

US2

Proportion Air Quick Summary Sheet

Proportion Air McCordsville, IN 317-335-2602
<http://www.proportionair.com/> 1/11/2016

30mm Stainless Ultrasonic Sensor

RANGE: MIN: 4 inches, MAX: 168 in.



This sheet summarizes basic sensor features. Refer to installation instructions for detailed information.

Figure 1- Sensor Rear View

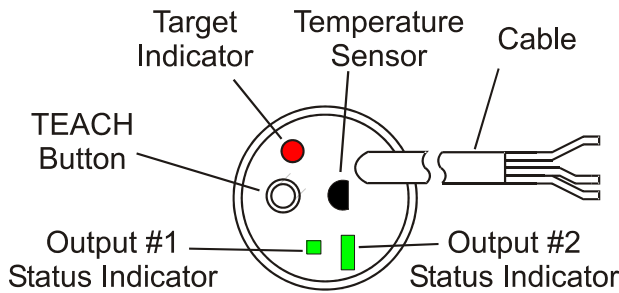


Figure 2- Wiring Diagram

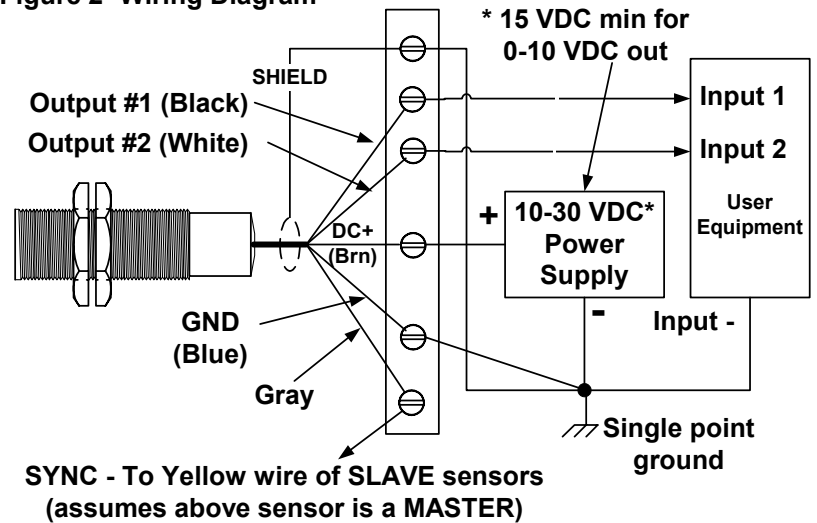
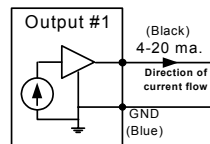


Table 1 – Outputs and Wire Colors

Output #1: 4-20 ma. Current Loop (sourcing)
Output #2: 0-10 Volts DC
Power: 10-30 VDC, 15 min for full 10 VDC Output

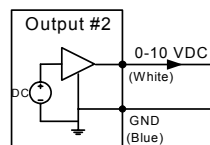
Signal	Wire Color	
DC+ In (Power)	BROWN	
GND	BLUE	
OUTPUT #1	BLACK	
OUTPUT #2	WHITE	
SYNC Slave (1)	YELLOW	
SYNC Master (1)	GRAY	
Cable Shield	Bare stranded wire	
Notes: (1) Leave disconnected if not used		

Figure 3 – Specifications – Output #1 on BLACK wire



Black Wire, Output #1, 4-20 ma. Current Loop Output
 Current sourcing, 1K max loop resistance @ 24 VDC
 Use TEACH features 4 and 5 to set the endpoint distances
 Use TEACH feature 6 to select SLOW or FAST response
 Voltage and Current Loop outputs adjust simultaneously

Figure 4 – Specifications – Output #2 on WHITE wire



White Wire, Output #2, 0-10 VDC Voltage Output
 Voltage output, 0-10 VDC @ 10 ma. maximum
 Use TEACH features 4 and 5 to set the endpoint distances
 Use TEACH feature 6 to select SLOW or FAST response
 Voltage and Current Loop outputs adjust simultaneously

Basic Setup Procedure:

Setup uses the rear TEACH push-button. TEACH features are shown in the table at right. In the following procedure, TEACH 3 means press and hold the rear push-button until the TARGET indicator flashes red 3 times, then release it.

1. Unlock the sensor

Use TEACH 3 to unlock the sensor. When unlocked, the STATUS indicator will blink as shown below.

2. Adjusting Output #1 (Current)

Point sensor at target at the 0 VDC/4 ma distance. With TARGET flashing GREEN use TEACH 4 to set the endpoint. Move the target to the 10 VDC/20 ma. distance. Use TEACH 5 to set that endpoint. The outputs are both linearly scaled between the two endpoints. Analog status is indicated as shown below.

3. Adjusting Output #2 (Voltage)

There is no separate adjustment for Output #2 in this model. Adjusting Output #1 affects both analog outputs simultaneously. Use TEACH 30 to change the voltage output from 0-10 VDC to 0-5 VDC output range.

4. Other Adjustments

Use TEACH 6 to set whether the outputs should change SLOW or FAST to the measured distance. Multi-sensor applications may require use of TEACH 12-14. Other measurement rates are set using TEACH 24-28. Refer to installation instructions for these features.

5. Relock the sensor

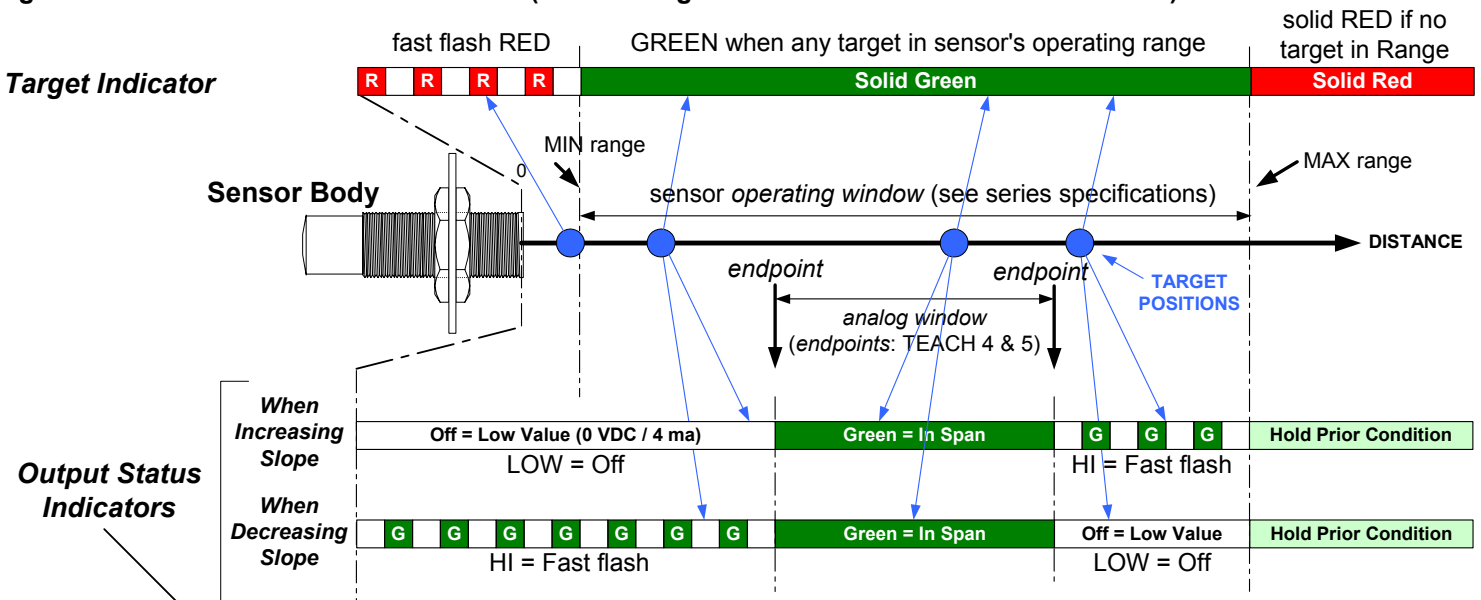
The sensor will re-lock (a) after 15 minutes, (b) if power is cycled, or (c) by using TEACH 3 again.

Table 2 – TEACH Features List

STATUS BLINKS (Note 4)	Feature Description	Factory Default	Note
3	Unlock (or re-lock) TEACH features	-	1
4	Set current target as 4 ma/0 VDC Endpoint	10 in.	2,3
5	Set current target as 20 ma/10 VDC Endpoint	40 in.	2,3
6	Reverse SLOW and FAST output response	FAST	2
12-14	Set multi-sensor synchronization modes (see installation instructions)	Slave A	2,6
17	Set factory defaults: 0 VDC and 4 ma. @ 10 in. (152mm) 10 VDC and 20 ma. @ 40 in. (1016mm) Output response = fast, Sync=SlaveA, measure rate=50 mSec, target loss delay=ON	X	6
24-28	Measure rate (see installation instructions)	50 mSec	2
30	Change between 0-10VDC and 0-5VDC	0-10 VDC	2
32	Temperature Compensation ON		
33	Temperature Compensation OFF	X	2

1. The sensor must first be UNLOCKED (3 blinks) before making other adjustments. The TARGET indicator blinks slowly when UNLOCKED.
 2. After TEACH 17 this feature is set to factory default (column 3)
 3. The sensor must detect the intended target prior to setting this feature
 4. To set a feature, press and hold the TEACH button and release it after the TARGET indicator blinks the number of times in this column.
 6. Sensor exits TEACH mode after this feature is executed

Figure 5-REAR INDICATORS OPERATION (see heading and above table for default distances)



Both Output Status indicators operate identically in this model. The current loop and voltage outputs use the same endpoints.