

Temperature/Humidity Data Logger with 2 Universal External Inputs

OMYL-M90 and OMYL-M90E



- ✓ **Integral Temperature/Humidity Sensors**
 - OMYL-M90 has Internal Temperature/Humidity Sensors
 - OMYL-M90E Fitted with Integral Temperature/Humidity Probe
- ✓ **2 External Inputs for:**
 - Combined Temperature/Humidity Sensors
 - Pt100/Pt1000 RTD, Thermistor Temperature Sensors
 - Process Voltage or Current Input
 - Pulse Input
- ✓ **Up to 4 Million Readings (Internal Memory Size)**
- ✓ **Up to 32 Hz Sampling Rate**
- ✓ **High Accuracy**
- ✓ **20 Bit A/D Converter**
- ✓ **Shock Proof, IP65 Housing (Dust and Water Jet Proof)**
- ✓ **Transfer Rate of 500 kbps**
- ✓ **Low Current Consumption**
- ✓ **Up to 4 Years Battery Life**

The OMYL-M90 and OMYL-M90E are temperature/humidity data loggers that also accept two universal external inputs and are software configurable to record up to 6 parameters. These data loggers are available with standard memory of 100,000 readings (OMYL-M90, OMYL-M90E) or expanded memory of 4 million readings (OMYL-M90-4M, OMYL-M90E-4M). The following inputs can be configured:

- Temperature and humidity (internal sensors for OMYL-M90, integral temperature/humidity probe for OMYL-M90E)
- External temperature (Pt100/Pt1000 RTD, U thermistor)
- External temperature/humidity (for combined external temperature/humidity probes)
- Process voltage or current (0 to 10 mV, 0 to 20 mV, 0 to 50 mV, 0 to 100 mV, 0 to 1 V, 0 to 2.5 V, 0 to 5 V, 0 to 10 V, 0 to 24 mA)
- Pulse or frequency input, e.g., from revolution counters, rain gages, photoelectric sensors

For pulse input once activated the data logger senses and records the number of pulses/contact closures that occur within adjacent "time bin" periods. The bin period is selectable from 1 second to over 24 hours. At the end of each bin period, the total number of pulses/counts within the bin period is recorded. The data logger then starts another bin period and continues until either the memory is full or the test period has ended.



OMYL-M90 shown larger than actual size.

The storage medium is non-volatile flash memory so no data is lost if the battery becomes discharged. Data logger setup as well as data retrieval is accomplished using the included standard OMYL-SOFT software. Downloaded data is stored in the OMYL-SOFT software as a text file for viewing in third party software packages or Microsoft Excel. The OMYL-SOFT standard software does not include any graphing functionality. Graphing and analyzing downloaded data files requires the OMYL-SOFT-PLUS version of the software (ordered separately).

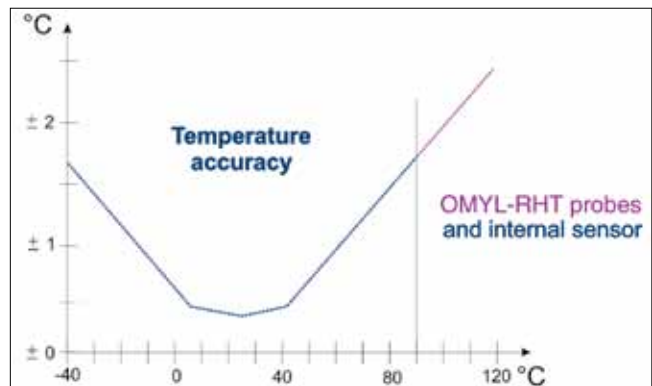
SPECIFICATIONS

Internal Temperature

Temperature Range: -30 to 70°C (-22 to 158°F) with standard lithium battery; -40 to 90°C (-40 to 194°F) with optional high temperature lithium battery

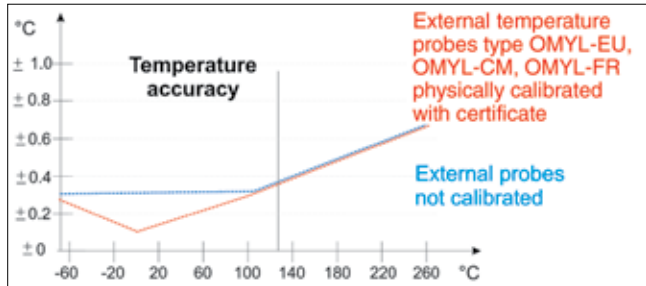
Temperature Resolution: 0.01°C (0.02°F)

Accuracy: See chart below



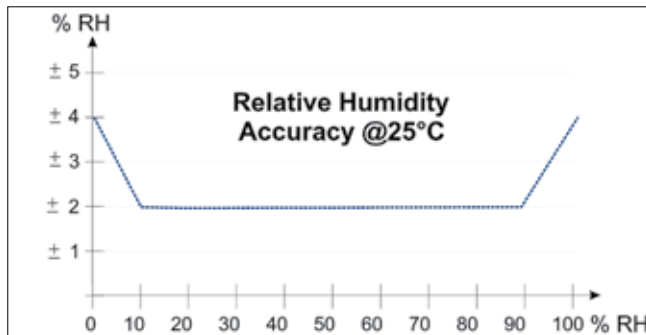
External Temperature Input

Sensor: Pt100 or Pt1000 RTD, U thermistor (2000 Ω @ 25°C)
Range: -70 to 250°C (-94 to 482°F), probe dependent
Resolution: 0.01°C (0.02°F)
Accuracy: See chart below



Internal/External Humidity

Humidity Range: 0 to 100% RH
Humidity Resolution: 0.01% RH
Accuracy: See chart below



Current Input

Range: 0 to 24 mA
Resolution: 0.36 μ A
Input Impedance: 10 Ω shunt
Accuracy: 0.1% of range
Signal Input: OMYL-CI cable

Pulse Input

Signal Input: Potential-free (dry contact) signals and low level pulses < 3 Vdc can be measured with the OMYL-CS input cable; higher voltage level pulses up to 24 Vdc can be measured with the optional OMYL-CP input cable

Maximum Input Voltage: 24 Vdc

Measuring Range

Potential Free (Dry Contact) Pulses

Pulse Count: 0 to 65,000 pulses

Pulse Rate: 0 to 100 Hz

Voltage Pulses

Pulse Count: 0 to 65,000 pulses

Pulse Rate: 0 to 1300 Hz

Reading Rate: 1 second to 24 hours; 2 Hz, 4 Hz, 8 Hz, 16 Hz, 32 Hz in fast mode (only 4 Hz for humidity sensors)

Start Modes: Immediate start, delayed start

Memory Capacity: OMYL-M90, OMYL-M90E; 100,000 readings: OMYL-M90-4M, OMYL-M90E-4M; 4 million readings

Memory Wrap Around: Yes (software configurable)

Battery: 3V lithium battery [standard temperature range battery (included), optional high temperature range battery]; user replaceable

Battery Life (Standard Temperature Range Battery): 4 years at 1 minute reading rate, 230 days at 10 second reading rate, 25 days at 1 second reading rate

LED Functionality: Integrated status LED indicates data logging status, low battery or alarm condition

Alarms: Software programmable high/low thresholds

Computer Interface: USB (interface cable included)

Software: XP SP3/Vista/7 and 8 (32- and 64-bit)

Operating Environment: -30 to 70°C (-22 to 158°F) with standard lithium battery (included); -40 to 90°C (-40 to 194°F) with optional high temperature lithium battery

Millivolt Input

Range (mV)	0 to 10	0 to 20	0 to 50	0 to 100
Resolution (μ V)*	0.58	0.58	0.76	1.54
Input Impedance (M Ω)	2.5			
Accuracy	0.1% of range			
Signal Input	Lower signals (maximum 1V) can be processed with the standard cable OMYL-CS. Higher voltage levels require the connection cable OMYL-CU or OMYL-CP.			

*Input ranges can be sampled up to 32 Hz. At 32 Hz the maximum resolution is ten times the above value.

Voltage Input

Range	0 to 1 V	0 to 2.5 V	0 to 5 V	0 to 10 V
Resolution	15.4 μ V	38.9 μ V	76.9 μ V	154 μ V
Input Impedance (M Ω)	2.5	0.1	0.1	0.1
Accuracy	0.1% of range			
Signal Input	Lower signals (maximum 1V) can be processed with the standard cable OMYL-CS. Higher voltage levels require the connection cable OMYL-CU or OMYL-CP.			

Dimensions

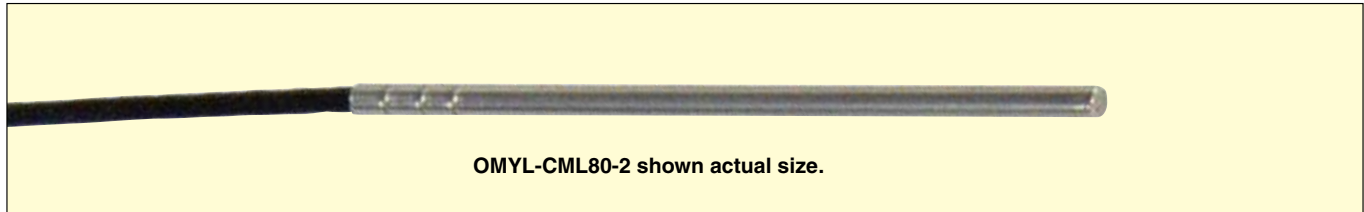
OMYL-M90, OMYL-M90-4M: 30 H x 50 mm dia
(1.18 x 1.97")

OMYL-M90E, OMYL-M90E-4M: 30 H x 50 mm dia
(1.18 x 1.97") with 100 L x 8 mm dia probe
(3.94 x 0.31")

Weight: 70 g (2.5 oz)

Enclosure: Robust, shock-proof POM, IP65

General Purpose Pt1000 RTD Temperature Sensors



Model No.	Stainless Steel Probe		Cable		
	Operating Temperature	Dimensions	Material	Length	Maximum Operating Temperature
OMYL-CML80-2	-70 to 250°C (-94 to 482°F)	100 L x 4 mm dia (4 x 0.16")	PVC	2 m (6.6')	80°C (176°F)
OMYL-CML80-5			PVC	5 m (16.4')	80°C (176°F)
OMYL-CML120-2			PTFE	2 m (6.6')	120°C (248°F)
OMYL-CML120-5			PTFE	5 m (16.4')	120°C (248°F)
OMYL-CMS80-2		50 L x 4 dia (2 x 0.16")	PVC	2 m (6.6')	80°C (176°F)
OMYL-CMS80-5			PVC	5 m (16.4')	80°C (176°F)
OMYL-CMS120-2			PTFE	2 m (6.6')	120°C (248°F)
OMYL-CMS120-5			PTFE	5 m (16.4')	120°C (248°F)

Pt1000 RTD Sensors for Surface Temperature Measurement



Model No.	Stainless Steel Base		Cable		
	Operating Temperature	Dimensions	Material	Length	Maximum Operating Temperature
OMYL-EU80-2	-70 to 250°C (-94 to 482°F)	20 L x 10 mm W (0.8 x 0.4")	PVC	2 m (6.6')	80°C (176°F)
OMYL-EU80-5			PVC	5 m (16.4')	80°C (176°F)
OMYL-EU120-2			PTFE	2 m (6.6')	120°C (248°F)
OMYL-EU120-5			PTFE	5 m (16.4')	120°C (248°F)

Magnetic Pt1000 RTD Sensors for Surface Temperature Measurement



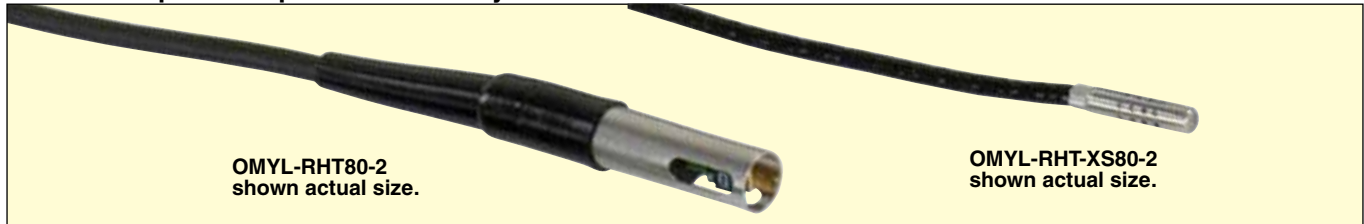
Model No.	Steel Base with Built-In Magnet		Cable		
	Operating Temperature	Dimensions	Material	Length	Maximum Operating Temperature
OMYL-EUM80-2	-70 to 250°C (-94 to 482°F)	25 L x 14 mm W (1 x 0.56")	PVC	2 m (6.6')	80°C (176°F)
OMYL-EUM80-5				5 m (16.4')	

Fast Response Air Temperature Sensors



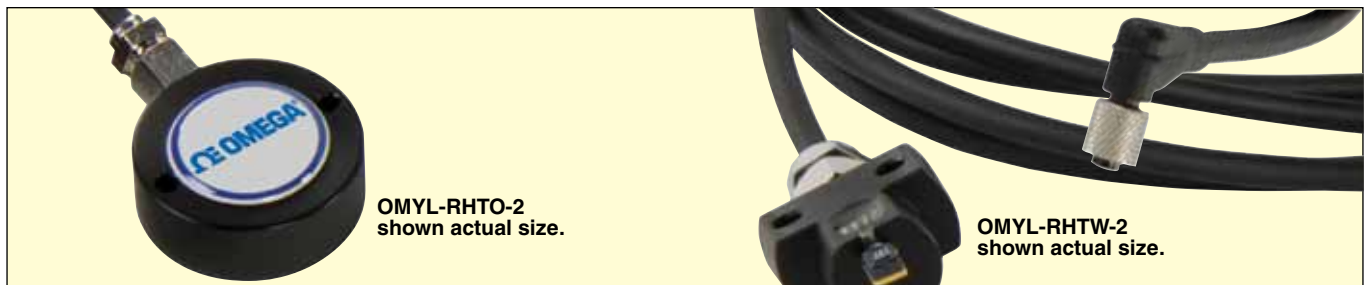
Model No.	Stainless Steel Probe		Cable		
	Operating Temperature	Dimensions	Material	Length	Maximum Operating Temperature
OMYL-FR80-2	-70 to 250°C (-94 to 482°F)	17 L x 4 mm dia (0.67 x 0.16")	PVC	2 m (6.6')	80°C (176°F)
OMYL-FR80-5			PVC	5 m (16.4')	80°C (176°F)
OMYL-FR120-2			PTFE	2 m (6.6')	120°C (248°F)
OMYL-FR120-5			PTFE	5 m (16.4')	120°C (248°F)

General Purpose Temperature/Humidity Sensors




Model No.	Stainless Steel Temperature/Humidity Probe		Cable		
	Humidity Range (%RH)	Dimensions	Material	Length	Maximum Operating Temperature
OMYL-RHT80-2	0 to 100	35 L x 8 mm dia (1.4 x 0.32")	PVC	2 m (6.6')	80°C (176°F)
OMYL-RHT80-5			PVC	5 m (16.4')	80°C (176°F)
OMYL-RHT120-2			PTFE	2 m (6.6')	120°C (248°F)
OMYL-RHT120-5			PTFE	5 m (16.4')	120°C (248°F)
OMYL-RHT-XS80-2		20 L x 4 mm dia (0.8 x 0.16")	PVC	2 m (6.6')	80°C (176°F)
OMYL-RHT-XS80-5			PVC	5 m (16.4')	80°C (176°F)
OMYL-RHT-XS120-2			PTFE	2 m (6.6')	120°C (248°F)
OMYL-RHT-XS120-5			PTFE	5 m (16.4')	120°C (248°F)

Special Temperature/Humidity Sensors



Model No.	Stainless Steel Temperature/Humidity Probe			Cable		
	Application	Humidity Range (%RH)	Dimensions	Material	Length	Maximum Operating Temperature
OMYL-RHTO-2	Wall saturation and boundary levels	0 to 100	10 H x 30 mm dia (0.4 x 1.2")	PVC	2 m (6.6')	80°C (176°F)
OMYL-RHTO-5					5 m (16.4')	
OMYL-RHTW-2	Walls or confined spaces		45 L x 20 mm W (1.8 x 0.8")		2 m (6.6')	
OMYL-RHTW-5					5 m (16.4')	


Moisture/Condensation Sensors



OMYL-SHS-2 shown actual size.

Model No.	Probe			Cable		
	Application	Operating Temperature	Dimensions	Material	Length	Maximum Operating Temperature
OMYL-SHS-2	Condensation (incipient moisture)	0 to 50°C (32 to 122°F)	43 L x 10 mm W (1.7 x 0.4")	PVC	2 m (6.6')	50°C (122°F)
OMYL-SHS-5					5 m (16.4')	

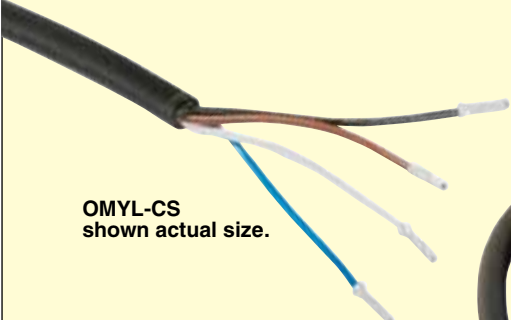
Soil Moisture Probe



OMYL-SMP shown actual size.

Model No.	Range	Accuracy	Resolution	Dimensions	Operating Temperature
OMYL-SMP-2	Calibration dependent, up to 0 to 100% VWC (volumetric water content) with polynomial equation	<ul style="list-style-type: none"> • ±3% VWC most mineral soils, up to 8 dS/m • ±1 to 2% VWC with soil specific calibration • Rockwool: ±3% VWC, 0.5 to 8 dS/m • Potting Soil: ±3% VWC, 3 to 14 dS/m 	0.1% VWC (mineral soil) 0.25% VWC (rockwool)	8.9 L x 1.8 cm W (3.5 x 0.7")	-40 to 50°C (-40 to 122°F)

Accessories



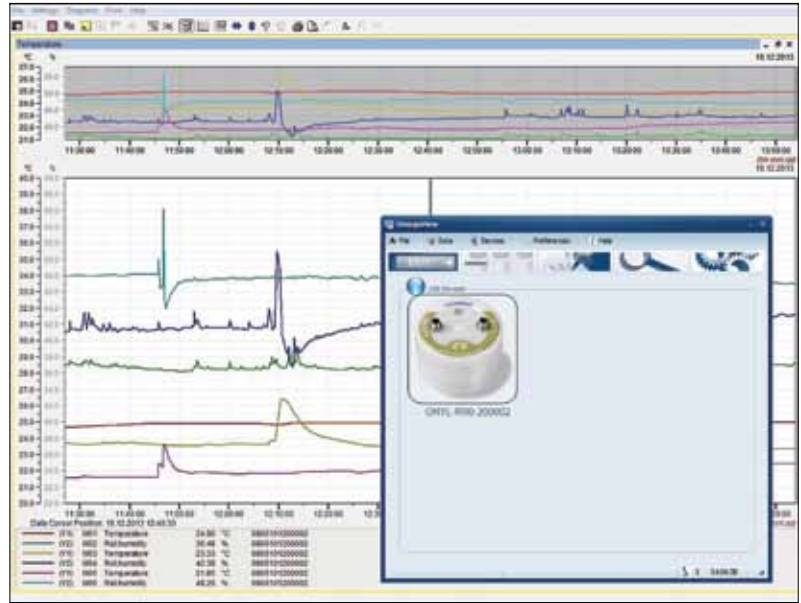
OMYL-CS shown actual size.



OMYL-CU shown actual size.



OMYL-M80E shown smaller than actual size.



OMYL-SOFT-PLUS graphing and analyzing software.

To Order	
Model No.	Description
OMYL-M90	Temperature/humidity data logger (internal temperature/humidity sensors) with 2 universal external inputs, 100,000 readings
OMYL-M90-4M	Temperature/humidity data logger (internal temperature/humidity sensors) with 2 universal external inputs, 4 million readings
OMYL-M90E	Temperature/humidity data logger (integral temperature/humidity probe) with 2 universal external inputs, 100,000 readings
OMYL-M90E-4M	Temperature/humidity data logger (integral temperature/humidity probe) with 2 universal external inputs, 4 million readings

Comes complete with 3V lithium battery (standard temperature range), 1.8 m (6') USB interface cable, two **OMYL-CS** voltage input cables (0 to 1 V), **OMYL-SOFT** software and operator's manual on USB stick.

Ordering Example: **OMYL-M90** temperature/humidity data logger with two external inputs, 100,000 readings and **OCW-1**, **OMEGACARESM** extends standard 1-year warranty to a total of 2 years.

Accessories

Model No.	Description
OMYL-SOFT-PLUS	Plus version of the software for graphing and analyzing data files
OMYL-CS	Connection cable for voltages from 0 to 1V
OMYL-CU	Connection cable for voltages from 1 to 10V
OMYL-CP	Connection cable for voltages from 5 to 24V
OMYL-CI	Connection cable for current measurement up to 24 mA
OMYL-WH20	Wall mount holder for data logger (includes tamper evident lead seal)
OMYL-WS50	Set of 50 tamper evident lead seals (50 wires and 50 seals)
OMYL-BATT	Replacement 3V lithium battery (standard temperature range)
OMYL-BATT-HT	Replacement 3V lithium battery (high temperature range)