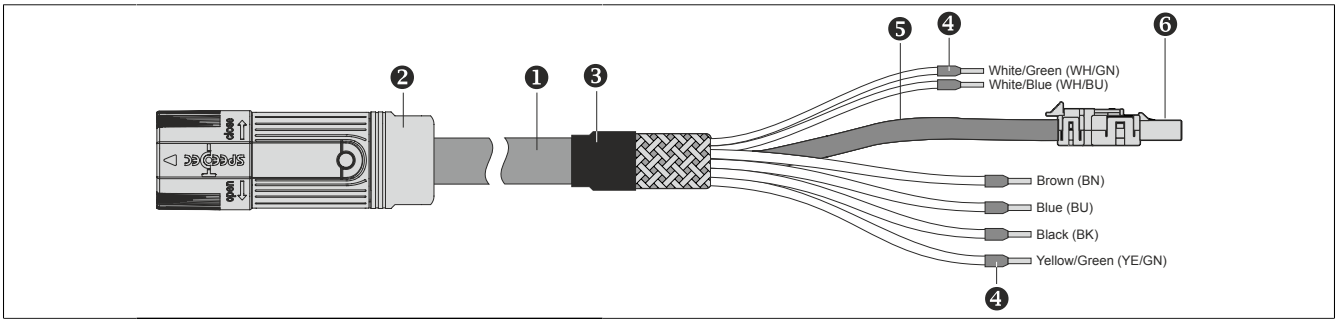
Order number	8ECH0005.1111A-0
Signal line	
Quantity	6
Wire insulation	PP
Wire colors	Brown/Green, white/green, gray/pink, yellow/violet
Variant	2x copper stranded wire, 4x tinned copper stranded wire
Cross section	2x 0.30 mm², 4x 0.15 mm²
Shield	Tinned copper braiding, optical coverage >85% and foil shield
Stranding	Brown/Green with white/green, pink with gray and yellow with violet
Cable stranding	With filler elements and foil shield
Cable shield	Tinned copper braiding, optical coverage >85% and foil shield
Outer jacket	
Material	PUR
Color	Orange, similar to RAL 2003 flat
Labeling	B&R 4x1.5 + 2x0.75 + (2x2x26AWG + 2x1x24AWG) * E130266 * cRUus AWM STYLE 21223 * AWM I/II A/B 80°C 1000 V FT1 [1]
Connector	
Type	13-pin female speedtec hybrid motor connector
Mating cycles	<500
Contacts	13
Additional connectors	8-pin male Mini I/O encoder connector Mating cycles: <1500 Contacts: 8 Degree of protection per EN 60529: IP30 when connected
Degree of protection per EN 60529	IP66/67 when connected
Electrical properties [1]	
Test voltage	
Wire - Wire	4 kV
Wire - Shield	4 kV
Conductor resistance	
Power lines	≤13.3 Ω/km
Supply lines	≤26 Ω/km
Signal line	0.30 mm²: ≤68 Ω/km, 0.15 mm²: ≤140 Ω/km
Insulation resistance	≥200 MΩ*km
Current-carrying capacity per DIN VDE 0298 part 4, table 11	
Wall mounting	20.2 A
Installed in conduit or cable duct	17.8 A
Installed in cable tray	20.9 A
Ambient conditions [1]	
Temperature	
Moving	-20°C to +90°C
Static	-20°C to +90°C
Mechanical properties [1]	
Dimensions	
Length	5 m
Diameter	13 mm ±0.4 mm
Bend radius	
Single bend	>40 mm
Moving	≥100 mm
Drag chain data	
Acceleration	Max. 50 m/s² (depends on the length of the travel path)
Flex cycles	≥3,000,000
Speed	Max. 300 m/min
Weight	1.2 kg

Table 2: 8ECH0005.1111A-0 - Technical data

1) Values refer to the raw cable being used.
2) Depends on the raw cable used.

4 Wiring

4.1 Cable construction



Pos.	Description	Note
1	Hybrid cable	8ECHxxxx.1111A-0: 4 x 1.5 mm² + 2 x 0.75 mm² + (2 + 1 x 0.30 mm² + 2 x 2 x 0.15 mm²) 8ECHxxxx.1312A-0: 4 x 4.0 mm² + 2 x 1 mm² + (2 x 1 x 0.30 mm² + 2 x 2 x 0.15 mm²)
2	13-pin female circular connector	Dimensions: ø 28 x 80 mm
3	Heat shrink tubing	
4	Wire end sleeves	
5	Heat shrink tubing	
6	Mini I/O encoder connector	Dimensions: 11 x 8 x 33 mm

Table 3: Hybrid motor cables - Cable construction

4.2 Pinout

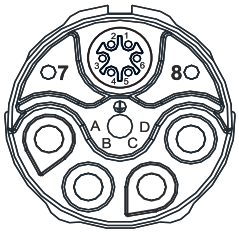
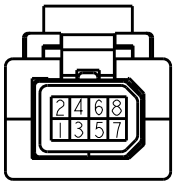
Circular connector	Pin	Description	Function	Pin	Mini I/O connector
	1	U+	Encoder power supply +12 V	1	
	2	COM	Encoder power supply 0 V	7	
	3	D	Data	6	
	4	D\	Data inverted	8	
	5	T	Clock output	2	
	6	T\	Clock output inverted	4	
	7	B-	Brake 0 V	-	
	8	B+	Brake +24 V	-	
	A	U	Motor connection U	-	
	B	V	Motor connection V	-	
	C	W	Motor connection W	-	
	D	-	-	-	
	⏚	PE	Protective ground conductor	-	

Table 4: Hybrid motor cables - Pinout

4.3 Cable diagram

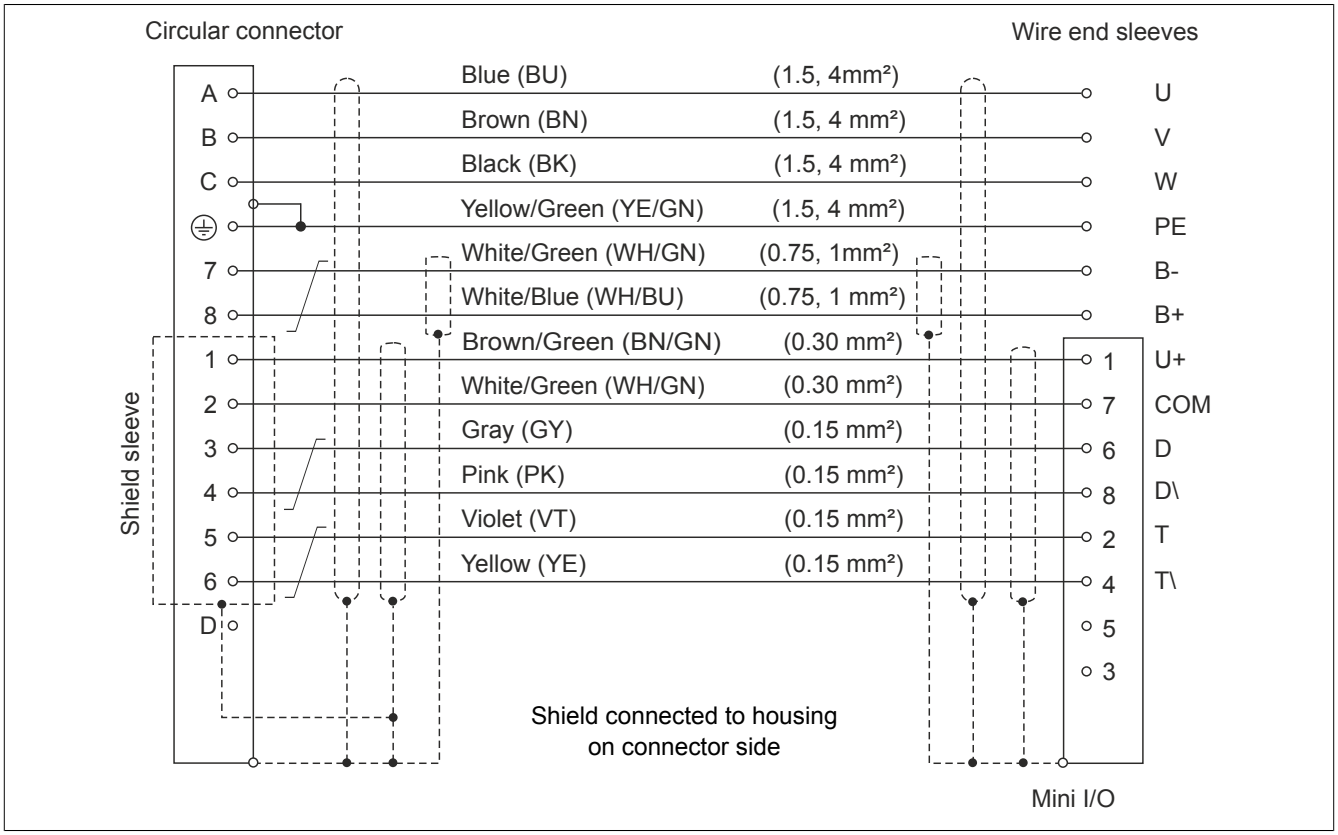


Figure 1: Hybrid motor cables - Cable diagram