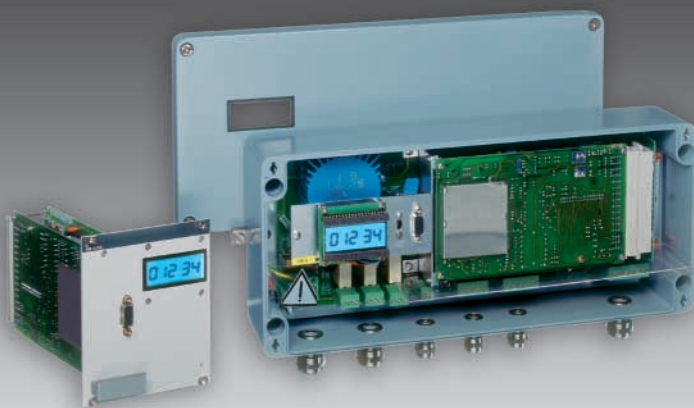




PR 1710, PR 1711

Digital weighing transmitter



- Accuracy of 3000 e class III (EN 45501)
- Serial communication interface (RS 232 or TTY or RS 485/422)
- Option: convenient 5-digit LCD display
- Configurable analogue output 0/4-20 mA
- 3 configurable inputs, 3 configurable outputs
- Userfriendly, menu-prompted configuration without separate SW
- Calibration without weights (Smart Calibration)
- W&M approval; galvanic isolation of the measuring signal

Product Profile

You are looking for integral process automation and you want to integrate scales in your system. These transmitters easily meet the highest weighing requirements. Whether your application requires analogue or digital signals via bus systems, these transmitters cover nearly all needs for modern automation processes. For local process control you just choose the PR 1710/ PR 1711 with LCD display.

For hazardous area applications we provide an intrinsically safe version with load cell connection with W&M approval for zone 1 and one application for zone 2 with W&M approval as well.

To enable easy linkage to automation systems, you have the choice between different serial communication lines such as RS 232 or TTY or RS 485/422. Furthermore, several common bus protocols are already implemented.

Description

The transmitters PR 1710/ PR 1711 are available in single Euroformat for 19" racks or in an IP 65 field version. Load cells are connectable by 6-wire technique.

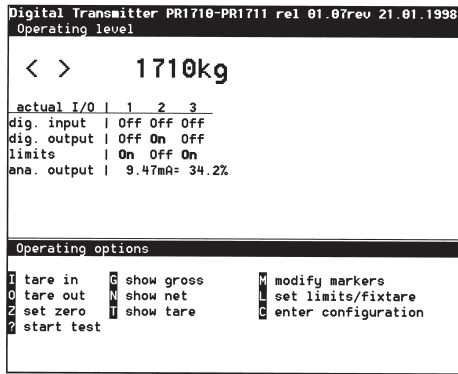
To reduce the possibility of EMI, all inputs and outputs are galvanically isolated. Mechanical vibrations of the weighing structure can be effectively suppressed by means of an analogue filter. Additionally, a configurable software filter smoothes the distortion of the measuring signal which occurs under sudden load variations.

The digital transmitter has a userfriendly, menu-prompted setup. A separate serial line (RS 232) is accessible via standard SUB-D connector and allows calibration and configuration by a PC or terminal (VT 100-compatible).

These instruments allow calibration without weights for fast and easy commissioning. All calibration and configuration parameters are stored in an EEPROM to avoid the loss of data in the case of a power breakdown.

Benefits

- Improved process performance
- Consistent results
- Higher up-time
- Lower maintenance costs
- High Flexibility



Main screen showing the prompts of the operating level menu

PR1710

Design: Single Euroformat

Height: 3 HE (128.4 mm)
Width without display: 10 TE (50.5 mm)
Width with display: 21 TE (106.3 mm)

Connector type

3*16 pole connector
(IEC I30-14, DIN 41612)
Standard matching plug: e. g. with solder eyelet from Schroff (69001-712)

Supply voltage

18 to 33 V_{DC}, +/- 15 V_{DC} (+/- 6.6 %)
or 24 V_{AC} (+10/-15 %)
Power consumption: 7 W, 9 VA

Display (option)

Display: 5 digits 7-segment LCD
Height: 10.2 mm
Viewing area: 45.7 x 17.7 mm

Digital inputs

3, optodecoupled, 10 to 31 V_{DC}

Digital outputs

3 optodecoupled max.
31 V_{DC}/40 mA

PR 1711

Design: Field housing

Protection class IP 65

Connection

Via 6 cable glands

Supply voltage

115/230 VAC (+10/-15 %)
Power consumption: 10.5 VA
Optional on request:
18 to 33 V_{DC}, 24 V_{AC} (+10/-15 %)

Display

Display: 5 digits 7-segment LCD
Height: 10.2 mm
Viewing area: 45.7 x 17.7 mm

Digital input

3, optodecoupled; 10 bis 31 V_{DC}

Digital outputs

3, via relays; contact duty:
250 V_{AC} / 5 A
250 V_{DC} / 0.3 A
100 V_{DC} / 0.5 A
30 V_{DC} / 1.5 A
30 V_{DC} / 5 A

PR 1710/1711

Configuration/Calibration

Via PC or terminal, VT 100 compatible

Service interface

9-pole D-SUB connector RS 232,
9.6 kB for PC or terminal;
Functions: calibration, configuration,
monitoring

Communication interface

RS 232, RS 422/485 or current loop
selectable with order
Maximum baudrate: 19.2 kB
(4.8 kB for CL)

Protocols

EW-Bus, remote display, Modbus/Jbus, DUST
3964R, Siemens 3964R-RK512

Analogue output

0/4 to 20 mA, max. burden 500 Ω;
configurable for various weights
(e.g. B, N, T, D)
Update rate: proportional to measuring time
Resolution: 12 bit

Accuracy class

3000 e class III (EN 45501, OIML R76)

Load cell connection

All strain gauge load cells;
6 or 4 wire connection possible

Load cell supply

12 V or 7 V_{DC}, selectable

Load impedance

Min. 87.5 Ω;
e.g. 6 load cells with 600 Ω each or
4 load cells with 350 Ω each

Input signal

Total range: 0 to 36 mV
1,2 μV/e for W&M applications
0,4 μV/e for industrial applications
Dead load range:
36 mV – (max. span) Span and deadload
adjustment via software during calibration

Measuring principle

A/D conversion: integrating converter,
ratiometric to LC supply
Conversion rate: 50 ms
Measuring time: 50 ms; 100 ms or multiples

Resolution (internal)

0.16 μV / count;
> 75,000 counts for 12 mV
> 210,000 counts for 36 mV

Analogue filter

Active Butterworth, 40 dB/decade,
2 Hz cut-off frequency

Linearity

< 0.007 %

Temperature influence

Live zero TKo < 1 μV / 10 K
Span Tkspn < 0,006 % / 10 K

Net weight/shipping weight

PR 1710/xx: 0,7 kg / 1,2 kg
PR 1711/xx: 4,8 kg / 6,1 kg

Approvals and certificates

CE
EC type approval D99-09-002
PTB02ATEX2058II(2)G[EEExib]IIB/C
TÜV 98 ATEX1339XII3G ExnAII4
(Zone 2 for 1710)
TÜV 98 ATEX1340XII3G ExnAII4
(Zone 2 for 1711)

Environmental conditions

Vibration

According to IEC 68-2-6, Test Fc

Electrostatic discharge

According to IEC 1000-4-2, Level 3

Electromagnetic fields

According to IEC 1000-4-3, Level 2
26 MHz bis 1 Ghz

Supply line

According to IEC 1000-4-4, Level 3

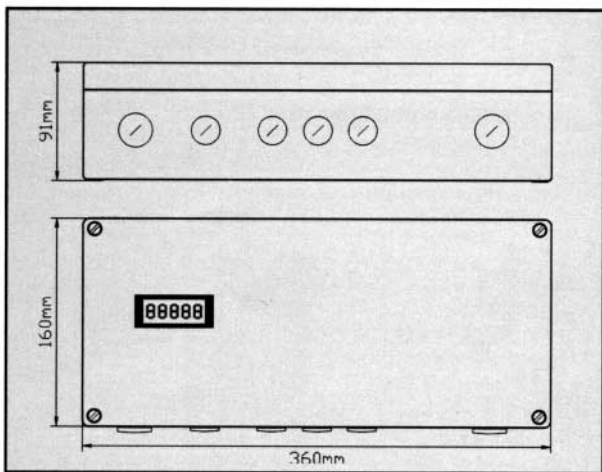
Radio interference

According to EN 55011

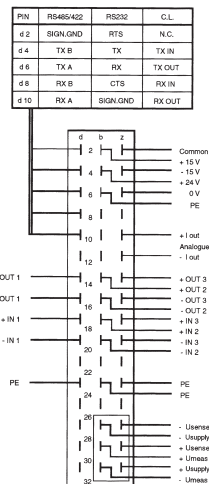
Temperature range

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

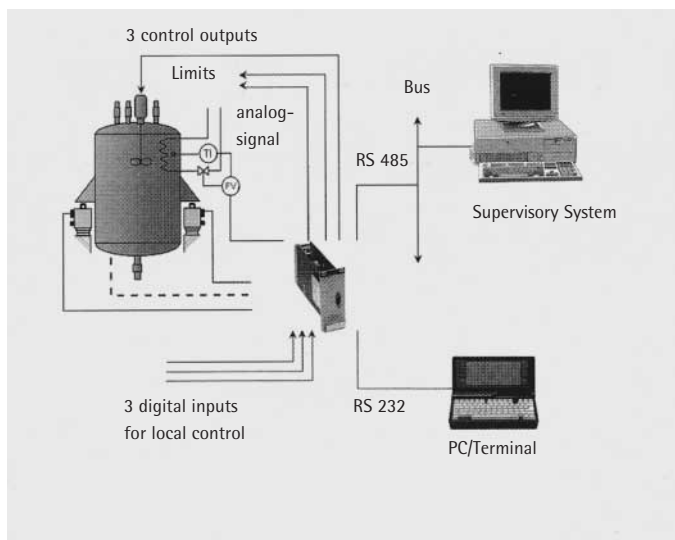
PR 1711



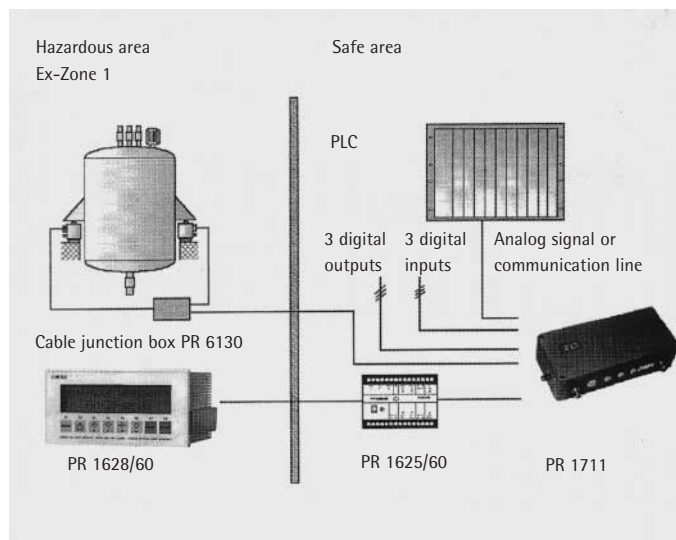
PR 1710



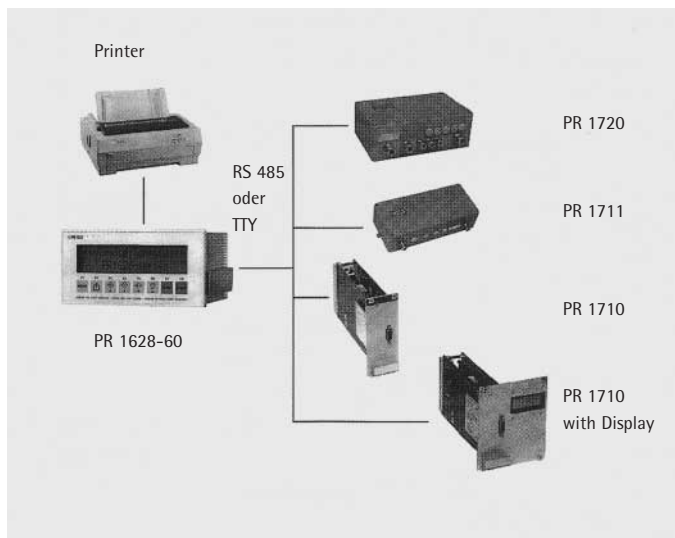
Dimensions in mm



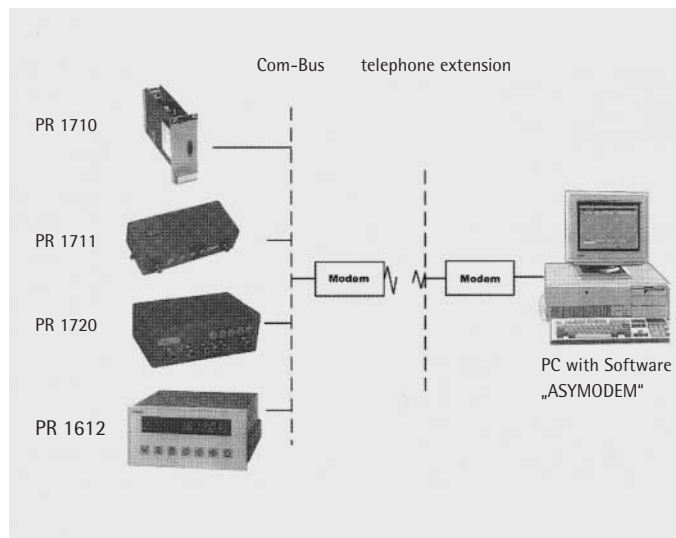
Typical application using a PR 1710/xx



Typical application in a hazardous area using PR 1711 with Ex-remote display PR 1628/60

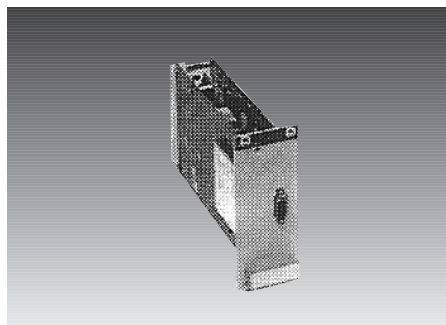


Control of several Pr 1710/ PR 1711 transmitters via one PR 1628 remote display

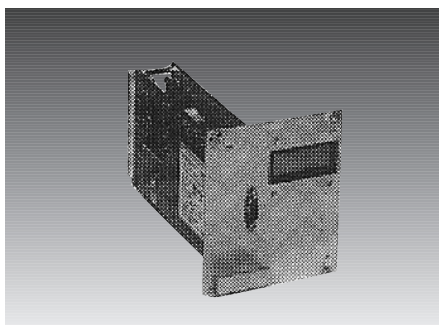


Remote control via ASYMODEM software (up to 16 instruments)

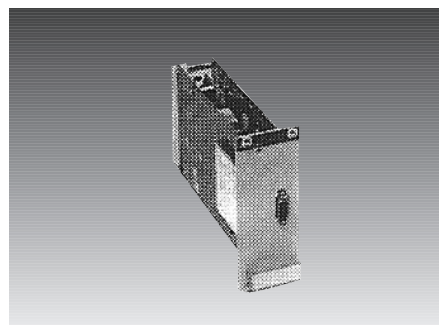
Order numbers



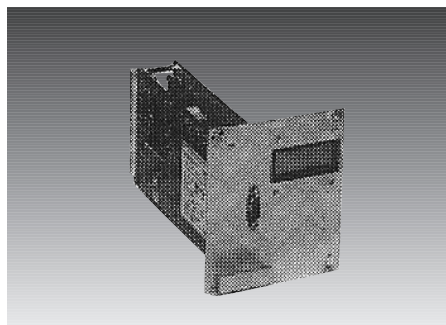
Single Euroformat: PR 1710 without display
 PR 1710/01 (with current loop)
 PR 1710/02 (with RS 232)
 PR 1710/04 (with RS 422/485)



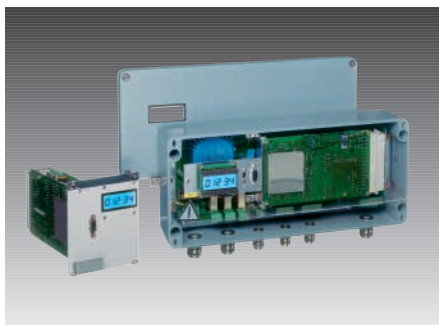
PR 1710 with display
 PR 1710/11 (with current loop)
 PR 1710/12 (with RS 232)
 PR 1710/14 (with RS 422/485)



PR 1710 (Ex) intrinsically safe without display
 PR 1710/61 (with current loop)
 PR 1710/62 (with RS 232)
 PR 1710/64 (with RS 422/485)



PR 1710 (Ex) intrinsically safe with display
 PR 1710/71 (with current loop)
 PR 1710/72 (with RS 232)
 PR 1710/74 (with RS 422/485)



Fieldhousing PR 1711 (Ex) intrinsically safe transmitter with display
 PR 1711/61 (with Current loop)
 PR 1711/62 (with RS 232)
 PR 1711/64 (with RS 422/485)

Order information

Type	Description	Order numbers
PR 1710/01	Digital Weighing transmitter (TTY)	9405 117 10011
PR 1710/02	Digital Weighing transmitter (RS 232)	9405 117 10021
PR 1710/04	Digital Weighing transmitter (RS 422/485)	9405 117 10041
PR 1710/11	Digital Weighing transmitter with display (TTY)	9405 117 10111
PR 1710/12	Digital Weighing transmitter with display (RS 232)	9405 117 10121
PR 1710/14	Digital Weighing transmitter with display (RS 422/485)	9405 117 10141
PR 1710/61	Intrinsically safe digital weighing transmitter (TTY)	9405 117 10611
PR 1710/62	Intrinsically safe digital weighing transmitter (RS 232)	9405 117 10621
PR 1710/64	Intrinsically safe digital weighing transmitter (RS 422/485)	9405 117 10641
PR 1710/71	Intrinsically safe digital weighing transmitter with display (TTY)	9405 117 10711
PR 1710/72	Intrinsically safe digital weighing transmitter with display (RS 232)	9405 117 10721
PR 1710/74	Intrinsically safe digital weighing transmitter with display (RS 422/485)	9405 117 10741
PR 1711/61	Intrinsically safe digital weighing transmitter (TTY)	9405 117 11611
PR 1711/62	Intrinsically safe digital weighing transmitter (RS 232)	9405 117 11621
PR 1711/64	Intrinsically safe digital weighing transmitter (RS 422/485)	9405 117 11641

Specifications subject to change without notice.
 Printed in Germany.
 n/sart • C
 9498 717 10001
 Version 07.2005

Sartorius Hamburg GmbH
 Meiendorfer Straße 205
 22145 Hamburg, Germany
 Tel. +49.40.67960.303
 Fax +49.40.67960.383
www.sartorius.com