

Assembly Instructions for junction box type: EJB 1, EJB 2 & EJB 3 MEJB 1, MEJB 2 & MEJB 3

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

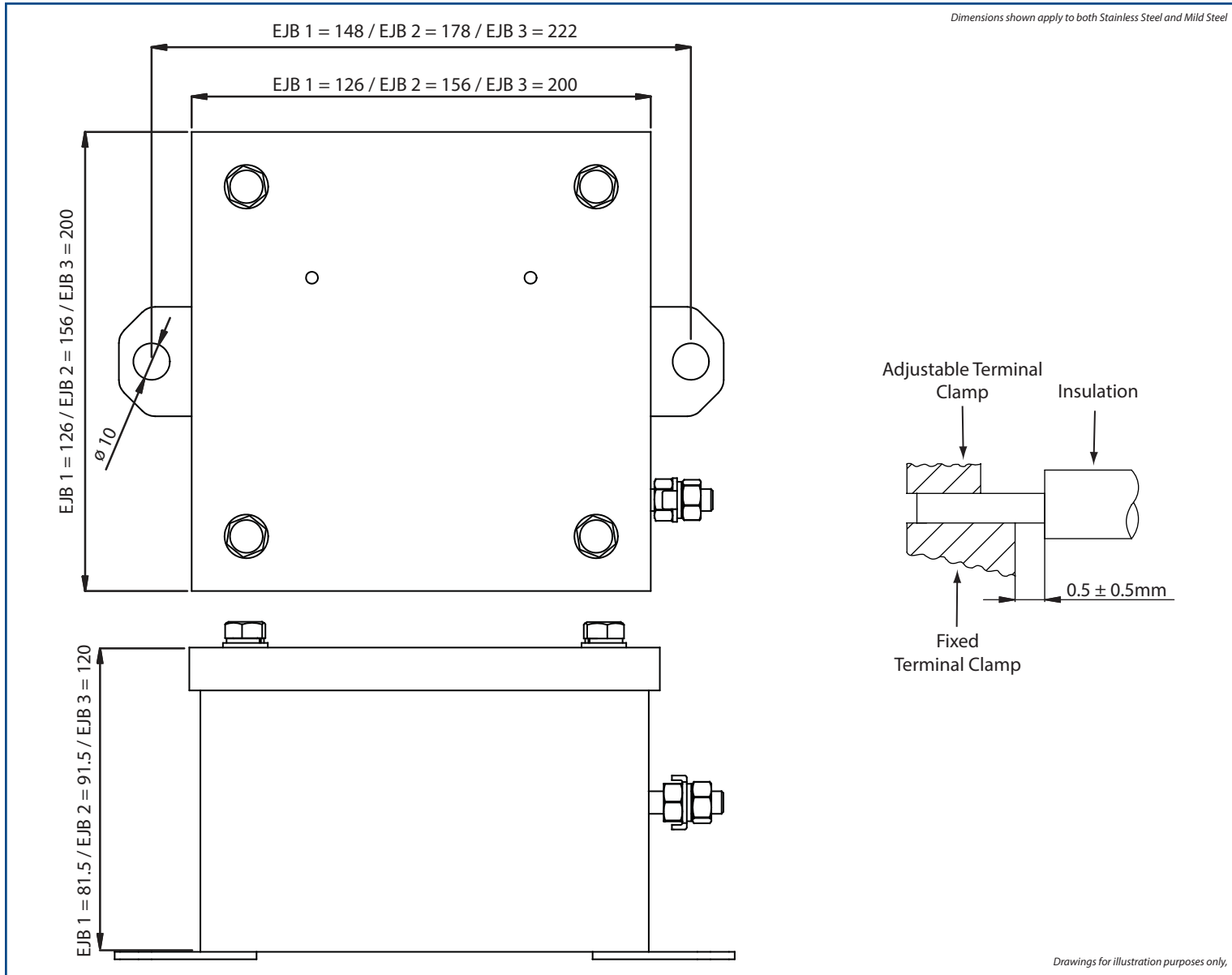
- Group II Category 1G, for use in Zone 0 (plus Zone 1 and Zone 2).
- Group II Category 1D, for use in Zone 20 (plus Zone 21 and Zone 22).
- Group II Category 2G, for use in Zone 1 (plus Zone 2).
- Group II Category 2D, for use in Zone 21 (plus Zone 22).

Service Temperature: -60°C to +80°C

Minimum Installation Temperature: -5°C

Certification Details

Box Type: EJB 1, EJB 2 & EJB 3 and MEJB 1, MEJB 2 & MEJB 3
 Ⓢ II 2G Exe 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 No: 08ATEX0208X / IEC Ex No: BAS08.0065X
 IEx 16.0144X
 EAC TC RU C-GB.AA87.B.00430



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

$$W = N \times F \times I^2 \qquad N = W / F \times I^2 \qquad I = \text{Sqrt} (W / N \times F)$$

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*	T**	T***	T*	T**	T***	T*	T**	T***	T*	T**	T***	T*	T**	T***				
	T6	80°C	+40°C	T6	80°C	+55°C	T6	80°C	+65°C	T5	80°C	+40°C	T5	80°C	+55°C	T5	80°C	+65°C	
EJB 1		4.74			2.96			1.778			6.51			4.74			3.55		0.185
EJB 2		6.64			4.15			2.4			9.1			6.64			4.9		0.228
EJB 3		6.64			4.15			2.4			9.1			6.64			4.9		0.300

SPECIAL CONDITIONS FOR SAFE USE:

1. Unused entry holes shall be fitted with stopping plugs as specified in the empty enclosure certificates Baseefa 08ATEX0207U and IECEx BAS 08.0064U. The operating temperature range of the enclosure is limited to that of the stopping plug fitted.
2. Only breather / drain devices as specified in the empty enclosure certificates Baseefa 08ATEX0207U and IECEx BAS 08.0064U may be used with these enclosures. The breather / drain devices must be installed in their correct orientation in either the bottom face or bottom face gland plate of the enclosure. The operating temperature range of the enclosure is limited to that of the breather / drain device fitted.
3. When used under dust layers, the maximum depth shall be no greater than 50mm.
4. All terminal screws, used and unused, shall be tightened down by the end user.
5. Insulation of conductors must extend to within 1mm of the metal of the terminal throat unless specified otherwise on the terminal certificate.
6. 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.
7. 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 for Exe IIC junction boxes, or IEC 60079-11 for Exia IIC / Exib IIC junction boxes for the rated voltage of the equipment.
8. Terminal temperatures must not exceed the operating range specified on the component certificate.
9. All terminals and accessories such as cross-connectors, shall be installed in accordance with the terminal manufacturers instructions.
10. The maximum voltage, current and dissipated power shown on the rating label must not be exceeded.
11. 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 6 sq. mm. conductor at 29 amps is fitted with a 2.5 sq. mm. conductor then the current shall be reduced to a maximum of 17 amps, or the rating marked on the apparatus label, whichever is the lower.
12. When metallic and non-metallic trunking is provided inside the junction box, the maximum operating current in any circuit within the trunking is limited to 90%.
13. When a self adhesive certification label is fitted, the minimum ambient temperature shall be -40°C.
14. **Unused entries may be fitted with alternative stopping plugs and/or beather 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.**
15. When the junction box is coated with K-MASS, the maximum permitted current is limited to 80% and there shall be a label stating "Warning: Static Hazard, clean only with a damp cloth".
16. When a document pocket is fixed to the inside of the lid, care must be taken by the installer / end user to prevent static build up i.e. plastic wallets must not be used to contain documents inside the enclosure.

TO OPEN THE LID:

1. Disconnect power (isolate all circuits).
2. Untighten the M6 lid securing screws.
3. a) Carefully remove the lid ensuring the seal is not displaced or damaged.
b) Ensure correct gasket is fitted for area of use.

TO CLOSE THE LID:

1. Check that the gasket is correctly secured to the underside of the lid and undamaged. If the lid has been removed, completely reverse the opening procedure at 3, ensuring that the correct lid is refitted.
2. Ensure that the wiring is not trapped or obstructing the sealing flange.
3. Locate and tighten the M6 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 and these installation instructions.
- b) Where other certified components are part of the assembly, the user must take account of any limitations listed on relevant certificates.
- c) The enclosure may be ready supplied with cable entries. Where the customer drills cable entries they must be installed in accordance with the component certificates Baseefa 08ATEX0207U or IEC Ex BAS 08.0064U 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.
- b) When used as a general purpose junction box or marshalling box the circuits carrying currents $\geq 1A$ 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) Where a major portion of the terminals are carrying maximum rated current the temperature at the branching point of the conductors may exceed 70°C. Under these circumstances the installer must ensure that the limiting temperature for the cable insulation used is acceptable e.g. 85°C (T6) or 100°C (T5).

EARTHING:

- a) Where there is a requirement for bonding of the gland plate, this can be achieved by using earthtags on the outside of the enclosure in conjunction with cable glands or by use of enclosure lids with factory fitted earth studs. In the case of painted boxes, consideration must be given to the removal of the paint. e.g. under a serrated washer on the inside of the box which may lead to corrosion of the enclosure and potential reduction in earthing protection. This area must be protected against corrosion following installation.

SCHEDULE OF TERMINALS FITTED

EJB 1 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	15	9	17	0.0018	10	0.4 - 0.6
WDU2.5	0.5	2.5	690	12	15	9	17	0.00126	10	0.4 - 0.6
WDU4	0.5	4.0	690	10	20	8	22	0.00114	10	0.5 - 1.0
WDU6	0.5	6.0	690	7	11	6	29	0.00075	12	0.8 - 1.6
WDU10	1.5	10.0	690	6	9	5	40	0.00049	12	1.2 - 2.4
SAKK4 **	0.5	6.0	275	7	20	7	20	0.00091	9	0.5 - 1.0
SAKK10 **	0.5	10.0	275	5	35	5	35	0.00114	9	2.0 - 2.4
BK6	1.0	4.0	275	1	20	1	-	0.00120	8	0.5 - 0.7
MK6/6	1.0	6.0	420	1	25	1	-	0.0007	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

Note: Terminals listed (with the exception of **) are only suitable for a minimum operating temperature of -50°C
SAKK terminals are suitable for -60°C

EJB 2 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	18	13	11	17	0.00212	10	0.4 - 0.6
WDU2.5	0.5	2.5	690	18	13	11	17	0.00206	10	0.4 - 0.6
WDU4	0.5	4.0	690	15	18	10	22	0.00134	10	0.5 - 1.0
WDU6	0.5	6.0	690	11	24	8	29	0.00088	12	0.8 - 1.6
WDU10	1.5	10.0	690	9	34	6	40	0.00057	12	1.2 - 2.4
WDU16	1.5	16.0	690	7	47	5	53	0.00042	16	2.0 - 4.0
SAKK4 **	0.5	6.0	275	11	20	11	20	0.00104	9	0.5 - 1.0
SAKK10 **	0.5	10.0	275	8	35	8	35	0.00122	9	2.0 - 2.4
BK6	1.0	4.0	275	1	20	1	21	0.0014	8	0.5 - 0.7
MK6/6	1.0	6.0	420	1	25	1	26	0.00083	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

Note: Terminals listed (with the exception of **) are only suitable for a minimum operating temperature of -50°C
SAKK terminals are suitable for -60°C

EJB 3 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	26	9	8	17	0.002653	10	0.4 - 0.6
WDU2.5	0.5	2.5	690	26	9	8	17	0.002593	10	0.4 - 0.6
WDU4	0.5	4.0	690	22	13	8	22	0.001673	10	0.5 - 1.0
WDU6	0.5	6.0	690	17	17	6	29	0.0011	12	0.8 - 1.6
WDU10	1.5	10.0	690	13	25	5	40	0.000701	12	1.2 - 2.4
WDU16	1.5	16.0	690	12	33	4	54	0.000506	16	2.0 - 4.0
SAKK4 **	0.5	6.0	275	12	17	9	20	0.001264	9	0.5 - 1.0
SAKK10 **	0.5	10.0	275	17	24	8	35	0.001349	9	2.0 - 2.4
BK6	1.0	4.0	275	1	20	1	21	0.00173	8	0.5 - 0.7
MK6/6	1.0	6.0	420	1	25	1	26	0.001054	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

Note: Terminals listed (with the exception of **) are only suitable for a minimum operating temperature of -50°C
SAKK terminals are suitable for -60°C

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: Stainless and Mild Steel Terminal Boxes EJB 1, EJB 2 & EJB 3 / MEJB 1, MEJB 2 & MEJB 3

Provisions of the Directive fulfilled by the Equipment:

Group II Category 2G Exe 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: Baseefa08ATEX0208X

Notified Body for production: SGS-Baseefa 1180 Buxton UK

Harmonized Standards used: EN 60079-0:2012+A11:2013, EN60079-7:2007, 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.


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A. Tindall
Technical Manager