Procon Engineering

(A Division of National Oilwell Varco UK Limited)

EP 1400 DIN-Rail Mount Digital Weight Indicator

A highly cost-effective weighing instrument for process vessel weighing and platform scales	**Available with serial + analogue + any one of: Ethernet or Ethercat or Ethernet IP or DeviceNet or Profinet or Profibus DP or CANopen outputs**
USB port for easy computer connection	**High precision 24 bit analogue to digital conversion with 60,000 count resolution**
Optional 0 – 5/10v and 4-20 m/A analogue output	**RS232, 422 or 485 serial port with ASCII or ModBus™ RTU**
Five point linearization compensation	**Calibration and set-up via front panel or by PC with 'Optimation' software**

The EP 1400 weight transmitter is the perfect choice for hopper and vessel weighing applications. It delivers excellent weighing performance plus a host of useful communication features. These include a wide range of fieldbus protocols, available with serial output only or with serial and analogue outputs which means the EP 1400 can communicate with virtually any device.

The module is easy to install within equipment panels and can be mounted on a 35mm DIN Rail or OMEGA bar. The weight, the status of the instrument, the setting of parameters and any errors are all clearly shown on the display.

The fast 50 conversions per second ADC make it ideal for batching and dosing applications. Filtering can be adjusted to suppress signal fluctuations due to mechanical vibration, etc.

EP 1400 DIN-Rail Mount Digital Weight Indicator
Technical Specification Sheet

Connectivity

The EP 1400 is equipped with a serial port that can be used for RS232C and RS422/485 or ModBus RTU communications. These ports can be connected to a printer to record weight data, a remote display, or a PLC/Computer Control System. Data flow is bi-directional and set point values can be written to the indicator from the PLC or computer.

The protocols it supports makes for easy interfacing to most PLCs. On this instrument the 0-5/10V & 4-20 mA option card can be combined with another internal option card (an alternative to RS485) to allow connection to Profinet or Profibus or Ethernet or Ethercat or Ethernet IP or DeviceNet or CANopen protocols.

Digital Inputs and Outputs

Two set points are provided. These are solid-state switches with a maximum load of 100 MA at 24 Vdc. The hysterisis setting is menu selectable. The digital inputs can be used for Tare, Zero and Print commands.

Calibration and set up.

All functions of the EP 1400 are activated and modified by accessing a simple set-up menu. All settings/edits that are selected or activated remain in the memory even if the transmitter has been switched off.

The settings of the set-up menu can be changed using the keys on the front of the instrument or by using 'Optimation' utility software that can be provided; a USB port is fitted to facilitate quick and simple connectivity of a PC or laptop for this method of set-up.

One benefit of the PC or laptop approach is the availability of a 'data sheet' calibration mode, this allows the unit to be calibrated according to the mV/V performance of the load cell(s) selected thus avoiding the need for using dead weights or other calibration references if desired.

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SPECIFICATION	
Legal for Trade:	Certification available on request
Measuring range:	-3.9 - □3.9mV/V
Input sensitivity:	0.02 µV/count
Full scale non-linearity	<0.01%
Gain drift:	<0.001% FS/°C
Display	6 digit 7-segment LED red, height 14mm
A/D converter:	24 bit
Internal resolution:	> di 16,000,000 points
Frequency signal acquisition:	12 - 1000 Hz
Visible resolution (in divisions):	999999
Divisions value (adjustable):	x1, x2, x5, x10, x20, x50
Decimal figures range:	0 - 4
Temperature range (operating):	-10 -□50°C (max humidity 85% without condensation)
Storage temperature:	-20 - +70°C
Filter:	0.5 – 1000Hz
Excitation voltage:	5 Vdc (max 8 -350 Ohm- load cells)
Logic output:	2 optoisolated output; max 24 Vdc/100mA each
Logic input:	2 optoisolated inputs 24 Vdc PNP (external power supply)
Serial port:	1 USB device – 1 RS232C – 1 RS485/Fieldbus; ASCII or ModBus RTU protocol
Analogue output non-linearity:	<0.02%
Temperature drift analogue output:	0.001% FS / °C
Power supply:	12 – 24 Vdc ±15% - power consumption 5W
Microcontroller:	ARM Cortex M0 – 32-bit 256KB flash reprogrammable on-board via USB
Data storage:	64 Kbytes expandable up to 1024 Kbytes (optional)
Regulatory compliance:	EN61000-6-2, EN61000-6-3 for EMC, EN61010-1 for electrical safety
Keyboard:	4 keys
Overall dimensions:	106mm x 63mm x 110mm (l x h x d)
Assembly:	On support for DIN profile or OMEGA bar
Container material:	Self-extinguishing Noryl (UL 94 V1)
Connections:	Removable terminal boards pitch 5.08
Load cells power supply:	5Vcc/120mA (max 8 cells x 350Ω in parallel) short-circuit protected
Internal resolution:	24 bit
Display weight resolution:	Up to 999,999 divisions on useful capacity
Weight acquisition frequency:	12Hz – 1000Hz
Maximum cable length:	15m (RS232C) and 1000m (RS422 and RS485)
Baud rate:	120, 2400, 4800, 9600, 19200, 38400, 57600, 115200 selectable
Analogue output (optional):	Optoinsulated 16 bit Voltage: 0-5/10V (R min 10K Ohm) Current: 0/4 – 20mA (R max 300 Ohm)
Fieldbus (alternative to RS485):	PROFINET, ETHERNET IP, ETHERCAT, ETHERNET, PROFIBUS, CANOPEN, DEVICENET

Procon Engineering's policy is one of continuous product enhancement.
We therefore reserve the right to incorporate technical modifications without prior notification. *Issue No: 2025-1*

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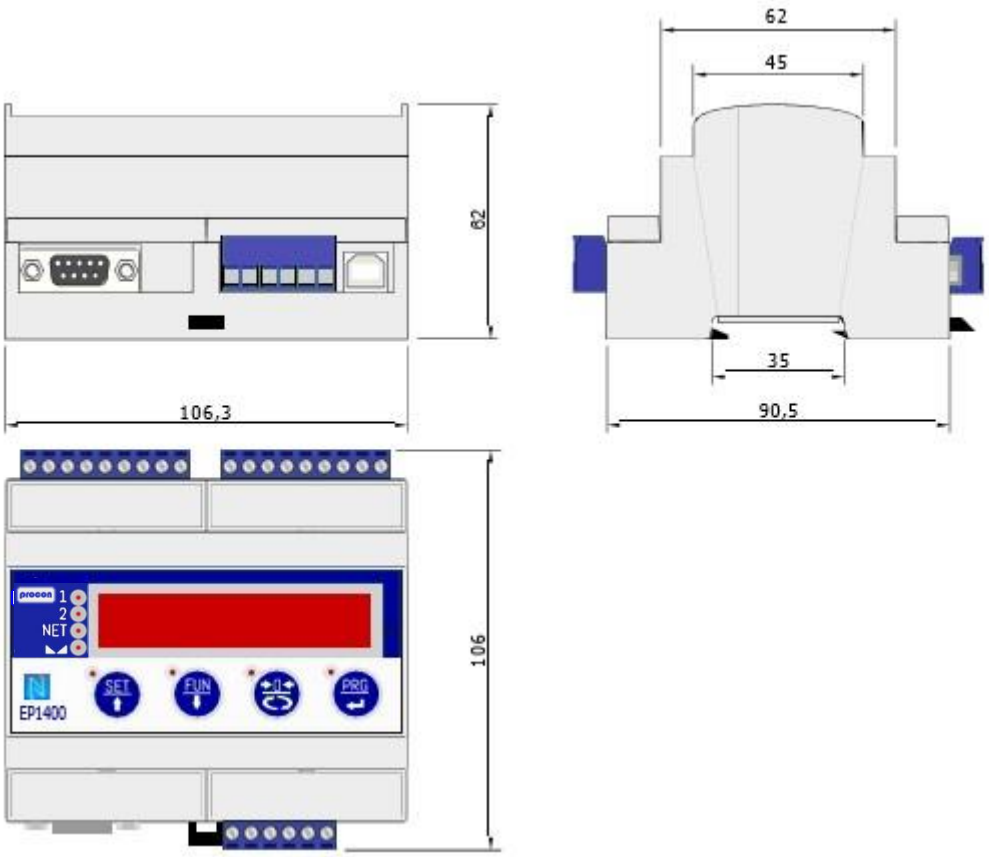

Figure 1- EP 1400 Layout Dimensions

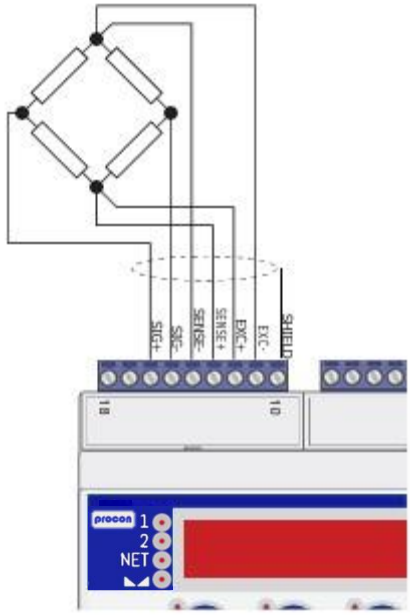

Figure 2 - EP1400 Loadcell Connections

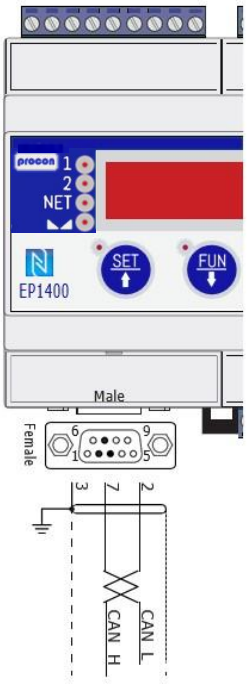

Figure 3- EP1400 Serial Output

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