



## **SENSORS ~ CAPTEURS ~ SENSOREN**

A wide range of sensors designed for low cost and harsh environments.

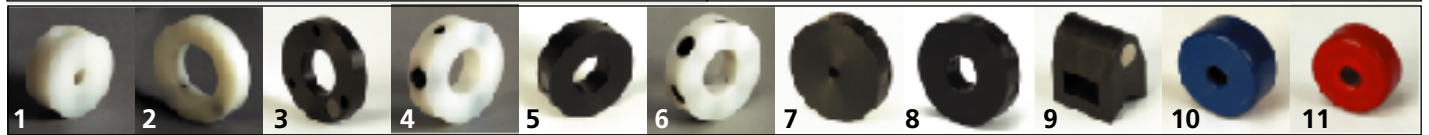
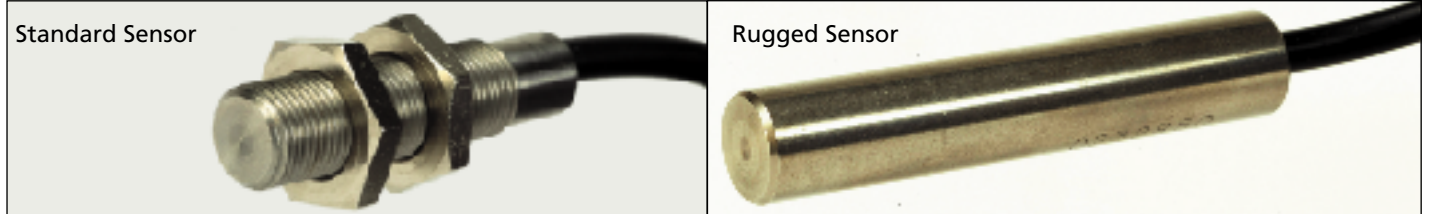
Une large gamme de capteurs à bas prix et pour les environnements difficiles.

Ein weiter Bereich von Sensoren - entwickelt für raue Umgebungen und mit niedrigen Kosten.

## Reed Switch and Magnet ILS et Aimant Reed Schalter und Magnet

**Principle:** Closing contact induced by magnetic field.  
**Example applications:** Rotation, distance, area, event counting.

Supply Voltage: N/A – passive  
 Output: Closing contact  
 Frequency: 0 ~ 100Hz  
 Current (resistive): Switch 0.5A, hold 1.2A  
 Material: Stainless steel  
 Protection: IP67  
 Sensitivity: Depends on magnet type and field strength, typically 5 ~ 30 mm



SENSORS	Type	Length	Diameter	Cable Length/Termination
K/SNR/503	Standard	45.0	M12	5000 free ends
S/SR/500-2-001	Rugged	80	15	4000 6.35 mm fast-on

MAGNETS	Type	O/D	Bore	Length	Pulses/Rev	Ref
S/MG/500-12-003	End of shaft	34	6.5	14	1	1
S/MG/500-12-002	On shaft (PTO)	63	35	14	1	2
S/MG/185-1-013	On shaft	50	23	8	1	3
S/MG/185-1-010	On shaft	48	22.5	14	3	4
S/MG/217-1-010	On shaft	48	20.5	14	3	5
S/MG/185-1-014	On shaft	48	22.8	14	6	6
S/MG/195-1-027	End of shaft	63	6.5	15	8	7
S/MG/202-1-016	On shaft	63	22.5	15	8	8
S/MGNT/CRRY/003	Saddle	25 (L)	20 (W)	28 (H)	1	9
S/MAGNET/002	As req'd	32	6.5	15	N/a	10
S/MG/193-1-020	As req'd	16	4.5	7	N/a	11

## Inductive ~ Inductif ~ Induktiver

**Principle:** Sensor detects presence of conductive material.  
**Example applications:** Rotation, distance, area, event counting.

Supply Voltage: 10 ~ 30 Vdc  
 Output: NPN  
 Switching Frequency: 400Hz  
 Current: <18 mA  
 Material: Stainless steel  
 Protection: IP67

SENSORS	Threaded Length	Diameter	Sensing Distance	Cable/connections
S/Z782-079	28	M12	4.0	2000 free ends
S/SR/187-1-016	28	M18	8.0	2000 free ends



M12 Version (4 mm max sensing distance)

M18 Version (8 mm max sensing distance)

## Single Axis Angle Sensor

Capteur un Angle ~ Einachsiger Neigungssensor

**Example applications:** Self levelling, angle sensing.  
Model # 017 provides an on/off output when  $> \pm 1.5\text{deg}$  from horizontal.  
Model # 010 provides an analog output.

Supply Voltage: 10 ~ 30 Vdc  
Current: < 30mA  
Output: See table  
Protection: IP67  
Dimensions: O/A 35 (L) x 100 dia



Models	Output	Max range
S/SR/257-1-017	Vsupply < $\pm 1.5\text{deg}$ < 0.5 Vdc	N/a
S/SR/268-7-010	20 mV/deg	90 degrees

## Dual Axis Angle Sensor

Capteur Deux Angle ~ Zweiachsiger

**Example applications:** Self levelling, angle sensing.  
Sensor provides an two analog outputs proportional to inclination in two planes.

Supply Voltage: 10 ~ 30 Vdc  
Output: X axis +3V offset  $\pm 66\text{mV/deg}$   
Z axis +3V offset  $\pm 66\text{mV/deg}$   
Protection: IP67  
Dimensions: O/A 160 (L) x 70 (W) x 30 (H)



### Models

S/AC/182-3-045 Dual Axis Angle Sensor

## Rotary Encoder Encodeur Rotatif Drehgeber

**Example applications:** Seed drills, fertilizer/salt spreaders, harvesters. 360 pulses/rev gives good response and resolution even at low speeds.

Supply Voltage: 10 ~ 30 Vdc  
Output: 360 pulses/rev NPN  
Protection: IP67  
Dimensions: O/A 70 (L) x 170 dia



### Models

S/SR/500-2-035 360 Pulse/rev Rotary Encoder

## Capacitive ~ Capacitance ~ Kapazitiv

**Principle:** Capacitance change due to change of dielectric constant.

**Example Applications:** High/low level sensing of granular materials. Fertilizer/salt spreaders, combine grain tanks, grain drills, silos.



Supply Voltage: 10 ~ 30 Vdc, @ < 35mA  
 Output: NPN.  
 Hi: Vsupply,  
 Lo: <0.1 V @ 2mA, < 1.2V @ 50mA  
 Material: uPVC  
 Protection: IP67  
 Sensitivity: Depends on sensed material.  
 Typically 4 ~ 20 mm  
 Dimensions: 80 mm x 1 inch BSP  
 N/C and N/O external connections.

### Models

S/SR/201-2-001 Standard sensor

## Force ~ Effort ~ Kraft

**Principle:** Strain gauge

**Example Applications:** Load and overload measurement on vehicles. Easily installed onto vehicle chassis or stressed member.



Supply Voltage: 10.5 ~ 15 Vdc  
 Output: See table  
 Protection: IP67  
 Dimensions: O/A 75 (L) x 40 (W) x 30 (H)  
 Mounting holes: 50 mm centres, M8 clearance  
 Cable: 90 mm to AMP

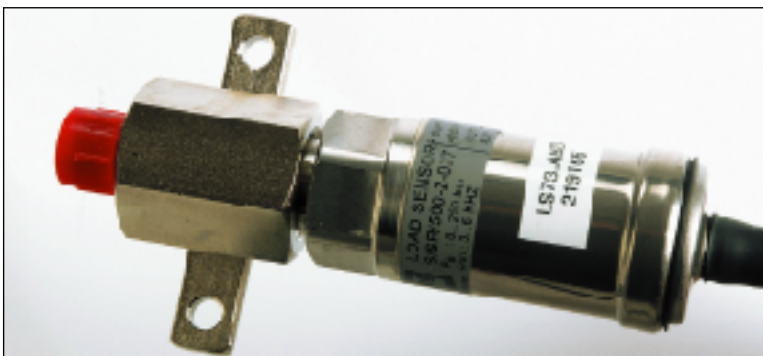
Models	μStrain	Output kHz
S/SR/500-2-048	0 to 480	3.0 to 6.0
S/SR/500-2-042	0 to 480	3.5 to 9.5

## Pressure ~ Pression ~ Druck

**Example Applications:** Crop sprayers, hydraulic pressure monitoring/measuring.

Supply Voltage: 10 ~ 30 Vdc  
 Output: See table  
 Materials: Stainless steel  
 Protection: IP67  
 Dimensions: O/A 100 (L) x 35 dia  
 Cable: 2000 mm to Weatherpack

Models	Range (bar)	Output kHz
S/SR/500-2-024	0 to 10	1 to 6 Vdc
S/SR/500-2-027	0 to 250	3 to 6 kHz



## Grain Flow ~ Capteur de Rendement ~ Körnerfluss

**Principle:** Dynamic measurement of occlusion time as loaded paddle passes light beam.

**Example applications:** Grain flow measurement on paddle elevators. Used on combine harvesters for the measurement of both clean grain and returns grain.

### Models

Transmitter/Receiver (pair)  
Lens Assembly (each)

S/SR/182-2-017  
S/AC/182-2-020

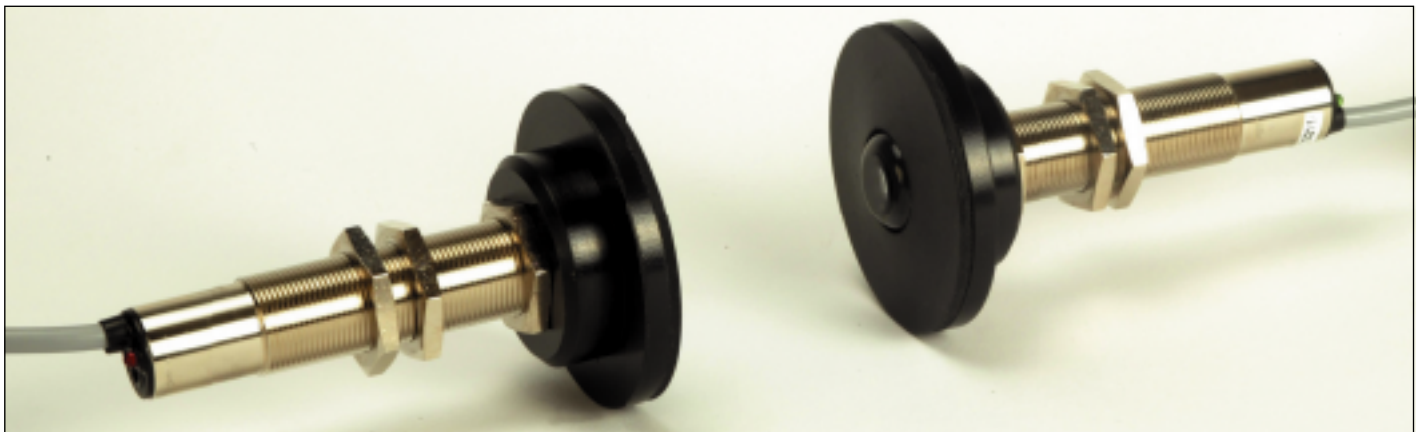
### TRANSMITTER

Supply Voltage: 10 ~ 30 Vdc  
Current: <28 mA

### RECEIVER

Supply Voltage: 10 ~ 30 Vdc  
Current: <15 mA  
Output: NPN  
Max frequency: 500Hz  
Reaction Time: 1mS  
Material: Stainless steel  
Protection: IP67  
Dimensions: 75 (L) x M18

For further information concerning interfacing and required software algorithms, contact the RDS OEM department.



## Moisture ~ Humidité ~ Feuchtigkeit

**Principle:** Capacitive.

**Example Applications:** Continuous measurement of moisture on combine harvesters, grain driers etc

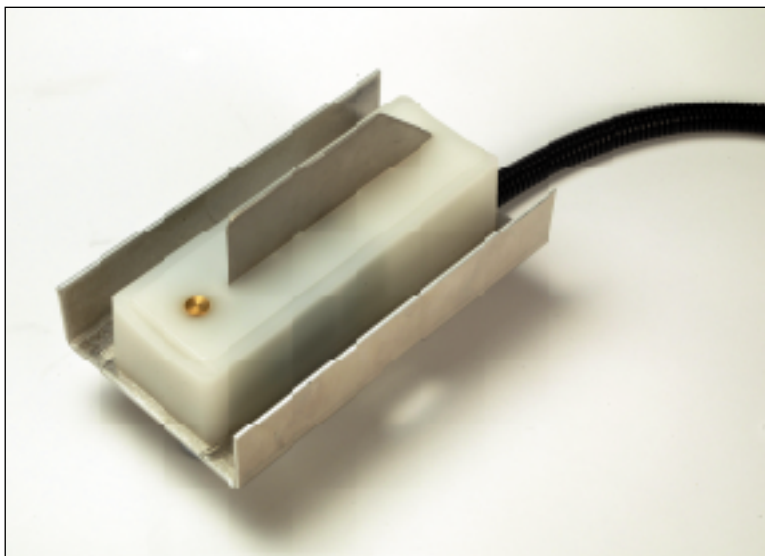
### Models

S/SR/182-6-013

Standard Moisture Sensor

Supply Voltage: 10 ~ 30 Vdc  
Output: Analog  
Dimensions: O/A 170 (L) x 100 (W) x 50 (H) mm  
Cable: 400 mm to AMP

For further information concerning interfacing and required software algorithms, contact the RDS OEM department



RDS has over 30 years experience in specifying, designing and manufacturing systems for agricultural and other off-road mobile machinery. Of equal importance to the instrument display itself, are the sensors which are fundamental to the whole system. The sensors need to be able to operate reliably in very a demanding physical, and electromagnetic environment. Market pressure on machinery manufacturers means that sensors are required in industrial volumes, to a military specification, but at consumer prices! This is what RDS aims to offer.

### INSTRUMENTS

RDS is able to offer a wide range of instruments to vehicle and implement manufacturers. Depending on volume, these can be 'own branded name' versions of standard RDS products, customised software or 'clean sheet' new designs.

Examples of standard products from the Wizard, Expert and Pro-Series range are shown below.

Separate data sheets are available on many of the products and sensors shown here and the RDS OEM department is at your disposal to discuss your technical requirements in detail.

RDS is continually evolving new sensors, including rotary position sensors, ultrasonic sensors for speed/distance/movement/flow and new versions of existing sensors. Contact us with details of your particular requirements.

Separate data sheets available for most items. All units in metric, except where stated.



Errors and omissions excepted. Technical details are subject to change without notice.



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