





## B&R Basic Power Cable Part Numbers

Excerpt from Cable Section of the 8MS Motor User's Manual:

### Size 1 Power Cables:

Model Number	Short Description	Image	
<b>Motor Cables 1.5 mm<sup>2</sup> 1)</b>			
8CM005.12-1	Motor cable, length 5m, 4 x 1.5mm <sup>2</sup> + 2 x 2 x 0.75mm <sup>2</sup> , Motor connector 8pin Intercontec socket, can be used in cable drag chains, UL/CSA listed		
8CM007.12-1	Motor cable, length 7m, 4 x 1.5mm <sup>2</sup> + 2 x 2 x 0.75mm <sup>2</sup> , Motor connector 8pin Intercontec socket, can be used in cable drag chains, UL/CSA listed		
8CM010.12-1	Motor cable, length 10m, 4 x 1.5mm <sup>2</sup> + 2 x 2 x 0.75mm <sup>2</sup> , Motor connector 8pin Intercontec socket, can be used in cable drag chains, UL/CSA listed		
8CM015.12-1	Motor cable, length 15m, 4 x 1.5mm <sup>2</sup> + 2 x 2 x 0.75mm <sup>2</sup> , Motor connector 8pin Intercontec socket, can be used in cable drag chains, UL/CSA listed		
8CM020.12-1	Motor cable, length 20m, 4 x 1.5mm <sup>2</sup> + 2 x 2 x 0.75mm <sup>2</sup> , Motor connector 8pin Intercontec socket, can be used in cable drag chains, UL/CSA listed		
8CM025.12-1	Motor cable, length 25m, 4 x 1.5mm <sup>2</sup> + 2 x 2 x 0.75mm <sup>2</sup> , Motor connector 8pin Intercontec socket, can be used in cable drag chains, UL/CSA listed		
<b>Motor Cables 4 mm<sup>2</sup> 2)</b>			
8CM005.12-3	Motor cable, length 5m, 4 x 4mm <sup>2</sup> + 2 x 2 x 1mm <sup>2</sup> , Motor connector 8pin Intercontec socket, can be used in cable drag chains, UL/CSA listed		
8CM007.12-3	Motor cable, length 7m, 4 x 4mm <sup>2</sup> + 2 x 2 x 1mm <sup>2</sup> , Motor connector 8pin Intercontec socket, can be used in cable drag chains, UL/CSA listed		
8CM010.12-3	Motor cable, length 10m, 4 x 4mm <sup>2</sup> + 2 x 2 x 1mm <sup>2</sup> , Motor connector 8pin Intercontec socket, can be used in cable drag chains, UL/CSA listed		
8CM015.12-3	Motor cable, length 15m, 4 x 4mm <sup>2</sup> + 2 x 2 x 1mm <sup>2</sup> , Motor connector 8pin Intercontec socket, can be used in cable drag chains, UL/CSA listed		
8CM020.12-3	Motor cable, length 20m, 4 x 4mm <sup>2</sup> + 2 x 2 x 1mm <sup>2</sup> , Motor connector 8pin Intercontec socket, can be used in cable drag chains, UL/CSA listed		
8CM025.12-3	Motor cable, length 25m, 4 x 4mm <sup>2</sup> + 2 x 2 x 1mm <sup>2</sup> , Motor connector 8pin Intercontec socket, can be used in cable drag chains, UL/CSA listed		

### 2.1.2 Pin assignments for 8CMxxx.12-1, 8CMxxx.12-3

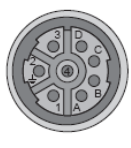
Circular connector	Pin	Description	Function
	1	U	Motor connection U
	4	V	Motor connection V
	3	W	Motor connection W
	2	PE	Protective ground conductor
	A	T+	Temperature +
	B	T-	Temperature -
	C	B+	Brake +
	D	B-	Brake -

Table 78: Pin assignments for motor cable 8CMxxx.12-1, 8CMxxx.12-3

### Exlar Recommends the following B&R Power Cables:

All Cables include Therm(KTY84) and Brake Leads


#### 8CMxxx.12-1 for use with:

GSM20, GSM30  
GSX20, GSX30  
SLM060, SLM090  
SLG060, SLG090

#### 8CMxxx.12-3 for use with:

GSM40,  
GSX40, GSX50  
SLM115, SLM142  
SLG115

### Size 1.5 Power Cables

Model Number	Short Description	Image
<b>Motor Cables 10 mm<sup>2</sup> 3)</b>		
8CM005.12-5	Motor cable, length 5m, 4 x 10mm <sup>2</sup> + 2 x 2 x 1.5mm <sup>2</sup> , Motor connector 8pin Intercontec socket, can be used in cable drag chains, UL/CSA listed	
8CM007.12-5	Motor cable, length 7m, 4 x 10mm <sup>2</sup> + 2 x 2 x 1.5mm <sup>2</sup> , Motor connector 8pin Intercontec socket, can be used in cable drag chains, UL/CSA listed	
8CM010.12-5	Motor cable, length 10m, 4 x 10mm <sup>2</sup> + 2 x 2 x 1.5mm <sup>2</sup> , Motor connector 8pin Intercontec socket, can be used in cable drag chains, UL/CSA listed	
8CM015.12-5	Motor cable, length 15m, 4 x 10mm <sup>2</sup> + 2 x 2 x 1.5mm <sup>2</sup> , Motor connector 8pin Intercontec socket, can be used in cable drag chains, UL/CSA listed	
8CM020.12-5	Motor cable, length 20m, 4 x 10mm <sup>2</sup> + 2 x 2 x 1.5mm <sup>2</sup> , Motor connector 8pin Intercontec socket, can be used in cable drag chains, UL/CSA listed	
8CM025.12-5	Motor cable, length 25m, 4 x 10mm <sup>2</sup> + 2 x 2 x 1.5mm <sup>2</sup> , Motor connector 8pin Intercontec socket, can be used in cable drag chains, UL/CSA listed	

### 2.1.4 Pin Assignments for 8CMxxx.12-5

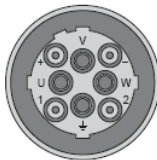
Circular connector	Pin	Description	Function
	U	U	Motor connection U
	V	V	Motor connection V
	W	W	Motor connection W
	PE	PE	Protective ground conductor
	1	T+	Temperature +
	2	T-	Temperature -
	+	B+	Brake +
	-	B-	Brake -

Table 79: Pin assignments for motor cables 8CMxxx.12-5

### Exlar Recommends the following B&R Power Cables:

All Cables include Therm(KTY84) and Brake Leads

#### 8CMxxx.12-5 for use with:

GSX60, SLM180

\*When selecting part numbers other than Exlar recommends, please consult your B&R Representative, Distributor or Agent.



### 'M' Manufacturers Connector Option with BR2 Feedback:

EnDat Absolute Encoder motor connections excerpt from Wiring Section of the 8MS Motor User's Manual:

#### 1.2.1 EnDat


EnDat	Pin	Description	Function
	1	Sense +5V	Sense input +5 V
	2	---	---
	3	---	---
	4	Sense COM	Sense input 0 V
	5	---	---
	6	---	---
	7	+5V out / 0.25A	Encoder supply +5 V
	8	T	Clock output
	9	T̄	Clock output inverted
	10	COM (1, 3 - 9, 11, 13 - 15)	Encoder supply 0 V
	11	---	---
	12	B	Channel B
	13	B̄	Channel B inverted
	14	D	Data input
	15	A	Channel A
	16	Ā	Channel A inverted
	17	D̄	Data inverted

Table 73: Pin assignments for EnDat encoder cable attachment

The Heidenhain model EQN1125 – 512 periods per rev is used with the following Exlar models using the BR2 feedback callout:

GSM20, GSM30  
GSX20, GSX30  
SLM060, SLM090  
SLG060, SLG090

*\*Physical dimensions of the actuator will be longer than specified in the Exlar Catalog when using EnDat feedback on the above models.*

The Heidenhain model EQN1325 – 512 periods per rev is used with the following Exlar models using the BR2 feedback callout:

GSM40  
GSX40, GSX50, GSX60  
SLM115, SLM142, SLM180  
SLG115

All Exlar Models using 'M' connectors and BR2 feedback option are wired as shown above.

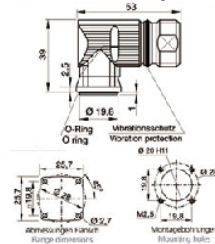
#### B&R EnDat Absolute Encoder Connector from Intercontec Part # - AEDC 113 NN00 00 0012 000

##### Housing design

Reference picture  
Configurated housing  
surface: Chromated



##### Technical drawing



Insulation inserts :  
E-Type , Front view



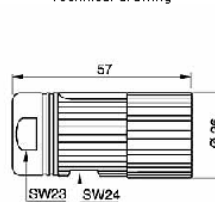
#### Mating Connector from Intercontec Part # - ASTA 035 NN00 40 0036 000

##### Housing design

Reference picture  
Configurated housing  
surface: Nickel plated



##### Technical drawing



Insulation inserts :  
P-Type , Front view



## Drive Connections

Excerpt of Motor connections from the ACOPOS plug-in module Technical Data Sheets:

### ACOPOS plug-in resolver module

#### 6.4.1 Pin Assignments



Image	X1	Pin	Description	Function
		1	---	---
		2	---	---
		3	Cos	Cosine input
		4	Sin	Sine input
		5	Ref	Reference output
		6	---	---
		7	Cos <sup>i</sup>	Cosine input inverted
		8	Sin <sup>i</sup>	Sine input inverted
		9	Ref <sup>i</sup>	Reference output inverted

Table 113: Pin assignments for AC122 - Resolver Interface

### ACOPOSmulti plug-in resolver module



- Encoder monitoring
- High resolution

### ACOPOS plug-in EnDat module

#### 6.3.1 Pin Assignments



Image	X1	Pin	Description	Function in EnDat mode	Function in Incremental mode
		1	A	Channel A	Channel A
		2	COM (1, 3-9, 11, 13-15)	Encoder supply 0 V	Encoder supply 0 V
		3	B	Channel B	Channel B
		4	+5V out / 0.25A	Encoder supply +5 V	Encoder supply +5 V
		5	D	Data input	---
		6	---	---	---
		7	RI	---	Reference Pulse Inverted
		8	T	Clock output	---
		9	A <sup>i</sup>	Channel A inverted	Channel A inverted
		10	Sense COM	Sense input 0 V	Sense input 0 V
		11	B <sup>i</sup>	Channel B inverted	Channel B inverted
		12	Sense +5V	Sense input +5 V	Sense input +5 V
		13	D <sup>i</sup>	Data inverted	---
		14	R	---	Reference Pulse
		15	T <sup>i</sup>	Clock output inverted	---

Table 112: Pin assignments for AC120 - EnDat Encoder Interface

### ACOPOSmulti plug-in EnDat module



- Encoder monitoring
- EnDat 2.1 protocol
- High precision analog signal processing
- Interleaved parameter chip with field module

Excerpt from Wiring Section of the 8MS Motor User's Manual:

#### 2.3.2 Pin Assignments



Circular connector	Pin	Description	Function	Pin	DSUB plug
	1	---	---	---	
	2	---	---	---	
	3	Cos	Cosine input	3	
	4	Sin	Sine input	4	
	5	Ref	Reference output	5	
	6	---	---	---	
	7	Cos <sup>i</sup>	Cosine input inverted	7	
	8	Sin <sup>i</sup>	Sine input inverted	8	
	9	Ref <sup>i</sup>	Reference output inverted	9	
	10	---	---	---	
	11	---	---	---	
	12	---	---	---	

Table 83: Pin assignments for resolver cable


Model Number	Short Description	Image
8CR005.12-1	Resolver cable, length 5m, 3 x 2 x 24 AWG/19, resolver plug 12-pin Intertec socket, servo plug 9-pin DSUB plug, can be used in cable drag chains, UL/CSA listed	
8CR007.12-1	Resolver cable, length 7m, 3 x 2 x 24 AWG/19, resolver plug 12-pin Intertec socket, servo plug 9-pin DSUB plug, can be used in cable drag chains, UL/CSA listed	
8CR010.12-1	Resolver cable, length 10m, 3 x 2 x 24 AWG/19, resolver plug 12-pin Intertec socket, servo plug 9-pin DSUB plug, can be used in cable drag chains, UL/CSA listed	
8CR015.12-1	Resolver cable, length 15m, 3 x 2 x 24 AWG/19, resolver plug 12-pin Intertec socket, servo plug 9-pin DSUB plug, can be used in cable drag chains, UL/CSA listed	
8CR020.12-1	Resolver cable, length 20m, 3 x 2 x 24 AWG/19, resolver plug 12-pin Intertec socket, servo plug 9-pin DSUB plug, can be used in cable drag chains, UL/CSA listed	
8CR025.12-1	Resolver cable, length 25m, 3 x 2 x 24 AWG/19, resolver plug 12-pin Intertec socket, servo plug 9-pin DSUB plug, can be used in cable drag chains, UL/CSA listed	

Table 57: Order data for resolver cables

Exlar recommends part number **8CRxxx.12-1** for use with ACOPOS or ACOPOSmulti resolver module and all Exlar models using the 'M' connector option and BR1 Resolver feedback option.

Excerpt from Wiring Section of the 8MS Motor User's Manual:

#### 2.2.2 Pin Assignments



Circular connector	Pin	Description	Function	Pin	DSUB plug
	15	A	Channel A	1	
	10	COM (1, 3-9, 11, 13-15)	Encoder supply 0 V	2	
	12	B	Channel B	3	
	7	+5V out / 0.25A	Encoder supply +5 V	4	
	14	D	Data input	5	
	9	T	Clock output	8	
	16	A <sup>i</sup>	Channel A inverted	9	
	4	Sense COM	Sense input 0 V	10	
	13	B <sup>i</sup>	Channel B inverted	11	
	1	Sense +5V	Sense input +5 V	12	
	17	D <sup>i</sup>	Data inverted	13	
	9	T <sup>i</sup>	Clock output inverted	15	

Table 81: Pin assignments for EnDat encoder cables


Model Number	Model Number	Image
8CE005.12-1	EnDat cable, length 5m, 10 x 0.14mm <sup>2</sup> + 2 x 0.5mm <sup>2</sup> , EnDat connector 17-pin Intertec socket, servo connector 15-pin DSUB plug, can be used in cable drag chains, UL/CSA listed	
8CE007.12-1	EnDat cable, length 7m, 10 x 0.14mm <sup>2</sup> + 2 x 0.5mm <sup>2</sup> , EnDat connector 17-pin Intertec socket, servo connector 15-pin DSUB plug, can be used in cable drag chains, UL/CSA listed	
8CE010.12-1	EnDat cable, length 10m, 10 x 0.14mm <sup>2</sup> + 2 x 0.5mm <sup>2</sup> , EnDat connector 17-pin Intertec socket, servo connector 15-pin DSUB plug, can be used in cable drag chains, UL/CSA listed	
8CE015.12-1	EnDat cable, length 15m, 10 x 0.14mm <sup>2</sup> + 2 x 0.5mm <sup>2</sup> , EnDat connector 17-pin Intertec socket, servo connector 15-pin DSUB plug, can be used in cable drag chains, UL/CSA listed	
8CE020.12-1	EnDat cable, length 20m, 10 x 0.14mm <sup>2</sup> + 2 x 0.5mm <sup>2</sup> , EnDat connector 17-pin Intertec socket, servo connector 15-pin DSUB plug, can be used in cable drag chains, UL/CSA listed	
8CE025.12-1	EnDat cable, length 25m, 10 x 0.14mm <sup>2</sup> + 2 x 0.5mm <sup>2</sup> , EnDat connector 17-pin Intertec socket, servo connector 15-pin DSUB plug, can be used in cable drag chains, UL/CSA listed	

Table 55: Order data for EnDat cables

Exlar recommends part number **8CExxx.12-1** for use with ACOPOS or ACOPOSmulti EnDat module and all Exlar models using the 'M' connector option and BR2 EnDat feedback option.