INSTALLATION MANUAL

# SURPRISE Smart Display

## Display HMI touchscreen with IoT, Gateway built-in I/O

EN




DOCUMENTATION

SENECA

ISO 9001:2015

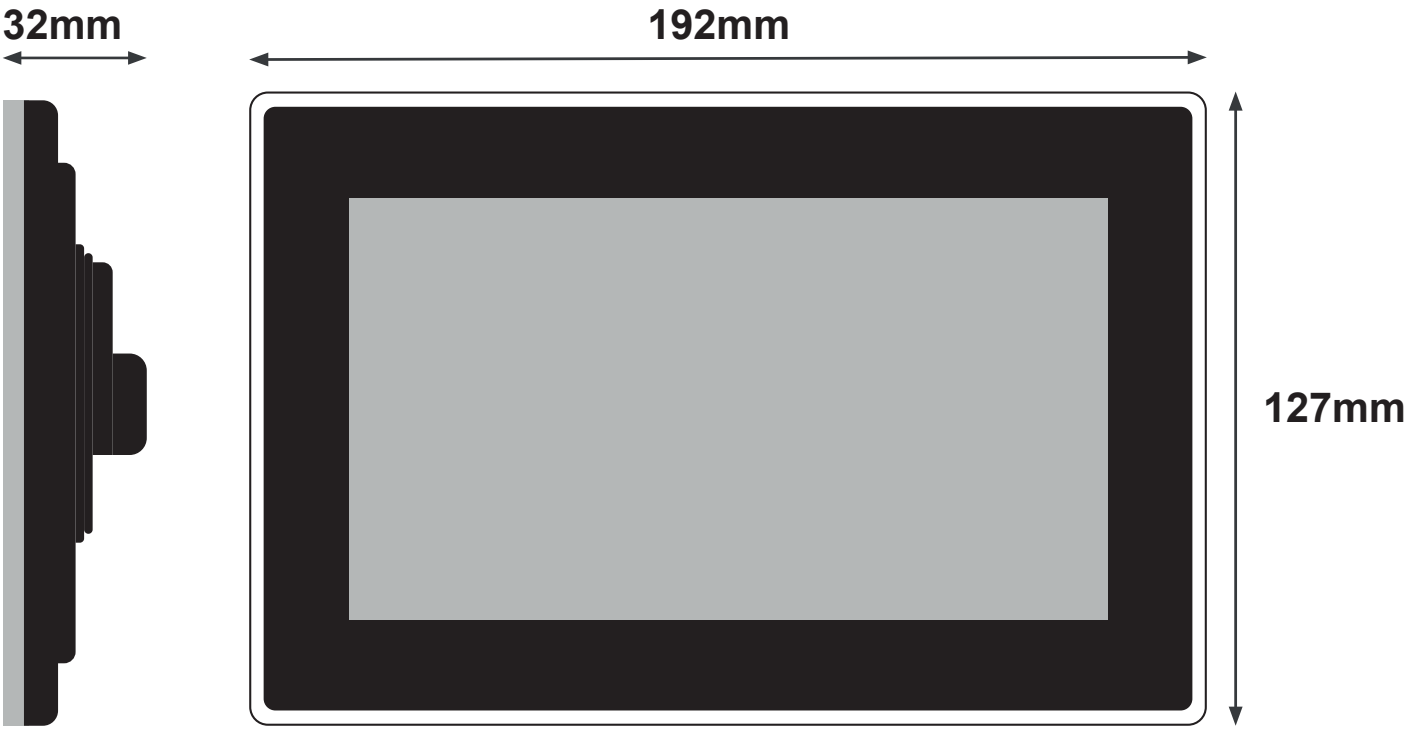
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**Tel. +39.049.8705355 - 8705359 - Fax +39.049.8706287**

For manuals in other languages and configuration software, visit:
www.seneca.it/products/surprise-smart-display



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## MODULE LAYOUT




| | | | | | |
|---|---|---|---|---|---|
| **Dimensions (LxHxD)** | 192 x 127 x 32 | **Weight** | 420 g | **Protection rating** | IP 64 |

## PRELIMINARY WARNINGS

The word **WARNING** preceded by the symbol ⚠ indicates conditions or actions that put the user's safety at risk. The word **ATTENTION** preceded by the symbol ⚠ indicates conditions or actions that might damage the instrument or the connected equipment. The warranty shall become null and void in the event of improper use or tampering with the module or devices supplied by the manufacturer as necessary for its correct operation, and if the instructions contained in this manual are not followed.

| | |
|---|---|
|  | **WARNING**: The full content of this manual must be read before any operation. The module must only be used by qualified electricians. Specific documentation is available via QR-CODE shown on page 1. |
|  | The module must be repaired and damaged parts replaced by the Manufacturer. The product is sensitive to electrostatic discharges. Take appropriate measures during any operation. |
|  | Electrical and electronic waste disposal (applicable in the European Union and other countries with recycling). The symbol on the product or its packaging shows the product must be surrendered to a collection centre authorized to recycle electrical and electronic waste. |



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## GENERAL SPECIFICATIONS

Smart Display is a 7-inch HMI touch-sensitive colour display (capacitive touch panel), with 800 x 480 resolution and LED backlight.
It is also an operator terminal designed to control and monitor the operation of devices, systems or production lines.
Smart Display also offers extended connectivity thanks to the functionalities of Industrial Gateway, Serial Device Server, Bridge and optional WIFI.
The preloaded software application allows the display of parameters, the sending of commands, the configuration of tags, communication, individual video pages and alarm management.

## TECHNICAL SPECIFICATIONS

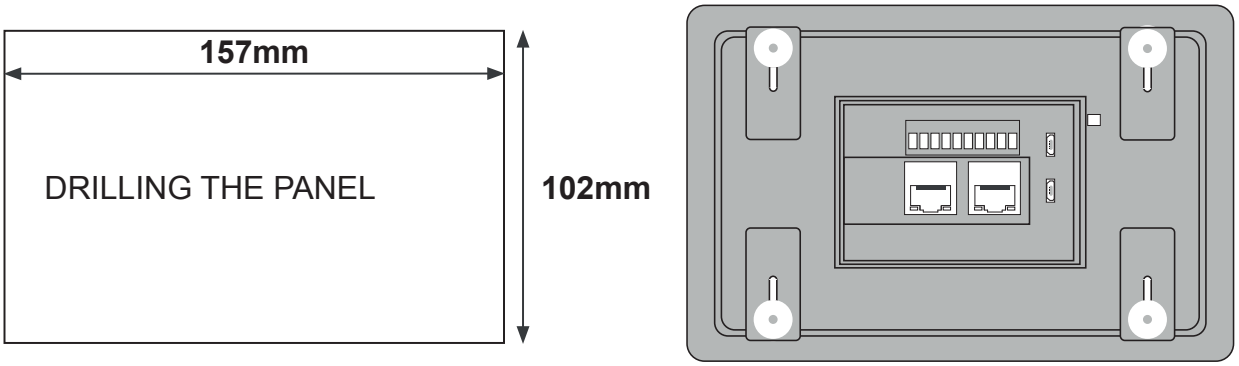
| | |
|---|---|
| **STANDARDS** | **EN300 328** Wideband transmission systems.<br>**EN301 489-17 EMC** Specific conditions for Data Transmission Systems.<br>**EN301 489-1 EMC** Common technical requirements for radio equipment.<br>**EN60368-1, EN62311** Safety |
| **POWER SUPPLY**<br>Voltage<br>Absorption | 24 Vac/dc ± 10%<br>AC: Max. 16 VA, 10 W; DC: Max. 9W (maximum brightness)<br>**N.B.:** Arrange a power supply with at least 1.5 A inrush |
| **DISPLAY**<br>Resolution<br>Brightness<br>Contrast<br>Duration<br>Viewing angles<br>RTC | <br>800 x 640, technology: TFT, 16 M colours<br>350 cd/m$^2$<br>500 : 1<br>30000 h (backlight level = 5)<br>70° / 50° / 70° / 70° (Top, Bottom, Left, Right)<br>YES |
| **CONNECTIONS ELECTRICAL** | 1 removable terminal 3.5mm pitch 10-way, 1.5 mm$^2$ max cable section<br>2 micro USB connectors<br>2 RJ45 connectors (Ethernet ports) |
| **ENVIRONMENTAL CONDITIONS**<br>Operating temperature<br>Humidity<br>Storage temperature<br>Protection rating | <br>From -20°C to +55°C<br>10%– 90% non condensing.<br>From -30°C to +55°C<br>IP64 (referred to the front and with gasket installed) |
| **COMMUNICATION PORTS** | 2 x Fast Ethernet 10/100Tx ports on RJ45<br>1 x RS232/RS485 software switchable serial port<br>1 x RS485 serial port<br>1 x USB OTG port<br>1 x USB serial port for debugging software<br>1 x Wi-Fi 802.11 b/g/n, band 2.4 ÷ 2,4835 GHz, max Output Power: 17 dBm (50 mW)<br>2 x General Purpose Input or Output channels |
| **AUXILIARY VOLTAGE INPUT/OUTPUT** | See explanatory diagrams on page 5 |
| **GENERAL PURPOSE I/O** | Number of channels: 2<br>Input voltage: 0÷28 V Threshold ON > 9 V<br>Input impedance: 9 kΩ Threshold OFF < 4 V |
| **ASSEMBLY** | Using fixing brackets or wall bracket |
| **The Declaration of Conformity ( DoC) is available at www.seneca.it/surprise-smart-display.** | |



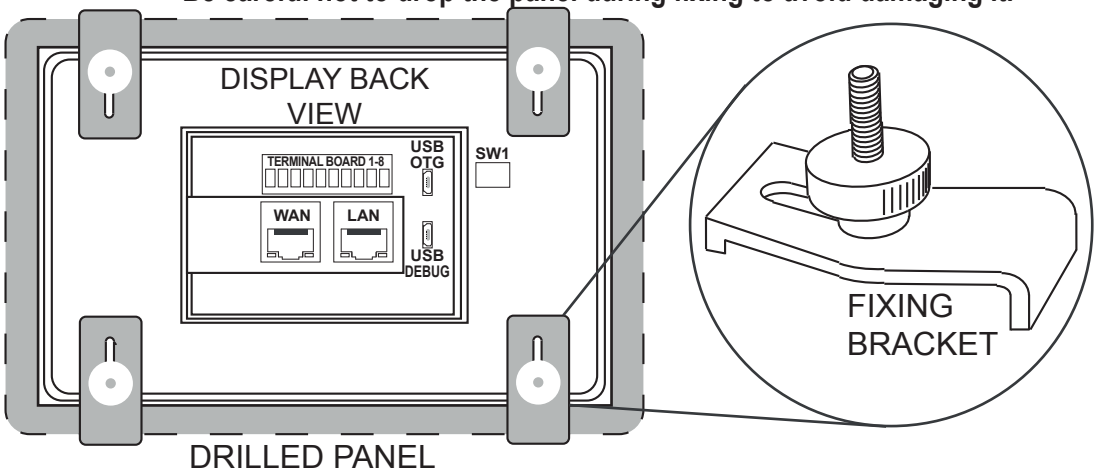
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## INSTALLATION REGULATIONS

For secure fixing use all four brackets provided.
In case of use in environments with the presence of water, use the supplied gasket.
The minimum thickness of the panel is 1 mm and the maximum thickness is 15 mm.
For the assembly: make a rectangular opening on the panel measuring: W=157 mm x H=102 mm.
Place the display on a stable surface, screw the 4 studs into the threaded inserts of the display, insert the 4 brackets and fix them to the display using the 4 white knobs.
Fastening the brackets as in the figure allows the easy insertion into the opening made on the panel.

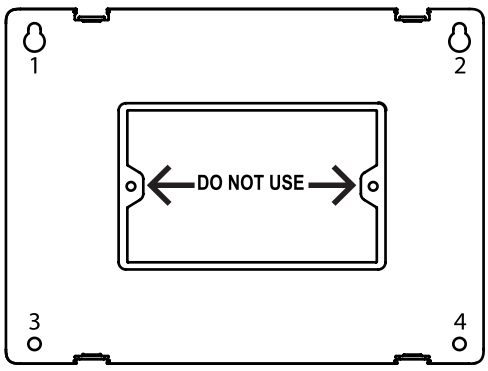



Insert the display into the panel opening and fix it by turning the brackets as shown in the figure.
**Be careful not to drop the panel during fixing to avoid damaging it.**

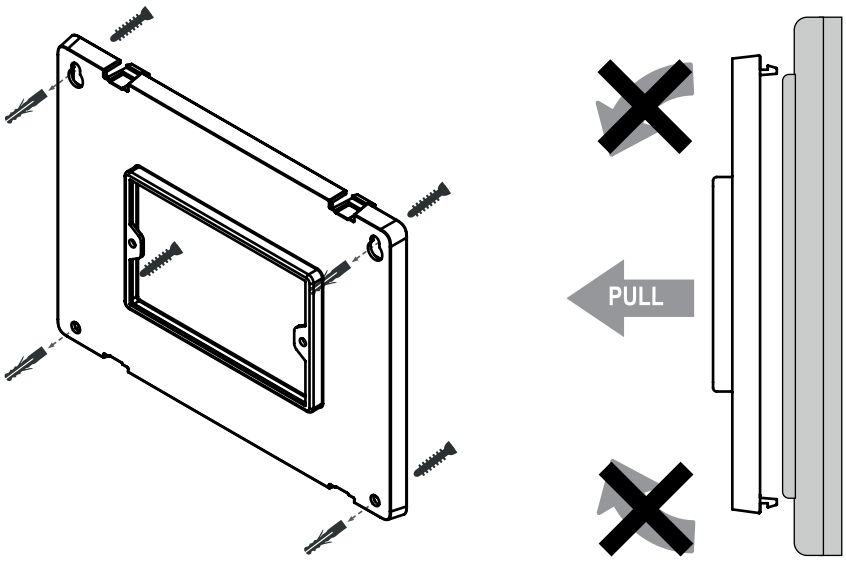



For wall mounting use the outer holes of the fixing accessory as shown in the picture below
(N.B.: the wall mounting accessory is supplied already assembled to the instrument, in case of wall mounting it must be removed avoiding to make levers in order not to damage the plastic):

**WALL-MOUNTING**




**REMOVAL OF THE ACCESSORY FIXING**



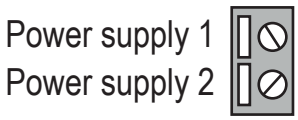


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## ELECTRICAL CONNECTIONS

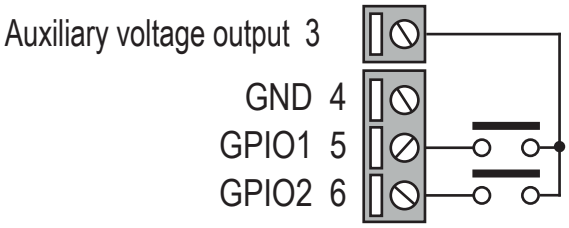
**Important: The upper power supply limits must not be exceeded, as this could cause serious damage to the module. Switch the module off before connecting inputs and outputs.**
To meet the electromagnetic immunity requirements:
- use shielded signal cables;
- connect the shield to a preferential instrumentation earth system;
- separate shielded cables from other cables used for power installations (transformers, inverters, motors, induction ovens, etc...)

### POWER SUPPLY

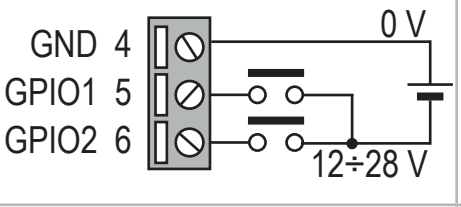



The power supply is connected to terminals 1 and 2.
The supply voltage must be:
24 Vdc (indifferent polarity) or 24 Vac.
Use a power supply with a minimum current of 1 A

### GENERAL PURPOSE INPUT

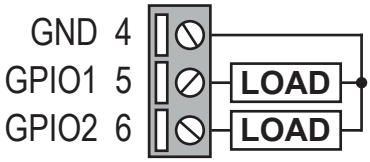



The inputs are PNP type with internal power supply, the figure alongside shows the connection.
To use the INPUT or OUTPUT function it is necessary to configure the dedicated port through the dedicated configuration page.

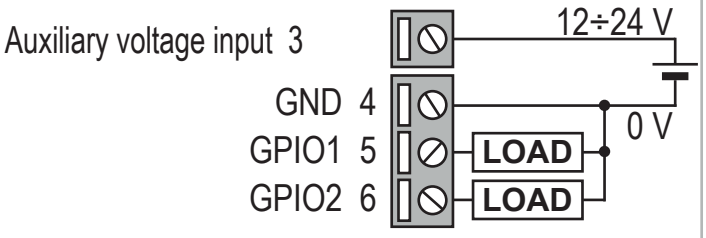



The inputs can also be activated in voltage,
ON > 9 V, OFF < 4 V

### GENERAL PURPOSE OUTPUT




Connection with internal power
12 V / 50 mA per output.




Connection with external power
12÷24 V / 100 mA per output.

### SERIAL PORTS




The device has a COM1 port configurable as RS232 or RS485 on terminals 7 and 8 and a COM2 RS485 port on terminals 9 and 10.



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## ⚠ WARNING

A wired emergency stop button must be installed in any human-machine interface system such as this display in compliance with ICS safety recommendations.
**If used as an operator panel for machines, check the applicable safety standards.**

## ⚠ CAUTION

Do not power the HMI display and DC inductive loads or controller input circuits, with the same power supply. Some controllers generate 24 Vdc but do not provide enough current to be able to power this HMI display which, when turned on, generates absorption peaks greater than 1 A.

## ⚠ CAUTION

a. The length of the power cable must be kept to a minimum
   (Max: 500m shielded, 300m unshielded).
b. If wiring occurs outdoors, use appropriate surge suppressors.
c. Properly separate the power conductors from the signal conductors.

## CONTACT INFORMATION

| | |
|---|---|
| Technical support | support@seneca.it |
| Product information | sales@seneca.it |

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