Installation & Maintenance Manual

FH400-** Series JB/Control Panels (CP, A2, CB)

Specifications

Types	FH400-** Series JB Junction Boxes FH400-** Series Control Panels (CP-Control Panels, A2 –Instrument CP, CB-Circuit Breaker)
Hazardous Area	
ATEX certificate number	SIRA 07ATEX1138X
IECEx certificate number	IECEx SIM 07.0005X
CE number	CE 0102
Certification coding for ATEX/IECEx	
FH400-** Series	Ex II 2 G Ex d IIB+H_2 T6 Ex d IIB+H_2 T6
Gas temperature class	
FH400-** Series	T6 @ Ta+40°C / +55°C / +60°C
Minimum ambient temperature	
FH400-** Series	-20°C
IP Rating	
FH400-** Series	IP66
Mechanical	
Material	Cast Aluminium (optional – Cast Iron/ Cast Stainless Steel)
Finish	Painted/Powder Coated Grey
Cover screw torque	18Nm
Entry threadform	Metric/BSP/NPT (Refer to Customer Specific Drawing produced at time of ordering)
Electrical	
Maximum voltage	– see certification label
Maximum current	– see certification label
Maximum Watts Dissipation	– see certification label
Conformity	IEC 60079-0 EN 60079-0 IEC 60079-1 EN 60079-1 IEC 60529 EN 60529

Installation

To minimise the risk of ignition by electrical apparatus in hazardous areas efficient installation, inspection and maintenance of apparatus and systems is essential and the work should be carried out by suitably trained personnel in accordance with the prevailing code of practice.

1) The enclosure should be mounted via the through-holes that are provided in the body. The enclosure should be used as a template when marking fixing points, alternatively, the dimensions of the fixing centres are found on the enclosure drawing. Expanding bolts should be used when mounting on concrete, or suitably sized bolts, nuts and anti-vibration washers when mounting to a steel framework.
2) This enclosure is suitable for common environments found in Petro-Chemical, On Offshore Oil & Gas Installations.
   If any special environmental protection is required then P+F should be contacted to evaluate such conditions.
3) Ensure appropriate Hardware and supports are used for Mounting enclosure weight.
   Remove lid/cover by un-screwing 24 x M10 Socket Hd. Cap screws.
   Tool requirement– 8mm HEX. Allen Key.
4) Install incoming and outgoing cables using appropriately certified cable glands.
   Any unused cable entries are to be plugged using suitably certified stopping plugs.
5) Connect earthing to internal & external earth facility.
   Ensure when using phase conductors over 10mmsq, appropriate sized rail mounted earth terminal is provided.
6) All terminals should be tightened to the torque specified by their manufacturer.
7) No Cables should be left floating and un-terminated.
8) Once the Lid/cover is fitted, ensure that all fasteners are fully tightened.
   Secure cover with the body using 24 x M10 Socket HD. Cap screws.
   Note- 1. Ensure gaskets (O-Rings) are positioned correctly.
   Ensure cover screws are tightened.
9) Refer to Appropriate Selection Installation & Maintenance Standards for,
   a) General Requirements. b) Flameproof Enclosure Ex d.

Special conditions of Safe Use

1) The maximum gap shall not exceed for cylindrical joints 0.15mm and for flanged joints 0.04mm.
2) In order to maintain the temperature classification of T6, the maximum power dissipation of internal equipment shall not exceed the following values,

T6 applications for T_a 40 °C		T6 applications for T_a 55 °C		T6 applications for T_a 60 °C	
Maximum power dissipation, W	Minimum thermal rating of cable, °C	Maximum power dissipation, W	Minimum thermal rating of cable, °C	Maximum power dissipation, W	Minimum thermal rating of cable, °C
77	75	65	NA	43	NA
125	90	76	80	61	80
153	105	85	83	68	83

Maintenance

Electrical apparatus installed in hazardous locations has design features that make it operationally safe under normal conditions. In order to ensure that the apparatus remains serviceable the following points should be attended to on a periodical basis. The period between inspections is not fixed, but should be adjusted to suit the environmental conditions where the equipment is situated. An initial inspection after 12 months of use is suggested.

1) Isolate elsewhere before opening.
2) Ensure that all fasteners are present.
3) Dis-assemble as stated in Installation steps.
4) Ensure that the enclosure or control functions are not damaged or distorted so as to prevent proper functioning of the gaskets (o-rings).
5) Ensure and check any lid mounted operators are secured.
6) Ensure that the enclosure is not corroded such as to affect its IP rating.
7) Ensure all flamepath areas are in good condition.
8) Ensure external earth bonding connections are in place and in good condition.
9) Ensure that all entry devices are in good condition and securely tightened.
10) Ensure that the certification label is present and legible.

With the enclosure open:

11) Ensure that the cover gasket (o-rings) remains in place and is in good condition. Replacement gaskets are available from Pepperl+Fuchs.
12) Ensure that all terminals are in good condition i.e. no cracks or breakage.
13) Ensure that all terminals are tightened to the manufacturer's specified torque.
14) Ensure that no conductors have moved such as to reduce creepage and clearance distances.
15) Ensure that any modifications that have been performed are in accordance with the previous section, making reference to the certification if necessary.
16) With the cover refitted, ensure that all fasteners are fully tightened.
17) Refer to Appropriate Selection Installation & Maintenance Standards for,

a. General Requirements, b. Flameproof Enclosure E x d.

MAINTENANCE OF INTERNAL ELECTRICAL EQUIPMENT:

1) The replacement of faulty components is to be done using components having exactly the same physical and electrical parameters with preservation of the existing layout configuration and watts dissipation of components should to taken into consideration.
2) Installation of equipment to be in accordance with appropriate Installation & Maintenance Standards.
3) If Applicable- In the occurrences of window assembly Glass breakage, the cover assembly is to returned to P+F or replacement.

Maintenance :

a. Isolate elsewhere before opening.
b. Dis-assemble as stated in Installation Procedure.
c. Main Visual checks:-
d. Flamepath Condition.
e. Gasket condition.
f. Corrosion of securing screws.
g. Integrity of housings.
h. Wire terminations are secure.
i. Assemble as per installation procedure.