HF.JENSEN
Robust sensors crafted in Denmark

HF Jensen A/S
Emdrupvej 70, DK-2400 Copenhagen
Denmark

+45 39 53 60 40
info@hfjensen.com
www.hfjensen.com

Analog proximity sensor with integrated electronics, HFJ-1883072

DESCRIPTION

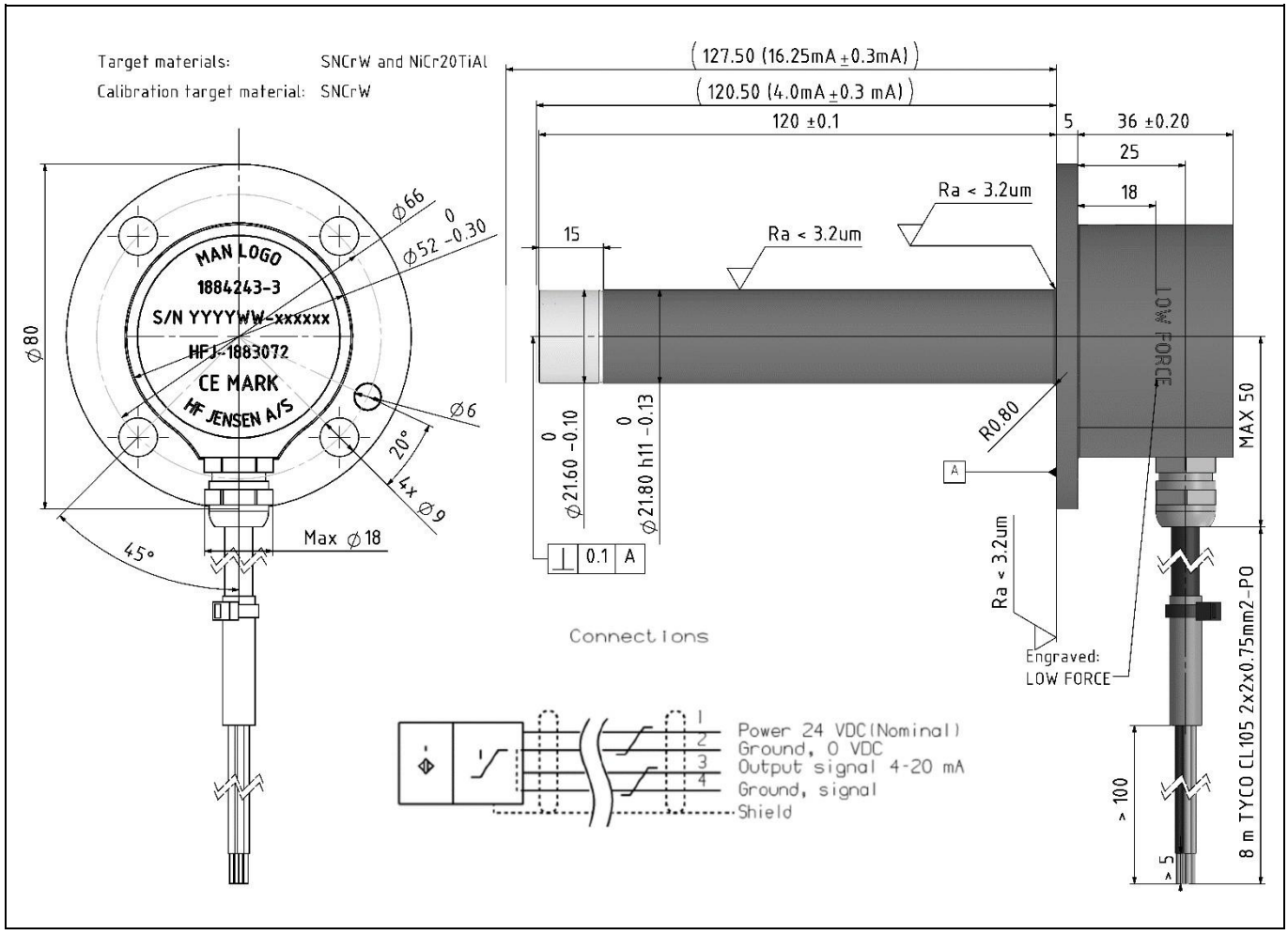
HFJ-1883072 is an analog proximity sensor with integrated electronics. The sensor uses an Eddy Current measurement principle to detect displacement of a non-magnetic target in proximity of the sensor front. Contactless measurement principle reduces wear and ensure longer lifetime. Factory calibration of the sensor ensures current output in the range of 4-16.25 mA representing 7 mm physical displacement of the non-magnetic target material. The calibration is performed using non-magnetic material SNCrW, but the sensor is also applicable to use with other non-magnetic materials such as NiCr20TiAl. Changing the non-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.



HF Jensen A/S
Emdrupvej 70, DK-2400 Copenhagen
Denmark

+45 39 53 60 40
info@hfjensen.com
www.hfjensen.com

SPECIFICATIONS

General specifications	
- **Output type**	Analog output current
- **Magnetic target materials**	SNCrW, NiCr20TiAl
- **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**	SNCrW
- **Operating voltage**	24 V_{DC}
- **Linear output range (analog current output)**	4 – 16.25 mA_{DC} (RL ≤ 400 Ω , C_L < 1µF)
- **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- emisson**	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

ORDERING INFORMATION

HFJ-1883072