

# SURE-SEAL<sup>®</sup> IP67 M20 SERIES CATALOG



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# Technical Information

## Wire Gauge Conversion Chart

Conversion between American Wire Gauge (AWG), Circular Mil Area (CMA), and approximate metric millimeter squared (mm<sup>2</sup>) wire sizes.

Diameter			Area	
AWG	in.	mm	CMA	mm <sup>2*</sup>
4/0 (0000)	0.46	11.68	212000	120
3/0 (000)	0.41	10.41	168000	95
2/0 (00)	0.365	9.27	133000	70
1/0 (0)	0.325	8.26	106000	50
1	0.289	7.34	83700	-
2	0.258	6.55	66400	35
3	0.229	5.82	52600	-
4	0.204	5.18	41700	25
5	0.182	4.62	33100	-
6	0.162	4.11	26300	16
7	0.144	3.66	20800	-
8	0.128	3.25	16500	10
9	0.114	2.90	13100	-
10	0.102	2.59	10400	6
11	0.091	2.31	8230	-
12	0.081	2.06	6530	4
13	0.072	1.83	5180	-

Diameter			Area	
AWG	in.	mm	CMA	mm <sup>2*</sup>
14	0.062	1.57	4110	2.5
15	0.057	1.45	3260	-
16	0.051	1.30	2580	1.5
17	0.045	1.14	2050	1
18	0.040	1.02	1620	0.75
19	0.036	0.91	1290	-
20	0.032	0.81	1020	0.5
21	0.0285	0.72	810	-
22	0.0253	0.643	642	0.34
23	0.0226	0.574	509	-
24	0.0201	0.511	404	0.25
25	0.0179	0.45	320	-
26	0.0159	0.404	254	0.14
27	0.0142	0.361	202	-
28	0.0126	0.320	160	0.08
29	0.0113	0.29	127	-
30	0.01	0.254	101	0.05

\*Nearest metric wire size  
Use to Convert American Wire Gauge to Diameter and Circular Mil Area.

# How to Order

## M20 Series With Molded Cable

1		2		4	5		6
<b>IPM20</b>	-	<b>H8</b>	-	<b>M</b>	<b>WL</b>	-	<b>1.5</b>
SERIES		CODING & # CONTACTS		GENDER	ANGLE		ASSEMBLY LENGTH

**SERIES**

IPM20 = M20

**CODING & # CONTACTS**

H8 = 3 Power + 5 Signal

**GENDER**

M = Male  
F = Female

**ANGLE**

WL = Straight

**ASSEMBLY LENGTH\***

1.5 = 1.5 meters  
2.0 = 2 meters  
3.0 = 3 meters  
5.0 = 5 meters  
10 = 10 meters

\* Additional lengths are available upon request

## M20 Series Panel Mount

1		2	3	4		5
<b>IPM20</b>	-	<b>H8</b>	<b>M</b>	<b>-RF</b>	-	<b>SC</b>
SERIES		CODING & # CONTACTS	GENDER	FASTENING		TYPE

**SERIES**

IPM20 = M20

**CODING & # CONTACTS**

H8 = 3 Power + 5 Signal

**GENDER**

M = Male  
F = Female

**FASTENING**

-RF = Rear Fastened

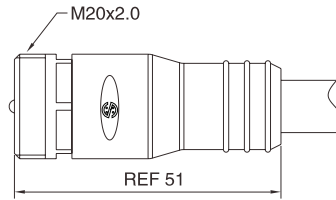
**TYPE**

SC = Solder Cup

# M20 Male Molded Cable, Straight

Connector series: M20  
 Gender: Male  
 Locking type: Fix screw  
 Mounting type: Straight  
 Part No.: IPM20-H8-MWL-XXX

X refers to cable length



## General Information

Ambient temperature: -10°C ~ +80°C	Insulation resistance: $\geq 100M\Omega$
Connector insert: PBT	Contact resistance: $\leq 5m\Omega$
Connector contacts: Brass with gold plated	Shielding: Unavailable
	IP rating: IP67 in locked condition

## Electrical Data & Mechanical Data

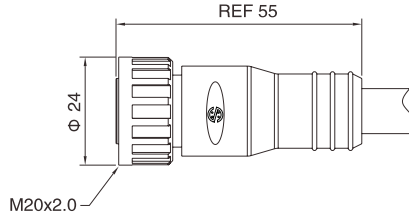
Contacts	Contact termination	Rated current	Voltage		Wire gauge / size		Cable jacket
			A/C	D/C	AWG	mm <sup>2</sup>	
3+5 pins 	Solder version	4A (signal 5 pins)	300V	300V	26-22AWG	0.14-0.3	PVC
		13A (power 3 pins)			18-14 AWG	0.5-2.5	

## Notes

- Please refer to Page 4 for the Conversion between American Wire Gauge AWG and Wire Cross-section mm<sup>2</sup>
- Please refer to Page 5 for the products' part number encoding rule.

# M20 Female Molded Cable, Straight

Connector series: M20  
Gender: Female  
Locking type: Fix screw  
Mounting type: Straight  
Part No.: IPM20-H8-FWL-XXX  
X refers to cable length




## General Information

Ambient temperature:	-10°C ~ +80°C
Connector insert:	PBT
Connector contacts:	Brass with gold plated
Coupling nut/screw:	ASA

Seal/O-ring:	Silicone
Insulation resistance:	≥ 100MΩ
Contact resistance:	≤ 5mΩ
Shielding:	Unavailable
IP rating:	IP67 in locked condition

## Electrical Data & Mechanical Data

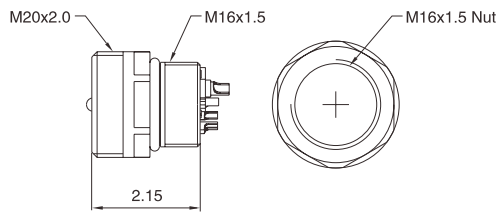
Contacts	Contact termination	Rated current	Voltage		Wire gauge / size		Cable jacket
			A/C	D/C	AWG	mm <sup>2</sup>	
3+5 pins 	Solder version	4A (signal 5 pins)	300V	300V	26-22AWG	0.14-0.3	PVC
		13A (power 3 pins)			18-14 AWG	0.5-2.5	

## Notes

- Please refer to Page 4 for the Conversion between American Wire Gauge AWG and Wire Cross-section mm<sup>2</sup>
- Please refer to Page 5 for the products' part number encoding rule.

# M20 Male Panel Mount, Solder, Rear Fastened

Connector series: M20  
 Gender: Male  
 Locking type: Fix screw  
 Mounting type: Rear fastened  
 Part No.: IPM20-H8M-RF-SC



## General Information

Ambient temperature: -25°C ~ +90°C

Connector insert: PBT

Connector contacts: Brass with gold plated

Coupling nut/screw: PA66

Seal/O-ring: Silicone

Insulation resistance:  $\geq 100M\Omega$

Contact resistance:  $\leq 5m\Omega$

Shielding: Unavailable

IP rating: IP67 in locked condition

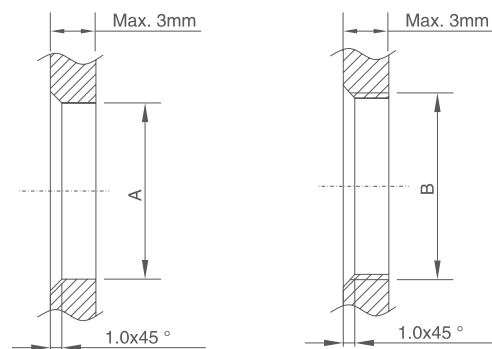
## Electrical Data & Mechanical Data

Contacts		Contact termination	Rated current	Voltage		Wire gauge / size	
				A/C	D/C	AWG	mm <sup>2</sup>
3+5 pins		Solder version	4A (signal 5 pins)	300V	300V	26-22AWG	0.14-0.3
			13A (power 3 pins)			18-14 AWG	0.5-2.5

## Panel Cut-out Dimensions

With bare hole

With thread to screw in



	A	B
M20	20 $\begin{smallmatrix} +0.1 \\ -0 \end{smallmatrix}$	M20x1.5

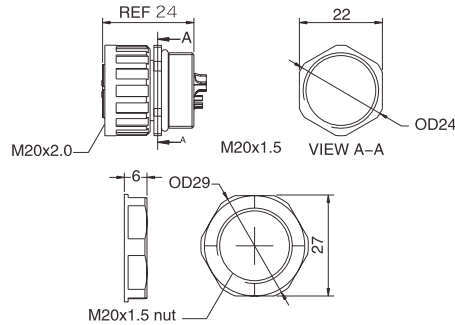
## Notes

- Please refer to Page 4 for the Conversion between American Wire Gauge AWG and Wire Cross-section mm<sup>2</sup>
- Please refer to Page 5 for the products' part number encoding rule.



# M20 Female Panel Mount, Solder, Rear Fastened

Connector series: M20  
Gender: Female  
Locking type: Fix screw  
Mounting type: Rear fastened  
Part No.: IPM20-H8F-RF-SC



## General Information

Ambient temperature:	-25°C ~ +90°C
Connector insert:	PBT
Connector contacts:	Brass with gold plated
Coupling nut/screw:	ASA

Seal/O-ring:	Silicone
Insulation resistance:	≥ 100MΩ
Contact resistance:	≤ 5mΩ
Shielding:	Unavailable
IP rating:	IP67 in locked condition

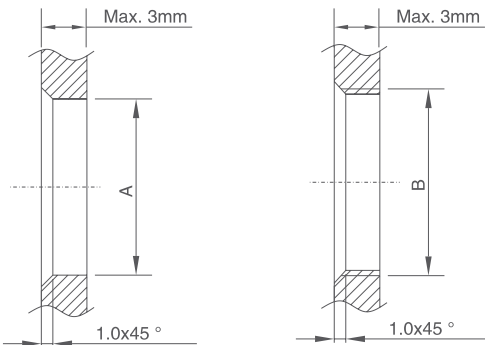
## Electrical Data & Mechanical Data

Contacts	Contact termination	Rated current	Voltage		Wire gauge / size	
			A/C	D/C	AWG	mm <sup>2</sup>
3+5 pins 	Solder version	4A (signal 5 pins)	300V	300V	26-22AWG	0.14-0.3
		13A (power 3 pins)			18-14 AWG	0.5-2.5

## Panel Cut-out Dimensions

With bare hole

With thread to screw in



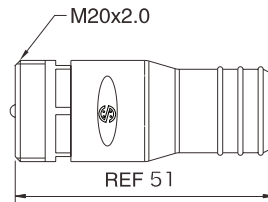
	A	B
M20	20 <sup>+0.1</sup> <sub>-0</sub>	M20x1.5

## Notes

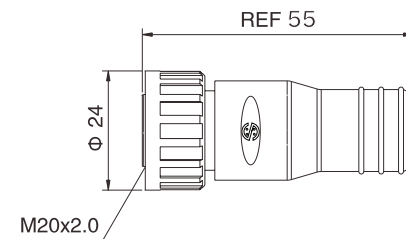
- Please refer to Page 4 for the Conversion between American Wire Gauge AWG and Wire Cross-section mm<sup>2</sup>
- Please refer to Page 5 for the products' part number encoding rule.

## M20 Plastic Male & Female Terminator

Connector series: M20  
Gender: Male  
Locking type: Fix screw  
Mounting type: Straight  
Part No.: IPM20-H8M-TM



Connector series: M20  
Gender: Female  
Locking type: Fix screw  
Mounting type: Straight  
Part No.: IPM20-H8F-TM



### General Information

Ambient temperature:	-10°C ~ +80°C
Connector insert:	PBT
Connector contacts:	Brass with gold plated
Coupling nut/screw:	ASA
Wiring:	Pins 2 & 3 are connected via a 120 Ohm Resistor

Seal/O-ring:	Silicone
Insulation resistance:	≥ 100MΩ
Contact resistance:	≤ 5mΩ
Shielding:	Unavailable
IP rating:	IP67 in locked condition

### Electrical Data & Mechanical Data

	Contacts		Contact termination	Rated current	Voltage	
	Male	Female			A/C	D/C
3+5 pins			Solder version	4A (signal 5 pins) 13A (power 3 pins)	300V	300V

## Part Numbers

All M20 Series P/Ns	Catalog Page
IPM20-H8-MWL-1.0	6
IPM20-H8-MWL-3.0	6
IPM20-H8-MWL-5.0	6
IPM20-H8-FWL-1.0	7
IPM20-H8-FWL-3.0	7
IPM20-H8-FWL-5.0	7
IPM20-H8M-RF-SC	8
IPM20-H8F-RF-SC	9
IPM20-H8M-TM	10
IPM20-H8F-TM	10



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North American Production Facility, South Bend, IN



FilConn, Chandler, AZ



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Visit [www.peigenesis.com](http://www.peigenesis.com), call +1 800.675.1214 (North America), +44 (0) 23 8062 1260 (Europe),  
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