

Product serie PCD7.D5xxCF1

Operating Instructions for the HMTL5 panels



0	Table of Contents	3
0.1	Document Process	4
0.2	Trademarks	4
1	Introduction	5
2	Product Overview	6
3	Standards and Approvals	6
3.1.	Declaration of REACH conformity	7
3.1.1	Article 33 Communication	7
3.2	Product Identification	8
4	Technical Specifications	9
4.1	Environmental conditions	9
4.2	Approvals	9
4.3	Electromagnetic Compatibility (EMC)	10
4.4	Durability information	10
4.5	Surface resistance	11
4.5.1	Cleaning and disinfecting of front screen	11
5	Technical Data	12
5.1	Dimensions	14
5.2	Installation Environment	15
5.3	Safety instruction	16
5.4	Installation Procedure	16
6	Connections	17
6.1	PCD7.D570CF1, PCD7.D510CF1, PCD7.D515CF1 and PCD7.D521CF1	17
6.2	Ethernet Port	17
7	Power Supply, Grounding and Shielding	18
8	Battery	19
9	Special Instruction for Use	20
10	Unpacking and Packing Instructions	21
A	Appendix	23
A.1	Safety Guide	23
A.2	Contact	24

0.1 Document Process

Version	Updated	Location	Comments
ENG01p	2020-04-22	-	- New Document
ENG01	2020-06-05	- Ch 4.2++	- Approvals
ENG02	2020-06-22	- overall	- Small corrections
ENG03	2020-07-02	- Ch 5.1	- New dimensions for the front plate
ENG04	2020-07-06	- overall	- Corrections from Technical Customer Support
ENG05	2020-07-14	- Ch 3.1	- Declaration of REACH conformity Article 33 Communication
ENG06	2020-09-15	- Ch 4.5.1	- New chapter Cleaning and disinfection
ENG07	2021-04-12	- overall	- SKUs, Flash, RAM, Chipset.

0.2 Trademarks

Saia PCD® is a registered trademark of Saia-Burgess Controls AG.

Technical changes are subject to the latest technical developments.

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Third-party brands and names are the property of their respective owners.

Published in Switzerland

1 Introduction

This user's manual describes information which relates to the device, installation, transportation, storage, assembly, use and maintenance.

This user's manual describes the main features of the Saia PCD7.D5xxCF1 HTML5 panels.

They pertain to the following the following models:

Type	Description
PCD7.D570CF1	Operator interface with TFT color 7" widescreen display multitouch projected capacitive touchscreen
PCD7.D510CF1	Operator interface with TFT color 10.1" widescreen display multitouch projected capacitive touchscreen
PCD7.D515CF1	Operator interface with TFT color 15.6" widescreen display multitouch projected capacitive touchscreen
PCD7.D521CF1	Operator interface with TFT color 21.5" widescreen display multitouch projected capacitive touchscreen

2 Product Overview

The PCD7.D5xxCF1 HTML5 HMI products combine state-of-the-art connectivity features and top performance in a great design. Products have been designed as IoT edge devices with the combination of a powerful controller with networking capability (up to 3 Ethernet networks). They are the ideal choice for all demanding IoT edge applications in factory, marine and building automation.

The glass projected capacitive touchscreen and the brilliant displays with size up to 21.5" and resolution up to 1920 × 1080 guarantee great optical performance; with the support of multitouch gesture programming they can create the most natural human interfaces.

- PCD7.D5xxCF1 products have been designed to run powerful HMI applications.
- Powerful browser with industry-standard Web engines.

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	CISPR 22 CISPR 16-2-3	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 EN 61000-4-8 EN 61000-4-11 EN 61000-4-29	
	EN 60945	

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

The products are in compliance with the Restrictions on Certain Hazardous Substances (RoHS) Directive 2011/65/EU.

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

3.1. Declaration of REACH conformity

3.1.1 Article 33 Communication

REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006

Saia-Burgess Controls AG takes compliance with REACH very seriously.

According to Article 33 “Duty to communicate information on substances in articles”:

1. Any supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1 % weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance.
2. On request by a consumer any supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1 % weight by weight (w/w) shall provide the consumer with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance.

Our duty is to inform you that the substance(s) listed below may be contained in these products above the threshold level of 0.1% by weight of the listed article.

SVHC Substance	CAS Number
Lead	7439-92-1
Diboron trioxide	1303-86-2
Lead titanium zirconium oxide	12626-81-2
4,4'-isopropylidenediphenol [Bisphenol A; BPA]	80-05-7
Lead monoxide (lead oxide)	1317-36-8
2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1
2-methyl-1-(4-methylthiophenyl)-2-morpholino propan-1-one	71868-10-5
Decamethylcyclopentasiloxane (D5)	541-02-6
Boric acid	10043-35-3 / 11113-50-1
Lead (II) oxide	1317-36-8
Octamethylcyclotetrasiloxane (D4)	556-67-2
Decamethylcyclopentasiloxane (D5)	541-02-6
Dodecamethylcyclohexasiloxane (D6)	540-97-6

Any further information will be available on request.

The declaration does not concern the supply of components by the customer, intended to be part of the finished product to be supplied to the customer.

We confirm that our products do not use any other REACH restricted materials during the manufacturing, storage or handling process.

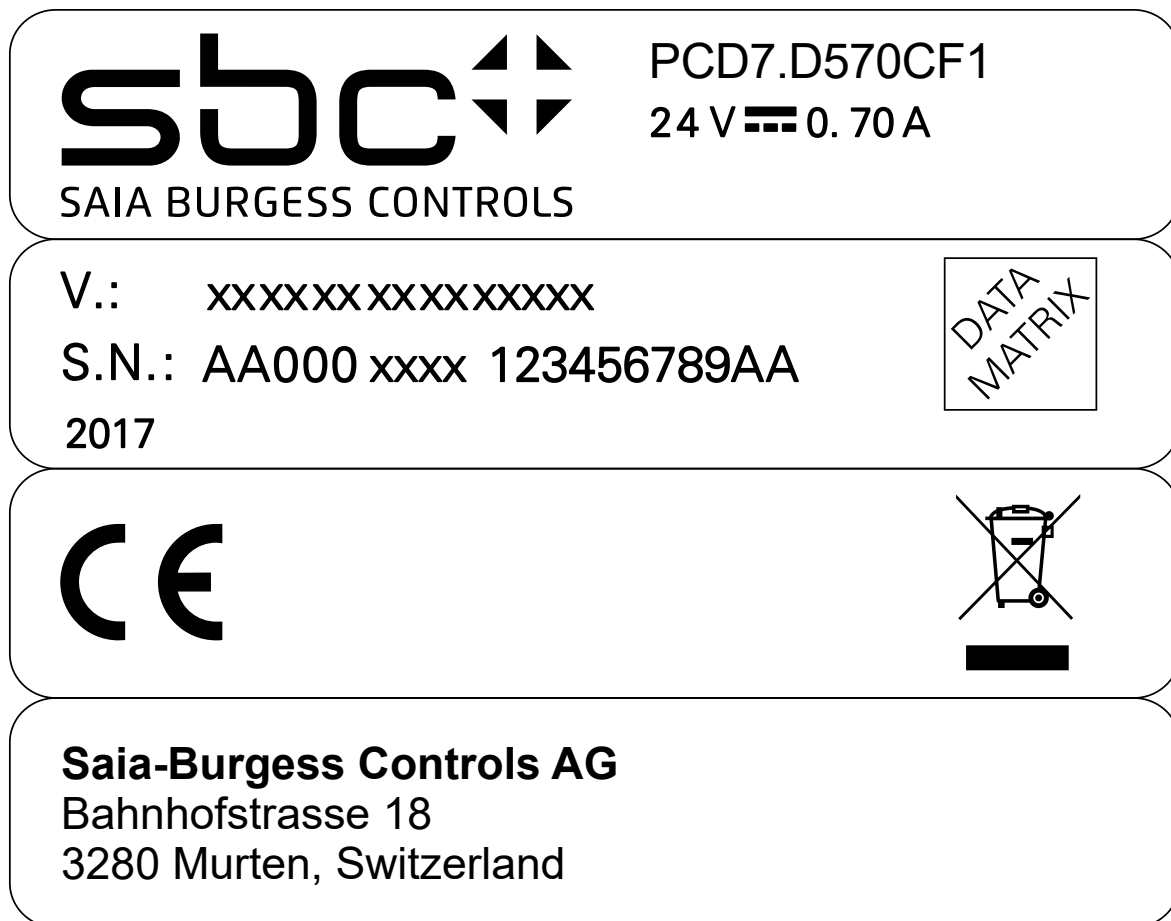
Product Identification

3.2 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.

An example of this plate is shown in the figure below:

Note: the PCD7.D570CF1 label is used as an example for PCD7.DxxCF1 Series



product model name	PCD7.D570CF1
year/week of production	2017
serial number	xxxxxxxxxxxxxxxxxx
version id of the product	AA00 xxxx 123456789AA
manufacturer address	Saia-Burgess Controls AG Bahnhofstrasse 18 3280 Murten, Switzerland

4 Technical Specifications

Touchscreen technology	Projected capacitive
Back-up battery	3 V / 50 mAh Lithium, rechargeable, not user-replaceable, model VL2330
Fuse	Automatic
Serial Port	not supported
Flash	- 4 GB
RAM	- 2 GB
Hardware clock	Clock/Calendar with back-up battery
Accuracy RTC (at 25°C)	<100 ppm

4.1 Environmental conditions

Operating temperature (surrounding air temperature)	-20 ... +60°C (vertical installation) USB devices may limit max temperature to +50°C	EN 60068-2-14
Storage temperature	-20 ... +70°C	EN 60068-2-1 EN 60068-2-2 EN 60068-2-14
Operating and storage humidity	5 ... 85 % RH non-condensing	EN 60068-2-30
Vibrations	5 ... 9 Hz, 7 mm p-p 9 ... 150 Hz, 1 g	EN 60068-2-6
Shock	± 50 g, 11 ms, 3 pulses per axis	EN 60068-2-27
Protection class	Front panel IP66, Rear IP20	EN 60529

4.2 Approvals

CE	Emission EN 61000-6-4, Immunity EN 61000-6-2 for installation in industrial environments
UL	UL 61010-1, 3rd Edition and UL 61010-2-201, 1st Edition

4.3 Electromagnetic Compatibility (EMC)

Radiated disturbance test	Class A	CISPR 22 CISPR 16-2-3
Electrostatic discharge immunity test	8 kV (air electrostatic discharge) 4 kV (contact electrostatic discharge)	EN 61000-4-2
Radiated, radio-frequency, electromagnetic field immunity test	80 MHz ... 1 GHz, 10V/m 1.4 GHz ... 2 GHz, 3 V/m 2 GHz ... 2.7 GHz, 1 V/m	EN 61000-4-3
Burst immunity test	± 2 kV dc power port ± 1 kV signal line	EN 61000-4-4
Surge immunity test	± 0.5 kV dc power port (line to earth) ± 0.5 kV dc power port (line to line) ± 1 kV signal line (line to earth)	EN 61000-4-5
Immunity to conducted disturbances induced by radiofrequency field	0.15 ... 80 MHz, 10 V	EN 61000-4-6
Power frequency magnetic field immunity test	Enclosure, 50/60 Hz, 30 A/m	EN 61000-4-8
Voltage dips, short interruptions and voltage variations immunity test	Port: AC mains; Level:	
	100% duration:	1 cycle and 250 cycles (50Hz); 1 cycle and 300 cycles (60Hz);
	40% duration:	10 cycles (50Hz); 12 cycles (60Hz);
	70% duration:	25 cycles (50Hz); 30 cycles (60Hz);
	Phase:	0°...180°
Test executed on the 230 Vac side of the Power Supply		EN 61000-4-11
	Port: DC mains; Level:	
	0% duration:	10 ms, 20 interruptions in 1 s

4.4 Durability information

Backlight service life (LED type)	40 000 Hrs. or more (LED type) (Time of continuous operation until the brightness of the backlight reaches 50% of the rated value when the surrounding air temperature is 25°C) - see Note
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Note: Extended use in environments where the surrounding air temperature is 40°C or higher may degrade backlight quality/reliability/durability.

4.5 Surface resistance

Chemical resistance of the front glass for an exposure time of 24 hours without visible changes:

- Betadine (10% Povidone Solution)
- Cola
- Electrode Gel/Paste
- Hydrogen Peroxide (3% Solution)
- NaCl (0.9% Solution)
- Coffee
- Dextrose (5% Glucose Solution)
- Hydrogen chloride (0.5% Solution PH=1)
- Isopropyl Alcohol
- Sodium Hypochlorit
- Ethyl Alcohol (70% ... 90%)
- Quaternary ammonium compound

4.5.1 Cleaning and disinfecting of front screen

As the trade names of cleaning and disinfecting agents differ in each country, they cannot be listed here.

However, for cleaning the front screen we recommend cleaning agents containing the isopropyl alcohol or ethyl alcohol (70 % ... 90 %) listed above.

For disinfecting the front screen we recommend disinfectants containing the above listed hydrogen peroxide (3% solution), sodium hypochlorite, ethyl alcohol (70% ... 90%) or quaternary ammonium compounds.

The indicated solution ratios should never be exceeded.

Make sure that none of these substances can penetrate into the interior of the device.

Technical Data

5 Technical Data

Model	PCD7.D570CF1	PCD7.D510CF1
Display / Backlight	TFT Color / LED	TFT Color / LED
Colors	16M	16M
Resolution	800 × 480 - WVGA 15 : 9	1280 × 800 - WXGA 16 : 10
Diagonal [inches]	7" widescreen	10.1" widescreen
Dimming	yes	yes
Chipset	i.MX8M Mini Quad ARM Cortex-A53	i.MX8M Mini Quad ARM Cortex-A53
Operating System	Linux	Linux
RAM	2 GB	2 GB
Flash	4 GB	4 GB
SD card slot	Not supported	Not supported
Serial Port	Not supported	Not supported
Ethernet port	2 × 10/100 Mb, 1 × 10/100/1000 Mb	2 × 10/100 Mb, 1 × 10/100/1000 Mb
USB port	2 × Host interface version 2.0 max. 500 mA	2 × Host interface version 2.0 max. 500 mA
Battery	rechargeable	rechargeable
Real Time Clock	yes	yes
Voltage	24 Vdc (*)	24 Vdc (*)
Current rating (at 24VDC)	0.7 A	1.00 A
Weight	1.3 Kg	1.7 Kg

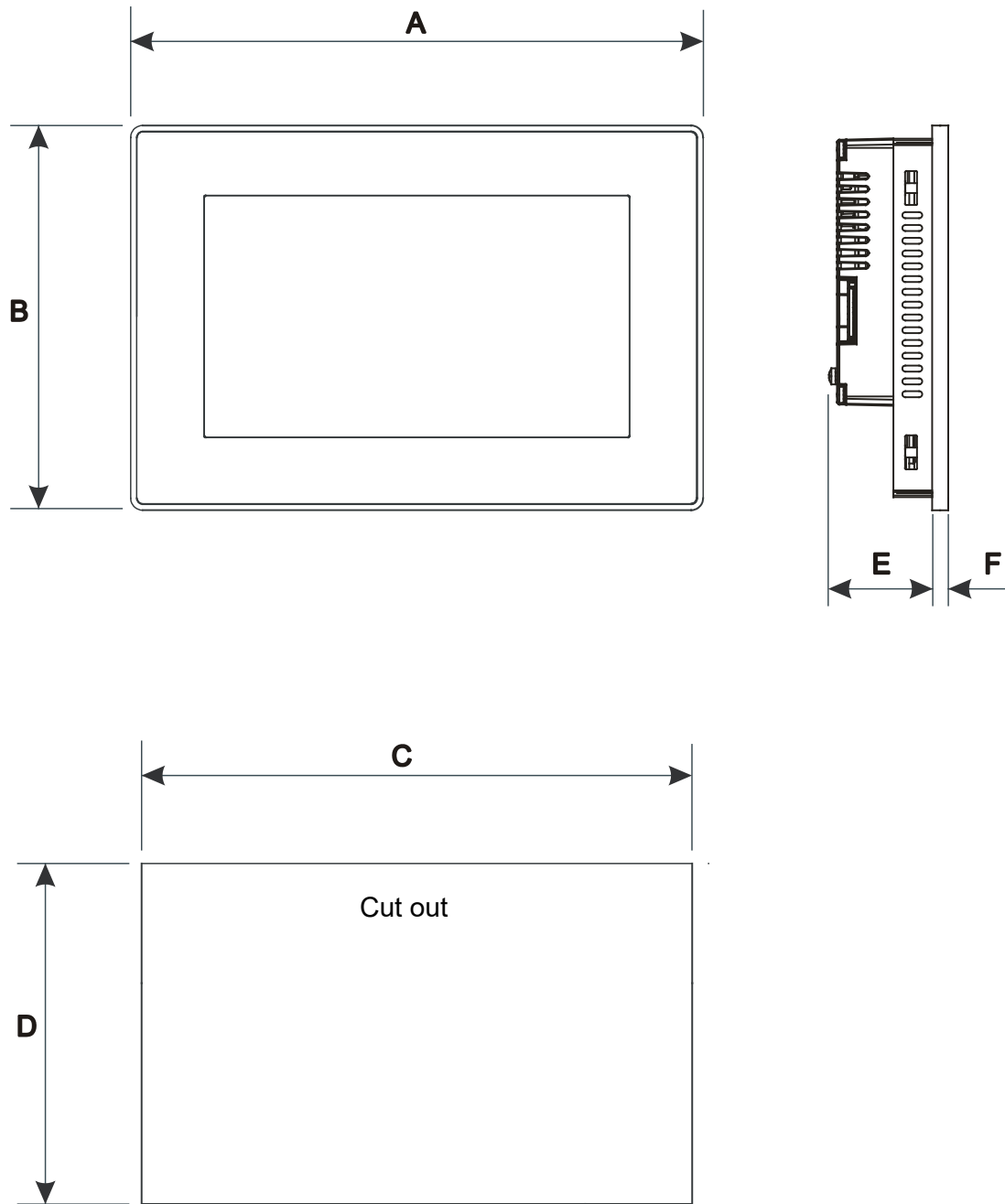
(*) 10...32 Vdc
For applications requiring compliance with EN 61131-2 and specifically in reference to 10 ms voltage dips, the power supply range voltage is 18...32 Vdc.

Model	PCD7.D515CF1	PCD7.D521CF1
Display / Backlight	TFT Color / LED	TFT Color / LED
Colors	16M	16M
Resolution	1366 × 768 - HD 16 : 9	1920 × 1080 - full HD 16 : 9
Diagonal [inches]	15.6" widescreen	21.5" widescreen
Dimming	yes	yes
Chipset	i.MX8M Mini Quad ARM Cortex-A53	i.MX8M Mini Quad ARM Cortex-A53
Operating System	Linux	Linux
RAM	2 GB	2 GB
Flash	4 GB	4 GB
SD card slot	Not supported	Not supported
Serial Port	Not supported	Not supported
Ethernet port	2 × 10/100 Mb, 1 × 10/100/1000 Mb	2 × 10/100 Mb, 1 × 10/100/1000 Mb
USB port	2 × Host interface version 2.0 max. 500 mA	2 × Host interface version 2.0 max. 500 mA
Battery	rechargeable	rechargeable
Real Time Clock	yes	yes
Voltage	24 Vdc (*)	24 Vdc (*)
Current rating (at 24VDC)	1.20 A	1.70 A
Weight	4.1 Kg	6.1 Kg

(*) 10...32 Vdc
For applications requiring compliance with EN 61131-2 and specifically in reference to 10 ms voltage dips, the power supply range voltage is 18...32 Vdc.

Dimensions

5.1 Dimensions



MODEL	A	B	C	D	E	F
PCD7.D570CF1	187 mm/7.36"	147 mm/5.79"	176 mm/6.90"	136 mm/5.35"	47 mm/1.85"	8...8.5 mm / 0.31...0.33"
PCD7.D510CF1	282 mm/11.10"	197 mm/7.80"	271 mm/10.67"	186 mm/7.32"	52 mm/2.05"	8...8.5 mm / 0.31...0.33"
PCD7.D515CF1	422 mm/16.60"	267 mm/10.50"	411 mm/16.18"	256 mm/10.00"	56 mm/2.20"	8...8.5 mm / 0.31...0.33"
PCD7.D521CF1	552 mm/21.73"	347 mm/13.66"	541 mm/21.30"	336 mm/13.22"	56 mm/2.20"	8...8.5 mm / 0.31...0.33"

5.2 Installation Environment

Avoid prolonged exposition to direct sunlight to avoid the risk of overheating the device.

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

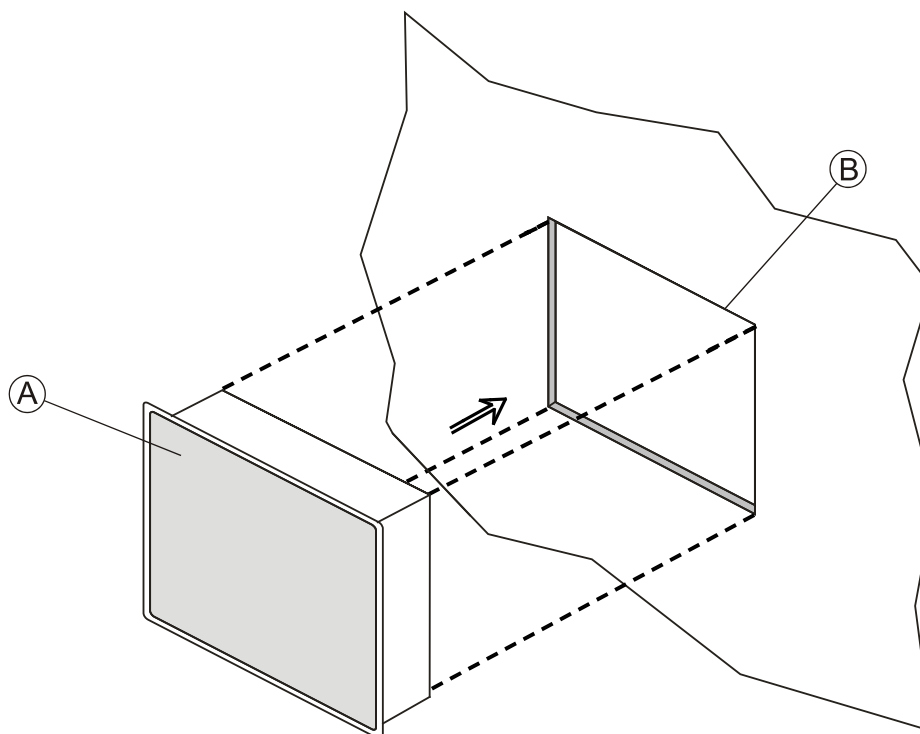
Do not use tools of any kind (screwdrivers, etc.) to operate the touch screen of the panel.

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

- the borders of the cutout must be flat
- fasten each fixing screw until the bezel corner gets in contact with the panel.
- the cutout for the panel must be of the dimensions indicated in this manual.


The IP66 is guaranteed only if:

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



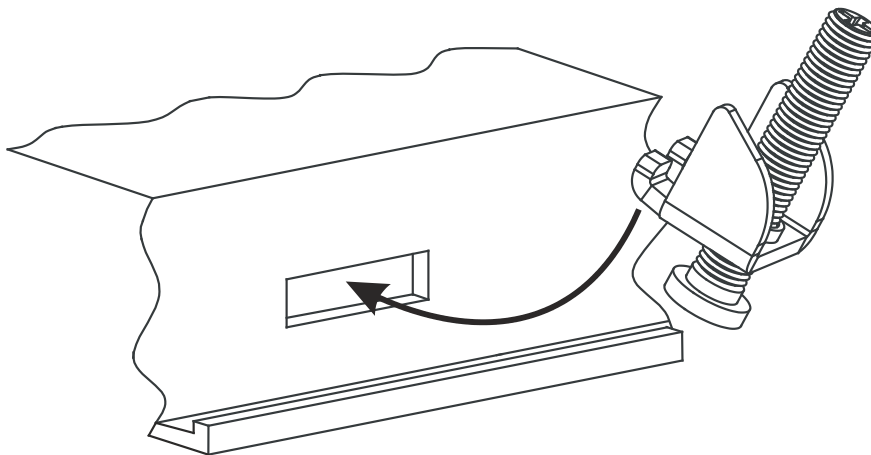
A. PCD7.D5xxCF1
B. Installation cut-out


5.3 Safety instruction

	ATTENTION	For all installation notes, please refer to the Installation Guide provided with the product.
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5.4 Installation Procedure

Place the fixing brackets contained in the fixing kit as shown in figure below



	CAUTION Tightening torque: 130 Ncm or screw each fixing screw until the bezel corner gets in contact with the panel.
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6 Connections

6.1 PCD7.D570CF1, PCD7.D510CF1, PCD7.D515CF1 and PCD7.D521CF1

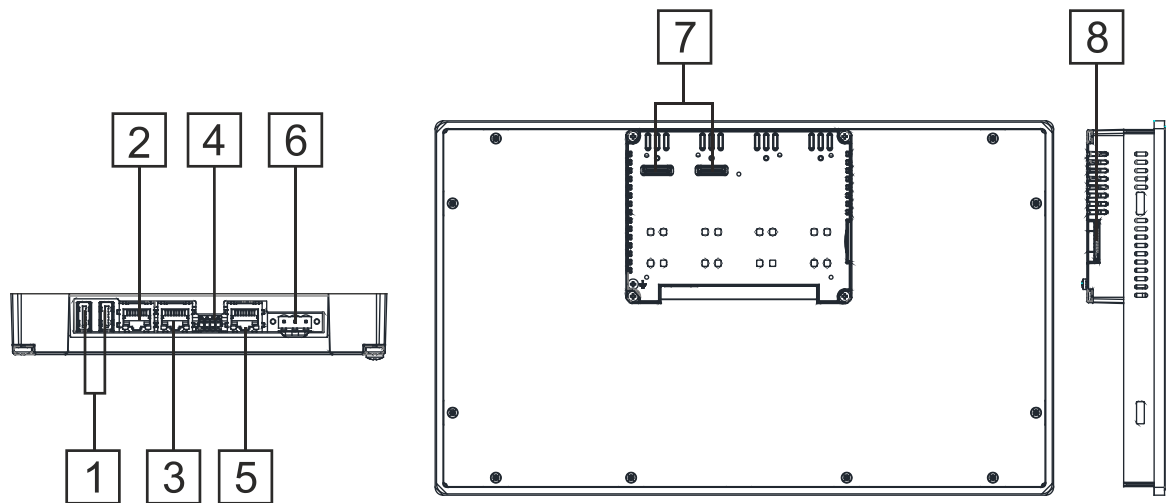
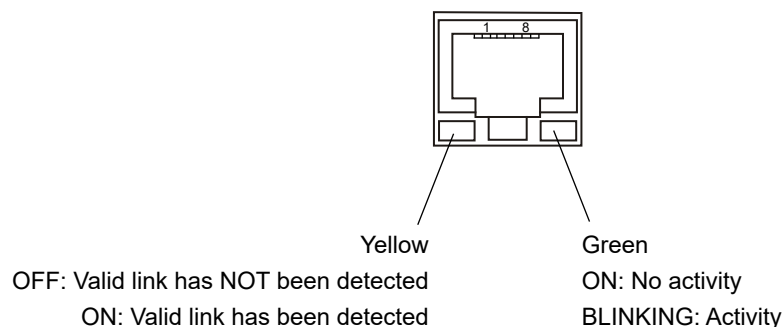


Fig. 6.2

1. USB Port V2.0, max. 500 mA - for maintenance only
2. Ethernet port 2 (10/100 Mb)
3. Ethernet port 1 (10/100 Mb)
4. Serial Port - not supported
5. Ethernet port 0 (10/100/1000 Mb)
6. Power Supply
7. 2 × Expansion slot for Plugin module - not supported
8. SD Card Slot

6.2 Ethernet Port

The Ethernet port has two status indicators. Please see description in figure.



7 Power Supply, Grounding and Shielding

The power supply terminal block is shown in the figure below.

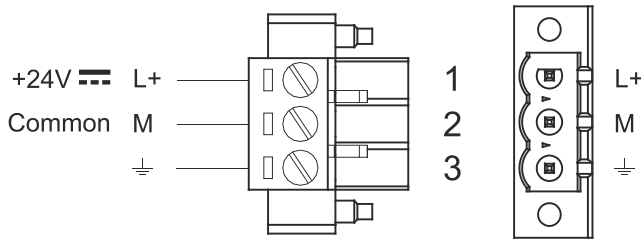


Fig. 7.1

3 conductor 1.5 mm² wire size minimum, minimum temperature conductor rating 105°C.

	Note: Ensure that the power supply has enough power capacity for the operation of the equipment.
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The unit must always be grounded to earth with 1.5 mm² wire size minimum. Grounding helps limit the effects of noise due to electromagnetic interference on the control system.

Earth connection will have to be done using either the screw or the faston terminal located near the power supply terminal block. A label helps identify the ground connection. Also connect to ground the terminal 3 on the power supply terminal block.

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

When using the floating power scheme, note that the panes internally connects the power common to ground with a 1 MΩ resistor in parallel with a 4.7 nF capacitor.

The power supply must have double or reinforced insulation.

The suggested wiring for the power supply is shown below.

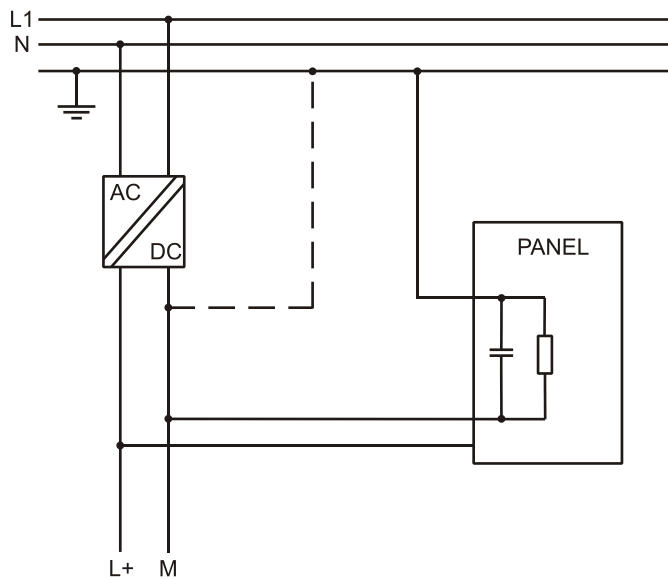


Fig. 7.2

All the electronic devices in the control system must be properly grounded. Grounding must be performed according to applicable regulations.

8 Battery

These devices are equipped with rechargeable Lithium battery, not user-replaceable.

The following information is maintained by the battery:

- hardware real-time clock (date and time)

Charge:

At first installation must be charged for 48 hours.

When the battery is fully charged, it ensures a period of 3 months of data back-up at 25°C.

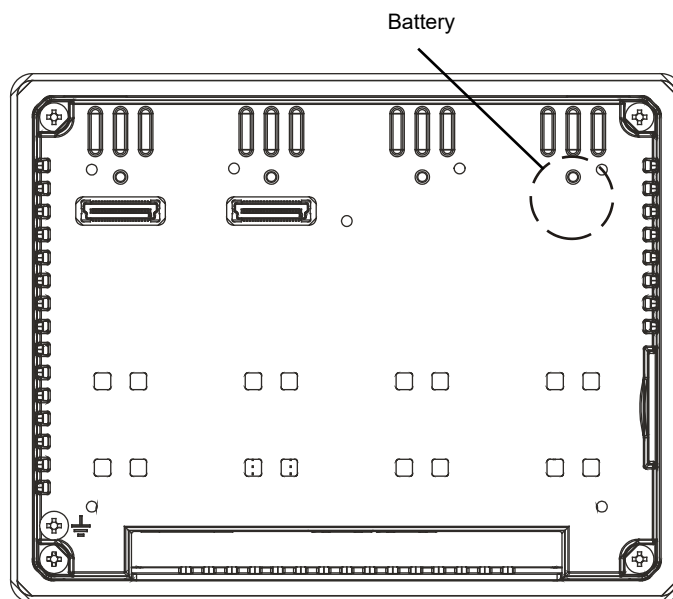


Fig. 8.1: PCD7.D570CF1, PCD7.D510CF1, PCD7.D515CF1, PCD7.D521CF1

	ATTENTION	Dispose of batteries according to local regulations.
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	ATTENTION	According to WEEE European Directive 2012/19/EU, this device cannot be disposed of as a domestic waste.	
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9 Special Instruction for Use

- The equipment shall only be used in an area of not more than pollution degree 2, as defined in IEC/EN 60664-1.
- The equipment shall be installed in an enclosure that provides a degree of protection not less than IP 54 in accordance with IEC/EN 60079-15.
- Transient protection shall be provided that is set at a level not exceeding 140 % of the peak rated voltage value at the supply terminals to the equipment.
- Install the HMI device according to the accompanying installation instructions.
- Ground the HMI device according to the accompanying installation instructions.
- Only qualified personnel may install the HMI device or repair it.
- Ensure that the aeration holes are not covered.
- Care shall be taken not to allow layers of dust to form on the graphic panel in a way that might cause the accumulation of static charges. Keep the faceplate of the HMI device clean: the equipment must be cleaned only with a soft cloth and neutral soap product. Do not use solvents.
- This device should not be used for purposes and methods other than indicated in this document and in the documentation accompanying the product.

10 Unpacking and Packing Instructions

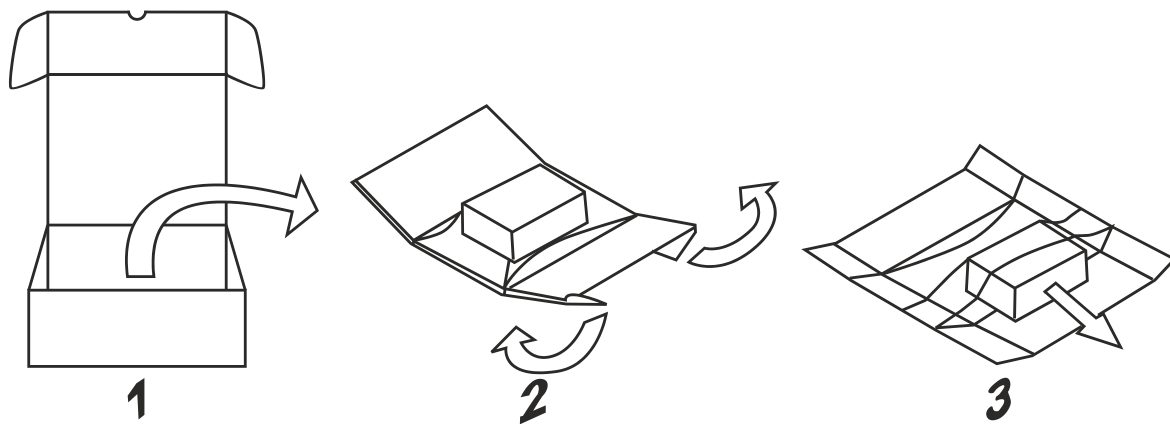


Fig. 10.1: PCD7.D570CF1, PCD7.D510CF1

Unpacking and Packing Instructions

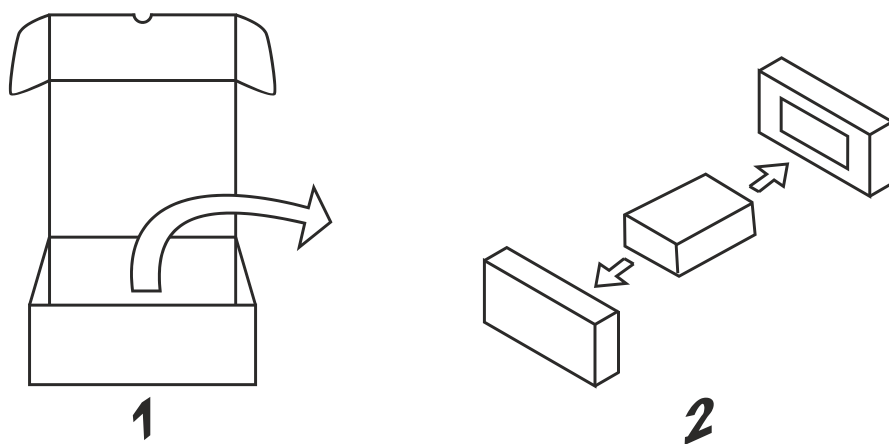


Fig. 10.2: PCD7.D515CF1, PCD7.D521CF1

To repack the unit, please follow the instructions backwards.

A Appendix

A.1 Safety Guide

The manual contains safety standards that must be respected for the personal safety and to avoid damage.

Indications of attention are divided into three levels of severity:



DANGER

DANGER: Indicates a failure to observe safety rules and such failure may cause death or serious injuries.



ATTENTION

ATTENTION: Indicates a failure to observe safety rules and that deficiency may cause damage.



CAUTION

CAUTION: Indicates a failure to observe safety rules and that deficiency may cause defects to the equipment or inconsistencies.

Addresses

A.2 Contact

Saia-Burgess Controls AG

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3280 Murten, Switzerland

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SBC website: www.saia-pcd.com

International agencies &

SBC subsidiaries: www.saia-pcd.com/contact

Return of goods:

<https://sbc-support.com/de/services/reparaturservice/>