Operating instructions

Series SX302

Alphanumeric large size displays with Ethernet interface

MAC address: | | : | | : | | : | | : | | : | |

Site of the unit: _____

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Chapter 1 Safety precautions

Important information

Read these operating instructions before starting the unit. They provide you with important information on the use, safety and maintenance of the units. This helps you to protect yourself and prevent damage to the unit.

Information intended to help you to avoid death, bodily harm or considerable damage to property are highlighted by the warning triangle shown here; it is imperative that this information be properly heeded.

The operating instructions are intended for trained professional electricians familiar with the safety standards of electrical technology and industrial electronics.

Store these operating instructions in an appropriate place.

The manufacturer is not liable if the information in these operating instructions are not complied with.

Safety

Components inside the units are energized with electricity during operation. For this reason, mounting and maintenance work may only be performed by professionally-trained personnel while observing the corresponding 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 units do not have a power switch. They are operative as soon as the operating voltage is applied.

Intended use

The units 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 units, 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 units.

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 attachment hardware, the unit carrier and the anchoring at the unit carrier are sufficient to securely support the unit under the given surrounding conditions.

The units 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 infeed.

Sufficient space is to be kept clear around the units 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.

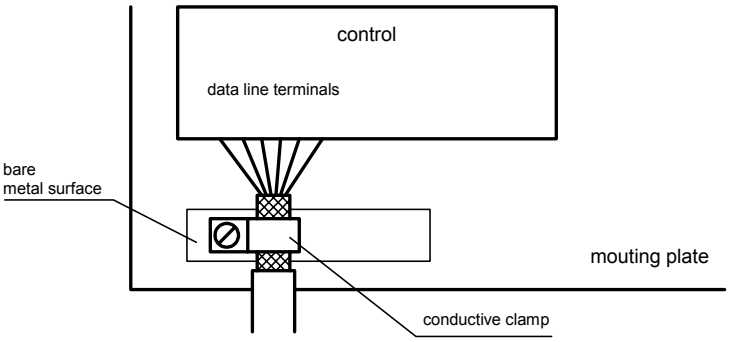
Grounding

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 EU Directive 89/336/EEC (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:



- 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

Units or unit parts which are no longer needed are to be disposed of in accordance with the regulations in effect in your country.

Model designation

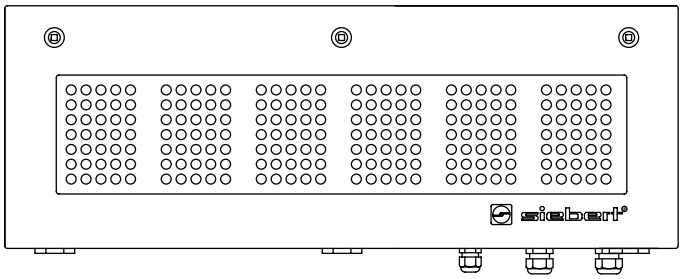
The model designation of the units is:

SX302-xx/xx/xx-xxx/xx-E0

x = The 'x's in the model designation indicate the size and design of the units (see Chapter 6).

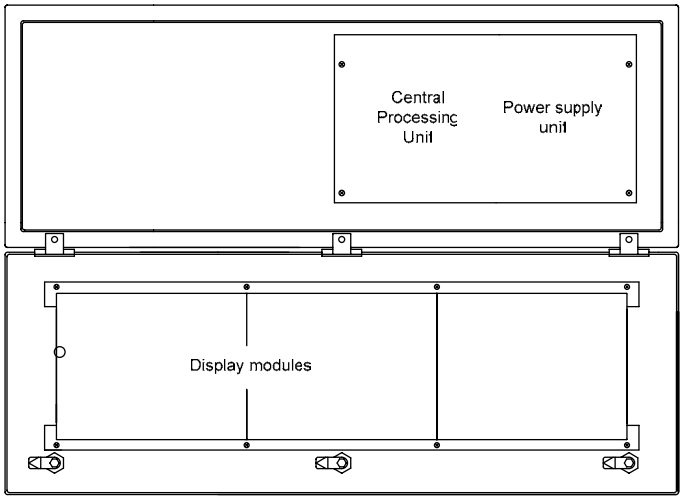
Unit construction

The following figure shows model type S302-06/10/xx-xxx/xx-xx as example for the other model types. The front frame of the housing is locked with quick-action releases and can be hinged downward for opening the unit.



The following figure shows the unit when open and reveals the modular construction of the units. All components, controls and connections are directly accessible.

The display modules are found inside the housing front frame. The control computer and power supply unit are located in the lower housing section.

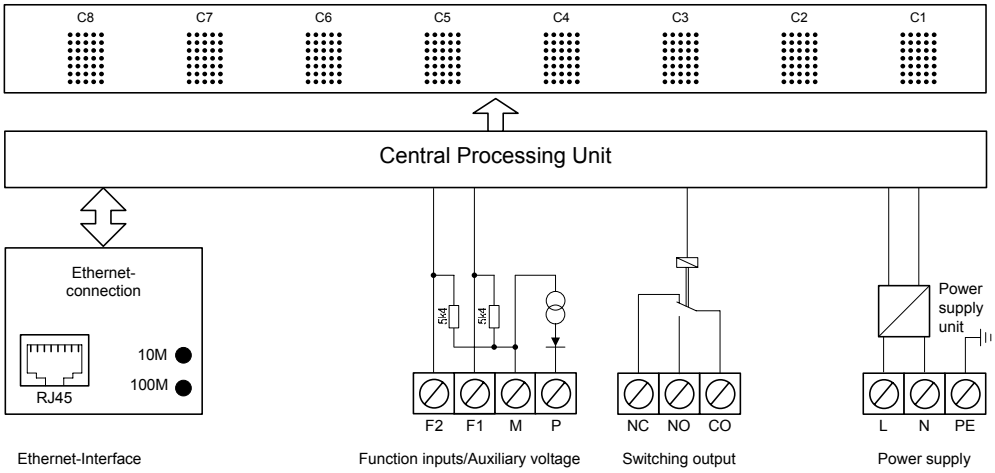


Display technology

Depending on the type, the units are provided with a light-emitting LED or light-reflecting LRD®- display:

- SX302-xx/xx/0x-xxx/xx-xx: LED display
  SX302-xx/xx/2x-xxx/xx-xx LED display for outdoor application
- SX302-xx/xx/4x-xxx/xx-xx LRD® display

Principle circuit



Display range

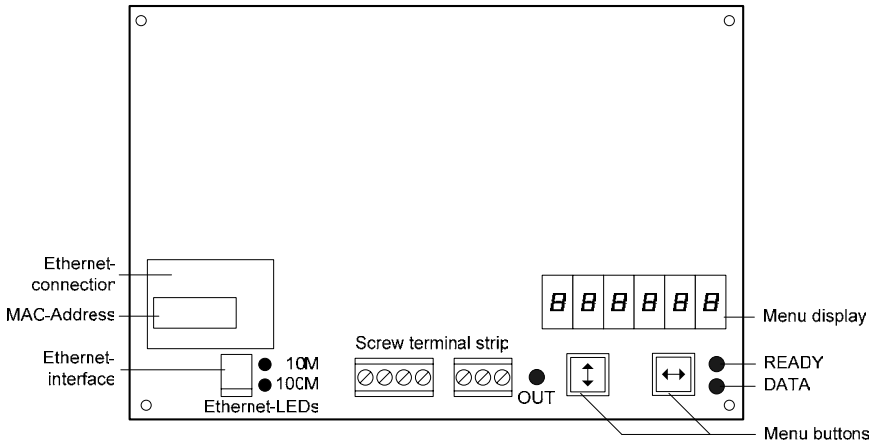
Depending on the type, the units have the following displays:

SX302-x1/xx/xx-xxx/xx-xx (1 digit): C1
SX302-x2/xx/xx-xxx/xx-xx (2 digits): C2…C1
SX302-x3/xx/xx-xxx/xx-xx (3 digits): C3…C1
SX302-x4/xx/xx-xxx/xx-xx (4 digits): C4…C1
SX302-x5/xx/xx-xxx/xx-xx (5 digits): C5…C1
SX302-x6/xx/xx-xxx/xx-xx (6 digits): C6…C1
SX302-x7/xx/xx-xxx/xx-xx (7 digits): C7…C1
SX302-x8/xx/xx-xxx/xx-xx (8 digits): C8…C1

Devices with double-sided display (SX302-xx/xx/xx-2xx/xx-xx) show the same information on the front and rear side.

Central Processing Unit

The following figure shows the Central Processing Unit:



Parameterization

The parameterization of the unit is done by means of a menu in the menu display (see chapter 4).

Ethernet interface

The Ethernet interface serves for activation of the devices (see chapter 4.) It is a standard-RJ45 socket and has the following specifications:

Data rate:	10/100 Mbps, Automatic detection
Galvanic separation:	1,5 kV
Supported protocols:	ICMP, ARP, IP, TCP, UDP, DHCP, Telnet and HTTP
Operation modes:	TCP Server, TCP Client and UDP
	The units are set-up as TCP server by default. The data is transmitted to port 8000 via a socket connection (factory settings). Other ports between 2000 and 9999 can be set via the menu (see chapter 4).
Configuration:	The basic configuration can be set up without external aids via the menu (see chapter 4). Further settings can be done via Web Browser or Telnet console (see chapter 5).

The Telnet and HTTP protocols are used exclusively for configuration, not for data transmission.

Function inputs

The function inputs allow, independently of commands via the Ethernet interface, a reduction the brightness and the flashing of the display (see chapter 3). It is located on the screw type terminal of the control computer.

The function inputs are PLC-compatible and are designed for the following signal voltages:

Signal voltage: L = -3.5...+5 V (open input = L)
H = +18...30 V (active H), M = reference potential

Auxiliary voltage

The units supply terminal P with an auxiliary voltage galvanically isolated from the operating voltage, which can serve as H signal (24 V ± 25%, max. 50 mA, M = reference potential).

Menu display

The menu display represents a menu for unit parameterization (see chapter 4).

During normal operation OnlinE appears in the menu display as soon as data arrive at the Ethernet interface.

Menu buttons

The menu can be operated by means of the menu buttons (see chapter 4).

Switching output

The devices dispose of a switching output (relay) with potential-free change-over contact (NC, NO, CO).

Status indicators

The status indicators (LEDs) of the central processing unit have the following function:

READY STAT: On = Ready for data transmission via Ethernet
Off = Address conflict on the Ethernet

DHCP: On = Ready for data transmission via Ethernet
Off = No DHCP server found

DATA Data are received

OUT Switching output is active

Ethernet-LEDs

The data transmission rate is detected automatically and displayed via the 100M and 10M Ethernet LEDs. A permanently lit LED signals a connection having the indicated speed. Flickering means additional data exchange.

Power supply

The power supply of the units is connected to the terminals L, N and PE. They are located on the power supply unit.

In devices for a power supply of 24 V (S302-xx/xx/xx-xxx/xB-xx), the terminals are designated with +, – and PE.

Chapter 3 Control

Activation commands

All commands and data telegrams require a telegram ending (*) with the characters CR, LF or CR/LF.

Network parameters

The network parameters can be set in the menu and no external aids are necessary. Once this has been done, the unit can be accessed via the network. Further settings can then be made via the network (see chapter 5).

In the IP menu item, static address assignment or DHCP must be selected.

In the I1...I4 menu items, the four bytes of the IP address are set, if static address assignment has been selected.

In the S1...S4 menu items, the four address bytes of the Subnet Mask are set, if static address assignment has been selected.

In the G1...G4 menu items, the four bytes of the standard gateway address are set, if static address assignment has been selected.

Upon resetting the factory settings (Default) in menu item U, DHCP will be activated.

After switching to static address assignment, the following addresses are set in-factory by default:

- IP-Address192.168.127.254
- Subnet Mask 255.255.255.000
- Standard-Gateway 192.168.127.001

Socket connection

The units are set up as TCP server by default. The data is transmitted to port 8000 via a socket connection (factory settings). Other ports between 2000 and 9999 can be set in menu item P (see chapter 4).

In menu item P, the decimal points of the port number flash one after the other. The digit with the decimal point flashing can be set to the value requested by means of the menu key [⇔].

Time-out

In menu item t, it is possible to set whether a time-out occurs, and if so, after what time. Time-out means that a minus sign appears on the display if the unit has not received a data telegram after a defined time.

Switching output

The devices dispose of a switching output (relay) with potential-free change-over contact (NC, NO, CO).

When setting OFF in menu item r, the switching output can be activated with the following command:

Activate switching contact: **$Q@1**
Deactivate switching contact: **$Q@0**

When setting 1, 2 or 4 in menu item r, the command **$Q@1** causes a wiping pulse at the switching output with a duration of 1, 2 or 4 seconds.

When setting A1, A2 or A4 in menu item r, the switching output automatically gives a wiping pulse with a duration of 1, 2 or 4 seconds with every telegram ending.

The relay switches after realized telegram ending.

The wiping function is suitable, for example, for activating optical and acoustic signal transmitters.

The status indicator OUT of the control computer is lighted with active switching output.

Display test

In menu item F, you can set whether a display test is to be performed after the operating voltage is applied.

The display test can be also activated via the serial interface with the following command:

Display test on : **$T1**
Display test off **$T0**

The display test has priority over blanking and flashing.

Demo operation mode

If the setting *PLAY* is selected in menu item F, random characters are displayed. In this case, it is impossible to activate the unit.

Flashing

Flashing of the display can be activated with the following command:

Flashing on: **$F1**
Flashing off: **$F0**

If**$F1** is sent in the data telegram, the succeeding digits will flash until the end of the data telegram or until**$F0** is sent in the data telegram.

Flashing of the display can also be activated by application of the H signal to functional input F1 (priority compared to the commands).

For units provided with an LRD® display flashing is not possible.

Brightness

The brightness of the display can be reduced with the following command:

Normal brightness: **`$L0`**
Reduced brightness: **`$L1`**

The brightness of the display can also be reduced with an H signal applied to functional input F2 (priority compared to the commands).

For units provided with an LRD® display brightness reduction is not possible.

Blanking

The display can be blanked with the following command (priority compared to flashing):

Blanking on: **`$B1`**
Blanking off: **`$B0`**

ESC sequences

The character <ESC> ($1B_h$) can be used in the command instead of the § character, e.g. **`<ESC>L1`** instead **`$L1`**.

Power-on reset

After power-on, minus signs are displayed to signalize that the unit is ready for operation. If a display test has been preselected in menu item F, it will run beforehand.

Charater set

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
2		!	"	#	$	%	&	'	(	)	*	+	,	-	.	/
3	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7	p	q	r	s	t	u	v	w	x	y	z	{	¦	}	~	⌂
8	€	ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ì	Ä	Å
9	É	æ	Æ	ô	ö	ò	û	ù	ÿ	Ö	Ü	¢	£	¥	₧	ƒ
A	á	í	ó	ú	ñ	Ñ	■	■	¿	⌐	¬	½	¼	¡	«	»
B	░	▒	▓	│	↑	↓	→	←	≡	■	■	■	■	■	■	Ё
C	А	Б	В	Г	Д	Е	Ж	З	И	Й	К	Л	М	Н	О	П
D	Р	С	Т	У	Ф	Х	Ц	Ч	Ш	Щ	Ъ	Ы	Ь	Э	Ю	Я
E	α	ß	Γ	π	Σ	σ	µ	τ	Φ	Θ	Ω	δ	∞	φ	ε	∩
F	≡	±	≥	≤	■	■	÷	≈	°	■	·	■	■	²	■	■

Chapter 4 Parameterization

Menu

The parameterization of the devices is carried out in a menu of the menu display.

During normal operation OnlinE appears in the menu display as soon as data arrive at the Ethernet interface.

Menu operation

To reach the menu, press both menu buttons simultaneously (approx. 1 sec.) until an audible signal is heard and menu item 01 appears in the menu display. Now, you can navigate in the menu as follows:

Next menu item:	Shortly press key [↕]
Page menu items forward:	Press key [↕] long
Previous menu item:	Double click on key [↕]
Page menu items backward:	Double click on [↕] and keep it pressed
Next setting	Shortly press key [↔]
Page settings forward:	Press key [↔] long
Previous setting	Double click on key [↔]
Page setting backward:	Double click on [↔] and keep it pressed

The menu ends in menu item Uwith the button [↕]. The settings made are either saved (set), not saved (escape) or the factory settings are reset, depending on the setting selected in menu item U.

Canceling the menu without saving the settings made is possible by pressing both menu buttons longer (approx. 1 sec.) or will occur automatically if 60 seconds pass without a menu button being pressed.

Once the menu is closed, the unit behaves in the same manner as when the operating voltage was applied.

In the menu mode the character Ξ appears in the main display. Control of the display is not possible in menu mode.

Menu item P

In menu item P, the decimal points of the port number flash one after the other. The digit with the decimal point flashing can be set to the value requested by means of the menu key [↔].

Menu table

The menu items are displayed in the following menu table. The factory settings are marked with an *. Individual menu items or settings can be suppressed in another menu item, depending on the unit version or setting.

Menu item		Settings		Menu display
IP	IP-Address	Static		IP StAt
		DHCP*		IP dHCP
I1	IP-Address	0		I.1 0
	Byte 1 (xxx.- . . - -)	↓	192*	↓
	192.168.127.254*	255		I.1 255
I2	IP-Address	0		I.2 0
	Byte 2 (- - -.xxx.- . - -)	↓	168*	↓
		255		I.2 255
I3	IP-Address	0		I.3 0
	Byte 3 (- - -.- - -.xxx.- - -)	↓	127*	↓
		255		I.3 255
I4	IP-Address	1		I.4 1
	Byte 4 (- - -.- . - -.xxx)	↓	254*	↓
		254		I.4 254
S1	Subnet Mask	0		S.1 0
	Byte 1 (xxx.- . . - -)	↓	255*	↓
	255.255.255.0*	255		S.1 255
S2	Subnet Mask	0		S.2 0
	Byte 2 (- - -.xxx.- . - -)	↓	255*	↓
		255		S.2 255
S3	Subnet Mask	0		S.3 0
	Byte 3 (- - -.- - -.xxx.- - -)	↓	255*	↓
		255		S.3 255
S4	Subnet Mask	1		S.4 1
	Byte 4 (- - -.- . - -.xxx)	↓	000*	↓
		255		S.4 255
G1	Standard-Gateway	0		G.1 0
	Byte 1 (xxx.- . . - -)	↓	192*	↓
	192.168.127.001*	255		G.1 255
G2	Standard-Gateway	0		G.2 0
	Byte 2 (- - -.xxx.- . - -)	↓	168*	↓
		255		G.2 255
G3	Standard-Gateway	0		G.3 0
	Byte 3 (- - -.- - -.xxx.- - -)	↓	127*	↓
		255		G.3 255
G4	Standard-Gateway	1		G.4 1
	Byte 4 (- - -.- . - -.xxx)	↓	001*	↓
		254		G.4 254
P	Port	2000…8000*…9999		P nnnn

Menu item		Settings	Menu display
R	Switching output	No wiping pulse*	r OFF
		Wiping pulse 1 sec	r 1
		Wiping pulse 2 sec	r 2
		Wiping pulse 4 sec	r 4
		Automatic wiping pulse 1 sec	r A1
		Automatic wiping pulse 2 sec	r A2
		Automatic wiping pulse 4 sec	r A4
T	Time-out	No time-out *	t 0
		Time-out after 2 s	t 2
		Time-out after 4 s	t 4
		Time-out after 8 s	t 8
		Time-out after 16 s	t 16
		Time-out after 32 s	t 32
		Time-out after 64 s	t 64
		Time-out after 128 s	t 128
F	Display test	No display test at power-on *	F ----
		Display test at power-on	F 8888
		Demo operation mode	F PLAY
U	Saving	Saving parameters* (Set)	U SEt
		Not saving parameters (Escape)	U ESC
		Resetting to the default settings (Default)	U dEF

MAC address

The MAC address of the unit is to be found on the Ethernet coupling of the control processor (see label). It is possibly needed for commissioning and should be written down on page 2 of this operating manual before the unit is mounted on a hardly accessible location.

Basic configuration

The basic configuration can be set up without external aids via the menu (see chapter 4). To integrate the unit in the network, either DHCP must be activated, or the static IP address, the relevant Subnet Mask and, if necessary, the IP address of the standard gateway must be set. These values are assigned by the system administrator and should be known before putting the unit into operation.

Configuration via network

As soon as the units can accessed via TCP/IP, additional configuration can take place via Telnet and HTTP. Access can be password-protected or can be deactivated, to prevent unauthorized operations. As-delivered and after setting the default in menu item U, access is enabled.

Additional information

The configuration dialogs are self-explanatory. For detailed information, please refer to the documentation of the Ethernet coupling (Moxa NE4100T type). For further information and PC tools, please go to *www.moxa.com*.

Basic setting

Via Telnet and HTTP the gateway can inadvertently be parameterized so that it is no longer accessible via the network. In this case the gateway can be rest in a defined status via menu and selection of default in menu item U (see chapter 4) and after resetting of the network parameters it can be accessed via network again.

Unit properties

The model designation is structured as follows:

SX302 – [ ][ ] / [ ][ ] / [ ][ ] – [ ][ ][ ] / [ ][ ] – M 0

	:	:	:	:	:	:	:	:	:	:	:	:	:	
1 digit	0	1	:	:	:	:	:	:	:	:	:	:	:	
2 digits	0	2	:	:	:	:	:	:	:	:	:	:	:	
3 digits	0	3	:	:	:	:	:	:	:	:	:	:	:	
4 digits	0	4	:	:	:	:	:	:	:	:	:	:	:	
5 digits	0	5	:	:	:	:	:	:	:	:	:	:	:	
6 digits	0	6	:	:	:	:	:	:	:	:	:	:	:	
7 digits	0	7	:	:	:	:	:	:	:	:	:	:	:	
8 digits	0	8	:	:	:	:	:	:	:	:	:	:	:	
			:	:	:	:	:	:	:	:	:	:	:	
Character height of 50 mm			0	5	:	:	:	:	:	:	:	:	:	
Character height of 100 mm			1	0	:	:	:	:	:	:	:	:	:	
					:	:	:	:	:	:	:	:	:	
LED					0	:	:	:	:	:	:	:	:	
LRD®					4	:	:	:	:	:	:	:	:	
						:	:	:	:	:	:	:	:	
Color of the characters red						R	:	:	:	:	:	:	:	
Color of the characters green						G	:	:	:	:	:	:	:	
Color of the characters white						W	:	:	:	:	:	:	:	
							:	:	:	:	:	:	:	
Display readable on one side							1	:	:	:	:	:	:	
Display readable on both sides							2	:	:	:	:	:	:	
								:	:	:	:	:	:	
Steel sheet housing, coated								0	:	:	:	:	:	
Steel sheet housing, bilayer painting								1	:	:	:	:	:	
Steel sheet housing V2A, coated								2	:	:	:	:	:	
Steel sheet housing V2A, brushed								3	:	:	:	:	:	
Steel sheet housing V4A, brushed								5	:	:	:	:	:	
									:	:	:	:	:	
Protection type IP54									0	:	:	:	:	
Protection type IP65									1	:	:	:	:	
Protection type IP54 climate adjustment									2	:	:	:	:	
Protection type IP54 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 and hanging installation, cable entry point from the bottom										4	:	:	:	
Wall 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	

Max. power consumption

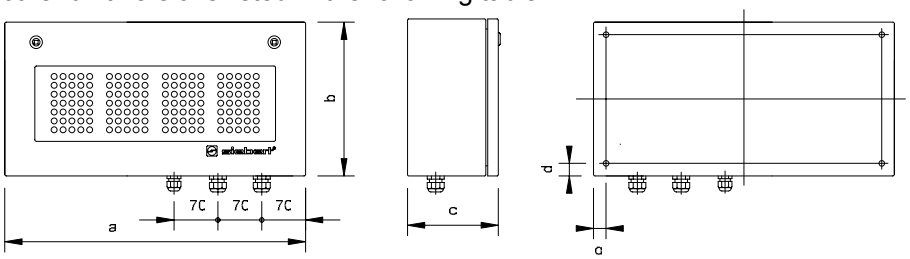
Units with one-side display		Units with double-sided display	
1 digit		1 digit	
SX302-01/10/0x-1xx/xx-xx	approx. 12 VA	SX302-01/10/0x-2xx/xx-xx	approx. 16 VA
SX302-01/10/4x-1xx/xx-xx	approx. 50 VA	SX302-01/10/4x-2xx/xx-xx	approx. 91 VA
2 digits		2 digits	
SX302-02/05/0x-1xx/xx-xx	approx. 12 VA	SX302-02/05/0x-2xx/xx-xx	approx. 15 VA
SX302-02/10/0x-1xx/xx-xx	approx. 15 VA	SX302-02/10/0x-2xx/xx-xx	approx. 21 VA
SX302-02/10/4x-1xx/xx-xx	approx. 50 VA	SX302-02/10/4x-2xx/xx-xx	approx. 91 VA
3 digits		3 digits	
SX302-03/05/0x-1xx/xx-xx	approx. 13 VA	SX302-03/05/0x-2xx/xx-xx	approx. 17 VA
SX302-03/10/0x-1xx/xx-xx	approx. 17 VA	SX302-03/10/0x-2xx/xx-xx	approx. 26 VA
SX302-03/10/4x-1xx/xx-xx	approx. 50 VA	SX302-03/10/4x-2xx/xx-xx	approx. 91 VA
4 digits		4 digits	
SX302-04/05/0x-1xx/xx-xx	approx. 14 VA	SX302-04/05/0x-2xx/xx-xx	approx. 19 VA
SX302-04/10/0x-1xx/xx-xx	approx. 21 VA	SX302-04/10/0x-2xx/xx-xx	approx. 33 VA
SX302-04/10/4x-1xx/xx-xx	approx. 50 VA	SX302-04/10/4x-2xx/xx-xx	approx. 91 VA
5 digits		5 digits	
SX302-05/05/0x-1xx/xx-xx	approx. 15 VA	SX302-05/05/0x-2xx/xx-xx	approx. 21 VA
SX302-05/10/0x-1xx/xx-xx	approx. 23 VA	SX302-05/10/0x-2xx/xx-xx	approx. 38 VA
SX302-05/10/4x-1xx/xx-xx	approx. 50 VA	SX302-05/10/4x-2xx/xx-xx	approx. 91 VA
6 digits		6 digits	
SX302-06/05/0x-1xx/xx-xx	approx. 16 VA	SX302-06/05/0x-2xx/xx-xx	approx. 23 VA
SX302-06/10/0x-1xx/xx-xx	approx. 26 VA	SX302-06/10/0x-2xx/xx-xx	approx. 43 VA
SX302-06/10/4x-1xx/xx-xx	approx. 50 VA	SX302-06/10/4x-2xx/xx-xx	approx. 91 VA
7 digits		7 digits	
SX302-07/05/0x-1xx/xx-xx	approx. 17 VA	SX302-07/05/0x-2xx/xx-xx	approx. 25 VA
SX302-07/10/0x-1xx/xx-xx	approx. 30 VA	SX302-07/10/0x-2xx/xx-xx	approx. 51 VA
SX302-07/10/4x-1xx/xx-xx	approx. 50 VA	SX302-07/10/4x-2xx/xx-xx	approx. 91 VA
8 digits		8 digits	
SX302-08/05/0x-1xx/xx-xx	approx. 18 VA	SX302-08/05/0x-2xx/xx-xx	approx. 27 VA
SX302-08/10/0x-1xx/xx-xx	approx. 32 VA	SX302-08/10/0x-2xx/xx-xx	approx. 55 VA
SX302-08/10/4x-1xx/xx-xx	approx. 50 VA	SX302-08/10/4x-2xx/xx-xx	approx. 91 VA

For units with built-in heating, the values for power consumption specified in the table increase by approx. 10 – 100 VA (exact values on request), depending on the unit size).

Switching output	Maximum switching voltage	30 V AC/DC
	Maximum switching current	500 mA (resistive load)
Screw type terminal	Control computer	Capacity of terminals 0,14…1,5 mm^2
	Power supply	Capacity of terminals 0,2…4 mm^2
Housing colors	Front pane	RAL 5002 ultramarine
	Front pane	RAL 7035 light grey
Front frame	SX302-xx/xx/xR-xxx/xx-xx	plastic, tinted red, non-reflective
	SX302-xx/xx/xG-xxx/xx-xx	plastic, tinted green, non-reflective
Ambient conditions	Operating temperature	0…55 °C
	Storage temperature	-30…85 °C
	Relative Feuchte	max. 95 % (non-condensing)

Units with one-side display

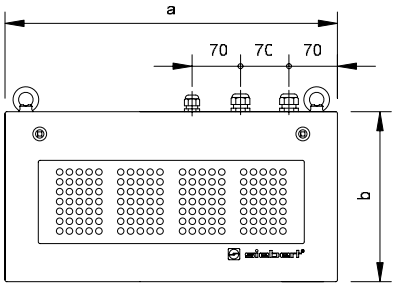
The following figure shows unit version S302-04/10/4x-1xx/xx-xx, representing the other unit versions listed in the following table.

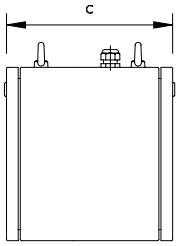


1 digit	A	B	C	D	ø	Weight
SX302-01/10/xx-1xx/xx-xx	330 mm	245 mm	145 mm	32 mm	7 mm	approx. 7 kg
2 digits						
SX302-02/05/xx-1xx/xx-xx	300 mm	185 mm	110 mm	32 mm	7 mm	approx. 5 kg
SX302-02/10/xx-1xx/xx-xx	330 mm	245 mm	145 mm	32 mm	7 mm	approx. 7 kg
3 digits						
SX302-03/05/xx-1xx/xx-xx	300 mm	185 mm	110 mm	32 mm	7 mm	approx. 5 kg
SX302-03/10/xx-1xx/xx-xx	480 mm	245 mm	145 mm	32 mm	7 mm	approx. 9 kg
4 digits						
SX302-04/05/xx-1xx/xx-xx	300 mm	185 mm	110 mm	32 mm	7 mm	approx. 5 kg
SX302-04/10/xx-1xx/xx-xx	480 mm	245 mm	145 mm	32 mm	7 mm	approx. 9 kg
5 digits						
SX302-05/05/xx-1xx/xx-xx	400 mm	185 mm	110 mm	32 mm	7 mm	approx. 6 kg
SX302-05/10/xx-1xx/xx-xx	680 mm	245 mm	145 mm	32 mm	7 mm	approx. 12 kg
6 digits						
SX302-06/05/xx-1xx/xx-xx	400 mm	185 mm	110 mm	32 mm	7 mm	approx. 6 kg
SX302-06/10/xx-1xx/xx-xx	680 mm	245 mm	145 mm	32 mm	7 mm	approx. 12 kg
7 digits						
SX302-07/05/xx-1xx/xx-xx	510 mm	185 mm	110 mm	32 mm	7 mm	approx. 7 kg
SX302-07/10/xx-1xx/xx-xx	870 mm	245 mm	145 mm	32 mm	7 mm	approx. 14 kg
8 digits						
SX302-08/05/xx-1xx/xx-xx	510 mm	185 mm	110 mm	32 mm	7 mm	approx. 7 kg
SX302-08/10/xx-1xx/xx-xx	870 mm	245 mm	145 mm	32 mm	7 mm	approx. 14 kg

Units with double-sided display

The following figure shows unit version S302-04/10/4x-2xx/xx-xx, representing the other unit versions listed in the following table.





Units with character height of 50 mm (SX302-xx/06/xx-2xx/xx-xx) are provided with 2 eyes instead of 4.

1 digit	A	B	C	Weight
SX302-01/10/xx-2xx/xx-xx	330 mm	245 mm	240 mm	approx. 11 kg
2 digits				
SX302-02/05/xx-2xx/xx-xx	300 mm	185 mm	150 mm	approx. 9 kg
SX302-02/10/xx-2xx/xx-xx	330 mm	245 mm	240 mm	approx. 11 kg
3 digits				
SX302-03/05/xx-2xx/xx-xx	300 mm	185 mm	150 mm	approx. 9 kg
SX302-03/10/xx-2xx/xx-xx	480 mm	245 mm	240 mm	approx. 15 kg
4 digits				
SX302-04/05/xx-2xx/xx-xx	300 mm	185 mm	150 mm	approx. 9 kg
SX302-04/10/xx-2xx/xx-xx	480 mm	245 mm	240 mm	approx. 15 kg
5 digits				
SX302-05/05/xx-2xx/xx-xx	400 mm	185 mm	150 mm	approx. 9 kg
SX302-05/10/xx-2xx/xx-xx	680 mm	245 mm	240 mm	approx. 19 kg
6 digits				
SX302-06/05/xx-2xx/xx-xx	400 mm	185 mm	150 mm	approx. 9 kg
SX302-06/10/xx-2xx/xx-xx	680 mm	245 mm	240 mm	approx. 19 kg
7 digits				
SX302-07/05/xx-2xx/xx-xx	510 mm	185 mm	150 mm	approx. 11 kg
SX302-07/10/xx-2xx/xx-xx	870 mm	245 mm	240 mm	approx. 23 kg
8 digits				
SX302-08/05/xx-2xx/xx-xx	510 mm	185 mm	150 mm	approx. 11 kg
SX302-08/10/xx-2xx/xx-xx	870 mm	245 mm	240 mm	approx. 23 kg