

Brief Instructions

Control Stations Division 2 SR.CS2* Stainless Steel

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

Document No.: DOCT-8506

Edition: 12/2022

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.

The corresponding datasheets, manuals, declarations of conformity, 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.

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 NEC/CEC.

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 NEC/CEC 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 labels are present and legible. Take the ambient conditions into account.

ENG

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

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.

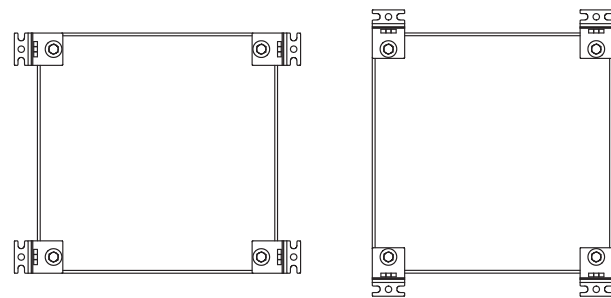
Tighten all cable glands with the appropriate torque.

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.

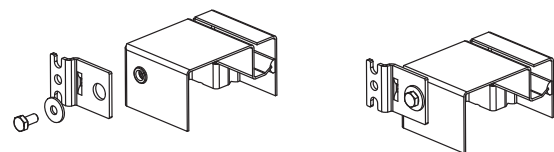


Enclosures can be installed either by means of separate mounting brackets or directly by using the screw holes in the enclosure rear.

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 the case of mixed I.S. to non-I.S circuits, spacing should be in accordance with UL508A, UL698A and UL121201.

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.

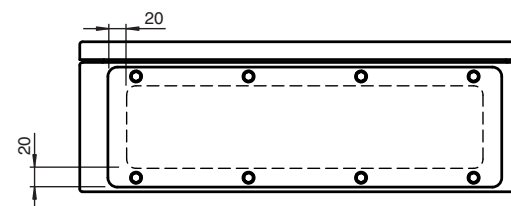
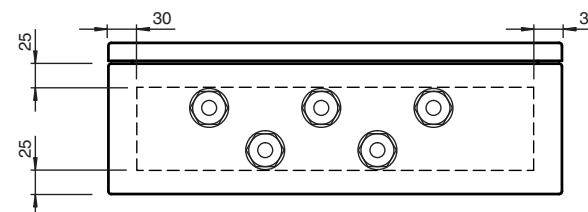
When installing additional components, consult Pepperl+Fuchs in order to ensure these components are listed in the examination certificate and the maximum power dissipation of this solution is within the allowed limits.

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 NFPA 70 National Electric Code, Canadian Electrical Code C22.2 1-15, UL 508A /CSA C22.2 No. 286 with reference to operation, maintenance and repair.

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 NFPA 70 National Electric Code and Canadian Electrical Code C22.2 1-15.

Delivery, Transport, Disposal

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

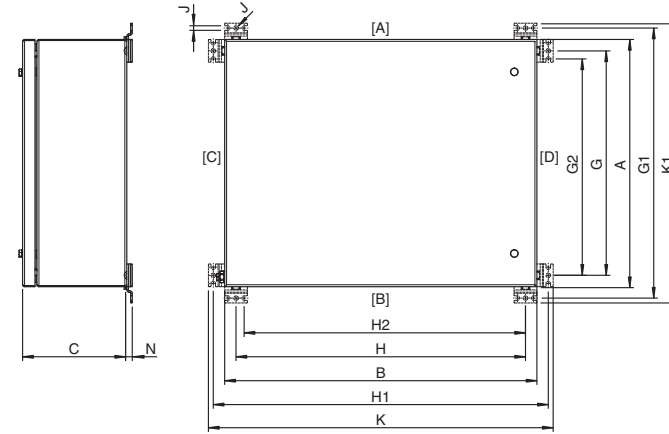
Technical Specifications

General	
Types and variants	SR.CS2* - see type code table
Electrical specifications	
Operating voltage	250 V AC / DC max. (optionally 600 V) See certification label
Operating current	5 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, hinged
Cover fixing, torque	see data table
Degree of protection	Type 4X
Mass	see data table
Mounting	screws, optional mounting brackets enclosed
Cable entry	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	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	-40 ... 55 °C (-58 ... 131 °F) depending on integrated components
International approvals	
ETL approval	
ETL certificate	Intertek 5003368 , Intertek 5022079
Approved for	Class I, Division 2, Groups A, B, C, D according UL 508A, UL 121201
cETLus	CSA C22.2, No. 213, 286
Ambient temperature	-25 ... 40 °C (-13 ... 104 °F) T6 -40 ... 55 °C (-40 ... 131 °F) T5
Maximum power dissipation	Dependent on enclosure size. See certification label
Conformity	
Standards	UL 50 / UL 50E UL 508A UL 689A UL 121201 CSA C22.2 No. 213 CSA C22.2 No. 286

Type Code / Model Number

1	2	3	4	5	6	7	8	9								
SR	.	***	.	**	.	**	.	*	.	*	.	*	-	*	.	****
SR	.	CS2	.	38	.	48	.	22	.	B	.	1	-	Y	.	123456
Example: SR.CS2.38.48.22.B.1-Y123456 Control Station for Division 2, stainless steel, size 38x48x22 cm, landscape orientation with face B at bottom, gland plate at bottom face, engineered product																
1	Enclosure type															
SR	stainless steel															
2	Type of solution															
CS2	control station (Class I, Division 2)															
3	Height [cm]															
n	see dimensions data table															
4	Width [cm]															
n	see dimensions data table															
5	Depth [cm]															
n	see dimensions data table															
6	Cable entry face orientation															
B	face [B] at bottom															
D	face [D] at bottom															
7	Gland plates															
0	none															
1	one gland plate at bottom face															
2	two gland plates															
3	three gland plates															
4	four gland plates															
8	Variant															
S	standard product															
C	configured product															
CA	configured and adapted product															
Y	engineered product															
9	Variant number															
	consecutive item number															

Variant-Specific Data - Dimensions and Enclosure Details



Type	External dimensions [mm]					Mounting [mm]										Mass approx. [kg]	Cover screws		
	A	B	C	K	K1	G	G1	G2	H	H1	H2	J	N	Schrauben	Mx		qty.	torque [Nm]	
SRM.26.26.16	260	260	160	174	310	310	225	295	212.5	225	295	212.5	7	8.5	5.8	M6	4	3 - 3.5	
SRM.31.31.16	310	310	160	174	360	360	275	345	262.5	275	345	262.5	7	8.5	8	M6	4	3 - 3.5	
SRM.38.38.22	380	380	220	234	430	430	345	415	332.5	345	415	332.5	7	8.5	11	M6	4	3 - 3.5	
SRM.38.48.22	380	480	220	234	530	530	345	415	332.5	445	515	432.5	7	8.5	13	M6	6	3 - 3.5	
SRL.40.60.22	400	600	220	234	650	450	365	435	352.5	565	635	552.5	7	8.5	15.5	M6	6	3 - 3.5	
SRL.48.48.22	480	480	220	234	530	530	445	515	432.5	445	515	432.5	7	8.5	16	M6	8	3 - 3.5	
SRL.48.76.22	480	760	220	234	810	530	445	515	432.5	725	795	712.5	7	8.5	22	M6	8	3 - 3.5	
SRL.60.60.26	600	600	260	274	650	650	565	670	552.5	565	635	552.5	7	8.5	24	M6	8	3 - 3.5	
SRX.80.80.30	800	800	300	314	900	900	765	870	752.5	765	870	752.5	7	8.5	34	M6	8	3 - 3.5	
SRX.90.60.30	900	600	300	314	700	100	865	970	852.5	565	670	552.5	7	8.5	33	M6	10	3 - 3.5	

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