

Data sheet

Thermal Actuator TWA-Z

Description



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/DC	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/DC	5 m	082F1268
TWA-Z NC	230 V AC		082F1272
TWA-Z NC	24 V AC/DC	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	V	24 AC/DC, ± 25%	230 AC, ± 25%
Max. inrush current	mA	< 350	< 250
Power consumption	W	2	
Frequency	Hz	50/60	
Control input		On/off and PWM	
Closing force	N	90	
Min. stroke	mm	2.8	
Full stroke time ¹⁾	min.	3	
Max. medium temperature	° C	120	
Ambient temperature		2 ... 60	
Storage and transport temperature		-40 ... 70	
Ambient humidity		95% r.h., non-condensing	
Protection class		III	II
Grade of enclosure		IP 41	
Cable length	m	1.2, 5 or 10	
Weight	kg	0.15	

1) When heating the actuator full stroke time increases up to some minutes – it depends on the ambient temperature.

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.

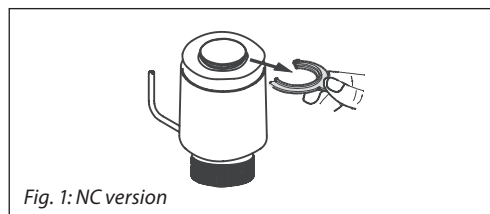


Fig. 1: NC version

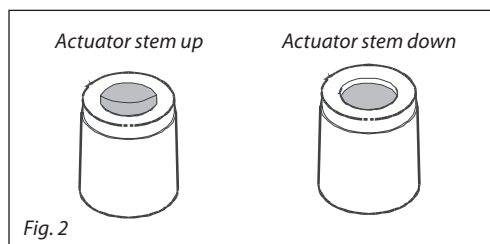


Fig. 2

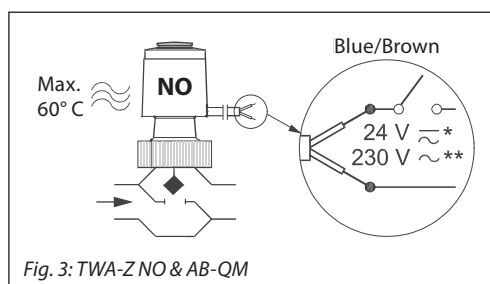


Fig. 3: TWA-Z NO & AB-QM

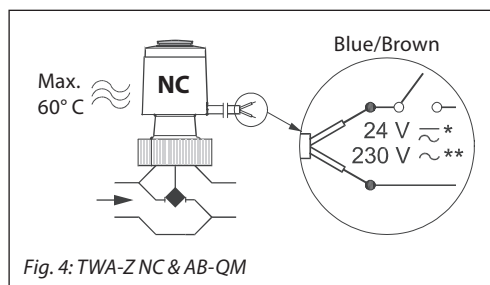
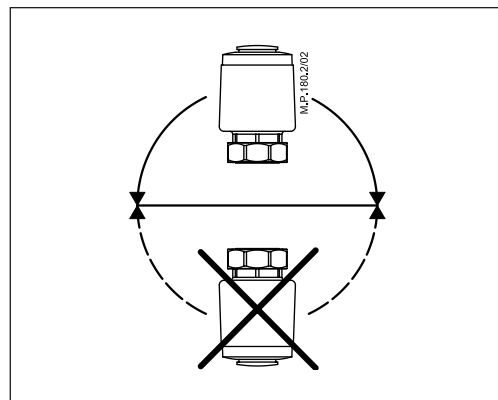


Fig. 4: TWA-Z NC & AB-QM

Installation

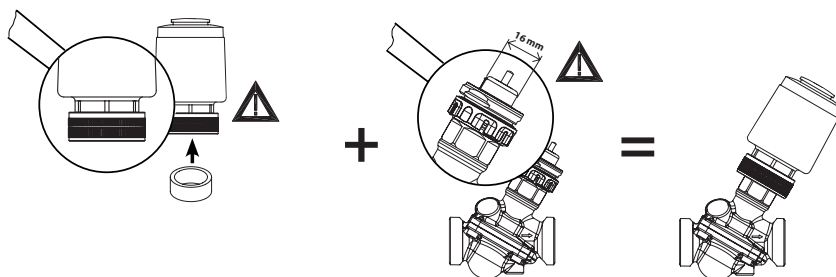
Mechanical

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

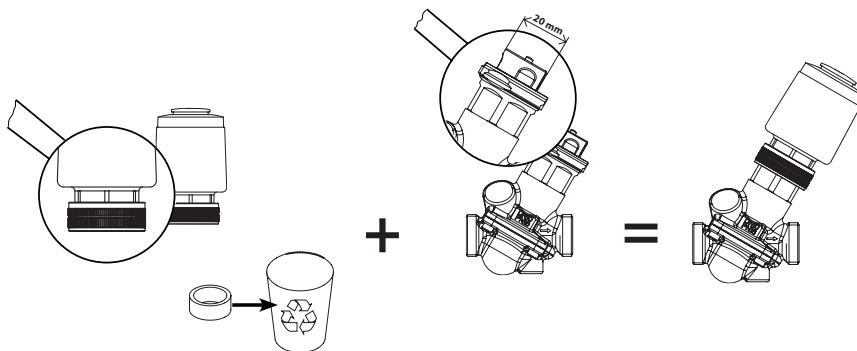


Actuator / Valve Combinations

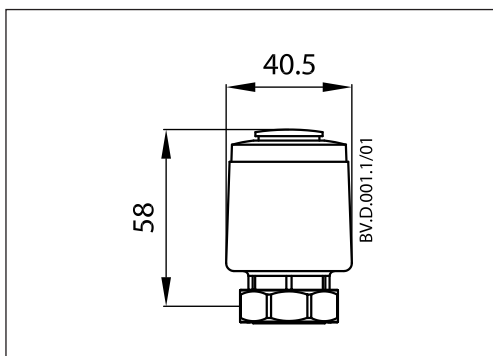
TWA-Z (Gen. 2011) & AB-QM (1st gen.)



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



Dimensions





Danfoss A/S

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