



PRO-X4 Process Controller



- Programmable Process Controller (acc.to IEC 61131)
- EC Type Approval as indicator for non-automatic scales class III, 6000 e
- Optional
 - Fieldbus-Interfaces: Ethernet, Profibus, DeviceNet, Interbus, CC-Link, Profinet, Ethernet|IP
 - Analogue in-|outputs
 - Digital in-|outputs
 - Internal|external Alibi-memory
- Easy integration into automation concepts

The PRO-X4 Process Controller is a multiple use device for precise weighing applications in industrial environment.

A wide range of interface options make it feasible for integration into all up-to-date automation concepts. The housing is designed for easy installation into switch cabinets, operating panels or direct at the machinery as a front-end unit. The bright weight display, with 7 digits plus units and status symbols, guarantees a good readability even under harsh conditions.

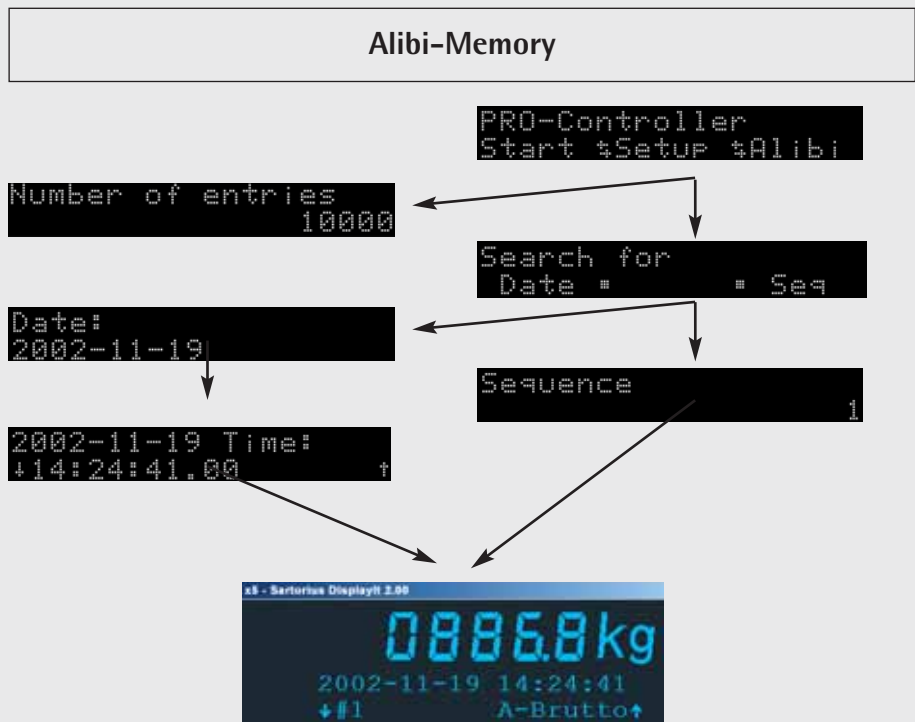
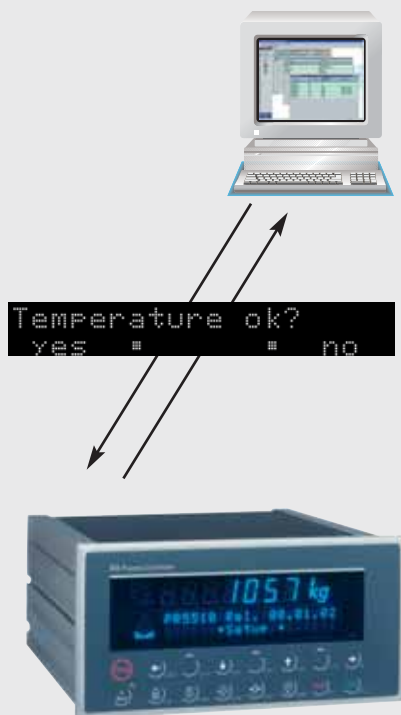
Additionally there are two text lines each with 20 characters. Under the text lines function keys are arranged. The meaning depends on the application and guides the operator through the menu. The keys have a double assignment. The second level enables the operator to enter also alphanumeric characters. The X4 Process Controller offers the connection of an external PC-keyboard to upgrade the operation comfort in case of data entry.

The X4 Process Controller has beside the normal indicator and weighing functions several interfaces and an internal alibi-memory as an option.

The communication channels are:

- Serial RS232|485
- Ethernet
- Fieldbus
- Interbus S
- Devicenet
- Profibus DP
- CC-Link
- Profinet
- Ethernet|IP

The terminal function allows the dialog with a host, either PC or PLC.



Terminalfunction

Many weighing processes need a dialog with the operator. The PRO-X4 offers an ideal combination between a high precision instrument on the one hand and terminal for a SCADA System on the other hand. The weight signals will be detected, converted, stored and if necessary transmitted serially via Ethernet or fieldbus options. These are also valid for typical indicator functions like i.e. tare and zero setting. The two-line-display with function keys and alphanumeric keypad can be used to indicate transmitted commands or messages and to edit or enter values and to retransmit to the host. Contents and sequences are controlled only from the host with simple predefined commands.

Internal | External Alibi-memory

There are two possibilities to realise an alibi memory.

Internal

A fixed memory size for the data write to the alibi memory must be defined. Data set contains date | time, weight and a sequence number. The reserved memory area is fixed; and so it is ensured that the data is always available. The size depends on the application and how many procedures have to be stored. Entries of 15,000 data sets cover approx. 960 kB.

During normal operation the display can show the entries. Search criteria are date | time or sequence number.

External

To store a larger amount of data it can be necessary to use an external alibi memory. For this purpose the OmniScale device is available. During configuration the slot where the external device will be connected has to be defined. Storage medium is a Flash-card. Data set contains also date | time, weight and a sequence number. To read out the data from a PC, the OmniScale can be connected via the serial interface or with the OmniDrive via parallel interface.

Input configuration

```
↑Input confis. ↑
```

```
Input confis.
↓Slot 1 ↑
```

```
Slot 1 Input ↑ 1↑
↓Tare A ↓
```

Functions of inputs

Tare in, Tare out, Set zero,
Printout active (new Data, Alibi, print)
Repeat printout active
Interlock1: only Terminal mode.
Interlock2: 'Setup' not allowed.
Keep output value at Slot 1 or 2

	Slot	1	2	3	4
PR 5510/04	Serial I/O RS485/422 + RS232	•	•		
PR 5510/06	Analog out			•	
PR 5510/07	1 Analog out / 4 analog in	•	•		
PR 5510/08	BCD out / open emitter	•	•		
PR 5510/09	BCD out / open collector	•	•		
PR 5510/12	Control I/O 6/12 opto	•	•		
PR 5510/14	Ethernet interface				•
PR 1721/35	CC-Link interface				•
PR 1721/31	Profibus interface				•
PR 1721/32	Interbus interface				•
PR 1721/34	Devicenet interface				•

Layout 1

Scale: Station1
Sequence: 27
Date: 20.11.2002
Time: 11:06:59
Gross: A <0687.5 kg>
Net: A <0127.5 kg>
Tare: A <0560.0 kg>



Label
(designed with
NiceLabelExpress)

Layout 2

2002-11-30-11:06:59 #27 Gross: A <0687.5 kg>

I/O Configuration

Within the configuration mode you can assign predefined functions to the I/O's. The type of interface card in the specific slots will be detected automatically. So the analog and BCD interface will also be recognised. To choose the desired function it is necessary to scroll through the menu shown on the display and assign it to a certain in- or output.

Options

In total 4 slots are incorporated to equip the device with option cards.

Slot 1-2 are assigned for digital, analogue and serial interfaces.

Slot 3 is only designed for the analogue card PR 5510/06.

Slot 4 is designed for the Ethernet card and all other fieldbus interfaces.

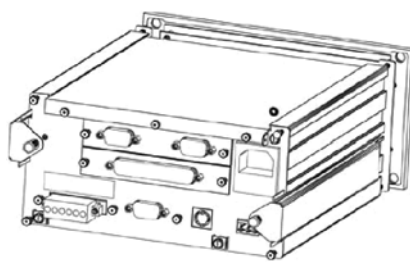
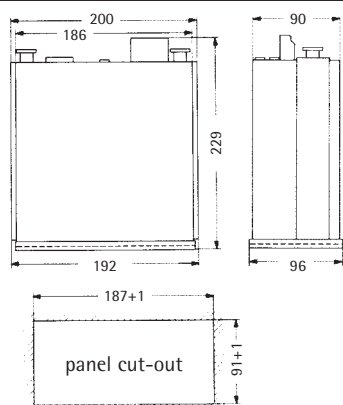
By using the analogue boards please take into consideration that there are certain restrictions regarding the power consumption. In case an Ethernet or Fieldbus option is used, only Slot 1 or 2 can be equipped.

Printouts

Two different print layouts are predefined and stored in the PRO-X4 as shown on top. To redesign a layout according to special requirements, two ways are offered by the system.

1. By means of the programming tool PR 1750NT the predefined formats can be modified.
2. By means of the program NiceLabelExpress (NLE) formats can be freely designed on a PC. The results are label files, which will be downloaded to the device and filled with variables during printout.

Technical Data PRO-X4



Power supply

115–230 V_{AC}, 50–60 Hz +10%/–15%
10 W/17 VA (without options)
or 24VDC, +/- 20%

Housing

Material: Aluminium
Protection class: IP30
Front panel: IP65

Order information

Type	Description	Order number
PR 5510/00	PRO-X4 230 V	9405 155 10001
PR 5510/01	PRO-X4 24 VDC	9405 155 10011

Pluggable Options Cards

			SLOT	1	2	3	4
PR 5510/04	Serial Interface card (RS232 485)	9405 355 10041		o	o		
PR 5510/06	1 analogue Output 0 4–20 mA*	9405 355 10061				o	
PR 5510/07	1 analogue Output 4 analogue Input*	9405 355 10071		o	o		
PR 5510/08	BCD open emitter	9405 355 10081		o	o		
PR 5510/09	BCD open collector	9405 355 10091		o	o		
PR 5510/12	Digital 6 In- 12 Output, Opto Opto	9405 355 10121		o	o		
PR 5510/14	Ethernet, 10 MBaud Modbus TCP	9405 355 10141					o
PR 1721/31	Profibus DP	9405 317 21311					o
PR 1721/32	Interbus S	9405 317 21321					o
PR 1721/34	DeviceNet	9405 317 21341					o
PR 1721/35	CC-Link	9405 317 21351					o
PR 1721/36	Profinet	9405 317 21361					o
PR 1721/37	Ethernet IP	9405 317 21371					o

Further Options

PR 1792/13	OPC Server Licence	9405 317 92131
PR 1792/20	AccessIt Licence	9405 317 92201
PR 8001/01	X-Family PowerTools	9405 380 01011
PR 8901/81	Internal Alibi-Memory (Licence)	9405 389 01811
PR 1623/10	Connecting Cable (4 m)	9405 316 23101
PR 1623/20	Relay I O Module	9405 316 23201
PR 1623/30	Terminal I O Module	9405 316 23301
PR 1620/01	19" Rack mounting kit for 1 unit	9405 316 20011
PR 1620/02	19" Rack mounting kit for 2 units	9405 316 20021

o = optional, x = included in delivery

The documentation will be delivered on a CD, a paper version can be ordered separately.

* Pay attention to the total load. Refer to documentation.

Display

7-Digit plus status symbols
text: 2 lines, 20 characters

Load cell input

6-or 4-wire
Load cell supply: 12 V_{DC}
Impedance: min. 75 Ω,
e.g. 12 load cells with 1,080 Ω

Interface

– Built-in bidirectional serial interface
RS232; user selectable protocols:
remote display, printer
– Keyboard interface PS2

Accuracy

6000 e OIML R 76
min. verification interval 0.5 μV/e

Linearity

<0.002%

Resolution

4.8 Mio counts
usable stepwidth 0.2 μV/d

Measuring time

10...1,280 ms, adjustable

Filter

4-pole digital filter 0.1 to 5 Hz

Input signal range

0...36 mV
Dead load suppression: 100%

Temperature influence

Zero: <0.05 μV/K RTI
Span: <+/-4 ppm/K

Environmental conditions

Temperature range

Operation: -10°C to +55°C
Storage: -40°C to +70°C

Electrical safety

according to IEC 61010-1

Vibration

according to IEC 60068-2-6

Conformity

NAMUR, CE

Weight

net: 2.12 kg
gross: 4 kg

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