

# PSD

## PORTABLE SENSOR DISPLAY

### FEATURES

- 0.01% Accuracy
- Rigid Versatile Handheld Instrument
- Min.-Max. Value Display (Peak & Valley)
- 16 Programmable Measurement Ranges
- Measuring Rate up to 1600 values per second
- Connection to any type of Strain Gauge Transducers
- USB 2.0 Interface
- Battery-powered or USB-powered Device
- Display Units
- Character Height: 14 mm
- Can be programmed directly on the device or by software (provided).

### DESCRIPTION

The PSD Portable Sensor Display from Magtrol is a very compact, light and easy to use device. This amplifier can process sensor strain gauge signals  $\pm 0.3 \dots 5 \text{ mV/V}$ . High measuring accuracy, paired with fast measuring rates allow an internal resolution of 22 bits at  $2 \text{ mV/V}$ . It also stores the adjustment data, sensor designation and physical unit. Functions, such as TARE, recall of min.-max. value,... are available during the measurement.

The device is powered by 3 AA batteries or via its USB Mini-B port. In order to increase its duration of use, the PSD integrates an automatic standby mode which is activated when the device is not used.

### APPLICATIONS

The PSD Display can be used with many sensors such as force sensors, load cells, torque sensors, anchor sensors or any other type of strain gauge transducers.

This portable measurement and display system is particularly suitable in cases where a fixed installation is difficult or irrelevant, such as:

- Maintenance of installation
- Intermittent monitoring
- Laboratory, Research and development,...
- Installation or monitoring in civil engineering,...



Fig. 1: PSD | Portable Sensor Display

### DIMENSIONS



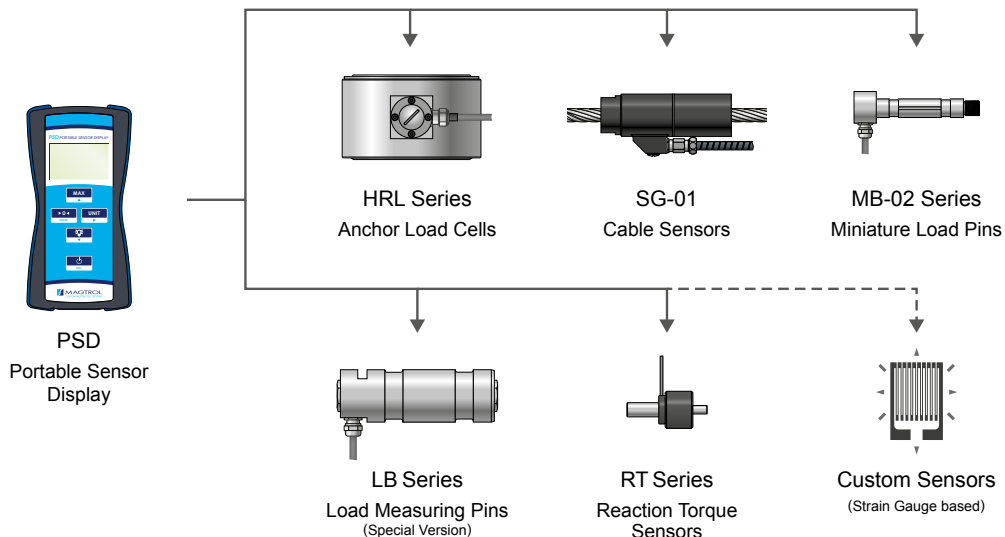
## SPECIFICATIONS

MEASUREMENT	
Measuring accuracy class	0.01 %
Input Signal Range	±0.3 ... 5 mV/V
Input Impedance Range of Strain Gauge Bridge	> 150 Ω (2 parallel strain gauge full bridge / 350 Ω) up to 2000 Ω
Excitation Voltage (full bridge)	5.0VDC
Relative Linearity Error <sup>a)</sup>	0.0015 %
Noise (at measurement rate) <sup>a)</sup>	0.002 (6.25 Hz) ... 0.04 (1600 Hz)
Temperature Effect (on zero Signal) <sup>a)</sup>	0.002 % / 10K
DISPLAY	
Type	5-digit LCD graphic display, 128 x 64 pixel, illuminated
Display Range	±99999
Display Additional Mode	Meas/min/max value, overload, units, charge of battery
Display Rate	3 s
Scaling Point for Linearization	up to 4 points
Internal Resolution <sup>a)</sup>	22 bits
Measuring Rate (average value)	6.25 ... 1600/s
Measured Value Transmission via USB	max. 1400 values/s (with software)
Character height	14 mm
ELECTRICAL CHARACTERISTICS	
Power supply voltage	3.0 - 4.8 VDC (3x AA battery) or powering via USB-port
Operating time with batteries	~40 h
ENVIRONMENT	
Operating temperature range	-10 °C ... +50 °C
Storage temperature range	-20 °C ... +70 °C
Protection class (EN 60529)	IP54 <sup>b)</sup>
ELECTRICAL CHARACTERISTICS & CONNECTICS	
Connectics	6 poles axial connector
USB Interface	USB Mini-B connector
Weight (without batteries)	240 g

a) By or at 2mV/V

b) In use, transducer connected and USB-port closed

## SYSTEM CONFIGURATION



## RELATED PRODUCTS

As presented in «System Configuration», the PSD can be used with many of Magtrol's products, as well as with any third party manufacturer's sensors that base their measurement system on strain gauge technology.

### MB-02 SERIES - MINIATURE LOAD PINS



Fig. 2: MB-02-10-10-2  
Miniature Load Pin

Magtrol MB-02 Series Miniatures Load Measuring Pins are used to measure load and force and provide overload protection. The pins are mounted into machines in place of normal shafts and fitted with strain gauges, allowing them to produce a signal proportional to the measured load.

Manufactured in Switzerland, Magtrol's MB-02 Series Load Pins are rugged with high resistance stainless steel and tight construction. The compact design as well as the high protection class give this sensor an excellent aptitude for the measurement and monitoring of forces and overloads on mechanical compact applications, as well as in hostile environments.

### SG-01 - CABLE SENSOR



Fig. 3: SG-01 | Cable Sensor

The SG-01 cable sensor is designed for providing monitoring of permanent and temporary anchors and allowing continuous load measuring using either a direct or remote reading system.

Its specific design allow to use this sensor in harsh, tropical or harbor environments. The SG-01 cable sensor is particularly suitable for bridge strand and stay cables permanent mounting under hostile environmental conditions.

### RT 200 SERIES REACTION TORQUE SENSOR



Fig. 6: RT200 | Reaction  
Torque Sensor

The RT 200 Series is a compact and maintenance-free Reaction Torque Sensor. Based on strain gauge technology, this reaction torque sensor provides highly accurate torque measurement. It has been specifically designed to perform high-precision static torque measurements with low dynamic rotation (and limited angle) clockwise and counter-clockwise.

Major field applications include testing actuators, valves and fasteners as well as torque control on watch or medical devices, or any other application requiring torque measurement without full rotation.

### HRL SERIES - ANCHOR LOAD CELL



Fig. 4: HRL -4 | 600kN  
with connector and screw cap

HRL Series load cells consist of a high quality stainless steel. This compact load cell is designed specifically for heavy duty use on anchors and civil engineering, with load cells that are available in the range of 600 to 3 700 kN. Special designs are available upon request.

The attached shielded cable includes a water-proof connector with cap. Version without connector are available as an option. Cable lengths are customisable according to the installation requirements; for further information please contact us.

### LB SERIES - LOAD MEASURING PINS

LB Series Load Measuring Pins are used to measure load and force and to provide overload protection. The pins are mounted into machines in place of normal shafts and fitted with strain gauges, allowing them to produce a signal proportional to the measured load. Manufactured in Switzerland, Magtrol's Load Pins are rugged with high resistance stainless steel and tight construction, designed specifically for use in hostile industrial environments.



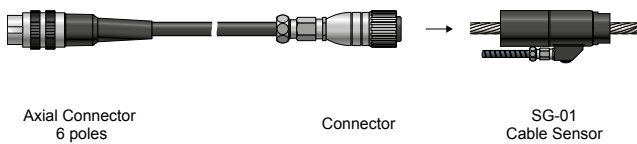
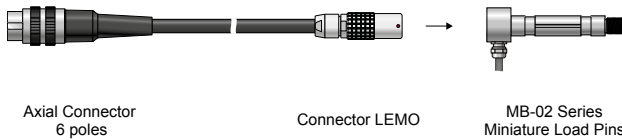
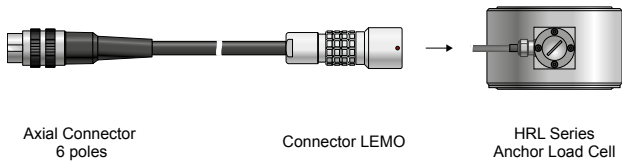
Fig. 5: LB 210 & LB 217  
Load Measuring Pins

LB Series Load Pins are used for load measuring devices and overload protection on cranes, hoisting gear, elevators, winches, and force measurement for regulation processes in industrial installations and machinery production. Moreover it is an ideally transducer to detect and measure forces in harsh, tropical, offshore, marine and harbor environments.

Further information on related products are available in their specific data sheets. Please visit our website: [www.magtrol.com](http://www.magtrol.com)

ACCESSORIES

CONNECTION CABLES



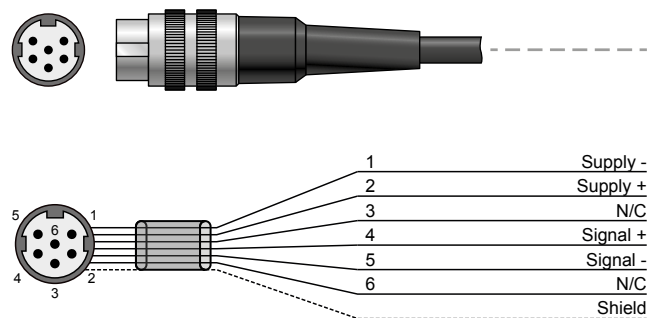
ORDERING INFORMATION FOR CABLE

ORDERING NUMBER 944-101-000-0 \_ X

- 1 : Cable for HRL Series
- 2 : Cable for MB-02 Series
- 3 : Cable for SG-01

Example: Connection cable for HRL Series would be ordered as follows: **944-101-000-01X**

CONNECTOR



Axial Connector (only) PN 957-11-07-1206

The portable PSD display can be used with many strain gauge bridge sensors. For use with a Magtrol sensor not listed above or for use with any other sensor, please contact our sales representative.

ORDERING INFORMATION

ORDERING NUMBER 854-100-000-011 \_

- blank : Standard version
- C : with calibration

Example: PSD Portable Sensor Display calibrated would be ordered as follows: **854-100-000-011C**.