

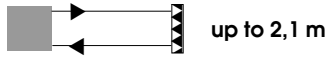
# Series OU

## Ultramini – clever – reliability in confined quarters



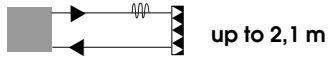
4 m

Through-beam sensors OUS/OUE



up to 2,1 m

Retro-reflective sensors OUR



up to 2,1 m

Retro-reflective sensors with polarizing filters OUP and OUC



up to 10 cm

Diffuse-reflective sensors OUT



### High functionality

#### Diverse operating principles

ELESTA's OU sensors are available as through-beam sensors, retro-reflective sensors with and without polarizing filters, retro-reflective sensors for transparent objects, as well as diffuse-reflective sensors.

#### Light reserve warning indicator

All of the sensors in the OU series contain a *light-reserve warning indicator* (blinking function indicator) for controlling dirt build-up on the lenses and as an *alignment aid*.

#### High switching frequency

All OU sensors have a 1000 Hz switching frequency, allowing for the reliable detection of even fast moving objects.

#### Low power consumption

The OU sensors distinguish themselves with an extremely small power consumption of less than 15 mA.

#### Test input

The OU through-beam sensors are available standard with *test input*, for confirming that the sensor is operating properly.

### Simple installation and operation

#### Adjustable range

The optical range of the diffuse-reflective OU sensors can be adjusted to meet the specific application.

#### Various connection versions

All OU sensors are available standard with a 4 wire 2 m cable or a 4 pin M8 connector (snap-on or threaded).

#### Clever mounting concept

In contrast to the side mounting of traditional sensors, the OU mini-sensor from Elesta is designed for front or back mounting in the direction of the optical axis with only 10 mm depth. Thanks to recessed screws or nuts, a clean flush mounting is possible with no protruding parts. With two M3 screws and metal reinforced mounting holes, this mini-sensor can be fastened everywhere, simply and reliably.



### Reliable for the highest demands

#### Robust construction with IP 67 sealing

The OU photoelectric sensors are built with a robust polycarbonate housing, and are protected against water and dust. The sensors meet the *sealing* requirements of IP 67.

#### EMC-tested

The OU sensors are tested according to IEC 801, EN50081-1 and EN50082-2. This assures trouble free use even in high electromagnetically contaminated environments.

#### High ambient light rejection

Thanks to pulse modulation and a very sensitive ambient light suppression with active disturbing light recognition and rejection, the OU sensors are extremely insensitive to foreign light sources e.g. HF-lamps, etc.

#### «Crosstalk» suppression

Through the active «crosstalk» suppression, the OU sensors function reliably even when oppositely mounted.

#### Reverse polarity protection

All of the OU sensor's electrical connections are protected against reverse wiring.

#### Short-circuit protection

The OU sensor's transistor outputs are electronically protected against short circuit.

#### Power-up output suppression

During power-up the outputs of the OU sensors are blocked for typically 90 msec.

**Designation code**

OU X XXX XXX XX

Principle	Supply	Outputs	Connection	Electr. option	Light	Range
C: Retro-reflective for transparent objects E: Through-beam receiver P: Retro-reflective with polarizing filters R: Retro-reflective S: Through-beam emitter T: Diffuse-reflective Z: Accessory	1: 10-30 VDC	KA: No output NA: NPN <i>light- and dark-on</i> PA: PNP <i>light- and dark-on</i>	1: Cable 2 m 5: Connector M8	00: Range adjustable 01: Range adjustable, <i>test input</i> 40: Range not adjustable 41: Range not adjustable, <i>test input</i>	I: infrared R: red	OUS/OUE: 1: 4 m OUR/OUP/OUC: 1: 1 m 2: 0,8 m OUT: 1: 5 cm 2: 10 cm

**Accessories**

**Retroreflectors:** see page 130

**Connector cables:** see page 128

# Through-beam sensors, ultramini



- Front or back mounting in the direction of the optical axis
- Light reserve warning indicator
- Insensitive to foreign light sources, e.g. HF-lamps, etc.
- Dual transistor outputs, NPN or PNP
- Short-circuit protection, reverse polarity protection and power-up output suppression
- Test input
- Connections: Cable, 2 meter  
Connector, M8
- EMC tested according to IEC 801 and EN50081-1/EN 50082-2



## Product designation<sup>1)</sup>

Output  
 Connection  
 Range adjustment

## Optical data<sup>2)</sup>

Max. range  
 Emitter

## Electrical data<sup>2)</sup>

Supply voltage  $U_s$   
 Allowable ripple  
 Current consumption (without load)  
 Max. load current  $I_L$   
 Residual voltage  
 Max. switching frequency  
 Test input: emitter on  
                   emitter off

## Environmental data

Sealing  
 Temperature  $T_A$   
 (operating and storage)  
 Weight

Emitter		Receiver			
OUS 1KA 141 R1	OUS 1KA 541 R1	OUE 1NA 140 R1	OUE 1NA 540 R1	OUE 1PA 140 R1	OUE 1PA 540 R1
		NPN (light- and dark-on)		PNP (light- and dark-on)	
Cable 2 m	Connector M8	Cable 2 m	Connector M8	Cable 2 m	Connector M8
No		No			
4 m					
Red-LED, 650 nm, pulsed					
10...30 VDC					
+/- 10% of $U_s$					
< 15 mA		< 8 mA			
		100 mA			
		< 1,6 V			
		1000 Hz			
$\geq 7 V$ open or $\leq 3 V$					
IP 67					
-25...+65 °C					
ca. 45 g	ca. 4 g	ca. 45 g	ca. 4 g	ca. 45 g	ca. 4 g

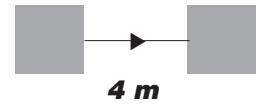
1) For product designation of sensors with options see designation code on page 13.  
 2) When not otherwise noted, all technical data at  $T_A = 25^\circ\text{C}$  and  $U_s = 24 V$ .

### Note:

The emitter is only activated, if the *test input* is connected to  $U_s$  or to a corresponding test signal.

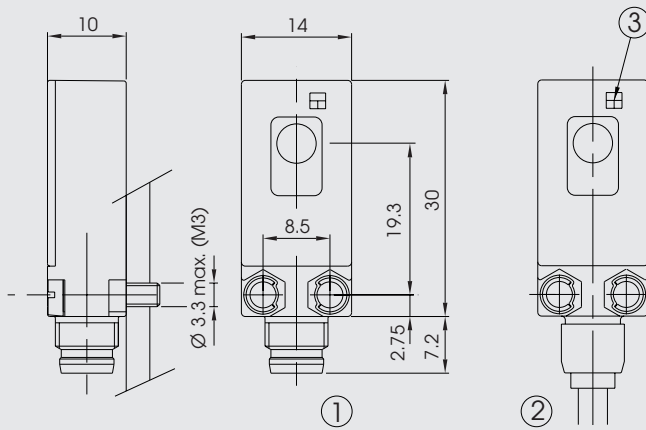
10...30 VDC

NPN / PNP  
light-on and  
dark-on output



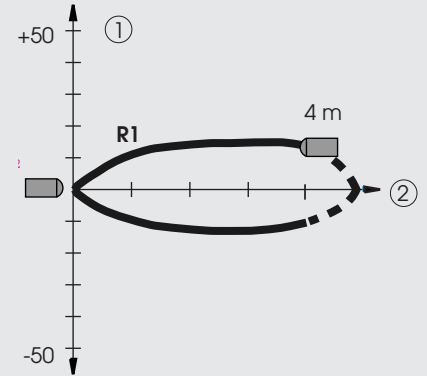
**OUS/OUE**

**Dimensions (30 mm x 10 mm x 14 mm)**



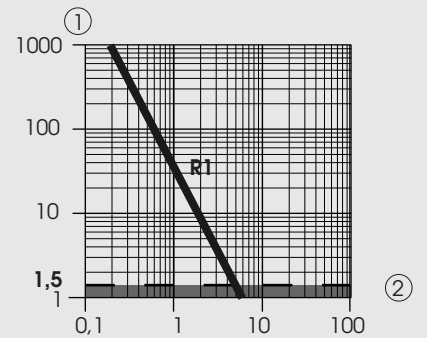
- ① Connector M8
- ② Cable connection
- ③ Emitter: operation indicator  
Receiver: function indicator

**Optical diagrams**



**Typical beam diameter**

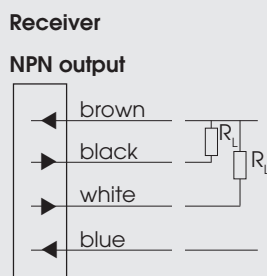
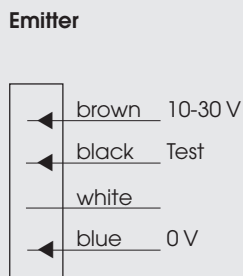
- ① Diameter in (cm)
- ② Range in (m)



**Typical excess gain curve**

- ① Gain factor
- ② Range in (m)

**Wiring diagram**



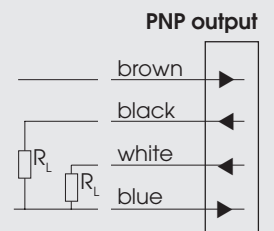
Connection for connector M8	Wire color
1	brown
2	white
3	blue
4	black

⊕ Supply voltage 10...30 V

Light-on output

Dark-on output

⊖ Supply voltage



Light-on output:  
Output energized when no object is present.

Dark-on output:  
Output energized when object is present.