Panasonic®

TOUCH TERMINALS

HMe Series

Instruction Manual

Table of contents

1. Introduction

This instruction manual contains information about the installation, transportation, storage, assembly, use and maintenance of programmable displays of the HMe series.

The following models are available:

- HMe04: Programmable display with TFT color 4.3" widescreen display touchscreen
- HMe07: Programmable display with TFT color 7" widescreen display touchscreen
- HMe10: Programmable display with TFT color 10.1" widescreen display touchscreen

2. Product overview

The HMe series programmable displays combine state-of-the-art features and top performance with an oustanding design. They are the ideal choice for all demanding HMI applications including factory and building automation.

The HMe series programmable displays have been designed to run the HMWIN software.

- Compatible with HMWIN Studio.
- Full vector graphic support. Native support of SVG graphic objects, trasparency and alpha blending.
- Screen object dynamics: control visibility and transparency, move, resize, rotate any object on screen. Change properties of basic and complex objects.
- Multilanguage applications with TrueType fonts. Easily create, install and maintain applications in multiple languages to meet global requirements.
- Data display in numerical, text, bargraph, analog gauges and graphic image formats.
- Rich set of state-of-the-art HMI features: data acquisition and logging, trend presentation, alarm handling, scheduler and timed actions (daily and weekly schedulers, exception dates), recipes, security and user management, email and RSS feeds.
- Wide selection of communication drivers available with multiple-driver communication capability.
- Remote monitoring and control with Client-Server functionality.
- On-line and Off-line simulation with HMWIN Studio.
- Powerful scripting language for automating HMI applications. Efficient script debugger improves productivity in application development.
- Rich gallery of vector symbols and objects.

3. Standards and approvals

The products have been designed for use in an industrial environment in compliance with the 2014/30/EU EMC Directive.

The products have been designed in compliance with:

EN 61000-6-4	EN 55011 Class A
EN 61000-6-2	EN 61000-4-2
	EN 61000-4-3
	EN 61000-4-4
	EN 61000-4-5
	EN 61000-4-6

The installation of these devices into the residential, commercial and light-industrial environments is allowed only in the case that special in measures are taken in order to ensure conformity to EN 61000-6-3.

In compliance with the above regulations the products are CE marked.

4. Product identification

The product may be identified through a plate attached to the rear cover. You will have to know the type of unit you are using for correct usage of the information contained in the guide.

HMe0

HMe07

HMe10

The following information is provided by the plate:

- Product model name
- Product part number
- Year/week of production
- Version ID of the product
- Serial number

5. Technical data common to all models

5.1 Hardware specifications

|	
Touch screen technology	Resistive
Real-time clock back-up	Supercapacitor
Fuse	Automatic
Serial Port	RS232, RS485, RS422 software configurable
Recipe memory	Flash
Real-time clock	Clock/Calendar with supercapacitor back-up
Accuracy real-time clock (at 25°C)	<100ppm

5.2 Environmental conditions

Operating temperature (surrounding air temperature)	0 – +50°C	EN 60068-2-14
Storage temperature	-20 – +70°C	EN 60068-2-14
Operating and storage humidity	5 – 85% RH not-condensing	EN 60068-2-30
Vibrations	5 – 9Hz, 7mm $_{p-p}$ 9 – 150Hz, 1g	EN 60068-2-6
Shock	± 50g, 11ms, 3 pulses per axis	EN 60068-2-27
Degree of protection	IP66 front panel (see note)	EN 60529
Pollution degree environment	2	

* The front face of the unit, installed in a solid panel, has been tested using conditions equivalent to the standards shown in the "Environmental conditions". Even though the level of resistance unit is equivalent to these standards, oils that should have no effect on the HMe can possibly harm the unit. This can occur in areas where either vaporized oils are present, or where low viscosity cutting oil are allowed to adhere to the unit for long periods of time. If the front face protection sheet on the HMe becomes peeled off, these conditions can lead to the ingress of oil into the unit and separate protection measures are suggested.

If the installation gasket is used for a long period of time, or if the unit and its gasket are removed from the panel, the original degree of the protection cannot be guaranteed.

5.3   Electromagnetic compatibility (EMC)

Radiated disturbance test	Class A	EN 55011
Electrostatic discharge immunity test	8kV (air electrostatic discharge) 4kV (contact electrostatic discharge)	EN 61000-4-2
Radiated, radio-frequency, electromagnetic field immunity test	80MHz – 1GHz, 10V/m 1,4GHz – 2GHz, 3V/m 2GHz – 2.7GHz, 1V/m	EN 61000-4-3
Burst immunity test	± 2KV DC power port ± 1KV signal line	EN 61000-4-4
Surge immunity test	± 0,5KV DC power port (line to earth) ± 0,5KV DC power port (line to line) ± 1KV signal line (line to earth)	EN 61000-4-5
Immunity to conducted disturbances inducted by radiofrequency field	0.15 – 80MHz, 10V	EN 61000-4-6

5.4   Durability information

Backlight service life (LED type)	20000 hours or more (Time of continuos operation until the brightness of the backlight reaches 50% of the rated value when the surrounding air temperature is 25°C, see note)
Front foil (without direct exposure to sunlight or UV rays)	10 years if the surrounding air temperature is 25°C
UV resistance	Indoor applications: After 300 hours cycled humidity in QUV accelerated weathering, some yellowing and brittleness may be present.
Solvent resistance	Contact for 1/2 hour at 21°C, no visible effect: acetone, butyl cellosolve, cyclohexanone, ethyl acetate, hexane, isopropyl alcohol, mek, methylene chloride, toluene, xylene Contact for 24 hours at 49°C, no visible effect: coffee, ketchup, lemon juice, mustard (slight yellow stain), tea, tomato juice.
Touch screen reliability	> 1 milion operations

*   Extended use in environments where the surrounding air temperature is 40°C or higher may degrade backlight quality/reliability/durability.

6. Technical data by model

Model	HMe04	HMe07	HMe10
Display / Backlight	TFT Color / LED		
Colors	64K		
Resolution	480 x 272	800 x 480	1024 x 600
Display size (inch)	4.3 widescreen	7" widescreen	10.1" widescreen
Dimming	yes		
User memory flash	60MB		
RAM	256MB DDR	512MB DDR	
Serial port	RS232, RS485, RS422 DB9 female software configurable		RS232, RS485, RS422 software configurable
Ethernet port	10/100Mbit		
USB port	Host interface V2.0, max. 500mA		
Real-time clock	yes		
Voltage	24V DC	18–32V DC	
Current rating (at 24V DC)	0.25A	0.30A	0.38A
Weight	0.4kg	0.6kg	1kg

7. Dimensions

7.1 HMe04
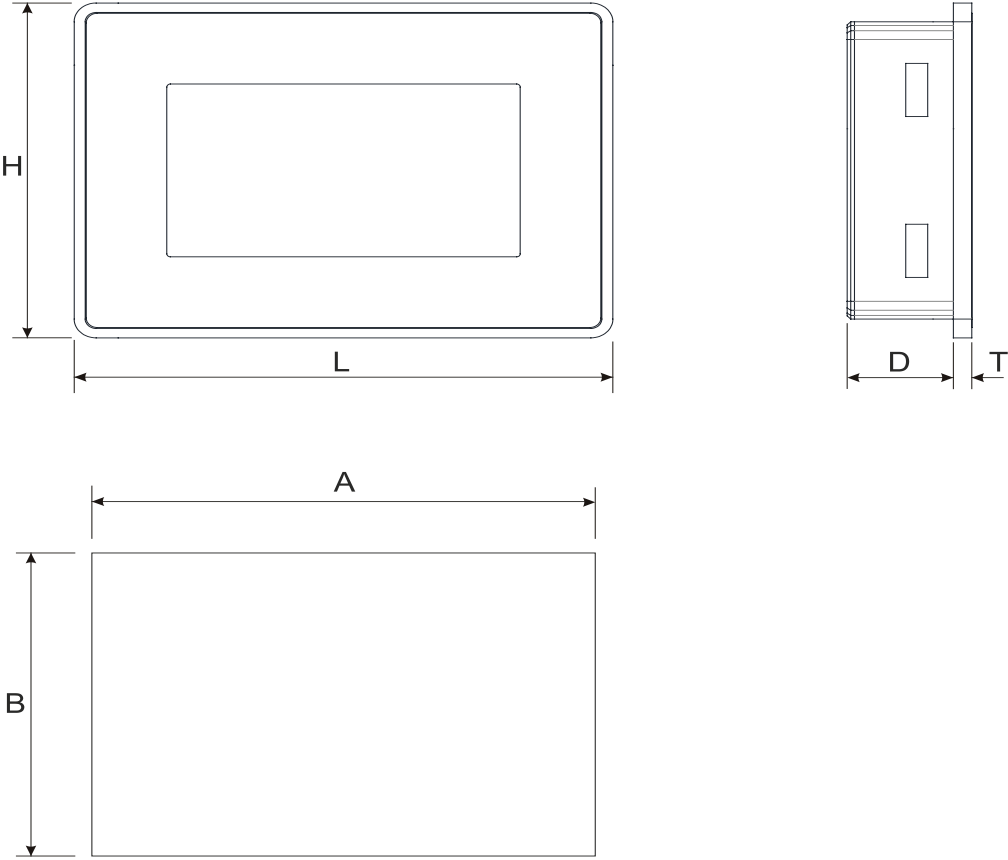
Model	A	B	L	H	D	T
HMe07	136mm	96mm	147mm	107mm	29mm	5mm

7.2   HMe07
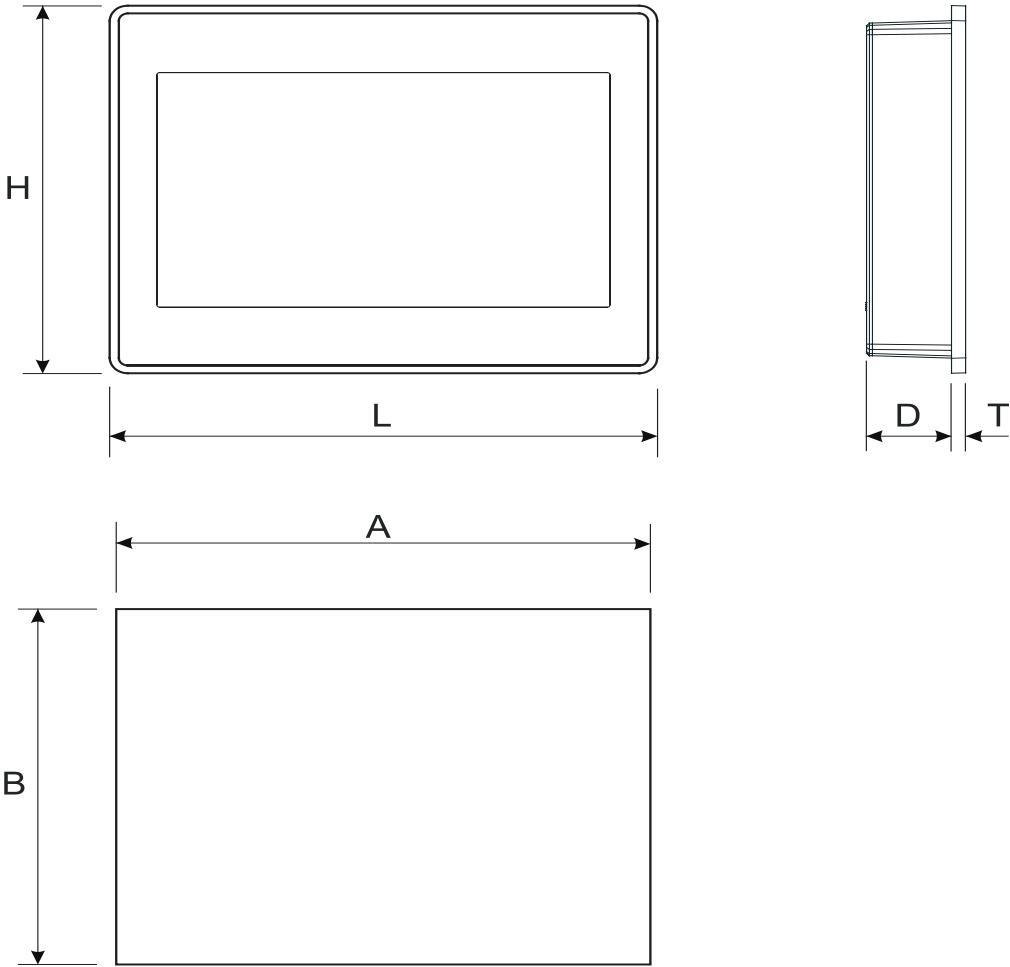
Model	A	B	L	H	D	T
HMe07	176mm	136mm	187mm	147mm	29mm	5mm

7.3   HMe10
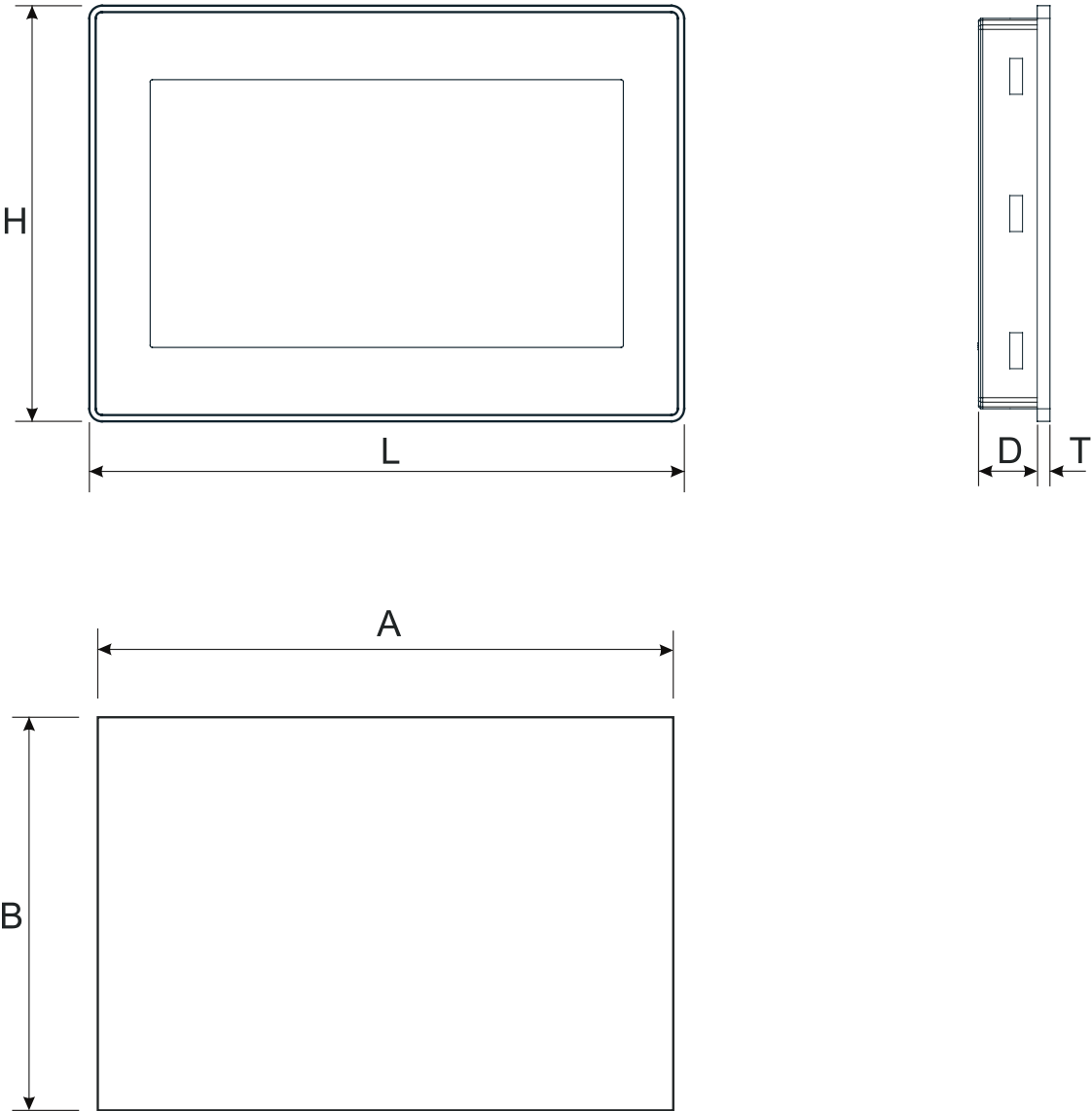
Model	A	B	L	H	D	T
HMe10	271mm	186mm	282mm	197mm	29mm	6mm

8. Installation

8.1 Installation environment

In order to meet the front panel protection classifications, proper installation procedure must be followed:

- The borders of the cutout must be flat.
- Each fixing screw must be tightened until the plastic bezel corner get in contact with the panel.
- The cutout for the panel must be of the dimensions indicated in this manual.

The equipment is not intended for continuous exposure to direct sunlight. This might accelerate the aging process of the front panel film.

The equipment is not intended for installation in contact with corrosive chemical compounds. Check the resistance of the front panel film to a specific compound before installation.

Do not use tools of any kind (screwdrivers, etc.) to operate the touch screen of the panel.

The IP66 is guaranteed only if:

- The max. deviation from the plane surface to the cutout is ≤0.5mm
- The thickness of the case where the equipment is mounted is from 1.5mm to 6mm
- The max. surface roughness where the gasket is applied is ≤120µm.
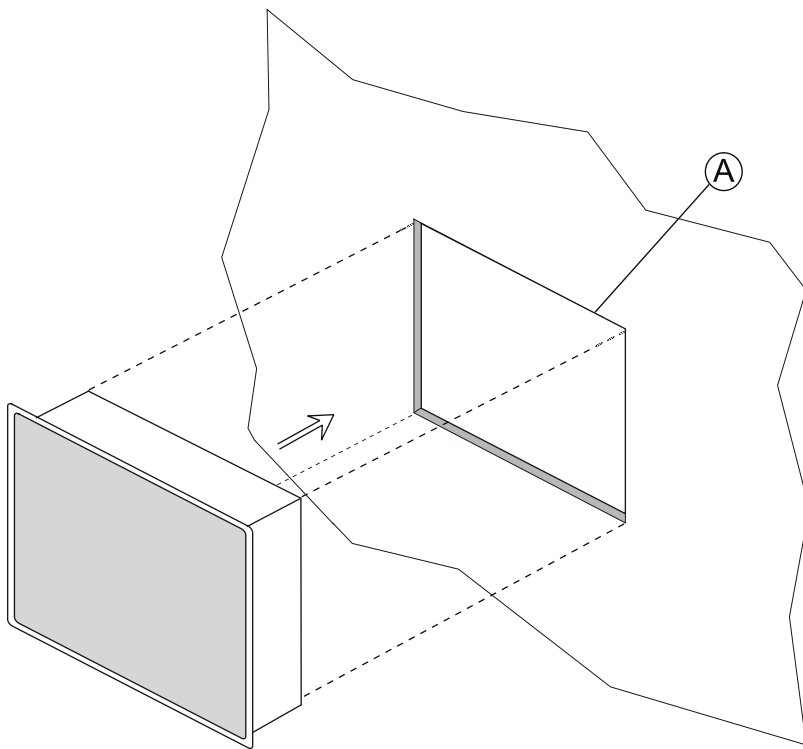
A: Installation cutout

8.2 Installation procedure

Place the fixing brackets as shown in the figure below.
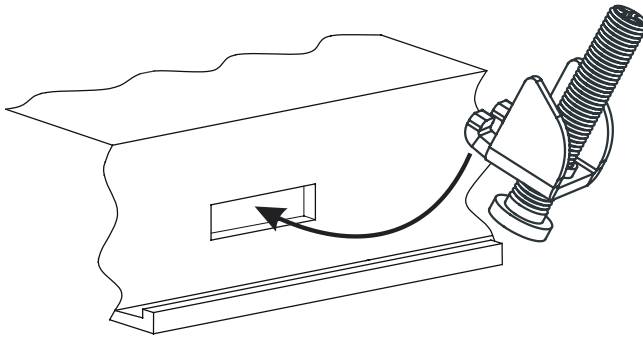
Make sure to screw each fixing screw until the bezel corner gets in contact with the panel.

Tightening torque: 75 Ncm

9. Connections

9.1 HMe04
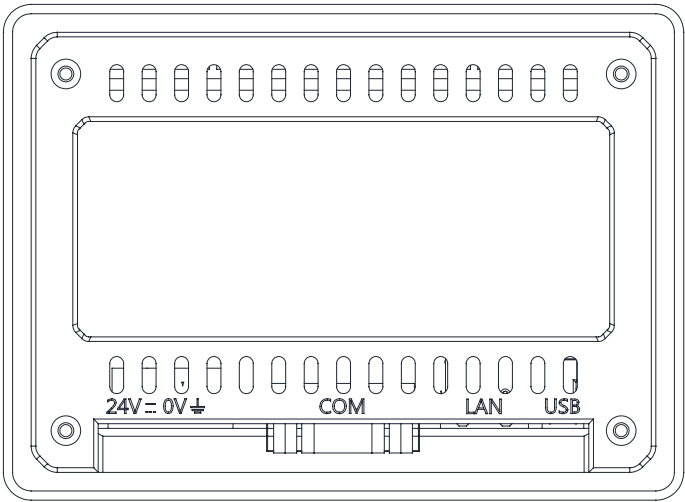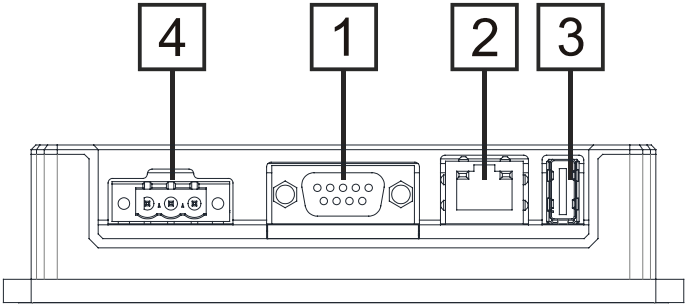
1   Serial port

2   Ethernet port

3   USB port

4   Power supply

9.2   HMe07
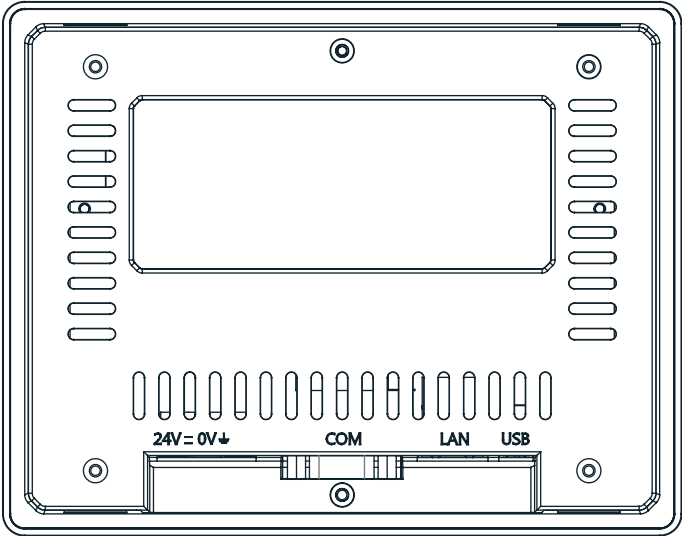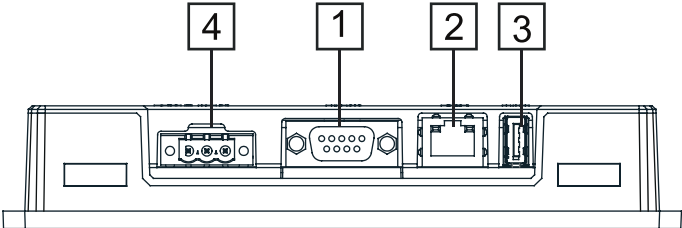
1   Serial port

2   Ethernet port

3   USB port

4   Power supply

9.3 HMe10
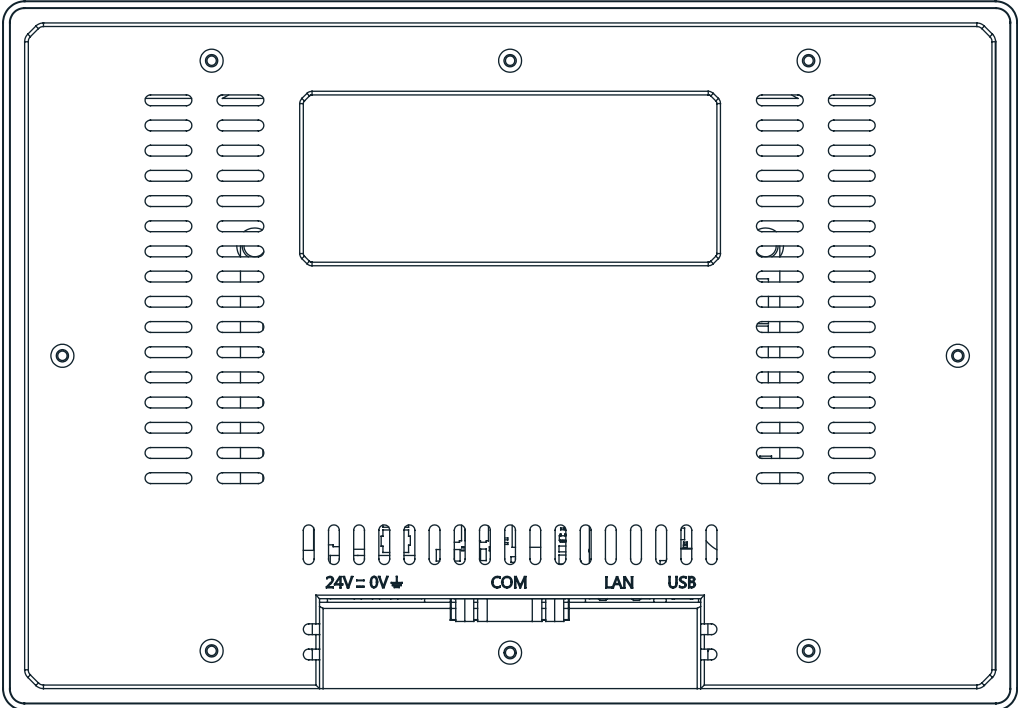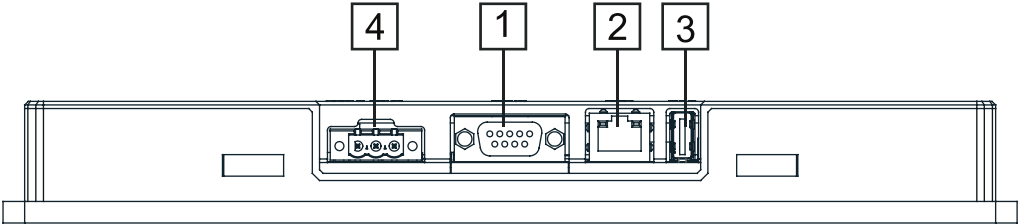
1   Serial port

2   Ethernet port

3   USB port

4   Power supply

9.4   Serial port

The serial port is used to communicate with the PLC or with another type of controller.

Standards available for the signals in the PLC port connector are: RS232, RS422, RS485. Use the corresponding communication cable for the connection.

The serial port is software programmable. Make sure you select the appropriate interface in the programming software.

RS232

Pin	Description
1	GND
2	
3	TX
4	RX
5	
6	+5V output
7	CTS
8	RTS
9	

Serial port
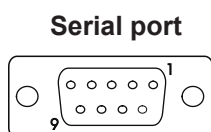
RS422, RS485

Pin	Description
1	GND
2	
3	CHA-
4	CHB-
5	
6	+5V output
7	CHB+
8	CHA+
9	

For RS485, pins 4-3 and 8-7 must be connected externally.

9.5   Ethernet port

The Ethernet port has two LED status indicators. They work as shown in the table below.
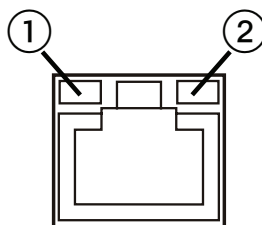
Green ①	Yellow ②	Description
ON	OFF	No LAN cable connected
BLINKING (link active)	ON	LAN cable connected with 100Mbit/s link
BLINKING (link active)	OFF	LAN cable connected with 10Mbit/s link

9.6   Power supply, grounding, and shielding

The power supply terminal block is shown in the figure below.
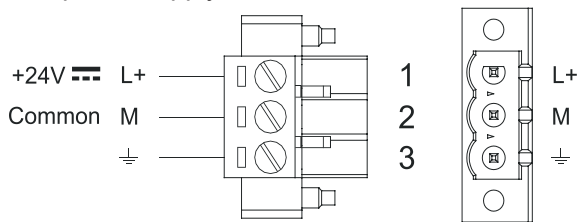
DC power connector - AWG24 wire size - R/C terminal blocks (XCFR2), female pitch 5.08mm, torque 4.5 lb-in

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NOTICE

Make sure that the power supply has sufficient power capacity for the operation of the equipment.

The unit must always be grounded to earth. Grounding helps limit the effects of noise due to electro-magnetic interference on the control system.

Use terminal 3 on the power supply terminal block earth connection.

The power supply circuit may be floating or grounded. In the latter case, connect to ground the power source common as indicated with a dashed line in the figure below.

When using the floating power scheme, note that internally the power common is connected to the ground with a 1MΩ resistor in parallel with a 4,7nF capacitor.

The power supply must have double or reinforced insulation. The suggested wiring for the power supply is shown below.
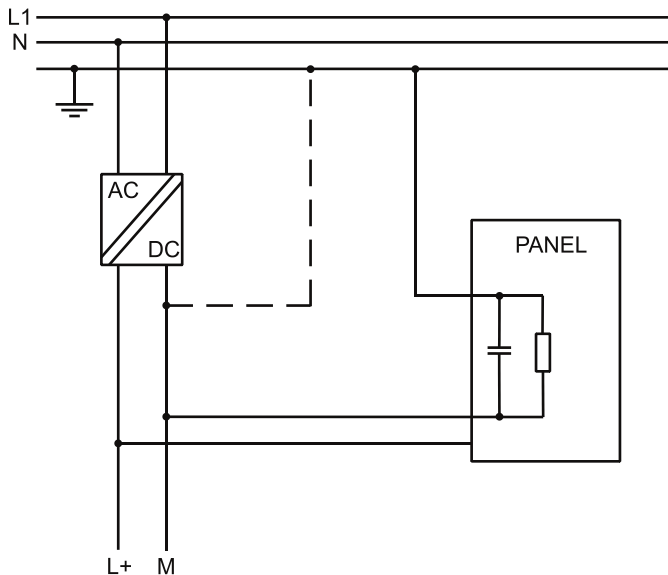
All the electronic devices in the control system must be properly grounded. Grounding must be performed according to applicable regulations.

10. Cleaning faceplates

The equipment must be cleaned only with a soft cloth and neutral soap product. Do not use solvents.

11. Getting started

The HMe series panels must be programmed with the programming software HMWIN Studio (starting from v2.6), a Windows application.

There are two options to transfer a HMWIN application project to a panel:

Ethernet   Connect the panel via the Ethernet interface to a personal computer running the HMWIN Studio software. Select "Run/Download to target" in HMWIN Studio.

Make sure that the firewall policy is configured in a way that allows HMWIN Studio to access the network.

USB   Create an update package using the HMWIN Studio software and copy it to an USB flash drive.

12. System settings tool

12.1 Introduction

The HMe series panels have a system settings interface to allow the configuration of system options.

The user interface of "System Settings" is based on HTML pages accessible locally on HMI or remote using a web browser, e.g. Chrome v44 or higher on port 443 (https://IP/machine_config). The default username is "admin", the default password is "admin".

Use the navigation menu on the left side of the screen to browse through the available options.
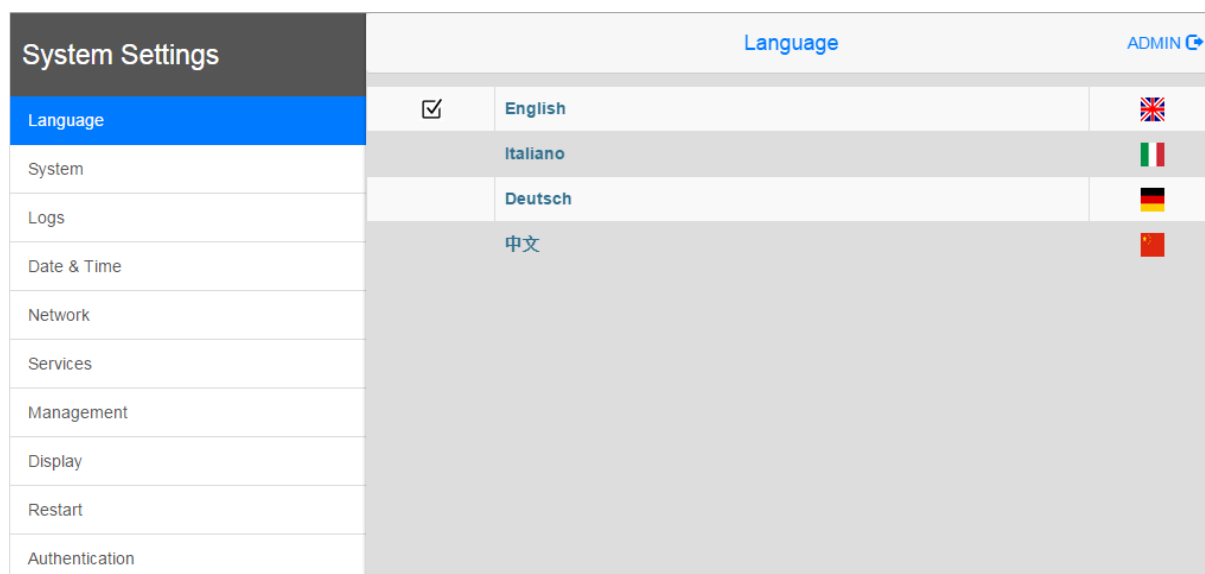
On the left side, the active menu item is highlighted. The right side shows related information and settings. Based on the size of the panel, both menu and content of the selected item may not be displayed.

The system settings interface has two operating modes:

User mode   HMWIN runtime is running or the HMI panel is in "factory default" status.

System mode   HMWIN runtime is not running or the HMI panel has a software failure.
The system mode includes all options available in user mode. In addition, the system mode offers commands dedicated to system upgrade and recovery which are not available in user mode.

12.2 Activation of system settings in user mode

HMWIN runtime not running   Touch the "System Setting" button on the HMI panel.

HMWIN runtime running   To activate the system settings in user mode, you need to access the context menu by touching and holding any unused area of the touchscreen for a few seconds. The default holding time is 2 seconds.

12.3 Activation of system settings in system mode

Normal operation

If HMWIN runtime is not running:
Touch the "System Setting" button on the HMI panel to open the system settings in user mode. Select "Restart" > "Config OS" to reboot in system mode.

If HMWIN runtime is running:
To activate the system settings in user mode, you need to access the context menu by touching and holding any unused area of the touchscreen for a few seconds. The default holding time is 2 seconds. Select "Restart" > "Config OS" to reboot in system mode.

Recovery operation

If the HMI panel is not responsive, tap on the surface of the touchscreen during the power-up phase of the panel. The tapping frequency must be high. Start tapping the touchscreen as soon as power has been supplied to the panel.
The message "TAP-TAP DETECTED" appears when the operating sequence has been recognized. Release the touchscreen to boot in user mode without running HMWIN runtime or touch and hold the touchscreen for a few seconds. Then select "Restart" > "Config OS" to boot in system mode.

12.4 Options available in system settings

The following important options for basic settings of the panel are available:

|	
Language System	Configures the language used for the system setting menu only.
System	Shows information about platform, status and timers (e.g. system on time, backlight on time).
Logs	Enables persistent log for BSP and allows to export it.
Date & Time	Allows to change the date and time of the panel, including time zone and NTP server.
Network	Allows to configure the IP address of the Ethernet interface and the other network settings, e.g. DNS, gateway, DHCP, hostname.
Services	Enables/disables services, e.g. OpenSSH server, cloud services, SNMP and logging.
Management	Allows to update BSP components (Main OS, Config OS, Boot loader, XLoader), check partition consistency, update the splash screen, show the usage and size of partitions. The update of "Main OS" is only available in system mode. The update of "Config OS" is only available in user mode.
Display	Allows to adjust the brightness, configure automatic backlight turnoff and select HMI orientation (90°, 180°, 270° and 360°).
Restart	Restarts the panel. Select "Main OS" to restart the panel in user mode (default setting). Select "Config OS" to restart the panel in system mode and open the system settings.
Authentication	Allows to configure the administrator ("admin") and the standard user ("user") password. An administrator has full access to the "System Settings" (e.g. BSP updates and other system components). A standard user has some limitations.

Note: the system settings tool includes also other options that are not described and not documented in this manual.

13. Touchscreen calibration

The HMe series panels support the calibration of the interface. To start calibration proceed as follows:

- Tap on the surface of the touchscreen during the power-up phase of the panel. The tapping frequency must be high. Start tapping the touchscreen as soon as power has been supplied to the panel. The message "TAP-TAP DETECTED" appears when the operating sequence has been recognized.
- Release the touchscreen and wait a few seconds until the message "ENTERING SYSTEM SETTINGS" appears.
- Touch and hold the touchscreen for a few seconds to select "TOUCHSCREEN CALIBRATION".

14. Unpacking and packing instructions
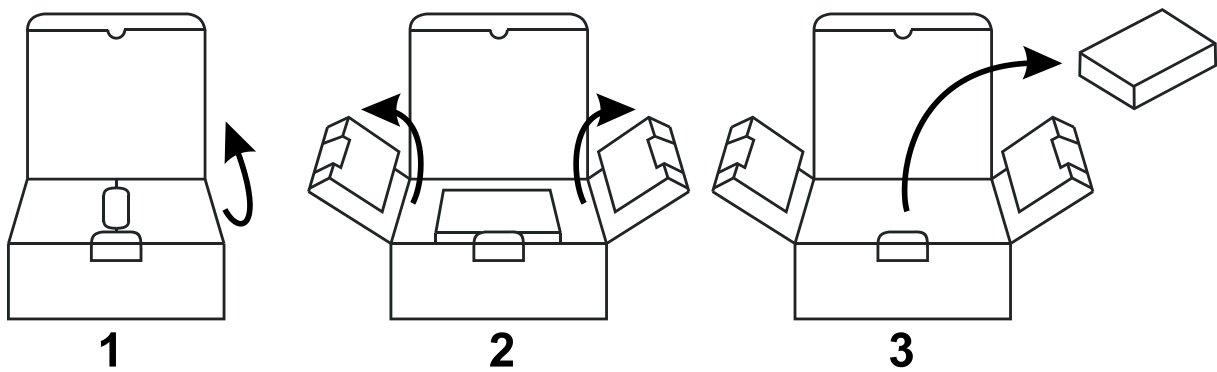
To repack the unit, please follow the instructions backwards.

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