

# TX700 HMI/PLC Series

## 10" Sunlight Readable Display — CODESYS V3 PLC with TARGET and WEB VISU

### High-Quality Metal Housing and Glass Front with a Capacitive Touch

#### TX710HB-P3CV01

|                              |                                                                                                                      |
|------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Type                         | TX710HB-P3CV01                                                                                                       |
| ID                           | 100007474                                                                                                            |
| <b>Display/touch</b>         |                                                                                                                      |
| Display                      | TFT colour                                                                                                           |
| Touchscreen                  | Capacitive, Glass front                                                                                              |
| Active screen area           | 10.1"                                                                                                                |
| Resolution (pixels)          | 1280 × 800 pixels WXGA                                                                                               |
| Format                       | 16:9                                                                                                                 |
| Brightness                   | 800 cd/m² typ.                                                                                                       |
| Dimmable                     | Yes, To 0 %                                                                                                          |
| <b>Controller</b>            |                                                                                                                      |
| Processor                    | ARM Cortex A9, Dual core 800 MHz                                                                                     |
| Memory                       | 4 GB Flash                                                                                                           |
| RAM memory                   | 1024 MB                                                                                                              |
| Add-on memory                | 1x SD card slot, 2 USB host ports                                                                                    |
| Real time clock              | Yes (battery-buffered)                                                                                               |
| <b>PLC data</b>              |                                                                                                                      |
| Programming                  | CODESYS V3                                                                                                           |
| Released for CODESYS version | V 3.5.12.10                                                                                                          |
| Programming languages        | IEC 61131-3 (IL, LD, FBD, SFC, ST)                                                                                   |
| Programming interface        | Ethernet                                                                                                             |
| Program memory               | 20000 kByte                                                                                                          |
| Non-volatile memory          | 63 kByte                                                                                                             |
| <b>Interfaces</b>            |                                                                                                                      |
| Onboard                      | 3 × RJ45 Ethernet, 1 × RS232/485/422, 2 × USB host, 1 × power supply, 2 × expansion slot                             |
| Onboard for selection        | CANopen Master (via extension module)                                                                                |
| Ethernet                     | ETH0 - 10/100/1000 Mbit<br>ETH1 - 10/100 Mbit<br>ETH2 - 10/100 Mbit                                                  |
| Protocols                    | PROFINET (Controller/Device)<br>EtherNet/IP (Scanner/Adapter)<br>Modbus TCP (Server/Client)<br>EtherCAT (MainDevice) |
| Fieldbus                     | Modbus RTU (Server/Client)<br>CANopen (Server)                                                                       |
| USB                          | 2 × host ports                                                                                                       |
| Serial                       | RS232 / RS485 / RS422                                                                                                |
| Expansion slot               | Two slots for up to four plug-in modules                                                                             |
| <b>Power supply</b>          |                                                                                                                      |
| Rated value                  | 24 VDC, max. 1.0 A                                                                                                   |
| Admissible voltage range     | 10...32 VDC                                                                                                          |



- 10" TFT wide screen color display
- LED backlight
- 1280 x 800 pixel resolution
- 16 M colors
- Capacitive touchscreen with glass front
- Higher level of brightness for improved readability in sunlight
- Greater screen quality thanks to liquid bonding (LOCA), which improves contrast and brightness by reducing reflection and refraction
- Extended temperature range
- Increased robustness against mechanical influences
- All-metal housing, coated to protect the PCB
- 3 RJ45 Ethernet ports with 10/100 Mbit
- 1 serial interface (RS232, RS485, RS422)
- 2 USB host ports
- 1 SD card slot

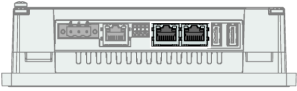
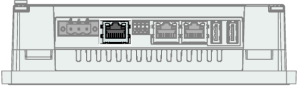
**General data**

|                              |                                                                       |
|------------------------------|-----------------------------------------------------------------------|
| Operating ambient conditions | -20...60 °C, 5...85 % relative humidity, non-condensing               |
| Storage ambient conditions   | -30...70 °C, 5...85 % relative humidity, non-condensing               |
| Approvals                    | CE<br>cULus                                                           |
| Ex approval                  | Haz. Loc. Class I, Division 2, Groups A, B, C and D<br>IEC Ex<br>ATEX |
| Protection class             | IP66 front, IP20 rear<br>NEMA type: 12/4X                             |

**Dimensions**

|                   |                   |
|-------------------|-------------------|
| Front (W x H x D) | 282 x 197 x 56 mm |
| Cut-out (W x H)   | 271 x 186 mm      |
| Mounting depth    | 56+8 mm           |
| Weight            | approx. 2.5 kg    |

Connection and pin assignment

|                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b>Power Supply</b></p> <p>The power supply connector is supplied with each device.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <p>Pin assignment</p>  <p>1 = 24 VDC<br/>2 = 0 V<br/>3 = <math>\frac{1}{2}</math></p>                                               |
|    | <p><b>USB Interface</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <p>Pin assignment</p>  <p>1 = 5 VDC<br/>2 = D -<br/>3 = D +<br/>4 = GND</p>                                                         |
|  | <p><b>Ethernet</b></p> <p>Ethernet ports ETH1 and ETH2 (10/100 Mbit)</p> <p>The Ethernet ports are independent but can be bridged with ETH0.</p> <p>Ethernet cables (examples):</p> <p><b>RJ45 male connector — RJ45 male connector:</b> RJ45S-RJ45S-4414-2M (ID: 6441423)</p> <p><b>RJ45 male connector — M12 male connector, 4-pin, D-coded:</b> RSSD-RJ45S-4414-2M (ID: 6441413)</p> <p><b>RJ45 male connector — M8 male connector, 4-pin:</b> PSGS4M-RJ45S-4414-2M (ID: 6933005)</p> <p><b>RJ45 male connector — M12 female receptacle, 4-pin, D-coded:</b> RJ45-FKSDD-4414-2M (ID: 6935282)</p> | <p>Pin assignment</p>  <p>1 = TX +<br/>2 = TX -<br/>3 = RX +<br/>4 = n.c.<br/>5 = n.c.<br/>6 = RX -<br/>7 = n.c.<br/>8 = n.c.</p> |
|  | <p><b>Ethernet</b></p> <p>Ethernet port ETH0 (10/100 Mbit)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <p>Pin assignment</p>  <p>1 = TX +<br/>2 = TX -<br/>3 = RX +<br/>4 = n.c.<br/>5 = n.c.<br/>6 = RX -<br/>7 = n.c.<br/>8 = n.c.</p> |



Serial Interface

The serial interface can be operated either as RS232, RS485 or RS422. The adjacent wiring diagrams show the respective pin assignments.

**PLEASE NOTE:** In RS485 mode, pins 1 and 2 as well as 3 and 4 must be externally connected!

Pin assignment in RS232 operating mode

- 1 = RX
- 2 = TX
- 3 = CTS
- 4 = RTS
- 5 = +5 VDC output
- 6 = GND
- 7 = n.c.
- 8 = shield

Pin assignment in RS485 operating mode

- 1 = B- (RX-)
- 2 = A- (TX-)
- 3 = B+ (RX+)
- 4 = A+ (TX+)
- 5 = +5 VDC output
- 6 = GND
- 7 = n.c.
- 8 = shield

Pin assignment in RS422 operating mode

- 1 = RX-
- 2 = TX-
- 3 = RX+
- 4 = TX+
- 5 = +5 VDC output
- 6 = GND
- 7 = n.c.
- 8 = shield



Ports for Plug-in Modules



SD Card Slot

SD card (example): 2-GB SD CARD (ID: 6828025)

## Accessories

| Type code      | Ident no. |                                                               | Dimension drawing |
|----------------|-----------|---------------------------------------------------------------|-------------------|
| TX700-MOUNT-10 | 100003189 | TX700 mounting bracket and power connectors for 10" devices   |                   |
| TX-LTE-WLAN    | 100025179 | Plug-in LTE and Wi-Fi modem with LTE/UMTS/GSM, Wi-Fi and GNSS |                   |

## Function accessories

| Type code  | Ident no. |                                                                   | Dimension drawing |
|------------|-----------|-------------------------------------------------------------------|-------------------|
| TX-IO-XX03 | 6828201   | Plug-in I/O module — 20 DI, 12 DO, 4 AI (U/I/RTD/TC), 4 AO (U/I)  |                   |
| TX-IO-DX06 | 6828203   | Plug-in I/O module — 8 DI, 6 DO, 1 relay output (NO)              |                   |
| TX-DP-S    | 100010167 | Plug-in PROFIBUS DP slave interface, 9-pin SUB-D female connector |                   |
| TX-CAN     | 6828210   | Plug-in CANopen interface, 9-pin SUB-D male connector             |                   |
| TX-RS485   | 100002598 | Plug-in interface for RS485/RS422, 9-pin SUB-D female connector   |                   |
| TX-RS232   | 100002599 | Plug-in interface for RS232, 9-pin SUB-D female connector         |                   |
| TX-PSC     | 100002938 | Power Supply Male Connector for TX HMI Devices                    |                   |