



PointSenz

***Waterproof Railway Points
(Switch) Monitoring Current
Transducer with opening design***

LEM

LEM has recently launched a new waterproof transducer which provides non contact measurement of motor currents in points (switch) machines without disruption to existing cabling or connections.

PointSenz



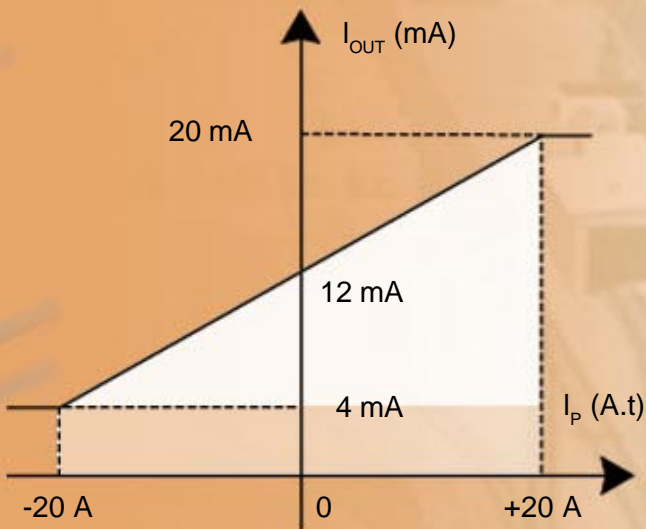
- Simple and quick to install
 - Water resistant
 - Non-contact current measurement
 - An opening clip on design
- ➔ Reduced “possession” time
 - ➔ Withstands floods to 1 metre
 - ➔ Does not need a safety case
 - ➔ Avoids the disconnection of the main motor supply cable

What does LEM bring to Points (switch) Machine?

Preventive maintenance

A transducer output measuring the DC current taken by the points (switch) motor is logged to produce an operational profile of current used against time. This is then stored within a data logging system and used as the control characteristic. This “footprint” forms the basis of comparison for any future measurements. As time elapses, changes in this machine footprint can indicate mechanical wear, lack of lubrication, jamming within the points (switch) mechanism caused by ballast, electrical motor and winding failure, and points (switch) misalignment, all identified by an increase in total current taken. Any variation from the normal “profile” also indicates the likelihood of other incipient problems – wear, rust, debris, vandalism...

- New Points (switch) maintenance: Assessing the condition of key components like the points (switch) machine actuation current and operating time
- Early warning of machine failure before problems or critical breakdown occur
- Optimization of the railway maintenance staff efficiency
- Replacement only when necessary
- Minimization of disruption
- Keep cost to an acceptable level



PCM transducers

Point (switch) Condition Monitoring transducers

- Opening core (Clip-On design)
- Compact for simple installation by clipping it easily into the Points (switch) Machines in less than 30 seconds
- Unipolar power supply: 0 to +24 Volts
- An accurate bipolar DC or AC (up to 1 kHz) measurement
- PCM 10 Models for 10 A RMS nominal measurement
- Measured peak current up to ± 20 A
- Reference point at no primary current: 12 mA.
- The variation span of the output signal is $8 \text{ mA}/I_p$

These are the first devices developed for this application. Contact your local sales office for details of extensions to this range and other transducers for signalling condition monitoring.

Three different versions of the PCM 10:

PCM 10-A

Designed for mounting into an Alstom (Formerly GEC and GRS) HW Points (switch) Machine
LEM Reference: 60.05.13.000.0

PCM 10-P

Designed for standard panel mounting.
LEM Reference: 60.05.13.100.0

PCM 10-P/SP1

Similar to the PCM 10-P but with a 2 metre cable output (this model is not waterproof)
LEM Reference: 60.05.13.101.0

Full technical specification available on request or under www.lem.com

PCM features

(PCM = Point Condition Monitoring)

PointSenz

- **Waterproof:** the design is rated water resistant to IP 67.

- **The operating temperature range is:** -25°C to +70°C.

- **PCMs comply with:**

- BS 581: Electrically driven points (switch) machines
- BR969: 1973 Cat D for vibration
- EN 50121 - 5 for EMC
- EN50155 for Railway applications (Power supply, temperature and humidity)
- EN61010-1/2 cat III, Pollution degree 2 for safety.
- UL 94-V0
- A robust design gives this product a designed lifetime of 25 years.

The flexible design can be modified to measure other current ranges and fitted to machines from other manufacturers.

Our engineers have used many model analysis tools such as the FMEA (Failure Mode Effect Analysis for the Design and the Process) in mind with QS 9000 procedures (Advanced Product Quality Planning & Control Plan, Documentation of

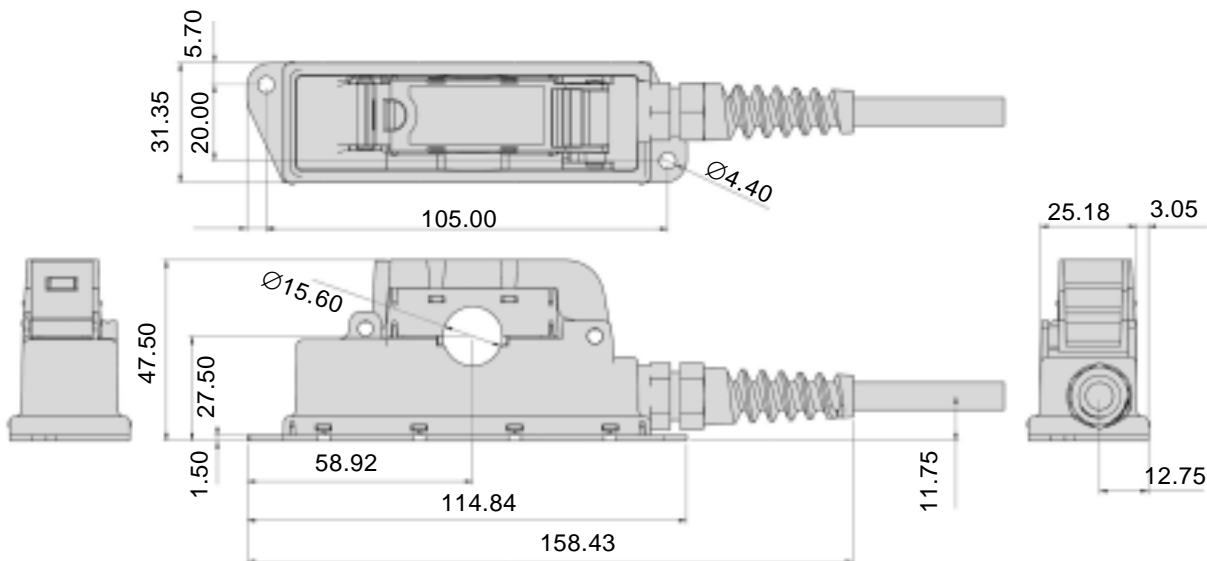
every stage of the project) to guarantee that high quality and reliability have been designed in.

In this way LEM hopes to become the measurement partner to the Rail industry, offering accuracy, repeatability and value for money measurement solutions.



PCM is the first product from the LASER series.

Dimensions in mm



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