



Air Vent Technology Ltd,

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QST/EC PLANTROOM TWIN FANS

Installation, Operation & Maintenance Manual

Introduction

Designed for internal applications, the QST/EC range encompasses models of direct driven centrifugal fan units with airflow duties up to 3.5m³/s

Motor windings are fitted with an auto-reset thermal cut-out.

Motors are pre-wired to an external terminal box speed controller, auto-changeover & isolator.

General Construction

Casework is manufactured from 0.9mm to 1.6mm thick galvanised sheet steel with an 'O' class foam / barrier mat insulation to provide acoustic insulation.

Access is via a removable top cover.

Fitted backdraught shutters prevent recirculation via inoperative fan.

Inspection Upon Receipt Of Goods

Immediately upon receipt of any goods, a careful inspection should be undertaken to ensure nether damage has occurred nor parts missing.

Particular attention should be paid to the fan impeller, motor shaft, anti-vibration mounts, flexible connection, coil connection & casework.

In the event of such damage or loss having occurred, inform AVT (01264 356 415) WITHIN 3 WORKING DAYS of the delivery date, giving the serial number which can be found on the nameplate. After this period we will be unable to entertain any claim for loss or damage.

Handling

Units being craned into position must be handled with care to avoid damage.

Installation

When installing our equipment, the following must be observed.

Safety: It is the responsibility of the installer to ensure that the installation complies with the legal regulations and the current HEALTH AND SAFETY AT WORK ACT.

Ambient Temperatures: The range of units covered by this manual are designed for use in an environment where the ambient air temperature is unlikely to exceed 40°C.

Mounting: These units must be mounted in the horizontal plane. Bottom access can be accommodated if advised at time of order.

Positioning

All units should be mounted on a completely flat base.

QST/EC units have integral mounting points.

Duct Connections: Adjoining ductwork should always be independently supported to avoid undue stress on the unit casing. Impellers are statically and dynamically balanced, anti-vibration mounts and fast clamps are available to suit.

Access: All units are designed with easily removable components for maintenance purposes. Sufficient room should be allowed to allow components to be withdrawn.

Electrical Wiring

Electrical supply must be fully isolated before attempting to affect any work on the unit.

All wiring should be carried out by a competent electrician and should comply fully with the current I.E.E. Wiring regulations.

The electrical supply must be as stated on the nameplate.

When the wiring is complete, check for free & correct rotation of the fan impeller

Maintenance

6 Monthly: The fan impeller should be carefully cleaned with a brush. This will prevent the impeller from becoming unduly dirty and become unbalanced.

12 Monthly: The security and integrity of all fastenings should be checked. Particular attention should be paid to the impeller fixing onto the fan shaft

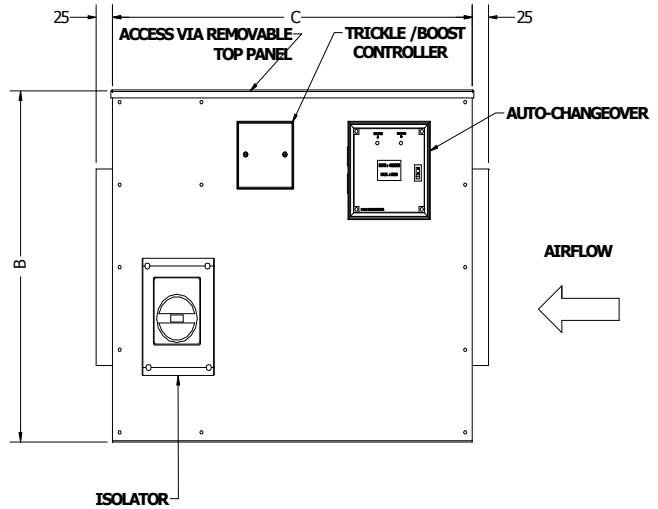
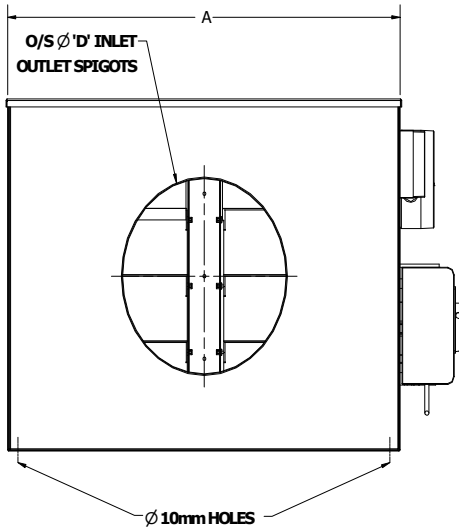
	Motor Power	Phase	FLC
QST150EC	52W	1Φ	0.40A
QST200EC	70W	1Φ	0.55A
QST250EC	170W	1Φ	1.40A
QST310EC	510W	1Φ	3.10A
QST350EC	450W	1Φ	2.90A
QST450EC	1.0kW	3Φ	1.60A
QST560EC	3.1kW	3Φ	4.90A



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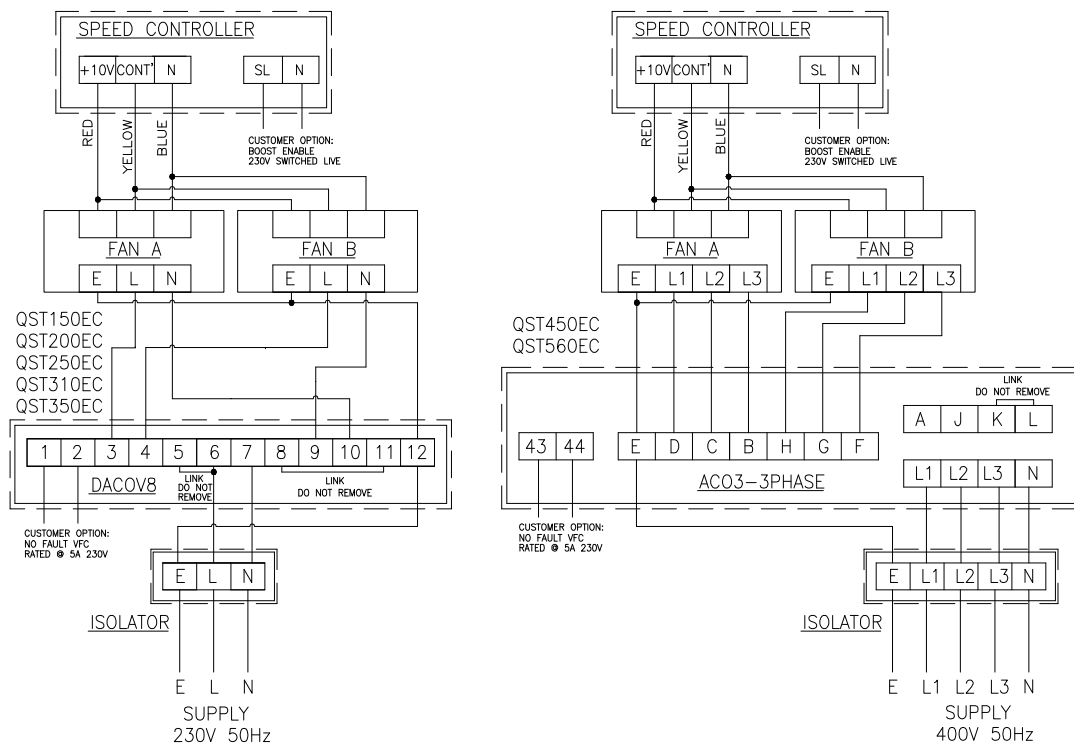
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MODEL	A	B	C	D	WEIGHT	DETAILS		
						TRICKLE BOOST	ISOLATOR	AUTO CHANGEOVER
QST150EC	450	250	400	150	20 kg	YES	YES	YES
QST200EC	450	350	450	200	27 kg	YES	YES	YES
QST250EC	600	450	550	250	40 kg	YES	YES	YES
QST315EC	850	450	800	310	62 kg	YES	YES	YES
QST350EC	950	550	900	350	80 kg	YES	YES	YES
QST450EC	1200	650	1200	450	131 kg	YES	YES	YES
QST560EC	1500	750	1500	560	217 kg	YES	YES	YES

Fan Wiring





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Duty Sharing Mode

This is the factory set option, links HD1 is parked, and duty sharing is in operation. Switching the unit on via the on/off switch on the front of the panel automatically starts the diagnostic sequence.

Diagnostic Sequence

This is carried out, at switch on, to ensure both motors are correctly wired and capable of performing duty / stand-by operation:

1. Motor B runs for 30 seconds, during which time the corresponding green indicator is illuminated
2. Motor A takes over immediately. The green indicator of Motor B is extinguished and that of Motor A becomes illuminated.
3. Motor A continues to run until the selected Duty Sharing Time has been completed.
4. Motor B takes over immediately and continues to run for an equal time duration to that just performed by Motor A.
5. The above sequence continues unless;
 - a. Power is switched off at the on/off switch
 - b. Power is switched off by an external time clock
 - c. A fault occurs

Fault Condition

- The changeover senses the cessation of electric current in the duty motor.

In The Case of a Fault Condition

- The indicator for the Run motor will change from green to red. The Stand-by motor will start and its indicator will illuminate green
- If a fault develops with the Stand-by motor as well, its indicator will change from green to red, leaving both indicators red.

Volt Free Contacts

These are available for use to provide remote indication to a BMS panel to indicate if one or both motors have failed.

Contacts are normally open and rated at 5A 230V

Fault Clearance & Controller Reset

Where single or double motor fault conditions have occurred and subsequent been rectified, it is necessary to reset the controller by switching

the power off and back on again before any motor may be restarted.

Duty Time Sharing

This is selectable from eight stepped time durations, identified by markings around the perimeter of the potentiometer, at the top right of the circuit board;

Position	Duration
1	8 minutes
2	2 hours
3	4 hours
4	6 hours
5	8 hours
6	10 hours
7	12 hours
8	24 hours

Position 1 - This is used in conjunction with a 15 minute run on timer to ensure automatic duty sharing is maintained.

Positions 2 to 6 - These enable the end user to maintain automatic duty sharing where external timers limit operation of the unit.

Positions 7 & 8 - These are intended for use during continuous running, according to preference

Non Duty Sharing Mode

When HD1 is in the parked position, the diagnostic stating sequence remains operative but the duty sharing facility is inoperative and Motor A runs continuously, unless it develops a fault. If it does develop a fault Motor B runs continuously.

ACO3-3PHASE

Using the switch on the front panel, select either Fan A or Fan B as the duty fan.

Fault Condition

- The changeover senses overload trip in the duty motor.

In The Case of a Fault Condition

- The indicator for the Trip motor will illuminate. The Stand-by motor will start.

Volt Free Contacts

These are available for use to provide remote indication to a BMS panel to indicate motor failure.

Contacts are normally open and rated at 5A 230V