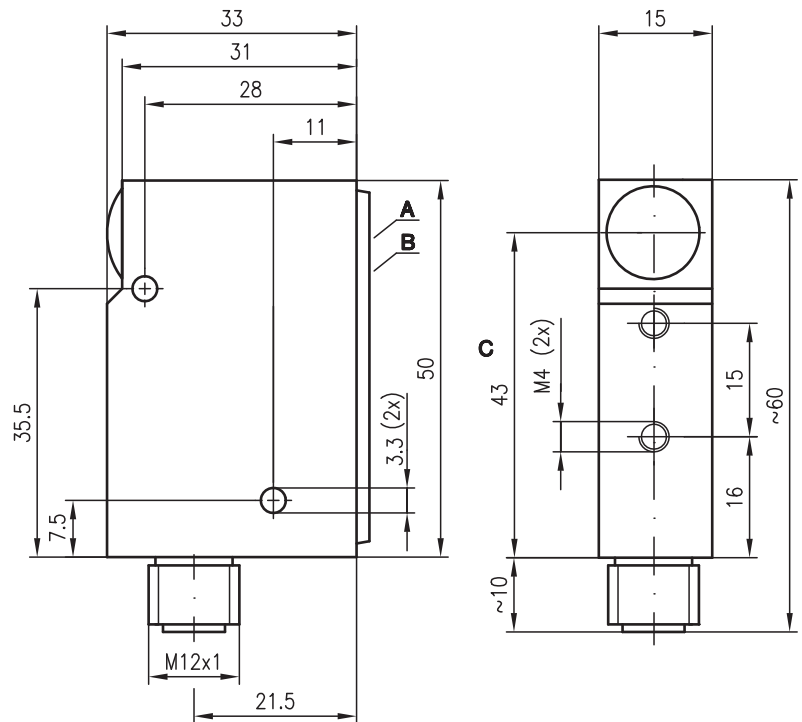


IPRK 18

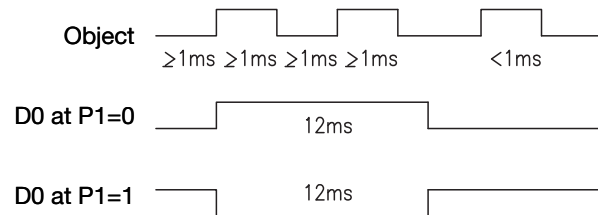
Retro-reflective photoelectric sensors with polarization filter



Dimensioned drawing

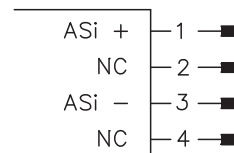


Minimal switching pulse for IPRK 18/A.1 L.4



- A Indicator diode
- B Sensitivity adjustment
- C Optical axis

Electrical connection



0 ... 3m



- Polarized retro-reflective photoelectric sensor for reliable detection of transparent media (e.g. clear glass, PET, foil). The sensor uses visible red light and comes with integrated AS-i slave.
- Detection range changeover via AS-i (e. g. from clear glass to colored glass or non-transparent media) without further user intervention
- Gap detection $\geq 5\text{mm}$ (see table)
- autoControl warning function for increased availability and for checking the correct basic setting
- Extended switching pulse for reliable transmission via AS-interface



Accessories:

(available separately)

- Mounting system (BT 95)
- M12 connectors (KD ...)
- M8 connectors (KD ...)
- Reflectors
- Reflective tapes

Specifications

Optical data

Typ. operating range limit (TK(S) 100x100) ¹⁾	0 ... 3m
Operating range ²⁾	see tables
Recommended reflector	MTKS 50x50.1
Light source	LED (modulated light)
Wavelength	660nm (visible red light, polarized)

Timing

Switching frequency (sensor)	according to AS-i specifications: 1000Hz internally
Response time (sensor)	according to AS-i specifications: 0.5ms internally
Delay before start-up	≤ 300ms

Electrical data

Operating voltage U_B ³⁾	26.5V ... 31.6V (according to AS-i specification)
Open-circuit current	≤ 35mA
Sensitivity	basic setting: clear glass via 12-turn potentiometer changeover: clear/colored glass/non-transparent via AS-i (D2, D3 data bits)

Indicators

Yellow LED

Green LED

continuous light, switching output
flashing slowly, sensor identification
 - activation via AS-i (D2, D3 data bits)
flashing slowly, operating point 1, clear glass
 - manual adjustment (see remarks)
 - activation via AS-i (D2, D3 data bits)
flashing fast, operating point 2, colored glass
 - activation via AS-i (D2, D3 data bits)
continuous light, op. point 3, opaque media
 - activation via AS-i (D2, D3 data bits)

Mechanical data

Housing	diecast zinc
Optics cover	glass
Weight	150g
Connection type	M12 connector, 4-pin, stainless steel

Environmental data

Ambient temp. (operation/storage)	-20°C ... +60°C/-30°C ... +70°C
Protective circuit ⁴⁾	2, 3
VDE safety class	III
Protection class	IP 67, IP 69K ⁵⁾
Light source	free group (in accordance with EN 62471)
Standards applied	IEC 60947-5-2
Certifications	UL 508, C22.2 No.14-13 ³⁾ ⁶⁾

AS-i data

I/O code	3
ID code	F
Address	programmed by the user in the range of 1 to 31 (default=0)
Cycle time acc. to AS-i specification	max. 5ms
AS-i standard according to profile	S-3.F

- 1) Typ. operating range limit: max. attainable range without performance reserve
- 2) Operating range: recommended range with performance reserve
- 3) For UL applications: for use in class 2 circuits according to NEC only
- 4) 2=polarity reversal protection, 3=short circuit protection for all outputs
- 5) 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
- 6) These proximity switches shall be used with UL Listed Cable assemblies rated 30V, 0.5A min, in the field installation, or equivalent (categories: CYJV/CYJV7 or PVVA/PVVA7)

Operate in accordance with intended use!

- This product is not a safety sensor and is not intended as personnel protection.
- The product may only be put into operation by competent persons.
- Only use the product in accordance with the intended use.

AS-i data

Assignment: data bits				Assignment: parameter bits			
Programming (host level)				Programming (host level)			
D ₀	Switching output	∅ no reflection 1 reflection	System input	P ₀	NC	∅	System parameter
D ₁	Warning output autoControl	∅ active 1 not active	System input	P ₁	Light/dark switching	∅ dark switching *1 light switching	System parameter
D ₂	Adjusting the performance reserve	see table	System output	P ₂	NC	∅	System parameter
D ₃			System output	P ₃	NC	∅	System parameter

* default = 1

Tables

Reflectors			Operating range
1	TK(S)	100x100	0 ... 2.4m
2	MTKS	50x50.1	0 ... 2.0m
3	TK(S)	30x50	0 ... 0.8m
4	TK(S)	20x40	0 ... 0.8m
5	Tape 6	50x50	0 ... 1.8m

1	0	2.4	3.0
2	0	2.0	2.5
3	0	0.8	1.0
4	0	0.8	1.0
5	0	1.8	2.0

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

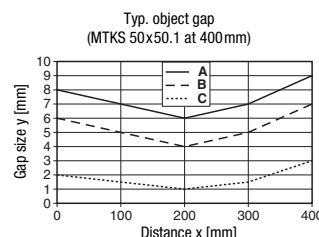
*) For sensitivity set to operating point 3

D ₂	D ₃	Performance reserve
#0	#0	Sensor identification
1	0	Parameter for clear glass
0	1	Parameter for colored glass
1	1	Parameter for opaque objects

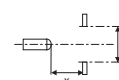
Basic setting (see remarks)

D ₂	D ₃	autoControl (D ₁ =0)
0	0	Incorrect basic setting
1	0	System misaligned
0	1	System misaligned
1	1	System misaligned

Diagrams



- A Operating pt. 1
- B Operating pt. 2
- C Operating pt. 3



Remarks

Objects	Configuration (indicator green LED)
Clear glass, PET, foil	Operating pt. 1

- The potentiometer may only be used in basic setting (D₂=0, D₃=0).
- In autoControl (D₁=0) clean the system and align it optimally with reflector, set a new basic setting, if required.
- Reflectors with small triple structures are required for ranges ≤ 200mm.
- 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.

IPRK 18

Retro-reflective photoelectric sensors with polarization filter

Order guide

	Designation	Part no.
With 12ms pulse stretching	IPRK 18/A L.4	50030077
	IPRK 18/A.1 L.4	50034119

