Data sheet

WTD20EC-V2449S02

DeltaPac

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	part no.
WTD20EC-V2449S02	1073586

Other models and accessories ➜ www.sick.com/DeltaPac

Detailed technical data

Features

Functional principle	Photoelectric proximity sensor
Dimensions (W x H x D)	42 mm x 42 mm x 45 mm
Housing design (light emission)	Rectangular
Sensing range max.	30 mm ... 40 mm [1]
Sensing range	30 +/- 2 mm
Type of light	Visible red light
Light source	PinPoint LED [2]
Light spot size (distance)	Ø 1 mm (30 mm) [3]
Wave length	635 nm
Adjustment	IO-Link
Special applications	Zero gap detection
Background suppression	≥ 60 mm
Key feature of the object	Edges in uneven surfaces
Special features	The sensor features an optimized internal sensor signal logic, specially designed for secondary packaging with small edges, including folding boxes for cigarette packaging with uneven or glossy surfaces. Increased object speed (1.0 m/s) with reduced mounting tolerance (2°)

[1] The sensing range max. refers to the object leading edge. The individual object leading edges must be within the operating range.
[2] Average service life: 100,000 h at T_U = +25 °C.
[3] 4 x.

Mechanics/electronics

Supply voltage	10 V DC ... 30 V DC [1]

[1] Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A.
[2] May not exceed or fall below U_V tolerances.
[3] At 24 V.
[4] 2 switching outputs with Imax = 100 mA.
[5] A = V_S connections reverse-polarity protected.
[6] B = inputs and output reverse-polarity protected.
[7] C = interference suppression.
[8] Preset 1 ms.

Ripple	< 5 V_{pp} [2]
Current consumption	70 mA [3]
Switching output	PNP
Output current $I_{max.}$	≤ 100 mA [4]
Connection type	Male connector M12, 4-pin
Circuit protection	A [5] B [6] C [7]
Protection class	III
Weight	130 g
Housing material	Plastic, Novodur
Enclosure rating	IP67
Ambient operating temperature	–40 °C ... +55 °C
Ambient temperature, storage	–40 °C ... +75 °C
Productivity max.	≤ 200,000 pcs./h
Object speed max.	≤ 1 m/s
Radius of the object contour	1 mm ... 2 mm
Switching accuracy	≤ 2 x radius
Repeatability (T_a not constant)	typ. < 1 mm
Switch on delay Q_1 & Q_2	0 ms ... 255 ms [8]
Time delay off Q_1	0 ms ... 255 ms [8]
Object width min.	≥ 10 mm
Object height min.	≥ 30 mm

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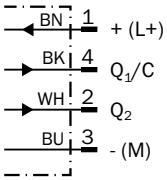
Classifications

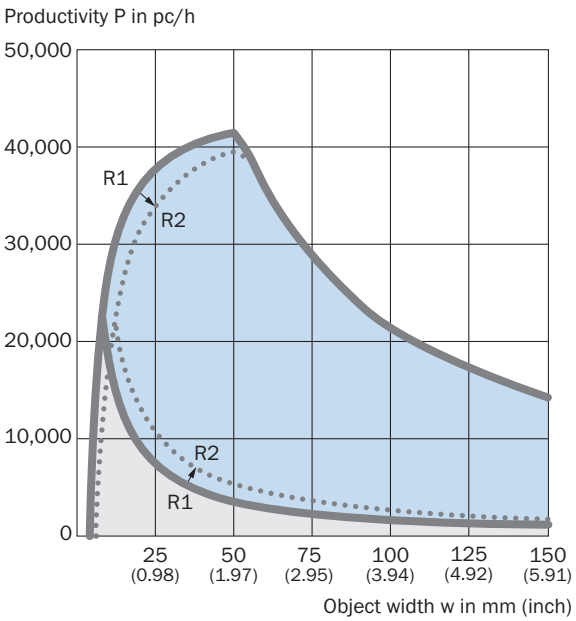
ECLASS 5.0	27270904
ECLASS 5.1.4	27270904
ECLASS 6.0	27270904
ECLASS 6.2	27270904
ECLASS 7.0	27270904
ECLASS 8.0	27270904
ECLASS 8.1	27270904
ECLASS 9.0	27270904
ECLASS 10.0	27270904
ECLASS 11.0	27270904

ECLASS 12.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

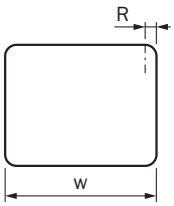
Connection diagram Cd-244



Characteristic curve, productivity



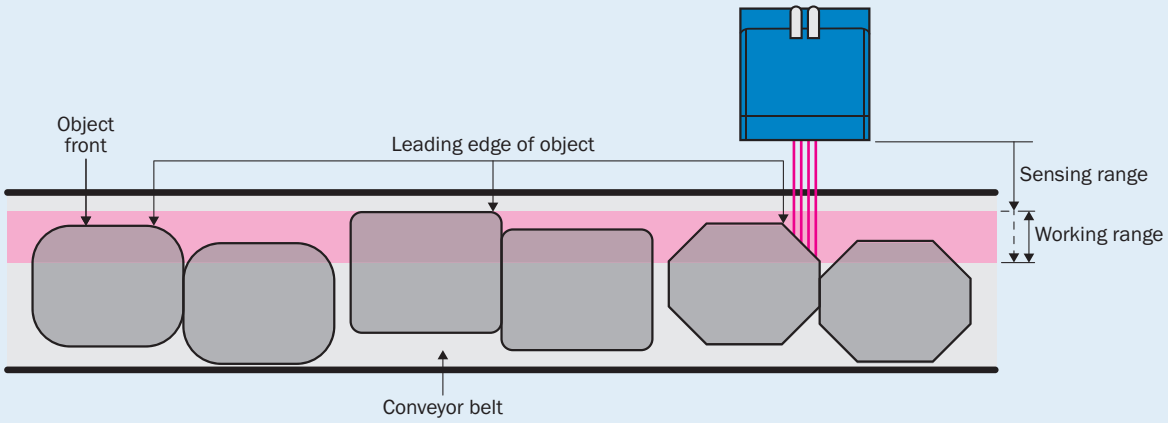
= R1, Radii of 1 mm
= R2, Radii of 2 mm
= Working range
= Maximal working range



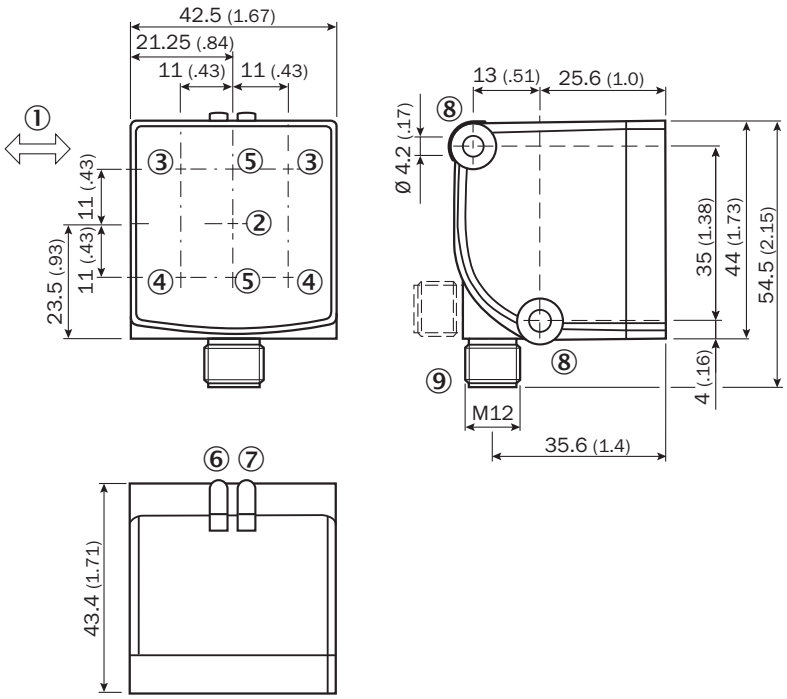
Parameter example, dimensions in mm (inch)

Object width	Object radii	Productivity min.	Productivity max.
25 (0.98)	1 (0.04)	7,500 pc/h	38,000 pc/h
75 (2.95)	2 (0.08)	3,500 pc/h	28,500 pc/h

Sensing range in detail



Dimensional drawing WTD20E-V/W24xx, connector



Dimensions in mm (inch)
① Standard direction
② Center of optical axis, sender
③ Center of optical axis, receiver (first energy scale)
④ Center of optical axis, receiver (second energy scale)
⑤ Optical axis, receiver
⑥ LED indicator orange: status of received light beam, presence signal Q1
⑦ LED indicator green: Supply voltage active

⑧ fixing hole
⑨ Connection (rotatable)

Recommended accessories

Other models and accessories ➜ www.sick.com/DeltaPac

	Brief description	Type	part no.
connectors and cables			
	• **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 5 m, 4-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Uncontaminated zones, Zones with chemicals	YF2A14-050VB3XLEAX	2096235
	• **Connection type head A:** Male connector, M12, 4-pin, straight, A-coded • **Description:** Unshielded • **Connection systems:** Screw-type terminals • **Permitted cross-section:** ≤ 0.75 mm²	STE-1204-G	6009932
Mounting systems			
	• **Description:** Plate N11N for universal clamp bracket • **Material:** Stainless steel • **Details:** Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp) • **Items supplied:** Universal clamp (5322627), mounting hardware • **Usable for:** DeltaPac, Glare, WTD20E	BEF-KHS-N11N	2071081

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

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