

FSD-TD-TF actuator – 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 This document only applies to dampers that are already installed.

2 Important

- 2.1 Actuators are IP54 rated – Check actuator connection box are suitably located.
- 2.2 Do not cut /sever the Thermal Fuse lead. This will render the unit inoperable and invalidate the 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 within this document.
- 3.2 The 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 whilst the actuator is fitted.

4 Equipment required

- 4.1 Suitable equipment and means of fixing junction box to appropriate surface.
- 4.2 Cordless drill with 3mm dia and 10mm dia drill bits
- 4.3 Philips type PH2 screwdriver. Screwdriver to suit junction box terminals
- 4.4 8mm and 12mm AF spanners.

5 Procedure

- 5.1 (Actuators are fitted to the 12mm AF sq shaft on the Transfer Drive (TD) box.
- 5.2 Check actuator, thermal fuse and 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 thermal fuse (NTF)
- 5.4 Terminate wires within a junction box (supplied by others) compliant with site rules and Electrical Installation Regulations (BS7671) in close proximity to actuator, also referring to wiring diagram on actuator label,
- 5.5 Fix self adhesive TF template (supplied) onto the duct. This should typically be above the actuator, either to the duct side or duct top for vertical installations, or anywhere to 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 from BSB that can be fixed to damper casing).
- 5.6 Drill holes in duct (sizes/positions are detailed on template label). Remove burrs.
- 5.7 Fit the TF to duct with the two screws provided using Philips PH2 screwdriver

6 Test

- 6.1 As a pre-check, the actuator should be wound manually using the manual reset key provided.
- 6.2 Check TF is correctly fitted to duct.
- 6.3 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.
- 6.4 **IMPORTANT: Press test switch lever on TF to allow actuator travel to its 'spring' 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)!
- 6.5 Release TF toggle switch to allow damper to drive to normal position.

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

- 7.1 If not already the case, remove power to actuator and allow actuator to travel to end position.
- 7.2 Using 8mm AF spanner, remove single actuator fixing bolt 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).
- 7.3 If changing actuator position, refit adaptor plate/actuator/washer/bolt as req'd and tighten to approx 5Nm.
- 7.4 If changing direction of travel, remove indication pointer, and refit (noting correct position) on underside of actuator. Rotate damper TD box input shaft 90° to its other end of travel.
- 7.5 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 adaptor plate/actuator/washer/bolt in place as req'd and tighten to approx 5Nm
- 7.6 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 actuator – Installing, Operating and Test (PTO for “with TF”)

1 Scope

- 1.1 These actuators do not have a thermal fuse (NTF),
- 1.2 This document only applies to dampers that are already installed.

2 Important

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

3 Health and Safety

- 3.1 Only competent personnel may carry out the work outlined within this document.
- 3.2 The 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 whilst the actuator is fitted.

4 Equipment required

- 4.1 Suitable equipment and means of fixing junction box to appropriate surface.
- 4.2 8mm and 12mm AF spanners.

5 Procedure

- 5.1 (Actuators are fitted to the 12mm AF sq shaft on the Transfer Drive (TD) box.
- 5.2 Check actuator and 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 thermal fuse NTF

- 5.4 Terminate wires within a junction box (supplied by others) compliant with site rules and Electrical Installation Regulations (BS7671) in close proximity to actuator, also referring to wiring diagram on actuator label,

6 Test

- 6.1 As a pre-check, the actuator should be wound manually using the manual reset key provided.
- 6.2 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.
- 6.3 **IMPORTANT: remove power to allow actuator travel to its ‘spring’ 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!)
- 6.4 Re-apply power to allow damper to drive to normal position.

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

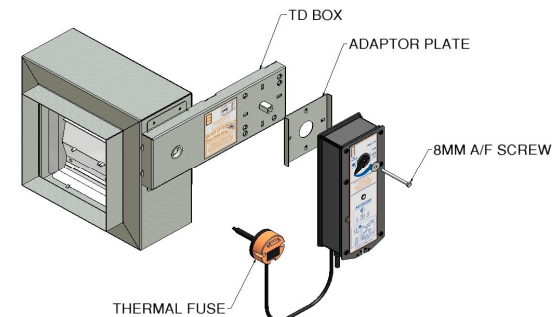
- 7.1 If not already the case, remove power to actuator and allow actuator to travel to end position.
- 7.2 Using 8mm AF spanner, remove single actuator fixing bolt and washer (retain for later) and lift actuator from Transfer Drive box. (It may be necessary to partially wind the actuator a few degrees with the aid of the manual reset key to release residual torque).
- 7.3 If changing actuator position, refit adaptor plate/actuator/washer/bolt as req’d and tighten to approx 5Nm.
- 7.4 If changing direction of travel, remove indication pointer, and refit (noting correct position) on underside of actuator. Rotate damper TD box input shaft 90° to its other end of travel.
- 7.5 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 adaptor plate/actuator/washer/bolt in place as req’d and tighten to approx 5Nm
- 7.6 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 following to 6.6 – 6.7 above

FSD-TD Actuator Operating & installation Instructions



Retain this document for future reference.

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