ENGINEERING
TOMORROW

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, RTD, RAVL and RAV-valves from Danfoss. Furthermore versions for valves with Heimeier/MNG/Oventrop M30×1,5 connection are available.
Other valves must be verified individually to ensure correct valve closing measurement and valve top geometry.

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**
TWA-D	RTD	24 V AC/DC	NC	**088H3150**
TWA-D	RTD	24 V AC/DC	NO	**088H3151**
TWA-D	RTD	230 V AC	NC	**088H3152**
TWA-D	RTD	230 V AC	NO	**088H3153**

** With end-switch (end-switch only 24 V~)*
*** Connection to Heimeier, MNG and Oventrop valves with M30×1,5 connection. Other valves must be verified individually to ensure correct valve closing measurement and valve top geometry (see page 3).*

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Technical specifications

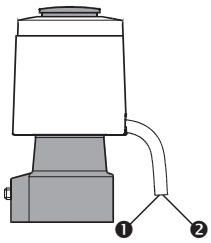
Supply voltage	24 V (Class II (SELV)) and 230 V (3 A pre-fuse)
Max. inrush current	24 V: 350 mA, 230 V: 250 mA
Frequency	50-60 Hz
Running power consumption	2 W
Spindle travel time	~3 min.
Ambient temperature	0 °C to +60 °C
Enclosure	IP 41
Cable length	950 mm

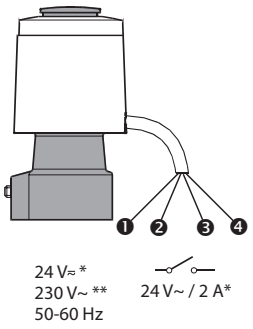
Combination overview for Danfoss thermal wax actuator and valves (V) or manifolds (M)

Valve/ Manifold	RA-N (V)	RTD-N (V)	RA-C (V)	RA-FN (V)	RA-G (V)	RTD-G (V)	RAV-/8 (V)	VMT-8 (V)	RAVL-6 (V)	FHD (M)
k_{VS} (m^3/H)	0,65 to 1,40	0,65 to 1,40	1,20 to 3,30	0,65 to 1,40	2,06 to 4,75	2,00 to 4,40	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	0,6	0,2*	0,2*	0,8	0,8	0,6	0,6
Actuator**	TWA-A	TWA-D	TWA-A	TWA-A	TWA-A	TWA-D	TWA-V	TWA-V	TWA-L	TWA-A

** The RA-G/ RTD-G 25 valve has a max. Δp = 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.*

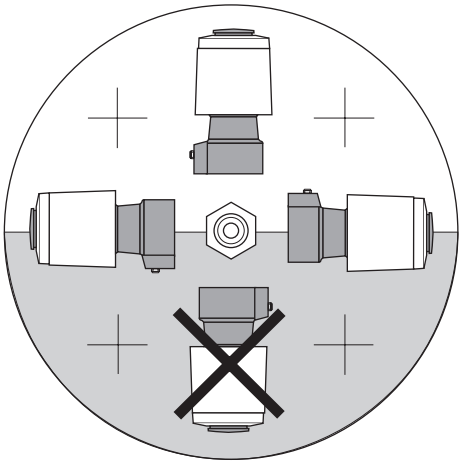
Electrical connections





❶ Blue
❷ Brown
❸ Green
❹ Green

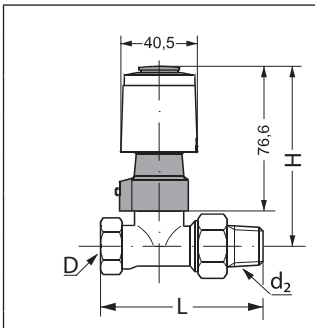
** 24 V Class II transformer (SELV)*
*** 230 V max. 3 A pre-fuse*



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.*

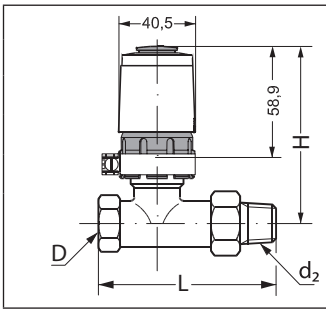
Dimensions

TWA-A / RA valves



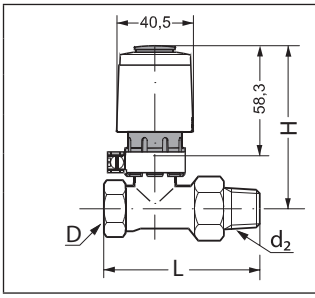
DN	D / d2 ISO 7/1		Valve type	H [mm]	L [mm]
10	Rp 3/8	R 3/8	RA-N, RA-FN	92	75
15	Rp 1/2	R 1/2	RA-N, RA-FN	92	82
20	Rp 3/4	R 3/4	RA-N, RA-FN	97	98
25	Rp 1	R 1	RA-N, RA-FN	97	125
15	Rp 1/2	R 1/2	RA-G	95	96
20	Rp 3/4	R 3/4	RA-G	95	107
25	Rp 1	R 1	RA-G	99	125

TWA-V / RAV valves



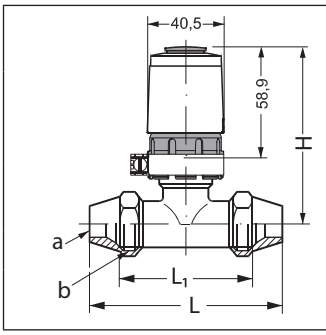
DN	D / d2 ISO 7/1		RAV	H [mm]	L [mm]
15	Rp 1/2	R 1/2	15/8	74	95
20	Rp 3/4	R 3/4	20/8	74	106
25	Rp 1	R 1	25/8	87	125

TWA-L / RAVL valves



DN	D / d2 ISO 7/1		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

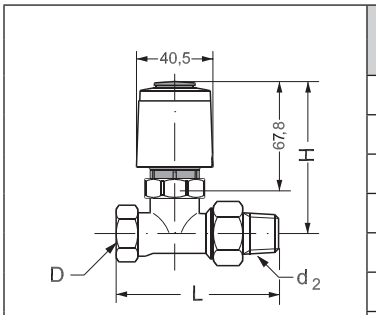
TWA-V / VMT



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	G1¼ A	25/8	87	120

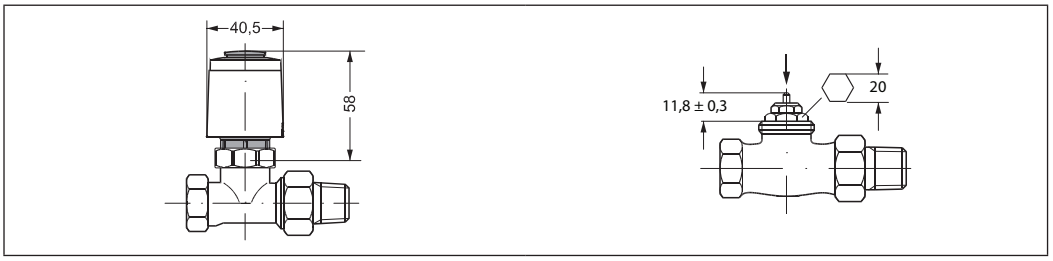
Dimensions

TWA-D / RTD valves



DN	D ISO 7/1	d_2 ISO 7/1	Valve type	H [mm]	L [mm]
10	Rp ³/₈	R ³/₈	RTD-N	83.2	75
15	Rp ½	R ½	RTD-N	83.2	82
20	Rp ¾	R ¾	RTD-N	88.2	98
25	Rp 1	R 1	RTD-N	88.2	125
15	Rp ½	R ½	RTD-G	86.2	96
20	Rp ¾	R ¾	RTD-G	86.2	107
25	Rp 1	R 1	RTD-G	90.2	125

TWA-K



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