Netmon : Aux Sensors

Netmon Aux Sensors are optional extra temperature alarms for basic High and/or Low temperature alarms in buildings which are not temperature controlled, or are not regulated by Dicam.

(Networked Dicam units have their own temperature alarm functions, so Aux Sensor alarms are not needed for rooms being controlled by Dicam.)

A Netmon may have up to 20 Aux Sensors (and/or 20 Aux Trips - see Aux Trip data sheet), and it may also trigger dropouts for Aux sensors.

What it does

Each sensor has High Limit and Low Limit settings.

If the sensor temperature is hotter than the High limit setting, the Netmon gives a HIGH TEMPERATURE alarm.

If the sensor is colder than the Low limit setting, the Netmon gives a LOW TEMPERATURE alarm.

High and/or Low settings can also be set to OFF for any sensor. In this case there will be no High and/or Low Temperature alarm for this sensor.

Sensors also have a "Bypass" setting. If a sensor is "bypassed", there is no alarm for this sensor, whatever the reading.

Note *: Great care must be taken with High and Low Limit settings to ensure effective alarms, and Bypass must be used with great caution.*

How it works

The Aux temperature sensors can be connected to the Netmon, or other units on the Dicam network.

The sensor readings are transmitted over the network, and read by the Netmon. The Netmon compares each sensor reading with its High and Low Limit settings and gives an alarm if the reading passes the Limit (unless the sensor is "bypassed).

Note : High and Low Limits for Aux Sensors are always set at the Netmon, even if they are connected to another unit.

The Netmon gives each sensor a "name" such as SENS07 - meaning Aux SENSor 7. In some display menus, the program also shows where it is connected. For example, SENS07 might show CH:11/3 - meaning

it's connected to Unit 11, input 3. In most cases, the sensor reading is only displayed at the Netmon, not at the unit where it is connected.

Note *: Aux Sensors are not used for control, only for alarm. Sensors used for control as well as alarm usually have temperature limit settings in the units where they are used for control.*

If there is no reading from a sensor - for example, if the sensor becomes disconnected, or if its Dicam unit is is switched off - the Netmon gives a "Sensor Failure" warning for that sensor.

Checking Sensor Readings

You should check Sensor readings at least once a day, and check High and Low limit settings regularly to make sure the setting are right for stock being housed.

To check Sensor Readings and High and Low settings, go to the SENSORS menu.

The Netmon can work in either °C or °F. This is indicated by either C or F next to the readings.

In the Sensors menu, turn the knob to read each sensor in turn, and the High and Low settings. There could be up to 20 sensors. You'll see a display such as :

```
SENS01        HIGH  LOW
22.6C         32C   10C
```

This is a normal display.

SENS01 is the Netmon's "name" for the sensor. (In this case, Aux Sensor 1.)

Below the Sensor name (such as SENS01) is the current temperature of this sensor. (Either in °C or °F depending on how your Netmon is set up.)

In this case, the temperature is below the High limit, and above the Low Limit, so there is no alarm for this sensor.

When checking sensor readings, always consider whether the reading is a "sensible" value, not just check if it's in alarm or not. For example - if this room was a weaner room for pigs, you should be worried at a reading of 22.6°C, because it's low for this size of animal.

```
SENS01        HIGH  LOW
32.5C         32C   10C
```

This is a danger sign - it's TOO HOT.

The sensor temperature is above the High Limit, so the gives a High Temperature alarm.

```
SENS01        HIGH  LOW
7.2C          32C   10C
```

This is a danger sign - it's TOO COLD.

The sensor temperature is below the Low Limit, so the Netmon gives a Low Temperature alarm.

```
SENS01        HIGH  LOW
------C       32C   10C
```

This is a danger sign - there's NO SENSOR READING.

The sensor or sensor wiring may be faulty, or the unit where the sensor is connected may not be communicating with the Netmon.

```
SENS01        HIGH  LOW
22.6C         30C   ----
```

This is a danger sign - the Low Temperature Limit is switched OFF.

Note : Even if you're not too worried about low temperatures in a particular building you should always have a Low Temperature setting.

A sensor/wiring fault can give a sensor reading way below the real value. With no Low Limit setting, you won't get an alarm if the sensor reads low..

```
SENS01        HIGH  LOW
22.6C         ---   10C
```

This is a danger sign - the High Temperature Limit is switched OFF.

Note : Even if you're not worried about high temperature in this particular building - or even if it's very hot weather and high temperature is unavoidable - you should always have a High Temperature setting.

A sensor/wiring fault could give a sensor reading way above the real value. With no High Limit setting, you won't get an alarm if the sensor reads high.

```
SENS01        HIGH  LOW
22.6C         40C   10C
```

This is a danger sign - the High Temperature Limit is FAR TOO HIGH for normal livestock use.

After the Sensor temperature readings, you may also see TRIP readings - see the Aux Trip data sheet.

After Sensors and Trip readings, you may see EXT1 and EXT2 - these are the Outside Temperature sensor readings - see the Outside Temperature data sheet.

```
SENS01        HIGH  LOW
22.6C         BYPASSED
```

This is a danger sign - alarms for this sensor are OFF.

Note : Even if the building is out of use, it makes sense to keep the temperature alarms on, as this will give a (limited) fire detection.

Changing High and Low Limit Settings

To change the High and Low Limit Settings, go to SETTINGS : SENSOR LIMITS.

Turn the knob until it shows the Sensor whose settings you want to change and press the button.

The flashing cursor goes to the HIGH setting - turn the knob to change it if you wish, and press the button again to Enter the value.

The flashing cursor goes to the LOW setting - turn the knob to change it if you wish, and press the button again to Enter the value.

Note : Your Netmon unit might be using ⁰C or ⁰F (indicated by C or F next to the value).

MAKE SURE you set suitable values according to the temperature scale being used, and the animals being housed.

Warning : The Netmon can work in either ⁰F or ⁰C (but not both at the same time), and might be used for factors other than environmental temperature. So a very wide range of values is possible.

Note : A High or Low setting of [---] means that the particular function is "OFF". E.g. If LOW = [---] then the unit will not trigger a Low Temperature for this sensor, no matter how cold it gets.

As supplied, all High and Low Settings are Off [---]. They will not provide temperature alarms until you make your first settings.

Bypassing a Sensor

Sometimes you may want to "Bypass" a sensor - that means to ignore temperature alarms for a particular sensor. For example, if the building is out of use, or if the particular sensor has a fault.

CAUTION : When a Sensor is Bypassed, there is NO ALARM for that sensor. Use this feature ONLY when ABSOLUTELY necessary.

TAKE OTHER PRECAUTIONS for the safety of the stock if a Sensor is Bypassed.

To check if any sensors are "Bypassed" go to Settings : Sensor Bypasses. In normal use it should say e.g.

```
SENS07      BYPASS
CH: 11/3    NO
```

This is the normal display.

To Bypass this sensor, press the button (NO changes to YES.) The sensor is now ignored when checking for High or Low temperatures or sensor failures. E.g. :

```
SENS07      BYPASS
CH: 11/3    YES
```

This is a danger sign. It means the sensor is bypassed, so there will be no alarms for this sensor. To return it to normal use, press the button again. Bypass YES changes to Bypass NO. Or see Clearing Bypasses -

Clearing Sensor Bypasses

To clear all Bypasses and return the system to full alarm status, go to Settings : Clear Bypasses. Press the button once. The display shows CLEARED briefly. You have now cleared Sensor and Unit bypasses.

If you get an Aux Sensor alarm

During normal use, the Netmon shows SYSTEM OK in the Keypoint window.

If the Netmon detects an alarm condition, SYSTEM OK changes to !!ALARMS!!. Press the button to go into the ALARMS menu. This menu is only shown when there is an alarm.

In the Alarms menu, turn the knob to view the different alarms detected. The Netmon may show Unit alarms, as well as SENSor alarms.

For example, it may show :

```
ALARMS:    SENS01
HIGH TEMPERATURE
```

Press the button to see if there is more than one alarm warning for this sensor. Check the sensor reading and settings using the SENSORS menu (see above). Once an alarm has been detected for an Aux Sensor, it remains in memory until you clear it. For example, a

Sensor might have had a high temperature, but the temperature may now have dropped.

At the bottom of the alarms menu is the item :

```
ALARMS:
CLEAR & RETURN
```

If you press the button, the alarm warning is reset , but it may come back within a few seconds if the temperature or other problem is still present.

It's always advisable to go and check the room, building, or piece of equipment to make sure everything is OK. For example, magnets may have been released.

WARNING : Depending on your Netmon set up, you may get Alarm indications on the Netmon that do not trigger your siren, Fastcall unit, etc. If you're not sure, check with your installer or see Alarm Trigger Setup.

Aux Sensors : Routine Testing

Under the UK Welfare of Livestock Regulations, you are required to Test alarms and backup ventilation provision EVERY WEEK. It might not be compulsory for your use, but it's strongly recommended you do it regularly, whatever the use.

The more often you test and check readings, the less likely you'll have a problem which is not detected.

See the main section on routine testing of a Netmon, and read these additional notes for testing of Aux Sensor functions.

Weekly Test for Aux Sensors/Dropouts

1. Go to the SENSORS menu and note down the reading and trigger settings for each Aux Sensor.

2. Go to each room and check that the temperature shown is correct and the settings are suitable.

3. If your Aux Sensors also have Dropouts, go to the Netmon : Test Outputs menu, and set each dropout (e.g. SENS01DO) to 100%. This will make the dropout release.

Wait a few seconds, then exit the Test Outputs menu. Dropouts will return to automatic operation (so the magnets are now energised again), but they should have released.

Go to each room and check that the dropout has released. If it has not released, clean/adjust and go back to the Netmon and repeat the procedure.

Dropouts

As well as detecting and alarming for Aux sensors, the Netmon can control "Dropouts". Dropouts are usually magnets which release when an alarm is detected.

As with Sensors, they can be connected to outputs on remote units on the network.

If you have Aux Sensor Dropouts, they will be shown in the TEST : OUTPUTS menu. You will find for example:

```
OUTPUT     CH: 3/7
SENS01D0   0%
```

This means the dropout for Sensor 01 is connected to Unit 3, output 7. Several sensors might use the same output, In this case, the dropout will release if any of the sensors has an alarm. In this case, you might see, say, both SENS01DO and SENS02DO shows CH:3/7.

If your unit shows something like this, it means there is no dropout for this sensor :

```
OUTPUT     CH: NONE
SENS01D0
```

Configuring Aux Sensors

Setting up Aux Sensors takes great care, as it uses networking facilities extensively. We strongly recommend installers take specific training in this aspect of the system.

Aux Sensors are usually wired using "spare" sensor channels on the network.

1   Make a plan of the site showing the Dicam units, complete with addresses, and showing the spare input and output channels on each unit.

2   Work out the shortest/most efficient wiring from the desired Aux sensor locations (and any other remote inputs such as Aux Trips) to the spare channels.

3   WRITE DOWN a list showing the Input Channel to be used for each Aux Sensor such as :

SENSOR	UNIT	CH
1	3	6
2	3	7
3	4	4
etc.		

4   Connect the sensors to these sensor inputs, and check the sensor is reading correctly by measuring sensor voltage (see Installation Manual).

Note : Except on Slave IO units, you can't read the sensor on the unit where it is connected.

5   At each of the units where you have connected an Aux Sensor, go to I/O Config : Inputs Networked.

For the channels in your list, select NETWORK = YES.

For example, if following the list above, at Unit 3, set :

INPUT	NETWORK
5	NO
6	YES
7	YES
8	NO

(Press the button to toggle from NO/YES.)

6   At the Netmon, go to Config : Monitor Config : Sensors/Trips.

SENS01	DROPOUT
CH:NONE	NONE

Follow the list you prepared. E.g. If you were following the list shown above - Select SENS01 and set it to CH:3/6.

(See below for configuring Aux Sensor Dropouts.)

7   Go back to the User menu : Test : Sensors. For each of the sensors you have set up, check that :

A) The channel shown is the right one

B) The sensor is reading correctly

If the sensor is not reading, first check that network communication is functional to the unit shown - go to the UNITS menu.

Then go to the unit and double check the sensor voltage. (If necessary, look for a BAD SENSORS window.)

8   Set initial trigger values for each Aux Sensor in Settings : Sensor Limits (e.g. Set HIGH = 30 and LOW = 15.)

9   Give a copy of this leaflet to the User, along with a list of channels used for each Aux Sensor. Make sure you explain the workings of the system fully.

Configuring Aux Sensor Dropouts

As with Aux Sensor Inputs, Aux Sensor Dropouts can use spare channels on the network.

Aux Sensors don't usually have dropouts. But if they do, they require an output driver (e.g. usually a MAG1) for each circuit.

Note : A single output channel can act as the dropout for several Aux Sensors and/or Aux Trips BUT ONLY Aux Sensors/Trips. DO NOT set a channel as the output from any other Dicam control unit.

Hint : While setting up dropouts, you may generate many alarm warnings. (Especially Output Timeout or Config Error warnings). You might find it useful to use Clear Alarms All Units = YES during set up. After you've completed set up, MAKE SURE you set Clear Alarms All Units = NO.

1 As before, make a detailed list of the Aux Sensors and the Output Channels you are going to use e.g. :

SENSOR	UNIT	CH	DROPOUT
1	3	6	3/6
2	3	7	3/6
3	4	4	4/5
etc.			

2 Connect the Output Driver (e.g. MAG1) and magnet(s) to the driver to the output channels you are going to use. Initially, this will be in the alarm (i.e. Released) status.

3 Go to each Dicam unit shown in your list. In I/O Config : Output Types, set these channels to TYPE = NORMON. E.g. Using the list shown above, at Unit 3, set Output Channel 6 = NormOn.

Note : This will give an Output Timeout warning, because the device is not yet configured in the Netmon.

4 In Netmon : Monitor Config : Sensors/Trips, set the output channels according to the list you've prepared e.g. Set SENS01 Dropout = 3/6.

5 Clear alarms in individual units and check operation of outputs.

To check dropout channels

Using Netmon : User menu : Test Outputs :

Set the Dropout to 100% : e.g. Set SENS01DO = 100%. Check it has released.

Set Dropout = 0% - check it has energised

Note : If more than one Sensor D/O is using the same output channel, you must set all of these dropout devices to 0% before it will energise.