

POSS, the track to greater availability

POSS MONITORING FOR RAIL INFRASTRUCTURE AND ROLLING STOCK



Strukton Systems MicroPOSS I.o

General Description

The MicroPOSS unit is a data logger capable of sampling a total of nine 4-20mA analogue input channels. These channels are buffered and pre-processed locally after which the measurements are sent to a central data management system over Ethernet, GPRS or GSM-R.

One of the key principles of the MicroPOSS data logger is its easy installation. The current sensors mostly used with this data logger are of split-core design making it easy to install in a relay house without the need for detaching existing cables. Furthermore, the data logger gets its configuration from a central system keeping the use of software tooling and expertise in the field to a minimum.

The MicroPOSS unit is tested against the European and the stricter Dutch EMC railway standards making it a logger suitable for placement in relay interlocking houses or electronic interlocking cabinets. The rugged stainless steel housing allows it to be used in harsh railway environments without problems. The high isolation level of the power supply allows direct connection to the signalling power supply without the need for an isolation transformer.

Main features

Hardware

- Embedded platform based on proven Rabbit processing technology
- 9 analog input channels (DB9) capable of sampling and supplying power to active industry standard 4-20mA sensors
- Maximum sampling frequency of 50 Hz

Communications

- Communication over Ethernet and optionally GPRS or GSM-R.
- All communication modules are integrated in the same unit reducing installation time and minimizing EMC risks.



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Software

Contains measurement software to perform

- Non intrusive Point condition monitoring
- Train detection – Track Circuits
- Rail temperature monitoring

Contains communication software to

- Communicate measurements over XML to a central POSS server
- Retrieve new settings from a central POSS server
- Retrieve new firmware from a central POSS server

Technical specifications

Physical characteristics

Housing:	Stainless steel
Dimensions:	200 x 230 x 150 mm (L x W x H)
Operating temperature:	-20 ... 70 °C
Storage temperature:	-30 ... 80 °C
Humidity:	Up to 100% non-condensing
Protection level:	IP4X

Electrical characteristics

Power supply:	90...260 VAC
Frequency:	47...80Hz
Power consumption:	< 15 W
Fuses:	Fuse less
Auxiliary voltages:	24 VDC, 5 VDC
Leakage current:	0.5 mA
Isolation levels:	2.2 kVAC / 3.1kVDC 1 min.

External interfaces

Analogue inputs	9 DB9 connectors 4-20 mA 24VDV
Maintenance	MMC card slot, Sim card slot, RS232 debug interface

Communication characteristics

Ethernet

Type:	Ethernet (Cat. 5)
Connection:	RJ45
Speed:	10Mbps

GPRS/GSM-R

Type:	Siemens MC55 triband / Siemens MC55i quadband (GSM-R)
Connection:	N-Connector (Female)
Speed:	Up to 85.6 kbps (downlink)
Output power:	2W / Class 4 for EGSM 900 / GSM-R 1W / Class 1 for GSM 1800 / 1900

Regulations

The MicroPOSS data logger conforms to the following international regulations regarding EMC.

- NEN-EN 50121-3-2
Railway applications - Electromagnetic compatibility - Part 3-2: Rolling stock – Apparatus
- NEN-EN 50121-4
Railway applications - Electromagnetic compatibility – Part 4 - Emission and immunity of the signalling and telecommunications apparatus
- NEN-EN55011
Industrial, scientific and medical (ISM) radio-frequency Equipment. Electromagnetic disturbance characteristics. Limits and methods of measurement
- NEN-EN55022
Information technology equipment. Radio disturbance characteristics. Limits and methods of measurement

In addition to these international regulations the MicroPOSS data logger is tested to the specific Dutch ProRail regulations RLN00007 and RLN00138. These regulations are stricter than the international EN 50121-4 standard.

Availability

Release: 07/2007

