

Data Sheet

TWA Thermal Wax Actuator

Application



The TWA is a small actuator for electrical on/off controls to activate several types of valves and floor heating manifolds.

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

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

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

The TWA can be connected to the RA, RAVL and RAV-valves from Danfoss. Furthermore versions for valves with Heimeier/MNG/Oventrop M30x1,5 connection are available.

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

*SELV = Safety Extra Low Voltage

Ordering

Actuator	Connection type	Supply Voltage	Function	Code no.
TWA-A	RA	230 V AC	NC/S*	088H3106
TWA-A	RA	24 V AC/DC	NC	088H3110
TWA-A	RA	24 V AC/DC	NO	088H3111
TWA-A	RA	230 V AC	NC	088H3112
TWA-A	RA	230 V AC	NO	088H3113
TWA-A	RA	24 V AC/DC	NC/S*	088H3114
TWA-V	RAV/VMT	24 V AC/DC	NC	088H3120
TWA-V	RAV/VMT	24 V AC/DC	NO	088H3121
TWA-V	RAV/VMT	230 V AC	NC	088H3122
TWA-V	RAV/VMT	230 V AC	NO	088H3123
TWA-L	RAVL	24 V AC/DC	NC	088H3130
TWA-L	RAVL	24 V AC/DC	NO	088H3131
TWA-L	RAVL	230 V AC	NC	088H3132
TWA-L	RAVL	230 V AC	NO	088H3133
TWA-K	M30x1,5**	230 V AC	NC/S*	088H3105
TWA-K	M30x1,5**	24 V AC/DC	NC	088H3140
TWA-K	M30x1,5**	24 V AC/DC	NO	088H3141
TWA-K	M30x1,5**	230 V AC	NC	088H3142
TWA-K	M30x1,5**	230 V AC	NO	088H3143

* With end-switch (end-switch only 24 V~)

** Connection to Heimeier, MNG and Oventrop valves with M30x1,5 connection. Other valves must be verified individually to ensure correct valve closing measurement and valve top geometry (see page 3).

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	N	110	
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	≈ 3 min	

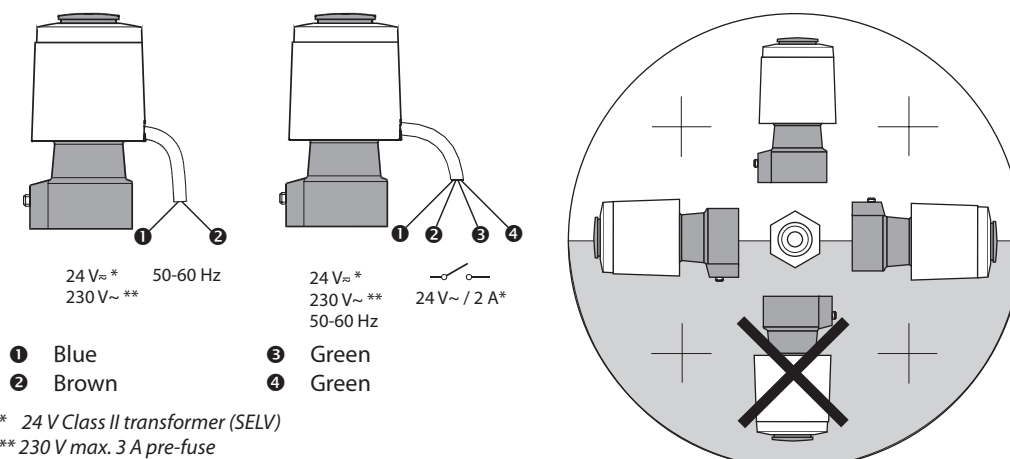
Combination overview for Danfoss thermal wax actuator and valves (V) or manifolds (M)

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)
k_{VS} (m ³ /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
Max. Δp (Bar)	0,6	0,6	0,6	0,2*	0,8	0,8	0,6	0,6
Actuator**	TWA-A	TWA-A	TWA-A	TWA-A	TWA-V	TWA-V	TWA-L	TWA-A

* The RA-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.

Electrical connections



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.

Dimensions

TWA-A / RA valves

	DN	D ISO 7/1	d ₂	Valve type	H [mm]	L [mm]
	10	Rp 3/8	R 3/8	RA-N, RA-FN	92	75
	15	Rp 1/2	R 1/2	RA-N, RA-FN	92	82
	20	Rp 3/4	R 3/4	RA-N, RA-FN	97	98
	25	Rp 1	R 1	RA-N, RA-FN	97	125
	15	Rp 1/2	R 1/2	RA-G	95	96
	20	Rp 3/4	R 3/4	RA-G	95	107
	25	Rp 1	R 1	RA-G	99	125

TWA-V / RAV valves

	DN	D ISO 7/1	d ₂	RAV	H [mm]	L [mm]
	15	Rp 1/2	R 1/2	15/8	74	95
	20	Rp 3/4	R 3/4	20/8	74	106
	25	Rp 1	R 1	25/8	87	125

TWA-L / RAVL valves

	DN	D ISO 7/1	d ₂	RAVL	H [mm]	L [mm]
	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

Dimensions

TWA-K



Danfoss A/S

Climate Solutions • danfoss.com • +45 7488 2222

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