

MICROSave

SPEED CONTROL SYSTEM

operated by a B.M.S. and
with local control (I.C.P.)

SUPPLEMENTARY DATA

To be used in conjunction with Technical Data sheet 670578

TECHNICAL DATA

NUAIRE

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CI/SfB Ref

(57.7) Xh

Leaflet 670678

230V 1ph 50Hz

400V 3ph 50Hz

JANUARY 2001

Microsave speed control working in conjunction with a Building Management System where an individual panel IS required for control and fan status indication.

General

This MicroSave speed control system which is controlled by a Building Management System and a hand operated panel (known as the Interface Control Panel or I.C.P.), is suitable for use with most NuAire fans including DuctMaster Axials, Terminator roof extract, Mixed Flow Airmovers, Single Cabinet fans, Filtered Input units and System 2000 De-stratification system. Full details can be found in the MicroSave Speed Controls Applications Guide, NuAire Leaflet No. 670581.

This 5 or 3 position stepped MicroSave Speed Control is activated directly from a BMS for ON / OFF and speed selection via an analogue voltage signal taken directly to the MicroSave Control Module. Included is a facility for the BMS to hand over control to a locally operated I.C.P. and be able to override the I.C.P. if required. See the diagram below.

For matching this control with specific fans see MicroSave Speed Control 'Selection Guide' for the NuAire fan model chosen.

Coding

Two versions of the control are available one is 5 speed the other is 3 speed. The last letter of the code indicates the version i.e. MSCBMSANL4-3 is a 3 speed model.

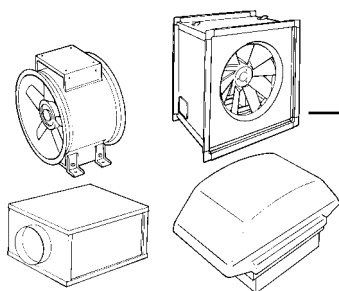
For coding insert the letters **BMSANL** in place of 'ON' in the standard MicroSave speed control code e.g.

MSCON4-5 and **MSCON4-3** become **MSCBMSANL4-5** and **MSCBMSANL4-3**

Standard codes can be found in the MicroSave Speed Control Selection sheets which are produced for each NuAire fan model range.

WITH LOCAL (I.C.P.). CONTROL

NuAire axial fan, NuAire Mixed Flow Fan,
NuAire In Line Fan & NuAire Roof Fan.



Control Module

Note:

The Control Module can be located anywhere in the mains supply to the fan. However, the nearer the Control Module is placed to the fan - the greater the savings in mains wiring.

SCHEMATIC DIAGRAM

Electrical isolator should be fitted in mains supply for maintenance purposes.

24 volts

Wiring between the ICP and the Control Module is 4 core screened signal cable 7 / 0.1mm (0.055mm²) PVC coated with a 230 volt outer insulation.

Mains wiring

I.C.P.

Building Management System

The BMS can control the operation of the fan(s) directly or hand over control to an I.C.P. for local control. The B.M.S. will control the fan(s) through voltage signals. These signals will be as follows:-

	MIN	MAX
7 volts = speed 5 (full speed)	6.868	7.5 (5 speed version)
6 volts = speed 4	5.846	6.886 (5 speed version)
5 volts = speed 3	4.828	5.5
4 volts = speed 2	3.808	4.826
3 volts = speed 1	2.788	3.806
2 volts = under local ICP control.	1.9	2.6
1 volt = 'OFF'	0.85	1.766

3-7 volts controls the speed of the fan(s).

2 volts will enable the fan to be controlled by an I.C.P.

1 volt switches the fan(s) 'OFF'.

If the B.M.S. chooses a speed then this will override a setting made locally at the I.C.P. After shutdown (B.M.S. 'OFF') the I.C.P. will revert to 'OFF' when startup (B.M.S. 'ON') is initiated.

Interface Control Panel (I.C.P.)

The LEDs on the ICP will indicate the following:

- Amber LED flashing = BMS has selected master 'OFF'
- Continuous Amber LED = Fan under local ICP control, no speed selected.
- Individual Green LED illuminated = Fan running at that speed under local ICP control
- When Amber LED is illuminated and a number of Green speed LEDs are also illuminated in a 'bar graph' type display = Fan under BMS control and running at the highest LED illuminated
- No LEDs illuminated = Either ICP not connected to fan or no power at fan.
- Continuous Red LED illuminated with all Green speed LEDs flashing in a downward sequence = ICP error. This specifically means that a thermal trip / overload condition has occurred and the 'Master OFF' has not been selected by the BMS.
- Rapidly flashing Red LED = 'Master OFF' has been selected by the BMS but the thermal trip / overload condition still exists.
- Continuous Amber LED with superimposed flashing Red LED = BMS communication error.
- Continuous Red LED = Press button on ICP to reset the system.

Typical Specification

The MicroSave speed control system shall comprise a control module and an Interface Control Panel (ICP) the control module shall be mounted in the power supply to the fan. The ICP shall be mounted in the occupied space for local control. The exact locations to be shown on the project drawings.

The module to be a robust galvanised steel enclosure containing all the electronic and mechanical components. The control module shall include a contactor and overload which shall be set to the current rating of the fan motor.

The ICP shall be constructed in ABS plastic with six LED indicator lights programmed to give the LED indication sequence as described on page 1

of NuAire Technical Data sheet No 670578.

A touch sensitive switch shall be provided on the ICP to give manual speed selection. The ICP shall be designed for surface mounting and be sized 147mm x 87mm 37mm and capable of being mounted in a plastic recessed back box so that a depth of only 9mm protrudes into the occupied space.

The method of speed control shall be by five steps (or three steps) derived from transformer tapings matched by NuAire to the fan chosen to eliminate harmonic motor noise. The transformer shall be mounted in the Control Module.

Voltage signals from the B.M.S. shall control the operation of the fan from OFF through speeds

1-5 or 1-3 and shall allow manual operation of the ICP to control fan speed during pre determined time periods selected by programming the BMS. The BMS shall be able to override the speed selected at the ICP to increase or decrease the fan speed, after which time the fan will revert to the speed previously set at the ICP.

The values of these signal voltages shall be shown on page 1 of NuAire Technical Data sheet 670578.

The B.M.S. shall be able to receive a fan fail signal from volt free contacts fitted in the MicroSave Speed Control Module. This signal is to be provided from the overloads fitted.

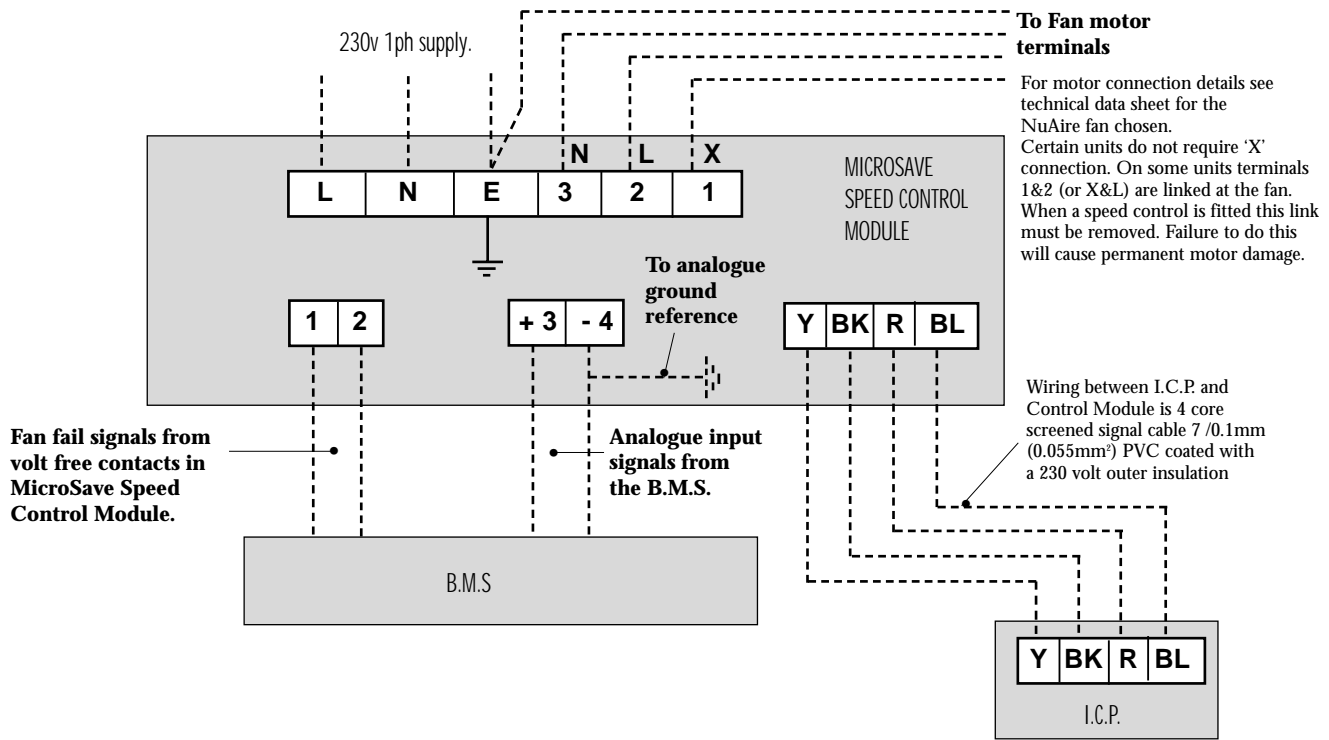
SUPPLEMENTARY DATA

Microsave Speed Control System

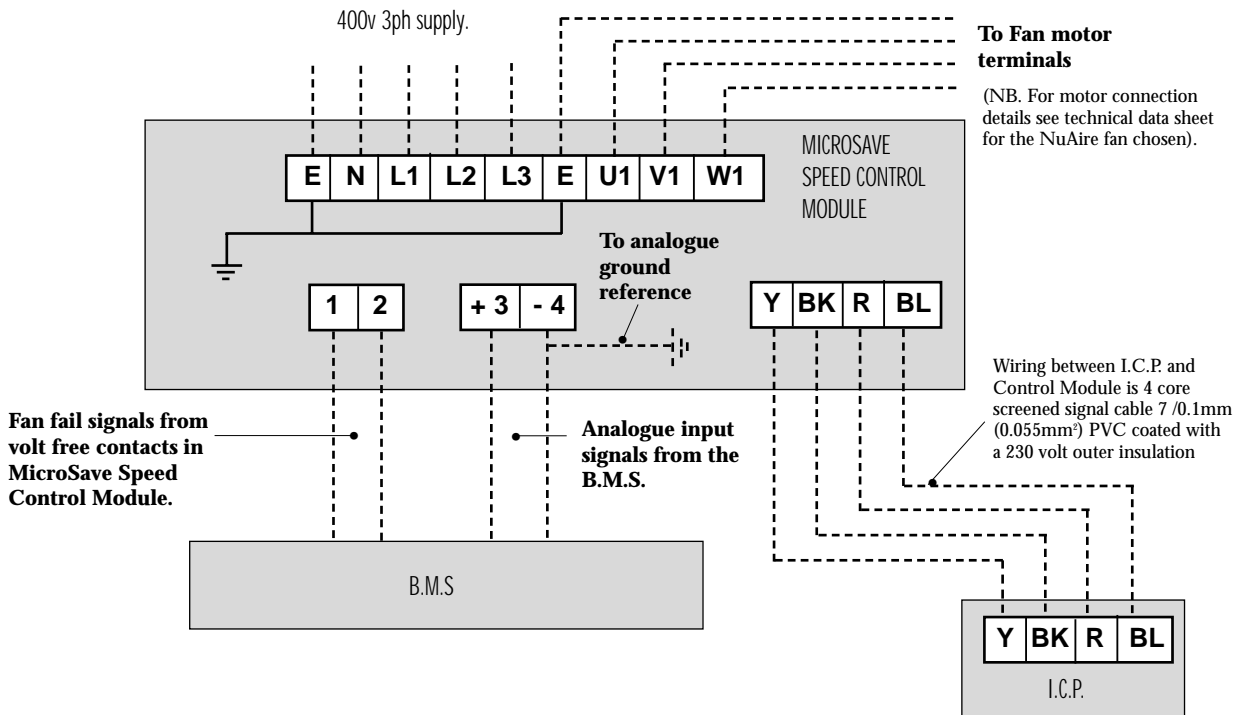
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Wiring diagram 1 phase



Wiring diagram 3 phase



Technical or commercial considerations may, from time to time, make it necessary to alter the design, performance and dimensions of equipment and the right is reserved to make such alterations without prior notice.