

# PRODUCT GUIDE

## SOLDIER SYSTEMS

The new standard in push-pull connectors  
developed specifically for harsh-environments



## MIL-PP

*Push-Pull Connectors*

*Series ABSC*



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## Soldier-worn connector

# PUSH-PULL CONNECTORS MIL-PP

TT Electronics has introduced its most advanced rugged high speed data connector, targeted at harsh environment, wearable and man-portable electronic systems. The MIL-PP family of micro push-pull connectors saves up to 35% weight and space over its nearest equivalent and has been developed following feedback from end users.

This range of connectors from TT Electronics offers tactile blind mate-able key-keyway engagement, environmental sealing to IP68 and a range of ultrahigh density insert arrangements for signal and data including USB, Ethernet and RS232 systems. Includes patented Delta-Clip retention system.

✓ Ultra high-pitch contact density, up to 30 ways

✓ High-speed data capability, inc USB and Ethernet

✓ Positive, blind mateable, key-keyway engagement system

✓ RoHS, Reach and WEEE compliant

✓ Fully environmentally sealed

✓ Robust design for the most demanding environments

✓ Fully scoop-proof, to prevent accidental contact damage

✓ Low-lustre, non-reflective, black finish



## Specifications

### MIL-PP Connectors

#### Materials

- Shells: aluminium alloy (aerospace grade)
- Insulators: rigid polymer
- Contacts: copper alloy

#### Environmental Ratings

- Temperature range: -55 to +125°C
- Vibration: 16hrs random
- Sealing: IP68 mated
- Salt spray: 1000 hours

#### Standard Plating Finishes

- Metal parts: non-reflective black finish (RoHS compliant)
- Contacts: gold

#### Environmental Characteristics

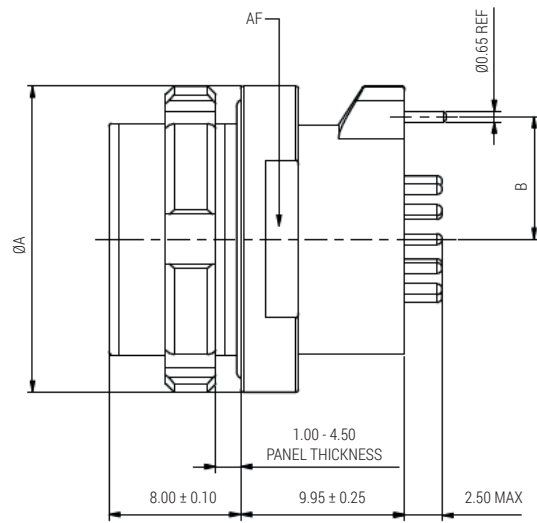
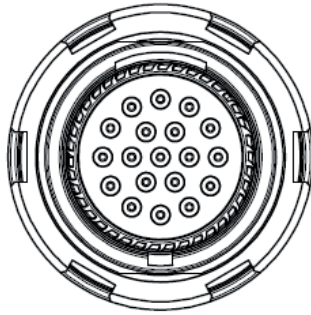
- Insulation resistance: 30,000Mohms
- Dielectric withstand voltage: 750v AC
- Current rating: 3amps @ 40°C
- Contact resistance <5m ohm
- Shell to shell continuity <5m ohm
- Recommended max wire size is 24AWG

#### Mechanical Features

- Coupling: push pull, blind mating
- Keying: 5 orientations available
- Contact type: solder and PCB pins
- Contact retention: assembled and injection moulded in position
- Endurance: 5000 operations minimum

# Style 27A

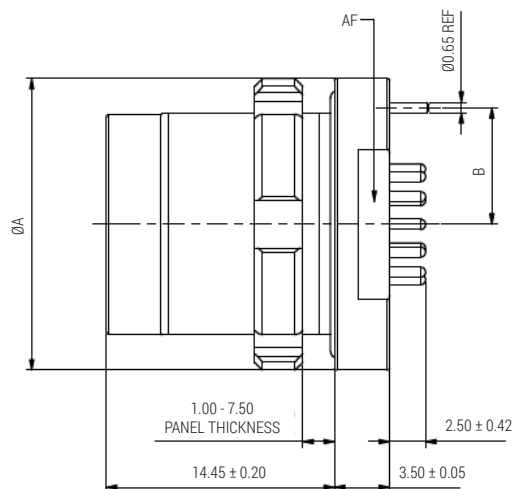
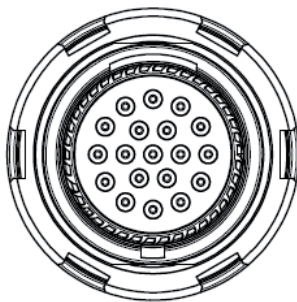
## Recessed Box Mounted Receptacle



DIMENSIONS				WEIGHT (g)	
Size	ØA Max	B ±0.1	AF	PIN	SKT
02	14.60	5.40	12.00	3.83	4.69
04	16.60	6.40	14.00	5.02	6.61
06	18.60	7.40	16.00	5.63	8.03

# Style 24A

## Box Mounted Rec

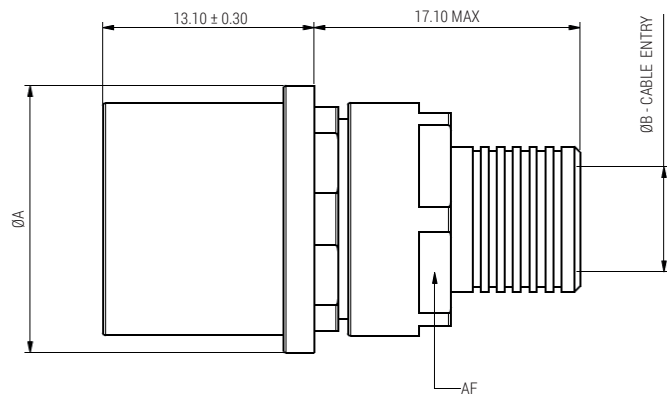
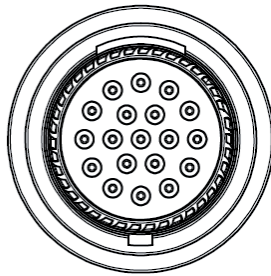


DIMENSIONS				WEIGHT (g)	
Size	ØA Max	B ±0.1	AF	PIN	SKT
02	14.60	5.40	12.00	3.62	4.48
04	16.60	6.40	14.00	4.94	6.53
06	18.60	7.40	16.00	5.13	7.53

# Style 01K

## Cable Mounted Receptacle

Screen trap crimp comes as standard with this style connector

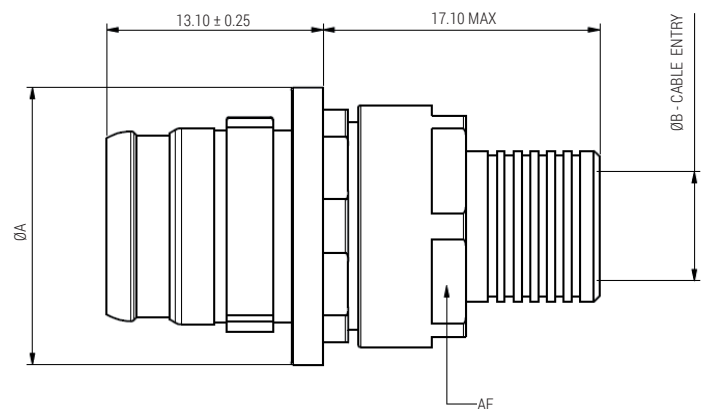
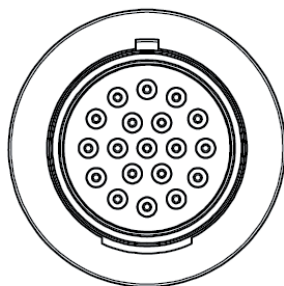


DIMENSIONS				WEIGHT (g)		
Size	Cable Entry Size	ØA Max	ØB Min	AF	PIN	SKT
02	02	12.55	4.45	3/8" AF	3.50	3.96
04	02	14.55	4.45	1/4" BSF	4.81	6.44
04	04	14.55	6.45	1/4" BSF	4.73	6.36
06	02	16.55	4.45	5/16" BSF	6.25	8.69
06	04	16.55	6.45	5/16" BSF	6.26	8.69
06	06	16.55	8.45	5/16" BSF	6.43	8.86

# Style 06K

## Cable Mounted Plug

Screen trap crimp comes as standard with this style connector



DIMENSIONS				WEIGHT (g)		
Size	Cable Entry Size	ØA Max	ØB Min	AF	PIN	SKT
02	02	12.55	4.45	3/8" AF	3.00	3.85
04	02	14.55	4.45	1/4" BSF	5.95	5.95
04	04	14.55	6.45	1/4" BSF	5.87	5.87
06	02	16.55	4.45	5/16" BSF	5.59	6.60
06	04	16.55	6.45	5/16" BSF	5.60	6.61
06	06	16.55	8.45	5/16" BSF	5.77	6.78



# Connector Assembly Instructions

## MIL-PP push-pull connectors

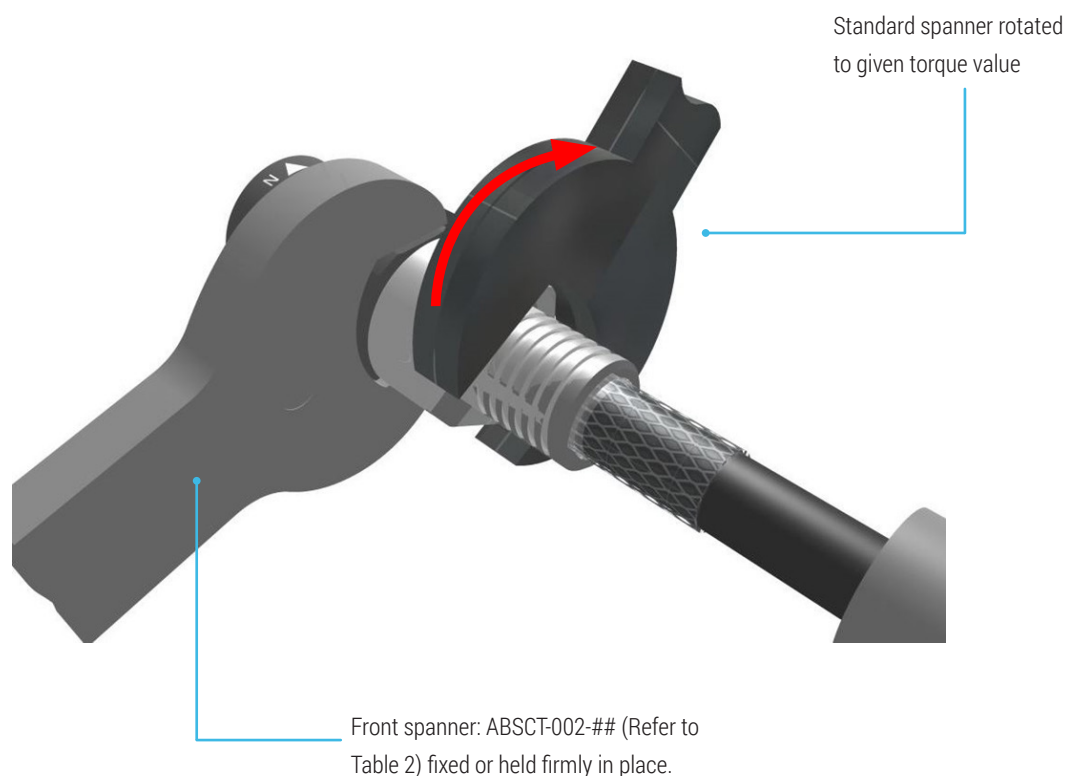


TABLE '2'

Connector Size	Front Spanner	Rear Spanner (A/F)	Torque Nm
02	ABSCT-002-02	3/8" AF	3.0 - 3.5
04	ABSCT-002-04	1/4" BSF	3.5 - 4.0
06	ABSCT-002-06	5/16" BSF	4.0 - 4.5

### Notes

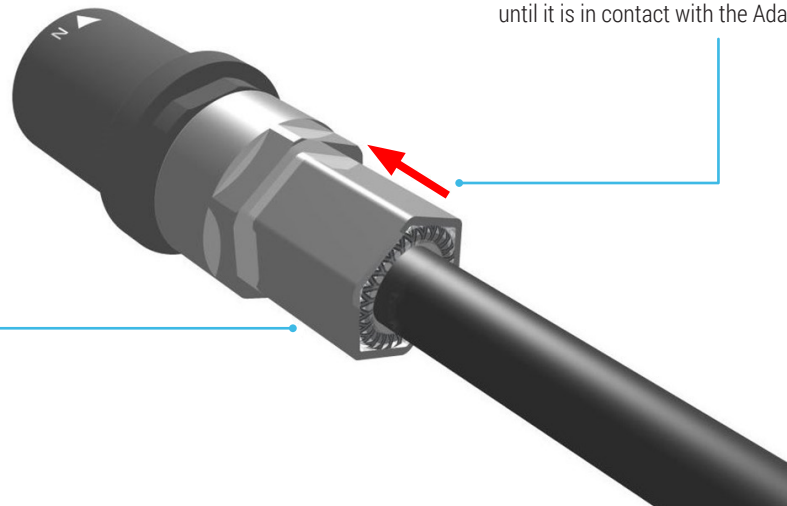
Rear Spanner (A/F) values are based upon standard wrench sizes as follows:

- Size 02 in accordance with BS 7586 1992
- Size 04 in accordance with BS 192-2: 1998
- Size 06 in accordance with BS 192-2: 1998

# Connector Assembly Instructions

## Using Screen Trap Collar

Crimp the 'Screen Trap Collar' onto the 'Rear Adaptor' using Crimp Tool DMC HX4, Mil P/N M22520/5-01 or NSN 5120-01-335-8575, using die set ABCST-0003-##.

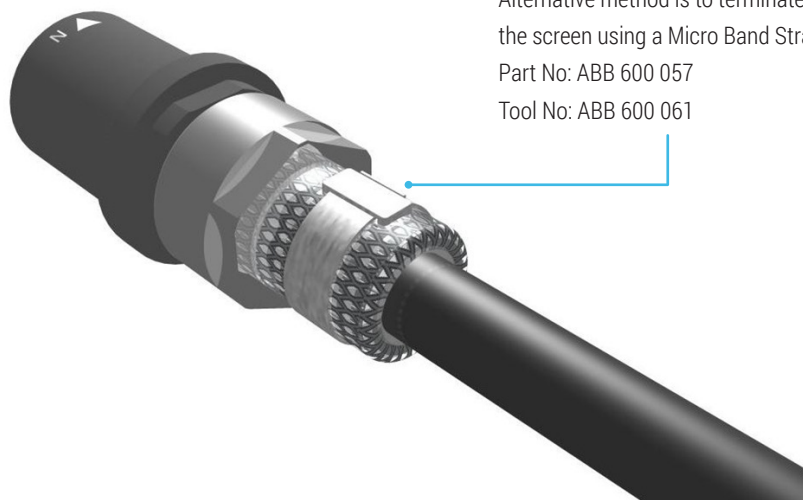


Screen trap crimp comes as standard with this style connector

Slide the 'Screen Trap Collar' over the screen until it is in contact with the Adaptor Shoulder.

Connector Size	Die Set No:
02	ABST-0003-02
04	ABST-0003-04
06	ABST-0003-06

## Alternative with Micro Band Strap



Alternative method is to terminate the screen using a Micro Band Strap.  
Part No: ABB 600 057  
Tool No: ABB 600 061

TABLE '2'			
Connector Size	Front Spanner	Rear Spanner (A/F)	Torque Nm
02	ABST-002-02	3/8" AF	3.0 - 3.5
04	ABST-002-04	1/4" BSF	3.5 - 4.0
06	ABST-002-06	5/16" BSF	4.0 - 4.5

# Connector Assembly Instructions

## Receptacle Connector Panel Nut Assembly



TABLE '3'		
Connector Size	Slotted Nut Driver	Torque ±10% (Nm)
02	ABSCT-0001-02	1.4
04	ABSCT-0001-04	1.7
06	ABSCT-0001-06	2.0



# Connector Assembly Instructions


## MIL-PP push-pull connectors

### 2. Cable Interface


- TT Electronics offer the complete solution from connector manufacture to final cable assembly. As part of the final assembly, two offerings are available in the form of over moulding (2a) and heat shrink boot (2b) solutions as illustrated below.

#### 2a. Over Moulding

TT Electronics can offer two over mould solutions:

- i) Polyamide – Low pressure so ideal for sensitive electronic components solutions, prototype/demonstration purposes.
- ii) Thermoplastic Polyurethane (recommended)
  - Ideal for high volume and harsh environments.
- Example of a straight over moulded cable plug: 

#### 2a. Heat shrink boot – Ideal for demonstration builds

- Example of a straight heatshrink boot cable plug: 

Please consult our team on further information on how TT Electronics can support you and your requirements.

# Part Number Explanation

## MIL-PP push-pull connectors

ABSC

06K

B

06

19

P

N

XX

### Shell Style:

- 06K = cable plug
- 01K = cable receptacle
- 24A = box receptacle
- 27A = recessed box receptacle
- 04T = box receptacle, solder
- 07T = Recessed box connector, solder

### Material and Finish

- B = Non-reflective black

### Shell Size:

- 02
- 04
- 06

### Insert Arrangement

- See table 1

### Contact Type:

- P = pin
- S = socket

### Orientation

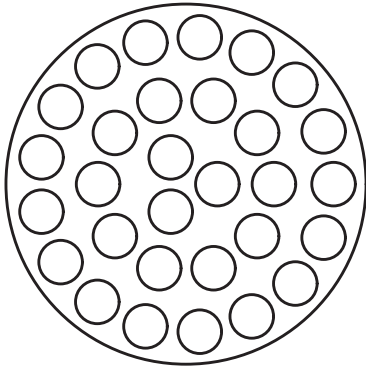
- N = normal
- Alternative A,B,C,D
- See table 2

### Cable Entry (if applicable)

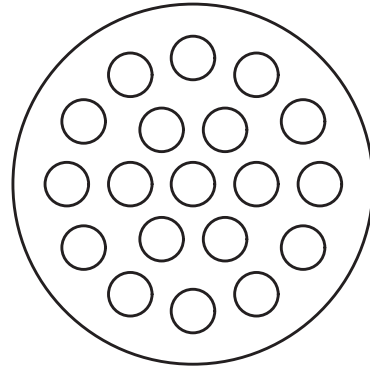
- 04 & 06
- \*Shell styles 06K and 01K only, omit if shell size is equal to entry size
- \*\*Entry size larger than shell size not permissible

# Table 1 Planforms

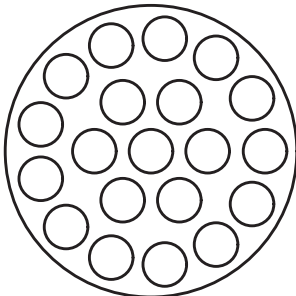
## MIL-PP push-pull connectors



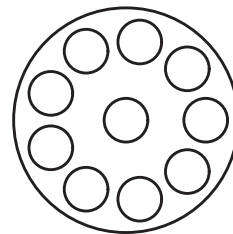
Size: 06  
Planform: 30



Size: 06  
Planform: 19



Size: 04  
Planform: 20



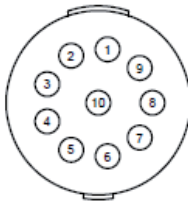
Size: 02  
Planform: 10

# Contact Arrangements

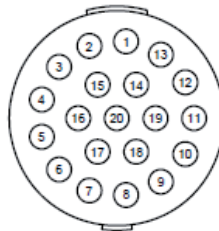
## View of Termination Side

(Socket Contact Type)

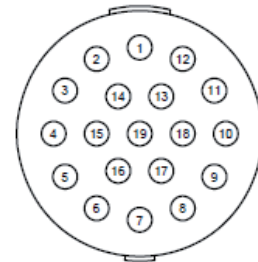
Size: 02  
10 way



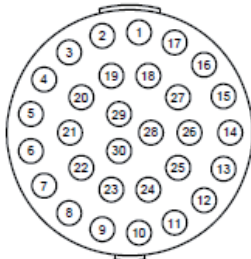
Size: 04  
20 way



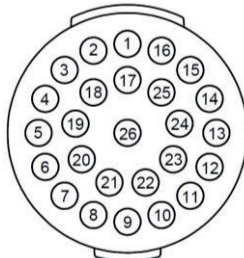
Size: 06  
19 way



Size: 06  
30 way



Size: 06  
26 way





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