

EC-TYPE EXAMINATION CERTIFICATE



[1]

[2]

**Equipment or Protective System intended for use
in Potentially Explosive Atmospheres
Directive 94/9/EC**

[3]

EC-Type Examination Certificate Number: **DEMKO 11 ATEX 149713X Rev. 0**

[4]

Equipment or Protective System: **FJB Series Enclosures for Control, Distribution and Monitoring**

[5]

Manufacturer: **Flameproof Engineering Pty. Ltd.**

[6]

Address: **Unit 18, 276 New Line Road, Dural, NSW 2158, Australia**

[7]

This equipment or protective system and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

[8]

UL International Demko A/S, notified body number 0539 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report no. **10CA03166**

[9]

Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2009

EN 60079-1:2007

[10]

If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

[11]

This EC-Type examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by the certificate.

[12]

The marking of the equipment or protective system shall include the following:

 **II 2 G Ex d IIB+H₂ T* Gb IP66 -20 °C ≤ T_a ≤ + °C**

(* Refer to Table 2 for details)

Certification Manager

Jan-Erik Storgaard

Date of issue: 2011-12-29

Notified Body

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[14]

Schedule
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[15] Description of Equipment or protective system

The FJB series of enclosures are designed to house terminals, control, signalling and distribution equipment & instruments.

These Enclosures are constructed of sand cast or pressure cast aluminium–silicon alloy as per AS 1874-2000, with less than 7.5% Mg content. These enclosures have rectangular shape with the lid fixed to main enclosure body by means of stainless steel hexagonal socket head cap screw fasteners with minimum tensile strength of 700 MPa (or N/mm²). Bonded seals are used under the head of each fastener against the ingress of dusts and liquid in to the enclosure. All models are provided with solid silicone rubber seal fitted and secured in a groove in the lid.

Rectangular or circular windows made of tempered clear borosilicate glass having minimum thickness of 10 mm may be fitted in the lid. Rectangular glass panels are cemented directly in to the lid of the enclosure and clamped by a metallic frame or with retaining steel clips. Circular glass panels are cemented into a threaded window frame and secured in place by a locking ring, which is then threaded to the lid and locked by a hexagon socket head grub screw.

Enclosure lids can be fitted with switch operators with handle or key switch, push buttons as required.

Suitable "Ex d" certified cable glands are used for cable entry from any side of the enclosure, in size ranging from M20 to M63 or 3/8" NPT to 2" NPT. Unused entries are closed with suitable "Ex d" certified blanking elements.

Internal and external earth connection facilities are made of stainless steel.

The ratio of minimum free internal volume to empty volume is not less than 53.5%. For internal volume of the FJB empty and populated enclosures is as given Table 1.

Table 1

Model	Internal Volume (Liters)	
	Empty	Max. Populated
FJB210	1.6	0.486
FJB211	5.0	2.325
FJB322	14.0	6.51
FJB433	21.5	10
FJB432	15.0	6.97
FJB543	35.0	16.275
FJB643	56.0	26.04
FJB754	95.0	44.175

The FJB enclosures may be installed either in vertical or horizontal position. Steel perforated or solid aluminium gear trays may be fitted inside the enclosure for mounting various electrical components. The minimum distance kept between live parts and the side walls or lid is 20mm. The maximum power dissipation of each model is as shown in Table 2.

The ambient temperature range is -20 °C to +60 °C.

Electrical data

Maximum Power Dissipation:

The following tables shows the maximum power dissipation of the internal equipment, for maximum ambient temperature of 40 °C and 60 °C, temperature class T6 and T5, for the equipment installed in vertical or horizontal position against a back wall, in open air, natural convection.

Table 2 – Temperature Class vs Maximum power dissipation – Ex d

Model	Pd (W)	Pd (W)	Pd (W)	Pd (W)
	Tamb +40°C, T6	Tamb +60°C, T6	Tamb +40°C, T5	Tamb +60°C, T5
FJB-210	45	26	61	40
FJB-211	80	44	106	71
FJB-322	131	73	175	116
FJB-433	170	-	220	-
FJB-432	145	-	193	-
FJB-543	232	129	309	206
FJB-643	297	165	396	264
FJB-754	500	250	600	418



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Installation instructions

- The cables for the installation of the equipment shall be selected in conformance with EN 60079-14 as applicable.
- If the temperature at the rated conditions and maximum ambient temperature is likely to exceed 70 °C at the entry point, or 80 °C at the branching point of the conductors at the cable entry, then the cables should have a high-temperature elastomer, polymeric or fibrous insulating material, suitable for continuous operation at a temperature of at least 90 °C if the equipment is rated T6, or 110 °C if the equipment is rated T5.
- PVC thermoplastic insulated cables are generally not suitable for continuous operation exceeding 75 °C and should be avoided where higher operating temperature is required.
- In the above situation, the cable glands should be suitably certified and rated at a minimum temperature of continuous operation of the internal elastomeric sealing ring (compression gland) or of the internal filling setting compound (barrier gland) of at least 90 °C if the equipment is rated T6, or 110 °C if the equipment is rated T5.
- The enclosures are provided with stainless steel internal and external equipotential bonding terminals ranging from M6 to M16.
- Sealing of the fasteners against the ingress of dusts and liquids into the enclosure through the fastener holes is achieved by special gasketing arrangement under the head of each fastener. The special seals under the head of the fasteners shall not be replaced with other market parts.

Operation instructions

Refer to "Operation Manual" – drawing FJB-0000-0000-02 - Rev. 2 - 2011-12-12.

Routine tests

All FJB series of enclosure with operators, windows and conduit entries must be subjected to a routine over pressure test according to EN 60079-1:2007 Clause 15.1.3, at a minimum of 1200 kPa for a period of 10 seconds.

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Report No.

Project Report No.: 10CA03166 (Hazardous Location Testing)

Description:	Sheets	Drawing No.:	Rev. Level:	Date (YYYY-MM-DD):
Equipment Enclosures series FJB... General Dimensions	1	FJB-0000-0001-01	2	2011-12-21
Equipment Enclosures series FJB... Side Entry Holes	1	FJB-0000-0002-01	2	2011-12-12
Equipment Enclosures series FJB... Lid Holes for Control Switch and Signal Operators	1	FJB-0000-0003-01	2	2011-12-12
Equipment Enclosures series FJB... Glass Window Assemblies – Rectangular Windows with internal frame	1	FJB-0000-0004-01	2	2011-12-12
Equipment Enclosures series FJB... Glass Window Assemblies – Round Windows with threaded frame	1	FJB-0000-0004-02	2	2011-12-12
Equipment Enclosures series FJB... Glass Window Assemblies – Rectangular and Round Windows with internal retaining clips	1	FJB-0000-0004-03	2	2011-12-12
FJB enclosures and equipment: marking and warning labels	1	FJB-0000-0005-01	2	2011-12-21
CSS series of Control, Switch and Signal Operators	1	CSS-0000-0001-01	4	2011-12-12
CSS series of Control, Switch and Signal Operators	1	CSS-0000-0002-01	4	2011-12-12
FJB Empty Enclosures: Technical Note	15	FJB-0000-0000-01	3	2011-12-21
Operation Manual	26	FJB-0000-0000-02	2	2011-12-12

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Special conditions for safe use:

Contact the original equipment manufacturer for information on the dimensions of the flameproof joints.

[18]

Essential Health and Safety Requirements

Concerning ESR this Schedule verifies compliance with the Annex III of ATEX directive only. The manufacturer's Declaration of Conformity declares compliance with other relevant Directives.

Additional information

The FJB series of enclosures has in addition passed the tests for Ingress Protection to IP66 in accordance with IEC 60529 Ed. 2.1:2001.

The manufacturer shall inform the notified body concerning all modifications to the technical documentation as described in ANNEX III to Directive 94/9/EC of the European Parliament and the Council of 23 March 1994.

