

US1 ULTRASONIC SENSOR



- Can detect objects up to 37 feet
- Target detection distance is field adjustable
- Signal output is field adjustable
- RS-232 compatible
- Position detection switches are field adjustable

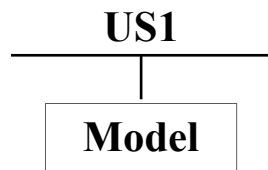
DESCRIPTION

The US-1 is an ultrasonic position transducer that can be used with Proportion-Air products. It is ideal for non-contact position sensing. The proportional analog output signal makes it ideal as a command signal generator for Proportion-Air electro-pneumatic control valves in web tensioning applications. The unit is self contained and can function as a stand alone device. This unit offers a variety of field adjustments: detection range; reversible electronic output; position detection switches that can be used for roll size alarms; and gain adjustment for sensitivity.

SPECIFICATIONS

Supply Voltage.....	15Vdc-24Vdc
Supply Current.....	200mA
Output Signal.....	4mA-20mA 20mA-4mA 0Vdc-10Vdc 10Vdc-0Vdc
Connector & cable.....	9 pin, color coded (5 ft) 22AWG
Operating temperature.....	-22°F(-30°C) to 158°F (70°C)
Dimensions.....	2.375 in (60mm) diameter x 5.5 in (139.7mm) long
Beam angle.....	approximately 15 degrees
Sensing distance	(long range) 6.5 inches to 37 feet
Repeatability.....	0.1 percent of measured distance

ORDERING INFORMATION



CONNECTIONS & SETTINGS

STATUS INDICATOR LEDS (when illuminated)

Red: POWER on

Yellow: TARGET is detected in sensor's range

Green: SWITCH 1 output is on

Green: SWITCH 2 output is on

(See figure 1)

SET BUTTON (See figure 1)

Set Point Adjustment

1. With the target indicator light on and at one end position, press set button 4 times to set distance end point number 1. Watch target indicator LED flash the same number of times.
2. Push set button within 2 seconds to accept new settings.
3. With target at second end position, press set button 5 times to set distance end point number 2. Watch target indicator LED repeat flash the same number of times
4. Push set button within 2 seconds to accept new settings.

Reverse Output Press set button 6 times to reverse output (example: from 0-10Vdc to 10-0Vdc).

Switch Set Point Adjustment

1. With the target indicator light on switch 1 set point, press set button 7 times to set distance end point number 1. Watch target indicator LED flash the same number of times.
2. Push set button within 2 seconds to accept new settings.
3. Push set button 8 times to reverse switch 1 output state.
4. With target at second switch set point, press set button 9 times to set distance end point number 2. Watch target indicator LED repeat flash the same number of times.
5. Push set button within 2 seconds to accept new settings.
6. Push set button 10 times to reverse switch 2 output state.

GAIN ADJUSTMENT (See figure 1)

The GAIN adjustment potentiometer affects the target sensitivity. Turn the gain potentiometer clockwise to increase gain using a small screwdriver. **Be careful not to damage the potentiometer during adjustment.**

Increase the gain for more reliable detection of smaller or more distant objects. Gain adjustment can have the appearance of changing the sensor's beam width, but it actually affects the threshold at which a target is detected. The factory setting is appropriate for most targets.

WIRING

The US1 comes with a pre-wired mating connector with color coded leads. See Table 1 for connection information.

PIN DESIGNATIONS

PIN	COLOR	FUNCTION
1	Red	+15-24Vdc Power
2	Orange	Current Loop (Sinking)
3	Brown	Not Connected
4	Violet	RX (RS232 Data In)
5	White	Switch #1 Output
6	Black	Ground (-)
7	Yellow	Voltage Signal Out
8	Blue	TX (RS232 Data Output)
9	Green	Switch #2 Output

TABLE 1

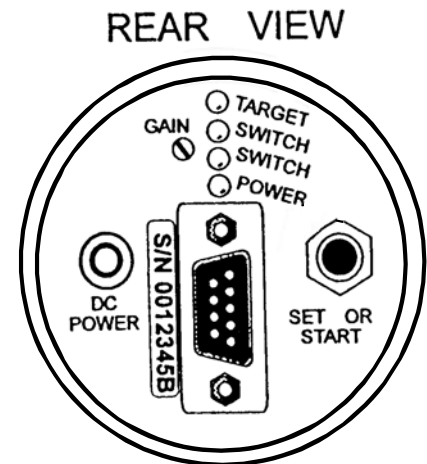


FIGURE 1

PROPORTION-AIR, INC.

BOX 218 MCCORDSVILLE, IN USA 46055

PHONE: (317)335-2602

FAX: (317)335-3853

web site: www.proportionair.com

email address: info@proportionair.com