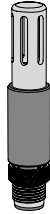


## Features

The temperature, humidity, and dew point sensor works in a variety of environments to provide temperature, humidity, and dew point measurements via IO-Link.

- Temperature, humidity, and dew point monitoring in one device
- Rugged over-molded design
- Ships with aluminum grill filter cap
- Optional stainless steel 10 µm sintered filter available separately
- Continuous process data values for temperature, humidity, and dew point
- Ideal for tracking ambient conditions in critical applications
- IO-Link interface for configuration and communication
- Process data profiles available for Smart Sensor and floating point formats for both Fahrenheit and Celsius
- Configurable high and low thresholds for discrete output



## Models

| Model Number | Function                                                         | Control                 | Connectors                                                 |
|--------------|------------------------------------------------------------------|-------------------------|------------------------------------------------------------|
| S15S-TH-KQ   | Female connector:<br>Temperature, humidity, and dew point sensor | Male connector: IO-Link | Integral 4-pin M12 male/female quick-disconnect connectors |

## IO-Link®

IO-Link® is a point-to-point communication link between a master device and a sensor and/or light. It can be used to automatically parameterize sensors or lights and to transmit process data. For the latest IO-Link protocol and specifications, please visit [www.io-link.com](http://www.io-link.com).

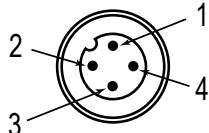
For the latest IODD files, please refer to the Banner Engineering Corp website at: [www.bannerengineering.com](http://www.bannerengineering.com).

## Configuration

The measured sensor values are available via Process Data In.

For more information, see Banner P/N 242289 *S15S IO-Link Temperature, Humidity, and Dew Point Sensor - IO-Link Data Reference Guide* and Banner P/N 242291 *S15S-TH-KQ IO-Link IODD*.

## Wiring Diagrams

| Male (IO-Link Master)                                                               | Pin | Wire Color | Signal Description |
|-------------------------------------------------------------------------------------|-----|------------|--------------------|
|  | 1   | Brown      | 18 V DC to 30 V DC |
|                                                                                     | 2   | White      | Discrete (OUT)     |
|                                                                                     | 3   | Blue       | Ground             |
|                                                                                     | 4   | Black      | IO-Link            |

## Status Indicators

### Power LED Indicator (Green)

- Solid Green = Power On
- Off = Power Off

### IO-Link Communication LED Indicator (Amber)

- Flashing Amber (900 ms On, 100 ms Off) = IO-Link communications are active
- Off = IO-Link communications are not present

### Sensor Value Communication LED Indicator (Amber)

- Solid Amber = Temperature, humidity, and dew point sensor values are between the low threshold and the high threshold.
- Off = Temperature, humidity, or dew point sensor values are less than the low threshold OR greater than the high threshold.
- Default Values for Temperature (Configurable):
  - Low Threshold = 0 °C (32 °F)
  - High Threshold = 49 °C (120 °F)
- Default Values for Humidity (Configurable):
  - Low Threshold = 0%

- High Threshold = 100%
- Default Values for Dew Point (Configurable):
  - Low Threshold = 0 °C (32 °F)
  - High Threshold = 49 °C (120 °F)

## S15S Specifications

### Supply Voltage

18 V DC to 30 V DC at 50 mA maximum

### Power Pass-Through Current

1 A maximum

### Supply Protection Circuitry

Protected against reverse polarity and transient voltages

### Leakage Current Immunity

400 µA

### Resolution

14-bits

### Indicators

Green LED: Power

Amber LED 1: IO-Link communications active

Amber LED 2: Analog value present

### Connections

Integral 4-pin M12 male/female quick-disconnect connectors

### Construction

Coupling Material: Nickel-plated brass

Connector Body: PVC translucent black

### Temperature and/or Humidity Input

Sample Rate: 3 seconds

### Humidity

Measuring Range: 0 to 100% relative humidity (RH)

Resolution: 0.1% RH

Accuracy:

± 3% at 0 °C to +70 °C (+32 °F to +158 °F) and 10% to 90% RH

± 7% at 0 °C to +70 °C (+32 °F to +158 °F), and 0% to 10% or 90% to 100% RH

### Temperature

Measuring Range: -40 °C to +85 °C (-40 °F to +185 °F)

Resolution: 0.1 °C (32.18 °F)

Accuracy:

-40 °C to 0 °C (-40 °F to +32 °F): ± 0.8 °C (± 1.5 °F)

0 °C to +60 °C (+32 °F to +140 °F): ± 0.7 °C (± 1 °F)

+60 °C to +85 °C (+140 °F to +185 °F): ± 1.3 °C (± 2.2 °F)

### Operating Conditions

**Temperature:** -40 °C to +70 °C (-40 °F to +158 °F)

90% at +70 °C maximum relative humidity (non-condensing)

**Storage Temperature:** -40 °C to +80 °C (-40 °F to +176 °F)

### Required Overcurrent Protection



**WARNING:** Electrical connections must be made by qualified personnel in accordance with local and national electrical codes and regulations.

Overcurrent protection is required to be provided by end product application per the supplied table.

Overcurrent protection may be provided with external fusing or via Current Limiting, Class 2 Power Supply.

Supply wiring leads < 24 AWG shall not be spliced.

For additional product support, go to [www.bannerengineering.com](http://www.bannerengineering.com).

| Supply Wiring (AWG) | Required Overcurrent Protection (A) | Supply Wiring (AWG) | Required Overcurrent Protection (A) |
|---------------------|-------------------------------------|---------------------|-------------------------------------|
| 20                  | 5.0                                 | 26                  | 1.0                                 |
| 22                  | 3.0                                 | 28                  | 0.8                                 |
| 24                  | 1.0                                 | 30                  | 0.5                                 |

### Certifications



Banner Engineering BV  
Park Lane, Culliganlaan 2F bus 3  
1831 Diegem, BELGIUM



Turck Banner LTD Blenheim House  
Blenheim Court  
Wickford, Essex SS11 8YT  
GREAT BRITAIN



### Product Identification



## FCC Part 15 Class B for Unintentional Radiators

(Part 15.105(b)) This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

(Part 15.21) Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

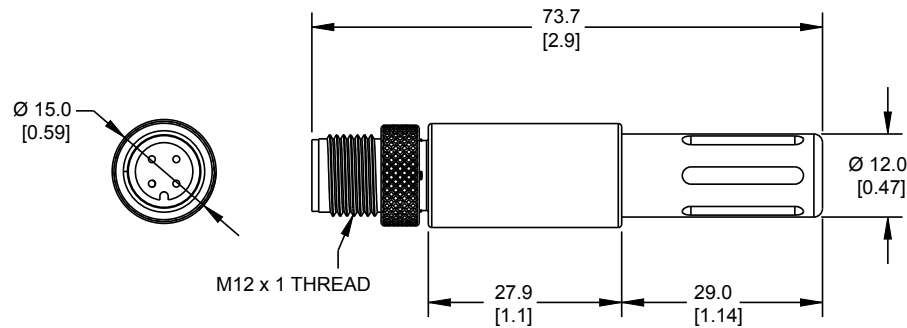
## Industry Canada ICES-003(B)

This device complies with CAN ICES-3 (B)/NMB-3(B). Operation is subject to the following two conditions: 1) This device may not cause harmful interference; and 2) This device must accept any interference received, including interference that may cause undesired operation.

Cet appareil est conforme à la norme NMB-3(B). Le fonctionnement est soumis aux deux conditions suivantes : (1) ce dispositif ne peut pas occasionner d'interférences, et (2) il doit tolérer toute interférence, y compris celles susceptibles de provoquer un fonctionnement non souhaité du dispositif.

Dimensions

All measurements are listed in millimeters [inches], unless noted otherwise. The measurements provided are subject to change.



S15S Accessories

Temperature-Humidity Filter Caps

|                                                                                                                                                                                     |  |                                                                                                                                                             |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>FTH-FIL-001</b> <ul style="list-style-type: none"><li>Aluminum grill filter cap</li><li>Factory default, ships with the S15S-TH*Q, M12FT*Q, and Q45 All-in-One sensors</li></ul> |  | <b>FTH-FIL-002</b> <ul style="list-style-type: none"><li>Stainless steel</li><li>Sintered to 40-micrometer porosity (for high dust environments.)</li></ul> |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

Cordsets

| 4-pin A-Code Double-Ended M12 Female to M12 Male Cordsets             |                 |                 |         |                                                 |
|-----------------------------------------------------------------------|-----------------|-----------------|---------|-------------------------------------------------|
| Model                                                                 | Length          | Dimensions (mm) | Pinouts |                                                 |
| BC-M12F4-M12M4-22-1                                                   | 1 m (3.28 ft)   |                 | Female  | 1 = Brown<br>2 = White<br>3 = Blue<br>4 = Black |
| BC-M12F4-M12M4-22-2                                                   | 2 m (6.56 ft)   |                 |         |                                                 |
| BC-M12F4-M12M4-22-5                                                   | 5 m (16.4 ft)   |                 |         |                                                 |
| BC-M12F4-M12M4-22-8                                                   | 8 m (26.25 ft)  |                 |         |                                                 |
| BC-M12F4-M12M4-22-10                                                  | 10 m (30.81 ft) |                 |         |                                                 |
| BC-M12F4-M12M4-22-15                                                  | 15 m (49.2 ft)  |                 | Male    |                                                 |
| 4-pin A-Code Double-Ended M12 Female to M12 Male Right-Angle Cordsets |                 |                 |         |                                                 |
| Model                                                                 | Length          | Dimensions (mm) | Pinouts |                                                 |
| BC-M12F4-M12M4A-22-1                                                  | 1 m (3.28 ft)   |                 | Female  | 1 = Brown<br>2 = White<br>3 = Blue<br>4 = Black |
| BC-M12F4-M12M4A-22-2                                                  | 2 m (6.56 ft)   |                 |         |                                                 |
| BC-M12F4-M12M4A-22-5                                                  | 5 m (16.4 ft)   |                 |         |                                                 |
| BC-M12F4-M12M4A-22-8                                                  | 8 m (26.25 ft)  |                 |         |                                                 |
| BC-M12F4-M12M4A-22-10                                                 | 10 m (30.81 ft) |                 |         |                                                 |
| BC-M12F4-M12M4A-22-15                                                 | 15 m (49.2 ft)  |                 | Male    |                                                 |

| 4-pin A-Code Double-Ended M12 Female Right-Angle to M12 Male Right-Angle Cordsets |                 |                 |  |                                                                                     |
|-----------------------------------------------------------------------------------|-----------------|-----------------|--|-------------------------------------------------------------------------------------|
| Model                                                                             | Length          | Dimensions (mm) |  | Pinouts                                                                             |
| BC-M12F4A-M12M4A-22-0.3                                                           | 0.3 m (1 ft)    |                 |  | <p>Female</p> <p>Male</p> <p>1 = Brown<br/>2 = White<br/>3 = Blue<br/>4 = Black</p> |
| BC-M12F4A-M12M4A-22-1                                                             | 1 m (3.28 ft)   |                 |  |                                                                                     |
| BC-M12F4A-M12M4A-22-2                                                             | 2 m (6.56 ft)   |                 |  |                                                                                     |
| BC-M12F4A-M12M4A-22-5                                                             | 5 m (16.4 ft)   |                 |  |                                                                                     |
| BC-M12F4A-M12M4A-22-8                                                             | 8 m (26.25 ft)  |                 |  |                                                                                     |
| BC-M12F4A-M12M4A-22-10                                                            | 10 m (30.81 ft) |                 |  |                                                                                     |
| BC-M12F4A-M12M4A-22-15                                                            | 15 m (49.2 ft)  |                 |  |                                                                                     |

Bracket

|                                                                                                                                                                                          |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <p><b>LMBS15MAG</b></p> <ul style="list-style-type: none"><li>• Attaches to S15 housing</li><li>• White polypropylene</li><li>• 11.8 kg (26 lb) pull force</li><li>• One piece</li></ul> |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

# Banner Engineering Corp Limited Warranty

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