

SuperDew Quick Start Instructions.

1). Check that the mains rating shown on the back of the Super-Dew meter corresponds with your supply. If this is the case then connect the meter to your supply and switch on.

The Super-Dew meter can work with any sensor, and will display Dewpoint in Deg.C on a bright green backlit liquid crystal display. If the unit was specially ordered in degrees F then adjust readings to suit, note G, R & Y models only can be supplied in degrees F.

2). We need to set the meter for the particular range of sensor, which is to be used. This information will be shown on the tin, which the sensor is supplied in and should conform, to one of the sensors depicted in the table below. If not read the range and adjust the meter to suit.

<u>SENSOR TYPE</u>	<u>“DRY” setting, Dewpoint deg. C</u>	<u>“WET” setting, Dewpoint deg. C</u>
<u>Purple Spot</u>	-100	0
<u>Silver Spot</u>	-100	-20
<u>Red Spot</u>	-80	-20
<u>Grey Spot</u>	-80	0
<u>Yellow Spot</u>	-60	0
<u>Blue Spot</u>	-80	+20

2A). “DRY” Limit Setting

Having determined which sensor we are going to use note its “DRY” limit e.g. for a Red spot sensor this is -80 Deg.C DP. With nothing but the mains connected to the meter and it switched on adjust the “DRY” potentiometer on the front of the Super-Dew until the display shows the sensors “DRY” limit.

2B). “WET” Limit Setting (Auto-cal)

Connect the sensor to the Super-Dew using the supplied co-ax connector lead and note the “WET” limit of the sensor e.g. for the Red spot this is -20 Deg.C DP. Hold the sensor in ambient air i.e. well above 0 Deg.C (typical Dewpoints are around 5 - 20 Deg.C DP) so the sensor should be fully saturated. Now adjust the "WET" potentiometer until the Super-Dew display reads the “WET” limit of the sensor i.e. -20 Deg.C for the red spot sensor.

This auto-cal procedure can be followed for all sensors whose “WET” limit is much below ambient temperature conditions. **Silver, Grey, Red and Yellow spot sensors** should all auto-cal satisfactorily providing the ambient Dewpoint is above their “WET” limit.

2C). Other sensors whose “WET” limit is above 0deg.C DP or above ambient Dewpoints e.g. **Blue spot sensors** are calibrated slightly differently as these sensors do not have a designed saturation level.



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The "DRY" limit setting is carried out the same as described earlier, but the "WET" calibration will have to be made either in room air and if the Dewpoint is known then the "WET" limit potentiometer is adjusted with the sensor connected until the Super-Dew display corresponds with the known conditions.

If the room Dewpoint is not known then the sensor can be calibrated using a humidity jar. Here if temperature is known then using the look up tables or graph the Dewpoint can be calculated and used to set the "WET" limit correctly.

Typically at 20 Deg.C using a 11% RH jar with the sensor enclosed within it the "WET" on the Super-Dew should be adjusted using the "WET" potentiometer until the display shows -10 Deg.C, for the 54% bottle it should read +11 Deg.C and for the 75% bottle the reading should be +16 Deg.C

The meter is now fully calibrated and is ready for the sensor to be put in-line, either in a sensor holder or in the atmosphere it is to work in.

3). Alarm Settings

The meter is equipped with two alarm relays, which have the provision of normally open and normally closed contacts rated at 240V and 2A.

The set points of these alarms are adjusted by pressing the relevant "ALARM" button on the front panel of the Super-Dew and whilst holding it down adjust the relevant alarm potentiometer, the set point will be shown on the display of the Super-Dew, releasing the button returns the display to Dewpoint functioning.

Alarm Trips and Hysteresis

3A). The "DRY" Alarm

This will trip at the set level as the sensor detects gas passing it which is becoming drier, a degree of hysteresis of approximately 3 Deg.C DP is built in to prevent chatter of the relays around the set point, this means that the alarm will only reset as the sensor detects the gas passing it becoming wetter by 3 Deg.C DP more than the set point.

Contacts are: 4 = Normally Open, 5 = Common, 6 = Normally Closed



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3B). The “WET” Alarm

This will trip at the set level as the sensor detects gas passing it which is becoming wetter, a degree of hysteresis of approximately 3 Deg.C DP is built in to prevent chatter of the relays around the set point, this means that the alarm will only reset as the sensor detects the gas passing it becoming wetter by 3 Deg.C DP less than the set point.

Contacts are: 7 = Normally Open, 8 = Common, 9 = Normally Closed

4). Analogue Outputs

The 4-20mA Output

This is available at pins 2(+VE) and 3(-VE) at the rear of the Super-Dew on the analogue output port:

4mA occurs at the “DRY” limit, which the meter was initially set to.

20mA occurs at the “WET” limit setting for the sensor and is factory set, should a different range sensor be required then follow the instructions in the main manual to effect a 20mA re-calibration if required.

The mA output is linear with Dewpoint across this range. It is a current source and must be sunk into a load of no greater than 500 ohms, this assuming good quality low loss signal cable is used; the internal supply for the mA output is a DC supply of 15 volts.

5). Further Information.

Any settings not covered in this Quick Start Guide will be covered in the full manual supplied with the instrument.



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