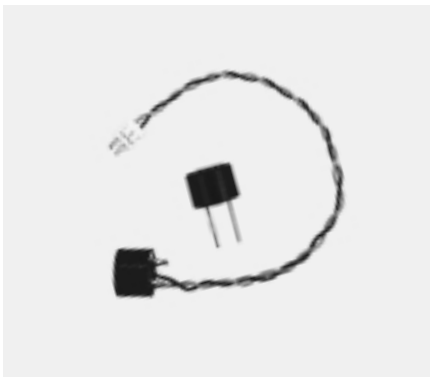


# SENSORS

## ULTRASONIC SENSORS

### MA40 SERIES



#### MA40 SERIES OPEN TYPE FEATURES

- Small size: 10 and 16
- Combined types
- High SPL types
- Low voltage/current types

#### APPLICATIONS

- Burglar alarms
- Object detection devices
- Distance measurement devices

#### MA40E SERIES WATERPROOF TYPE FEATURES 40kHz Sensors

- Waterproof
- Many types leaded/not
- Short ringing time
- Directive models

#### APPLICATIONS

- Rear backing sonar
- Corner sonar

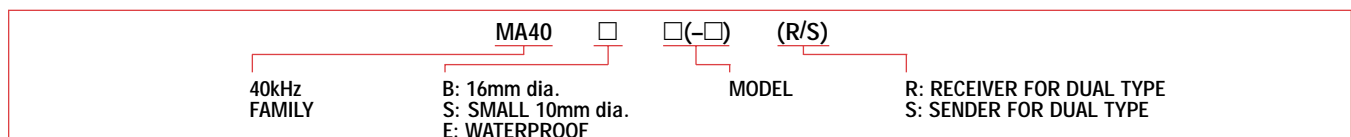
#### DIMENSIONS: mm

OPEN	MA40S4R/S	MA40B8R/S	MA40S5	MA40B7
WATERPROOF	MA40E6-7	MA40E9-1	MA40E7R/S	MA40E8-2

#### SPECIFICATIONS

Part Number	MA40E7R/S	MA40S4R/S	MA40B8R/S	MA40B7	MA40E6-7	MA40S5	MA40E8-2	MA40E9-1
Construction	Waterproof type	Open structure type			Waterproof type	Open structure type	Waterproof type	
Using Method	Receiver and Transmitter (Dual use) type			Combined use type				
Nominal Frequency (kHz)	40							
Overall Sensitivity (dB)	—	—	—	-45 <sup>+4</sup> <sub>-5</sub>	—	-50 ± 4	—	—
Sensitivity (dB)	-74 min.	-63 ± 3	-63 ± 3	—	-82 min.	—	-85 min.	-85 min.
Sound Pressure (dB)	106 min.	120 ± 3	120 ± 3	—	108 min.	—	106 min.	103 min.
Directivity (deg)	100	80	50	44	75	70	75	100 x 50
Capacitance (pF)	2200 ± 20%	2550 ± 20%	2000 ± 20%	2000 ± 20%	2200 ± 20%	2550 ± 20%	2800 ± 20%	4000 ± 20%
Operating Temp. Range(°C)	-30 ~ +85	-40 ~ +85	-30 ~ +85			-40 ~ +85	-30 ~ +85	
Detectable Range (m)	0.2 - 3	0.2 - 4	0.2 - 6	0.2 - 4	0.2 - 2	0.2 - 2.5	0.2 - 1.5	0.2 - 1.5
Resolution (mm)	9							
Dimension (mm)	18φ x 12h	9.9φ x 7.1h	16φ x 12h	16φ x 12h	18φ x 12h	9.9φ x 7.1h	14φ x 8h	18φ x 10h
Weight (g)	4.5	0.7	2.0	2.0	4.5	0.7	2.4	4.8
Allowable Input Voltage (Vp-p) (Rectangular wave)	85 (40kHz) Pulse width 0.4ms Interval 100ms	20 (40kHz) Continuous signal	40 (40kHz) Continuous signal	100 (40kHz) Pulse width 0.4ms Interval 100ms	140 (40kHz sine wave) Pulse width 0.4ms Interval 100ms	60 (40kHz) Pulse width 0.4ms Interval 100ms	160 (40kHz) Pulse width 0.8ms Interval 60ms	160 (40kHz) Pulse width 0.8ms Interval 60ms
Packaging Quantity (Pcs.)	90	540	150	150	90	540	80	80

#### PART NUMBERING SYSTEM



For more detailed information regarding this product line in North America, consult us. To receive additional information on Murata Products call 1-800-831-9172.