Assembly Instructions for:
PL 7** Series Junction Boxes

HAWKE International

AI 285 / Issue Q - 12/21

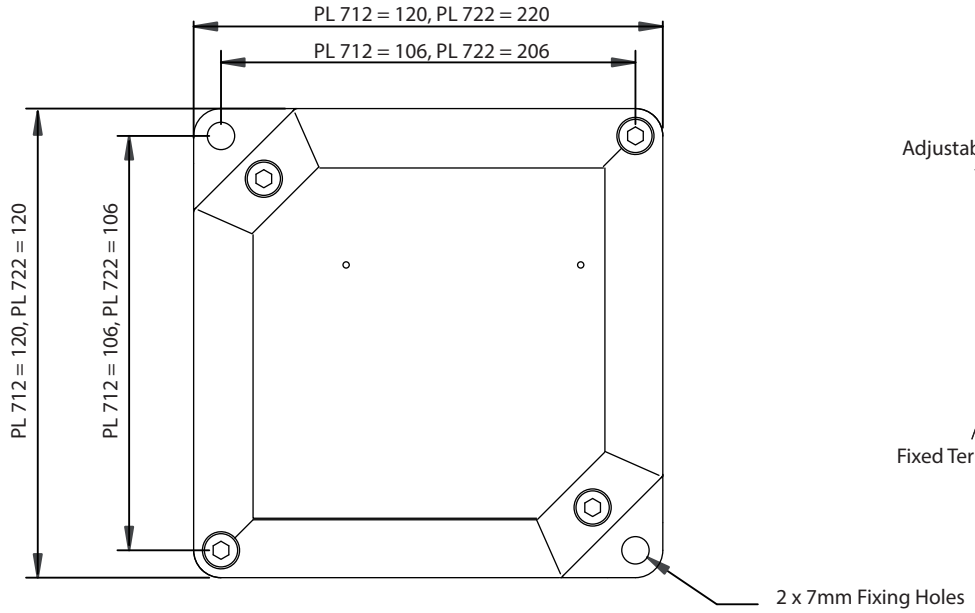
IMPORTANT: *This document should be read carefully before commencing installation*

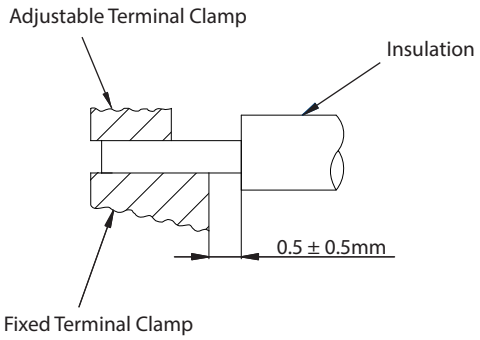
Service Temperature
PL 7** -20°C to +75°C with integral earth plate
PL 7** -60°C to +75°C without integral earth plate

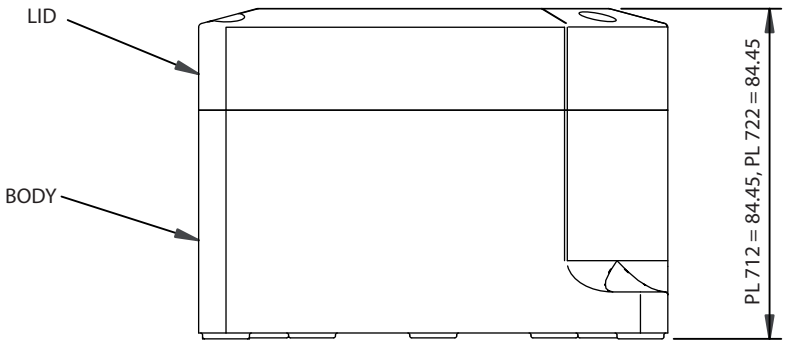
Minimum Installation Temperature: -5°C

Certification Details

Box Type: PL7** Series
Ex II 2G Exeb IIC T* Gb, Ex II 2D Extb IIIC T**°C Db IP66
Ex II 2G Exib IIC T* Gb, Ex II 2D Exib IIIC T**°C Db IP66
Ex II 1G Exia IIC T* Ga, Ex II 1D Exia IIIC T**°C Da IP66
BaseefaBAS08ATEX0272X / IECEx BAS08.0091X
IEx 16.0143X / BAS21UKEX0036X
Ex No EA3C RU C-GB.HA91.B.00260/21







(Dimensions in mm)

Drawings for illustration purposes only

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

$W = N \times F \times I^2$ $N = W / F \times I^2$ $I = \sqrt{W / N \times F}$

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*** +40°C	T* T6	T** 80°C	T*** +55°C	T* T6	T** 80°C	T*** +65°C	T* T5	T** 95°C	T*** +40°C	T* T5	T** 95°C	T*** +55°C	T* T5	T** 95°C	T*** +65°C	
PL 712	3.352			2.148			1.2			4.6			3.352			2.4			0.142
PL 722	5.318			3.323			1.9			7.3			5.318			3.9			0.226

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CONDITIONS FOR SAFE USE:

1. Do not allow dust layers to build up on this product.
2. Unused cable entries must be fitted with the stopping plugs as listed on the ZPL7 component certificate Baseefa08ATEX0271U. The operating temperature and Ingress Protection rating of the enclosure is limited to that of the stoppling plug fitted.
3. Only breather / drain devices as specified in empty enclosure certificate BASEEFA08ATEX0271U may be used with these enclosures. The breather / drain devices must be installed in their correct orientation in the bottom face of the enclosure. The operating temperature range and Ingress Protection rating of the enclosure is limited to that of the breather / drain device fitted.
4. All terminal screws used and unused, shall be fully tightened down by the end user.
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 schedule.
6. Terminals shall be installed in such a manner that the creepage and clearance distances 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.
8. All terminals and accessories such as cross-connectors shall be installed in accordance with the terminal manufacturer's 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 10mm^2 conductor at 40 amps is fitted with a 4mm^2 conductor then the current shall be reduced to a maximum of 22 amps 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 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. Insulation of conductors must extend to within 1mm of the metal of the terminal throat unless specified otherwise on the terminal certificate.

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 forseeable aggressive substances.

TO OPEN THE LID:

1. Untighten the lid securing screws.
2. 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.

EARTHING:

a) The earth leads must be in accordance with IEC/EN 60079-0.
b) Junction boxes shall be earthed in accordance with the relevant code of practice e.g. IEC/EN 60079-14 and IEC/EN 60079-31.
   i) The PL 7** series boxes are supplied fitted with an internal earth terminal.
   ii) The PL 7** series boxes may be supplied fitted with or without an internal earth continuity plate.

Note : *There is no integral connection from the internal earth continuity plate through to the external of the box.*

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

PL 712 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			
WDU 2.5N	0.5	2.5	440	12	13	7	17	0.001482	10	0.4 - 0.6
WDU 2.5	0.5	2.5	690	10	15	7	17	0.001422	10	0.4 - 0.8
UT 2.5	0.14	2.5	690	11	14	9	15	0.001462	9	0.5 - 0.6
WDU 4	0.5	4.0	690	9	19	7	22	0.000944	10	0.5 - 1.0
UT 4	0.14	4.0	690	9	20	9	20	0.000914	9	0.6 - 0.8
WDU 6	0.5	6.0	690	6	29	6	29	0.000613	12	0.8 - 1.6
UT 6	0.2	6.0	690	6	28	6	28	0.000637	10	1.5 - 1.8
WDU 10	1.5	10.0	690	5	39	4	40	0.000411	12	1.2 - 2.4
UT 10	0.5	10.0	690	5	39	5	39	0.000399	10	1.5 - 1.8
HTB 6*	0.5	6.0	550	1	37	1	37	N/A	12	1.0 - 2.0

** Refer to Fig. 1 for HTB terminal limitations*

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

PL 722 Terminal Capacity Data

Terminal Type	Conductor Size mm²		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			
WDU 2.5N	0.5	2.5	440	34	8	7	17	0.002104	10	0.4 - 0.6
WDU 2.5	0.5	2.5	690	34	8	7	17	0.002044	10	0.4 - 0.8
UT 2.5	0.14	2.5	690	32	10	9	15	0.002084	9	0.5 - 0.6
WDU 4	0.5	4.0	690	28	7	7	22	0.001331	10	0.5 - 1.0
UT 4	0.14	4.0	690	27	9	9	20	0.001301	9	0.6 - 0.8
WDU 6	0.5	6.0	690	21	29	7	29	0.000872	12	0.8 - 1.6
UT 6	0.2	6.0	690	20	28	7	28	0.000896	10	1.5 - 1.8
WDU 10	1.5	10.0	690	17	39	5	40	0.000565	12	1.2 - 2.4
UT 10	0.5	10.0	690	16	39	6	39	0.000553	10	1.5 - 1.8

** Refer to Fig. 1 for HTB terminal limitations*

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

1.5mm² solid with:	1.5mm² solid or 2.5mm² stranded or 4mm² stranded or 6mm² stranded or 10mm² stranded
1.5mm² stranded with:	0.9mm² stranded or 1.2mm² stranded or 1.5mm² stranded or 2.2mm² or 2.5mm² stranded or 4mm² stranded or 6mm² stranded or 10mm² stranded.
2.5mm² solid with:	0.9mm² stranded or 1.2mm² stranded or 2.2mm² solid or 2.5mm² solid or 4mm² solid or 6mm² stranded or 10mm² stranded
2.5mm² stranded with:	2.5mm² stranded or 4mm² stranded or 6mm² stranded or 10mm² stranded
4mm² stranded with:	4mm² stranded or 6mm² stranded or 10mm² stranded
6mm² stranded with:	6mm² stranded or 10mm² stranded
10mm² stranded with:	10mm² 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.

Declaration of Conformity in accordance with European Directive 2014/34/EU and UK Statutory Instrument 2016/1107

Manufacturer: Hawke International, Oxford Street West, Ashton-under-Lyne, OL7 0NA, United Kingdom
Equipment: PL7 Series Enclosure

Provisions of the Directive fulfilled by the Equipment: Group II Category 2G Ex eb IIC T* Gb, II 2D Ex tb IIIC T**°C Db IP66
Group II Category 2G Ex ib IIC T* Gb, II 2D Ex ib IIIC T**°C Db IP66
Group II Category 1G Ex ia IIC T* Ga, II 1D Ex ia IIIC T**°C Da IP66

Harmonized Standards used: EN 60079-7:2007, EN 60079-11:2012, EN 60079-31:2014

Notified Body for EU-Type Examination: SGS Fimko 0598 Helsinki Finland
EU-type Examination Certificate: Baseefa08ATEX0272X
Notified Body for production: 0598

Approved Body for UK-Type Examination: SGS Baseefa 1180 Buxton UK
UK-type Examination Certificate: BAS21UKEX0036X
Approved Body for production: 1180

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.

Andrew Reid
Technical Manager