X3 Process Indicator

- Ethernet TCP/IP Connection for Remote Control
  - Configuration via VNC
  - OPC Server
- W&M approval with 10.000 e acc. to EN 45501|OIML R 76
- Serial Interface RS232 for Printer or remote display
- 3 digital In- and 3 Outputs for limit function
- Optional Interfaces:
  - several interfaces
  - Fieldbus: Profibus-DP, DeviceNet, Interbus-S, Modbus-TCP, CC-link, Profinet, Ethernet/IP
- Transflective LCD Display, back lighted
- Internal Alibi memory
- ATEX Zone 2/22 Version available

Product profile
The new X3 Process Indicator provides an easy and reliable solution for process hopper scales with strain gauge load cells in process automation applications.

The X3 Process Indicator sets new standards in Process automation. The standard Ethernet TCP/IP interface allows an easy integration into existing PC networks. Information can be transferred into supervisory systems with the integrated OPC-Server technology.

The IP address can be assigned via the 3 following possibilities:
1. Manual input of the IP address by the user
2. Automatic assignment from a network server (DHCP)
3. Auto IP, self-assign by the instrument

If the IP Address is not known by the user, a small tool is scanning the complete network and displays IP address and name of all Sartorius Instruments that are connected to the network.

With this function all instruments|scales can be clearly identified. The tool is delivered with the Process Indicator and can be used without installation.

There are three possibilities for the configuration. First is the configuration via the front keys. Second is the VNC-technology. This function enable the user to start the homepage of the instrument in the Microsoft Internet Explorer and do the configuration online. Third possibility is to use the tool ConfigureIt Professional. With this tool all configurations can be done online or offline and saved on the PC. This makes the administration of different systems very easy and well arranged.

The flexibility of the instrument with different options as serial and digital interfaces or fieldbus allows a simple integration into automation systems. Also a high resolution 0|4-20 mA analogue output card is available. With two interface slots, the system can easily be extended also years after the investment. This gives investment protection.

The X3 Process Indicator is available in a robust aluminium housing for front panel mounting. Utmost interference suppression and longterm stability guarantees optimum use in harshest environments.

The LCD weight display with 18 mm characters is back lighted and transflective. It allows a good readability even under difficult conditions as e.g. direct sunlight.

Three freely configurable digital In- and Outputs can control simple process functions, like limits.

Take control direct on the display or via PC. Do you think about Wireless LAN? Use the possibilities of the Ethernet TCP/IP. Remote Service via the Internet, allows support from every point of the world.

The high-quality Sense-amplifier supports 4 and also 6 wire Load Cells. This allows connections over long distances without losing accuracy.

Additional security guarantees the fully galvanically isolated sensor input circuit and supply from supply voltage and all in-|output circuits.

Technical Data

Housing
Dimensions: 192 × 96 × 150 mm
Panel cutout:
$187^{+0,5}$ × $91^{+0,5}$ mm
Material: Aluminium
Protection class: IP30
Front panel: IP65

RoHS conform

Supply Voltage
110 V/240 V_{AC}, -15%/+10%,
50/60 Hz or: 24 V_{DC}

Power Consumption
13 VA/11 W

Display
LCD, transflective, back lighted
Elements: 6-digits (7 Segments)
figure height: 18 mm
Colour: black | white with
weight- and status symbols

Keyboard
6 double function keys
(short lift keys)

Status Indicator
-> 0 <- zero display within
± 1/4d standstill
$_{B}$ gross weight display
$_{NET}$ net weight display
$_{T}$ tare weight display
Dimensions can be set for: g, kg, t, lb
Decimal point can be set

Control outputs
Quantity: 3
opto-isolated output, passive,
Voltage: max. 30 V_{DC}
Current: max. 30 mA

Control Inputs
Quantity: 3,
opto-isolated input, passiv,
Functions: zero setting, taring...
Voltage: max. 30 V_{DC}
Current: max. 10 mA

Load cell connection
All strain gauge load cells;
6- or 4-wire connection

Load cell supply
12 V, short-circuit proof.
External load cell supply possible.

Minimum load impedance
min. 75 Ω
e.g. 6 load cells with 600 Ω
or 4 load cells with 350 Ω

Measuring principle
Measuring amplifier:
Delta-Sigma converter
Measuring time:
min 5 ms - max. 1600 ms

Accuracy
10,000 e class III acc. to EN 45501;
according to. OIML R 76,
min. verification interval: 0.5 µV/e

Input range
7.5 nV (appr. 4.8 Mio. div.)
Usable resolution: 0.2 µV/d

Input signal
Measuring signal: 0 bis 36 mV
(for 100% nominal load)

ATEX approval
only indicator PR5410/03

Zone 2/22
II 3G Ex nA II T4 X
II 3D Ex tD A22 IP5x T80°C X

As indicator for installation by the customer

Linearity
<0.003%

Temperature effects
Zero: TK_0 m < 0.05 µV/K RTI
Span: TK_{span} < +/- 2.5 ppm/K

Alibi Memory
Internal 50.000 entries

Digital filter for load cell
4th order (low pass), Bessel, aperiodic
or Butterworth

Ethernet interface
Ethernet TCP/IP and Modbus TCP
definition of an IP address:
– AutoIP
– DHCP Server assignment
– manual input of an IP address

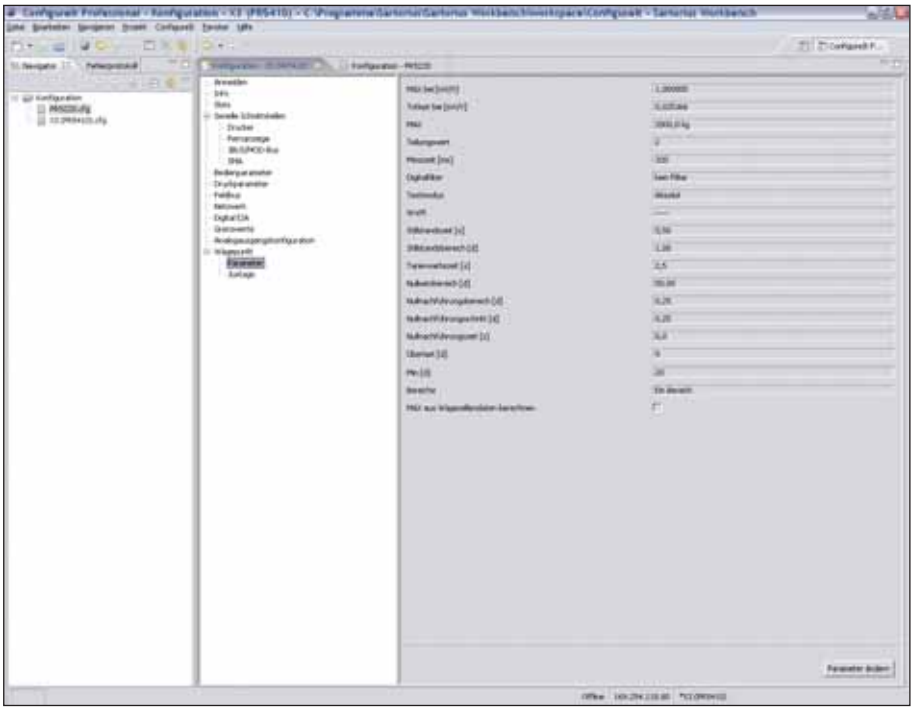
Automatic detection of signal
transmission and corresponding
change over (auto cross-over)
(cross-over or patch cable)

Environmental conditions
Temperature
W&M: –10 °C to +40 °C
Operation: –10 °C to +50 °C
Storage: –20 °C to +70 °C

Protection class
Front panel IP65
Housing IP30

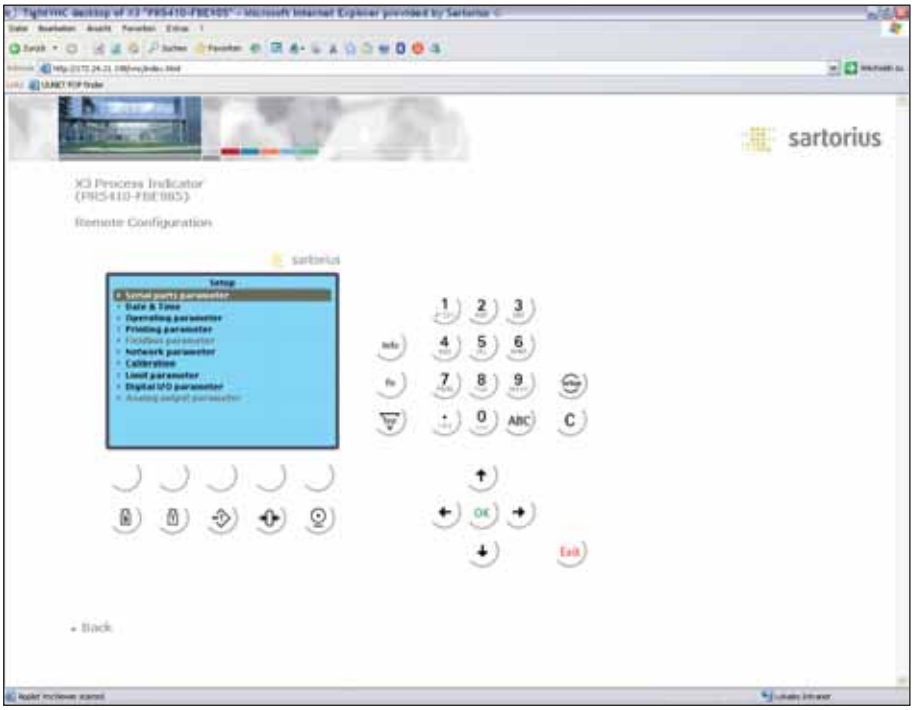
Packing size
291 × 331 × 160 mm

Weight
Net: 1.45 kg
Gross: 2.3 kg



The ConfigureIt Professional program has the following features:

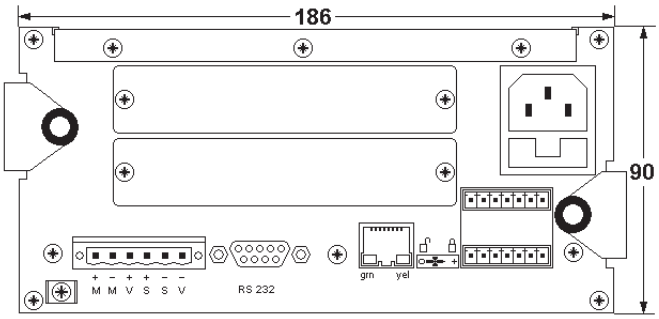
- Searching for an instrument in a network
- Creating and modifying an instrument configuration
- Entering the parameters of an instrument
- Calibration of an instrument using the following methods:
  - with test weights
  - by mV/V
  - using the load cell data ('smart calibration')
- Loading an instrument configuration from an instrument
- Storing an instrument configuration in an instrument or in a file
- Copying instrument configurations (cloning)
- Creating a documnt (PDF, XLS, etc.) with the instrument configuration



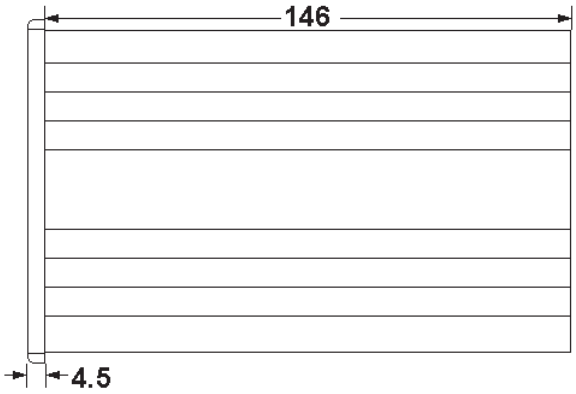
The Functionality VNC allows the following functions:

- Opens the internal Web-Page with the direct entry of the IP adress into the standard Web Browser
- Showing and modifying an instrument configuration
- Calibration of an instrument using the following methods:
  - with test weights
  - by mV/V
  - using the load cell data ('smart calibration')
- Displaying and printing the complete configuration
- Weight Indication on the PC Display
- Display the internal Alibi memory
- Readout of the fault memory

Front view*



Back view*



Side view*

187 + 0,5 x 91 + 0,5

Panel cut out*

*Dimensions in mm

Order Information

Type	Description	Order number
PR 5410/00	X3 Process Indicator, 110–230 V	9405 154 10001
PR 5410/01	X3 Process Indicator, 24 VDC	9405 154 10011
PR5410/03	X3 Process Indicator, 24 VDC, ATEX Zone 2/22	9405 154 10031
Options		
PR 5510/02	Serial Interface Card 2× RS232	9405 355 10021
PR 5510/04	Serial Interface Card 1× RS232 und 1× RS485	9405 355 10041
PR 5510/07	Analogue 4 In-|1 Output	9405 355 10071
PR 5510/08	BCD open emitter	9405 355 10081
PR 5510/09	BCD open collector	9405 355 10091
PR 5510/12	Digital 6 In- and 12 Outputs	9405 355 10121
PR 5510/14	Ethernet Modbus TCP	9405 355 10141
PR 1721/31	Profibus-DP	9405 317 21311
PR 1721/32	Interbus S	9405 317 21321
PR 1721/34	Device NET	9405 317 21341
PR 1721/35	CC-Link	9405 317 21351
PR 1721/36	Profinet	9405 317 21361
PR 1721/37	Ethernet|IP	9405 317 21371

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