

The US040015 is an ultrasonic sensor of asymmetrical beam patterns, approximates $\pm 80^\circ/40^\circ$ for horizontal/vertical, which mostly suits for car reversing aids.

Thanks to our new developed [Sonar Ranging Chip PW-0268](#) that makes our US040015 in such small dimensions.

The US040015 needs only three wires connection, positive power, ground and I/O digital signal. The I/O digital signal connection is a bi-direction port and is designed as an open collector connection with an internal pull high resistor. When the I/O port is being pulled low by an external transistor, the sensor is activated, and after excitation duration, which is decided by the control pulse, the I/O port will again go low if a valid echo signal is detected.

Please be aware that US040015 is not a complete proximity sensor. It is a solution dealing with all analog signals and converts them to digital signals for further processes.

See detail of [Ultrasonic Proximity Sensors](#)

Features:

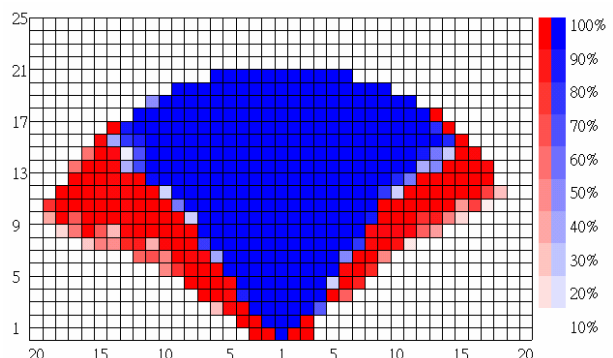
- Echo ranging distance from 0.2 m to 1.5 m
- Asymmetrical beam patterns:
Horizontal Beam: around $\pm 80^\circ$
Vertical Beam: around $\pm 40^\circ$
- Automatic frequency tracing minimizes temperature influence
- Bi-directional digital I/O port
- Water-proof construction
- Miniature size
- Flexible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



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° |
| Control pulse (max.) | 600 μ s |
| Ringing (max.) | 1100 μ s |
| Protection level | IP 65 |
| Operation temperature | -40° ~ +85°C |

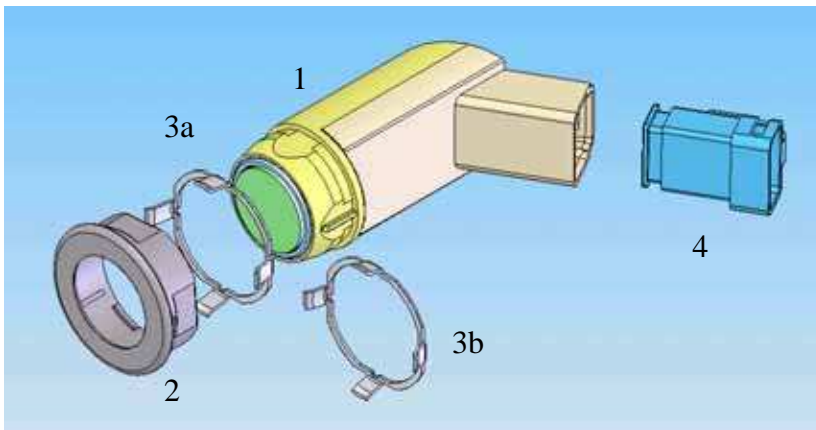
Beam Pattern: (against a 7.5 cm rod-shaped target, each cell presents 7.5 * 7.5 cm)



S. Square Enterprise Company Limited
Pro-Wave Electronics Corporation

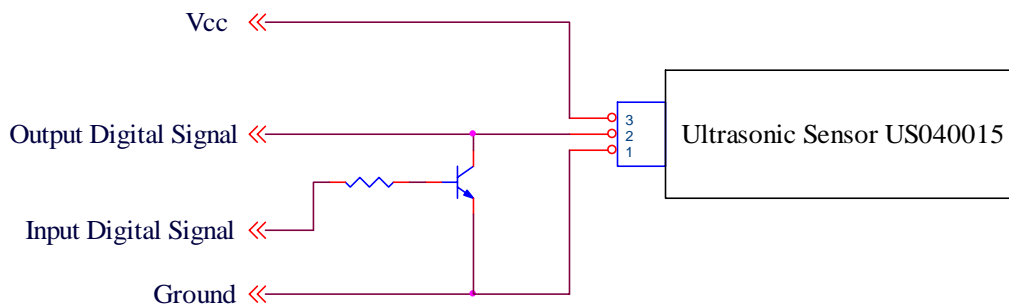
P.O. Box 1-70 Chung Ho, Taiwan, ROC; E-mail: prowave@ms3.hinet.net; Tel: 886-2-22465101(5 lines), 22459774; Fax: 886-2-22465105
<http://www.s2.com.tw> ; <http://www.prowave.com.tw>

Accessories

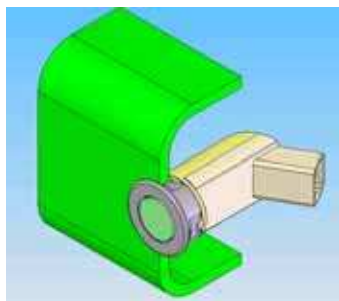


1. Sensor Body
2. Front Cover
3. Spring Clips for installation; two clips "a" and "b"
4. 3 Wires Connector (specify wire length when ordering)

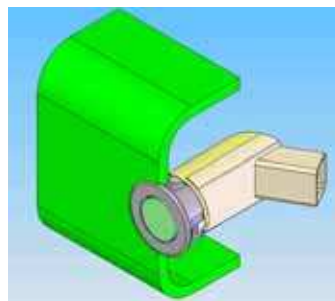
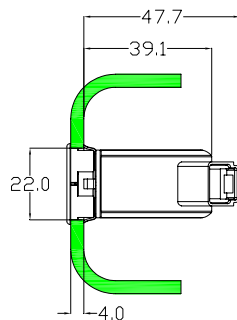
Circuit diagram:



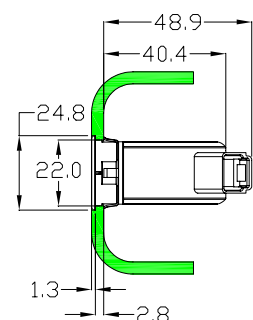
Installations:



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:

