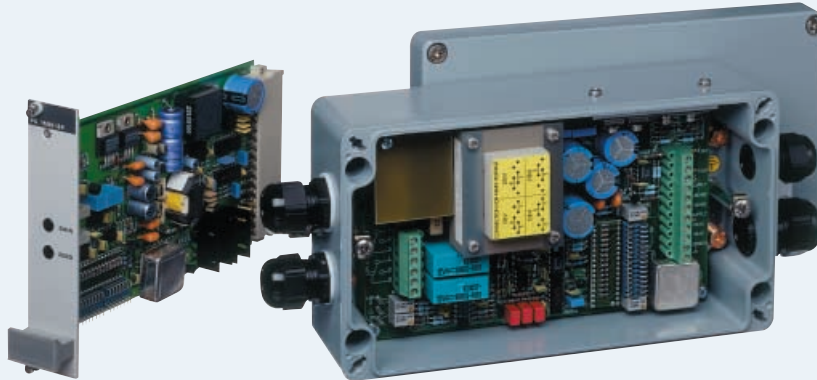


# PR 1590 PR 1591 Series Analog Weight Transmitters

Single Euroformat, IP 65 housing with setpoints

global weighing technologies



- High precision analog transmitter for all kinds of industrial weighing, batching and level control application
- Standard analog outputs 0–10 V and 0/4–20 mA
- 6-wire load cell interface
- Power supply:  
24 V<sub>DC/AC</sub> according to NAMUR  
±15 V<sub>DC</sub>; 110/220 V<sub>AC</sub>
- Intrinsically safe versions (galvanic isolation) CENELEC-approval [EEx ib] II B/C
- Simple to commission and to calibrate
- Adjustment easily accessible via the front
- No interaction between zero and span
- Mechanically and electrically compatible to former versions PR 1590/6x and SGT 750
- Longterm and temperature stable

## APPLICATION

The analog transmitters of the PR 159x series from Global Weighing have been specially designed for use in industrial environment, and are particularly suited for applications with hazardous areas (zone 1) like chemical, petrochemical and food industries.

The applications range from level control and simple weighing to complex applications e.g. mixing and filling stations, in conjunction with PLCs, computers or other supervisory systems.

The 6 wire technique enables all strain gauge load cells to be connected to the weight transmitter without any loss in accuracy resulting from temperature effects on the load cell cable.

The influence of mechanical vibrations on the weight signal is suppressed by an efficient filter circuitry. The analog output signals can be used for indication or as input signals for PLCs or other supervisory systems. The current signal may be transmitted over long distances without significant loss of accuracy.

## Versions available

- PR 1590/24 ±15 V or 24 V<sub>DC/AC</sub> according to NAMUR
- PR 1590/66 intrinsically safe version
- PR 1591/00 field housing (IP 65) two relays for setpoints
- PR 1591/10 field housing (IP 65) with display two relays for setpoints
- PR 1591/60 intrinsically safe version, field housing (IP 65) two relays for setpoints



## TECHNICAL DATA

### Approvals

PTB / CENELEC [EEx ib] II B/C  
for PR 1590/66 and PR 1591/60

### Load cell types

All strain gauge load cells or any other type of mV source with linear output

### Load cell connection

6-wire-technique recommended  
4-wire-technique possible  
Load cell supply: short circuit proof

### Span adjustment

Coarse adjustment by 8-position  
DIL-switches  
Fine adjustment ( $\leq 0.05\%$ ) by potentiometer; range approx  $\pm 2.5\%$ .

### Zero point adjustment

Coarse adjustment by 7-position  
DIL-switches  
Fine adjustment ( $< 0.1\ \mu\text{V}$ ) by potentiometer; range approx  $\pm 3.5\%$ .  
No interaction between span and zero.

### Analog Filter

Active 2-pole filter with 1 Hz Cut-off frequency. Filter can be switched off.

### Analog outputs

Voltage:  $0-10\ \text{V}_{\text{DC}}$   
max.  $5\ \text{mA}/\text{min. } 2\ \text{k}\Omega$   
Current:  $0/4-20\ \text{mA}_{\text{DC}}$   
max.  $10\ \text{V}/\text{max. } 500\ \Omega$   
Galvanic isolation between output signal and power supply (not at PR 1590/00).

### Setpoints (PR 1591/xx)

2 setpoints with potential-free change over each contact.

Adjustable with resolution of  $\pm 0.5\%$ .

Setting:  $0-100\% = 0-10\ \text{V}$

> Lim 1 active  
(with negative hysteresis)

> Lim 2 active  
(with positive hysteresis)

Contact rating  $250\ \text{V}_{\text{AC}}$   
 $4\ \text{A}$   
 $100\ \text{VA}$

Derating for DC  $250\ \text{V}_{\text{DC}} / 0.4\ \text{A}$   
 $100\ \text{V}_{\text{DC}} / 0.55\ \text{A}$   
 $50\ \text{V}_{\text{DC}} / 1\ \text{A}$   
 $30\ \text{V}_{\text{DC}} / 4\ \text{A}$

Spark suppression recommended.

### Display (PR 1591/10)

3 1/2 digit 7-segment LCD  
Height: 12.7 mm  
Range: adjustable up to 1999  
Units of weight: kg/t by stick-on foil  
Decimal point: possible positions  
0000 - 0.000 - 00.00 - 000.0

## CONNECTIONS

### PR 1590/xx:

All connections are made via 48 pole connector; DIN 41612, Type F, acc to IEC 130-14, e.g. Global Weighing Type F 068.II

### PR 1591/xx:

All connections are made via screw terminals, suitable for 2.5 mm wire diameter. Cable input via cable glands, which are upon delivery closed with a screw cap.

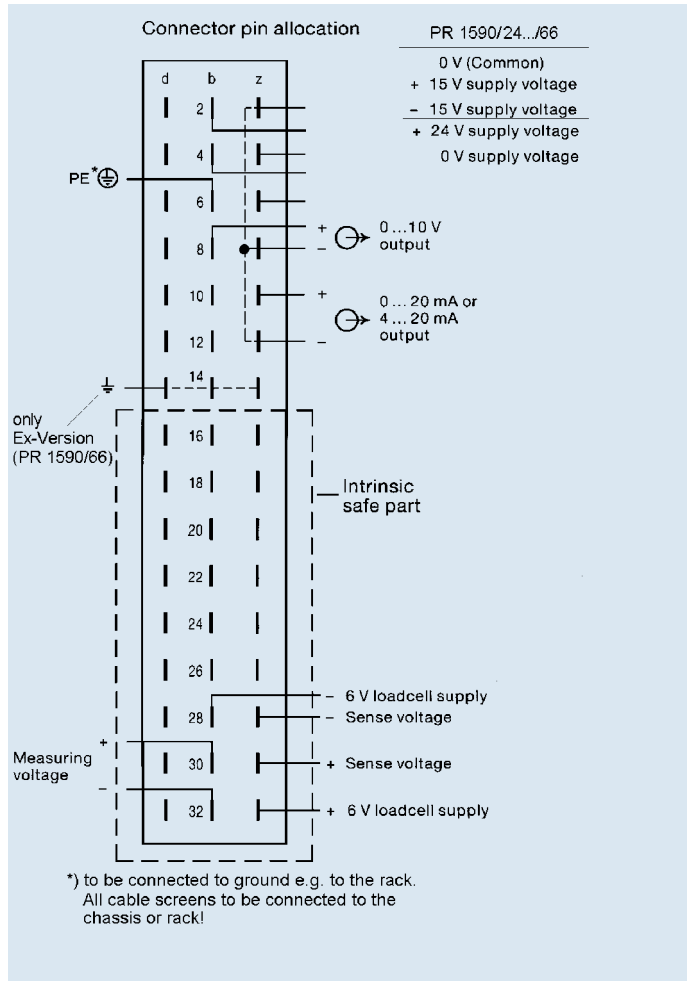
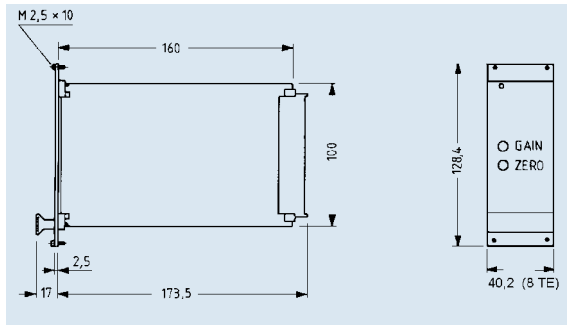
Weight transmitter	PR 1590/24	PR 1590/66	PR 1591/00	PR 1591/10	PR 1591/60
Accuracy class	0.05 %		0.1 %		
Linearity	0.01 %	0.1 %	0.01 %		0.05 %
Zero stability	0.09 % / 10 K	0.14 % / 10 K	<0.17 % / 10 K		<0.23 % / 10 K
Span stability	0.05 % / 10 K	0.13 % / 10 K	<0.10 % / 10 K		<0.18 % / 10 K
Ranges span	2.5-25 mV	2.5-25 mV	2.5 - 25 mV		2.5-25 mV
Ranges deadload	0-15 mV	0-15 mV	0-15 mV		0-15 mV
Load cell supply	12 V	12 V 7 V	12 V		12 V
Minimum impedance (resulting)	75 $\Omega$	150 / 87 $\Omega$	100 $\Omega$		150 $\Omega$
Supply voltage (nominal)	24 $\text{V}_{\text{DC/AC}}$ $\pm 15\ \text{V}_{\text{DC}}^*$			110/128/220/238 $\text{V}_{\text{AC}}$	
Voltage tolerances (Operating range)	DC: 18 ... 33 V AC: 18 ... 28 V			15 % ... + 10 % 48 Hz to 62 Hz	
Power consumption (at nominal voltage)	7.5 W / 11 VA	5.5 W / 8.5 VA		11 W max. / 20 VA max.	
Isolated output (signal / supply)			yes		
Control outputs	no	no	2 relays	2 relays	2 relays
Additional features		for Ex-use	-	Display built-in	for Ex-use
Net weight	0.23 kg	0.34 kg		2.6 kg	3.9 kg
Shipping weight	0.50 kg	0.65 kg		3.6 kg	5.1 kg
Operating temperatur.	-10 °C to +55 °C			-0 °C to +55 °C	- 10 °C to +55 °C
Storage temperature	-40 °C to +70 °C			-20 °C to +60 °C	-40 °C to +70 °C
Packing dimensions W x D x H in mm	240 x 160 x 70		460 x 250 x 220		510 x 340 x 260

Analog Weight Transmitters  
 Single Euroformat  
 IP 65 housing with setpoints

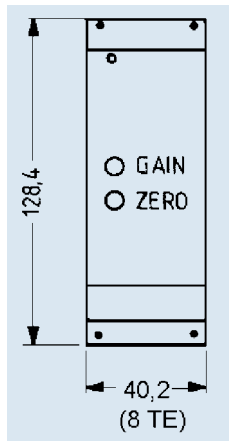
PR 1590 (Single Euroformat)

PR 1590/xx Dimensions in mm

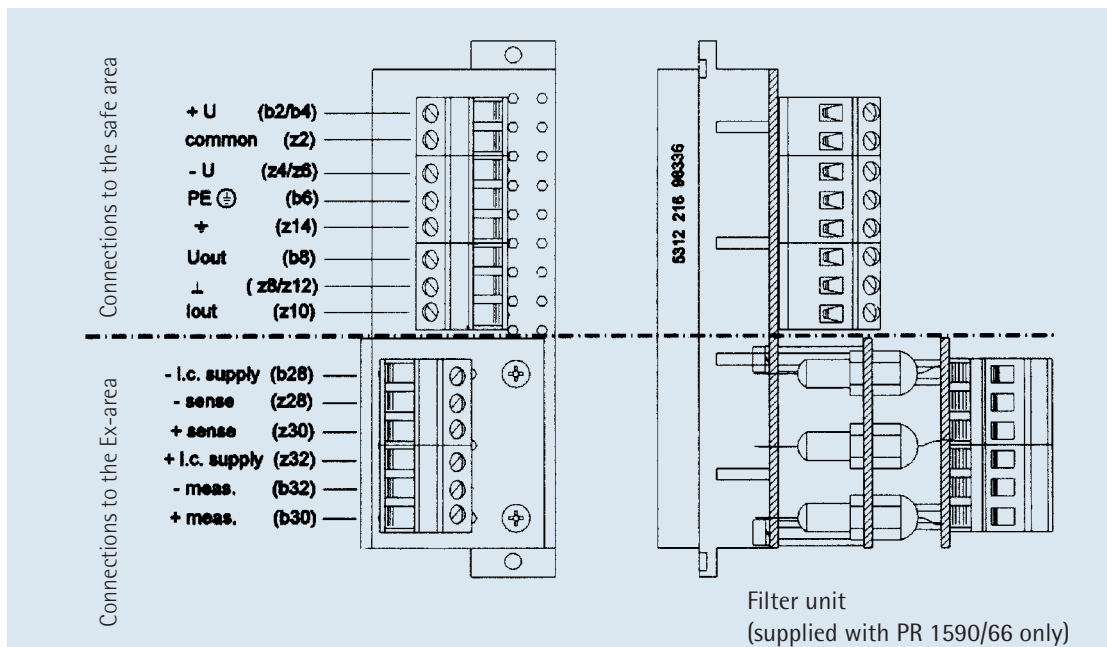
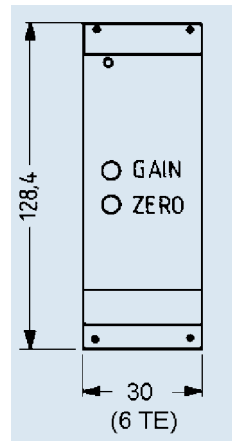
PR 1590/xx Connecting Diagram



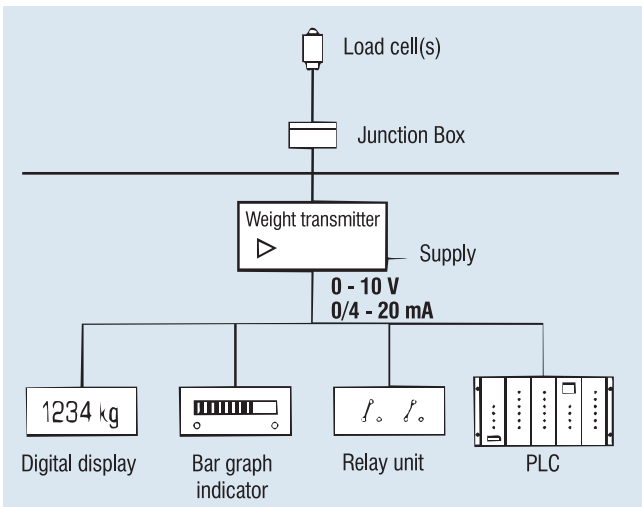
PR 1590/66



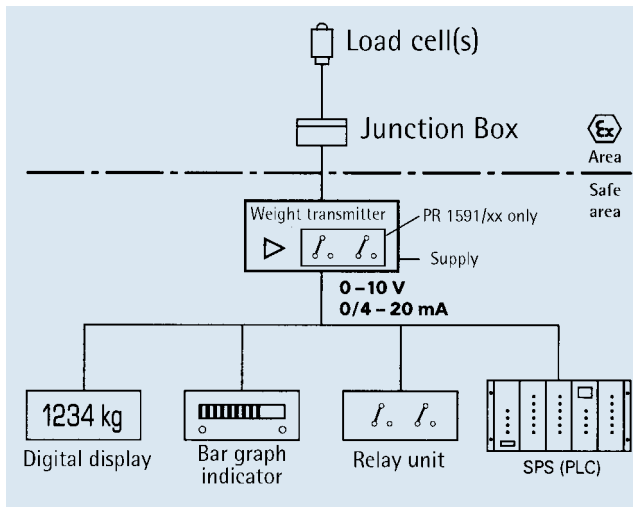
PR 1590/24



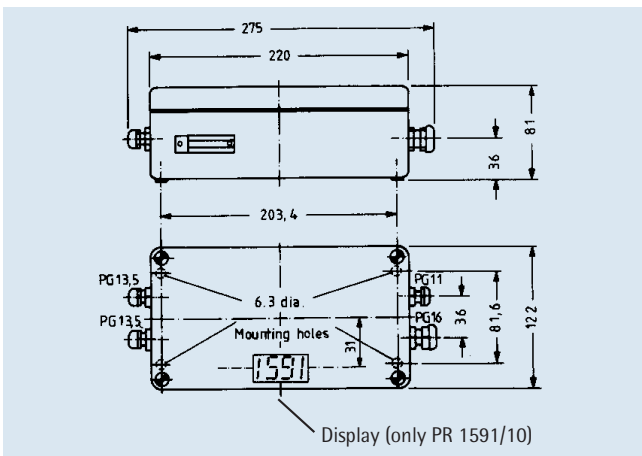
PR 1591/0 ... /10 and PR 1590/24  
Application diagram



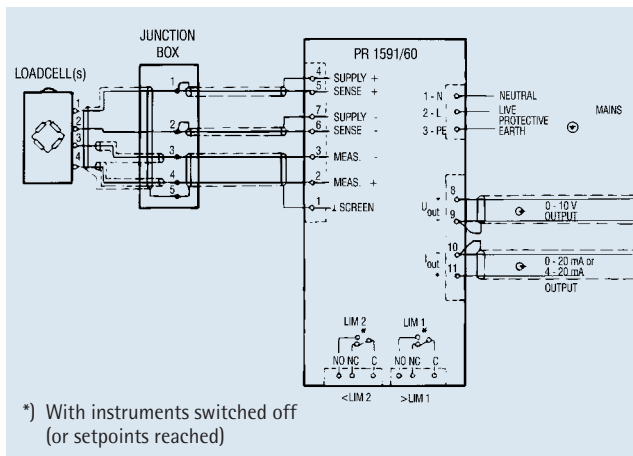
PR 1591/60 and PR 1590/66  
Ex-Application diagram



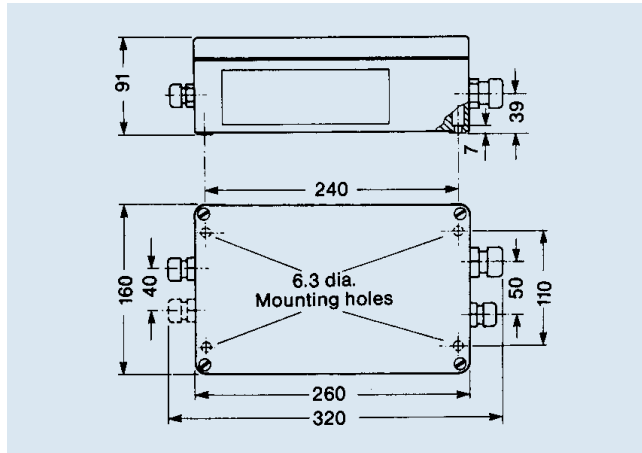
PR 1591 (IP65 housing) PR 1591/00



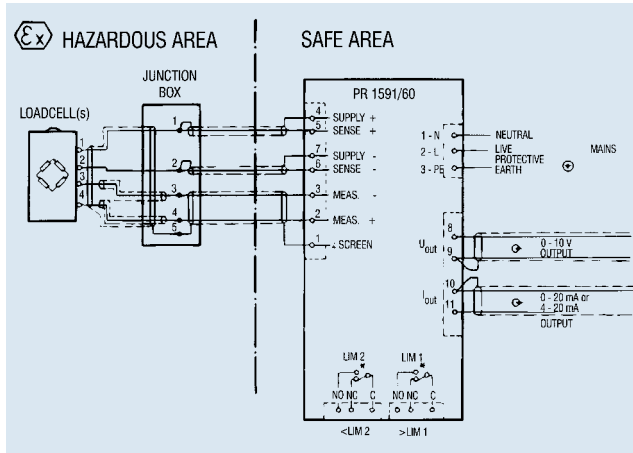
PR 1591/00 and PR 1591/10 Connection diagram



PR 1591/60



PR 1591/60 Connection diagram



Autoryzowany przedstawiciel GWT GLOBAL Weighing Technology □

□  
P.H.U. WEGA Andrzej Zubka □  
80-299 Gdansk Osowa □  
ul. Kasjopei 30A □  
□  
Dział handlowy □  
Tel. (058) 554-52-29 □  
Fax. (058) 522-90-05 □  
e-mail: wega@gd.onet.pl □  
http://www.phu-wega.pl



GWT Global Weighing Technologies GmbH  
Meiendorfer Straße 205  
D-22145 Hamburg, Germany

Tel. (+49) 40 679 60-303  
Fax (+49) 40 679 60-383  
www.global-weighing.com

