Digital Phase Reference Sensor

DRS-020 & DRS-040

FEATURES

- Operating distance :
  - 0 to 2mm (DRS-020)
  - 0 to 4mm (DRS-040)
- Supply voltage range 10 to 30 VDC
- Output voltage drop < 2V at 200 mA
- Switching frequency:
  - DRS-020: < 5kHz
  - DRS-040: < 2.5kHz
- Built-in protection : short-circuit, voltage reversal, and induction
- Noncontact indictive
- Built for hostile environments
- Built-in LED enabling for visual diagnostic.
- Embedded sensor tip
- Shock proof

Related applications

- Phase reference measurement
- Used for
  - Air gap signals
  - Magnetic flux signals
  - Vibrations
  - Rotational speed

DESCRIPTION

The Model DRS-020 and DRS-040 are self-contained, phase reference, non-contact sensors.
These phase reference or synchronization (trigger signal) sensors are inductive (eddy current) proximity sensor used to trig the phase reference once per revolution. It measures the distance between a target glued on the shaft and detects its presence once the target is in range.
Once per revolution, a pulse is generated once the target crosses the sensor tip. Trigger signal is used as a phase reference for all the measurements that require correlation of data with the position of rotor.
The distance between the target and the sensor tip shall be below 2mm for the DRS-020, and respectively 4mm for the DRS-040. The built-in LED enable to check the correct sensor operation.
The eddy current proximity switches react to metal parts only making them insensitive to dirt.
The embedded sensor head makes it robust to mechanical shocks. The built-in electronic is protected against short-circuits, induced overvoltage and power supply reversal.
The DRS-020 and DRS-040 include an extension cable, a metallic target and a package of glue.

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GLOBAL SPECIFICATION

ELECTRICAL CHARACTERISTICS	DRS-020	DSR-040
Power supply	$+10V_{DC}$ to $+30V_{DC}$	
Current consumption	approx. 10mA	
Signal output - Pulse	approx. $+24V_{DC}$	
Rated operating distance	Dn 2mm	Dn 4mm
Hysteresis	< 10%	
Repeat accuracy	0.04mm	
Output current	< 200mA	
Output voltage drop at 200mA	< 2V	
No-load supply current	< 10mA	
Leakage current	< 0.1mA	
Switching frequency	< 5kHz	< 2.5kHz
Time delay before availability	32ms	60ms
LED indicator	Built-in	

ENVIRONMENTAL		
Temperature range (sensor only)		
Operation	-25°C to 70°C	
Storage	-40°C to +80°C	
Sensor protection class	IP67	
Connector protection class	IP67	
Shocks and vibration	IEC 60947-5-2/7.4	
EMC protection	IEC 60255-5	1kV
	IEC 61000-4-2	Level 3
	IEC 61000-4-3	Level 3
	IEC 6100-4-4	Level 3

PHYSICAL CHARACTERISTICS		
Body thread	M8x1	M12x1
Connector	M12, mating connector M12	

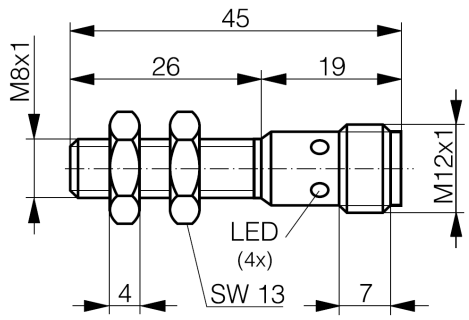
FIELD WIRING	
Brown	+24VDC
White	0VDC
Green	Output signal
Black	Cable shield

ORDERING INFORMATION

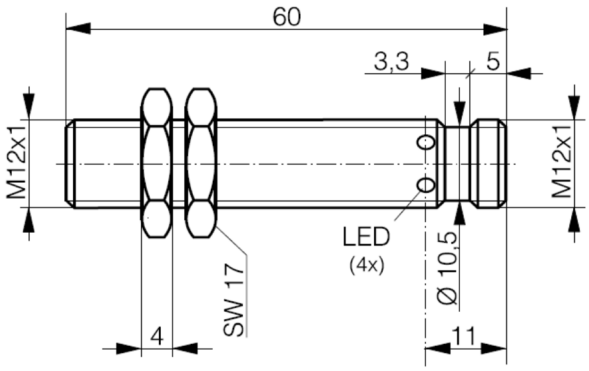
Part type	DRS-020 complete set
Ordering code	06.020.00L (L=0 for 10meters cable, L=1 for 20 meters cable)
Description	Digital phase reference set, including the probe, the extension cable and the target
Part type	DRS-040 complete set
Ordering code	06.040.00L (L=0 for 10meters cable, L=1 for 20 meters cable)
Description	Digital phase reference set, including the probe, the extension cable and the target

MECHANICAL DRAWING

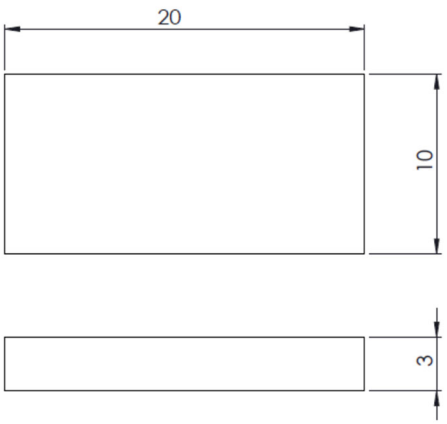
DRS-020 Probe



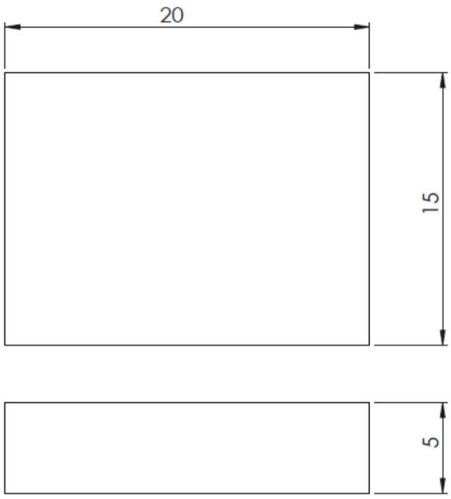
DRS-040 Probe



DRS-020 Target



DRS-040 Target



MC-monitoring Quality certifications

LOCAL REPRESENTATIVE

MC-monitoring SA
Route André Piller 19
CH-1762 Givisiez | Switzerland
Phone : +41 58 411 54 00
Mail : info@mc-monitoring.com
sales@mc-monitoring.com
Web : mc-monitoring.com

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