



# Thermal actuators

**TWA**

## Description

The TWA is a small actuator for electrical on/off control, designed to operate various types of valves and floor heating manifolds.

The TWA range includes actuators for 24V (SELV\*) or 230V supply, available in both normally closed (NC) and normally open (NO) versions (valve positions with no supply voltage to the actuator).

NC/S versions with an end switch are also available for certain actuator types.

Each actuator is equipped with a visual position indicator to show whether the valve is open or closed.

The TWA can be connected to RA, RAVL, and RAV valves from Danfoss. The TWA-K version (M30x1.5) can be connected to Heimeier, MNG, and Oventrop valves.

Other valves must be verified individually to ensure correct valve closing dimensions and valve top geometry.

\*SELV = Safety Extra Low Voltage

## Features & benefits

- Available in Normally Closed (NC) and Normally Open (NO) versions
- Red clip (NC) for easy identification and installation
- Fast and simple installation
- Visual position indicator
- Compatible with a wide range of valves and manifolds
- Energy efficient – only 2W running power consumption

## Ordering

### Product code numbers

Product Type	Connection type	Supply voltage [V] AC	Valve function	Cable length [m]	Code number
TWA-K	M 30 x 1.5	230	NC/S (with end-switch)	0.950	088H3105
TWA-A	RA	230	NC/S (with end-switch)	0.950	088H3106
TWA-A	RA	24	NC	0.950	088H3110
TWA-A	RA	24	NO	0.950	088H3111
TWA-A	RA	230	NC	0.950	088H3112
TWA-A	RA	230	NO	0.950	088H3113
TWA-A	RA	24	NC/S (with end-switch)	0.950	088H3114
TWA-A	RA	24	NC	5.000	088H3116
TWA-A	RA	24	NC	10.000	088H3117
TWA-A	RA	230	NC	5.000	088H3118
TWA-A	RA	230	NC	10.000	088H3119
TWA-V	RAV	24	NC	0.950	088H3120
TWA-V	RAV	24	NO	0.950	088H3121
TWA-V	RAV	230	NC	0.950	088H3122
TWA-V	RAV	230	NO	0.950	088H3123
TWA-L	RAVL	24	NC	0.950	088H3130
TWA-L	RAVL	24	NO	0.950	088H3131
TWA-L	RAVL	230	NC	0.950	088H3132
TWA-L	RAVL	230	NO	0.950	088H3133
TWA-K	M 30 x 1.5	24	NC	0.950	088H3140
TWA-K	M 30 x 1.5	24	NO	0.950	088H3141
TWA-K	M 30 x 1.5	230	NC	0.950	088H3142
TWA-K	M 30 x 1.5	230	NO	0.950	088H3143
TWA-K	M 30 x 1.5	24	NC	5.000	088H3146
TWA-K	M 30 x 1.5	230	NC	10.000	088H3147
TWA-K	M 30 x 1.5	230	NC	5.000	088H3148
TWA-K	M 30 x 1.5	24	NC	10.000	088H3149

**NC/S** - With end-switch

**M30x1.5** – Compatible with Heimeier, MNG, and Oventrop valves with M30x1.5 connection.

Other valves must be verified individually to ensure correct valve closing dimensions and valve top geometry (see dimensions page).

## Product details

### General data

**Table: Technical specifications**

Power supply	[V]	24 V AC/DC, $\pm 15\%$	230 V AC, $\pm 15\%$
Max. inrush current	[mA]	< 350	< 250
Power consumption	[W]	2	2
Frequency	[Hz]	50 – 60	
Control input		On/off & PWM	
Closing force TWA-NC	[N]	110	
Closing force TWA-NO		120	
Closing measurement TWA-K	[mm]	11.8 $\pm$ 0.3	
Ambient temperature	[°C]	2 – 60	
Storage and transportation temperature		-40 – 70	
Ambient humidity		95% r.h., non-condensing (according to EN 60730-1)	
Protection class		III	II
Grade of enclosure		IP 41	
Cable length	[mm]	950	
Spindle travel time	[min]	$\approx 3$	

### Combination overview for Danfoss thermal wax actuator and valves (V) or manifolds (M)

Valve/ Manifold	RA-N (V)	RA-C (V)	RA-FN (V)	RA-G (V)	RAV-/8 (V)	VMT-8 (V)	RAVL-6 (V)	SSM (M)
<b>k<sub>vs</sub></b> [m <sup>3</sup> /H]	0.65 to 1.40	1.20 to 3.30	0.65 to 1.40	2.30 to 5.50	1.20 to 3.10	1.50 to 3.10	0.20 to 1.50	0.10 to 1.10
<b>Max. <math>\Delta p</math></b> [Bar]	0.6	0.6	0.6	0.2*	0.8	0.8	0.6	0.6
<b>Actuator**</b>	TWA-A	TWA-A	TWA-A	TWA-A	TWA-V	TWA-V	TWA-L	TWA-A

\* The RA-G/ RTD-G 25 valve has a max.  $\Delta p = 0.16$  bar. Consult valve/manifold datasheets for further information.

\*\* If the actuator should be an 24 V or 230 V and normally open (NO) or normally closed (NC), depends mainly of the application, control strategy and the controller connected to the actuator.



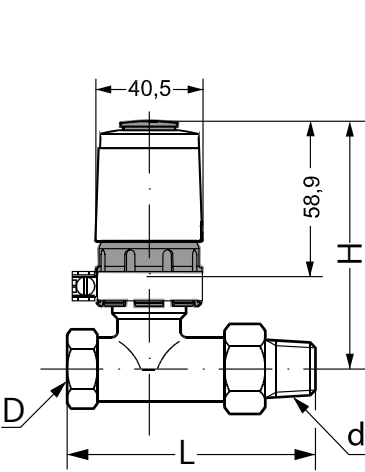
Dimensions  
TWA-A / RA valves

Technical drawing of a Danfoss 88h27 valve. The drawing shows a side view of the valve with dimensions: 40,5 (width of the top actuator), 76,6 (height of the top actuator), D (port diameter), d2 (actuator diameter), L (length of the valve body), and H (total height of the valve body).

Danfoss  
88h27

DN	D	d2	Valve type	H [mm]	L [mm]
	ISO 7/1				
10	Rp 3/8	R 3/8	RA-N, RA-FN	92	75
15	Rp ½	R ½	RA-N, RA-FN	92	82
20	Rp ¾	R ¾	RA-N, RA-FN	97	98
25	Rp 1	R 1	RA-N, RA-FN	97	125
15	Rp ½	R ½	RA-G	95	96
20	Rp ¾	R ¾	RA-G	95	107
25	Rp 1	R 1	RA-G	99	125

TWA-V / RAV valves

	DN	D	d2	RAV	H [mm]	L [mm]
		ISO 7/1				
	15	Rp ½	R ½	15/8	74	95
	20	Rp ¾	R ¾	20/8	74	106
25	Rp 1	R 1	25/8	87	125	

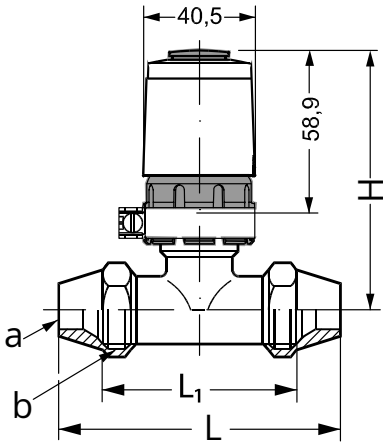
All dimensions are in mm



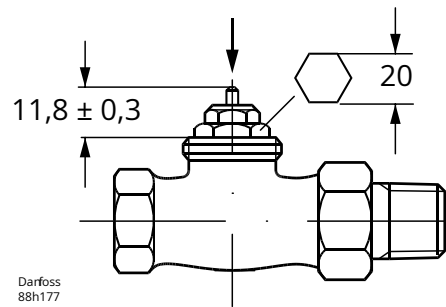
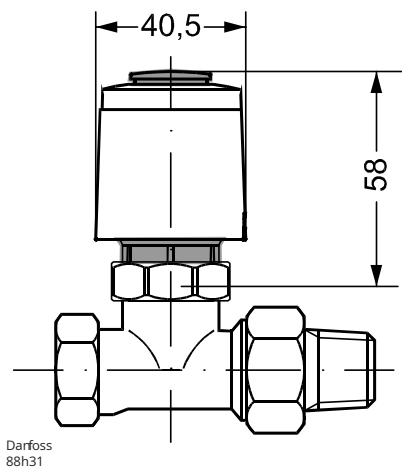
TWA-L / RAVL valves

	DN	D	d2	RAVL	H [mm]	L [mm]
		ISO 7/1				
	10	Rp 3/8	R 3/8	10	75	85
	15	Rp 1/2	R 1/2	15	75	95
	20	Rp 3/4	R 3/4	20	75	106

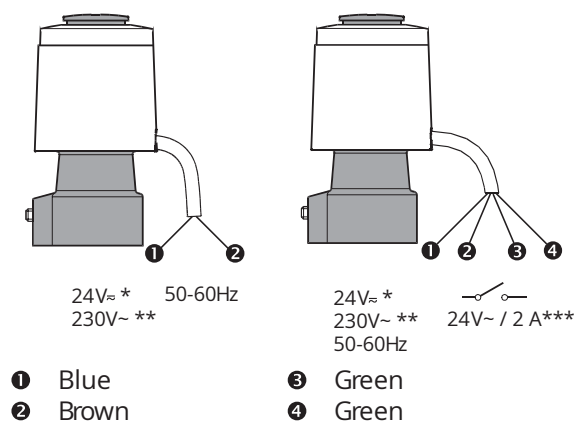
TWA-V / VMT

	DN	a	b	VMT	H [mm]	L [mm]
	15	Ø15, Ø16, Ø18	G 3/4 A	15/8	74	90
	20	Ø18, Ø22	G1 A	20/8	74	101
	25	Ø28	G1 1/4 A	25/8	87	120

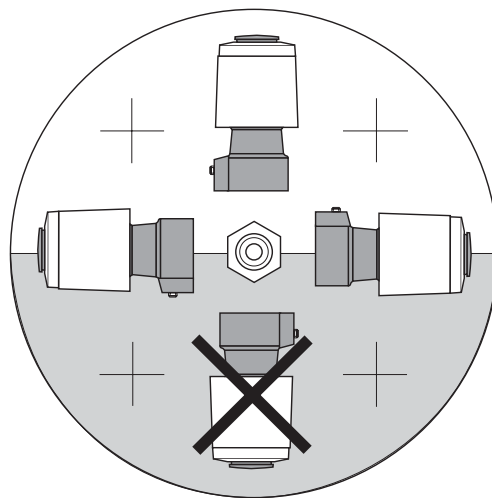
All dimensions are in mm

**TWA-K**

All dimensions are in mm

**Connections****Electrical connections**

Danfoss  
088L770



\* 24 V Class II transformer (SELV)

\*\* 230 V max.

\*\*\* When the actuator is closed, the potential free relay will open

**Note:** Max 3.15 A pre fuse according to EN 60127 (both for 24 and 230 V versions) for actuator with cord length up to 2 m. If the actuator will be used with a cord length of >3 m and max. 23 m, the protection of the cord/wire (overload, short circuit and mechanical stress) should be assured by a circuit breaker (6 A/characteristic "B") and should be installed in a protection tube or comparable means.

**Note:** All NC-versions are equipped with a red mounting split on the position indicator to secure easy valve connection. When mounted this split must be removed for correct operation.

## Certificates, declarations and approvals

The list contains all certificates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

When you click on the link you will be directed to the latest version of the 'Declaration of Conformity'. Products developed and sold before this date of issue conform to the directives/standards in force at the time of their sale.

Approval type	Title	Certification body	Approval topic
EU-UK Declaration	<a href="#">Danfoss EU-UK VJSBU102.06</a>	Danfoss	UK RoHS
Manufacturer's Declaration	<a href="#">Manufacturer's declaration BF20112024-en01</a>	Danfoss	EU RoHS
Export Control Declaration	<a href="#">Actuators</a>	Danfoss	
EAC Declaration	<a href="#">EAC KZ 7100841.13.12.01046</a>	EAC - Eurasian Customs Union	EMC
EAC Declaration	<a href="#">EAC KZ 7100841.13.12.01045</a>	EAC - Eurasian Customs Union	EMC

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