

XS Fan Switches & Sensors

Controls and Sensors for the XS Range

Installation and Maintenance Manual



The EMC Directive
2014/30/EU
The Low Voltage
Directive
2014/35/EU



1.0 IMPORTANT SAFETY INFORMATION

- Installation or replacement of units or spare parts must be carried out by a qualified or Nuaire approved service engineer/electrician and in accordance with IEE or local national wiring regulations.
- Isolate from power supply before removing any covers. During installation/maintenance ensure all covers are fitted before switching on the mains supply.
- All-pole disconnection from the mains as shown in the wiring diagram must be incorporated within the fixed wiring and shall have a minimum contact separation of 3mm in accordance with latest edition of the wiring regulations.
- This unit requires an earth connection.
- This appliance should not be used by children or persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge, unless they have been given supervision or instruction concerning the safe use of the appliance by a person responsible for their safety. Children shall not play with the appliance. Cleaning and user maintenance shall not be carried out by children.
- Maximum ambient temperature should not exceed 25°C for continuous operation or 35°C occasionally.

2.0 CODE DESCRIPTION

1	-	2	3
XS	-	AQ	6

1. Range: **XS**
2. Type
MFC = Remote Switch Control
PIR = Passive Infra-red Control
H = Humidity Control
AQ = Air Quality Control
TH = Temperature Control
3. Size/Type:
(excluding XS-MFC)
6 = Integral Sensor for 6" Fan
9 = Integral Sensor for 9" Fan
12 = Integral Sensor for 12" Fan
R = Remote Sensor (for all fan sizes)

3.0 XS-MFC REMOTE SWITCH CONTROL

Designed to work in conjunction with the XS range of fans and associated integral and remote sensors, the XS-MFC Remote Switch Control offers the user the following:

- On/Off.
- Maximum or Economy performance.
- Variable Speed Control.
- Forward/Reverse airflow.
- Auto/Manual operation.

Refer to the unit lift up lid for switch operating instructions.

The Remote Switch can control one fan or multiple fans, depending on the fan and type of sensor being used.

Up to 5x 6"/9" fans can be controlled by one XS-MFC.

Up to 2x 12" fans can be controlled by one XS-MFC.

Do not mix fans of different sizes on the same control.

3.1 SITING POSITION

Mount in a vertical plane with the grille at the bottom. Mount the switch 1.5 metres from the floor (minimum). Do not expose to excessive amounts of oil, grease or direct water spray.

Do not subject switches to a direct heat source in excess of 25°C (35°C occasionally).

3.2 INSTALLATION

Follow the following pictorial sequence.

Fig 1: Lift up panel & remove 2 screws to dismantle unit

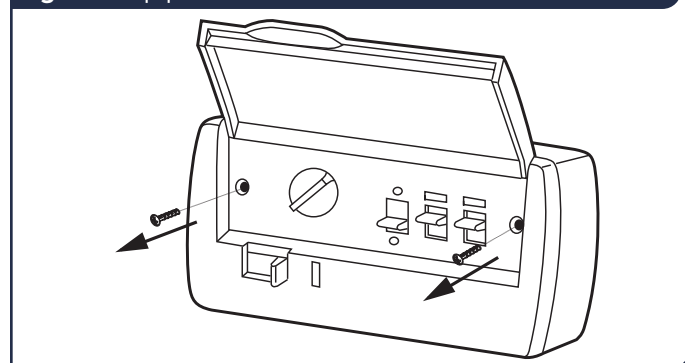


Fig 2: Push out backplate cable entry with a screwdriver

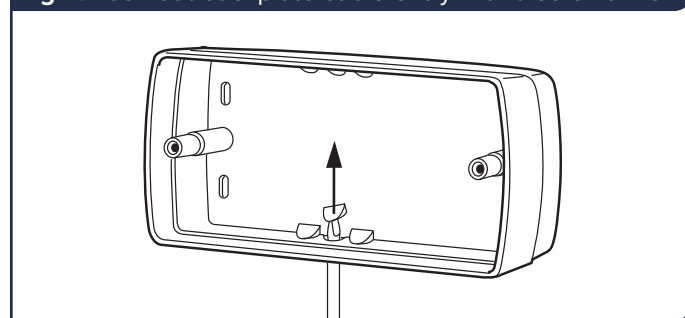


Fig 3: Spot through backplate and drill and plug the wall

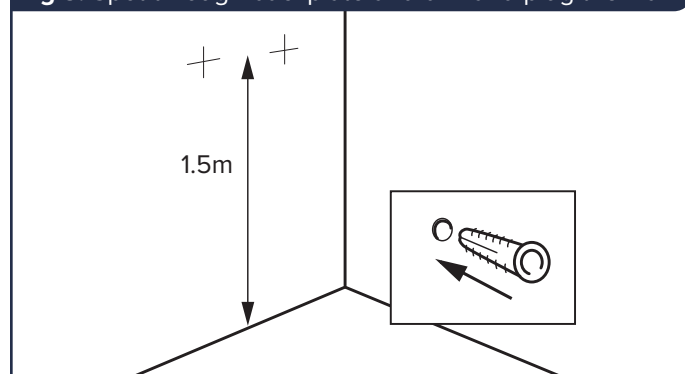


Fig 4: Fix backplate to the prepared wall

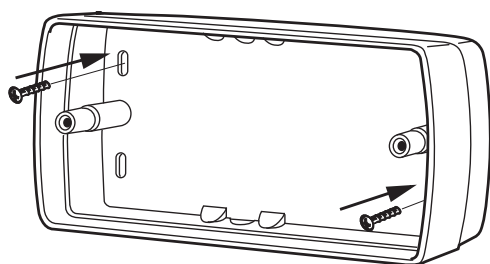


Fig 5: Feed approx. 200mm of supply cable into box

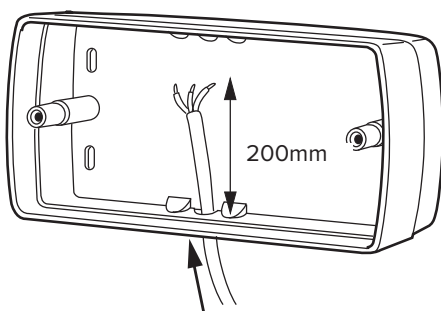


Fig 6: Connect the supply cable into the control block using the appropriate wiring diagram

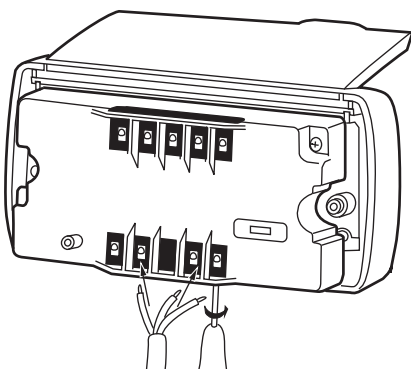
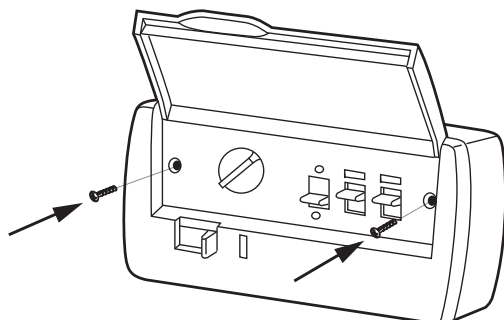


Fig 7: Hook lip of security strap (if fitted) in hinge socket. Fit the control into the backplate, secure and test.



4.0 INTEGRAL SENSORS

- **XS-PIR - Passive Infra-red Movement Detector**
Senses body movement.
Run on Timer is adjustable between 2 and 40 minutes.
- **XS-H - Humidity Sensor**
Senses relative humidity.
Adjustable between 30% and 90% RH.
Run on Timer is adjustable between 2 and 40 minutes.
- **XS-AQ - Air Quality Sensor**
Detects odours and tobacco smoke.
Adjustable to suit size requirements. Run on Timer is adjustable between 2 and 40 minutes.
- **XS-TH - Temperature Sensor**
Suitable for temperatures up to 25°C (occasionally 35°C)
- **XS-TA - Run on Timer**
Adjustable between 2 and 40 minutes.

ISOLATION

Before commencing work make sure that the unit is electrically isolated from the mains supply.

4.1 SITING

- Mounted inside a fan.
- Grille section adjacent to sensor must be changed to suit the sensor being used (see Fig 8).
- Do not expose to excessive amounts of oil, grease or direct water spray.
- Do not subject sensors to a direct heat source in excess of 25°C (35°C occasionally).

4.2 INSTALLATION

Follow the pictorial sequence on this page.

Fig 8: Push out the sensor area cover from the grille

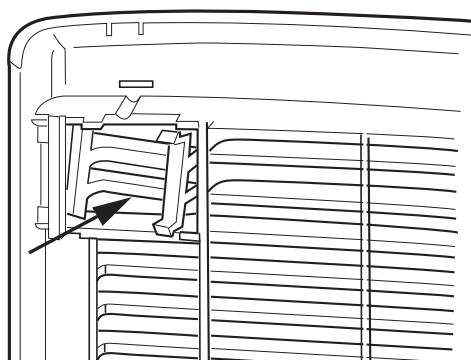


Fig 9: Remove the module plate

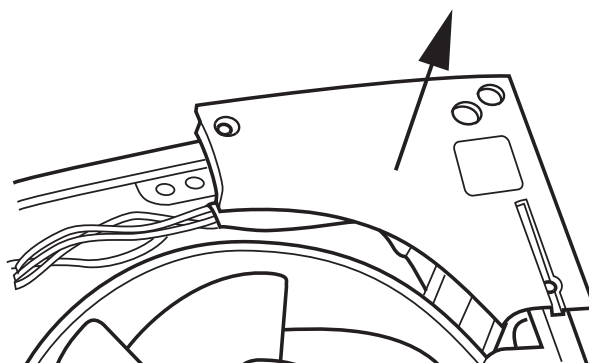


Fig 10: Connect sensor to fan using pre-wired plug

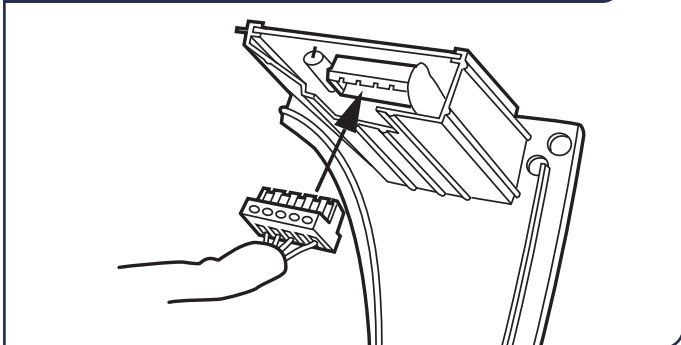


Fig 11: Screw the sensor module into position on the fan

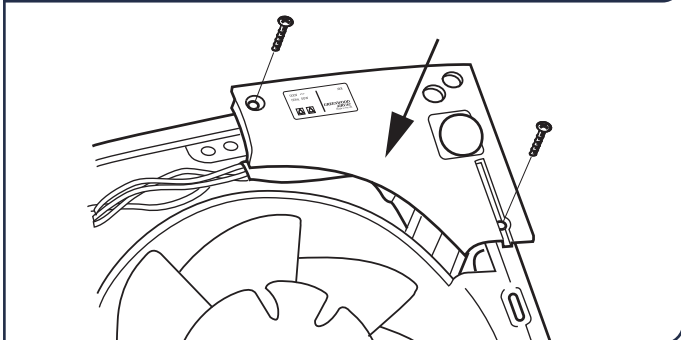
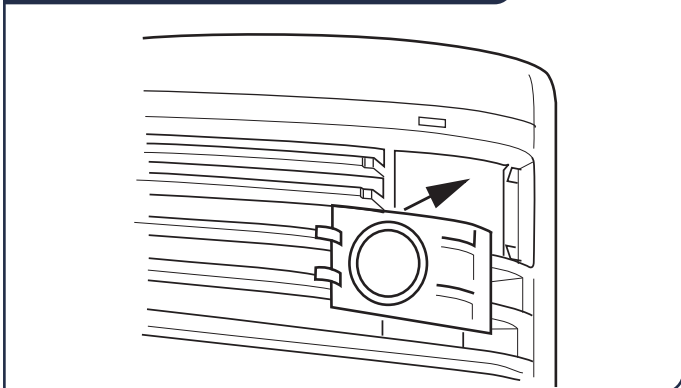


Fig 12: Fit new grille insert into main grille



5.0 REMOTE SENSORS

Designed to work in conjunction with the XS range of fans, the range of XS Remote Sensors offer the user the following functions:

- **XS-PIRR - Passive Infra Red movement detector**
Senses body movement.
Run on Timer is adjustable between 2 and 40 minutes.
- **XS-HR - Humidity Sensor**
Senses relative humidity.
Adjustable between 30% and 90% RH.
Run on Timer is adjustable between 2 and 40 minutes.
- **XS-AQR - Air Quality Sensor**
Detects odours and tobacco smoke.
Adjustable to suit size requirements.
Run on Timer is adjustable between 2 and 40 minutes.

Refer to the lift up lid for sensor operating instructions.

5.1 SITING

- Mount in a vertical plane.
- The grille in sensor box should be at the bottom.
- Mount the sensor 1.5 metres from the floor.
- Do not expose to excessive amounts of oil, grease or direct water spray.
- Do not subject switches to a direct heat source in excess of 25°C (35°C occasionally).

ISOLATION

Before commencing work make sure that the unit is electrically isolated from the mains supply.

5.2 INSTALLATION

Fig 13: Remove screws securing the cover to the box

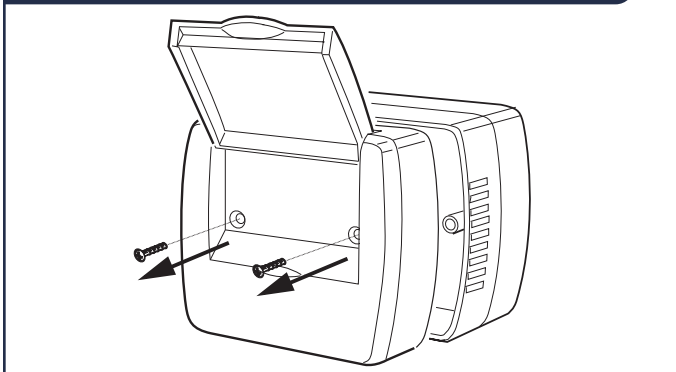


Fig 14: Knock out cable entry point and feed the supply cable through, allowing approx. 200mm of cable to protrude into box

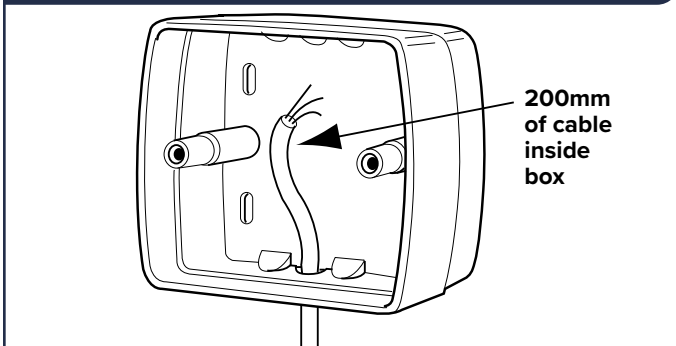


Fig 15: Drill and plug the surface and fix the back box to the wall

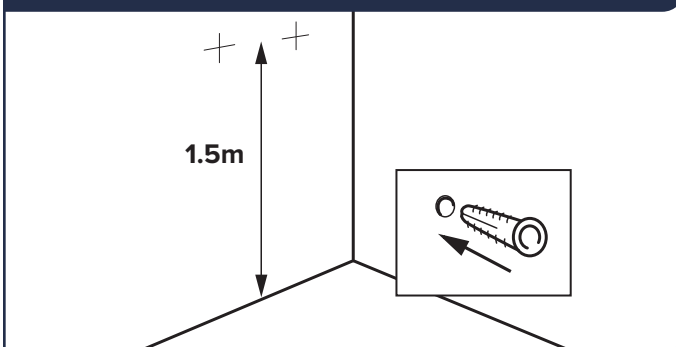


Fig 16: Wire in the sensor
(see wiring options in 6.0 WIRING on page 4)

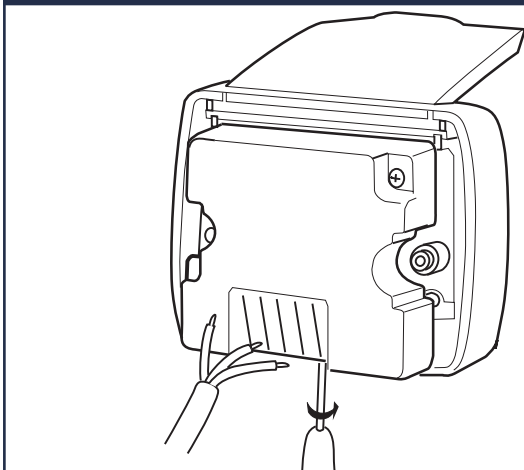
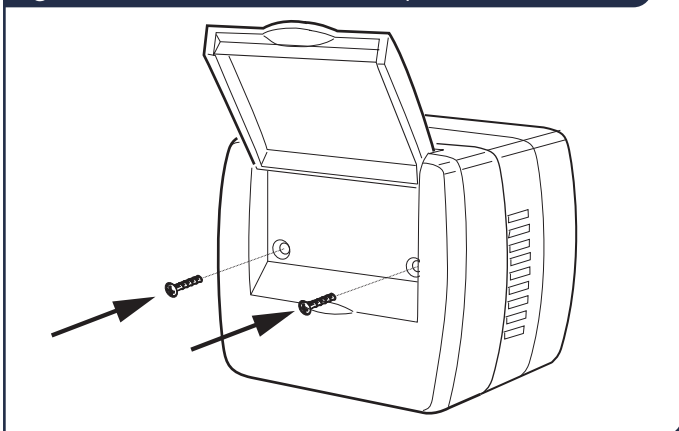


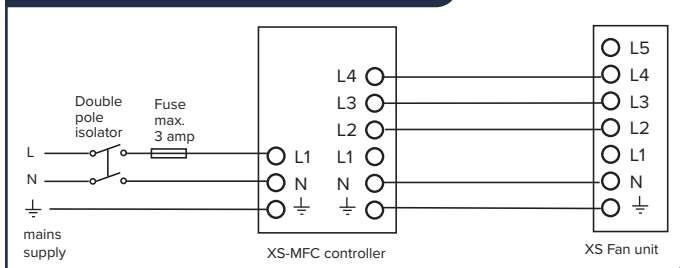
Fig 17: Screw sensor module into position on the wall



6.0 WIRING

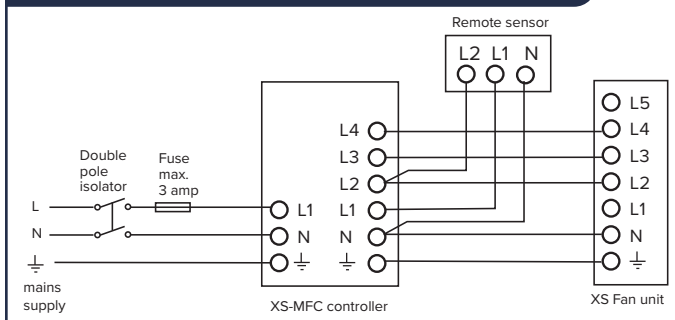
6.1 ELECTRICAL WIRING FOR ONE FAN

Fig 18: Supply/Extract Fan Operated via Remote XS-MFC Control



Remote switch may be set: On/Off, Forward/Reverse, Economy/Std. (variable speed), Auto/manual.

Fig 19: Supply/Extract Fan Operated via Remote XS-MFC Control and Remote Sensor

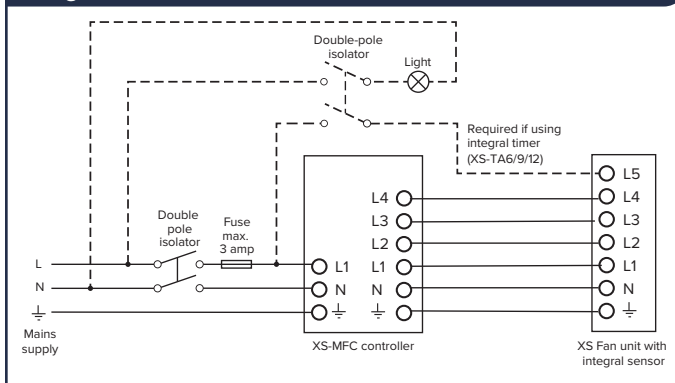


Remote switch may be set: On/Off, Forward/Reverse, Economy/Std. (variable speed), Auto/manual.

One or more remote sensors may be wired in parallel to one XS-MFC Control.

- Humidity Sensor: XS-HR
- Air Quality Sensor: XS-AQR
- Passive Infra-Red Sensor: XS-PIRR

Fig 20: Wiring a Remote XS-MFC Control with a integral Sensor



Remote switch may be set: On/Off, Forward/Reverse, Economy/Std. (variable speed), Auto/manual.

Maximum one integral sensor per fan 6/9/12 denotes unit size.

- Humidity Sensor: XS-H6/9/12
- Air Quality Sensor: XS-AQ6/9/12
- Passive Infra-red Sensor: XS-PIR6/9/12
- Temperature Sensor: XS-TH6/9/12
- Run-on Timer: XS-TA6/9/12

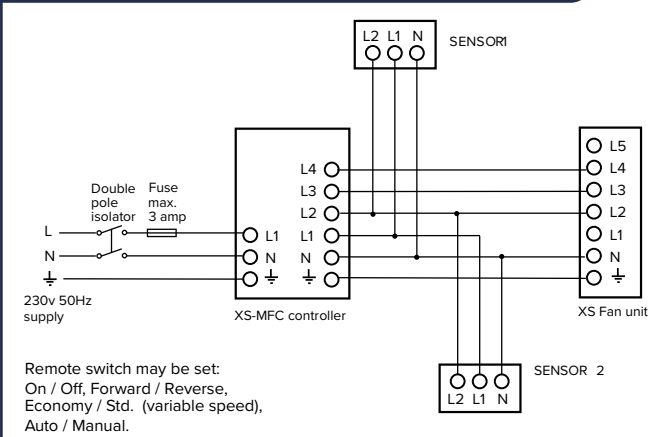
A single sensor will switch all fans if more than one fan is being operated by a single XS-MFC Control.

Note: Multi-Fan Options:

Up to 5 fans (size 6 or 9) can be controlled by one XS-MFC.
Up to 2 fans (size 12) can be controlled by one XS-MFC.

Do not mix different fan sizes on the same XS-MFC control.

Fig 21: Supply/Extract Fan Operated via Remote XS-MFC Control and Multiple Remote Sensors



Note: If 2 x 12" fans or 3 x 6" or 9" fans are used in the same operating mode in the same room they should all be controlled from the same MFC speed control. This avoids the possibility of one fan (if speed controlled at a lower flow rate) being stalled by the other fan(s).

Adequate make-up air provision sufficient to provide ventilation in accordance with building regulations is required in all rooms. This should be checked during commissioning with all fans in the same room running together in all possible configurations.

The automatic shutters, motor bearings should be frequently inspected and maintained to ensure they open fully/operate satisfactorily. Use of an RCD is recommended.

Always confirm airflow direction before commissioning.

ISOLATION

Before commencing work make sure that the unit is electrically isolated from the mains supply.

6.2 ELECTRICAL WIRING FOR MULTIPLE FANS

Fig 22: Multiple Fans Operated via Remote XS-MFC Control

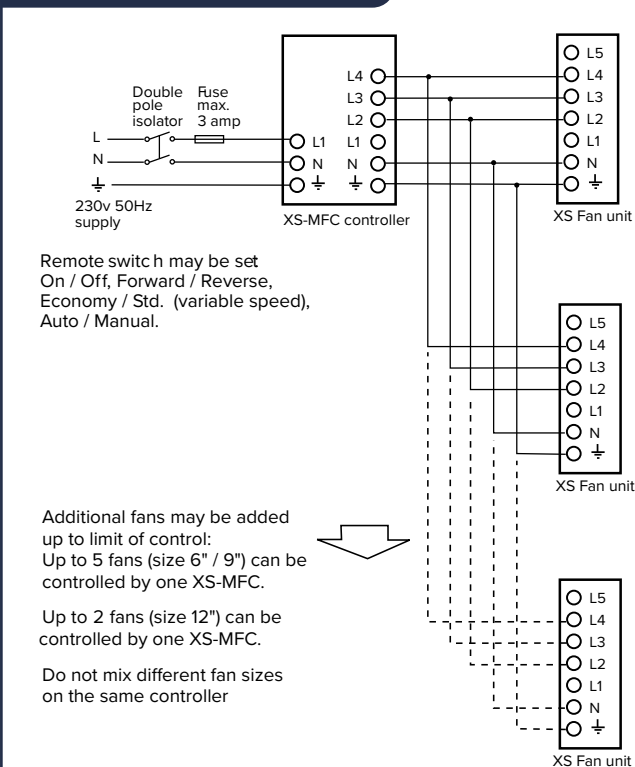


Fig 23: Multiple Fans Operated via Remote XS-MFC Control and a Remote Sensor

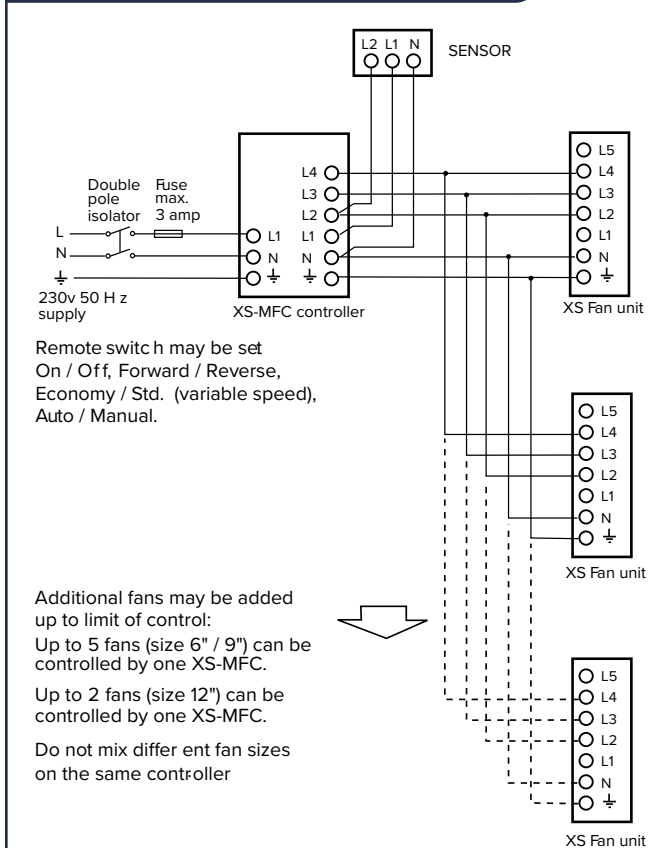
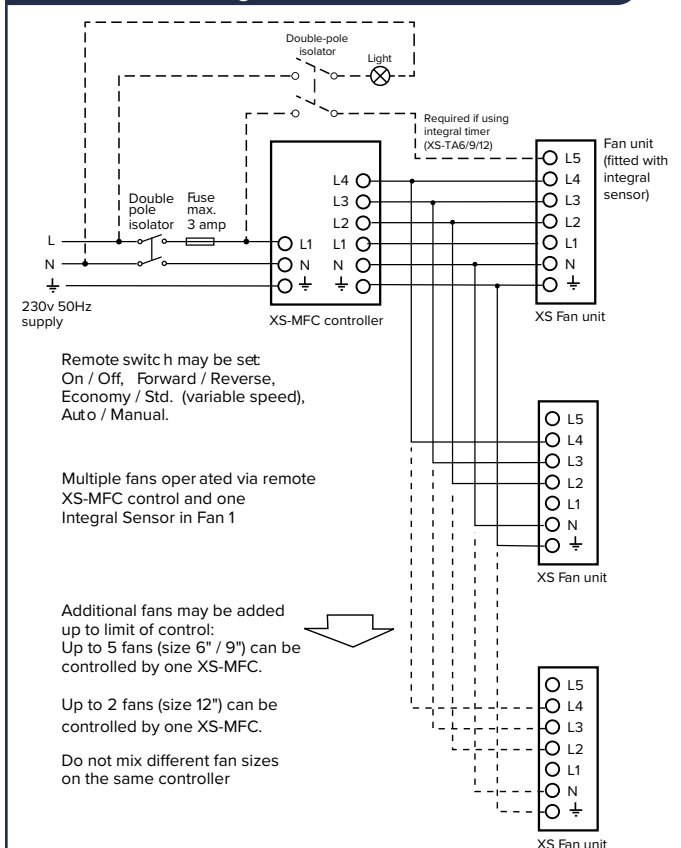


Fig 24: Multiple Fans Operated via Remote XS-MFC Control and an Integral Sensor in Fan 1



7.0 MAINTENANCE

Periodically, at least once a year, or more frequently in case of heavy use, remove the dirt and encrustation from the casing.

8.0 WARRANTY

The 3 year warranty starts from the day of delivery and includes parts and labour for the first year. The remaining period covers replacement parts only.

This warranty is void if the equipment is modified without authorisation, is incorrectly applied, misused, disassembled, or not installed, commissioned and maintained in accordance with the details contained in this manual and general good practice.

The product warranty applies to the UK mainland and in accordance with Clause 14 of our Conditions of Sale. Customers purchasing from outside of the UK should contact Nuaire International Sales office for further details. A unit returned to Nuaire should be suitably protectively packaged and clearly marked with the 'returns number' obtained from Nuaire prior to posting.

Failure to maintain the unit as recommended will invalidate the warranty.

9.0 END-OF-LIFE AND RECYCLING

Ensure that Nuaire product is made safe from any electrical / water / refrigerant supplies before dismantling commences. This work should only be undertaken by a qualified person in accordance with local authority regulations and guidelines, taking into account all site based risks.

Where possible Nuairé use components which can be largely recycled when the product reaches its end-of-life:

- Fans, motors, controls, actuators, cabling and other electrical components can be segregated into WEEE recycling streams.
- Sheet metal parts, aluminium extrusion, heating/cooling coils and other metallic items can be segregated and fully recycled.
- EPP, plastic ducting, nylon corner pieces, plastic heat exchangers, packaging material and other plastic components can be segregated into mixed plastic and widely recycled.
- Cardboard packaging, wood, used filters and other paper components can be largely recycled or fully processed in energy from waste centres.
- Remaining Items can be further segregated and processed in accordance with the zero waste hierarchy. Please call After Sales Support for further information on items not listed above.

10.0 AFTER SALES AND REPLACEMENT PARTS

For technical assistance or further product information, including spare parts and replacement components, please contact the After Sales Department.

If ordering spares please quote the serial number of the unit together with the part number, if the part number is not known please give a full description of the part required. The serial number will be found on the identification plate attached to the unit casing.

Telephone 02920 858 400
aftersales@nuaire.co.uk

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 changes without prior notice.

11.0 NOTES

[illegible]

