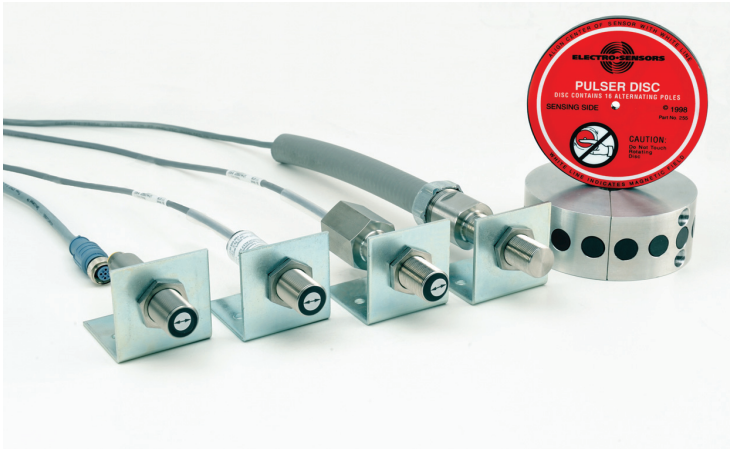


# ELECTRO•SENSORS

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## Series 18 – Shaft Rotation Speed Sensors

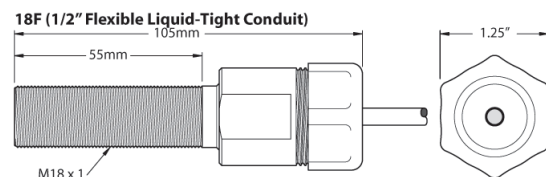
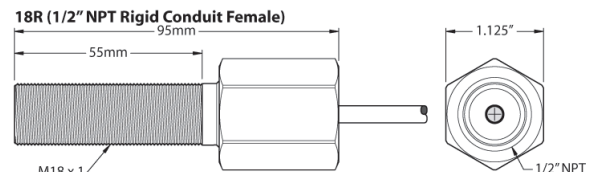
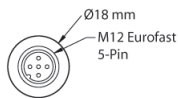
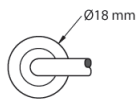
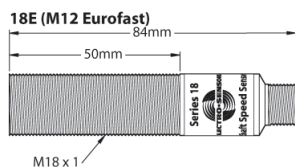
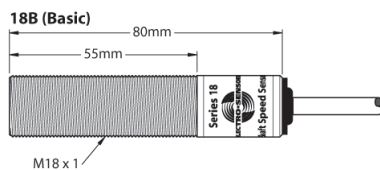
- Hall-Effect or magnetoresistive sensors available
- Single channel or quadrature signaling
- NPN or PNP transistor outputs available
- 4 Housing Options
  - Basic 18mm threaded housing
  - M12 Eurofast connector — quick disconnect
  - 1/2" NPT female rigid conduit port
  - 1/2" flexible, liquid tight conduit
- Rugged, industrial-duty 18mm stainless steel sensor housing
- All sensors are epoxy potted and are liquid- and dust-tight

## Product Information

### Description

Series 18 sensors are available in a range of output sensing and signaling options to meet even the most demanding application requirements. The sensors function by detecting passing magnets from a shaft-mounted pulser disc or wrap and output a voltage pulse frequency proportional to the shaft rotation speed. All models operate down to (and including) zero speed. Series 18 sensors are compatible with PLC inputs, tachometers and a wide range of frequency meters. All models come standard with a mounting bracket and two stainless steel hex jam nuts.

### Dimensions (4 Housing Options)



## Specifications • Series 18 Sensors

<b>Models/Options:</b>	<b>18</b>	<ul style="list-style-type: none"> <li>- Cable Length in ft (corded only; use leading zeros)</li> <li>- O: open-collector output(s)</li> <li>- T: terminated output(s) (internal 4.7 kΩ pull-up/down)</li> <li>- N: npn (sinking) output(s)</li> <li>- P: pnp (sourcing) output(s)</li> <li>- S: single signal</li> <li>- Q: quadrature signal (A, B; only available with Hall-Effect sensing)</li> <li>- H: Hall-Effect sensing</li> <li>- M: Magnetoresistive sensing</li> <li>- B: m18x1 housing (basic) - corded</li> <li>- E: m18x1 housing with M12 (Eurofast) connector</li> <li>- R: m18x1 housing with 1/2 npt female (rigid) conduit port - corded</li> <li>- F: m18x1 housing with 1/2 in (flexible) liquid-tight conduit fitting - corded</li> </ul>
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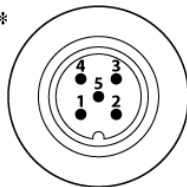
Examples:	18BHSNO-010	(basic housing, Hall-Effect, single signal, npn, open-collector, 10ft cable)
	18EHQPT	(eurofast housing, Hall-Effect, quadrature signal, pnp, terminated)

<b>Output Functions</b>	Hall-Effect:	$f_{\text{pulse}} = \text{RPM} * \text{PPR} / 60$	$\text{RPM} = f_{\text{pulse}} * 60 / \text{PPR}$
	Magnetoresistive:	$f_{\text{pulse}} = \text{RPM} * \text{PPR} / 30$	$\text{RPM} = f_{\text{pulse}} * 30 / \text{PPR}$
	Notes:	$f_{\text{pulse}}$ is the pulse output signal frequency (Hz). RPM is the shaft revolutions-per-minute. PPR is the pulser target pulses-per-revolution (number of N/S magnet pairs or 1/2 of total magnets). Magnetoresistive gives 2X the frequency of Hall-Effect. Some pulser target restrictions exist for Magnetoresistive sensing (consult factory).	

<b>Specifications</b>	Sensor Gap	1/4 in ±1/8 in (using pulser targets with 1/2" magnets)
	$V_{\text{supply}}$	5 → 24 Vdc
	$I_{\text{supply}}$ (no $I_{\text{out}}$ load)	10 mA (max)
	$I_{\text{out}}$	20 mA (max, NPN sink / PNP source)
	Operating Temp	-20 → +85 °C (-4 → +185 °F)
	Output frequency	0 → 20 kHz

<b>Cable</b>	Type	Shielded, 24 AWG
	Color code	Red (V+), Blk (Common), Wht (signal A), Grn* (signal B)
		* Q signal option only

**M12 Euro pinout \***



- 1 - Shield
- 2 - V+ (5 – 24Vdc)
- 3 - Common
- 4 - Signal (A)
- 5 - Signal (B) - Q signal option only, else unconnected

\* 18E housing option only

*Specifications subject to change without notice.*

ES 120 Rev B