

Архангельск (8182)63-90-72  
Астана (7172)727-132  
Астрахань (8512)99-46-04  
Барнаул (3852)73-04-60  
Белгород (4722)40-23-64  
Брянск (4832)59-03-52  
Владивосток (423)249-28-31  
Волгоград (844)278-03-48  
Вологда (8172)26-41-59  
Воронеж (473)204-51-73  
Екатеринбург (343)384-55-89  
Иваново (4932)77-34-06

Ижевск (3412)26-03-58  
Иркутск (395)279-98-46  
Казань (843)206-01-48  
Калининград (4012)72-03-81  
Калуга (4842)92-23-67  
Кемерово (3842)65-04-62  
Киров (8332)68-02-04  
Краснодар (861)203-40-90  
Красноярск (391)204-63-61  
Курск (4712)77-13-04  
Липецк (4742)52-20-81  
Киргизия (996)312-96-26-47

Магнитогорск (3519)55-03-13  
Москва (495)268-04-70  
Мурманск (8152)59-64-93  
Набережные Челны (8552)20-53-41  
Нижний Новгород (831)429-08-12  
Новокузнецк (3843)20-46-81  
Новосибирск (383)227-86-73  
Омск (3812)21-46-40  
Орел (4862)44-53-42  
Оренбург (3532)37-68-04  
Пенза (8412)22-31-16  
Казахстан (772)734-952-31

Пермь (342)205-81-47  
Ростов-на-Дону (863)308-18-15  
Рязань (4912)46-61-64  
Самара (846)206-03-16  
Санкт-Петербург (812)309-46-40  
Саратов (845)249-38-78  
Севастополь (8692)22-31-93  
Симферополь (3652)67-13-56  
Смоленск (4812)29-41-54  
Сочи (862)225-72-31  
Ставрополь (8652)20-65-13  
Таджикистан (992)427-82-92-69

Сургут (3462)77-98-35  
Тверь (4822)63-31-35  
Томск (3822)98-41-53  
Тула (4872)74-02-29  
Тюмень (3452)66-21-18  
Ульяновск (8422)24-23-59  
Уфа (347)229-48-12  
Хабаровск (4212)92-98-04  
Челябинск (351)202-03-61  
Череповец (8202)49-02-64  
Ярославль (4852)69-52-93

<https://turck.nt-rt.ru/> || [tku@nt-rt.ru](mailto:tku@nt-rt.ru)

# Панели HMI

Органы управления HMI серии TX500 оснащены высококачественными дисплеями с великолепной графикой, резистивным сенсорным экраном и современным процессором. Они идеально подходят для использования на оборудовании малого и среднего размера, для которого требуется местное управление, выполнение и отслеживание процессов. Модуль управления CODESYS 3 для TX500 имеет функции контроллера PROFINET, сканера EtherNet/IP и Modbus TCP, а также ведущего устройства Modbus RTU. HMI также можно использовать в качестве подчиненных устройств при работе с протоколами Modbus. Для визуализации используется target-файл CODESYS 3

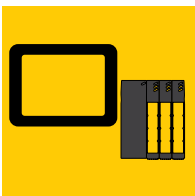
## Overview

## HMI/PLC TX Operator Panels



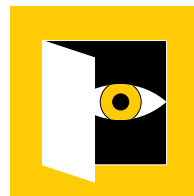
# TX Operator Panels – Efficient Control and Visualization

The four product lines of the Turck TX operator panel series provide tailor-made solutions for the control (Programmable Logic Controller PLC) and operation (Human Machine Interface HMI) of simple and medium machines and systems.



## HMI/PLC – Your benefit

- CODESYS-V3-PLC and HMI in one panel
- Compact and powerful all-in-one solution



## More detailed view

- Brilliant TFT displays
- 4" to 21" screen diagonals
- Resistive or capacitive touch
- Gesture control



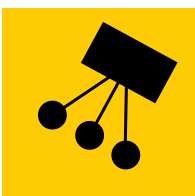
## Panel diversity

- Basic, standard, or premium
- Always the right panel for the best price/performance ratio



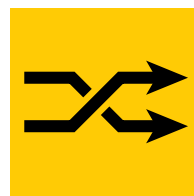
## Highly communicative PLC

- CODESYS PLC as the core piece for your system solutions
- Numerous Ethernet/fieldbus protocols as master and slave



## More Ethernet ports

- Three independent Ethernet ports
- Physically separated networks
- Internal bridge function for switch functionality



## Plug-in modules

- Digital and analog I/O signals
- CAN interface
- Additional serial interfaces RS485/RS232



## Visualization with TX VisuPro

- Communication with up to eight controllers at the same time
- Data gateway between PLCs
- PDF, videos, IP cameras, audit trail



## Modern hardware

- Scalable system performance
- Glass or foil front
- Capacitive or resistive touch
- Metal or plastic housing



## II.0 + IIOT Ready

- Turck Cloud connection
- OPC-UA Server/Client
- VNC Client/Server
- MQTT and Node RED in preparation



## More approvals

- cULus
- DNV GL ship approval
- For the Ex area:  
UL Class 1 Div. 2, ATEX, IEC Ex

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# Portfolio of TX Operator Panels

TX100	TX207
Basic Line	Basic Line
Solid HMI operator panels for simple visualization tasks at an optimized good price-performance ratio	HMI/PLC for medium applications featuring data exchange with field devices such as I/O modules, valves, and drives; the TX207 is characterized by the large number of onboard interfaces for Ethernet, RS232, RS485, and CAN



Application area	
Function	HMI
Control	–
Performance class*	1 - TX104 3 - TX107, TX110
Visualization	TX VisuPro
Display	
Diagonal	4–10"
Touch	Foil front, resistive touch
System	
Controller	Single-core up to 1 GHz
Operating system	RT Linux
General data	
Housing	Robust plastic housing
Temperature range	0–50 °C
Approvals	CE, cULus
Approvals for Ex areas	–



\* is used to compare the performance of the devices, based mainly on the computing speed of the processor, which increases proportionally to the factor. Details on the respective processor in the technical data.

## TX500

### Standard Line

HMI/PLC for simple applications featuring data exchange with a few field devices such as I/O modules, valves, and drives; the TX500 devices can also be used as a HMI for simple visualization tasks



## TX700

### Premium Line

For larger applications featuring data exchange with more field devices, even with different protocols on different interfaces; the TX700 devices are also ideal for demanding visualization tasks



HMI or HMI/PLC

CODESYS V3

2 - TX504E, TX507E

3 - TX507, TX510, TX513

CODESYS TargetVisu (Default)

TX VisuPro (Optional)

4...13"

Foil front, resistive touch

Single-core up to 1 GHz

Windows CE

High-quality metal housing

0...50 °C

CE, cULus

UL Class 1 Div. 2

HMI or HMI/PLC

CODESYS V3

3 - TX705

5 - TX707, TX710

9 - TX715, TX721

CODESYS TargetVisu (Default)

TX VisuPro (Optional)

5...21"

Glass front, capacitive touch, multi-touch and gesture control

Single to quad-core 800 MHz

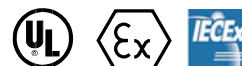
RT Linux

High-quality metal housing

-20...60 °C

CE, cULus, DNV GL

UL Class 1 Div. 2, ATEX, IEC Ex



# Use Cases and Application Areas

Areas of application and application possibilities for the TX operator panels can be found in automation technology where processes need to be monitored and controlled. The following four examples show a cross-section of typical application.



## Logistics

Logistics centers offer a wide range of application possibilities for HMI and HMI/PLC devices – from the packaging and distribution center to the control of loading ramps and roller doors. Important conditions and hazards can be made clearly visible to employees in a flexible and dynamic way, for example, through flashing symbols or color changes. Step-by-step work processes can be illustrated visually as a sequence of pictures or drawings. The display of PDFs or videos are further options for achieving and ensuring continuous quality in work processes.



## Systems and assemblies

Many machines and assemblies such as pump controls are still controlled and operated in the traditional way using switches, buttons, and indicator lights. Modern and compact HMI/PLC panels offer added value here, too. Firstly, operating data such as pressures, hour meters, or maintenance intervals can be illustrated in a structured way. Secondly, user administration allows different views and information to be made available to various user groups such as operating personnel or service technicians. Also, parameters can be freely adjusted or adjusted within specified ranges at any time.





### Compact machines

Other types of smaller machines are, for example, mixers, dosing feeders, or stirring units. Here, the necessary entries are generally performed by the operating personnel. Recipes from a predefined pool are also frequently used. However, changes and optimizations can even be made and saved during operation. Such adjustments can also be logged transparently in combination with a user administration. For this type of application, predefined objects and widgets such as the "Audit Trail" are available. In addition to the software, hardware is also often required in such applications. Special variants are available with stainless steel front, which fulfill the protection degree up to IP69.



### Modularization

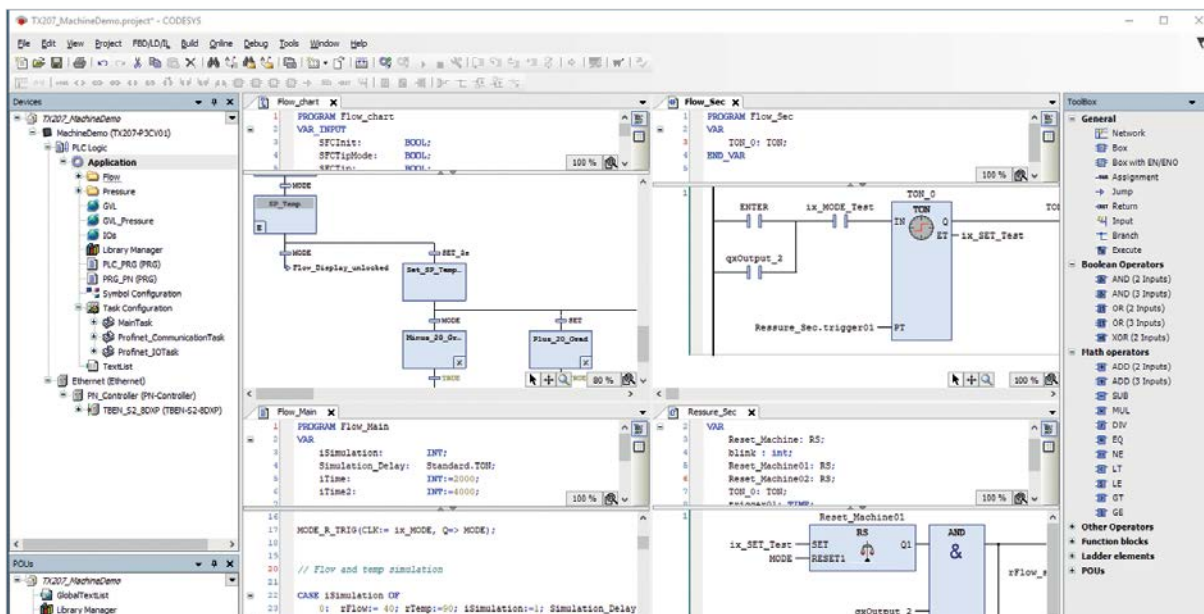
The trend toward the modularization of machines and plants helps the machine manufacturer to standardize plant parts. A kit of independent modules and optional extensions or functions is therefore created, from which users can flexibly put together a configuration to suit their needs. Whether the individual modules or system parts require an HMI or HMI/PLC, or are to be controlled by other modules, can be decided on flexibly according to the level of complexity or optionally at the customer's request. Turck also offers optional PLCs or Field Logic Controllers without their own display. Cost benefits and increased efficiency are just two aspects resulting from the modularization of machines.

# CODESYS-PLC

The built-in control functionality can be programmed with CODESYS V3 according to the IEC 61131-3 standard. The user can select any of the standard programming languages available; LD, FBD, IL, ST, CFC, and SFC. All supported Ethernet and fieldbus protocols can be configured via the software that allows real object-ori-

ented PLC programming. The following figure shows four possible programming languages:

- Top left: Sequential function chart (SFC)
- Top right: Ladder diagram (LD)
- Bottom left: Structured text (ST)
- Bottom right: Function block diagram (FBD or FUP)



In addition to the standard libraries that are already available in the CODESYS setup, Turck supports users with their own libraries and function blocks for IO-Link and the Turck BL ident RFID system. In addition, a large open source community is available

on the Internet that offers a wide range of application expertise and provides sample programs and function blocks. One example is the "Open Source Community for Automation Technology", OSCAT for short. At [www.oscat.de](http://www.oscat.de) you will find extensive

knowledge that can support you in the development of your applications and thus considerably reduce time and costs.

## Communication possibilities

The CODESYS controller supports the master and slave functions shown in the table. The CODESYS-Feature OPC-UA server is also already licensed in the TX HMI/PLC panels. In addition, standard Ethernet TCP/IP or UDP/IP or serial communication via RS232, RS485, or RS422 can be freely programmed.

Protocol	Master	Slave
PROFINET	Yes	-
EtherNet/IP	Yes	-
Modbus TCP	Yes	Yes
CANopen	Yes	-
Modbus RTU	Yes	Yes





# CODESYS Visualization Possibilities

## TargetVisu

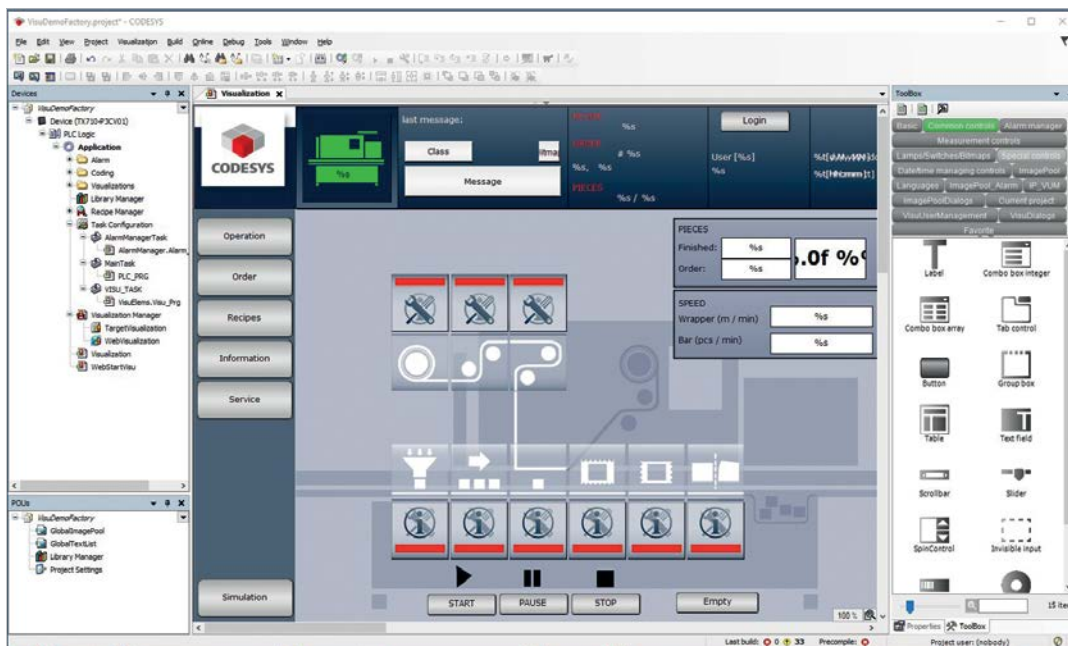
The CODESYS TargetVisu is the visualization that is shown and run locally on the touch screen of the TX operator panels. The integration of the visualization editor into the PLC programming environment ensures maximum efficiency by allowing the PLC programmer to create the visualization in a tool while also programming the controller.

## WebVisu

The CODESYS WebVisu is built in a similar way to a TargetVisu. The web-based display variant allows remote access, remote monitoring, as well as service and diagnostics of a plant only with the help of a browser. The WebVisu can thus be easily used in addition to TargetVisu on PCs or mobile devices.

## Internal visualization

The visualization pages can also be carried out within the CODESYS programming environment. This is a particularly useful feature in the context of programming and commissioning. Not only can variables and states be very easily observed, they can also be manipulated. This also applies for all visualization pages of the TargetVisu and WebVisu.



Basic elements	General controls	Input options	Special controls	Practical controls	Animation possibilities
Rectangles	Buttons	Keys	Trace	Pointer instruments	Text display
Ellipses	Tables	Toggling	ActiveX elements	Lamps	Color change
Curves	Scroll bars	Picture change	Waiting symbols	Switch	Visible/invisible
Polygons	Slider	Mouse-over	Text editors	Potentiometer	Operable/inactive
Bitmaps	Loading bar	Function calls	-	Bar graphs	Shift
Buttons	Radio buttons	-	-	-	Resizing
Frames	Check boxes	-	-	-	Rotation
Bezier curves	-	-	-	-	Character properties

# TX VisuPro

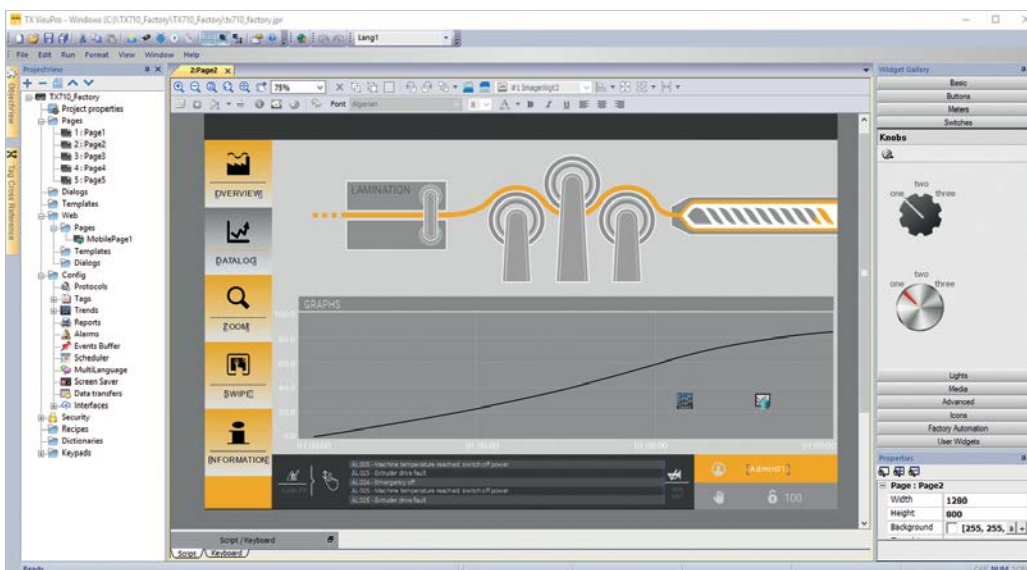
TX VisuPro is a modern development environment for the creation of contemporary, innovative, and user-friendly graphical user interfaces. TX VisuPro applications can communicate simultaneously with up to eight of the same or different controllers. Advanced features such as gesture control, scheduler, Java Scripting, IP cameras, emails, or audit trails can be generated quickly and intuitively according to your

requirements. The HMI thereby becomes the showpiece of each machine and plant.

TX VisuPro is not licensed and can be downloaded free of charge at [www.turck.de](http://www.turck.de). Thanks to the integrated simulation mode, the creation and testing of a visualization is already possible without the available hardware.

Excerpt of the supported HMI protocols and controls:

- Siemens Simatic
- Phoenix Contact
- Allen-Bradley
- Beckhoff
- CODESYS (V2, V3)
- Mitsubishi
- Omron
- Modbus (TCP, RTU)
- CANopen
- OPC UA (Server, Client)



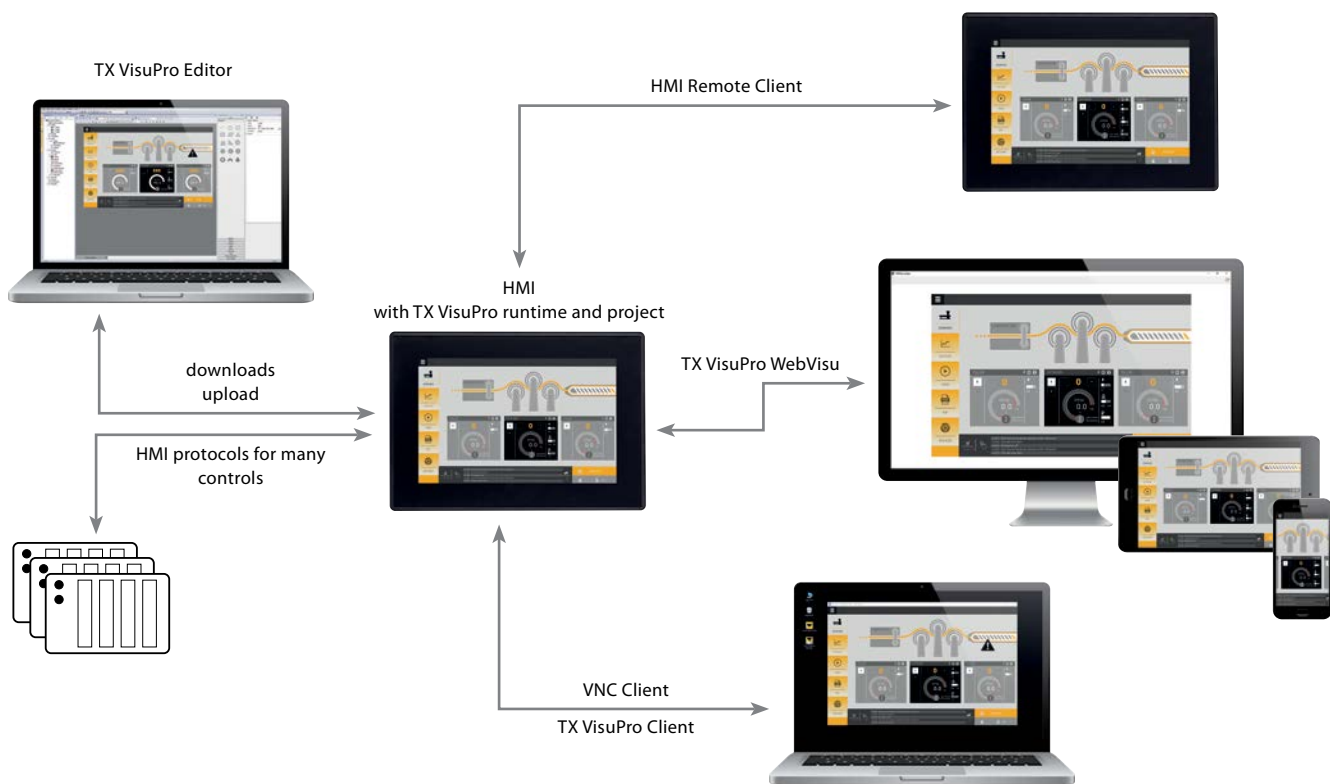
Basic elements	General controls	Input options	Special controls	Practical controls	Animation possibilities
Rectangles	Buttons	Keys	Trace	Pointer instruments	Text display
Ellipses	Tables	Toggling	Text editors	Lamps	Color change
Curves	Scroll bars	Picture change	Media player	Switch	Visible/invisible
Polygons	Slider	Mouse-over	Web controls	Potentiometer	Operable/inactive
Bitmaps	Loading bar	Function calls	IP camera	Bar graphs	Shift
Buttons	Radio buttons	Gesture control	Recipes	–	Resizing
Frames	Check boxes	Widget properties	Scheduler	–	Rotation
Bezier curves	Scales	–	Audit tables	–	Character properties
Rings/circles	–	–	Rotation menu	–	–
Icons	–	–	Send email	–	–
–	–	–	Alarm management	–	–
–	–	–	Recipe management	–	–
–	–	–	User administration	–	–

## More options for visualization with TX VisuPro

The actual visualization is executed and shown in its native form on the runtime of the centrally displayed HMI. The visualiza-

tion with TX VisuPro offers yet even more opportunities and features for display and operation. The HMI device can therefore

also be accessed remotely in various ways. The figure offers a schematic overview for this.



### HMI Remote Client

The HMI Remote Client is practically a twin of the central HMI with the TX VisuPro runtime, which acts as a server in this case. The Remote Client automatically loads the current version of the Visu application from the server during start-up and then executes it independently. The application can then be operated from both devices independently of each other, allowing different content to be accessed at the same time.

### TX VisuPro WebVisu

TX VisuPro on the web enables access to all visualization pages that were created as a web type. This can also be other pages and content. This offers hardware-independent remote access via a web browser. All devices that feature an HTML5-enabled web browser, such as web panels, PCs or mobile devices such as tablets or smartphones, can be used for this purpose.

### TX VisuPro Client/VNC Client

The TX VisuPro HMI Client is an independent windows application. The tool is part of the TX VisuPro setup and is automatically installed as part of it. The Client enables remote access to the native Visu application of the central HMI. The VNC Client enables full access to all the HMI settings. This is, for example, the ideal solution for remote maintenance and diagnosis of the control panel.

# TX100 Series



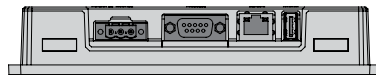
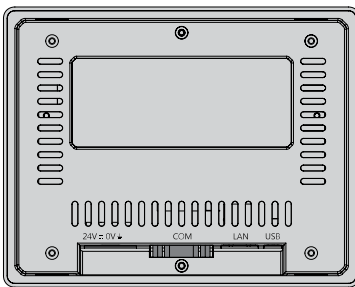
The HMIs of the TX100 product series include three devices with resistive touch display with screen diagonals of 4", 7", or 10". The high-quality plastic housing and the reduced number of interfaces offer an optimal price/performance ratio in cost-sensitive applications. The devices have one Ethernet interface, a serial interface (RS232, RS422 or RS485) and a USB port. The TX100 devices are pure operator interfaces without control function and, like all TX devices, can be easily connected to almost all controllers by means of protocol support.

Alternatively, the panels can also be used as a web panel.

**Areas of application**

- HMI panel
- Web panel

Interfaces:



Type key

**TX 1 07 - 00 VP ST**

**TX** Product family      **1** Series      **04** Screen diagonals

Product family  
TX    Turck HMI

Series  
1    TX100 Series

Size  
04    4.3"  
07    7"  
10    10.1"

**00** PLC      **VP** Visualization      **ST** Communication

PLC  
00    HMI without PLC functionality

Visualization  
VP    TX VisuPro Runtime

Communication  
ST    Standard HMI protocols

# TX207



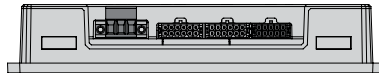
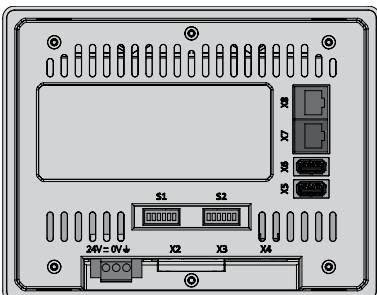
The TX207 combines the high-quality plastic housing of the TX100 series with a much more powerful hardware platform. The resistive touchscreen has a screen diagonal of 7". The TX207 has sufficient memory and computing power, and is equipped with a real-time Linux operating system. Therefore, the main application area for this HMI is on the integrated control functionality, and the programming is carried out with CODESYS V3. Numerous interfaces are already on board for the connection of I/Os, drives,

and field devices. The TX207 has two Ethernet ports, two RS232 and two RS485, as well as two CAN interfaces and USB host ports.

**Areas of application**

- Control
- HMI panel
- Web panel

Interfaces:



Type key

**TX 2 07 - P3 CV 01**

**TX** Product family      **2** Series      **07** Screen diagonals

Product family  
TX Turck HMI/PLC

Series  
2 TX200 Series

Size  
07 7"

**P3** PLC      **CV** Visualization      **01** Communication

PLC  
P3 CODESYS V3 Runtime

Visualization  
CV CODEYS V3 TargetVisu Runtime

Communication  
01 PROFINET controller  
EtherNet/IP™ scanner  
Modbus TCP master/slave  
Modbus RTU master/slave  
CANopen master



# TX100 | TX207 Technical Data



Type designation	TX104-00VPST	TX107-00VPST
Ident. no.	100002311	100002312
<b>Display/touch</b>		
Display	TFT color	TFT color
Touch	resistive	resistive
Active screen area	4.3"	7"
Resolution (pixels)	480 x 272	800 x 480
Format	16:9	16:9
Brightness	200 Cd/m <sup>2</sup> typ.	200 Cd/m <sup>2</sup> typ.
Dimmable	Yes	Yes
<b>System</b>		
Processor	ARM Cortex A8, 300 MHz	ARM Cortex A8, 1 GHz
Flash memory	2048 MB	4096 MB
RAM memory	256 MB	512 MB
Memory expansion	USB	USB
Real-time clock	-	-
Buzzer	-	-
<b>PLC data</b>		
Programming	-	-
Programming languages	-	-
Programming interfaces	-	-
Program memory	-	-
Retain memory	-	-
<b>Interfaces</b>		
Ethernet ports	1 x 10/100 Mbit	1 x 10/100 Mbit
Serial ports	1x (RS232/RS485/RS422, configurable)	1x (RS232/RS485/RS422, configurable)
USB ports	1x host v.2.0, max. 500 mA	1x host v.2.0, max. 500 mA
SD Card	-	-
Expansion slot	-	-
<b>Power supply</b>		
Rated value	24 VDC, max. 0.25 A	24 VDC, max. 0.3 A
Permissible voltage range	18...32 VDC	10...32 VDC
<b>General data</b>		
Operation temperature	0...50 °C	0...50 °C
Approvals	CE, cULus	CE, cULus
Ex approval	-	-
Protection class	IP66 front, IP20 rear	IP66 front, IP20 rear
<b>Dimensions</b>		
Housing front (W x H)	147 x 107 mm	187 x 147 mm
Installation cut-out (W x H)	136 x 96 mm	176 x 136 mm
Mounting depth	29 mm	29 mm
Weight	320 g	540 g


**TX110-00VPST**

100002313

**TX207-P3CV01**

100002080

TFT color

resistive

10.1"

1024 x 600

16:9

 200 Cd/m<sup>2</sup> typ.

Yes

TFT color

resistive

7"

800 x 480

16:9

 200 Cd/m<sup>2</sup> typ.

Yes

ARM Cortex A8, 1 GHz

4096 MB

512 MB

USB

–

–

ARM Cortex A9, Dual Core 800 MHz

4096 MB

1024 MB

USB

Yes (battery-backed)

–

–

–

–

–

–

CODESYS V3

IEC 61131-3 (IL, LD, FBD, SFC, ST)

Ethernet

20 MB

63 kB

1 x 10/100 Mbit

1x (RS232/RS485/RS422, configurable)

1x host v.2.0, max. 500 mA

–

–

1x 10/100/1000 Mbit

1x 10/100 Mbit

2x (RS232), 2x (RS422/RS485), 2x (CAN)

2x host v.2.0, max. 100 mA

–

–

24 VDC, max. 0.38 A

10...32 VDC

0...50 °C

CE, cULus

–

IP66 front, IP20 rear

282 x 197 mm

271 x 186 mm

29 mm

900 g

24 VDC, max. 0.3 A

10...32 VDC

0...50 °C

CE, cULus

–

IP66 front, IP20 rear

187 x 147 mm

176 x 136 mm

29 mm

560 g

# TX500 Series



The HMI devices from the TX500 family combine the "Control, Operation and Monitoring" functions and can already be used as a standard line for simple control tasks. The high-quality metal housing is combined with a film front and resistive touch display with screen diagonals from 4" to 13". The Ethernet ports are connected to each other via an integrated switch. In addition to a serial interface (RS232, RS485, or RS422), the devices are equipped with a further two USB ports. Due to the smaller CPU,

the two ECO-variants (TX504E and TX507E) should only be used as an operator panel or for very simple control applications.

#### Areas of application

- Control
- HMI panel

## Plug-in module

The TX500 devices with displays from 7" feature two interfaces for the connection of optional plug-in modules. Up to two plug-in modules can be inserted on each of the two slots, if one of the two modules has an expansion slot. This is the case, for example, on the serial modules and the plug-in modules for CAN.

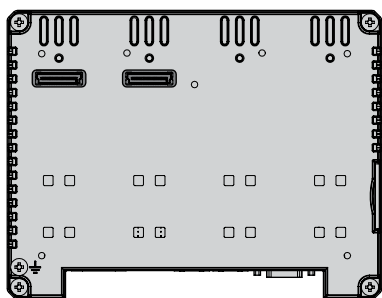
#### Overview of the available plug-in modules

- RS232 interface
- RS485 interface
- CANopen Manager
- Digital I/O module  
(8 DI, 6 DO, 1 relay output)
- Multi-functional I/O module  
(20 DI, 12 DO, 8 AI, 4 AO)

(For more details on the plug-in modules, see Accessories overview)



Interfaces:



Type key



<b>TX</b> Product family	<b>5</b> Series	<b>04</b> Screen diagonals
Product family TX Turck HMI/PLC	Series 5 TX500 Series	Size 04 4.3" 07 7" 10 10.4" 13 13.3"
<b>E</b> Processor	<b>P3</b> PLC	<b>CV</b> Visualization
Processor E 600 MHz (ECO) blank 1 GHz	PLC P3 CODESYS V3 PLC Runtime	Visualization CV CODESYS V3 TargetVisu Runtime
<b>01</b> Communication		
Communication 01 PROFINET controller (Master) EtherNet/IP™ scanner Modbus TCP master/slave Modbus RTU master/slave CANopen master		

# TX500 Technical Data



<b>Type designation</b>	<b>TX504E-P3CV01</b>	<b>TX507E-P3CV01</b>
Ident. no.	6828101	6828103
<b>Display/touch</b>		
Display	TFT color	TFT color
Touch	resistive	resistive
Active screen area	4.3"	7"
Resolution (pixels)	480 x 272	800 x 480
Format	16 : 9	16 : 9
Brightness	150 Cd/m <sup>2</sup> typ.	300 Cd/m <sup>2</sup> typ.
Dimmable	Yes (up to 0%)	Yes (up to 0%)
<b>System</b>		
Processor	ARM Cortex A8, 600 MHz	ARM Cortex A8, 600 MHz
Flash memory	128 MB	128 MB
RAM memory	256 MB	256 MB
Memory expansion	USB, SD card	USB, SD card
Real-time clock	Yes (battery-backed)	Yes (battery-backed)
Buzzer	Yes	Yes
<b>PLC data</b>		
Programming	CODESYS V3	CODESYS V3
Programming languages	IEC 61131-3 (IL, LD, FBD, SFC, ST)	IEC 61131-3 (IL, LD, FBD, SFC, ST)
Programming interfaces	Ethernet	Ethernet
Program memory	20 MB	20 MB
Retain memory	16 kB	16 kB
<b>Interfaces</b>		
Ethernet ports	2 x 10/100 Mbit	2 x 10/100 Mbit
Serial ports	1 x (RS232/RS485/RS422, configurable)	1 x (RS232/RS485/RS422, configurable)
USB ports	1 x host v2.0	1 x host v2.0, 1 x host v2.0/1.1
SD Card	Yes	Yes
Expansion slot	1 x plug-in slot	2 x plug-in slots
<b>Power supply</b>		
Rated value	24 VDC, max. 0.55 A	24 VDC, max. 0.7 A
Permissible voltage range	10–32 VDC	10...32 VDC
<b>General data</b>		
Operation temperature	0...50 °C	0...50 °C
Approvals	CE, cULus	CE, cULus
Ex approval	UL Class 1 Div. 2	UL Class 1 Div. 2
Protection class	IP66 front, IP20 rear	IP66 front, IP20 rear
<b>Dimensions</b>		
Housing front (W x H)	147 x 107 mm	187 x 147 mm
Installation cut-out (W x H)	136 x 96 mm	176 x 136 mm
Mounting depth	56 mm	47 mm
Weight	950 g	850 g





**TX507-P3CV01**

6828104

TFT color  
resistive  
7"  
800 x 480  
16 : 9  
300 Cd/m<sup>2</sup> typ.  
Yes (up to 0%)

ARM Cortex A8, 1 GHz  
256 MB  
256 MB  
USB, SD card  
Yes (battery-backed)  
Yes

CODESYS V3  
IEC 61131-3 (IL, LD, FBD, SFC, ST)  
Ethernet  
20 MB  
16 kB

2 x 10/100 Mbit  
1 x (RS232/RS485/RS422, configurable)  
1 x host v2.0, 1 x host v2.0/1.1  
Yes  
2 x plug-in slots

24 VDC, max. 0.7 A  
10...32 VDC

0...50 °C  
CE, cULus  
UL Class 1 Div. 2  
IP66 front, IP20 rear

187 x 147 mm  
176 x 136 mm  
47 mm  
850 g



**TX510-P3CV01**

6828105

TFT color  
resistive  
10.4"  
800 x 600  
4 : 3  
300 Cd/m<sup>2</sup> typ.  
Yes (up to 0%)

ARM Cortex A8, 1 GHz  
256 MB  
256 MB  
USB, SD card  
Yes (battery-backed)  
Yes

CODESYS V3  
IEC 61131-3 (IL, LD, FBD, SFC, ST)  
Ethernet  
20 MB  
16 kB

2 x 10/100 Mbit  
1 x (RS232/RS485/RS422, configurable)  
1 x host v2.0, 1 x host v2.0/1.1  
Yes  
2 x plug-in slots

24 VDC, max. 1.0 A  
10...32 VDC

0...50 °C  
CE, cULus  
UL Class 1 Div. 2  
IP66 front, IP20 rear

287 x 232 mm  
276 x 221 mm  
56 mm  
2200 g



**TX513-P3CV01**

6828107

TFT color  
resistive  
13.3"  
1280 x 800  
16 : 9  
300 Cd/m<sup>2</sup> typ.  
Yes (up to 0%)

ARM Cortex A8, 1 GHz  
256 MB  
256 MB  
USB, SD card  
Yes (battery-backed)  
Yes

CODESYS V3  
IEC 61131-3 (IL, LD, FBD, SFC, ST)  
Ethernet  
20 MB  
16 kB

2 x 10/100 Mbit  
1 x (RS232/RS485/RS422, configurable)  
1 x host v2.0, 1 x host v2.0/1.1  
Yes  
2 x plug-in slots

24 VDC, max. 1.2 A  
10...32 VDC

0...50 °C  
CE, cULus  
UL Class 1 Div. 2  
IP66 front, IP20 rear

336 x 267 mm  
326 x 256 mm  
56 mm  
2600 g

# TX700 Series



The HMI/PLC panels of the TX700 series impress with innovative design. The panels of the Premium Line improve the high quality metal housings with a redesigned front with capacitive glass display. Panels are available with screen diagonals from 5" to 21". The panels now also feature up to three Ethernet ports, which can be used independently for different applications. It is thereby also possible to turn the panels into a universal IoT platform. Remote maintenance and remote access can be quickly and easily achieved with the integrated VNC Server. The PLC programming is freely

available via CODESYS V3, the graphical user interface can be created with the visualization editor in CODESYS, or optionally with TX VisuPro.

**Areas of application**

- Control
- HMI panel
- Multi-touch and gesture control
- IoT Gateway
- Extended temperature range of -20...60 °C

## Variants for the food industry and extreme environments

The TX700 series has also been expanded to include special Food&Beverage variants and devices with special displays that meet F&B specifications and ensure good readability even in sunlight. The blue front of the F&B variants (7" and 15") has a stainless steel frame and a full polyester coating. This covers the glass front even in

the event of a possible glass breakage and meets hygiene requirements. The TX700HB variants (high brightness with 7" and 10") are equipped with sunlight readable displays with a brightness of up to 800 candelas. These devices ensure safe display and operation even in extreme environments.

## Plug-in modules

The TX700 panels can also be expanded with functions, interfaces, and local I/O signals via plug-in modules. The concept has been adopted from the TX500 panel series. The same plug-in modules can be used.

## Gesture control via TX VisuPro

The glass front of the TX700 operator panels with capacitive touch supports multi-touch and gesture control functionality. The gestures can be flexibly configured in the TX VisuPro visualization editor. A predefined object, also known as a widget, defines the area of the display the gesture

is to be recognized and which action is to be subsequently performed. Modern operating concepts can thereby quickly and flexibly be adapted to the requirements of the individual machine or system. Below is an overview of the typical gestures.

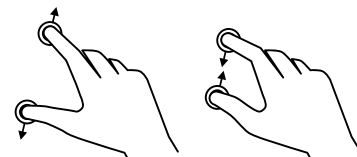
Swipe



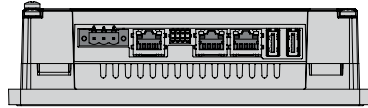
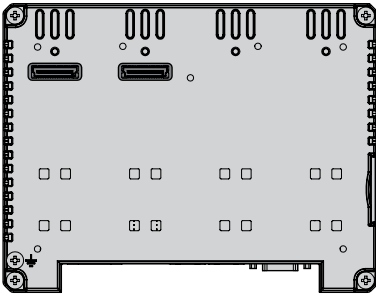
Rotate



Zoom



## Interfaces:



## Type code

**TX 7 05 FB - P3 CV 01**

**TX** Product series      **7** Series      **05** Screen diagonal

Product series  
TX Turck HMI/PLC

Series  
7 TX700 series

Size  
00 Without display  
05 5"  
07 7"  
10 10.1"  
15 15.6"  
21 21.5"

**FB** Variant      - **P3** PLC      **CV** Visualization

Variant  
Blank Standard  
FB Food & Beverage  
HB High Brightness  
S Single Core  
D Dual Core  
Q Quad Core

PLC  
P3 CODESYS V3 PLC Runtime

Visualization  
CV CODESYS V3 TargetVisu Runtime  
WV WebVisu (CODESYS, TX VisuPro)

**01** Communication

Communication  
01 PROFINET controller  
EtherNet/IP™ scanner  
Modbus TCP master/slave  
Modbus RTU master/slave  
CANopen master

# Technical Features TX700



<b>Type designation</b>	<b>TX705-P3CV01</b>	<b>TX707-P3CV01</b>
Ident. no.	100002029	100002030
<b>Display/touch</b>		
Display	TFT color	TFT color
Touch	capacitive	capacitive
Active screen area	5"	7"
Resolution (pixels)	800 x 480	800 x 480
Format	16 : 9	16 : 9
Brightness	300 Cd/m <sup>2</sup> typ.	500 Cd/m <sup>2</sup> typ.
Dimmable	Yes (up to 0%)	Yes (up to 0%)
<b>System</b>		
Processor	ARM Cortex A8, 1 GHz	ARM Cortex A9, Dual Core 800 MHz
Flash memory	4096 MB	4096 MB
RAM memory	512 MB	1024 MB
Memory expansion	USB, SD card	USB, SD card
Real-time clock	Yes (battery-backed)	Yes (battery-backed)
Buzzer	-	-
<b>PLC data</b>		
Programming	CODESYS V3	CODESYS V3
Programming languages	IEC 61131-3 (IL, LD, FBD, SFC, ST)	IEC 61131-3 (IL, LD, FBD, SFC, ST)
Programming interfaces	Ethernet	Ethernet
Program memory	20 MB	20 MB
Retain memory	63 kB	63 kB
<b>Interfaces</b>		
Ethernet ports	2 x 10/100 Mbit	1 x 10/100/1000 Mbit 2 x 10/100 Mbit
Serial ports	1 x (RS232/RS485/RS422, configurable)	1 x (RS232/RS485/RS422, configurable)
USB ports	1 x host v.2.0, max. 500 mA	2 x host v.2.0, max. 500 mA
SD Card	Yes	Yes
Expansion slot	1 x plug-in slot	2 x plug-in slots
<b>Power supply</b>		
Rated value	24 VDC, max. 0.6 A	24 VDC, max. 0.7 A
Permissible voltage range	10...32 VDC	10...32 VDC
<b>General data</b>		
Operation temperature	-20...60 °C	-20...60 °C
Approvals	CE, cULus	CE, cULus
Ex approval	UL Class 1 Div. 2, ATEX, IEC Ex	UL Class 1 Div. 2, ATEX, IEC Ex
Protection class	IP66 front, IP20 rear	IP66 front, IP20 rear
<b>Dimensions</b>		
Housing front (W x H)	147 x 107 mm	187 x 147 mm
Installation cut-out (W x H)	136 x 96 mm	176 x 136 mm
Mounting depth	52 mm	47 mm
Weight	800 g	1100 g


**TX710-P3CV01**

100002031

 TFT color  
 capacitive  
 10.1"  
 1280 x 800  
 16 : 9  
 500 Cd/m<sup>2</sup> typ.  
 Yes (up to 0%)

 ARM Cortex A9, Dual Core 800 MHz  
 4096 MB  
 1024 MB  
 USB, SD card  
 Yes (battery-backed)

 CODESYS V3  
 IEC 61131-3 (IL, LD, FBD, SFC, ST)  
 Ethernet  
 20 MB  
 63 kB

 1 x 10/100/1000 Mbit  
 2 x 10/100 Mbit  
 1 x (RS232/RS485/RS422, configurable)  
 2 x host v.2.0, max. 500 mA  
 Yes  
 2 x plug-in slots

 24 VDC, max. 1.0 A  
 10...32 VDC

 -20...60 °C  
 CE, cULus  
 UL Class 1 Div. 2, ATEX, IEC Ex  
 IP66 front, IP20 rear

 282 x 197 mm  
 271 x 186 mm  
 56 mm  
 1800 g

**TX715-P3CV01**

100002032

 TFT color  
 capacitive  
 15.6"  
 1366 x 768  
 16 : 9  
 400 Cd/m<sup>2</sup> typ.  
 Yes (up to 0%)

 ARM Cortex A9, Quad Core 800 MHz  
 8192 MB  
 2048 MB  
 USB, SD card  
 Yes (battery-backed)

 CODESYS V3  
 IEC 61131-3 (IL, LD, FBD, SFC, ST)  
 Ethernet  
 20 MB  
 63 kB

 1 x 10/100/1000 Mbit  
 2 x 10/100 Mbit  
 1 x (RS232/RS485/RS422, configurable)  
 2 x host v.2.0, max. 500 mA  
 Yes  
 2 x plug-in slots

 24 VDC, max. 1.2 A  
 10...32 VDC

 -20...60 °C  
 CE, cULus  
 UL Class 1 Div. 2, ATEX, IEC Ex  
 IP66 front, IP20 rear

 422 x 267 mm  
 411 x 256 mm  
 56 mm  
 3500 g

**TX721-P3CV01**

100002033

 TFT color  
 capacitive  
 21.5"  
 1920 x 1080  
 16 : 9  
 300 Cd/m<sup>2</sup> typ.  
 Yes (up to 0%)

 ARM Cortex A9, Quad Core 800 MHz  
 8192 MB  
 2048 MB  
 USB, SD card  
 Yes (battery-backed)

 CODESYS V3  
 IEC 61131-3 (IL, LD, FBD, SFC, ST)  
 Ethernet  
 20 MB  
 63 kB

 1 x 10/100/1000 Mbit  
 2 x 10/100 Mbit  
 1 x (RS232/RS485/RS422, configurable)  
 2 x host v.2.0, max. 500 mA  
 Yes  
 2 x plug-in slots

 24 VDC, max. 1.7 A  
 10...32 VDC







 -20...60 °C  
 CE, cULus  
 UL Class 1 Div. 2, ATEX, IEC Ex  
 IP66 front, IP20 rear

 552 x 347 mm  
 541 x 336 mm  
 56 mm  
 6100 g




# Accessories

## Plug-in modules


























Figure	Ident-No.	Type designation	Description	
	100002598	TX-RS485	RS485 interface	Galvanically isolated 9-pin SUB-D plug connection With plug-in expansion slot
	100002599	TX-RS232	RS232 interface	9-pin SUB-D plug connection With plug-in expansion slot
	6828210	TX-CAN	CANopen Manager	CANopen Manager/Master in CODESYS Max. 1 Mbit Galvanically isolated 9-pin SUB-D plug connection With plug-in expansion slot
	6828203	TX-IO-DX06	8 DI, 6 DO, 1 relay output	I/O module 8 digital inputs, 24 VDC, PNP 6 digital outputs, 24 VDC, 0.5A, PNP 1 relay, NO contact
	6828201	TX-IO-XX03	20 DI, 12 DO 0.5A, 8 AI, 4 AO	I/O module 20 digital inputs, 24 VDC, PNP 12 digital outputs, 24 VDC, 0.5A, PNP 8 analog inputs, U, I, RTD, TC 4 analog outputs, U, I
	100004786	TX-EXTEND	Plug-in extension	Can be used with the TX504 and TX705 Required when operating the TX-IO-XX03- I/O module With plug-in expansion slot

## Protective film

Figure	Ident-No.	Type designation	Number per unit	Use
	100003928	TX-PROTFOIL-04	10 pcs.	TX504 or TX104
	100003930	TX-PROTFOIL-07	10 pcs.	TX507 or TX107 or TX207
	100003931	TX-PROTFOIL-10	10 pcs.	TX510
	100003932	TX-PROTFOIL-13	10 pcs.	TX513

The protective films can be used for HMI devices with resistive touch. More variants with added UV protection are available.

# Mounting Accessories

Ident-No.	Type designation	Mounting clamp, old	Mounting clamp, new	Power supply	Serial	CAN	Use
100003186	TX100-MOUNT-07	–	4 x 	1 x 	–	–	TX104-00VPST TX107-00VPST
100003187	TX100-MOUNT-10	–	11 x 	1 x 	–	–	TX110-00VPST
100003206	TX200-MOUNT-07	–	4 x 	1 x 	–	1x 	TX207-P3CV01
6828220	TX500-MOUNT-07	4 x 	–	1 x 	–	–	TX504E-P3CV01 TX507E-P3CV01 TX507-P3CV01
6828221	TX500-MOUNT-10	10 x 	–	1 x 	–	–	TX510-P3CV01
6828222	TX500-MOUNT-13	14 x 	–	1 x 	–	–	TX513-P3CV01
100003188	TX700-MOUNT-07	–	4 x 	1 x 	1 x 	–	TX705-P3CV01 TX707-P3CV01
100003189	TX700-MOUNT-10	–	11 x 	1 x 	1 x 	–	TX710-P3CV01
100003190	TX700-MOUNT-15	–	12 x 	1 x 	1 x 	–	TX715-P3CV01
100003191	TX700-MOUNT-21	–	14 x 	1 x 	1 x 	–	TX721-P3CV01

The sets with mounting brackets and connectors are always included in the delivery. However, they can also be ordered separately as spare parts.

# Turck Cloud Solutions

## Turck Cloud Portal



Turck Cloud Solutions offers a Cloud solution that is specifically tailored to industrial requirements and can be hosted locally or externally. The bidirectional encrypted communication is designed to maximize data security. Dashboards allow a clear overview of the machine data and statuses, and convenient operation of the machines. Additional features, such as data analysis or monitoring of production processes, create immediate real added value.

### Key Features

- Scalable Cloud solutions
- Hosted locally or externally
- Encrypted, bidirectional, and efficient data transmission
- Fast and easy integration
- Can be customized
- Efficient system monitoring
- Simple remote diagnostics
- Predictive maintenance
- Identification of the optimization fields
- Easy entry into Industry 4.0

Ident-No.	Type designation	Description
9940005	TCS-Portal-Project-Registration-01	Setup of a project in the Turck Cloud Portal
9940006	TCS-Portal-Device-Registration-01	Registration of a device in the Turck Cloud Portal
9940007	TCS-Portal-Device-Dataflat-Month-01	Monthly data flat rate per device in the Turck Cloud Portal
9940008	TCS-Portal-Customization-01	Customer-specific adaptation of the Turck Cloud Portal

Note: Cloud Solutions are only available in certain countries. Please contact your local sales contact.

## TCG20 - Edge gateways for the control cabinet



The EDGE gateways in the TCG20 series offer several interfaces for simple integration into automation networks. As a result, both new systems and existing systems that already have their own controllers can be quickly and easily integrated into Cloud systems. Thanks to the built-in web-based EDGE PLC with its intuitive graphical editor, data can be pre-processed and prepared as required with the TCG20 series without any additional hardware or software.

### Key Features

- Fully integrated into the Turck Cloud
- Web-Based EDGE PLC
- End-to-end encryption
- Optional LAN, WLAN, UMTS
- OPC UA and MQTT enable flexible Cloud connections
- Integration into virtually any automation system via Ethernet, serial and CAN interfaces
- Built-in firewall
- VPN Clients
- NAT router



Ident-No.	Type designation	UMTS	WLAN	Ethernet ports
100002555	TCG20-UMTS-1ETH-CRS-01	•	–	1
100002556	TCG20-UMTS-5ETH-CRS-01	•	–	5
100002557	TCG20-WLAN-1ETH-CRS-01	–	•	1
100002558	TCG20-WLAN-5ETH-CRS-01	–	•	5
100002559	TCG20-UMTS-WLAN-1ETH-CRS-01	•	•	1
100002560	TCG20-UMTS-WLAN-5ETH-CRS-01	•	•	5

# CODESYS-V3 Controls

IP67 controllers in the robust block I/O housing



The CODESYS-V3 controller TBEN-L-PLC is a compact IP67 PLC for the control of smaller, medium, or modular machines. With its robust housing, wide temperature range, and high protection rating, the TBEN-L-PLC enables machine-orientated automation concepts directly in the field without the need for control cabinets. The use of pre-assembled cables reduces the cabling requirements and enables fast and efficient commissioning.

### Key Features

- Simple programming with CODESYS V3 acc. to IEC-61131-3
- CODESYS WebVisu (optional)
- Fully integrated into the Turck Cloud
- Extremely robust
- Temperature range -40...+70 °C
- 2 Ethernet ports
- 2 serial interfaces (RS232, RS485)
- CAN interface
- 8 local DX I/O signals
- Output current up to 2 A per channel

Ident-No.	Type designation	Description
6814018	TBEN-L5-PLC-10	IP67 controller, power supply 7/8", 5-pin
10000272	TBEN-L5-PLC-11	IP67 controller, power supply 7/8", 5-pin with WebVisu license
6814019	TBEN-L4-PLC-10	IP67 controller, power supply 7/8", 4-pin
10000273	TBEN-L4-PLC-11	IP67 controller, power supply 7/8", 4-pin with WebVisu license

Programmable gateways for modular I/O systems BL20 and BL67



The generation of programmable gateways for the modular I/O systems BL20 and BL67 are programmable via CODESYS V3. Thanks to the Turck multiprotocol technology, the devices can be used in any of the three Ethernet protocols PROFINET, EtherNet/IP™, and Modbus TCP. As distributed intelligence, the programmable gateways can pre-process data on-site, control tasks autonomously, or act as a protocol converter.

### Key Features

- Simple programming with CODESYS V3 acc. to IEC-61131-3
- CODESYS WebVisu (optional)
- Can be used in PROFINET, EtherNet/IP™, and Modbus TCP networks thanks to multi-protocol Ethernet technology
- Autonomous control of applications even without higher-level control
- Modbus TCP Master
- OPC-UA Server (in preparation)

Ident-No.	Type designation	Description
6827394	BL67-PG-EN-V3	Programmable BL67 gateway, multiprotocol Ethernet
10000041	BL67-PG-EN-V3-WV	Programmable BL67 gateway, multiprotocol Ethernet, with CODESYS WebVisu
6827393	BL20-PG-EN-V3	Programmable BL20 gateway, multiprotocol Ethernet
6827398	BL20-PG-EN-V3-WV	Programmable BL20 gateway, multiprotocol Ethernet, with CODESYS WebVisu

More information is available at [www.turck.de](http://www.turck.de)

Архангельск (8182)63-90-72  
 Астана (7172)727-132  
 Астрахань (8512)99-46-04  
 Барнаул (3852)73-04-60  
 Белгород (4722)40-23-64  
 Брянск (4832)59-03-52  
 Владивосток (423)249-28-31  
 Волгоград (844)278-03-48  
 Вологда (8172)26-41-59  
 Воронеж (473)204-51-73  
 Екатеринбург (343)384-55-89  
 Иваново (4932)77-34-06

Ижевск (3412)26-03-58  
 Иркутск (395)279-98-46  
 Казань (843)206-01-48  
 Калининград (4012)72-03-81  
 Калуга (4842)92-23-67  
 Кемерово (3842)65-04-62  
 Киров (8332)68-02-04  
 Краснодар (861)203-40-90  
 Красноярск (391)204-63-61  
 Курск (4712)77-13-04  
 Липецк (4742)52-20-81  
 Киргизия (996)312-96-26-47

Магнитогорск (3519)55-03-13  
 Москва (495)268-04-70  
 Мурманск (8152)59-64-93  
 Набережные Челны (8552)20-53-41  
 Нижний Новгород (831)429-08-12  
 Новокузнецк (3843)20-46-81  
 Новосибирск (383)227-86-73  
 Омск (3812)21-46-40  
 Оренбург (4862)44-53-42  
 Оренбург (3532)37-68-04  
 Пенза (8412)22-31-16  
 Казахстан (772)734-952-31

Пермь (342)205-81-47  
 Ростов-на-Дону (863)308-18-15  
 Рязань (4912)46-61-64  
 Самара (846)206-03-16  
 Санкт-Петербург (812)309-46-40  
 Саратов (845)249-38-78  
 Севастополь (8692)22-31-93  
 Симферополь (3652)67-13-56  
 Смоленск (4812)29-41-54  
 Сочи (862)225-72-31  
 Ставрополь (8652)20-65-13  
 Таджикистан (992)427-82-92-69

Сургут (3462)77-98-35  
 Тверь (4822)63-31-35  
 Томск (3822)98-41-53  
 Тула (4872)74-02-29  
 Тюмень (3452)66-21-18  
 Ульяновск (8422)24-23-59  
 Уфа (347)229-48-12  
 Хабаровск (4212)92-98-04  
 Челябинск (351)202-03-61  
 Череповец (8202)49-02-64  
 Ярославль (4852)69-52-93