





Installation & Maintenance Manual for Control Stations

Specifications

Types	(F)XL*****.CS (formerly .CP) GL*****.CS (formerly .CP)	Refer to type code builder in annex Refer to type code builder in annex
Hazardous Area		
ATEX certificate number	SIRA13ATEX3059X	
IECEX certificate number	IECEX SIR 13.0021 (no IECEX for Control Stations fitted with Schmersal controls)	
CE number	 0102	
Certification coding for ATEX/IECEX		
Certification digit in type code <u>1</u>	 II 2 GD	Ex de IIC T* Gb Ex tb IIIC T** Db
Certification digit in type code <u>3</u>	 II 2 GD	Ex ib IIC T* Gb Ex tb IIIC T** Db
Certification digit in type code <u>5</u>	 II 2 GD	Ex de ib IIC T* Gb Ex tb IIIC T** Db
Gas/dust temperature class		
Maximum ambient temperature	Ta +55°C	Ta +40°C
Applications with 5°K internal rise	T5 / T95°C	T6 / T80°C
Applications with 10°K internal rise	T4 / T130°C	T6 / T80°C
Applications with 15°K internal rise	T4 / T130°C	T5 / T95°C
When Schmersal controls fitted	T4 / T130°C	T4 / T130°C
	Refer to the enclosure certification label for confirmation	
Minimum ambient temperature	-40°C (-25°C / 0°C when fitted with Schmersal controls) -50°C with specific equipment options	
IP Rating	IP 66 (IP 65 when fitted with Schmersal controls)	
Maximum internal power dissipation (MDP)	Dependent on enclosure size and application internal rise – see certification label	
Mechanical		
XL/FXL types:		
Material		
Stainless steel models	316L	
Mild steel models	CR4	
Finish		
Stainless steel models	Electropolished	
Mild steel models	Powder coated	
GL types:		
Material	Glass reinforced polyester	
Finish	As moulded	
All types:		
Cover screw torque	2Nm	
Entry threadform	Refer to Customer Specific Drawing produced at time of ordering	
Electrical		
Maximum voltage	Dependent on terminals & equipment fitted – see certification label	
Maximum current	Dependent on terminals, cable & equipment fitted – see certification label	
Conformity	EN 60079-0: 2012	EN 60079-1: 2007
	EN 60079-7: 2007	EN 60079-11: 2007
	EN 60079-31: 2009	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) When selecting an installation location for the enclosure, **Control Stations fitted with Schmersal controls must be protected from impacts greater than 4J and permanent exposure to UV radiation.**



- 2) The enclosure should be mounted via the external fixing feet that are provided. The enclosure may be used as a template when marking fixing points, alternatively, the dimensions of the fixing centres are provided in the associated enclosure datasheet. Expanding bolts should be used when mounting on concrete, or suitably sized bolts, nuts and anti-vibration washers when mounting to a steel framework.
- 3) An assessment should be made to ensure that the amount of power being dissipated within the enclosure is lower than the figure stated on the certification label so that temperature classes can be guaranteed. Most of the dissipation in a terminal box application arises from the current flowing in the cables, therefore the length of cable within the enclosure should be minimised. Refer to Table 1 for dissipations of standard copper cables at standard fusing currents.
- 4) Cables should not be bunched together so as to create hot spots. This is especially important when using relatively high currents with cables of smaller cross section.
- 5) Only suitably approved Ex e terminals may be fitted. **Only feedthrough terminals are permitted within Ex e enclosures. Note that fuse terminals, relays, MCB's, contactors etc. MUST NOT BE FITTED IN AN EXE ENCLOSURE.**
- 6) Only one conductor should be inserted into each terminal.
- 7) All strands of each conductor must enter the terminal.
- 8) No cables should be left floating and un-terminated.
- 9) Cable insulation should extend to within 1mm of the metalwork of the terminal. Creepage and clearance distances given by EN 60079-7: 2007 are as follows:

Voltage (AC or DC)	Minimum creepage distance (mm)	Minimum clearance (mm)
≤250	8	8
≤500	16	8

- 10) If cross connects are fitted, partitions/barriers may be required to preserve clearance distances.
- 11) All terminals should be tightened to the torque specified by their manufacturer.
- 12) 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.
- 13) All unused entries should be fitted with suitably approved Ex e / Ex tb stopping plugs.
- 14) When the internal/external earth stud is supplied loose, the components should be fitted as per the below Figure 1.
- 15) Once the cover is fitted, ensure that all fasteners are fully tightened.

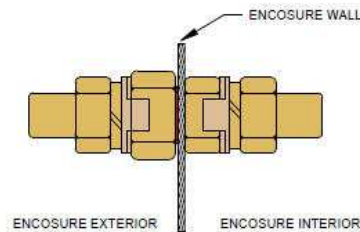


Figure 1

Cable CSA	Current (A)					
	1	2	4	6	10	16
1mm ²	0.0168	0.0672	0.269	0.605	1.68	4.3
2.5mm ²	0.00672	0.0269	0.108	0.242	0.672	1.72
4mm ²	0.0042	0.0168	0.067	0.151	0.42	1.08
6mm ²	0.0028	0.0112	0.045	0.101	0.28	0.717

Table 1 – Dissipation of copper cables in W/m

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 or control functions are 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 terminals are in good condition i.e. no cracks or breakage.
- 9) Ensure that all terminals are tightened to the manufacturer's specified torque.



- 10) Ensure that no conductors have moved such as to reduce creepage and clearance distances.
- 11) Ensure that any modifications that have been performed are in accordance with the previous section, making reference to the certification if necessary.
- 12) With the cover refitted, ensure that all fasteners are fully tightened.

Annex

XL/FXL type codes:

Enclosure Style	Enclosure Material	Mutually exclusive sections			Enclosure size designation	Certification	No. Of gland plates	Depth	CJB designation	Optional digit	Part number of customised solution		
		Enclosure height	Enclosure width	Enclosure depth									Custom
F X L												FXL Style enclosure	
X L												XL Style enclosure	
S												Stainless steel	
M												Mild Steel	
		x x x										Height in cm	
			x x x									Width in cm	
				x x x								Depth in cm	
					x x							Enclosure size from standard range	
						1						Ex de / Ex t	
						3						Ex ib / Ex t	
						5						Ex de ib / Ex t	
						0						No gland plates	
						1						1 gland plate	
						2						2 gland plates	
						3						3 gland plates	
						4						4 gland plates	
							D					Deep enclosure	
		C	S	*	-	Y x x x x x x x	Enclosure type code

GL type codes:

Enclosure Style	Enclosure Material	Mutually exclusive sections			Enclosure size designation	ECP	Certification	Depth	CJB designation	Optional digit	Part number of customised solution		
		Enclosure height	Enclosure width	Enclosure depth									Custom
G L												GL Style enclosure	
		x x x										Height in cm	
			x x x									Width in cm	
				x x x								Depth in cm	
					x x							Enclosure size from standard range	
						0						No earth continuity plate	
						1						Steel earth continuity plate	
						2						Brass earth continuity plate	
						3						Stainless steel earth continuity plate	
							1					Ex de / Ex t	
							3					Ex ib / Ex t	
							5					Ex de ib / Ex t	
								D				Deep enclosure	
		C	S	*	-	Y x x x x x x x	Enclosure type code