

WCD 2

Features

- Prevents “indoor rain“ condensation
- Enables optimal efficiency for chilled beam applications
- Low smoke & fume flying lead cable
- Volt Free Contact or current output
- Adjustable set point
- Operates on calculated dew point
- Strap-on or screw mounting

Overview

The condensation sensor WCD 2 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 condensation sensor WCD 2 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.

Technical data

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

Ordering

Type no.	Description
WCD 2	Condensation Sensor 2 meter cable
	On request: 5 meter cable

Installation



1. Warning! Observe anti-static precautions.
2. The condensation sensor WCD 2 should only be installed by a competent, suitably trained technician.
3. Ensure that all power is disconnected before carrying out any work on the condensation sensor WCD 2.
4. Choose a suitable location and mount the condensation sensor WCD 2 (see page 3). 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.
5. 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.
6. The condensation sensor WCD 2 can be simply fixed in place on a pipe with the cable-ties or with the 2 self-tapping screws provided.
7. If the condensation sensor WCD 2 is to be mounted onto a pipe, it is important the unit is mounted length-wise to ensure maximum thermal transfer efficiency (see page 3).
8. Terminate the flying lead cores as required and ensure that the supply voltage is within the specified tolerances.

Operation

The condensation sensor WCD 2 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 condensation sensor WCD 2.

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 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

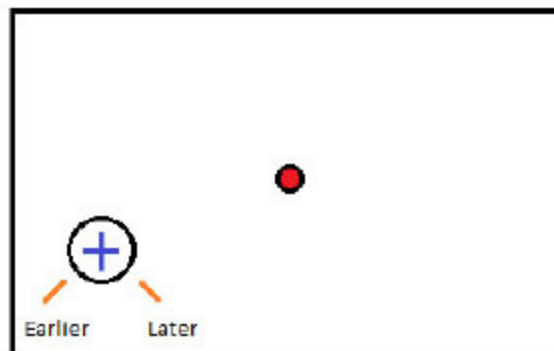
VFC mode

Red +24Vac/dc
Blue 0V

Green Common

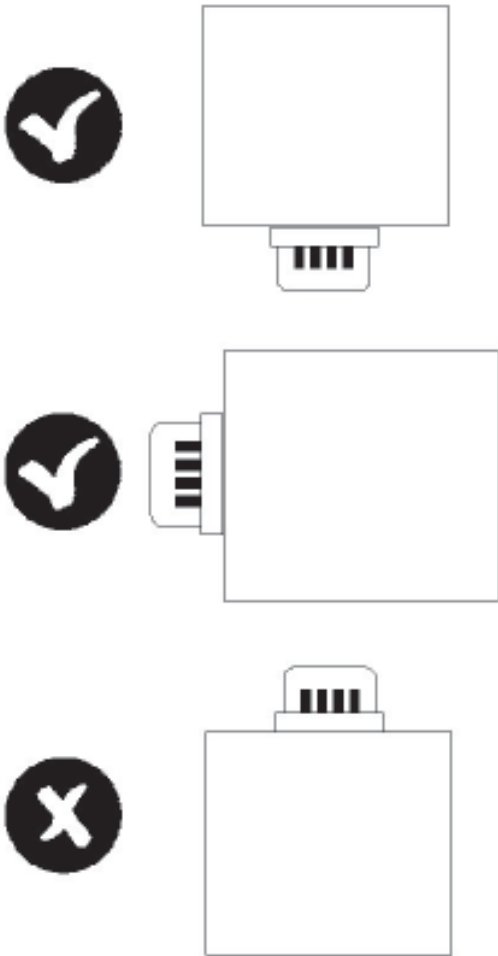
Yellow N/C
White N/O

Switching Point Adjustment

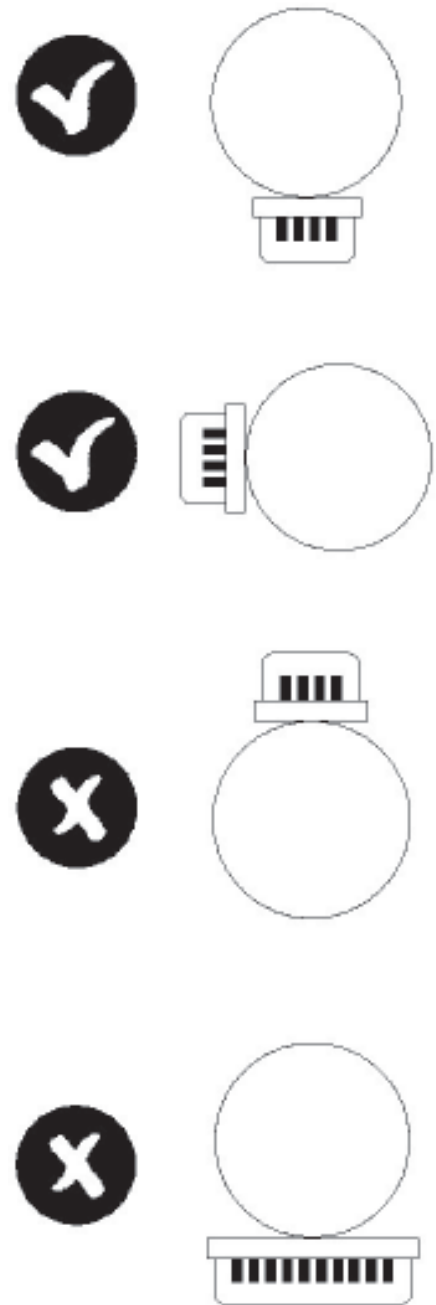


Mounting Position

Square or Rectangular Section Surface



Round Section Surface



Trend Scaling

(Current mode)

Type 5 "Characterise" scaling

Upper	20
Lower	4
Exponent	2
Points	2
I1	4
O1	4
I2	20

We reserve the right to make changes in our products without any notice which may effect the accuracy of the information contained in this leaflet.