

# RMS MINI WIRELESS LOGGER



## ADVANTAGES

- Saves up to 10,000 measured values
- Fail-safe thanks to internal battery and battery monitoring
- Battery life up to 3 years
- Conforms to FDA 21 CFR Part 11 / GAMP5
- ISM band 868 MHz / 915 MHz

## APPLICATIONS

- Environmental chambers
- Pharmaceutical industry
- Analog third-party devices
- Incubators



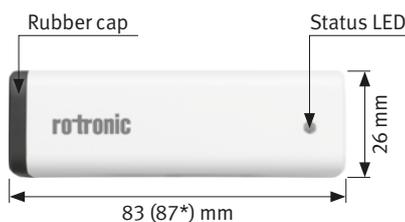
## TECHNICAL INFORMATION

### Compatible with

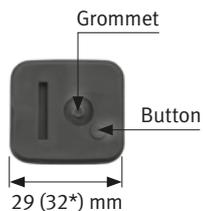
- RMS-GW-868: Firmware V1.0
- RMS-GW-915: Firmware V1.5
- Software V1.2: RMS-MLOG-T10-868
- Software V1.2.1: 915 MHz devices

### Dimensions / Connections

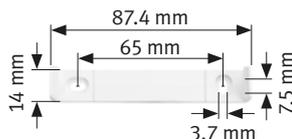
Top view



Rubber cap (front view)



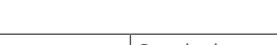
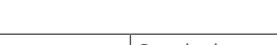
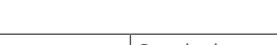
Wall bracket



\* with wall bracket

General specifications	
Device type	RMS Mini Wireless Logger
Memory size	10,000 measured values 13,000 data points (RMS-MLOG-B)
Range of application (electronics)	-30...85 °C / 0...100 %RH -40...85 °C / 0...100 %RH (RMS-MLOG-B)
Storage conditions	-30...30 °C / 0...95 %RH
Battery	RMS-BAT
Battery life	3 years (at 23 °C and 1 minute interval) 2.7 years (RMS-MLOG-B)
Measurement interval	10 s to 15 min (software dependant)
Wireless interface	ISM 868 MHz   ISM 915 MHz
Indoor wireless range	20...50 meters   15...25 meters
Conformity with standards	
FDA / GAMP directives	FDA 21 CFR Part 11 / GAMP5
Housing / Mechanics	
Housing material	ABS
Dimensions	83 x 29 x 29 mm
IP protection class	IP65, IP30 (RMS-LOG-B)
Fire protection class	UL94-V2

# TECHNICAL INFORMATION

	Type	Range / Accuracy																																			
Temperature & humidity 	RMS-MLOG-B-868 RMS-MLOG-B-915 	-40...85 °C ( $\pm 0.5$ °C @ 25 °C / $\pm 1$ °C @ 0...70 °C / $\pm 3.5$ °C @ rest of temperature range) / 0...100 %RH ( $\pm 3$ %RH @ 25 °C)																																			
Temperature 	RMS-MLOG-T-868 RMS-MLOG-T-915 	-30...85 °C ( $\pm 0.4$ °C @ 25 °C) Details: see page 3																																			
Temperature with external probe (NTC)   Further NTC probes available in various lengths. Please contact Rotronic.	RMS-MLOG-T10-868 RMS-MLOG-T10-915 	<table border="1"> <thead> <tr> <th>Item no.</th> <th>T10-0001</th> <th>T10-0002</th> <th>T10-0003</th> <th>T10-0004</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Application</td> <td>Cryotechnology</td> <td>Freezers, dry ice...</td> <td>Standard</td> <td>Cable duct monitoring</td> </tr> <tr> <td>Probe operating range</td> <td>-196...-90 °C</td> <td>-80...200 °C</td> <td>-50...200 °C</td> <td>-50...200 °C</td> </tr> <tr> <td>NTC accuracy range</td> <td>-196...-90 °C</td> <td>-80...150 °C</td> <td>-50...120 °C</td> <td>-50...120 °C</td> </tr> <tr> <td>Dimensions / Housing</td> <td colspan="4"><math>\varnothing 6 \times 50</math> mm / stainless steel</td> </tr> <tr> <td>Cable length</td> <td colspan="4">2 m</td> </tr> </tbody> </table>	Item no.	T10-0001	T10-0002	T10-0003	T10-0004						Application	Cryotechnology	Freezers, dry ice...	Standard	Cable duct monitoring	Probe operating range	-196...-90 °C	-80...200 °C	-50...200 °C	-50...200 °C	NTC accuracy range	-196...-90 °C	-80...150 °C	-50...120 °C	-50...120 °C	Dimensions / Housing	$\varnothing 6 \times 50$ mm / stainless steel				Cable length	2 m			
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Power input 	RMS-MADC-868-V (0...10 V)  RMS-MADC-868-A RMS-MADC-915-A (0...20 mA) 	0...10 VDC ( $\pm 0.1$ V @ 25 °C) 0...20 mA or 4...20 mA (shunt 110 Ohm) $\pm 0.2$ mA @ 25 °C																																			
Digital input 	RMS-MDI-868 	<table border="1"> <thead> <tr> <th>Item no.</th> <th>DC-0001</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> <tr> <td>Application</td> <td>Door contact / magnetic trigger</td> </tr> <tr> <td>Switch</td> <td>Normally open</td> </tr> <tr> <td>Cable length</td> <td>30 cm</td> </tr> <tr> <td>Mounting</td> <td>M3 screws</td> </tr> <tr> <td>IP</td> <td>IP65</td> </tr> </tbody> </table>	Item no.	DC-0001			Application	Door contact / magnetic trigger	Switch	Normally open	Cable length	30 cm	Mounting	M3 screws	IP	IP65																					
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Illumination 	RMS-MLOG-LGT-868 	0.05...3000 lux -3.5...10 lux @ 10 lux																																			

# TEMPERATURE ACCURACY

## RMS-MLOG-T & T10 ACCURACY OVERVIEW

The RMS-MLOG-T10-XXX allows users to implement their own NTC sensor. It is possible to add the NTC nominal value and B constant within the RMS software. For NTC's from Rotronic, simply choose the NTC from the dropdown list (as of Software V1.2).

The RMS-MLOG-T10-XXX can be calibrated and adjusted (2 points) via the RMS software. When using external NTC's, please account for the accuracy of the RMS-MLOG electronics.

### Accuracy overview

<b>T10-0001*</b>	
Accuracy between -196...-90 °C	±2.5 °C
<b>T10-0002*</b>	
Accuracy at 25 °C	±0.2 °C
Accuracy at -80...-30 °C	±1 °C
Accuracy at -30...40 °C	±0.5 °C
Accuracy at 40...70 °C	±1 °C
Accuracy at 70...200 °C	±3 °C
<b>T10-0003* and T10-0004*</b>	
Accuracy at 25 °C	±0.4 °C
Accuracy at -50...0 °C	±1 °C
Accuracy at 0...30 °C	±0.5 °C
Accuracy at 30...60 °C	±1 °C
Accuracy at 60...90 °C	±1.5 °C
Accuracy at 90...200 °C	±3.2 °C
<b>RMS-MLOG-T-XXX</b>	
Accuracy at 25 °C	±0.4 °C
Accuracy at -30...0 °C	±1.3 °C
Accuracy at 0...40 °C	±1 °C
Accuracy at 40...85 °C	±1.5 °C
<b>RMS-MLOG-T10-XXX electronic measurement accuracy</b>	
Accuracy at 25 °C	±0.1 °C
Accuracy at -200...-40 °C	±0.4 °C
Accuracy at -40...150 °C	±0.3 °C
Accuracy at 150...200 °C	±0.6 °C
<b>RMS-MLOG-T10-XXX electronic temperature accuracy</b>	
Accuracy at 25 °C	±0.0 °C
Accuracy at -30...85 °C	±0.3 °C

To calculate the total accuracy of the RMS-MLOG-T10-XXX, it is necessary to add all variables together.

\* NTC accuracy

### Examples at various temperatures

<b>Use of the T10-0002 at 25 °C and the RMS-MLOG-T10-XXX at 25 °C</b>	
T10-0002 accuracy at 25 °C	±0.2 °C
RMS-MLOG-T10-XXX electronic measurement accuracy at 25 °C	±0.1 °C
RMS-MLOG-T10-XXX electronic temperature accuracy at 25 °C	±0.0 °C
Total accuracy at 25 °C	±0.3 °C
<b>Use of the T10-0001 at -196 °C and the RMS-MLOG-T10-XXX at 25 °C</b>	
T10-0001 accuracy at -196 °C	±2.5 °C
RMS-MLOG-T10-XXX electronic measurement accuracy at -196 °C	±0.4 °C
RMS-MLOG-T10-XXX electronic temperature accuracy at 25 °C	±0.0 °C
Total accuracy with the sensor at -196 °C and the logger at 25 °C	±2.9 °C
<b>Use of the T10-0003 at 35 °C and the RMS-MLOG-T10-XXX at 35 °C</b>	
T10-0003 accuracy at 35 °C	±1 °C
RMS-MLOG-T10-XXX electronic measurement accuracy at 35 °C	±0.3 °C
RMS-MLOG-T10-XXX electronic temperature accuracy at 35 °C	±0.3 °C
Total accuracy at 35 °C	±1.6 °C

### Improvement in accuracy:

When using the data logger with the internal NTC or any of the NTC's provided by Rotronic, it is possible to carry out a 1 or 2 point adjustment in order to improve the measurement accuracy.

#### 1 point adjustment:

- Adjustment range: -25...125 °C
- Accuracy: ±0.3 °C
- Accuracy range: adjustment point ±10 °C

#### 2 point adjustment:

- Adjustment range: -25...125 °C
- Accuracy: ±0.3 °C
- Maximum span of the 2 adjustment points: 80 °C