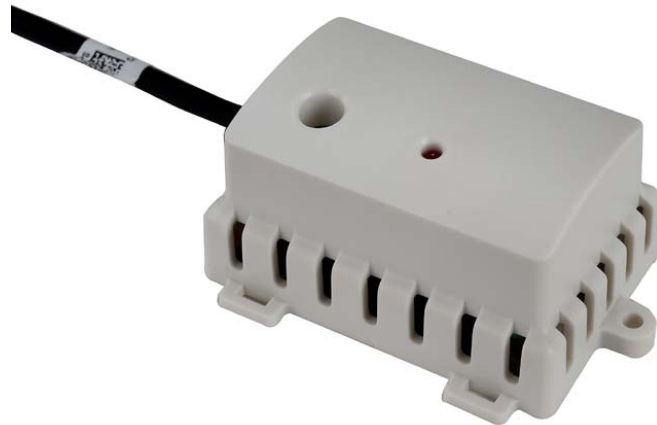




WD-CPS

Condensation Prevention Detector



Features:

- Strap-on or screw mounting
- VFC or current output
- Low smoke & fume flying lead cable
- Adjustable set point
- LED indication of status

Benefits:

- Prevents "indoor rain" condensation
- Enables optimal efficiency for chilled beam applications

Technical Overview

The WD-CPS condensation prevention sensor is designed to meet the requirements for a low cost device to provide early warning of condensing conditions. Applications include chilled beam/ceiling systems where control safeguards are required to avoid 'indoor rain'.

The sensor provides either a volt-free contact or current output and is housed in a small enclosure which can be strapped to the surface that requires monitoring.

For pricing or any further information, please contact Omni Instruments Ltd.



Specification:

| | |
|-------------------------|------------------------------------------|
| Output: | |
| Current | dry <5mA, wet >12mA |
| VFC | 24Vac/dc @ 1A resistive SPDT |
| Supply voltage | 24Vdc \pm 5% or 24Vac \pm 10% |
| Supply current | 20mA max. |
| Response time | <5 sec |
| Measurement Accuracies: | |
| Temp | \pm 0.2°C |
| RH | \pm 5% RH |
| Set point offset range | \pm 2°C |
| Flying lead | Low Smoke Zero Halogen (LSZH) |
| Dimensions | W73 x H48 x D30 mm (2.76 x 1.89 x 1.18") |
| Mounting plate | 1mm thick stainless steel |
| Statutory Compliance: | |
| EMC: | |
| Emissions | EN61000-6-3 |
| Immunity | EN61000-6-2 |
| Country of origin | UK |

Part Codes:

| | |
|------------------|-----------------------------------------|
| WD-CPS-2M | Condensation detector, 2m (6.56ft) lead |
| WD-CPS-5M | Condensation detector, 5m (16.4ft) lead |



The products referred to in this data sheet meet the requirements of EU Directive 2004/108/EC



Installation:



Antistatic precautions must be observed when handling these sensors. The PCB contains circuitry that can be damaged by static discharge.

1. The WD-CPS should only be installed by a competent, suitably trained technician.
2. Ensure that all power is disconnected before carrying out any work on the WD-CPS.
3. Choose a suitable location and mount the detector (see page 4). The unit should be mounted as close as possible to the chilled water inlet, or the coldest part of the system to be measured. Ambient air must be allowed to enter and circulate around the detector element.
4. **Important!** It is essential that no insulating material is placed between the detector and the mounting surface. The detector plate must be kept at the same temperature as the potential condensing surface.
5. The detector can be simply fixed in place on a pipe with the cable-ties or with the 2 self-tapping screws provided.
6. If the detector is to be mounted onto a pipe, it is important the unit is mounted length-wise to ensure maximum thermal transfer efficiency (see page 4).
7. Terminate the flying lead cores as required and ensure that the supply voltage is within the specified tolerances.

Operation:

The WD-CPS operates on dew point temperature rather than a fixed value of relative humidity. The dew point is calculated from a temperature compensated RH element and a high accuracy thermistor which are thermally bonded to the metal plate of the WD-CPS. The switching set point is determined as $3^{\circ}\text{C} \pm$ the pot offset *above the current dew point*. The relay is activated when the dew point temperature is below the offset set point.

NB To obtain maximum accuracy over a narrow band of RH values, the device will not perform valid calculations on levels of RH below 75%.

LED Indication:

The red LED, visible through the top of the housing, has 4 functions;

1. Short blink once every 15 seconds to show the device is working properly.
2. Rapid continuous blinking to show the dew point switching set point is close.
3. Continuously ON when the output is switched on.
4. One long flash followed by 2 short flashes to show the temperature element is faulty



Connections:

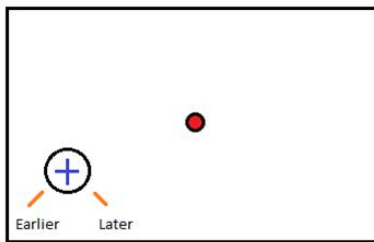
Current mode

Red +24Vdc
Blue 4-20mA output

VFC mode

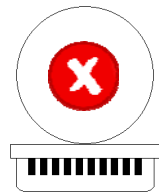
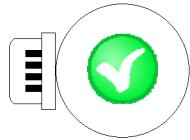
Red +24Vac/dc
Blue 0V
Green Common
Yellow N/O
White N/C

Switching Point Adjustment:

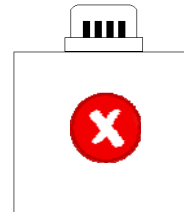
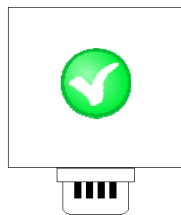
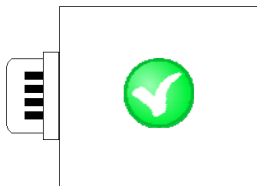


Mounting Position:

Round section surface:



Square or rectangular section surface:



Whilst every effort has been made to ensure the accuracy of this specification, We cannot accept responsibility for damage, injury, loss or expense from errors or omissions. In the interest of technical improvement, this specification may be altered without notice.