

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 2.1/2.2 Heidenhain EQN1325 - 512 periods

resolution multi-turn absolute encoder – 1FK6/1FK7

motor wiring w/M23 euro connectors for 'M' option –

recommended for use with 40, 50, 60, 115, 142, 180

frame sizes

SM4 = EnDat 2.1/2.2 Heidenhain EQN1125 - 512 periods

resolution multi-turn absolute encoder – 1FK6/1FK7

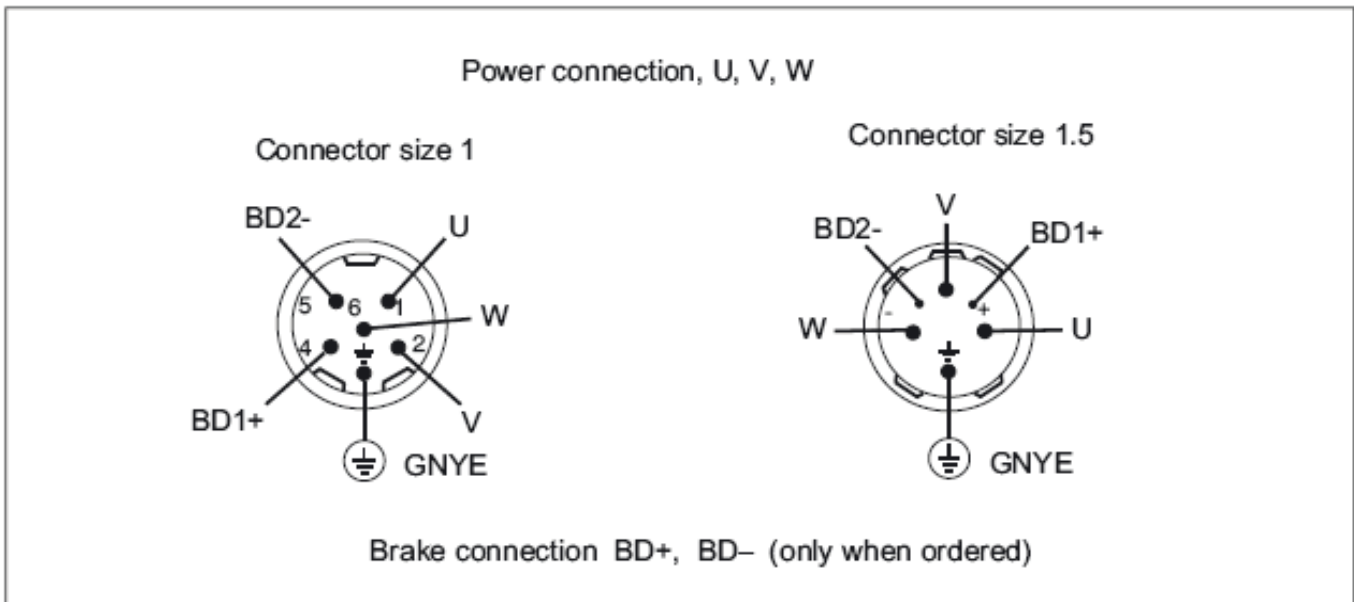
motor wiring w/M23 euro connectors for 'M' option

– recommended for use with 20, 30, 060, 090 frame

sizes

Exlar Actuator Power Wiring

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

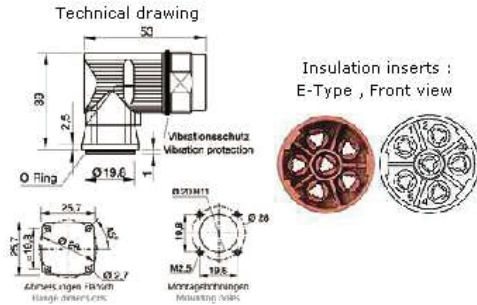


Siemens Connector Size 1 is used with the following:

Exlar Models using the 'M' Manufacturers Connector Option:
 GSM20,GSM30,GSM40, GSX20,GSX30,GSX40,GSX50,
 SLM060,SLM090,SLM115,SLM142, SLG060,
 SLG090,SLG115

Housing design

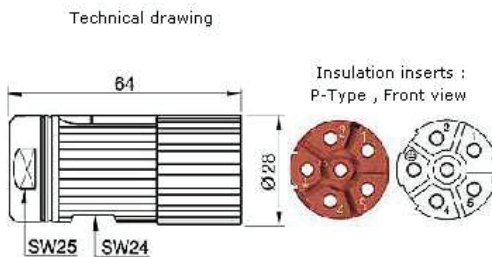
Reference picture
 Configured housing
 surface: Chromated



Siemens Size 1 from Intercontec Part # - BEDC 088 NN00
 00 0005 000

Housing design

Reference picture
 Configured housing
 surface: Nickel plated



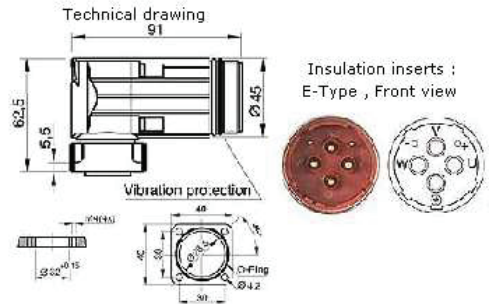
Mating Connector Intercontec Part # - BSTA 107 FR03 42
 0036 000

Siemens Connector Size 1.5 is used with the following:

Exlar Models using the 'M' Manufacturers Connector Option:
 GSX60,SLM180

Housing design

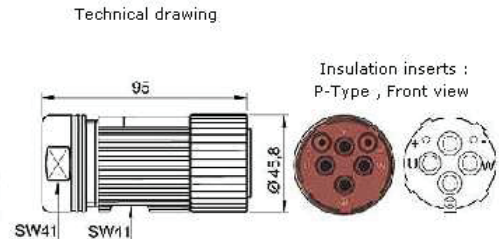
Reference picture
 Configured housing
 surface: Nickel plated



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

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 ² | 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-....**

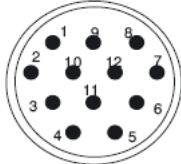
**When selecting part numbers other than Exlar recommends, please consult your Siemens Representative, Distributor or Agent.*

Exlar Actuator Feedback Wiring

'M' Manufacturers Connector Option with SM2 Feedback:

Resolver motor connections excerpt taken from the Siemens 1FK6/1FK7 motor planning guide:

| PIN No. | Signal |
|---------|---------------|
| 1 | SIN |
| 2 | *SIN |
| 3 | Inner shield |
| 4 | Inner shield |
| 5 | Inner shield |
| 6 | not connected |
| 7 | -Vpp |
| 8 | +1R1 |
| 9 | -1R2 |
| 10 | +Vpp |
| 11 | COS |
| 12 | *COS |



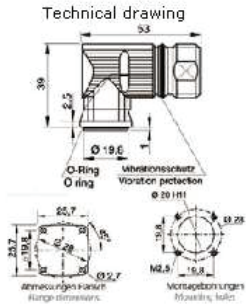
When viewing the plug-in side (pins)

+1R1 = KTY84

-1R2 = KTY84

All Exlar Models using 'M' connectors and SM2 feedback option are wired as shown.

Housing design
Reference picture
Configurated housing surface: Chromated



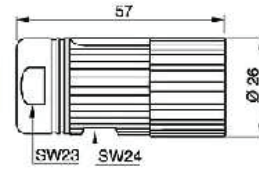
Insulation inserts :
P-Type , Front view



Housing design
Reference picture
Configurated housing surface: Nickel plated



Technical drawing



Insulation inserts :
E-Type , Front view



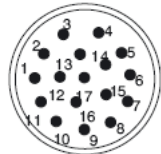
Mating Connector from Intercontec Part # - ASTA 021 NN00 40 0036 000

Siemens Resolver Connector from Intercontec Part # - AEDC 102 NN00 00 0012 000

'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 |

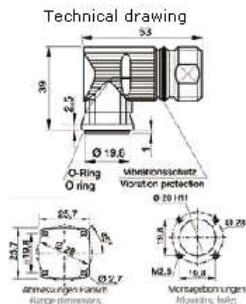


When viewing the plug-in side (pins)

+1R1 = KTY84
-1R2 = KTY84

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

Housing design
Reference picture
Configurated housing surface: Chromated



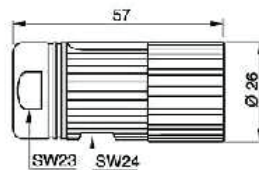
Insulation inserts :
P-Type , Front view



Housing design
Reference picture
Configurated housing surface: Nickel plated



Technical drawing



Insulation inserts :
P-Type , Front view



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

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

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

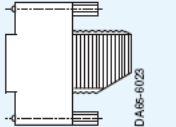

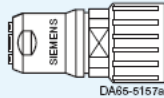
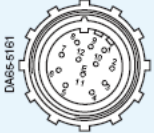
Table 2-7 Assignment of X411/X412 for resolvers

| Pin | Signal name | Pin | Signal name |
|-----|-----------------|-----|-----------------|
| 1 | Reserved | 14 | Reserved |
| 2 | M_Encoder | 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) | - | - |

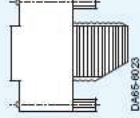


Excerpt from Servo Motor Motion Connect Catalog:

| 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: 6FC9 348 – 7HP00   | 3 | SIN | SIN | 1 | Connector Type: 6FX2 003 – 0CE12   |
| | 4 | * SIN | * SIN | 2 | |
| | 5 | Inner shield | | 3 | |
| | 6 | COS | COS | 11 | |
| | 7 | * COS | * COS | 12 | |
| | 8 | Inner shield | | 5 | |
| | 13 | + TEMP | + TEMP | 8 | |
| | 25 | - TEMP | - TEMP | 9 | |
| | 24 | Inner shield | | 4 | |
| | 9 | +V _{pp} | +V _{pp} | 10 | |
| | 11 | -V _{pp} | -V _{pp} | 7 | |
| | Yes | Overall shield on connector housing | | 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 | |
| 3 | A | Ua1 | 1 | Connector Type: 6FX2 003 – 0CE17 |
| 4 | * A | * Ua1 | 2 | |
| 5 | | Inner shield | 17 |  |
| 6 | B | Ua2 | 11 | |
| 7 | * B | * Ua2 | 12 |  |
| 8 | | Inner shield | 17 | |
| 15 | Data | Data | 3 |  |
| 23 | * Data | * Data | 13 | |
| 24 | | 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 | |

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.*