Operation Instructions

Control Units LCP*.* / LCS*.*

ENG

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Validity

Specific processes and instructions in this document require special precautions to guarantee the safety of the operating personnel.

Target Group/Personnel

Responsibility for planning, assembly, commissioning, operation, maintenance, and dismounting lies with the system operator.

Mounting, installation, commissioning, operation, maintenance and disassembly of any devices may only be carried out by trained, qualified personnel. The instruction manual must be read and understood.

Laws, standards, or directives applicable to the intended use must be observed. In relation to hazardous areas, Directive 1999/92/EC must be observed.

The corresponding data sheets, declarations of conformity, EC-type-examination certificates, certificates and Control Drawings if applicable (see data sheet) are an integral part of this document. You can find this information under www.pepperl-fuchs.com.

Mounting/Installation

Use only one conductor per terminal.

- If cable glands are needed for installation, the following points must be considered / evaluated:
- The cable glands used must be suitably certified for the application
- The temperature range of the cable glands must be chosen according to the application.
- The cable glands fitted must not reduce the IP rating.

If you use stranded wires, crimp on wire end ferrules.

In order to guarantee the temperature classes, ensure that power dissipation is lower than the figure stated in the certificate. Most of the power dissipation arises from current flowing in the cables.

In order to minimize power dissipation, observe the maximum possible cable lengths.

Observe the tightening torque of the terminal screws.

Unused conductors must be either connected to terminals or securely tied down and isolated.

If mounting the enclosure on concrete use expanding bolts. If mounting the enclosure to a steel framework use vibration resistant mounting equipment.

The insulation stripping length must be considered.

To ensure the IP degree of protection:

- all seals must be undamaged and correctly fitted
- all screws of the surrounding enclosure and its cover must be tightened with the appropriate torque
- only cable of the appropriate size must be used in the cable glands
- all cable glands must be tightened with the appropriate torque
- all empty cable glands must be sealed with the corresponding plugs

When installing additional components, make sure that these components are listed in the EC-Type-Examination Certificate of the control station.

Select suitable conductors in order to ensure, that the maximum permitted temperature of the conductors fit to the maximum permitted ambient temperature of the control station.

The permitted ambient temperatures of the built-in components must not be exceeded.

The minimum bending radius has to be adhered to.

When installing the conductors the insulation must reach up to the terminal.

Connect all bare non-energized metal parts to the protective earth conductor.

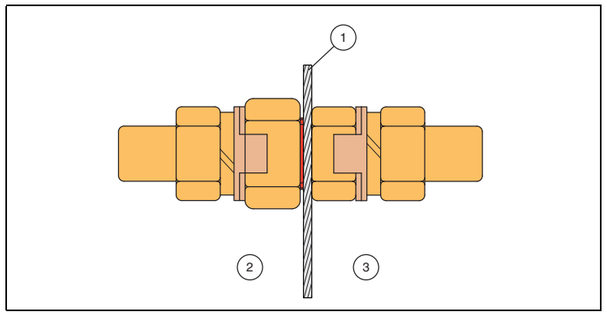
Observe IEC/EN 60079-17 for maintenance and testing.

Before opening the enclosure make sure, that the built-in components are de-engergized.

When energized, the enclosure may only be opened for maintenance, if only intrinsically safe circuits are used inside the enclosure.

If there is a defect, the product must be repaired by Pepperl+Fuchs.

When the internal/external ground bolt is supplied loose, the components should be fitted as shown in the figure below.



1	Enclosure wall
2	Enclosure exterior
3	Enclosure interior

Technical Specifications

LCS*.* LCP*.*	Refer to type code builder in chapter „Typecodes“ Refer to type code builder in chapter „Typecodes“	
Hazardous Area		
ATEX certificate number	SIRA13ATEX3059X	
IECEx certificate number	IECEx SIR 13.0021	
CE number	CE 0102	
Certification coding for ATEX/IECEx		
Certification digit in type code 1	Ex II 2 GD Ex de IIC T* Gb Ex II 2 GD Ex tb IIIC T** Db	
Gas/dust temperature class		
Maximum ambient temperature	Ta +55°C	Ta +40°C
Applications with 10°K internal rise	T4 / T130°C	T6 / T80°C
Refer to the enclosure certification label for confirmation		
Minimum ambient temperature	-35 °C (-40 °C / -50 °C with specific equipment options)	
IP Rating	IP 66	
Mechanical		
LCS types		
Material		
Stainless steel models	316L	
Finish		
Stainless steel models	Electropolished	
LCP types		
Material	Glass reinforced polyester	
Finish	As moulded	
All types		
Cover screw torque	2 Nm	

LCS*.* LCP*.*	Refer to type code builder in chapter „Typecodes“ Refer to type code builder in chapter „Typecodes“
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 60079-7: 2007 EN 60079-31: 2009 EN 60079-1: 2007 EN 60079-11: 2007 EN 60529

Dissipation of copper cables in W/m

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

Typecodes

Type code / model number							
Series							
LC	Control Unit						
:	Material						
:	P	GRP glass fiber reinforced polyester					
:	S	stainless steel					
:	:	Enclosure type / quantity of operators					
:	:	1 ... 4	see dimensions data table				
:	:	:	Function 1				
:	:	:	xxxx	see operator type codes			
:	:	:	:	Function 2			
:	:	:	:	xxxx	see operator type codes		
:	:	:	:	:	Function 3		
:	:	:	:	:	xxxx	see operator type codes	
:	:	:	:	:	:	Function 4	
:	:	:	:	:	:	xxxx	see operator type codes
:	:	:	:	:	:	:	Entry configuration / cable glands
:	:	:	:	:	:	:	x
LC							
LC	P	n	.xxxx	.xxxx	.xxxx	.xxxx	.x
LC	S	n	.xxxx	.xxxx	.xxxx	.xxxx	.x

Fig. 1 Type code of operating elements see series data sheets LCS*.* and LCP*.*.

Typecodes

(F)XL*.CS Typecode:

Type code / model number								
Enclosure type								
FXL	metal enclosure with return flange							
XL	metal enclosure							
:	**Material**							
:	**M**	mild steel						
:	**S**	stainless steel						
:	:	**Enclosure size**						
:	:	**nn**	enclosure size from standard range					
:	:	:	**Type of explosion protection**					
:	:	:	**1**	Ex de, Ex tb				
:	:	:	**3**	Ex ib, Ex tb				
:	:	:	**5**	Ex de ib, Ex tb				
:	:	:	:	**Gland plate at face(s)**				
:	:	:	:	**0**	none			
:	:	:	:	**1**	face B			
:	:	:	:	**2**	faces A, B			
:	:	:	:	**3**	faces B, C, D			
:	:	:	:	**4**	faces A, B, C, D			
:	:	:	:	:	**Enclosure depth**			
:	:	:	:	:		standard depth		
:	:	:	:	:	**D**	increased depth		
:	:	:	:	:	:	**Type of solution**		
:	:	:	:	:	:	**CS**	control station	
:	:	:	:	:	:	:	**Optional digit**	
:	:	:	:	:	:	:	**n**	counter
:	:	:	:	:	:	:	:	**Item number**
:	:	:	:	:	:	:	:	Yxxxxxx
						.CS		-Yxxxxxx

GL*.CS Typecode:

Type code / model number							
Enclosure type							
GL	glass fiber reinforced polyester GRP						
:	**Enclosure size**						
:	**nn**	enclosure size from standard range					
:	:	**Earth continuity plate**					
:	:	**0**	none				
:	:	**1**	galvanized steel				
:	:	**2**	brass				
:	:	**3**	stainless steel				
:	:	:	**Type of explosion protection**				
:	:	:	**1**	Ex de, Ex tb			
:	:	:	**3**	Ex ib, Ex tb			
:	:	:	**5**	Ex de ib, Ex tb			
:	:	:	:	**Enclosure depth**			
:	:	:	:		standard depth		
:	:	:	:	**D**	increased depth		
:	:	:	:	:	**Type of solution**		
:	:	:	:	:	**CS**	control station	
:	:	:	:	:	:	**Optional digit**	
:	:	:	:	:	:	**n**	counter
:	:	:	:	:	:	:	**Item number**
:	:	:	:	:	:	:	Yxxxxxx
GL					.CS		-Yxxxxxx

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