



PD 630 Load Cell Transmitter

- Ratiometric bridge sensor input with sensor supply
- Six wire connection with shield for sensors
- Fits both low and high sensitivity sensors
- Pt100/Pt1000 four wire sensor input
- Galvanic isolated analog inputs
- Digital Source output for nominal 24 volt
- Fast digital input with frequency measurement
- P-NET via Light-Link and via cabled RS485
- Advanced self-testing and overload protection
- Wide Supply Range and Low Consumption
- Programmable in COPP

APPLICATION

PD 630 is a device in the M36 series with both Light-Link and RS485 P-NET communication interface and a high precision analog input with screw terminals for shielded analog 6-wire measurement and a digital I/O.

The bridge input can measure force, strain, pressure, torsion or weight depending on the transducer.

The temperature input fits Pt100 and Pt1000 resistance sensors with two or four wires.

Galvanic isolated analog inputs enables grounding of Load Cells without creating ground loops.

Communication via RS485 cabled P-NET for large weighing systems where the module can be located near the load cells saving extension cables, connection boxes and installation time.

Communication via P-NET Light-Link when mounted on a DIN rail together with other PD modules.

Digital input has as a frequency input to measure belt speed in belt weight systems.

The PD 630 module is programmable in COPP, which means that part of or all of an automation application can run in the module. The program can make use of ready-made components to control and monitor any process or machine application, locally in the module as well as via the network, interacting with other devices.

SPECIFICATIONS

Power Specifications

Supply voltage nominal 24 VDC
 Supply voltage 12-32 VDC
 Typ. internal power consumption (@ 24 VDC) 0.5 W

Environmental Conditions

Operation temperature -25 °C to +70 °C (*
 Storage temperature -40 °C to +85 °C
 Relative humidity < 95 % RH (non-cond.)
 Protection class IP40

Typical data with 2mV/V sensitivity Load Cell:

Update interval / settling time:	
Fast	25ms/50ms
Balanced	100ms/200ms
Precision	500ms/1000ms
Resolution RMS/Flickerfree:	
Fast	18000 d / 3000 d
Balanced	90000 d / 30000 d
Precision	180000 d / 60000 d
Linearity	3 ppm
Output excitation voltage	3.3 V
Minimum sensor bridge resistance	30 Ω
Filter averaging	N = 1 to 64 samples
Filter settling time	(N+1) x Update interval
Filter resolution improvement factor	√N

Pt100/Pt1000 input

Accuracy (-200°C – 100°C).....	+/- 0.20°C
Accuracy (100°C - 600°C)	+/- 0.45°C
Update interval	200 ms

Digital Input (referenced to -24 Vin)

Frequency	Max. 1 kHz @ 50% duty cycle
Input	On: Vin < 4.5 V, Off: Vin > 6.5 V
Hysteresis:.....	Typ. 1 V
Line check: (**	
Line open voltage:	>0.75 * Vin
Line short circuit voltage:	< 2 V
Input pull down resistance:	6.8 kΩ
Input active pull up (configurable)	3 mA
Fast Mode Digital Input (referenced to -24 Vin) (**	
Frequency	Max. 50 kHz @ 50 % duty cycle
Input voltage Off	2.5 V + Hys/2
Input voltage On	2.5 V – Hys/2
Hysteresis (Hys)	Typ. 1.0 V

Fast Mode Digital Input (referenced to -24 Vin) (**

Frequency	Max. 50 kHz @ 50 % duty cycle
Input voltage Off	2.5 V + Hys/2
Input voltage On	2.5 V – Hys/2
Hysteresis (Hys)	Typ. 1.0 V

Digital Output (source)

Oneshot and Dutycycle time resolution	417 μs
Internal resistance	Typ. 0.5 Ω
Output start current (duration max 200 ms)	Typ. 5 A
Load current at ON (Source only)	Max. 1.0 A
Short circuit cutoff delay time (current > 5A)	104 μs
Leak current at OFF	Max. 500 μA

Load Current Measurements

Range	10 A
Accuracy	Min. 2.5 %, +/-25 mA
Resolution	5 mA
Repeatability	Min. 1 %, +/- 25 mA
(*Up to 70 °C @ 50 % load on all I/O's (** Use shielded cable	

BASE MODULE BM 021

PD 600 series DPis and I/O devices are made up of two parts: The Terminal Base Module and the Electronics Device.

The Terminal Base Module is snap-locked directly on a DIN-Rail and interlocks with neighbouring modules to ensure stability.

The Terminal Base Module has two terminals for all the channels for connection to the process signals, respecting the demand for only one wire in each terminal, ensuring a safe and straight forward design- and installation process.

One of the two terminals is with the negative supply and the other is the input / output terminal. Having only one wire in each terminal enables that the wiring to/from process signals can be done directly, without the need for any further intermediate terminals.

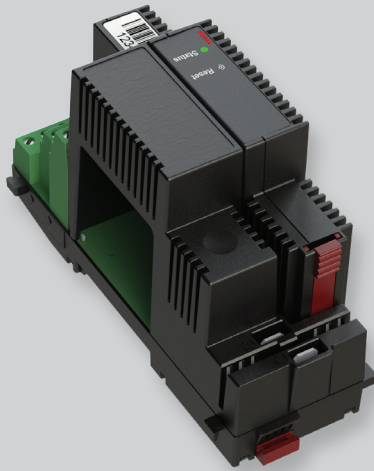
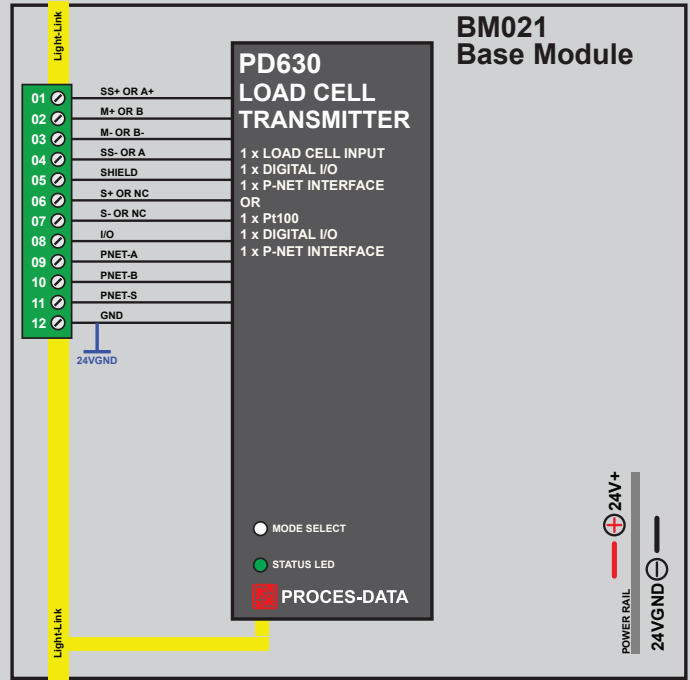
The Terminal Base provides also a power rail for connections to the power supply, as well as guides for the Light-Link interface.

BM 021 provides terminals for all I/O connections and power supply, as well as guides for the Light-Link interface.

The base module is available with screw terminals.

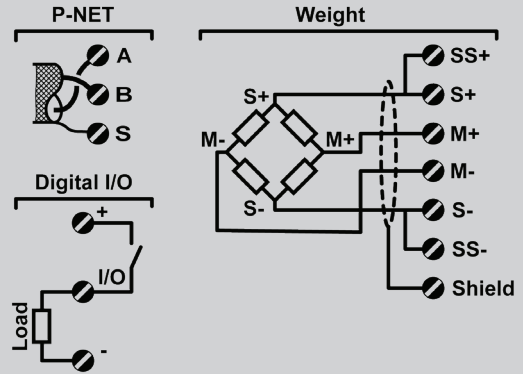
Power Specifications

Current supplied by power rail Max. 5 A
 Current at spade connectors Max. 10 A

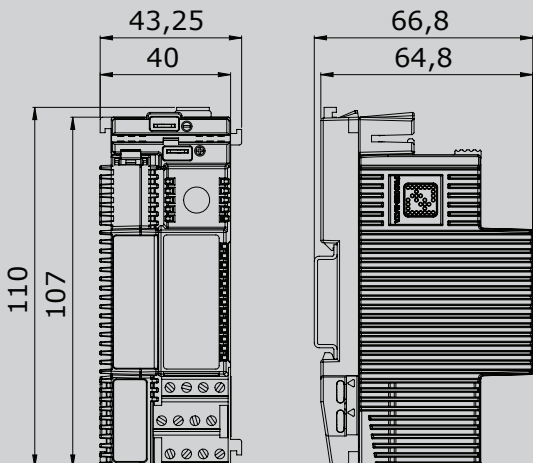


Rear View

Examples of connections



MECHANICAL (mm)



Mechanical Specifications

Dimensions (HxWxD) 66.8 x 43.3 x 110 mm
 Weight approx 125 g
 Vibration IEC 60068-2-6 : 2007