

# The MM-Series

## Multi-Mode Acoustic Transmitters and Sensor Transmitters

(motion, temperature, pressure)

(compatible with MAP, SRX and Rcode Acoustic receiving systems)

**For tracking at  
multiple scales of  
observation and  
environments.**



As in other areas of fish and wildlife monitoring, Lotek is continuously expanding the boundaries of acoustic telemetry with a range of innovative options, including transmitters that combine multiple technologies for use in multiple habitats.

Multi-mode technology provides the means to track animals throughout a variety of applications or environments that may not be compatible with a single technology.

With the sensor option (motion, temperature, pressure), one can monitor fish depth, temperature and mobile state.

### Key Features

- Compatible with multiple acoustic receiving systems, including MAP, SRX and Rcode within a single device thereby eliminating the need to double tag.
- Flexible duty cycle between transmission modes to optimize detection rates and data acquisition with respect to fish behavior.
- Permits simultaneous detection/decoding of hundreds of co-located transmitters.
- Works with both existing coastal scale and fine scale monitoring arrays.
- Also available in single and tri-mode operation.
- Cost effective solution for multiple technology deployments.
- Sensor transmitters offer a variety of depth ranges.
- Rapid transmission rates (5 seconds) for efficient mobile tracking.

# LOTEK

WIRELESS  
FISH & WILDLIFE MONITORING

*Innovative solutions for a sustainable future.*

- Receivers
- Dataloggers
- Radio transmitters

- Acoustic transmitters
- Archival tags
- GPS systems

- Hydrophones
- Wireless hydrophones
- 2D/3D Position systems

- Sensor transmitters
- Accessories
- Consulting

# The MM-Series

## Applications

- Studies of migration activity of anadromous species from ocean through to spawning site
- Studies of lake dwellers moving between shallow and deep freshwater
- Micro-habitat utilization and species interaction 2D/3D
- Combines the ability to manually track, as well as autonomously log presence absence data, while collecting 2D and 3D positioning data at key areas of interest
- Monitoring of fish entrainment around hydro facilities

## Specifications

| TAG MODEL                                                             | Physical Specifications           |                        | Calculated Life         |                           |
|-----------------------------------------------------------------------|-----------------------------------|------------------------|-------------------------|---------------------------|
|                                                                       | Size (d x length) (mm)            | Weight (g)             | Std / HP (days)         | Std / HP (days)           |
| <b>MR-series Dual Mode Operation - MAP Acoustic + R-code Acoustic</b> |                                   |                        |                         |                           |
|                                                                       |                                   |                        | <b>M = 5s / R = 60s</b> | <b>M = 10s / R = 120s</b> |
| MM-MR-8-SO                                                            | 8.5 x 42                          | 5.5                    | 19                      | 37                        |
| MM-MR-11-SO                                                           | 11 x 38                           | 6.6                    | 19                      | 37                        |
| MM-MR-11-28                                                           | 12 x 60                           | 10.5                   | 91 / 24                 | 181 / 48                  |
| MM-MR-11-45                                                           | 12 x 73                           | 14.5                   | 142 / 37                | 281 / 74                  |
| MM-MR-16-25                                                           | 16 x 57                           | 26.0                   | 178 / 47                | 354 / 94                  |
| MM-MR-16-33                                                           | 16 x 64                           | 29.0                   | 243 / 64                | 483 / 128                 |
| MM-MR-16-50                                                           | 16 x 80                           | 35.0                   | 389 / 103               | 773 / 205                 |
| <b>MS-series Dual Mode Operation - MAP Acoustic + SRX Acoustic</b>    |                                   |                        |                         |                           |
|                                                                       |                                   |                        | <b>M = 5s / S = 5s</b>  | <b>M = 10s / S = 10s</b>  |
| MM-MS-8-SO                                                            | 8.5 x 42                          | 5.5                    | 16                      | 31                        |
| MM-MS-11-SO                                                           | 11 x 38                           | 6.6                    | 16                      | 31                        |
| MM-MS-11-28                                                           | 12 x 60                           | 11                     | 78 / 20                 | 154 / 41                  |
| MM-MS-11-45                                                           | 12 x 73                           | 15                     | 121 / 32                | 239 / 63                  |
| MM-MS-16-25                                                           | 16 x 57                           | 26                     | 151 / 40                | 301 / 79                  |
| MM-MS-16-33                                                           | 16 x 64                           | 29                     | 206 / 54                | 410 / 108                 |
| MM-MS-16-50                                                           | 16 x 80                           | 35                     | 330 / 87                | 656 / 173                 |
| <b>SR-series Dual Mode Operation - SRX Acoustic + R-code Acoustic</b> |                                   |                        |                         |                           |
|                                                                       |                                   |                        | <b>S = 5s / R = 60s</b> | <b>S = 10s / R = 120s</b> |
| MM-SR-8-SO                                                            | 8.5 x 42                          | 5.5                    | 52                      | 100                       |
| MM-SR-11-SO                                                           | 11 x 38                           | 6.6                    | 52                      | 100                       |
| MM-SR-11-28                                                           | 12 x 60                           | 11                     | 256 / 69                | 495 / 137                 |
| MM-SR-11-45                                                           | 12 x 73                           | 15                     | 398 / 107               | 770 / 212                 |
| MM-SR-16-25                                                           | 16 x 57                           | 26                     | 508 / 132               | 994 / 263                 |
| MM-SR-16-33                                                           | 16 x 64                           | 29                     | 693 / 180               | 1356 / 358                |
| MM-SR-16-50                                                           | 16 x 80                           | 35                     | 1109 / 288              | 2169 / 573                |
| <b>MM-series Sensor Transmitter Options</b>                           |                                   |                        |                         |                           |
| Sensor                                                                | Physical Specifications           |                        | Calc Life               |                           |
|                                                                       | Additional Size (d x length) (mm) | Additional Weight (g)* | Derating (days)         |                           |
| Motion                                                                | 0 x 0                             | 0.0                    | < 1%                    |                           |
| Temp+Press                                                            | 0 x 5                             | 0.5 - 3.0              | < 1%                    |                           |
| Press+Motion                                                          | 0 x 5                             | 0.5 - 3.0              | < 1%                    |                           |

**Notes:** Tolerance on all specifications is  $\pm 5\%$ .  
Warranty life is defined as 80% of the calculated life from the date of shipment.  
Maximum warranty life is 3 years.  
Sensors only available in MAP mode, i.e. for MM-MR-series.  
Sensor transmitter length and weight are in addition to the ID-only specifications.  
\*Sensor weight increase 0.5g for 8.5 mm tag and 3g for 16 mm diameter tag.



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