

POSS, the track to greater availability

POSS MONITORING FOR RAIL INFRASTRUCTURE AND ROLLING STOCK



MicroPOSS 2 Product Specification

The MicroPOSS 2 is Strukton Systems' next generation universal data logger in the POSS product suite for condition monitoring. Originally it has been developed for rail condition monitoring applications, but its universal and robust character in combination with its ease of use enables application in any harsh environment with high demands on equipment. MicroPOSS 2, with its new FPGA technology and open-source software, is highly flexible and prepared to meet the challenges of new monitoring needs.

Application

The MicroPOSS 2 data logger is capable of handling both analogue and digital sensor inputs. It provides 9 analogue inputs and 27 digital inputs, which can be applied for either potential or potential-free inputs. The out-of-the-box data logger supports the following applications:

- AC and/or DC point machine monitoring
- Train detection - Track circuits monitoring
- Insulation monitoring
- Rail temperature
- Level crossing events
- Event logging (digital)

Because of the one-box robust housing it is small enough to be installed in rail relay cabinets. Its capability to connect with other MicroPOSS units enables the logger to scale-up and grow big enough to monitor any installation in even the largest relays rooms.

Capabilities and characteristics

- **Flexibility:** The data logger supports a wide range of sensors within the industrial standards of 4-20mA. The measurement algorithms can be changed remotely

- **Scalability:** More MicroPOSSes can be connected to each other via the Ethernet-port to facilitate input capacity growth. This enables even further growth with an Ethernet switch when using a standard switch and connect multiple MicroPOSS units or other equipment via the Ethernet ports
- **Simplicity:** The logger can be installed in minutes without the need for detaching existing cables
- **Robust:** The MicroPOSS is developed and certified according to international rail standards. It is remotely controlled by a central system. Configuration changes and software updates can be done remotely
- **Reliable (mobile) communication:** The MicroPOSS communicates with a central system via either a standard Ethernet connection or via the built-in GSM/GPRS or GSM-R modem. The MicroPOSS is capable of buffering thousands of measurements locally on mirrored memory cards to protect measurements from being lost during network and power failure
- **Galvanic isolation:** All inputs are galvanically isolated to prevent influence on signaling systems



Strukton
Systems

www.possinfo.com info@struktonsystems.com

The MicroPOSS 2.0 unit is tested against the European railway standards making it suitable for placement in relay interlocking houses or electronic interlocking cabinets. The rugged stainless steel housing allows use without problems in harsh railway environments. The high isolation level of the power supply allows direct connection to the signalling power supply without the need for an isolation transformer.



Technical specifications

General

Voltage	90 - 260 VAC
Frequency	47 - 80 Hz
Consumed power	< 15 VA
Sensor voltage	24 VDC, 12VDC
Leakage current	< 0.5 mA
Insulation voltage	2.2 kVAC, 3.1 kVDC, 1 min.
Ambient temperature (operational) -	20...70 °C
Ambient temperature (storage)	-30...80 °C
Relative air humidity	non-condensing
Protection	IP4X (closed case)

Data and communication output

GPRS/GSM or GSM-R	Quad-band
Output GPRS	class 10: max. 86 kbps (DL)
Connector	FME connector (male)
Ethernet type	(Cat. 5)
Connector	RJ45
Protocol	TCP/IP
Speed	100 Mbps

Hardware

- Embedded platform based state-of-the-art ARM and FPGA technology
- 9 analogue input channels (Sub-D9) capable of sampling and supplying power to active industry standard 4-20mA AC and DC sensors
- 27 digital input channels, either configured for potential or potential-free inputs
- A built-in FPGA opens the door to high frequency sampling applications
- Maximum sampling frequency of 1 kHz

Case dimensions

Length	205 mm
Length (incl. attachment brackets)	230 mm
Width	150 mm
Height	68 mm
Weight approx.	1.8 kg

Interfaces

Memory card	MMC/SD 2x
SIM card	1x
Antenna (FME)	1x
Ethernet (RJ45)	1x
Sensor (D-sub 9 female)	9x
Power supply (220V, IEC)	1x

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-EN 55011
Industrial, scientific and medical (ISM) radio-frequency Equipment. Electromagnetic disturbance characteristics. Limits and methods of measurement
- NEN-EN 55022
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.

