

# DATA SHEET

## CTH-518

### TEMPERATURE AND HUMIDITY SENSOR

#### Product Overview

The **CTH-518** can be used in a variety of applications with an operating temperature range of -40 to +85°C. The built-in diagnostics indicators facilitate operation. Probe sensors elements are factory calibrated, ensuring the accuracy in repeatable geometric data.

#### Output Metrics / Sensor Data

- Road Surface Temperature
- Ambient Temperature
- Ambient Humidity
- \*Dew Point

*\*Derived from other sensors*

#### Diagnostics

- Power LED - Active when power is OK
- Traffic LED- Flickers when CAN messages are present

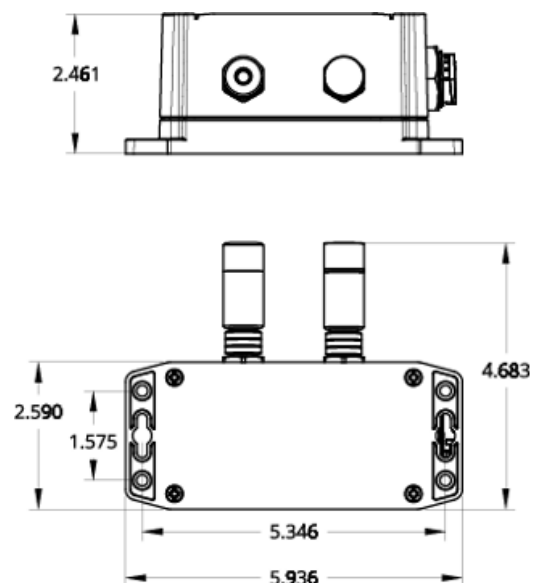
*Please refer to DL-18/HDVO-318 Manual for additional diagnostic information.*

#### Connections / Communications Protocol

- The CTH-518 uses a single RJ45 connection for communication with a proprietary Skip-Line CAN network. Communications cables are standard T568B CAT5.
- For full ingress protection, please use sealed mating connector CON\_RJ45\_CTJ808\_PLUG.



#### Dimensions



**General Specifications**

Operating Temperature Range	-40 to +85°C
Recommended Ambient Temperature Range	0 to +50°C
Module Dimensions	<a href="http://www.hammondmfg.com/pdf/1555CF42.pdf">http://www.hammondmfg.com/pdf/1555CF42.pdf</a>
Probe Dimensions	18mm Diameter x 50mm Length
Environmental	Designed to meet IP67

**Sensor Specifications**

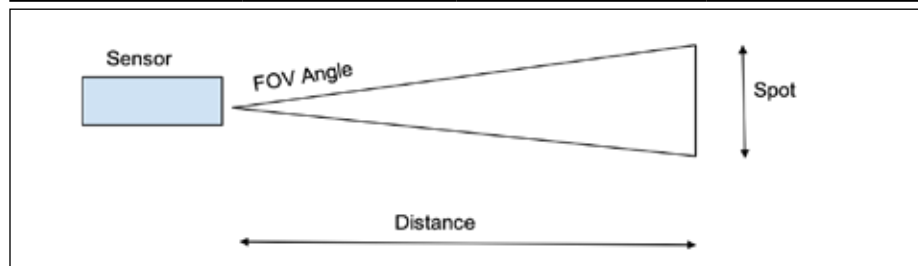
	Typical	Maximum
Surface Temperature Accuracy	+/-0.5°C	
Air Temperature Accuracy	+/-0.2°C	+/-0.4°C
Relative Humidity Accuracy	+/-2.0%RH	+/-2.5%RH

**Notes**

Probe sensor elements are factory calibrated. Probes can be fitted to either sensor port on the module. This allows for the probes to be swapped if this aids in avoiding obstruction of the infrared FOV.

Infrared FOV for the Surface Temperature probe is 10°. This gives approximately 1:6 distance to spot ratio - meaning the spot measured on the road surface has a diameter 1/6th of the mounting distance between the sensor and the road surface. Therefore, a recommended mounting height is 0.5-1.0m (20-40 inches). See table below for more details: FOV Calculations:

Measurement Distance		Spot size for MLX90614 FOV versions	
		10deg	
mm	inches	mm	Inches
100	3.9	18	0.7
200	7.9	35	1.4
500	19.7	87	3.4
800	31.5	140	5.5
1000	39.4	175	6.9
Distance:Spot Ratio		5.7	



**Maintenance**

1. Probes are field replaceable.
2. The sintered filter tip on the RH probe is field replaceable.
3. Routinely inspect the IR optics to ensure contamination does not result in measurement errors.

**Installation**

1. Mount in a position where there will be good air flow.
2. Mount away from direct sunlight.
3. Mount away from heat sources like the engine and exhaust, recommended in front of the engine like behind the bumper.
4. Ensure the Surface Temperature probe has a clear line-of-sight to the road surface and that there are no objects obstructing the 10° FOV.