

RJF

Ethernet Connection System for Harsh Environment – Industrial Ethernet



Applications

- Robotics
- Industrial Process Control
- CNC Machines
- Special Machines
- Oil & Gas
- Motion Control
- Data Acquisition and Transmission in Harsh Environment
- Tele-maintenance

Data Transmission

10 BaseT, 100 BaseTX and 1000 BaseT networks
Cat 5e per TIA/EIA 568B and ClassD per ISO/IEC 11801

RJF allows you to use an Ethernet Class D / Cat. 5e connection for 10 BaseT, 100 BaseTX or 1000 BaseT networks in harsh environments:

With the patented RJStop® system you can use a standard RJ45 cordset in a metallic plug which will protect it from shocks, dust and fluids.

No hazardous on-field cabling and grounding!

MAIN CHARACTERISTICS

- Compliant with IEC 60603-7 variant 11
- Bayonet coupling ("Audible & Visual" coupling signal)
- Robust metallic shells based on MIL-DTL-26482 H
- RJ45 cordset retention in the plug: 100 N in the axis
- Mating cycles: 500 min
- Sealed against fluids and dust (IP68)
- Shock, Vibration and Traction resistant
- No cabling operation in field and no tools required
- Mechanical Coding / Polarization (4 positions)
- Compatible with cable diameter from 5,5 mm [0.216 in] to 13 mm [0.512 in]

Environmental Protection

- Sealing: IP68
- Salt Spray: 48 h with Nickel plating
> 96 h with black coating
> 500 h with Oliv Drab Cadmium
- Fire Retardant/Low Smoke: UL94 V0 and NF F 16 101 & 16 102
- Vibrations: 10 – 500 Hz, 10 g, 3 axes: no discontinuity > 10 nano s.
- Shocks: IK06: weight of 250 g drop from 40 cm [15.75 in] onto connectors (mated pair)
- Humidity: 21 days, 43°C, 98% humidity
- Thermal Shock: 5 cycles at - 40°C / +100°C
- Temperature Range: - 40°C / +85°C

Part Number Code

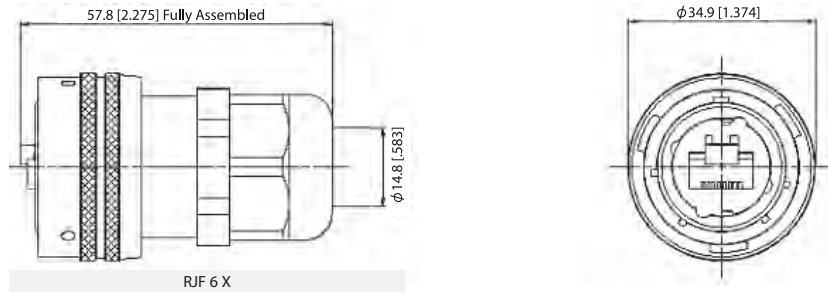
Series	RJF	2	2	B	03 100BTX
RJField					
Shell Type					
6:	Plug, Plastic Gland				
6M:	Plug, Metal Gland				
2:	Square Flange Receptacle				
2PE:	Square Flange Receptacle, IP68 backshell, Plastic gland				
2PEM:	Square Flange Receptacle, IP68 backshell, Metal gland				
7:	Jam Nut Receptacle				
7PE:	Jam Nut Receptacle, IP68 backshell, Plastic gland				
7PEM:	Jam Nut Receptacle, IP68 backshell, Metal gland				
2SA, 7SA:	Transversally sealed receptacle (unmated) see page 22				
Back Terminations (For Receptacles only)					
1:	Female RJ45				
1RA:	Right Angle Female RJ45				
2:	RJ45 Cordset				
Shell Finishes					
B:	Black Coating - ROHS compliant				
N:	Nickel (<i>Note: with this version, the inserts are metallized</i>) - ROHS compliant				
G:	Olive Drab Cadmium (<i>Note: with this version, the inserts are metallized</i>)				
Cordset Length (For Receptacles with "2" Back Termination only)					
03 100 BTX:	0.3m [11.81 inches]				
05 100 BTX:	0.5m [19.68 inches]				
10 100 BTX:	1m [39.37 inches]				
15 100 BTX:	1.5m [59.05 inches]				
00:	8 tinned holes at the rear of the PCB to solder the cable				

Remark: Cabling configuration: 100 BTX = 568B (Ethernet specification)

- Examples:
- Nickel plug: RJF 6 N
 - Black square flange receptacle, female RJ45 back termination: RJF 2 1 B
 - Olive drab cadmium jam nut receptacle, 1.5m [59.05"] 100 BTX cordset termination: RJF 7 2 G 15 100BTX
 - Black in line square flange receptacle, 30cm [11.81"] 100BTX cordset termination: RJF 2PE 2 B 03 100BTX
 - Nickel jam nut receptacle, solder termination: RJF 72 N 00

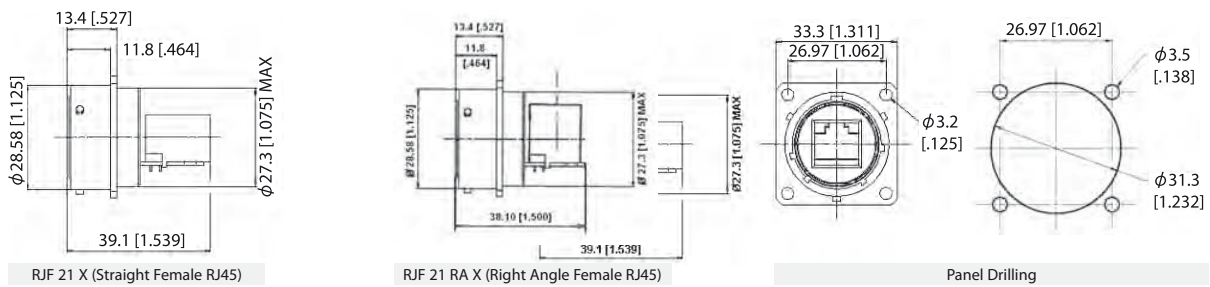
Plug:

- Shell type 6 with Plastic or Metal Gland

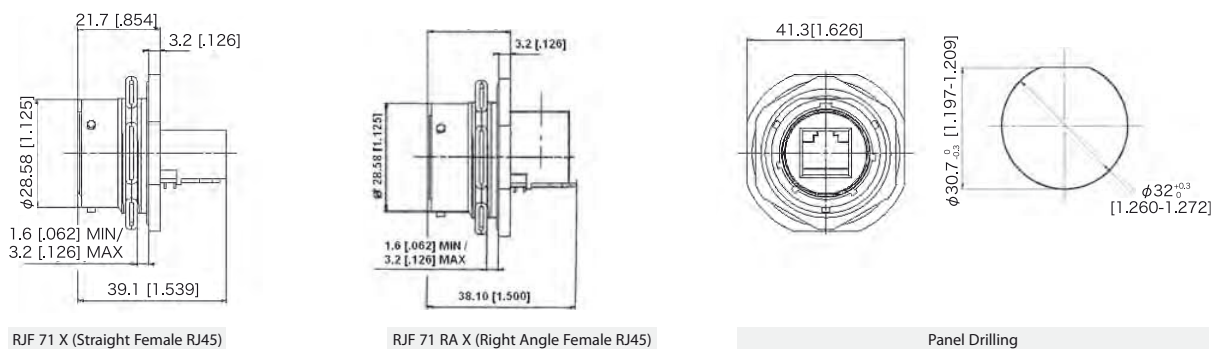


Receptacles:

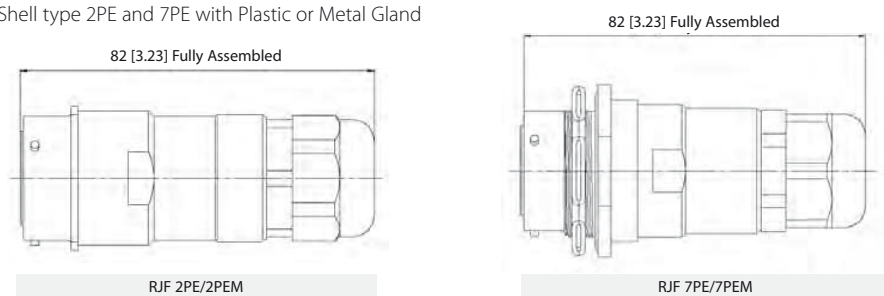
- Square flange receptacle • 4 mounting holes: Shell type 2



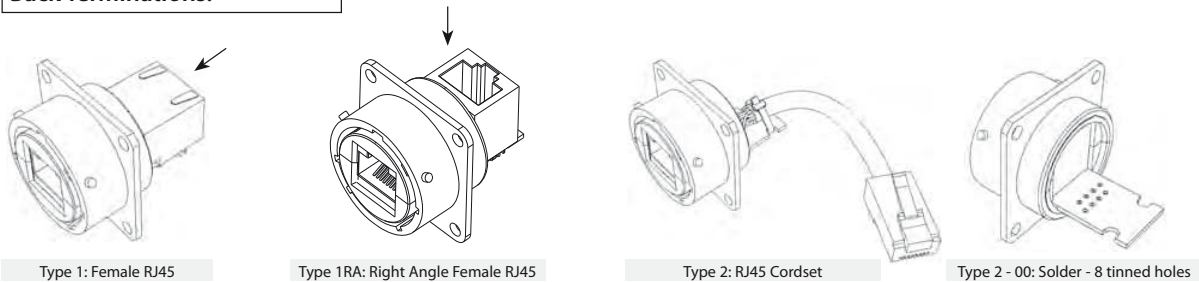
- Jam nut receptacle • Hexagonal Nut mounting: Shell type 7



- Receptacles with IP68 backshell: • Shell type 2PE and 7PE with Plastic or Metal Gland



Back Terminations:

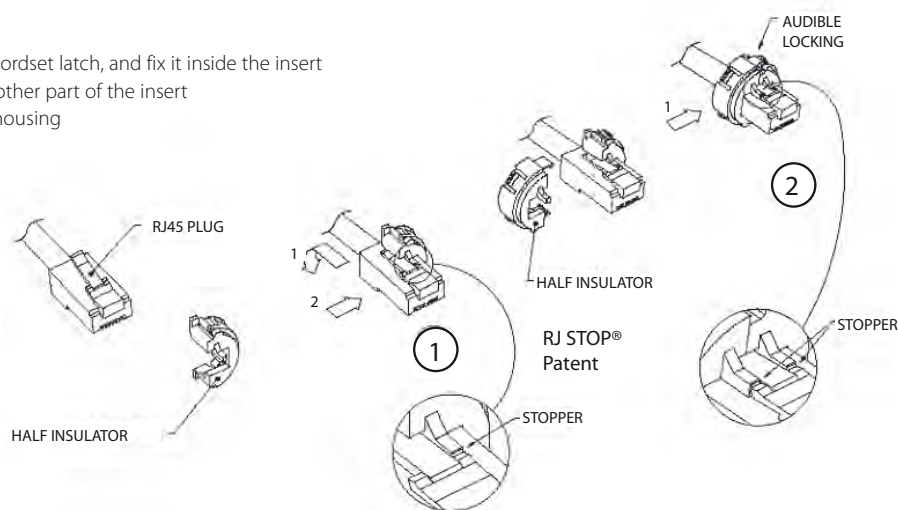


Notes: • Type 2 without RJ45 plug at the end of the cable is also available: consult factory

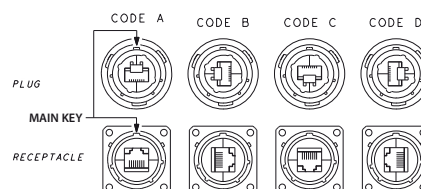
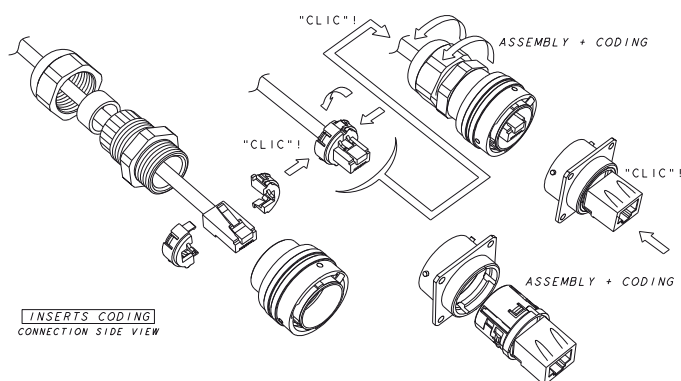
Universal: Can be used with all standard RJ45 Cat.5e cordset brands

Assembly instructions

1. Push down the RJ45 cordset latch, and fix it inside the insert
2. Press in and click the other part of the insert
3. Insert in the metallic housing



Easy and Safe: No field cabling tools required



Accessories:

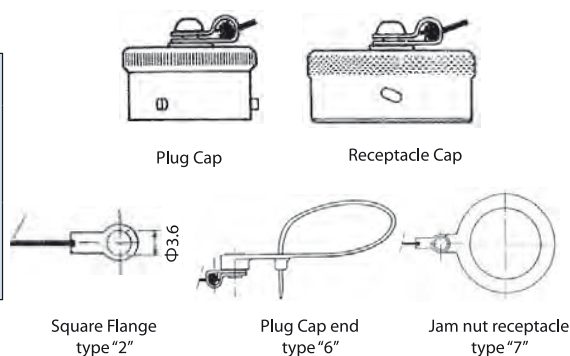
■ Metallic cap

	RJFC	2	B
Connector Type			
6:	Plug		
2:	Square Flange Receptacle		
7:	Jam Nut Receptacle		
Finishes			
B:	Black Coating - ROHS compliant		
N:	Nickel - ROHS compliant		
G:	Olive Drab Cadmium		

- Panel gasket for square flange « 2 » thickness: 0,6 mm – P/N: JE 18



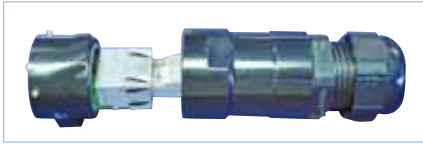
- Insert removal tool for receptacle and plug
P/N = RJF ODE



RJF

Special receptacles: cable mount inline & PC tails

Inline Cable Mount Receptacles



Inline receptacles allow you to make cable extensions in the field by using them with rugged RJFied series plugs.

PART NUMBERS:

Plastic Gland

Black coating: **RJF2PEWF1B**

Nickel plating: **RJF2PEWF1N**

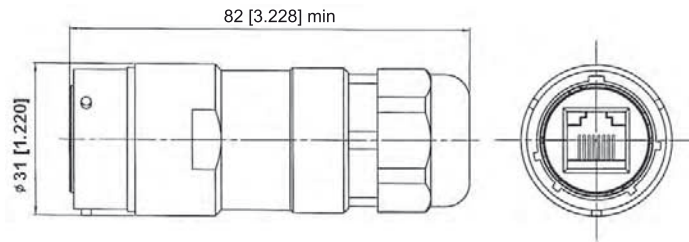
Olive Drab Cadmium plating: **RJF2PEWF1G**

Metallic Gland

Black coating: **RJF2PEMWF1B**

Nickel plating: **RJF2PEMWF1N**

Olive Drab Cadmium plating: **RJF2PEMWF1G**

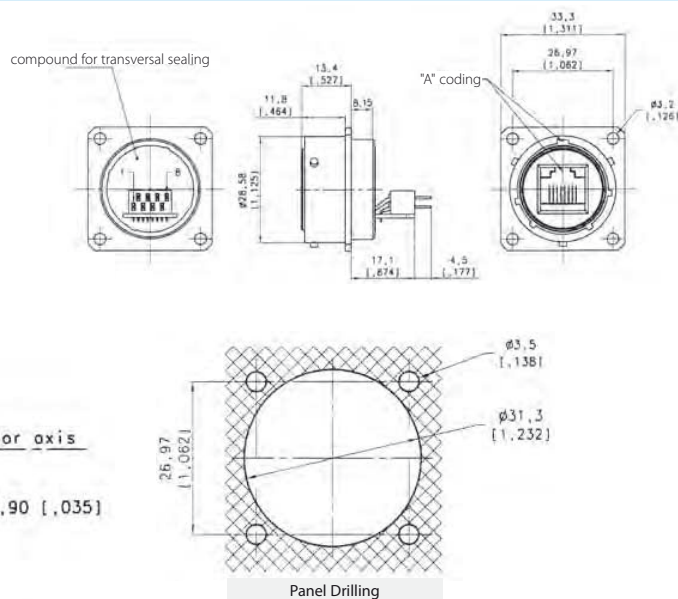
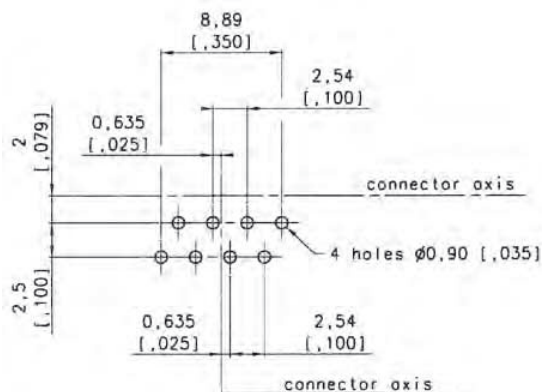


PC Tails Receptacles



These receptacles can be soldered directly on your PCB. A compound insures a transversal sealing and good performance in high vibration environments. They can be connected with rugged RJField series plugs.

PCB LAYOUT – SOLDER FACE VIEW



PART NUMBERS:

Note:

1. Platings available: "B": black coating • "N": nickel plating • "G": olive drab cadmium plating

2. As these receptacles are compounded, coding position has to be specified in the P/N.

See examples hereunder

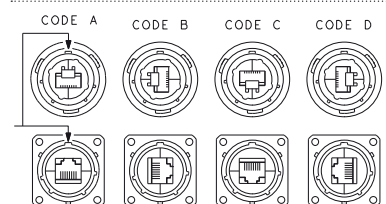
Examples:

Square flange receptacle – black coating – coding A: **RJF2SA5B**

Square flange receptacle – nickel plating – coding C: **RJF2SC5N**

Square flange receptacle – olive drab cadmium plating – coding D: **RJF2SD5G**

MAIN KEY



RJF/RJF TV

Environmentally Sealed Receptacles, Transversally sealed receptacles



SEALED RECEPTACLE In some applications, a transversal sealing for the receptacle is a « must ». This will prevent fluids and dust from going through the receptacle when plug or cap are not mated to the receptacle. The sealed solution (version "S") has a compound at the rear of the receptacle as shown on the examples below. This feature is available both in RJF and RJF TV shells (please consult the relevant data sheet for product details and accessories). In addition, the Sealed RJF TV has been successfully tested in very high vibration corresponding to airplane applications.

Applications

- Outdoor Equipment
- Airplanes Equipment
- Tactical Radios
- Shelters
- Rugged computers
- Data Acquisition and Transmission in Harsh Environments

Data Transmission

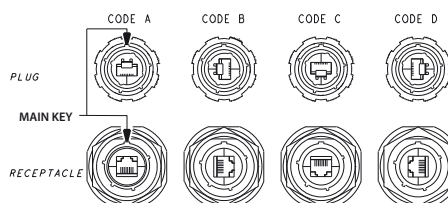
10 BaseT, 100 BaseTX and 1000 BaseT networks
Cat 5e per TIA/EIA 568B and ClassD per ISO/IEC 11801

IMPORTANT NOTE

Due to the compound, the coding of the connector must be done in the factory: use the codes A, B, C or D in the Part Number.

MAIN CHARACTERISTICS

- Same as the RJF and RJF TV series ... a complete IP68 sealing of the receptacle (even with no plug or no protective cap mated) is added.
- Outside dimensions are the same as the standard RJF and RJF TV series.
- Vibrations: The compounded versions of the RJF TV have been tested in vibration following the NAS 1599 Aeronautic specification (Ambient temperature):
5 - 3000 Hz, 20g, 2,5 mm [.1 inch] double amplitude, 3 axes, 12 hours
Note: This specification exceeds MIL-C-26500 requirements.



RJFTV 7S A 2G 15 100BTX

Part Number Code

Series	RJF TV	7S	A	2	G	03 100BTX
RJF:	MIL-DTL-26482 H bayonet					
RJFTV:	MIL-DTL-38999 Series III					
Shell Type						
2S:	Sealed Square Flange Receptacle					
7S:	Sealed Jam Nut Receptacle					
Coding	A,B,C,D					
Back Terminations (For Receptacles only)						
1:	Female RJ45					
1RA:	Right Angle Female RJ45					
2:	RJ45 Cordset					
Shell material & Finish						
B:	Aluminium shell - black coating (Only available for RJF Series) - ROHS compliant					
N:	Aluminium shell - nickel plating - ROHS compliant (note: receptacle inserts are metallized)					
G:	Aluminium shell - olive drab cadmium plating (note: receptacle inserts are metallized)					
BZ:	Marine bronze shell (only available for RJFTV) (receptacle inserts are metallized) - ROHS compliant					
Cordset Length (For Receptacles with "2" Back Termination only)						
03 100 BTX:	0.3m [11.81 inches]					
05 100 BTX:	0.5m [19.68 inches]					
10 100 BTX:	1m [39.37 inches]					
15 100 BTX:	1.5m [59.05 inches]					

Remark: Cabling configuration: 100 BTX = 568B (Ethernet specification)

Examples:

- Bayonet, A coding, Olive Drab Cadmium Jam Nut sealed receptacle with female RJ45 Back termination: RJF 7SA 1 G
- Bayonet, A coding, Black square flange sealed receptacle, Female RJ45 Back termination: RJF 2SA 1 B
- Series III, A coding, Olive Drab Cadmium Jam Nut sealed receptacle, 1.5m [59.05"] 100 BTX cordset: RJF TV 7SA 2 G15 100BTX

RJF/RJF TV

Hermetic receptacles



HERMETIC RECEPTACLE In some applications, a transversal hermiticity for the receptacle is a « must ». This will prevent gas from going through the receptacle when plug or cap are not mated to the receptacle. The hermetic solution (version "H") has a compound at the rear of the receptacle as shown on the examples below. This feature is available both in RJF and RJF TV shells (please consult the relevant data sheet for product details and accessories). Helium leakage is less than 1.10^{-6} cm^3 per second [0.1 micron cubic ft per hour] at one bar [15 psi] pressure differential.

Applications

- Outdoor Equipment
- Airplanes Equipment
- Tactical Radios
- Shelters
- Rugged computers
- Data Acquisition and Transmission in Harsh Environments

Data Transmission

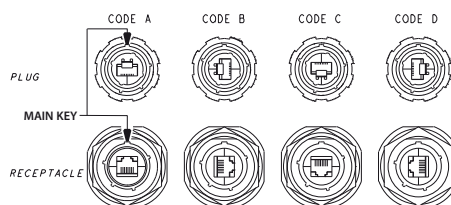
10 BaseT, 100 BaseTX and 1000 BaseT networks
Cat 5e per TIA/EIA 568B and ClassD per ISO/IEC 11801

IMPORTANT NOTE

Due to the compound, the coding of the connector must be done in the factory: use the codes A, B, C or D in the Part Number.

MAIN CHARACTERISTICS

- Same as the RJF and RJF TV series ... a complete IP68 sealing of the receptacle (even with no plug or no protective cap mated) is added.
- Outside dimensions are the same as the standard RJF and RJF TV series.
- Vibrations: The compounded versions of the RJF TV have been tested in vibration following the NAS 1599 Aeronautic specification (Ambient temperature):
5 - 3000 Hz, 20g, 2,5 mm [1 inch] double amplitude, 3 axes, 12 hours
Note: This specification exceeds MIL-C-26500 requirements.



RJF TV 7 H 2G 15 100BTX

Part Number Code

Series	RJF TV	7H	A	2	G	03 100BTX
RJF:	MIL-DTL-26482 H bayonet					
RJFTV:	MIL-C-38999 series III					
Shell Type						
2H:	Transversally Sealed and Hermetic Square Flange Receptacle					
7H:	Transversally Sealed and Hermetic Jam Nut Receptacle					
Coding	A,B,C,D					
Back Terminations (For Receptacles only)						
1:	Female RJ45					
1RA:	Right Angle Female RJ45					
2:	RJ45 Cordset					
Shell material & Finish						
B:	Aluminium shell - black coating (Only available for RJF Series) - ROHS compliant					
N:	Aluminium shell - nickel plating - ROHS compliant (note: receptacle inserts are metallized)					
G:	Aluminium shell - olive drab cadmium plating (note: receptacle inserts are metallized)					
BZ:	Marine bronze shell (only available for RJFTV) (receptacle inserts are metallized) - ROHS compliant					
Cordset Length (For Receptacles with "2" Back Termination only)						
03: 100 BTX:	0.3m [11.81 inches]					
05: 100 BTX:	0.5m [19.68 inches]					
10: 100 BTX:	1m [39.37 inches]					
15: 100 BTX:	1.5m [59.05 inches]					

Remark: Cabling configuration: 100 BTX = 568B (Ethernet specification)

Examples:

- Bayonet, A coding, Olive Drab Cadmium Jam Nut sealed receptacle with female RJ45 Back termination: RJF 7HA 1 G
- Bayonet, A coding, Black square flange sealed receptacle, Female RJ45 Back termination: RJF 2HA 1 B
- Series III, A coding, Olive Drab Cadmium Jam Nut sealed receptacle, 1.5m [59.05"] 100 BTX cordset: RJF TV 7HA 2 G15 100BTX