

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 recoilers 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	1.2 m	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, $\pm 25\%$	230 AC, $\pm 25\%$
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.

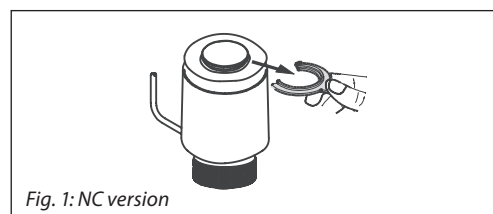


Fig. 1: NC version

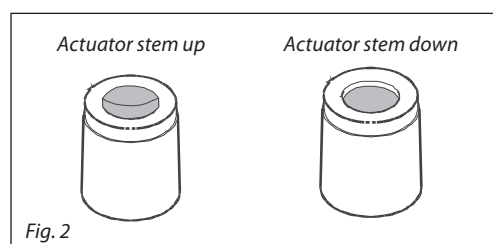


Fig. 2

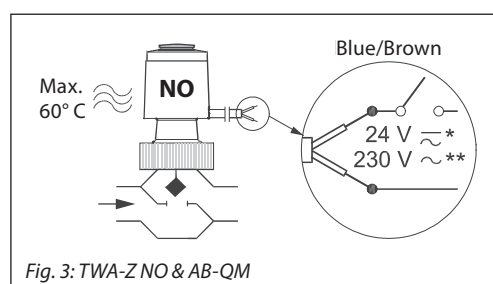


Fig. 3: TWA-Z NO & AB-QM

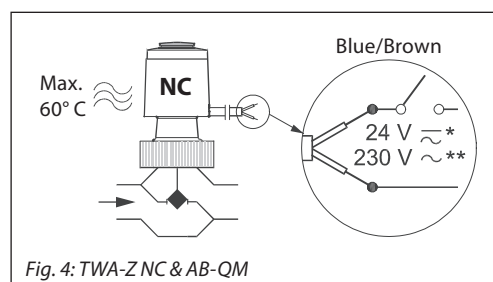
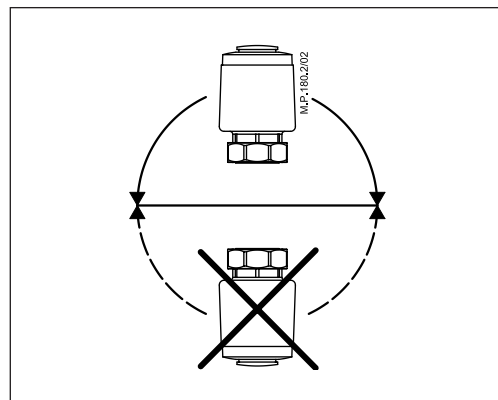


Fig. 4: TWA-Z NC & AB-QM

Installation

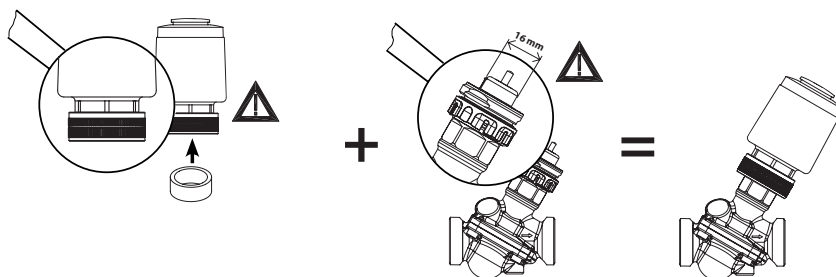
Mechanical

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

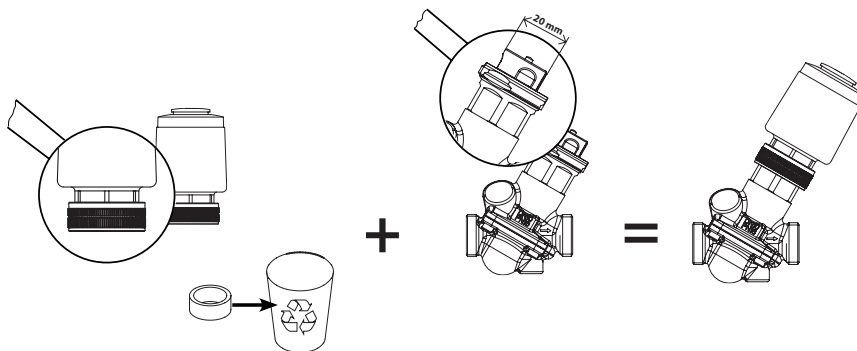


Actuator / Valve Combinations

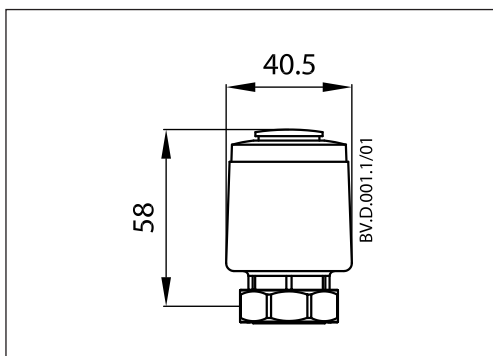
TWA-Z (Gen. 2011) & AB-QM (1st gen.)



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



Dimensions





Danfoss A/S

Heating Segment • heating.danfoss.com • +45 7488 2222 • E-Mail: heating@danfoss.com

Danfoss can accept no responsibility for possible errors in catalogues, brochures and other printed material. Danfoss reserves the right to alter its products without notice. This also applies to products already on order provided that such alterations can be made without subsequential changes being necessary in specifications already agreed.
All trademarks in this material are property of the respective companies. Danfoss and all Danfoss logotypes are trademarks of Danfoss A/S. All rights reserved.
