

Introduction

The QST-EC and EMT-EC ranges each encompass 7 models of direct driven centrifugal twin fans with airflow duties up to 3.8m³/s.

Motors are pre-wired to an external control panel CP/EC/TF with auto-changeover functionality and isolator.

General Construction

Casework is manufactured from 0.9mm to 1.5mm thick galvanised sheet steel with an 'O' class foam/barrier mat insulation to provide acoustic insulation.

Access is via removable top cover.

Fitted backdraught shutters prevent recirculation via in-operative fan.

Inspection Upon Receipt Of Goods

Immediately upon receipt of any goods, a careful inspection should be undertaken to ensure neither damage nor missing parts. Particular attention should be paid to the fan impeller, motor shaft, anti-vibration mounts, flexible connection, coil connection and casework.

In the event of such damage or loss having occurred, inform **AVT (01264 356415) WITHIN 3 WORKING DAYS** of the delivery date, giving the serial number which can be found on the name-plate. After this period we will be unable to entertain any claim for loss or damage.

Handling

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

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 / Positioning: These units must be mounted so that the fan shaft is horizontal. Not doing this will result in fan failure. Bottom access can be accommodated if advised at time of order. 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, and 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 Sufficient room should be allowed adjacent to the unit to allow components to be withdrawn.

Electrical Wiring

Electrical supply must be fully isolated before attempting 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 and correct rotation of the fan impeller

Maintenance

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

Model	Motor Power Watt	Phase	FLC A
QST/EMT150-EC	50	1Φ	0.46
QST/EMT200-EC	83	1Φ	0.75
QST/EMT250-EC	170	1Φ	1.40
QST/EMT315-EC	470	1Φ	3.00
QST/EMT350-EC	500	1Φ	2.20
QST/EMT450-EC	950	3Φ	1.50
QST/EMT560-EC	4150	3Φ	6.30

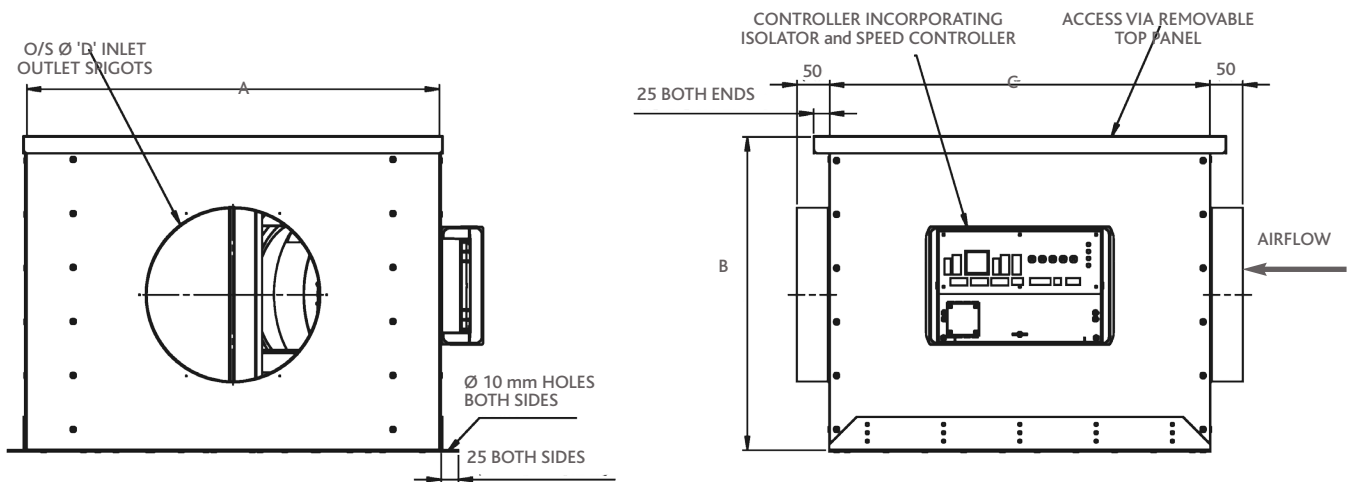
QST-EC and EMT-EC Ranges

Acoustic Cabinet Twin Fans - EC Motor - Internal and External

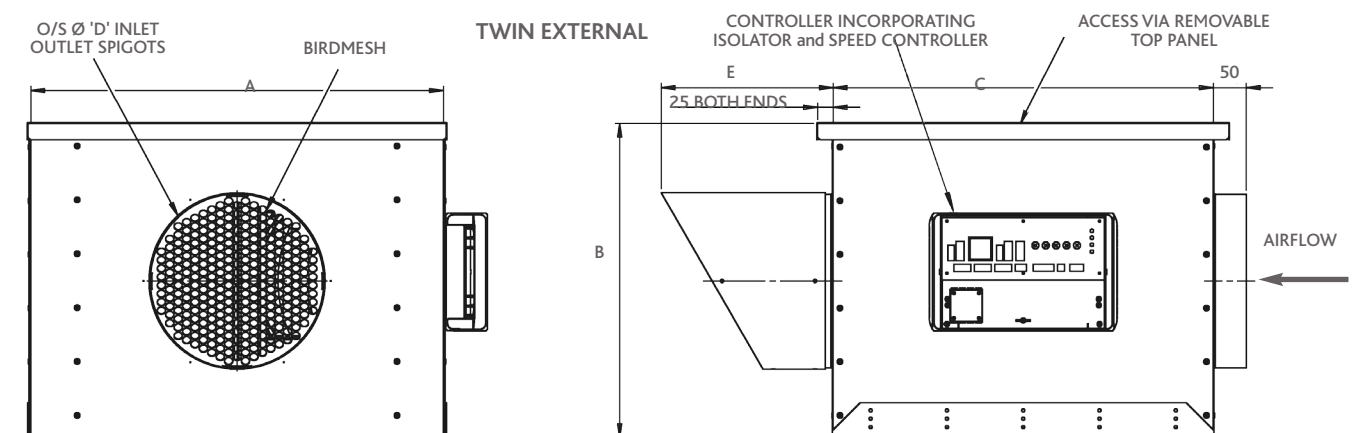
Installation, Operation & Maintenance Manual



Dimensions



TWIN FANS - INTERNAL and EXTERNAL						
Model	A	B	C	D	E	kg internal
QST/EMT150-EC	450	250	400	150	180	20
QST/EMT200-EC	450	350	450	200	210	27
QST/EMT250-EC	600	450	550	250	240	40
QST/EMT315-EC	850	450	800	310	275	62
QST/EMT350-EC	950	550	900	350	295	80
QST/EMT450-EC	1200	650	1200	450	350	131
QST/EMT560-EC	1500	830	1500	560	415	217



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Installation, Operation & Maintenance Manual

CP-EC-TF1 AND CP/EC/TF3 - TWIN FAN CONTROL PANELS

Introduction

Designed as a controls option for the Air Vent Technology twin fan products.

There are two models in the range;

CP/EC/TF/1 – Suitable for single phase fan motors, for a 230V 50Hz single phase mains supply

CP/EC/TF/3 – Suitable for three phase fan motors, for a 400V 50Hz three phase mains supply

General Description

- IP65 rated enclosure
- Fascia isolator
- Individual fan motor fuses
 - o MCB for 3 phase fan motors
- Illuminated Indication
 - o Panel live indicator
 - o Fan run indicator
 - o Fan fault indicator
 - o Boost indicator
- Customer connections
 - o VFC BMS enable
 - o VFC BMS boost
 - o Fan fault BMS link
 - o Remote 0-10V speed control

Installation

The CP/EC/TF is supplied fitted to the unit. It is pre-wired to fan motors and mains isolator and is suitable for internally and externally mounted units.

The enclosure is opened with a flat-head screwdriver to release the hinge, and two Philips head screws beneath the open hinge.

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.

Operation

- On initial power-up the fault relay will be energized into the normal "No Fault" condition.
- Fan 2 will run for 30 seconds to allow the control to monitor the correct running of the fan.
- If no fan fault is detected the control will switch from Fan 2 to Fan 1
- If Fan 2 is found to be faulty the control will go into fault mode and Fan 1 will run on

Run Modes

- The controller is intended to operate the unit as duty-share auto-changeover - **NORM**
 - o Duty-share time period (1-12 hours) is defined by pot - **C/O TIME**
 - o Auto-changeover activated upon failure of running fan

- Either fan can be forced to run continually, bypassing the duty-share and auto changeover operations, if required – **OVERRIDE**
- Both fans can be forced to run continually, bypassing duty-share auto changeover operation, in duplex mode if required - **OVERRIDE**

Fan Speed Control

TRICKLE V – Trickle speed 0% - 100%

BOOST V – Boost speed 0% - 100%

RUN ON TIME – Boost run-on time 0 – 20 minutes

BMS

- VFC Enable – shipped linked
- VFC Boost – Fan will run at Trickle set-point until the link is closed. Fan will continue to run at Boost set-point as long as the link is closed or for the duration of the run-on time. Boost LED remains solidly illuminated when activated, and flashes during run-on period
- Remote Speed – A 0-10V signal can remotely vary the fan speed between the Trickle and Boost set-points as minimum and maximum limits
- Fault Relay – To prevent false positives, a continual fault of 30 seconds is required before a fault condition is reported. Upon a fault condition the relevant fan LED will flash and relay will switch to fault condition. Faults are reset upon a power cycle. Relay rated for 12A / 250Vac

LEDs

POWER – Solid illumination when controller has power applied

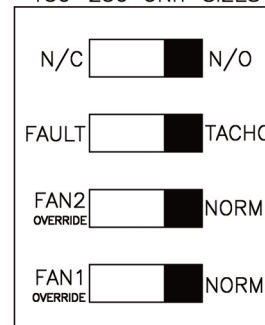
FAN1 – Solid illumination when active, flashing when in fault

FAN 2 – Solid illumination when active, flashing when in fault

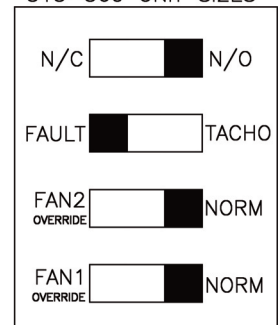
BOOST - Solid illumination when active, flashing when in run-on period

DIP SWITCH SETTINGS

150–250 UNIT SIZES



315–560 UNIT SIZES



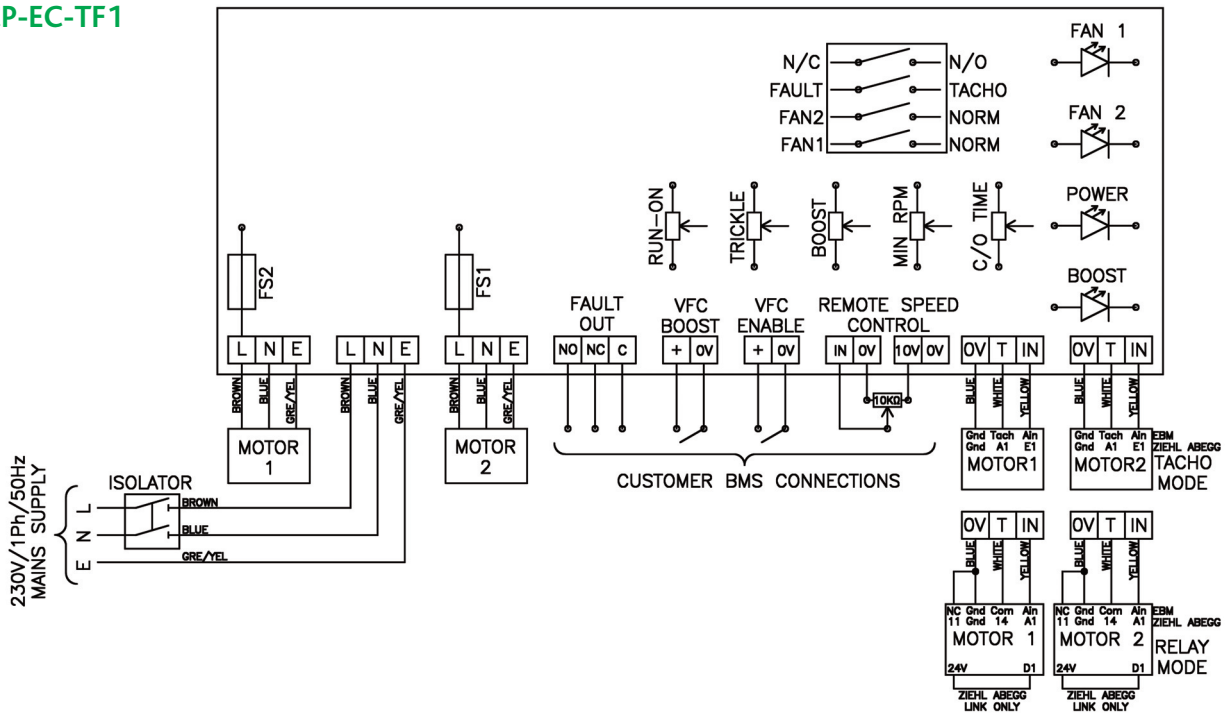
TEST MODE

All unit are test run before dispatch to confirm correct operation of the above functions. There is a factory test mode to aid troubleshooting. Contact Air Vent Technology if assistance is required with troubleshooting.

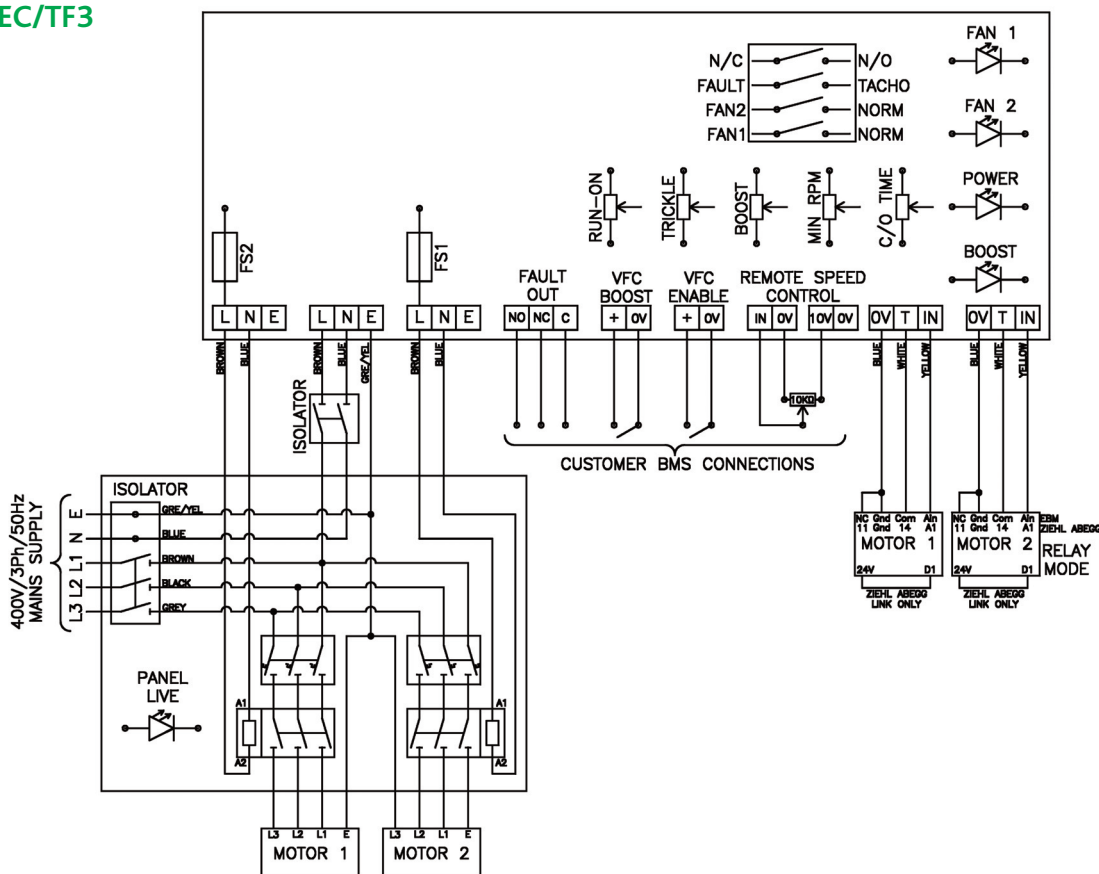
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CP-EC-TF1



CP/EC/TF3



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