

Assembly Instructions for:
PL 6** Series Junction Boxes

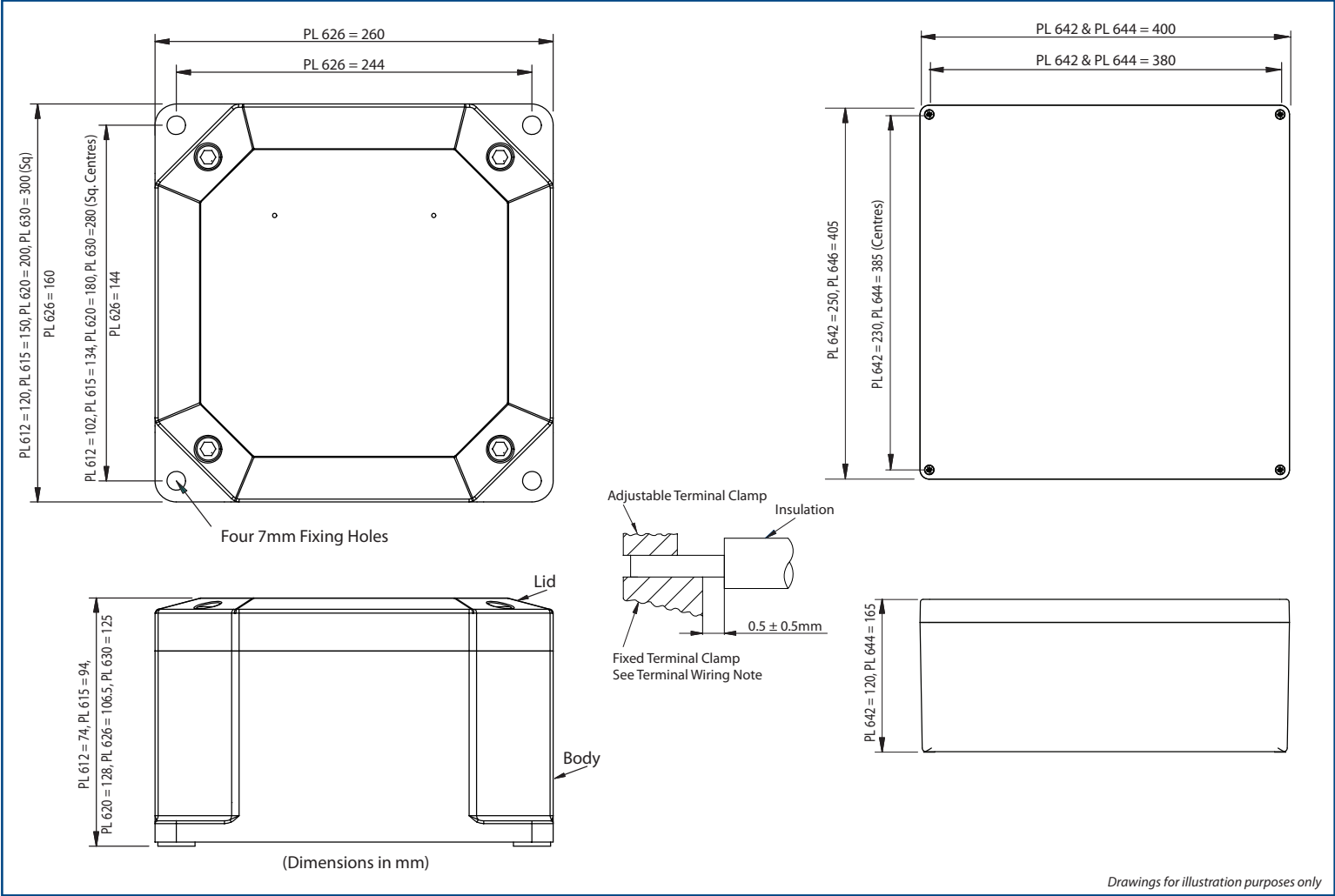
IMPORTANT: This document should be read carefully before commencing installation

Zones of Use for Terminal Box - as defined in IEC/EN 60079-0 and IEC/EN 60079-10-1/60079-10-2
Group II Category 1G, for use in Zone 0 (plus Zone 1 and Zone 2).
Group II Category 1D, for use in Zone 20 (plus Zone 21 and Zone 22).
Group II Category 2G, for use in Zone 1 (plus Zone 2).
Group II Category 2D, for use in Zone 21 (plus Zone 22).

Service Temperature: PL 6** -60°C to +75°C
Minimum Installation Temperature: -5°C

Certification Details

Box Type: PL6** Series
II 2G Exeb IIC T* Gb, II 2D Extb IIIC T***C Db IP66 CE
II 2G Exib IIC T* Gb, II 2D Exib IIIC T***C Db IP66 CE
II 1G Exia IIC T* Ga, II 1D Exia IIIC T***C Da IP66 CE
Baseefa 06ATEX0117X
IEC Ex BAS06.0028X
IEEx 16.0143X
TC RU C-GB.AA87.B.00430



Drawings for illustration purposes only

W = Maximum Dissipated Wattage N = No. of Terminals Fitted F = Combined Terminal Resistance I = Maximum Current

W = N x F x I^2 N = W / F x I^2 I = Sqrt (W / N x F)

Note: Combined Terminal Resistance = Resistance of Maximum Conductor Length (see BS 6360 and table below) + Terminal Resistance

Box Type	Maximum Power Dissipation (Watts)															Max. Cable Length Per Terminal (M)
	T* T6	T** 80°C	T*** -60°C +40°C	T* T6	T** 80°C	T*** -60°C +55°C	T* T6	T** 80°C	T*** -60°C +65°C	T* T5	T** 95°C	T*** -60°C +40°C	T* T5	T** 95°C	T*** -60°C +55°C	
PL 612		4.1			2.5			1.5			5.6			4.1		0.127
PL 615		6.4			4.0			2.4			8.8			6.4		0.175
PL 620		11.4			7.1			4.2			15.6			11.4		0.240
PL 626		11.4			7.1			4.2			15.6			11.4		0.275
PL 630		20.8			13.0			7.8			28.6			20.8		0.365
PL 642		20.8			13.0			7.8			28.6			20.8		0.432
PL 644		20.8			13.0			7.8			28.6			20.8		0.528

CONDITIONS FOR SAFE USE:

1. Unused entry holes must be fitted with stopping plugs as listed on the ZPL6 component certificate Baseefa06ATEX0116U. The operating temperature range and Ingress Protection rating of the enclosure is limited to that of the stopping plug fitted.
2. Any breathing and draining device as listed on the ZPL6** component certificate Baseefa06ATEX0116U may be fitted. The breather/drain device must be installed in its correct orientation in the bottom face of the junction box. The operating temperature range and Ingress Protection rating of the junction box is limited to that of the breather/drain device fitted.
3. All terminal screws, used and unused, shall be fully tightened down by the end user.
4. Insulation of conductors must extend to within 1mm of the metal of the terminal throat unless specified otherwise on the terminal certificate.
5. No more than one single or multi-stranded lead shall be connected to either side of any terminal unless multiple conductors have been joined in a suitable manner, e.g. two conductors into a single insulated bootlace ferrule, or any method indicated on the terminal certificate.
6. Terminals and their accessories shall be installed in such a manner that the creepage distances and clearances between the terminal and adjacent components, enclosure walls and covers comply with the requirements of EN 60079-7 and EN 60079-11 for the rated voltage of the equipment.
7. Terminal temperatures must not exceed the operating range specified on the component certificate for the terminal.
8. All terminals, and accessories such as cross-connectors, shall be installed in accordance with the terminal manufactures instructions.
9. The maximum voltage, current and dissipated power shown on the rating label must not be exceeded.
10. When connecting conductors of cross section below the maximum allowed for the particular terminal then the maximum amps per pole must be reduced in-line with the maximum amps permitted for a terminal equivalent to the conductor size fitted e.g. If a terminal that can take a 10mm² conductor at 40Amps is fitted with a 4mm² conductor then the current shall be reduced to a maximum of 22Amps, or the rating marked on the apparatus label, whichever is the lower.
11. When label fixing is by screws complete with Nyloc nuts then the Ingress Protection Rating is IP66.
12. Unused entries may be fitted with alternative stopping plugs and or breather drains to those listed in the schedule. The user is responsible for ensuring that the protection concept, temperature class and relevant IP rating are maintained.
13. When fuse terminals are fitted, the low ambient temperature is limited to -25°C and the junction box becomes a defined arrangement.

EXTERNAL EFFECTS AND AGGRESSIVE SUBSTANCES:

The end user shall take into consideration for health and safety regulations when changing environmental conditions and in the presence of extraneous voltages, humidity, vibrations, contamination and other external effects, take into account the limits of the operating conditions established by Hawke International.

Equipment parts used must be appropriate to the intended mechanical and thermal stresses and capable of withstanding attack by existing or foreseeable aggressive substances.

TO OPEN THE LID:

1. Disconnect power (isolate all circuits).
2. Untighten the lid securing screws.
3. Carefully remove the lid ensuring the gasket is not displaced or damaged.

TO CLOSE THE LID:

1. Check that the gasket is correctly located in the groove in the underside of the lid and undamaged. Ensure that the correct lid is refitted.
2. Locate and tighten all the lid securing screws into the box body.

ENCLOSURE INSTALLATION (EI)

- a) The IP rating of the enclosure must be maintained for the area of use (e.g. IP6* for Zone 21 dust environment) by the use of correct arrangement of cable/gland/sealing arrangements and in accordance with the installation codes as detailed in IEC/EN 60079-14 - IEC/EN 60079-31 and these installation instructions.
- b) The enclosure may be ready supplied with cable entries. Where the customer drills cable entries they must be installed in accordance with the component certificate BAS06ATEX0116U or IEC Ex No: BAS06.0027U and enclosure limitations, these specify a maximum clearance on the entry thread of 0.7mm for plain holes and where adjacent cable entries are installed sufficient clearance must be maintained to allow for the fitting of sealing/retaining washers and the rotation of the cable gland hexagons, and leave a minimum of material between adjacent holes in line with the above certificate number(s).

TERMINAL WIRING (TW)

- a) All wiring must be carried out in accordance with the relevant code of practice and/or instructions e.g. IEC/EN 60079-14 and IEC/EN 60079-31.
- b) When used as a general purpose junction box or marshalling box the circuits carrying currents $\geq 1\text{A}$ shall be individually protected against over current such that the protective device operates effectively at no more than 1.45 times the current carrying capacity of the smallest conductor used in that circuit.
- c) The installer shall ensure creepage and clearance distances are not reduced, especially between intrinsically safe (is) and non-is circuits (e.g. 50mm clearance).
- d) The use of any cross connection devices between adjacent terminal ways shall be in accordance with the requirements of the relevant component certificate listed on Drg. D9160.

EARTHING:

- a) Junction boxes shall be earthed in accordance with the relevant code of practice e.g. IEC/EN 60079-14 and IEC/EN 60079-31.
- b) The PL 6** series boxes are supplied fitted with an internal earth terminal.
- c) The PL 6** series boxes may be supplied fitted with or without an internal earth continuity plate.

Note : *An optional internal / external earth stud is available.*

SCHEDULE OF TERMINALS FITTED (T6 40C AND T5 55C)

PL 612 Terminal Capacity Data										
Terminal Type	Conductor Size mm ²		Max. Volts	Maximum Physical Terminal Content		Reduced Terminal Content at Maximum Terminal Amps		Combined Terminal Resistance (Ohms)	Insulation Stripping Length (mm)	Terminal Tightening Torque (Nm)
	Min	Max		Term. Qty.	Amps	Term. Qty.	Amps			
WDU2.5N	0.5	2.5	440	12	16	10	17	0.001371	10	0.4 - 0.6
WDU2.5	0.5	2.5	690	10	17	10	17	0.001311	10	0.4 - 0.6
WDU4	0.5	4.0	690	10	22	9	22	0.000375	10	0.5 - 1.0
WDU6	0.5	6.0	690	9	29	6	29	0.000567	12	0.8 - 1.6
WDU10	1.5	10.0	690	6	39	5	40	0.000384	12	1.2 - 2.4
BK6	1.0	6.0	275	1	20	N/A	N/A	0.000936	8	0.5 - 0.7
MK6/6	1.0	6.0	440	1	25	N/A	N/A	0.000521	9	1.2 - 2.0
HTB 6 *	1.0	6.0	550	1	37	N/A	N/A	N/A	12	1.0 - 2.0

* Refer to Fig. 1 for HTB terminal limitations

PL 615 Terminal Capacity Data										
Terminal Type	Conductor Size mm ²		Max. Volts	Maximum Physical Terminal Content		Reduced Terminal Content at Maximum Terminal Amps		Combined Terminal Resistance (Ohms)	Insulation Stripping Length (mm)	Terminal Tightening Torque (Nm)
	Min	Max		Term. Qty.	Amps	Term. Qty.	Amps			
WDU2.5N	0.5	2.5	440	14	16	13	17	0.001727	10	0.4 - 0.6
WDU2.5	0.5	2.5	690	14	17	13	17	0.001667	10	0.4 - 0.6
WDU4	0.5	4.0	690	12	22	11	22	0.001097	10	0.5 - 1.0
WDU6	0.5	6.0	690	9	29	9	29	0.000715	12	0.8 - 1.6
WDU10	1.5	10.0	690	7	40	7	40	0.000472	12	1.2 - 2.4
WDU16	1.5	16.0	690	6	53	6	53	0.000362	16	2.0 - 4.0
HTB 6 *	1.0	6.0	550	1	37	N/A	N/A	N/A	12	1.0 - 2.0

* Refer to Fig. 1 for HTB terminal limitations

PL 620 Terminal Capacity Data										
Terminal Type	Conductor Size mm ²		Max. Volts	Maximum Physical Terminal Content		Reduced Terminal Content at Maximum Terminal Amps		Combined Terminal Resistance (Ohms)	Insulation Stripping Length (mm)	Terminal Tightening Torque (Nm)
	Min	Max		Term. Qty.	Amps	Term. Qty.	Amps			
WDU2.5N	0.5	2.5	440	24	16	18	17	0.002208	10	0.4 - 0.6
WDU2.5	0.5	2.5	690	24	16	18	17	0.002148	10	0.4 - 0.6
WDU4	0.5	4.0	690	20	21	16	22	0.001396	10	0.5 - 1.0
WDU6	0.5	6.0	690	15	29	12	29	0.000915	12	0.8 - 1.6
WDU10	1.5	10.0	690	12	40	10	40	0.000591	12	1.2 - 2.4
WDU16	1.5	16.0	690	9	53	9	53	0.000437	16	2.0 - 4.0
WDU35	2.5	35.0	690	6	80	6	80	0.000271	16	4.0 - 5.0
WDU70N	10.0	70.0	690	4	129	4	129	0.000206	22	8.0 - 12.0

PL 626 Terminal Capacity Data										
Terminal Type	Conductor Size mm ²		Max. Volts	Maximum Physical Terminal Content		Reduced Terminal Content at Maximum Terminal Amps		Combined Terminal Resistance (Ohms)	Insulation Stripping Length (mm)	Terminal Tightening Torque (Nm)
	Min	Max		Term. Qty.	Amps	Term. Qty.	Amps			
WDU2.5N	0.5	2.5	440	38	11	15	17	0.002468	10	0.4 - 0.6
WDU2.5	0.5	2.5	690	38	11	15	17	0.002408	10	0.4 - 0.6
WDU4	0.5	4.0	690	32	15	14	22	0.001558	10	0.5 - 1.0
WDU6	0.5	6.0	690	24	20	11	29	0.001023	12	0.8 - 1.6
WDU10	1.5	10.0	690	19	28	9	40	0.000655	12	1.2 - 2.4
WDU16	1.5	16.0	690	16	39	8	53	0.000477	16	2.0 - 4.0
WDU35	2.5	35.0	690	12	62	6	80	0.000289	16	4.0 - 5.0

If glands are installed in Faces B and D, maximum terminal quantities may be reduced.

PL 630 Terminal Capacity Data										
Terminal Type	Conductor Size mm ²		Max. Volts	Maximum Physical Terminal Content		Reduced Terminal Content at Maximum Terminal Amps		Combined Terminal Resistance (Ohms)	Insulation Stripping Length (mm)	Terminal Tightening Torque (Nm)
	Min	Max		Term. Qty.	Amps	Term. Qty.	Amps			
WDU2.5N	0.5	2.5	440	76	9	23	17	0.003135	10	0.4 - 0.6
WDU2.5	0.5	2.5	690	76	9	23	17	0.003075	10	0.4 - 0.6
WDU4	0.5	4.0	690	64	12	21	22	0.001978	10	0.5 - 1.0
WDU6	0.5	6.0	690	48	17	17	29	0.001300	12	0.8 - 1.6
WDU10	1.5	10.0	690	36	25	15	40	0.000820	12	1.2 - 2.4
WDU16	1.5	16.0	690	30	34	12	53	0.000581	16	2.0 - 4.0
WDU35	2.5	35.0	690	22	55	9	80	0.000361	18	4.0 - 5.0
WDU70N	10.0	70.0	690	11	108	7	129	0.000240	22	8.0 - 12.0

Note: Terminals listed are only suitable for a minimum operating temperature of -50°C.

PL 642 Terminal Capacity Data										
Terminal Type	Conductor Size mm ²		Max. Volts	Maximum Physical Terminal Content		Reduced Terminal Content at Maximum Terminal Amps		Combined Terminal Resistance (Ohms)	Insulation Stripping Length (mm)	Terminal Tightening Torque (Nm)
	Min	Max		Term. Qty.*	Amps	Term. Qty.	Amps			
WDU2.5N	0.5	2.5	440	115	7	20	17	0.003631	10	0.4 - 0.6
WDU2.5	0.5	2.5	690	115	7	20	17	0.003571	10	0.4 - 0.6
WDU4	0.5	4.0	690	97	9	18	22	0.002282	10	0.5 - 1.0
WDU6	0.5	6.0	690	73	13	15	29	0.001507	12	0.8 - 1.6
WDU10	1.5	10.0	690	59	18	13	40	0.000948	12	1.2 - 2.4
WDU16	1.5	16.0	690	49	25	11	53	0.000658	16	2.0 - 4.0
WDU35	2.5	35.0	690	17	59	8	80	0.000371	18	4.0 - 5.0
WDU70N	10.0	70.0	690	15	88	6	129	0.000258	22	8.0 - 12.0

Note: Terminals listed are only suitable for a minimum operating temperature of -50°C.

* Horizontal Rails.

PL 644 Terminal Capacity Data										
Terminal Type	Conductor Size mm ²		Max. Volts	Maximum Physical Terminal Content		Reduced Terminal Content at Maximum Terminal Amps		Combined Terminal Resistance (Ohms)	Insulation Stripping Length (mm)	Terminal Tightening Torque (Nm)
	Min	Max		Term. Qty.	Amps	Term. Qty.	Amps			
WDU2.5N	0.5	2.5	440	164	5	16	17	0.004342	10	0.4 - 0.6
WDU2.5	0.5	2.5	690	164	5	16	17	0.004282	10	0.4 - 0.6
WDU4	0.5	4.0	690	137	7	15	22	0.002724	10	0.5 - 1.0
WDU6	0.5	6.0	690	104	10	12	29	0.001802	12	0.8 - 1.6
WDU10	1.5	10.0	690	83	14	11	40	0.001118	12	1.2 - 2.4
WDU16	1.5	16.0	690	68	20	9	53	0.000768	16	2.0 - 4.0
WDU35	2.5	35.0	690	50	33	7	80	0.000422	18	4.0 - 5.0
WDU70N	10.0	70.0	690	26	62	5	129	0.000284	22	8.0 - 12.0

Note: Terminals listed are only suitable for a minimum operating temperature of -50°C.

Fig. 1 - When HTB terminals are fitted the following limitations apply:

Table 1

Max. No. conductors of same size connected to each terminal

Conductor Size (sq. mm.)	Maximum No. of Cores
10	2
6	3
4	4
Smaller Conductors > or = 0.5 sq. mm.	4

Conductors be either all solid or all stranded

Table 2

Alternatively, the following PAIRS of conductor combinations may be fitted in one terminal

1.5mm ² solid with:	1.5mm ² solid or 2.5mm ² stranded or 4mm ² stranded or 6mm ² stranded or 10mm ² stranded
1.5mm ² stranded with:	0.9mm ² stranded or 1.2mm ² stranded or 1.5mm ² stranded or 2.2mm ² or 2.5mm ² stranded or 4mm ² stranded or 6mm ² stranded or 10mm ² stranded.
2.5mm ² solid with:	0.9mm ² stranded or 1.2mm ² stranded or 2.2mm ² solid or 2.5mm ² solid or 4mm ² solid or 6mm ² stranded or 10mm ² stranded
2.5mm ² stranded with:	2.5mm ² stranded or 4mm ² stranded or 6mm ² stranded or 10mm ² stranded
4mm ² stranded with:	4mm ² stranded or 6mm ² stranded or 10mm ² stranded
6mm ² stranded with:	6mm ² stranded or 10mm ² stranded
10mm ² stranded with:	10mm ² stranded

Alternatively, the following THREE of conductor combinations may be fitted in one terminal

Two 2.5mm² solid conductors and one 6mm² stranded conductor

SCHEDULE OF LIMITATIONS FOR HTB 6 TERMINALS:

- 1) Leads connected to the terminals shall have insulation extending to within 3mm of the terminal throat and the bare end of each lead shall not extend more than 3mm beyond the other side of the slot and shall remain straight. Maximum stripping length 16mm.
- 2) The terminal cap of each terminal, used and unused, shall be fully tightened down by the end user.
- 3) Conductors of different sizes and configurations shall not be inserted into the same terminal throat/slot except for the specific combinations listed in Tables 1 & 2.
- 4) When installed in an enclosure the creepage and clearance distances between the terminals, adjacent equipment and enclosure walls must comply with the requirements of IEC/EN 60079-7.
- 5) When installed in plastic enclosures, there shall be at least 3mm clearance between the inside of the removable cover/lid of the enclosure and the terminal screws after the connections have been made and the terminal screws and cover/lid have been fully tightened down.
- 6) For conductor sizes less than 1mm² but not less than 0.5mm², the maximum current rating shall not exceed 1 amp.

EU Declaration of Conformity in accordance with European Directive 2014/34/EU

Manufacturer: Hawke International

Address: Oxford Street West, Ashton-under-Lyne, OL7 0NA, United Kingdom

Equipment Type: PL6 Series

Provisions of the Directive fulfilled by the Equipment:

Group II Category 2G Exeb IIC T* Gb, II 2D Extb IIIC T***C Db IP66

Group II Category 2G Exib IIC T* Gb, II 2D Exib IIIC T***C Db IP66

Group II Category 1G Exia IIC T* Ga, II 1D Exia IIIC T***C Da IP66

Notified Body for EU-Type Examination: Baseefa 1180 Buxton UK

EU-type Examination Certificate: Baseefa06ATEX0117X

Notified Body for production: SGS-Baseefa 1180 Buxton UK

Harmonized Standards used: EN IEC60079-0: 2018, EN60079-01: 2014, EN60079-7: 2015, EN60079-11: 2012, EN60079-31: 2014.

On behalf of the above named company, I declare that, on the date the equipment accompanied by this declaration is placed on the market, the equipment conforms with all technical and regulatory requirements of the above listed directives.



A. Tindall
Technical Manager