8BCS0020.1111A-0

1 General information

- UL/CSA listed
- Can be used in cable drag chains
- Assembled specifically for use with ACOPOSmulti drive systems and B&R servo motors
- speedtec - Innovative connector system for secure connections

2 Order data

Model number	Short description	Figure
	SinCos cables	
8BCS0020.1111A-0	ACOPOSmulti SinCos cable, length 20 m, 10x 0.14 mm² + 2x 0.5 mm², SinCos 12-pin female speedtec connector, 15-pin male DSUB servo connector, can be used in cable drag chains, UL/CSA listed	

Table 1: 8BCS0020.1111A-0 - Order data

3 Technical data

Model number	8BCS0020.1111A-0
General information	
Cable cross section	5x 2x 0.14 mm² + 1x 2x 0.50 mm²
Durability	Oil resistance per VDE 0472 Part 803 as well as standard hydraulic oils [1)]
Certification	UL AWM style 20963, 80°C, 30 V, E63216 and CSA AWM I/II A/B, 90°C, 30 V, FT1 LL46064 [1)]
Certifications	
CE	Yes
Cable construction	
Supply lines	
Quantity	2
Wire insulation	Special thermoplastic material
Wire colors	White/Green, white/red
Design	Tinned copper stranded wire
Cross section	0.5 mm²
Shield	No
Stranding	White/Red with white/green and filler elements
Signal lines	
Quantity	10
Wire insulation	Special thermoplastic material
Wire colors	Blue, brown, yellow, gray, green, pink, red, black, violet, white
Design	Tinned copper stranded wire
Cross section	0.14 mm²
Shield	No
Stranding	Green with brown, gray with yellow, white with violet, black with red, pink with blue
Cable stranding	With terminating foil shield
Complete shielding	Copper braiding, optical coverage >85% and foil shield
Outer jacket	
Material	PUR
Color	Green, similar to RAL 6018 flat
Labeling	BERNECKER + RAINER 5x2x0.14+2x0.50 FLEX UL AWM STYLE 20963 80°C 30 V E63216 CSA AWM I/II A/B 90°C 30 V FT1 LL46064 [1)]
Connector	
Type	12-pin female speedtec SinCos connector
Connection cycles	<500
Contacts	12
Additional connectors	15-pin male DSUB servo connector Connection cycles: <200 Contacts: 15 Degree of protection per EN 60529: IP20 when connected
Degree of protection per EN 60529	IP66/67 when connected
Electrical characteristics [1)]	
Operating voltage	≤30 V_{eff}

Table 2: 8BCS0020.1111A-0 - Technical data

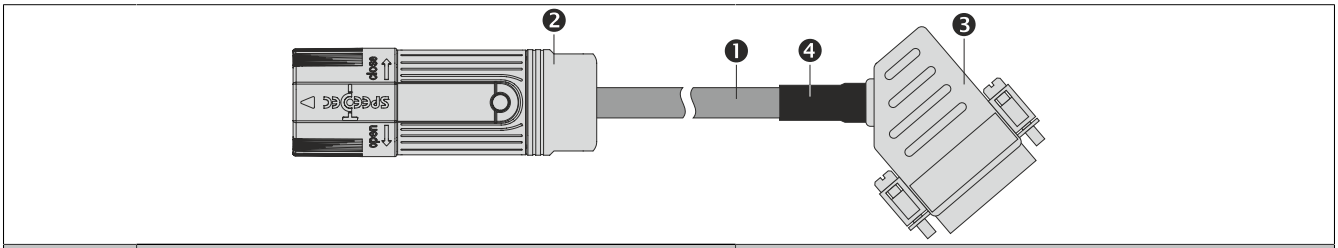
Model number	8BCS0020.1111A-0
Test voltage	
Wire/Wire	1 kV
Wire/Shield	0.8 kV
Conductor resistance	
Supply lines	≤40 Ω/km
Signal lines	≤140 Ω/km
Insulation resistance	>200 MΩ*km
Environmental conditions [1]	
Temperature	
Moving	-20°C to +80°C
Static	-20°C to +90°C
Mechanical characteristics [1]	
Dimensions	
Length	20 m
Diameter	7.85 mm ± 0.2 mm
Bend radius	
Single bend	≥24 mm
Moving	≥60 mm
Drag chain data	
Acceleration	≤6 g
Flex cycles [2]	>3,000,000
Speed	≤4 m/s
Weight	1.6 kg

Table 2: 8BCS0020.1111A-0 - Technical data

1) Values refer to the raw cable being used.
2) At an ambient temperature of 20°C and bend radius of 65 mm.

4 Wiring

4.1 Construction



Pos.	Description	Note
1	Encoder line	10x 0.14 mm² + 2x 0.50 mm²
2	12-pin female SinCos connector	
3	DSUB housing 45°, metal plated, 15-pin male connector	
4	Heat shrink tubing	

Table 3: 8BCS SinCos cables - Construction

4.2 Pinout

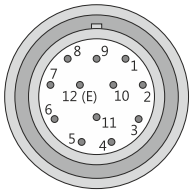
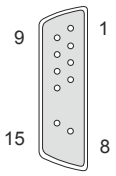
Circular connector	Pin	Description	Function	Pin	DSUB connector
	5	A	Channel A	1	
	10	COM	Encoder power supply 0 V	2	
	8	B	Channel B	3	
	12	+5 V out / 0.3 A	Encoder power supply +5 V	4	
	4	R\	Reference pulse inverted	7	
	6	A\	Channel A inverted	9	
	11	Sense COM	Sense input 0 V	10	
	1	B\	Channel B inverted	11	
	2	Sense +5 V	Sense input +5 V	12	
	3	R	Reference pulse	14	

Table 4: 8BCS SinCos cables - Pinout

4.3 Cable diagram

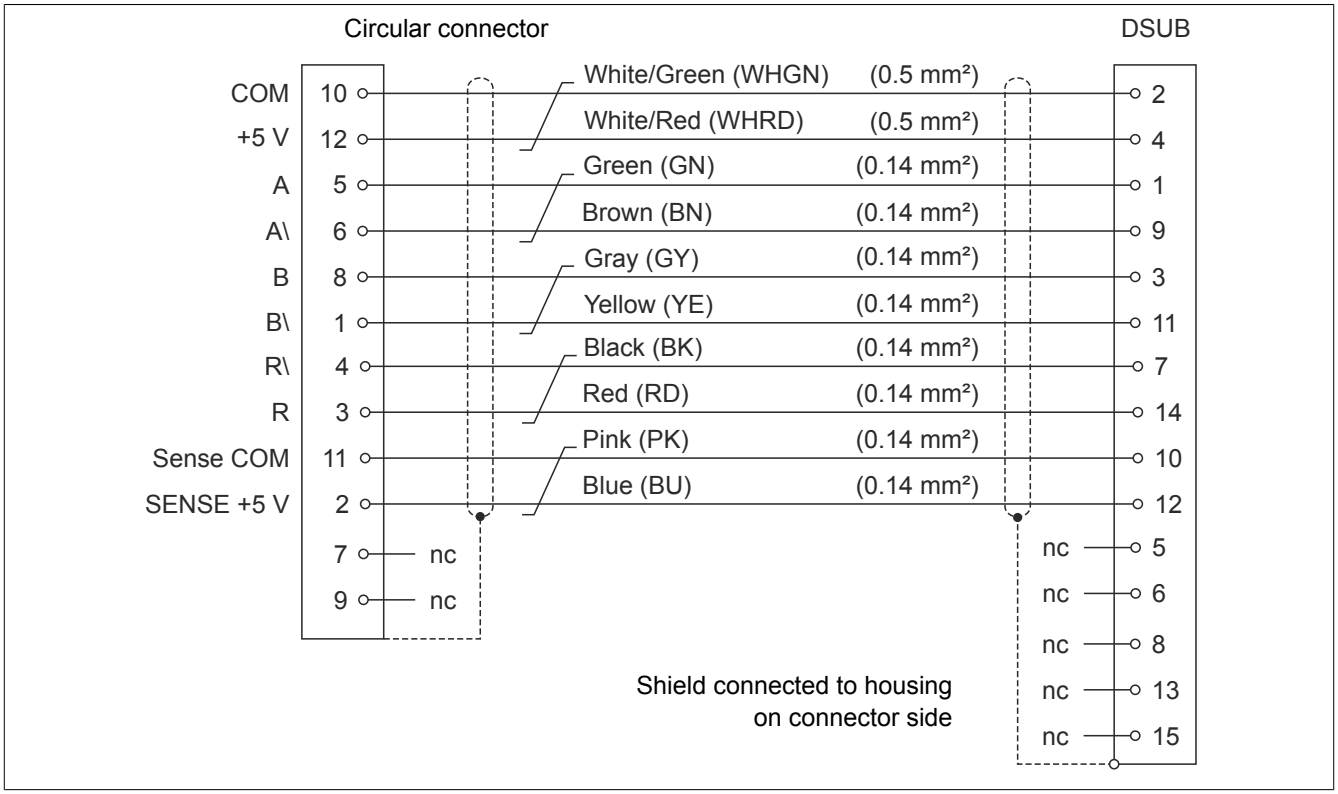


Figure 1: 8BCS SinCos cables - Cable diagram