



Long Life Reliability  
does not cost the earth



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# Aviation Plugs, Sockets, Cable Assemblies & Spares

LPA Group has over 70 years' experience in power connection solutions for the aviation sector. The company has an ethos of designing and manufacturing products offering high reliability, with low maintenance and life cycle costs.

LPA's worldwide network of customers comprises of major UK and international airports, OEMs, specialist aviation suppliers and the military. We recognise the importance of reliable power systems in these dynamic environments and ensure our range of power connector and cable harnesses can exceed these demanding expectations.

LPA's aviation products are designed to support the efficiency and safety of the ground handling staff and GPU equipment in use on airport aprons.

Our aviation connector range is designed and manufactured to ISO 461-1, ISO 461-2, BS 43 173 part 1 and LPA is also ISO 9001 certified.



# Aviation Plugs & Sockets

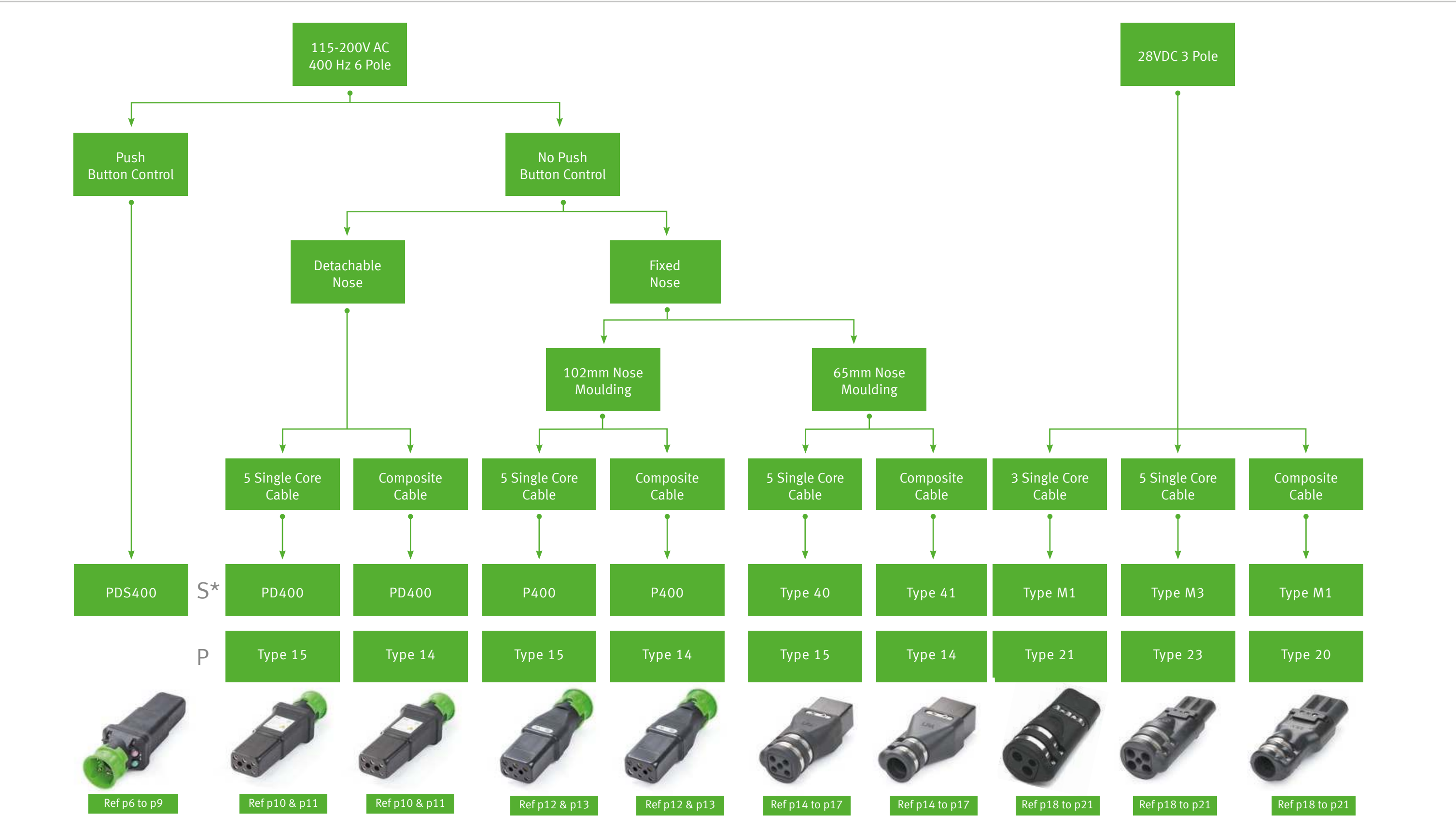


115 - 200V AC 400 Hz 6 Pole & 28VDC 3 Pole Connectors.



- Plane Power 400 Hz connectors and 28VDC plugs and sockets
- External components manufactured from impact, abrasion and chemically resistant, thermally stable polymers
- Modular connector construction - replacement parts including noses, handles, switches, LED's and contact tubes
- IP66 and IP67 rated (no filler required with Plane Power connectors - independent IP certificate available on request)
- Suitable for a wide range of composite and single core cables

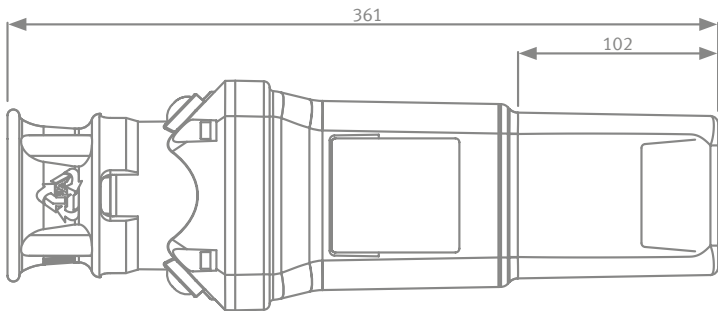
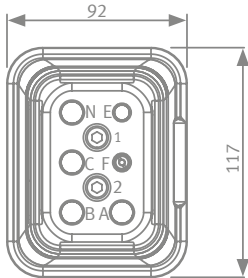
Socket/Plug Selector



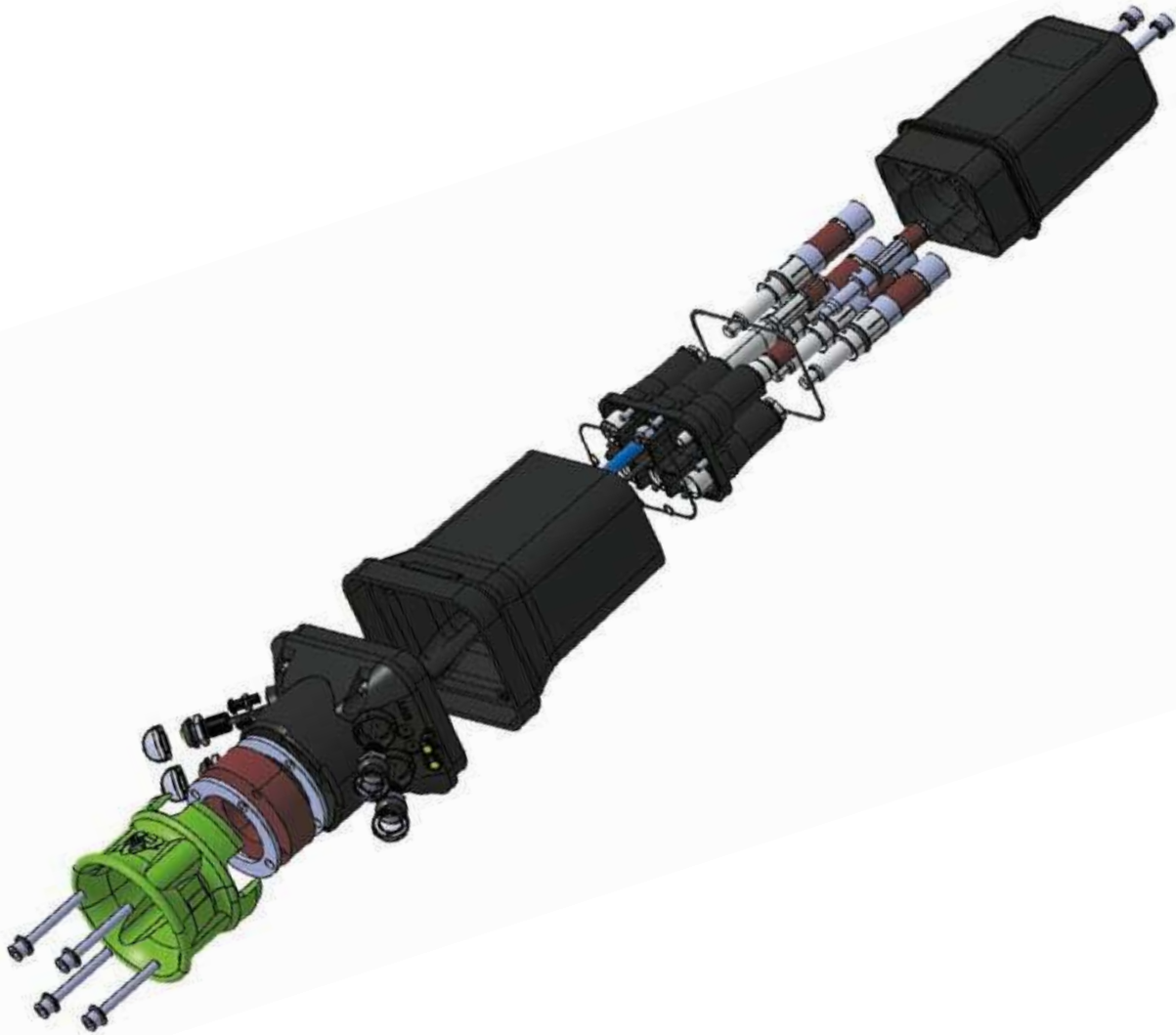
\* S - Sockets (plug into the aircraft - have tubes)  
P - Plugs (have pins)



# PDS400 Connector (400 Hz)



All dimensions in mm



Detachable front nose & push button controls.

The PDS400 connector comes with detachable front nose and push-button controls.

**Features:**

- Configurable to meet customer requirements
- Low maintenance
- Impact resistant
- External components manufactured from impact, abrasion and chemically resistant, thermally stable polymers
- Detachable power/control contacts and contact insulator (nose) are easy to maintain and replace
- LEDs and push-button switches are individually replaceable
- Suitable for a wide range of composite and single core 400 Hz cables
- Exterior replaceable handle/strain relief system
- IP66 & IP67 rated (filler not required)

**Technical information:**

- High conductivity silver plated copper contacts
- Configurable switches and LEDs to provide control and indication of connector usage
- Micro-switch (replaceable) located within the 'F' contact provides a signal once the connector has been inserted 90% into the mating receptacle (optional feature)
- Optional temperature sensors fitted to A, B and C contacts can prevent overheating if wired correctly into Power Supply
- Switch 'boots/hoods' provide ingress protection for the external faces of the switches
- Nominal voltage: 115/200 V, 400 Hz
- Current carrying capacity (cont): 450 A (power), 35 A (control)
- Current overload: 1500 A for 1 min (power)

- High-voltage test: 4000V
- Operating temperature: -25°C to +90°C (includes temperature rise)
- Mating forces: As per ISO 461 – 1
- Weight: 2.5 kg
- Applicable standards: ISO 461-1, ISO 461-2, BS 4G 173-1, VG 96966-1, MIL-C-7974D
- Compatibility: Mates with ISO 461-2 and MS90362 receptacles

# PDS400 Connector (400 Hz)

PDS400  
with Exohook hanging  
from PJS400 Junction  
Sleeve

|   |  |
|---|--|
| 1 | Standard control tube                    |
| 2 | 90% insertion tube with removable switch |

|   |   |
|---|---|
| 0 | No LEDs                                     |
| 1 | 1 LED colour red                            |
| 2 | 2 LEDs colours red & green                  |
| 3 | 3 LEDs colours red & green + 1 yellow       |
| 4 | 4 LEDs colours red & green + 2 yellow       |
| 5 | 1 LED colour green                          |
| 6 | 4 LEDs colours red & green + yellow & green |

|   |   |
|---|---|
| 1 | ON (normally open), OFF (normally closed) |
| 2 | ON (normally open), OFF (normally open)   |

|   |                                 |
|---|---------------------------------|
| 0 | No temperature sensors required |
| 1 | PT100                           |
| 2 | PTC120                          |
| 3 | PTC100                          |

|   |                                       |
|---|---------------------------------------|
| 0 | No push buttons                       |
| 1 | 1 push button - green                 |
| 2 | 2 push buttons - green & red          |
| 3 | 3 push buttons - green, red & black   |
| 4 | 4 push buttons - green, red & 2 black |

| Conductor sizes mm² |            |                            |
|---------------------|------------|----------------------------|
| 1                   | A, B & C N | 70mm²<br>70mm²             |
| 2                   | A, B & C N | 70mm²<br>35mm²/50mm²       |
| 3                   | A, B & C N | 35mm²/50mm²<br>35mm²/50mm² |
| 4                   | A, B & C N | 35mm²/50mm²<br>30mm²/33mm² |
| 5                   | A, B & C N | 30mm²/33mm²<br>25mm²       |

|   |                                   |
|---|-----------------------------------|
| A | To suit 1 x Ø 34.00-35.99mm cable |
| B | To suit 1 x Ø 36.00-37.99mm cable |
| C | To suit 1 x Ø 38.00-39.99mm cable |
| D | To suit 1 x Ø 40.00-41.99mm cable |
| E | To suit 1 x Ø 42.00-44.99mm cable |
| F | To suit 3 x Ø 19.00-20.99mm cable |
| G | To suit 3 x Ø 21.00-23.00mm cable |
| H | To suit 4 x Ø 16.00-17.99mm cable |
| J | To suit 4 x Ø 18.00-19.99mm cable |
| K | To suit 4 x Ø 20.00-22.00mm cable |

Cable length in metres e.g. 10 (from 5 to 30, in 5M increments)

|   |   |
|---|---|
| 0 | No LEDs                                     |
| 1 | 1 LED colour red                            |
| 2 | 2 LEDs colours red & green                  |
| 3 | 3 LEDs colours red & green + 1 yellow       |
| 4 | 4 LEDs colours red & green + 2 yellow       |
| 5 | 1 LED colour green                          |
| 6 | 4 LEDs colours red & green + yellow & green |

|   |                                 |
|---|---------------------------------|
| 0 | No temperature sensors required |
| 1 | PT100                           |
| 2 | PTC120                          |
| 3 | PTC100                          |

|   |                                       |
|---|---------------------------------------|
| 0 | No push buttons                       |
| 1 | 1 push button - green                 |
| 2 | 2 push buttons - green & red          |
| 3 | 3 push buttons - green, red & black   |
| 4 | 4 push buttons - green, red & 2 black |

|   |  |
|---|--|
| 1 | Standard control tube                    |
| 2 | 90% insertion tube with removable switch |

|   |   |
|---|---|
| 1 | ON (normally open), OFF (normally closed) |
| 2 | ON (normally open), OFF (normally open)   |

|   |                                 |
|---|---------------------------------|
| 0 | No temperature sensors required |
| 1 | PT100                           |
| 2 | PTC120                          |
| 3 | PTC100                          |

|   |                                       |
|---|---------------------------------------|
| 0 | No push buttons                       |
| 1 | 1 push button - green                 |
| 2 | 2 push buttons - green & red          |
| 3 | 3 push buttons - green, red & black   |
| 4 | 4 push buttons - green, red & 2 black |

|   |  |
|---|--|
| 1 | Standard control tube                    |
| 2 | 90% insertion tube with removable switch |

|   |   |
|---|---|
| 1 | ON (normally open), OFF (normally closed) |
| 2 | ON (normally open), OFF (normally open)   |

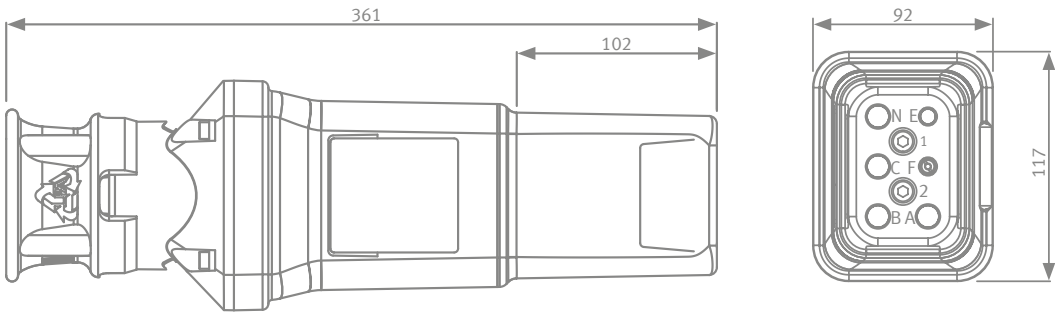
|   |                                 |
|---|---------------------------------|
| 0 | No temperature sensors required |
| 1 | PT100                           |
| 2 | PTC120                          |
| 3 | PTC100                          |

|   |                                       |
|---|---------------------------------------|
| 0 | No push buttons                       |
| 1 | 1 push button - green                 |
| 2 | 2 push buttons - green & red          |
| 3 | 3 push buttons - green, red & black   |
| 4 | 4 push buttons - green, red & 2 black |

Add **L** - harness connector control contacts to be linked.  
Add **N** - harness connector neutral rupture to be wired.  
Add **LN** - harness connector contacts linked + neutral rupture to be wired.

**Example codes:**  
**Connector only**  
PDS400/2143C2 - Cable size 70mm² ABC, 35/50mm² neutral, standard control tube, 4 push buttons, 3 LED's, bung to suit cable size 1 X Ø 38.00 – 39.99mm, PTC120 temperature sensors.  
**Connector with cable**  
PDS400/2240J0/10/1 - Cable size 70mm² ABC, 35/50mm² neutral, 90% insertion tube, 4 push buttons, 0 LED's, bung to suit cable size 4 x Ø 18.00-19.99mm, no temperature sensor, 10m cable, switch wiring ON (Normally open) OFF (normally closed).

# PD400 Connector (400 Hz)



All dimensions in mm

PD400

Cable size

Control tube type

Bung type

| Conductor sizes mm <sup>2</sup> |               |  |
|---------------------------------|---------------|--|
| 1                               | A, B & C<br>N | 95mm <sup>2</sup><br>95mm <sup>2</sup>   |
| 2                               | A, B & C<br>N | 70mm <sup>2</sup><br>70mm <sup>2</sup>   |
| 3                               | A, B & C<br>N | 70mm <sup>2</sup><br>35mm <sup>2</sup> to 50mm <sup>2</sup>                      |
| 4                               | A, B & C<br>N | 35mm <sup>2</sup> to 50mm <sup>2</sup><br>35mm <sup>2</sup> to 50mm <sup>2</sup> |
| 5                               | A, B & C<br>N | 35mm <sup>2</sup> to 50mm <sup>2</sup><br>25mm <sup>2</sup>                      |

|   |   |
|---|---|
| A | To suit 1 x Ø 34.00-35.99mm cable                       |
| B | To suit 1 x Ø 36.00-37.99mm cable                       |
| C | To suit 1 x Ø 38.00-39.99mm cable                       |
| D | To suit 1 x Ø 40.00-41.99mm cable                       |
| E | To suit 1 x Ø 42.00-44.99mm cable                       |
| F | To suit 3 x Ø 19.00-20.99mm cable                       |
| G | To suit 3 x Ø 21.00-23.00mm cable                       |
| H | To suit 4 x Ø 16.00-17.99mm cable                       |
| J | To suit 4 x Ø 18.00-19.99mm cable                       |
| K | To suit 4 x Ø 20.00-22.00mm cable                       |
| L | To suit 4 x Ø 14.00-15.99mm + 1 x Ø 09.00-10.99mm cable |
| M | To suit 4 x Ø 16.00-17.99mm + 1 x Ø 09.00-10.99mm cable |
| N | To suit 4 x Ø 14.00-15.99mm + 1 x Ø 13.00-14.99mm cable |
| P | To suit 4 x Ø 16.00-17.99mm + 1 x Ø 13.00-14.99mm cable |
| Q | To suit 4 x Ø 20.00-21.99mm + 1 x Ø 08.50-09.99mm cable |

Supplied with detachable front nose.

The PD400 connector is supplied with a detachable nose & replacement front contacts.

**Features:**

- Detachable power/control contacts and contact insulator (nose) are easy to maintain and replace
- Suitable for a wide range of composite and single core 400 Hz cables
- External components manufactured from impact, abrasion, and chemically resistant, thermally stable polymers
- Exterior replaceable handle/strain relief system
- IP66 & IP67 rated (no filler required)

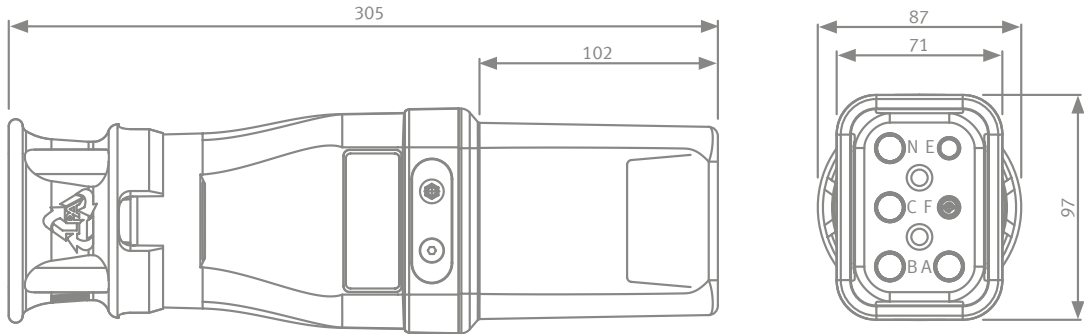
**Technical information:**

- High conductivity silver-plated copper contacts
- Micro-switch (replaceable) located in F contact provides an indication once the connector has been 90% inserted into the mating receptacle (optional feature)
- Nominal voltage: 115/200 V, 400 Hz
- Current carrying capacity: 450 A (power), 35 A (control)
- Current overload: 1500 A for 1 min (power)

- High-voltage test: 4000 V
- Operating temperature: -25C to +90°C (includes temperature rise)
- Mating forces: As per ISO 461-1
- Weight: 2.30 kg
- Applicable standards: ISO 461-1, ISO 461-2, BS 4G 173-1, VG 96966-1, MIL-C-7974D
- Compatibility: Mates with ISO 461-2 and MS90362 receptacles



# P400 Connector (400 Hz)



All dimensions in mm

|                           |               |  |   |
|---------------------------|---------------|--|---|
| 1   Standard control tube |               | 2   90% insertion tube with removable switch |   |
| P400                      |               | Cable size                                   | Bung size   |
|                           |               | Control tube                                 |   |
|                           |               | Conductor sizes mm²                          |   |
| 1                         | A, B & C<br>N | 95mm²<br>95mm²                               | A   To suit 1 x Ø 34.00-35.99mm cable<br>B   To suit 1 x Ø 36.00-37.99mm cable<br>C   To suit 1 x Ø 38.00-39.99mm cable<br>D   To suit 1 x Ø 40.00-41.99mm cable<br>E   To suit 1 x Ø 42.00-44.99mm cable<br>F   To suit 3 x Ø 19.00-20.99mm cable<br>G   To suit 3 x Ø 21.00-23.00mm cable<br>H   To suit 4 x Ø 16.00-17.99mm cable<br>J   To suit 4 x Ø 18.00-19.99mm cable<br>K   To suit 4 x Ø 20.00-22.00mm cable<br>L   To suit 4 x Ø 14.00-15.99mm + 1 x Ø 09.00-10.99mm cable<br>M   To suit 4 x Ø 16.00-17.99mm + 1 x Ø 09.00-10.99mm cable<br>N   To suit 4 x Ø 14.00-15.99mm + 1 x Ø 13.00-14.99mm cable<br>P   To suit 4 x Ø 16.00-17.99mm + 1 x Ø 13.00-14.99mm cable<br>Q   To suit 4 x Ø 20.00-21.99mm + 1 x Ø 08.50-09.99mm cable |
| 2                         | A, B & C<br>N | 70mm²<br>70mm²                               |   |
| 3                         | A, B & C<br>N | 70mm²<br>35mm² to 50mm²                      |   |
| 4                         | A, B & C<br>N | 35mm² to 50mm²<br>35mm² to 50mm²             |   |
| 5                         | A, B & C<br>N | 35mm² to 50mm²<br>25mm²                      |   |

Supplied with fixed electrical contacts.

The P400 connector comes with fixed electrical contacts, providing a cost-effective connection system to power aircraft.

Features:

- Easy connection to cable
- Low maintenance
- External components manufactured from impact, abrasion and chemically resistant, thermally stable polymers
- Suitable for a wide range of composite and single core 400 Hz cable
- Exterior replaceable handle/strain relief system
- IP66 & IP67 rated (filler not required)

Technical information:

- High conductivity silver plated copper contacts
- Nominal voltage: 115/200 V, 400 Hz
- Current carrying capacity: 450 A (power), 35 A (control)
- Current overload: 1500 A for 1 min (power)
- High-voltage test: 4000 V
- Operating temperature: -25°C to +90°C (including temperature rise)
- Weight: 2.45 kg

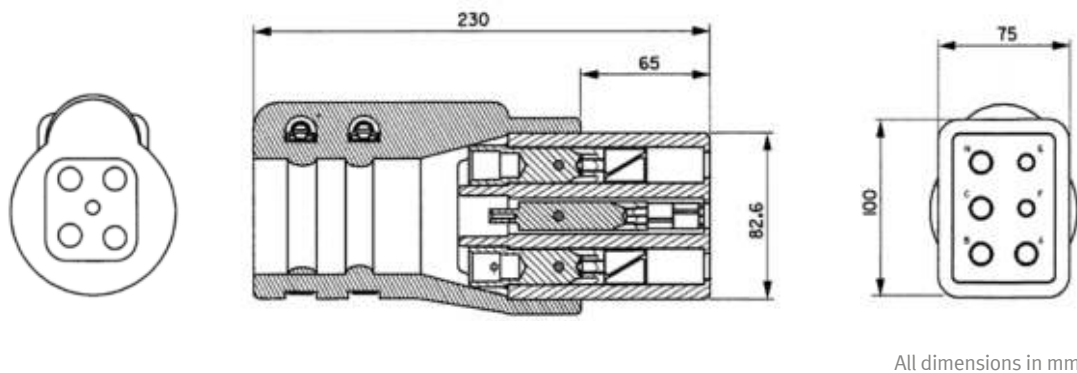
- Applicable standards: ISO 461-1, ISO 461-2, BS 4G 173-1, VG 96966-1, MIL-C-7974D
- Compatibility: Mates with ISO 461-2 and MS90362 receptacles



# Short Nose Socket (400 Hz)



Type 40



## 5 Single Core Cable Types

| Cable Size mm² | Cable Dia mm Min/Max | Socket Order Ref | Front Half | Rear Half | Power Tube | Control Tube | 5 Hole Bung | Socket Protection Cap |
|----------------|----------------------|------------------|------------|-----------|------------|--------------|-------------|-----------------------|
| 4 X 95         | 14.5/18.0            | 40/1             |            |           |            |              |             |                       |
| 4 X 95         | 18.0/21.0            | 40/2             | 28845      | 27589     | 27920      | 26374        | 18286       | 29598                 |
| 4 X 70         | 14.5/18.0            | 40/3             | 27298      | 27589     | 26373      | 26374        | 28721       | 29598                 |
| 4 X 70         | 18.0/21.0            | 40/4             | 27298      | 27589     | 26373      | 26374        | 18286       | 29598                 |
| 4 X 50         | 11.0/14.5            | 40/5             | 27418      | 27589     | 27089      | 26374        | 27628       | 29598                 |
| 4 X 50/35      | 14.5/18.0            | 40/6             | 27418      | 27589     | 27089      | 26374        | 28721       | 29598                 |
| 4 X 50/35      | 18.0/21.0            | 40/7             | 27418      | 27589     | 27089      | 26374        | 18286       | 29598                 |

## Composite Cable Types

| Cable Size mm² | Cable Dia mm Min/Max | Socket Order Ref | Front Half | Rear Half | Power Tube | Control Tube | Socket Protection Cap |
|----------------|----------------------|------------------|------------|-----------|------------|--------------|-----------------------|
| 4 X 95         | 44.0/52.0            | 41/1             |            |           |            |              |                       |
| 4 X 70         | 44.0/52.0            | 41/2             | 27298      | 27592     | 26373      | 26374        | 29598                 |
| 4 X 50/35      | 34.0/43.0            | 41/3             | 27418      | 27236     | 27089      | 26374        | 29598                 |



## Fixed short nose 400 Hz socket.

**Features:**

- The front moulding on Type 40 & 41 Sockets is shorter (65mm) than the other connectors (103mm)
- Rear assemblies complete with screw clips, clamping pates, nuts & bolts
- Front assemblies complete with power & control tubes
- Type 40 rear assembly, specify bung reference according to cable size

- Contacts can be either crimped or soldered
- Average weight: 2.3kg
- Exterior material: CSPE

**Technical information:**

- 115-200V AC
- **Power components**
- 450 amps, maximum continuous current
- 1500 amps for maximum 1 minute

**Control components**

- 35 amps maximum continuous current
- Applicable standards: ISO 461-1, ISO 461-2, BS 45 173
- Compatibility: Mates with ISO 461-2

# Connector Plugs (400 Hz)



Type 15 Plug







Type 14 Plug

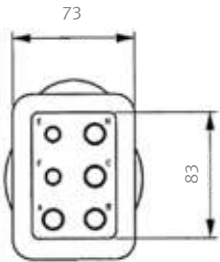
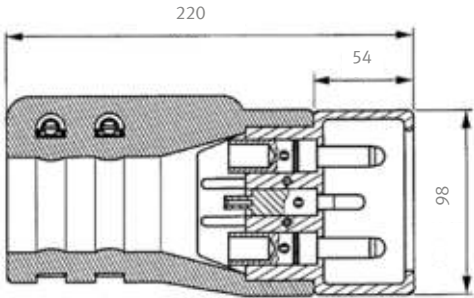


## 5 Single Core Cable Types

| Cable Size mm² | Cable Dia mm Min/Max | Plug Order Ref | Front Half Plug   | Rear Half Assembly  | Power Pin   | Control Pin   | 5 Hole Bung   |
|----------------|----------------------|----------------|---|---|---|---|---|
|                |                      |                |  |  |  |  |  |
| 4 X 95         | 14.5/18.0            | 15/1           | 28727   | 27589   | 28377   | 26675   | 28721   |
| 4 X 95         | 18.0/21.0            | 15/2           | 28727   | 27589   | 28377   | 26675   | 18286   |
| 4 X 70         | 14.5/18.0            | 15/3           | 27299   | 27589   | 26674   | 26675   | 28721   |
| 4 X 70         | 18.0/21.0            | 15/4           | 27299   | 27589   | 26674   | 26675   | 18286   |
| 4 X 50/35      | 11.0/14.5            | 15/5           | 28726   | 27589   | 27884   | 26675   | 27628   |
| 4 X 50/35      | 14.5/18.0            | 15/6           | 28726   | 27589   | 27884   | 26675   | 28721   |
| 4 X 50/35      | 18.0/21.0            | 15/7           | 28726   | 27589   | 27884   | 26675   | 18286   |

## Composite Cable Types

| Cable Size mm²      | Cable Dia mm Min/Max | Plug Order Ref | Front Half Plug   | Rear Half Assembly  | Power Pin   | Control Pin   |
|---------------------|----------------------|----------------|---|---|---|---|
|                     |                      |                |  |  |  |  |
| 4 X 95              | 44.0/52.0            | 14/1           | 28727   | 27592   | 28377   | 26675   |
| 4 X 70              | 44.0/52.0            | 14/2           | 27299   | 27592   | 26674   | 26675   |
| 4 X 50/35           | 34.0/43.0            | 14/3           | 28726   | 27236   | 27884   | 26675   |
| 3 X 35/50<br>1 X 25 | 34.0/43.0            | 14/5           | -   | 27236   | 3 x 27884<br>1 x 44388  | 26675   |
| 3 X 70<br>1 X 35/50 | 34.0/43.0            | 14/6           | 44959   | 27236   | 3 x 26674<br>1 x 27884  | 26675   |
| 4 X 70              | 34.0/43.0            | 14/7           | 27299   | 27236   | 26674   | 26675   |



Type 14

All dimensions in mm

### Features:

- Rear assemblies complete with screw clips, clamping plates, nuts & bolts
- Front assemblies complete with power & control pins or tubes
- Contacts can be either crimped or soldered
- Available with protection cap (part number - 29598)

- Socket weight: 2.5-3kg. Plug weight: 1.9kg
- Exterior material: CSPE

### Technical information:

- High-voltage test: 4000 V
- Operating temperature: -25°C to +90°C (including temperature rise)

### Power components

- 450 amps, maximum continuous current
- 1500 amps for maximum 1 minute

### Control components

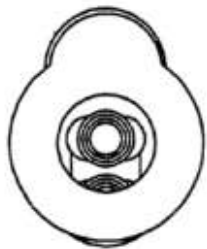
- 35 amps maximum continuous current



# 28VDC 3 Pole Connector



Type M1 Socket



Type 20 Plug



Type M3 Socket



Type 23 Plug



Supplied with fixed electrical contacts and split control contact.

Suitable for a wide range of composite, 3 or 5 core cable types.

**Features:**

- Composite, 3 or 5 single core harness entry
- Split control pins & tubes
- Square bung fitted with removable plug to accommodate control cable
- Rear assemblies complete with screw clips, clamping plates, nuts & bolts
- Front assemblies complete with power & control pins or tubes

- Single contacts can be either crimped or soldered (double contacts must be soldered).
- Average weight: plug - 1.4kg, socket - 1.6kg
- Exterior material: CSPE

**Technical information:**

**Power components**

- 450 amps, maximum continuous current

- 1500 amps for maximum of 1 minute

**Control components**

- 35 amps continuous current
- Applicable standards: ISO 461-1, ISO 461-2, BS 45 173
- Compatibility: Mates with ISO 461-2

# 28VDC 3 Pole Connector



Type M1 Socket



Type 21 Plug



## Composite Cable Types

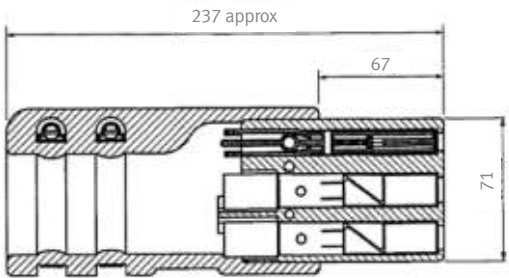
| Cable Size mm² | Cable Dia mm Min/Max | Socket Order Ref | Single End Socket Front | Rear Half | Power Tube | Plug Order Ref | Single End Plug Front | Rear Half | Power Pin |
|----------------|----------------------|------------------|-------------------------|-----------|------------|----------------|-----------------------|-----------|-----------|
| 2 X 120        | 41/ 54               | M1/A             |                         |           |            |                |                       |           |           |
| 2 X 95         | 41/ 54               | M1/B             | 28682                   | 28703     | 28686      | 20/A           | 28711                 | 28703     | 28707     |
| 2 X 70         | 29/40                | M1/C             | 28683                   | 28701     | 27920      | 20/B           | 28712                 | 28703     | 28708     |
| 2 X 50/35      | 29/40                | M1/D             | 28684                   | 28701     | 26373      | 20/C           | 28713                 | 28701     | 28709     |
|                |                      |                  | 28685                   | 28701     | 27089      | 20/D           | 28714                 | 28701     | 28710     |

## 3 Single Core Cable Types

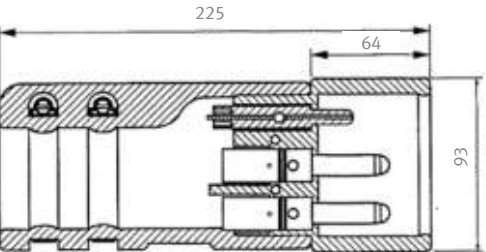
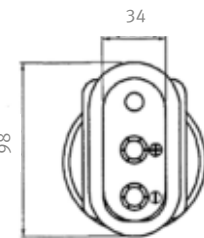
| Cable Size mm² | Cable Dia mm Min/Max | Socket Order Ref | Single End Socket Front | Rear Half | Power Tube | 3 Hole Bung | Plug Order Ref | Single End Plug Front | Rear Half | Power Pin | 3 Hole Bung |
|----------------|----------------------|------------------|-------------------------|-----------|------------|-------------|----------------|-----------------------|-----------|-----------|-------------|
| 2 X 120        | 15.5/20.0            | M1/1             |                         |           |            |             |                |                       |           |           |             |
| 2 X 120        | 20.0/24.5            | M1/2             | 28682                   | 28723     | 28686      | 28678       | 21/1           | 28711                 | 28723     | 28707     | 28678       |
| 2 X 120        | 24.5/29.0            | M1/3             | 28682                   | 28723     | 28686      | 28679       | 21/2           | 28711                 | 28723     | 28707     | 28679       |
| 2 X 95         | 15.5/20.0            | M1/4             | 28682                   | 28723     | 28686      | 28680       | 21/3           | 28711                 | 28723     | 28707     | 28680       |
| 2 X 95         | 20.0/24.5            | M1/5             | 28683                   | 28723     | 27920      | 28678       | 21/4           | 28712                 | 28723     | 28708     | 28678       |
| 2 X 95         | 24.5/29.0            | M1/6             | 28683                   | 28723     | 27920      | 28679       | 21/5           | 28712                 | 28723     | 28708     | 28679       |
| 2 X 70         | 11.0/15.5            | M1/7             | 28683                   | 28723     | 27920      | 28680       | 21/6           | 28712                 | 28723     | 28708     | 28680       |
| 2 X 70         | 15.5/20.0            | M1/8             | 28684                   | 28723     | 27920      | 28678       | 21/7           | 28713                 | 28723     | 28709     | 28677       |
| 2 X 70         | 20.0/24.5            | M1/9             | 28684                   | 28723     | 26373      | 28678       | 21/8           | 28713                 | 28723     | 28709     | 28678       |
| 2 X 50/35      | 11.0/15.5            | M1/10            | 28684                   | 28723     | 26373      | 28679       | 21/9           | 28713                 | 28723     | 28709     | 28679       |
| 2 X 50/35      | 15.5/20.0            | M1/11            | 28685                   | 28723     | 27089      | 28677       | 21/10          | 28714                 | 28723     | 28710     | 28677       |
| 2 X 50/35      | 20.0/24.5            | M1/12            | 28685                   | 28723     | 27089      | 28678       | 21/11          | 28714                 | 28723     | 28710     | 28678       |
|                |                      |                  |                         |           |            | 28679       | 21/12          | 28714                 | 28723     | 28710     | 28679       |

## 5 Single Core Cable Types

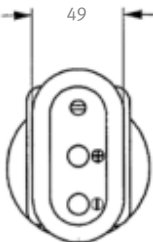
| Cable Size mm² | Cable Dia mm Min/Max | Socket Order Ref | Double End Socket Front | Rear Half | Double Power Tube | 5 Hole Bung | Plug Order Ref | Double End Plug Front | Rear Half | Double Power Pin | 5 Hole Bung |
|----------------|----------------------|------------------|-------------------------|-----------|-------------------|-------------|----------------|-----------------------|-----------|------------------|-------------|
| 4 X 70/95      | 14.5/18.0            | M3/3             |                         |           |                   |             |                |                       |           |                  |             |
| 4 X 70/95      | 18.0/21.0            | M3/4             | 28704                   | 28723     | 21362             | 28721       | 23/3           | 28717                 | 28723     | 28715            | 28721       |
| 4 X 50/35      | 11.0/14.5            | M3/5             | 28704                   | 28723     | 21362             | 18286       | 23/4           | 28717                 | 28723     | 28715            | 18286       |
| 4 X 50/35      | 14.5/18.0            | M3/6             | 28705                   | 28723     | 28706             | 27628       | 23/5           | 28718                 | 28723     | 28716            | 27628       |
| 4 X 50/35      | 18.0/21.0            | M3/7             | 28705                   | 28723     | 28706             | 28721       | 23/6           | 28718                 | 28723     | 28716            | 28721       |
|                |                      |                  |                         |           | 18286             | 23/7        | 28718          | 28723                 | 28716     | 18286            |             |



Socket



Plug



All dimensions in mm



# Cable Assemblies & Harnesses



Bespoke assemblies and cable harnesses to meet customer requirements.

Extension Harness (EH), Power Harness (PH) and Dual Harness (DH) options available.

**Features:**

- Composite, 3 single core or 5 single core cable options
- 115 - 200 V AC 400 Hz and 28 VDC supply
- Quick assembly using standard stock items
- Cable length in metres, from 5 to 30M and in 5M increments



Part Number Configurator - 400 Hz

Extension  
Harness (EH)



400 Hz Single Core Extension Harness  
with P400 & Type 15

28VDC Single Core Extension Harness  
with M3 & Type 23

|       |   |
|-------|---|
| P400  | Fixed contact connector                       |
| PD400 | Detachable nose replaceable contact connector |

| EH                  | Socket type | Cable type & size | Cable length   |
|---------------------|-------------|-------------------|----------------|
| Conductor sizes mm² |             |                   |                |
| 1                   | Single core | A, B & C<br>N     | 95mm²<br>95mm² |
| 2                   | Single core | A, B & C<br>N     | 70mm²<br>70mm² |
| 3                   | Single core | A, B & C<br>N     | 50mm²<br>50mm² |
| 4                   | Single core | A, B & C<br>N     | 35mm²<br>35mm² |
| 5                   | Composite   | A, B & C<br>N     | 70mm²<br>35mm² |

Cable length in metres  
e.g. 15m would be 15.  
From 5m to 30m in  
increments of 5m.

**Example code:**  
EHPD400215 - Extension harness with PD400 featuring 70mm² power cables, 15m of cable. This will be fitted with either a Type 14 or Type 15 plug depending on cable type. When ordering please specify if composite or multi core cable is required.

Part Number Configurator - 28VDC

|    |                      |
|----|----------------------|
| M1 | 2 single core cables |
| M3 | 4 single core cables |

| EH                  | Socket type | Cable type & size                  | Cable length                 |
|---------------------|-------------|------------------------------------|------------------------------|
| Conductor sizes mm² |             |                                    |                              |
| 1                   | Single core | + power contact<br>- power contact | 120mm²<br>120mm²             |
| 2                   | Single core | + power contact<br>- power contact | 95mm²<br>95mm²               |
| 3                   | Single core | + power contact<br>- power contact | 70mm²<br>70mm²               |
| 4                   | Single core | + power contact<br>- power contact | 35/50mm²<br>35/50mm²         |
| 5                   | Single core | + power contact<br>- power contact | 2 x 70/95mm²<br>2 x 70/95mm² |
| 6                   | Single core | + power contact<br>- power contact | 2 x 35/50mm²<br>2 x 35/50mm² |

Cable length in metres  
e.g. 15m would be 15.  
From 5m to 30m in  
increments of 5m.

**Example code:**  
EHM1315 - Extension harness including Type M1 socket with 70mm² power cables, 15m of cable and a Type 21 plug.



Part Number Configurator - 400 Hz

Power Harness (PH)



400 Hz Single Core Cable Harness & P400



400 Hz Composite Cable Harness & PD400



28VDC 5 Single Core Cable Harness & Type M3

|       |   |   |  |
|-------|---|---|--|
| P400  | Fixed contact connector                       | 1 | Standard control tube                    |
| PD400 | Detachable nose replaceable contact connector | 2 | 90% insertion tube with removable switch |

| PH | Socket type | Cable type & size | Control tube | Cable length |
|----|-------------|-------------------|--------------|--------------|
|----|-------------|-------------------|--------------|--------------|

| Conductor sizes mm² |             |               |                 |
|---------------------|-------------|---------------|-----------------|
| 1                   | Single core | A, B & C<br>N | 95mm²<br>95mm²  |
| 2                   | Single core | A, B & C<br>N | 70mm²<br>70mm²  |
| 3                   | Single core | A, B & C<br>N | 50mm²<br>50mm²  |
| 4                   | Single core | A, B & C<br>N | 35mm²<br>35mm²  |
| 5                   | Composite   | A, B & C<br>N | 70 mm²<br>35mm² |

Cable length in metres  
e.g. 15m would be 15.  
From 5m to 30m in  
increments of 5m.

**Example code:**  
PHPD4001225LN - Power harness  
including PD400 detachable nose  
connector with 95mm² power cable,  
90% insertion tube, 25m of cable.  
E&F are linked and neutral rupture  
is wired.

Add **L** - harness connector control contacts to be linked.  
Add **N** - harness connector neutral rupture to be wired.  
Add **LN** - harness connector contacts linked + neutral rupture  
to be wired.

Part Number Configurator - 28VDC

|    |                      |
|----|----------------------|
| M1 | 2 single core cables |
| M3 | 4 single core cables |

| PH | Socket type | Cable type & size | Cable length |
|----|-------------|-------------------|--------------|
|----|-------------|-------------------|--------------|

| Conductor sizes mm² |             |                                    |                              |
|---------------------|-------------|------------------------------------|------------------------------|
| 1                   | Single core | + power contact<br>- power contact | 120mm²<br>120mm²             |
| 2                   | Single core | + power contact<br>- power contact | 95mm²<br>95mm²               |
| 3                   | Single core | + power contact<br>- power contact | 70mm²<br>70mm²               |
| 4                   | Single core | + power contact<br>- power contact | 35/50mm²<br>35/50mm²         |
| 5                   | Single core | + power contact<br>- power contact | 2 x 70/95mm²<br>2 x 70/95mm² |
| 6                   | Single core | + power contact<br>- power contact | 2 x 35/50mm²<br>2 x 35/50mm² |

Cable length in metres  
e.g. 15m would be 15.  
From 5m to 30m in  
increments of 5m.

**Example code:**  
PHM3520 - Power harness  
including M3 connector (4  
single core cables) featuring  
2 x 70/95mm² (+) and 2 x  
70/95mm² (-) conductors  
attached to 20m of cable.

# Dual Harness (DH)



Dual Harness with PJS400 & PDS400 complete with Exohook

## Part Number Configurator

|   |  |
|---|--|
| 1 | Amokabel 7x35mm <sup>2</sup> + 18x1mm <sup>2</sup>   |
| 2 | BETAjet FRNC Smartflex V26x6mm <sup>2</sup> + 6x35mm <sup>2</sup> + 6x (4x1mm <sup>2</sup> )   |
| 3 | BETAjet 400 FRNC Drumflex 1x35mm <sup>2</sup> + 6x35mm <sup>2</sup> + 6x (3x1mm <sup>2</sup> ) |

|   | Reeler cable (m) | Joiner cable (m) |
|---|------------------|------------------|
| A | 18               | 1.5              |
| B | 18               | 2.0              |
| C | 18               | 2.5              |
| D | 24               | 1.5              |
| E | 24               | 2.0              |
| F | 24               | 2.5              |

|   |  |
|---|--|
| 1 | Standard control tube                    |
| 2 | 90% insertion tube with removable switch |

|   |   |
|---|---|
| 0 | No LEDs                                     |
| 1 | 1 LED colour red                            |
| 2 | 2 LEDs colours red & green                  |
| 3 | 3 LEDs colours red & green + 1 yellow       |
| 4 | 4 LEDs colours red & green + 2 yellow       |
| 5 | 1 LED colour green                          |
| 6 | 4 LEDs colours red & green + yellow & green |

|   |   |
|---|---|
| 1 | ON (normally open), OFF (normally closed) |
| 2 | ON (normally open), OFF (normally open)   |

|   |                                 |
|---|---------------------------------|
| 0 | No temperature sensors required |
| 1 | PT100                           |
| 2 | PTC120                          |
| 3 | PTC100                          |

|   |   |
|---|---|
| 1 | Amokabel SII 4x1x50mm <sup>2</sup> + (4x1mm <sup>2</sup> ) twisted      |
| 2 | Amokabel SII 4x1x70mm <sup>2</sup> + (4x1mm <sup>2</sup> )              |
| 3 | BETAjet FRNC-Flex 4x1x50mm <sup>2</sup> + (4x1mm <sup>2</sup> )         |
| 4 | BETAjet FRNC-Flex 4x1x70mm <sup>2</sup> + (4x1mm <sup>2</sup> )         |
| 5 | BETAjet FRNC-Deltaflex 3x1x50/20mm <sup>2</sup> + (8x1mm <sup>2</sup> ) |
| 6 | BETAjet FRNC-Deltaflex 3x1x70/25mm <sup>2</sup> + (8x1mm <sup>2</sup> ) |

|   |                                       |
|---|---------------------------------------|
| 0 | No push buttons                       |
| 1 | 1 push button - green                 |
| 2 | 2 push buttons - green & red          |
| 3 | 3 push buttons - green, red & black   |
| 4 | 4 push buttons - green, red & 2 black |

**Example codes:**  
DH48ENF23402LN - Dual harness including 24m of BETAjet FRNC Smartflex V26x6mm<sup>2</sup> + 6 x 35mm<sup>2</sup> + 6 x (4 x 1mm<sup>2</sup>) and 2.0m of BETAjet FRNC Deltaflex 3x 1 x 70/25mm<sup>2</sup> + (8 x 1mm<sup>2</sup>), no filler in the PJS400 junction sleeve, 90% insertion tube in PDS400 socket, 3 push buttons (red, green and black), 4 LED's (red, green, 2 x yellow), no temperature sensor, connector contacts linked and neutral rupture wired.

Add **L** - harness connector control contacts to be linked.  
Add **N** - harness connector neutral rupture to be wired.  
Add **LN** - harness connector contacts linked + neutral rupture to be wired.

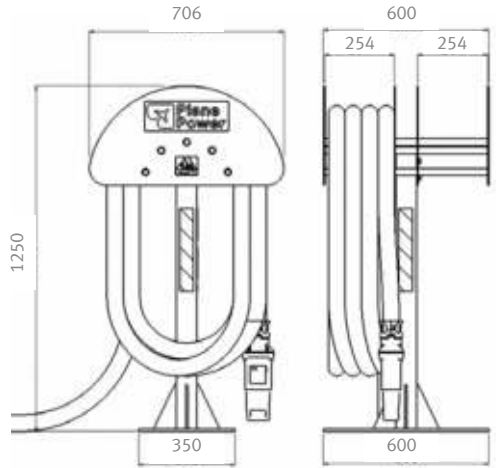
Additional reeler and joiner cable options may be possible

## Cable Harness Storage Stand (PCR100)

Designed for use in the hanger or on the airport apron.

Features:

- Bolt together two part welded aluminium construction
- Suits multicore and composite cables
- Holds 100kg per side (maximum)
- Bright yellow finish and fitted with high visibility reflective tape





# PJS400 Junction Sleeve (400 Hz)



|          |                                   |          |  |
|----------|-----------------------------------|----------|--|
| <b>A</b> | To suit 1 x Ø 34.00-35.99mm cable | <b>F</b> | To suit 3 x Ø 19.00-20.99mm cable                          |
| <b>B</b> | To suit 1 x Ø 36.00-37.99mm cable | <b>G</b> | To suit 3 x Ø 21.00-23.00mm cable                          |
| <b>C</b> | To suit 1 x Ø 38.00-39.99mm cable | <b>H</b> | To suit 4 x Ø 16.00-17.99mm cable                          |
| <b>D</b> | To suit 1 x Ø 40.00-41.99mm cable | <b>J</b> | To suit 4 x Ø 18.00-19.99mm cable                          |
| <b>E</b> | To suit 1 x Ø 42.00-44.99mm cable | <b>K</b> | To suit 4 x Ø 20.00-22.00mm cable                          |
|          |                                   | <b>L</b> | To suit 4 x Ø 14.00-15.99mm cable + 1 x Ø9.00-10.99 Cable  |
|          |                                   | <b>M</b> | To suit 4 x Ø 16.00-17.99mm cable + 1 x Ø9.00-10.99 Cable  |
|          |                                   | <b>N</b> | To suit 4 x Ø 14.00-15.99mm cable + 1 x Ø13.00-14.99 Cable |
|          |                                   | <b>P</b> | To suit 4 x Ø 16.00-17.99mm cable + 1 x Ø13.00-14.99 Cable |
|          |                                   | <b>Q</b> | To suit 4 x Ø 20.00-21.99mm cable + 1 x Ø8.50-9.99 Cable   |

| PJS400                          | Bung type<br>(reeler cable) |  | Bung size<br>(connector cable) | Conductor sizes | Filler  |   |                 |    |                    |
|---------------------------------|-----------------------------|--|--------------------------------|-----------------|---|---|-----------------|----|--------------------|
|                                 |                             |  |                                |                 | <table><tr><td>F</td><td>Filler required</td></tr><tr><td>NF</td><td>No filler required</td></tr></table> | F | Filler required | NF | No filler required |
| F                               | Filler required             |  |                                |                 |   |   |                 |    |                    |
| NF                              | No filler required          |  |                                |                 |   |   |                 |    |                    |
| Conductor sizes mm <sup>2</sup> |                             |  |                                |                 |   |   |                 |    |                    |
| 1                               | A, B & C<br>N               | 70mm <sup>2</sup><br>35mm <sup>2</sup> to 50mm <sup>2</sup>                      | Joining to                     | A, B & C<br>N   | 35mm <sup>2</sup> to 50mm <sup>2</sup><br>35mm <sup>2</sup> to 50mm <sup>2</sup>                          |   |                 |    |                    |
| 2                               | A, B & C<br>N               | 70mm <sup>2</sup><br>35mm <sup>2</sup> to 50mm <sup>2</sup>                      | Joining to                     | A, B & C<br>N   | 70mm <sup>2</sup><br>70mm <sup>2</sup>  |   |                 |    |                    |
| 3                               | A, B & C<br>N               | 35mm <sup>2</sup> to 50mm <sup>2</sup><br>35mm <sup>2</sup> to 50mm <sup>2</sup> | Joining to                     | A, B & C<br>N   | 35mm <sup>2</sup> to 50mm <sup>2</sup><br>35mm <sup>2</sup> to 50mm <sup>2</sup>                          |   |                 |    |                    |
| 4                               | A, B & C<br>N               | 35mm <sup>2</sup> to 50mm <sup>2</sup><br>30mm <sup>2</sup>                      | Joining to                     | A, B & C<br>N   | 70mm <sup>2</sup><br>70mm <sup>2</sup>  |   |                 |    |                    |
|                                 | Reeler cable                |  |                                | Connector cable |   |   |                 |    |                    |

**Example code:**  
PJS400/DH2F - This configuration joins single composite cable with outer diameter from 42.00mm to 44.99mm with conductor sizes of 70mm² (AB and C) and 35-50mm² (neutral) to 4 single core cables with outer diameters of 16.00-17.99mm with conductor sizes of 70mm² (A,B and C) and 70mm² (neutral). Filler is required.

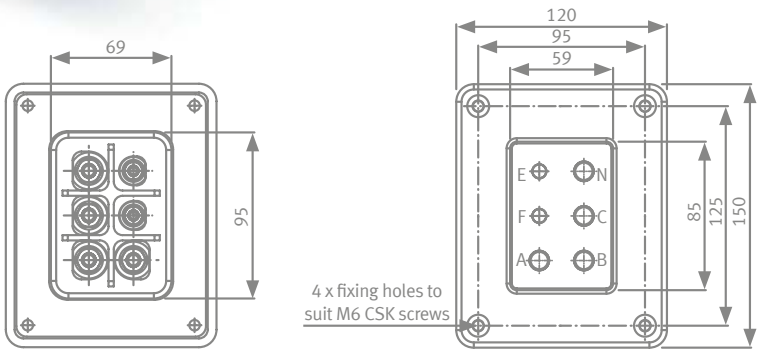
The PJS400 Junction Sleeve (400 Hz) is designed to connect composite cable to multicore cable. Configured to meet customer requirements, it is low maintenance and impact resistant.

- Features:**

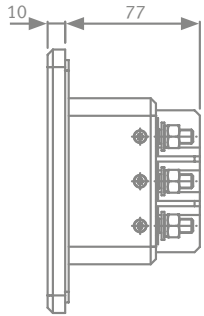
  - Provides safe and robust connection of differing cable types
  - Ideal for use with cable retrievers/reelers
  - Power supplies using composite cable can be joined to more flexible single core cable at the connector end
  - External components manufactured from impact, abrasion and chemically resistant, thermally stable polymers
- Suitable for a wide range of composite and single core 400 Hz cables
  - Exterior replaceable handle/strain relief system
  - IP66 & IP67 rated (filler not required)
- Technical information:**

  - Configurable bungs to suit industry standard cables
  - Supplied with connector hanging bracket
- Nominal voltage: 115/200 V, 400 Hz
  - Current carrying capacity: 450 A (power), 35 A (control)
  - Current overload: 1500 A for 1 min (power)
  - High-voltage test: 4000 V
  - Operating temperature: -25°C to +90°C (including temperature rise)
  - Weight: 1.7 kg uncabled and not filled

# PFR400 Flanged Receptacle



All dimensions in mm



All dimensions in mm

Easy connection to cable & low maintenance.

### Features:

- External components manufactured from impact, abrasion and chemically resistant, thermally stable polymers
- Connector interface ISO 461 compliant
- Threaded connections to suit standard lugs M8 Power, M6 E & F
- Supplied with conformal gasket
- Low profile

### Technical information:

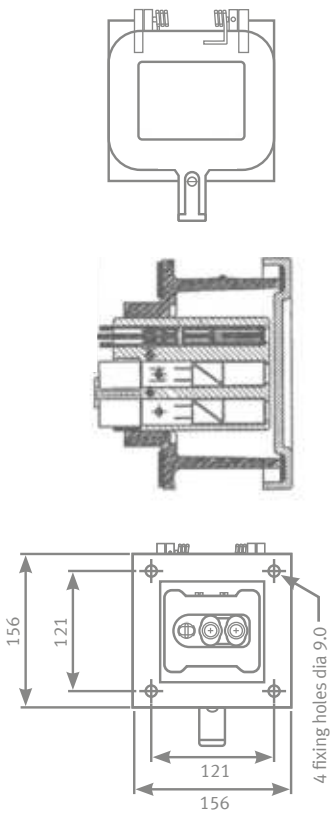
- High conductivity silver plated copper contacts
- Easy cable attachment
- Replaceable contacts
- Nominal voltage: 115/200 V, 400 Hz
- Current carrying capacity: 450 A (power), 35 A (control)
- Current overload: 1500 A for 1 min (power)
- High-voltage test: 4000 V

- Operating temperature: -25°C to +90°C (including temperature rise)
- Weight: 1 kg
- Compatibility: Mates with ISO 461-2 and MS90362 receptacles

# 28VDC Flanged Plug & Socket



Type 19



All dimensions in mm

## 28VDC 3 Pole - Plug

| Cable Size mm <sup>2</sup> | Plug Order Ref | Single End Plug Front | Single End Pin | Double End Plug Front | Double End Pin |
|----------------------------|----------------|-----------------------|----------------|-----------------------|----------------|
| 2 x 120                    | 19/1           | 28711                 | 28707          | -                     | -              |
| 2 x 95                     | 19/2           | 28712                 | 28708          | -                     | -              |
| 2 x 70                     | 19/3           | 28713                 | 28709          | -                     | -              |
| 2 x 50/35                  | 19/4           | 28714                 | 28710          | -                     | -              |
| 4 x 95/70                  | 19/6           | -                     | -              | 28717                 | 28715          |
| 4 x 50/35                  | 19/8           | -                     | -              | 28718                 | 28716          |

## 28VDC 3 Pole - Socket

| Cable Size mm <sup>2</sup> | Socket Order Ref | Single End Socket Front | Single End Tube | Double End Socket Front | Double End Tube |
|----------------------------|------------------|-------------------------|-----------------|-------------------------|-----------------|
| 2 x 120                    | 16/1             | 28682                   | 28686           | -                       | -               |
| 2 x 95                     | 16/2             | 28683                   | 27920           | -                       | -               |
| 2 x 70                     | 16/3             | 28684                   | 26373           | -                       | -               |
| 2 x 50/35                  | 16/4             | 28685                   | 27089           | -                       | -               |
| 4 x 95/70                  | 16/6             | -                       | -               | 28704                   | 21362           |
| 4 x 50/35                  | 16/8             | -                       | -               | 28705                   | 28706           |



Type 16

**Features:**

- Cast aluminium alloy housing & lid
- Epoxy powder coated orange or black finish
- Interior compliant to ISO 461
- Assemblies complete with power & control pins or tubes
- Lid incorporates connector retaining tongue with padlocking facility
- Rated to IP54

- Single contacts can be either crimped or soldered. Double-ended contacts must be soldered
- Connector material: CSPE

**Technical information:**

**Power Components**

- 450 amps maximum continuous current
- 1500 amps for maximum 1 min

**Control Components**

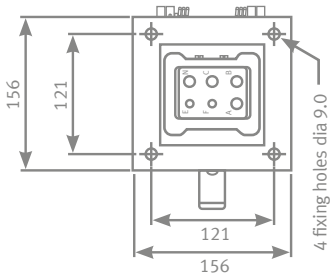
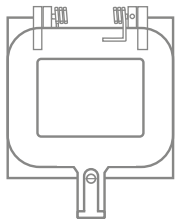
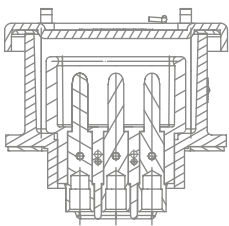
- 35 amps maximum continuous current
- All flanged plugs have a split control pin (part number - 29176) and all flanged sockets have a split control tube (part number - 13196)



# 400 Hz Flanged Plug & Socket






Type 18






All dimensions in mm

## 115-200V AC 400 Hz 6 Pole - Plug

| Cable Size mm² | Plug Order Ref | Front Half Plug Assembly  | Power Pin   | Control Pin   |
|----------------|----------------|---|---|---|
|                |                |  |  |  |
| 4 x 95         | 18/1           | 28727   | 28377   | 26675   |
| 4 x 70         | 18/2           | 27299   | 26674   | 26675   |
| 4 x 50/35      | 18/3           | 28726   | 27884   | 26675   |

## 115-200V AC 400 Hz 6 Pole - Socket

| Cable Size mm² | Socket Order Ref | Front Half Socket Assembly  | Power Tube  | Control Tube  |
|----------------|------------------|---|---|---|
|                |                  |  |  |  |
| 4 x 95         | 10/1             | 28845   | 27920   | 26374   |
| 4 x 70         | 10/2             | 27298   | 26373   | 26374   |
| 4 x 50/35      | 10/3             | 27418   | 27089   | 26374   |



Type 10

**Features:**

- Cast aluminium alloy housing & lid
- Epoxy powder coated orange or black finish
- Interior compliant to ISO 461
- Assemblies complete with power & control pins or tubes
- Lid incorporates connector retaining tongue with padlocking facility
- Rated to IP54

- Single contacts can be either crimped or soldered. Double-ended contacts must be soldered
- Connector material: CSPE

**Technical information:**

- Power Components**
- 450 amps maximum continuous current
  - 1500 amps for maximum 1 min

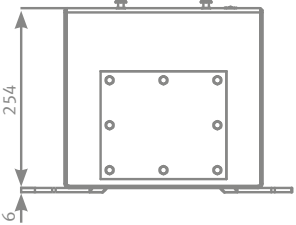
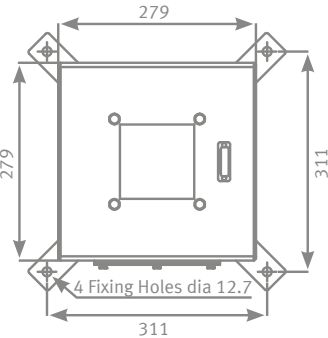
**Control Components**

- 35 amps maximum continuous current
- All flanged plugs have a split control pin (part number - 29176) and all flanged sockets have a split control tube (part number - 13196)

# Flanged Connector Mounting Boxes



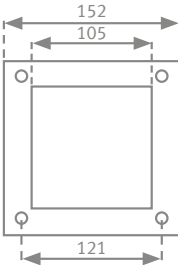
Type 27121  
Surface Box



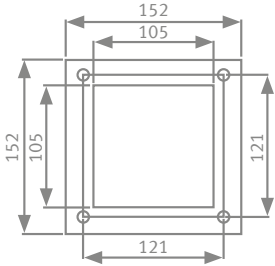
All dimensions in mm



Type 27012  
Angle Adaptor Box



All dimensions in mm



IP54 rated with flanged connector installed.

**Features:**







- Designed for use with flanged connector Types 10, 16, 18 & 19
- IP54 rated with flanged connector installed
- Manufactured in mild steel and zinc sprayed, with a polyester powder coated orange or black finish
- Cuboid design with side entry allows orientation to meet installation requirements
- Type 27121 gland plate accommodates most cable types and sizes
- Type 27121 supplied with flange connector fixing bolts
- Type 27012 supplied with fixing bolts and sealing gasket



# Spares & Accessories



## Spares & Accessories






| Spare part  | Name & description   | Part No.                | Spare accessory for               |
|---|--|-------------------------|-----------------------------------|
|    | <b>Connector nose</b>  | 54357                   | PDS400<br>PD400                   |
|    | <b>Handle assembly</b><br>With screws and washers                            | 54466                   | PDS400<br>PD400<br>P400<br>PJS400 |
|   | <b>Black switch</b><br>With fixing nut and switch cover                      | 54469                   | PDS400                            |
|  | <b>Green switch</b><br>With fixing nut and switch cover                      | 54468                   | PDS400                            |
|  | <b>Red switch</b><br>With fixing nut and switch cover                        | 54467                   | PDS400                            |
|  | <b>LED lights</b><br>With spring washer and O ring<br>Red<br>Green<br>Yellow | 54470<br>54471<br>54472 | PDS400                            |

We offer a range of spares and accessories to support our customers. To find out more or check stock availability contact us on [sales@lpa-connect.com](mailto:sales@lpa-connect.com) and +44 (0)1799 512800.

Spares & Accessories

| Spare part  | Name & description                                      | Part No. | Spare accessory for     |
|---|---|----------|-------------------------|
|    | <b>Switch cover</b><br>Replaceable silicone switch boot | 53765    | PDS400                  |
|    | <b>Control tube front half assembly</b>                 | 54354    | PDS400<br>PD400         |
|   | <b>Power tube front half assembly</b>                   | 54355    | PDS400<br>PD400         |
|  | <b>90% insertion tube front half assembly</b>           | 54449    | PDS400<br>PD400<br>P400 |
|  | <b>90% insertion tube switch</b>                        | 52544    | PDS400<br>PD400<br>P400 |

Spares & Accessories

| Spare part  | Name & description  | Part No.                            | Spare accessory for   |
|---|---|-------------------------------------|---|
|    | <b>Exohook</b><br>Hanging hook for the PDS400/PJS400 when used with the PJS400 and PD400  | 54657                               | PDS400<br>PD400   |
|    | <b>Cable Guard</b><br>Spiral cable guard to protect the cable harness.<br>Inside diameter of 60mm, available in black, orange and yellow. | 54822/BLK<br>54822/ORG<br>54822/YEL | All cable harnesses   |
|   | <b>Socket protection cap</b>  | 54749                               | PDS400<br>PD400<br>P400   |
|  | <b>Aircraft socket assembly kit</b>   | 51722                               | PDS400<br>PD400<br>D400<br>D410<br>N27<br>P27   |
|  | <b>Lanyard assembly</b>   | 51844                               | Using the LPA Lanyard Assembly reduces the strain on the aircraft socket caused by the weight of the cable harness. The lanyard is supplied to customer requirements. |



# Technical Information

Performance and dimensions of LPA Connection Systems Aviation Ground Power Supply Connectors comply with BS ISO 461-1, BS ISO 461-2, BS 4G 178-2, Add BS 4G 173 Part 1 and to appropriate Ministry of Defence (Air) and NSN standards.

General assembly:

Tubes and Pins are retained in moulded plastic or rubber housings by stainless steel circlips or nylon fixing pins. Front and rear housings are secured together by Stainless Steel fixings, thus facilitating disassembly and easy access to pins and tubes when attaching the cable. The connector is secured to the cable by two stainless steel screw clamps or by pot and bung design, providing excellent strain relief and weatherproof seal. A heat shrink sleeve covering the cable entry and rear housing can be supplied as an option.

Front and rear housings:

Housings are moulded or machined from Glass Reinforced Nylon, Nitrile PVC or CSPE, compounds selected for

their resistance to UV light, moisture, chemicals abrasion and other hazards / wear and tear associated with aircraft maintenance areas, with a temperature range of -40°C to +100°C.

Power & control pins & tubes:

Pins and Tubes are machined from copper and silver plated to ensure excellent electrical conductivity. Tubes incorporate a spring mechanism ensuring positive electrical contact in accordance with ISO 461-1/BS 4G 173.

Cable termination:

**Power pins and tubes:** With the exception of the Type M3 and Type 23 connectors, which must be soldered, power pins and tubes may be connected to cables by soldering or crimping. Termination Guide (Ref 29273) available on request.

**Control pins and tubes:** With the exception of the Split Design F tube and pin on 28VDC connectors which must be soldered, control tubes and pins may be connected to cables by soldering or crimping. The electrical

and load test approvals to BS 4G 178-2 & ISO 461 require the use of the appropriate crimping dies as shown in the product selection charts. Conductors under 2mm<sup>2</sup> will require doubling over to provide a satisfactory crimped connection.

Crimping tests have been conducted using conductor sizes shown in tables in BS 638. Oversheath dimensions are for power cables to BS 638, BS 6004 and BS 6007. Control cables are to BS 6500.

Heat shrink sleeves, supplied as standard by LPA, should be fitted over the connection and cable end of all power pins and tubes.

It is recommended that, following connection but before mating front and rear assemblies together, the rear assembly is filled with RTV silicone sealant (ACC Silicones AS1602 or AS1603) to prevent any possible moisture ingress (only on legacy connectors).

LPA Group Plc reserves the right to modify designs and specifications so as to permit the incorporation of technical developments.

# NATO Stock References

| NSN              | LPA part number                          | Where used                                 |
|------------------|--|--|
| 5935-99-393-4883 | P400/21M                                 |  |
| 5935-99-340-3621 | P400/21L                                 |  |
| 5935-99-495-1220 | P400/21E                                 |  |
| 5935-99-368-1700 | P400/41A                                 |  |
| 5935-99-349-7070 | P400/21F                                 |  |
| 5935-99-344-4526 | PD400/21M                                |  |
| 5935-99-551-2589 | Type 40/2                                |  |
| 5935-99-758-1104 | Type 40/4                                |  |
| 5935-99-192-2528 | Type 40/6                                |  |
| 5935-99-785-7295 | Type 40/8                                |  |
| 5935-99-434-9740 | Type 41/3                                |  |
| 5935-99-203-1199 | Type M1/C                                |  |
| 5935-99-770-3267 | Type M1/5                                |  |
| 5935-99-010-0617 | Type M1/7                                |  |
| 5935-99-434-9738 | Type M3/3                                |  |
| 5935-99-244-2408 | Type M3/4                                |  |
| 5935-99-608-3168 | Type 10/2                                |  |
| 5935-99-282-4558 | Type 18/2                                |  |
| 5935-99-810-3422 | Type 15/4                                |  |
| 5935-99-461-3781 | Nose moulding excluding contacts 33580   | D410/D400                                  |
| 5935-99-551-0426 | Power tube detachable front half 33526   | Type D400/Type D410                        |
| 5935-99-498-8657 | Control tube detachable front half 33530 | Type D400/D410                             |
| 5935-99-867-8041 | 400 Hz protection cap                    | Type D400/D410/Type 400/D400               |
| 5935-99-192-6707 | Tube retaining peg 11945                 | Type 400/Type 410                          |
| 5935-99-192-6693 | 28VDC power tube retaining peg 13175     | Type M1/M3                                 |
| 5935-99-192-6692 | 28VDC control tube retaining peg 13176   | Type M1/M3                                 |
| 5935-99-193-2920 | 28VDC control tube split pin type        | Type M1/M3                                 |
| 5999-99-205-4971 | Control tube                             | Type 40/41                                 |
| 5999-99-117-8495 | Power tube assembly 70/95mm              | Type M3                                    |
| 5999-99-528-3584 | Power tube 70mm 26373                    | Type M1/M7                                 |
| 5999-99-301-2920 | Power tube 35/50mm 27089                 | Type 40/8                                  |
| 5999-99-051-8636 | Power tube assembly                      | Type M1/5, Type M1/7, Type 10/1, Type 40/1 |

## Cable crimping data

| Cable size            | Die Number | Code | Code |
|-----------------------|------------|------|------|
| 120 mm <sup>2</sup>   | 31152      | M120 | HM   |
| 95 mm <sup>2</sup>    | 31151      | L95  | HL   |
| 25-70 mm <sup>2</sup> | 30732      | K70  | HK   |
| E-F                   | 30254      | F10  | HF   |

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