

## Optoelectronic Sensor Series A1S30 ...A1S37P

### Outstanding Characteristics

- Ready for various applications with smooth or profiled targets: a dot of paint on a shaft is adequate to start measurements. Likewise, a fan blade, a screw head, a slot or cam will serve. Function does not depend on the target material, there being no load or reaction to the object.
- Easy and quick to use, especially in connection with our portable tachometers C118 or C156.
- Scanning distance 1-2 cm with A1S30.. and A1S36..., but up to 2 meters with the Laser type A1S37P.
- Frequency range up to 15 kHz (1 million RPM).
- Further flexibility via optional extension cable of up to 30 meters.

### Application

Though primarily associated with temporary applications because of their ease of use and flexibility, permanent installations also may utilize these sensors. With a plastics target, or a smooth shaft where a profile would be difficult to apply, optoelectronic detection will be the only choice. Certainly, the area of detection should be kept adequately clean, and the marking be made as contrasting as possible. Specifically for use with our units for permanent installation, which do not provide the automatic signal conditioning that distinguishes our portables. For long term installations we specifically recommend our optoelectronic sensors A1S40.

### Signal Output

The phototransistor directly serves the output, providing a signal of 100 millivolts up to 5 volts, which varies widely with the marking on the target, and with the scanning distance. Therefore, signal conditioning is recommended. Our portable units provide this, delivering a shaped TTL-signal. A resistor configuration and adequate supply voltages are required for the light source and for the output transistor as provided with our portables. To connect these sensors to our units for permanent installation, we recommend the ready made adapters B1A003/ B1A004.

### Sensor connection

The connector at the end of the sensors A1S30...A1S37P fits the input socket of the portables C118 and C156, directly or via extension cable SAK.

Pin Nos are:

- 1 = + supply to the LED light source (to 5volts via resistor)
- 2 = emitter of phototransistor (to -U via resistor)
- 3 = empty
- 4 = collector phototransistor (to +U via resistor)
- 5 = - pole of the LED light source
- 6 = sensor housing (internal jumper to 5).

The adapter B1A003 or B1A004 connects to the terminals of our permanent installation units, including the resistors necessary for operation, with these open ended leads:

- A (white) to the sensitive (mV) signal input
- B = (green) to common zero of input
- C (brown) to the 8v/1k supply output
- D (yellow) to the +12v transmitter supply output
- S (shield) to ground (PE) of the installation.

### Sensing Distance

Widely dependent on contrast and reflection grade of the target. Typical (rule of thumb) values :  
1 cm with the A1S30..., 2 cm with the A1S36..., 2 meters with the A1S37... (requires the reflection tape U1A006).

### Signal transmission

The low level and high impedance signal character allows a maximum of 30 meters, within an interference-free ambience only.  
Our cables SAK... resp. B1A... provide the necessary uninterrupted screening.

### Model Specifications

#### A1S30P

Covering the majority of applications.  
Available with a shaft length of 95 mm (standard) and 35 mm. Shaft diameter 8 mm. Plug-in connector at shaft end. Temperature range 0-50 °C.

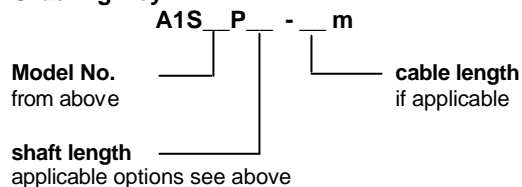
#### A1S36P

for heavy duty applications (paper machines etc.) by virtue of intensified light emission and firmly attached sealed cable.  
Temperature range -10 ...+ 60 °C.  
Available with shaft length of 95 mm (standard) or 35 mm. Shaft diameter 8 mm.  
Special narrow space version A1S36WP35 with angled cable at shaft end.

#### A1S37P

Laser light model with narrow focussed light beam (red, < 1 mW, grade 2).  
Scanning distance up to 2 meters. Not affected by luminescent light ambience. Requires reflection tape as mark on the target.  
Housing diameter 28 mm, length 75 mm, plug-in connector at rear.  
Temperature range 0-50 °C.

### Ordering Key



### Useful Accessories

#### Reflection Tape U1A006

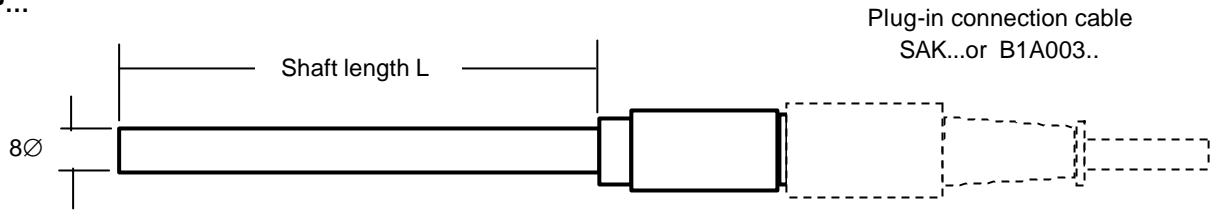
Massive enhancement of the reflection grade. Thereby increasing the scanning distance and facilitating the operation. Light weight and excellent adhesion allows use up to high speed.  
Available in bag containing 10 pieces of 10 cm length, 1 cm width. Ordering No.: U1A006/10, or as 1 piece of 4,5 m length, 1 cm width, on roll. Ordering No. U1A006/1.

#### Sensor clamp stand with magnetic base U9A001

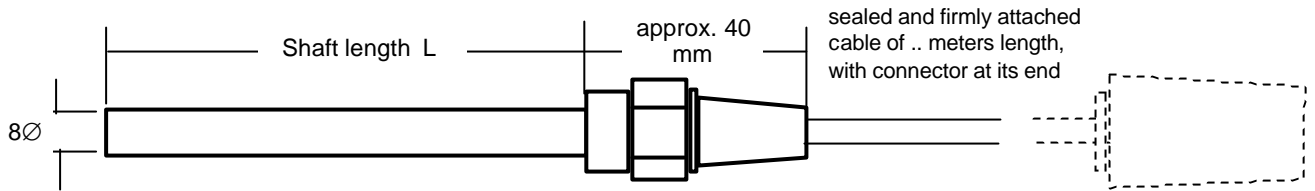
Helpful with long term applications. Specifically with the Laser model A1S37P, which calls for a steady support. Accepts all our sensors to direct them to the target.

Dimensions

A1S30P...



A1S36P...



A1S37P

