

FAG Wear Debris Check

Technical Datasheet



Purpose

Detection and classification of wear of bearings, cages and gears

Benefits

- Classification of metal particles (metallurgy [Fe, nFe], size)
- No calibration necessary
- Capable of being integrated easily into existing CM solutions or machine controls

Industrial Sectors/ Applications

Gearboxes for all industrial applications and purposes

Technical Data

Performance

Detectable Particles (Material)	Ferrous (Fe), Non Ferrous (nFe)
Detectable Particles (Size)	Fe: >40µm nFe: >135µm
Characteristic Value	<ul style="list-style-type: none"> ■ Particle Quantity (cumulative) ■ Particle Rate (Number of Particles / Minute) ■ Fe/nFe Mass (Particle Mass / Hour)

Specifications

Pipe Diameter (Measuring Section)	10mm
Hydraulic Connection	G 1/2" (BSPP) x 17 mm (female) acc. ISO 228
Wetted Surface Materials	PEEK, Viton (FPM), Aluminium
IP Class	IP67
Weight	3 kg

Operating Conditions

Flow Rate (Particle Speed)	1.3 l/min (0.28 m/s) up to 9 l/min (1.9 m/s)
System Fluid Pressure	0 up to 20 bar
Permitted Fluid Temperatures	-20 up to +85 °C
Ambient Operating Temperature	-20 up to +70 °C
Fluid Compatibility	Mineral Oils, Synthetic Oils, Water/Oil Emulsions
Range of Viscosity	Viscosity Independent

Data Communication

Digital	<ul style="list-style-type: none"> ■ Ethernet (Modbus TCP) ■ RS485 – half duplex (Modbus RTU) ■ CAN (CANopen)¹⁾
Analog	<ul style="list-style-type: none"> ■ 4-20 mA (Particles per Minute) ■ 4-20 mA (Particle Mass per Hour)
Alarm Interface	Alarm Contact [0.1A max.] (2 wires)

Electrical Installation

Cable	7 twisted pair shielded cable (Power Supply and Signals)
Power Input	24V ± 4V
Power Consumption	3W
Fuse Rating	0.2A (200mA)
Cable Specification	screened CSA: 0.22mm ² , 1A, AC: 440V max: 70°C
Cable Lengths	<ul style="list-style-type: none"> ■ RS485, CAN¹⁾: 1000m max. (Twisted Pair Cable, shielded) ■ Ethernet: 100m max. (CAT5e-Kabel) ■ 4-20 mA: 10m recommended ■ Alarm: 50m Max.

Monitored Values (Classification)

Classification (Bin Size)		Characteristic Value
Ferrous Particles (Fe)	Non Ferrous Particles (nFe)	<u>For Each Bin:</u> <ul style="list-style-type: none"> ■ Particle Quantity (cumulative) ■ Particles per Minute ■ Particle Mass per Hour <u>Sum Signal (total amount):</u> <ul style="list-style-type: none"> ■ Particle Quantity (Fe / nFe) total amount (cumulative) ■ Particles (Fe / nFe) per Minute ■ Particle Mass (Fe / nFe) per Hour
25 – 50 µm*		
50 – 100 µm		
100 – 150 µm	100 – 150 µm*	
150 – 200 µm	150 – 200 µm	
200 – 400 µm	200 – 400 µm	
400 – 600 µm	400 – 600 µm	
600 – 1000 µm	600 – 1000 µm	
> 1000 µm	> 1000 µm	

All characteristic values are transmitted by Ethernet, RS485 or CAN interface¹⁾. Sum signals („Particle (Fe/nFe) per Minute“, „Particle Mass (Fe/nFe) per Hour“) transmitted by 4-20 mA current loops (analog) as well. The integrated alarm interface uses the same values as the 4-20 mA current loops.

* According to material properties

¹⁾ The CANopen interface offers limited functionality. Operation can cause additional efforts. If required please contact the manufacturer for further information.

Dimensions

