



Part no.: 50128196
ET328I-400F.3/4P
Energetic diffuse sensor



Figure can vary

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Technical data

| Basic data | |
|-------------------------------------|---|
| Series | 328 |
| Operating principle | Diffuse reflection principle |
| Optical data | |
| Operating range | Guaranteed operating range |
| Operating range, white 90% | 0.001 ... 0.4 m |
| Operating range, black 6% | 0.005 ... 0.4 m |
| Operating range limit | Typical operating range |
| Operating range limit, white 90% | 0.001 ... 0.4 m |
| Operating range limit, black 6% | 0.005 ... 0.4 m |
| Permanently set operating range | 0.4 m |
| Light source | LED , Infrared |
| LED light wavelength | 850 nm |
| Transmitted-signal shape | Pulsed |
| LED group | Exempt group (in acc. with EN 62471) |
| Electrical data | |
| Protective circuit | Polarity reversal protection Short circuit protected |
| Performance data | |
| Supply voltage U_B | 10 ... 30 V , DC , Incl. residual ripple |
| Residual ripple | 0 ... 15 % , From U_B |
| Open-circuit current | 0 ... 20 mA |
| Outputs | |
| Number of digital switching outputs | 2 Piece(s) |
| Switching outputs | |
| Voltage type | DC |
| Switching current, max. | 100 mA |
| Switching voltage | high: $\geq(U_B-2.5V)$ low: $\leq 2.5V$ |
| Switching output 1 | |
| Switching element | Transistor , PNP |
| Switching principle | Light switching |
| Switching output 2 | |
| Switching element | Transistor , PNP |
| Switching principle | Dark switching |
| Timing | |
| Switching frequency | 500 Hz |
| Response time | 1 ms |
| Readiness delay | 300 ms |
| Connection | |

Part no.: 50128196 – ET328I-400F.3/4P – Energetic diffuse sensor
Connection 1

| | |
|----------------------|------------------------------|
| Type of connection | Cable |
| Function | Signal OUT Voltage supply |
| Cable length | 2,000 mm |
| Sheathing material | PUR |
| Cable color | Black |
| Number of conductors | 4 -wire |
| Wire cross section | 0.2 mm ² |

Mechanical data

| | |
|---------------------|--|
| Thread size | M18 x 1 mm |
| Dimension (Ø x L) | 18 mm x 46 mm |
| Housing material | Plastic Stainless steel , V2A , ABS |
| Lens cover material | Plastic |
| Net weight | 40 g |
| Housing color | Black Silver |

Operation and display

| | |
|----------------------|--------------|
| Type of display | LED |
| Number of LEDs | 1 Piece(s) |
| Operational controls | Teach button |

Environmental data

| | |
|--------------------------------|---------------|
| Ambient temperature, operation | -40 ... 60 °C |
| Ambient temperature, storage | -40 ... 70 °C |

Certifications

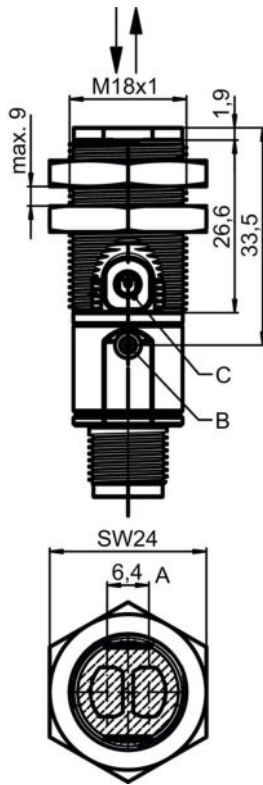
| | |
|----------------------|---------------|
| Degree of protection | IP 67 |
| Protection class | III |
| Certifications | c UL US |
| Standards applied | IEC 60947-5-2 |

Classification

| | |
|-----------------------|----------|
| Customs tariff number | 85365019 |
| eCl@ss 8.0 | 27270903 |
| eCl@ss 9.0 | 27270903 |
| ETIM 5.0 | EC001821 |
| ETIM 6.0 | EC001821 |

Dimensioned drawings

All dimensions in millimeters



A Optical axis
 B Indicator diode
 C Teach button

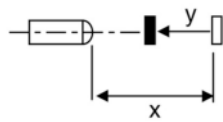
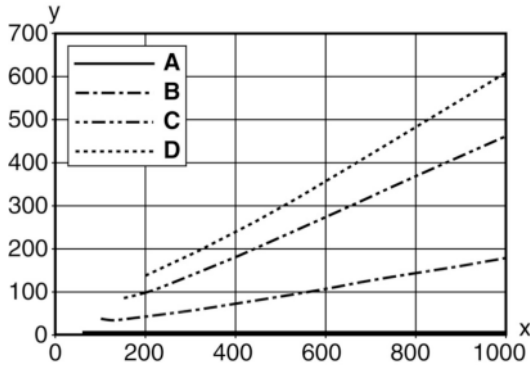
Electrical connection

| Connection 1 | |
|----------------------|------------------------------|
| Type of connection | Cable |
| Function | Signal OUT Voltage supply |
| Cable length | 2,000 mm |
| Sheathing material | PUR |
| Cable color | Black |
| Number of conductors | 4 -wire |
| Wire cross section | 0.2 mm ² |

| Conductor color | Conductor assignment |
|-----------------|----------------------|
| Brown | V+ |
| White | OUT 2 |
| Blue | GND |
| Black | OUT 1 |

Diagrams

Typ. black/white behavior



| | |
|---|-------------------------|
| x | Range [mm] |
| y | Reduction of range [mm] |
| A | White 90% |
| B | Gray 50% |
| C | Gray 18% |
| D | Black 6% |

Operation and display

LEDs

| LED | Display | Meaning |
|-----|--------------------------|-----------------------|
| 1 | Green, continuous light | Operational readiness |
| | Yellow, continuous light | Object detected |

Part number code

Part designation: XXX328BY-AAAF.BB/CC-DDD

| | |
|--------|---|
| XXX328 | Operating principle: PRK: retro-reflective photoelectric sensor with polarization filter ET: energetic diffuse reflection sensor FT: diffuse reflection sensor with fading LE: throughbeam photoelectric sensor receiver LS: throughbeam photoelectric sensor transmitter |
| Y | Light type: n/a: red light I: infrared light |
| AAAF | Pre-set range (optional): n/a: operating range acc. to data sheet XXXX: pre-set range [mm] |
| BB | Equipment: n/a: axial optics W: 90° angular optics 3: teach-in via button |

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| | |
|-----|---|
| CC | Switching output / function (OUT1 = pin 4, OUT2 = pin 2):: 4: PNP transistor output, light switching P: PNP transistor output, dark switching 2: NPN transistor output, light switching N: NPN transistor output, dark switching 9: input for transmitter deactivation (deactivation with HIGH signal) D: input for transmitter deactivation (deactivation with LOW signal) X: pin not used |
| DDD | Electrical connection: n/a: cable, standard length 2000 mm, 4-wire M12: M12 connector, 4-pin (plug) |

| |
|---|
| Note |
| A list with all available device types can be found on the Leuze electronic website at www.leuze.com . |

Notes


| |
|---|
| Observe intended use! |
| <ul style="list-style-type: none"> 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 its intended use. |

| |
|--|
| For UL applications: |
| <ul style="list-style-type: none"> For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code). 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) |

- Sum of the output currents for both outputs, 50 mA for ambient temperatures > 40 °C
- With the set scanning range, a tolerance of the operating range is possible depending on the reflection properties of the material surface.


Accessories

Mounting technology - Mounting brackets



| | Part no. | Designation | Article | Description |
|---|----------|-------------|------------------|--|
|  | 50113548 | BT D18M.5 | Mounting bracket | Diameter, inner: 18 mm Design of mounting device: Angle, L-shape Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type Type of mounting device: Rigid Material: Stainless steel |

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Mounting technology - Rod mounts

| | Part no. | Designation | Article | Description |
|---|----------|--------------|-----------------|--|
|  | 50117490 | BTU D18M-D12 | Mounting system | Design of mounting device: Mounting system Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal |

Mounting technology - Other

| | Part no. | Designation | Article | Description |
|--|-------------|-------------|---------------------------|--|
|  | 50083189 | BT 318-ARH | Adjustment fastening part | Design of mounting device: Mounting plate Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type Type of mounting device: Swiveling, Adjustable Material: Metal |
|  | 50126631 ** | BT 328M | Fastening | Contains: 2x M18 mounting nut Design of mounting device: Mounting clamp Fastening, at system: For 18 mm rod, Through-hole mounting Mounting bracket, at device: Screw type Type of mounting device: Turning, 360° Material: Stainless steel |

** Included in delivery contents