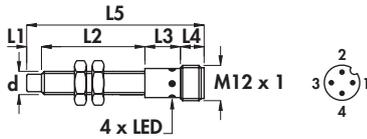


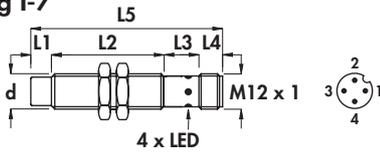
SPEED SENSORS

- Speed sensors with integrated control
- 3 wires - d.c.
- Connector output M12 x 1

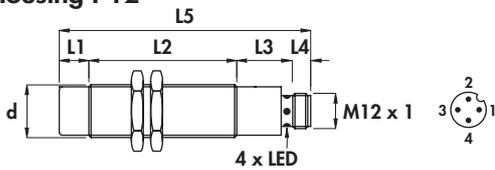
Housing I-11



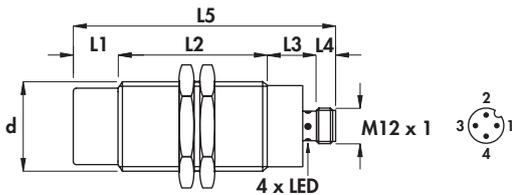
Housing I-7



Housing I-12



Housing I-2



General Features:

These sensors allow to control with extremely high precision the rotation of a toothed wheel or reference marks, switching off the load or giving an alarm in case the speed goes down the minimum threshold. Thanks to the extremely wide measuring range they can be even used to control repetitive operations, signalling in case of unavoided stops. Further delays or other special functions are implementable upon specific request.

The output is protected against connection mistakes, overvoltages on lines, and short circuit of the load. The connection is possible with a 4 wires M12x1 connector which must be ordered separately.

Technical data:

- Working voltage: 10 ÷ 30 Vdc
- Max ripple: 10%
- No-load supply current: < 15 mA
- Rated operational current (I₀): 200 mA
- Voltage drop: < 1,5 V
- Switching hysteresis (H): < 10% S_n
- Repeat accuracy (R): < 2% S_n
- Maximum detectable interval (between two pulses): 2 min
- Detectable start-up time (T₁): 0 ÷ 1 min (default 2 sec.)
- Temperature range: -20 ÷ +70°C
- Max thermal drift of sensing distance S_n: ±10%
- Degree of protection: IP67
- Status indicator: yellow LED = out ON; frequency over the threshold
- Protected against short-circuit and overload
- Electromagnetic compatibility (EMC) according to EN60947-5-2
- Shock and vibration resistance according to EN60068-2-27 e EN60068-2-6

Diameter	M8 x 1	M12 x 1	M18 x 1	M30 x 1,5
Nut	Size	SW13	SW17	SW24
	Thickness mm	4	4	4
Max tightening torque Nm	10	15	35	80

Materials:

- Housing 8 mm: stainless steel
- Housing 12 - 18 - 30 mm: nickel plated brass
- Sensing face: plastic

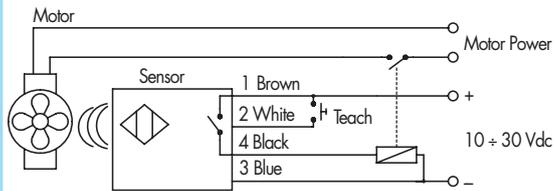
Housing	Flush mounting Non flush mounting	L1	L2	L3	L4	L5	Female connector (see page H-1)	Body diameter (d)	Max detectable frequency	Nominal sensing distance (S _n) ±10%	ORDERING REFERENCES	
											mm	mm
I-11	•	-	40	12	8	60	6-8B-10	M8 x 1	1	1,5	DSD8/4309KS	
I-11	•	5	35	12	8	60	6-8B-10	M8 x 1	1	2,5	DSD8/5309KS	
I-7	•	-	43	15	8	66	6-8B-10	M12 x 1	1	2	DSD12/4309KS	
I-7	•	7	36	15	8	66	6-8B-10	M12 x 1	1	4	DSD12/5309KS	
I-12	•	-	50	19	8	77	6-8B-10	M18 x 1	1	5	DSD18/4309KS	
I-12	•	10	50	19	8	87	6-8B-10	M18 x 1	1	8	DSD18/5309KS	
I-2	•	-	65	17	8	90	6-8B-10	M30 x 1,5	0,8	10	DSD30/4309KS	
I-2	•	15	50	17	8	90	6-8B-10	M30 x 1,5	0,4	15	DSD30/5309KS	

ORDERING REFERENCES

PNP (positive switching)



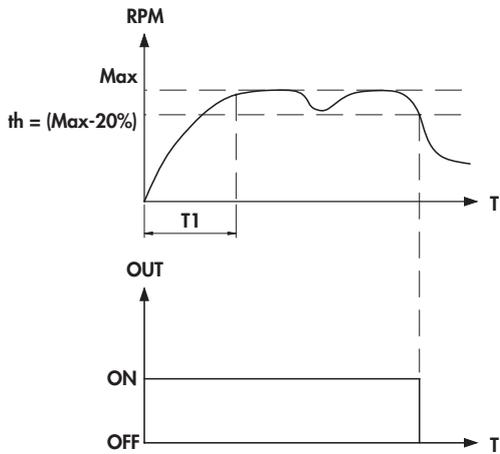
Example of application



Use of the sensor:

On power on, the yellow LED goes on and the output switches in ON state, driving the relay, which will drive the motor. After a start up delay time (T1) the sensor measures the speed of the motor and compare it to the threshold value. If the speed is under the threshold value, the output goes OFF, turning off the LED. The minimum threshold can be either factory presetted or can be acquired from the sensor directly on the application with no need to perform any measurement.

Procedure 1



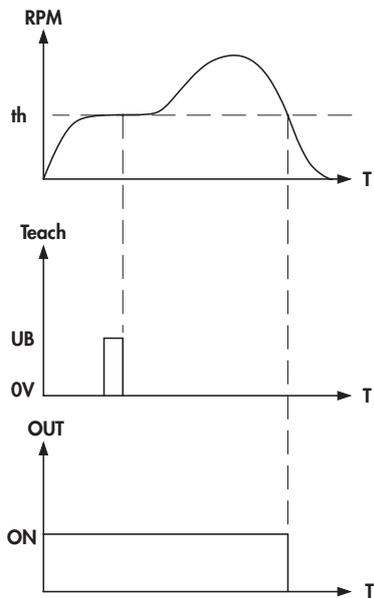
Threshold self-teaching procedure:

There are two different ways to perform the self-teaching of the threshold:

1 - Acquisition of start up time and calculation of the threshold from the maximum speed:

- a) connect the Teach input (white) to the positive of power supply (brown) before to turn on the power
- b) Turn on the power supply to the machine and to the sensor and wait the speed gets the nominal value
- c) Turn off the power supply
- d) At this stage the sensor acquired the start up time (T1) and calculated the threshold as the maximum value of the speed reduced of -20%
- e) Disconnect the Teach in from the positive of power supply before to run the machine again.

Procedure 2



2 - Acquisition of a known threshold (start up time is not modified):

- a) Turn the power supply on to the machine and sensor and go to the speed you want to get as threshold (th)
- b) Connect temporarily the Teach input (white) to the positive of power supply. This operation can be easily done with a push-button on the operator panel of the machine.
- c) At this stage the current speed becomes the minimum threshold (th), under of which the sensor goes in OFF state.

Both of the procedures can be repeated unlimited times.