



TNC / TNC 18 GHz

R143 / R144

Contents

TNC

Introduction..... 11-4
Interface 11-4 to 11-5
Characteristics 11-6 to 11-7

TNC 50Ω

Plugs 11-8 to 11-9
Jacks 11-9 to 11-11
Receptacles..... 11-11 to 11-12
Caps 11-12
Adapters 11-13

TNC 18 GHz

Interface 11-5
Characteristics 11-6 to 11-7
Plugs 11-14
Jacks 11-14 to 11-15
Receptacles..... 11-15
Adapters 11-16
Caps..... 11-16

TNC 75Ω

Plugs 11-17
Jacks 11-17

Panel drilling 11-18

SECTION 11 TABLE OF CONTENTS

Introduction



50Ω	DC - 11 GHz (standard) DC - 18 GHz (TNC 18 GHz)
75Ω	DC - 1.5 GHz DC - 1 GHz (recommended)
50 and 75Ω	DC - 1.5 GHz (commercial)

GENERAL

- Screw-on equivalent to BNC bayonet series
- Good RF performance
- Suitable for high power levels
- Long life and high strength
- 3 ranges:
 - Standard TNC series (50 and 75Ω fully intermateable)
 - Commercial TNC series (50 and 75Ω)
 - 18 GHz TNC series (50Ω)

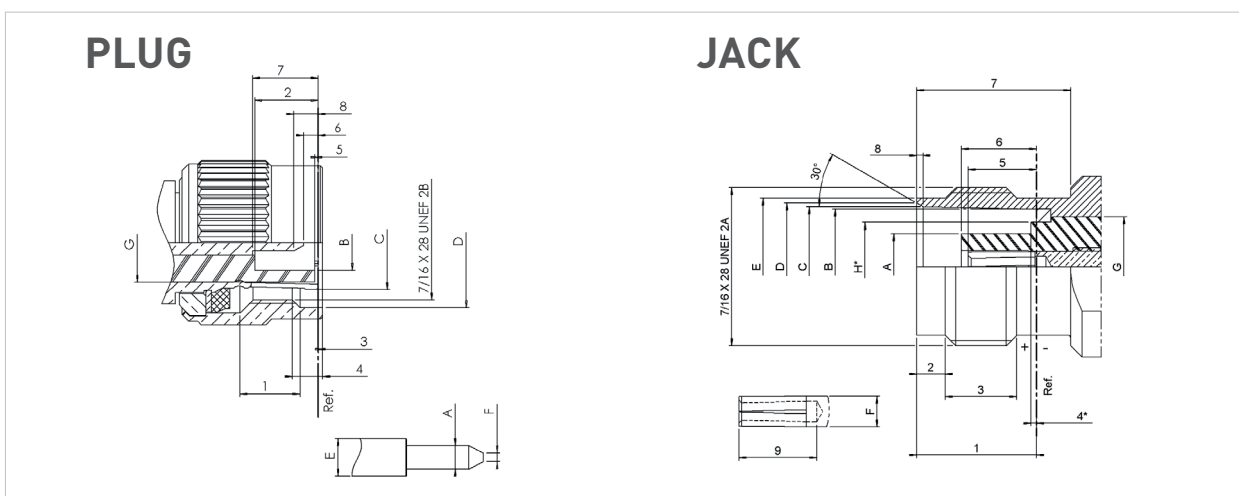
APPLICABLE STANDARDS

- MIL-C-39012 / MIL STD 348A/313
- IEC 60169-17
- CECC 22200

APPLICATIONS

- Avionics
- Aeronautics
- Countermeasures
- Telecommunications

Interface TNC

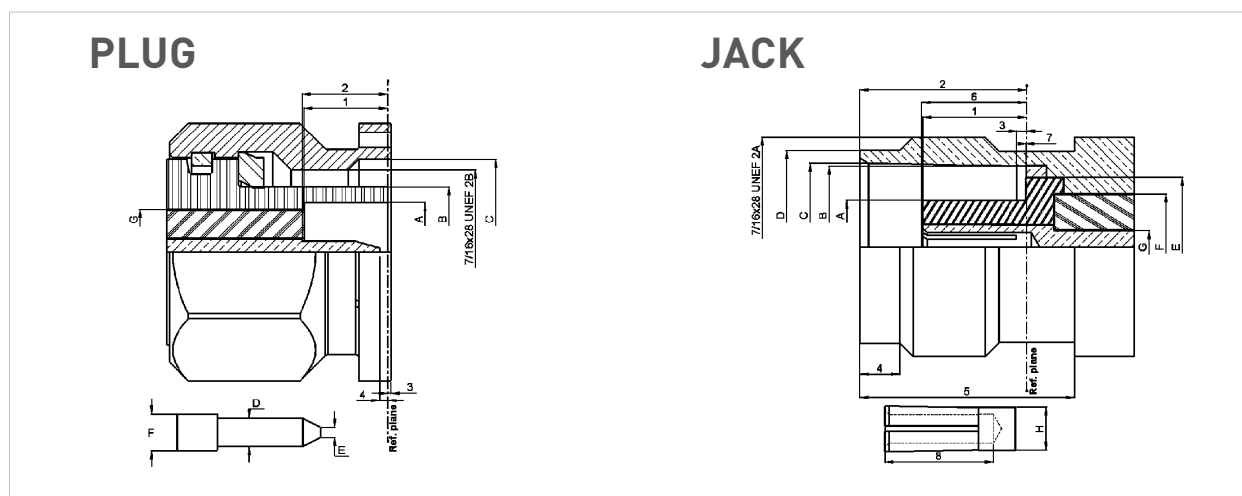


Interface TNC

Letter	mm		inch	
	min.	max.	min.	max.
A	1.32	1.37	0.052	0.054
B	4.83	-	0.190	-
D	11.40	-	0.449	-
E	-	2.20	-	0.087
F	0.35	0.65	0.014	0.025
G	7.00	7.05	0.275	0.277
1	4.9	5.70	0.193	0.224
2	5.28	5.79	0.208	0.228
3	0.15	-	0.006	-
4	1.8	-	0.071	-
5	0.15	-	0.006	-
6	0.08	1.02	0.003	0.040
7	5.33	5.84	0.210	0.230
8	0.70	1.98	0.027	0.078

Letter	mm		inch	
	min.	max.	min.	max.
A	-	4.72	-	0.186
B	8.10	8.10	0.319	0.321
C	8.31	8.46	0.327	0.333
D	8.79	9.04	0.346	0.356
E	9.60	9.68	0.378	0.381
F	-	2.20	-	0.087
H	-	5.90	-	0.232
1	8.30	8.50	0.327	0.335
2	1.73	2.24	0.068	0.088
3	4.75	-	0.187	-
4	-	0.15	-	0.006
5	4.72	5.23	0.186	0.206
6	4.78	5.28	0.188	0.208
7	10.7	-	0.421	-
8	0.38	0.76	0.015	0.030
9	4.95	-	0.195	-

Interface TNC 18 GHz



Letter	mm		inch	
	min.	max.	min.	max.
A	6.18	6.22	0.243	0.245
B	8.03	8.09	0.316	0.319
C	11.40	11.60	0.449	0.457
D	1.34	1.36	0.053	0.054
E	0.35	0.65	0.014	0.026
F	1.62	1.66	0.064	0.065
G	5.28	5.32	0.208	0.210
1	5.28	5.38	0.208	0.212
2	5.35	5.50	0.211	0.217
3	-0.30	0.55	-0.012	0.022
4	0.35	0.90	0.014	0.065

Letter	mm		inch	
	min.	max.	min.	max.
A	4.68	4.72	0.184	0.186
B	8.10	8.15	0.319	0.321
C	8.32	8.46	0.328	0.333
D	9.61	9.68	0.379	0.381
E	6.93	6.98	0.273	0.275
F	5.28	5.32	0.208	0.210
G	1.62	1.66	0.064	0.065
H	2.14	2.18	0.084	0.086
1	4.98	5.23	0.196	0.206
2	8.36	8.46	0.329	0.333
3	0.48	1.02	0.019	0.040
4	1.80	2.20	0.071	0.087
5	10.60	11.00	0.417	0.432
6	5.18	5.28	0.204	0.208
7	-0.10	0.05	0.004	0.002
8	5.20	5.70	0.204	0.224

TNC/TNC 18 GHz

Characteristics TNC

Test/characteristics	MIL-C-39012 A	Values/remarks	
ELECTRICAL CHARACTERISTICS			
Impedance		50Ω	75Ω
Frequency range		DC - 11 GHz	DC - 1.5 GHz
V.S.W.R.	3-14	1.30 max	
Insertion loss	3-27	0.18 dB max at 9 GHz	
RF leakage	3-26	-60 dB min from 2 to 3 GHz	
Insulation resistance	3-11	5000 MΩ min	
Contact resistance	3-16	Initial 1.5 0.2	After proof 2 -
Working voltage		At sea level: 500 V rms	at 70000 ft (21000 m): 125 V rms
Dielectric withstanding voltage	3-17	At sea level: 1500 V rms	at 70000 ft (21000 m): 375 V rms
RF withstanding voltage	3-23	At sea level: 1000 V rms (5 MHz sine wave)	

MECHANICAL CHARACTERISTICS

Durability	3-15	500 matings	
Mating / unmating		axial force: not applicable torque: 1.96 inch pounds (22.6 N.cm)	
Recommended mating torque		3.99 to 5.98 inch pounds (46 to 69 N.cm)	
Proof torque		14.74 inch pounds (170 N.cm)	
Coupling mechanism retention force	3-25	100 Lbf (44.5 daN)	
Cabling retention force	3-24	cable clamp:	40.6 Lbf (181 N min) [all cables]
		crimped:	51 Lbf (227 N min) (cable dia. .189 (4.8) to .228 (5.8))
			76.4 Lbf (340 N min) (cable dia. .250 (6.35) and above)
Center contact retention		Axial: 6.06 Lbf (27 N)	

ENVIRONMENTAL CHARACTERISTICS

Temperature range		-65°C / + 165°C	
standard models		-65°C / +100°C	
hermetic sealed models		-65°C / +105°C	
models for semi-rigid cables			
Thermal shock	3-20	MIL-STD-202, method 107, condition B	
High temperature endurance		MIL-STD-202, method 108	
Corrosion (salt spray)	3-13	MIL-STD-202, method 101, condition B	
Vibrations	3-18	MIL-STD-202, method 204, condition B	
Shocks	3-19	MIL-STD-202, method 213, condition G	
Moisture resistance	3-21	MIL-STD-202, method 106	
Low pressure	3-22	Not applicable	
Hermetic seal		Applied vacuum 10 ⁻⁶ mm of Hg (Torrs) leakage rate < 10 ⁻⁶ atm/cm ² /s	
Leakage		Pressure 3.5 bars; duration 2 mn; temperature 15°C to 25°C	

MATERIALS AND PLATING

Body and center pin contact	Brass as per QQ-B-626	Nickel plated
Center socket contact	Beryllium copper as per QQ-C-530	Gold plated
Ferrules	Brass	
Insulators	PTFE teflon	
Gaskets	Silicone elastomer	

All dimensions are given in mm

Characteristics commercial TNC

Test/characteristics	Values/remarks
ELECTRICAL AND ENVIRONMENTAL CHARACTERISTICS	
Impedance	50Ω or 75Ω
Frequency range	DC - 1.5 GHz
Test voltage	1500 V rms
Operating voltage	500 V rms
Insulation resistance	5000 MΩ min (500 V)
Contact resistance	10 mΩ max
Temperature range	-35°C / +70°C

PLATING

Body	Nickel
Center contacts	Gold

Characteristics

Test/characteristics	MIL-C-39012 A	Values/remarks
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ELECTRICAL CHARACTERISTICS

Impedance		50Ω
Frequency range		DC - 18 GHz
V.S.W.R.	3-14	Semi-rigid cable: 1.17 max Flexible cable: 1.35 at 12.4 GHz In series adapter: 1.35 max
Insertion loss	3-27	0.18 dB max at 9 GHz
RF leakage	3-26	-60 dB min from 2 to 3 GHz
Insulation resistance	3-11	5000 MΩ min
Contact resistance	3-16	Initial 1.5 0.2 After proof 2 -
Working voltage		At sea level: 500 V rms at 70000 ft (21000 m): 125 V rms
Dielectric withstanding voltage	3-17	At sea level: 1500 V rms at 70000 ft (21000 m): 375 V rms
RF withstanding voltage	3-23	At sea level: 1000 V rms (5 MHz sine wave)

MECHANICAL CHARACTERISTICS

Durability	3-15	500 matings
Mating / unmating		axial force: not applicable torque: 1.96 inch pounds (22.6 N.cm)
Recommended mating torque		22.98 inch pounds (265 N.cm)
Proof torque		29.40 inch pounds (339 N.cm)
Coupling mechanism retention force	3-25	100 Lbf (44.5 daN)
Cabling retention force	3-24	51 Lbf (227 N min) (cable dia. .189 (4.8) to .228 (5.8)) 76.4 Lbf (340 N min) (cable dia. .250 (6.35) and above)
Center contact retention		Axial: 6.06 Lbf (27 N)

ENVIRONMENTAL CHARACTERISTICS

Temperature range		
standard models		-65°C / + 165°C
hermetic sealed models		-65°C / +100°C
models for semi-rigid cables		-65°C / +105°C
Combined climate tests		
Thermal shock	3-20	MIL-STD-202, method 107, condition B
High temperature endurance		MIL-STD-202, method 108
Corrosion (salt spray)		MIL-STD-202, method 101, condition B
Vibrations	3-18	MIL-STD-202, method 204, condition B
Shocks	3-19	MIL-STD-202, method 213, condition G
Moisture resistance	3-21	MIL-STD-202, method 106
Low pressure	3-22	Not applicable
Hermetic seal		Applied vacuum 10 ⁻⁶ mm of Hg (Torrs) Leakage rate < 10 ⁻⁶ atm/cm ² /s
Leakage		Pressure 3.5 bars; duration 2 mn; temperature 15°C to 25°C

MATERIALS

Body		Stainless steel
Center socket contact	male female	Brass Bronze
Ferrules		Brass
Insulators		PTFE teflon
Gaskets		Silicone elastomer

PLATING

Body		Passivated
Center contacts		Gold plated

Standard packaging = unit

All dimensions are given in mm (inch)

Plugs

STRAIGHT PLUGS CRIMP TYPE FOR FLEXIBLE CABLE

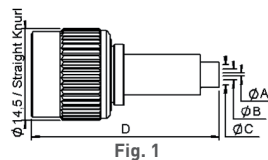


Fig. 1

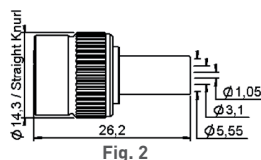


Fig. 2

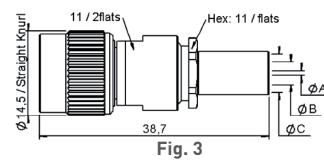


Fig. 3

Cable group	Cable group dia.	Part number	Fig	Dimensions mm				Captive center contact	Packaging	Note
				A	B	C	D			
RG174/RG316/AEP-100FR	2.6/50/S & LMR® 100	R143 075 000	1	0.6	1.75	3.25	29.6	yes	100 pieces	
AEP-195FR	LMR® 195	R143 082 027		1.05	3.1	5.55	26.6	yes	100 pieces	Crimp type
AEP-200FR	LMR® 200	R143 082 200		1.27	3.1	5.55	26.6	yes	100 pieces	Crimp type
AEP-240FR	LMR® 240	R143 084 161		1.5	4.05	6.6	28.2	yes	100 pieces	Crimp type
AEP-400FR	LMR® 400	R143 089 117		2.85	7.8	11.05	27.85	yes	100 pieces	Crimp type
RG58/RG141	5/50/S	R143 082 000	2						100 pieces	Full crimp
		R143 082 161						yes		Commercial version, full crimp
		R143 072 000	3	1.05	3.1	5.55		no		
RG142/RG223/RG400	5/50/D	R143 073 000	1		3.075	5.5		yes	Unit	
		R143 083 000		1.05	3.1	5.5	26.6			

STRAIGHT PLUGS CLAMP TYPE FOR FLEXIBLE AND SEMI RIGID CABLE

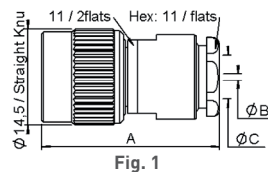


Fig. 1

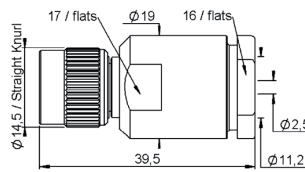


Fig. 2

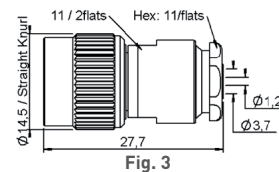


Fig. 3

Cable group	Cable group dia.	Part number	Fig	Dimensions mm			Captive center contact	Packaging	Note
				A	B	C			
RG174/RG316/RD316 RG179/RD179	2.6/50+75	R143 004 000	1	26.5	0.6	3.1	yes	Unit	
RG58/RG141/RG142 RG223/RG400	5/50/S+D	R143 008 000		27.1	1.2	5.6	no	100 pieces	Conical braid clamp
RG59/RG62	6/75+93	R143 012 000		27	1.05	6.65			
RG213/RG393/RG214	10+11/50	R143 018 000	2				yes	Unit	Safety coupling nut
		R143 018 500							
RG402	.141"	R143 052 000	3				no		

Plugs and jacks

RIGHT ANGLE PLUGS CRIMP AND SOLDER TYPE

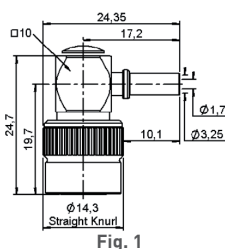


Fig. 1

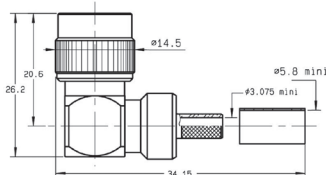


Fig. 2

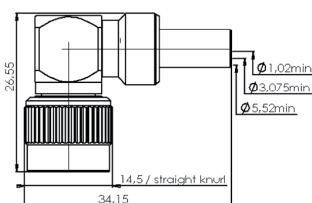


Fig. 3

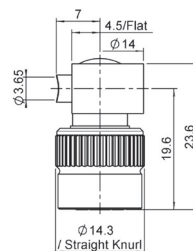
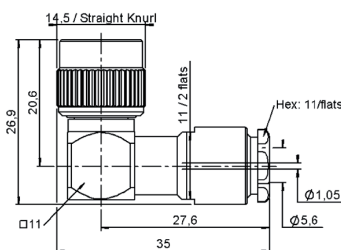


Fig. 4

Cable group	Cable group dia.	Part number	Fig	Captive center contact	Packaging	Note
RG174/RG316	2.6/50/S	R143 181 161	1	yes	100 pieces	Commercial version
RG58/RG141	5/50/S	R143 182 000	3		100 pieces	
RG142/RG223/RG400	5/50/D	R143 183 000	2		Unit	
RG402	.141"	R143 154 100	4		100 pieces	Solder Type

RIGHT ANGLE PLUG CLAMP TYPE FOR FLEXIBLE CABLE



Cable group	Cable group dia.	Part number	Captive center contact	Packaging
RG58/RG141/RG142/RG223/RG400	5/50/S+D	R143 156 000	yes	Unit

STRAIGHT JACKS CRIMP TYPE FOR FLEXIBLE CABLE

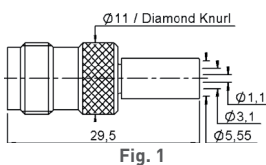


Fig. 1

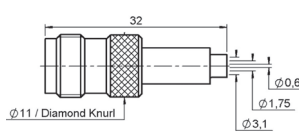


Fig. 2

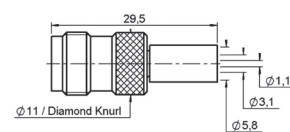
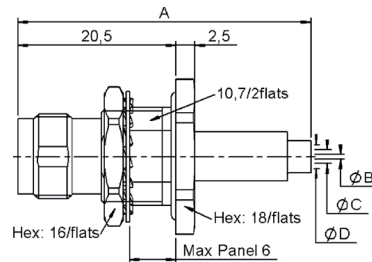


Fig. 3

Cable group	Cable group dia.	Part number	Fig	Captive center contact	Packaging	Note
RG174/RG316/RD316	2.5/60 S + D	R143 237 000	2	yes	Unit	
RG58/RG141	5/50/S	R143 235 161	1		100 pieces	Commercial version, full crimp
RG142/RG223/RG400	5/50D	R143 236 020	3		Unit	

Jacks

STRAIGHT BULKHEAD JACKS CRIMP TYPE FOR FLEXIBLE CABLE



Cable group	Cable group dia.	Part number	Dimensions mm				Captive center contact	Panel drilling	Packaging	Note
			A	B	C	D				
RG174/RG316	2.6/50/S	R143 331 161	38	0.6	1.75	3.10	yes	P09+P11	100 pieces	Commercial version, panel sealed
RG58/RG141	5/50/S	R143 332 161	35	1.05	3.10	5.55				Commercial version, panel sealed, full crimp

STRAIGHT JACKS CLAMP TYPE FOR FLEXIBLE CABLE

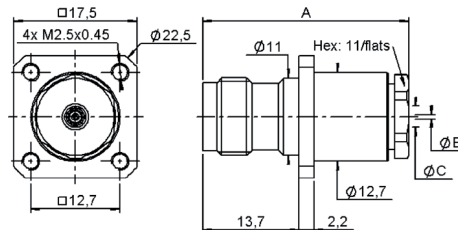


Fig. 1

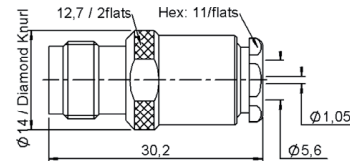
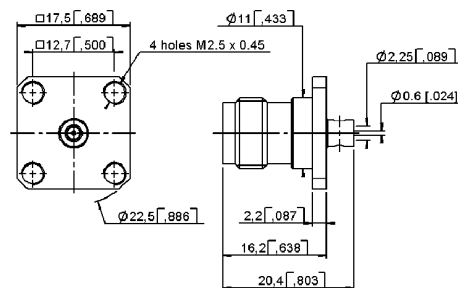


Fig. 2

Cable group	Cable group dia.	Part number	Fig	Dimensions mm			Captive center contact	Panel drilling	Packaging	Note
				A	B	C				
RG174/RG316/RD316/RG179/RD179	2.6/50+75	R143 254 000	1	29.8	0.6	3.1	yes	P04	Unit	Square flange Also for screws type 3-56 UNF 2A
RG58/RG141/RG142/RG223/RG400	5/50/S+D	R143 258 000		30.2	1.05	5.6	no			
RG58/RG141	5/50/S	R143 207 000	2							

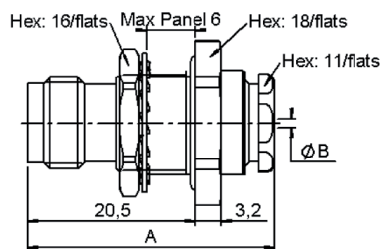
SQUARE FLANGE STRAIGHT JACK SOLDER TYPE FOR SEMI-RIGID CABLE



Cable group	Cable group dia.	Part number	Captive center contact	Panel drilling	Packaging
RG405	.085"	R143 257 440	no	P01	Unit

Jacks and receptacles

STRAIGHT BULKHEAD JACKS PANEL SEALED REAR MOUNT



Cable group	Cable group dia.	Part number	Dimensions (mm)		Captive center contact	Panel drilling	Packaging
			A	B			
RG178/RG196	2/50/S	R143 323 000	29.9	2.2	yes	P09	Unit
RG174/RG316/RD316	2.6/50	R143 324 000	29.6	3.1			100 pieces
RG58/RG141	5/50/S	R143 325 000	30.17	5.6			Unit
RG402	.141"	R143 337 000	30.8	3.7	no		100 pieces

SQUARE FLANGE STRAIGHT FEMALE RECEPTACLES

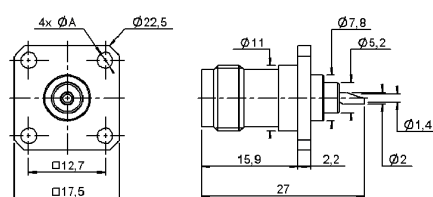
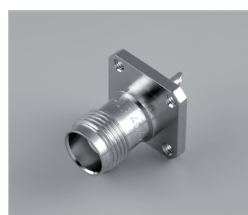


Fig. 1

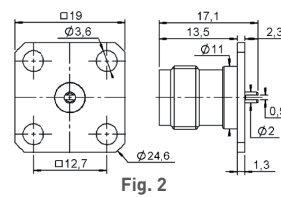


Fig. 2

Part number	Fig	Dimensions A (mm)	Captive center contact	Panel drilling	Packaging	Note
R143 404 000	1	M2.5 x 0.45	yes	P05	Unit	Solder pot 17.5 mm square flange
R143 405 000		2.6			100 pieces	
R143 420 000	2		no	P02		Slotted contact 19 mm square flange

BULKHEAD STRAIGHT FEMALE RECEPTACLES

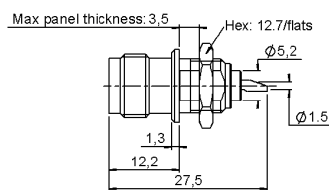


Fig. 1

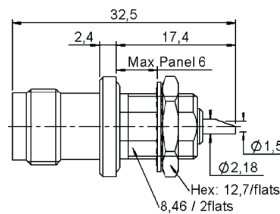


Fig. 2

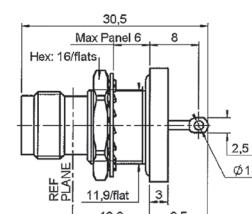
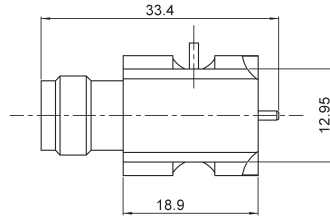


Fig. 3

Part number	Fig	Captive center contact	Panel drilling	Packaging	Note
R143 557 000	1	yes	P08	Unit	Front mount, solder pot contact
R143 603 000	2		P10		Panel sealed, front mount, solder pot contact
R143 626 000	3		P17		Hermetic, panel sealed, rear mount

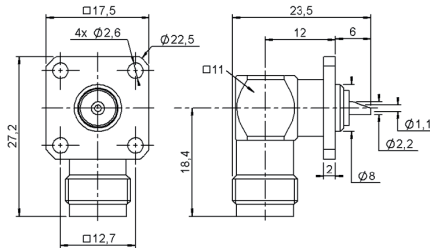
Receptacles and caps

RF POWER SWITCHING CONNECTORS



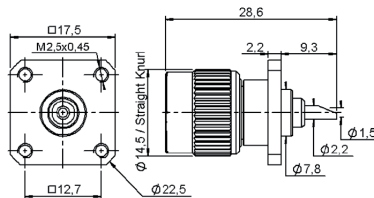
Part number	Type
R143 422 947	Left
R143 422 957	Right

SQUARE FLANGE RIGHT ANGLE FEMALE RECEPTACLE



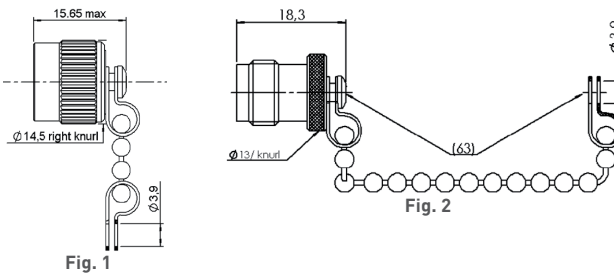
Part number	Captive center contact	Panel drilling	Packaging	Note
R143 654 000	yes	P06	Unit	Solder pot contact

SQUARE FLANGE STRAIGHT MALE RECEPTACLE



Part number	Captive center contact	Panel drilling	Packaging	Note
R143 440 000	yes	P03	Unit	Solder pot contact

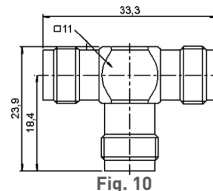
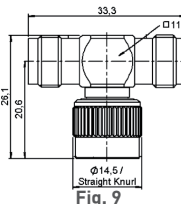
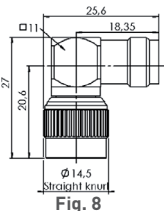
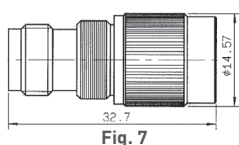
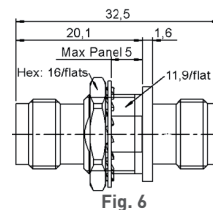
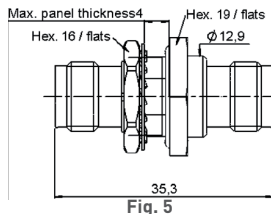
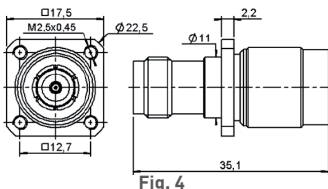
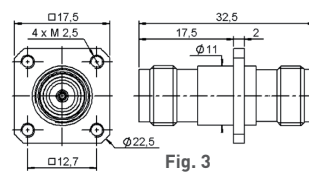
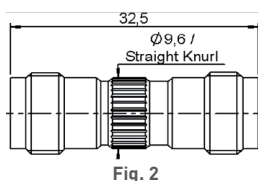
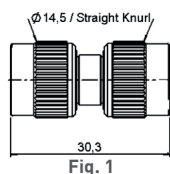
PROTECTIVE CAPS



Part number	Fig	Finish	Packaging	Note
R143 812 000	1	Nickel	Unit	Male with chain
R143 835 000	2		100 pieces	Female with chain

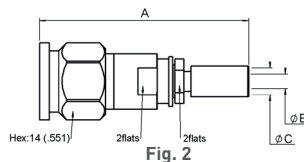
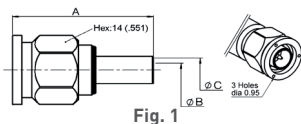
Adapters

IN SERIES ADAPTERS



Part number	Fig	Captive center contact	Panel drilling	Packaging	Note
R143 703 000	1	yes	P01	Unit	Male-male
R143 704 000	2				Female-female
R143 710 000	3				Square flange female-female
R143 713 000	4				Square flange slide on type male-female
R143 753 000	5			100 pieces	Bulkhead hermetic, panel seated female-female
R143 720 000	6				Commercial version, bulkhead female-female
R143 713 200	7			Unit	Female-male push-on
R143 770 000	8			Unit	Right angle male-female
R143 780 000	9				Female female male
R143 782 000	10				Female female female

STRAIGHT PLUGS CRIMP TYPE FOR FLEXIBLE CABLE

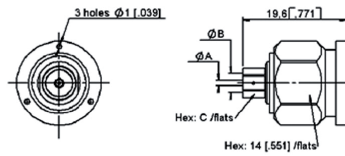
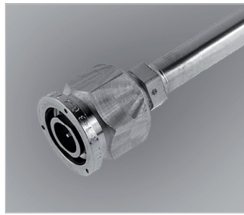


Cable group	Cable group dia.	Part number	Fig	Dimensions mm (inch)			Note
				A	B	C	
RG142/RG223/RG400	5/50/D	R143 082 700	1	30 [1.181]	3.2 [.126]	5.5 [.218]	Incl. heatshrink tube
		R143 097 700	2	43.5 [1.713]	3 [.118]	5.5 [.218]	
	3.85/50/S	R143 088 101		47 [1.85]	3 [.118]	4.2 [.165]	
	4.13/50	R143 093 700		43.5 [1.71]	2.7 [.106]	4.5 [.177]	
8.07/50/S	R143 092 790	49.7 [1.957]		6.3 [.248]	8.4 [.331]		
RG214/RG225	11/50/D	R143 089 700	1	35 [1.38]	7.5 [.295]	11 [.433]	

TNC 50Ω

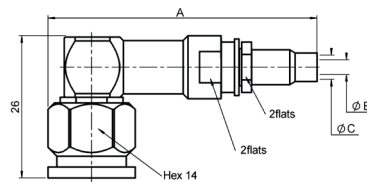
Plugs and jacks

STRAIGHT PLUGS SOLDER TYPE FOR SEMI-RIGID CABLE



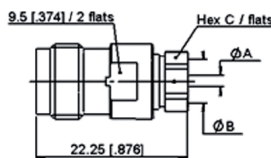
Cable group	Cable group dia.	Part number	Dimensions mm (inch)		
			A	B	C
RG402	.141"	R143 051 700	1 [.039]	3.65 [.144]	5 [.197]
RG401	.250"	R143 054 700	1.7 [.067]	6.45 [.254]	8 [.315]

RIGHT ANGLE PLUGS CRIMP TYPE FOR FLEXIBLE CABLE



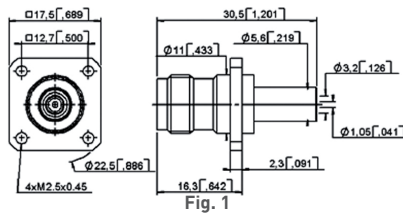
Cable group	Cable group dia.	Part number	Dimensions mm (inch)			Note
			A	B	C	
	3.85/50/S	R143 188 101	54.2 [2.13]	3 [.118]	4.2 [.165]	Incl. heatshrink tube
	4.13/50	R143 191 700	50 [1.97]	2.7 [1.06]	4.5 [.177]	

STRAIGHT JACKS SOLDER TYPE FOR SEMI-RIGID CABLE



Cable group	Cable group dia.	Part number	Dimensions mm (inch)		
			A	B	C
RG402	.141"	R143 227 700	1 [.039]	3.65 [.143]	5 [.197]

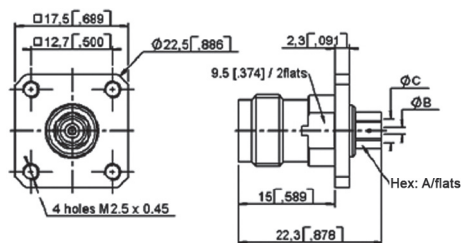
STRAIGHT SQUARE FLANGE JACK CRIMP TYPE FOR FLEXIBLE CABLE



Cable group	Cable group dia.	Part number	Fig	C	Panel drilling	Note
	5/50/D	R143 292 700	1	5.6 [.219]		
		R143 297 700	2			

Jacks and receptacles

STRAIGHT SQUARE FLANGE JACKS SOLDER TYPE FOR SEMI-RIGID CABLE



Cable group	Cable group dia.	Part number	Dimensions mm (inch)			Panel drilling
			A	B	C	
RG405	.085"	R143 272 700	4 (.157)	0.6 (.024)	2.25 (.089)	P12
RG402	.141"	R143 273 700	5 (.197)	1 (.039)	3.65 (.144)	
RG401	.250"	R143 274 700	8 (.315)		6.45 (.254)	

STRAIGHT BULKHEAD JACK PANEL SEALED

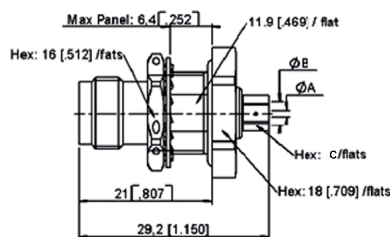


Fig. 1

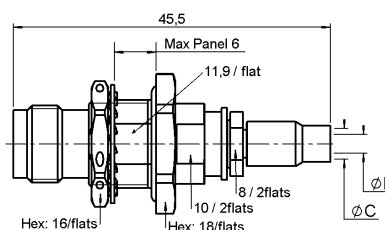
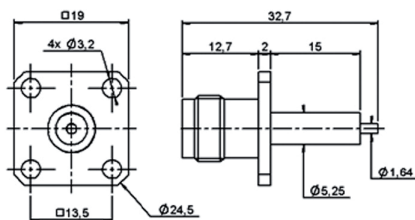


Fig. 2

Cable group	Cable group dia.	Part number	Fig	Dimensions mm (inch)		Panel drilling	Type
				B	C		
RG402	.141"	R143 321 700	1	3.65 [.144]	5 [.197]	P09	Solder
RG401	.250"	R143 322 700		6.45	8		
	4.13/50	R143 340 700	2	2.7	4.5		Crimp

SQUARE FLANGE STRAIGHT FEMALE RECEPTACLE (extended dielectric)



Part number	Captive center contact	Panel drilling
R143 412 700	yes	P13

TNC 18 GHz

Adapters and caps
IN SERIES ADAPTERS

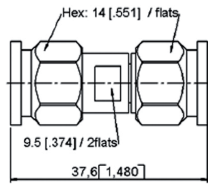


Fig. 1

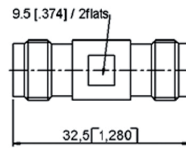


Fig. 2

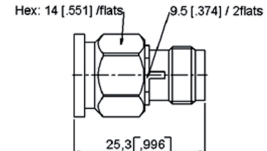


Fig. 3

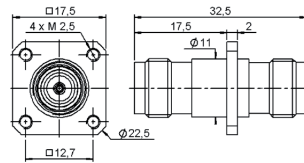


Fig. 4

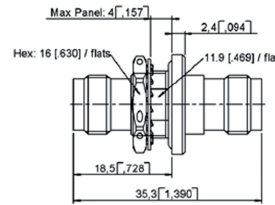
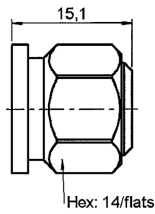
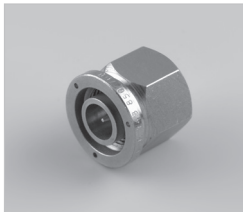


Fig. 5

Part number	Fig	Captive center contact	Panel drilling	Note
R143 703 700	1	yes		Male - male
R143 704 700	2			Female - female
R143 705 700	3			Male - female
R143 710 700	4		P16	Square flange female - female
R143 730 700	5		P09	Bulkhead panel sealed female - female

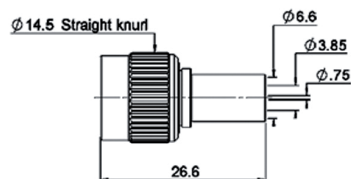
CAPS



Part number	Note
R143 850 700	Male short circuit

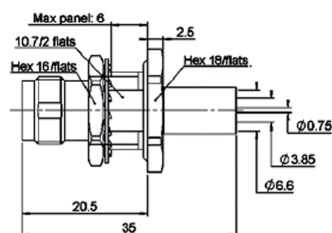
Plugs and jacks

STRAIGHT PLUGS CRIMP TYPE FOR FLEXIBLE CABLE



Cable group	Cable group dia.	Part number	Captive center contact	Note
RG59/RG62	6/75 + 93	R144 085 000	no	Full crimp
		R144 085 161	yes	Commercial version - full crimp

STRAIGHT BULKHEAD JACKS CRIMP TYPE FOR FLEXIBLE CABLE

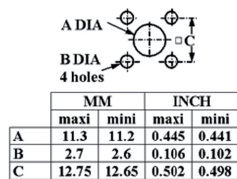


Cable group	Cable group dia.	Part number	Captive center contact	Panel drilling	Packaging	Note
RG59/RG62	6/75 + 93	R144 334 161	yes	P09 or P11	100 pieces	Commercial version Panel sealed

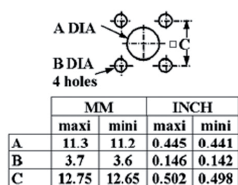
TNC 75Ω

Panel drilling

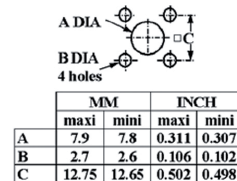
P01



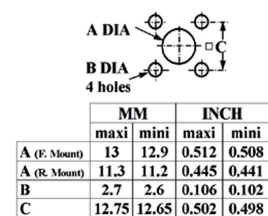
P02



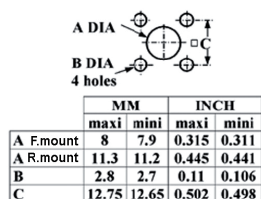
P03



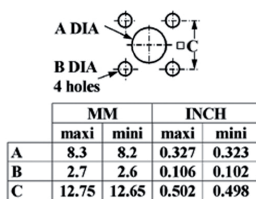
P04



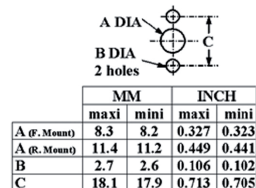
P05



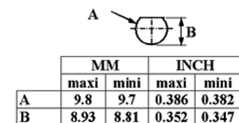
P06



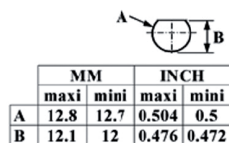
P07



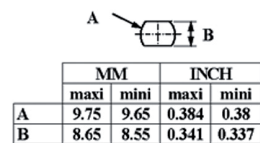
P08



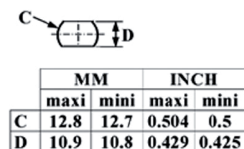
P09



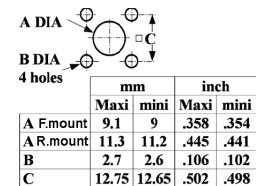
P10



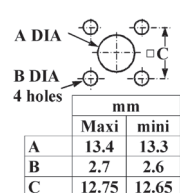
P11



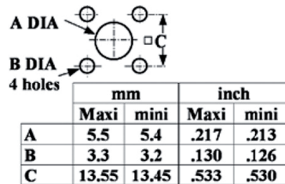
P12



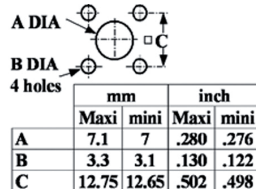
P13



P14



P15



P16

