

## PT180428

diffuse reflection laser sensor



### Mounting

Install the diffuse reflection sensor in a way that the light beam can fall unimpededly onto the object to be detected. The diffuse reflection sensor can be fixed in a plastic or metal plate with through bore of  $\varnothing > 18\text{mm}$  using the supplied nuts (SW 24). The maximum tightening torque is 22Nm. Alternatively, there are available our quick clips AY000051.

### Adjustment

Turn the potentiometer counter-clockwise until the stop (minimum sensitivity position). Move the object to be detected into the beam path. Turn the potentiometer clockwise until the output switches reliably (see "LED-display"). Memorize position "A" of the potentiometer.

Now take the object to be detected out of the beam path. Turn the potentiometer further in clockwise direction. If the output switches again, memorize position "B" of the potentiometer. If you can turn the potentiometer until the right stop (maximum sensitivity position) without switching of the output, this corresponds to position "B".

Now turn the potentiometer exactly to the centre position between "A" and "B"!

**Note:** Turn the potentiometer always slowly. Turning with excessive strength will damage the device irreparably.

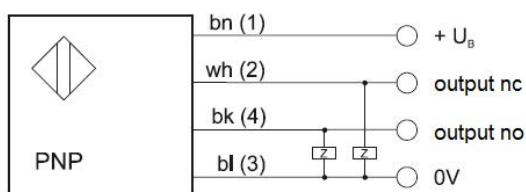
### LED-display:

The device provides a yellow and a green LED. The yellow LED signalizes an active switching output. The green LED indicates a reliable switching behavior. It should light up as well in switched as in non-switched status.

For the maximum switching accuracy in case of lateral passing, the direction is to chose as shown in the picture aside.



### Connection



bn=brown, wh=white, bk=black, bl=blue  
terminal marking of cable socket in brackets

## Technical Data

|                              | <b>PT180428</b>                                                   |
|------------------------------|-------------------------------------------------------------------|
| sensor type                  | diffuse reflection sensor                                         |
| sensing range                | 0 ... 250mm                                                       |
| operating voltage $U_B$      | 10 ... 30V DC                                                     |
| switching output             | pnp, exclusive-OR (no/nc)                                         |
| current consumption w/o load | $\leq 35\text{mA}$                                                |
| max. switching current       | 100mA                                                             |
| max. switching frequency     | 1.5kHz                                                            |
| sensitivity adjustment       | potentiometer 270°                                                |
| display                      | LED yellow: output switched LED<br>green: stable switching status |
| transmitting element         | laser-redlight, 650nm, laser class 1                              |
| design / housing material    | threaded sleeve M18 x 1 / chrome-plated brass                     |
| lens material                | PMMA                                                              |
| protection class             | IP 67 (EN 60529)                                                  |
| ambient temperature          | -10 ... +50°C                                                     |
| temperature (storage)        | -25 ... +70°C                                                     |
| connection                   | M12-connector 4-pin                                               |
| cable socket                 | 2m: VK200321 / 5m: VK500321 / 10m: VKA00321                       |



## Note

The devices react to the quantity of the light that is reflected by any object. The nominal switching distance is based on white paper (90% white). In case of more highly reflected materials (e.g. polished aluminum) the maximum switching distance increases. For low reflective materials (e.g. black rubber) the nominal switching distance is far from being achieved.

**Never use these articles in applications where the safety of a person depends on their functionality!**