



**ELECTRICAL CONTROL EQUIPMENT  
FOR HAZARDOUS AREAS**

**FLAMEPROOF ENGINEERING  
Electrical Control Equipment for Hazardous Locations**

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Quality  
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Company  
ISO9001 QEC24536  
SAI Global



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ENGINEERING**  
-- SYDNEY, AUSTRALIA. --



## **ELECTRICAL CONTROL EQUIPMENT FOR HAZARDOUS AREAS**

Flameproof Engineering Pty Ltd specializes in the design and manufacture of customized explosion-protected (Flameproof) control equipment. “Ex” certified equipment offered by Flameproof Engineering include: control panels, control stations, motor starters, power distribution panels, solid-state lights (spotlights, work-lights, floodlights), isolators, junction boxes, rectifiers and power conversion equipment for installation in Hazardous Locations.

All necessary components (enclosures, pushbuttons, pilot lights, switchgear, control operators, viewing windows, power converters, LED modules) have been designed and are entirely manufactured by Flameproof Engineering in conformity to the latest editions of the Australian and International current Standards for Control Equipment for Hazardous Locations. The design of the Flameproof Engineering enclosures and pushbuttons is patented.

The Flameproof Engineering equipment and components are manufactured, inspected and tested under stringent ISO9001 Quality Management System and are delivered with IECEx Certificate of Conformity and carry the Ex Conformity Mark (IECEx TSA 001), which is a further acknowledgement of the superior quality and stringent conformity of our products.

Each Flameproof Engineering piece of equipment is a fully Australian Made product, designed and manufactured to IEC and AS/NZS Standards and Rules.

Flameproof Engineering offers, for all equipment:

- Zone 1 “EPL Gb” rating including Hydrogen (IIB+H<sub>2</sub>) and Acetylene (IIC)
- Zone 21 “EPL Gb” rating for all Ignitable Dust types, including Conductive and non-conductive Dusts (IIIC)
- Extended ambient temperature range -20 to +60C
- Dust-tight and Protection against water jets from all directions and temporary submersion (IP66/IP67) for ALL equipment
- Housings made of hard temper corrosion-resistant TGIC-free polyester coated marine-grade alloy or Stainless Steel 316, or High Tensile Bronze
- External and internal coating suitable for outdoor permanent exposure to weather, salt, acids and UV radiation in extended temperature range, reduces the possibility of formation of condensate.
- Australian Made product.

The highly experienced and competent engineering team, CAD/CAM design and CNC manufacturing facilities of Flameproof Engineering assure superior product quality and fast delivery of complex equipment customized to your requirements.



## **ELECTRICAL CONTROL EQUIPMENT FOR HAZARDOUS AREAS**

### APPLICATIONS

Flameproof equipment is required in all areas where explosive or combustible gas, vapour, mist, dust, fibers and flyings might be present:

- Oil refineries
- Oil rigs
- Chemical plants
- Fertilizer plants
- Petrol stations
- Spray Paint booths
- Aircraft hangars
- Marine installations
- Flour and grain mills
- Textiles plants
- Paper industry

### GAS GROUPS, PROTECTION TYPE AND RATINGS

All Flameproof Engineering products are suitable for installation in Zone 1 (frequent presence of explosive gas atmosphere) (EPL Gb, i.e. Equipment having a high level of protection) Gas Group IIB+H2 (including Hydrogen, Ethylene and Propane) or IIC (including Acetylene) and Zone 21 (EPL Db, i.e. Equipment having a high level of protection) IIIC (Conductive and non-conductive explosive dusts and flyings).

All parts are made of marine grade stainless steel or aluminium alloys with additional surface protection (heavy anodizing or powder coating) to ensure the best performance and long term safety, reliability and durability in the harshest environmental conditions.

All Flameproof Engineering equipment is rated at a minimum Ingress Protection of IP66 (dust tight and protected against the ingress of water from heavy jets from all directions) and IP67 (protected against temporary submersion).

### PRODUCT RANGE

The Flameproof Engineering range of Ex d equipment is comprised of:  
FJB range of rectangular enclosures with flanged joint (Ex dt IIB+H2 IIIC IP66/67)  
RJB round instrument enclosures and junction boxes (Ex dt IIC IIIC IP66/IP67)  
SJB square instrument enclosures (Ex dt IIC IIIC IP66/IP67)

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## **ELECTRICAL CONTROL EQUIPMENT FOR HAZARDOUS AREAS**

CSS series of Control, Switch and Signal components (Ex dt IIC IIIC IP66/IP67)  
RED reducers and adaptors: metric to metric, NPT to metric, metric to NPT (Ex IIC tb IIIC IP66/IP67).

PLA and PLB blanking plugs: metric or NPT; plated brass or stainless steel (Ex d I/IIC and Ex tb IIIC IP66/IP67).

### **FJB CONTROL PANELS**

The FJB series Control Panels are built in the FJB rectangular enclosures with flanged joint. Pushbuttons, switches and pilot lights from the CSS range are fitted in the front cover, with all labels and identification plates required or desirable for proper operator interface. The FJB enclosures are made of tempered marine grade copper-free aluminium alloy and are normally coated inside and outside to ensure maximum durability and resistance to corrosion in aggressive environment.

The FJB Control Panels conform to IEC 60079-0 Ed 4.0 (2004), IEC 60079-0 Ed. 5.0 (2007), IEC 60079-1 Ed. 6.0 (2007), IEC 60079-31 Ed. 1.0 (2008), IEC 60529 Ed. 2.1 (2001). The Ingress Protection rating is IP66/IP67 in all configurations.

Certification: IECEX TSA 08.0036

Ex d IIB+H2 T6  $-20 \leq T_a \leq 60^\circ\text{C}$  Gb

Ex t IIIC T85°C  $-20 \leq T_a \leq 60^\circ\text{C}$  Db

IP66/IP67

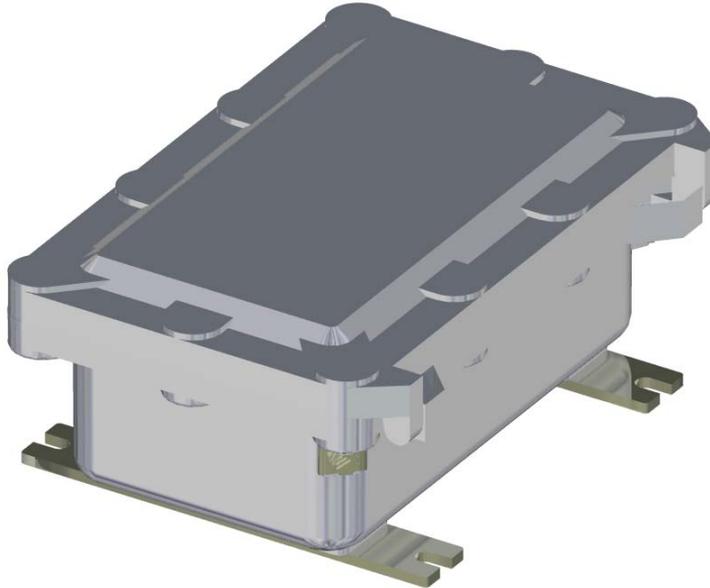
Operating ambient temperature: -20 +60C

### **THE FJB RANGE OF EQUIPMENT ENCLOSURES WITH FLANGED JOINT**

The FJB series of Explosion-proof Equipment Enclosures are designed and manufactured by FLAMEPROOF ENGINEERING Pty Ltd and make use of new original concepts to achieve the highest level of safety, as well as a distinctive and elegant aspect in which all details have been designed for functionality.



## **ELECTRICAL CONTROL EQUIPMENT FOR HAZARDOUS AREAS**



FJB210

The FJB enclosures are designed to house terminals, control, signalling and distribution equipment and instruments in hazardous area.

Advantages of the FJB series:

- Certification to the latest edition of the IEC Standards
- IIB+H2 for all models
- IIIC protection for all models (conductive dusts, non-conductive dusts, flyings)
- Extended ambient temperature to +60C
- External coating, TGIC-free, UV and salt resistant
- Internal coating (reduces the risk of internal condensation)
- Enclosure made of tempered marine grade aluminium alloy (or Stainless Steel 316, or High Tensile Bronze for Group I underground installation)
- Fasteners and mounting accessories in Stainless Steel 316
- Gaskets in high-performance materials to last for life



## **ELECTRICAL CONTROL EQUIPMENT FOR HAZARDOUS AREAS**

- All control components (CSS) rated IP66/IP67 and protected against corrosion
- Windows in ultra-clear material with the highest light transmissivity across the spectrum. Ballistic impact-resistant constructions. Rectangular or round windows, permanently cemented in the cover or replaceable in special frame.

The range of FJB equipment enclosures comprises 8 models, from the FJB210 (internal dimensions mm 212h 112w 73d, internal volume 1.90 dm<sup>3</sup>) to the FJB855 (internal dimensions mm 830h 460w 500d, internal volume 200 dm<sup>3</sup>). The FJB series of equipment enclosures have rectangular shape with flanged lid fixed to the main part of the enclosure by means of stainless steel cap screws. The bolt heads are concealed and recessed in counter-bored guards in the lid. The shape of the bolt guards is an original distinctive feature of the FJB enclosures. 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, with stainless steel 316 and silicone rubber seals. The design of the lid and its sealing arrangement has been optimized to achieve the highest mechanical resistance and protection against the ingress of dust and liquids.



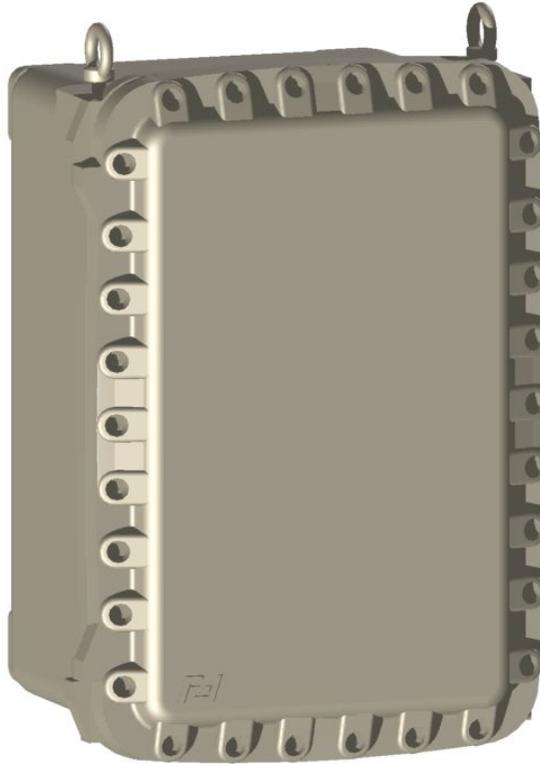
FJB643 Control Panel



FJB322 VSD Motor Control Equipment



## **ELECTRICAL CONTROL EQUIPMENT FOR HAZARDOUS AREAS**



FJB754

All models are provided with solid silicone rubber seal fitted and secured into a groove in the lid, in the outer part of the flange. The design and machining accuracy we guarantee is such that the maximum gap of the flanged joint is maintained well below 40  $\mu\text{m}$ . The o-ring is retained in its groove by design, so there is no risk that it might adhere to the flange, be displaced and impair the IP rating of the enclosure. This arrangement provides and maintains IP66/IP67 protection even after long service life with exposure to weather extremes and chemicals.

The enclosures are provided with stainless steel internal and external earth connection facilities, inclusive of elastic washers and clamps for conductors having cross-sectional area consistent with the size and rated current of the enclosure. The material used (stainless steel) provides effective protection against corrosion; the elastic washer and clamping devices of the earth connection facilities ensures secure contact pressure and prevent loosening and twisting of the cable.



## **ELECTRICAL CONTROL EQUIPMENT FOR HAZARDOUS AREAS**

All enclosures are provided with two secure internal and external earth connection facilities, generously sized for the largest conductors for which the equipment is rated, and complete with cable lug clamping and anti-loosening devices. The lid is internally provided with two earth connection points with similar security arrangement. Our equipment is designed to be installed in any position and offers convenient earth connection facilities in opposite sides.

We deliver the FJB enclosures complete with threaded cable entries (Metric or NPT) and internal equipment in compliance with the Explosion Protection Standards and certification requirements and with the Customer's specifications. Entries may be in any side of the enclosure.

Glass windows may be provided in the lid. Our windows are made of extra thick, tempered safety clear glass, and offer the highest clarity and light transmissivity through the spectrum. We offer a large variety of window options: rectangular or round; fixed or replaceable. Replaceable windows can be replaced as a whole unit.

Common features to all units:

- Marine grade, copper-free aluminium alloy, with external and internal protective coating
- Very thick lid, hinged to the box in the long side (short side hinge arrangement also available).
- Glass windows, switches, pushbuttons and pilot lights available options for all sizes.
- Solid Silicone seal, rated at 5000 kPa from -60 C to +250C, in the flanged joint.
- Stainless Steel fasteners and mounting accessories.
- The perforated gear tray reduces the equipment assembly time and increases the mounting area for components, while avoiding possible pressure-piling effects.
- Multi-layer internal assembly solutions available for most enclosures.
- Certified for use with Hydrogen and Conductive Dusts in extended ambient temperature range.
- Stainless Steel mounting feet.

The total power dissipation of the internal equipment shall not exceed the maximum rating for the enclosure and for the desired temperature class, as per the table hereafter.



## **ELECTRICAL CONTROL EQUIPMENT FOR HAZARDOUS AREAS**

FJB maximum electrical ratings and dissipation:

Model	A	V	kVA	Pd (W)	Pd (W)	Pd (W)	Pd (W)
				Tamb 40C, T6	Tamb 60C, T6	Tamb 40C, T5	Tamb 60C, T5
FJB210	57	630	63	46	26	61	41
FJB211	125	1000	215	80	44	106	71
FJB322	215	1000	370	131	73	175	116
FJB433	250	1000	430	168	93	224	149
FJB432	215	1000	370	145	80	193	129
FJB543	415	4000	720	232	129	309	206
FJB643	630	4000	1100	297	165	396	264
FJB754	1800	6600	3200	500	250	600	415
FJB854	3200	6600	5540	574	319	765	510
FJB855	3200	11 kV	60M	732	406	975	650

FJB Enclosure models and dimensions:

ENCLOSURE MODEL	External height	External width	External depth	Internal Gear Tray height	Internal Gear Tray width	Internal depth available for equipment
FJB210	280	195	115	210	105	63
FJB211	310	230	220	230	130	140
FJB322	370	310	280	285	200	200
FJB432	435	360	230	330	230	150
FJB433	435	360	300	340	240	220
FJB543	570	415	300	470	290	220
FJB643	650	460	360	530	330	260
FJB754	780	600	440	640	405	310
FJB854	950	630	470	800	450	330
FJB855	950	630	650	800	450	520



**ELECTRICAL CONTROL EQUIPMENT  
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Maximum entry configurations:

	M16 3/8"	M20 1/2"	M25 3/4"	M32 1"	M40 1 1/4"	M50 1 1/2"	M63 2"	M75 2 1/2"	M90 3"
FJB210	4	3	2	2	1				
	8	4	3	2	2				
FJB211	12	8	4	3	2	1	1		
	15	12	8	6	3	2	1	1	1
FJB322	16	12	10	6	4	3	1	1	1
	24	18	14	9	6	4	2	1	1
FJB432	18	12	7	5	4	2	1	1	1
	28	18	14	8	6	4	3	2	1
FJB433	24	20	9	7	6	3	3	1	1
	42	30	15	12	6	5	3	2	1
FJB543	30	22	16	8	5	4	3	2	1
	50	40	18	15	8	6	4	3	2
FJB643	36	30	20	12	9	6	4	3	2
	60	50	30	18	14	10	6	4	3
FJB754	40	32	22	11	9	6	4	3	2
	66	55	32	20	16	8	6	4	3
FJB854	60	50	40	32	21	18	12	6	5
	80	66	60	48	30	26	18	12	8



## ELECTRICAL CONTROL EQUIPMENT FOR HAZARDOUS AREAS



Examples of customized Flameproof control equipment.



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FJB210: control panel for Ex fork lift truck.



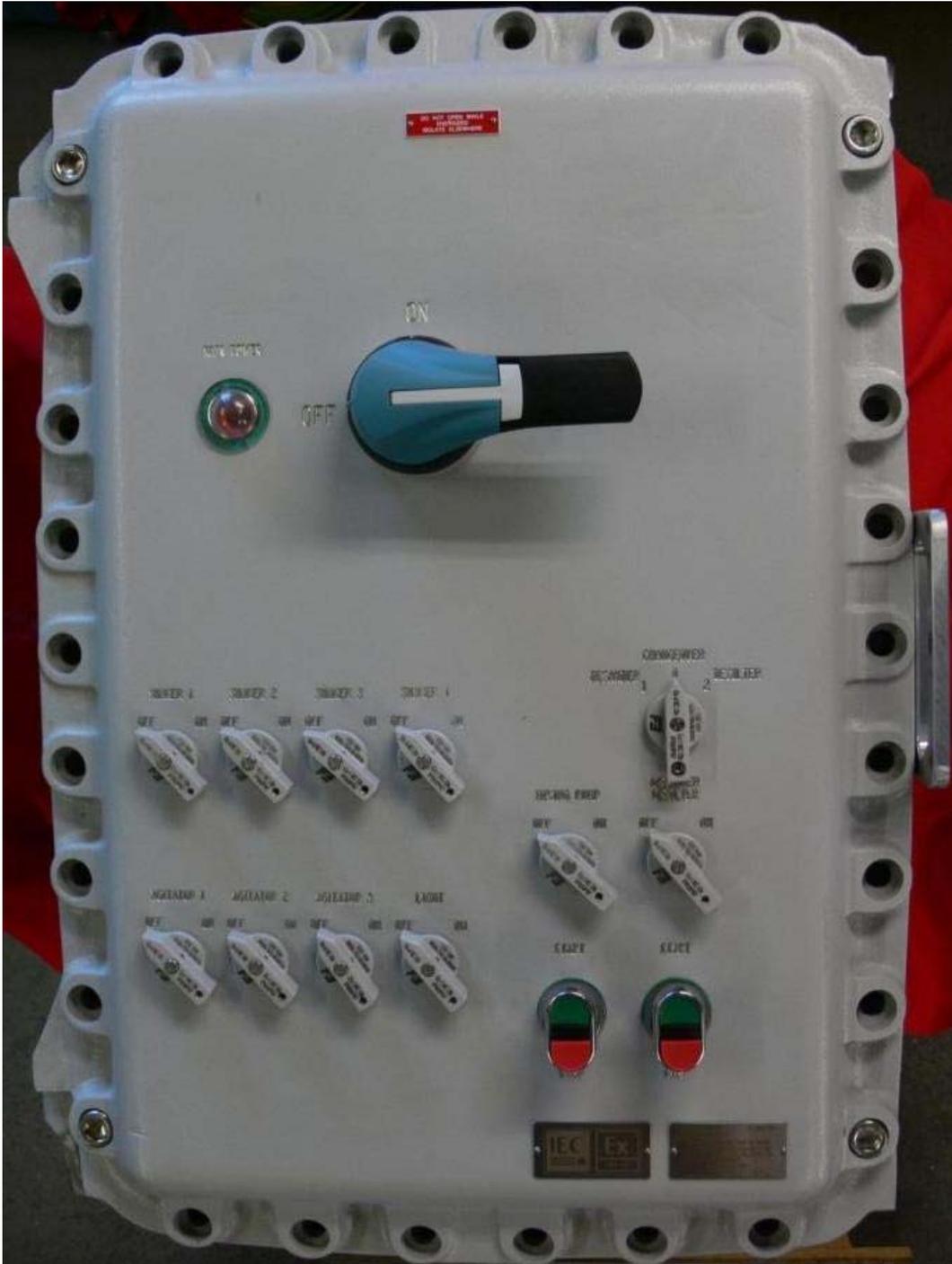
## **ELECTRICAL CONTROL EQUIPMENT FOR HAZARDOUS AREAS**



FJB432: an example of Ex d 15 kW star-delta motor starter with thermal overload and circuit breaker.



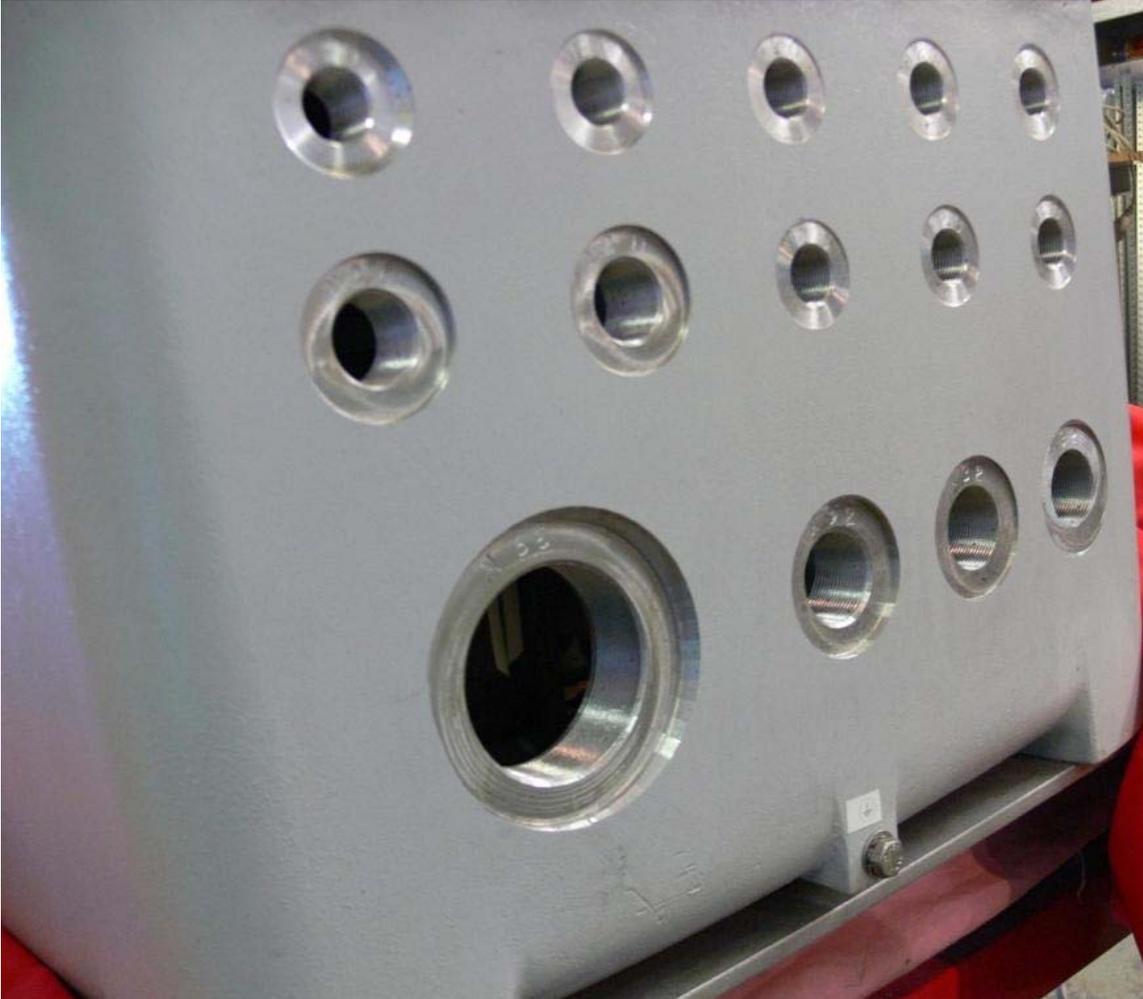
**ELECTRICAL CONTROL EQUIPMENT  
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FJB754: an example of Ex d motor control panel with 10x motor starters, 2x 75 kW soft starters, 4p 250A disconnect switch.



**ELECTRICAL CONTROL EQUIPMENT  
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Threaded entry holes are always marked with thread type and size.  
Metric (parallel) threaded entry holes are always provided with a flat spot-face to ensure accurate sealing and the highest IP protection level of the entry device.



## **ELECTRICAL CONTROL EQUIPMENT FOR HAZARDOUS AREAS**

### **FJB LIGHTING EQUIPMENT**



We offer LED lighting solutions in the FJB enclosures. The cool, highly efficient operation is flicker-free and never requires lamp replacement. Various power and luminous intensity are available in each size, with dimmable control and emergency options. EXIT signs etc also available. These light fittings are suitable for the most demanding applications in hazardous areas (zone 1 Ex d+H2 T6, zone 21 T85/T100C, IP66/IP67), corrosive and saline environments.

RJB and SJB INSTRUMENT ENCLOSURES (Ex d IIC Ex t IIIC IP66/IP67)

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## **ELECTRICAL CONTROL EQUIPMENT FOR HAZARDOUS AREAS**

The RJB and SJB enclosures are designed to house terminals, control and signalling equipment and instruments in hazardous area. Their design conforms to IEC 60079-0 Ed. 5.0 (2007), IEC 60079-1 Ed. 6.0 (2007) Standards for Gas Group IIC, IEC 60079-31 Ed 1.0 (2008) for explosive dust protection, IEC 60529 Ed. 2.1 (2001). The Ingress Protection rating is IP66/IP67 (protected against temporary submersion).

Certification: IECEx TSA 08.0040

Ex d IIC T6  $-20 \leq T_a \leq 60^\circ\text{C}$  Gb

Ex t IIIC T85°C  $-20 \leq T_a \leq 60^\circ\text{C}$  Db

IP66/IP67

Operating ambient temperature:  $-20 +60\text{C}$

- 1) RJB01: round body enclosure offering 80 mm internal diameter and 50 mm depth, with threaded lid. It can be fitted with 15 mm terminal rail and up to six 4 mm<sup>2</sup> or ten 1.5 mm<sup>2</sup> terminals, or with a round (68 mm diameter) mounting plate for internal equipment. The round body is provided with four flat entry pads, each of which may have one threaded entry up to M25 or ¾" NPT size.



A special application of the RJB01 junction box with a liquid level probe.



## ELECTRICAL CONTROL EQUIPMENT FOR HAZARDOUS AREAS



The RJB01W is the version with 50 mm round viewing window. We offer LED spotlights in the RJB01W enclosure, with various power and luminous intensity, and supply configurations. These light fittings are suitable for hazardous areas (zone 1 Ex d IIC T6/T5 and zone 21 Ex tb IIC); they offer a flicker-free operation and never require lamp replacements, dimmable option, maximum luminous flux of 2000 lumen and intensity of 500 cd. Applications: hazardous area spotlights, traffic lights, signal lights, fork lift trucks.



The RJB01WL provides constant light output from 12, 24, 36 or 48 V AC or DC.

2) The RJB11S Control Stations are designed to withstand the harshest environmental conditions. The RJB housing is made of extra-hard temper marine-grade light alloy

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(Stainless Steel 316 also available). The external and internal coating is suitable for outdoor permanent exposure to weather, salt, acids and UV radiation in extended temperature range and reduces the possibility of formation of condensate.

The RJB11S Control Stations offer superior quality, durability and reliability in all conditions.

- Ex d IIC: suitable for all gas types including Hydrogen and Acetylene
- Ex t IIIC: suitable for all dust types including conductive dusts
- Extended operating ambient temperature range
- Protected against water jets and temporary submersion
- Rugged construction
- Up to 8 threaded cable entries
- Can be provided with two entries in the same side (e.g. bottom side)
- Metric entries have precision spot-face for perfect gland sealing
- Vast range of functions and contact arrangements
- Delivered with lug for external earth connection
- Stable and robust mounting base with 4 external fixing points.

Here are some examples of RJB11S Control Stations:



RJB11S1500 isolator and selector switches up to 4p 32A 11kW AC3. Feature padlockable handle, cable entries in the bottom side or top-bottom. Mounting base with 4 fixing points. External equipotential bonding connection facility for 4-6 mm<sup>2</sup> wire.



RJB11S2001 Emergency Stop. The robust external operator can be removed only with a special tool and can withstand shocks, impacts and vibrations as required by IEC60947-5-5. Latching operator, twist-to-release. Key release, locking and guard options available.



## **ELECTRICAL CONTROL EQUIPMENT FOR HAZARDOUS AREAS**



RJB11S2008 Key Switch and RJB11S2009, RJB11S2010 Selector Switches. Available in a variety of configurations: 0-1, 1-2, 1-0-2, 1-2-3, AUTO-MAN, FWD-OFF-REV etc. Up to 2 separate contacts available in each position. Choice of silver 690Vac or gold quad-connect low voltage contacts.

RJB11	Enclosure/jbox with internal terminal rail, external mounting base and entries
RJB11W	instrument enclosure with 50 mm window
RJB11-0220-01	2x M20 opposite
RJB11-0220-02	2x M20 at 90 degree
RJB11-0220-03	2x M20 in the same side
RJB11-0420-01	4x M20 one in each side
RJB11-0225-01	2x M25 opposite
RJB11-0225-02	2x M25 90 deg
RJB11-0425-01	4x M25 one in each side
RJB11S	Control Station with one operator, external mounting base and entries:
RJB11S1502-...	2-p 20A 240V 2.5 kW AC23 isolator switch
RJB11S1504-...	4-p 20A 415V 7.5 kW AC23 isolator switch
RJB11S1506-...	2-p 25A 240V 3.67 kW AC23 isolator switch
RJB11S1507-...	4-p 25A 415V 11 kW AC23 isolator switch
RJB11S1508-...	2-p 32A 240V 5 kW AC23 isolator switch
RJB11S1509-...	4-p 32A 415V 15 kW AC23 isolator switch
RJB11S1510-0220	1-0-2 selector, 1-pole (HAND-OFF-AUTO or FWD-OFF-REV)
RJB11S2001-0120	Emergency Stop, 1x M20
RJB11S2002-0120	Pushbutton station (Black pushbutton), 1x M20
RJB11S2003-0120	Pushbutton station (Green pushbutton), 1x M20
RJB11S2004-0120	Pushbutton station (Red pushbutton), 1x M20
RJB11S2007-0120	ON-OFF 2p 10A
RJB11S2008-0120	Key switch, OFF-ON or 1-2, NO/NC changeover, 1x M20
RJB11S2010-0220	1-0-2 selector, 1-pole (HAND-OFF-AUTO or FWD-OFF-REV)
RJB11S2011-0220	START-STOP station, 1x M20

Other versions and customizations available, please inquire. Most of our products are customized to specific requirements.

### 3) RJB11WL Flameproof Ex d IIC T6 Ex t IIIC IP66/IP67 LED worklight/spotlight

- Explosion-proof low voltage solid state high intensity light fitting
- High power, high efficiency, cool LED technology
- 2000 lumen luminous flux

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## **ELECTRICAL CONTROL EQUIPMENT FOR HAZARDOUS AREAS**

- Supply voltage 200-275 Vac 50/60 Hz
- Very long operating life, no lamp replacements
- Impact and vibration resistant
- Suitable for installation in areas with possible presence of any type of explosive gas and combustible dust: IECEx certification for zone 1 IIC and zone 21 IIIC
- Withstands weather conditions, water jets and temporary submersion

The RJB11WL Power LED lights offer superior quality, durability and reliability in all conditions.

- Ex d IIC: suitable for all gas types including Hydrogen and Acetylene
- Ex t IIIC: suitable for all dust types including conductive dusts
- Extended operating ambient temperature range
- Protected against water jets and temporary submersion
- Rugged construction
- Metric entry has accurate flat spot-face for perfect gland sealing
- One or two M20 or M25 threaded entries
- Delivered with lug for external earth connection
- Stable and robust mounting base with 4 external fixing points
- Adjustable swivel bracket available for wall or ceiling mounting.

RJB11WL complete with adjustable mounting bracket. The light source is solid-state and is designed to last for life. The reflector is internal, protected from dust and weather.





## **ELECTRICAL CONTROL EQUIPMENT FOR HAZARDOUS AREAS**



The proprietary technology developed by FLAMEPROOF ENGINEERING achieves very high luminous efficiency and low power dissipation. The electronic circuits and circuit board design is covered by copyright under Australian Law.

Dimensions: mm 115x110x140 complete with mounting bracket.  
Weight kg 2.

Other models available with different operating voltages and power ratings.  
Colors: Cool white; warm white; amber; red; green.

3) SJB18: square body enclosure, with threaded lid. The threaded lid may be provided with a 90 mm diameter round glass window (SJB18W). The SJB18 enclosure can be internally fitted with a terminal rail for terminals, or a circuit breaker (up to 4p 63A) or isolator (up to 4p 125A) and external padlockable operating handle, or with a 130x130 mm mounting plate. The internal depth of the SJB18 is 100 mm (80 mm for the SJB18W). Each of the four faces of the enclosure may be provided with up to six threaded entries.

4) SJB23: square body enclosure, with threaded lid. The threaded lid may be provided with a 140 mm diameter round glass window (SJB23W). The SJB23 enclosure can be internally fitted with a terminal rail for terminals or one or two circuit breakers or isolators and external padlockable operating handles, or with a 170x170 mm mounting plate. The internal depth of the SJB23 is 115 mm (90 mm for the SJB23W). Each of the four faces of the enclosure may be provided with up to eight threaded entries.



## **ELECTRICAL CONTROL EQUIPMENT FOR HAZARDOUS AREAS**



SJB23

**CONTROL COMPONENTS:** switches, pushbuttons, pilot lights

Flameproof Engineering manufactures a variety of switch and circuit breaker operators, pushbuttons and pilot lights, suitable for application in the FJB enclosures or in other Ex d IIC or IIB or DIP/Ex tD/Ex t enclosures with provision for certified control operators in their certification.

Component protection and certification:

IECEX TSA 08.0037U Ex d IIC Gb Ex t IIIC Db IP66/IP67 (protected against temporary submersion).

The CSS control components are designed, manufactured and tested to meet the superior performance and safety requirements of hazardous areas and corrosive environments.

CSS1000 series of switch and circuit breaker operators with handle

These operators comprise a stainless steel treaded bush, an operating rod having length and operating attachment to suit the switch or circuit breaker and



## **ELECTRICAL CONTROL EQUIPMENT FOR HAZARDOUS AREAS**

actual enclosure. We offer different options of operating handles with padlock facility, to be fitted on the lid or at the side of the enclosure. The internal switchgear provided with our equipment is sourced from the main reputable international manufacturers. We can deliver switch operators to suit most types and makes of switchgear.

### CSS2000 series of pushbuttons

We offer a large choice of pushbutton configurations: Emergency Stop; flush (various colors); 2 or 3 position key switch; 1-2 or ON-OFF or 1-0-2 selector switch; START-STOP. All operators offer maximum durability and safe performance in heavy demanding and harsh corrosive environments. Up to 6 NO/NC contacts can be provided in each pushbutton, and they are easily replaceable and available worldwide. The contacts are rated at 10A 690 V, listed and approved to IEC, UL, CSA. A special low voltage version with quad gold plated contacts is available for PLC application.

Optional shrouds or padlockable attachments are available for most types.



CSS3000 pilot lights: pilot light with large lens diffuser and internal tinted filter. All colors and voltages are available, with LED or neon lamp, 6V to 250V.



## **ELECTRICAL CONTROL EQUIPMENT FOR HAZARDOUS AREAS**

### **PLA, PLB BLANKING PLUGS**

Our blanking plugs are available in plated brass or in stainless steel, and with internal retaining device and hexagonal head (type "a") or hexagon recess (type "b"). Threads can be metric or NPT. Metric blanking plugs are delivered complete with sealing washer.

### **RE, AD REDUCERS AND ADAPTORS**

We offer reducers and adaptors in any size and thread configuration. Material is stainless steel or plated brass.



The Flameproof Engineering logo and the FE logo are registered Trade Marks of Flameproof Engineering Pty Ltd.

The design of the Flameproof Engineering enclosures and accessories is protected by patents sealed with IP Australia:

The principle of compressive stress distribution of the Flameproof Engineering FJB series of enclosures is protected by patent 2008100654.

The design of the Flameproof Engineering FJB enclosures is registered with Design Registration Numbers 14786/2008 (Certificate of Design Registration No. 323421) and 15224/2008 (Certificate of Design Registration No. 323483).

The design of the Flameproof Engineering CSS2000 series of pushbuttons is protected with Design Registration Number 15217/2008 (Certificate of Registration No. 324353).

Flameproof Engineering contacts:

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