



LPS: Laser Position Sensor, Tilt Sensor Optional



Laser Guided Alignment and Positioning

The LPS Laser Position Sensor detects the position of an incident laser beam. In this way the vertical and horizontal position in relation to the guiding laser beam can be determined. The positional data enable vehicles and machines to be guided or aligned over a distance of several hundred metres.

There is also a version available with implemented 2-axis tilt sensor: **LPS-T**

Special features

- △ Large active measuring area of 120 x 80 mm
- △ Suppression of ambient light
- △ Selectable serial interface: RS232, TTY or 4 - 20 mA analogue output
- △ Robust, watertight IP 65 metal housing with wall mounting flange
- △ Vibration-free and shock resistant operation over long distances
- △ 2-axis tilt sensor $\pm 20^\circ$ optional : **LPS-T**

Range of applications

- | | |
|---------------------------------------|-----------------------------------|
| △ Road finishing machines and graders | △ Automated guided vehicles |
| △ Automated lawn mowers | △ Detection of settling |
| △ Autonomous cleaning machines | △ Detection of structural changes |



Description

This optical sensor captures the position of a red laser beam on its detector surface with reference to the centre point. All current continuous wave lasers from 1 to 5 mW can be used. The measuring principle has been widely used for many years in tunnel construction.

Depending on the laser quality the laser target detects the deviation in the horizontal and vertical position, even over long distances (>100 m). Interference from external light sources is almost totally suppressed.

There is a variety of interfaces available, such as RS232, TTY or 4 -20 mA analogue output.

The LPS Laser Position Sensor is therefore ideally suited to the optical determination and control of lateral positional movement with respect to the laser beam.

The version **LPS-T** has an implemented two-axis $\pm 25^\circ$ **tilt-sensor** for applications requiring inclination measurement.

The device is exceedingly vibration and shock resistant and operates reliably over a wide temperature range. The robust, watertight metal housing is very compact and easily installed. It is therefore ideally suited for use in harsh environmental conditions.



Technical data

△ Housing:	Aluminium housing with flange for wall mounting
△ External measurements, housing with flange:	Height 135 mm; width 173 mm; depth 125 mm
△ Protection type:	IP 65 according to DIN 40050
△ Operational temperature range:	-10 to +60 °C
△ Power supply:	9 - 30 VDC, 5 W
△ Communication interfaces:	Selectable RS232, TTY, 4 -20 mA analogue output
△ Measuring area:	Height 80 mm; width 120 mm
△ Measuring accuracy:	± 1 mm (within an active area of 60 x 100 mm)
△ Measuring resolution:	0.1 mm
△ Laser wavelength:	600 nm to 700 nm
△ Laser sensitivity:	Suitable for continuous wave lasers from 1 to 5 mW
△ Laser range:	Several hundred metres, depending on laser beam

Optional tilt-sensor included: LPS-T

△ Tilt range:	$\pm 25^\circ$, 2-axis
△ Tilt accuracy:	$\pm 0.5^\circ$
△ Tilt resolution:	0.1 °

Released: April 2010