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**Operating instructions**

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**Series SX302**

**Alphanumeric large size displays  
with serial interface**

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**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.

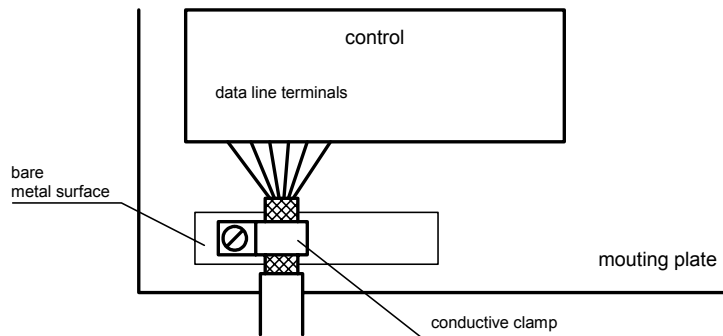
## Grounding

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).

## EMV-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.  $0.1\mu\text{F}/600\text{ V AC}$ ) 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.

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**Chapter 2** **Unit description**


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**Model designation**

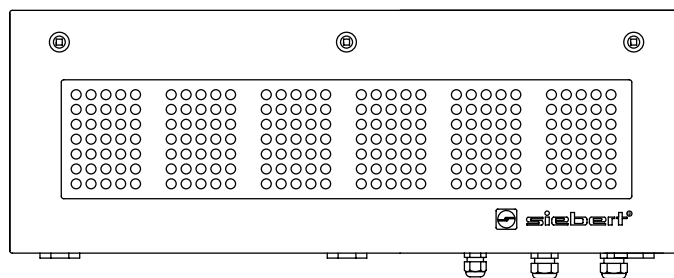
The model designation of the units is:

- SX302-xx/xx/xx-xxx/xx-S0 (Interface RS485/RS232)
- SX302-xx/xx/xx-xxx/xx-T0 (Interface TTY 20mA/RS232)

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

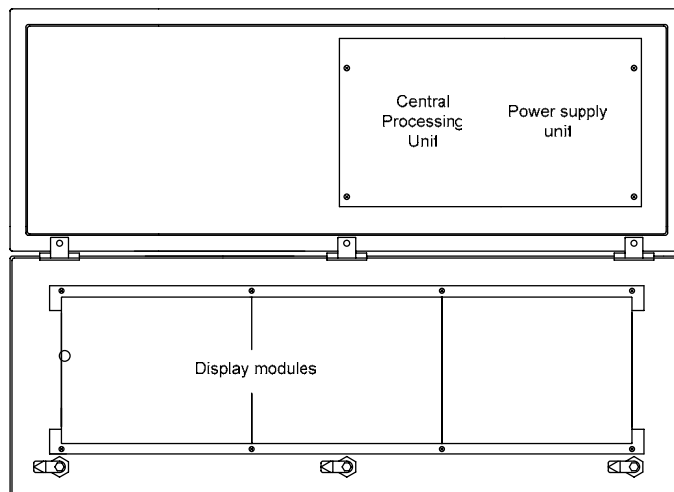
**Unit construction**

The following figure shows model type 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 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.

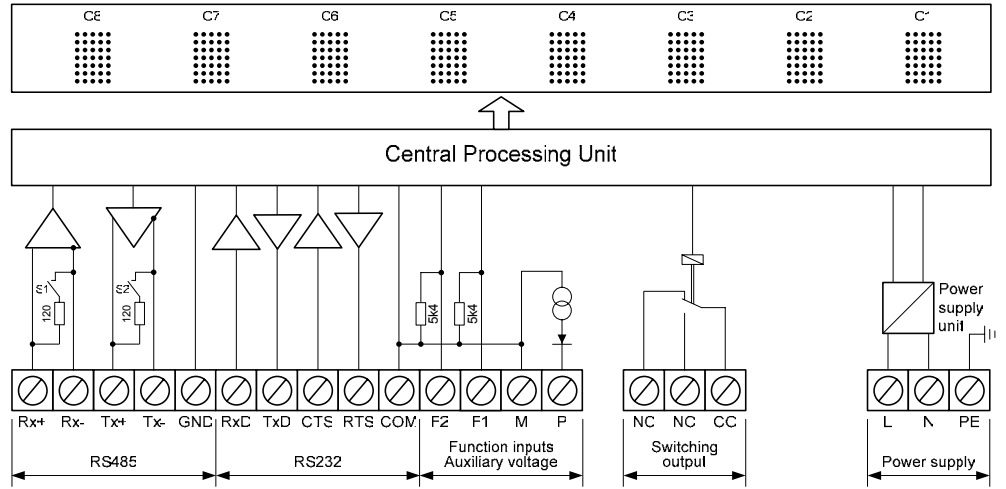

**Display technology**

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

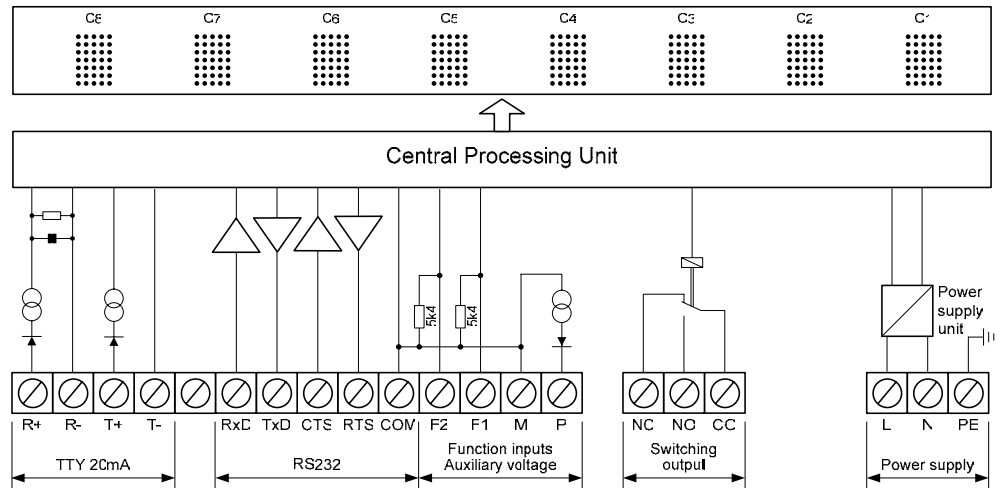
- SX302-xx/xx/0x-xxx/xx-xx: LED display
- SX302-xx/xx/4x-xxx/xx-xx: LRD<sup>®</sup> display

Principle circuit diagram

Units with interface RS485/RS232 (SX302-xx/xx/xx-xxx/xx-S0)



Units with interface TTY 20mA/RS232 (SX302-xx/xx/xx-xxx/xx-T0)



Display range

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

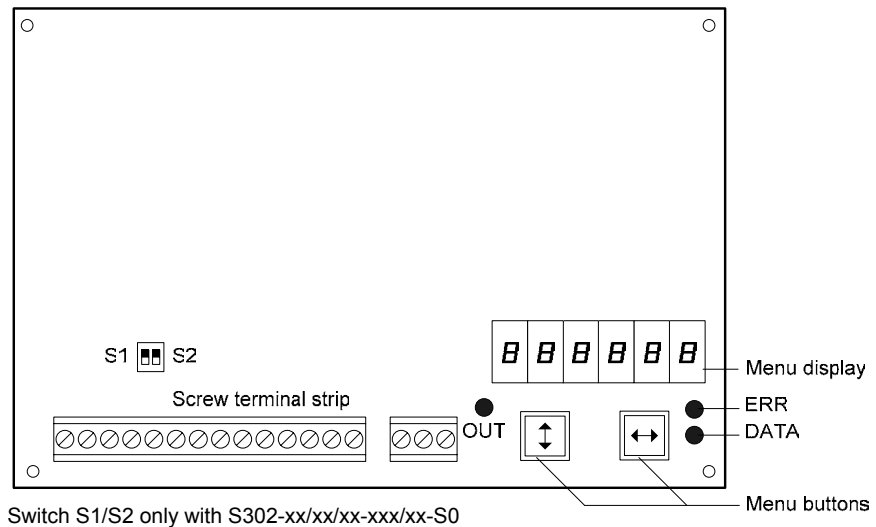
- SX302-01/xx/xx-xxx/xx-xx (1 digit): C1
- SX302-02/xx/xx-xxx/xx-xx (2 digits): C2...C1
- SX302-03/xx/xx-xxx/xx-xx (3 digits): C3...C1
- SX302-04/xx/xx-xxx/xx-xx (4 digits): C4...C1
- SX302-05/xx/xx-xxx/xx-xx (5 digits): C5...C1
- SX302-06/xx/xx-xxx/xx-xx (6 digits): C6...C1
- SX302-07/xx/xx-xxx/xx-xx (7 digits): C7...C1
- SX302-08/xx/xx-xxx/xx-xx (8 digits): C8...C1

The 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:



## Serial Interface

The serial interface is located on the screw-type terminal strip of the control computer. Depending on the device model, it has the following formats:

- S302-xx/xx/xx-xxx/xx-S0: RS485 and RS232

The switches S1 (Tx) and S2 (Rx) serve for locking the data lines (see chapter 5).

- S302-xx/xx/xx-xxx/xx-T0: TTY 20mA and RS232

Preferably, the interfaces RS485 or TTY 20 mA are to be used for activation. They are galvanically isolated from all other electric circuits and provide the best preconditions for a reliable and safe operation of the devices due to its physical characteristics.

The interface RS232 is determined for testing purposes and is not recommended for activation because of its physical properties.

The interface format and the interface parameters are set in a menu (see chapter 4).

## Auxiliary voltage

The units supply terminal P with an auxiliary voltage galvanically isolated from the operating voltage ( $24\text{ V} \pm 20\%$ , max. 50 mA, M = reference potential). It can be used for supplying power to the current loop or as H signal.

## Function inputs

The functional inputs allow, independently of commands, via Ethernet interface to reduce the brightness and 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 =  $-3.5\dots+5\text{ V}$  (open input = L)

H =  $+18\dots30\text{ V}$  (active H), M = reference potential

## Menu display

The menu display represents a menu for unit parameterization (see chapter 5). During normal operation *Online* appears in the menu display as soon as data arrive at the serial interface.

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: DATA Data are received ERR Error in the data format OUT Switching output is active
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 (SX302-xx/xx/xx-xxx/xB-xx), the terminals are designated with +, – and PE.

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### Chapter 3

### Control

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Parameterization	The units must be parameterized before they can be controlled. Parameterization occurs in a menu (see Chapter 4).
Interface format	Select in menu item 1 between the interface formats which are available in the unit. In the interface format RS485, you can select several settings in the menu item 1. Which settings are to be selected is described in chapter 5.
Interface parameter	Data format, parity, baud rate, protocol and protocol reply are set in menu items 2 to 6. If the format RS232 is selected in menu item 1, the RTS/CTS handshake is always active. If protocol 3964 is selected in menu item 5, 8 bit data format and even parity are set automatically. If setting 'Echo' is selected in menu item 6, the unit transmits the received data telegrams via the serial interface.
Ignore characters	If the characters to be represented in the display do not start on the first data telegram position, in menu item 7 you can set how many preceding characters have to be ignored.
Addressing	If no addressing is desired, select the setting 0 in menu item 8. If the devices are to be selectively addressable, they receive an individual address. In menu item 8, it is defined if the address has one, two or three digits. In menu item 9, the address is set (1...999). The address 0 is reserved as broadcast address, with which all devices are addressed. If the device receives the address 0, it does not send back a telegram reply. If the address 0 is set in menu item 9, the device is addressed with any address but it does not send back a telegram reply.

Time-out	<p>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.</p>
Switching output	<p>The devices dispose of a switching output (relay) with potential-free change-over contact (NC, NO, CO).</p> <p>When setting OFF in menu item r, the switching output can be activated with the following command:</p> <p>Activate switching contact: <b>\$Q@1</b> Deactivate switching contact: <b>\$Q@0</b></p> <p>When setting 1, 2 or 4 in menu item r, the command <b>\$Q@1</b> causes a wiping pulse at the switching output with a duration of 1, 2 or 4 seconds.</p> <p>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.</p> <p>The relay switches after realized telegram ending.</p> <p>The wiping function is suitable, for example, for activating optical and acoustic signal transmitters.</p> <p>The status indicator OUT of the control computer is lighted with active switching output.</p>
Display test	<p>In menu item F, you can set whether a display test is to be performed after the operating voltage is applied.</p> <p>The display test can be also activated via the serial interface with the following command:</p> <p>Display test on: <b>\$T1</b> Display test off: <b>\$T0</b></p> <p>The display test has priority over blanking and flashing.</p>
Demo operation mode	<p>If the setting <i>PLAY</i> is selected in menu item F, random characters are displayed. In this case, it is impossible to activate the unit.</p>
Flashing	<p>Flashing of the display can be activated with the following command:</p> <p>Flashing on: <b>\$F1</b> Flashing off: <b>\$F0</b></p> <p>If <b>\$F1</b> is sent in the data telegram, the succeeding digits will flash until the end of the data telegram or until <b>\$F0</b> is sent in the data telegram.</p> <p>Flashing of the display can also be activated by application of the H signal to functional input F1 (priority compared to the commands).</p> <p>For units provided with an LRD® display flashing is not possible.</p>
Brightness reduction	<p>The brightness of the display can be reduced with the following command:</p> <p>Normal brightness: <b>\$L0</b> Reduced brightness: <b>\$L1</b></p> <p>The brightness of the display can also be reduced with an H signal applied to functional input F2 (priority compared to the commands).</p> <p>For units provided with an LRD® display brightness reduction is not possible.</p>

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<sub>n</sub>) 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	{		}	~	Δ
8	€	ç	é	ä	å	à	á	ç	è	ê	ë	ì	í	î	ï	À
9	É	×	È	ó	ö	ó	ó	ó	ó	ó	ó	ó	ó	ó	ó	ó
A	á	í	ó	ó	ó	ó	ó	ó	ó	ó	ó	ó	ó	ó	ó	ó
B	ó	ó	ó	ó	ó	ó	ó	ó	ó	ó	ó	ó	ó	ó	ó	ó
C	À	Á	Â	Ã	Ä	Å	Æ	Ç	Ð	Ñ	Ò	Ó	Ô	Õ	Ö	Ø
D	Ð	Ç	Т	У	Ф	Х	Ц	Ч	Ш	Щ	Ъ	Ы	Ь	Э	Ю	Я
E	α	β	γ	π	Σ	σ	μ	τ	θ	ε	Ω	δ	φ	∅	ε	n
F	≡	±	≥	≤	=	=	÷	×	°	=	=	=	=	=	=	=

Setting 0 activates the standard character set in menu item E.

In menu item E, the Cyrillic characters BFh to DFh are displayed on the digits of characters 5Fh to 7Fh in setting 1.

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## Chapter 4 Parameterization

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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 serial 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 U with 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  $\bar{\text{E}}$  appears in the main display. Control of the display is not possible in menu mode.

#### 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
1 Serial Interface	RS232	1 232
	RS485	1 485
	RS485 (4-wire bus)	1 4854
	RS485 (2-wire bus)	1 4852
	TTY 20mA	1 444
2 Data format	7 Bit + even and odd parity	2 7b $\bar{\text{E}}$
	8 bit*	2 8b $\bar{\text{E}}$
3 Parity	none*	3 non $\bar{\text{E}}$
	odd	3 odd
	even	3 E $\bar{\text{U}}$ $\bar{\text{E}}$ n
4 Baud rate	1200	4 1200
	2400	4 2400
	4800	4 4800
	9600*	4 9600
	19200	4 192
5 protocol	CR/LF*	5 CrLF
	STX/ETX	5 S-E
6 protocol reply	none*	6 non $\bar{\text{E}}$
	ACK/NAK	6 R $\bar{\text{C}}$ n $\bar{\text{R}}$
	Echo	6 ECHO

<b>Menu item</b>	<b>Settings</b>	<b>Menu display</b>
7	Individual characters	Ignore no character*
	Individual characters	Ignore first character
		Ignore first 2 characters
		Ignore first 3 characters
		↓
	Ignore first 99 characters	
8	Address length	No Addressing*
		1 digit
		2 digits
		3 digits
9	Address	Address 0
		Address 1
		↓
	Address 999	
T	Time-out	No time-out *
		Time-out after 2 s
		Time-out after 4 s
		Time-out after 8 s
		Time-out after 16 s
		Time-out after 32 s
		Time-out after 64 s
		Time-out after 128 s
R	Switching output	No wiping pulse*
		Wiping pulse 1 sec
		Wiping pulse 2 sec
		Wiping pulse 4 sec
		Automatic wiping pulse 1 sec
		Automatic wiping pulse 2 sec
		Automatic wiping pulse 4 sec
E	Charater set	Standard*
		Cyrillic
F	Display test	No display test at power-on *
		Display test at power-on
		Demo operation mode
U	Saving	Saving parameters* (Set)
		Not saving parameters (Escape)
		Resetting to the default settings (Default)

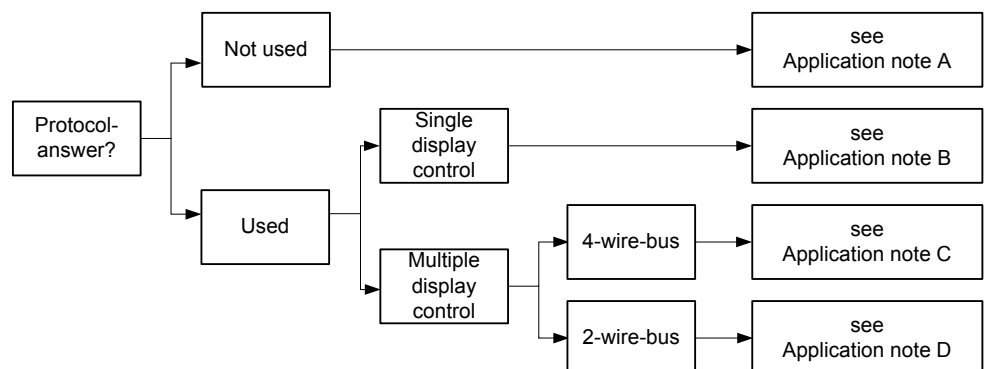
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**Chapter 5**      **Notes on RS485 interface configuration**


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**Parameterization**      The units must be parameterized before they can be controlled. Parameterization occurs in a menu (see Chapter 4).

**Menu settings**      The interface format RS485 allows the settings *4B5*, *4B54* and *4B52* in the menu item 1. The selected setting depends on whether the protocol reply is to be sent by the display:



If the display should not send a protocol reply (normal case), application example A applies for activating one or more displays.

If a protocol reply is expected, a differentiation has to be made whether one single unit or more units are to be activated. If one single unit is activated, application example B is valid.

If several units are to be activated, a bus wiring is necessary. You have to differentiate, if a 4-wire bus (full-duplex) or a 2-wire bus (half-duplex) is used. Application example C applies for 4-wire bus and application example D applies for 2-wire bus.

**Data lines**      To achieve the highest possible interference immunity, the data lines of the RS485 have to be terminated on both ends. The required resistors are provided in the unit and can be connected on the screw terminal strip with the jumpers S1 (Tx) and S2 (Rx) (see block diagram).

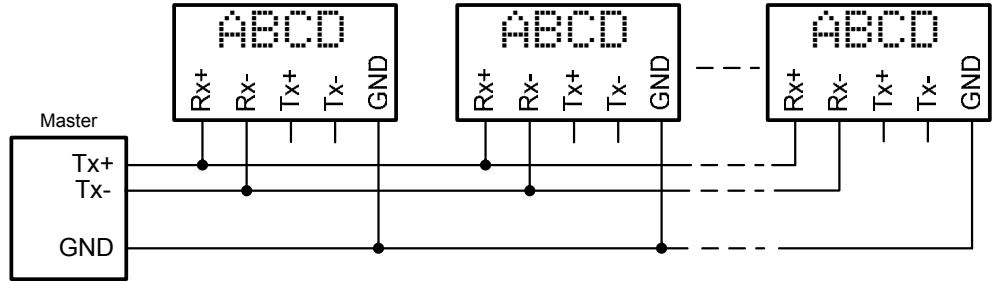
The polarization of the data lines must be ensured by means of the master.

For the data lines, you always have to ensure that:

- Shielded twisted-pair cables of sufficiently large cross-section are used.
- The shielding is connected on both line ends.
- For the signal ground (COM) use a wire pair short-circuited on both ends in the data cable. The shielding may not be used as the signal ground.
- A twisted core pair is used each for Tx+ and Tx- and for Rx+ and Rx-. Non-observance of this instruction causes the protective function of the twisted-pair cable to be lost.
- Improperly terminated data lines cause faults during data transfer.

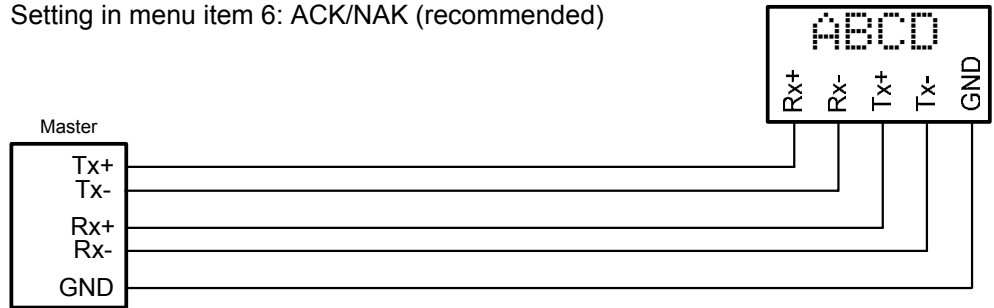
Application example A

Setting in menu item 1: RS485  
 Setting in menu item 6: No protocol reply



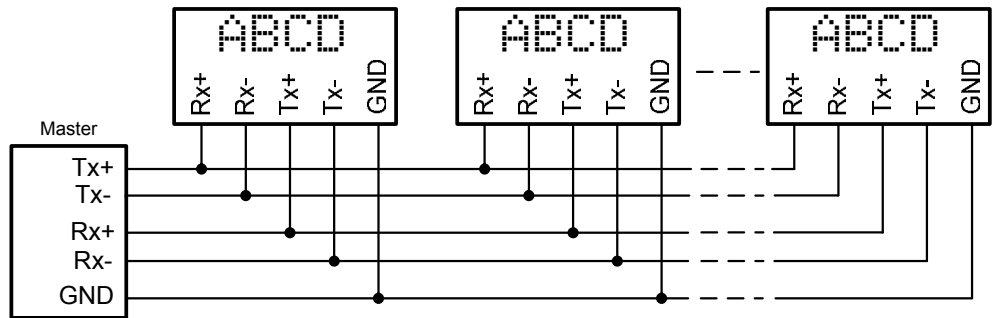
Application example B

Setting in menu item 1: RS485  
 Setting in menu item 6: ACK/NAK (recommended)



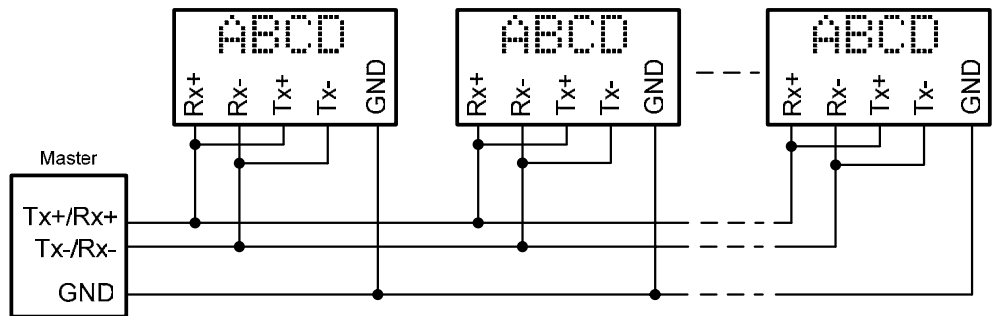
Application example C

Setting in menu item 1: RS485.4  
 Setting in menu item 6: ACK/NAK



Application example D

Setting in menu item 1: RS485.2  
 Setting in menu item 6: ACK/NAK





Unit properties

The model designation is structured as follows:

SX302	-	<input type="text"/>	/	<input type="text"/>	/	<input type="text"/>	-	<input type="text"/>	/	<input type="text"/>	-	<input type="text"/>
		:	:	:	:	:	:	:	:	:	:	:
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	:	:	:	:	:	:	:	:	:	:
		:	:	:	:	:	:	:	:	:	:	:
Interface RS485/RS232			S	0	:	:	:	:	:	:	:	:
Interface TTY 20mA/RS232			T	0	:	:	:	:	:	:	:	:

## Max. power consumption

### Units with one-side display

1 digit	
SX302-01/10/0x-1xx/xx-xx	approx. 12 VA
SX302-01/10/4x-1xx/xx-xx	approx. 50 VA
2 digits	
SX302-02/05/0x-1xx/xx-xx	approx. 12 VA
SX302-02/10/0x-1xx/xx-xx	approx. 15 VA
SX302-02/10/4x-1xx/xx-xx	approx. 50 VA
3 digits	
SX302-03/05/0x-1xx/xx-xx	approx. 13 VA
SX302-03/10/0x-1xx/xx-xx	approx. 17 VA
SX302-03/10/4x-1xx/xx-xx	approx. 50 VA
4 digits	
SX302-04/05/0x-1xx/xx-xx	approx. 14 VA
SX302-04/10/0x-1xx/xx-xx	approx. 21 VA
SX302-04/10/4x-1xx/xx-xx	approx. 50 VA
5 digits	
SX302-05/05/0x-1xx/xx-xx	approx. 15 VA
SX302-05/10/0x-1xx/xx-xx	approx. 23 VA
SX302-05/10/4x-1xx/xx-xx	approx. 50 VA
6 digits	
SX302-06/05/0x-1xx/xx-xx	approx. 16 VA
SX302-06/10/0x-1xx/xx-xx	approx. 26 VA
SX302-06/10/4x-1xx/xx-xx	approx. 50 VA
7 digits	
SX302-07/05/0x-1xx/xx-xx	approx. 17 VA
SX302-07/10/0x-1xx/xx-xx	approx. 30 VA
SX302-07/10/4x-1xx/xx-xx	approx. 50 VA
8 digits	
SX302-08/05/0x-1xx/xx-xx	approx. 18 VA
SX302-08/10/0x-1xx/xx-xx	approx. 32 VA
SX302-08/10/4x-1xx/xx-xx	approx. 50 VA

### Units with double-sided display

1 digit	
SX302-01/10/0x-2xx/xx-xx	approx. 16 VA
SX302-01/10/4x-2xx/xx-xx	approx. 91 VA
2 digits	
SX302-02/05/0x-2xx/xx-xx	approx. 15 VA
SX302-02/10/0x-2xx/xx-xx	approx. 21 VA
SX302-02/10/4x-2xx/xx-xx	approx. 91 VA
3 digits	
SX302-03/05/0x-2xx/xx-xx	approx. 17 VA
SX302-03/10/0x-2xx/xx-xx	approx. 26 VA
SX302-03/10/4x-2xx/xx-xx	approx. 91 VA
4 digits	
SX302-04/05/0x-2xx/xx-xx	approx. 19 VA
SX302-04/10/0x-2xx/xx-xx	approx. 33 VA
SX302-04/10/4x-2xx/xx-xx	approx. 91 VA
5 digits	
SX302-05/05/0x-2xx/xx-xx	approx. 21 VA
SX302-05/10/0x-2xx/xx-xx	approx. 38 VA
SX302-05/10/4x-2xx/xx-xx	approx. 91 VA
6 digits	
SX302-06/05/0x-2xx/xx-xx	approx. 23 VA
SX302-06/10/0x-2xx/xx-xx	approx. 43 VA
SX302-06/10/4x-2xx/xx-xx	approx. 91 VA
7 digits	
SX302-07/05/0x-2xx/xx-xx	approx. 25 VA
SX302-07/10/0x-2xx/xx-xx	approx. 51 VA
SX302-07/10/4x-2xx/xx-xx	approx. 91 VA
8 digits	
SX302-08/05/0x-2xx/xx-xx	approx. 27 VA
SX302-08/10/0x-2xx/xx-xx	approx. 55 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<sup>2</sup>  
Power supply Capacity of terminals 0,2...4 mm<sup>2</sup>

## Housing colors

Front pane: RAL 5002 ultramarine  
Bottom part of the unit: RAL 7035 light grey

## Front frame

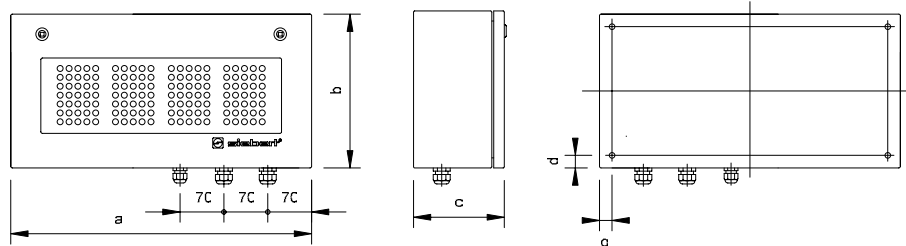
SX302-xx/xx/xR-xxx/xx-xx plastic, tinted red, non-reflective  
SX302-xx/xx/xG-xxx/xx-xx plastic, tinted green, non-reflective

## Ambient conditions

Operating temperature: 0...55 °C  
Storage temperature: -30...85 °C  
Relative humidity: max. 95 % (non-condensing)

Units with one-side display

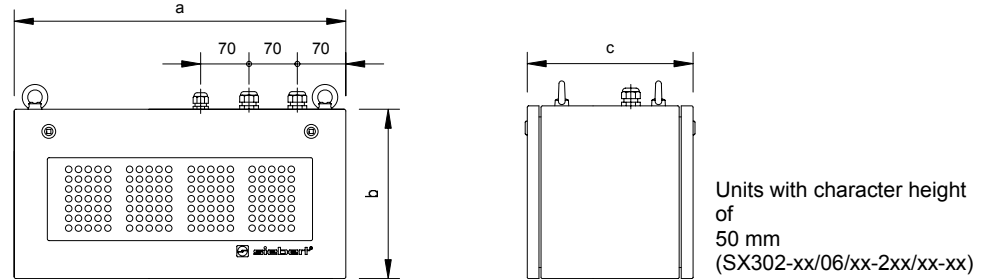
The following figure shows unit version S302-04/10/4x-1xx/xx-xx, representing the other unit versions listed in the following table.



	A	B	C	D	ø	Weight
<b>1 digit</b>						
SX302-01/10/xx-1xx/xx-xx	330 mm	245 mm	145 mm	32 mm	7 mm	approx. 7 kg
<b>2 digits</b>						
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
<b>3 digits</b>						
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. 7 kg
<b>4 digits</b>						
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
<b>5 digits</b>						
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
<b>6 digits</b>						
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
<b>7 digits</b>						
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
<b>8 digits</b>						
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.



1 digit	A	B	C	Weight
SX302-01/10/xx-2xx/xx-xx	330 mm	245 mm	240 mm	approx. 11 kg
<b>2 digits</b>				
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
<b>3 digits</b>				
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
<b>4 digits</b>				
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. 16 kg
<b>5 digits</b>				
SX302-05/05/xx-2xx/xx-xx	400 mm	185 mm	150 mm	approx. 10 kg
SX302-05/10/xx-2xx/xx-xx	680 mm	245 mm	240 mm	approx. 20 kg
<b>6 digits</b>				
SX302-06/05/xx-2xx/xx-xx	400 mm	185 mm	150 mm	approx. 11 kg
SX302-06/10/xx-2xx/xx-xx	680 mm	245 mm	240 mm	approx. 20 kg
<b>7 digits</b>				
SX302-07/05/xx-2xx/xx-xx	510 mm	185 mm	150 mm	approx. 12 kg
SX302-07/10/xx-2xx/xx-xx	870 mm	245 mm	240 mm	approx. 22 kg
<b>8 digits</b>				
SX302-08/05/xx-2xx/xx-xx	510 mm	185 mm	150 mm	approx. 12 kg
SX302-08/10/xx-2xx/xx-xx	870 mm	245 mm	240 mm	approx. 24 kg