

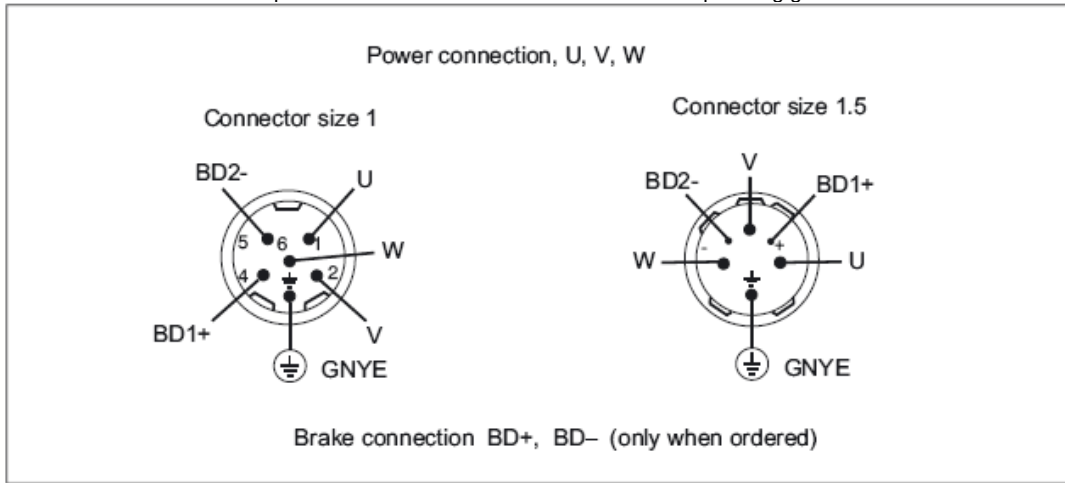
### Siemens - 'M' Manufacturers Connector, Cable & Wiring Information

**Current Exlar Feedback configurations are as follows:**

- SM2 = Standard Resolver – 1FK6/1FK7 motor wiring w/M23 connectors for 'M' option
- SM3 = EnDat Heidenhain EQN1325 - 512 periods resolution multi-turn absolute encoder – 1FK6/1FK7 motor wiring w/M23 euro connectors for 'M' option
- SM4 = EnDat Heidenhain EQN1125 - 512 periods resolution multi-turn absolute encoder – 1FK6/1FK7 motor wiring w/M23 euro connectors for 'M' option
- SM5 = Heidenhain Incremental Encoder sin/cos 1vpp – 1FK6/1FK7 motor wiring w/M23 euro connectors for 'M' option

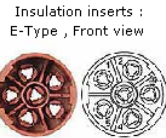
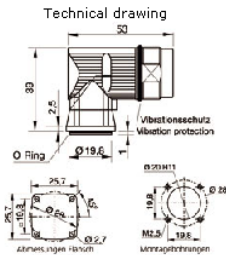
**Exlar Actuator Power Wiring**

All Siemens options are wired from this excerpt taken from the Siemens 1FK6/1FK7 motor planning guide:



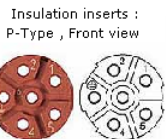
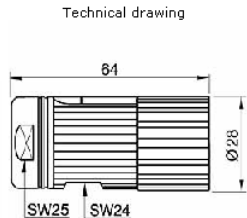
Siemens Connector Size 1 is used with the following Exlar Models using the 'M' Manufacturers Connector Option:  
 GSM20,GSM30,GSM40  
 GSX20,GSX30,GSX40,GSX50  
 SLM060,SLM090,SLM115,SLM142  
 SLG060,SLG090,SLG115  
 Siemens Size 1 from Intercontec Part # - BEDC 088 NN00 00 0005 000

**Housing design**  
 Reference picture  
 Configured housing surface: Chromated



Mating Connector Intercontec Part # - BSTA 107 FR03 42 0036 000

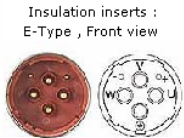
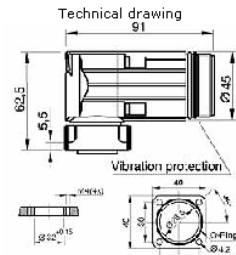
**Housing design**  
 Reference picture  
 Configured housing surface: Nickel plated



Siemens Connector Size 1.5 is used with the following Exlar Models using the 'M' Manufacturers Connector Option:  
 GSX60,SLM180

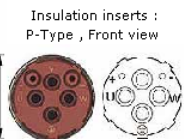
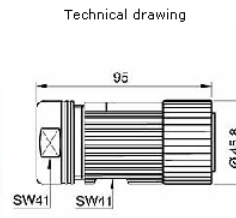
Siemens Size 1.5 from Intercontec Part # - CEDA 257 NN00 00 0004 000

**Housing design**  
 Reference picture  
 Configured housing surface: Nickel plated



Mating Connector Intercontec Part # - CSTA 263 NN00 44 0001 000

**Housing design**  
 Reference picture  
 Configured housing surface: Nickel plated



### Siemens Basic Power Cable Part Numbers

Excerpt from Siemens Motion Connect Cables and Connections Catalog:  
*Power cable and extension for 1FT/1FK motors*

No. of cores x cross-section mm <sup>2</sup>	Connector size	Extensions		Connector size	Basic cables	
		Order No.			Order No.	
4x1.5	1	6FX 002-5 A05-....		1	6FX 002-5 A01-....	
4x2.5	1	6FX 002-5 A15-....		1	6FX 002-5 A11-....	
4x1.5	1.5	6FX 002-5 A28-....		1.5	6FX 002-5 A21-....	
4x2.5	1.5	6FX 002-5 A38-....		1.5	6FX 002-5 A31-....	
4x4	1.5	6FX 002-5 A48-....		1.5	6FX 002-5 A41-....	
4x6	1.5	6FX 002-5 A58-....		1.5	6FX 002-5 A51-....	
4x10	1.5	6FX 002-5 A68-....		1.5	6FX 002-5 A61-....	
4x10	3	6FX 002-5 X18-....		3	6FX 002-5 A13-....	
4x16	3	6FX 002-5 X28-....		3	6FX 002-5 A23-....	
4x25	3	6FX 002-5 D X38-....		3	6FX 002-5 D A31-....	
4x35	3	6FX 5 002-5 D X48-....		3	6FX 5 002-5 D A43-....	
	3	6FX 8 002-5 D X48-....		3	6FX 8 002-5 D A43-....	
4x50	3	6FX 5 002-5 D X58-....		3	6FX 5 002-5 D A53-....	
	3	6FX 8 002-5 D X58-....		3	6FX 8 002-5 D A53-....	
MOTION-CONNECT 500		5			5	
MOTION-CONNECT 700 1)		7			7	
MOTION-CONNECT 800		8			8	
Without brake cores		C			C	
With brake cores		D			D	

**Exlar Recommends the following Siemens Power Cables for use with(all include brake leads):**

GSM20,GSM30,GSX20,GSX30,SLM060,SLG060,SLM090,SLG090 - **6FX5002-5DA01-....**

GSM40,GSX40,GSX50,SLM115,SLG115,SLM142 – **6FX5002-5DA11-....**

GSX60,SLM180 – **6FX5002-5DA61-....**

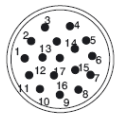
**\*When selecting part numbers other than Exlar recommends, please consult your Siemens Representative, Distributor or Agent.**



### 'M' Manufacturers Connector Option with SM3 or SM4 Feedback:

EnDat Absolute Encoder motor connections excerpt taken from the Siemens 1FK6/1FK7 motor planning guide:

PIN No.	Signal
1	A+
2	A-
3	+data
4	not connected
5	+clock
6	not connected
7	M encoder
8	+1R1
9	-1R2
10	P encoder
11	B+
12	B-
13	-Data
14	-clock
15	0 V sense
16	5 V sense
17	not connected



When viewing the plug-in side (pins)

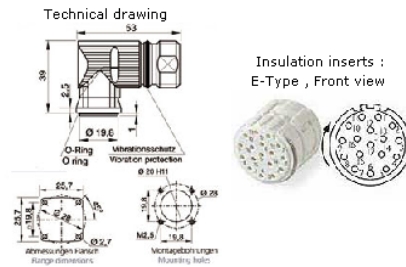
+1R1 = KTY84

-1R2 = KTY84

All Exlar Models using 'M' connectors and SM3 or SM4 feedback option are wired as shown.

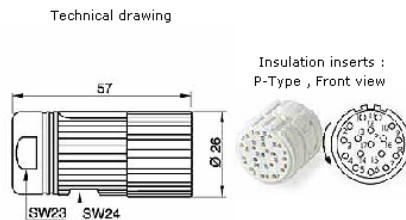
### Siemens EnDat Absolute Encoder Connector from Intercontec Part # - AEDC 113 NN00 00 0012 000

**Housing design**  
Reference picture  
Configurated housing  
surface: Chromated



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

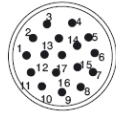
**Housing design**  
Reference picture  
Configurated housing  
surface: Nickel plated



### 'M' Manufacturers Connector Option with SM5 Feedback:

Incremental Encoder motor connections except taken from the Siemens 1FK6/1FK7 motor planning guide:

PIN No.	Signal
1	A+
2	A-
3	R+
4	D-
5	C+
6	C-
7	M encoder
8	+1R1
9	-1R2
10	P encoder
11	B+
12	B-
13	R-
14	D+
15	0 V sense
16	5 V sense
17	not connected



When viewing the plug-in side (pins)

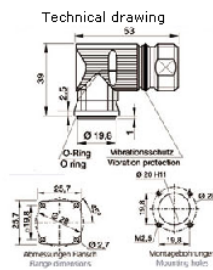
+1R1 = KTY84

-1R2 = KTY84

All Exlar Models using 'M' connectors and SM5 feedback option are wired as shown.

### Siemens Incremental Encoder Connector from Intercontec Part # - AEDC 113 NN00 00 0012 000

**Housing design**  
Reference picture  
Configurated housing  
surface: Chromated

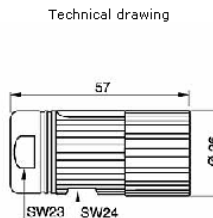


Insulation inserts :  
E-Type , Front view



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

**Housing design**  
Reference picture  
Configurated housing  
surface: Nickel plated



Insulation inserts :  
P-Type , Front view



## Drive Connections

Excerpt of Resolver Motor connections from the Siemens 611U Universal Function Manual:

Connector designation: X411 → Drive A  
 X412 → Drive B  
 Connector type: 25-pin, D-Sub, plug connector

Connector designation: X411 → Drive A  
 X412 → Drive B  
 Connector type: 25-pin, D-Sub, plug connector

Table 2-7 Assignment of X411/X412 for resolvers

Pin	Signal name	Pin	Signal name
1	Reserved	14	Reserved
2	M_Enooder	15	Reserved
3	SIN_PLUS	16	Reserved
4	SIN_MINUS	17	Reserved
5	Inner shield	18	Reserved
6	COS_PLUS	19	Reserved
7	COS_MINUS	20	Reserved
8	Inner shield	21	Reserved
9	Excitation_Pos	22	Reserved
10	Reserved	23	Reserved
11	Excitation_Neg	24	Inner shield
12	Reserved	25	Temp- (KTY/PTC)
13	Temp+ (KTY/PTC)	-	-

Table 2-6 Assignment of X411/X412 for encoders with sin/cos 1Vpp

Pin	Signal name	Pin	Signal name
1	P_Encoder	14	5 V sense
2	M_Encoder	15	EnDat_DAT
3	A	16	0 V sense
4	*A	17	R
5	Inner shield	18	*R
6	B	19	C
7	*B	20	*C
8	Inner shield	21	D
9	Reserved	22	*D
10	EnDat_CLK	23	*EnDat_DAT
11	Reserved	24	Inner shield
12	*EnDat_CLK	25	-Temp (KTY/PTC)
13	+Temp (KTY/PTC)	-	-

Excerpt from Servo Motor Motion Connect Catalog:

Base Cable Type 6FX . 002 - 2CF02 - . . . .		Cut-to-Length Cable 6FX . 008 - 1BD41		Measuring-System Side	
Converter Side	PIN	Signal Name	Signal Name	PIN	Connector Type: 6FX2 003 - 0CE12
Connector Type: 6FC9 348 - 7HP00	3	SIN	SIN	1	Connector Type: 6FX2 003 - 0CE12
	4	* SIN	* SIN	2	
	5	Inner shield	Inner shield	3	
	6	COS	* COS	11	
	7	* COS	* COS	12	
	8	Inner shield	Inner shield	5	
	13	+TEMP	+TEMP	8	
	25	-TEMP	-TEMP	9	
	24	Inner shield	Inner shield	4	
	9	+V <sub>FE</sub>	+V <sub>FE</sub>	10	
	11	-V <sub>FE</sub>	-V <sub>FE</sub>	7	
	Yes	Overall shield on connector housing	Yes	Yes	

Exlar Recommends part number **6FX5002-2CF02-....** for use with SIMODRIVE 611U/MASTERDRIVES and all Exlar models using the 'M' connector option and SM2 Resolver feedback option.  
**\*When selecting part numbers other than Exlar recommends, please consult your Siemens Representative, Distributor or Agent.**

Excerpt from Servo Motor Motion Connect Catalog:

Base Cable Type 6FX . 002 - 2EQ10 - . . . .		Cut-to-Length Cable 6FX . 008 - 1BD51		Measuring-System Side	
Converter Side	PIN	Signal Name	Signal Name	PIN	Connector Type: 6FX2 003 - 0CE17
Connector Type: 6FC9 348 - 7HP00	4	* A	* Ua1	2	Connector Type: 6FX2 003 - 0CE17
	5	Inner shield	Inner shield	17	
	6	B	Ua2	11	
	7	* B	* Ua2	12	
	8	Inner shield	Inner shield	17	
	15	Data	Data	3	
	23	* Data	* Data	13	
	24	Inner shield	Inner shield	17	
	10	Clock cycle	Clock cycle	5	
	12	* Clock cycle	* Clock cycle	14	
	13	+Temp	+Temp	8	
	25	-Temp	-Temp	9	
	1	P encoder	P encoder	10	
	14	5 V Sense	5 V Sense	16	
	2	M encoder	M encoder	7	
	16	0 V Sense	0 V Sense	15	
	Yes	Overall shield on connector housing	Yes	Yes	

Exlar Recommends part number **6FX5002-2EQ10-....** for use with SIMODRIVE 611U, MASTERDRIVES or SMC20 DRIVE-CLIQ module for use with SINAMICS and all Exlar models using the 'M' connector option and SM3 or SM4 EnDat feedback option.  
**\*When selecting part numbers other than Exlar recommends, please consult your Siemens Representative, Distributor or Agent.**

Excerpt from Servo Motor Motion Connect Catalog:

Base Cable Type 6FX . 002 - 2CA31 - . . . .		Cut-to-Length Cable 6FX . 008 - 1BD51		Measuring-System Side	
Converter Side	PIN	Signal Name	Signal Name	PIN	Connector Type: 6FX2 003 - 0CE17
Connector Type: 6FC9 348 - 7HP00	3	A	Ua1	1	Connector Type: 6FX2 003 - 0CE17
	4	* A	* Ua1	2	
	5	Inner shield	Inner shield	17	
	6	B	Ua2	11	
	7	* B	* Ua2	12	
	8	Inner shield	Inner shield	17	
	17	R	Ua0	3	
	18	* R	* Ua0	13	
	24	Inner shield	Inner shield	17	
	19	C	Ua3	5	
	20	* C	* Ua3	6	
	21	D	Ua4	14	
	22	* D	* Ua4	4	
13	+Temp	+Temp	8		
25	-Temp	-Temp	9		
1	P encoder	P encoder	10		
14	5 V Sense	5 V Sense	16		
2	M encoder	M encoder	7		
16	0 V Sense	0 V Sense	15		
Yes	Overall shield on connector housing	Yes	Yes		

Exlar Recommends part number **6FX5002-2CA31-....** for use with SIMODRIVE 611U, MASTERDRIVES or SMC20 DRIVE-CLIQ module for use with SINAMICS and all Exlar models using the 'M' connector option and SM5 Incremental Encoder sin/cos 1 Vpp feedback option.

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