PRODUCT INFORMATION & INSTALLATION GUIDE 2023

Airius Model 100/EC
STANDARD SERIES

www.airius.co.uk

AIRIUS®
saving you energy

MODEL 100/EC DIMENSIONS AND PROPERTIES

495 mm
(19.4 in)

843 mm
(33.1 in)

Free hanging units can be angled up to 90° off vertical

UNIT SIZE	STANDARD
Weight:	20.4 kgs *(45 lbs)*
Height to Rim:	N/A
Total Height:	843 mm *(33.1 in)*
Diameter:	495 mm *(19.4 in)*

MOTOR	230V @ 50 Hz
Watts*:	390
RPM*:	1690
L/S*:	812 *(1722 CFM)*
m³/hr:	2925
Centre Line Velocity[1]:	0.71 m/s @ 30 m
AMPS*:	2.50

*Motor data provided by motor manufacturer and is subject to change at anytime
[1]Velocity profile tested in situ

COVERAGE

	Heating	Cooling
Ceiling Height =	Up to 32 m *(105 ft)*	Up to 22 m *(72 ft)*
Nozzle Height =	Up to 30.5 m *(100 ft)*	Up to 20.5 m *(67 ft)*
Floor Area =	Up to 232 m² *(2500 ft²)*	Up to 148 m² *(1600 ft²)*

All data is indicative only and can change subject to application. For more accurate design please contact Airius.

MOTOR

Single Phase

Electrically commutated, variable speed 92% efficient motor

German EBM Papst EC motor

230 Volt @ 50/60 Hz

OPERATING TEMPERATURES

Operating Temperature   = -25°C (-13°F) - 60°C (140°F)

HOUSING

PC/ABS Resin - Inc. internal fixed blade stator, nozzle and cowl

5VA flame resistance rating

1.8 m steel safety leash cable (fastened to housing)

Applicable to Titan Series Upgrade - Chemical resistant ABS resin housing and stator blades with stainless steel fixings

INGRESS PROTECTION

IP54 Rated

NOISE LEVELS

Sound Pressure Level   = 40.7 dB(A)

Calculated from nozzle of unit to head height when installed at maximum ceiling height

For additional noise level information contact Airius

COLOUR

Cool gray 2C - Off white as standard

Can be tailor painted to your colour specifications
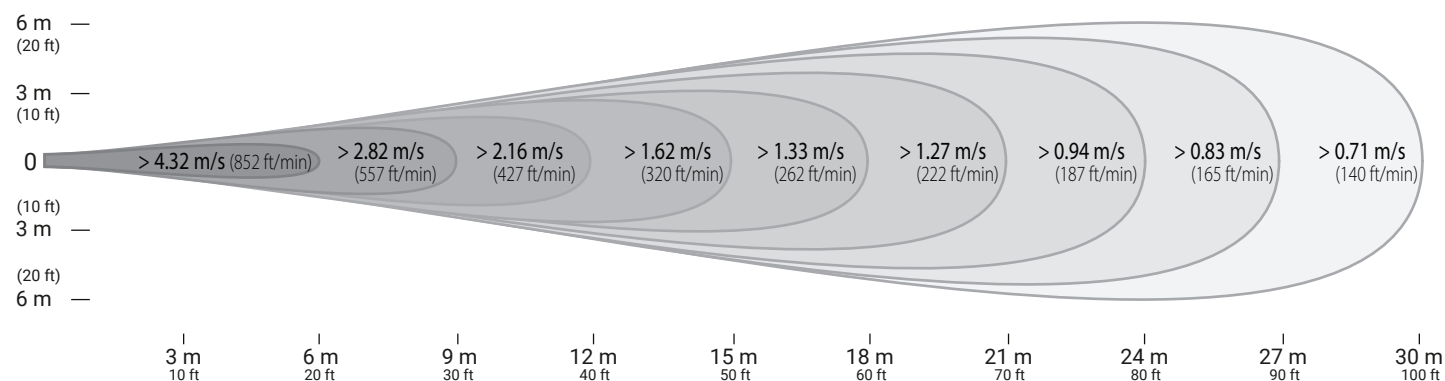
Titan Series Upgrade - Black as standard

ACCESSORIES & OPTIONS

On/off speed controls allow for variable output from Airius unit.

EC controls available

Fully BMS controllable

Bacnet Protocol for individual fan control

For horizontal installations Airius recommend the use of a cradle, a second cable or a rod attachment to support the fan nozzle

WARRANTY

5 years parts and workmanship from shipping date
120 day money back guarantee (T's & C's apply)

![Airius logo] AIRIUS® saving you energy

VELOCITY PROFILE

6 m (20 ft)										
3 m (10 ft)										
0	> 4.32 m/s (852 ft/min)	> 2.82 m/s (557 ft/min)	> 2.16 m/s (427 ft/min)	> 1.62 m/s (320 ft/min)	> 1.33 m/s (262 ft/min)	> 1.27 m/s (222 ft/min)	> 0.94 m/s (187 ft/min)	> 0.83 m/s (165 ft/min)	> 0.71 m/s (140 ft/min)	
(10 ft) 3 m										
(20 ft) 6 m										

3 m 10 ft	6 m 20 ft	9 m 30 ft	12 m 40 ft	15 m 50 ft	18 m 60 ft	21 m 70 ft	24 m 80 ft	27 m 90 ft	30 m 100 ft

UNIT PLACEMENT

PREPARATION

Install electrical circuit(s) and outlet(s) in accordance with national and local electric codes.

Outlets should generally be mounted vertically unless a "twist/locking" type is being used.

Wall switch may be installed in circuit to disable power and prevent electrical hazards when servicing.

Confirm electrical continuity of Airius unit on the ground before permanently mounting in the ceiling.

MAINTENANCE

Frequency of cleaning will vary by application and environment.

You may clean the plastic housing with a damp warm cloth, using mild household detergents.

Do not use petroleum products, thinners or solvents to clean any part of the Airius unit.

If the Airius unit fails, contact manufacturer.

MATERIALS & PROPERTIES

Constructed from recyclable materials.

The outer shell, stator and fan blades are fire rated 5VA materials.

Power cord is a 1.8 m, 3 wire, 1.02 mm diameter 300VAC rated electrical cord - CE/EU compliance rated as HO5VV (PLUG NOT SUPPLIED).

Electrically commutated, variable speed 92% efficient motor.

Motor is thermally protected. Shutoff is at 135°C & reset is at 125°C.

No lubrication required. Bearings are sealed.

OPERATION

Designed to operate 24 hours-a-day, 7 days-a-week to maintain air circulation/thermal equalization/humidity equalization.

Use optional speed control to fine tune RPM if needed.

INSTALLATION

Do not hard connect fans in excess of 10 kgs unless agreed with Airius prior to Installation. When attaching it is preferred if some chain or cable is used between fan and the support. However it is not imperative.

Hang from the ceiling, typically 300 mm (12") - 450 mm (18") from the roof deck to fan intake.

For cooling applications fans can be installed slightly lower. Contact Airius for design details and assistance.

The Airius unit performs best when air column from the nozzle is unimpeded to the floor.

The Airius unit should not be mounted directly in front of heat ducts, vents or any other high heat source.

Use professionally installed hardware, capable of supporting a minimum of five times the weight of the fan unit.

Hardware to hang the unit includes but is not restricted to: Hooks, chains, cables, carabiners, bridle rings, beam clamps and bolts.
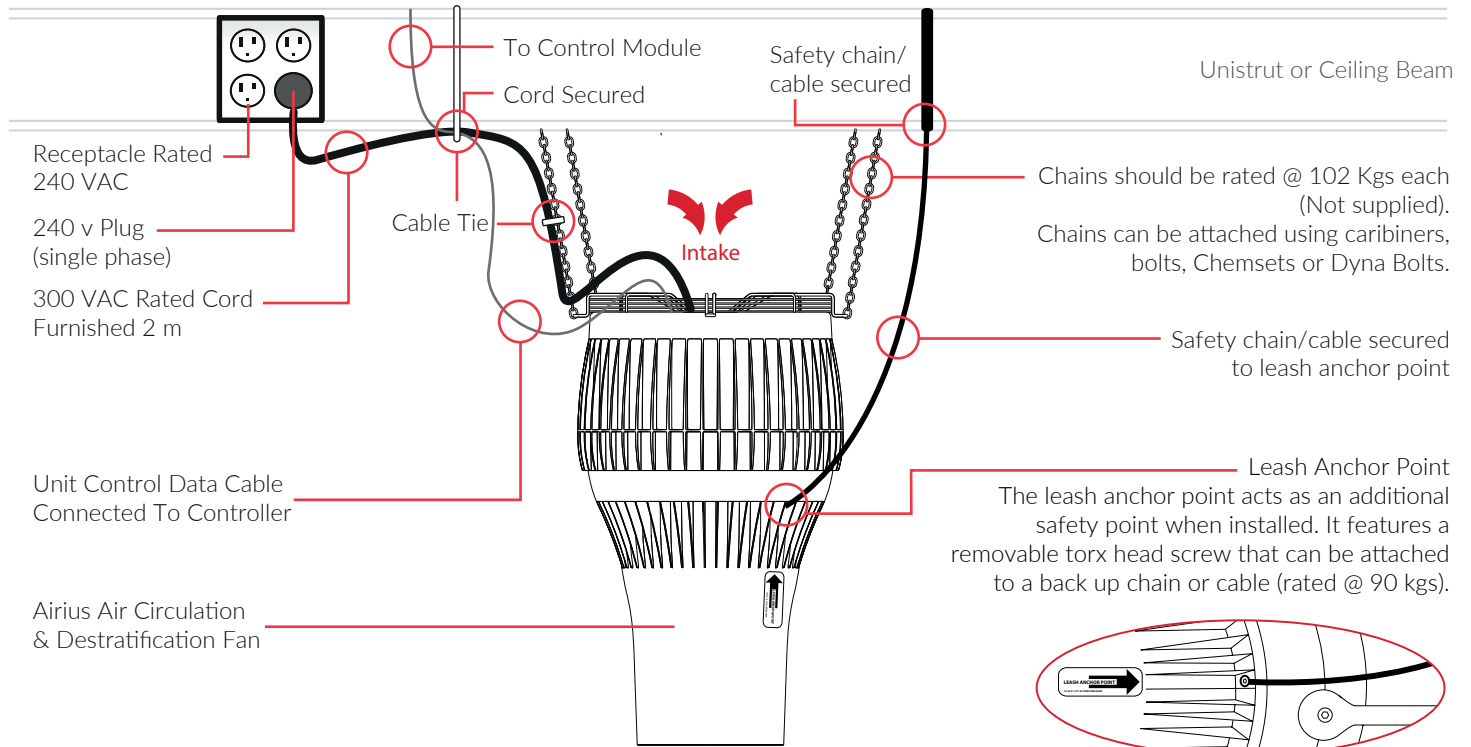
Density of the placement is directly related to the effectiveness, performance and savings.

Mount out of reach from people and animals.

Floor plans, mezzanines, office locations, machinery, people placement, plumbing, lighting, duct work, electrical systems, natural light/air systems, cranes, doors, windows, ventilation and fire suppression systems are all factors in properly locating the Airius system within the ceiling.
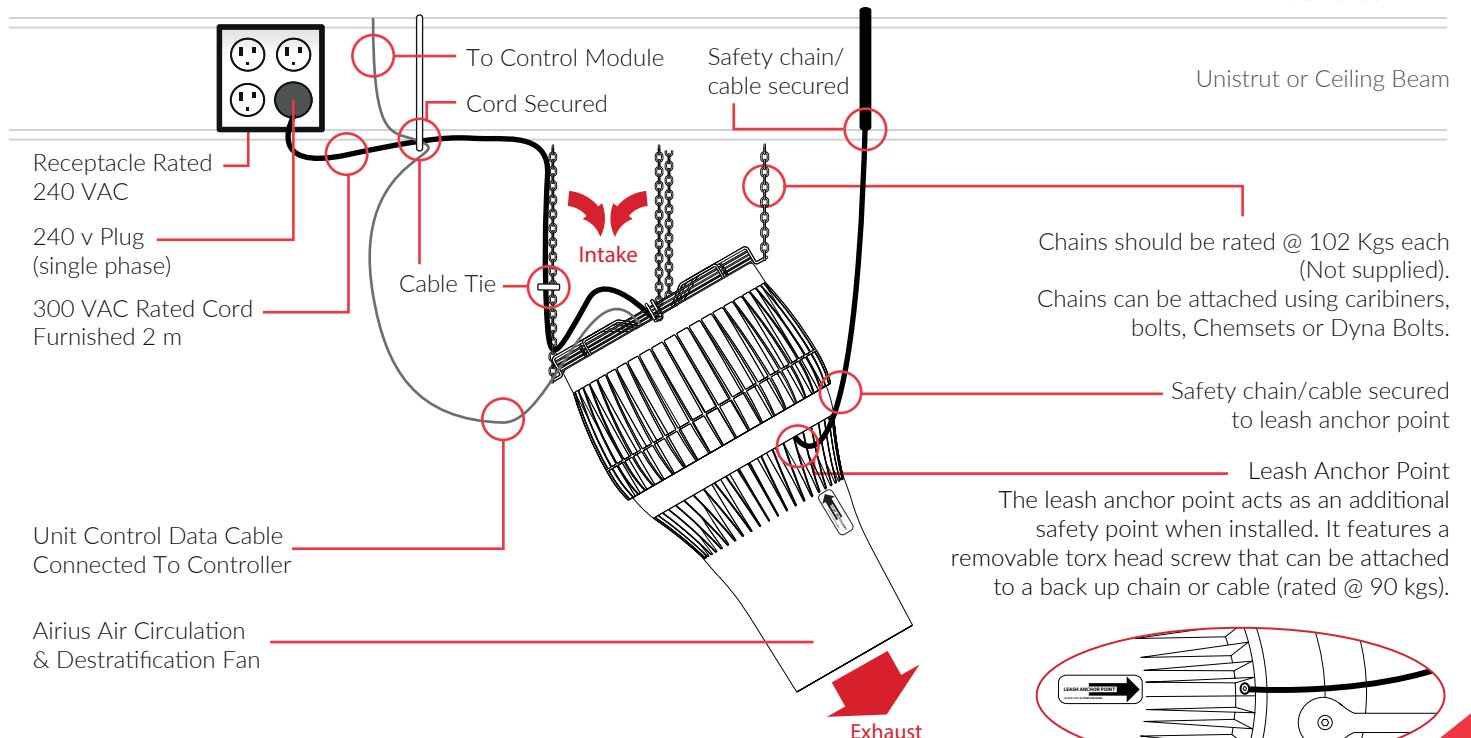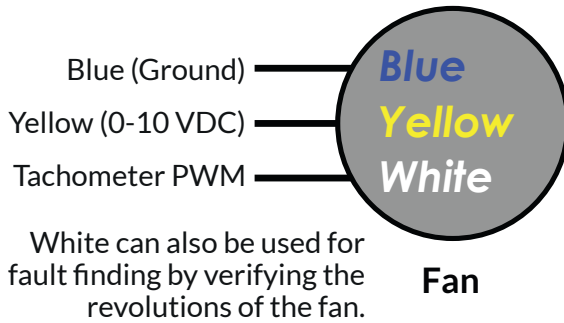
CHAIN HUNG (STRAIGHT)

PLUG NOT SUPPLIED

To Control Module

Cord Secured

Safety chain/
cable secured

Unistrut or Ceiling Beam

Receptacle Rated
240 VAC

240 v Plug
(single phase)

Cable Tie

Intake

Chains should be rated @ 102 Kgs each
(Not supplied).
Chains can be attached using caribiners,
bolts, Chemsets or Dyna Bolts.

300 VAC Rated Cord
Furnished 2 m

Safety chain/cable secured
to leash anchor point

Unit Control Data Cable
Connected To Controller

Leash Anchor Point
The leash anchor point acts as an additional
safety point when installed. It features a
removable torx head screw that can be attached
to a back up chain or cable (rated @ 90 kgs).

Airius Air Circulation
& Destratification Fan

CHAIN HUNG (ANGLED)

PLUG NOT SUPPLIED

To Control Module

Cord Secured

Safety chain/
cable secured

Unistrut or Ceiling Beam

Receptacle Rated
240 VAC

240 v Plug
(single phase)

Intake

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Airius Air Circulation
& Destratification Fan

Exhaust

BMS CONTROL WIRING

Blue (Ground)

Yellow (0-10 VDC)

Tachometer PWM

Blue
Yellow
White

White can also be used for fault finding by verifying the revolutions of the fan.
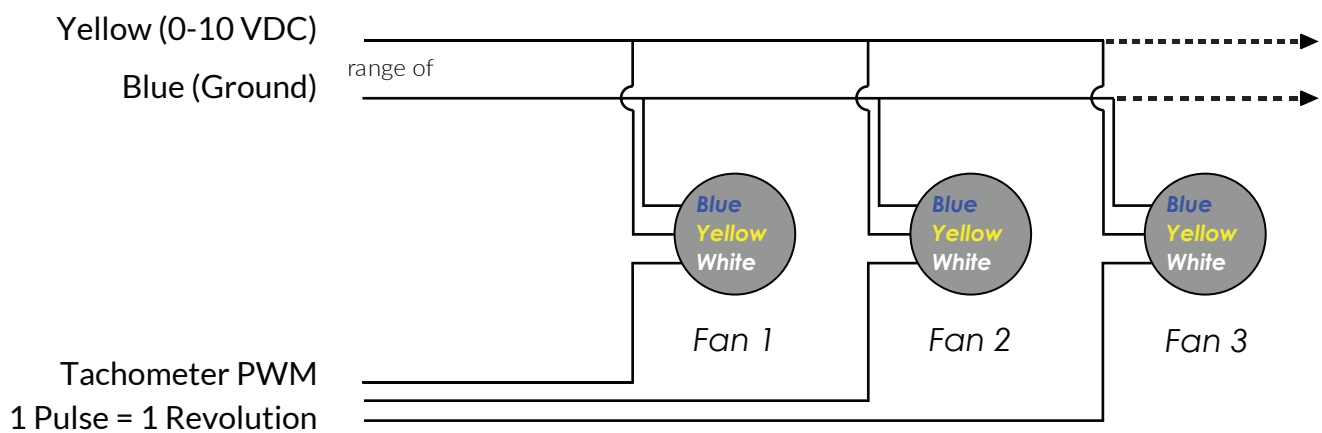
Fan

GENERAL NOTES

0-10 V signal allows infinitely variable open loop speed control

Connecting the red and yellow leads will allow EC fans to operate at full speed

A single controller can be used to control multiple fans with the same speed setting

The BMS generates this voltage to send to the signal (yellow)

Yellow is labelled as 0-10VDC because that is the acceptable range of voltages that the fan will accept

Yellow (0-10 VDC)

Blue (Ground)

range of

Blue
Yellow
White

Blue
Yellow
White

Blue
Yellow
White

Fan 1

Fan 2

Fan 3

Tachometer PWM
1 Pulse = 1 Revolution

![Airius logo - saving you energy]

(0-10V) POTENTIOMETER EC FAN SPEED CONTROLLER

Technical Data

Voltage: 230VAC – 50/60Hz
Output: 0-10 Vdc > 1 kOhm (max 8 mA)
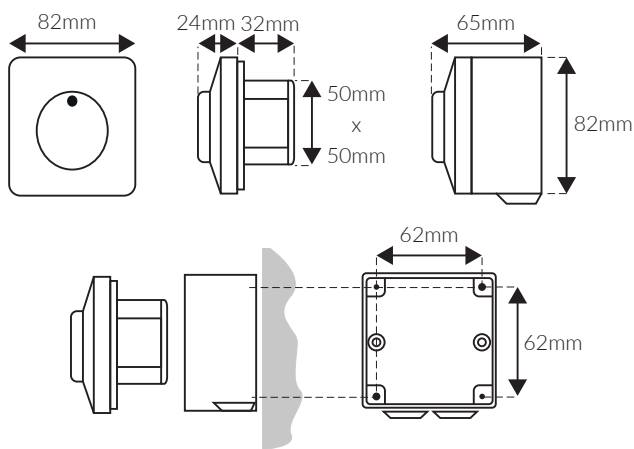
1 X EC CONTROLLER REQUIRED PER CIRCUIT.

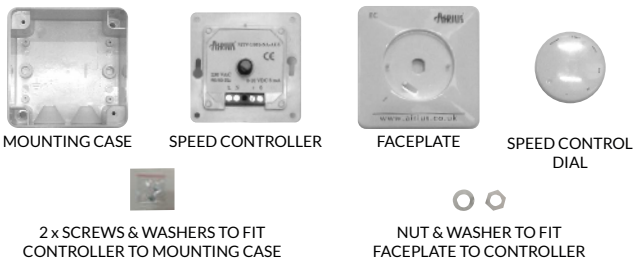**PLEASE CONTACT AIRIUS FOR RECOMMENDED QUANTITY OF FANS PER CONTROLLER FOR YOUR UNIQUE APPLICATION.**

WARRANTY

Two years from delivery date against defects in manufacturing. Any modifications or alterations to the product relieve the manufacturer of all responsibility.

The manufacturer bears no responsibility for any misprints or mistakes in this data, and modifications or improvements to the product can be made at any time after date of publication.
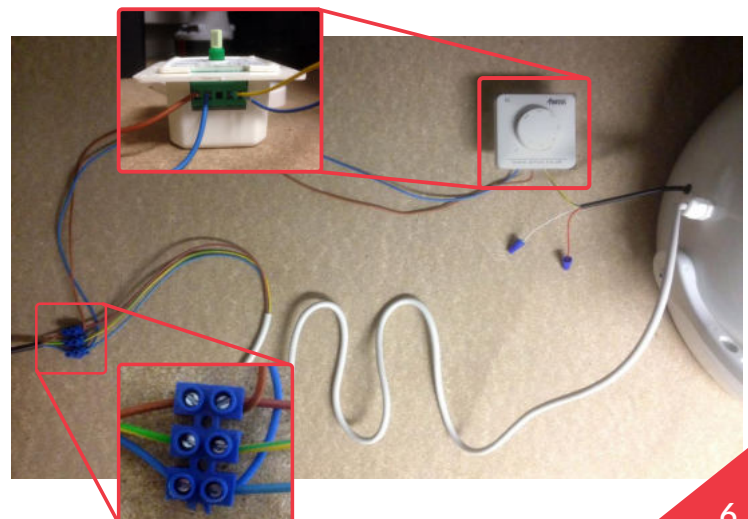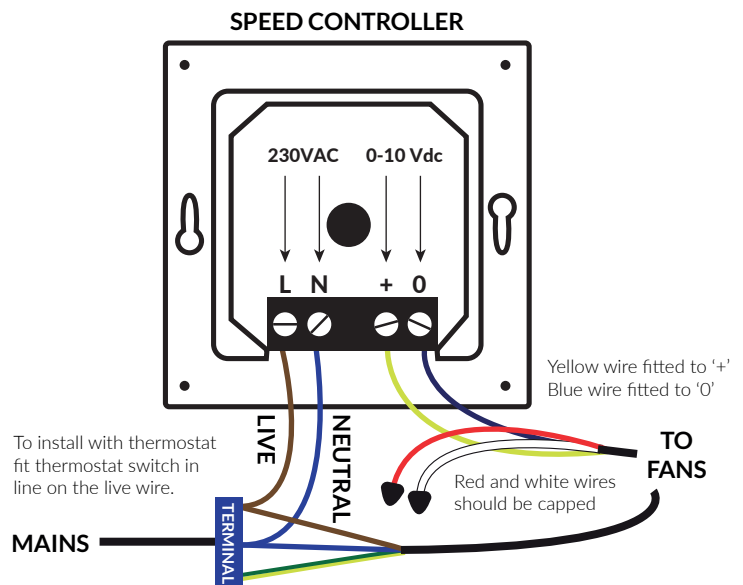
DIMENSIONS

82mm
24mm 32mm
65mm
50mm x 50mm
82mm
62mm
62mm

WIRING

SPEED CONTROLLER

230VAC   0-10 Vdc

L   N   +   0

Yellow wire fitted to '+'
Blue wire fitted to '0'

To install with thermostat fit thermostat switch in line on the live wire.

LIVE   NEUTRAL

TO FANS

Red and white wires should be capped

MAINS   TERMINAL

COMPONENTS

MOUNTING CASE   SPEED CONTROLLER   FACEPLATE   SPEED CONTROL DIAL

2 x SCREWS & WASHERS TO FIT CONTROLLER TO MOUNTING CASE

NUT & WASHER TO FIT FACEPLATE TO CONTROLLER

PC/ABS

INSET MOUNTING (IP44)

Break mains voltage. Connect according to diagram. Mount the inner case to the wall with the connections pointing down. Mount cover with nut to the wall. Push knob in place at off position.

SURFACE MOUNTING (IP54)

Break mains voltage. Mount surface mounting case to the wall together with included grommets. Connect according to diagram. Mount inner case in surface mounting case with included screws. Mount cover with nut to surface mounting case. Push knob in place at off position. When needed a 5mm hole for condensation water is to be drilled at the bottom of the surface mounting case.

IN CASE OF FAULTY OPERATION

Please check: right voltage is applied, all connections are correct, the machine to be regulated is functioning.

TRANSPORT AND STOCK KEEPING

Avoid shocks. Stock in original packaging. Avoid extreme conditions.

MAINTENANCE

In normal conditions the controllers are maintenance-free. If soiled clean with dry or dampish cloth. In case of heavy pollution clean with a non-aggressive product. In these circumstances the controller should be disconnected from the mains. Pay attention that no fluids enter the controller. Only reconnect the controller to the mains when it is completely dry.

All works may only be carried out by skilled personnel following the local regulations and AFTER the controller is completely separated from the mains.

CAUTION

Electrical installations should only be carried out by qualified personnel only. Follow safety measures to avoid electric shock.

According to the low voltage directive: 2006/95/EC/
The EMC directive: 2004/108/EC

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