

Cable Connectors

Receptacles With Solder End

Receptacles With Coaxial End

Receptacles With Tab

Receptacles With Slot

Receptacles With Half Round

PCB Connectors



SMA CONNECTORS

#### SMA Series Coaxial Connectors



#### **DESCRIPTION**

Originally designed in 1960 and known by a different name, it was not until 1968 that the SMA, after being incorporated into MIL-C-39012, became known as the SubMiniature A. Then and now, SMA's compact design, high durability and outstanding electronic performance have made it one of the most widely used connectors in RF and Microwave applications across the board. Normally utilized in frequency ranges from DC-18 GHz, there are also precision versions that can reach as high as 26.5GHz.

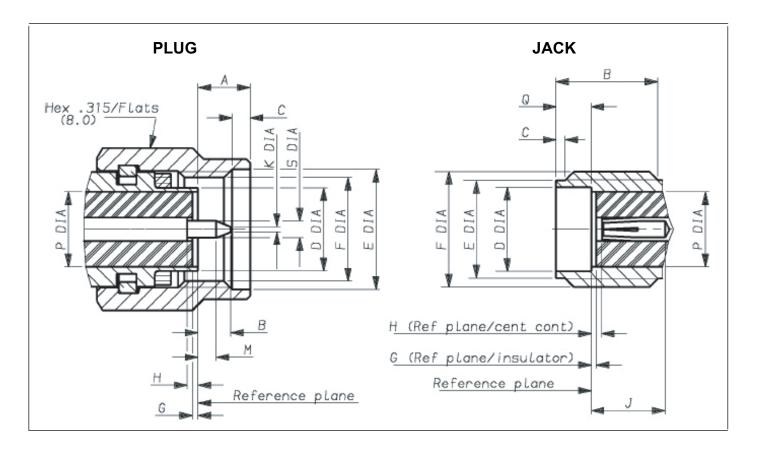
SMA is available both in Standard and Reverse Polarity. where the male and female interface is switched. Regarding to extensive small scale coaxial which join whorl that has a reliable characteristic with long lifespan that the width, performance are excellent, high frequently. Suitable for the microwave equipment and body of the digital communication system and join in the cable for the micro-strip line frequency in the loop frequently.

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#### **SMA SERIES**





LETTER	m	m	in	inch mm inch		mm		ch	
LEITER	min.	max.	min.	max.	LEITER	min.	max.	min.	max
Α		3.43		.135	А				
В		2.54		.100	В	4.31		.170	
С	0.38	1.14	0.15	0.45	С	0.38	1.14	0.15	0.45
D DIA		4.59			D DIA	4.596		.181	
E DIA	6.35		.250		E DIA	5.28	5.49	.208	.216
F DIA		1/4 36 UNS	2B		F DIA		1/4 36 UNS 2	2A	
G*	0.0	-0.20	0.0	-0.08	G*	0.0	-0.20	0.0	-0.08
H*	0.0	-0.25	0.0	-0.10	H*	0.0	-0.25	0.0	-0.10
J					J	2.92		0.115	
K DIA		0.38		0.15	K DIA				
М	1.27		0.05		М				
P DIA	4.10	nom.	.161	l nom.	P DIA	4.10	nom.	.161	nom.
Q DIA					Q DIA	1.88	1.98	.074	.078
S DIA	0.09	0.94	.035	.037	S DIA				

#### Interface dimensions conformable to the standards:

 International:
 IEC 61169-4

 Europe:
 CECC 22190

 Germany:
 DIN 47223, VG 95250

IP rating (interface, mated) IP68

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#### **TECHNICAL DATA**



ELECTRICAL DATA	
Impedance	50 Ohm
Frequency range	.141" & .085" semi-rigid cable: 0-18 GHz;Flexible cables: 0- 12.4 GHz
Dielectric withsanding voltage	.141" & RG-58 Cables: 1,000 VRMS
V.S.W.R.	straight connectors: 1.2 max 0-18 GHz; right angle connectors: 1.25 max 0-18 GHz
Insulation resistance	5,000 M Ω
Contact resistance	Body: $2.0~\text{m}\Omega$ ; Braid to body: $0.5~\text{m}\Omega$
RF leakage	-60 dB minimum

MECHANICAL DATA	
Mating	.250-36 threaded coupling
Connector Durability (matings)	500 mating and unmating cycles at 12 cycles per minute

MATERIAL DATA	
Body and Outer Contacts	Brass per QQ-B-626, gold or nickel plated
Insulator	PTEF PER ASTM-D1457
Gasket	Silicone rubber
Crimp Ferrule	Copper

ENVIRONMENTAL	
Temperature Range	TFE: -65°C to +165°C
Mechanical Shock	MIL STD 202, method 213
Moisture resistance	MIL STD 202, method 106
Corrosion	MIL STD 202, method 101, condition B,
Vibration	MIL STD 202, method 204, condition D, 20g

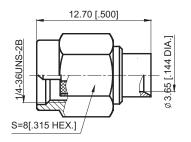






P/N	0.11.7	Finish			Notes
	Cable Type	Center	Body	Assembly Instruction	Notes
60-03-2M06-001	Semi-rigid .141/RG402	Gold	Gold	A01	

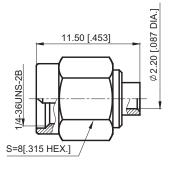
- > Cable entry soldered
- > Centre contact soldered





P/N	0.11. T	Finish		A b - b - f t'	Notos
	Cable Type	Center	Body	Assembly Instruction	Notes
60-03-2M11-002	Semi-rigid .086/RG405	Gold	Gold	A01	

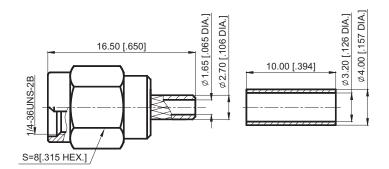
- > Cable entry soldered
- > Centre contact soldered





P/N	0.11.7	Finish			Notes
	Cable Type	Center	Body	Assembly Instruction	Notes
60-03-1M04-003	LMR100/RG174/RG316	Gold	Gold	A02	

- > Cable entry crimp
- > Centre contact soldered





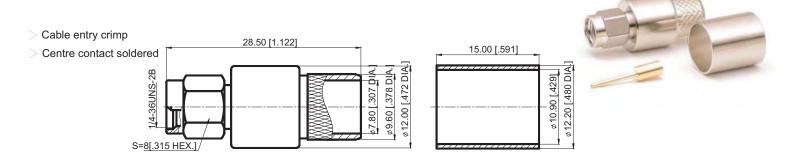


# Straight cable plugs (male)



D/N	0.11. T	Fin	ish		Notos
P/N	Cable Type	Center	Body	Assembly Instruction	Notes
60-03-1M18-004	LMR195/RG58	Gold	Gold	A02	
Cable entry crimp     Centre contact soldere	19.20 [.756	φ3.20 [.126 DIA.]	4.50	\$\rightarrow{\pi}{\pi} \frac{\pi}{\pi} \	

	P/N	0.11. T	Finish		A a sample to the store Care	Notos
		Cable Type	Center	Body	Assembly Instruction	Notes
	60-03-1M01-005	LMR400	Gold	Gold/Nickel	A02	



D/N	0.11. T	Fin	ish	A b b - b b c C	Notes
P/N	Cable Type	Center	Body	Assembly Instruction	Notes
60-03-1M10-006	LMR240	Gold	Gold	A02	
Cable entry crimp     Centre contact solder	ed 19.20 [.756]	\$\rightarrow\rightarro	13.00 [.4	Ø 6.80 [.268 DIA.]	

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S=8[.315 HEX.]

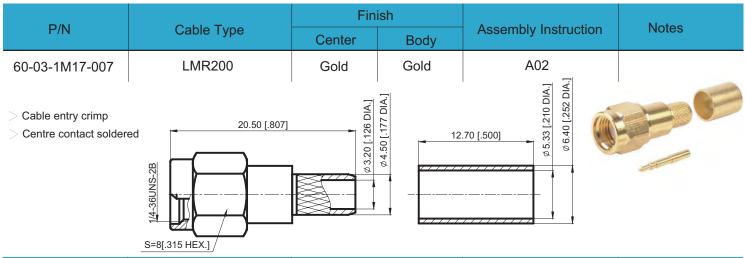
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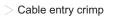


#### Straight cable plugs (male)

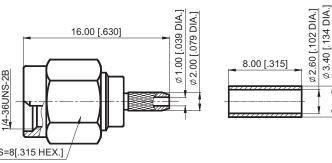




D.0.1	0.11.7	Fin	ish		Notes
P/N	Cable Type	Center	Body	Assembly Instruction	Notes
60-03-1M12-008	RG178	Gold	Gold	A02	



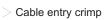
> Centre contact soldered



Gold

S=8[.315 HEX.]				
Oakla Torra	Fin	ish	A	Notes
Cable Type	Center	Body	Assembly Instruction	Notes

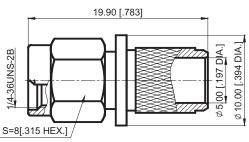
Gold



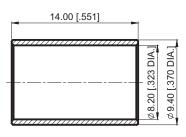
P/N

60-03-1M20-009

> Centre contact soldered



LMR300



A02

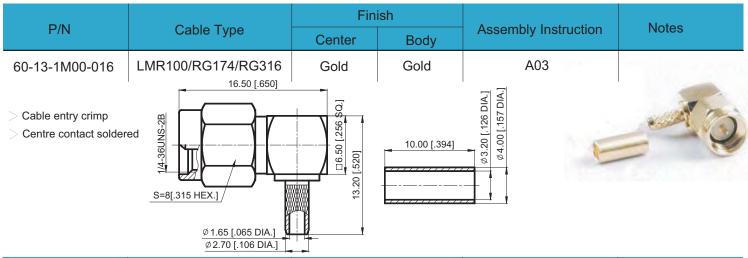


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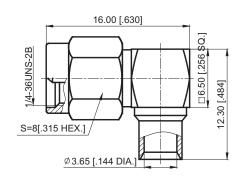




DAL	0.11.7	Fin	ish		Natas
P/N	Cable Type	Center	Body	Assembly Instruction	Notes
60-13-1M18-017	RG58/LMR195	Gold	Gold	A03	
> Cable entry crimp > Centre contact solde	## 16.00 [.630]  S=8[.315 HEX.]  ## 3.20 [.126 DIA.]  ## 4.50 [.177 DIA.]	15.40 [.606]	12.70 [.500]	\$6.25 [.246 DIA.]	

D/N	0.11. T	Finish		A	Notos
P/N	Cable Type	Center	Body	Assembly Instruction	Notes
60-13-2M06-018	RG402/Semi-rigid .141	Gold	Gold	A04	

- > Cable entry crimp
- > Centre contact soldered









#### Straight cable jacks (female)

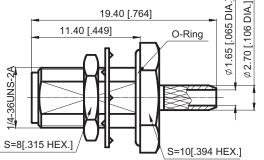
DAL	0.11.7	Fin	ish		Natas
P/N	Cable Type	Center	Body	Assembly Instruction	Notes
60-02-1M17-022	LMR200	Gold	Gold	A02	
Cable entry crimp     Centre contact solder	red 17.50 [.689]  S=7[.276 HEX.]	φ3.20 [.126 DIA.] φ4.50 [.177 DIA.]	12.70 [.5]	8 8 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	

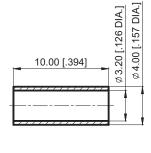
#### Straight bulkhead cable jacks(female)

D/N	0.11. T	Fin	ish	A b - b - f t'	Mount Holo
P/N	Cable Type	Center	Body	Assembly Instruction	Mount Hole
60-02-1B00-020	RG174/LMR100/RG316	Gold	Gold	A02	M01

> Cable entry crimp

> Centre contact soldered







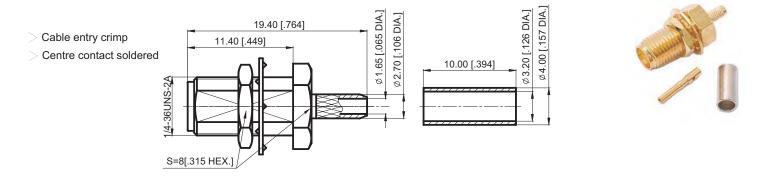






P/N		0.11. T	Fin	ish	A secondal allocations the se	Mount Hole
	P/N	Cable Type	Center	Body	Assembly Instruction	Would Hole
	60-02-1B18-021	RG58/LMR195	Gold	Gold	A02	M01
	> Cable entry crimp > Centre contact solder	21.40 [.843] ed 11.40 [.449] S=8[.315 HEX.]		Ø 3.20 [.126 DIA.] Ø 4.50 [.177 DIA.]	\$\times \times \frac{\pi_{0.05}}{\pi_{0.213}} \times \frac{\pi_{0.05}}{\pi_{0.213}} \times \frac{\pi_{0.05}}{\pi_{0.05}} \	

D/N	0.11. T	Finish			Mount Holo	
P/N	Cable Type	Center	Body	Assembly Instruction	Mount Hole	
60-02-1B00-023	RG174/LMR100/RG316	Gold	Gold	A02	M01	





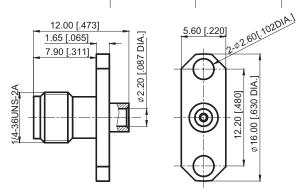
#### Straight panel cable jacks(female)



D/N	Cable Type	Fin	ish	Accombly Instruction	Mount Holo
P/N	Cable Type	Center	Body	Assembly Instruction	Mount Hole
60-02-5E06-024	RG402/Semi-rigid .141	Gold	Gold	A01	M02
Cable entry soldered     Centre contact solder	12.75 [.502] 1.65 [.065] 7.90 [.311]	ø 3.65 [.144 DIA.]	α 16.00 [.630 DIA] σ 16.00 [.630 DIA]		

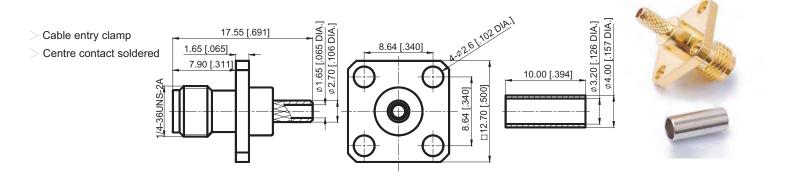
D/N	0.11. T	Finish		A a a comblet to a force Care	Mount Hole
P/N	Cable Type	Center	Body	Assembly Instruction	Mount Hole
60-02-5E11-025	RG405/Semi-rigid .086	Gold	Gold	A01	M02

- > Cable entry soldered
- > Centre contact soldered





DAL	0.11.7	Finish			Mount Hala
P/N	Cable Type	Center	Body	Assembly Instruction	Mount Hole
60-02-5F04-026	LMR100/RG174/RG316	Gold	Gold	A02	M02



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#### RECEPTACLES WITH SOLDER END







D/A1			Fir	nish	Notes	
P/N		Mount Hole	Center	Body	Notes	
60-03-8F1-0	027	M02	Gold	Gold		
> Panel mounted	d	87	φ 0.95 [.037 DIA.] φ 1.27 [.050 DIA.]	8.64 [.340]	4. 45. 80 (105 DIA)	

#### Receptacles, jacks (female)

D/N		Fin	ish	
P/N	Mount Hole	Center	Body	Notes
60-02-8B1-046	M01	Gold	Golder	
> Bulkhead mounted	<del> </del>	17.30 [.681] [.449]	φ0.95 [.037 DIA.] φ1.27 [.050 DIA.]	

#### RECEPTACLES WITH SOLDER END



# Receptacles, jacks (female)



DAL		Fin	ish	
P/N	Mount Hole	Center	Body	Notes
60-02-8E1-037	M03	Gold	Gold	
> Panel mounted	7.90 [.311] 1 14.60 [.575]			DI.102DIA.]

# Right angle Receptacles, jacks(female)

DAL		Fir	nish	
P/N	Mount Hole	Center	Body	Notes
60-12-8F7-029	M04	Gold	Gold	
> Panel mounted	19.55 [.770] 13.05 [.514] 9.75 [.384] 4.00 [.15 1.65 [.065]	φ4.1[.161 DIA.]	12.70 [.500 SQ.]  8.64 [.340]	Ma Leathard day

#### RECEPTACLES WITH SOLDER END







D/N	Finish	Finish		
P/N	Mount Hole	Center	Body	Notes
60-12-8F7-030	M04	Gold	Gold/Nickel	
> Panel mounted	7.90 [.311]	5 [.065]	<u>۱</u> (۵)	0 [.500 SQ.] 4 [.340]

#### RECEPTACLES WITH COAXIAL END

Receptacles, jacks(female)

P/N	Mount Hole	Fin Center	ish Body	Notes
60-02-8E2-038	M03	Gold	Gold	
> Panel mounted	7.90 [.311] 1.60 [.063 12.00 [.472]	ø 16.00 [.630 DIA.]	2-\$2.60[. 6.00 [.236]	102DIA·]

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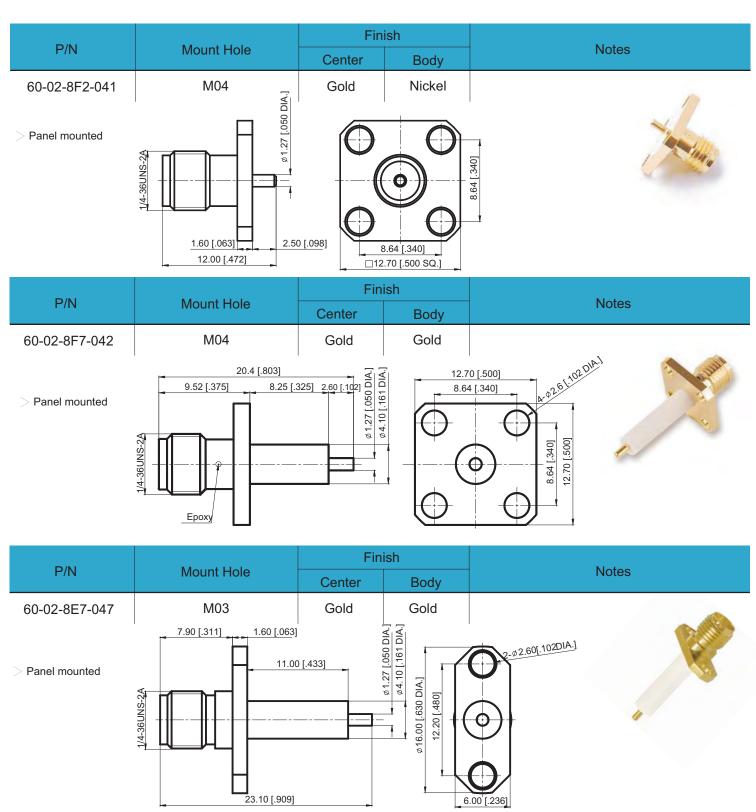
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#### RECEPTACLES WITH COAXIAL END



Receptacles, jacks(female)





#### **RECEPTACLES WITH TAB**



#### Panel Launchers, male



D.0.1		Fin	ish	
P/N	Mount Hole	Center	Body	Notes
60-03-8E6-048	M03	Gold	Gold/Nickel	
> Panel mounted	SW 8 [.315 HEX.]  1.60 [.063 15.14 [.596]	1.27 [.050 2.54 [.100]		Williamy (National Particular)

# Panel Launchers, female

5.01		Fin	ish	
P/N	Mount Hole	Center	Body	Notes
60-02-8E6-040	M03	Gold	Gold/Nickel	-
> Panel mounted	1.60 [.063] 12.04 [.474]	1.27 [.050] 4 [.100]	0 [539] 0.57 (1050) 0.53 (1050	

#### **RECEPTACLES WITH SLOT**







D.0.1		Fin	ish	
P/N	Mount Hole	Center	Body	Notes
60-02-8F3-043	M04	Gold	Gold	
> Panel mounted	1.65 [.065]	7 [.050 DIA.]	2.70 [.500 SQ.]  8.64 [.340]	402601.102 DIA)

#### RECEPTACLES WITH HALF ROUND

# Panel Launchers, female

D/M		Finish		
P/N	Mount Hole	Center	Body	Notes
60-02-8E4-045	M03	Gold	Gold	
> Panel mounted	1.60 [.063] 9.50 [.374]	2.50 [.098]		Ø 16.00 [.630 DIA.]

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#### **PCB CONNECTORS**

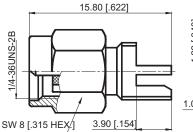


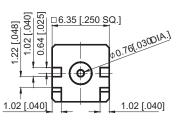


# Straight PCB plugs(male)

P/N	Mount Hole	Finish		
		Center	Body	Notes
60-03-7L2-031		Gold	Gold	1mm Thickness PCB Board

> Without stand-off



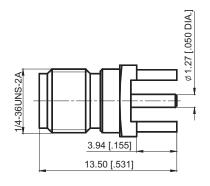


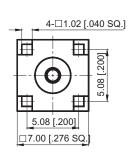


#### Straight PCB jacks(female)

P/N	Mount Hole	Finish		
		Center	Body	Notes
60-02-5L2-033	M05	Gold	Gold/Nickel	

> With stand-off





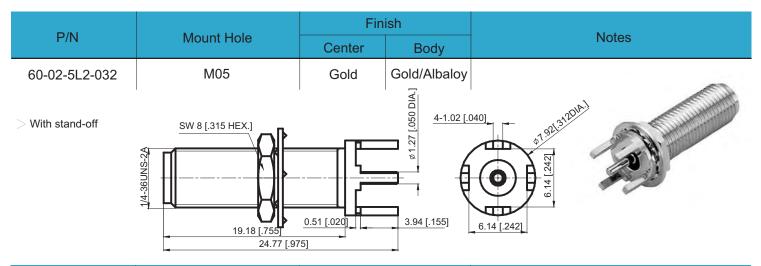


#### **PCB CONNECTORS**



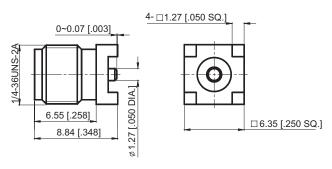
# Straight PCB jacks(female)





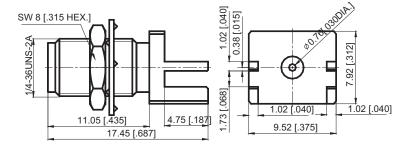
5/41		Finish		
P/N	Soldering Pads	Center	Body	Notes
60-02-6L2-034	M06	Gold	Gold	





P/N	Mount Hole	Finish		Notes	
		Center	Body	Notes	
60-02-5L2-035		Gold	Gold	1.57mm[.062] Thickness PCB Board	

> Without stand-off





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#### **PCB CONNECTORS**

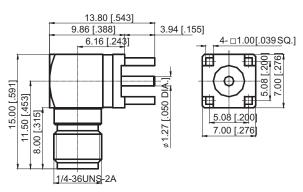




Right Angle PCB jacks(female)

P/N	Mount Hole	Finish		
		Center	Body	Notes
60-12-5M8-049	M05	Gold	Gold/Nickel	

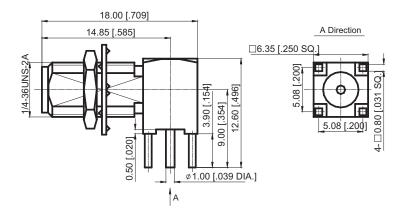
> With stand-off





D.(1)	Mount Hole	Finish		
P/N		Center	Body	Notes
60-12-5M8-051	M01,M07	Gold	Gold	

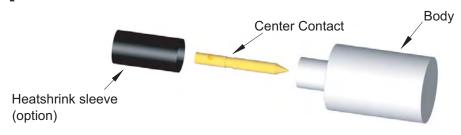
> SMT mounted

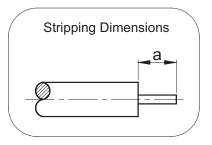






#### **A01**





P/N	Cable Type	Stripping Length (mm [in])	Notes
60-03-2M06-001	RG402/Semi-rigid .141		
60-02-5E06-024	110402/3emi-ngid .141	3.00 [.118]	
60-03-2M11-002	DC 405/Com: visid 000	3.00 [.110]	
60-02-5E11-025	RG405/Semi-rigid .086		

- 1. Slide the heatshrink sleeve onto the cable (option).
  - Strip the cable as Striping Dimensions.



- 2. Slide the center contact on until it bottom against the cable dielectric.
  - Solder the center contact onto the cable.



3. • Slide the cable into the body until it stops.



4. • Solder the body onto the cable.



5. • Slide the heatshrink sleeve over the body and heatshrink it in place (option).

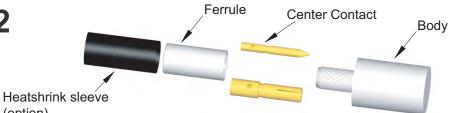


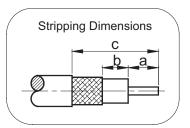
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(option)





D/N	Cable Type	HEX. Crimp Tool	Stripp	oing Length (mm	i [in])
P/N	Cable Type	(mm [in])	а	b	С
60-03-1M12-008	RG178	2.54 [.100]		1 [.039]	9 [.354]
60-03-1M04-003		3.25 [.128]	2.5 [.098]	0 [.000]	10 [.394]
60-02-1B00-020	LMR100/RG174/RG316				
60-02-1B00-023	LIMR 100/RG 174/RG3 16				
60-02-5F04-026					
60-03-1M18-004	- LMR195/RG58 - LMR200	5.41 [.213] 6.8 [.268]			
60-02-1B18-021					
60-03-1M17-007					8 [.315]
60-02-1M17-022					
60-03-1M10-006	LMR240				
60-03-1M20-009	LMR300	8.2 [.323]	3 [.118]	1 [.039]	10 [.394]
60-03-1M01-005	LMR400	10.9 [.429]	4 [.157]	1 [.039]	11 [.433]

- 1. Slide the heatshrink sleeve onto the cable (option).
  - Slide the ferrule onto the cable.
  - Strip the cable as Striping Dimensions.



- 2. Slide the center contact on until it bottom against the cable dielectric.
  - Solder the center contact onto the cable.



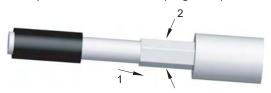
3. • Fan the braid.



4. • Slide the cable into the body until stops.



- 5. Slide the ferrule over the braid.
  - Crimp the ferrule with crimping tool (see table).



- 6. Cut the excess of braid if necessary.
  - Slide the sleeve over the ferrule and heatshrink it in place (option).

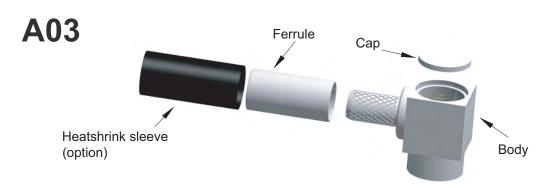


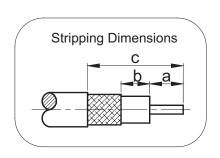
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P/N	Cable Type	HEX. Crimp Tool (mm [in])	Stripping Length (mm [in])		
			а	b	С
60-13-1M00-016	LMR100/RG174/RG316	3.25 [.128]	1.5 [.059]	3 [.118]	11 [.433]
60-13-1M18-017	LMR195/RG58	5.41 [.213]	1.7 [.067]	4 [.157]	13 [.512]

- 1. Slide the heatshrink sleeve onto the cable (option).
  - · Slide the ferrule onto the cable.
  - Strip the cable as Striping Dimensions.



2. • Fan the braid.



- 3. Push the body under the braid.
  - Slide the ferrule over the braid.



- 4. Crimp the ferrule with crimping tool (see table).
  - · Solder the inner conductor.



5. • Place the cap into the body.



- 6. Press on the cap until stops.
  - Slide the sleeve over the ferrule and heatshrink it in place (option).



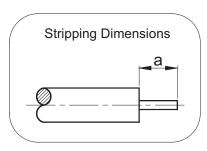
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P/N	Cable Type	Stripping Length (mm [in])	Notes
60-13-2M06-018	RG402/Semi-rigid .141	3.5 [.138]	

- 1. Slide the heatshrink sleeve onto the cable (option).
  - Strip the cable as Striping Dimensions.



- 2. Slide the cable into the body until it stops.
  - · Solder the inner conductor.



3. • Screw the back nut onto the body.

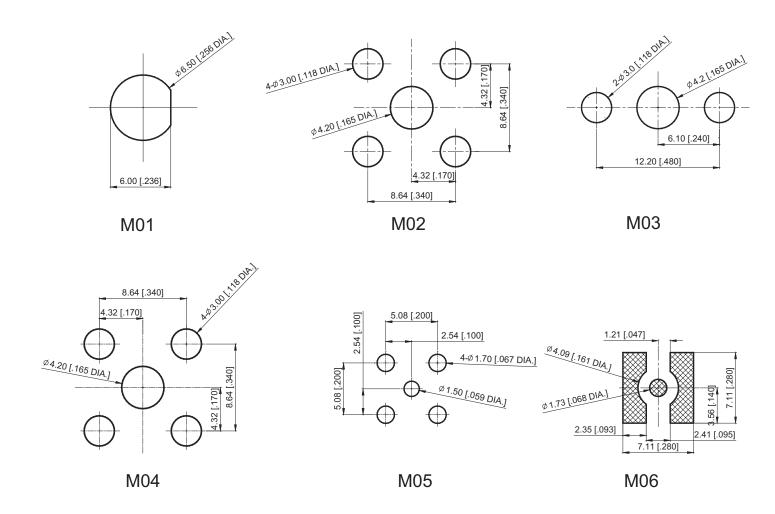


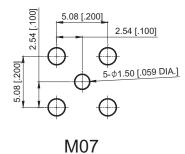
4. • Slide the sleeve over the body and heatshrink it in place (option).



#### **MOUNTING HOLES**







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