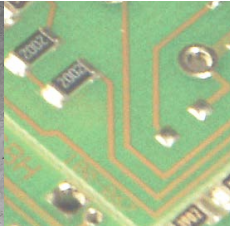


# Product serie PCD7.D5xxRF

## Operating Instructions for the HMTL5 panels



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## 0.1 Document Process

Version	Updated	Published	Comments
ENG01p	2020-04-22	-	- New Document
ENG01	2020-06-05	- Ch. 4.2	- Approvals added
ENG02	2020-06-22	-	- Small corrections
ENG03	2020-07-06	- overall	- Corrections from Technical Customer Support
ENG04	2020-07-17	- Ch. 3.1 - Ch. 3.1.1	- Declaration of REACH conformity - Article 33 Communication
ENG05	2020-09-16	- Ch 4.5.1	- New sub chapter "Cleaning and disinfection"

## 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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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.D5xxRF HTML5 panels.

They pertain to the following models:

Type	Description
PCD7.D543RF	Operator interface with TFT color 4.3" widescreen display touchscreen
PCD7.D570RF	Operator interface with TFT color 7" widescreen display touchscreen

## 2 Product Overview

The PCD7.D5xxRF HTML5 HMI products combine state-of-the-art features and top performance with an outstanding design. They have been designed to offer an outstanding price/performance ratio for challenging applications.

They are the ideal choice for HMI applications including factory and building automation.

- PCD7.D5xxRF 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	EN 55011 Class A
EN 61000-6-3	EN 55022 Class B
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 60079-0	
EN 60079-7	
EN 60079-11	

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.

### 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 60079-7.
- 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.

## Standards and Approvals

**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
1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4
Lead	7439-92-1
4,4'-isopropylidenediphenol [Bisphenol A; BPA]	80-05-7
Diboron trioxide	1303-86-2
Lead titanium zirconium oxide	12626-81-2

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.

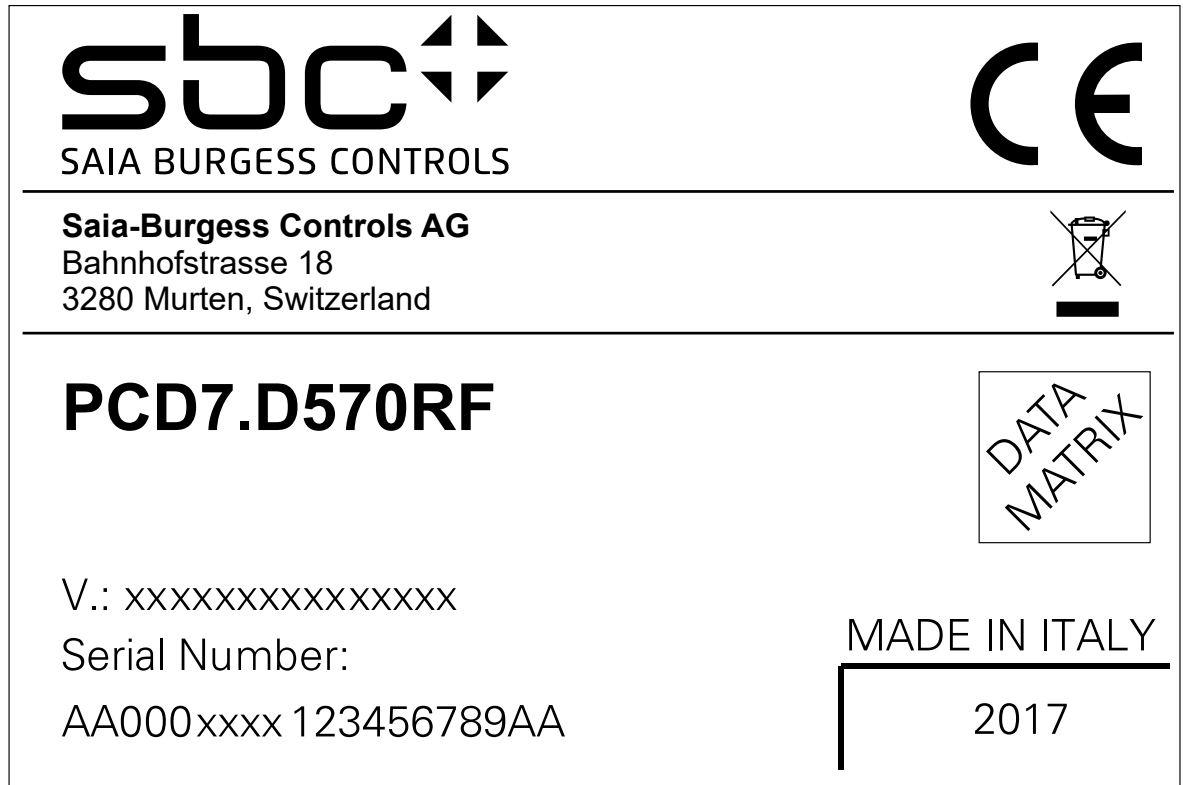
We confirm that our products do not use any other REACH restricted materials during the manufacturing, storage or handling process.

### 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.D570RF label is used as an example for PCD7.DxxRF Series



product model name	PCD7.D570RF
year/week of production	2017
serial number	AA000 xxxx123456789AA
version id of the product	xxxxxxxxxxxxxxxx
manufacturer address	Saia-Burgess Controls AG Bahnhofstrasse 18 3280 Murten, Switzerland

## 4 Technical Specifications

<b>Touchscreen technology</b>	Resistive
<b>RTC backup</b>	Supercapacitor
<b>Fuse</b>	Automatic
<b>Recipe memory</b>	Flash
<b>Hardware clock</b>	Clock/Calendar with supercapacitor back-up
<b>Accuracy RTC (at 25°C)</b>	<100 ppm

### 4.1 Environmental conditions

<b>Operating temperature (surrounding air temperature)</b>	0 ... +50°C (vertical installation)	EN 60068-2-14
<b>Storage temperature</b>	-20 ... +70°C	EN 60068-2-1 EN 60068-2-2 EN 60068-2-14
<b>Operating and storage humidity</b>	5 ... 85 % RH non-condensing	EN 60068-2-30
<b>Vibrations</b>	5 ... 9 Hz, 7 mm p-p 9 ... 150 Hz, 1 g	EN 60068-2-6
<b>Shock</b>	± 50 g, 11 ms, 3 pulses per axis	EN 60068-2-27
<b>Protection class</b>	IP66 front panel *	EN 60529
<b>Pollution degree environment</b>	2	

\* The front face of the SBC 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 of the SBC unit is equivalent to these standards, oils that should have no effect on the PCD7.D5xxRF can possibly harm the unit. This can occur in areas where either vaporized oils are present, or where low-viscosity cutting oil is allowed to adhere to the unit for long periods of time. If the front face protection sheet on the PCD7.D5xxRF 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 level of the protection cannot be guaranteed.

### 4.2 Approvals

<b>CE</b>	Emission EN 61000-6-4, Immunity EN 61000-6-2 for installation in industrial environments. Emission EN 61000-6-3, Immunity EN 61000-6-1 for installation in residential environments.
<b>UL</b>	ANSI/UL 508



### 4.3 Electromagnetic Compatibility (EMC)

<b>Radiated disturbance test</b>	Class A	EN 55011
<b>Electrostatic discharge immunity test</b>	8 kV (air electrostatic discharge) 4 kV (contact electrostatic discharge)	EN 61000-4-2
<b>Radiated, radio-frequency, electromagnetic field immunity test</b>	80 MHz ... 1 GHz, 10 V/m 1.4 GHz ... 2 GHz, 3 V/m 2 GHz ... 2.7 GHz, 1 V/m	EN 61000-4-3
<b>Burst immunity test</b>	± 2 kV dc power port ± 1 kV signal line	EN 61000-4-4
<b>Surge immunity test</b>	± 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
<b>Immunity to conducted disturbances induced by radiofrequency field</b>	0.15 ÷ 80 MHz, 10 V	EN 61000-4-6
<b>Voltage dips, short interruptions and voltage variations immunity test</b>	<b>Port: AC mains; Level:</b>	
	100% duration:	1 cycle and 250 cycles (50 Hz)
	40% duration:	10 cycles (50 Hz)
	70% duration:	25 cycles (50 Hz)
	Phase:	0°...180°
<b>Test executed on the 230 Vac side of the Power Supply</b>		EN 61000-4-11

### 4.4 Durability information

<b>Backlight service life (LED type)</b>	40000 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
<b>Front foil (without direct exposure to sunlight or UV)</b>	10 years if the surrounding air temperature is 25°C
<b>UV Resistance</b>	Indoor applications: After 300 hours cycled humidity in QUV accelerated weathering, some yellowing and brittleness may be present.

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

<b>Touchscreen reliability</b>	> 1 million operations
--------------------------------	------------------------

## 4.5 Solvent resistance

### Contact for 1/2 hour at 21°C, No visible effect:

- Acetone,
- Butyl Cellosolve,
- Cyclohexanone,
- Ethyl Acetate,
- Hexane,
- Isopropyl Alcohol,
- MEK (Butanone, also known as methyl ethyl ketone),
- 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.

### 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 above listed Acetone, Butyl Cellosolve, Ethyl Acetate, Isopropyl alcohol, MEK or Methylene Chloride.

For disinfecting the front screen we recommend disinfectants containing the above listed Ethyl Acetate, Isopropyl alcohol or MEK.

The indicated solution ratios should never be exceeded.

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

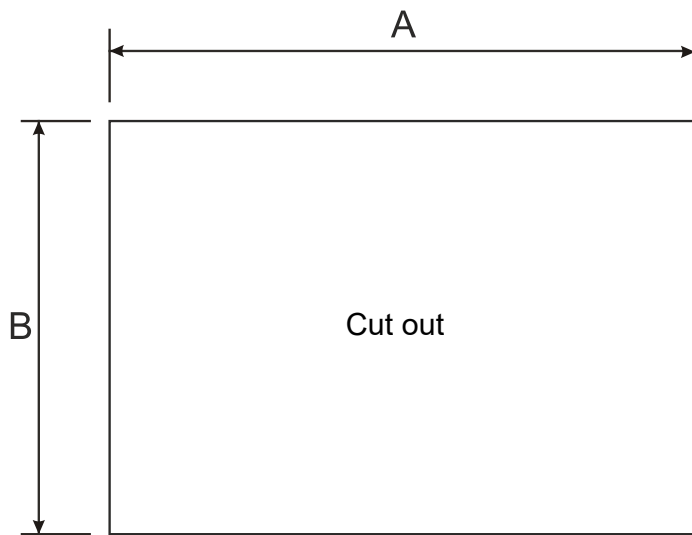
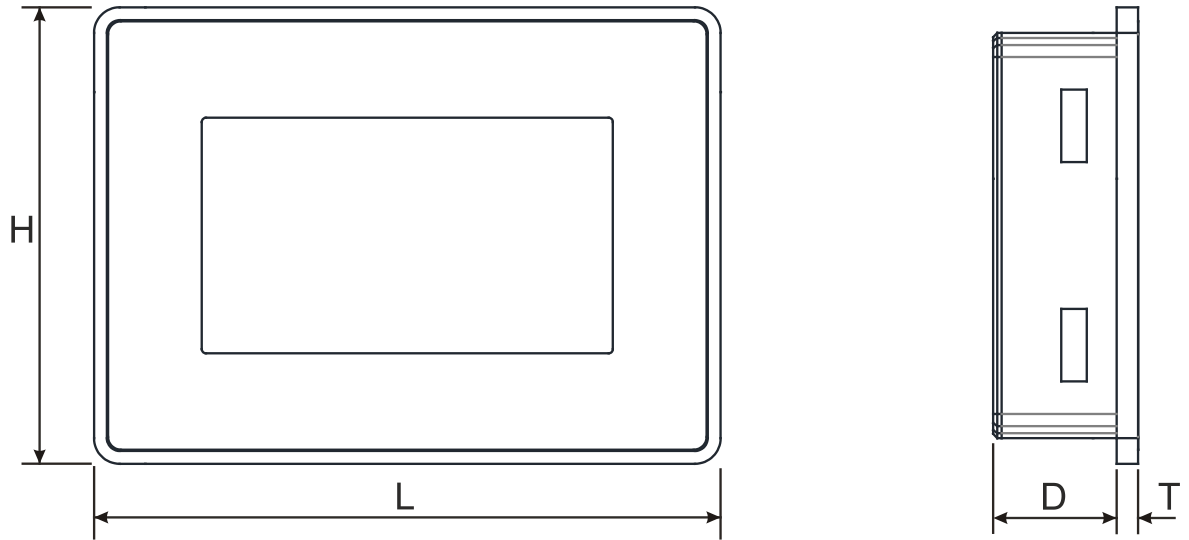
## 5 Technical Data

Model	PCD7.D543RF	PCD7.D570RF
Display / Backlight	TFT Color / LED	TFT Color / LED
Colors	64K	64K
Resolution	480 × 272 16 : 9	800 × 480 - WVGA 15 : 9
Diagonal (inches)	4.3" widescreen	7" widescreen
Dimming	yes	yes
Chipset	ARM Cortex-A8 - 1 GHz	ARM Cortex-A9 dual core - 800 MHz
Operating System	Linux	Linux
User memory	4 GB Flash	4 GB Flash
RAM	512 MB DDR	1 GB DDR
Ethernet port	10/100 Mbit	10/100 Mbit
USB port	Host interface version 2.0 max. 500 mA	Host interface version 2.0 max. 500 mA
Real Time Clock	yes	yes
Voltage	24 Vdc	24 Vdc
Current rating (at 24VDC)	0.25 A	0.30 A
Weight	0.4 Kg	0.875 Kg

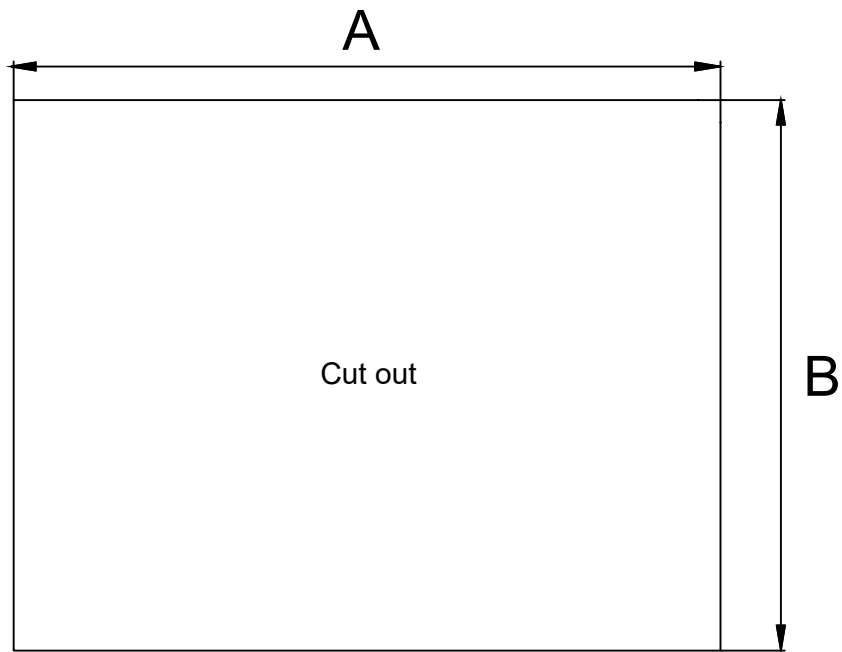
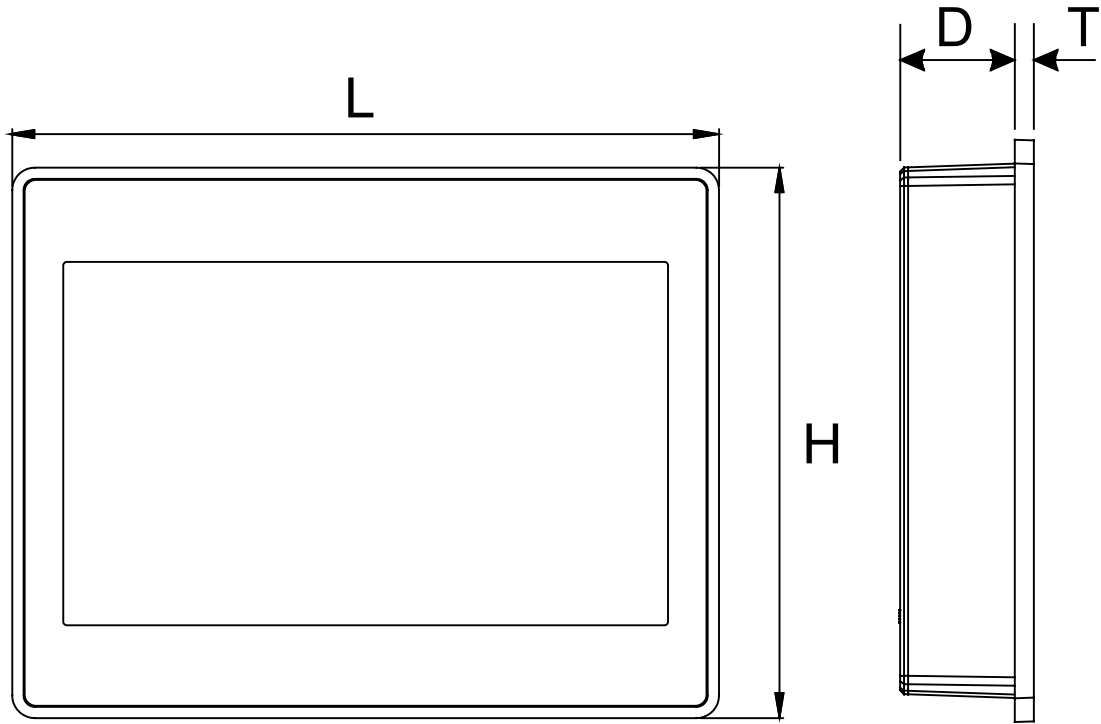
(\*) 10...32 Vdc  
For applications requiring compliance with EN 61131-2 and specifically in reference to 10 ms voltage dips, the power supply range voltage is 18...32 Vdc.

Dimensions

5.1 Dimensions



MODEL	A	B	L	H	D	T
PCD7.D543RF	136 mm/5.35"	196 mm/7.72"	147 mm/5.78"	107 mm/4.21"	29 mm/1.14	5 mm/0.19"



MODEL	A	B	L	H	D	T
PCD7.D570RF	176 mm/6.93"	136 mm/5.35"	187 mm/7.36"	147 mm/5.79"	29 mm/1.14"	5 mm/0.19"

## 5.2 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
- 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.

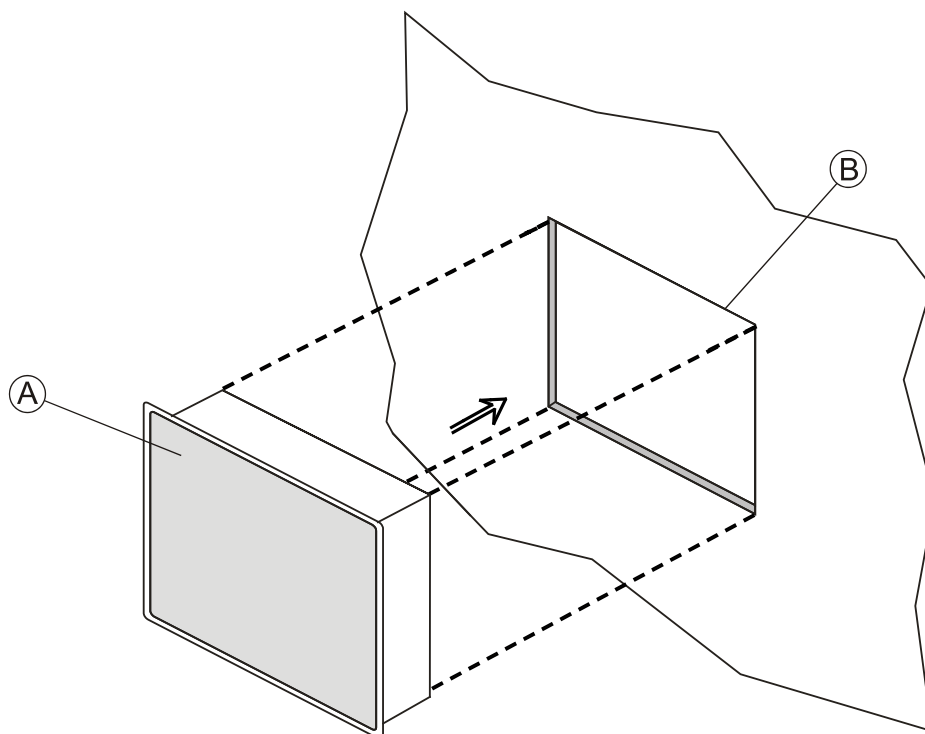
The equipment is not intended for continuous exposure to direct sunlight. This might accelerate the aging process of the front panel film.

The equipment is not intended for installation in contact with corrosive chemical compounds. Check the resistance of the front panel 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:

- max. deviation from the plane surface to the cut-out:  $\leq 0.5$  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:  $\leq 120$   $\mu\text{m}$



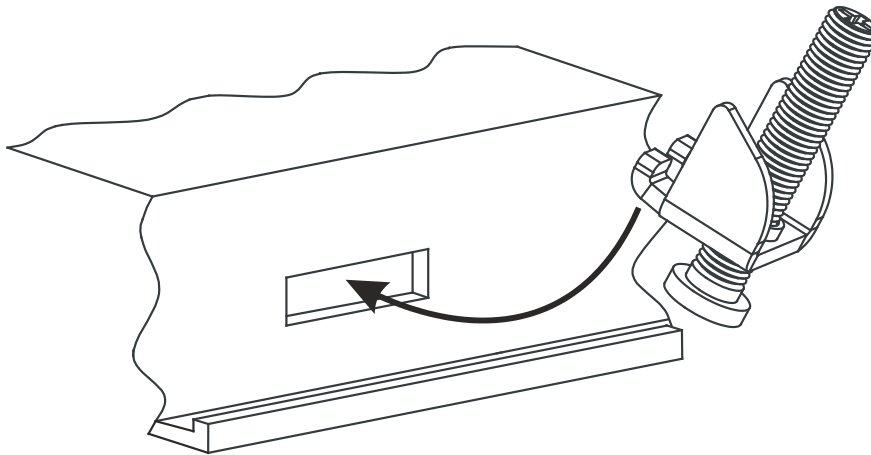
A. PCD7.D5xxRF  
B. Installation cut-out


### 5.3 Safety instruction

	<b>ATTENTION</b>	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.



	<b>CAUTION</b> Tightening torque: 75 Ncm or screw each fixing screw until the bezel corner gets in contact with the panel.
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Connections

## 6 Connections

### 6.1 PCD7.D543RF

- 1. Serial port - not supported
- 2. Ethernet Port
- 3. USB Port
- 4. Power Supply

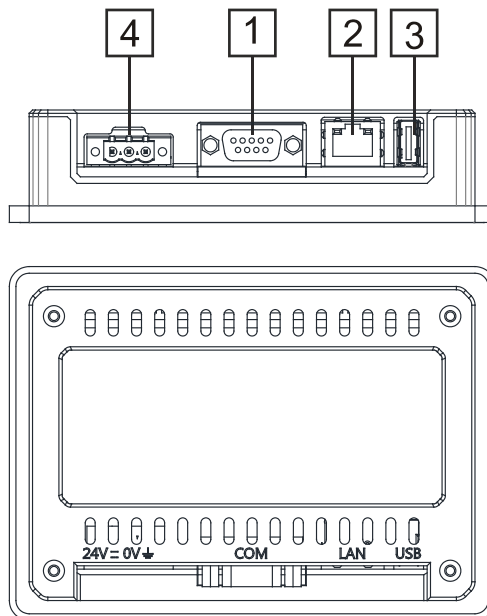


Fig. 6.1

### 6.2 PCD7.D570RF

- 1. Power Supply
- 2. Ethernet Port
- 3. USB Port

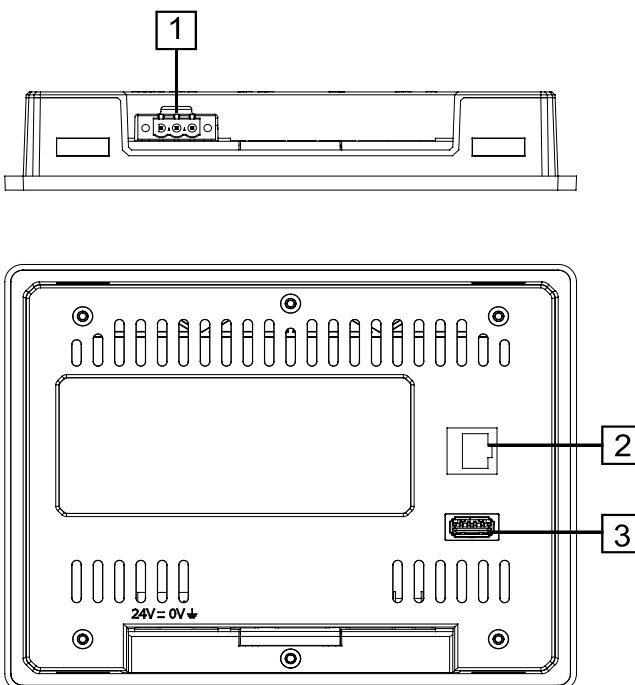
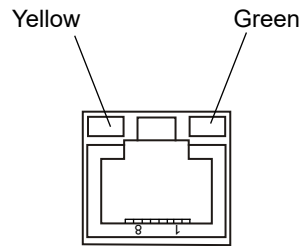


Fig. 6.2



## 6.3 Ethernet Port

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



Green	Yellow	
ON	OFF	No LAN cable connected
BLINK (link active)	ON	LAN cable connected with 100 Mbit/s link
BLINK (link active)	OFF	LAN cable connected with 10 Mbit/s link

## 7 Power Supply, Grounding and Shielding

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

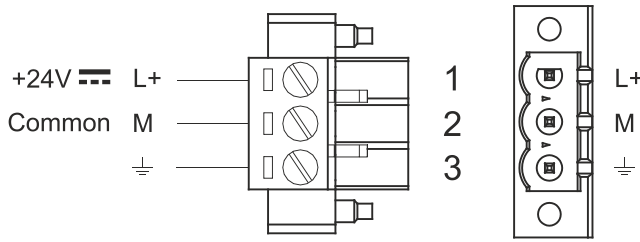


Fig. 7.1

DC Power Connector - female R/C Terminal Blocks (XCFR2), pitch 5.08 mm, torque 0.5 Nm.

3 conductor 1.5 mm<sup>2</sup> wire size minimum, minimum temperature conductor rating 105°C.

	<b>Note:</b> Ensure that the power supply has enough power capacity for the operation of the equipment.
--	---

The unit must always be grounded to earth with 1.5 mm<sup>2</sup> 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.

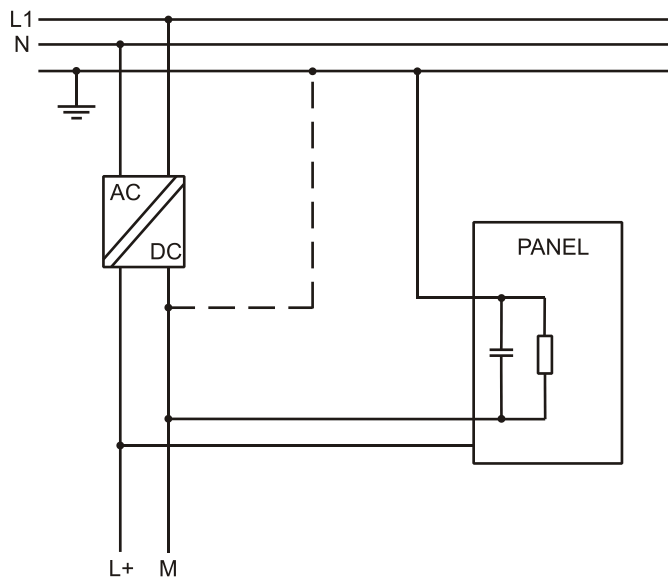


Fig. 7.2

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

## 8 Cleaning faceplates

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

## 9 Touchscreen calibration

PCD7.D5xxRF HMI products support calibration of the touchscreen.

To start calibration, proceed as follow:

1. Use the “tap-tap” procedure at boot (this procedure consists in tapping the surface of the touchscreen during the device power-up phase. You have to start tapping the touchscreen as soon as power has been applied to the device). When the sequence has been recognized, the system shows the message: “TAP-TAP DETECTED”.
2. Release touch and wait few seconds until the message “ENTERING SYSTEM SETTINGS” appears
3. Press and hold touch for few seconds for selecting “TOUCHSCREEN CALIBRATION”.

## 10 Unpacking and Packing Instructions

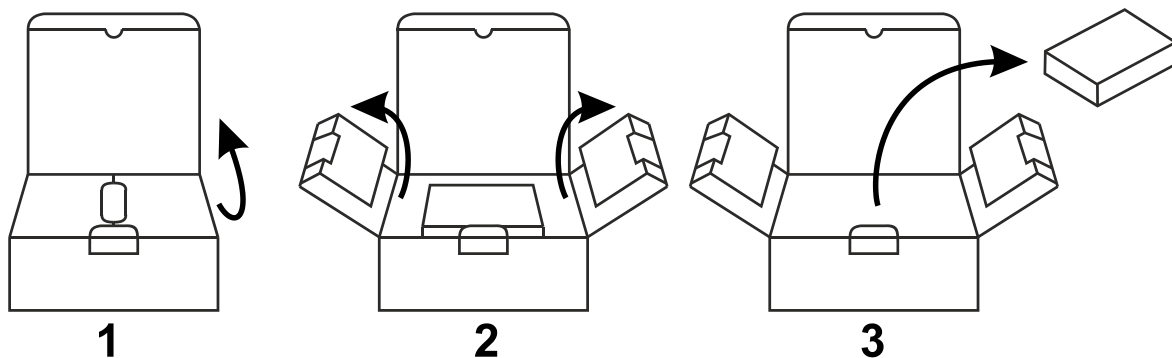


Fig. 10.1: PCD7.D543RF, PCD7.D570RF

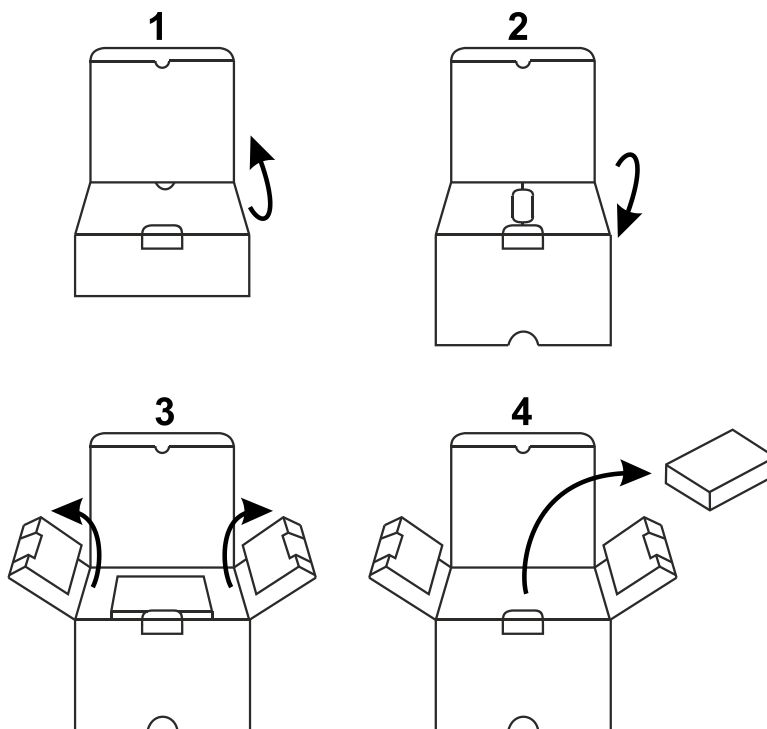


Fig. 10.2: PCD7.D510RF

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



**DANGER**

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



**ATTENTION**

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



**CAUTION**

Addresses

## A.2 Contact

### **Saia-Burgess Controls AG**

Bahnhofstrasse 18  
3280 Murten, Switzerland

Telephone Headquarters..... +41 26 580 30 00

Telephone SBC Support ..... +41 26 580 31 00

Fax..... +41 26 580 34 99

E-mail Support: ..... [support@saia-pcd.com](mailto:support@saia-pcd.com)

Support website: ..... [www.sbc-support.com](http://www.sbc-support.com)

SBC website: ..... [www.saia-pcd.com](http://www.saia-pcd.com)

International agencies &  
SBC subsidiaries: [www.saia-pcd.com/contact](http://www.saia-pcd.com/contact)

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