

UT 20-150

Ultrasonic sensor with switching output



PRODUCT HIGHLIGHTS

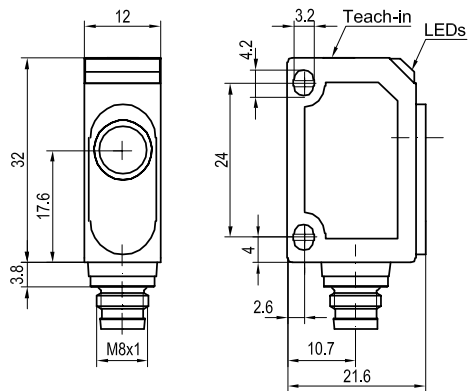
- Detection regardless of object colour and surface
- Compact miniature housing for use when machine space is limited
- Robust ambient conditions have no effect on sensor
- Reliable detection of highly transparent objects

Sensor data		Functions	
Limit scanning distance	250 mm	Indicator LED, green	Operating voltage indicator
Operating scanning distance	20 ... 150 mm	Indicator LED, yellow	Switching output indicator
Ultrasonic frequency	~ 380 kHz	Scanning distance adjustment	Via Teach-in button
Resolution	0.20 mm	Teach-in modes	Mode 1: set switching point
Repeatability	± 0.15 % ¹		Mode 2: set window operation
Hysteresis	2 mm	Adjustment possibilities	Mode 3: set two-way / retroreflective sensor
Temperature drift	0.17 % / °C		N.O. / N.C. via Teach-in button
		Default settings	Button lock via Teach-in button
			Synchronisation via control input
			Default settings via Teach-in button
			Max. sensitivity and N.O.
Electrical data		Mechanical data	
Operating voltage, +U _B	20 ... 30V DC ²	Dimensions	32 x 21.6 x 12 mm
No-load current, I ₀	≤ 25 mA	Enclosure rating	IP 67 ³
Output current, I _e	200 mA	Material, housing	ABS
Protective circuits	Reverse polarity protection, U _B / short-circuit protection (Q)	Material, ultrasonic converter	Polyurethane foam, epoxy resin with glass content
Protection Class	2	Type of connection	(See Selection Table)
Power On Delay	< 300 ms	Ambient temperature: operation	-25 ... +70 °C
Switching output, Q	PNP / NPN (see Selection Table)	Ambient temperature: storage	-40 ... +85 °C
Output function	N.O. / N.C.	Weight	10 g
Switching frequency, f (ti/tp 1:1)	25 Hz	Vibration and impact resistance	EN 60947-5-2
Response time	24 ms		
Connection, WH	Sync.		

¹ From end-value of limit scanning distance ² Max. 10 % ripple, within U_B ³ With connected IP 67 plug

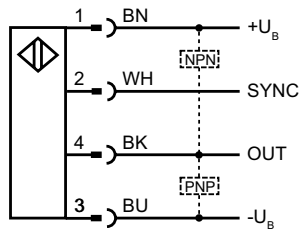
Operating scanning distance	Switching output	Type of connection	Part number	Article number
20 ... 150 mm	PNP	Metal plug, M8x1, 4-pin	UT 20-150-PSM4	693-11000
20 ... 150 mm	NPN	Metal plug, M8x1, 4-pin	UT 20-150-NSM4	693-11001

Plug connection



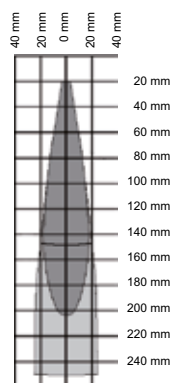
153-00391

Connection, 4-pin



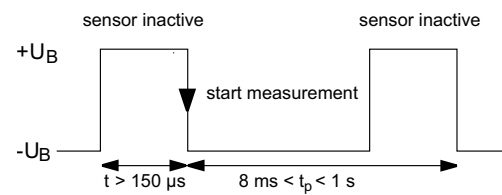
154-00116

Sound cone



155-00132

Synchronisation / triggering



Lay down a square-wave signal at the Sync input.
Pulse width $t > 150 \mu\text{s}$, repeat rate, $t_p = 8 \text{ ms} \dots 1 \text{ s}$.
A high level, $+U_B$ at Sync input deactivates the sensor.

155-00131

Accessories

Connection cables	From Page A-38
Brackets	From Page A-4