ProSpeed® LSV-1100

Precise speed and length measurements are critical for controlling the production of continuous materials, sheet materials and piece goods. ProSpeed® – the next generation LSV Laser Surface Velocimeters – optimize production processes by providing reliable measurements and increase the output worldwide in the metals, cable and converting industries.

The ProSpeed® LSV-1100 optical sensor measures in forward direction with laser precision. It measures reliably even under harsh production conditions with working distances up to 1.5 m.

Due to the non-contact measurement principle, these laser sensors eliminate common problems of traditional contact-wheel measurement methods such as damage to delicate surfaces, slippage and thermal expansion, work on almost any surface.

The enhanced connectivity of the ProSpeed® sensor generation ensures transparency in process control – anywhere and anytime. Web interface, multi-user access, fieldbus protocols and vast accessories offer flexible and customized solutions. For additional protection, choose the thermo-protective housing (TPH).

Highlights

- Reliable measurement of forward motion
- Easy process integration with long working distances up to 1.5 m
- Outstanding measurement depth-of-field up to 140 mm
- Transparency thanks to the enhanced connectivity (web interface, Ethernet, field bus protocols)
- Multi user access (3 via Ethernet + 1 serial)
- Gauge permanently adjusted*
- Visible laser for easy alignment
- Robust sensor technology (IP 66, 67)

* The extremely stable optics concept of the LSV does not require re-adjustment due to technical reasons. Local laws and quality control regulations may require recalibrations.

ProSpeed® LSV-1100

Process control by non-contact speed and length measurement

Datasheet

Technical data

Metrological specifications					
Nominal working distance [mm]	300	500	700	1000	1500
Depth-of-field [mm]	80	80	100	120	140
Minimal velocity [m/min]			0.5		
Maximal velocity [m/min]	6000	7700	7700	7700	7700
Max. Acceleration [m/s²]			1000		
Measurement units	m/min, ft/min, m or ft (selectable)				
Accuracy	<0.05 % of reading*				
Repeatability	<0.02 % of reading*				
Measurement value output rate	up to 1024/s				
Standard interfaces	■ RS-422 ■ Multi User Ethernet (10/100 Mbit/s) ■ Web Interface		■ Encoder (user-selectable, max. 3.5 MHz) ■ 24 V Status-I/O		
Optional interfaces	■ Profibus-DP ■ Profinet-IO ■ Ethernet / IP		■ Analog (voltage/current) ■ Wireless Ethernet		

* Under controlled conditions

Optics specifications	
Wavelength	650 - 700 nm (visible laser beam)
Laser power	max. 25 mW
Laser class	3B
Beam cross section	2 x 4 mm

General specifications	ProSpeed® LSV-1100	incl. thermo-protective housing TPH
Dimensions (L x W x H)	300 x 120 x 110 mm	727 x 256 x 254 mm
Weight	4.3 kg	36 kg
Power consumption	24 V DC / max. 20 W	
Operation temperature	0 ... +45 °C	-20 ... +200°C
Relative humidity	non-condensing	

Compliant with standards	
Protection class	IP66 and IP67 (according to EN 60529) IP66, IP68 and IP69K with Thermo-Protective Housing
Mechanical shock reliability	10g according to EN 60068-2-29 (IEC 68-2-29)**
Vibration reliability	according to EN 60068-2-6 (IEC 68-2-6)**

** The mechanical shock and vibration reliability of the optical sensor ProSpeed® LSV-1100 has been verified by a third party test institute.

Accessories

Connection box
The connection box is completely wired for instant operation and contains a full terminal block, a universal power supply and a LAN connector.

Compact terminal box
The compact terminal box for moderate environmental requirements provides the common interfaces for the majority of applications.

Touch display
The 7" touch display simplifies parametrization and visualization of measurement values on site. It uses the same intuitive user interface, as known from operating the measurement system via laptops, smartphones and tablet PC. This way users feel at home, no matter the device they use to operate the ProSpeed® LSV.

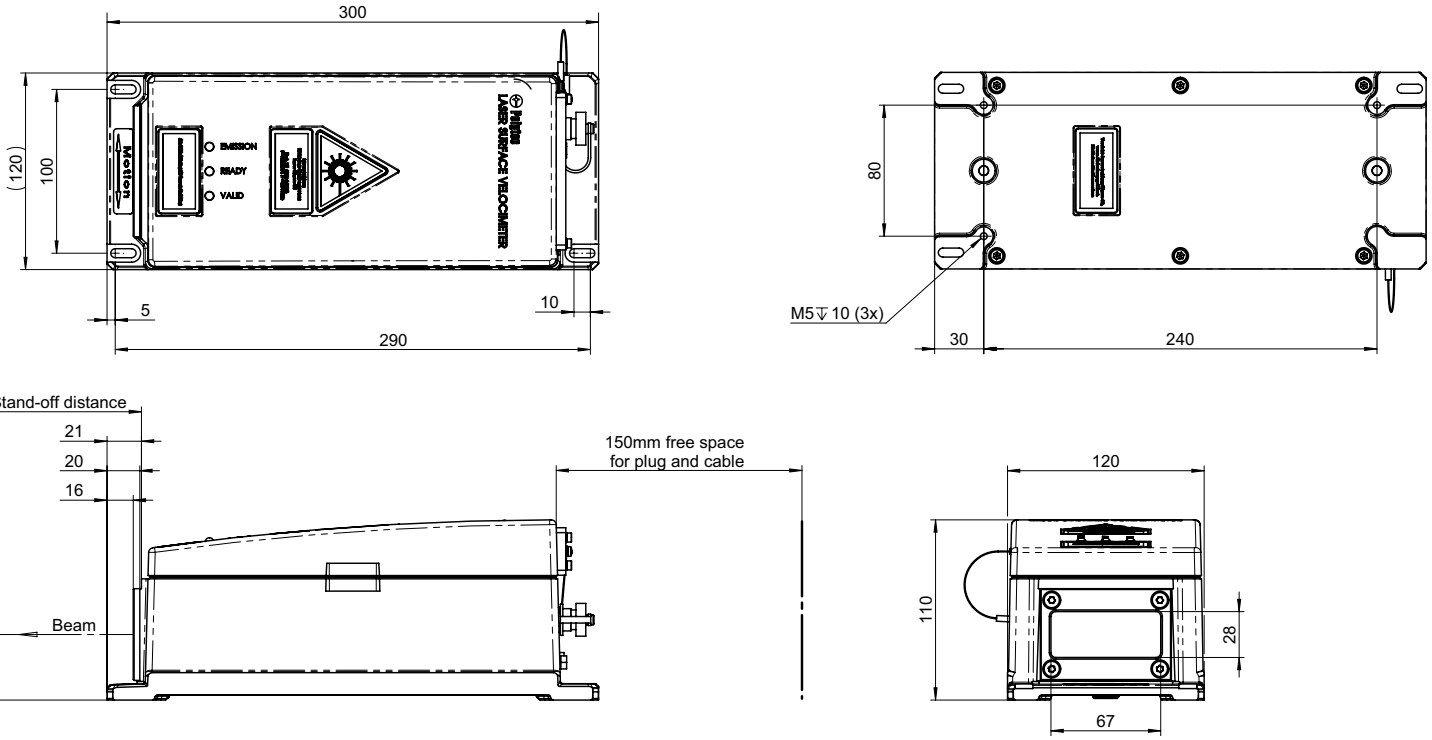
Air wipe with quick-exchange window
A front-mounted, aerodynamically optimized air wipe unit keeps the sensor's optical window free of dust and steam. For cleaning or replacement, the quick release window can be easily exchanged.

Mounting platform
The 3-axis adjustable mounting platform simplifies the precise alignment of the LSV sensor in relation to the measurement object. When mounting the LSV in a cooling housing, a suitable mounting platform is available.

Cooling plate
The cooling plate keeps the sensor in its operational temperature range, even under hot ambient conditions.

Thermo-protective housing TPH
To handle hot and hostile environments in harsh environments, Polytec has developed a cooled protective housing consisting of an aluminum housing with integrated stainless steel cooling coils. The coolant can either be water, rolling coolant, paraffin oil or kerosene. An optional heat shield protects the system from heat radiation from the measurement object itself or other heat sources.

Further accessories
Measurement frame installation kit, external display, mobility-kit, beam protective sleeve, cable protection, air preparation unit, beam deflection unit.



More Information

For more information please contact your Polytec application/sales engineer or visit the LSV homepage www.velocimeter.us and www.velocimeter.co.uk.