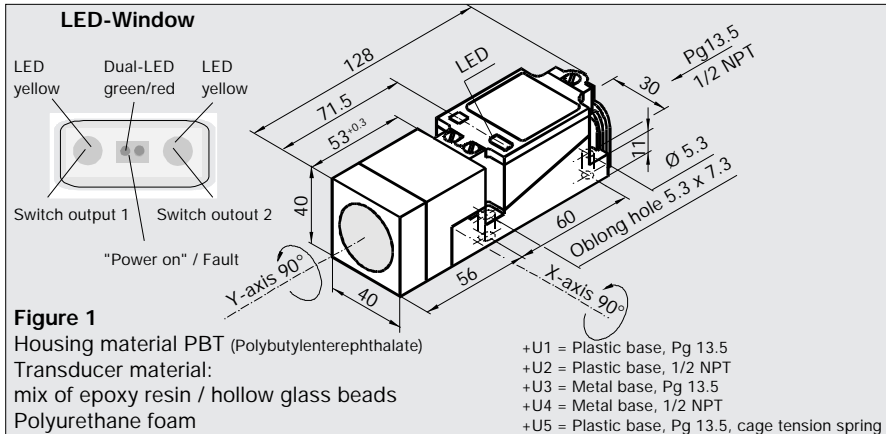


# Ultrasonic Sensors / Single Head System With 2 Switch Outputs / Serial Interface

- Reverse polarity safeguarded
- Two switch outputs
- Serial interface
- Adjustable parameters



The measurement of distance is derived from the propagation time of the ultrasonic pulse. Thus, the microprocessor is able to calculate the range as a function of the propagation time and the velocity of sound.

Two output options are available. These are two adjustable switching ranges or output via a serial interface (RS 232, 9 600, n, 8,1). Various output functions are available.

Further information concerning sensor instructions will be found in the publication "Command Set For Sensors With RS232 Interface".

## Note:

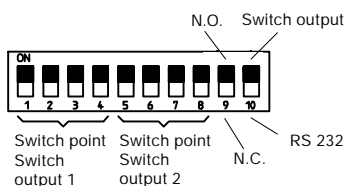
Before connection of the RS232 interface, ensure that S10 is set to the correct position.

## Switch point setting table

Switches 1 2 3 4	Switching range [cm]	Switches 5 6 7 8	Switching range [cm]
0 0 0 0	30	0 0 0 0	40
0 0 0 1	45	0 0 0 1	55
0 0 1 0	60	0 0 1 0	70
0 0 1 1	75	0 0 1 1	85
0 1 0 0	90	0 1 0 0	100
0 1 0 1	105	0 1 0 1	115
0 1 1 0	120	0 1 1 0	130
0 1 1 1	135	0 1 1 1	145
1 0 0 0	150	1 0 0 0	160
1 0 0 1	170	1 0 0 1	180
1 0 1 0	190	1 0 1 0	200
1 0 1 1	210	1 0 1 1	220
1 1 0 0	230	1 1 0 0	240
1 1 0 1	250	1 1 0 1	260
1 1 1 0	270	1 1 1 0	280
1 1 1 1	290	1 1 1 1	300

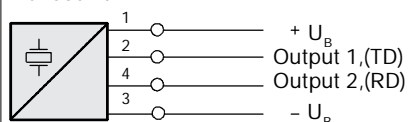
1  $\triangle$  ON; 0  $\triangle$  OFF

## Coding switches in terminal compartment



## Standard symbol / Connection:

Transceiver



## Detection range:

300 mm ... 3000 mm

## Version:

Transceiver with 2 switch outputs and serial interface

## Ordering code

UJ 3000+U1+E22+RS

## Nominal values:

Detection range	300 mm ... 3000 mm
Standard test plate (Min. flat surface)	100 mm x 100 mm
Unusable range (Unsuitable for switching)	0 mm ... 300 mm
Sonic beam divergence angle	Approx. 5° at -3 dB
Transducer frequency	Approx. 130 kHz
Static response time 4 (Basic setting)	≤ 280 ms
Static response time 1	≤ 70 ms
Dynamic response time	≤ 100 ms
Switching hysteresis	10 % of set switching range
Repeatability	≤ 1 %
Temperature drift	0.2 % / K

## Electrical ratings:

Working voltage $U_B$	20 V DC ... 30 V DC
Ripple	$\pm 10 \%_{SS}, \hat{U}_B = 33 V$
Quiescent current $J_B$	≤ 90 mA
Switch output 1 and 2 or RS 232 interface selectable (S10)	ON $\triangle$ switch output 1 and 2; OFF $\triangle$ RS 232 interface
Switch output 1 and 2 (pnp output) N.O., N.C. selectable (S9)	200 mA (k), $U_B$ -3 V Short circuit/Overload proof The 2 switch points are each settable in 16 steps by the coding switches 1 ... 4 and 5 ... 8 (See table)
RS 232 Interface	
Transmit data TD	High level -5 V ... -15 V Low level +5 V ... +15 V at 3 k $\Omega$ ... 7 k $\Omega$ load
Receive data RD	High level -3 V ... -13 V Low level +3 V ... +13 V
Interface cable	Interface cable length to DIN 66 259 Part 2
Indicators	
Dual LED Green	"Power on" mains on
Red, flashing at 2 Hz	Interference (At high extraneous sound levels)
LED Yellow	Switch output 1
LED Yellow	Switch output 2

## Mechanical data:

Working temperature	263 Kelvin ... 323 Kelvin (-10 °C ... +50 °C)
Storage temperature	233 Kelvin ... 358 Kelvin (-40 °C ... +85 °C)
Protection class to DIN 40 050	IP 65
Permissible shock and vibration stresses <sup>5)</sup>	b ≤ 30 g, T ≤ 11 ms f ≤ 55 Hz, a ≤ 1 mm
Method of connection	Terminal compartment accepts up to 2.5 mm <sup>2</sup> conductor csa

5) To IEC68-8-2-6 and IEC68-2-27