

This manual provides instructions for installing and connecting the MSM01 Multi-Sensor Module. Download the latest version of this manual from [http://www.cyttech.biz/multisensor\\_module.html](http://www.cyttech.biz/multisensor_module.html)

This manual should be read in conjunction with the CM9001-EMS Manual as MSM01 is part of the CM9001-EMS system. Download the CM9001-EMS manuals from [http://www.cyttech.biz/product\\_details.php?item\\_id=505](http://www.cyttech.biz/product_details.php?item_id=505)

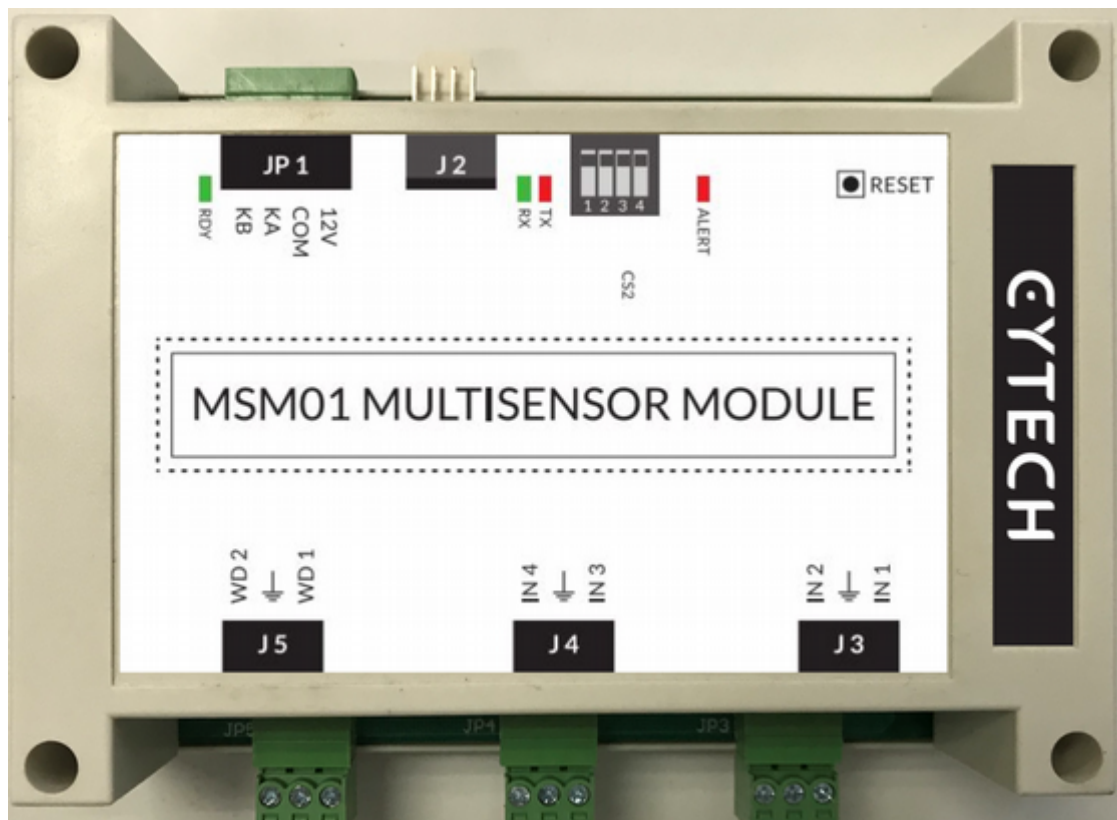
## What is Included

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- MSM01 Multi-sensor Module with 1 x 4 way pluggable Terminal Block, 3 x 3 way Pluggable Terminal Block.
- 4 way RS485 Cable 100 mm

## Introduction to the MSM01

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*MSM01 Multi-Sensor Module*

The MSM01 Multi-Sensor Module includes a Temperature Sensor, a Humidity Sensor, 2 Water Leakage Cable Inputs, and 4 Digital Inputs for External equipment failure monitoring. The MSM01 provides the sensor values and External Input events to CM9001-EMS Environmental Monitoring System. MSM01 is not a standalone product. CM9001-EMS can be set up to trigger alarms, dial out and send SMS messages to programmed telephones. See [http://www.cyttech.biz/product\\_details.php?item\\_id=505](http://www.cyttech.biz/product_details.php?item_id=505) for the CM9001-EMS Programming Manual.

## Minimum Versions

- MSM01 Firmware 7.003 – Gives 0.1 deg temperature resolution.
- KP04A Firmware 7.013 – Displays 0.1 deg temperature resolution.

- KP04AT KP04A with built-in Temperature sensor, without microphone  
Configurator 3.12.13

## **Part Numbers (Ordered Separately)**

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- MSM01 Multi-sensor Module with built-in Temperature and Humidity Sensor.
- WA01-0043 Water Leak Detection Cable with connectors, sold separately by meter length with 100K End of Line Resistor.
- CN01-0022 Waterproof Connectors Male/Female for Water Leak Detection Cable. 2 sets may be required for both ends of the cable.
- CM9001-EMS Environmental Monitoring System. This is required for MSM01.
- UCM/GSM4 – GSM Module for CM9001-EMS sends SMS when alarms occur
- UCM/Pi – Allows Graphical Sensor Display and daily email of sensor values.

## **Specifications**

Dimensions	145 x 90 x 40 mm
Weight	260 g
Power Supply	12VDC from CM9001
Current Consumption	50 mA
Temperature/Humidity Update interval (from MSM01)	8 seconds
Temperature Sensor	
Resolution	0.1 deg C
Accuracy	+/- 1 ° C
Range	0 to 50 ° C
Response Time	8 seconds
Drift	< 0.2 ° C per year
Humidity sensor	
Accuracy	+/- 6 % RH
Range	0 to 100 % RH
Response Time	15 seconds
Hysteresis	+/- 1 % RH
Drift	+/- 0.25 % RH /Year

## **ID Settings**

Up to 15 MSM01 or TSM01 Sensor Modules may be installed in a system.

MSM01 is a slave on the Cytech RS485 Bus. MSM01 cannot operate stand-alone without the CM9001. The MSM ID is determined according to the table below:

ID	DIP -1	DIP - 2	DIP - 3	DIP - 4	ID	DIP -1	DIP - 2	DIP - 3	DIP - 4
1	ON	ON	ON	ON	9	ON	ON	ON	OFF
2	OFF	ON	ON	ON	10	OFF	ON	ON	OFF
3	ON	OFF	ON	ON	11	ON	OFF	ON	OFF
4	OFF	OFF	ON	ON	12	OFF	OFF	ON	OFF
5	ON	ON	OFF	ON	13	ON	ON	OFF	OFF
6	OFF	ON	OFF	ON	14	OFF	ON	OFF	OFF
7	ON	OFF	OFF	ON	15	ON	OFF	OFF	OFF
8	OFF	OFF	OFF	ON					

The ID must not be the same as any other Sensor Module in the network. If there is only 1 Sensor Module, the ID must be 1. Press RESET on the MSM01 after changing the ID settings.

## Buttons

- RESET. Pressing this button resets the MSM01. It does not change settings.

## LED Indicators

- RDY (Green)- Indicates that power is applied and the MSM01 is operating.
- RX (Green), TX (Red) – indicates communications with the Cytech RS485 Bus. Both LEDs should be blinking rapidly
- Alert (Red) – For Test Purposes

## Connections

- JP1 4 way Pluggable Terminal Block (12V/COM/KA/KB): Connect to Controller using CAT5 cable if the MSM01 is not in the same enclosure as CM9001-EMS.
- J2 4 way Header (12V/COM/KA/KB): Plug in the 4 way cable to connect to CM9001-EMS if the MSM01 is mounted close by. The connection can be made by JP1 or J2.
- J5 WD1/COM/WD2: Connect Water Leakage Detection cables to WD1 or WD2 to monitor water leakage.
- J3 IN1/COM/IN2: External Inputs 1 and 2, Normally Open
- J4 IN3/COM/IN4: External Inputs 1 and 2, Normally Open

## Installation and Location

The MSM01 should be mounted in a dry area, in the room to be monitored. It can be mounted on the wall using the 4 mounting holes, or mounted on a Din Rail. The MSM should not be enclosed so that the temperature and humidity readings are not affected. The MSM01 should be connected to the CM9001 either by J2 (white 4 way cable) or JP1 (CAT5) as described above.

Connect Normally Open External Inputs to MSM IN 1 to IN 4. The centre pin of J3 and J4 are common return for the 4 inputs.

If the water leakage detection cable is used, connect via extension cable to WD1 or WD2 and the centre common (J5 terminal block).

The water leakage detection cable is connected to a longer single pair extension cable (eg using Alarm Cable), and the other end of the extension cable is connected

to WD1/WD2/Common terminals. Ensure that the connection or junction points between the water leakage detection cable and the extension cable will not be exposed to water.



WA01-0043 Water Leakage detection cable

A 100 K end-of-line/Terminating resistor is supplied initially connected to the WD1 and WD2 Water Leak Detection Inputs. This enables detection of cable break in the water leakage detection cable. If the Water Leak Detection cable is to be used, remove the 100K resistor from WD1/WD2 and connect it to the black wires at end of the Water Leak Detection cable. Refer to the CM9001-EMS Programming manual for the configuration.

Waterproof connector CN01-0022 can be used on both ends of the Water Leakage Detection cable to prevent the connections from getting wet.



## **Configuring MSM01**

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Configurator 3.12.13 and above is required to configure MSM01. Configurator can be downloaded from <http://www.cytech.biz/configurator.html> A UCM/USB (with USB Interface) or UCM/ETH03 (with Ethernet Interface), or the plug in ETH03 Submodule on CM9001 can be used for Configurator. The UCM Manual can be downloaded from [http://www.cytech.biz/ucm\\_manual.html](http://www.cytech.biz/ucm_manual.html)

Please refer to the CM9001-EMS Manual for instructions on the programming of MSM01 with CM9001-EMS. CM9001-EMS Manual can be downloaded from [http://www.cytech.biz/product\\_details.php?item\\_id=505](http://www.cytech.biz/product_details.php?item_id=505)

## **Document Revision History**

- 1.0.2 – 20 July 2018
- 1.0.4 – 22 April 2019