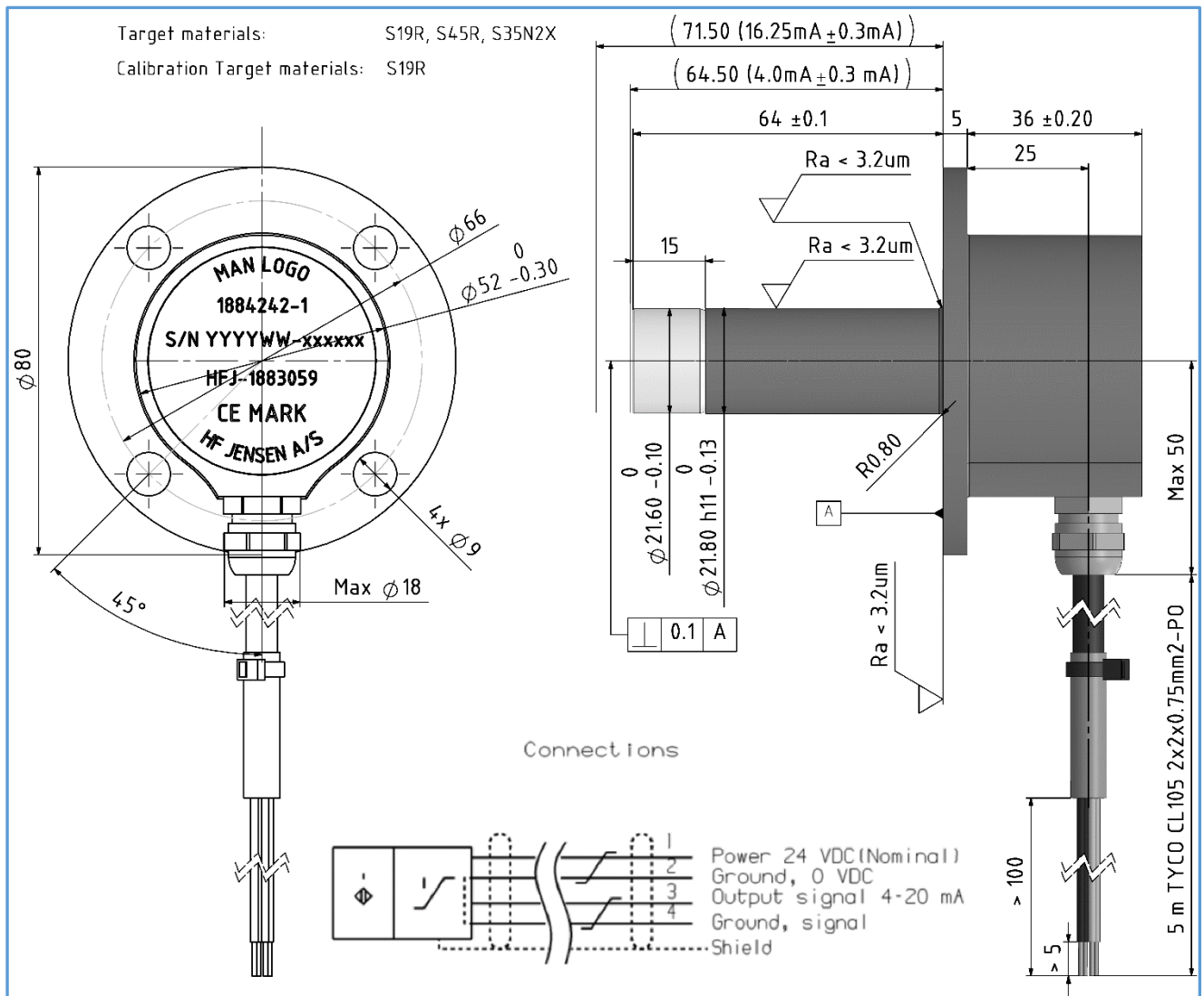


Analog proximity sensor with integrated electronics, HFJ-1883059



DESCRIPTION

HFJ-1883059 is an analog proximity sensor with integrated electronics. The sensor uses an Eddy Current measurement principle to detect displacement of a magnetic target in proximity of the sensor front. Contactless measurement principle reduces wear and ensure longer lifetime. Factory calibration of the sensor ensures current output in the range of 4-16.25 mA representing 7 mm physical displacement of the magnetic target material. The calibration is performed using magnetic material S19R, but the sensor is also applicable to use with other magnetic materials such as S45R and S35N2X. Changing the magnetic target material will affect the output current range representing the 7 mm displacement, but not the Non-linearity.

INSTALLATION

Install the sensor using the 4 x Ø9mm holes.

MAINTENANCE

The sensor is sealed to ensure optimum performance in the environment and cannot be repaired on-site. In case of malfunction, replace the sensor.

ORDERING INFORMATION

HFJ-1883059

2020-09-28

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HFJ-1883059

H F JENSEN
 SENSOR TECHNOLOGY

Technical Data

General specifications	
Output type	Analog output current
Magnetic target materials	S19R, S45R, S35N2X
Mechanical linear measurement range	7 mm (see drawing for calibrated linear range)
Output polarity	Direct Current- DC
Operating voltage range	16.8 – 31.2 V _{DC}
Complete output range (current)	3.5 – 20.5 mA _{DC}
Maximum current consumption	50 mA _{DC}
Nominal ratings	
Calibration target material	S19R
Operating voltage	24 V _{DC}
Linear output range (analog current output)	4 – 16.25 mA _{DC} (R _L ≤ 400 Ω , C _L < 1 μF)
Temperature drift	< ± 0.3mA within linear output range
Non-linearity	< ± 0.3mA within linear output range
Output ripple	PSRR < 1 μA/V up to 1 kHz
No-supply current	< 50 mA _{DC}
Dynamic Characteristics (Response time)	Increasing distance: 400μs to 700μs Decreasing distance: 300μs to 500μs
Reliability (Operating temperature 90°C with upper confidence level 90%)	
MTTF	> 1900000 hours
Expected lifetime	> 200000 hours
Environmental conditions	
Storage temperature	-25 °C to 85 °C
Ambient temperature	0 °C to 110 °C
Electronics temperature	0 °C to 110 °C (operating temperature)
Sensor front temperature (sensing element)	0 °C to 150 °C (operating temperature)
Vibration (test specification MAN 3090801-4 1)	2-2000 Hz / 20g / 150 minutes per axis
Working pressure sensor front (sensing element)	< 50 bar
Mechanical specifications	
Cable type	CL 105-2x2x0.75 – PO (flame retardent, halogen free)
Housing material	Stainless steel (DIN 1.4305)
Sensor front material (sensing element)	PEEK (Thermoplastic polymer)
Degree of protection	IP67 with reference to IEC 60529
Mass	1.5 kg
Standards and directives	
Marine type approval test	IACS UR E10 rev 6, Oct. 2014
Electrical and electronic installation in ships- EMC	IEC 60533:2015
Generic standards- immunity	IEC 61000-6-2 + amendments
Generic standards- emission	IEC 61000-6-4 + amendments
Electromagnetic compatibility	EMC Directive 2004/108/EC
Extended vibration test (product related)	MAN 3090801-4 1 (engine mounted equipment)
Degrees of protection provided by enclosures (IP)	IEC 60529 + amendment
Approvals and certificates	
Marine approval certificate	TA 62894/A0 EU-MR BV