HRTU 8 Diffuse reflection ultrasonic scanner with background suppression

50 … 400 mm

20 - 30 V DC

- Colour and transmission independent detection of objects, even in wet and foggy environment
- Switching behaviour almost surface-independent
- Teach function for adjustment
- M12 turning connector

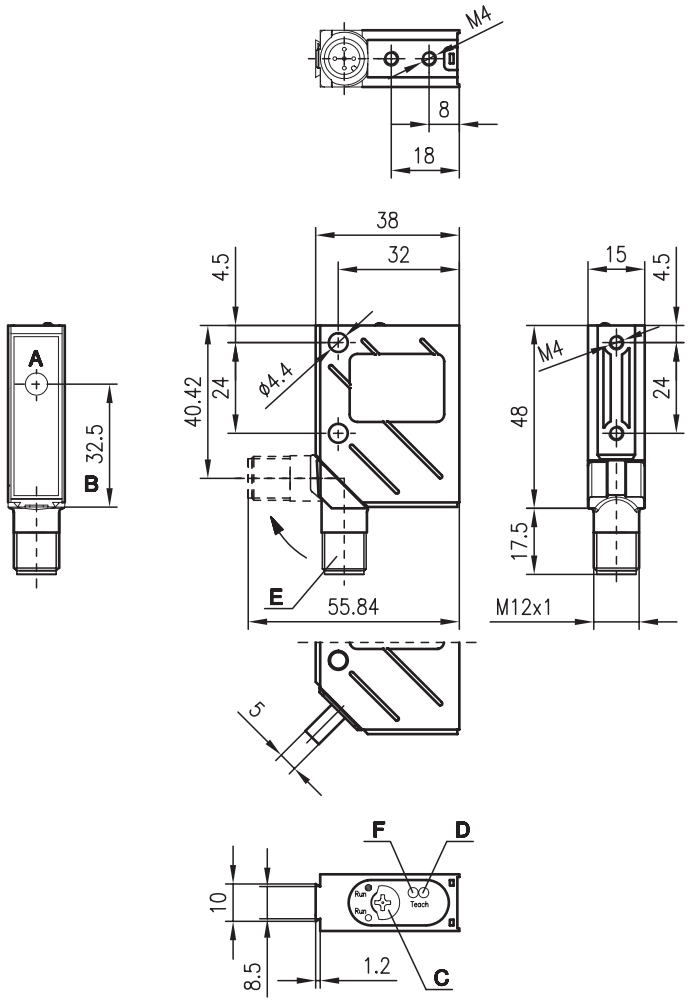
IEC 60947... IEC 60947... IP 67

Accessories:

(available separately • see page 74)

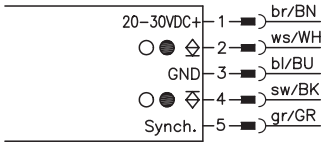
- M12 connectors (KD …)
- Ready-made cables (K-D …)
- Mounting systems
- Control guard

Dimensioned drawing



A Converter
B Ultrasonic axis
C Operational control
D LED green
E 90° turning connector
F LED yellow

Electrical connection



Specifications

Ultrasonic specifications	**HRTU 8/24-400-S12**
Operating range [1]	50 … 400mm
Adjustment range	60 … 400mm
Ultrasonic frequency	300kHz
Typ. opening angle	see diagrams
Resolution	1mm
Reproducibility	± 1mm
Temperature drift	± 0.17%/K
Timing	
Switching frequency	8Hz
Delay before start-up	250ms
Electrical data	
Operating voltage U_B	20 … 30V DC (incl. ± 10% residual ripple)
Residual ripple	± 10% of U_B
Bias current	≤ 25mA
Switching output	1 PNP and 1 NPN transistor
Function characteristics	reversible, object detected/not detected
Output current	max. 150mA
Indicators	
LED green	ready
LED green flashing	teaching in progress
LED yellow	reversible, object detected/not detected
LED yellow flashing	device or teach error
Mechanical data	
Housing	metal
Weight	70g
Connection type	M12 connector, 5-pin
Environmental data	
Ambient temp. (operation/storage)	-25°C … +70°C/-40°C … +85°C
Protective circuit [2]	1, 2, 3
VDE safety class	III
Protection class	IP 67
Standards applied	IEC 60947-5-2
Fitting position	any
Options	
Synch. input	
Sensor synchronisation	see remarks
Sensor active/not active	U_B or not connected/0V
Activation delay	< 100ms

1) For the complete temperature range, measured object ≥ 20x20mm
2) 1=short-circuit and overload protection, 2=polarity reversal protection (not for analogue inputs), 3=wire break and inductive protection

Teach process

	Operation	LED green	LED yellow
1.	Place object at desired distance	ON	ON/OFF
2.	Put step switch in position "Teach"	-	-
3.	Wait for acknowledge signal	-	-
	"Teach-in was successful"	1Hz	ON
	"Teach-in was not successful"	ON	1Hz
4.	Put step switch in position "Run"	-	-
	Run ❍ Output and yellow LED are not active when object was detected	ON	OFF
	Run ● Output and yellow LED are active when object was detected	ON	ON

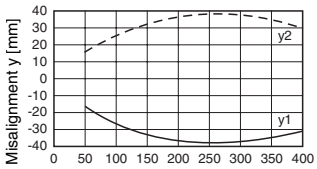
Order guide

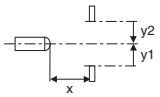
Designation	Part No.
HRTU 8/24-400-S12	500 38912

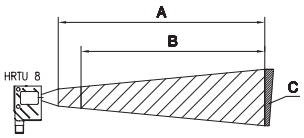
Tables

Diagrams

Typ. response behaviour (object 20x20mm)







A Operating range
B Adjustment range
C Object

Remarks

- **Synchronisation:**
  Max. 10 sensors may be synchronised by connecting the Synch inputs. Thus, mutual interference can be avoided.
- **Temperature drift**
  +0.17%/K
  for temperature rise
  -0.17%/K
  for temperature fall