



# ULTRASENSOR 2

## CHARACTERISTICS

- **ULTRA SMALL:**  
SMALLEST SENSOR ON THE MARKET TODAY.  
SMALL SIZE MEANS EASIER INSTALLATION ON TRICKY MACHINERY.
- **ULTRA FAST:**  
NO MECHANICAL MOVING PARTS MEANS THE SENSOR CAN READ ANY PRACTICAL CYCLE SPEED.
- **ULTRA RELIABLE:**  
COMPLETELY SOLID STATE OPERATION FOR HIGH RELIABILITY AND DURABILITY.
- **IP 67 PROTECTION.**
- **FULLY POTTED SOLID STATE DEVICE:**  
MEANS CIRCUIT IS ISOLATED FROM THE ENVIRONMENT.
- **2 LED:**  
- GREEN DIAGNOSTIC LED  
- ORANGE MONITORING LED DIAGNOSTIC
- **NPN AND PNP SIGNAL:**  
BOTH INCLUDED AS STANDARD.
- **M12 HEAVY DUTY METAL CONNECTOR:**  
PROVIDES ROBUST WIRING SOLUTIONS.

## APPLICATIONS

- **SMX, SMP, SMO, nP AND NPR+ PROGRESSIVE SYSTEMS**

*Patented:  
Ultrasensor technology is protected by international patents.*

*Patented:  
US 20080284415 A1*

## ULTRASENSOR 2 ULTRA SMALL, ULTRA FAST, ULTRA RELIABLE

The **UltraSensor 2** has been designed as a next generation replacement of Proximity and micro switch systems for monitoring spool movement in progressive divider elements. A single model will work with all standard SMX, SMP, SMO, nP and nPR+ divider blocks as a screw-on accessory without requiring special arrangement or modification to the spool. The patented concept works by monitoring magnetic flux variations through a Hall-effect sensor as the spool enters the sensing range. There are no moving parts which means the solid state device is completely wear free.



The device is equipped with **2 LED**:

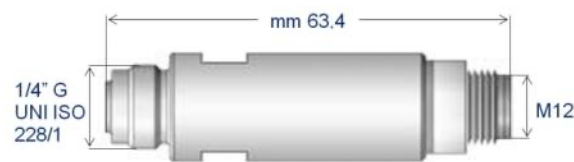
- 1. MONITORING LED (ORANGE):** allows you to see the output signal. LED signal indicate a good function of the spool.
- 2. DIAGNOSTIC LED (GREEN):** At power-on the number of pulses indicates the magnetic flux level. Pulses number is from 0 to 10. 5 blinking are standard pulses which shown a good function of device. Thanks to this diagnostic system you can verify the correct reading of magnetic field.

**NPN and PNP connection options are standard within the same sensor.**

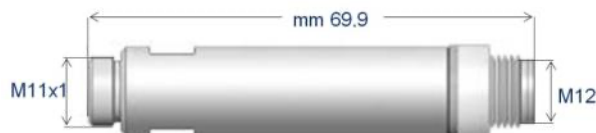
### NEW IMPROVEMENTS Version 2

- **NEW** *Power-on diagnostic LED*
- **NEW** *Metallic connector*
- **NEW** *Short-circuit protection*
- **NEW** *Advanced sensing algorithm*
- **NEW** *Interference resistant circuitry more robust than a normal prox. switch!*
- **NEW** *Protection against reverse polarity*

### SENSOR FOR SMX - 1655305 - 1655340 (SS 316)



### SENSOR FOR SMP - 1655306 - 1655348 (SS 316)



### SENSOR FOR SMO, nP AND NPR+ - 1655308 - 1655342 (SS 316)



## TECHNICAL CHARACTERISTICS

Material	Stainless steel AISI 316 - Nickel-plated brass
Max. Cycle per minute	1000
Voltage	8 ÷ 28 V DC
Short circuit protection	SI
Protection degree	IP 67
Operating temperature	-25°C ÷ +60 °C (-13 ÷ +158 °F)
Connector	M12x1
Output signals	NPN 2A - PNP 0,7A
Max allowable pressure on the front sensor surface	400 bar (5800 psi)

## MOUNTING INFORMATION

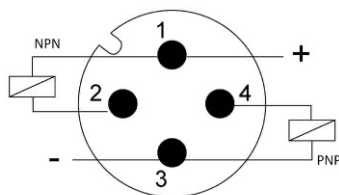
### CLAMPING TORQUE

SMX	10 Nm +5%
SMO- nP - nP Aluminium - nPr+	8 Nm

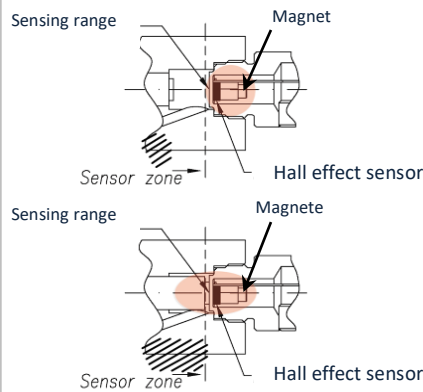
## OPERATING PRINCIPLE

### CONNECTION

M12 connection top view



PIN	FUNCTION
1	Vdc in 8÷28V
2	NPN out
3	GND
4	PNP out



Normally, the magnetic field is balanced around the hall sensor. With the spool in the sensing range, the flux density is modified allowing the Hall Effect sensor to detect the presence of the spool. The use of a magnetic flux variation allows an extended sensing zone which avoids problems on systems with low flow rates and backpressure where the spool can often stop or bounce on the sensing surface.

## ORDERING INFORMATION

DESCRIPTION	MATERIAL	PART. NO.
Sensor for SMP	Nickel-plated brass	1655306
	Stainless steel AISI 316	1655348
Sensor for SMX	Nickel-plated brass	1655305
	Stainless steel AISI 316	1655340
Sensor for SMO - nP - nPr+	Nickel-plated brass	1655308
	Stainless steel AISI 316	1655342

### ACCESSORIES

DESCRIPTION	PART. NO.
M12 female connector	0039999
5 m cable, 90°- M12 female connector	0039815
2 m cable, M12 female connector	0039168
2 m cable, 90°- M12 female connector	0039830

Distributor Info: