



Model Number

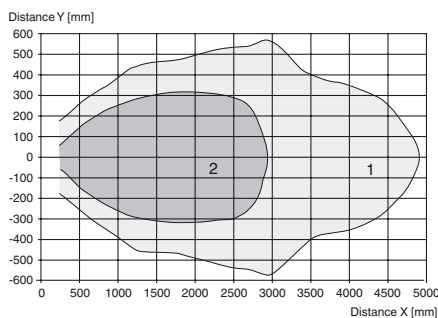
UC2500-F65-E8R2-V15

Features

- Level indication
- 2 switch outputs
- Program input
- Programmable by means of Interface (see accessories) and SON-PROG
- Synchronization options
- Temperature compensation

Diagrams

Characteristic response curve



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

Release date: 2013-04-11 11:29 Date of issue: 2013-10-25 235140_eng.xml

Technical data

General specifications

Sensing range	250 ... 2500 mm
Adjustment range	250 ... 2500 mm
Unusable area	0 ... 250 mm
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 120 kHz

Nominal ratings

Time delay before availability t_v	250 ms
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Limit data

Permissible cable length	max. 300 m
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Indicators/operating means

LED green	Power on
LED yellow 1	solid: switching state switch output 1 flashing: misadjustment
LED yellow 2	solid: switching state switch output 2 flashing: misadjustment

Electrical specifications

Rated operating voltage U_e	24 V DC
Operating voltage U_B	12 ... 30 V (including ripple) In supply voltage interval 12 ... 20 V reduced sensitivity by 20% ... 0%
Ripple	≤ 10 %
No-load supply current I_0	≤ 60 mA

Input

Input type	1 program input Teach-In of S_{min}
Input voltage	≤ Operating voltage
Level	low level : 0 ... 3 V (Teach-In active) high level : ≥ 15 V (Teach-In inactive)
Pulse length	≥ 150 ms

Output

Output type	2 switch outputs PNP, NO
Rated operating current I_e	150 mA , short-circuit/overload protected
Default setting	Switching distance "full", S_{max} : 350 mm Switching distance "empty", S_{min} : 2300 mm Switching hysteresis "full", H_{Smax} : 100 mm Switching hysteresis "empty", H_{Smin} : 200 mm average value "full", M_{Smax} : 20 average value "empty", M_{Smin} : 110

Voltage drop U_d	≤ 3 V
Switch-on delay t_{on}	200 ms
Repeat accuracy	± 5 mm
Off-state current I_f	0.01 mA
Temperature influence	≤ ± 1.5 %

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	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

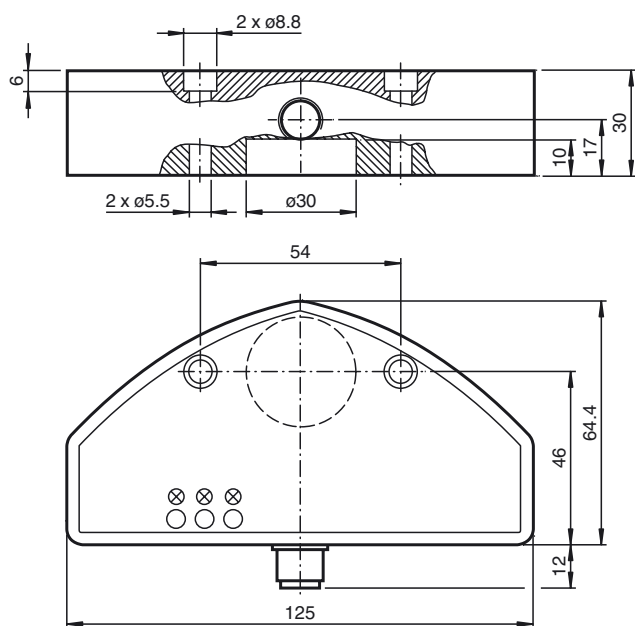
Compliance with standards and directives

Standard conformity	
Standards	EN 60947-5-2:2007 IEC 60947-5-2:2007

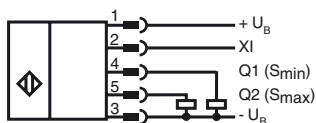
Approvals and certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for products rated ≤36 V

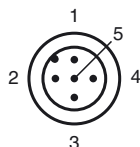
Dimensions



Electrical Connection



Pinout

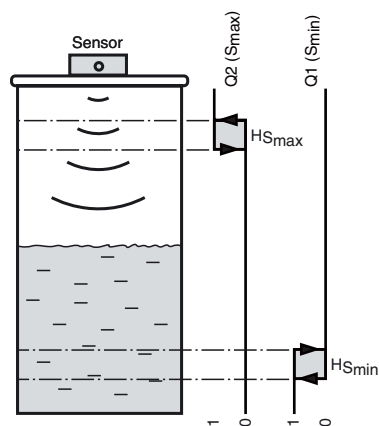


Wire colors in accordance with EN 60947-5-2

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

Additional Information

Function of the switching outputs



Accessories

V15-G-2M-PUR

Female cordset, M12, 5-pin, PUR cable

V15-G-2M-PVC

Female cordset, M12, 5-pin, PVC cable

V15-W-2M-PUR

Female cordset, M12, 5-pin, PUR cable

V15-W-2M-PVC

Female cordset, M12, 5-pin, PVC cable

3RX4000-PF

PC interface

Applications

The design and functionality makes this sensor best suitable for level detection applications in small containers or tanks. The device provides 2 switching outputs Q1 (S_{min}) and Q2 (S_{max}). Special distances can be assigned to each of them - e. g. the minimum and maximum levels in a tank can be evaluated and displayed. The parameters can be programmed with SONPROG or with an automatic setup (Teach-In).

Mounting and Connection

All parts are accommodated in a fully enclosed housing. The ultrasonic transducer is set back in the housing, so it is protected. Because of the built-in sealing the sensor can be used as a closure with integrated level detection. The opening of the tank must have a diameter of 26 mm. The sensor is fixed by means of two M5 screws. The sensor has a 5 pin M12 x 1 connector. The BERO has built-in polarity reversal as well as short-circuit and overload protection. Where there is electrical interference, shielded cables are recommended.

Setup

The two ranges, the associated hysteresis and the average value are preset at the factory (see technical data). The parameters can be programmed with SONPROG or with an automatic setup (teach-in). Teach-in can be done by means of the keys of the interface (accessories) or the function input XI.

Automatic Setup (Teach-in)

With this function the minimum level S_{min} can be set. The following steps must be performed in the correct order:

1. Fill the tank up to the required minimum level or place an object at the required distance.
2. Apply "low" signal (0 to 3 V) to the function input XI - e.g. connect XI via a key to 0 V, or connect it via a PLC to "LOW". The LED " S_{min} " flashes, then. The sensor is disabled; it's learning the distance. The signal duration must be at least 150 ms.
3. Remove signal from XI - e.g. disconnect it from the function input XI, connect it to $+U_B$ or connect it via a PLC to "HIGH").

Important! As long as the function input XI is connected to "low", the sensor is disabled.

SONPROG

With SONPROG the following parameters can be programmed:

- Start or end of both switching ranges S_{min} and S_{max}
- Hysteresis (HS_{max} , HS_{min})
- Blind zone
- Sensing range
- Average value
- Switching output S_{min} NC / NO

Customer specific programming is available on request.

Operation

The level of liquid inside a tank is detected within the sensing range. If the level reaches one of the two switching levels (S_{min} , S_{max}), then the corresponding output will be set active. Both switching levels are equipped with a switching hysteresis (HS_{min} , HS_{max}). The switching status of each output is indicated by the corresponding yellow LED. If the filling level is in between the 2 switching levels, both of the outputs are in off state.

Objects inside the blind zone will cause error signals. Therefore the user has to mount the sensor that way that the level cannot be inside the blind zone.



Model Number

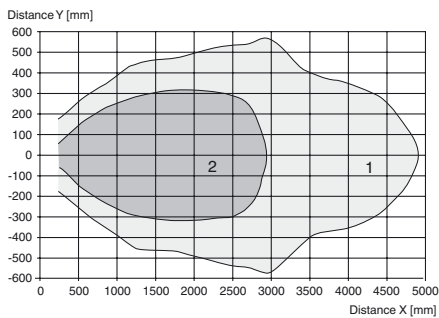
UC2500-F65-FE2R2-V15

Features

- Level indication
- Frequency output
- Programmable by means of Interface (see accessories) and SON-PROG
- Synchronization options
- Temperature compensation

Diagrams

Characteristic response curve



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

Release date: 2012-07-12 14:44 Date of issue: 2013-10-25 235152_eng.xml

Technical data

General specifications

Sensing range	250 ... 2500 mm
Adjustment range	250 ... 2500 mm
Unusable area	0 ... 250 mm
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 120 kHz

Nominal ratings

Time delay before availability t_v	250 ms
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Limit data

Permissible cable length	max. 300 m
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Indicators/operating means

LED green	Power on
LED yellow	solid: switching state switch output flashing: misadjustment

Electrical specifications

Rated operating voltage U_e	24 V DC
Operating voltage U_B	12 ... 30 V (including ripple) In supply voltage interval 12 ... 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

Output

Output type	1 Frequency output
Rated operating current I_e	300 mA
Default setting	250 mm ... 1500 mm
Linearity	≤ 1.5 %
Output frequency	12.5 ... 125 Hz (125 ... 1250 Hz) , adjustable

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	Connector M12 x 1 , 4-pin
Protection degree	IP65
Material	
Housing	PBT
Transducer	epoxy resin/hollow glass sphere mixture; polyurethane foam
Installation position	any position
Mass	500 g

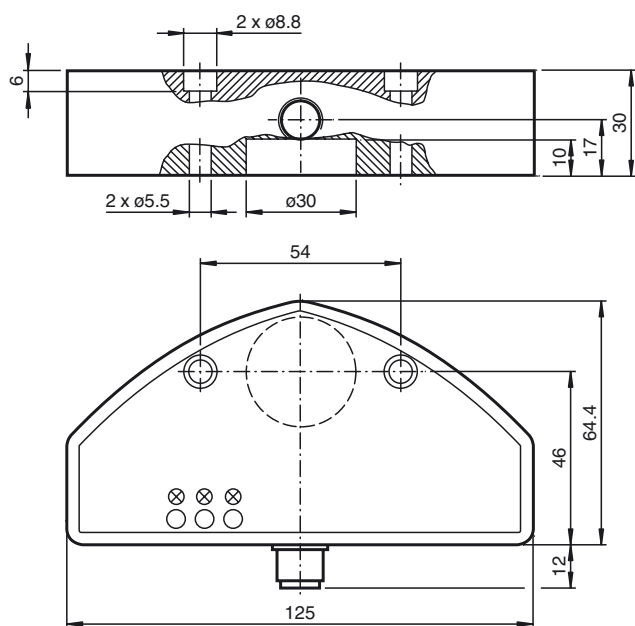
Compliance with standards and directives

Standard conformity	
Standards	EN 60947-5-2:2007 IEC 60947-5-2:2007

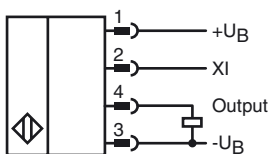
Approvals and certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for products rated ≤36 V

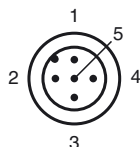
Dimensions



Electrical Connection



Pinout

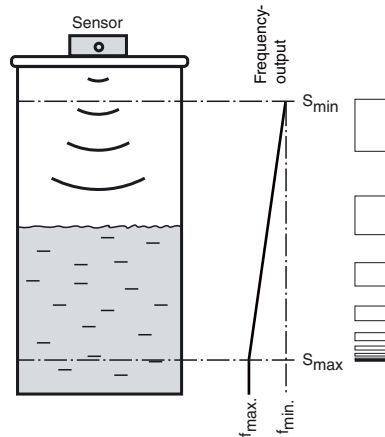


Wire colors in accordance with EN 60947-5-2

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

Additional Information

Function of the output



Accessories

V1-G-2M-PUR

Female cordset, M12, 4-pin, PUR cable

V1-G-2M-PVC

Female cordset, M12, 4-pin, PVC cable

V1-W-2M-PUR

Female cordset, M12, 4-pin, PUR cable

V1-W-2M-PVC

Female cordset, M12, 4-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 frequency output. The frequency of the output signal is a measure of the current filling level.

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 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}
- Frequency range
- Blind zone
- Averaging

Special programming options are available on request.

Operation

The filling level of a container is detected within the detection range. Filling levels between the measuring range limits (S_{min} , S_{max}) are displayed in the form of a rectangular signal with variable frequency. The frequency output delivers the smallest frequency value at filling level S_{min} and the highest frequency at filling level S_{max} . The frequency characteristic between the two measuring range limits is linear.

Objects in the blind zone 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. 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, 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).



Model Number

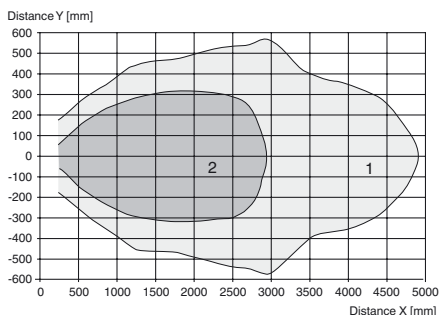
UC2500-F65-IE2R2-V15

Features

- Level indication
- 1 analog output, 4-20 mA current source
- 1 switch output
- Programmable by means of Interface (see accessories) and SON-PROG
- 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	250 ... 2500 mm
Adjustment range	250 ... 2500 mm
Unusable area	0 ... 250 mm
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 120 kHz

Nominal ratings

Time delay before availability t_v	250 ms
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Limit data

Permissible cable length	max. 300 m
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Indicators/operating means

LED green	Power on
LED yellow	solid: switching state switch output flashing: misadjustment

Electrical specifications

Rated operating 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	250 ... 2500 mm
Operating current I_L	≤ 300 mA , short-circuit/overload protected
Voltage drop	≤ 3 V

Analog output

Output type	1 current output 4 ... 20 mA , rising slope
Default setting	250 ... 2500 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	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

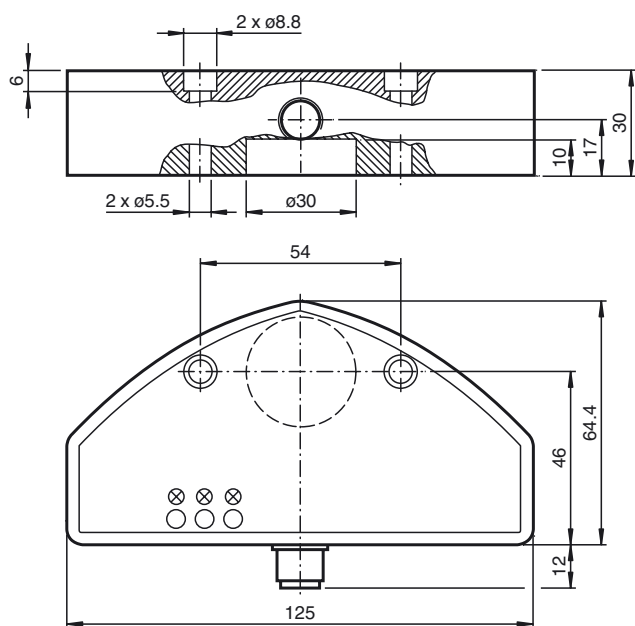
Standard conformity	
Standards	EN 60947-5-2:2007 IEC 60947-5-2:2007

Approvals and certificates

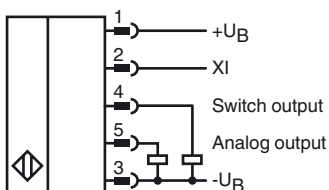
UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for products rated ≤36 V

Release date: 2012-07-12 14:44 Date of issue: 2013-10-25 235143_eng.xml

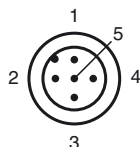
Dimensions



Electrical Connection



Pinout

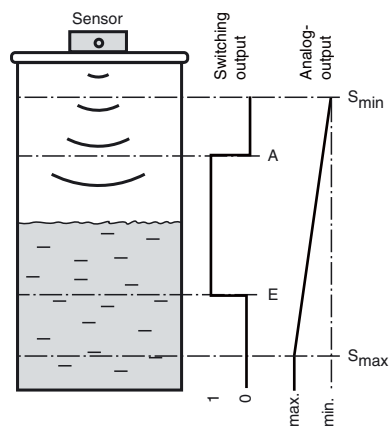


Wire colors in accordance with EN 60947-5-2

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

Additional Information

Function of the outputs



Accessories

V15-G-2M-PUR

Female cordset, M12, 5-pin, PUR cable

V15-G-2M-PVC

Female cordset, M12, 5-pin, PVC cable

V15-W-2M-PUR

Female cordset, M12, 5-pin, PUR cable

V15-W-2M-PVC

Female cordset, 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 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).



Model Number

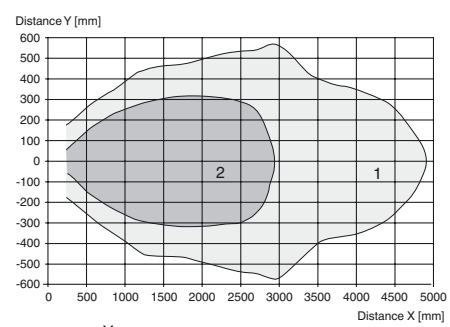
UC2500-F65-IE2R2-V15-Y235146

Features

- Level indication
- 1 analog output, 0-20 mA current source
- 1 switch output
- Programmable by means of Interface (see accessories) and SON-PROG
- 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

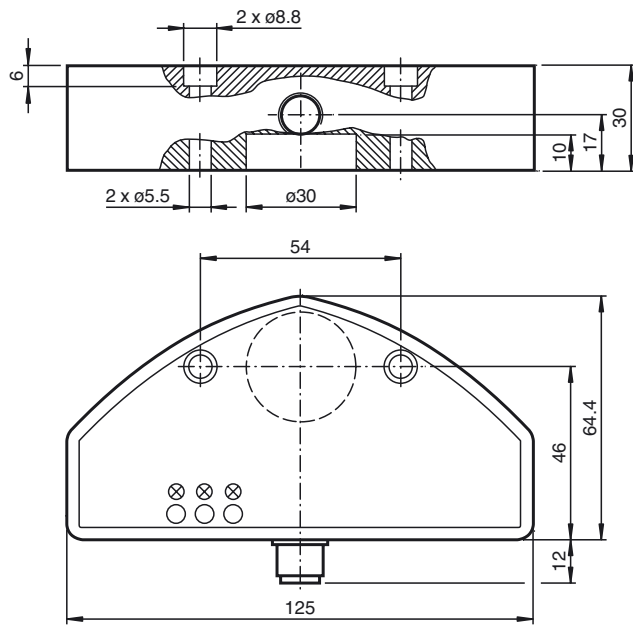
General specifications	
Sensing range	250 ... 2500 mm
Adjustment range	250 ... 2500 mm
Unusable area	0 ... 250 mm
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 120 kHz
Nominal ratings	
Time delay before availability t_v	250 ms
Limit data	
Permissible cable length	max. 300 m
Indicators/operating means	
LED green	Power on
LED yellow	solid: switching state switch output flashing: misadjustment
Electrical specifications	
Rated operating 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	250 ... 2500 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	250 ... 2500 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	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
CCC approval	CCC approval / marking not required for products rated ≤36 V

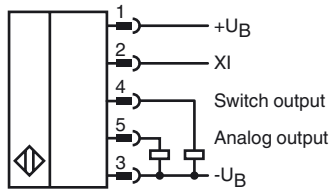
Release date: 2012-07-12 14:44 Date of issue: 2013-10-25 235146_eng.xml



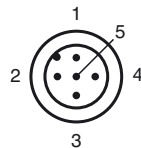
Dimensions



Electrical Connection



Pinout

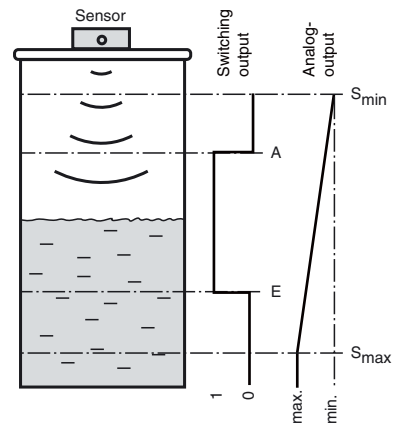


Wire colors in accordance with EN 60947-5-2

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

Additional Information

Function of the outputs



Accessories

V15-G-2M-PUR

Female cordset, M12, 5-pin, PUR cable

V15-G-2M-PVC

Female cordset, M12, 5-pin, PVC cable

V15-W-2M-PUR

Female cordset, M12, 5-pin, PUR cable

V15-W-2M-PVC

Female cordset, 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 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 sensor 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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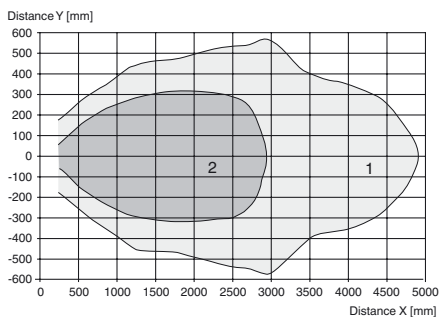
UC2500-F65-UE2R2-V15

Features

- Level indication
- 1 analog output, 0-10 V voltage source
- 1 switch output
- Programmable by means of Interface (see accessories) and SON-PROG
- 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	250 ... 2500 mm
Adjustment range	250 ... 2500 mm
Unusable area	0 ... 250 mm
Standard target plate	100 mm x 100 mm
Transducer frequency	approx. 120 kHz

Nominal ratings

Time delay before availability t_v	250 ms
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Limit data

Permissible cable length	max. 300 m
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Indicators/operating means

LED green	Power on
LED yellow	solid: switching state switch output flashing: misadjustment

Electrical specifications

Rated operating 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	250 ... 2500 mm
Operating current I_L	≤ 300 mA , short-circuit/overload protected
Voltage drop	≤ 3 V

Analog output

Output type	1 voltage output 0 ... 10 V , rising slope
Default setting	250 ... 2500 mm
Linearity error	≤ 1.5 %
Load resistor	> 2 kΩ

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	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

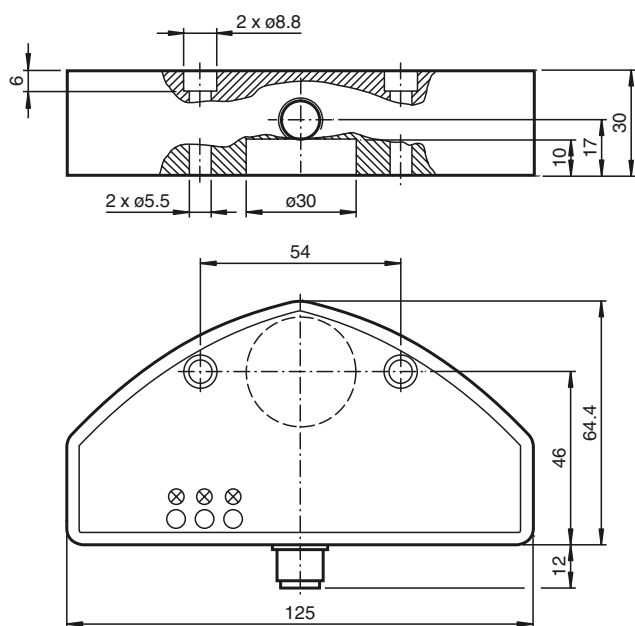
Standard conformity	
Standards	EN 60947-5-2:2007 IEC 60947-5-2:2007

Approvals and certificates

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for products rated ≤36 V

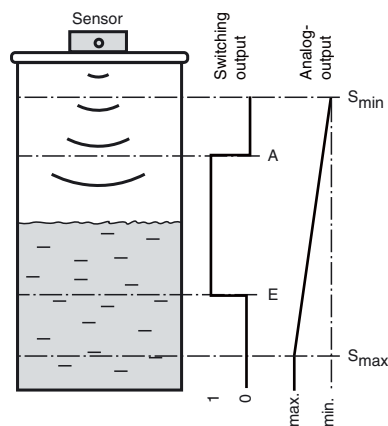
Release date: 2012-07-12 14:44 Date of issue: 2013-10-25 235149_eng.xml

Dimensions

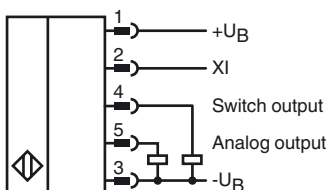


Additional Information

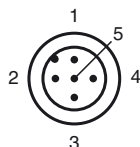
Function of the outputs



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)

Accessories

V15-G-2M-PUR

Female cordset, M12, 5-pin, PUR cable

V15-G-2M-PVC

Female cordset, M12, 5-pin, PVC cable

V15-W-2M-PUR

Female cordset, M12, 5-pin, PUR cable

V15-W-2M-PVC

Female cordset, 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 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 sensor 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).