

# Ultrasonic Diffuse, Analogue Output Type UC 80 CND 60 A . M1 TR

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- Square 80 mm ABS housing
- Sensing distance: 600 - 6000 mm
- Remote Teach by wire
- Outputs: Analog 0-10 V or 4-20 mA
- Setup of positive or negative slope
- Power supply: 15 to 30 VDC
- 8° beam angle
- Protection: Short-circuit, reverse polarity, transients
- Protection degree IP 65
- M12 plug, 5 pin

## Product Description

A self-contained multi function diffuse ultrasonic sensor with a sensing range of 600 to 6000 mm. The analog output is easily set up in 2 setpoints, pos./neg. slope and adjusted by teach-in - makes it ideal for level control tasks in a wide variety of vessels. A sturdy one-piece ABS housing provides the

perfect packaging for the sophisticated microprocessor controlled and digitally filtered sensor electronics. Excellent EMC performance and precision are typical features of this sensor based on true distance measurement.

## Ordering Key **UC80CND60AKM1TR**

Ultrasonic sensor	_____
Housing style	_____
Housing size	_____
Housing material	_____
Housing length	_____
Detection principle	_____
Sensing distance	_____
Output type	_____
Output configuration	_____
Connection	_____
Remote teach	_____

## Type Selection

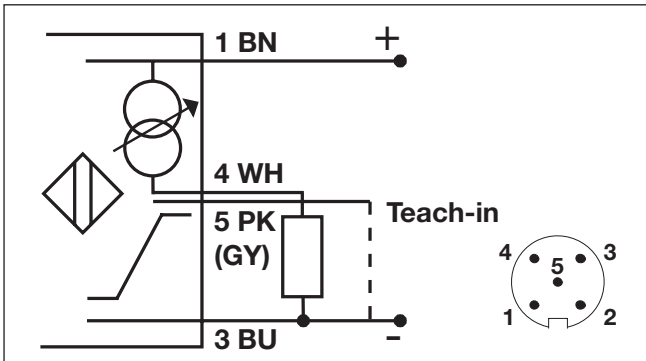
Housing dimensions	Connection	Rated operating dist. (S <sub>n</sub> )	Outputs	Ordering no.
80 x 80 x 50 mm	Plug M12, 5 pin	600-6000 mm	0-10 V	<b>UC 80 CND 60 AK M1 TR</b>
80 x 80 x 50 mm	Plug M12, 5 pin	600-6000 mm	4-20 mA	<b>UC 80 CND 60 AG M1 TR</b>

## Technical Data

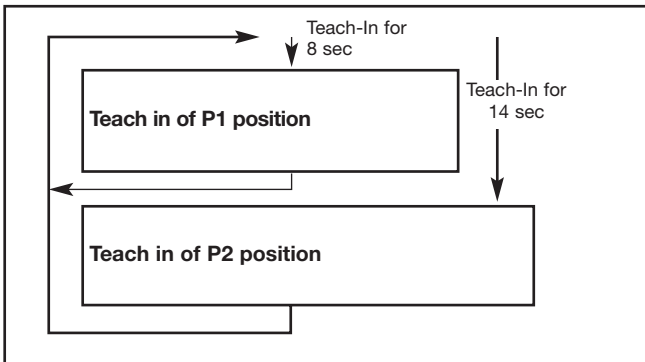
<b>Rated operational volt. (U<sub>e</sub>)</b>	15 to 30 VDC (ripple included)	<b>Carrier frequency</b>	80 KHz
<b>Ripple</b>	≤ 10%	<b>Indication</b>	Set points, 2 LEDs yellow Echo, 1 LED green
<b>No-load supply current (I<sub>o</sub>)</b>	≤ 35 mA	<b>Rated operating distance</b>	600 - 6000 mm
<b>Protection</b>	Short-circuit, transients and reverse polarity	<b>Temperature compensation</b>	Yes
<b>Rated insulation voltage</b>	> 1 kV	<b>Beam angle</b>	8°
<b>Power-on delay</b>	420 ms	<b>Ambient temperature</b> Operating and Storage	-15° to +70°C (5° to +158°F)
<b>Output</b> UA..CLD..AK.. UA..CLD..AG..	0-10 VDC 4-20 mA	<b>Degree of protection</b>	IP 65
<b>Output slope</b>	Positive or negative Setup via teach-in	<b>Housing material</b>	ABS
<b>Linearity error</b>	< 0.5%	<b>Connection</b> Cables for plug (M1)	Plug M12, 5-pin CONM15 series
<b>Repeat accuracy (R)</b>	0.2% ± 2 mm	<b>Weight</b>	300 g
<b>Rated operating distance/ Resolution</b>	1.5 mm	<b>CE-marking</b>	Yes
<b>Load</b> 4-20 mA 0-10 V	max. 500 Ω min. 2 kΩ		



## Wiring Diagram

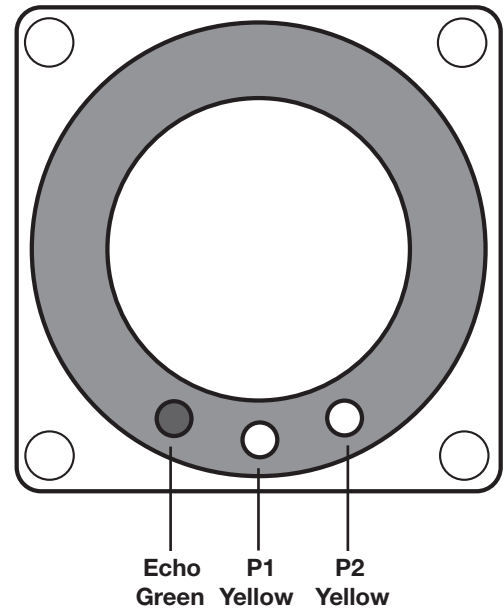


## Analogue Output Adjustment

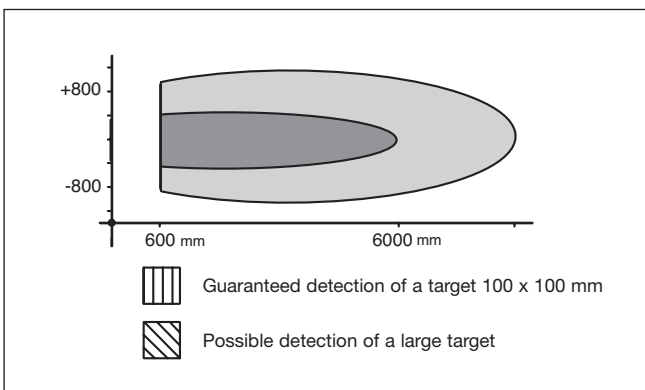


### Normal function:

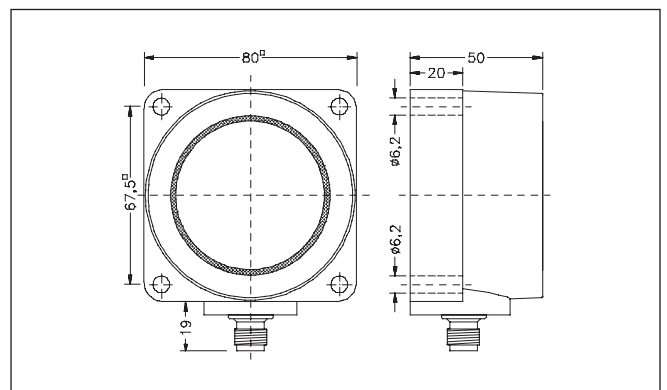
The Echo LED is ON when the echo is received (this is the alignment LED confirming that the target is properly aligned). The LED P1 is ON, when the target is between the sensor face and P1. The LED P2 is ON when Target is farther than P2.



## Detection Range



## Dimensions



Dimensions in mm.

## Teach-in procedure

### Analogue output adjustment

P1 and P2 define the analogue output slope.  
 P1 determines the 4 mA position and P2 the 20 mA position.  
 Positive slope:  $P1 < P2$   
 Negative slope:  $P2 < P1$

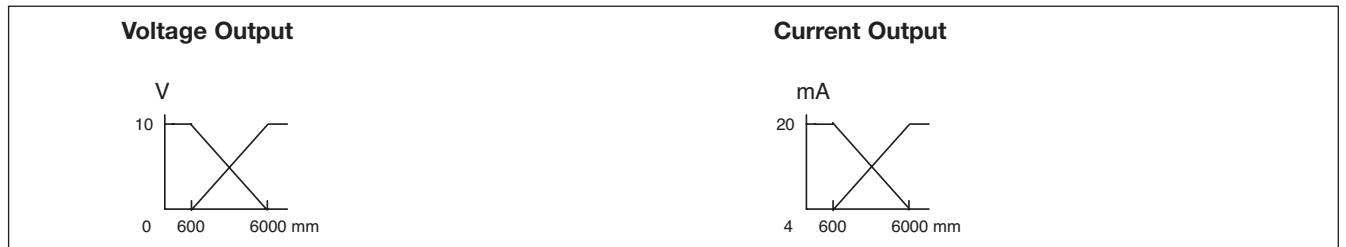
#### Teach-In of P1 position (4 mA output)

Hold Teach-In for 8 seconds until P1 and Echo LED's start flashing 2 times per second.  
 The sensor is now in teach mode for P1:  
 P1 LED will now flash once per second and the Echo LED returns to normal function (alignment LED).  
 The Teach-In function is now open for 1 minute to do the programming of P1.  
 Place the target at the new position P1.  
 Activate Teach-in: P1 is now programmed.  
 Sensor returns to normal function with new value for P1.

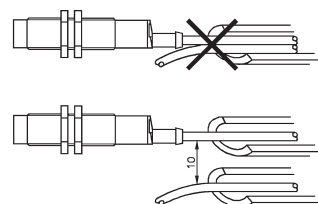
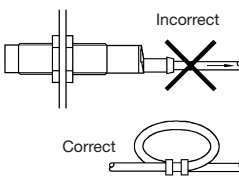
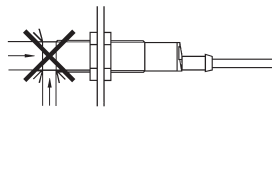
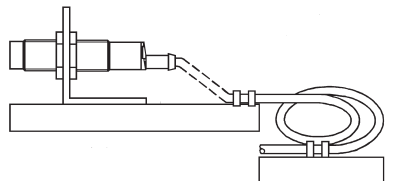
#### Teach-In of P2 position (20 mA output)

Hold Teach-In for 14 seconds until the P2 and Echo LEDs start flashing 2 times per second. After 8 seconds, the P1 and Echo LEDs will start flashing, but this must be ignored and after an additional 5 seconds the P2 is reached.  
 The sensor is now in teach mode for P2:  
 P2 LED is flashing once per second. The Echo LED returns to normal function (alignment LED).  
 Teach-mode is now open for 1 minute to do the programming of P2.  
 Move the target to the new position P2.  
 Activate Teach-in: P2 is now programmed.  
 Sensor returns to normal function with new value for P2.

## Output Functions



## Installation Hints

<p><i>To avoid interference from inductive voltage/current peaks, separate the prox. switch power cables from any other power cables, e.g. motor, contactor or solenoid cables</i></p> 	<p><i>Relief of cable strain</i></p>  <p>The cable should not be pulled</p>	<p><i>Protection of the sensing face</i></p>  <p>A proximity switch should not serve as mechanical stop</p>	<p><i>Switch mounted on mobile carrier</i></p>  <p>Any repetitive flexing of the cable should be avoided</p>
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