Model Number

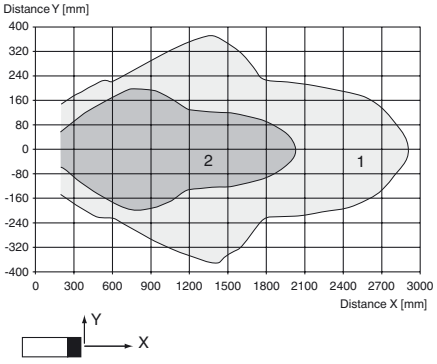
UC1500-F65-IE2R2-V15-Y235145

Features

- **Level indication**
- **1 analog output, 0-20 mA current source**
- **1 switch output**
- **Programmable by means of Interface (see accessories) and SONPROG**
- **Synchronization options**
- **Temperature compensation**

Diagrams

Characteristic response curve



Curve 1: flat surface 100 mm x 100 mm
Curve 2: round bar, Ø 25 mm

Technical data

General specifications	
Sensing range	200 ... 1500 mm
Adjustment range	200 ... 1500 mm
Unusable area	0 ... 200 mm
Standard target plate	20 mm x 20 mm
Transducer frequency	approx. 200 kHz
Nominal ratings	
Time delay before availability t_v	250 ms
Limit data	
Permissible cable length	max. 300 m
Indicators/operating means	
LED green	Power on
LED yellow	solid: switching state switch output flashing: misadjustment
Electrical specifications	
Rated operational voltage U_e	24 V DC
Operating voltage U_B	15 ... 30 V (including ripple) In supply voltage interval 15 ... 20 V reduced sensitivity by 20% ... 0%
Ripple	≤ 10 %
No-load supply current I_0	≤ 60 mA
Input	
Input type	1 Function input
Input voltage	≤ Operating voltage
Level	low level : 0 ... 3 V high level : ≥ 15 V
Switching output	
Output type	1 switch output PNP, NO
Default setting	200 ... 1500 mm
Operating current I_L	≤ 300 mA , short-circuit/overload protected
Voltage drop	≤ 3 V
Analog output	
Output type	1 current output 0 ... 20 mA , rising slope
Default setting	200 ... 1500 mm
Linearity error	≤ 1.5 %
Load resistor	≤ 300 Ω
Ambient conditions	
Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
Storage temperature	-40 ... 85 °C (-40 ... 185 °F)
Shock resistance	30 g , 11 ms period
Vibration resistance	10 ... 55 Hz , Amplitude ± 1 mm
Mechanical specifications	
Connection type	Device connector M12 x 1 , 5-pin
Protection degree	IP65
Material	
Housing	PBT
Transducer	epoxy resin/hollow glass sphere mixture; polyurethane foam
Installation position	any position
Mass	500 g
Compliance with standards and directives	
Standard conformity	
Standards	EN 60947-5-2:2007 IEC 60947-5-2:2007
Approvals and certificates	
UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose

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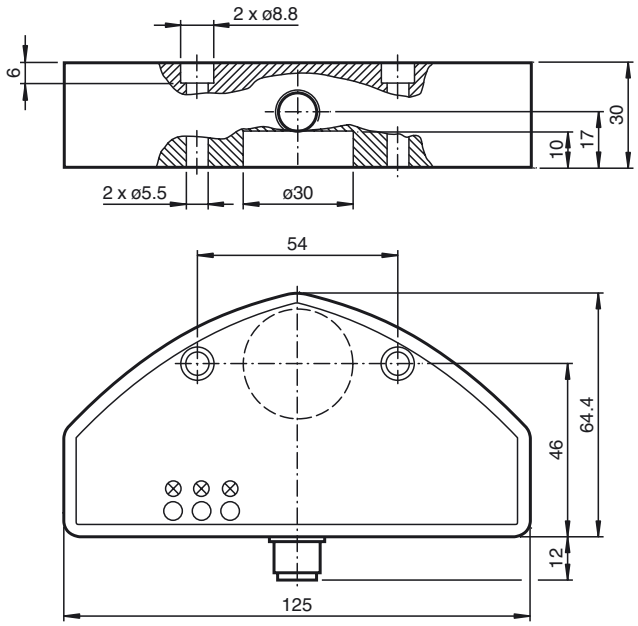
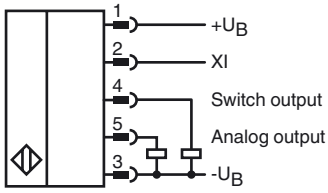
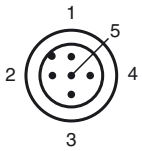
Dimensions



Electrical Connection



Pinout

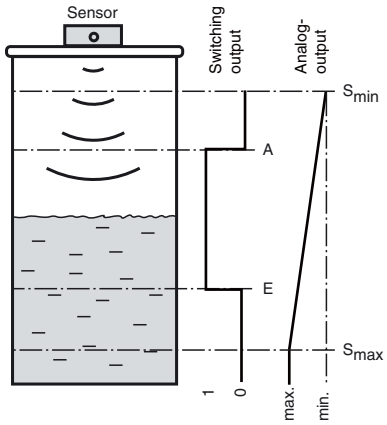


Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)
5	GY	(gray)

Additional Information

Function of the outputs



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Accessories

V15-G-2M-PUR
Cable socket, M12, 5-pin, PUR cable

V15-G-2M-PVC
Cable socket, M12, 5-pin, PVC cable

V15-W-2M-PUR
Cable socket, M12, 5-pin, PUR cable

V15-W-2M-PVC
Cable socket, M12, 5-pin, PVC cable

3RX4000-PF
PC interface

Application ranges

The design and function of this ultrasonic sensor make it ideal for filling level applications in small containers. The device has a switch output and an analogue output. With the switch output, a specific filling level in a tank can be signalled directly. The analogue output represents the current level as an analogue output variable.

Assembly and connection

All components are contained in an encapsulated housing. The ultrasonic converter is in a slightly recessed position in the housing. The integrated circumferential seal allows the sensor to be used directly as a closure with integrated filling level measurement. The tank opening must have a diameter of 26 mm. It can be mounted on the tank using 2 M5 screws. The electrical connection is based on a 5-pin device connector, M12 x 1. The connections are protected against reverse polarity, short circuits and overloads. Shielded cables are recommended if there is electrical interference.

Setting

As delivered, the switch-on and switch-off point, the measuring range limits and the averaging are fixed (see Technical data). They can subsequently be adapted to the application via SONPROG using the interface (see Accessories).

SONPROG

The following parameters can be changed via SONPROG:

- Measuring range limits S_{min} and S_{max}
- Switch-on and switch-off points (A, E)
- Blind zone
- Averaging

Special programming options are available on request.

Operation

The filling level of a container is detected within the detection range. When the filling level reaches the switch-on or switch-off point (E or A), the switch output reacts according to its setting. The switching statuses of the switch output are signalled by the yellow LEDs. If the level is between the switching points A and E, the output is active.
Filling levels between the measuring range limits (S_{min}, S_{max}) are displayed in the form of an analogue output signal at the analogue output. The analogue output delivers its minimum value at filling level S_{min} and its maximum value at filling level S_{max}. The characteristic between the two measuring range limits is linear.
Objects in the blind zone cause cause false signals. Install in such a way that the filling level cannot enter the blind zone.

Function input XI

The sensor is placed in standby mode by connecting a low level at the function input XI (blocked release). The sensors then performs no measurements. The outputs retain the most recent status. As soon as function input XI is disconnected from the low level or a high level is connected (release), the sensor resumes its normal function.
The function input XI can be used during operation for the synchronisation of multiple sensors. This can be done by connecting external signals, e.g. from a controller (external synchronisation) or by simply connecting the function inputs of all sensors to be synchronised (internal synchronisation).

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