PIN LOAD CELL
PR RADIO TYPE

Applications:

The pin load cell mod. PR Radio is mainly intended for application in crane weighing systems or, in any case, where it is necessary to measure the load on a pin.

Some applications are:

- Overload control for cranes
- Measurement of rope pull, belt tension, etc.

Main features:

- Immersion-tight construction
- Completely in plasma welded stainless steel
- Ignition by mechanical accelerometer (2g of threshold)
- Maximum distance of transmission up to 150m in the absence of obstacles
- Battery pack made of shockproof and fireproof material
- Optional: capacitive single touch screen
- Optional: GPRS module
- Optional: Cloud platform

Nominal load:

from 500 Kg to 100 t

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Specifications according to VDI / VDE 2637

Metrological characteristics	**Par.**	**Un.**	
Nominal load	Ln	t	0,5÷100
Minimum load	Lp	%Ln	5
Maximum load	Ll	%Ln	260
Linearity	Flin	±%Ln	0,5
Hysteresis	Fu	±%Ln	0,05
Repeatability	Fv	±%Ln	0,04
Drift under load in 30 '	Fcr	±%Ln	0,03
Nominal temperature range	Btn	°C	-10+40
Thermal variation of Zero (10 ÷ 60 ° C, for 10 ° C)	TKo	±%Cn	0,2
Thermal variation at the outlet (10 ÷ 60 ° C, for 10 ° C)	TKC	±%Cn	0,6
Environmental pressure effect	Fpr	%Ln/Kpa	0
Mechanical characteristics			
Breaking load	Ld	%Ln	>500
Deflection	hn	mm	<0,2
Battery characteristics			
Voltage		V	3,6
Graft	polarized connector		
Battery	non-rechargeable lithium		
Duration (assume use 8 hours a day)		T	1 mese
Environmental conditions			
Field working temperature	Btn	°C	-10+80
Field storage temperature	Bts	°C	-40+85
IP			IP -67

Subject to change without notice
All features depend on the mounting conditions

Description:

The electric strain gauge load cells consist of a metal core on which strain gauges are glued, which detect the deformations produced to the core by the applied load.
The strain gauges are connected to a Wheastone bridge such that the voltage detectable on a diagonal of the bridge (output signal) is proportional to the applied load and to the supply voltage (mV / V).

The pin load cells are normally intended for use in single cell weighing systems and, therefore, the output signal is not calibrated neither at zero nor at the nominal capacity, since the calibration must, however, be performed on the transmitter of weight.

The pin load cell type PR guarantees high reliability as it is completely built in stainless steel and the protection of the strain gauges is obtained by plasma welding of the sealing discs.
The PR cell does not have standard capacities and dimensions, since the characteristics are determined on the basis of the specific application needs of each client's request.

The wireless connection allows you to install the load cell in the most difficult to reach places, without the need for any wiring, thus reducing installation and maintenance costs.

The transmission of the data is encrypted AES128 bit data encription + proprietary CRC occurs at a frequency of 868Mhz (in accordance with CE standards) ensuring a maximum transmission distance of 150m.

The touch display and management via Cloud allow the visualization and monitoring, even remotely, of data from hundreds of cells.

Several advantages offered by the Cloud system:

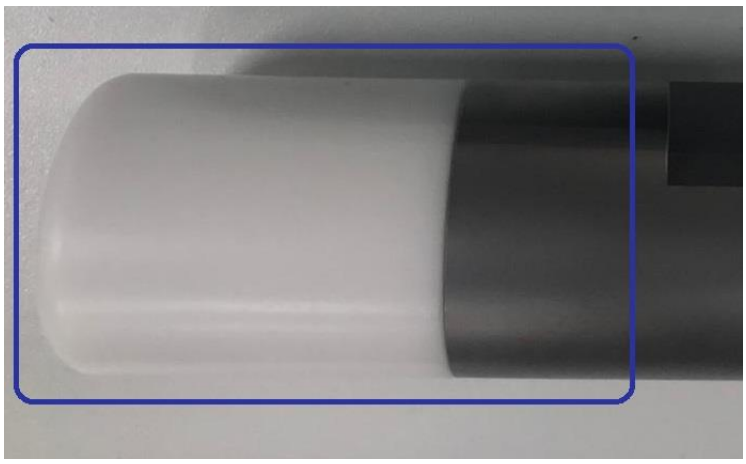
- the convenience of having hundreds of signals in your smartphone
- the simplicity of being able to access to data by scanning the QR code associated with the system
- the considerable amount of data that the Cloud system is able to manage
- the geolocation permitted by the system
- the opportunity to record data from any part and of the world, wherever you he found the

Cloud system configurations

- Creation of customized pages and analysis tools through graphs.
- Radio control unit configuration for data transmission.
- Logo customization, alarm set based on thresholds, notification via Email of any anomalies.
- Opportunity to export data in Excel format.
- Possibility of web services for integration with data management or other portals.
- Representation of the collected data.

Characteristics of the battery pack

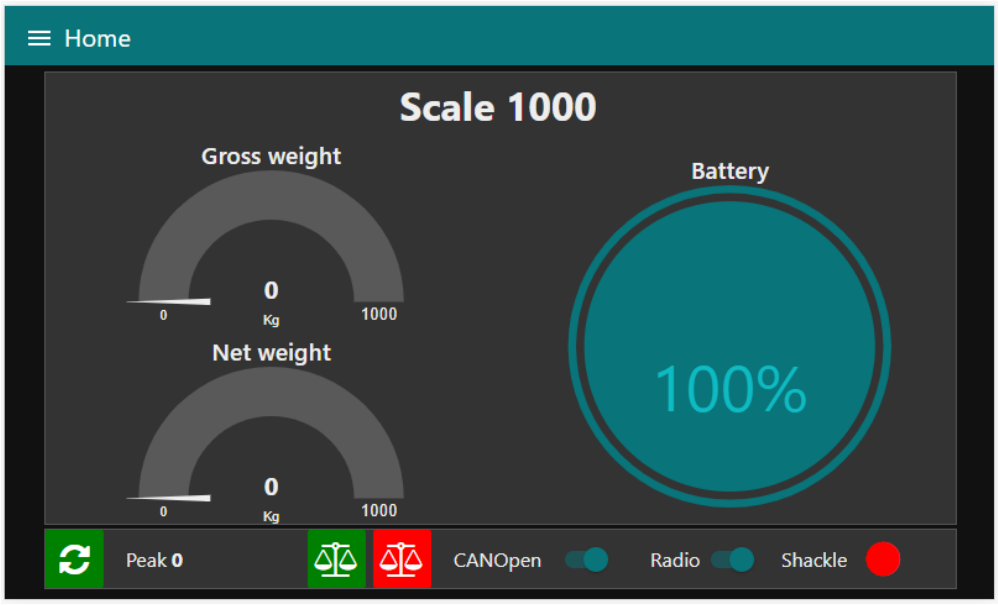
- Voltage 3.6V
- Plug with polarized connector
- Technology: non-rechargeable lithium battery
- Duration: 1 month with a use of 8 working hours continued per day



Data Exchange Protocol

Encrypted AES128 bit data encription + proprietary CRC

Touch Display Features:

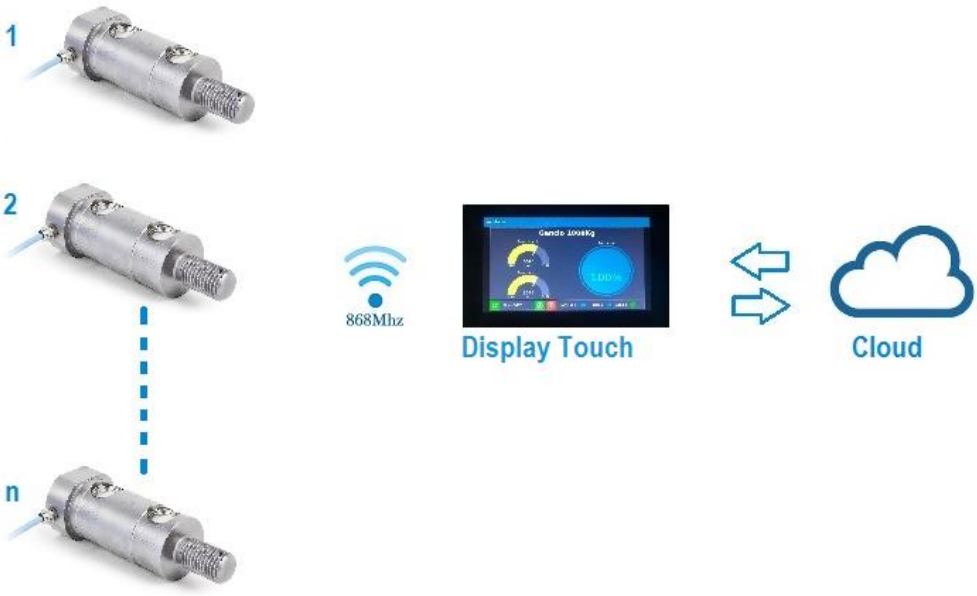


Power supply: 12-24Vcc min. 1.5A
Display resolution: 800x480 pixels
Touch screen: capacitive single touch
Communication: CANBus, 868Mhz Radio
Radio Frequency: 868Mhz (in accordance with CE standards)
Signal range: up to 150m in free field
Max radio power: 7 dBm
Antenna: Integrated
IN / OUT: 1 optically isolated digital input
4 USB ports
1 Ethernet port
1 WI-FI hotspot
Dimensions: 197x115x46 (measures in mm)
Standards: CE 2014/53 / UE (RED) / 2014/30 / UE (EMC), FCC (USA), IC (Canada)

Functions:

Net / gross weight indication.
Pin sensor battery status indication.
Radio communication status indication.
Totalization of weight.
Peak indication.

Radio option:



GPRS option:

Installation:

The load cells, in general, must be installed on structures (fixed support and object to be weighed) sufficiently rigid, since the deflections of the structures introduce errors in the measurement.
The installation area must be free from significant vibrations, and the load cell must be protected from direct sunlight and wind gusts.

Sudden changes in temperature or uneven heating produce thermal drifts that exceed the specification values.
The fixing and the cell supports must be sized for the breaking load of the cell itself, even if the weighing system has a lower capacity.

The installation of pin cells requires particular attention that the assembly conditions are in accordance with what is indicated in the diagrams:

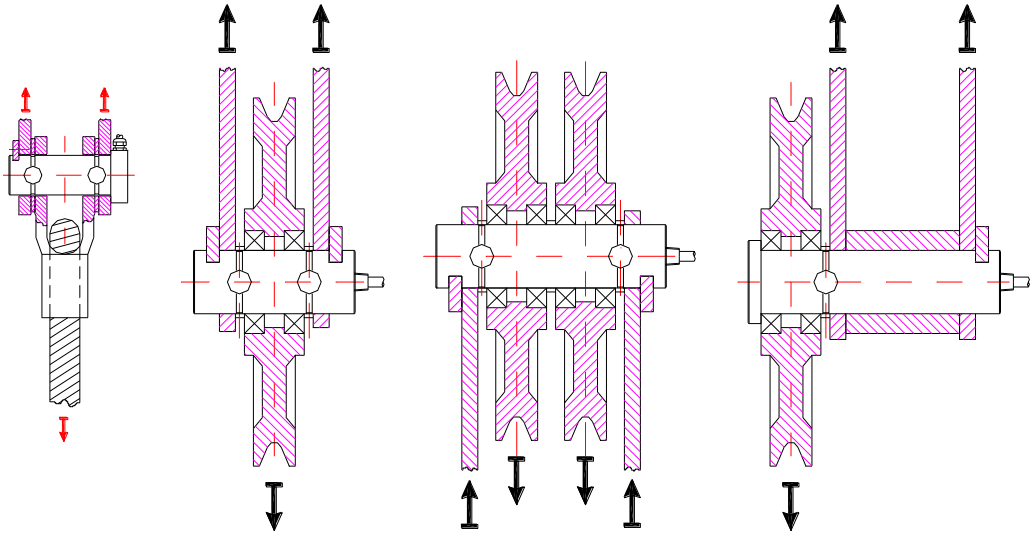
- respect the tolerance of the mounting hole
- distribute the load over the entire support surface
- respect the direction of the load

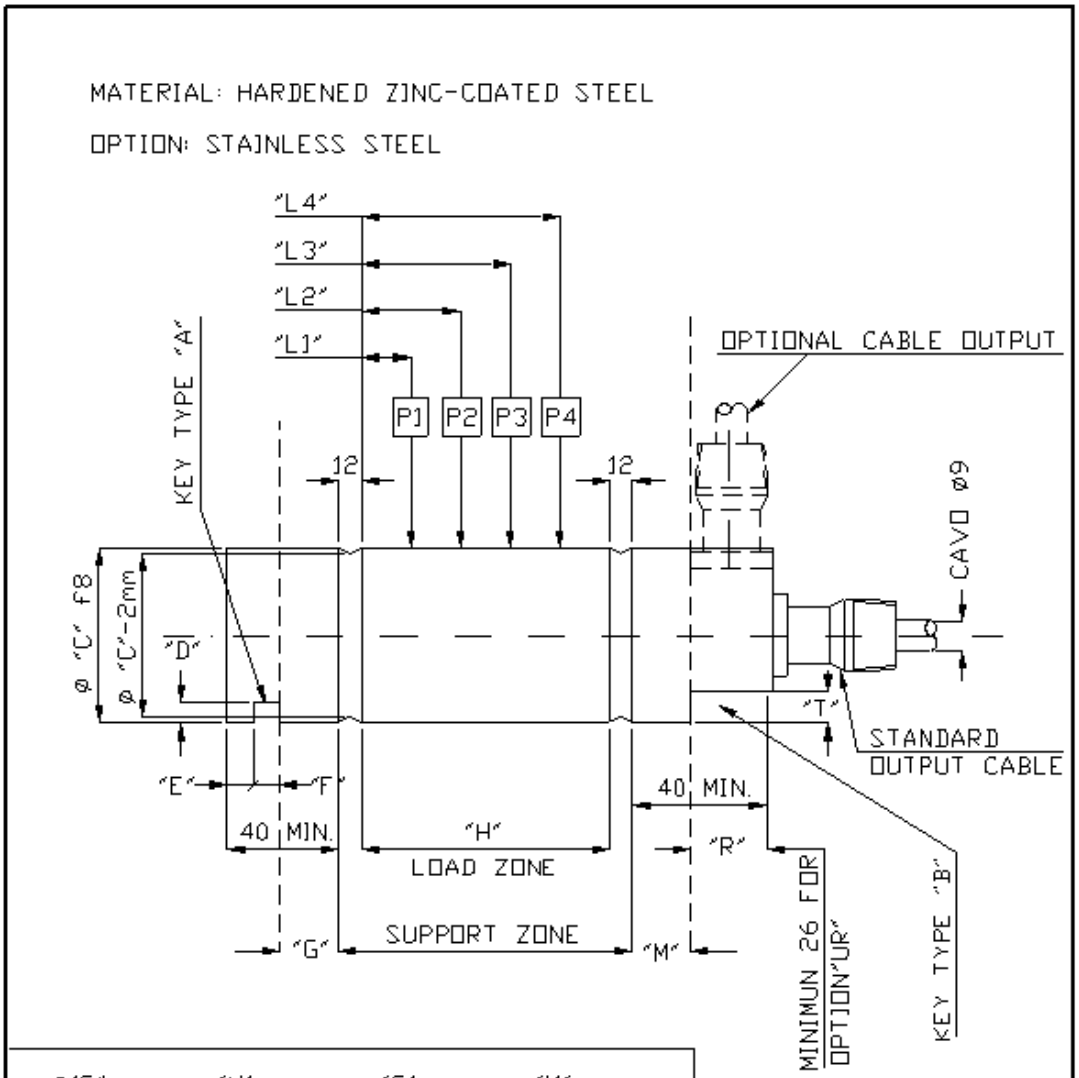
Warning :

If the tolerance indicated for the fixing hole is not respected or the load is concentrated on a surface lower than indicated, the breaking load is not guaranteed.

If the direction of the load is not in line with the direction of measurement, measurement errors are determined

MOUNTING EXAMPLES





ø"C"_____ "H"_____ "G"_____ "M"_____	
"L1"_____mm	"P1"_____Kg
"L2"_____mm	"P2"_____Kg
"L3"_____mm	"P3"_____Kg
"L4"_____mm	"P4"_____Kg
NOMINAL LOAD_____	
BREAKING LOAD_____	
N°_____ KEY TYPE_____	"D"_____ "E"_____ "F"_____
N°_____ KEY TYPE_____	"R"_____ "T"_____
CABLE OUTPUT_____	MATERIAL_____
CLIENT_____	
CLIENT REF_____	
"CELMI" REF_____	