

## HUMIDITY AND TEMPERATURE DATA LOGGERS



### COMPACT, DEPENDABLE AND INEXPENSIVE.

- Measurement accuracy of  $\pm 3.0\%RH$  and  $\pm 0.3\text{ }^{\circ}C$
- Compact design with a high IP protection
- Large storage capacity: 32,000 data point memory
- MIN/MAX/AVG statistical function
- Includes HW4-lite programming and analysis software
- Clear LCD with visual alerts
- Appropriately long battery life (3 years at logging interval of 5 min.)
- Conforms to FDA 21 CFR Part 11 / GAMP 5



**rotronic**  
MEASUREMENT SOLUTIONS

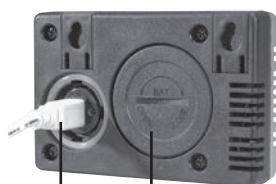
# TECHNICAL INFORMATION

## Dimensions / Ports

Type HL-1D

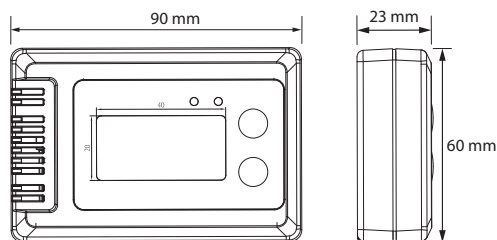


Type TL-1D



USB-Mini port  
(settings and data download)

Battery compartment



## Data Logging



The values stored in the HL-1D or the TL-1D are available for download with the HW4 software. After downloading the saved data, a graphical display of the values is possible. Via the HW4

software, the logging interval, logging mode, alarms and other such functions can be setup or enabled.

General Specifications	
Parameters	HL-1D: Humidity and temperature TL-1D: Temperature
Temperature sensor	NTC
Humidity sensor	HL-1D: ROTRONIC HygroMer IN-1 TL-1D: --
Accuracy at 23 °C ±5 °C	HL-1D: ±3.0 %RH / ±0.3 °C TL-1D: ±0.3 °C
Range of application	-20...70 °C / 0...100%RH
IP rating	IP67
Weight	85 g
Dimensions	90 x 60 x 23 mm
Logging interval	30 s...24 h
Battery	1 x CR2
Battery life	3 years at a logging interval of 5 minutes
Battery charge indicator	Yes (HW4 software, display and LED indicator)
Storage capacity	HL-1D: 16,000 data point memory (RH & T) TL-1D: 32,000 data point memory (T)
Function	MIN/MAX/AVG statistical data
Display	LCD, 2 lines, 1 decimal resolution
Display refresh rate	5 sec. (Standard) Same as Logging interval
LED indicator	2 LEDs Right LED flashes green during data logging Left LED flashes red when alarm limits breached or low battery
Communication	USB-Mini port
Adjustment	Humidity 1-point
FDA/GMP compatibility	Conforms to 21 CFR Part 11 and GAMP5
Software	HW4 V3.4.1 or later
<b>Accessory</b>	
USB-Mini cable	AC0003

<b>Included</b>	<ul style="list-style-type: none"> <li>- CR2 Battery</li> <li>- Short instruction manual</li> <li>- Function and calibration certificate</li> <li>- HW4-lite software key code (software to be downloaded from <a href="http://www.rotronic.com">www.rotronic.com</a>)</li> </ul>
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