

Originally designed as a reverse parking aid for an automotive application, the US040015 ultrasonic sensor is an integrated ranging system with an environmentally rugged transducer and electronic drive circuitry neatly packaged in a very compact housing. Only three wires are needed to address the sensor, power, ground, and control I/O. The control line is a bi-directional port with an internal pull-up resistor. A low input pulse on this line activates the ranging sequence. The number of pulses transmitted to the transducer is determined by the initiating pulse width. The control line then reverts to high and again will go low when a valid echo is detected. Knowing the speed of sound in air, (343.2m/s), distance is determined by measuring the elapsed time between these two events. External digital circuitry or a microprocessor can be used to perform these timing functions. Other Applications: collision avoidance, robotics, AGV's, forklifts.



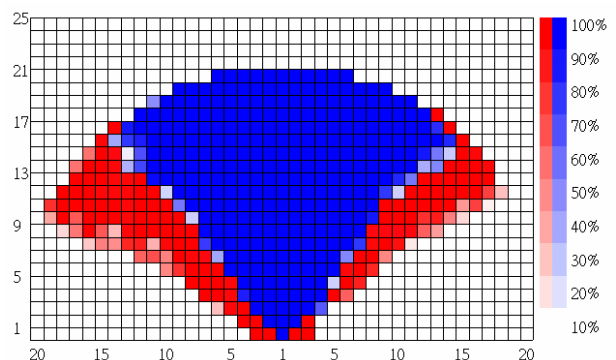
Specification:

Operation voltage	DC6 – 10V
Current consumption	<100 mA @DC10V
Signal voltage levels	
Input	Low 0.15 * Vcc
High 0.4 * Vcc	
Output	Low 0.05 * Vcc
High 0.9 * Vcc	
Operation frequency	40 – 45 KHz
Measuring rate (max.)	50 Hz
Measuring range	20 – 150 cm
Beam Horizontal	120°
Pattern Vertical	80°
Contrl pulse (max.)	600 μ s
Ringing (max.)	1100 μ s
Protection level	IP 65
Operation temperature	-40° ~ +85°C

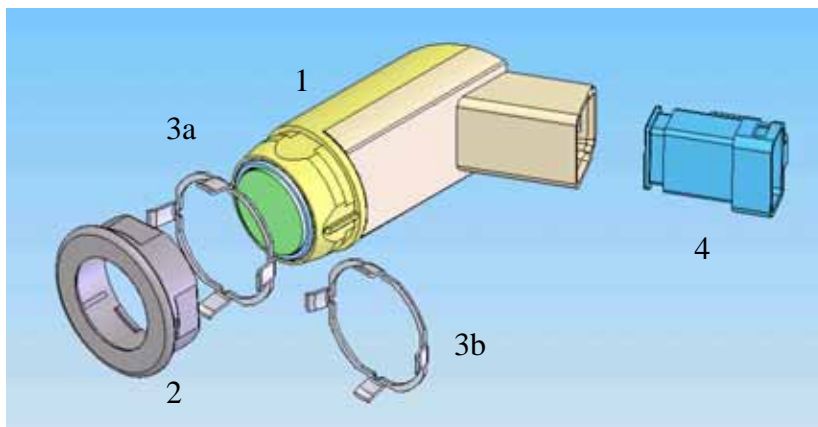
Features:

- Echo ranging distance from 0.2 m to 1.5 m
- Asymmetrical beam patterns:
Horizontal Beam: around $\pm 80^\circ$
Vertical Beam: around $\pm 40^\circ$
- Automatic frequency tracing minimizes temperature influence
- Bi-directional digital I/O port
- Water-proof construction
- Miniature size
- Flexible mounting

Beam Pattern: (against a 7.5 cm rod-shaped target, each cell presents 7.5 * 7.5 cm)

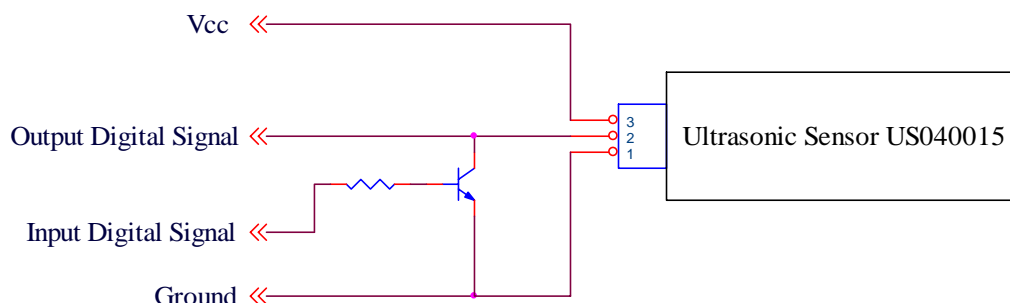


Accessories

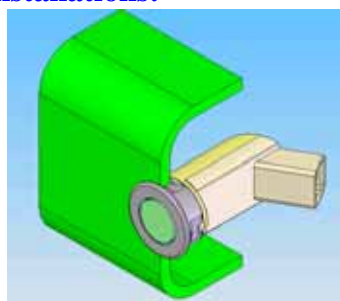


1. Sensor Body
2. Front Cover
3. Spring Clips for installation;
two clips “a” and “b”
4. 3 Wires Connector (specify
wire length when ordering)

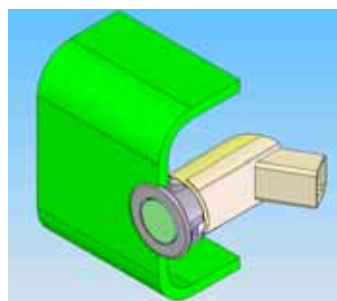
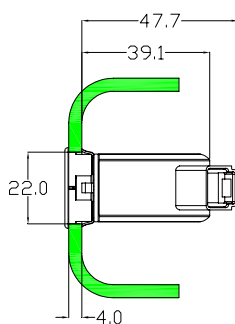
Circuit diagram:



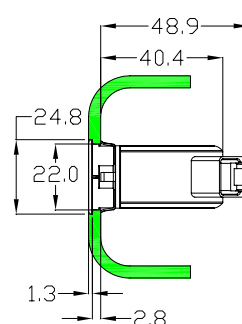
Installations:



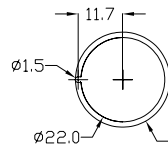
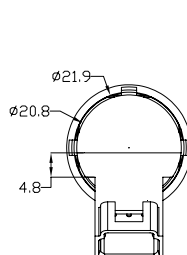
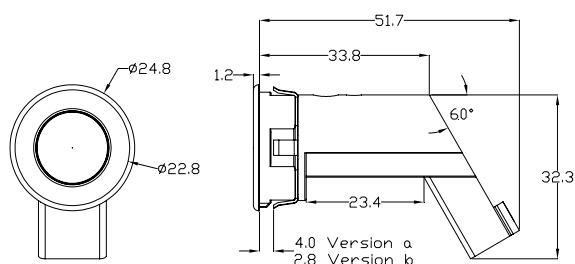
Φ22 mm straight through
hole with version “a” spring
clip



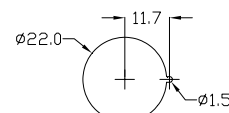
Φ24.8 * 1.2 mm depth,
Φ22 mm straight through
hole with version “b” spring
clip



Dimensions:



Version “b”
installation holes



Version “a”
installation holes