Installation & Maintenance Manual for HVB6.6 High Voltage Box

Specifications

Types	HVB6.6 HVB6.6/ACH
Hazardous Area	
ATEX certificate number	SIRA00ATEX3206
IECEx certificate number	IECEx SIR 09.0109 (no IECEx certification for /ACH model)
CU TR (formerly GOST) certificate number	RU C-DE.ГБ06.B00567
CE number	CE 0102
Certification coding for ATEX/IECEx	
Increased safety marking	Ⓔx II 2 GD Ex e IIC T* Gb Ex tb IIIC T** Db
Gas/dust temperature class	T6/T85°C @ Ta+55°C T4/T135°C @ Ta+55°C (for /ACH type with anti-condensation heater)
Minimum ambient temperature	-50°C
IP Rating	IP66
Mechanical	
Material	316L
Finish	Electropolished
Cover screw torque	2Nm
Terminal torque	50Nm
Entry threadform	Refer to Customer Specific Drawing produced at time of ordering
Electrical	
Maximum voltage	6.6kV
Maximum current	650A
Short circuit current	50kA
Phases	3
Maximum cable size	70mm² (to accommodate require bend radius)
Busbar terminals	M10 bolts
Anti-condensation heater (/ACH models only)	
Voltage	250VAC Max
Power	50W
Terminal capacity	2.5mm²
Conformity	EN 60079-0: 2006 IEC 60079-0: 2007 EN 60079-7: 2007 EN 61241-0: 2006 EN 61241-1: 2004 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 used as a template when marking fixing points. 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) The surface of each busbar that will contact the crimp lugs should be cleaned with a wire brush that has only been used on copper. The busbars should be free of any burrs. A very light coating of petroleum jelly may be applied to the surface of the busbars following cleaning if the joint is not to be made immediately.
3) Connections should be made to each busbar with proprietary copper tube crimp lugs to BS 4579. It is critical that the terminal manufacturer's recommendations with regard to the crimping device are strictly followed i.e. the correct tool and die are selected. The terminal lugs should be bolted to the busbar and tightened to she specified torque.
4) Due to the high electrical stress at the point where the cores of the cable leave the cable outer, a high voltage cable termination kit should be used. Such kits use semi conducting heat shrink sleeving to reduce the electrical stress at the breakout point and are available from major cable manufacturers.
5) The HVB6.6 does not provide any circuit protection and therefore overload protection should be provided upstream to ensure that the cable is not damaged in the event of an overload.
6) Cable entries should be made only with suitably approved Ex e / Ex tb glands noting that this equipment is suitable for use with gas group IIC & dust group IIIC. IP ratings should be suitable for the intended area of installation.
7) All unused entries should be fitted with suitably approved Ex e / Ex tb stopping plugs.
8) Once the cover is fitted, ensure that all fasteners are fully tightened.

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) Ensure that all fasteners are present.
2) Ensure that the enclosure is not damaged or distorted so as to prevent proper functioning of the gaskets.
3) Ensure that the enclosure is not corroded such as to affect its IP rating.
4) Ensure external earth bonding connections are in place and in good condition.
5) Ensure that all entry devices are in good condition and securely tightened.
6) Ensure that the certification label is present and legible.

Ensure that the location where the equipment is fitted is free from flammable gas or dust. With the enclosure open:

7) Ensure that the cover gasket remains in place and is in good condition. Replacement gaskets are available from Pepperl+Fuchs.
8) Ensure that all insulating pillars are in good condition i.e. no cracks or breakage.
9) Ensure that the insulation of the cable at the breakout point has not deteriorated.
10) Ensure that all terminals are tightened to the manufacturer's specified torque.
11) Ensure that no conductors have moved such as to reduce creepage and clearance distances.
12) Ensure that any modifications that have been performed are in accordance with the previous section, making reference to the certification if necessary.
13) With the cover refitted, ensure that all fasteners are fully tightened.