



Aircraft Ground Power Supply Connectors



Sun, Snow or Rain, we get the Power to the Plane



**Plane
Power**

Contents

Aviation Plugs & Sockets Range	2
Socket & Plug Selector	4
PDS400 Connector (400 Hz)	6
PD400 Connector (400 Hz)	10
P400 Connector (400 Hz)	12
Connector Plugs (400 Hz)	14
P28 Connector (28VDC)	16
28VDC 3 Pole Plugs	18
Cable Assemblies & Harnesses	20
PJS400 Junction Sleeve (400 Hz)	28
PPM400 Panel Mount Connector (400 Hz)	30
PFR400 Flanged Receptacle	32
400 Hz Flanged Plug & Socket	34
28VDC Flanged Plug & Socket	36
Flanged Connector Mounting Boxes	38
Spares & Accessories	40
Technical Information	44
NATO Stock References	45

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. LPA is EN 9100, ISO 9001 and ISO 14001 certified.

Aviation Plugs & Sockets

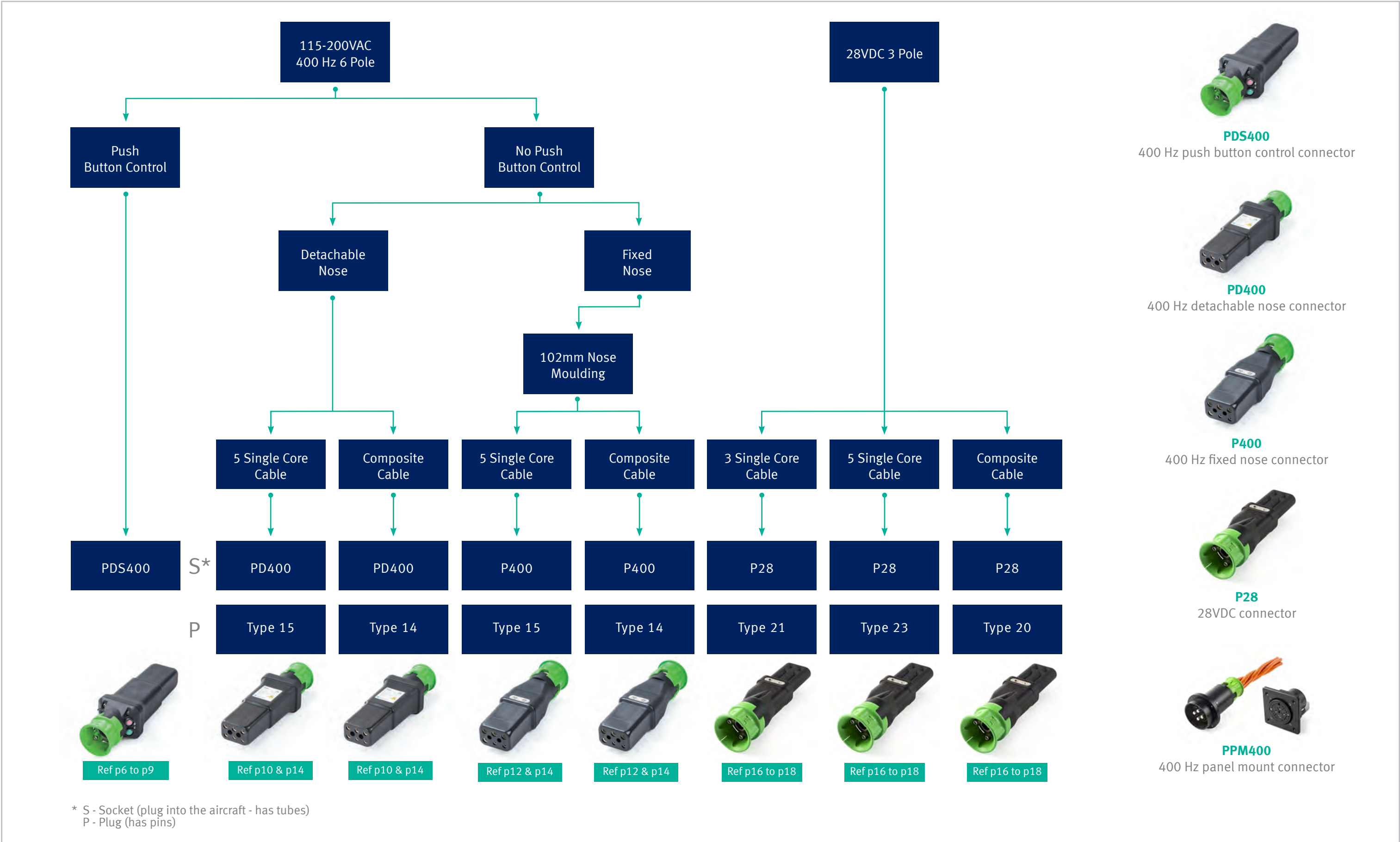


115 - 200VAC 400 Hz 6 Pole & 28VDC 3 Pole Connectors

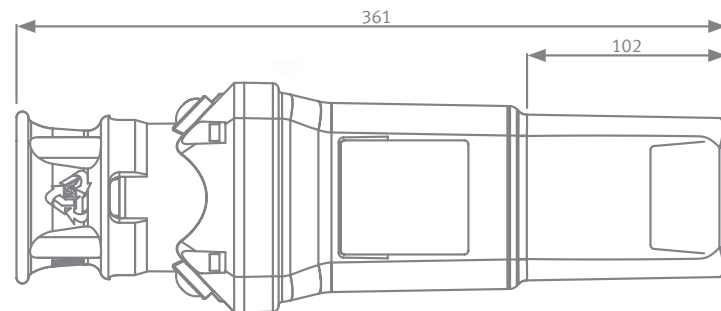
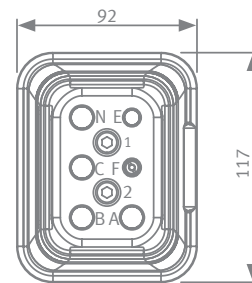
- Plane Power 400 Hz connectors and 28VDC plugs and sockets
- External components are manufactured from impact, abrasion and chemically resistant, thermally stable polymers
- Modular connector construction. Replacement parts include noses, handles, switches, LED's and contact tubes
- IP66 and IP67 rated (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



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: 4000 V
- 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-7974 D
- Compatibility: Mates with ISO 461-2 and MS90362 receptacles

PDS400 Connector (400 Hz)



PDS400 / **Cable size** / **Control tube** / **Quantity of push buttons** / **Quantity & colour of LEDs** / **Bung size** / **Temperature sensor** / **Cable length** / **Switch wiring detail**

Conductor sizes mm²

1	A, B & C N	70mm ² 70mm ²
2	A, B & C N	70mm ² 35mm ² /50mm ²
3	A, B & C N	35mm ² /50mm ² 35mm ² /50mm ²
4	A, B & C N	35mm ² /50mm ² 30mm ² /33mm ²
5	A, B & C N	30mm ² /33mm ² 25mm ²
6	A, B & C N	35mm ² /50mm ² 25mm ²

Quantity of push buttons

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
5	2 push buttons - 2 black

Quantity & colour of LEDs

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
7	1 LED colour yellow

Temperature sensor

0	No temperature sensors required
1	PT100
2	PTC120
3	PTC100

Cable length / **Switch wiring detail**

Cable length in metres
e.g. add 10

Only required for connector with cable

Switch wiring detail

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

Add **F** - lanyard fitting required.

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:

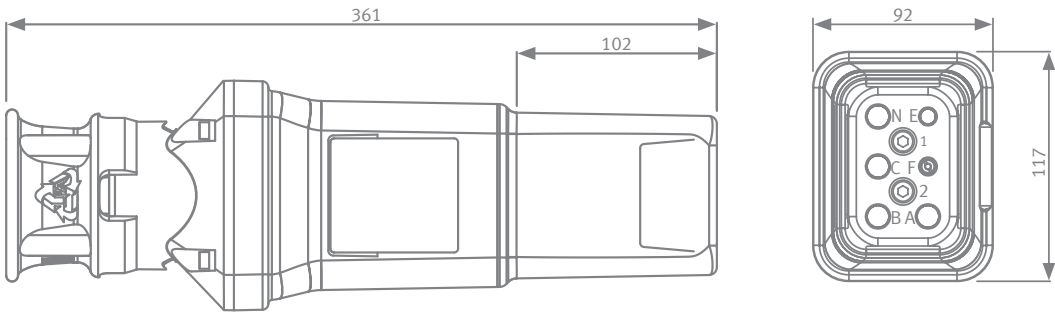
Connector only

PDS400/2143C2 - Cable size 70mm² A, B & C, 35/50mm² neutral, standard control tube, 4 push buttons, 3 LEDs, 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 A, B & C, 35/50mm² neutral, 90% insertion tube, 4 push buttons, 0 LEDs, 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

Temperature sensor

Conductor sizes mm ²		
1	A, B & C N	95mm ² 95mm ²
2	A, B & C N	70mm ² 70mm ²
3	A, B & C N	70mm ² 35mm ² to 50mm ²
4	A, B & C N	35mm ² to 50mm ² 35mm ² to 50mm ²
5	A, B & C N	35mm ² to 50mm ² 25mm ²

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
R	To suit 4 x Ø 18.00-20.00mm + 1 x - Ø 07.00-09.00mm cable

0	No temperature sensors required
1	PT100
2	PTC120
3	PTC100

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)

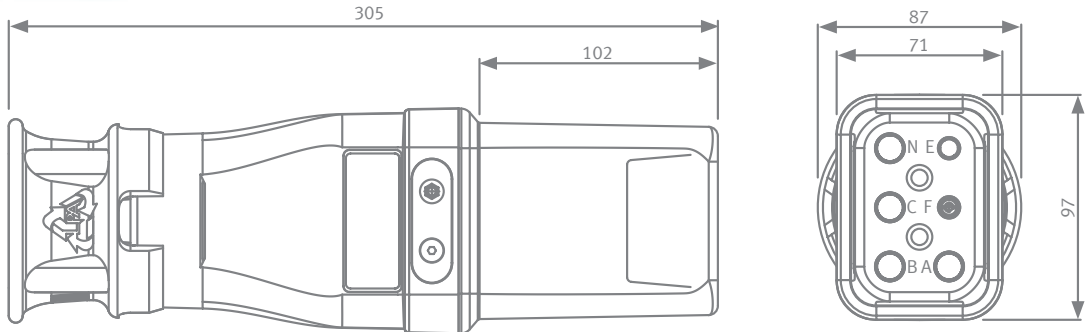
- Optional temperature sensors fitted to A, B and C contacts can prevent overheating if wired correctly into Power Supply
- Current overload: 1500 A for 1 min (power)
- High-voltage test: 4000 V
- Operating temperature: -25°C to +90°C (includes temperature rise)

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)

- 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-7974 D
- Compatibility: Mates with ISO 461-2 and MS 90362 receptacles

P400 Connector (400 Hz)



All dimensions in mm

1

Standard control tube

2

90% insertion tube with removable switch

0

No temperature sensors required

1

PT100

2

PTC120

3

PTC100

P400

Cable size

Control tube

Bung size

Temperature sensor

Conductor sizes mm²		
1	A, B & C N	95mm² 95mm²
2	A, B & C N	70mm² 70mm²
3	A, B & C N	70mm² 35mm² to 50mm²
4	A, B & C N	35mm² to 50mm² 35mm² to 50mm²
5	A, B & C N	35mm² to 50mm² 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
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
R	To suit 4 x Ø 18.00-20.00mm + 1 x - Ø 07.00-09.00mm cable

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)






- Optional temperature sensors fitted to A, B and C contacts can prevent overheating if wired correctly into Power Supply
- 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-7974 D
- Compatibility: Mates with ISO 461-2 and MS 90362 receptacles

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)

400 Hz Plug Spare Parts

5 Single Core Cable Types

Plug order ref	Cable dia mm min/max	Cable size mm²	Front half plug	Rear half assembly	Power pin	Control pin	5 hole bung
							
15/1	14.5/18.0	4 X 95	28727	27589	28377	26675	28721
15/2	18.0/21.0	4 X 95	28727	27589	28377	26675	18286
15/3	14.5/18.0	4 X 70	27299	27589	26674	26675	28721
15/4	18.0/21.0	4 X 70	27299	27589	26674	26675	18286
15/5	11.0/14.5	4 X 50/35	28726	27589	27884	26675	27628
15/6	14.5/18.0	4 X 50/35	28726	27589	27884	26675	28721
15/7	18.0/21.0	4 X 50/35	28726	27589	27884	26675	18286

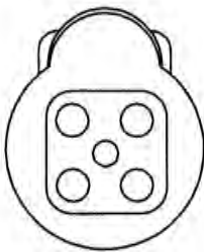
Composite Cable Types

Plug order ref	Cable dia mm min/max	Cable size mm²	Front half plug	Rear half assembly	Power pin	Control pin
						
14/1	44.0/52.0	4 X 95	28727	27592	28377	26675
14/2	44.0/52.0	4 X 70	27299	27592	26674	26675
14/3	34.0/43.0	4 X 50/35	28726	27236	27884	26675
14/5	34.0/43.0	3 X 35/50 1 X 25	-	27236	3 x 27884 1 x 44388	26675
14/6	34.0/43.0	3 X 70 1 X 35/50	44959	27236	3 x 26674 1 x 27884	26675
14/7	34.0/43.0	4 X 70	27299	27236	26674	26675

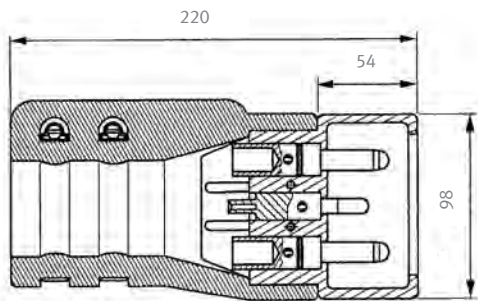
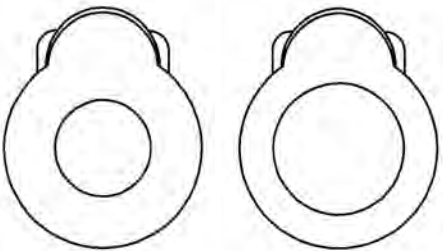
Connector
Plugs (400 Hz)



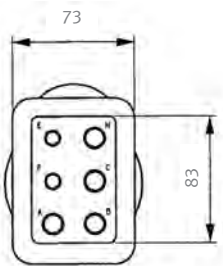
Type 15 Plug



Type 14 Plug



Type 14 Plug



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)

- Plug weight: 1.9kg
- Exterior material: CSPE

Technical information:

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

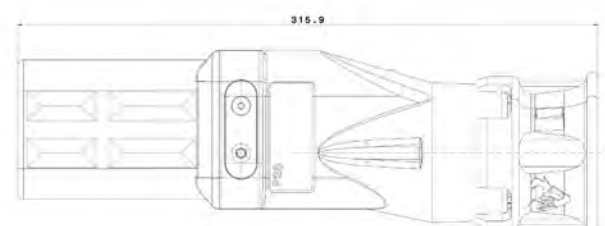
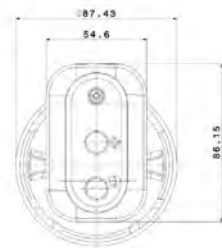
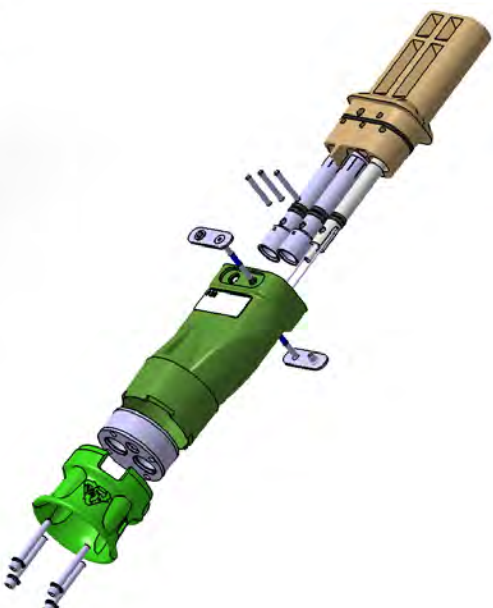
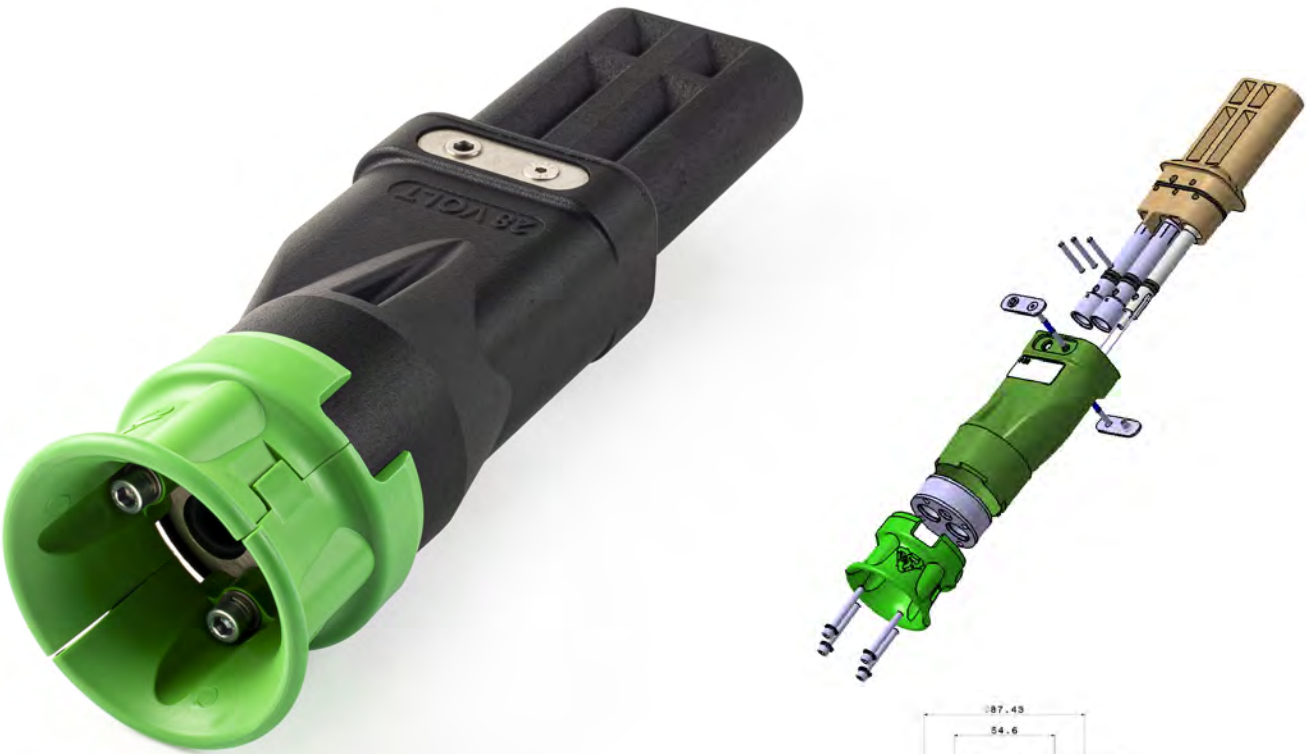
Power components

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

Control components

- 35 amps maximum continuous current

P28 Connector (28VDC)



P28

/

Cable size

Bung type

Control tube type

Temperature sensor

	+	-
1	120mm ²	120mm ²
2	95mm ²	95mm ²
3	70mm ²	70mm ²
4	35/50mm ²	35/50mm ²
5	2 x 70/95mm ²	2 x 70/95mm ²
6	2 x 35/50mm ²	2 x 35/50mm ²

A	To suit 1 x Ø 34 - 36mm cable
B	To suit 1 x Ø 36 - 38mm cable
C	To suit 1 x Ø 38 - 40mm cable
D	To suit 1 x Ø 40 - 42mm cable
E	To suit 1 x Ø 42 - 45mm cable
F	To suit power 3 x Ø 19.00 - 21.99
G	To suit power 3 x Ø 21.00 - 23.00
H	To suit power 4 x Ø 16.00 - 17.99
J	To suit power 4 x Ø 18.00 - 19.99
K	To suit power 4 x Ø 20 - 22.00
L	To suit power 4 x Ø 14.00 - 15.99 control 1 x Ø 9.00 - 10.99
M	To suit power 4 x Ø 16.00 - 17.99 control 1 x Ø 9.00 - 10.99
N	To suit power 4 x Ø 14.00 - 15.99 control 1 x Ø 13.00 - 14.99
P	To suit power 4 x Ø 16.00 - 17.99 control 1 x Ø 13.00 - 14.99
Q	To suit power 4 x Ø 20.00 - 21.99 control 1 x Ø 8.50 - 9.99
R	To suit power 4 x Ø 18.00 - 20.99 control 1 x Ø 7.00 - 9.00
S	To suit power 2 x Ø 10.00 - 11.99 control 1 x Ø 9.00 - 10.99
T	To suit power 2 x Ø 12.00 - 13.99 control 1 x Ø 9.00 - 10.99
U	To suit power 2 x Ø 14.00 - 15.99 control 1 x Ø 9.00 - 10.99
V	To suit power 2 x Ø 16.00 - 17.99 control 1 x Ø 9.00 - 10.99
W	To suit power 2 x Ø 18.00 - 19.99 control 1 x Ø 9.00 - 10.99
X	To suit power 2 x Ø 20.00 - 21.99 control 1 x Ø 9.00 - 10.99
Y	To suit power 2 x Ø 21.00 - 22.99 control 1 x Ø 9.00 - 10.99
Z	To suit power 2 x Ø 23.00 - 24.99 control 1 x Ø 9.00 - 10.99
AA	To suit power 4 x Ø 12.00 - 13.99 control 1 x Ø 9.00 - 10.99
AB	To suit power 4 x Ø 10.00 - 11.99 control x Ø 9.00 - 10.99
AC	To suit power 4 x Ø 18.00 - 20.99 control 1 x Ø 9.00 - 10.99

1	Standard
2	90% insertion
3	Split contact

0	No sensor
1	PT100
2	PTC120
3	PTC100

Supplied with fixed electrical contacts

The P28 connector comes with fixed electrical contacts, providing a cost-effective connection system to power aircraft. Suitable for a wide range of composite, 3 or 5 core cable types.

Features:

- Easy connection to cable
- Low maintenance
- IP66 & IP67 rated (no filler required)
- Suitable for a wide range of composite and single core cables
- External components manufactured from impact, abrasion and chemically resistant thermal stable polymers

- Exterior handle / stain relief system
- High conductivity silver-plated copper contacts




Technical information:

- Nominal voltage: 28VDC
- Current carrying capacity: 450 A (power), 35 A (control)
- Current overload: 1500 A for 1 minute (power)





- High voltage test: 4000 V
- Operating temperature: -25°C to +90°C (includes temperature rise)
- Applicable standards: ISO 461-1, ISO 461-2, VG 96966 and MIL-C-7974 D
- Overall weight: 1.2kg

28VDC Plug Spare Parts





Composite Cable Types

Plug order ref	Cable size mm²	Cable dia mm min/max	Single end plug front	Rear half	Power pin
					
20/A	2 X 120	41/ 54	28711	28703	28707
20/B	2 X 95	41/ 54	28712	28703	28708
20/C	2 X 70	29/40	28713	28701	28709
20/D	2 X 50/35	29/40	28714	28701	28710

3 Single Core Cable Types

Plug order ref	Cable size mm²	Cable dia mm min/max	Single end plug front	Rear half	Power pin	3 hole bung
						
21/1	2 X 120	15.5/20.0	28711	28723	28707	28678
21/2	2 X 120	20.0/24.5	28711	28723	28707	28679
21/3	2 X 120	24.5/29.0	28711	28723	28707	28680
21/4	2 X 95	15.5/20.0	28712	28723	28708	28678
21/5	2 X 95	20.0/24.5	28712	28723	28708	28679
21/6	2 X 95	24.5/29.0	28712	28723	28708	28680
21/7	2 X 70	11.0/15.5	28713	28723	28709	28677
21/8	2 X 70	15.5/20.0	28713	28723	28709	28678
21/9	2 X 70	20.0/24.5	28713	28723	28709	28679
21/10	2 X 50/35	11.0/15.5	28714	28723	28710	28677
21/11	2 X 50/35	15.5/20.0	28714	28723	28710	28678
21/12	2 X 50/35	20.0/24.5	28714	28723	28710	28679

5 Single Core Cable Types

Plug order ref	Cable size mm²	Cable dia mm min/max	Double end plug front	Rear half	Double power pin	5 hole bung
						
23/3	4 X 70/95	14.5/18.0	28717	28723	28715	28721
23/4	4 X 70/95	18.0/21.0	28717	28723	28715	18286
23/5	4 X 50/35	11.0/14.5	28718	28723	28716	27628
23/6	4 X 50/35	14.5/18.0	28718	28723	28716	28721
23/7	4 X 50/35	18.0/21.0	28718	28723	28716	18286

28VDC 3 Pole Plugs



P28 Socket



Type 20 Plug

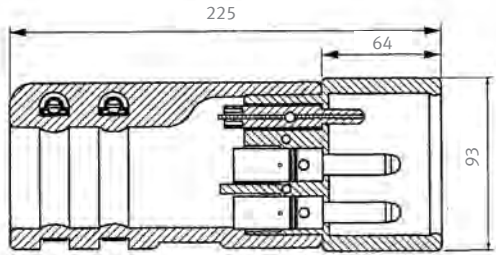


Type 21 Plug

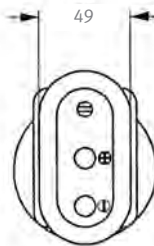


Type 23 Plug

Type 20/21/23 Plug



All dimensions in mm



Plug

Supplied with fixed electrical contacts and control contacts

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
- 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).
- 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 4G 173-1
- Compatibility: mates with ISO 461-2

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 - 200VAC 400 Hz and 28VDC supply
- Quick assembly using standard stock items
- Cable length can be specified
- Lanyard fitting option available



Part Number Configurator - 400 Hz

Extension Harness (EH)



400 Hz Single Core Extension Harness
with P400 & Type 15

Also available:
28VDC Extension Harness supplied with P28 connector and 28VDC plug.

P400	Fixed contact connector
PD400	Detachable nose replaceable contact connector

EH	Socket type	Cable type & size	Cable length	Lanyard fitting
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Conductor sizes mm²			
1	Single core	A, B & C N	95mm² 95mm²
2	Single core	A, B & C N	70mm² 70mm²
3	Composite	A, B & C N	70mm² 35mm²

Cable length in metres e.g. add 10.

For lanyard fitting add F.

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

P28	2 single core cables
P28	4 single core cables

EH	Socket type	Cable type & size	Cable length	Lanyard fitting
----	-------------	-------------------	--------------	-----------------

Conductor sizes mm²			
1	Single core	+ power contact - power contact	120mm² 120mm²
2	Single core	+ power contact - power contact	95mm² 95mm²
3	Single core	+ power contact - power contact	70mm² 70mm²
4	Single core	+ power contact - power contact	2 x 70mm² 2 x 70mm²
5	Single core	+ power contact - power contact	2 x 95mm² 2 x 95mm²

Cable length in metres e.g. add 10.

For lanyard fitting add F.

Example code:
EHP28315 - Extension harness including P28 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

A	4xSingle core 95mm ² -914
B	4xSingle core 70mm ² -954
C	7x35mm ² + (6x3x1)mm ² Composite Flex-57
D	7x35mm ² + (6x3x1)mm ² Composite-311*
E	7x35mm ² + (6x4x1)mm ² Composite-52
F	4x1x70 + (8x1mm) Twisted-107
G	4x(1x70mm ² + 4x1mm ²) Twisted-108
H	4x(1x50mm ² + 4x1mm ²) Twisted-53

0	No sensor
1	PT100
2	PTC120
3	PTC100

P400	Fixed contact connector
PD400	Detachable nose replaceable contact connector

PH	Socket type	Cable length	Cable type & size	Control tube type	Temperature Sensor
----	-------------	--------------	-------------------	-------------------	--------------------

Cable length
in metres e.g.
add 10.

1	Standard Control Tube- Standard Control Tube
2	90% Insertion Tube with Removable Switch- 'NO'-Standard Control Tube
3	90% Insertion Tube with Removable Switch- 'NC'- Standard Control Tube
4	90% Insertion Tube with Removable Switch- 'NO'-90% Insertion tube with Removeable Switch- 'NC'
5	90% Insertion Tube with Removable Switch- 'NO'-90% Insertion tube with Removeable Switch- 'NO'
6	90% Insertion Tube with Removable Switch- 'Nc'-90% Insertion tube with Removeable Switch- 'NC'

- Add **F** - lanyard fitting required.
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

PHP28	Cable type & size	Control tube type	Cable length	Lanyard fitting
-------	-------------------	-------------------	--------------	-----------------

Type	+	-
1	Single core 120mm ²	120mm ²
2	Single core 95mm ²	95mm ²
3	Single core 70mm ²	120mm ²
4	Single core 2x70mm ²	2x70mm ²
5	Single core 2x90mm ²	2x90mm ²

Type	
1	Standard Control
2	90% Insertion Tube
3	Split Contact Tube

Cable length
in metres e.g.
add 10.

For lanyard
fitting add F.

Also available:
28VDC Power Harness supplied with P28 connector and 28VDC plug.

Part Number Configurator

Dual
Harness (DH)



Dual Harness with PJS400 & PDS400 complete with Exohook

1	Standard control tube
2	90% Insertion Tube with Removable Switch- 'NO'-Standard tube
3	90% Insertion Tube with Removable Switch- 'NO' - Standard tube
4	90% Insertion Tube 'NO'- 90% Insertion tube 'NC'
5	90% Insertion - Standard tube 'NO'- 90% Insertion tube 'NO'
6	90% Insertion Tube 'NC'- 90% Insertion tube 'NC'

1	Amokabel SII 4x1x50mm ² +(4x1mm ²) twisted
2	Amokabel SII 4x1x70mm ² +(4x1mm ²)

0	No LEDs
1	One LED colour Red
2	Two LEDs colours Red & Green
3	Three LEDs colours Red & Green + 1 Yellow
4	Four LEDs colours Red & Green + 2 Yellow
5	One LED colour Green
6	Four LEDs colours Red & Green plus Yellow & Green
7	One LED colour Yellow

1	ON (Normally Open), OFF (Normally Closed)
2	ON (Normally Open), OFF (Normally Open)

A	1.5
B	2.0
C	2.5
D	Custom Cable Length in metres e.g. 1.2m

A	05
B	18
C	24
D	27
E	Custom Cable Length in metres e.g. 30m

0	No temperature sensors required
1	PT100
2	PTC120
3	PTC100

0	No push buttons
1	One push button - Green
2	Two push buttons - Green & Red
3	Three push buttons - Green, Red & Black
4	Four push buttons - Green, Red & 2 Black
5	Two push buttons - Black & Black
6	One push button - Red
7	One push button - Black & Black

0	No LEDs
1	One LED colour Red
2	Two LEDs colours Red & Green
3	Three LEDs colours Red & Green + 1 Yellow
4	Four LEDs colours Red & Green + 2 Yellow
5	One LED colour Green
6	Four LEDs colours Red & Green plus Yellow & Green
7	One LED colour Yellow

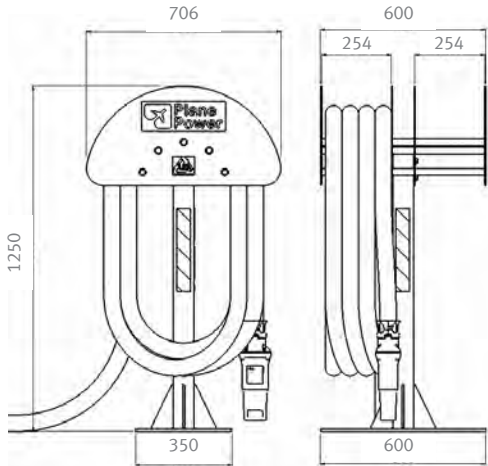
1	ON (Normally Open), OFF (Normally Closed)
2	ON (Normally Open), OFF (Normally Open)

Additional Suffixes:
If the harness connector requires the control contacts to be linked add an 'L'.
If the harness connector requires neutral rupture to be wired add an 'N'.
If the harness connector requires phase rupture to be wired add an 'P'.
If the harness connector requires both a control link and a neutral rupture add an 'LN'.
If the harness connector requires both a control link, neutral rupture and phase ruptured add an 'LNP'.
If the harness requires a lanyard to be fitted add an 'F'.

Cable Harness
Storage Stand
(PCR100)

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

- Features:**
- 2 part bolted and 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)



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

PJS400	Bung type (reeler cable)	Bung size (connector cable)	Conductor sizes
Conductor sizes mm²			
1	A, B & C N	70mm² 35mm² to 50mm²	Joining to A, B & C N 35mm² to 50mm² 35mm² to 50mm²
2	A, B & C N	70mm² 35mm² to 50mm²	Joining to A, B & C N 70mm² 70mm²
3	A, B & C N	35mm² to 50mm² 35mm² to 50mm²	Joining to A, B & C N 35mm² to 50mm² 35mm² to 50mm²
4	A, B & C N	35mm² to 50mm² 30mm²	Joining to A, B & C N 70mm² 70mm²
Reeler cable		Connector cable	

Example code:
PJS400/EH2 - This configuration joins single composite cable with outer diameter from 42.00mm to 44.99mm with conductor sizes of 70mm² (A, B 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).

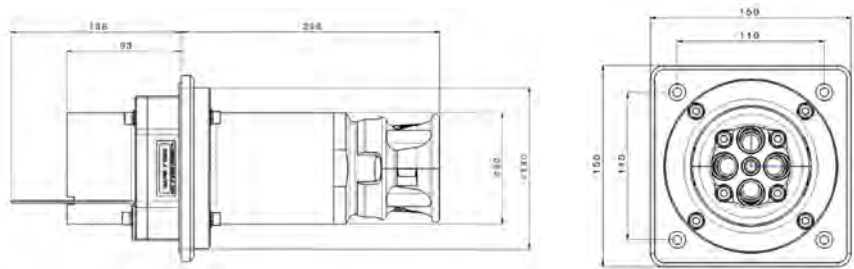
The PJS400 Junction Sleeve (400 Hz) is designed to connect composite cable to multicore cable. Configured to meet customer requirements, it is low maintenance and impact resistant.

- 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)
 - Exohook supplied with the PJS400
- 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

PPM400 Panel Mount Connector (400 Hz)



All dimensions in mm



PPM400P



PPM400S
socket

Plug

PPM400P	Cable size	Bung type
Conductor sizes mm²		
1	A, B & C N 70mm ² 70mm ²	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 R To suit 4 x Ø 18.00-20.99mm + 1 x - Ø 07.00-09.00mm cable
2	A, B & C N 70mm ² 35mm ² to 50mm ²	
3	A, B & C N 35mm ² to 50mm ² 35mm ² to 50mm ²	

Socket

PPM400S	Cable size
Conductor sizes mm²	
1	A, B & C N 70mm ² 70mm ²
2	A, B & C N 70mm ² 35mm ² to 50mm ²
3	A, B & C N 35mm ² to 50mm ² 35mm ² to 50mm ²

The PPM400 panel mount connector (400 Hz) provides a safe and robust connectorised solution for cable exiting enclosures. Configured to meet customer requirements, it is low maintenance and impact resistant.

Features:

- High conductivity copper contacts, Power silver plated, Controls gold plated
- Connector sealed to IP66 / IP67 when engaged (filler not required)
- Suitable for a wide range of composite and single core cables
- External components manufactured from impact, abrasion and chemically resistant thermally stable polymers
- Exterior handle / strain relief system

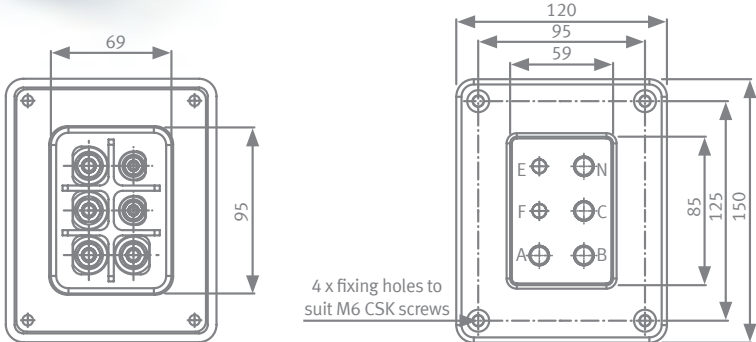
- Provided with A, B, C & N power contacts and up to 24 control contacts
- Optional cover & socket protection cap
- Polarity can be reversed using control contacts for First Break last mate to ensure safety

- Current overload: 1500 A for 1 minute (power)
- High voltage test: 4000 V
- Operating temperature: -25°C to +90°C (includes temperature rise)
- Mating forces: As per BS 4G 173
- Applicable standards: ISO 461-1 and BS 4G 173
- Overall weight: 2.5kg

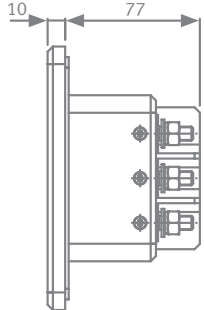
Technical information:

- Nominal voltage: 115/200 V, 400 Hz
- Current carrying capacity: 450 A (power), 35 A (control)

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:

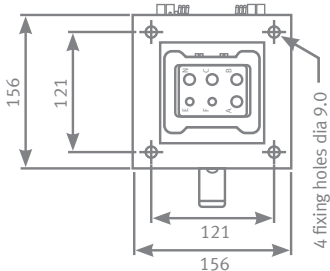
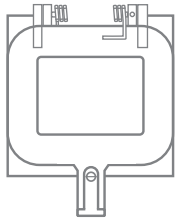
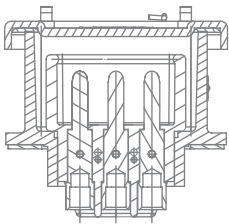
- High conductivity silver plated copper contacts
- Easy cable attachment
- Replaceable contacts
- Nominal voltage: 115/200 V, 400 Hz
- Current carrying capacity: 450 A (power), 35 A (control)
- Current overload: 1500 A for 1 min (power)
- High-voltage test: 4000 V

- Operating temperature: -25°C to +90°C (including temperature rise)
- Weight: 1 kg
- Compatibility: Mates with ISO 461-2 and MS 90362 receptacles

400 Hz Flanged Plug & Socket






Type 18






All dimensions in mm

115-200VAC 400 Hz 6 Pole - Plug

Plug order ref	Cable size mm ²	Front half plug assembly	Power pin	Control pin
				
18/1	4 x 95	28727	28377	26675
18/2	4 x 70	27299	26674	26675
18/3	4 x 50/35	28726	27884	26675

115-200VAC 400 Hz 6 Pole - Socket

Socket order ref	Cable size mm ²	Front half socket assembly	Power tube	Control tube
				
10/1	4 x 95	28845	27920	26374
10/2	4 x 70	27298	26373	26374
10/3	4 x 50/35	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 A maximum continuous current
- 1500 A for maximum 1 min

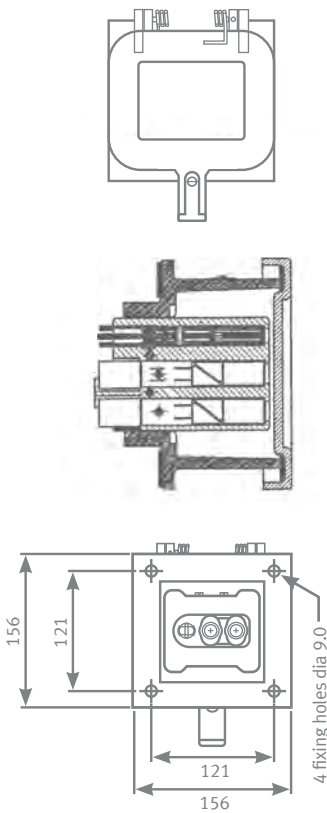
Control Components

- 35 A 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)

28VDC Flanged Plug & Socket



Type 19



All dimensions in mm

28VDC 3 Pole - Plug

Plug order ref	Cable size mm ²	Single end plug front	Single end pin	Double end plug front	Double end pin
19/1	2 x 120	28711	28707	-	-
19/2	2 x 95	28712	28708	-	-
19/3	2 x 70	28713	28709	-	-
19/4	2 x 50/35	28714	28710	-	-
19/6	4 x 95/70	-	-	28717	28715
19/8	4 x 50/35	-	-	28718	28716

28VDC 3 Pole - Socket

Socket order ref	Cable size mm ²	Single end socket front	Single end tube	Double end socket front	Double end tube
16/1	2 x 120	28682	28686	-	-
16/2	2 x 95	28683	27920	-	-
16/3	2 x 70	28684	26373	-	-
16/4	2 x 50/35	28685	27089	-	-
16/6	4 x 95/70	-	-	28704	21362
16/8	4 x 50/35	-	-	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 A maximum continuous current
- 1500 A for maximum 1 min

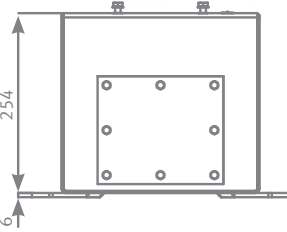
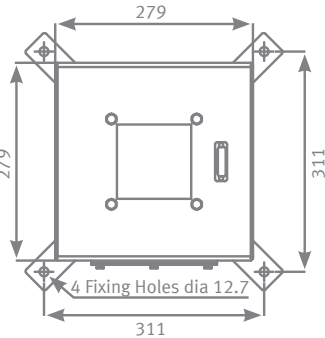
Control Components

- 35 A 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



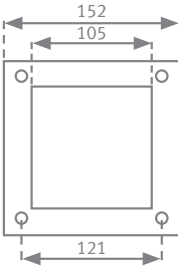
Type 27121
Surface Box



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
	Connector nose	54357	PDS400 PD400
	Handle assembly With screws and washers	54466	PDS400 PD400 P400 PJS400
	Black switch With fixing nut and switch cover	54469	PDS400
	Green switch With fixing nut and switch cover	54468	PDS400
	Red switch With fixing nut and switch cover	54467	PDS400
	LED lights With spring washer and O ring Red Green Yellow	54470 54471 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 and +44 (0)1799 512800.

Spares & Accessories

Spare part	Name & description	Part No.	Spare accessory for
	Switch cover Replaceable silicone switch boot	53765	PDS400
	Control tube front half assembly	54354	PDS400 PD400
	Power tube front half assembly	54355	PDS400 PD400
	90% insertion tube front half assembly	54449	PDS400 PD400 P400
	90% insertion tube switch	52544	PDS400 PD400 P400
	Aircraft socket assembly kit	51722	PDS400 PD400 P400 P28

Spares & Accessories

Spare part	Name & description	Part No.	Spare accessory for
	Exohook Hanging hook for the PDS400/PJS400 when used with the PJS400 and PD400	54657	PDS400 PD400
	Aircraft contact testing kit	52138	Inspection and testing kit for Plane Power 400Hz and 28VDC aviation connectors
	Socket protection cap	54749	PDS400 PD400 P400
	DC socket protection cap	29597	P28
	Plane Power lanyard assembly	55426	Designed to reduce the strain on the aircraft socket caused by the weight of the power cable harness.

P28 Spares	Part No.	P28 Spares	Part No.
Contacts		Nose sub-assemblies	
120mm ²	55160	120mm ²	55080/1
95mm ²	54475	95mm ²	55080/2
70mm ²	53773	70mm ²	55080/3
35/50mm ²	54455	35/50mm ²	55080/4
2x70/95mm ²	55168	2x70/95mm ²	55080/5
2x35/50mm ²	55167	2x35/50mm ²	55080/6
Control - Standard	55117	Body	55171
Control - 90% NO	54474	Sensor Kit PT100	55754
Control - 90% NC	TBA	Sensor Kit PTC100	55755
Nose	55170	Sensor Kit PTC100	55756
		Retaining Peg	55132
		O ring	54985
		Retaining plate Screw	54986

Technical Information

NATO Stock References

Performance and dimensions of LPA Connection Systems aviation ground power supply connectors comply with BS ISO 461-1, BS ISO 461-2 and to appropriate MOD 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.

All P series connectors are independently certified to IP66/67 and are CE marked.

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 ISO461-2, MIL-C-7174 D and MIL-C7974 D.

Cable termination:

Power pins and tubes:
With the exception of the P28 connectors where 4 power cables are selected, 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:

Control tubes and pins may be connected to cables by soldering or crimping. The electrical and load test approvals to ISO 461 require the use of the appropriate crimping dies as shown in the product selection charts. Conductors under 2mm² 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.

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

NSN	LPA part number
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
5935-99-671-7647	P400/22M
5935-99-564-4321	P400/22P
5935-99-344-4526	PD400/21M
998475867	Type 10/1
5935-99-608-3168	Type 10/2
5935-99-282-4558	Type 18/2
5935-99-810-3422	Type 15/4
992586194	Type 16/6

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