

HZS 352

Touch Room Unit

Publisher: SIGMATEK GmbH & Co KG
A-5112 Lamprechtshausen
Tel.: 06274/4321
Fax: 06274/4321-18
Email: office@sigmatek.at
WWW.SIGMATEK-AUTOMATION.COM

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Touch Room Unit

HZW 352

The HZS 352 is an intelligent terminal for programming and visualization of automated processes. As a room operating device, the terminal is equipped with a temperature sensor (starting with HW 3.0 with a temperature and humidity sensor).

A resistive touch screen serves as the input medium for process data and parameters. The output is shown on a 3.5" TFT color display. To save energy, the display is deactivated in sleep mode. When the screen surface is touched, the terminal is activated and then deactivated a few minutes after the last input.



With the LSE mask editor, graphics can be created on the PC, then stored and displayed on the terminal. Data is exchanged over a CAN bus.

The two-part HZS 352 is mounted on the wall in a flush-mounted box or with screw bosses in the corners of the operating terminal in a panel.

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1 Technical Data

1.1 Performance Data

SDRAM	8 Mbyte
(Flash)	1 Mbyte
Interfaces	1x CAN bus (fixed terminal strip)
Terminating resistor	120 Ω settable with DIP-Switch
Data rate	maximum 1 Mbits/s
Display	3.5" TFT color display
Resolution	320 x 240 pixels
Control panel	4-wire touch screen (analog resistive)

1.2 Temperature Sensor (until HW 2.xx)

Number	1
Resolution	12-bit
Temperature resolution	0.1 °C
Accuracy	± 0.5 °C
Temperature measurement range	0-50 °C

1.3 Temperature and Humidity Sensor (since HW 3.00)

Number	1
Resolution	12-bit
Temperature resolution	0.1 °C
Temperature measurement accuracy	±0.5 °C
Temperature measurement range	0-50 °C
Humidity resolution	0.1 % RH
Humidity measurement accuracy	±3 % RH (*)
Humidity measurement range	10-80 % RH (non-condensing)

(*) Maximum error at 20 to 80 % RH, without hysteresis error to errors due to long-term drift.

1.4 Electrical Requirements

Supply voltage	+18-30 V DC	
Current consumption	typically 50 mA	maximum 500 mA

1.5 Terminal

Operating unit dimensions	93.3 x 93.3 x 12.1 mm (W x H x D)
Installation depth of the supply for wall mounting in flush-mounted box	29 mm (installation of supply in flush-mounted box D = 65 mm) in accordance with ÖNORM E8606-1
Installation dimensions with panel mount	52 x 52 x 30 mm (W x H x D) Corner hole spacing 81.3 mm
Material	Plastic color: RAL9010
Weight	circa 120 g

1.6 Environmental Conditions

Storage temperature	-10 ... +70 °C	
Ambient temperature	0 ... +55 °C	
Humidity	10-80 %, non-condensing	
EMV product norm	EN 60730-1	
EMC stability	in accordance with EN 61000-6-2 (industrial area)	
EMC stability	in accordance to EN 61000-6-3 (living area)	
Protection type	EN 60529	
	Supply unit in the flush-mounted box	IP20
	Complete unit installed	IP30
	Mounting in a panel	IP30

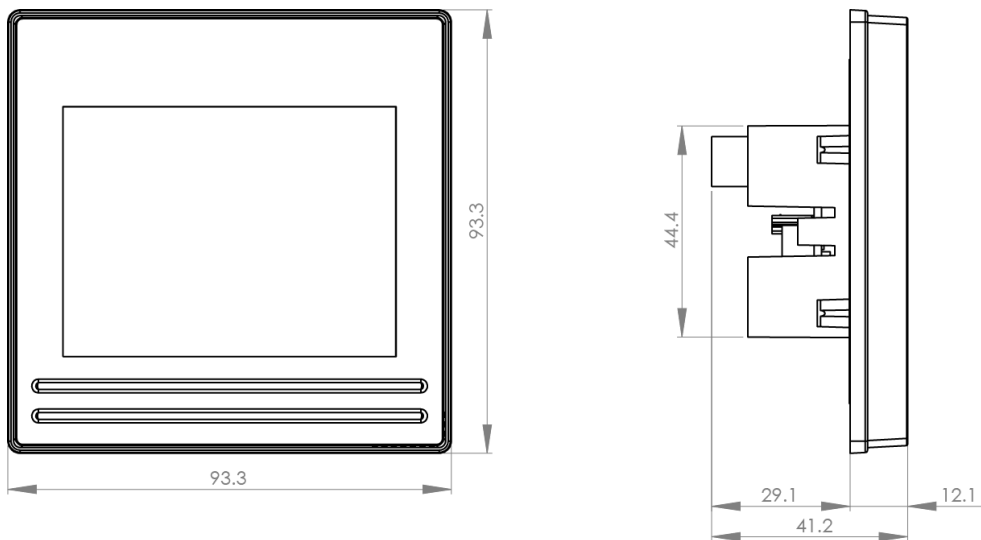
1.7 Display

Type	3.5" LC graphics display
Resolution	320(RGB) x 240
Pixel size	0.219 x 0.219 mm
Number of pixels	320*3 (RGB) x 240 pixels
Active surface	70.08 x 52.56 mm
Color depth	24-bit
Backlighting	6x LED, white, adjustable
Contrast	400:1
TOUCH	resistive
Brightness	typically 350 cd/m ²
Visible field	left and right 70°, below 70°, above 60°

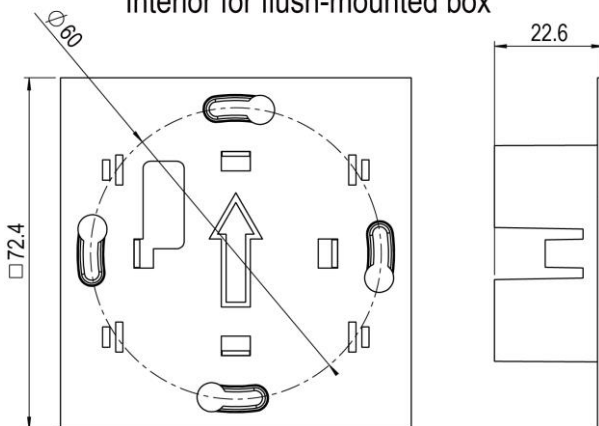
1.8 Miscellaneous

Article number	05-895-352
Hardware version	1.x-3.x

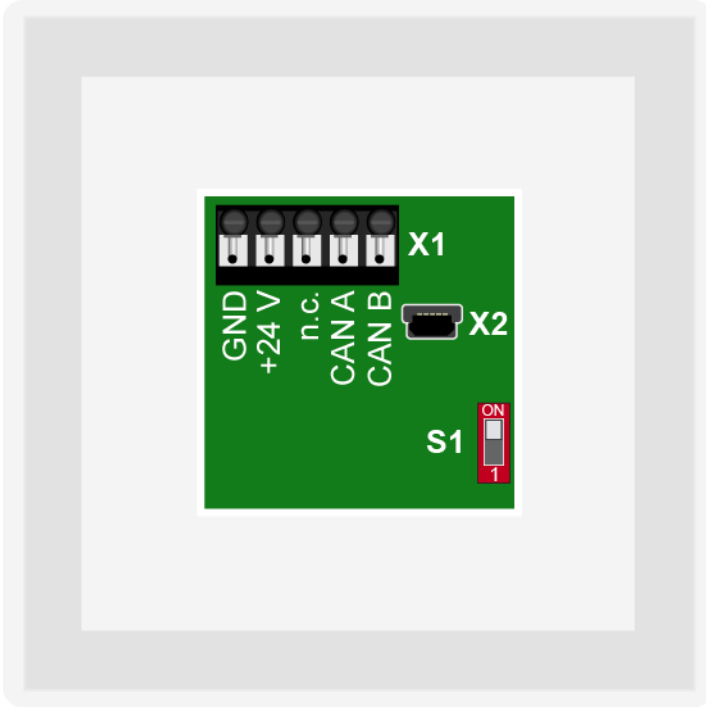
2 Mechanical Dimensions



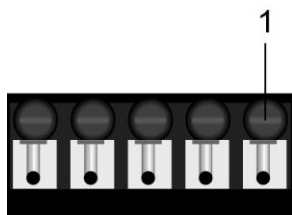
Interior for flush-mounted box



3 Connector Layout



X1: Supply Terminal (Weidmüller LSF-SMT 5.00/05/180 3.5SN BK TU)



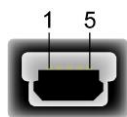
Pin	Function
1	CAN B (HIGH)
2	CAN A (LOW)
3	n.c.
4	+24 V
5	GND

n.c. = do not use

Connectible Leads

Wiring	Min.	max.
Connection dimensions	0.13 mm ²	1.5 mm ²
Conductor cross-section AWG	AWG 24	AWG 16
Single wire	0.2 mm ²	1.5 mm ²
Fine-stranded with end sleeve	0.25 mm ²	1.5 mm ²
End sleeve with collar	0.25 mm ²	0.75 mm ²

X2: USB Device 1.1 (Type Mini-B) (for service purposes only)



Pin	Function
1	+5 V
2	D-
3	D+
4	n.c.
5	GND

S1: CAN Bus Termination (1-pin DIP-Switch)



ON => CAN bus termination with 120 Ω

4 Mounting Instructions

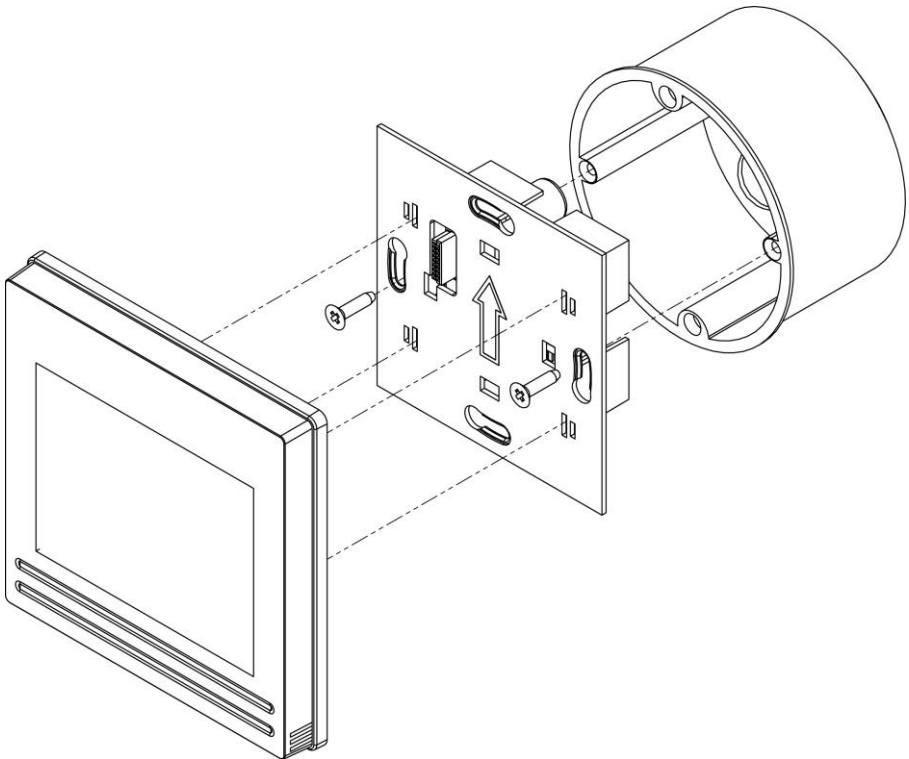
4.1 Wall Mount

The supply component is installed and wired in a flush-mounted box with a diameter of 65 mm. It is thereby important to ensure the flush-mounted box is mounted flush with the wall.

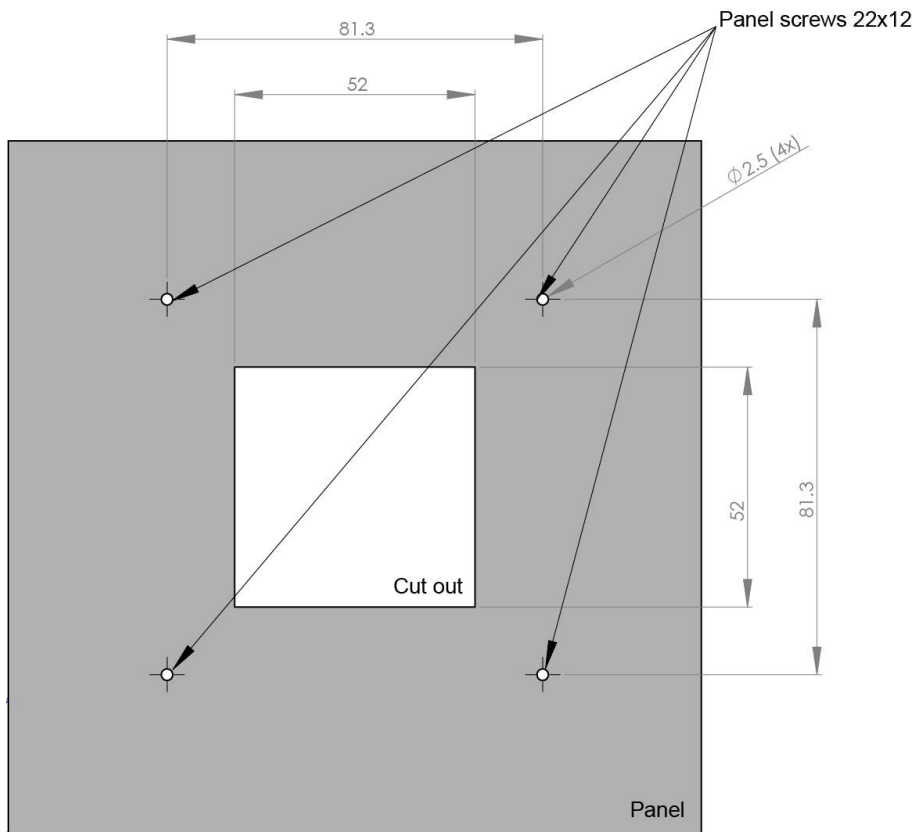
It must also be ensured that the arrow engraved on the insert plate point upward (see diagram).

Before installing, check whether the CAN bus (termination resistance switchable via the DIP switch) is required. After the electrical installation, the supply unit is mounted at the location using countersunk screws.

The operating terminal is the simply inserted into the flush-mounted box.



4.2 Panel Mount

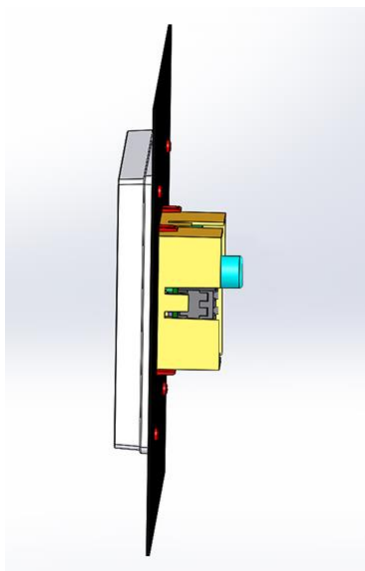


Panel screw length for a panel thickness of 2 mm:

Panel screw 22x12

Panel screw length for a panel thickness > 2 mm:

Panel thickness + 10 mm = Panel screw length



The touch room unit is inserted through the cutaway of the panel and secured from the back using 4 screws.

Scheme

5 CAN Bus Setup

This section explains how to correctly configure the CAN bus. The following parameters must first be set: Station number and data transfer rate.

5.1 CAN Bus station number

Each CAN bus station is assigned its own station number. With this station number, data can be exchanged with other stations connected to the bus. In a CAN bus system however, each station number can only be assigned once!

During the initial start-up of the terminal, the setup is activated (see following image), in which the station number is set. This value must match the configuration in the software project.

5.2 CAN Bus Data Transfer Rate

Various data transfer rates (baud rates) can be set on the CAN bus. As with the station number, the baud rate is defined in the setup during the initial start-up (see the following image). This value must match the configuration in the software project.

The longer the bus line is, the lower the data transfer rate that must be selected.

Value	Baud Rate	Maximum Length
1	500 kbits/s	80 m
2	250 kbits/s	160 m
3	125 kbits/s	320 m
4	100 kbits/s	400 m
5	50 kbits/s	800 m
6	20 kbits/s	1200 m
7	1 Mbits/s	30 m

These values apply to the following cable: 120 Ω Twisted Pair.

Note: For the CAN bus protocol: 1 kbits/s = 1 kBaud



5.3 Number of CAN Bus Participants

The maximum number of participants on the CAN bus depends on the cable length, termination resistance, data transfer rate and the drivers used in the participants.

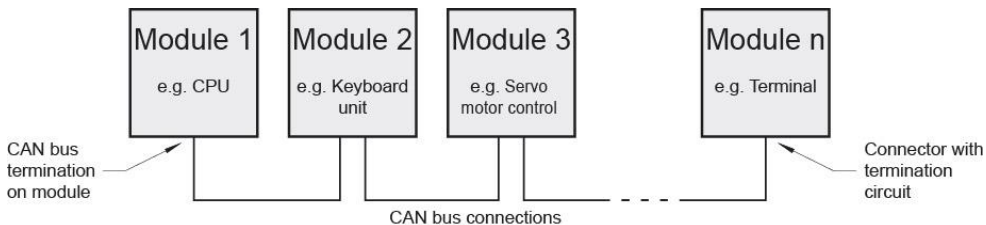
With a termination resistance of 120 Ω , at least 100 participants are possible.

5.4 Wiring the CAN Bus

For the CAN bus wiring, a shielded cable containing two twisted pairs is used. The wires serve to transmit the CAN-A and CAN-B signals, while the shielding provides the reference potential CAN_GND. Since the HZZ 352 has no connection for CAN_GND, it is sufficient in this case, to connect the shielding on one side at the opposite end.

6 CAN Bus Termination

In a CAN bus system, both end modules must be terminated. This is necessary to avoid transmission errors caused by reflections in the line.



The termination is made by an internal 120Ω between CAN A (LOW) and CAN B (HIGH).

7 Cleaning the Touch Screen

CAUTION!

Before cleaning the touch screen, the terminal must first be turned off to avoid unintentionally triggering functions or commands!

ATTENTION!

Avant de nettoyer l'écran tactile, le terminal doit d'abord être éteint afin d'éviter un déclenchement involontaire des commandes!

The terminal's touch screen can only be cleaned with a soft, damp cloth. A screen cleaning solution such as an anti-static foam, water with a mild detergent or alcohol should be used to dampen the cloth. The cleaning solution should be sprayed onto the cloth and not directly onto the terminal. The cleaning solution should not be allowed to reach the terminal electronics, for example, through the ventilation slots.

No erosive cleaning solutions, chemicals, abrasive cleansers or hard objects that can scratch or damage the touch screen may be used.

If the terminal comes into contact with toxic or erosive chemicals, carefully clean the terminal immediately to prevent corrosion!

To ensure the optimal function of the terminal, the touch screen should be cleaned at regular intervals!

Pour garantir le fonctionnement optimal du terminal, le terminal doit être nettoyé régulièrement!

To extend the lifespan of the touch screen as much as possible, using the fingers to operate the terminal is recommended.

Pour prolonger la durée de vie de l'écran tactile on recommande d'utiliser les doigts pour l'opérer.

Documentation Changes

Change date	Affected page(s)	Chapter	Note
18.06.2014	3 5	1.1 Performance Data 1.2 Temperature Sensor 1.6 Display	Table updated
08.10.2014	3	1.3 Electrical Requirements	Changed to +18-30 V DC
25.03.2016	5	1.6 Display	Table updated
03.03.2017	4 6 9 12, 13 13	1.5 Environmental Conditions 2 Mechanical Dimensions 4.1 Wall Mount 5.1 CAN Bus Station Number 5.2 CAN Bus Data Transfer Rate 5.3 Number of CAN Bus Participants 5.4 CAN Bus Wiring	Correction of temperature description Dimensional drawing of flush-mounted box expanded. Notes and installation diagrams expanded Note on the setup expanded Screenshot setup expanded Chapter moved Chapter expanded
07.02.2019	12	5.2 CAN-Bus Data Transfer Rate	Value 0 - Baudrate 615 kBit/s deleted
15.07.2019	3	1.3 Temperature and Humidity Sensor	Chapter added

