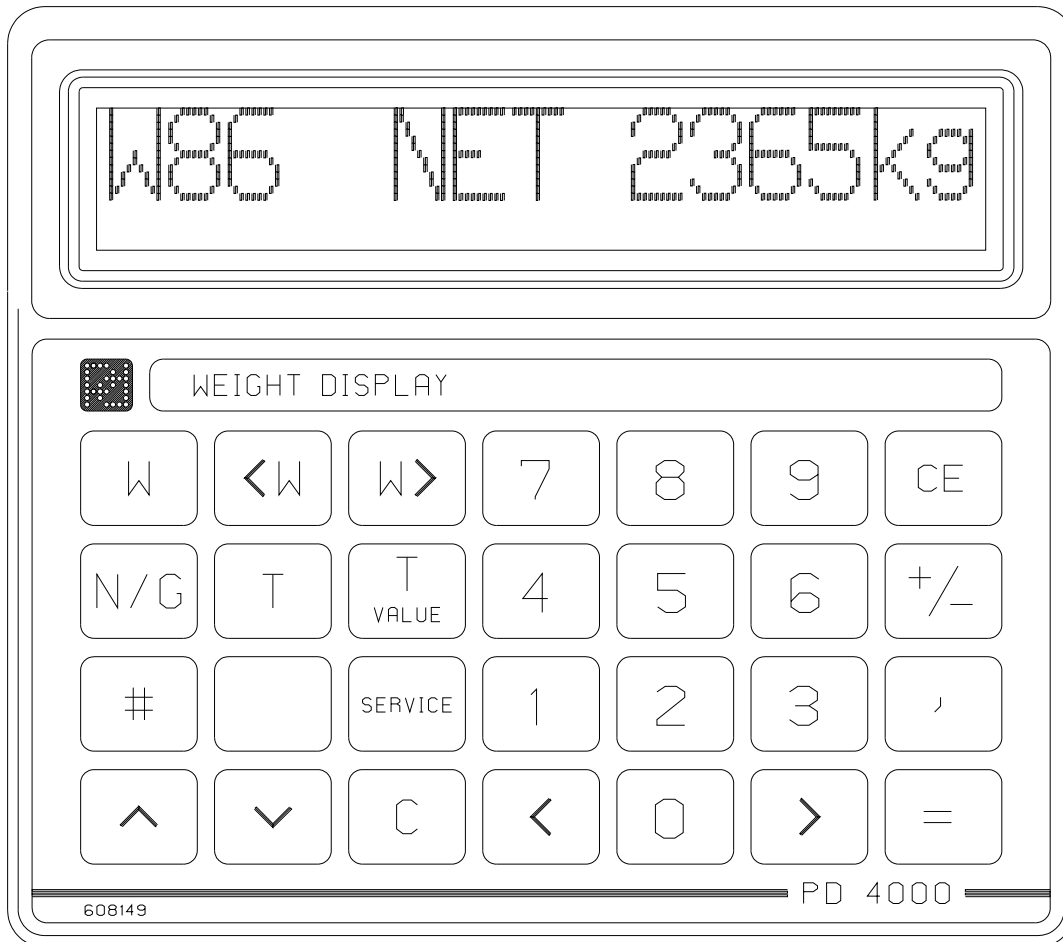


PD 4000/3230 WEIGHING SYSTEM



490 033 02

Weight Display, PD 4000**Features**

- Pattern approved weighing system, of class III/III
- Simultaneous supervision of up to 99 weight transmitters
- Automatic calculation of full-scale & zeropoint for connected weight transmitters
- Up to ten - 2mV/V load cells per transmitter
- Menu based configuration facilities
- Tamper protection
- Consecutive or direct selection of weight transmitter readings
- Comprehensive error detection and alarm functions
- Gross, Net and Tare displays
- Completely sealed construction
- P-NET Fieldbus communication, EN50170 vol. 1
- Real time clock
- EMC approved (89/336/EEC)
- Vibration approved (IEC 68-2-6 Test Fc)

Introduction

The pattern approved weighing system has been designed to enable a wide number of PD 3230 weight transmitters to be monitored and supervised from a single or a number of distributed PD4000 Display controllers. The PD4000 controllers also provide the ability to modify data and to select various functions within the weight transmitters.

A total of up to 99 Weight transmitters and 32 Weight Displays may be included within an approved system. Weight Displays are connected to Weight Transmitters via the P-NET Fieldbus system

The keys on the Weight Display consist of both numerical and function types. The primary data from a selected weight transmitter e.g. Gross weight or Net weight, may be selected and displayed by pressing a single function key.

Configuration and calibration of any Weight Transmitter and the set-up of the Weight Display, can all be performed using the SERVICE menu.

The PD 3230 Weight Transmitters are self contained weighing modules, which are mounted in a separate distributed boxes. Load cells are connected directly to the transmitters. For parallel connection of load cells to a transmitter, an optional PD810 junction box may be used.

The calibration of the load cells, zeropoint adjustment, full-scale adjustment and other relevant verification data ("e", "max", "min"...), are stored within the Weight Transmitter. After the sealing of the system, none of this data can be changed. The calibration and verification data will remain unchanged after a power failure.

System Description

The Weight Display utilizes the PD 4000 P-NET Controller. The PD 4000 is a standard display and controller element. To enable a controller to operate as a Weight Display, a special program is down loaded into the controller's FLASH memory from a PC.

The Controller is completely sealed, and is therefore suitable for use in any industrial environment. The compact design and the outstanding environmental features of the Controller, makes it exceptionally suitable for mounting on machines and for use in mobile applications.

The Weight Transmitter supervises the connection between the transmitter and the load cells, and registers possible errors occurring within the transmitter, whereas the Weight Display supervises the communication on the P-NET fieldbus.

If an error occurs within the transmitter, a code is generated and included within the response transmission from the module. This code is interpreted and displayed in clear text on the bottom line of the Weight Display, eg. "Overload in W: 01"

Display

The display is a fast graphics LCD, providing a wide viewing angle. The display has a resolution of 150 by 20 pixels, enabling a variety of character fonts and graphics to be used, e.g. 3 lines with 25 characters each. The viewing area is 120 mm * 19.2 mm. An LED back light is incorporated. The display is covered by non-reflecting glass.

Keyboard

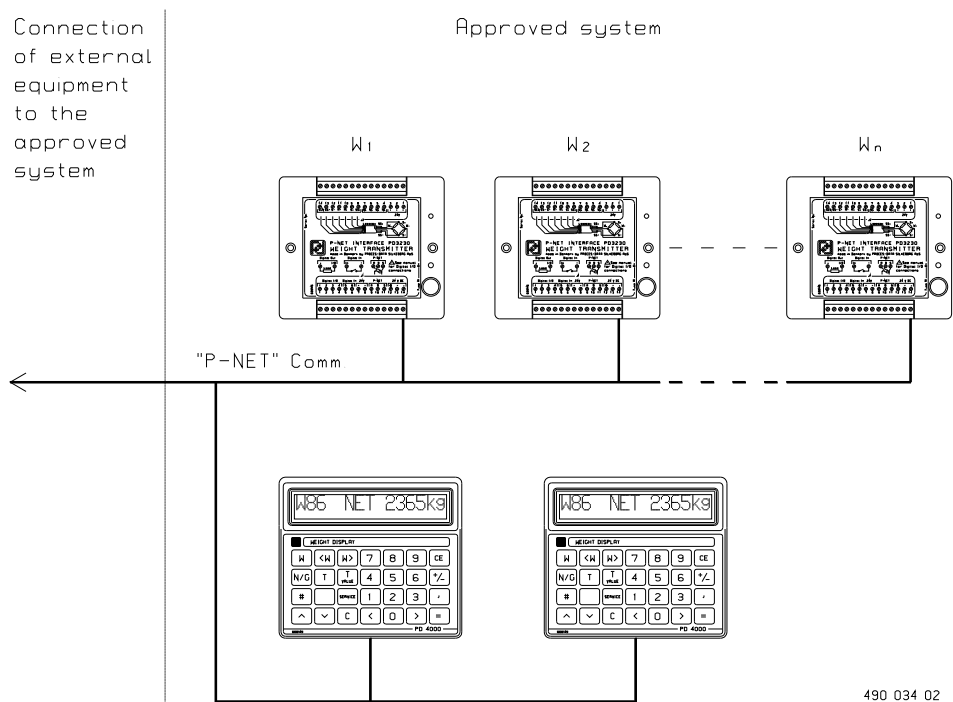
The keyboard has a membrane click-switch foil, with metal domes. It has 28 available keys. The Flowmeter-Display application includes a purpose designed, self adhesive keyboard overlay, where the key function markings have been adapted specifically for the application. This promotes an ideal operator/instrumentation interface.

Extended Applications

Within a P-NET system, Weight transmitters act as slaves, which convert the input signals from connected load cells into scaled engineering units. The Display units act as masters, which gather and display the data from the connected weighing modules.

There is no restriction on the number or proportion of Weight transmitters and Weight Displays within an approved system, as long as 99 slaves and 32 masters is not exceeded. It is also possible to connect additional equipment to P-NET, which is not included within the approved system. This provides the ability to collect, log, print, (eg. on a PC), information which has been processed by distributed Weight modules. The system is designed such that connecting additional equipment cannot influence the integrity of the approved system.

A typical Weighing System is shown below



490 034 02

Weighing system

SYSTEM SPECIFICATIONS**Electrical specification for P-NET:**

| | |
|-----------------|---|
| Bus structure: | Physical ring without termination. |
| Medium: | Shielded twisted pair cable with min. .22 mm ² area conductors |
| Impedance: | 100-120 ohms. |
| Suitable cable: | TWINAX IBM 7362211 105 ± 5 ohm, 51 pF/m. |
| Bus length: | Max 1200 m (RS 485). |

System Power:

| | | |
|-----------------|------|--------|
| PD4000 & PD3230 | nom. | 24.0 V |
| | min. | 20.0 V |
| | max. | 28.0 V |
| Ripple : | max. | 5 % |

Ambient Temperature:

| | |
|-------------------------|-----------------|
| Operating temperature : | -25 °C to 70 °C |
| Storage temperature : | -40 °C to 85 °C |

PD 4000 Controller, Mechanical:

| | |
|---------|----------|
| Width: | 144.0 mm |
| Height: | 127.0 mm |
| Depth: | 52.5 mm |

Materials

| | |
|----------|-----------------------------|
| Case: | Black NORYL GFN |
| Overlay: | Polycarbonate |
| Sealing: | IP68 @ front panel mounting |

Indication and signals:

| | |
|--------------------------|------------------------|
| Maximum resolution: | 3,000 |
| Excitation voltage: | 5 volts alternating DC |
| Maximum measuring range: | 11 mV |
| Sensitivity: | 2 mV/V |
| Min. load cell impedance | 60 ohm |
| Max. load cell impedance | 1K ohm |

Approvals:**Type Approval:**

The system has been pattern approved in accordance with EN 45501 for non-automatic weighing systems.
Type approval No. TC 2409

Environmental Approvals:

Complies with EMC-directive No: 89/336/EEC

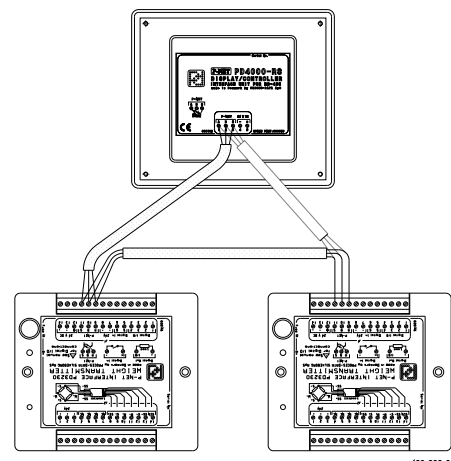
Generic standards for emission:

| | |
|---|------------|
| Residential, commercial and light industry: | EN 50081-1 |
| Industry: | EN 50081-2 |

Generic standards for immunity:

| | |
|---|------------|
| Residential, commercial and light industry: | EN 50082-1 |
| Industry: | EN 50082-2 |

Vibration (sinusoidal): IEC 68-2-6 Test Fc

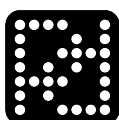
System Connections

Wiring diagram for PD4000/PD3230

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