

SSI - Hybrid cables and cable extensions

1 General information

Hybrid cables and various cable extensions are available for connecting highly dynamic 8WS series micro servo motors to ACOPOSmicro power inverters with an SSI absolute encoder interface from B&R.

Properties

- UL listed
- Can be used in cable drag chains
- Motor and encoder lines in one cable
- Assembled specifically for use with ACOPOSmicro power inverters and B&R servo motors with option "Single-cable solution (hybrid)"

2 8BCM00X5.1B48E-0 - SSI hybrid cable

2.1 Order data

Model number	Short description	Figure
8BCM00X5.1B48E-0	Accessories 8WS/ACOPOSmicro hybrid motor cable, length 0.5 m, ((2x(2x26AWG) + 2x24AWG)C + 3x16AWG)C, female 12+3-pin Itec hybrid motor connector, can be used in cable drag chains	

Table 1: 8BCM00X5.1B48E-0 - Order data

2.2 Technical data

Model number	8BCM00X5.1B48E-0
General information	
Cable cross section	((2x(2x26AWG) + 2x24AWG)C + 3x16AWG)C
Durability	Oil resistance per EN 60811-404
Certification	UL AWM style 20233, 80°C, 300 V
Cable construction	
Power lines	
Quantity	3
Wire insulation	TPE
Wire colors	Red, black, white
Design	Copper stranded wire
Cross section	1.31 mm ²
Shield	No
Stranding	No
Signal lines	
Quantity	6
Wire insulation	TPE
Wire colors	Green, pink, yellow, gray, red, blue
Design	Copper stranded wire
Cross section	4x 0.128 mm ² , 2x 0.205 mm ²
Shield	Tinned copper braiding, optical coverage >85% and foil shield
Stranding	2 pairs + 2 conductors with filler elements and foil shield
Cable stranding	1 element + 3 conductors with filler elements and foil shield
Complete shielding	Tinned copper braiding, optical coverage >85% and fleece shield
Outer jacket	
Material	PUR
Color	Black
Labeling	8BCM00X5.1B48E-0 Rev.C0 L = 500 mm 5015519-00-0 01/18 W www.br-automation.com B&R, 5142 Eggelsberg, Austria
Connector	
Type	12+3-pin female series 915 hybrid motor connector

Table 2: 8BCM00X5.1B48E-0 - Technical data

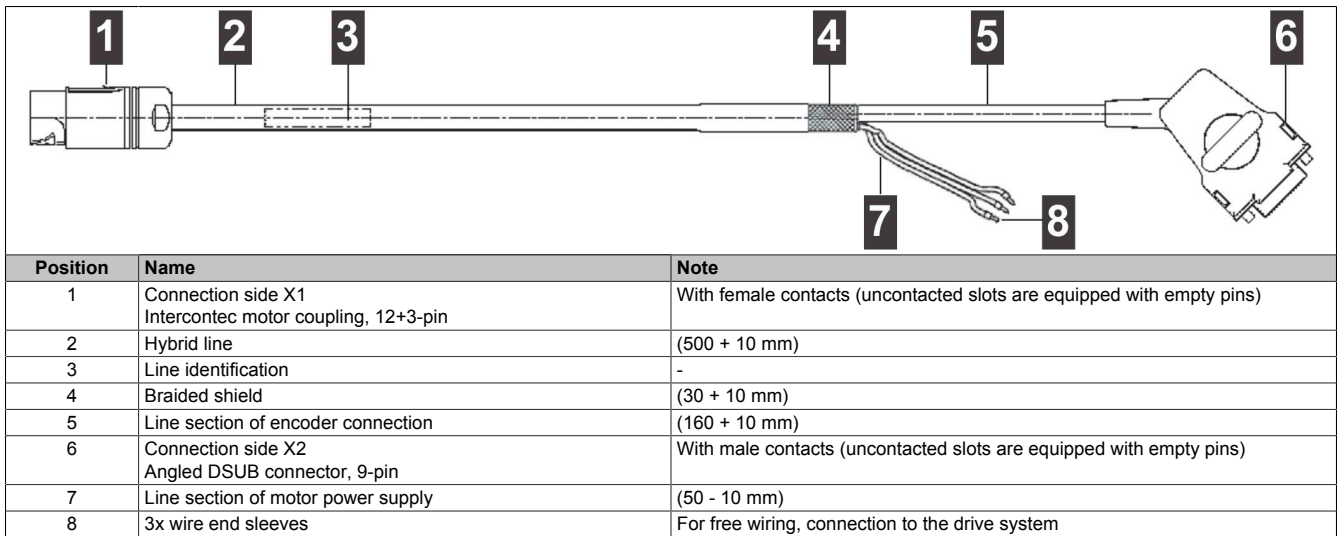
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Model number	8BCM00X5.1B48E-0
Connection cycles	<500
Contacts	15
Additional connectors	9-pin male DSUB connector Connection cycles: <500 Contact: 9 Degree of protection per EN 60529: IP20 when connected
Degree of protection per EN 60529	IP66/67 when connected
Electrical characteristics	
Test voltage	
Wire/Wire	2 kV
Wire/Shield	1.5 kV
Conductor resistance	
Power lines	≤87 Ω/km
Signal lines	≤137 Ω/km
Insulation resistance	>200 MΩ/km
Environmental conditions	
Temperature	
Moving	-20 to 80°C
Static	-40 to 80°C
Mechanical properties	
Dimensions	
Length	0.5 m
Diameter	(8.7 ± 0.3) mm
Bend radius	
Single bend	≥3x diameter
Moving	≥10x diameter
Drag chain data	
Acceleration	2 m/s ²
Flex cycles	1,000,000
Speed	3 m/s
Weight	0.63 kg

Table 2: 8BCM00X5.1B48E-0 - Technical data

2.3 Wiring

2.3.1 Cable construction



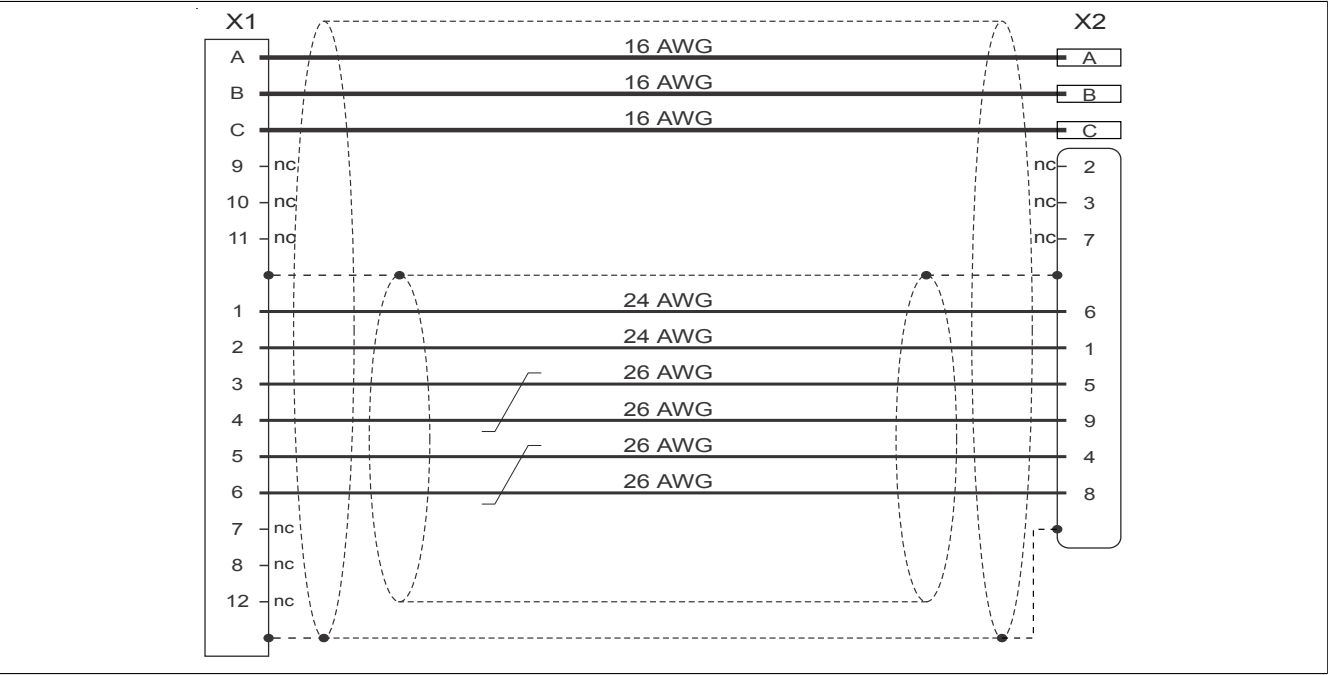
Information:

At least the last 300 mm on connection side X2 (drive side) must be laid statically!

2.3.2 Pinout

Connection X1 (motor)	Pin	Name	Color	Function	Pin	Connection X2 (drive)
	A	Mot.Ph.U	Red	Motor connection U	A	Wire end sleeves
	B	Mot.Ph.V	White	Motor connection V	B	
	C	Mot.Ph.W	Black	Motor connection W	C	
	9	n.c.	-	Not connected	2	
	10	n.c.	-	Not connected	3	
	11	n.c.	-	Not connected	7	
	1	GND	-	Encoder power supply GND	6	
	2	U+ / 5 V	-	Encoder power supply 5 V	1	
	3	T	-	Clock output	5	
	4	T\	-	Clock output inverted	9	
	5	D	-	Data	4	
	6	D\	-	Data inverted	8	
	7	n.c.	-	Not connected	-	
	8	n.c.	-	Not connected	-	
	12	n.c.	-	Not connected	-	

2.3.3 Cable diagram



3 8BCM00xx.1B470-0 cable extensions

3.1 Order data

	
Model number	Short description
Accessories	
8BCM0003.1B470-0	8WS hybrid motor cable extension, length 3 m, ((3x(2x26AWG)+(2x24AWG))C+3x26AWG+3x16AWG)C, 12+3-pin ltec hybrid motor connector, can be used in cable drag chains
8BCM0005.1B470-0	8WS hybrid motor cable extension, length 5 m, ((3x(2x26AWG)+(2x24AWG))C+3x26AWG+3x16AWG)C, 12+3-pin ltec hybrid motor connector, can be used in cable drag chains
8BCM0010.1B470-0	8WS hybrid motor cable extension, length 10 m, ((3x(2x26AWG)+(2x24AWG))C+3x26AWG+3x16AWG)C, 12+3-pin ltec hybrid motor connector, can be used in cable drag chains
8BCM0015.1B470-0	8WS hybrid motor cable extension, length 15 m, ((3x(2x26AWG)+(2x24AWG))C+3x26AWG+3x16AWG)C, 12+3-pin ltec hybrid motor connector, can be used in cable drag chains

Table 3: 8BCM0003.1B470-0, 8BCM0005.1B470-0, 8BCM0010.1B470-0, 8BCM0015.1B470-0 - Order data

3.2 Technical data

Model number	8BCM0003.1B470-0	8BCM0005.1B470-0	8BCM0010.1B470-0	8BCM0015.1B470-0
General information				
Cable cross section	((3x(2x26AWG)+(2x24AWG))C + 3x26AWG + 3x16AWG)C			
Durability	Oil resistance per EN 60811-404			
Certification	UL AWM style 20233, 80°C, 300 V			
Cable construction				
Power lines				
Quantity	3			
Wire insulation	TPE			
Wire colors	Red, black, white			
Design	Copper stranded wire			
Cross section	1.31 mm²			
Shield	No			
Stranding	No			
Supply lines				
Quantity	3			
Wire insulation	TPE			
Wire colors	Brown, orange, yellow			
Design	Copper stranded wire			
Cross section	0.128 mm²			
Shield	No			
Stranding	No			
Signal lines				
Quantity	8			
Wire insulation	TPE			
Wire colors	Green, pink, yellow, gray, brown, white, red, blue			
Design	Copper stranded wire			
Cross section	6x 0.128 mm², 2x 0.205 mm²			
Shield	Tinned copper braiding, optical coverage >85% and foil shield			
Stranding	4 pairs with filler elements and foil shield			
Cable stranding	1 element + 6 conductors with filler elements and foil shield			
Complete shielding	Tinned copper braiding, optical coverage >85% and fleece shield			
Outer jacket				
Material	PUR			
Color	Black			
Connector				
Type	12+3-pin female hybrid motor connector 915			
Connection cycles	<500			
Contacts	15			
Additional connectors	12+3-pin male series 915 hybrid motor connector			
Degree of protection per EN 60529	IP66/67 when connected			
Electrical characteristics				
Test voltage				
Wire/Wire	2 kV			
Wire/Shield	1.5 kV			
Conductor resistance				
Power lines	≤87 Ω/km			
Signal lines	≤137 Ω/km			
Insulation resistance	>200 MΩ/km			

Table 4: 8BCM0003.1B470-0, 8BCM0005.1B470-0, 8BCM0010.1B470-0, 8BCM0015.1B470-0 - Technical data

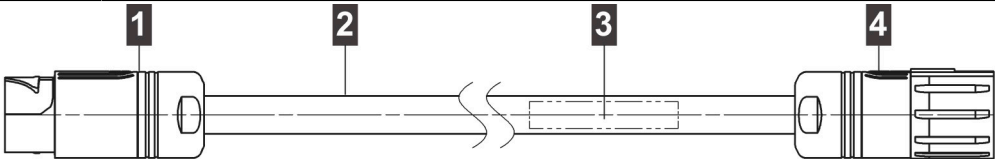
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Model number	8BCM0003.1B470-0	8BCM0005.1B470-0	8BCM0010.1B470-0	8BCM0015.1B470-0
Environmental conditions				
Temperature				
Moving	-20 to 80°C			
Static	-40 to 80°C			
Mechanical properties				
Dimensions				
Length	3 m	5 m	10 m	15 m
Diameter	(9.7 ± 0.3) mm			
Bend radius				
Single bend	≥3x diameter			
Moving	≥10x diameter			
Drag chain data				
Acceleration	2 m/s²			
Flex cycles	1,000,000			
Speed	3 m/s			
Weight	0.51 kg	0.81 kg	1.56 kg	2.31 kg

Table 4: 8BCM0003.1B470-0, 8BCM0005.1B470-0, 8BCM0010.1B470-0, 8BCM0015.1B470-0 - Technical data

3.3 Wiring

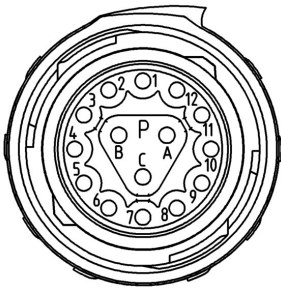
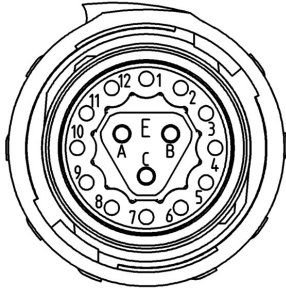
3.3.1 Cable construction

			
Position	Quantity	Name	Note
1	1	12+3-pin INTERCONTEC coupling	With female contacts (uncontacted slots are equipped with empty pins)
2	1	Hybrid line (5000 + 100 mm)	$((3 \times (2 \times 26 \text{ AWG}) + (2 \times 24 \text{ AWG}))C + 3 \times 26 \text{ AWG} + 3 \times 16 \text{ AWG})C$
3	1	Line identification	-
4	1	12+3-pin INTERCONTEC male connector	With male contacts (uncontacted slots are equipped with empty pins)

Information:

Relevant standards must be observed during installation!

3.3.2 Pinout

Connection Y (coupling)	Pin	Name	Function	Connection X (male connector)
	A	U	Motor connection U	
	B	V	Motor connection V	
	C	W	Motor connection W	
	9	-	-	
	10	-	-	
	11	-	-	
	1	GND	Encoder power supply GND	
	2	U+ / 5 V	Encoder power supply 5 V	
	3	T	Clock output	
	4	T\	Clock output inverted	
	5	D	Data	
	6	D\	Data inverted	
	7	-	-	
	8	-	-	
	12	n.c.	Not connected	

3.3.3 Cable diagram

