User manual

TOX® ProcessMonitor CEP 600

Edition: 07/31/2025, Version: 2

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1 Important information

1.1 Legal note

If this manual refers to goods and/or services of third parties, this is for example only or is a recommendation by TOX® PRESSOTECHNIK.
TOX® PRESSOTECHNIK does not accept any liability or warranty/guarantee with reference to the selection, specifications and/or usability of these goods and services. The use and/or representation of trademarked brands that do not belong to TOX® PRESSOTECHNIK are for information only; all rights remain the property of the owner of the trademarked brand.

Operating instructions, manuals, technical descriptions and software are originally compiled in German.

1.2 Exclusion of liability

TOX® PRESSOTECHNIK has checked the contents of this publication to ensure that it conforms to the technical properties and specifications of the products or plant and the description of the software. However, discrepancies may still be present, so we cannot guarantee complete accuracy. The supplier documentation included with the system documentation is an exception.

However, the information in this publication is checked regularly and any required corrections are included in subsequent editions. We are grateful for any corrections and suggestions for improvement. TOX® PRESSOTECHNIK reserves the right to revise the technical specifications of the products or plant and/or the software or documentation without prior notice.

1.3 Validity of the document

1.3.1 Content and target group

This manual contains information and instructions for the safe operation and safe maintenance or servicing of the product.

- All information in this manual is up to date at the time of print.
  TOX® PRESSOTECHNIK reserves the right to make technical changes that improve the system or increase the standard of safety.
- The information is intended for the operating company as well as operating and service personnel.

1.3.2 Other applicable documents

In addition to the available manual, further documents can be supplied. These documents must also be complied with. Other applicable documents can be, for example:

- additional operating manuals (e.g. of components or of a whole system)
- Supplier documentation
- Instructions, such as software manual, etc.
- Technical data sheets
- Safety data sheets
- Data sheets
- Schematics

1.4 Gender note

In order to enhance readability, references to persons that also relate to all sexes are normally only stated in the usual form in German or in the corresponding translated language in this manual, thus e.g. "operator" (singular) for male or female, or "operators" (plural) for male or female". This should in no way convey any gender discrimination or any violation of the principle of equality, however.

1.5 Displays in the document

1.5.1 Display of warnings

Warning signs indicate potential dangers and describe protective measures.
Warning signs precede the instructions for which they are applicable.

Warning signs concerning personal injuries

⚠ DANGER

Identifies an immediate danger!

Death or severe injuries will occur if appropriate safety measures are not taken.

➔ Measures for remedial action and protection.

⚠ WARNING

Identifies a potentially dangerous situation!

Death or serious injury may occur if appropriate safety measures are not taken.

➔ Measures for remedial action and protection.

⚠ CAUTION

Identifies a potentially dangerous situation!

Injury may occur if appropriate safety measures are not taken.

➔ Measures for remedial action and protection.

Warning signs indicating potential damage

NOTE

Identifies a potentially dangerous situation!

Property damage may occur if appropriate safety measures are not taken.

➔ Measures for remedial action and protection.

1.5.2 Display of general notes

General notes show information on the product or the described action steps.

Identifies important information and tips for users.

1.5.3 Highlighting of texts and images

The highlighting of texts facilitates orientation in the document.

✓ Identifies prerequisites that must be followed.

1. Action step 1
2. Action step 2: identifies an action step in an operating sequence that must be followed to ensure trouble-free operation.
   ▷ Identifies the result of an action.

▶ Identifies the result of a complete action.

➔ Identifies a single action step or several action steps that are not in an operating sequence.

The highlighting of operating elements and software objects in texts facilitates distinction and orientation.

- <In square brackets> identifies operating elements, such as buttons, levers and (valves) stopcocks.
- "with quotation marks" identifies software display panels, such as windows, messages, display panels and values.
- **In bold** identifies software buttons, such as buttons, sliders, checkboxes and menus.
- **In bold** identifies input fields for entering text and/or numerical values.

1.6 Contact and source of supply

Only use original spare parts or spare parts approved by TOX® PRESSOTECHNIK.

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For additional information and forms see www.tox.com

2 Safety

2.1 Basic safety requirements

The product is state of the art. However, operation of the product may involve danger to life and limb for the user or third parties or damage to the plant and other property.

For this reason the following basic safety requirements will apply:

- Read the operating manual and observe all safety requirements and warnings.
- Operate the product only as specified and only if it is in perfect technical condition.
- Remedy any faults in the product or the plant immediately.

2.2 Organizational measures

2.2.1 Safety requirements for the operating company

The operating company is responsible for compliance with the following safety requirements:

- The operating manual must always be kept available at the operation site of the product. Ensure that the information is always complete and in legible form.
- In addition to the operating manual, the generally valid legal and other binding rules and regulations must be provided for the following content and all personnel must be trained accordingly:
  - Work safety
  - Accident prevention
  - Working with hazardous substances
  - First aid
  - Environmental protection
  - Traffic safety
  - Hygiene
- The requirements and contents of the operating manual must be supplemented by existing national regulations (e.g. for prevention of accidents and for environmental protection).
- Instructions for special operating features (e.g. work organization, work processes, appointed personnel) and supervisory and reporting obligations must be added to the operating manual.

- Take action to ensure safe operation and make sure that the product is maintained in a functional condition.
- Only allow authorized persons access to the product.
- Ensure that all personnel work with awareness of safety and potential dangers with reference to the information in the operating manual.
- Provide personal protective equipment.
- Maintain all safety and information on dangers regarding the product complete and in legible condition and replace as required.
- Do not make any changes, carry out attachments or conversions to the product without the written approval of TOX® PRESSOTECHNIK. Action contrary to the above will not be covered by the warranty or the operating approval.
- Make sure that the annual safety inspections are carried out and documented by an expert.

2.2.2 Selection and qualifications of personnel

The following safety requirements are applicable for the selection and qualifications of personnel:

- Only appoint persons to work on the plant who have read and understood the operating manual, and in particular, the safety instructions before starting work. This is particularly important for persons who only work on the plant occasionally, e.g. for maintenance work.
- Only allow persons appointed and authorized for this work access to the plant.
- Only appoint reliable and trained or instructed personnel.
- Only appoint persons to work in the danger zone of the plant who can perceive and understand visual and acoustic indications of danger (e.g. visual and acoustic signals).
- Ensure that assembly and installation work and the initial commissioning are performed exclusively by qualified personnel who have been trained and authorized by TOX® PRESSOTECHNIK.
- Maintenance and repairs must be performed by qualified and trained personnel only.
- Ensure that personnel who are being trained, instructed or are in an apprenticeship can only work on the plant under the supervision of an experienced person.
- Have work on electrical equipment performed only by electricians or trained persons under the direction and supervision of an electrician in accordance with the electrotechnical regulations.

2.3 Fundamental hazard potential

Fundamental hazard potentials exist. The specified examples draw attention to known hazardous situations, but are not complete and do not in any way provide safety and risk awareness action in all situations.

2.3.1 Electrical hazards

Attention should be paid to electrical hazards particularly inside the components in the area of all assemblies of the control system and motors of the installation.

The following basically applies:

- Have work on electrical equipment performed only by electricians or trained persons under the direction and supervision of an electrician in accordance with the electrotechnical regulations.
- Always keep the control box and/or terminal box closed.
- Before commencing work on electrical equipment, switch off the main switch of the system and secure it against being switched back on inadvertently.
- Pay attention to the dissipation of residual energy from the control system of the servomotors.
- Make sure that the components are disconnected from the power supply when carrying out the work.

3 About this product

3.1 Intended use

The process monitoring ensures constant monitoring of the production process and quality assurance during production.

3.1.1 Safe and correct operation

Intended use includes the following conduct:

- Only operate with the components for which it is specified.
- Follow all instructions in this operating manual.
- Comply with the specified maintenance intervals and perform maintenance work correctly.
- Operate in compliance with the conditions of the technical data.
- Operation with fully assembled and functional safety devices.
- Activities may only be carried out by persons who are qualified or authorized for this purpose.

Any other use or application beyond this does not come under the scope of intended use.

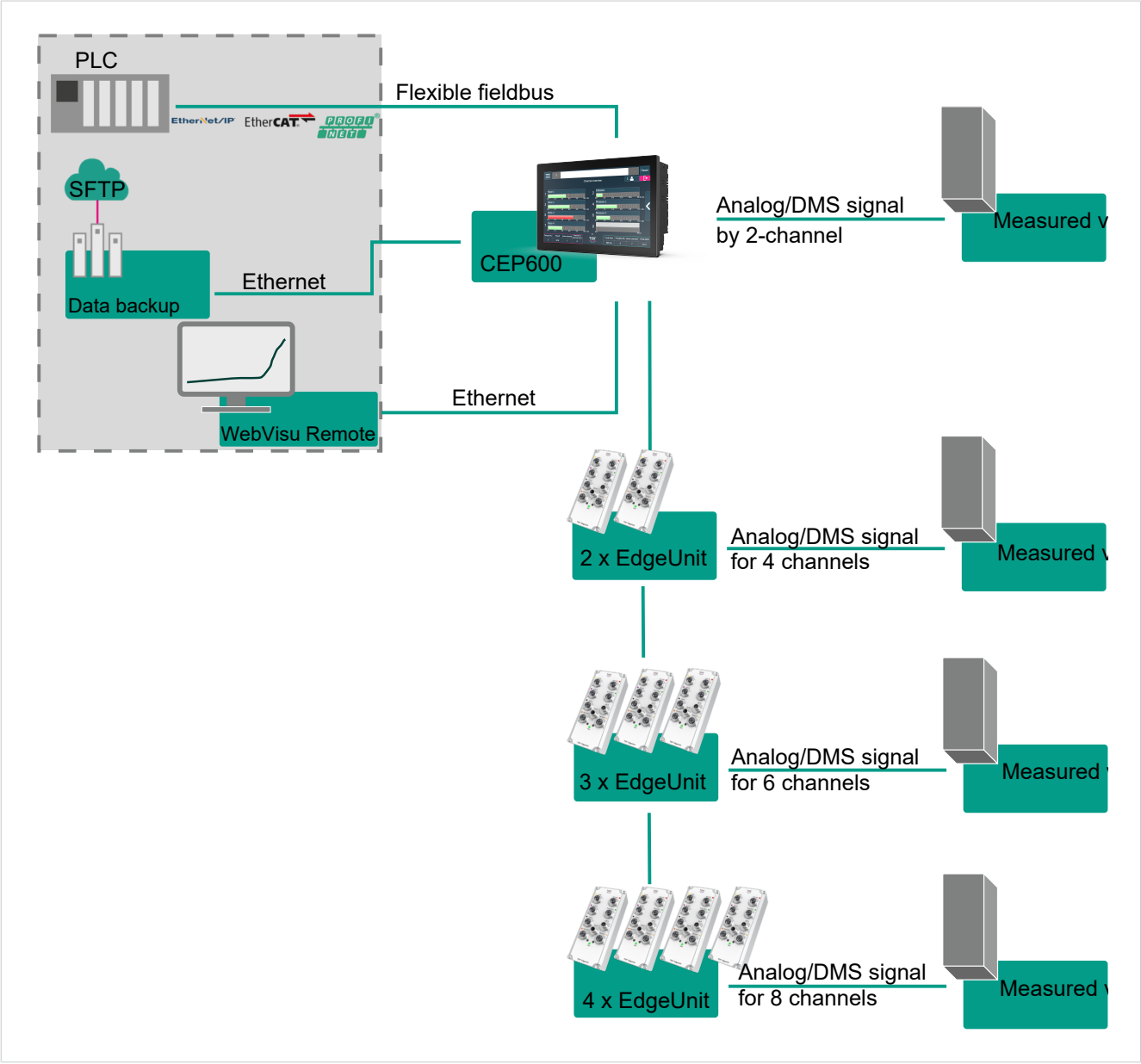
3.1.2 Foreseeable misuse

Use contrary to intended use includes the following foreseeable misuse:

- Operation under conditions that deviate from the technical data.
- Operation without fully assembled and functional connections.
- Operation without fully assembled and functional safety devices.
- Modifications to the product without prior approval by TOX® PRESSOTECHNIK and the approving authority.
- Incorrect parameterization.
- Execution of activities by persons who are not qualified or authorized to do so.

The operating company is exclusively responsible for all personal injury and property damage resulting from non-intended use. Non-intended use will not be covered by the warranty or the operating approval.

3.2 Product overview



3.3 Function description

3.3.1 Process monitoring system

The TOX® CEP 600 records individual measured values as bar charts and analyses them using min/max limits. Depending on the result of the measurement an OK/NOK message is issued both on the internal display as well as the external interfaces provided. The number of channels can be selected in 2

steps: 2, 4, 6, 8, 10 or 12 channels. The 2-channel version already has the evaluation unit for the sensors on board. From 4 channels, all signals are recorded by the TOX® EdgeUnit in a decentralized manner.

3.3.2 Field of application

 Bending	 Clinching	 Punching in/pressing in	 Molding	 Holding	 Punching	 Deep-drawing
 Stamping	 Pressing/ compress-ing	 SPR pressing in	 Assem-bling			

3.4 Product identification

3.4.1 Type plate

The details on the type plate ensure clear identification of components and the specific operating parameters.

The type plate is attached permanently on the component.

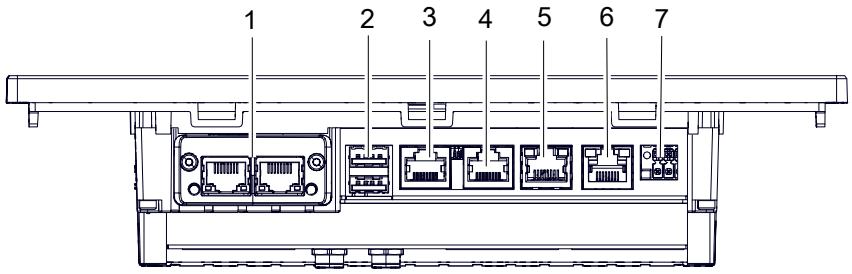
4 Technical data

4.1 Data sheet

For technical data see data sheet.
www.tox.com

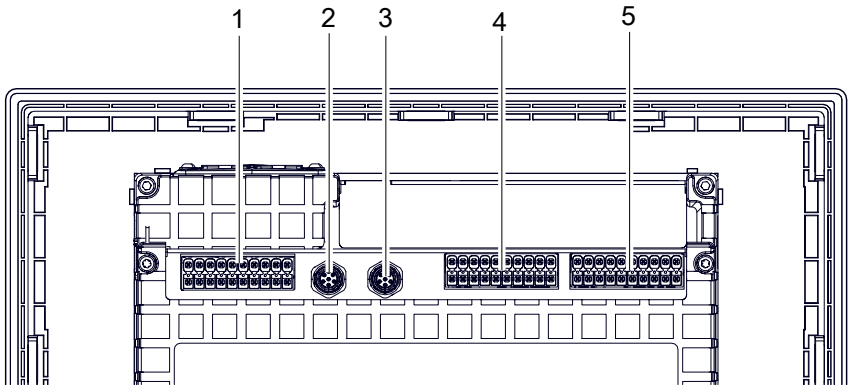
4.2 General technical data

4.2.1 Installation version connections



1	Fieldbus module	2	USB
3	not occupied	4	not occupied
5	Ethernet	6	EtherCat
7	Power supply		

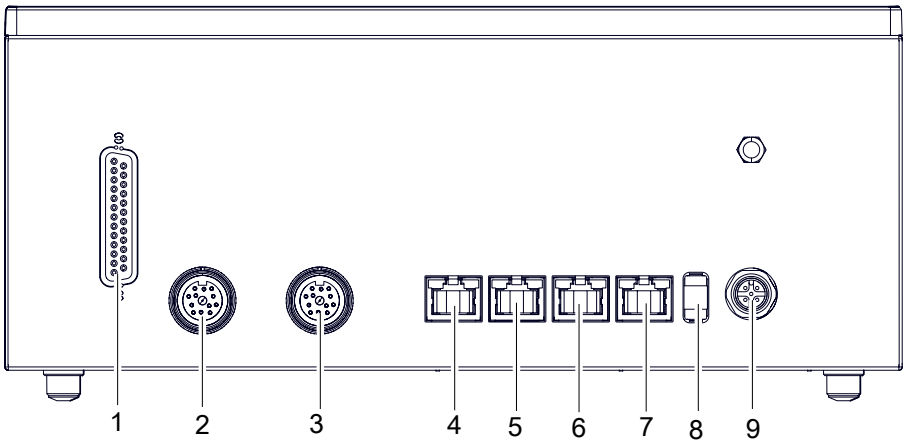
Fig. 1 Installation version: connections to underside



1	X5 I/O	2	X4 strain gauge 2 / Reserve
3	X3 strain gauge 1	4	X1 DIG I/O
5	X1 DIG I		

Fig. 2 Installation version: connections to rear side

4.2.2 Wall version connections



1	DIG I/O	2	Y / Ch1
3	X / Ch2	4	FB Out
5	FB In	6	Ethernet
7	EtherCat	8	USB
9	Power supply		

Fig. 3 Wall version: Connections

4.2.3 Mechanical characteristics

Description of the TOX® CEP 600 7” installation version	Value
Plastic installation housing	PA66 CF25, RAL 9000, UL 94-H
Installation cutout (Q x H)	187 mm x 120 mm
Housing dimensions with joining module (W x H x D)	185 mm x 118 mm x 52 mm
Dimensions of the front frame (W x H x D)	200 mm x 133 mm x 7.5 mm
Display	7" TFT LCD WSVGA (1024 x 600) LED-Backlight
Touch-technology	PCAP, projective capacitive touch 2-point multitouch
Plastic front frame	PA66 CF25, RAL 9000, UL 94-H
Fastening type	Clamp mounting via fixing element
Type of protection according to DIN 60529 09/2014	IP 65 (front plate) IP 20 (housing)
Weight	575 g

Description of the TOX® CEP 600 10.1” installation version	Value
Plastic installation housing	PA66 CF25, RAL 9000, UL 94-H
Installation cutout (Q x H)	255 mm x 162 mm
Housing dimensions with joining module (W x H x D)	185 mm x 118 mm x 52 mm
Dimensions of the front frame (W x H x D)	268 mm x 175 mm x 7.5 mm
Display	10.1" TFT LCD WSVGA (1024 x 600) LED-Backlight
Touch-technology	PCAP, projective capacitive touch 2-point multitouch
Plastic front frame	PA66 CF25, RAL 9000, UL 94-H
Fastening type	Clamp mounting via fixing element
Type of protection according to DIN 60529 09/2014	IP 65 (front plate) IP 20 (housing)
Weight	910 g

Description of the TOX® CEP 600 wall version	Value
Wall-mounted housing	Stainless steel
Dimensions of the housing (W x H x D)	268 mm x 175 mm x 116.2 mm
Display	10.1" TFT LCD WSVGA (1024 x 600) LED-Backlight
Touch-technology	PCAP, projective capacitive touch 2-point multitouch
Plastic front frame	PA66 CF25, RAL 9000, UL 94-H
Fastening type	4 x M6 screws, VESA 100

Description of the TOX® CEP 600 wall version	Value
Type of protection according to DIN 60529 09/2014	IP 65 (front plate) IP 20 (housing)
Weight	2,500 g

4.2.4 Power supply

Description	Value
Input voltage	24 V DC 9 - 36 V wide range input
Current consumption	≤ 1.5 A
Wall-mounted housing	24 V DC (M12 multipoint connector)

4.2.5 Installation version power supply pin assignment

Pin	Designation
1	0 C fieldbus
2	0 V
3	PE
4	PE
5	24 C fieldbus
6	24 V

4.2.6 Wall version power supply pin assignment

PIN	Voltage	Type	Description
1	24 V DC	I	24 V supply voltage
2	-	-	not occupied
3	0 V DC	I	0 V supply voltage
4	-	-	not occupied
5	PE	I	PE

4.2.7 Hardware configuration

Description	Value
Processor	ARM®Cortex® A7 2x 1 GHz
Memory	512 MB DDR3 RAM 512 MB NAND Flash 256 Kb NVRAM / NRAM
Real time clock / accuracy rate	at 25°C: ≤ +/- 1 s/ day, at - 10 ... + 70°C: ≤ + 1 s ... - 11 s/ day

Description	Value
Display	TFT LCD WSVGA (1024 x 600) Backlighting LED, switchable via software Contrast 600:1 (7"); 800:1 (10.1") Luminosity cd/m²: Type 400 (7"); type 430 (10.1") Viewing angle vertical 160°, horizontal 130° Capacitive, color depth 18 bit
Extendibility of interfaces	1 x slot for communication module Anybus CompactCom CC40 1 x micro SD card (microSDHC, up to 32 GB)

4.2.8 Electromagnetic compatibility

Description	Value
Noise immunity	DIN EN 6131-2 04/2008 DIN EN 61000-6-2 03/2006
Electrostatic discharge according to EN 61000-4-2	Contact +/- 4 kV Air gap +/- 8 kV
Electromagnetic fields according to EN 61000-4-3	80 MHz - 1 GHz: 10 V/m 80% AM (1 kHz) 1.4 GHz - 2 GHz: 3 V/m 80% AM (1 kHz) 2.0 GHz - 2.7 GHz: 1 V/m 80% AM (1 kHz)
Fast transients according to EN 61000-4-4	DC network inputs/outputs +/- 2 kV Signal ports +/- 1 kV
Asymmetric high frequency according to EN 61000-4-6	0.15 - 80 MHz 10 V 80% AM (1 kHz)
Impulse voltage according to EN 61000-4-5	Asymmetric and symmetric +/- 0.5 kV
RFI emissions According to DIN EN 61131-2 04/2008 and DIN EN 61000-6-4 09/2011 30 MHz - 1 GHz	IEC/CISPR 16-2-3 40 / 47 dB (µVm)

NOTE

Adherence to EMC/EC directive

For adherence to the EMC / CE directives, a proper total setup corresponding to the user manual smart9 1000 /eco9 1000 is assumed.

For the electromagnetic compatibility of the total system into which the control system is integrated, the one who introduces the entire plant into circulation bears the responsibility. We reserve the right to make technical changes for the improvement of quality.

4.2.9 Environmental conditions

Description	Value
Temperature	Operation +5°C - +55°C Storage -25°C - +70°C
Relative humidity without condensation acc. to RH2	10 % - 95 %
Vibrations according to IEC 68-2-6	5 Hz - 8.4 Hz Amplitude 1.75 mm, 8.4 Hz 150 Hz Acceleration 0.5 g

4.2.10 USB

Description	Value
Number of channels	2 x host (full speed)
USB 2.0	According to USB device Specification of USB 2.0 Compatible type A and B
Cable length	Max. 5 mm

Pin	Value
1	+5 V
2	Data -
3	Data +
4	GND

4.2.11 Digital inputs

Description	Value
Input voltage	24 V
Input current	At rated voltage (24 V): 4.8 mA
Delay time of standard inputs	$t_{LOW-HIGH}$: 2 µs $t_{HIGH-LOW}$: 2 µs
Input voltage	LOW level: ≤ 5 V HIGH level: ≥ 15V
Input impedance	4.3 kΩ

Pin	I O	TOX® CEP 600 installation version (X1 DIG E)
18	I0.0	Program bit 0
16	I0.1	Program bit 1
14	I0.2	Program bit 2
12	I0.3	Program bit 3
10	I0.4	Program strobe
8	I0.5	Offset external
6	I0.6	Start measurement

Pin	I O	TOX® CEP 600 installation version (X1 DIG E)
4	I0.7	Start measurement channel 2 (only 2-channel device)
1	GND_DIO	0 V external
17	I1.0	External operating mode
15	I1.1	Error reset
13	I1.2	Program bit 4
11	I1.3	Program bit 5
9	I1.4	Reserve
7	I1.5	Reserve
5	I1.6	Reserve
3	I1.7	Reserve

Tab. 1 Installation version: Phoenix Contact DFMC 20 connections

Pin, D-SUB 25	I O	Color code	TOX® CEP 600 wall version
14	I0.0	White	Program bit 0
15	I0.1	Brown	Program bit 1
16	I0.2	GREEN	Program bit 2
17	I0.3	YELLOW	Program bit 3
9	I0.4	White-blue	Program strobe
10	I0.5	Brown-blue	Offset external
18	I0.6	Grey	Measurement start
19	I0.7	White-yellow	Start measurement channel 2 (only 2-channel device)
20	I1.0	White-grey	External operating mode
21	I1.1	White-pink	Error reset
22	I1.2	Brown-red	Program bit 4
	I1.3		Program bit 5
13	I1.4	White-red	Reserve
25	I1.5	White-black*	Reserve
	I1.6		Reserve
	I1.7		Reserve
12	0 V	Brown-green	Reserve
11	0 V internal	Blue	0 V internal
23	24 V internal	Pink	24 V internal

Tab. 2 Wall version: 25-pin Sub-D connecting cable

* not wired in input/output cable

4.2.12 Digital outputs

Description	Value
Load voltage V_{in}	Nominal value 24 V (admissible range 19.2 to 30 V)
Output voltage	HIGH level: min. V_{in}-0.07 V LOW level: max. 5 µA · R_{load}
Output current	max. 0.5 A DC
Parallel switching of outputs possible	max. 4 outputs
Lamp load	max. 6 W
Coincidence factor	100 %

PIN	I O	TOX® CEP 600 installation version (X2 DIG I/O)
18	Q0.0	OK
16	Q0.1	NOK
14	Q0.2	Channel 2 OK (only 2-channel device)
12	Q0.3	Channel 2 NOK (only 2-channel device)
10	Q0.4	Program selection ACK
8	Q0.5	Ready for measurement
6	Q0.6	Measurement active
4	Q0.7	Measurement in progress channel 2 (only 2-channel device)
1	GND_0	0 V external (PLC)
20	+24 V	+24 V external (PLC)

Tab. 3 Installation version: Phoenix Contact DFMC 20 connections

Pin, D-SUB 25	I O	Color code	TOX® CEP 600 wall version
1	Q0.0	Red	OK
2	Q0.1	Black	NOK
3	Q0.2	Yellow-brown	Channel 2 OK (only 2-channel device)
4	Q0.3	Violet	Channel 2 NOK (only 2-channel device)
5	Q0.4	Grey-brown	Program selection ACK
6	Q0.5	Grey-pink	Ready for measurement
7	Q0.6	Red-blue	Measurement active
8	Q0.7	Pink-brown	Measurement in progress channel 2 (only 2-channel device)

Pin, D-SUB 25	I O	Color code	TOX® CEP 600 wall version
12	0 V	Brown-green	0 V external (PLC)
24	24 V	White-green	+24 V external (PLC)

Tab. 4 Wall version: 25-pin Sub-D connecting cable

4.2.13 Fieldbus module

Description	Value
Industrial Ethernet	EtherCAT EtherNet IP PROFINET
Logic supply Rated voltage Permissible range Current consumption from 24 V	 24 V DC 9 - 36 V DC wide range input ≤ 1 A
Anybus supply Rated voltage Permissible range Current consumption from 24 V	 24 V DC 9 - 36 V DC wide range input ≤ 1 A

4.2.14 Ethernet

Description		Value
Ethernet 10/100 Mbit/s Ethernet	Number of channels	1 channel, twisted pair (10/100BASE-T)
	Transmission according to	IEEE/ANSI 802.3, ISO 8802-3, IEEE802.3u
	Transmission rate	10/100 Mbit/s
	Connecting line	Shielded
	Length	Max. 100 mm
	Cable	Shielded impedance 100 Ω
	Connector	RJ45
	LED status display	Yellow: active Green: link
Ethernet 1 Gbit/s EtherCat	Number of channels	1 channel, twisted pair (1 Gbit BASE-T)
	Transmission according to	IEEE/ANSI 802.3, ISO 8802-3, IEEE802.3u
	Transmission rate	1 Gbit/s
	Connecting line	Shielded at least CAT 5
	Length	Max. 100 mm
	Cable	Shielded impedance 100 Ω
	Connector	RJ45 (modular connector)
	LED status display	Yellow: active Green: link

4.2.15 Fieldbus interface

Byte inputs	Designation
0.0	Measurement start
0.1	Error reset
0.2	Offset external
0.3	Program selection strobe
0.4	Start measurement channel 2 (only 2-channel device)
0.5	Reserve
0.6	Reserve
0.7	Reserve
1.0	Program bit 0
1.1	Program bit 1
1.2	Program bit 2
1.3	Program bit 3
1.4	Program bit 4
1.5	Program bit 5
1.6	External operating mode
1.7	Piece part is finished

Tab. 5 Data length: Byte 0-3

Byte outputs	Designation
0.0	OK
0.1	NOK
0.2	Ready for measurement
0.3	Program selection ACK
0.4	Measurement active
0.5	Channel 2 OK (only 2-channel device)
0.6	Channel 2 NOK (only 2-channel device)
0.7	Measurement in progress channel 2 (only 2-channel device)
1.0	Channel 1 OK
1.1	Channel 1 NOK
1.2	Channel 2 OK
1.3	Channel 2 NOK
1.4	Channel 3 OK
1.5	Channel 3 NOK
1.6	Channel 4 OK
1.7	Channel 4 NOK
2.0	Channel 5 OK
2.1	Channel 5 NOK
2.2	Channel 6 OK
2.3	Channel 6 NOK
2.4	Channel 7 OK
2.5	Channel 7 NOK
2.6	Channel 8 OK
2.7	Channel 8 NOK
3.0	Channel 9 OK

Byte outputs	Designation
3.1	Channel 9 NOK
3.2	Channel 10 OK
3.3	Channel 10 NOK
3.4	Channel 11 OK
3.5	Channel 11 NOK
3.6	Channel 12 OK
3.7	Channel 12 NOK

Format of final values via field bus (bytes 4 – 39):

The final values are written on bytes 4 to 39 on the field bus (if this function is activated).

Byte	Designation
4 to 7	Running number
8	Process number
9	Status
10	Second
11	Minute
12	Hour
13	Day
14	Month
15	Year
16, 17	Channel 1 force [kN] * 100
18, 19	Channel 2 force [kN] * 100
20, 21	Channel 3 force [kN] * 100
22, 23	Channel 4 force [kN] * 100
24, 25	Channel 5 force [kN] * 100
26, 27	Channel 6 force [kN] * 100
28, 29	Channel 7 force [kN] * 100
30, 31	Channel 8 force [kN] * 100
32, 33	Channel 9 force [kN] * 100
34, 35	Channel 10 force [kN] * 100
36, 37	Channel 11 force [kN] * 100
38, 39	Channel 12 force [kN] * 100

Tab. 6 Byte X (structure):

Status	Designation
1	Measurement active
2	OK
3	NOK

4.2.16 Connections of basic device with analog joining module (2-channel)

Overview

Description	Value
Digital inputs*	16
Digital outputs*	8
Analog inputs	2
Analog outputs	2
Ethernet interface 10/100 Mbit/s*	1
Ethernet interface 1 Gbit/s*	1
Strain gauge inputs (DMS)	2
USB device	2
Micro SD card	1
Communication module Anybus Compact-Com CC40*	1

*Interface-dependent

See circuit diagram for definition of the interfaces.

Analog inputs

Description	Value
Quantity	2 x voltage
Input size	dependent on pinning
Voltage range	0-10 V
AD conversion	ADC
Principle	successive approximation
Resolution	16 bit
Conversion time	7 µs
max. input range	
Voltage range	15 V
Current range	25 mA
Input impedance	25 kΩ
Offset error (0-point)	≤ +/- 30 mV
Reinforcement error	+/- 1%
Sensor supply (output)	24 V DC, max. 50 mA

Tab. 7 Analog inputs, non-isolated

Analog outputs

Description	Value
Quantity	2
Output size	Voltage
Voltage range	0-10 V

Description	Value
DA conversion	
Principle	R2R
Resolution	16 bit
Load	max. 5 mA
Conversion time	≤ 100 µs
Limit frequency	ca. 5 kHz
Offset error (0-point)	≤ +/- 30 mV
Reinforcement error	+/- 0.5%

Tab. 8 Analog outputs non-isolated

Strain gauge inputs (DMS)

Force measurement (channel Y) via strain gauge force transducer. The input is selected in the "Settings\Configuration force sensor" menu (see Channel settings menu, Page 59).

Description	Value
Quantity	2
Input size voltage range	Adjustable via software 1 mV/V, 2 mV/V, 4 mV/V, 8 mV/V userdefined (max. 8 mV/V) +/-1 mV/V, +/-2 mV/V, +/-4 mV/V, +/-8 mV/V userdefined (max. +/-8 mV/V) corresponds to 5 V supply voltage 5 mV, 10 mV, 20 mV, 40 mV, +/-5 mV/V, +/-10 mV/V, +/-20 mV/V, +/-40 mV/V,
AD conversion	
Principle	Delta-Sigma
Resolution	+/- 15 bit / 16 bit (internal 24 bit)
Conversion time	Adjustable via software 256 µs (3906 Sps [= Samples per second] 512 µs (1953 Sps) 1024 µs (977 Sps) 2048 µs (488 Sps) 4096 µs (244 Sps) All channels are converted simultaneously
max. input range of voltage	+1.6 V ...+3.4 V
Input impedance	1.75 MΩ
Minimum bridge resistance DMS	87 Ω
Sensor supply per channel	5 V DC +/- 5%, max. 60 mA, short-circuit proof

Tab. 9 Strain gauge inputs, non-isolated, 6-conductor

4.2.17 Connections of the basic device with TOX® EdgeUnit

From 4 channels, TOX® EdgeUnit are used; 2 channels each per TOX® EdgeUnit.

Overview

Description	Value
Digital inputs*	16
Digital outputs*	8
Ethernet interface 10/100 Mbit/s*	1
Ethernet interface 1 Gbit/s*	1
USB device	2
Micro SD card	1
Communication module Anybus Compact-Com CC40*	1

*Interface-dependent

See circuit diagram for definition of the interfaces.

Connections TOX® EdgeUnit TOX® CEP 600

Designation		Interfaces
X1		EtherCAT IN, including status LED
	Connector type	M12 4-pin bushing, D-coded
X2		EtherCAT OUT, including status LED
	Connector type	M12 4-pin bushing, D-coded
X3		Supply voltage
	Voltage	+ 24 V DC (18 - 28 V DC)
	Current consumption	US1 <0.25 A (without loads on Pin1, X4-7) US2 ~0 A (without outputs to X7)
	US1 US2	Logic voltage + sensors Output voltage (not isolated)
	Connector type	M12 5-pin, connector A-coded not AIDA compliant
X4		Digital IN
	Digital IN 1 / Digital IN 2	24 V DC
	Logic level 0 (LOW)	0 V - 10 V
	Logic level 1 (HIGH)	16 V - 28 V
	Input current	max. 2 mA (at 24 V)
	Connector type	M12 5-pin bushing, A-coded

Designa-tion		Interfaces
X5		Strain gauge 2
	measuring range	1.157 mV/V - 3.25 mV/V (adjustable gain)
	Voltage V DC	5 V
	Bridge resistance	700 Ω
	Resolution	16 bit
	Connector type	M12 5-pin bushing, A-coded
X6		Analog IN
	Analog IN 1	-10 - +10 V DC, 16 bit
	Analog IN 2	0 - 10 V DC, 12 bit
	Connector type	M12 5-pin bushing, A-coded
X7		Digital OUT
	Digital OUT 0 / Digital OUT 1	24 V DC, US2
	Output current	max. 2 A (per channel) / excess current and short-circuit safe
	Connector type	M12 5-pin bushing, A-coded
X8		Encoder
	Connector type	M12 8-pin bushing, A-coded
X9		Service plug
	Connector type	M12 8-pin connector, A-coded
X10.1		Strain gauge 1
	measuring range	1.157 mV/V - 3.25 mV/V (adjustable gain)
	Voltage V DC	5 V
	Bridge resistance	700 Ω
	Resolution	16 bit
	Connector type	M12 5-pin bushing, A-coded

	Model	Designa-tion	Description
X1	 Bushing M12 4-pin, D-coded	EtherCAT In	• Pin 1 = TD+ • Pin 2 = RD+ • Pin 3 = TD- • Pin 4 = RD-
X2		EtherCAT Out	• Pin 1 = TD+ • Pin 2 = RD+ • Pin 3 = TD- • Pin 4 = RD-
X3	 Connector M12 5-pin, A-coded	Power	• Pin 1 = 24 V US2 • Pin 2 = GND US2 • Pin 3 = 24 V US1 • Pin 4 = GND US1 • Pin 5 = PE • GND US1 = GND US2 = GN0 • Connector not AIDA compliant

	Model	Designa-tion	Description
X4	 Bushing M12 5-pin, A-coded	Digital In	• Pin 1 = 24 V US1 • Pin 2 = DIN.2 24 V • Pin 3 = GND • Pin 4 = DIN.1 24 V • Pin 5 = PE
X5		Strain gauge 2	• Pin 1 = S- signal strain gauge In • Pin 2 = 5 V supply strain gauge • Pin 3 = GND supply strain gauge • Pin 4 =S+ signal strain gauge In • Pin 5 = Not occupied
X6		Analog In	• Pin 1 = 24 V US1 • Pin 2 = AIN2 0 V - +10 V • Pin 3 = GND • Pin 4 = AIN1 -10 V - +10 V • Pin 5 = PE
X7		Digital Out	• Pin 1 = 24 V US1 • Pin 2 = DOUT.1 24 V US2 (2 A) • Pin 3 = GND • Pin 4 = DOUT.0 24 V US2 (2 A) • Pin 5 = PE
X8	 Bushing M12 8-pin	Encoder	• Pin 1 = 5 V • Pin 2 = APR • Pin 3 = ANR • Pin 4 = BPR • Pin 5 = BNR • Pin 6 = CPR • Pin 7 = CNR • Pin 8 = GND
X10.1	 Bushing M12 5-pin, A-coded	Strain gauge 1	• Pin 1 = S- signal strain gauge In • Pin 2 = 5 V supply strain gauge • Pin 3 = GND supply strain gauge • Pin 4 =S+ signal strain gauge In • Pin 5 = Not occupied

4.3 Pulse diagrams

4.3.1 Sequence of measuring operation without warning limit and number of pieces monitoring

Signal name	Type: Input "I" / Output "O"	Designation
A0	O	Part is OK (OK)
A1	O	Part is not OK (NOK)
A6	O	Measurement active

Signal name	Type: Input "I" / Output "O"	Designation
A5	O	Ready for measurement
E6	I	Measurement start

Tab. 10 Basic device signals

The contacts in the plug connector depend on the shape of the housing; see pin allocation of wall-mounted housing or mounting version.

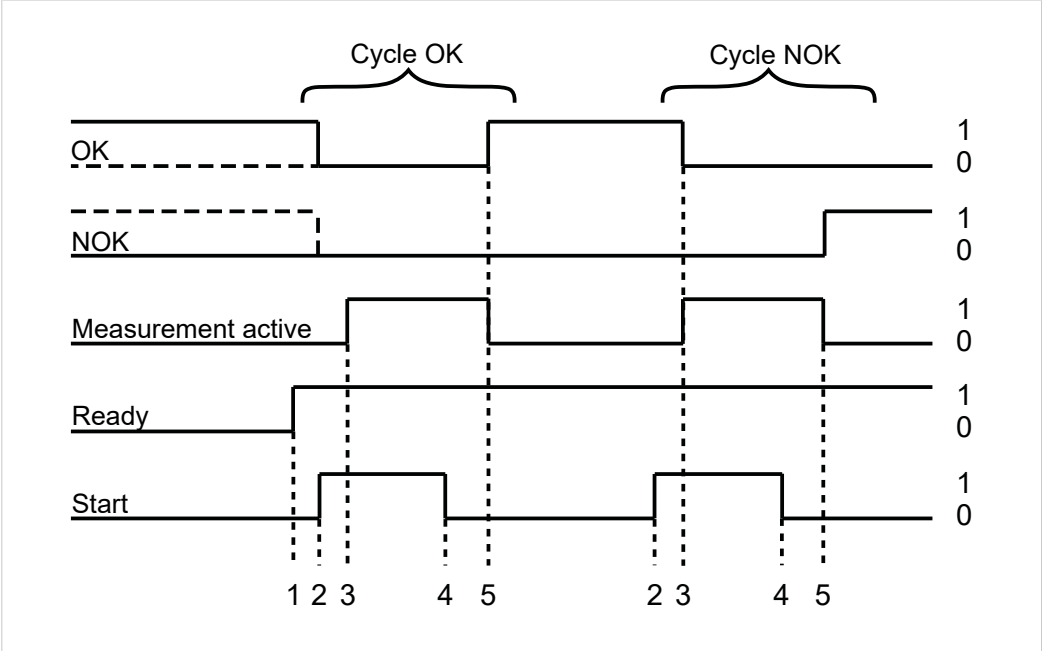


Fig. 4 Sequence without warning limit/number of pieces monitoring.

1	After it has been switched on, the device signals that it is ready for measurement by setting the >Ready for measurement> signal.
2	When closing the press the signal <Start measurement> is set.
3	The OK/NOK signal is reset. The <Measurement in progress> signal is set.
4	When the conditions for triggering the return stroke have been met and the minimum time has been reached (must be integrated in the overriding control), the 'Start' signal is reset. The measurement is evaluated when the <Start> signal is reset.
5	The <OK> or <NOK> signal is set and the <Measurement in progress> signal is reset. The OK or NOK signal remains set until the next start. When the function 'Number of pieces / Warning limit' is active, the OK signal that was not set must be used for the NOK evaluation. See the sequence at active warning limit / number of pieces.

4.3.2 Sequence of measuring operation with warning limit and number of pieces monitoring

	Type: Input "I" / Output "O"	Designation
A0	O	OK
A1	O	NOK
A6	O	Measurement active
A5	O	Ready for measurement
E6	I	Measurement start

Tab. 11 Basic device signals

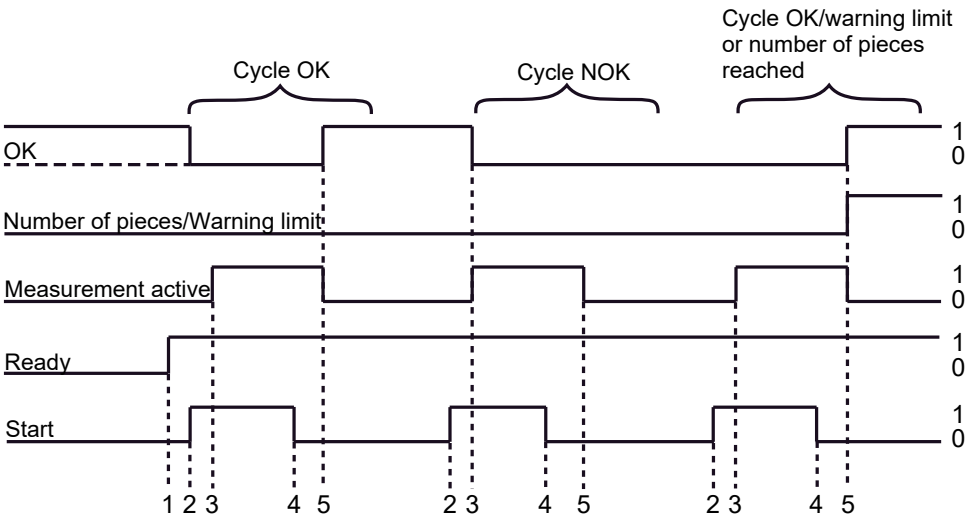


Fig. 5 Sequence with warning limit/number of pieces monitoring.

1	After it has been switched on, the device signals that it is ready for measurement by setting the >Ready for measurement> signal.
2	When closing the press the signal <Start measurement> is set.
3	The OK/NOK signal is reset. The <Measurement in progress> signal is set.
4	When the conditions for triggering the return stroke have been met and the minimum time has been reached (must be integrated in the overriding control), the 'Start' signal is reset. The measurement is evaluated when the <Start> signal is reset.
5	If the measurement lies within the programmed window, signal <OK> is set. If the measurement lies outside the programmed window, signal <OK> is not set. If the OK signal is missing it must be evaluated as NOK in the external control after a waiting period of at least 200 ms. If the warning limit or the number of pieces of a measurement channel has been exceeded in the finished cycle, the output <Warning limit/Number of pieces (NOK)> is also set. This signal can now be evaluated in the external control.

Plant control system: check the readiness of measurement

Before the command "Start measurement" it must be checked whether the CEP 600 is ready for measuring.

The process monitoring system might not be ready to measure due to a manual input or a fault. It is therefore always necessary prior to an automatic sequence to check the 'Ready to measure' output of the system controller before setting the 'Start' signal.

When measuring has started, the signals >Ready for measuring<, >OK<, >NOK< and >NOK_Alarm< are reset. In case of an automatic sequence, this signal condition should be checked by the plant control as feedback for a started measurement.

4.3.3 Offset adjustment via PLC interface

A zero point adjustment of all channels can be made via the interface by setting the signal "Offset external".

5 Transport and storage

5.1 Temporary storages

- Use original packaging.
- Make sure that all electrical connections are covered to prevent dust ingress.
- Protect the display against sharp-edged objects e.g. due to cardboard or hard foam.
- Wrap the device, e.g. with a plastic bag.
- Store the device only in closed, dry, dust-free and dirt-free rooms at room temperature.
- Add drying agent to the packaging.

5.2 Dispatch for repair

To dispatch the product for repair to TOX® PRESSOTECHNIK, please proceed as follows:

- Fill in the "Accompanying repair form". This we supply in the service sector on our website or upon request via e-mail.
- Send us the completed form via e-mail.
- Then you will receive the shipping documents from us via e-mail.
- Send us the product with the shipping documents and a copy of the "Accompanying repair form".

For contact data see Contact and source of supply, Page 9 or www.tox.com.

6 Commissioning

6.1 Preparing System

1. Check installation and mounting.
2. Connect required lines and devices, e.g. sensors and actuators.
3. Connect supply voltage.
4. Make sure that the correct supply voltage is connected.

6.2 Starting system

✓ System is prepared.
See Preparing System, Page 37.

➔ Switch on the plant.

▶ The device starts the operating system and the application.

▶ The device switches to the start screen.

7 Operation

7.1 Monitoring operation

No operating steps are necessary during ongoing operation.

The operating procedure must be monitored constantly in order to detect faults in time.

8 Software

8.1 Basic layout of the interface

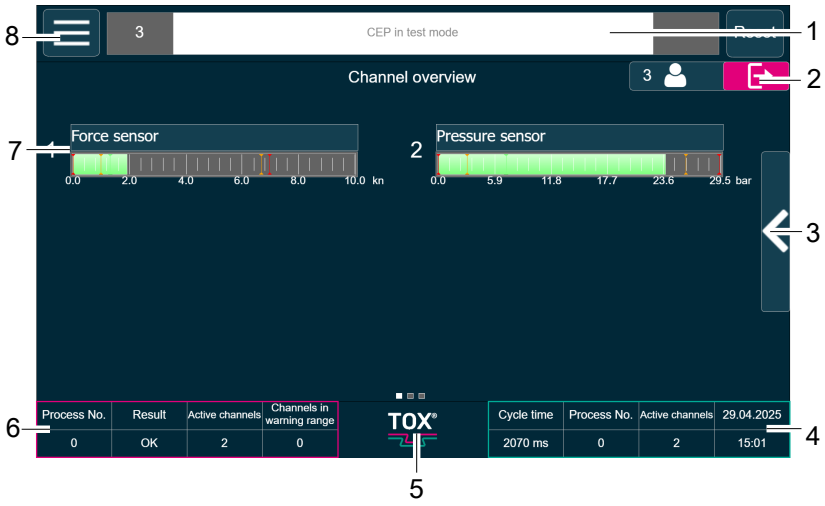


Fig. 6 Basic layout of the interface

	Designation	Function
1	Status and information bar	Displayed are: • Error Number • Error Text The error message list is opened with a tap. • Necessary user level for acknowledging the error message • Reset button to acknowledge the message
2	Logged in user	The logged in user is displayed. Logging the user in and out by tapping on the button.
3	Submenu	Opens the specific submenu with process parameters.
4	Process information	Displays the current values of the plant.
5	TOX® Logo	Tapping on the logo opens the information page of the used software version.
6	Quick overview	Displays the actual value of the last traveled process.
7	Main screen area	Displays the evaluation/recording of the last traveled process.
8	Menu tree	Displays the menu tree.

8.2 Information and status bar

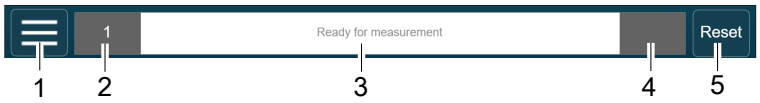


Fig. 7 Information and status bar

	Designation	Function
1	Main menu	Opens the main menu.
2	Status, warning and error numbers	The corresponding numbers are displayed.
3	Status, warning and error message	The corresponding messages are displayed in plain text.
4	User level for acknowledging	During an error also the necessary user level for acknowledging is displayed.
5	Reset	The message is reset.

If several messages appear simultaneously in the text field for error messages and status displays, they are cycled through every five seconds. Tapping an error message opens the error message list containing all current error messages and warnings.

8.3 Selection in main menu

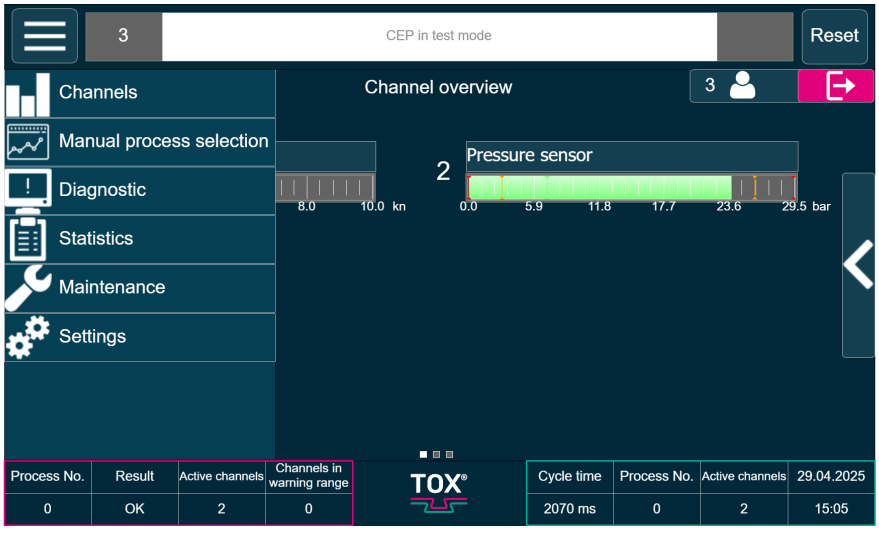


Fig. 8 Menu selection bar

	Button	Function
	Channels	Opens the channel overview menu and the channel parameters (depending on the number of channels)
	Manual process selection	Opens the manual process selection menu
	Diagnostic	Displays the following information: Error log, change log, events log, BUS interface and inputs/outputs
	Statistics	Displays the following information: Final values, curve data, shift counter and total counter
	Maintenance	Displays the following information: Service life counter, customer counter and information log
	Settings	Displays the following information: Configuration of force sensor, distance sensor, I/O, evaluation options and devices

8.4 Channels menu

8.4.1 Channel overview menu

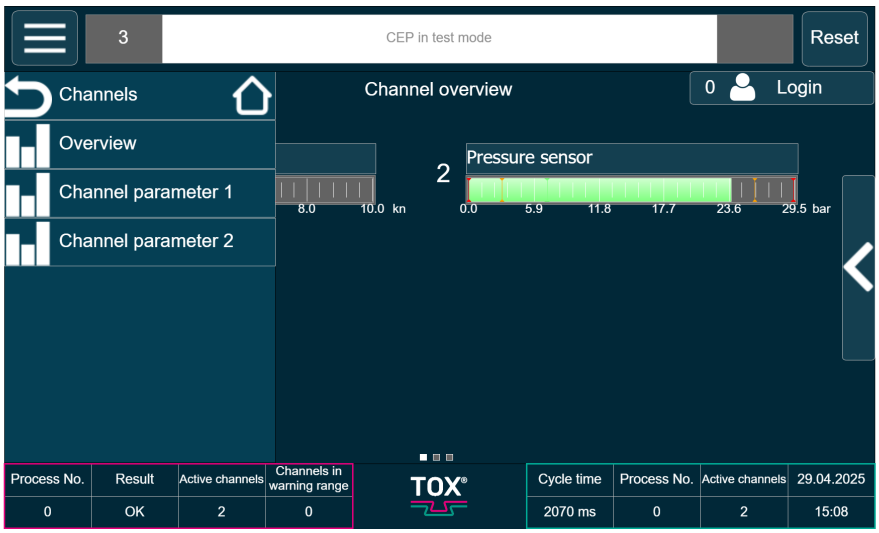
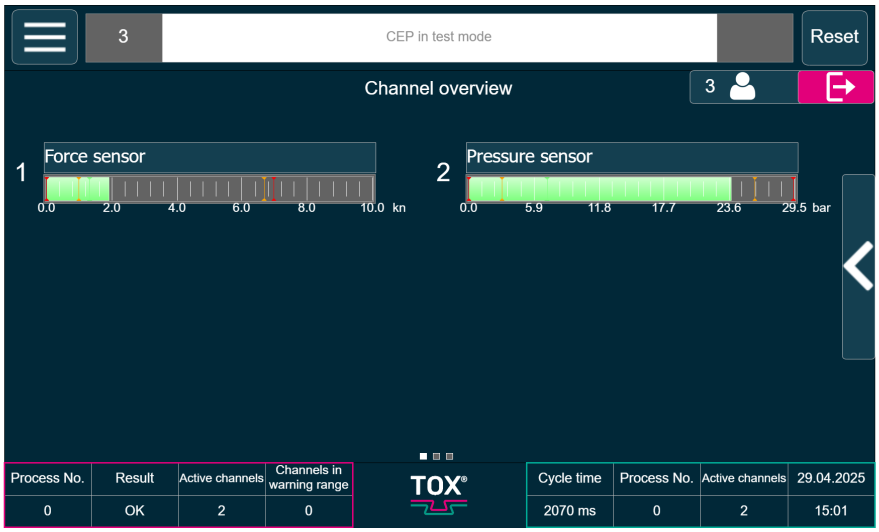


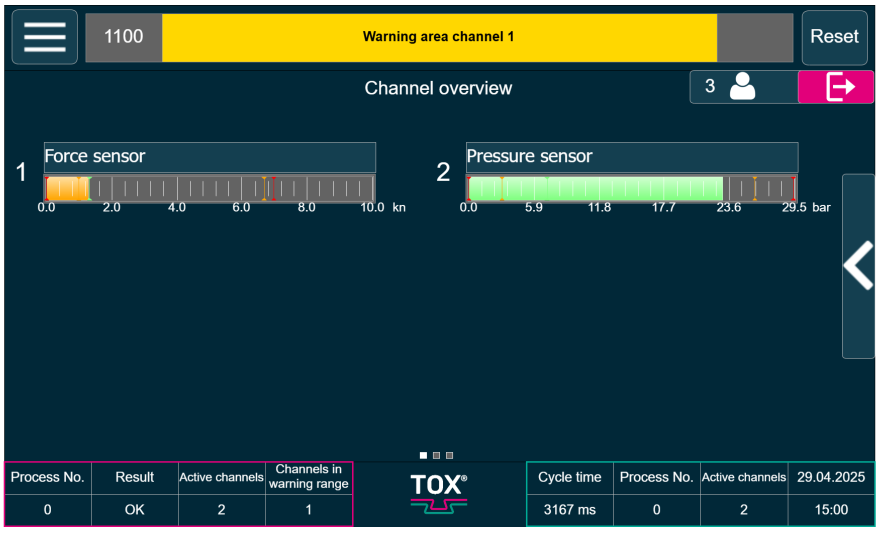
Fig. 9 Channel overview menu

	Button	Function
	Overview	Opens the channel overview, depending on the number of channels
	Channel parameters 1	Settings of the process-dependent channel parameters
	Channel parameters 2	Settings of the process-dependent channel parameters

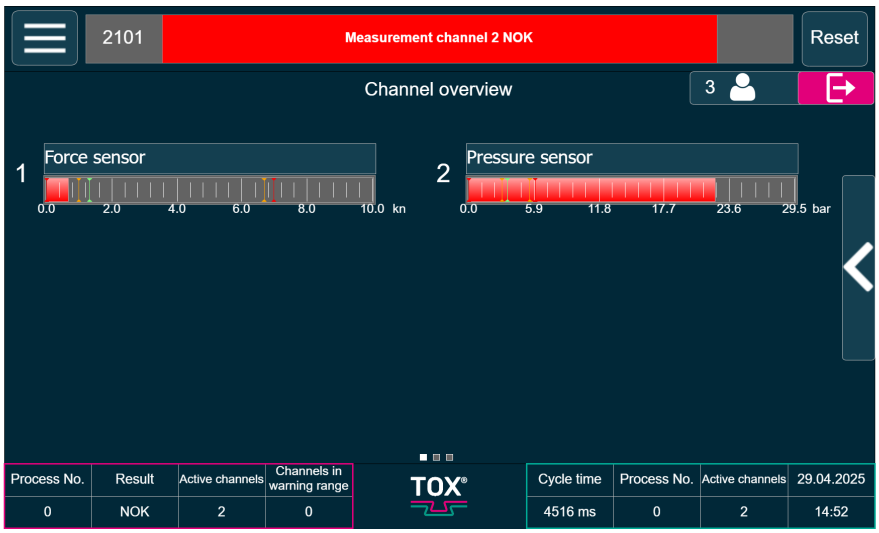
The bar displays of the individual channels show the value of a measurement graphically.



	Color	Meaning
	GREEN	The value is within the set min/max setpoints



	Color	Meaning
	YELLOW	The value is in the warning range (adjustable)



	Color	Meaning
	Red	The value is outside the setpoint

Channel parameters menu 1 / 2

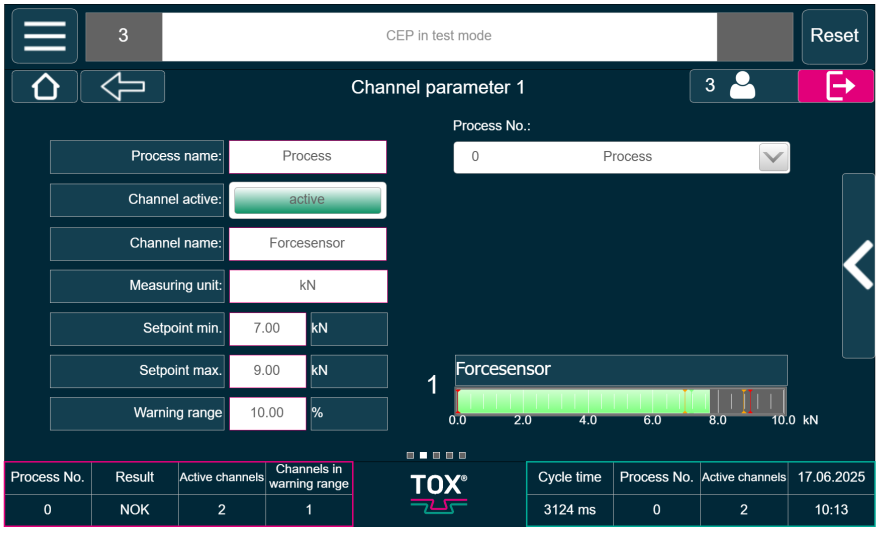


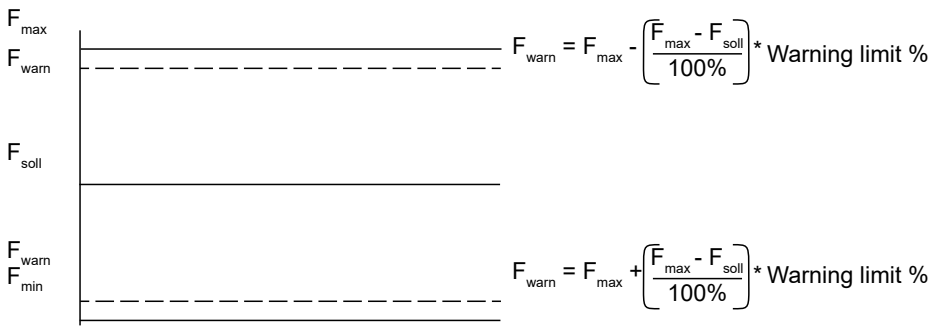
Fig. 10 Channel parameters menu 1 / 2

	Button	Function
	Process name	Names the desired process
	Channel active	Activates / deactivates the selected channel
	ChannelNameScreen	Names the desired channel.
	Measuring unit	Defines the measuring unit.

	Button	Function
	Setpoint min. / max. [kN]	Defines the minimum or maximum setpoint. When dropped below or exceeded, a message is output.
	Warning range [%]	Warning range relative to the setpoint limit.

Setting warning area

Possible setting range 0-50% (0% -> deactivated). Under menu item Evaluation option, the number of measuring cycles can be set in the warning range until a warning message is to follow. (see Evaluation options menu, Page 61)



Copy processes

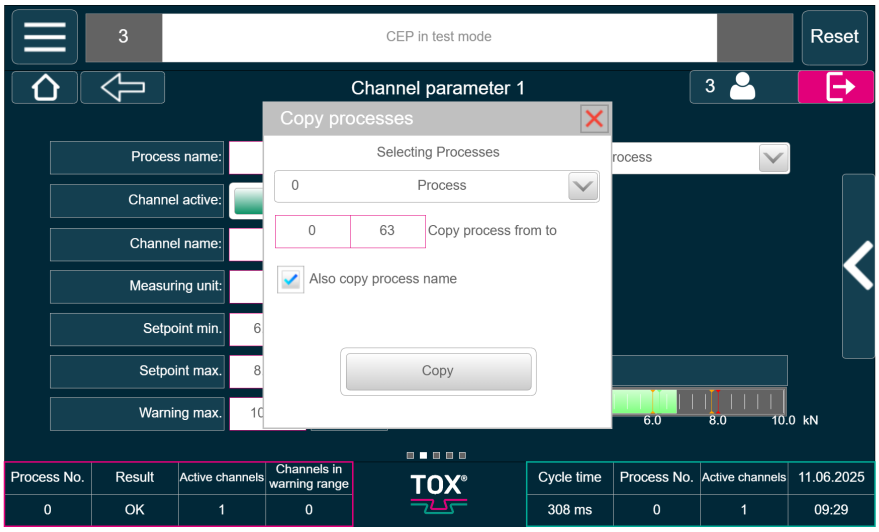


Fig. 11 Copy submenu

	Button	Function
	Selecting process	The process to be copied is selected and configured. A window opens and offers the following options: • <Selecting Processes> • <Copy process from to> Entry from 0 to 63. Additional categories can be selected. • <Process name> Tapping on the Copy button starts the copying process.

8.4.2 Manual process selection menu

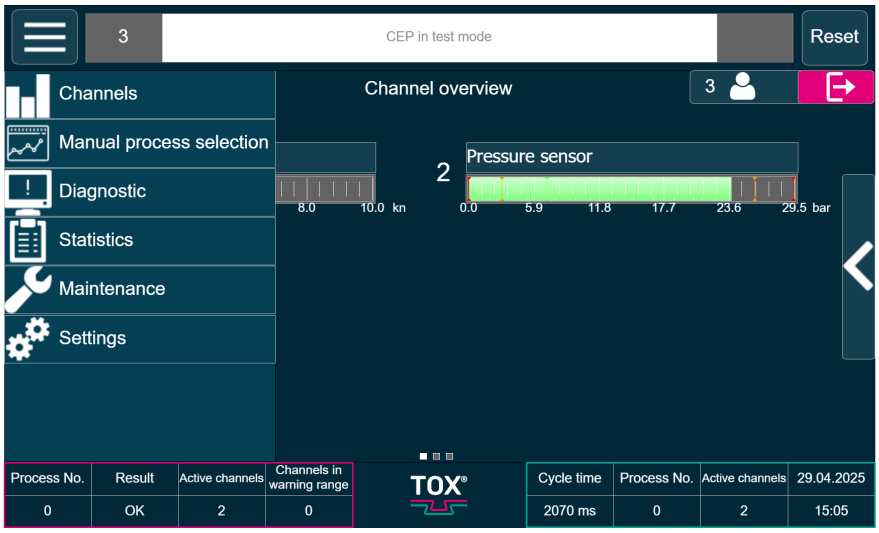


Fig. 12 Manual process selection menu

A process can be selected manually in this menu.

	Button	Function
	Active process	Selects the active process.
	Result	Shows the result of the run process.
	IO order counter	Displays the number of the IO cycles. With reset the counter is reset to zero. The order counter is deactivated with a setpoint value of "0".

As long as the "Operating mode external" signal is active, a manual process selection is blocked.

In this menu an order counter can be activated (see). Then totaling is made at every OK process.

If the setpoint is reached, a message appears in the status display and further recording is possible only by actuating the reset button of the OK order counter. The order counter is deactivated with a setpoint value of "0".

8.5 Diagnosis menu

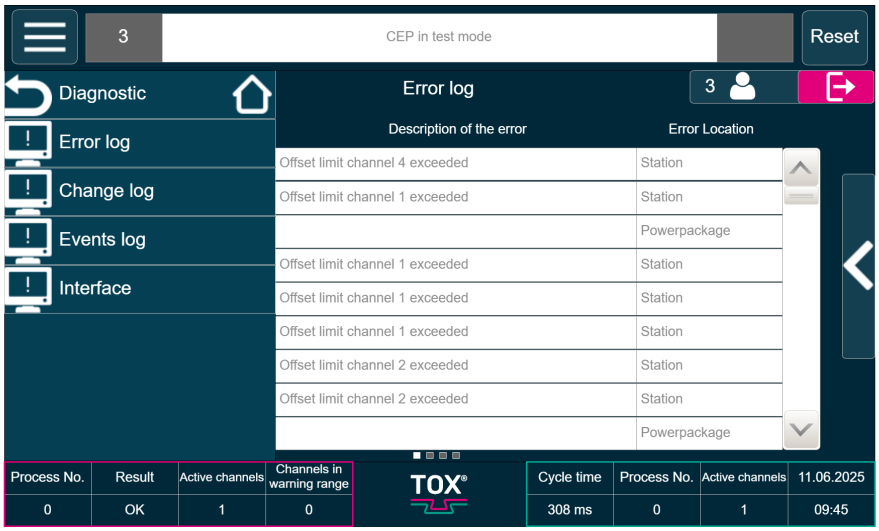


Fig. 13 Diagnosis menu

	Button	Function
	Error log	Opens the error memory.
	Change log	Opens a list with recorded changes.
	Events log	Opens a list with recorded events.
	Interface	Opens a list with interface definition and information.

8.5.1 Error memory menu

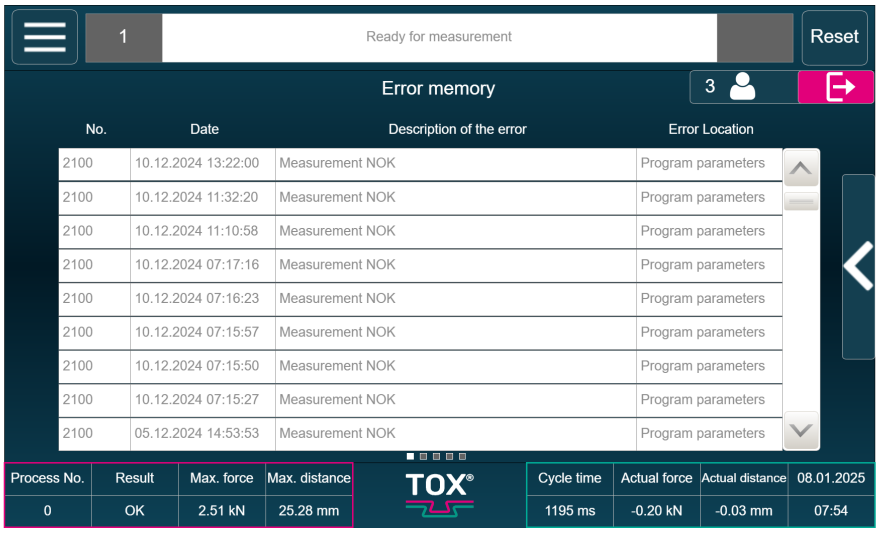


Fig. 14 Error memory menu

In this menu you can view the last 1,000 errors with time stamp that occurred.

The error number can be seen in the first column. Next to the error description, also the location of the error is listed.

The error memory can be exported as CSV file via the submenu.

Tap on the **Submenu** button to open further control options.

8.5.2 Change memory menu

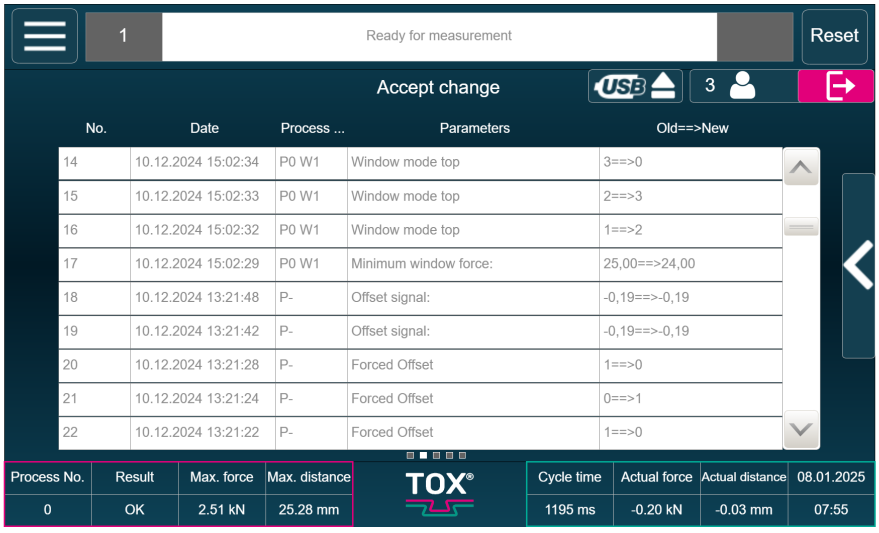


Fig. 15 Change memory menu

In this menu you can view the last 1,000 changes (<Old ==> New>) with time stamp that occurred.

The change memory can be exported as CSV file via the submenu.

Tap on the **Submenu** button to open further control options.

8.5.3 Recording of events menu

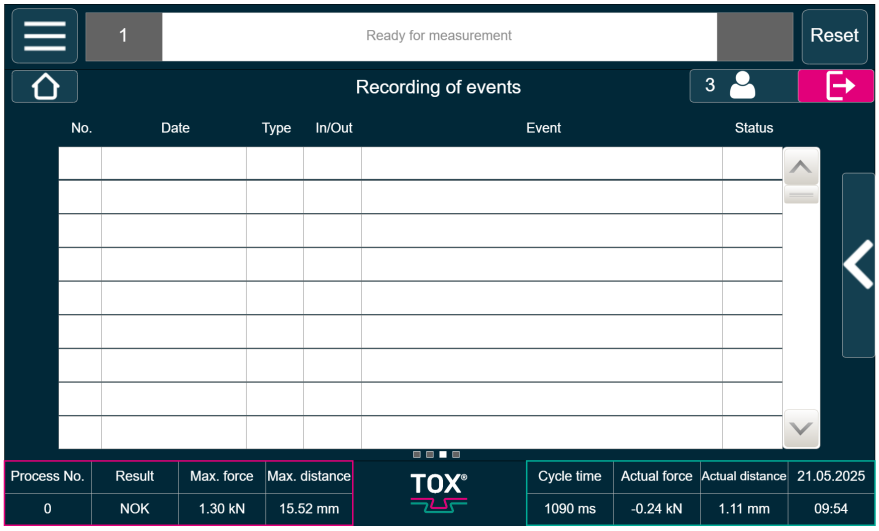


Fig. 16 Events memory menu

In this menu you can view the last 1,000 events that occurred.

The events can be exported as CSV file, and recordings can be started/stopped and deleted via the submenu.

Tap on the **Submenu** button to open further control options.

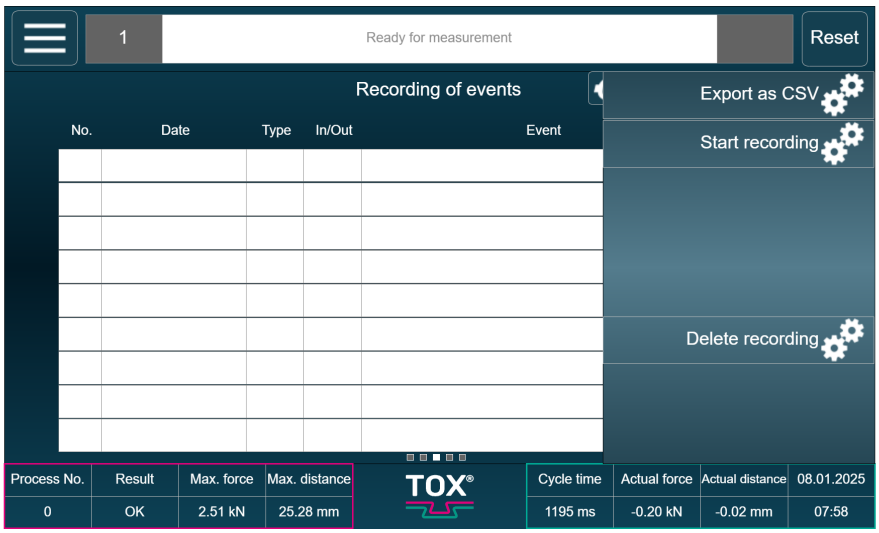


Fig. 17 Events memory submenu

8.5.4 Interface Menu

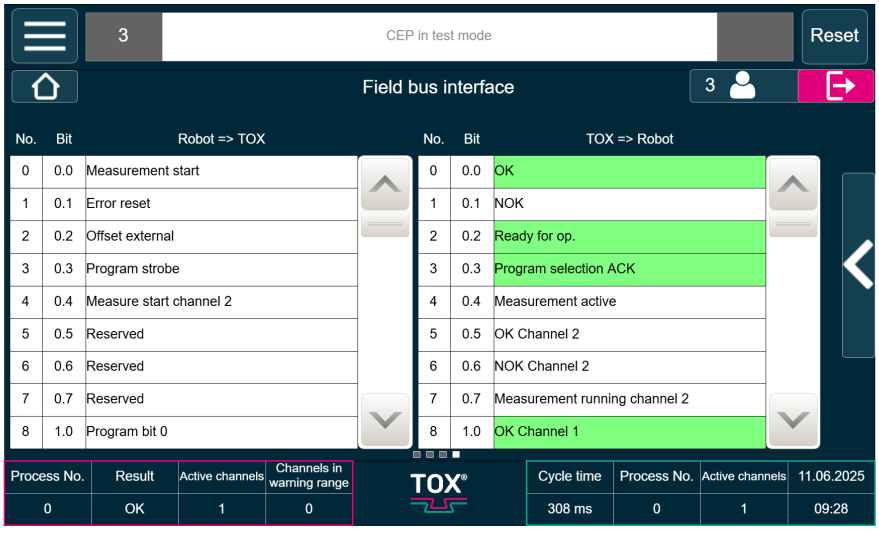


Fig. 18 Interface Menu

Information for the fieldbus interface can be entered via the submenu. Tap on the **Submenu** button to open further control options.

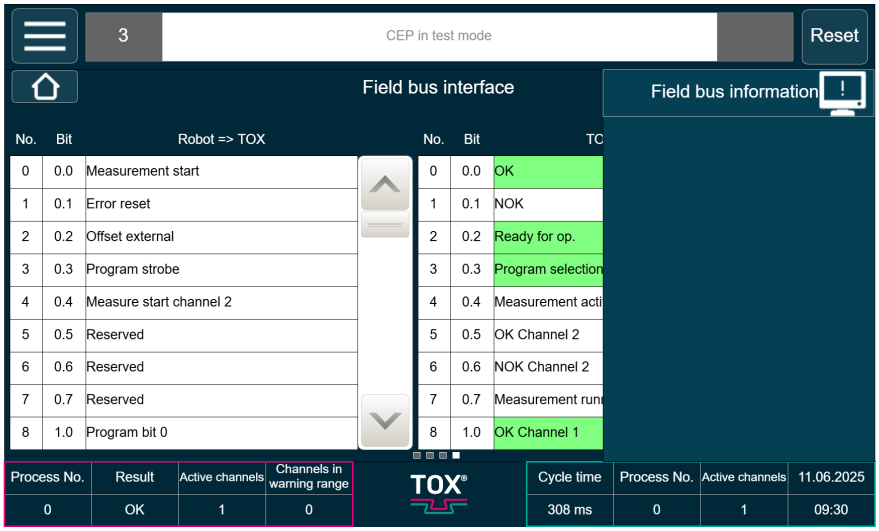


Fig. 19 Interface submenu

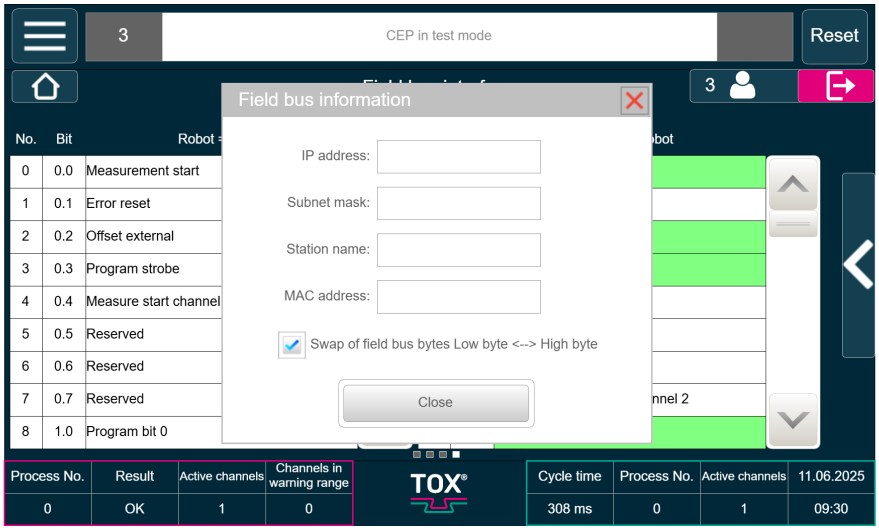


Fig. 20 Fieldbus information submenu

8.6 Statistics menu

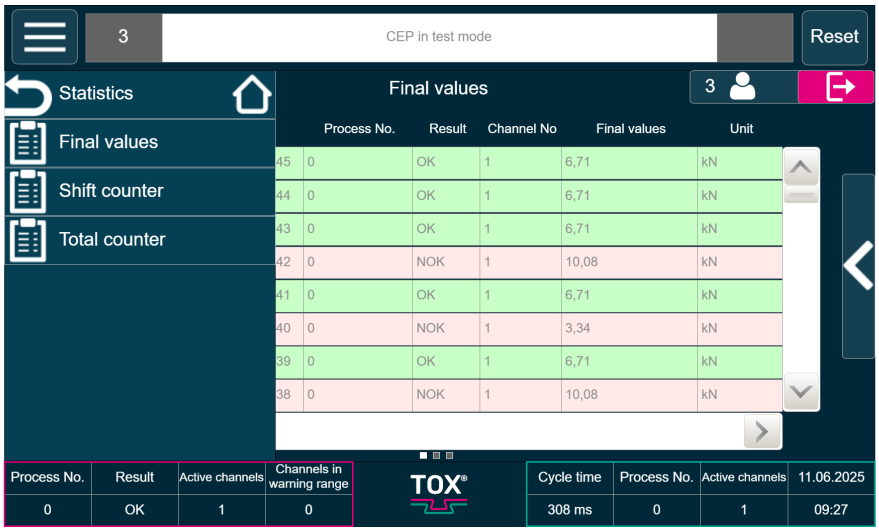


Fig. 21 Statistics menu

	Button	Function
	Final values	Opens a list with recorded final values.
	Shift counter	Opens the setting options of the shift counter.
	Total counter	Opens the setting options of the total counter.

8.6.1 Final values menu

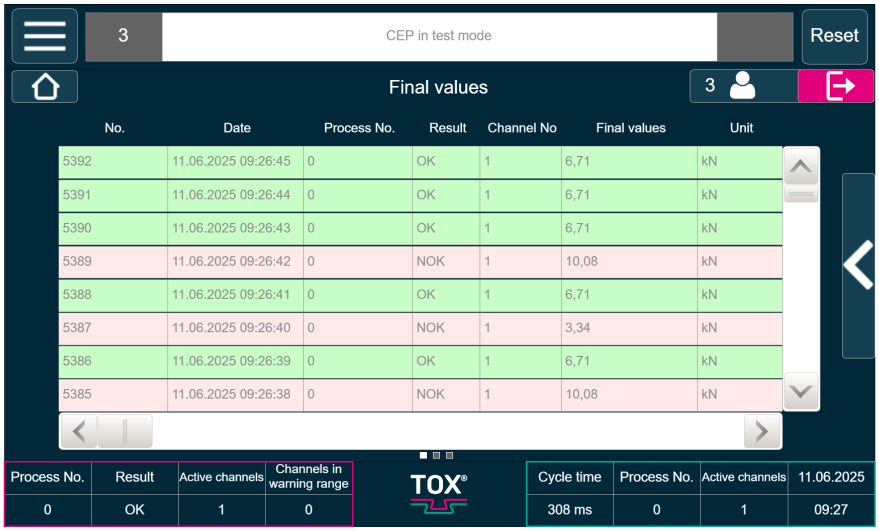


Fig. 22 Final values menu

The final values can be exported as CSV file via the submenu.
Tap on the **Submenu** button to open further control options.

8.6.2 Shift counter menu

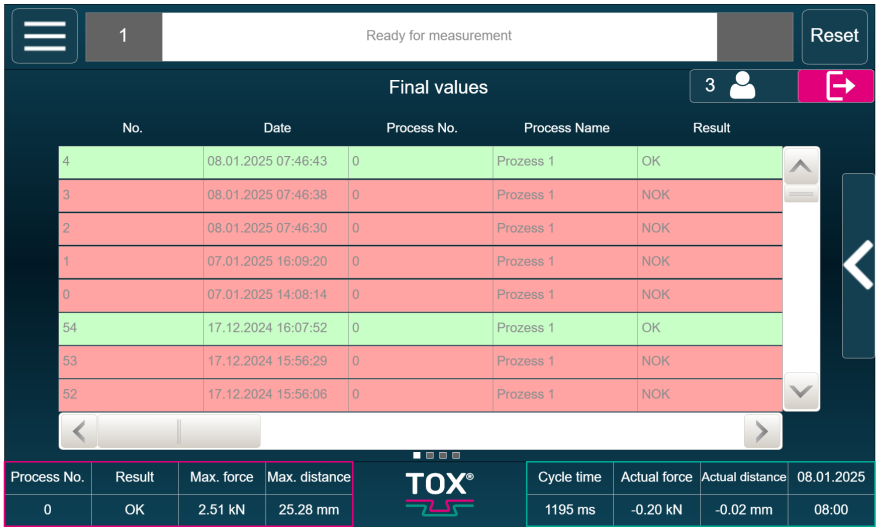


Fig. 23 Shift counter menu

In this menu the counters are configured.

	Button	Function
	Reset	Resets the counter values.
	Current	Displays the current value.
	Early warning	When the entered value is reached, a message is output.
	Early warning	When the entered value is reached, an error message is output. The process is then stopped as a result.

8.6.3 Total counter menu

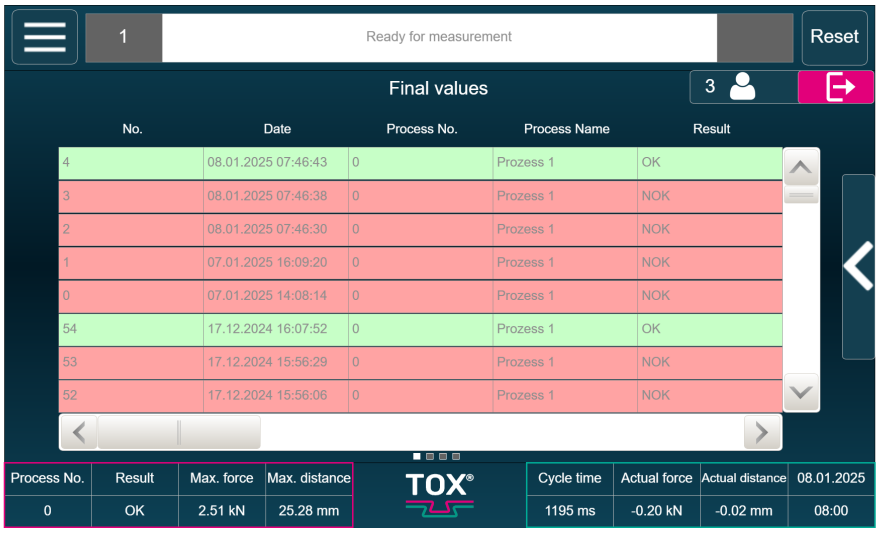


Fig. 24 Total counter menu

In this menu the counters are configured.

	Button	Function
	Early warning	When the entered value is reached, a message is output.
	Current	Displays the current value.
	Early warning	When the entered value is reached, a message is output.
	Early warning	When the entered value is reached, an error message is output. The process is then stopped as a result.

8.7 Maintenance menu

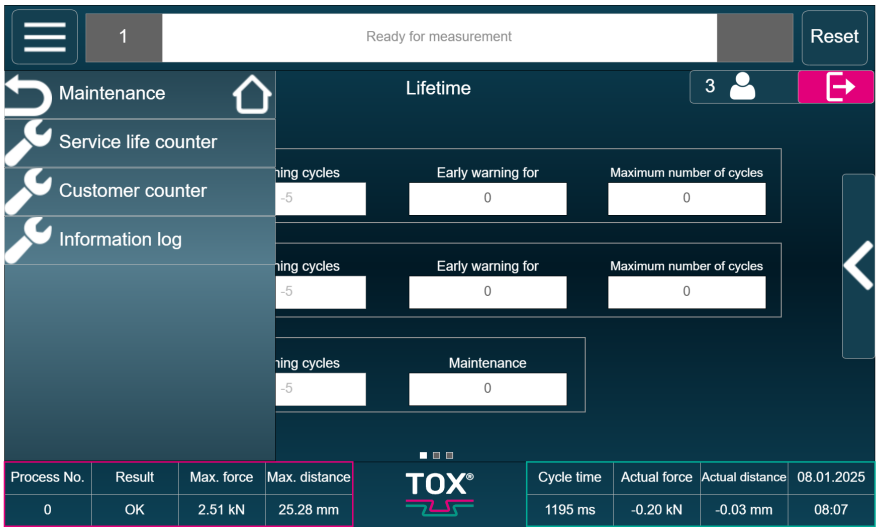


Fig. 25 Maintenance menu

	Button	Function
	Service life counter	Opens the setting options of the service life counter.
	Customer counter	Opens the setting options of the customer-specific counter.
	Information log	Opens the list of the information memory.

8.7.1 Service life counter menu

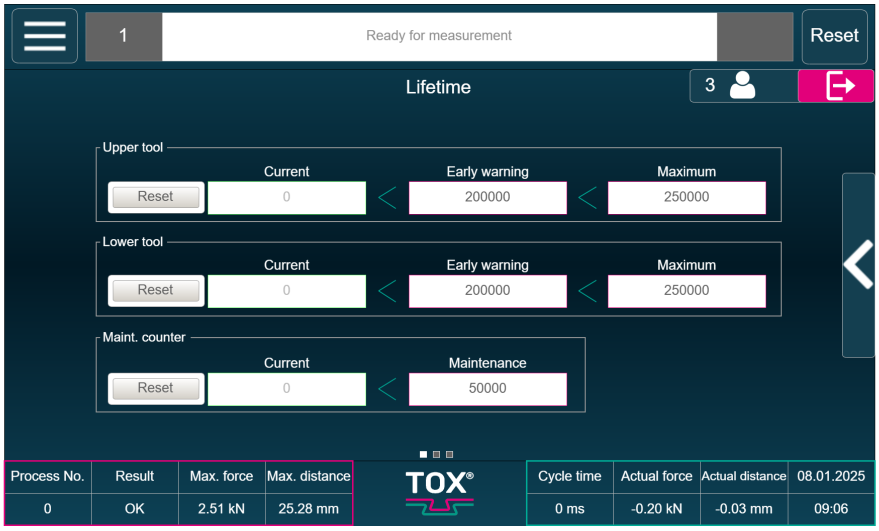


Fig. 26 Service life counter menu

In this menu the counters are configured.

	Button	Function
	Early warning	When the entered value is reached, a message is output.
	Current	Displays the current value.
	Early warning	When the entered value is reached, a message is output.
	Early warning	When the entered value is reached, an error message is output. The process is then stopped as a result.

Backwards totalling counters can be configured via the submenu.

Tap on the **Submenu** button to open further control options.

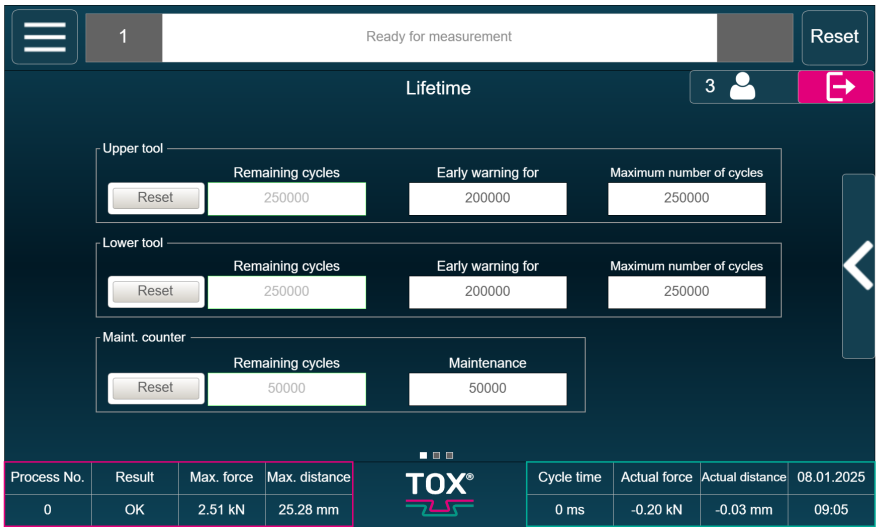


Fig. 27 Lifetime backwards counter menu

In this menu the counters are configured.

	Button	Function
	Early warning	When the entered value is reached, a message is output.
	Remaining cycles	Displays the number of the remaining cycles.
	Early warning for	When the entered value is reached, a message is output.
	Maximum cycle number	Defines the maximum number of process cycles.
	Early warning	When the entered value is reached, an error message is output. The process is then stopped as a result.

8.7.2 Customer counter menu

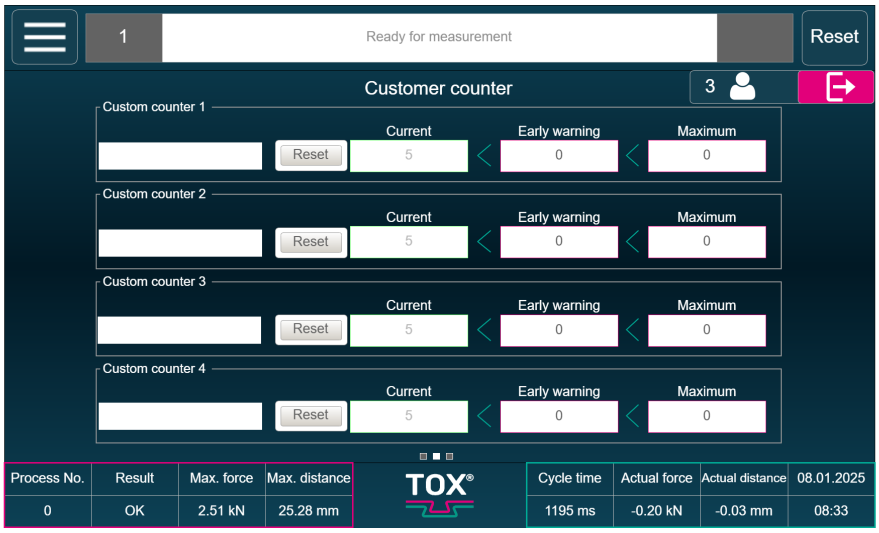


Fig. 28 Customer counter menu

In this menu the counters are configured.

	Button	Function
	Customer counter 1-4	Customer-specific counters can be named.
	Early warning	When the entered value is reached, a message is output.
	Current	Displays the current value.
	Early warning	When the entered value is reached, a message is output.
	Early warning	When the entered value is reached, an error message is output. The process is then stopped as a result.

8.7.3 Information memory menu

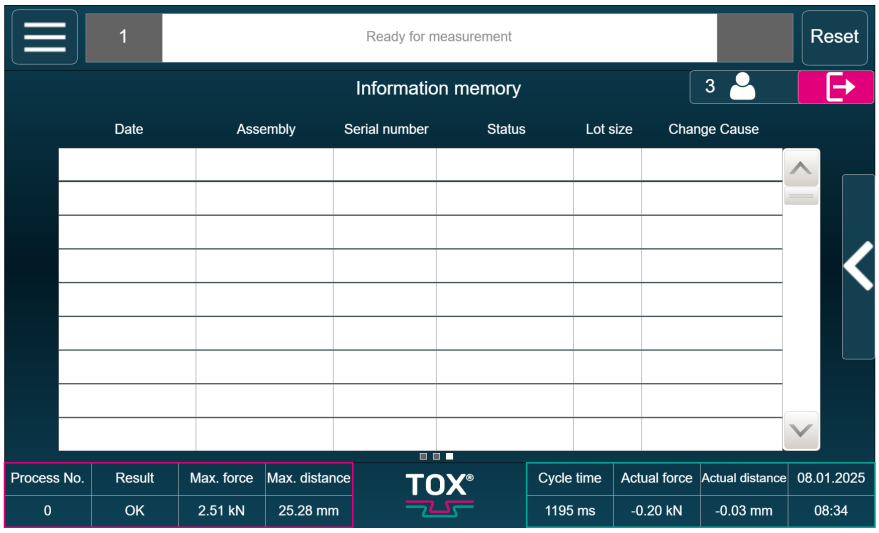


Fig. 29 Information memory menu

In this menu the customer-specific information is created and managed.

Information can be exported as CSV file via the submenu. Also new information can be created.

Tap on the **Submenu** button to open further control options.

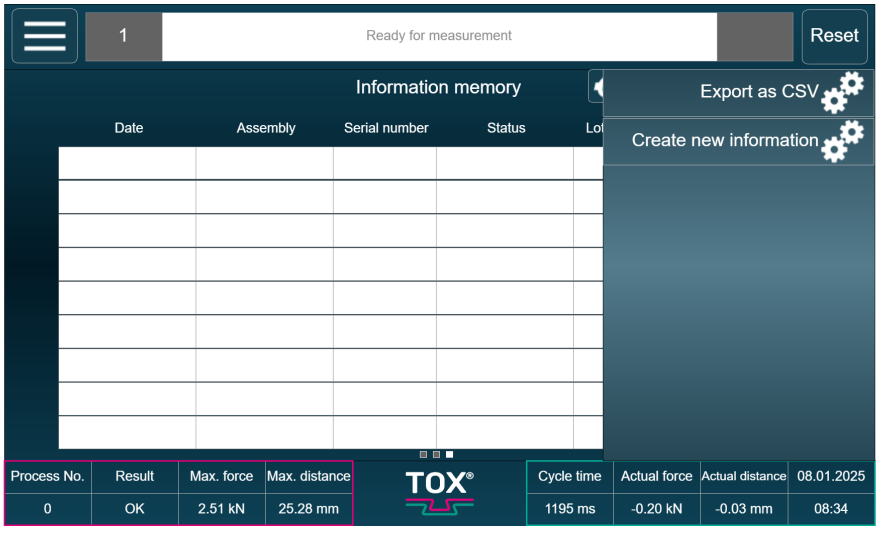


Fig. 30 Information memory submenu

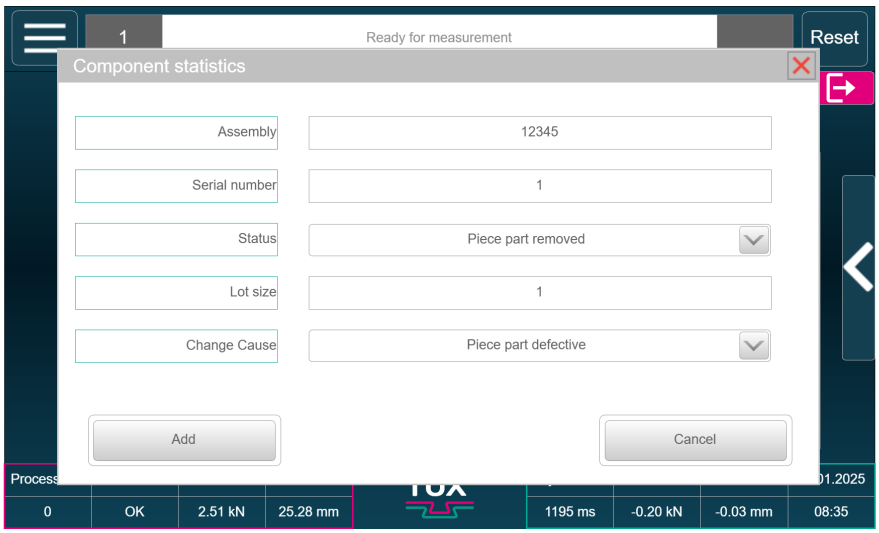


Fig. 31 Create new information in submenu

In this menu new information can be created qualified.

8.8 Settings menu

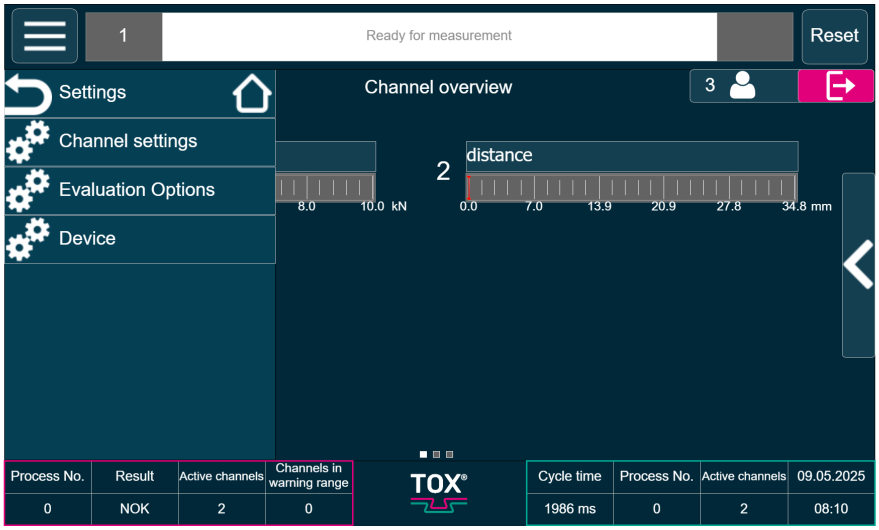


Fig. 32 Settings menu

	Button	Function
	Channel settings	Opens the setting options of the channel.
	Evaluation Options	Opens the setting options of the evaluation options.
	Device	Opens the setting options of the device.

8.8.1 Channel settings menu

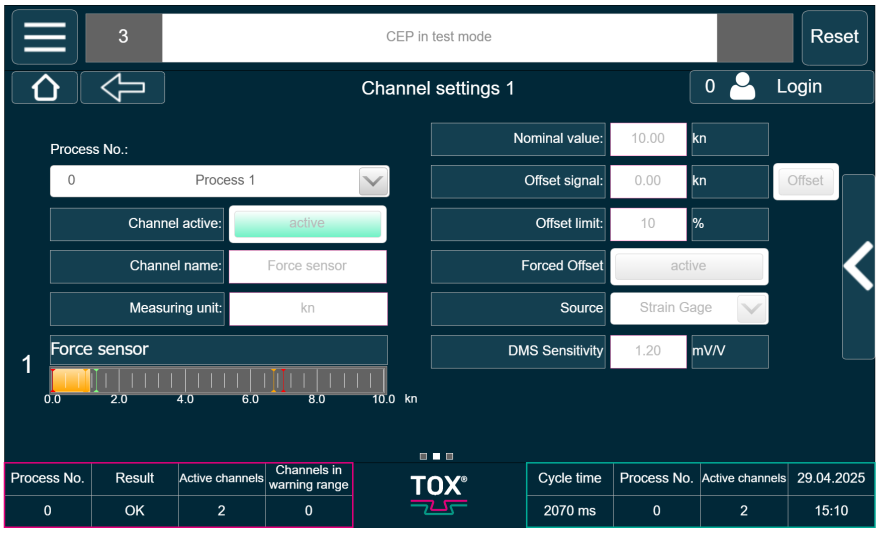


Fig. 33 Channel settings menu

In this menu the parameters of the force sensor are specified for the selected process.

	Button	Function
	Rated voltage	In this line you can set the nominal value for the force sensor used. The nominal value is specified in kN and is reached at the max. measurement signal of the force sensor. For the standard signal 0-10 V, 10 V corresponds to the nominal force.
	Offset value	The offset value adjusts a possible zero point offset of the analog measurement signal of the sensor. An offset adjustment must be carried out: • Once a day or after approx. 1,000 measurements. • When a sensor has been changed. If the sensor is load-free, the offset value can be set either via the "Offset" button or via the direct value entry.
	Offset limit	Offset limit of 10% means that the "Offset" value must only reach a maximum of 10% of the nominal load. If the offset is higher, an error message appears after the offset adjustment. This, for example, can prevent that an offset is taught when the press is closed.
	Forced offset	If the forced offset is activated, an offset adjustment is carried out automatically after the process monitoring system is switched on.
	Source	The source can be switched over between standard signal and DMS.
	DMS sensitivity	With this parameter the characteristic value of the DMS force sensor is entered. The bridge supply voltage amounts to 5 V.

The submenu can be used to set the factors settings, calibrate the force sensor and make a copy.

Tap on the **Submenu** button to open further control options.

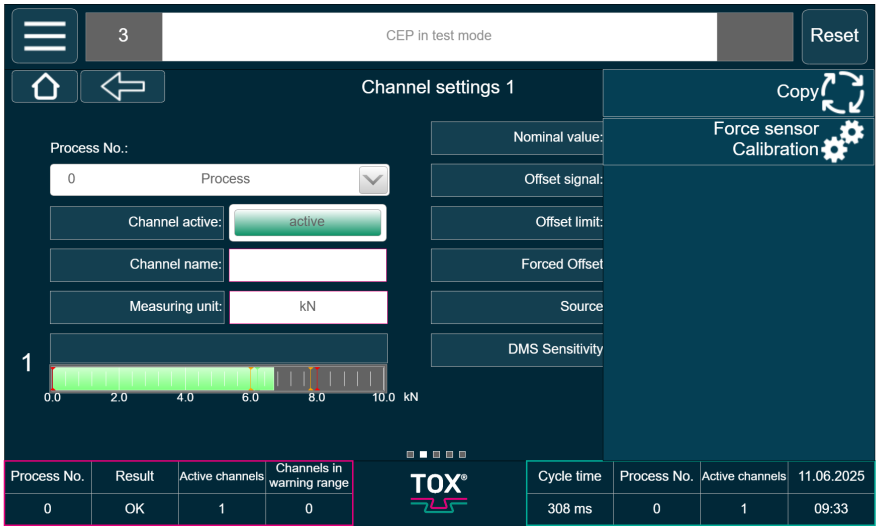


Fig. 34 Channel settings submenu

Calibration of force sensor

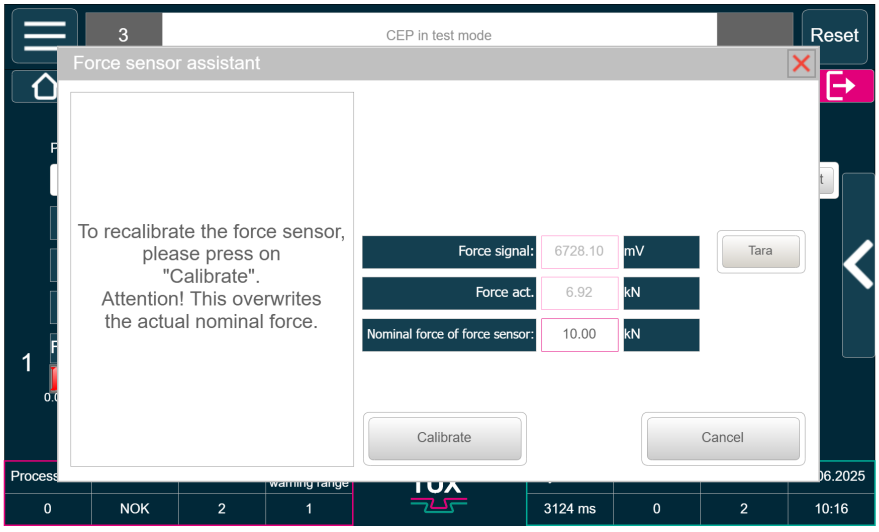


Fig. 35 Calibration of force sensor

For a 4-channel or multichannel CEP, when using the strain gauge inputs, there is the option to tare the input with the "Tare" button. This is recommended during initial commissioning or after the replacement of a force sensor.

8.8.2 Evaluation options menu

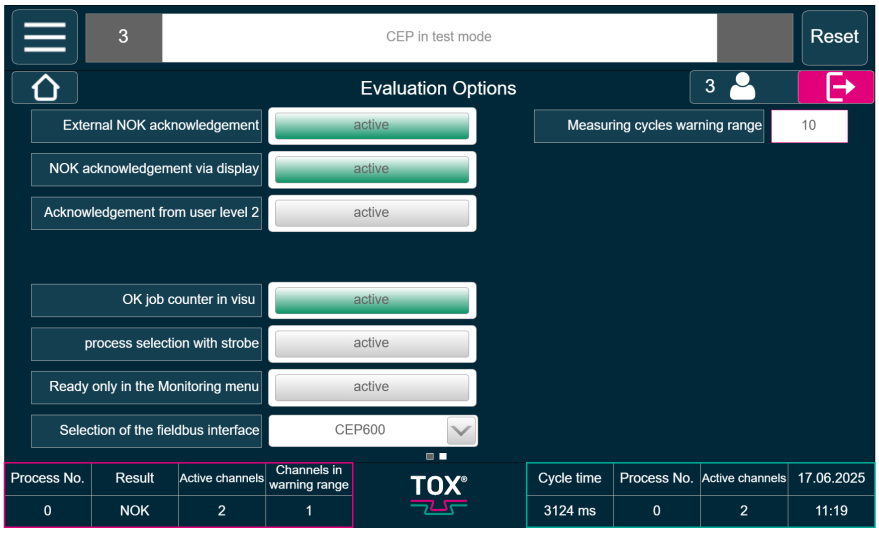


Fig. 36 Evaluation options menu

In this menu different evaluation options can be activated.

- External NOK acknowledgement

  At activation the NOK acknowledgement via the interface is carried out.
- NOK acknowledgement via display

  At activation the NOK acknowledgement is carried out directly on the display.
- Acknowledgement from user level 2

  When NOK acknowledgement via display is activated, it can be additionally set that an acknowledgement first takes place from user level 2 or higher.
- OK order counter in Visu

  An OK order counter can be activated that can be configured in menu <Process>, <Manual process selection>.
- Process selection with strobe

  When activated, a process change takes place via the interface only in connection with the <Strobe> bit.
- Ready for measurement only in monitoring menu

  When activated, process monitoring must be in the start screen so that a new process can be started. No change to a different page is possible during an active measurement.
- Selection of fieldbus interface

  The version of the fieldbus interface can be selected.
- Measuring cycles warning range

When the warning limit is activated the warning limit counter is raised by value '1' after every violation of the lower and upper warning limit. As soon as the counter reaches the set value, the message 'Warning range channel X' is created for the relevant channel X. The counter is automatically reset when a further measuring result lies within the set warning limit window. The counter is also reset after a restart of the device. Adjustable from 0-100.

8.8.3 Device menu

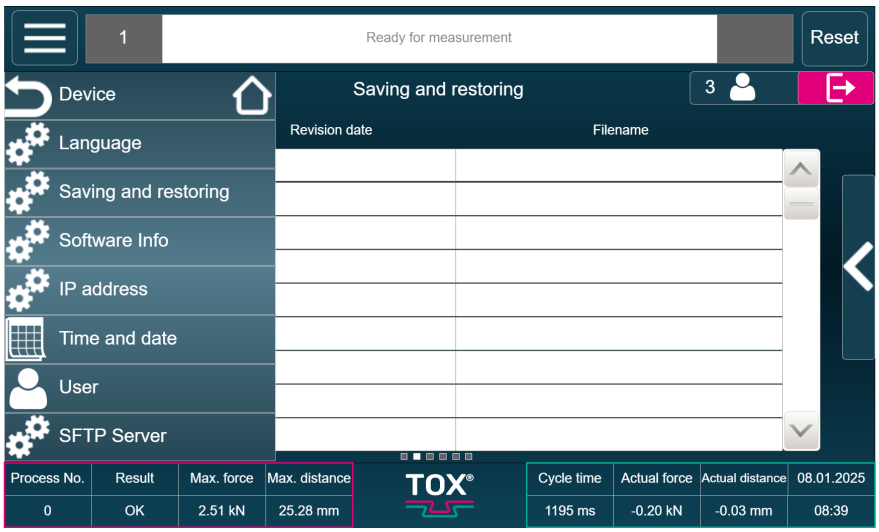
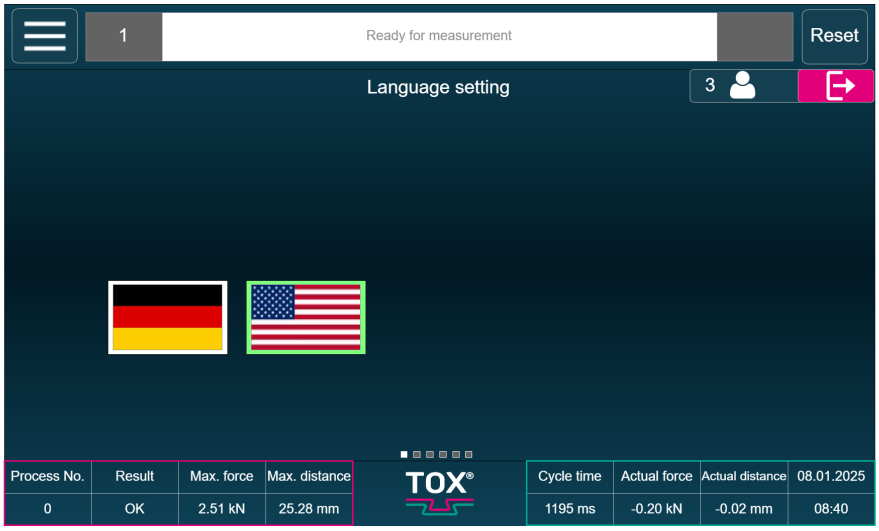


Fig. 37 Device menu

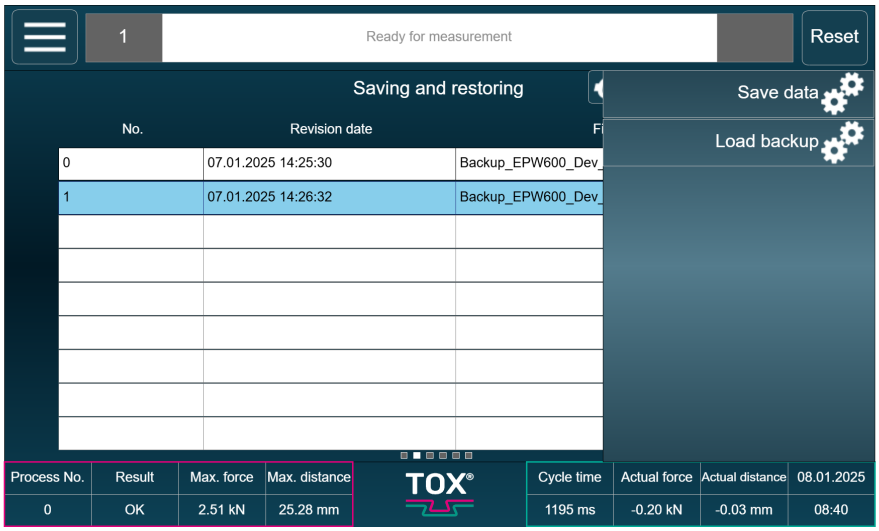
In this menu you can define different device-specific settings.

Language menu



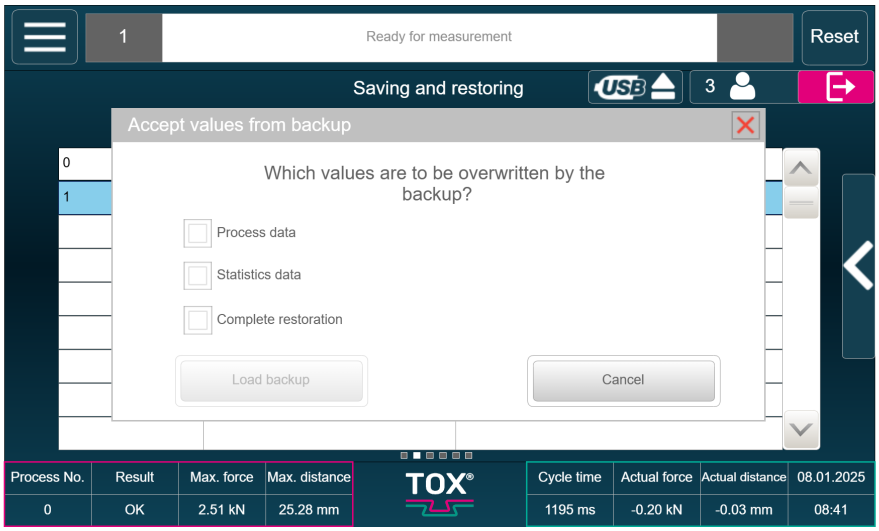
Selects the language of the interface.

Menu saving and restoring

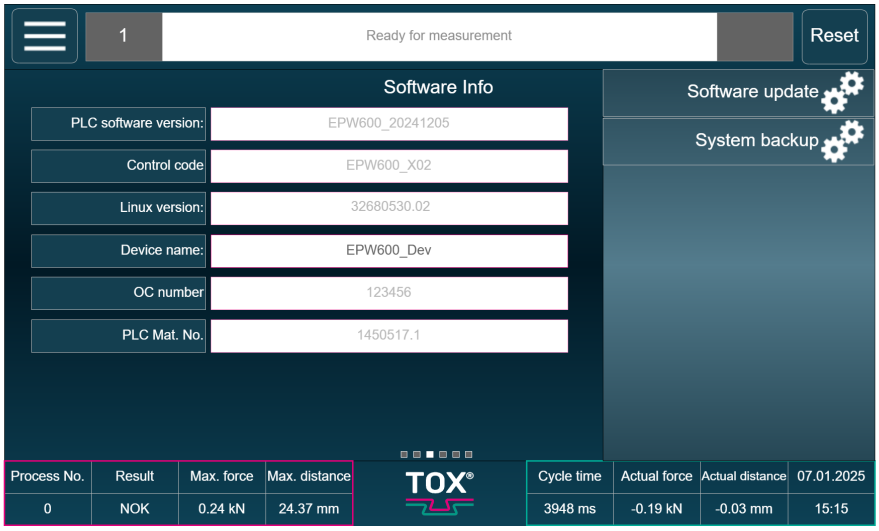


Makes the saving and restoring of the configuration and process date possible. For this **Save data** or **Load backup** can be selected in the submenu.

When a backup is selected, a selection dialog opens with which the data can be selected that are to be taken over from the backup.

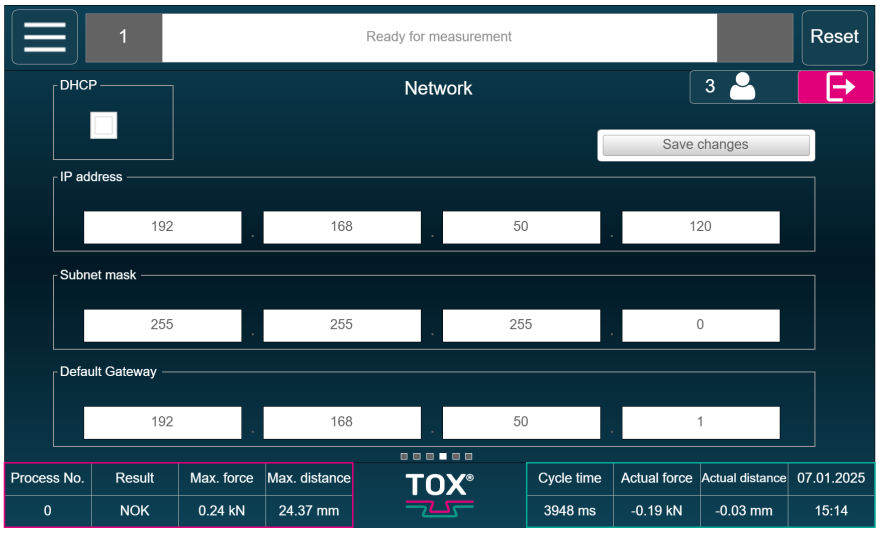


Menu Software Info



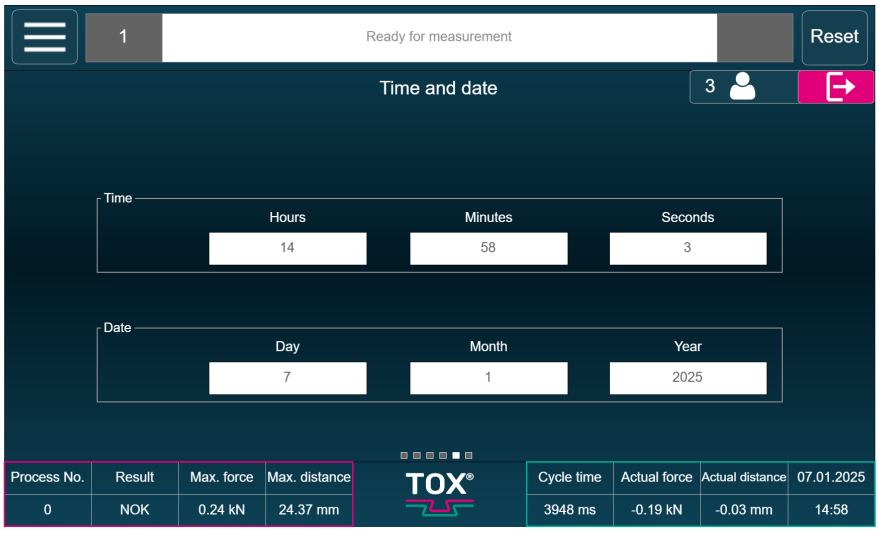
Shows information about the software version used. In the submenu a <Software update> or a <System backup> can be triggered. For this, tap on the corresponding button and follow the directions.

IP address menu



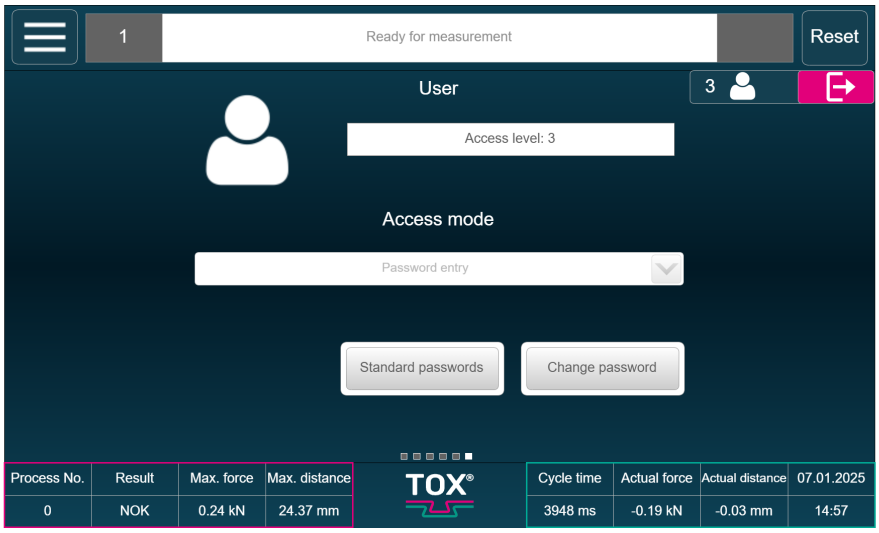
Defines the IP address.

Time and date menu



Setting the time and the date

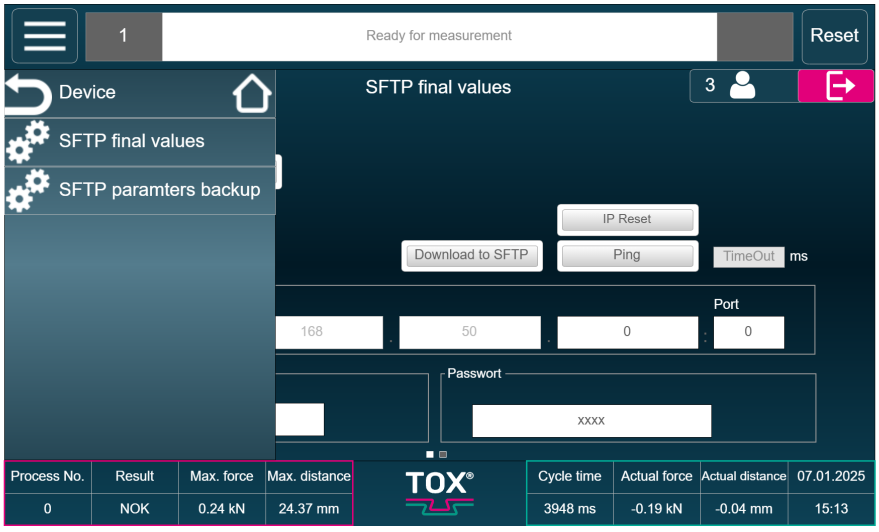
user menu



Defines the <Access mode> and the use of passwords.

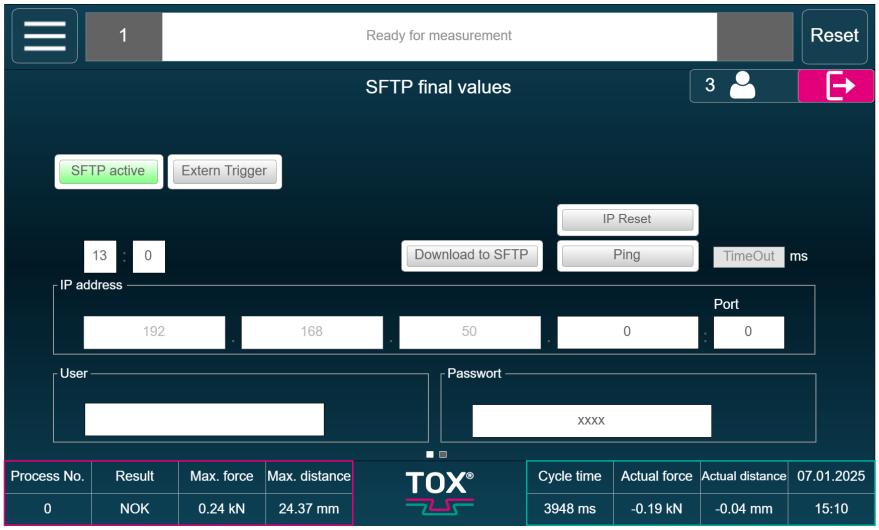
SFTP server menu

In the **SFTP menu** the settings are made to export curve data and final values to an SFTP server.



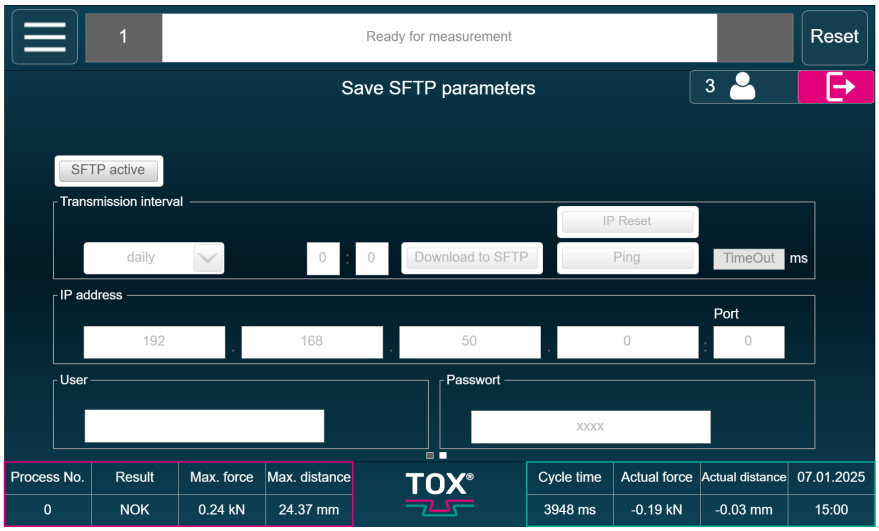
Defines the *Secure File Transfer Protocol* via submenu <SFTP final values> and <Backup SFTP parameters>.

SFTP final values



	Button	Function
	SFTP active	Activates the transmit data per SFTP function.
	External trigger	The signal for transmitting the data takes place from external. The signal "Piece part finished" must come via the interface.
	Download to SFTP	The data are loaded to the SFTP server.
	IP reset	IP address of the SFTP server is reset.
	Ping	Function for checking whether the SFTP server can be reached via the IP address.
	IP address	IP address of the SFTP server.
	User	User name for logging into the SFTP server.
	Password	Password for logging into the SFTP server.

Save SFTP parameters



	Display/control panel	Function
	SFTP active	Activates the transmit data per SFTP function.
	Transmission interval	Defines the interval for the transmission of the data.
	Download to SFTP	The data are loaded to the SFTP server.
	IP reset	IP address of the SFTP server is reset.
	Ping	Function for checking whether the SFTP server can be reached via the IP address.
	IP address	IP address of the SFTP server.
	User	User name for logging into the SFTP server.
	Password	Password for logging into the SFTP server.

9 Troubleshooting

9.1 Listing of errors and status messages

Pending error and status messages are displayed in the information and status bar. See Information and status bar, Page 40.

10 Maintenance

10.1 Maintenance work

No maintenance work is required.

11 Repairs

11.1 Repair work

No repair work is necessary.

12 Disassembly and Disposal

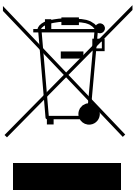
12.1 Safety requirements for disassembly

➔ Have the disassembly carried out by qualified personnel.

12.2 Disassembly

1. Shut down system or component.
2. Disconnect system or component from the supply voltage.
3. Remove all connected sensors, actuators or components.
4. Disassemble system or component.

12.3 Disposal



When disposing of packaging, consumables and spare parts, including the machine and its accessories, the relevant national environmental protection regulations must be complied with.

For the environmentally compatible utilization and disposal of its electronic components, please contact the certified disposal company for electronic waste or return it to TOX® PRESSOTECHNIK.

For further information about the take-back and forms see www.tox.com in the service sector.

Regarding questions about disposal please contact TOX® PRESSOTECHNIK SE & Co. KG (see Contact and source of supply, Page 9).

13 Attachments

EU DECLARATION OF CONFORMITY

Original EU declaration of conformity

The manufacturer TOX® PRESSOTECHNIK SE & Co. KG declares herewith that the following devices of the product family

Designation / function	Device for monitoring pressing processes
Product name / module	TOX® CEP 600.0XX.XX.XX TOX® CEP 600.4XX.XX.XX TOX® CEP 600.5XX.XX.XX
Serial number	see type plate
Description	Device for monitoring pressing and joining processes using force recording, available as a compact built-in unit or wall-mounting.

complies with all relevant provisions of the following legislation, including any changes in force at the moment of the declaration.
This declaration of conformity is issued under the sole responsibility of the manufacturer.

Applied EU legislation:

2014/30/EU	EMC Directive, OJ L 96 dated 29/3/2014, P. 79–106
2011/65/EU	RoHS Directive, OJ. L 174 dated 1.7.2011, P. 88–110

Reference to the used harmonised standards:

DIN EN 61000-6-2:2019-11	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity standard for industrial environments (IEC 61000-6-2:2016), German version EN IEC 61000-6-2:2019
DIN EN 61000-6-4:2020-09	Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments (IEC 61000-6-4:2018) German version EN IEC 61000-6-4:2019
DIN EN IEC 63000:2019-05	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances (IEC 63000:2016); German version EN IEC 63000:2018)

Place and date	Weingarten, 29.04.2025
Signature	
Information on the signatory	ppa Stefan Katzenmaier Component and Region Sales Manager

UK DECLARATION OF CONFORMITY

Original declaration of conformity

The manufacturer TOX® PRESSOTECHNIK SE & Co. KG declares herewith that the following devices of the product family

Designation / function	Device for monitoring pressing processes
Product name / module	TOX® CEP 600.0XX.XX.XX TOX® CEP 600.4XX.XX.XX TOX® CEP 600.5XX.XX.XX
Serial number	see type plate
Description	Device for monitoring pressing and joining processes using force recording, available as a compact built-in unit or wall-mounting

complies with all relevant provisions of the following enactments and their amendments.
This declaration of conformity is issued under the sole responsibility of the manufacturer.

Applied enactments:

SI 2016/1091	Electromagnetic Compatibility Regulations 2016
SI 2012/3032	The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

Reference to the used harmonised standards:

DIN EN 61000-6-2:2019-11	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity standard for industrial environments (IEC 61000-6-2:2016) German version EN IEC 61000-6-2:2019
DIN EN 61000-6-4:2020-09	Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments (IEC 61000-6-4:2018) German version EN IEC 61000-6-4:2019
DIN EN IEC 63000:2019-05	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances (IEC 63000:2016); German version EN IEC 63000:2018

Place and date	Weingarten, 29.04.2025
Signature	
Information on the signatory	ppa Stefan Katzenmaier Component and Region Sales Manager

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