



sartorius

## PRO-X4 Process Controller



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

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

A wide range of interface options make it feasible for integration in all up-to-date automation concepts. The housing is designed for easy installation into witch 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.

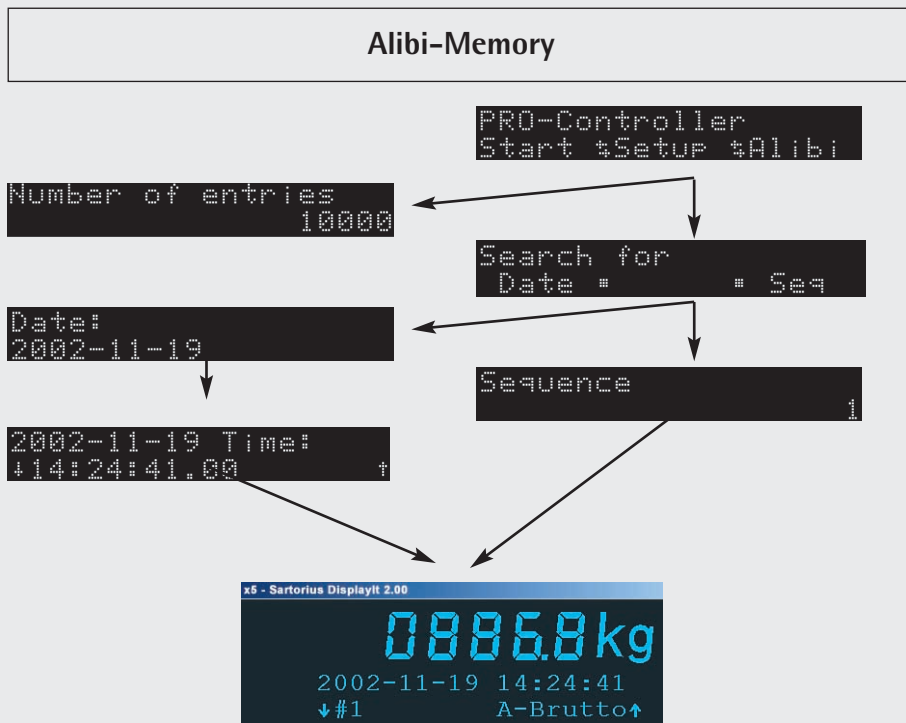
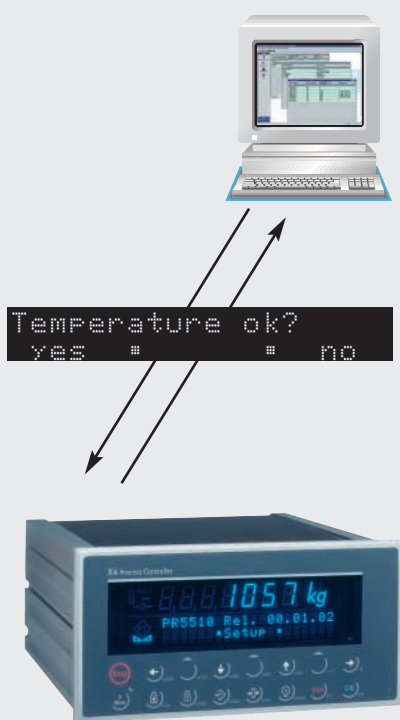
Additional two text lines are foreseen each with 20 characters. Under the text lines functionkeys are arranged. The meaning depends on the application and guides the operator through the menu. The keys have a double assignment. The second level enables the operator to enter also alphanumeric characters. 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 have 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

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 one hand and terminal for a SCADA System on the other hand. The weight signals will be detected, converted, stored and if necessary transmitted serial 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 alphanumerical 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

To define a fixed memory size for the data write to the alibi memory the Cal switch must be open. Data set contains date/time, weight and a sequence number. The reserved memory area is fixed and so it is secured to have the data always available. The size depends on the application and how many procedures have to be stored. Entries of 15,000 data sets cover approx. 960kB.

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

#### External

To store a bigger number 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 have 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 to a PC, the omniscaler 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 <0687.5kg>  
Net: A <0127.5kg>  
Tare: A <0560.0kg>



**Label**  
(designed with  
NiceLabelExpress)

## Layout 2

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

## 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 lots will be detected automatically. So also the analog and BCD interface will 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 lots 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.

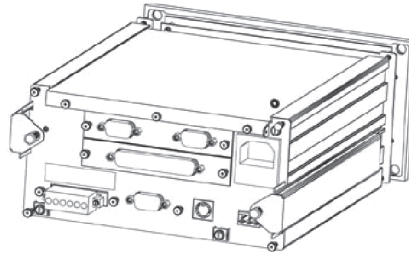
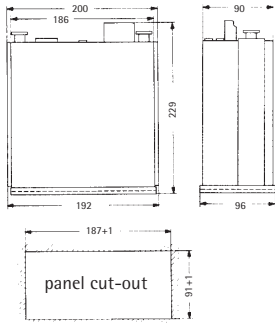
By using the analog boards please take into consideration that certain restrictions regarding the power consumption have to be calculated. In case an Ethernet or Fieldbus option is used, only Slot 1 or 2 can be equipped.

## 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 free 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 - 230V<sub>ac</sub> 50 - 60Hz +10%/-15%  
max. 19VA

### Housing

Material: Aluminium  
Protection class: IP 30  
Front panel: IP 65

### Order information

Type	Description	Order Code	SLOT	1	2	3	4
PR5510/00	PRO-X4 230 V	9405 155 10001					
<b>Options</b>							
PR5510/04	Serial Interface card (RS 232/485)	9405 355 10041		o	o		
PR5510/06	1 analogue Output 0/4 -20mA *	9405 355 10061					o
PR5510/07	1 analogue Output / 4 analogue Input *	9405 355 10071		o	o		
PR5510/08	BCD open emitter	9405 355 10081		o	o		
PR5510/09	BCD open collector	9405 355 10091		o	o		
PR5510/12	Digital 6 In- / 12 Output, Opto / Opto	9405 355 10121		o	o		
PR5510/14	Ethernet, 10MBaud	9405 355 10141					o
PR1721/31	Profibus DP	9405 317 21311					o
PR1721/32	Interbus S	9405 317 21321					o
PR1721/34	DeviceNet	9405 317 21341					o
PR1721/35	CC-Link	9405 317 21351					o
PR1792/13	OPC Server Licence	9405 317 92131					
PR1792/20	AccessIt Licence	9405 317 92201					
PR8001/01	X-Family PowerTools	9405 380 01011					
PR8901/81	Internal Alibi-Memory (Licence)	9405 389 01811					
PR1623/10	Connecting Cable (4m)	9405 316 23101					
PR1623/20	Relay I/O Module	9405 316 23201					
PR1623/30	Terminal I/O Module	9405 316 23301					

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: 12V<sub>dc</sub>  
Impedance: min. 75Ω,  
e.g. 12 load cells with 1,080Ω

### Interface

- Built-in bidirectional serial interface RS 232; user selectable protocols: remote display, printer
- Keyboard interface PS2

### Accuracy

6000e OIML R76  
min. verification interval 0,5μV/e

### Linearity

< 0.002%

### Resolution

2.5 Mio. counts for 1mV/V

### Measuring time

10... 1,280ms, adjustable

### Filter

4-pole digital filter 0.1 to 5Hz

### Input signal range

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

### Temperature influence

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

### Environmental conditions

#### Temperature range

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

### Electrical safety

according to IEC 61010-1

### Vibration

according to IEC 60068-2-6

### Conformity

EN61000-6-2 and EN61000-6-4  
NAMUR, CE