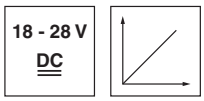
IPRK 18 — Retro-reflective photoelectric sensors with analog output

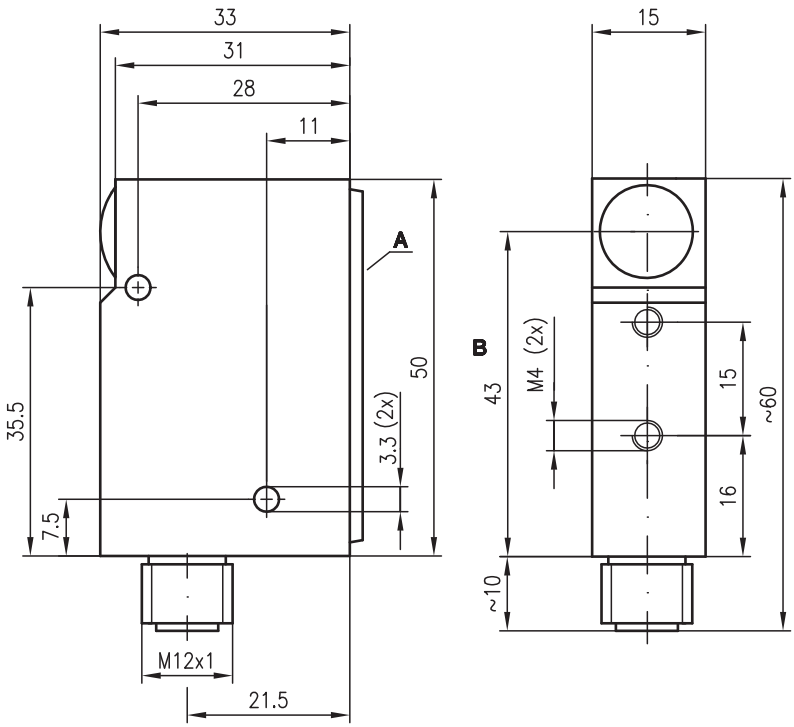
en 03-2012/06 50110544

0 … 1m



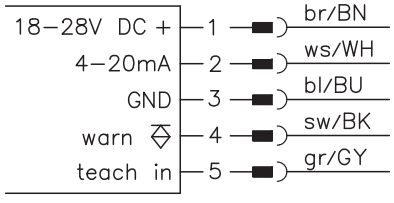
- Analogue output signal 4 … 20mA
- Teach-in for adaptation to the application

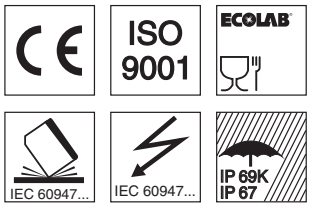
Dimensioned drawing



A Indicator diodes
B Optical axis

Electrical connection





Accessories:

(available separately)

- Mounting system (BT 95)
- M12 connectors (KD …, K-D …)
- Reflectors

Specifications

Optical data

Typ. operating range limit (MTKS 50x50)[1]	0 … 1.2m
Operating range [2]	see tables
Recommended reflector	MTKS 50x50.1
Light source	LED (modulated light)
Wavelength	660nm (visible red light, polarized)

Timing

Update time (analog output)	2ms
Delay before start-up	≤ 300ms

Electrical data

Operating voltage U_B	18 … 28VDC (incl. residual ripple)
Residual ripple	≤ 15% of UB
Open-circuit current	≤ 60mA
Analog output	4 … 20mA non-linearized, RL ≤ 1kΩ, 4mA with interrupted light path, 20mA with free light path, 12mA after teach-in
Resolution of analog output	1% of the maximum value (20mA)
Warning output	PNP
Function of warning output	see options
Teach input	PNP
Function of teach input	see options

Indicators

Green LED, continuous light	voltage supply
Red LED, continuous light	error
Yellow LED, continuous light	light path free

Mechanical data

Housing	diecast zinc
Optics cover	glass
Weight	150g
Connection type	M12 connector, 5-pin, stainless steel

Environmental data

Ambient temp. (operation/storage)	-25°C … +55°C/-40°C … +70°C
Protective circuit [3]	2, 3
VDE safety class	III
Protection class	IP 67, IP 69K [4]
LED class	1 (acc. to EN 60825-1)
Standards applied	IEC 60947-5-2

Options

Warning output	PNP, static principle
Signal voltage high/low [5]	≥ (U_B-2V)/≤ 2V
Output current	max. 100mA
Functions	
No error	warning output = high
Teach-in without error	warning output = high
Hardware device error	warning output = low
Dynamic error	warning output = low (received signal level outside of permissible range)
Teach-in running	warning output = low
Teach input	PNP
Teach-in active/not active	U_B/0V or not connected
Teach time	≥ 20ms (analog output supplies measurement value)
Handshake	warning output acknowledges the teach event

1) Typ. operating range limit: max. attainable range without performance reserve
2) Operating range: recommended range with performance reserve
3) 2=polarity reversal protection, 3=short circuit protection for all outputs
4) IP 69K test acc. to DIN 40050 part 9 simulated, high pressure cleaning conditions without the use of additives, acids and bases are not part of the test
5) Functional extra-low voltage with reliable disconnection or protective extra-low voltage (VDE 0100/T 410)

Order guide

Selection table Equipment ↓	Order code →	IPRK 18/V L.03 Part no. 50106974					
Switching output	1 PNP warning output	●					
Analog output	4 … 20mA	●					
Options	Teach via control cable	●					

Tables

Reflectors			Operating range
1	MTKS	50x50.1	0 … 1.0m
2	Tape 6	50x50	0 … 1.0m

1	0	1.0	1.2
2	0	1.0	1.2

Operating range [m]
Typ. operating range limit [m]

MTKS … = screw type

Teach-in process

1. Align sensor with reflector. The beam must not fall outside the reflector area!
2. Place the object to be scanned in the beam path.
3. Perform teach-in (teach-in input low -> high -> low).
4. Following teach-in, analog output exhibits approx. 12mA.

Remarks

- Following successful teach-in, the sensor supplies approx. 12mA.
- The analog output supplies a measurement value even in the event of an error.
- The light spot may not exceed the reflector.
- Preferably use MTK(S) or tape 6.
- For foil 6 the sensor's side edge must be aligned parallel to the side edge of the reflective tape.

Approved purpose:
This product may only be used by qualified personnel and must only be used for the approved purpose. This sensor is not a safety sensor and is not to be used for the protection of persons.