

## Energetic diffuse sensor

These sturdy sensors with metal thread in the plastic housing perform detection directly on an object and do not require a reflector. Versions are available for various distances as well as specifically for the paper industry. For even easier use, available with preset ranges.

### ET328 / FT328

These red light sensors in the sturdy plastic housing with metal thread facilitate robust object detection. The simple adjustment to the object through the teach button with two levels makes installation a piece of cake. These sensors feature the A<sup>2</sup>LS active ambient light suppression and easy alignment through brightly visible brightVision® light spot. Also available with preset range and infrared light for higher color independence.

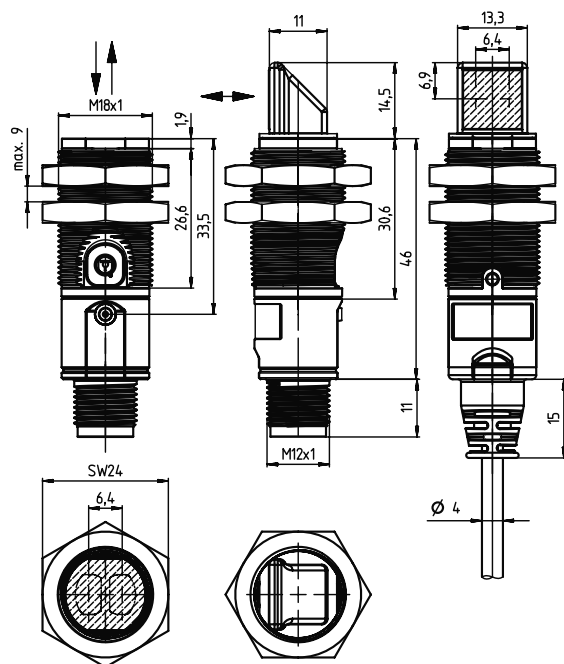
#### Benefits:

- Energetic diffuse reflection sensor with light/dark switching
- Range adjustment via teach-in
- Preset ranges (FT 100 mm/ET 400 mm) for easier use
- Axial and 90 ° light beam gate for flexible integration
- Sturdy plastic housing with stainless steel threaded sleeve with cylindrical M18 design
- Full control through green and yellow indicator LEDs and complementary outputs
- High color independence
- Special model available for paper label detection

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50122719	FT328.3/2N-M12	0.001 ... 0.215 m 0.001 ... 0.28 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading
50122717	FT328.3/4P-M12	0.001 ... 0.215 m 0.001 ... 0.28 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading, permanently set range
50122720	FT328.3/2N	0.001 ... 0.215 m 0.001 ... 0.28 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading
50122718	FT328.3/4P	0.001 ... 0.215 m 0.001 ... 0.28 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading
50122724	ET328.W3/2N-M12	0.005 ... 0.35 m 0.001 ... 0.45 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, 90 ° angular optics
50122721	ET328.W3/4P-M12	0.005 ... 0.35 m 0.001 ... 0.45 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, 90 ° angular optics

Part no.	Part description	Operating range [m] Op. range limit [m]	Light source	Connection	Description
50122725	ET328.W3/2N	0.005 ... 0.35 m 0.001 ... 0.45 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, 90 ° angular optics
50122722	ET328.W3/4P	0.005 ... 0.35 m 0.001 ... 0.45 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, 90 ° angular optics
50122728	ET328.3/2N-M12	0.001 ... 0.7 m 0.001 ... 1 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button
50122726	ET328.3/4P-M12	0.001 ... 0.7 m 0.001 ... 1 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button
50122729	ET328.3/2N	0.001 ... 0.7 m 0.001 ... 1 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button
50122727	ET328.3/4P	0.001 ... 0.7 m 0.001 ... 1 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button
50122715	FT328.W3/2N-M12	0.002 ... 0.1 m 0.002 ... 0.12 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading, 90 ° angular optics
50122713	FT328.W3/4P-M12	0.002 ... 0.1 m 0.002 ... 0.12 m	LED, red	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading, 90 ° angular optics
50122716	FT328.W3/2N	0.002 ... 0.1 m 0.002 ... 0.12 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button, fading, 90 ° angular optics
50122714	FT328.W3/4P	0.002 ... 0.1 m 0.002 ... 0.12 m	LED, red	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading, 90 ° angular optics
50128196	ET328I-400F.3/4P	0.001 ... 0.7 m 0.001 ... 1 m	LED, infrared	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button
50129139	ET328I-400F.3/2N-M12	0.001 ... 0.4 m 0.001 ... 0.4 m	LED, infrared	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button
50129140	ET328I-400F.3/4P-M12	0.001 ... 0.4 m 0.001 ... 0.4 m	LED, infrared	Connector, M12, 4-pin, plastic	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button
50128197	ET328I-400F.3/2N	0.001 ... 0.4 m 0.001 ... 0.4 m	LED, infrared	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button
50127773	FT328I.3/4P-M12P1	0.08 ... 0.1 m 0.08 ... 0.12 m	LED, infrared	Connector, M12, 4-pin, plastic	Application: detection of labels on bottles; Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button, fading
50128199	FT328I-100F.3/2N	0.001 ... 0.1 m 0.001 ... 0.1 m	LED, infrared	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, NPN, light switching; Digital switching output 2: transistor, NPN, dark switching, DC, teach button
50128198	FT328I-100F.3/4P	0.001 ... 0.1 m 0.001 ... 0.1 m	LED, infrared	Cable, 2,000 mm, 4-wire	Switching frequency: 500 Hz; Digital switching output 1: transistor, PNP, light switching; Digital switching output 2: transistor, PNP, dark switching, DC, teach button

### Dimensioned drawings: 328 series



328 series

## ACCESSORIES: 328 SERIES

### Connection technology

#### Connection cables

Part no.	Part description	Connection 1	No. of pins	Cable length	Sheathing material
50130692	KD U-M12-4W-P1-020	Connector, M12, angled, female	4-pin	2,000 mm	PUR
50130694	KD U-M12-4W-P1-050	Connector, M12, angled, female	4-pin	5,000 mm	PUR
50130690	KD U-M12-4W-V1-050	Connector, M12, angled, female	4-pin	5,000 mm	PVC
50130654	KD U-M12-4A-P1-020	Connector, M12, axial, female	4-pin	2,000 mm	PUR
50130657	KD U-M12-4A-P1-050	Connector, M12, axial, female	4-pin	5,000 mm	PUR
50130648	KD U-M12-4A-V1-020	Connector, M12, axial, female	4-pin	2,000 mm	PVC
50130652	KD U-M12-4A-V1-050	Connector, M12, axial, female	4-pin	5,000 mm	PVC

Further connection cables can be found on our website

### Mounting systems

#### Mounting brackets

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50113548	BT D18M.5	Angle, L-shape	Screw type	Through-hole mounting	Stainless steel
50117257	BT D21M	Angle, L-shape	Screw type	Through-hole mounting	Metal

Further mounting brackets can be found on our website

#### Rod mounts

Part no.	Part description	Design	Fastening at device	Fastening at system	Material
50117490	BTU D18M-D12	Mounting system, clampable, adjustable, turning, 360 °	Screw type	Through-hole mounting	Metal

Further rod mounts can be found on our website

### Reflectors and reflective tapes

#### Standard reflectors

Part no.	Part description	Design	Reflective surface	Fastening	Material
50024127	TK 82.2	Round	79 mm	Through-hole mounting, adhesive	Plastic
50081283	TKS 20X40	Rectangular	16 mm × 38 mm	Through-hole mounting, adhesive	Plastic
50023525	TKS 30X50	Rectangular	27 mm × 44 mm	Through-hole mounting, adhesive	Plastic
50040820	TKS 40X60	Rectangular	37 mm × 56 mm	Through-hole mounting, adhesive	Plastic
50022816	TKS 100X100	Rectangular	96 mm × 96 mm	Through-hole mounting, adhesive	Plastic

Dimensional tolerances for all specified dimensions: ± 0.2 mm

Further standard reflectors can be found on our website

#### Reflective tapes for standard applications

Part no.	Part description	Design	Reflective surface	Fastening	Material
50108300	REF 4-A-50x50	Rectangular	50 mm × 50 mm	Self-adhesive	Plastic

Further reflective tapes can be found on our website