

μSPEED®

Non-Contact Speed & Length Gauges

- ▶ Bi-Directional
- ▶ Zero Speed Measurement
- ▶ 0m/min to ±4.800m/min
- ▶ MID 22/2004/EC standard



General Information

Being capable of measuring speed and length without contact onto the material surface, starting from 0m/min including non-contact direction detection with a typical accuracy better $\pm 0.05\%$, μSPEED® sensors are the ideal industrial gauges for replacing contact tachometers, which tend to have measurement errors caused by slippage, chatter or vibration, dirt build-up and day to day wear problems.

The most compact and easy to handle in its class μSPEED® uses proven laser doppler technology plus the latest ELOVIS know-how. Thus it has no moving parts, is maintenance free and permanently calibrated, resulting in significant time and money savings.

μSPEED® sensors are designed for all kinds of conveying processes, also for frequent material starts and stops as well as for changes of material feeding direction and for low speed and high speed applications up to 4.800m/min (80m/s). μSPEED® sensors are available in different product versions to meet your specific requirements.

Applications

μSPEED® sensors work on almost any moving objects, such as web, coil, tube, rod, sheet, plate, cylinder, roller, profile, wire, yarn,... and are suitable for a wide range of applications, including continuous length measurement,

cut-to-length control, portable tachometer calibration and differential speed measurement, in the following industries.

Industries

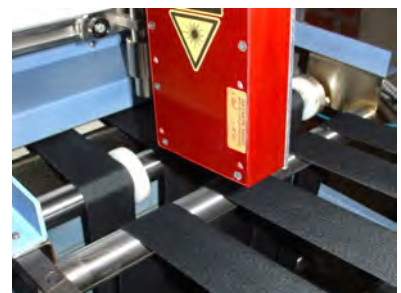
- Textile, non-woven and leather, ...
- Metall: Steel, aluminium, copper, ...
- Wire, cable, tube, fibre and rope, ...
- Plastic, film, foil and tape, profile, ...
- Paper and corrugated products, ...
- Rubber and synthetic material, ...
- Wood, glass, ceramics, ...

Features

- Non-contact direction detection
- Non-contact ZERO speed measurement
- Material presence detection
- Direct replacement for tachometers
- High accuracy and repeatability
- Independent of material, surface, colour
- No parametration necessary
- Permanently calibrated
- Compact package; Easy to handle
- Industrial smart sensor operates on 24VDC
- Programmable quadrature / pulse output
- RS-232/-485, Profibus, Ethernet, Canbus, ...

Specifications	μ SPEED-PRO & μ SPEED-PRO/MID	μ SPEED-SMART & SMART-ECO	μ SPEED-CLASSIC & CLASSIC/MID
Direction Detection	YES non-contact	YES optional non-contact	YES by external encoder
Zero Speed Measurement	YES non-contact	YES optional non-contact	YES by external encoder
Material Presence Detection	YES non-contact	YES optional non-contact	YES by external device
Accuracy (2 σ ;L>10m/3 σ ;L>20m)	$\pm 0.05\%$	SMART $\pm 0.05\%$ SMART-ECO $\pm 0.3\%$	$\pm 0.05\%$
Repeatability	$\pm 0.02\%$ (except SMART-ECO)		
Gauge Type	Smart sensor	Smart sensor	External display and processing unit
Speed Range	0m/min to \pm 4.800m/min 0-80m/s	1m/min to \pm 4.800m/min 0.02-80m/s	0m/min/* to \pm 3.600m/min 0-60m/s
Stand-Off Distances (Tolerances)	120mm \pm 5mm (\pm 20mm) 240mm \pm 10mm (\pm 40mm)		
Interfaces	1 x RS-485 or RS-232 alternatively to I/Os: RS-422, RS-485, SSI		1 x RS-232 unidir. 1 x RS-232 bidir. Analogue out : 0-4V
I/Os	Quadrature output 1 to 10.000 pulses/m (Classic only pulses) Input: Start, Gate, Direction, Laser Interlock Output: Stop, Precontact, Status		
I/O Type	RS-422 levels Laser Interlock (single, 24V)		Open collector output Opto-coupled input
Data Available	Speed, Length, Signal Quality, Status, Laser Interlock, Valid Measurements, Material Presence		
Fieldbus	Profibus, CANopen, DeviceNet, CC-Link, Ethernet-IP, Profinet-IO, Modbus-RTU, Bluetooth (Fieldbuses only optional)		Not available
Degree of Protection	Head: IP 67 / No processing unit (PU)		Head: IP 65 / PU: IP 44
Dimensions (LxWxH)	Head: 154x94x39mm / No processing unit (PU)		Head: 154x94x39mm PU: 180x144x96mm
Voltage	24VDC (18V to 30V)		110-230VAC/50-60Hz
Gauge Weight	1 kg		
Laser	25mW, 780nm (Laser Klasse 3B)		
Ambient Temperature / Humidity	5 to 50°C (50 to 120°F) – non condensing Cooling/heating required outside this range Ask for ELOVIS housing for cooling/heating		
Optional Accessories	<ul style="list-style-type: none"> - Interface-Unit (for integration into electrical cabinets) - Display-Unit (for monitoring & control functions) - Configuration & Monitoring & PPS software - Air conditioned housing (for cooling & heating) - Differential speed measurement software - Accredited / PTB certified version (MID 2004/22/EC standard) - Additional Display, different sizes 		

/* By the use of a pulse processing module and external encoder signal!
Specifications are subject to change without notice.



**INVISIBLE LASER RADIATION -
AVOID DIRECT EXPOSURE
TO BEAM
INVISIBLE LASER RADIATION
WHEN OPEN
LASER CLASS 3B
WAVELENGTH 780nm
CW OUTPUT POWER 25mW
EN 60825-1:2001**

This unit is a class IIIB laser product and complies with EN60825-1:2001. Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated July 26, 2001.

The following safety features required to comply with the Bureau of Radiological Health Class IIIB laser requirements are included:

- ▶ Key-operated power switch on controller
- ▶ Laser indicator light on controller and laser
- ▶ Delayed laser startup – laser indicator light on prior to laser radiation
- ▶ Laser beam blocking device
- ▶ Interlock capability for remote shut-off

ELOVIS

Sales and system integrator:

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