

Original User Manual

Touch Industrial Webpanel OEM 13.3

Christ Electronic Systems GmbH

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Instruction Manual: Touch Industrial Webpanel OEM 13.3

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1 Identification

Target group

This document is not intended for end customers! Necessary safety instructions for the end customer must be passed on by the machine builder or system provider and adopted in the respective national language.

Intended use

The devices described in this documentation are intended to enable the user to control, operate, observe, drive and visualise certain processes in industry or industrial contexts / environments. The devices must be used within the conditions and limits described in this documentation.

Improper use

The devices have not been designed and manufactured for use in applications where serious danger to life and health may occur. The equipment must not be used for the following purposes:

- Control of nuclear reactions in nuclear power plants
- Control systems of weapons
- Automatic control of aircraft air traffic control and mass transport systems
- Medical equipment for life support

Technical changes

Christ Electronic Systems GmbH reserves the right to change the information, designs and technical data contained in this documentation without prior notice.

History

The following editions of the manual have already been published:

Version	Comment
12/2024 Rev. 00	First edition
12/2024 Rev. 01	Chapter 8.4 FCC Approval: Replacing the illustration of the name plate


Table 1: History

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Design of safety instructions


The general structure of the safety instructions is shown below:


NOTICE	
	Type of hazard and source of hazard Consequences in the event of non-compliance with the guideline ➤ Measures to avoid hazards

The meaning of the colours of the safety instructions is shown below:

⚠ DANGER	
	Indicates an imminent danger Failure to follow the instructions may result in death or serious injury.

⚠ WARNING	
	Indicates a dangerous situation Failure to follow the instructions may result in serious injury.

⚠ CAUTION	
	Indicates a possible dangerous situation Failure to follow the instruction may result in injury.

NOTICE	
	Indicates user tips and useful information Important information to avoid malfunctions.

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2 Product description

Every industry has its own requirements for machine and system operation. To meet all of them, there are different housing variants with industry-specific features.

Above all, special areas of application or special environmental characteristics demand the greatest possible adaptability in the design of the touch panels.

In order to meet any requirements, Christ develops so-called OEM solutions. These are equipped with special customer-specific features.

The wide variety of OEM touch panels in terms of housing design, processor characteristics, interfaces, inch size and multi-touch technology enables customised implementation of customer requirements.

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2.1 System Overview

i.MX 8M Plus

CPU	NXP® i.MX 8M Plus QuadCore
Graphic	3D: Vivante™ GC7000UL / 2D: Vivante™ GC520L

Table 2: System overview i.MX 8M Plus

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2.2 Housing Variant Webpanel OEM 13.3

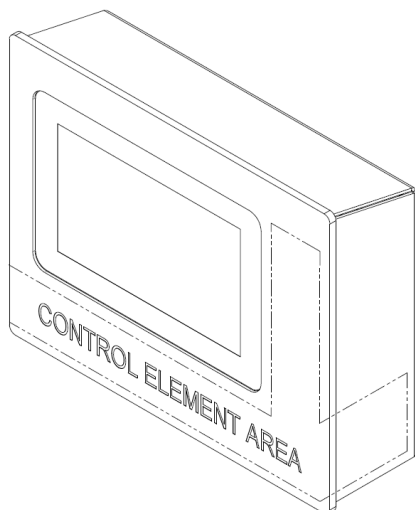


Illustration 1: CE OEM glass Front

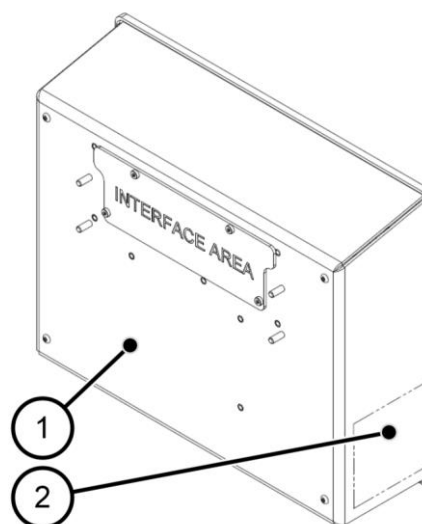


Illustration 2: CE OEM glass Rear

1	Customised Mounting
2	Control Element Area

Table 3: CE OEM glass Front and CE OEM glass Rear

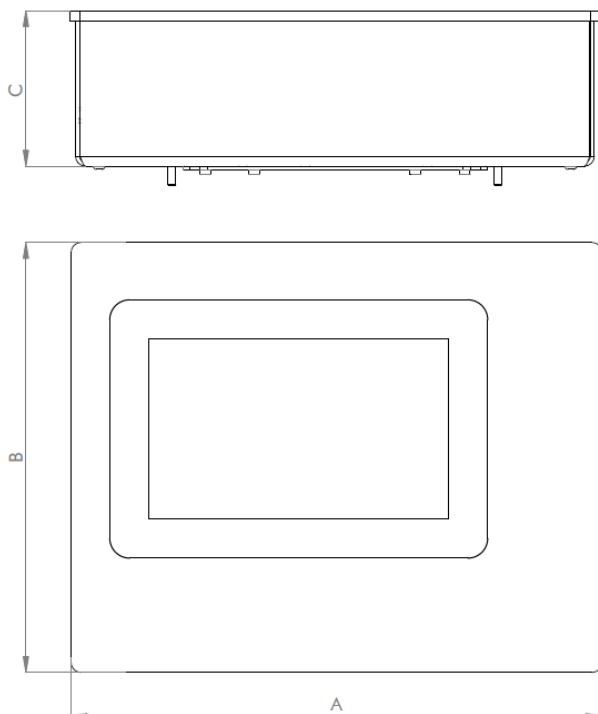


Illustration 3: Dimemsions Webpanel OEM 13.3

Size	A	B	C
13.3"	417,7	298,3	138

Table 4: Dimensions Webpanel OEM 13.3

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Pushbuttons



Series	SHORTRON® base-plate mounting
Degree of protection	IP65
Travel	2.3 mm
Illumination	Yes, white LED
Labeling Option	Yes ¹
Front Bezel	Silver-Coloured
Operating Temperature	-25 °C ... 70 °C
Contact Elements	max. 2 x NC / 2 x NO / 1 x NC + 1 x NO
Nameplate	Transparent: Blue, Yellow, Green, Transparent, Red, White Non-transparent: Black

Key Lock Switch



Series	SHORTRON® base-plate mounting
Degree of protection	IP65
Switchin function	Latching
Illumination	No
Labeling Option	No
Front Bezel	Silver-Coloured
Operating Temperature	-25 °C ... 70 °C
Contact Elements	max. 2 x NC / 2 x NO / 1 x NC + 1 x NO

¹ Possible designation plates are provided by your contact person

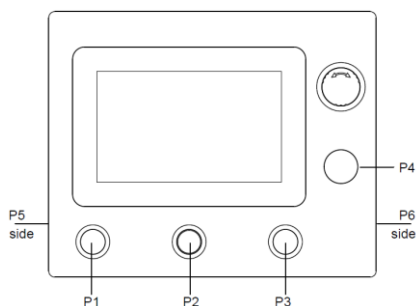
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Emergency Stop



Series	QUARTEX®-R
Type	QRUV
Degree of protection	IP65
Illumination	No
Labelling Option	No
Front Bezel	Yellow
Operating Temperature	-30°C ... 70°C
Contact Elements	max. 5 (NC / NO)
Switching Position Indicator	Yes
Release	Twist right or left
Anti-lock Collar	Yes



Positions of the control elements




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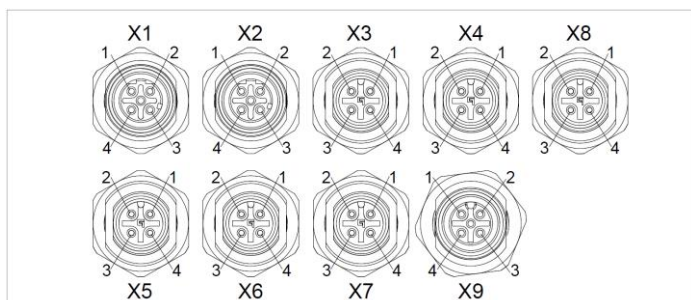
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3 Description Hardware

The description of the hardware refers to the device interfaces and the possible extensions for the device.

3.1 External Interfaces

NOTICE	
	External cable for Power Supply Malfunction occur ➤ Prepare a proper earth connection on the power supply
NOTICE	
	Signal and data cables Malfunction occur ➤ Signal and data cables must be shielded and of high quality.
NOTICE	
	Operating the interfaces outside their intended specification Malfunctions occur and the electronics of the device can be damaged or completely broken ➤ All interfaces must be operated within their specification. Only cables and components that meet the requirements for the intended use of the interfaces may be connected.



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	PIN 1	PIN 2	PIN 3	PIN 4
X1 (Binder 86 0536 1000 00404)	TX +	RX +	TX -	RX -
X2 (Binder 86 0536 1000 00404)	TX +	RX +	TX -	RX -
X3 (Binder 86 0631 1000 00004)	24 V	Ground	Ground	24 V
X4 (Binder 86 0631 1000 00004)	E_C1	E_C2	E_C3	E_C4
X5 (Binder 86 0631 1000 00004)	E_C5	E_C6	E_C7	E_C8
X6 (Binder 86 0631 1000 00004)	P4_C3	P4_C4	P4_C1	P4_C2
X7 (Binder 86 0631 1000 00004)	P5_C1	P5_C2	P5_C3	P5_C4
X8 (Binder 86 0631 1000 00004)	P6_C1	P6_C2	P6_C3	P6_C4
X9 (Binder 86 0632 1000 00004)	Input: Foot Switch normally open 13 (connected to 24 V)	Output: LED + (max. 100 mA)	Output: LED - (connected to Ground)	Input: Foot Switch normally open 14

Fieldbus I/O Mapping



Bit	Input	Bit	Output
0.0	X9_PIN4	0.0	X9_PIN2
0.1	P1_C1	0.1	P1_LED
0.2	P1_C3	0.2	P2_LED
0.3	P2_C1	0.3	P3_LED
0.4	P2_C3	0.4	--
0.5	P3_C1	0.5	--
0.6	P3_C3	0.6	--
0.7	--	0.7	--

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4 Mounting

This chapter describes all the steps for assembly. The following warnings are safety instructions that must be applied throughout the assembly chapter and in every other life cycle of the device.

NOTICE	
	Power Supply Disturbance of the proper operation ➤ The device must be operated with protective low voltage (< 28.8 VDC).
⚠ WARNING	
	Dropping a device Injuries and bruises to the legs and / or feet ➤ Wear safety shoes

Note for the installation site

This device is not designed for outdoor use.

Make sure that the ambient temperature and humidity are within the ranges which are specified under [Environmental Conditions](#).

Do not install the device directly in the sunlight.

Make sure that the device is installed so that is accessible for the operator.

Installation instructions

Check the package contents for any visible damage and for completeness.


In case of damage, do not install the device and contact the [Christ Service](#).

4.1 Torque

All screws must be tightened to the following tightening torques unless a different tightening torque is required.

Screw	Torque
M3	1.0 Nm
M4	2.3 Nm

4.2 Earth Connection

NOTICE	
	Earthing not connected Not guaranteed functionality of the device ➤ All earth connections must be connected to an earth point

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4.3 Mounting Webpanel OEM 13.3

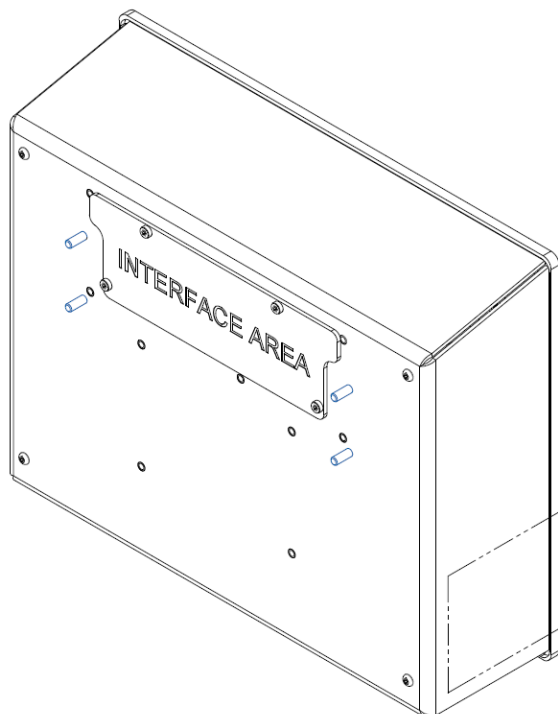


Illustration 4: Mounting Industrial Webpanel OEM 13.3

The unit is mounted on the marked threaded bolts. The customer determines the fastening utensils and the tightening torque. Christ accepts no liability for damage caused by this fastening.

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5 Commissioning

To put the device into operation, connect the power supply to the unit.

The device starts.


Further steps for commissioning are not necessary.

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6 Maintenance

The following chapter describes maintenance measures that can be performed by a qualified end user.

NOTICE	
	Damage to the seals, damage to the housing Loss of IP protection class ➤ There must be no permanent exposure to substances containing large amounts of oils or fats.

6.1 Cleaning

⚠ DANGER	
	Triggering unintended functions Loss of control of the plant / machine / device ➤ The appliance may only be cleaned when it is disconnected from the power supply.

To clean the device, use a soft cloth moistened with detergent solution or screen cleaner. The cleaning agent must not be applied directly to the device. Under no circumstances may aggressive solvents, chemicals or scouring agents be used.

6.2 Maintenance

It does not require any maintenance on the part of the user.

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7 Technical Data

This chapter summarizes the technical data.

7.1 Mechanical Specifications

Housing	Aluminium / silver, black
Weight	max. 3.3 kg
Dimensions	See Table Dimensions
Mounting	Customized mounting
Cooling	Passive

Table 5: Mechanical Specifications

7.2 Electrical Specifications

Supply Voltage	19.2 VDC ... 28.8 VDC
Power Consumption	up to 25 W
Continuous Rated Current	max. 2.5 A
Inrush Current (load-independent)	max. 70 A for 80 μ s (Used power supply: FSP060-DAAN3)
External Power Supply	SELV
Earthing	Functional Earthing (Cable cross-section has to be identical to the supply lines)
Battery Lifetime	4 years (constantly turned off)

Table 6: Electrical Specifications

7.3 Environmental Conditions

Operating Temperature	0 ~ 50 °C
Storage Temperature	-10 ~ 70 °C
Humidity	5 ~ 80 % (non condensing)
Protection Class	IP65 (IP20 rear)
Transportation and Storage	Suitable packing increases shock resistance
max. Installation Altitude	2000 m
Cooling	Natural Air Convection

Table 7: Environmental Conditions


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7.4 Display Specifications

Color Depth	8 bit
Lifetime	min. 50,000 h
Viewing Angle (right/left/up/down)	min. 85°/85°/85°/85°
Backlight	LED

Table 8: Display Specifications

NOTICE	
	Pixel Errors Due to the manufacturing process, displays may contain faulty pixels (pixel errors), which do not constitute a claim or warranty within the limits described below.

The international standard ISO 9241-307:2009 defines, on an international level, the maximum permissible pixel errors in an LC-display. This standard describes different error types, in consideration of different pixel error classes.

There are the following pixel error classes, each with three different error types:

Maximum acceptable errors per 1 Mio. pixels according to ISO 9241-307:2009				
error class	error type 1 pixel constantly illuminated	error type 2 pixel constantly dark	error type 3 subpixel constantly illuminated	error type 4 subpixel constantly dark
0	0	0	0	0
I	1	1	$n = 0 \text{ to } 2$ $2 - n$	$2 \times n + 1$
II	2	2	$n = 0 \text{ to } 5$ $5 - n$	$2 \times n$
III	5	15	max. 50	max. 50
IV	50	150	max. 150	max. 150

Why this classification of errors?

Each pixel of a display contains three subpixels which have the basic colors red, green and blue. The combination makes it possible to show a wide spectrum of colors.

Considering for example the display solution of 1280 x 800 pixels, thereof a total of 1,024,000 pixels or 3,072,000 subpixels are embedded in the display area. This means, the display holds 3,072,000 single transistors at an area of 261.1 mm by 163.2 mm.

These figures make it clear that it is not possible to specifically produce defect-free displays even by today's manufacturing standards.

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Christ Electronic Systems GmbH therefore adapts to the corresponding requirements of most international manufacturers. The displays must always comply with error class II. If the permissible number of errors of the pixel error class II is not exceeded, there is also no complaintable "failure" of the display.

Referring to the calculation, the following errors can occur in the display:

- Max. 2 constantly illuminated and 2 constantly dark pixels
- Max. 5 constantly illuminated or 10 constantly dark subpixel

Avoid burn-in on displays

NOTICE	
	Images that do not change
	"Image shadows", "ghost images" arise ➤ Changing displayed images, screen saver, energy-saving mode

With LC displays, so-called "ghost images" or "image shadows" can occur under certain circumstances. These are images that remain from the previous image and are felt to be "burnt into" the display. These do not remain forever. If "image shadows" occur, the device should be switched off for a longer period of time so that the burnt-in image disappears.

To avoid "ghost images" or "image shadows", the following behaviour is recommended:

- Do not display still images over an extended period of time
- Change standing images at short intervals
- Switch off the unit or use the energy-saving mode when not in use
- Use the screen saver function

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8 Standards and Approvals

The device meets the following requirements.

8.1 CE Marking



The device has been tested in accordance with the applicable EU directives and the associated harmonized standards.

8.2 RoHS



The device complies with the requirement of the EU Directive RoHS 2011/65/EU.

8.3 Electromagnetic Compatibility

Emitted Interference	EN55032 Class A
Immunity of supply line DC	± 2 kV according to IEC 61000-4-4; EFT $\pm 0,5$ kV according to IEC 61000-4-5; Surge asymmetrical
Immunity of signal lines	± 1 kV according to IEC 61000-4-4; EFT
ESD	± 4 kV Contact discharge according to EN61000-4-2 ± 8 kV Air discharge according to EN 61000-4-2
Immunity of conducted emission	3 V 150 kHz – 80 MHz, 80% AM nach IEC 61000-4-6
Immunity of high-frequency radiation	3 V/m 80 MHz – 1 GHz, 80% AM nach IEC 61000-4-3 3 V/m 1 GHz – 6 GHz, 80% AM nach IEC 61000-4-3

Table 9: Electromagnetic Compatibility

The device complies with the requirements of the EU Electromagnetic Compatibility Directive 2014/30/EU with the harmonized standards listed below:

EN 55032: 2015 Class A	Electromagnetic compatibility of multimedia equipment - Emission Requirements
EN 55035: 2017	Electromagnetic compatibility of multimedia equipment - Immunity requirements

8.4 FCC Approval



The device meets the requirements of FCC for approval in the USA and Canada. This has been tested and confirmed by SGS.

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FCC (Federal Communications Commission)

The device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause any harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operations.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found comply with the limits of Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a resident area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Validity

Touch Industrial Webpanel OEM 13.3, Prod. ID: PA10015956

Touch Industrial Webpanel OEM 13.3, Prod. ID: PA10xxxxxx

Where "xxxxxx" in the ID Number may be any numeric characters. These models are variants of the Touch Industrial Webpanel OEM 13.3 and are different regarding the interface connectors and the pushbuttons. These variants are subset of the ID: PA100015956.

Name Plate



Alpenstraße 34
D-87700 Memmingen
www.christ-es.de



SW-Bundle
PA10009871



Rev.: 6

Serial no.



Touch Industrial Webpanel OEM 13.3
 Prod.ID: PA10015956 Rev. 0
 S/N: 0297919-000-001  07/2024
 Input: = 24 VDC ± 20%
 MAC: 18:9b:a5:c0:93:be
 18:9b:a5:c0:93:bf

FCC ID: 2AVB6-PA10015956





Illustration 5: Name Plate

8.5 Environmentally Appropriate Disposal

The device must not be disposed of with domestic waste.



The appliance complies with the requirement of the EU Directive WEEE 2012/19/EU, which is symbolised by the symbol with the crossed-out dustbin.

In order to enable environmentally friendly recycling, the various materials must be separated from one another.

Disposal must be carried out in accordance with the applicable legal regulations.

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Component parts	Disposal
Enclosure	Metal Recycling
Electronic	Electronics Recycling
Paper / cardboard packaging	Paper / Cardboard boxes Recycling
Plastic packing materials	Plastics Recycling

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9 Technical Support

Despite the highest quality standards and detailed function tests of all our products, damage or failure can always occur in the daily handling of our equipment. The failure of a machine in production costs a lot of money. That is why the Christ company processes complaints as quickly as possible.

You can send the device to us without prior notice. All you need to do is fill out the [repair cover letter](#) and enclose it with the touch panel or IPC so that the service department can start the repair quickly. When the device arrives, it goes through a defined process that clearly documents all processes and makes the respective status traceable. As soon as your panel or IPC is registered in our system, you will receive a confirmation of receipt so that you can also get a precise overview.

Technical Support can be contacted as follows:

Service, Repair and Technical Support

Phone: +49 8331 8371-500

Fax: +49 8331 8371-497

E-Mail: service@christ-es.de

Or directly via the Homepage.

[Christ Service](#)

9.1 Device Seal

A device seal is affixed to every Christ device in order to prove whether the device has been opened by a third party. In case of a defect, please do not open the device, but contact our service department. They will discuss the further procedure with you.

Opening the device will void the warranty.

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