PRO-X5
System Controller

– Programmable System Controller
  (acc. to IEC 61131)
– EG Type Approval as Indicator for
  non-automatic scales class III, 5000 e
– Optional
  – Ethernet
  – Fieldbus-Interfaces:
    Profibus DP, DeviceNet, Interbus-S
  – Serial interfaces
  – Analogue in-│outputs
  – Digital in-│outputs
  – Internal│external Alibi-memory
– Easy integration to automation concepts
– Connection of an external second
  weighing point.

The PRO-X5 System Controller is a multiple use device for precise weighing applications for industrial environment.

A wide range of interface options make the PRO-X5 feasible for integration in all up-to-date automation concepts. The housing is designed in stainless steel as multi-functional enclosure to use as desk-top, as panel instrument or direct at the machinery as front-end unit. The weight display with 7 digits, 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 are functionkeys arranged. The meaning depends on the application and guides the operator through the menue.
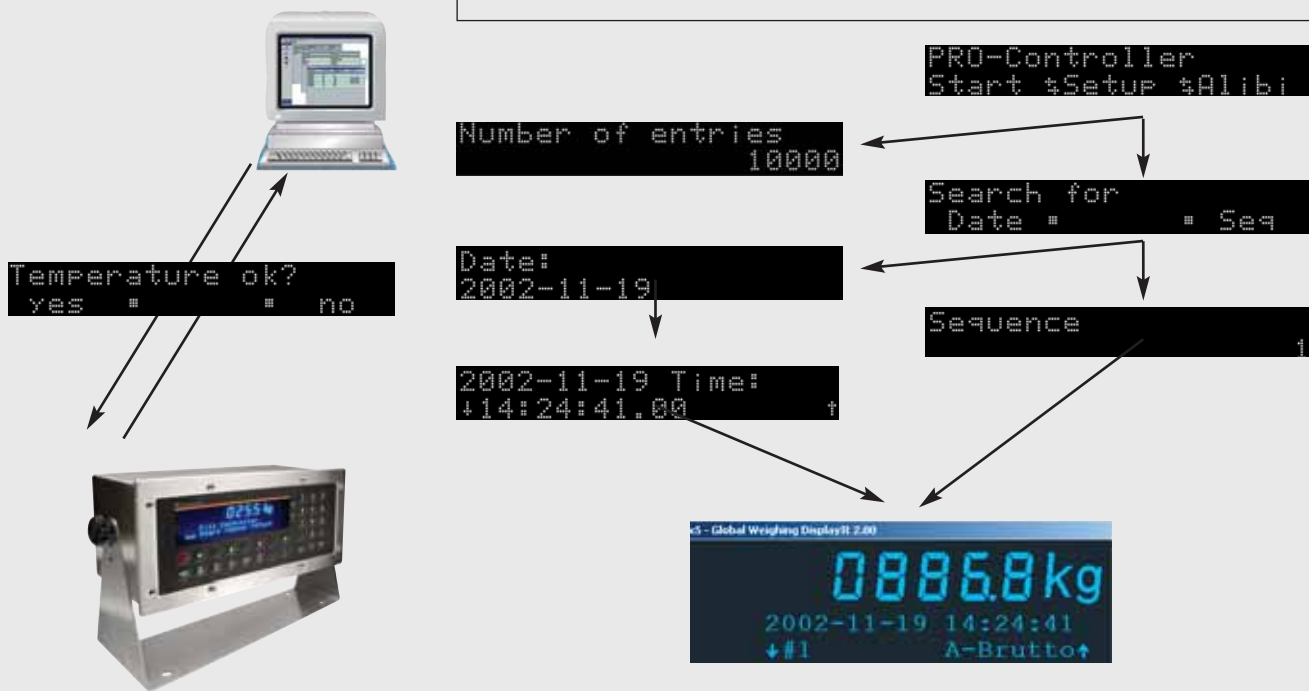
The alphanumerical keypad enables the operator to enter texture and values or to edit the indicated parameters. The standard layout of the PRO-X5 Process Controller enables the connection of an external PC-keyboard to upgrade the comfort of operation in case of data entry. Two LED indicates the weighing point with the weight shown on the display. A push button allows the switching between the weighingpoints.

The PRO-X5 Process Controller offers beside the normal indicator and weighing functions several communication features and optional an internal or external alibi-memory.
The communication channels are:
– Serial RS232│485
– Ethernet
– Fieldbus
– Interbus-S
– DeviceNet
– Profibus DP
Via communication independent and pre-defined dialogs can be realised with a host either PC or PLC.

Alibi–Memory

```
PRO-Controller
Start ⇕Setup ⇕Alibi
```

```
Number of entries
                10000
```

```
Search for
 Date ▪      ▪ Seq
```

```
Date:
2002-11-19
```

```
Sequence
                    1
```

```
2002-11-19 Time:
⇕14:24:41.00        ↑
```

```
Temperature ok?
 yes ▪      ▪ no
```

```
x5 – Global Weighing Display/R 2.00
           0886.8kg
2002-11-19 14:24:41
↓#1              A-Brutto↑
```

Terminal–function

Many weighing processes needs a dialog with the operator. The PRO-X5 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 via Ethernet or fieldbus options. These is also valid for typical indicator functions like tare or zero setting etc. 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 it 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. It needs always a RAM extension PR 1713/05 to use the alibi memory. Entries of 15000 data sets cover approx. 960 kB. During normal operation the display can show the content of 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 omniscale can be connected via the serial interface or with the omnidrive via parallel interface.

Input configuration

Functions of inputs
Tare in A, Tare out A, Set zero A ,
Tare in B, Tare out B, Set zero B
Printout active (new Data, Alibi, print)
Repeat printout active
Interlock1: only Terminal mode.
Interlock2: 'Setup' not allowed.
Keep output value at Slot 1, 2 or 3

Output configuration

Function of outputs
Digital, serial, fieldbus:
limits, stand-still, 1/4 d,
tared, Weight valid,
BCD: Gross, Net, Tare for WP A and WP B
Analog: Net, Gross for WP A and WP B

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 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 specific in- or output.

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

Slot1-3 are assigned for digital, analog and serial interfaces. Also the DIOS Master to connect a second weighing point via InterbusS can be placed here.

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.

Printouts
Two different print layouts are predefined and stored in the PRO-X5 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-X5
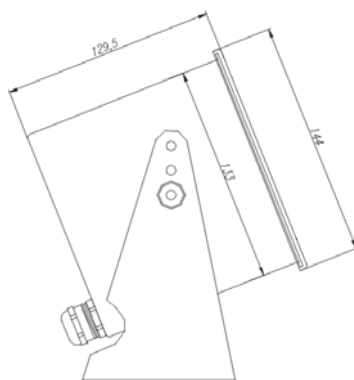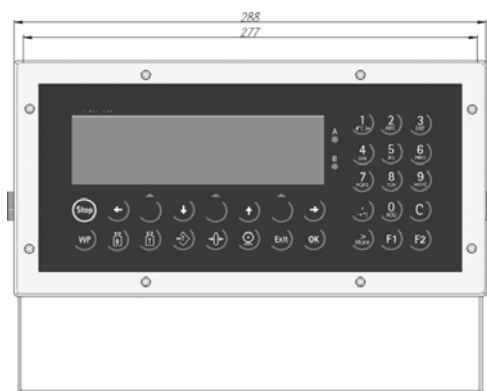
Order information

Type	Description	Order numbers
PR 5610/00	PRO-X5 230 V	9405 156 10001
PR 5610/01	PRO-X5 24 $V_{AC/DC}$	9405 156 10011
PR 5610/02	PRO-X5 ATEX 2/22+ FM Cl 1/ Div 2 (230 V)	9405 156 10021
PR 5610/022	PRO-X5 ATEX 2/22+ FM Cl 1/ Div 2 (115 V)	9405 156 10022
PR 5610/03	PRO-X5 ATEX 2/22+ FM Cl 1/ Div 2 (24 V)	9405 156 10031

Options

Type	Description	Order numbers
PR 1713/05	RAM Memory Extension 1 MB	9405 317 13051
PR 1799/99	W&M Approval Labels (1 set)	9405 317 99991
PR 8901/81	Internal Alibi Memory (Licence)	9405 389 01811
PR 8001/01	X-Family PowerTools	9405 380 01011
PR 1713/31	Extended EW Commands	9405 317 13311
PR 1792/20	AccessIt Licence	9405 317 92201
PR 1713/91	Panel Mounting kit	9405 317 13911
PR 1792/13	OPC Server Licence	9405 317 92131

Type	Description	Order numbers	SLOT 1	2	3	4
PR 1713/04	Serial interface card (RS232│485)	9405 317 13041		o	o	o
PR 1713/06	Analogue Output 0│4–20 mA	9405 317 13061	*	o	o	o
PR 1713/07	1 Analogue Output│4 Analogue Input	9405 317 13071	*	o	o	o
PR 1713/08	BCD 24 out, 1 in	9405 317 13081				o
PR 1713/12	Digital 4 In-│4 Output, Opto│Opto Output: 31 V, 25 mA	9405 317 13121		o	o	o
PR 1713/13	DIOS-Master (add. Software required)	9405 317 13131				o
PR 1713/15	Digital 4 In-│4 Output, Opto│Relais Output: 31 V, 1 A	9405 317 13151		o	o	o
PR 1713/17	Digital 6 In-│8 Output, Opto│Opto Output: 31 V, 25 mA	9405 317 13171		o	o	o
PR 1721/11	Profibus-DP interface	9405 317 21111				o
PR 1721/12	Interbus-S interface	9405 317 21121				o
PR 1721/14	DeviceNet interface	9405 317 21141				o
PR 1713/14	Ethernet interface, 10 MBaud	9405 317 13141				o

o = optional, x = included in delivery
The documentation will be delivered on a CD, a paper version can be ordered separately.
* max. 1 Analogue Output Card
*** The temperatur range for operation can be extended if the number of installed option cards is limited. (Temperature specification on request.)

Power supply
115/230 V_{AC} 50-60 Hz or 24 $V_{AC/DC}$
Max. 14,5 W/19 VA

Housing
Stainless steel DIN 1.43 01 (B.S. 304)
Ingress Protection: IP65 eq. to (NEMA: 4X)

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

Interface
Bi-directional serial interfaces RS232;
user selectable protocols: Keyboard connector, Remote Display, Printer, XON, Jbus, XBPI, ModBus, Dust 3964R

Linearity
< 0.007 %

Resolution
Max. 330,000 div. (internal) $\hat{=}$ 0.11 µV/d
Usable stepwidth 0.4 µV/d

Accuracy
5000 e class III acc. to EN 45 501;
OIML R 76 min. verification interval 1.0 µV/e;

Load cell input
6- or 4-wire
Load cell supply: 12 V
Impedance: min. 75 Ω,

Measuring principle
Ratiometric integrating A│D converter
Conversion time: 50 ms
Update rate: 50 ms to 2 s
Digital filter: 0.1 to 5 Hz

Input signal range
Net range 2.4 mV to 36 mV
(for 100 % maximum capacity)
Deadload range: 0...33.6 mV

Temperature influence
Live zero Tk_o: <0.1 µV/K RTI
Span TK_{spn}: <0.006 %/10 K

Environmental conditions

Temperatur range***
Operation: -10 °C to +40 °C
Storage: -40 °C to +70 °C

Conformity:
NAMUR, CE
ATEX Zone 2/22
FM Class 1│Div2

Weight
net: 3.5 kg
gross: 5 kg