Series SX302

Alphanumeric large size displays with PROFINET IO RT interface

Unit description (version 2.00)

1 Contact

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2 Legal note

This operation manual has been prepared with the utmost care. However, we do not accept any liability for possible errors. We always appreciate your suggestions for improvement, corrections, comments and proposals. Please contact us: editing@siebert-group.com

3 Safety precautions

Important information

Read these operating instructions before using the device. It contains important information on the use, safety and maintenance of the device. This helps you to protect yourself and prevent damage to the device.

Instructions that may lead to death, personal injury or considerable material damage if they are not followed or not followed correctly are highlighted by the warning triangle shown here.

The operating instructions are intended for trained professional electricians familiar with the safety standards of electrical technology and industrial electronics. The manufacturer is not liable if the information in these operating instructions is not complied with.

Store these operating instructions in an appropriate place.

Safety

Components inside the devices are energized with electricity during operation. For this reason, mounting and maintenance work may only be performed by qualified personnel in accordance with the relevant safety regulations.

The repair and replacement of components and modules may only be carried out by the manufacturer for safety reasons and due to the required compliance with the documented unit properties.

The devices do not have a power switch. They are in operation immediately after the operating voltage is applied.

Intended use

The devices are intended for use in industrial environments. They may only be operated within the limit values stipulated by the technical data.

When configuring, installing, maintaining and testing the devices, the safety and accident-prevention regulations relevant to use in each individual case must be complied with.

Trouble-free, safe operation of the units requires proper transport, storage, installation, mounting and careful operation and maintenance of the devices.

Mounting and installation

The attachment options for the units were conceived in such a way as to ensure safe, reliable mounting.

The user must ensure that the fastening material used, the device carrier and the anchoring at the unit device are sufficient for secure mounting under the given on-site conditions.

The devices are to be mounted in such a way that they can be opened up while mounted. Sufficient space for the cables must be available in the unit near the cable entries.

Sufficient space is to be kept clear around the devices to ensure air circulation and to prevent the build-up of heat resulting from use. The relevant information must be heeded in the case of units ventilated by other means.

When the housing fasteners are opened, the front frame of the housing hinges out upward or downward (depending on the unit version) automatically.

Grounding

All devices are equipped with a metal housing. They comply with safety class I and require a protective earth connection. The connecting cable for the operating voltage must contain a protective earth wire of a sufficient cross section (DIN VDE 0106 part 1, DIN VDE 0411 part 1).

EMC measures

The devices comply with the current EU Directive (EMC Directive) and provide the required interference immunity. Observe the following when connecting the operating voltage and data cables:

Use shielded data cables.

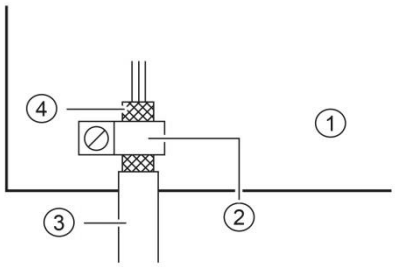
The data and operating voltage cables must be laid separately. They may not be laid together with heavy-current cables or other interference-producing cables.

The cable thickness must be properly assessed (DIN VDE 0100 Part 540).

The cable lengths inside the units are to be kept as short as possible to prevent interference. This applies especially to unshielded operating voltage cables. Shielded cables are also to be kept short due to any interference which might be emitted by the shielding.

Neither excessively long cables nor cable loops may be placed inside the units.

The connection of the cable shielding to the functional ground (PE) must be as short and low-impedance as possible. It should be made directly to the mounting plate over a large area with a conductive clip:



① mounting plate ② conductive clamp
③ data lines ④ cable shielding

The cable shielding is to be connected at both cable ends. If equipotential bonding currents are expected due to the cable arrangement, electrical isolation is to be performed on one side. In this case, capacitive connection (approx. 0.1µF/600 V AC) of the shielding on the isolated side must occur.

Disposal and return of old devices

Dispose the packing in an environmentally friendly manner. This device is subject to the European directive on waste electrical and electronic equipment (WEEE). The directive provides the framework for the EU-wide take-back and recycling of old appliances. Enquiries therefore should be sent by e-mail to the following e-mail address: info@siebert-group.com

Units or unit parts which are no longer needed are to be disposed of in accordance with the regulations in effect in your country. Personal data on the old appliances to be disposed of must be deleted by the user.

Table of contents

4 Model designation

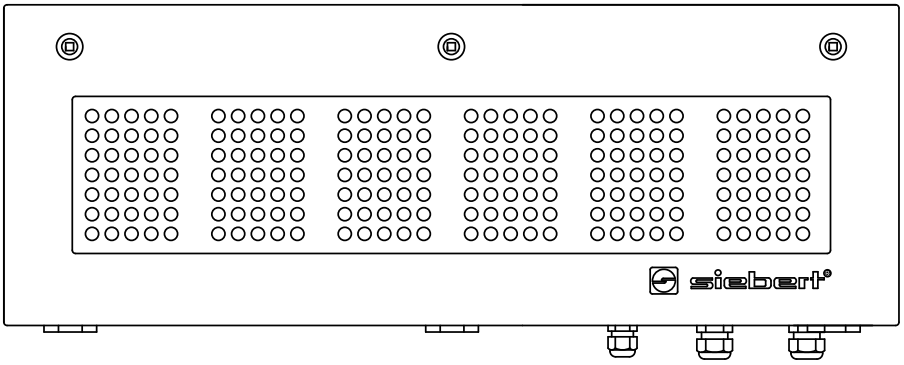
Model designation

This manual applies to units with the following model designation
(x = the 'x's in the model designation indicate the size and design of the units):

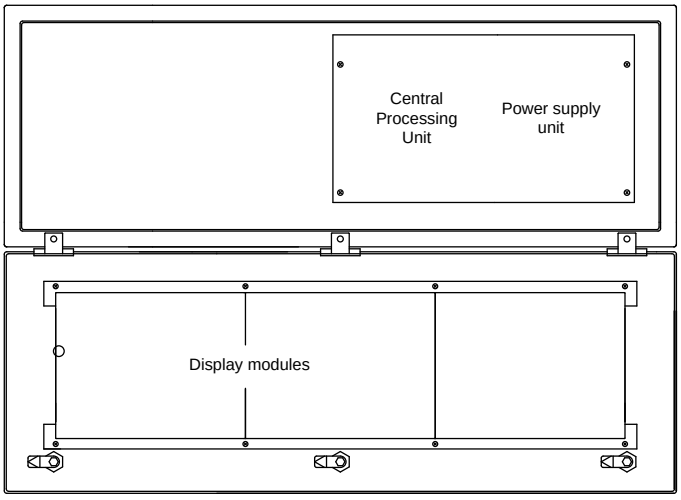
SX302-xx/xx/xx-xxx/xx-N0

Unit construction

The following figure shows model type SX302-06/10/xx-xxx/xx-xx as example for the other model types. The front frame of the housing is locked with quick-action releases. When opening the unit the front frame hinges downward.



The following figure shows the unit when open.



Units with double-sided display show the same information on the front and on the rear side.

5 PROFINET connection

The integration of the displays in PROFINET environments is described in the manual 'QuickStart for TIA Portal'.

The instructions and the GSDML file are available under the following link:

manuals.siebert-group.com/sx302-profinet

6 Technical data

Fieldbus

Interface	PROFINET IO RT, conformance class CC-B
MAC address	The MAC address for the PROFINET coupling is on the top side of the device.
Integrated switch	PROFINET IO IRT, conformance class CC-C

Power supply

The screw terminals for the power supply are located on the power supply unit in the lower part of the housing. They have the following designations:

Devices for power supply	115 V AC or 230 V AC	L, N, and PE
Devices for power supply	24 V DC	+, - and PE

Housing colors

Housing front frame	RAL 5002 ultramarine blue
Housing lower part	RAL 7035 light gray

Ambient conditions

Operating temperature	0…55 °C, with heating -20…55 °C
Storage temperature	-30…85 °C
Relative humidity	max. 95% (non-condensing)

7 Unit properties

The device version is coded in the type designation as follows:

SX302 – [ ][ ] / [ ][ ] / [0][ ] – [ ][ ][ ] / [ ][ ] – [N][0]

1 digit	0	1
2 digits	0	2
↓		↓
8 digits	0	8

Character heigt 50 mm	0	5
Character height 100 mm	1	0

Character color red	R
Character color green	G

Display readable on one side	1
Display readable on both sides	2

Steel sheet housing, powder-coated	0
Steel sheet housing, two-layer powder coated	1
Stainless steel housing V2A, powder.coated	2
Stainless steel housing V2A, brushed	3
Stainless steel housing V4A, brushed	5

Protection type IP54	0
Protection type IP65	1
Protection type IP54 with climate adjustment	2
Protection type IP54 with climate adjustment and heating	4

Wall mounting, cable entry point from the bottom	0
Wall mounting, cable entry point from the top	1
Hanging installation, cable entry point from the bottom	2
Hanging installation, cable entry point from the top	3
Wall mounting and hanging installation, cable entry point from the bottom	4
Wall mounting and hanging installation, cable entry point from the top	5

Power supply 230 V AC ±15 %, 50 Hz	A
Power supply 24 V DC ±15 %	B
Power supply 115 V AC ±15 %, 60 Hz	C

8 Power consumption

Units with one-sided display	[W]
1 digit	
SX302-x1/10/xx-1xx/xx-xx	8
2 digits	
SX302-x2/05/xx-1xx/xx-xx	8
SX302-x2/10/xx-1xx/xx-xx	10
3 digits	
SX302-x3/05/xx-1xx/xx-xx	9
SX302-x3/10/xx-1xx/xx-xx	12
4 digits	
SX302-x4/05/xx-1xx/xx-xx	10
SX302-x4/10/xx-1xx/xx-xx	13
5 digits	
SX302-x5/05/xx-1xx/xx-xx	11
SX302-x5/10/xx-1xx/xx-xx	14
6 digits	
SX302-x6/05/xx-1xx/xx-xx	13
SX302-x6/10/xx-1xx/xx-xx	17
7 digits	
SX302-x7/05/xx-1xx/xx-xx	15
SX302-x7/10/xx-1xx/xx-xx	19
8 digits	
SX302-x8/05/xx-1xx/xx-xx	17
SX302-x8/10/xx-1xx/xx-xx	22

Units with double-sided display	[W]
1 digit	
SX302-x1/10/xx-2xx/xx-xx	12
2 digits	
SX302-x2/05/xx-2xx/xx-xx	12
SX302-x2/10/xx-2xx/xx-xx	16
3 digits	
SX302-x3/05/xx-2xx/xx-xx	13
SX302-x3/10/xx-2xx/xx-xx	19
4 digits	
SX302-x4/05/xx-2xx/xx-xx	14
SX302-x4/10/xx-2xx/xx-xx	20
5 digits	
SX302-x5/05/xx-2xx/xx-xx	15
SX302-x5/10/xx-2xx/xx-xx	23
6 digits	
SX302-x6/05/xx-2xx/xx-xx	17
SX302-x6/10/xx-2xx/xx-xx	25
7 digits	
SX302-x7/05/xx-2xx/xx-xx	19
SX302-x7/10/xx-2xx/xx-xx	27
8 digits	
SX302-x8/05/xx-2xx/xx-xx	21
SX302-x8/10/xx-2xx/xx-xx	31

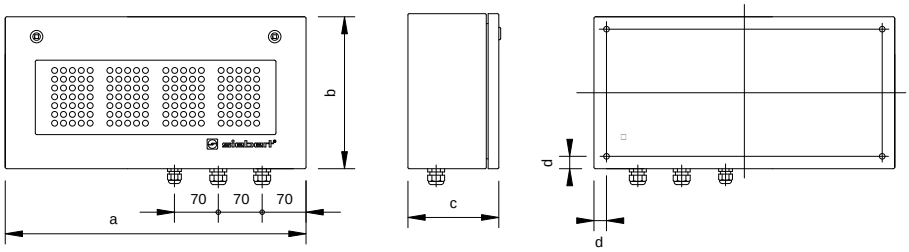
The specified values are approximate values and represent the average power consumption of the respective display. Depending on the interface, display of characters and brightness, higher values can also be achieved (up to +100%).

Depending on their size, devices with built-in heating have an approx. 10 W (approx. 30 W for devices with an operating voltage of 24 V DC ±15 %) higher power consumption.

9 Dimensions and weights

Units with one-sided display

The following figure shows unit version SX302-04/10/xx-1xx/xx-xx representing the other unit versions listed in the following table.

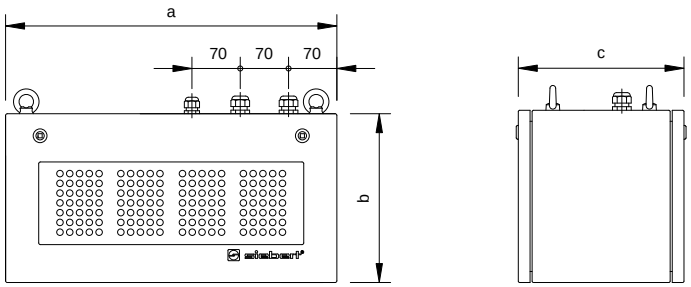


	a [mm]	b [mm]	c [mm]	d [mm]	Ø [mm]	Weight [kg][1)]
1 digit						
SX302-01/10/xx-1xx/xx-xx	330	245	110	16	7	6
2 digits						
SX302-02/05/xx-1xx/xx-xx	300	185	110	16	7	5
SX302-02/10/xx-1xx/xx-xx	330	245	110	16	7	6
3 digits						
SX302-03/05/xx-1xx/xx-xx	300	185	110	16	7	5
SX302-03/10/xx-1xx/xx-xx	480	245	110	16	7	8
4 digits						
SX302-04/05/xx-1xx/xx-xx	300	185	110	16	7	5
SX302-04/10/xx-1xx/xx-xx	480	245	110	16	7	8
5 digits						
SX302-05/05/xx-1xx/xx-xx	400	185	110	16	7	6
SX302-05/10/xx-1xx/xx-xx	680	245	110	16	7	10
6 digits						
SX302-06/05/xx-1xx/xx-xx	400	185	110	16	7	6
SX302-06/10/xx-1xx/xx-xx	680	245	110	16	7	10
7 digits						
SX302-07/05/xx-1xx/xx-xx	510	185	110	16	7	7
SX302-07/10/xx-1xx/xx-xx	870	245	110	16	7	12
8 digits						
SX302-08/05/xx-1xx/xx-xx	510	185	110	32	7	7
SX302-08/10/xx-1xx/xx-xx	870	245	110	32	7	12

[1)] The figures given are approximate values.

Units with double-sided display

The following figure shows unit version SX302-04/10/xx-2xx/xx-xx representing the other unit versions listed in the following table.



	a [mm]	b [mm]	c [mm]	Weight [kg][1)]
1 digit				
SX302-01/10/xx-2xx/xx-xx	330	245	150	9
2 digits				
SX302-02/05/xx-2xx/xx-xx	300	185	150	7
SX302-02/10/xx-2xx/xx-xx	330	245	170	9
3 digits				
SX302-03/05/xx-2xx/xx-xx	300	185	150	7
SX302-03/10/xx-2xx/xx-xx	480	245	170	12
4 digits				
SX302-04/05/xx-2xx/xx-xx	300	185	150	7
SX302-04/10/xx-2xx/xx-xx	480	245	170	12
5 digits				
SX302-05/05/xx-2xx/xx-xx	400	185	150	8
SX302-05/10/xx-2xx/xx-xx	680	245	170	15
6 digits				
SX302-06/05/xx-2xx/xx-xx	400	185	150	8
SX302-06/10/xx-2xx/xx-xx	680	245	170	15
7 digits				
SX302-07/05/xx-2xx/xx-xx	510	185	150	9
SX302-07/10/xx-2xx/xx-xx	870	245	170	18
8 digits				
SX302-08/05/xx-2xx/xx-xx	510	185	150	9
SX302-08/10/xx-2xx/xx-xx	870	245	170	18

[1)] The figures given are approximate values.