

Data Sheet

Thermal Actuator TWA-Z

Application



Danfoss thermal actuator TWA-Z is used with Danfoss automatically balanced combination valves type AB-QM.

The actuator can be controlled with an on/off controller, pulse width modulation (PWM), or switch.

These provide a cost effective solution for the control of hot and /or chilled water for fan coil units, small reheaters and recoolers in temperature control systems.

Main features:

- 24 V AC/DC or 230 V AC supply
- Position indicator
- Normally opened (NO) or normally closed (NC) version
- Max. medium temperature 120° C
- Cable included

Ordering

Type	Supply voltage	Cable length	Code no.
TWA-Z NO	24 V AC	1.2 m	082F1260
TWA-Z NC			082F1262
TWA-Z NO	230 V AC		082F1264
TWA-Z NC			082F1266
TWA-Z NC	24 V AC	5 m	082F1268
TWA-Z NC	230 V AC		082F1272
TWA-Z NC	24 V AC	10 m	082F1270
TWA-Z NC	230 V AC		082F1274

Service kits - combination with old AB-QM

Type	Code no.
TWA-Z adapter for AB-QM, DN 10-32	003Z0239

Disposal

The actuator must be dismantled and the elements sorted into various material groups before disposal.

Technical Data

Power supply	24 V AC/DC	230 V AC
Max. inrush current	< 350 mA	< 250 mA
Power consumption	2 W	
Frequency	50/60 Hz	
Control input	On/off and PWM	
Closing force	90 N	
Min. stroke	2.8 mm	
Full stroke time	3 min.	
Max. medium temperature	120° C	
Ambient temperature	2 to 60° C	
Storage and transport temperature	-40 to 70° C	
Protection class	III	II
Grade of enclosure	IP 41	
Cable length	1.2 m, 5 m or 10 m	
Weight	0.15 kg	

Operation

TWA-Z actuator works on the thermal expansion principle:

- moves actuator stem in one direction in case of heating of the actuator and
- moves actuator stem in another direction in case of no heating of the actuator

Two versions of actuators are available:

- TWA-Z NO version, in the non-energized state actuator's stem is retracted
- TWA-Z NC version, in the non-energized state actuator's stem is extracted

Both versions are available in 24V (SELV) or 230V.

The TWA-Z NC has an internal spring, which is factory fixed with a split ring (Fig.1) to hold the spring retracted in its off-the-shelf state. The use of split ring allows the actuator to be mounted to the valve. Once mounted, the split ring has to be removed.

Note:

In case the actuator has been dismantled and split ring removed, split ring can be added back to the actuator after the heating of the actuator.

The actuator is equipped with a position indicator to show the position of the actuator stem (Fig.2).

The AB-QM valve is closed in stem down position. Without actuator force the internal spring opens the valve.

Combination, TWA-Z NO & AB-QM (Fig.3)

- in the non-energized state the valve is open
- in the energized state the valve is closed

Combination, TWA-Z NC & AB-QM (Fig.4)

- in the non-energized state the valve is closed
- in the energized state the valve is opened.

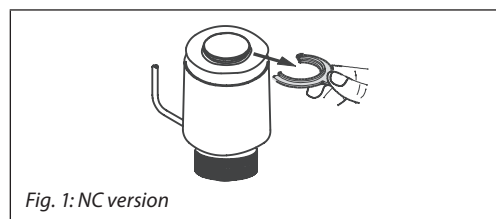


Fig. 1: NC version

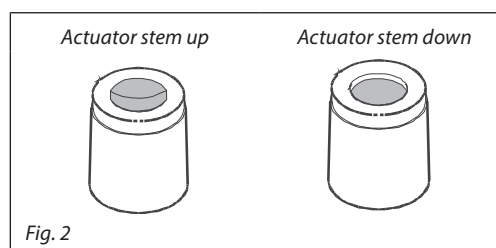


Fig. 2

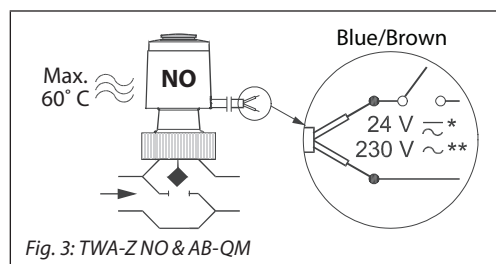


Fig. 3: TWA-Z NO & AB-QM

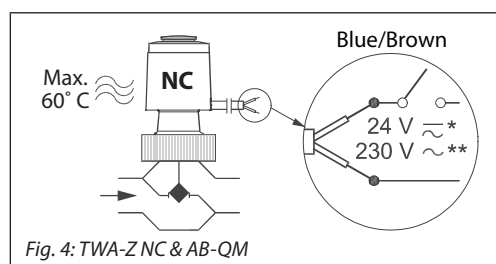
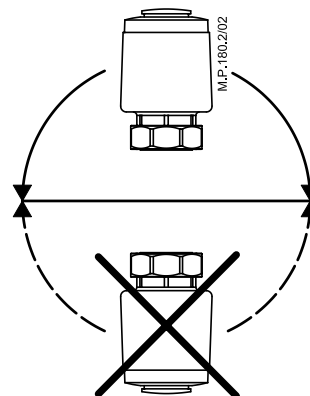


Fig. 4: TWA-Z NC & AB-QM

Installation

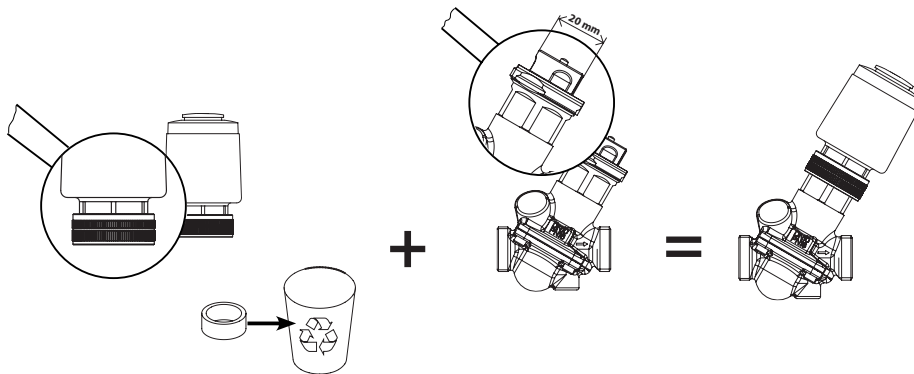
Mechanical

Installation of the valve with the actuator is allowed in horizontal position or upwards.

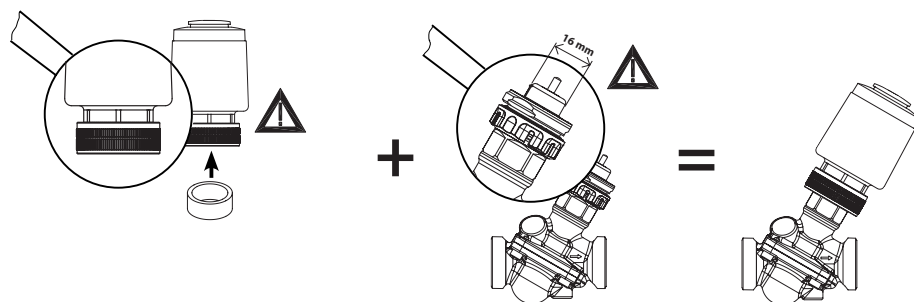


Actuator / Valve Combinations

TWA-Z (Gen. 2011) & AB-QM (2nd gen.)



TWA-Z (Gen. 2011) & AB-QM (1st gen.)



Dimensions

