

Knowledge Article

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Product Family: MD Ultrasonic Sensor

Number: KB-SEN-006

Subject: Configure UQ1 with Analog and Digital Outputs

Date Issued: February 12, 2021

Part Numbers

UQ1A-G6-0E

UQ1A-G7-0E

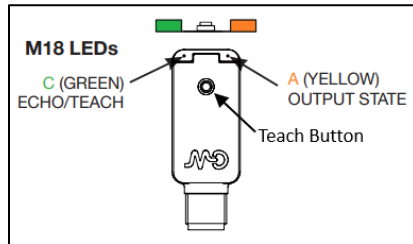
UQ1C-G6-0E

UQ1C-G7-0E

UQ1D-G6-0E

UQ1D-G7-0E

Button and LED locations



The teach button is always "active" meaning you can set P1 and P2 any time you momentarily press the button (minus the block feature). There is not a "teach" mode, it is always in teach mode, hence the reason for the Teach Block feature. Once you have your setpoints configured, it is best to enable the Teach Block to prevent someone from accidentally pressing the teach button and making new setpoints.

To enable Teach Block

Press the teach button for 12 seconds. After the first 8 seconds, the A (Yellow) LED will start blinking, keep holding the teach button until the blinking rate increases. Once the faster blinking rate happens, then you can release the button. The teach button will not allow new setpoints to be set.

To disable the Teach Block

Same as the enable. Press the teach button for 12 seconds. After the first 8 seconds, the A (Yellow) LED will start blinking, keep holding the teach button until the blinking rate increases. Once the faster blinking rate happens, then you can release the button. The teach button will allow new setpoints to be set.

There is no way to tell if you are turning the Block mode On or Off. If Block mode is enabled, then momentarily pressing the teach button will cause the C (Green) LED to blink once, to tell you that the button press is locked out. If A (Yellow) start flashing, that means that a new P1 setpoint has been entered.



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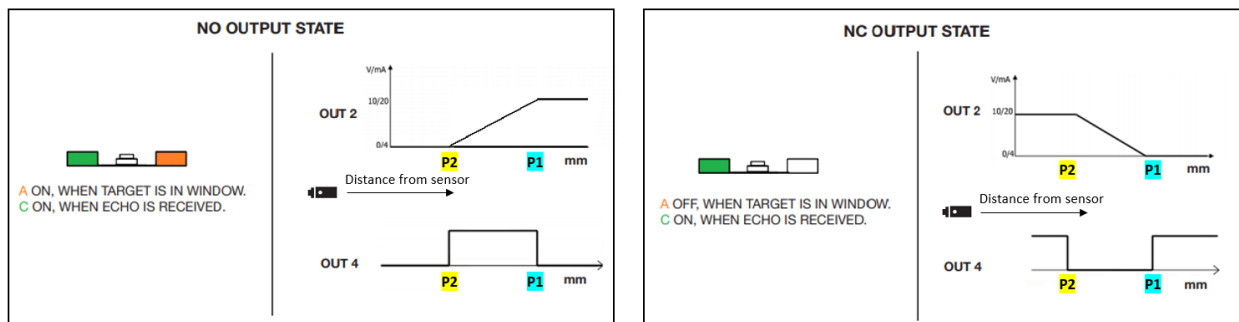
Changing Output States

Push and hold the teach button for 8 seconds. When the A (Yellow) starts blinking, release the teach button and the sensor output will change for Normally Open to Normally Closed. To change that output state back to Normally Open, press and hold the teach button for 8 seconds again.

There is no indication which state you are in, it just toggles from NO to NC, and back again.

Selecting Setpoints

P1 must **always** be farther away from the sensor than P2. Place the object for the first setpoint location (P1), press the teach button. A (Yellow) will start blinking, waiting for P2 to be set. Move the object to the second setpoint location (P2) and press the teach button again. That will set P1 and P2. A (Yellow) will blink 5 times to acknowledge that the setpoints have been set. If the new setpoints have not been accepted, the A (Yellow) will not blink 5 times and the old setpoints will still be valid.



Normally Open Mode

When the sensed object is $< P2$, Out(2) will be at its minimum value and Out(4) will be OFF. When the sensed object moves to $> P2$, Out(4) will turn ON, and Out(4) will start increasing as the sensed object moves towards P1. When the sensed object is $> P1$, Out(4) will turn OFF and Out(2) will be at maximum value.

Normally Closed Mode

When the sensed object is $< P2$, Out(2) will be at its maximum value and Out(4) will be ON. When the sensed object moves to $> P2$, Out(4) will turn OFF, and Out(4) will start decreasing as the sensed object moves towards P1. When the sensed object is $> P1$, Out(4) will turn ON and Out(2) will be at minimum value.

Clear Sensor back to Default

With the sensed object outside of the sensor sensing range (C (Green) LED is not lit), press the teach button once. A (Yellow) will blink 5 times, to signal that the sensor has been returned to default Normally Open setting.