

FSD-TD-TF actuators – Installing, Operating and Test (PTO for Non-TF)

1. Scope.

- 1.1 These actuators are supplied with a thermal fuse (TF), on a 1m lead.
- 1.2 Dampers would have previously been suitably installed into Wall or Floor application in accordance with Installation details and approved by local Building Control Authority.

2. Important

- 2.1 Actuators are IP54 rated – Check actuator is suitably located.
- 2.2 Do not cut /sever the Thermal Fuse lead. This will render the unit inoperable and invalidate warranty.
- 2.3 Thermal Fuse (TF) MUST be fitted to the abutting duct work, (or if ductless, appropriate location). Failure to do so will invalidate warranty as damper will not be fully fire protecting.

3. Health and Safety.

- 3.1 Only competent personnel may carry out the work outlined in this document.
- 3.2 Wearing of appropriate Personal Protective equipment (gloves, footwear, safety glasses etc) as required for safe working and as the site dictates.
- 3.3 Dampers may close without warning. Do not introduce limbs/fingers between blades while the actuator is fitted.

4. Equipment required

- 4.1 Suitable equipment and means of fixing junction box to appropriate surface.
- 4.2 Cordless drill and 3mm dia and 9.5...11mm dia drill bits
- 4.3 Philips type H and small flat bladed screwdriver
- 4.4 8mm AF spanner.

5. Procedure

- 5.1 Actuators are to be fitted to the Transfer Drive (TD) box fitted to the damper.
- 5.2 Check actuator/thermal fuse/wires are undamaged.
- 5.3 Check actuator label for correct voltage and operation as below:
 - 5.3.1 24V AC/DC OR 230V AC
 - 5.3.2 Spring Closed OR Spring Open
 - 5.3.3 With TF (thermal fuse) or without TF
- 5.4 Note; 24V AC/DC connect via safety isolating transformer. 230V AC for isolation/ disconnection from mains supply, a separate device must be incorporated in the fixed wiring (at least 3mm contact gap in all poles)
- 5.5 Terminate wires within a junction box compliant with site and electrical safety rules (supplied by others) in close proximity to actuator.
- 5.6 Referring to wiring diagram on actuator label, connect actuator leads, and supply/signal cables to junction box.

- 5.7 Position self adhesive TF template (supplied) onto duct. This should typically be above the actuator, either in the duct side or duct top for vertical installations, or anywhere on duct for horizontal installations. For round/spiral ducts, the three drilled holes must be in-line with the duct axis. (For ductless installations, a TF bracket is available which can be fixed to damper casing).
- 5.8 Drill holes in duct (sizes/positions are detailed on template label). Remove burrs.
- 5.9 Fit the TF to duct with the two screws provided using Philips type H screwdriver

6. Test

- 6.1 Check TF is correctly fitted to duct.
- 6.2 Switch on power to actuator. LED on TF will illuminate, and actuator will start to travel to the DRIVE-END position. After 60 seconds, visually check damper blade position and signaling is correct.
- 6.3 **IMPORTANT: Press test switch lever on TF to allow actuator spring to its fail-safe end position. Visually check damper blade positions and signals are correct.** (This is to ensure actuator functions electrically and overrides manual reset facility (should it have been used), as it is feasible to leave the damper inadvertently reset without TF being functional if this test is not carried out)!
- 6.4 Release TF toggle switch to allow damper to drive to normal position.

7. Changing actuator from Drive Open (spring close) to Drive Close (spring open) and vice versa

- 7.1 The actuator is fitted with one label (uppermost) designating its drive type. The 'opposite' drive label is available FOC from BSB, and should be ordered in advance of changeover.
- 7.2 Remove power to actuator and allow actuator to spring to fail-safe position
- 7.3 Using 8mm AF spanner, remove single actuator fixing screw and washer (retain for later) and lift actuator from Transfer Drive box. (It may be necessary to partially wind the actuator a few degrees with the aid of the manual reset key to release residual torque)
- 7.4 Fit new label on underside, (see 7.1), and remove existing label.
- 7.5 Remove indication pointer, and refit (noting correct position) on underside.
- 7.6 Ensure the adaptor plate is located between Transfer Drive box, and actuator. Ensure damper is in its new required fail-safe position at full end of travel, and then fit actuator in one of three positions available. Fit washer and 8mm AF hex head screw, Tighten to approx 5Nm.
- 7.7 Test – refer to section 6

8. Maintenance - The actuator is maintenance free

9. Fault finding

Symptom	Fault	Action
Green LED on the thermal fuse (TF) is not illuminated	No power / incorrect supply	Check supply
	TF tripped. Remove TF from duct, separate two halves, continuity check the two contacts within the probe section (or test with new probe)	If open circuit, replace probe
	Actuator faulty	Replace
Damper does not travel fully open / closed	Synchronisation of actuator and damper incorrect	Remove actuator and refit refer to 7.3, 7.5-7.7 above

FSD-TD-NTF actuators – Installing, Operating and Test (PTO for “with TF”)

1. Scope.

- 1.1 These actuators do not have a thermal fuse (TF),
- 2.2 Dampers would have previously been suitably installed into Wall or Floor application in accordance with Installation details and approved by local Building Control Authority.

2. Important

- 2.1 Actuators are IP54 rated – Check actuator is suitably located.

3. Health and Safety.

- 3.1 Only competent personnel may carry out the work outlined in this document.
- 3.2 Wearing of appropriate Personal Protective equipment (gloves, footwear, safety glasses etc) as required for safe working and as the site dictates.
- 3.3 Dampers may close without warning. Do not introduce limbs/fingers between blades while the actuator is fitted.

4. Equipment required

- 4.1 Suitable equipment and means of fixing junction box to appropriate surface.
- 4.2 8mm AF spanner.

5. Procedure

- 5.1 Actuators are to be fitted to the Transfer Drive (TD) box fitted to the damper.
- 5.2 Check actuator//wires are undamaged.
- 5.3 Check actuator label for correct voltage and operation as below:
 - 5.3.1 24V AC/DC OR 230V AC
 - 5.3.2 Spring Closed OR Spring Open
 - 5.3.3 With TF (thermal fuse) or without TF

- 5.4 Note; 24V AC/DC connect via safety isolating transformer. 230V AC for isolation/ disconnection from mains supply, a separate device must be incorporated in the fixed wiring (at least 3mm contact gap in all poles)
- 5.5 Terminate wires within a junction box compliant with site and electrical safety rules (supplied by others) in close proximity to actuator.
- 5.6 Referring to wiring diagram on actuator label, connect actuator leads, and supply/signal cables to junction box.

6. Test

- 6.1 Switch on power to actuator. The actuator will start to travel to the DRIVE-END position. After 60 seconds, visually check damper blade position and signaling is correct.
- 6.2 **IMPORTANT: remove power to allow actuator spring to its fail-safe end position. Visually check damper blade positions and signals are correct.** (This is to ensure actuator functions electrically and overrides manual reset facility (should it have been used), as it is feasible to leave the damper inadvertently reset without actuator being electrically functional if this test is not carried out)!
- 6.3 Re-apply power to allow damper to drive to normal position.

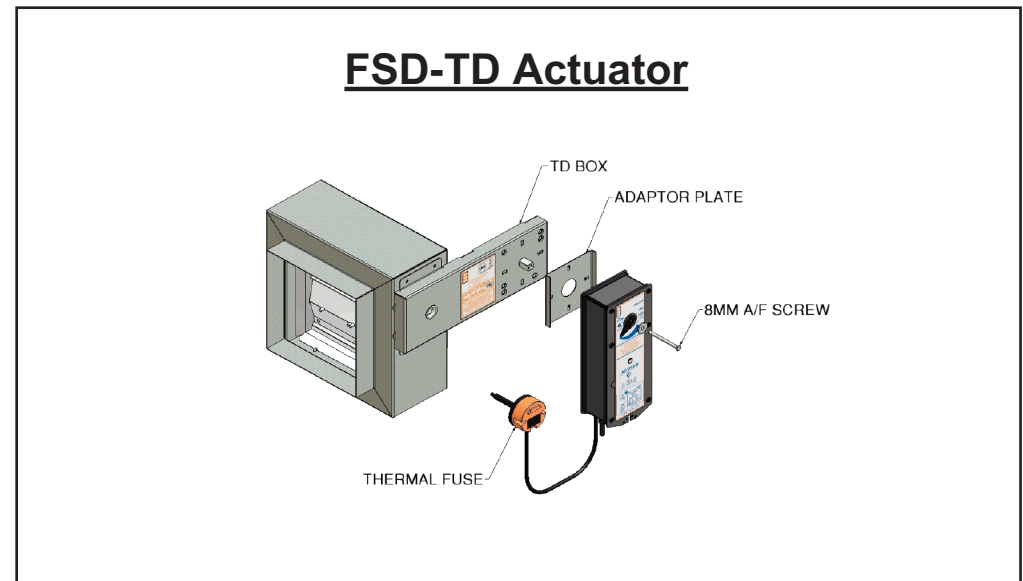
7. Changing actuator from spring close to spring open and vice versa

- 7.1 The actuator is fitted with one label (uppermost) designating its drive type. The 'opposite' drive label is available FOC from BSB, and should be ordered in advance of changeover.
- 7.2 Remove power to actuator and allow actuator to spring to fail-safe position
- 7.3 Using 8mm AF spanner, remove single actuator fixing screw and washer (retain for later) and lift actuator from Transfer Drive box. (It may be necessary to partially wind the actuator a few degrees with the aid of the manual reset key to release residual torque)
- 7.4 Fit new label on underside, (see 7.1), and remove existing label.
- 7.5 Remove indication pointer, and refit (noting correct position) on underside.
- 7.6 Ensure the adaptor plate is located between Transfer Drive box, and actuator. Ensure damper is in required fail-safe position at full end of travel, and then fit actuator in one of three positions available.
 - Fit washer and 8mm AF hex head screw, Tighten to approx 5Nm.
- 7.7 Test – refer to section 6

8. Maintenance - The actuator is maintenance free

9. Faultfinding

Symptom	Fault	Action
Actuator does not motor when powered	No power / incorrect supply	Check supply
	Actuator faulty	Replace
Damper does not travel fully open / closed	Synchronisation of actuator and damper incorrect	Remove actuator and refit refer to 6.6 - 6.7 above



Do not remove actuator packaging until unit is ready for wiring!

Retain this document for future reference