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Part no.: 50122722
ET328.W3/4P
Energetic diffuse sensor



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Technical data

Basic data	
Series	328
Operating principle	Diffuse reflection principle
Special design	
Special design	90° - angular optics
Optical data	
Operating range	Guaranteed operating range
Operating range, white 90%	0.005 ... 0.35 m
Operating range, gray 50%	0.01 ... 0.29 m
Operating range, gray 18%	0.012 ... 0.19 m
Operating range, black 6%	0.015 ... 0.14 m
Operating range limit	Typical operating range
Operating range limit, white 90%	0.001 ... 0.45 m
Operating range limit, gray 50%	0.01 ... 0.38 m
Operating range limit, gray 18%	0.012 ... 0.25 m
Operating range limit, black 6%	0.012 ... 0.2 m
Light source	LED , Red
LED light wavelength	620 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

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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

Mechanical data

Thread size	M18 x 1 mm
Dimension (Ø x L)	18 mm x 61 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

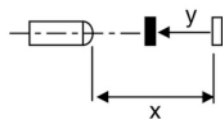
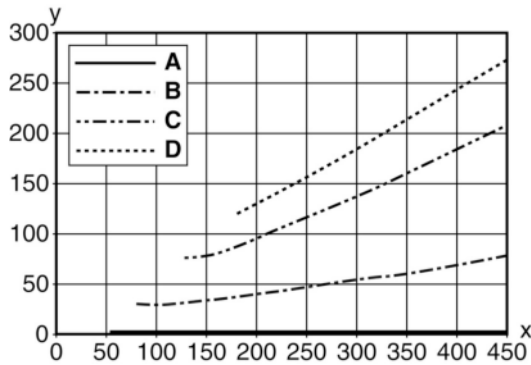
Customs tariff number	85365019
eCl@ss 8.0	27270903
eCl@ss 9.0	27270903
ETIM 5.0	EC001821
ETIM 6.0	EC001821

Dimensioned drawings

All dimensions in millimeters

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	Preset range (optional): n/a: operating range acc. to data sheet XXXX: preset 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

Note

A list with all available accessories can be found on the Leuze electronic website in the Download tab of the article detailed page.