

# M12 POWER CONNECTOR

## COMPACT AND POWERFUL

A major milestone in an age of miniaturization: the M12 Power connector. In the past, circular connectors have required a large footprint in order to carry large currents, but not anymore. With a compact size, large temperature extremes, and the capability of carrying up to 630 Volts and 16 Amps, this compact connector solves space requirement issues in today's automation industry. EMI ready options!



Mechanical Data	Materials and Technical Data
Housing	Brass / Die Cast Stainless Steel 316L
Housing surface	Nickel plated Other Surfaces Upon Request
Inserts	PBT Fire protection class V-0
Contacts	Copper alloy / Brass
Contact surface at point of contact	Gold plated
Minimum mating cycles	> 100 (Sealcon to Sealcon connector)
Seals / O-Rings	Buna-N (Black) / FKM (Green) / HNBR (Black)
Temperature range	-40 °F - 257 °F (-40 °C - 125 °C) (K + L) -40 °F - 185 °F (-40 °C - 85 °C) (S + T)
Type of contacts	Crimp K + L, Screw S + T
Protection	IP 67/ IP 69K
Cable diameter range	.11 - .43" (3 - 11 mm)

### Components Needed For A Complete M12 Power Connector:

- HOUSING (pages 14 - 16)
  - INSERT (page 17)
  - CONTACTS (if crimp contact insert is selected) (page 17)
- \*S+T CODINGS REQUIRE FERRULES FOR INSTALLATION

### Electrical Data

Coding	S (Screw)	T (Screw)	K (Crimp)	L (Crimp)
Colors	Black	Dark Gray	Blue	Gray
Number of positions	4 (3 + PE)	4	5 (4 + PE)	5 (4 + PE)
Power Applications	AC	DC	AC	DC
[mm <sup>2</sup> ] (AWG)	0.5 - 1.5 mm <sup>2</sup> (AWG 20 - 16)	0.5 - 1.5 mm <sup>2</sup> (AWG 20 - 16)	0.75 - 2.5 mm <sup>2</sup> (AWG 18 - 14)	0.75 - 2.5 mm <sup>2</sup> (AWG 18 - 14)
Nominal current [A]	12	12	16	16
Nominal voltage [V~] degree of protection 3	630	63	630	63
Test voltage (Breakdown voltage) [V~]	3310	840	3310	840
Insulation resistance [MΩ]	> 10 <sup>2</sup>	> 10 <sup>2</sup>	> 10 <sup>2</sup>	> 10 <sup>2</sup>
Max. contact resistance [mΩ]	< 3	< 3	< 3	< 3

**NOMINAL CURRENT:** Allowable current (Amp), that can be transmitted by each contact continuously and simultaneously.

**NOMINAL VOLTAGE:** Allowable voltage (Volt), that can be applied to each contact continuously and simultaneously.

**TEST VOLTAGE:** Voltage which, under certain conditions, a connector can be exposed to without breakdown.

**DEGREE OF PROTECTION:** Potential dirt accumulation of a disconnected connector in a certain environment.

### S+T Coding Ferrule Accessories

For proper assembly, screw terminals should use ferrules for a secure connection. **Ferrules are not included in Sealcon Connectors and will need to be sourced from a supplier.**

#### Suggested Ferrules

For 16 AWG.....Panduit #FSD78-8-D or equivalent

For 18 AWG.....Panduit #FSD77-8-D or equivalent



DO NOT CONNECT OR DISCONNECT  
SEALCON CONNECTORS UNDER LOAD.

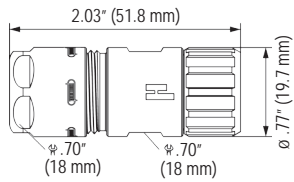
SEE TECHNICAL INFORMATION ON PAGE 80

\*ASSEMBLY INSTRUCTIONS CAN BE FOUND AT WWW.SEALCONUSA.COM OR BY CALLING US AT 1-800-456-9012

# M12 POWER CONNECTOR

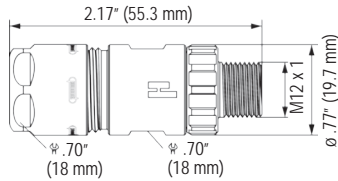
## HOUSINGS

### M12 Power Straight Connector, EMI, Female Thread



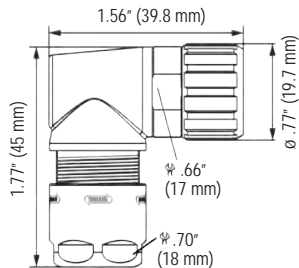
	Cable-Ø	Coding	Part Number
Crimp	3 - 6 mm (.11 - .23")	.....K, L	SA712-7.K10.300.000
	5 - 9 mm (.20 - .35")	.....K, L	SA712-7.K10.400.000
	8 - 11 mm (.31 - .43")	.....K, L	SA712-7.K10.500.000
Screw	3 - 6 mm (.11 - .23")	.....S, T	SA712-7.S10.300.000
	5 - 9 mm (.20 - .35")	.....S, T	SA712-7.S10.400.000
	8 - 11 mm (.31 - .43")	.....S, T	SA712-7.S10.500.000

### M12 Power Straight Connector, EMI, Male Thread



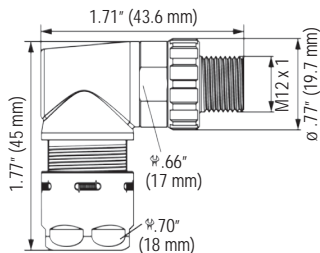
	Cable-Ø	Coding	Part Number
Crimp	3 - 6 mm (.11 - .23")	.....K, L	SA712-7.K20.300.000
	5 - 9 mm (.20 - .35")	.....K, L	SA712-7.K20.400.000
	8 - 11 mm (.31 - .43")	.....K, L	SA712-7.K20.500.000
Screw	3 - 6 mm (.11 - .23")	.....S, T	SA712-7.S20.300.000
	5 - 9 mm (.20 - .35")	.....S, T	SA712-7.S20.400.000
	8 - 11 mm (.31 - .43")	.....S, T	SA712-7.S20.500.000

### M12 Power Right Angle Connector, EMI, Female Thread



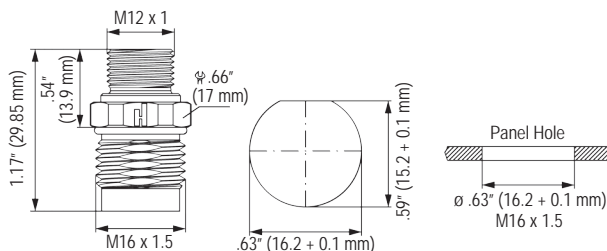
	Cable-Ø	Coding	Part Number
Crimp	3 - 6 mm (.11 - .23")	.....K, L	SA712-7.K30.300.000
	5 - 9 mm (.20 - .35")	.....K, L	SA712-7.K30.400.000
	8 - 11 mm (.31 - .43")	.....K, L	SA712-7.K30.500.000
Screw	3 - 6 mm (.11 - .23")	.....S, T	SA712-7.S30.300.000
	5 - 9 mm (.20 - .35")	.....S, T	SA712-7.S30.400.000
	8 - 11 mm (.31 - .43")	.....S, T	SA712-7.S30.500.000

### M12 Power Right Angle Connector, EMI, Male Thread



	Cable-Ø	Coding	Part Number
Crimp	3 - 6 mm (.11 - .23")	.....K, L	SA712-7.K31.300.000
	5 - 9 mm (.20 - .35")	.....K, L	SA712-7.K31.400.000
	8 - 11 mm (.31 - .43")	.....K, L	SA712-7.K31.500.000
Screw	3 - 6 mm (.11 - .23")	.....S, T	SA712-7.S31.300.000
	5 - 9 mm (.20 - .35")	.....S, T	SA712-7.S31.400.000
	8 - 11 mm (.31 - .43")	.....S, T	SA712-7.S31.500.000

### M12 Power Panel Connector, Single Hole, Male Thread



Type	Coding	Part Number
<b>Front Mounting, Single Hole</b>		
Thread M16	.....K, L (Crimp)	SA712-7.K42.000.000
Thread M20	.....K, L (Crimp)	SA712-7.K42.100.000
Thread M20	.....S, T (Screw)	SA712-7.S42.000.000
<b>with Lock Nut "Rotation Protection"</b>		
Thread M16	.....K, L (Crimp)	SA712-7.K42.000.00G
Thread M20	.....K, L (Crimp)	SA712-7.K42.100.00G
Thread M20	.....S, T (Screw)	SA712-7.S42.000.00G

S+T CODINGS REQUIRE FERRULES FOR INSTALLATION, SEE PAGE 13 FOR SPECIFICATIONS.

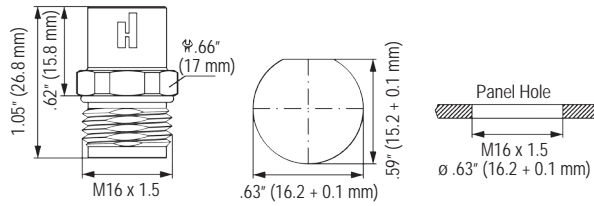


PIN INSERTS MOUNTABLE WITH MALE THREAD HOUSINGS ONLY.  
SOCKET INSERTS MOUNTABLE WITH FEMALE THREAD HOUSINGS ONLY.  
DRAWINGS APPLY FOR CODING K + L ONLY.

# M12 POWER CONNECTOR

## HOUSINGS

### M12 Power Panel Connector, Single Hole, Female Thread

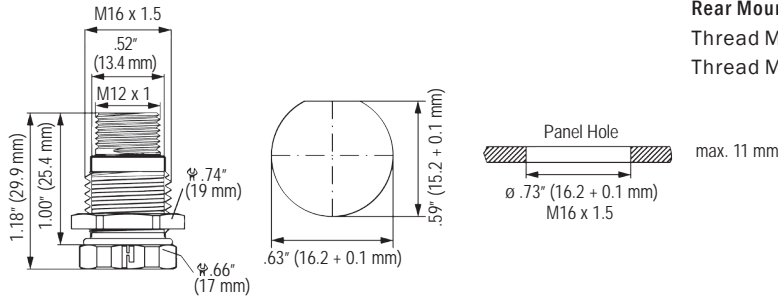


Type	Coding	Part Number
<b>Front Mounting, Single Hole</b>		
Thread M16.....K, L (Crimp).....	SA712-7.K44.000.000	
Thread M20.....K, L (Crimp).....	SA712-7.K44.100.000	
Thread M20.....S, T (Screw).....	SA712-7.S44.000.000	

#### with Lock Nut "Rotation Protection"

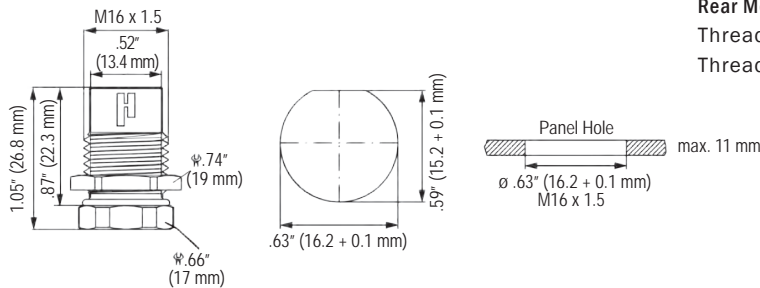
Thread M16.....K, L (Crimp).....	SA712-7.K44.000.00G
Thread M20.....K, L (Crimp).....	SA712-7.K44.100.00G
Thread M20.....S, T (Screw).....	SA712-7.S44.000.00G

### M12 Power Panel Connector, Single Hole, Male Thread



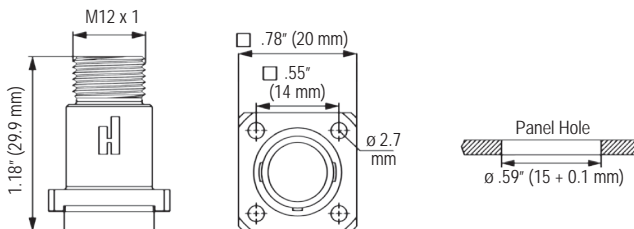
Type	Coding	Part Number
<b>Rear Mounting, Single Hole</b>		
Thread M16.....K, L (Crimp).....	SA712-7.K50.000.000	
Thread M20.....S, T (Screw).....	SA712-7.S50.000.000	

### M12 Power Panel Connector, Single Hole, Female Thread



Type	Coding	Part Number
<b>Rear Mounting, Single Hole</b>		
Thread M16.....K, L (Crimp).....	SA712-7.K51.000.000	
Thread M20.....S, T (Screw).....	SA712-7.S51.000.000	

### M12 Power Panel Connector, Male Thread, Flange



Type	Coding	Part Number
<b>Front Mounting, 4 x Holes 2.7 mm, Flange</b>		
Flange 20 x 20 mm...K, L (Crimp)...	SA712-7.K40.000.000	
Flange 25 x 25 mm...S, T (Screw)...	SA712-7.S40.000.000	

4 x Holes 3.2 mm Upon Request

S+T CODINGS REQUIRE FERRULES FOR INSTALLATION, SEE PAGE 13 FOR SPECIFICATIONS



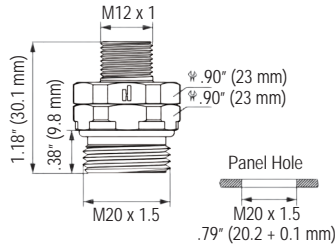
PIN INSERTS MOUNTABLE WITH MALE THREAD HOUSINGS ONLY.  
SOCKET INSERTS MOUNTABLE WITH FEMALE THREAD HOUSINGS ONLY.  
DRAWINGS APPLY FOR CODING K + L ONLY.

# M12 POWER CONNECTOR

## HOUSINGS, ACCESSORIES

M12 Power Connectors

### M12 Power Panel Connector, Male Thread, Single Hole, Orientable

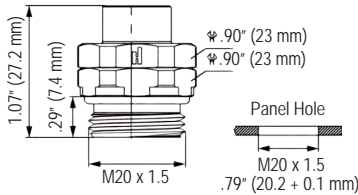


Type	Coding	Part Number
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Front Mounting, Single Hole  
 Thread M16.....K, L (Crimp).....SA712-7.K42.200.000  
 Thread M20.....S, T (Screw).....SA712-7.S42.200.000

DRAWING SHOWS CODING S + T

### M12 Power Panel Connector, Female Thread, Single Hole, Orientable



Type	Coding	Part Number
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Front Mounting, Single Hole  
 Thread M16.....K, L (Crimp).....SA712-7.K44.200.000  
 Thread M20.....S, T (Screw).....SA712-7.S44.200.000

DRAWING SHOWS CODING S + T

\*MOLDED CORDSETS ALSO AVAILABLE - CONTACT SEALCON FOR DETAILS

S+T CODINGS REQUIRE FERRULES FOR INSTALLATION, SEE PAGE 13 FOR SPECIFICATIONS

PIN INSERTS MOUNTABLE WITH MALE THREAD HOUSINGS ONLY.  
 SOCKET INSERTS MOUNTABLE WITH FEMALE THREAD HOUSINGS ONLY.

### M12 Power Accessories



Plastic Protective Cap for connectors  
 with Male thread..... SA712-7.000.980.161  
 with Female thread..... SA712-7.000.980.162



Brass Protective Cap with chain for connectors  
 with Female thread  
 Length 70 mm..... SA712-7.010.9S0.705



Brass Protective Cap for connectors  
 with Female thread ..... SA712-7.010.900.163



Brass Protective Cap with chain for connectors  
 with Male thread  
 Length 70 mm..... SA712-7.010.9S0.704



Brass Protective Cap for connectors  
 with Male thread ..... SA712-7.010.900.162



Crimp Tool for manual crimping of machined crimp contacts for signal connectors M12, M16 and M23..... S7.000.900.908




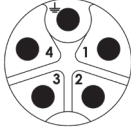

Tool Adapter for tightening or loosening knurled nuts  
 for M12 Power / M16 ..... S7.010.900.191


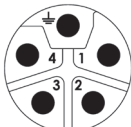




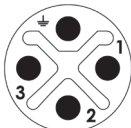
Screw Tool, adjustable 0.5 - 1.7 Nm .... S7.010.900.190



# M12 POWER CONNECTOR




## INSERTS, CONTACTS

Inserts K-Coding (Crimp)		Type	Part Number
 Insert Pin Mating View	 Insert Socket Mating View	 MAX WIRE INSULATION Ø 2.9 MM	Crimp Insert, Pins, 4 + PE without contacts .....SA712-7.K03.941.101 Required contacts: 4 x Pins, 1 x socket PE
			Crimp Insert, Sockets, 4 + PE without contacts .....SA712-7.K03.941.102 Required contacts: 4 x Sockets, 1 x pin


Inserts L-Coding (Crimp)		Type	Part Number
 Insert Pin Mating View	 Insert Socket Mating View	 MAX WIRE INSULATION Ø 2.9 MM	Crimp Insert, Pins, 4 + PE without contacts .....SA712-7.L03.941.101 Required contacts: 4 x Pins, 1 x socket PE
			Crimp Insert, Sockets, 4 + PE without contacts .....SA712-7.L03.941.102 Required contacts: 4 x Sockets, 1 x pin

Inserts S-Coding (Screw)		Type	Part Number
 Insert Pin Mating View	 Insert Socket Mating View	S+T CODINGS REQUIRE FERRULES FOR INSTALLATION, SEE PAGE 13 FOR SPECIFICATIONS	Insert with Pins 3 + PE Contacts with screw termination...SA712-7.S05.931.105
			Insert with Sockets 3 + PE Contacts with screw termination...SA712-7.S05.931.106

Inserts T-Coding (Screw)		Type	Part Number
 Insert Pin Mating View	 Insert Socket Mating View	S+T CODINGS REQUIRE FERRULES FOR INSTALLATION, SEE PAGE 13 FOR SPECIFICATIONS	Insert with Pins 4-pole Contacts with screw termination...SA712-7.T05.904.105
			Insert with Sockets 4-pole Contacts with screw termination...SA712-7.T05.904.106

M12 Power Contacts	Type	Crimp Range	Part Number
	Crimp Pin 1.5 mm, machined ..... (18 AWG) 0.75 mm <sup>2</sup> .....	SA712-7.010.901.521*	
	Crimp Pin 1.5 mm, machined .....(16 AWG) 1.5 mm <sup>2</sup> .....	SA712-7.010.901.531	
	Crimp Pin 1.5 mm, machined .....(14 AWG) 2.5 mm <sup>2</sup> .....	SA712-7.010.901.541	
	Crimp Socket 1.5 mm PE, machined.....(18 AWG) 0.75 mm <sup>2</sup> .....	SA712-7.010.911.522*	
	Crimp Socket 1.5 mm PE, machined.....(16 AWG) 1.5 mm <sup>2</sup> .....	SA712-7.010.911.532	
	Crimp Socket 1.5 mm PE, machined.....(14 AWG) 2.5 mm <sup>2</sup> .....	SA712-7.010.911.542	
	Crimp Socket 1.5 mm, machined.....(18 AWG) 0.75 mm <sup>2</sup> .....	SA712-7.010.901.522*	
	Crimp Socket 1.5 mm, machined.....(16 AWG) 1.5 mm <sup>2</sup> .....	SA712-7.010.901.532	
	Crimp Socket 1.5 mm, machined.....(14 AWG) 2.5 mm <sup>2</sup> .....	SA712-7.010.901.542	

\*UNDER DEVELOPMENT

 PIN INSERTS MOUNTABLE WITH MALE THREAD HOUSINGS ONLY.  
SOCKET INSERTS MOUNTABLE WITH FEMALE THREAD HOUSINGS ONLY.