

## Brief Instructions

# Control Stations SR.CS\* Stainless Steel

Pepperl-Fuchs GmbH  
Lilienthalstrasse 200  
69307 Mannheim, Germany  
Tel. +49 621 776-0  
Fax +49 621 776-1000

Document No.: DOCT-7300

Edition: 07/2021

Copyright Pepperl+Fuchs  
www.pepperl-fuchs.com



## Validity

Specific processes and instructions in this instruction manual require special provisions to guarantee the safety of the operating personnel.

## Target Group, Personnel

Responsibility for planning, assembly, commissioning, operation, maintenance, and dismantling lies with the plant operator.

The personnel must be appropriately trained and qualified in order to carry out mounting, installation, commissioning, operation, maintenance, and dismantling of the device. The trained and qualified personnel must have read and understood the instruction manual.

## Reference to Further Documentation

Observe laws, standards, and directives applicable to the intended use and the operating location. Observe Directive 1999/92/EC in relation to hazardous areas.

The corresponding datasheets, manuals, declarations of conformity, EC-type-examination certificates, certificates, and control drawings if applicable (see datasheet) are an integral part of this document. You can find this information under [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com).

## Intended Use

The control stations are used to control electrical energy and electrical signals in hazardous areas. They must be installed in fixed installations. Intended use includes observing these operating instructions and the other applicable documents, e.g. the data sheet. Any other use of the control stations is not allowed.

## Mounting and Installation

Observe the installation instructions according to IEC/EN 60079-14.

Local / national or plant specific electrical, grounding, H&S or installation rules and regulations shall be taken into account during installation.

If you intend to install the device or enclosure in areas that may be exposed to aggressive substances, ensure that the stated surface materials are compatible with these substances. If required, contact Pepperl+Fuchs for further information.

The requirements of the IEC/EN 60079-31 regarding excessive dust deposits must be considered by the user.

Ensure that adequate free air exists around the enclosure, and that it is not subjected to external sources of heating that could affect the stated temperature class.

Safety-relevant markings are found on the enclosure. Additional warnings may be on separate labels besides the main nameplate. Ensure that all

ENG

labels are present and legible. Take the ambient conditions into account. The permitted ambient temperatures of the built-in components must not be exceeded.

Variants equipped with non-light transmitting control functions should be installed only in areas where the risk of mechanical impact is low.

Ensure that the enclosure is not damaged, distorted, or corroded.

Ensure that all seals are clean, undamaged, and correctly fitted.

Tighten all screws of the enclosure/enclosure cover with the appropriate torque.

Cover screws are designed to be self-captive and they should remain in the cover at all times. If they ever need to be replaced, they have to be screwed through the enclosure cover into the associated spacer.

For cable glands only use incoming cable diameters of the appropriate size.

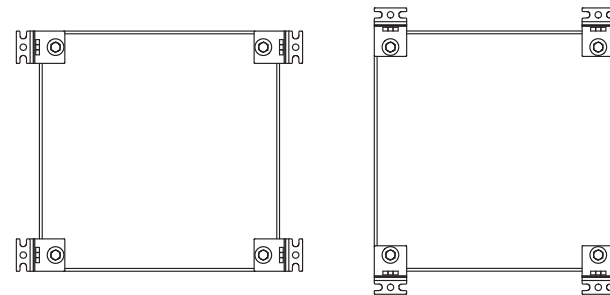
Tighten all cable glands with the appropriate torque.

Close all unused cable glands with the appropriate sealing plugs.

Close all unused enclosure holes with the appropriate stopping plugs.

Only use stopping plugs that are suitably certified for the application.

Only use sealing plugs that are suitably certified for the application.

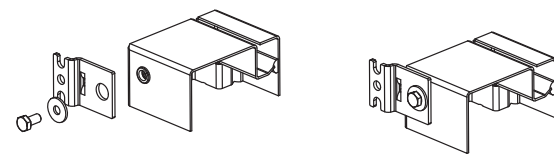


Enclosures can be installed either by means of separate mounting brackets or directly by using the screw holes in the enclosure rear.

Use all existing screw holes for mounting the enclosure.

It is recommended to use screws according to ISO 4762 or equivalent

Follow below instructions when using the optional mounting brackets in horizontal position.



1. Screw the brackets to the screw holes in the enclosure rear
2. Mark the upper screw positions on the mounting surface
3. Fix all upper screws to the mounting surface
4. Hang the enclosure onto the screws by using the bottom notches of the upper brackets
5. Mark the lower screw positions using the central holes of the lower brackets
6. Drill the appropriate screw holes into the mounting surface
7. Fix the lower mounting brackets to the mounting surface by using the central holes
8. Tighten all mounting screws with the appropriate torque

Torque moments depend on the used screws and the material where they are screwed into.

If using the mounting brackets in vertical position always use the central bracket holes.

If mounting the enclosure on concrete use expansion anchors. When mounting the enclosure to a steel framework use vibration resistant mounting material.

Make sure that the enclosure is mounted on a flat surface to avoid distortion of the enclosure and ensure proper sealing function of the cover gasket.

If external ground connections exist, ensure they are in good condition, and are not damaged or corroded.

In order to prevent condensation in the enclosure, use suitably certified breather drains.

## Requirements for cable glands:

Only use cable glands that are suitably certified for the application.

Only use cable glands with a temperature range appropriate to the application.

Only use cable glands with an ingress protection appropriate to the application.

Ground metal cable glands.

## Requirements for internal components:

The maximum permitted temperature of the conductors has to fit to the maximum permitted ambient temperature of the control station. Cable with a suitable temperature rating must be selected.

In case of mixed Ex e / Ex i arrangements, ensure the required minimum distances according to IEC/EN 60079-11.

Ensure that the terminals are in good condition and are not damaged or corroded.

Use only one conductor per terminal conductor entry point.

Observe the tightening torque of the terminal screws.

Avoid excessive cable lengths.

Observe the minimum bending radius of the conductors.

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

When using stranded conductors, crimp wire end ferrules on the conductor ends.

Unused cables and connection lines must be connected to terminals.

Insulation by tape alone is not permitted.

Observe the special conditions for safe use listed in the manufacturer's documentation.

Do not bunch more than 6 conductors in order to avoid hot spots.

Arrange ground connections for incoming and outgoing cables so that the earth fault current is not carried between separate grounding plates.

When installing additional components, consult Pepperl+Fuchs in order to ensure these components are listed in the EU-type examination certificate and the maximum power dissipation of this solution is within the allowed limits.

All normally closed contacts of the 2 pole and 4 pole contact blocks are designed as positive opening contacts according to IEC 60947.

For easier wiring the internal contact modules might be removed from the DIN-Rail. Take care the small notches of the modules fit into the cutouts of the rail when mounting them back on.

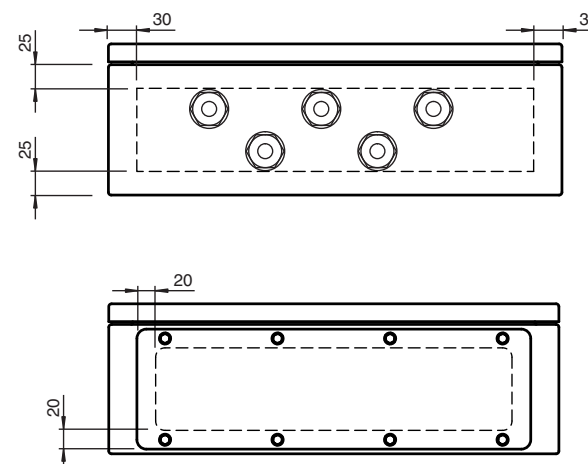
With ammeters for current transformer connection the interchangeable scales can be changed via an opening at the upper side.

## Rules for bringing in additional thru-holes for glands:

Determine if the space needed for the additional holes does not affect the stability of the enclosure wall and therefore the effectiveness of the gasket system.

In case of doubts consult Pepperl+Fuchs.

Maintain the minimum distances to enclosure rims and bottom as shown in the drawings below.



Calculate the minimum distance from the center of the additional thru-hole to the center of an already existing adjacent thru-hole by means of one of the following formulas:

1. Calculation via diameters

HSN = diameter of adjacent thru-hole

HSA = diameter of additional thru-hole

Minimum distance between centers =  $1.5 \times (HSN+HSA)/2$

2. Calculation via widths across corners

WCN = width across corners of adjacent cable gland

WCA = width across corners of additional cable gland

Minimum distance between centers =  $1.2 \times (WCN+WCA)/2$

Fabricate the additional thru-holes with an appropriate tooling method.

Ensure the thru-hole diameters are fitting to the gaskets and cable glands to be installed.

Ensure the enclosure surfaces around the thru-holes are undamaged in order to maintain the IP-protection.

## Operation, Maintenance, Repair

Observe IEC/EN 60079-14 during operation.

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

Observe IEC/EN 60079-19 for repair and overhaul.

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

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

The required maintenance intervals depend on the respective application, ambient conditions and national regulations and therefore have to be determined by the user.

Labels, windows and other surfaces which are not protected against electrostatic discharge may be a potential electrostatic charge hazard and shall therefore be cleaned only with a damp cloth.

Before reassembly, make sure both gasket and sealing faces are in good and clean condition to assure the degree of protection.


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

Alternatively the device can be repaired by a qualified electrician in compliance with IEC/EN 60079-19.

## Delivery, Transport, Disposal

Disposing of device and packaging must be in compliance with the applicable laws and guidelines of the respective country.

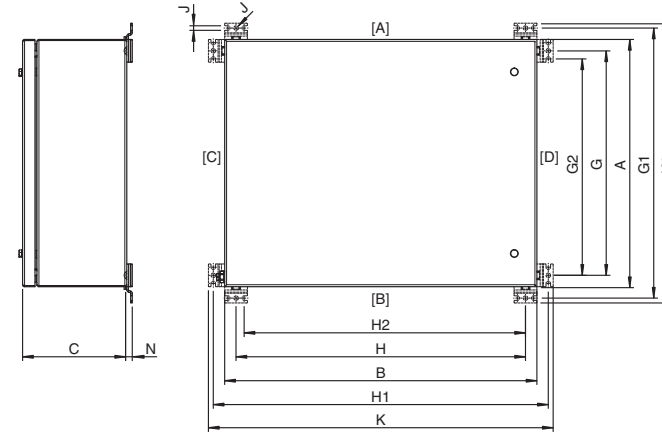
## Technical Specifications

General	
Types and variants	SR.CS* - see type code table
Electrical specifications	
Operating voltage	400 V AC / DC max. See certification label
Operating current	16 A max. Dependent on terminals and equipment fitted, but must not exceed maximum. See certification label
Mechanical specifications	
Dimensions	see data table
Enclosure cover	fully detachable
Cover fixing, torque	see data table
Degree of protection	IP66
Mass	see data table
Mounting	screws, optional mounting brackets enclosed
Cable entry	thru-holes or cable glands as per specification
Material	
Enclosure	1.5 mm AISI 316L, (1.4404) stainless steel
Gland Plate	optional 3 mm or 6 mm AISI 316L (1.4404) stainless steel
Finish	brushed
Cover seal	foamed silicone
Cover fixing	stainless steel A4 (V4A) hexagonal head screws, see data table
Grounding	M6 internal/external brass nickel-plated grounding bolt M6 internal stainless steel grounding bolt welded to lid M6 internal stainless steel grounding bolt welded to enclosure body
Ambient conditions	
Ambient temperature	-50 ... 55 °C (-58 ... 131 °F) depending on integrated components
Data for application in connection with hazardous areas	
EU-Type Examination Certificate	CML 16ATEX3009X
Marking	 II 2 GD Ex db eb IIC T* Gb, Ex tb IIIC T** Db or Ex ib IIC T* Gb, Ex tb IIIC T** Db or Ex db eb ib IIC T* Gb, Ex tb IIIC T** Db T6/T80 °C @ Ta +40 °C T5/T95 °C @ Ta +55 °C T4/T130 °C @ Ta +55 °C
Maximum power dissipation	Dependent on enclosure size. See certification label
International approvals	
IECEX approval	IECEX CML 16.0008X
Conformity	
Degree of protection	EN 60529
CE marking	0102
Standards	EN 60079-0:2012+A11:2013 EN 60079-7:2015+A1:2018 EN 60079-11:2012 EN 60079-31:2014 EN 60079-18:2015

## Type Code / Model Number

Enclosure type									
SR stainless steel									
Type of solution									
CSE control station (Ex e)									
CSI control station (Ex i)									
CSM control station, various types of explosion protection, e.g. (Ex e, Ex i)									
Height [cm]									
n see dimensions data table									
Width [cm]									
n see dimensions data table									
Depth [cm]									
n see dimensions data table									
Cable entry face orientation									
B face [B] at bottom									
D face [D] at bottom									
Gland plates									
0 none									
1 one gland plate at bottom face									
2 two gland plates									
3 three gland plates									
4 four gland plates									
Variant type									
S standard product									
C configured product									
CA configured and adapted product									
Y engineered product									
Variant number									
xxxxxx									
SR	.CSE	.xx	.xx	.xx	.B	.1	-S	xxxxxx	

## Variant-Specific Data - Dimensions and Enclosure Details



Type	External dimensions [mm]					Mounting [mm]								Mass approx. [kg]	Cover screws			Max. power dissipation [W]	
	A	B	C	K	K1	G	G1	G2	H	H1	H2	J	N		screws qty.	Mx	qty.		torque [Nm]
SRM.26.26.16	260	260	160	310	310	295	225	212.5	225	295	282.5	7	8.5	4 (B)	5.8	M6	4	3.5	13.7
SRM.31.31.16	310	310	160	360	360	345	275	262.5	275	345	332.5	7	8.5	4 (B)	8	M6	4	3.5	16.6
SRM.38.48.16	380	480	160	530	430	515	345	332.5	445	415	402.5	7	8.5	4 (B)	12	M6	6	3.5	25
SRL.48.48.16	480	480	160	530	530	515	445	432.5	445	515	502.5	7	8.5	4 (B)	14	M6	8	3.5	33.27
SRL.48.76.16	480	760	160	810	530	795	445	432.5	725	515	502.5	7	8.5	4 (B)	20	M6	8	3.5	43

Mass is valid for empty enclosure, it will increase according to enclosure accessories, integrated components and cable glands  
 Values might differ slightly due to manufacturing tolerances  
 screws qty.: Quantity of screws for direct mounting, (B) = optional mounting brackets included