



Installation & Maintenance Manual for LCP, GVU & E030 Ranges

Specifications

Types	LCP10X/LCP14X LCP Rotary Switch LCP11X/LCP12X/LCP13X LCP Single Push Button LCP15X LCP Indicator Lamp LCP16X LCP Ammeter Unit LCP17X/LCP18X LCP Double Push Button GVU/P & GVU/MK LCP Junction Box	
Hazardous Area	SIRA03ATEX3293 IECEX certificate number IECEX SIR 10.0078 GOST certificate number POCC DE.ГБ06.В01008 INMETRO certificate number CE number C E 0102	
Certification coding for ATEX/IECEX	Ex II 2 GD	Ex e IIC T* Gb (terminals / ammeters fitted) Ex de IIC T* Gb (above plus switches) Ex dem IIC T* Gb (above plus indicator lamps) Ex tb IIIC T** Db
Gas/dust temperature class	T6/T85°C @ Ta+40°C T5/T100°C @ Ta+55°C	
Minimum ambient temperature	-45°C	
IP Rating	IP66	
Mechanical	Glass reinforced polyester Material As moulded Finish M20 Entry threadform	
Electrical	See certification label Maximum voltage See certification label Maximum current	
Conformity	EN 60079-0: 2006 IEC 60079-0: 2007 EN 60079-7: 2007 EN 61241-0: 2006 EN 61241-1: 2004 EN 13163-1: 2001 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) 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.
- 3) 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.
- 4) Only suitably approved Ex e terminals may be fitted, noting that the IECEX certification only permits certain models of terminals to be fitted even if others are suitably approved.
- 5) Only one conductor should be inserted into each terminal.
- 6) 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	5
≤500	16	8
- 7) All terminals should be tightened to the torque specified by their manufacturer.
- 8) 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.
- 9) All unused entries should be fitted with suitably approved Ex e / Ex tb stopping plugs.
- 10) Once the cover is fitted, ensure that all fasteners are fully tightened.

Cable CSA	Current (A)									
	1	2	4	6	10	16	20	25	32	40
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	2.69	4.2	-	-
4mm ²	0.0042	0.0168	0.067	0.151	0.42	1.08	1.68	2.63	4.3	-
6mm ²	0.0028	0.0112	0.045	0.101	0.28	0.717	1.12	1.75	2.87	4.48
10mm ²	0.00168	0.00672	0.027	0.061	0.168	0.43	0.67	1.05	1.72	2.69

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 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 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.