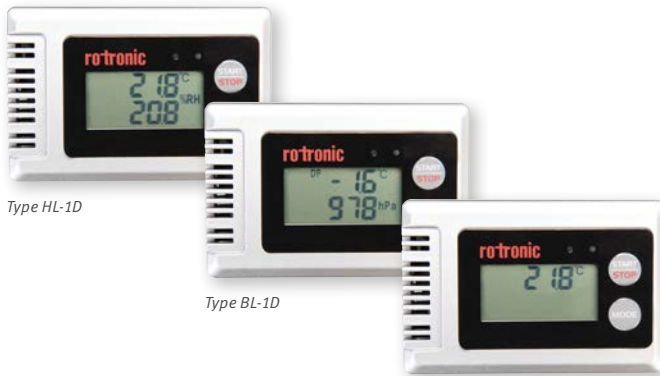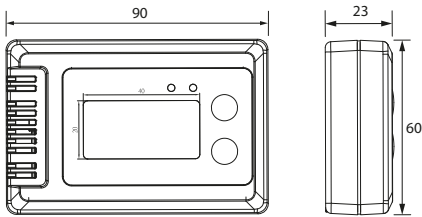# HL-1D / BL-1D / TL-1D

Type HL-1D

Type BL-1D

Type TL-1D

BENEFITS

- 3 types available:
  HL-1D: Humidity and temperature
  BL-1D: Process pressure, dew point, humidity and temperature
  TL-1D: Temperature, high storage capacity: 64,000 lines
- Free evaluation and configuration software HW4-lite
- FDA 21 CFR Part 11 / GAMP 5-compliant HW4 software
- Certified to EN 12830

APPLICATIONS

- Logistics
- Pharmaceuticals
- Pharmacies

TECHNICAL INFORMATION

Humidity measurement	
Measurement method	ROTRONIC HYGROMER® IN-1
Accuracy	±3 %RH @ 25°C ±5K (10...90 %RH) ±5 %RH others
Resolution	0.1 %RH
Measurement range	0...100 %RH (non-condensing)
Temperature	
Measurement method	NTC
Accuracy	±0.3 K @ -20...70 °C / ±0.5 K others
Resolution	0.1 °C
Measurement range	-30...70 °C
Pressure	
Measurement method	Bosch BMP280
Accuracy	±3hPa @ 0...65 °C / ±5hPa others
Resolution	1 hPa
Measurement range	300...1100 hPa
Dew point	
Measurement method	Calculation (from %RH and °C)
Calculation method	WMO Standard
Logging interval	**Storage capacity reached after**
30 sec.	11 days 2 hours
5 min.	111 days
30 min.	1 year 301 days
45 min.	2 years 270 days
60 min.	› 3 years
Delivery package	
• Battery, CR2 • Short instruction manual • Function and calibration certificate	

General specifications	
Logging interval	30 s..24 h
Storage capacity	32,000 lines (TL-1D: 64,000 lines)
Function	MIN / MAX / AVG
Display	LCD, 2 lines
Display refresh rate	5 sec. (standard) (in logging mode same as the logging interval)
LED indicators	2 LEDs Right LED flashes green when logging data, left LED flashes red when limits reached or low battery
Communication	USB-Mini port
Software	HW4 V3.4.1 or later (BL-1D: V3.9 or later) included
Application range	-30...70 °C 0...100 %RH (non-condensing)
Battery	1 x CR2
Battery life	1 year (1 h logging interval, room temperature)
IP protection class	IP67
Weight	85 g
Dimensions	90 x 60 x 23 mm
FDA/GMP compatibility	FDA 21 CFR Part 11 / GAMP 5-compliant HW4 software
Standards	EN 12830
Accessories	Mini USB cable AC0003 (contained in xL-1D-SET)

Contact:
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MEASUREMENT SOLUTIONS