DATASHEET

RecipSys 200

Triggered rod drop monitor

ADVANCED PISTON ROD DISPLACEMENT MONITORING FOR RECIPROCATING COMPRESSORS

The RecipSys 200 is a compact monitoring system that delivers accurate, real-time data on rider band wear. It eliminates the need for manual inspections or periodic shutdowns and provides a versatile and competitive monitoring solution that suits a wide range of reciprocating compressors.

INCREASED UPTIME

The compact monitoring system maximises operational uptime by removing the need for manual inspections and periodic shutdowns.

ANY COMPRESSOR

The transmitter is compact and cost-effective, making it easy to expand monitoring to nearly any reciprocating machine.

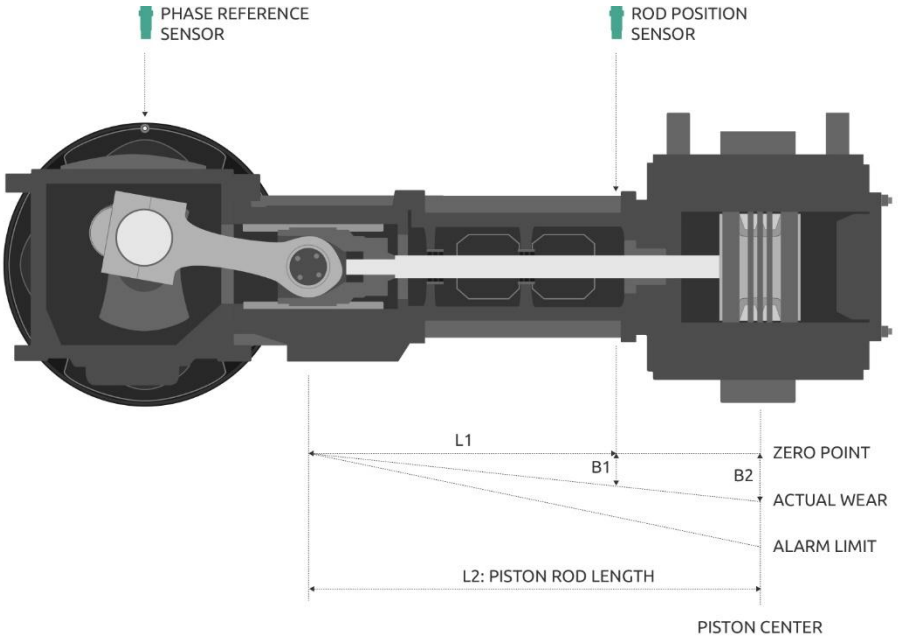
ANY CONFIGURATION

The system is scalable to accommodate any number of cylinders, works with all sensor brands, and can be integrated into any existing monitoring system.

TRIGGERED ROD DROP CONCEPT

RecipSys 200 monitors the vertical piston movement inside a cylinder by measuring the rod displacement on the vertical axis. Rod drop measurements provide crucial information on the wear of the rider bands.

Because of internal forces, the rod's position changes during the piston stroke. To accurately measure rod drop, measurements need to be taken at a specific point within the stroke. The RecipSys 200 uses a phase trigger to filter the displacement signal at the correct phase angle. This ensures dependable monitoring of machinery, whether it operates at a constant or variable RPM.



VERSATILE ARCHITECTURE

The compact design of the RecipSys 200 offers excellent scalability to accommodate various monitoring requirements. A single module can monitor two cylinders, while additional modules can be used to cover larger machines. Its DIN rail design and industry-standard interfaces facilitate seamless integration with other transmitter systems, control systems, or advanced monitoring platforms, supporting the development of efficient, application-specific monitoring solutions.

INDUSTRIAL STANDARDS

- API 670: Designed for phase triggered piston rod monitoring as described in the API 670 standard

INTERNATIONAL STANDARDS

- Electromagnetic Compatibility (EMC) Directive 2014/30/EU
- Low voltage Directive (LVD) 2014/35/EU
- RoHS Directive 2011/65/EU & 2015/863/EU

INPUT

Dynamic input channels

Number of rod displacement channels	2
Number of phase reference channels	1
Sensor type	3-wire voltage eddy current
Isolation	Galvanic isolated input
Measurement range	0 to -24 V_{DC}
Sensor power supply	-24 V_{DC}; max. 55 mA

PROCESSING

Processor	32-bit ARM chip
Signal analysis module	Processor driven signal calculations
Auto speed adjustable	Yes
Speed range	120 to 2400 RPM (2 to 40 Hz)
Sampling accuracy	Up to 1°

OUTPUT

Triggered analog output (ANALOG OUT)

Number	2
Type of signal	Triggered rod displacement signal
Programmable signal range	0 to 20 mA / 4 to 20 mA / 0 to 10 V_{DC} 24 V_{DC} when current output selected

Raw analog output (RAW OUT)

Number	2
Type of signal	Continuous rod displacement signal
Signal range	0 to -24 V_{DC} / max. 10 mA

Phase reference (NEXT RECIPSYS 200)

Number	1
Type of signal	Continuous phase reference signal
Type	Open collector output
Signal range	0 to -24 V_{DC} / max. 20 mA
Power	External negative power supply required

Relay 1 & 2 (rod displacement)

Number	2
Type of contact	Single-pole double-throw (SPDT)
Application	Channel alarm, configurable
Switching capacity	24 V_{DC} / 1 A

Relay 3 (system)

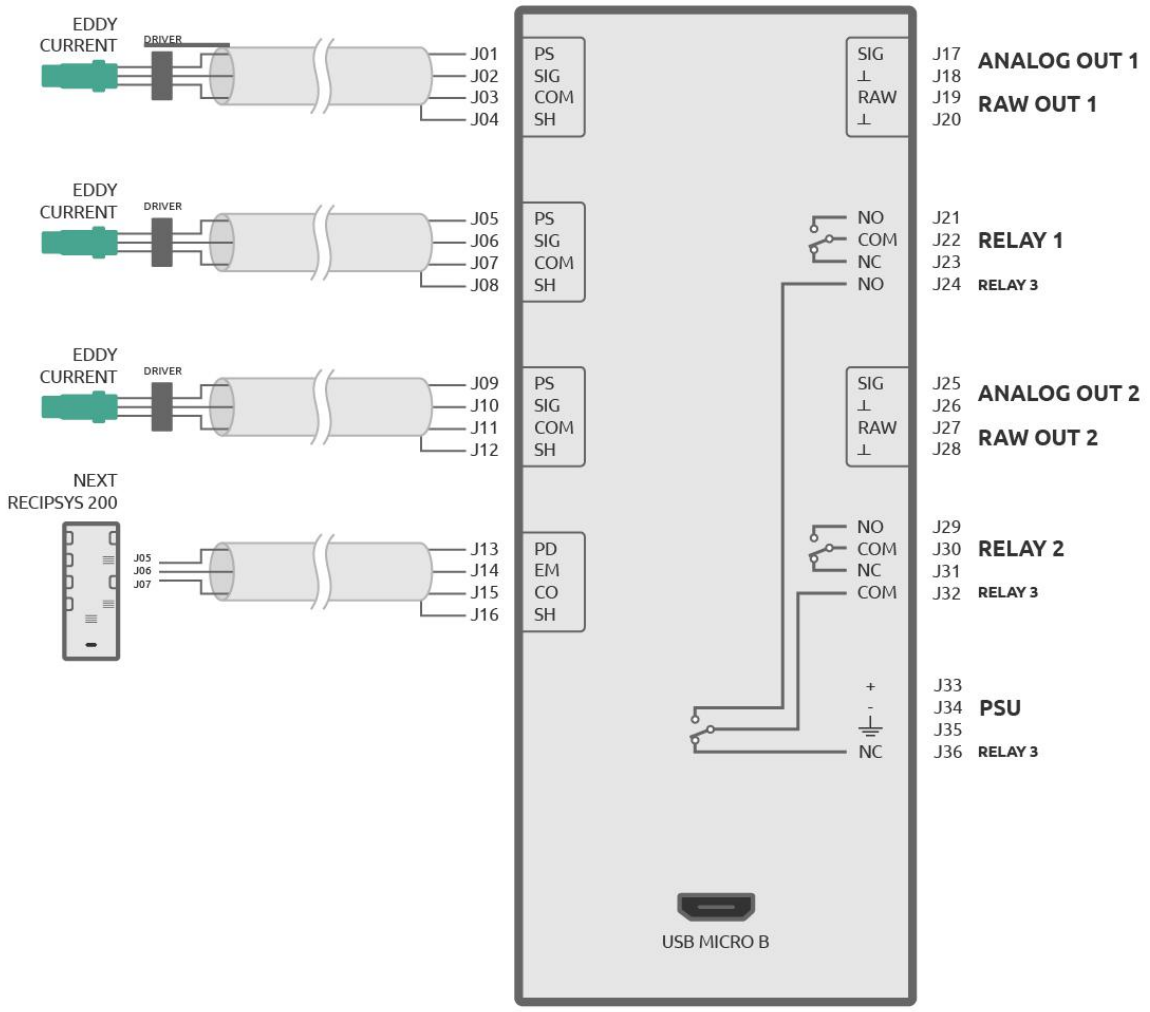
Number	1
Type of contact	Single-pole double-throw (SPDT)
Application	System / sensor status alarm
Switching capacity	24 V_{DC} / 1 A

SYSTEM

Power supply	
Number	1
Supply	24 V_{DC} +/- 10%
Current consumption	300 mA @ 24 V_{DC}
Reverse polarity protection	Yes
Housing	
Material	Polyamide (PA 66 GF 30)
Dimensions (W x H x D)	45.0 x 117.7 x 114.0 mm (1.77 x 4.63 x 4.49")
Connectors	9 plug-in connectors with 4 contacts, screw type terminals
Connector clamping range	0.13 to 3.31 mm^2 (26 to 14 AWG)
Connector tightening torque	0.4 to 0.6 Nm (0.30 to 0.44 lb-ft)
Mounting assembly	DIN rail ("top hat", 35 mm)
Ingress protection	IP20 according to IEC 60529
	Indoor use or use in a protective enclosure
Weight	325 g (11.5 oz)
Environmental conditions	
Operating temperature	-20 to 55 °C (-4 to 140 °F)
Storage temperature	-20 to 70 °C (-4 to 140 °F)
Operating humidity	0 to 80% non-condensing
Storage humidity	0 to 80% non-condensing
Other	Over Voltage Category (OVC) II, pollution degree 2 (IEC 60664-1)

APPROVALS

International standards	CE; UKCA
Electromagnetic Compatibility (EMC)	EN 55011 & EN 61000-4
Low Voltage Directive (LVD)	EN 61010-1
Environmental / RoHS	EN IEC 63000 (RoHS 3)



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Our expertise is to support and maintain these critical sensors and systems in the field throughout their operational life; to increase safety, maximize machine availability and to provide new monitoring data and machine insights.

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