

## Data Sheet

# TWA Electric Valve Actuator

### Features:



The TWA (thermal wax actuator) is a 24 volt ac/dc thermo-hydraulic actuator used with on/off controls to allow flow through the system. When

the TWA is energized, an internal wax element gradually heats up opening or closing the valve. TWA can be wired with Danfoss RET-B, RET-24 or FH-WS low voltage thermostats.

- Hot water radiator / baseboard / fin tube heating systems
- Hydronic floor heating systems (zone controls)
- Hot or chilled water applications
- Slow acting wax element eliminates water hammer associated with motorized valves.
- Silent operation
- Visual position indicator to show the open or closed position of the valve
- Low power consumption
- Compact size

### Ordering Information:

Code No.	Type	suitable Valve	Actuator Position	Replaces
088H3110	TWA-A	RA 2000, RA-C	Normally closed	082F1043 (ABNR)
088H3111			Normally open	082F1143 (ABNR)
088H3114			Normally closed w/ end switch	-
088H3120	TWA-V	RAV, VMT*	Normally closed	082F1042 (ABNV)
088H3121			Normally open	082F1142 (ABNV)

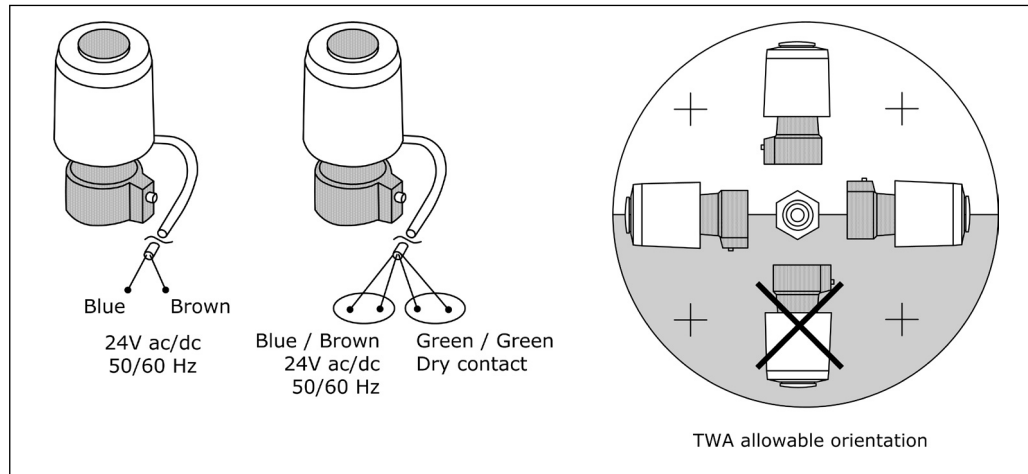
\* TWA-V is not to be used with VMT valves having Cv > 2.7 GMP

### Specifications:

<b>Suitable systems</b>	Hot water applications*
<b>Supply voltage</b>	24V ac/dc (Class II, SELV)
<b>Frequency</b>	50 - 60 Hz
<b>Avg. power consumption</b>	2W
<b>Travel time of spindle</b>	~3 min
<b>Ambient temperature</b>	32 - 140°F (0 - 60°C)
<b>Wire lead length</b>	4ft (1200 mm)
<b>End switch, max. Output</b>	24VAC / 2 A
<b>TWA-A (Maximum Δp for quiet operation)</b>	8.7 psi (0.6 bar)
<b>TWA-V (Maximum Δp for quiet operation)</b>	11.6 psi (0.8 bar)

\*TWA's are not recommended for steam valves or inside tight enclosures. Excessive ambient temperatures past 140°F (60°C) can place the wax in a semi-liquefied state causing the valve to falsely operate and the regulation to be lost.

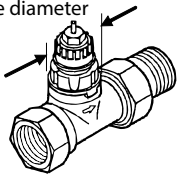
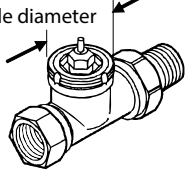
**Electric Connection & Mounting Orientation:**



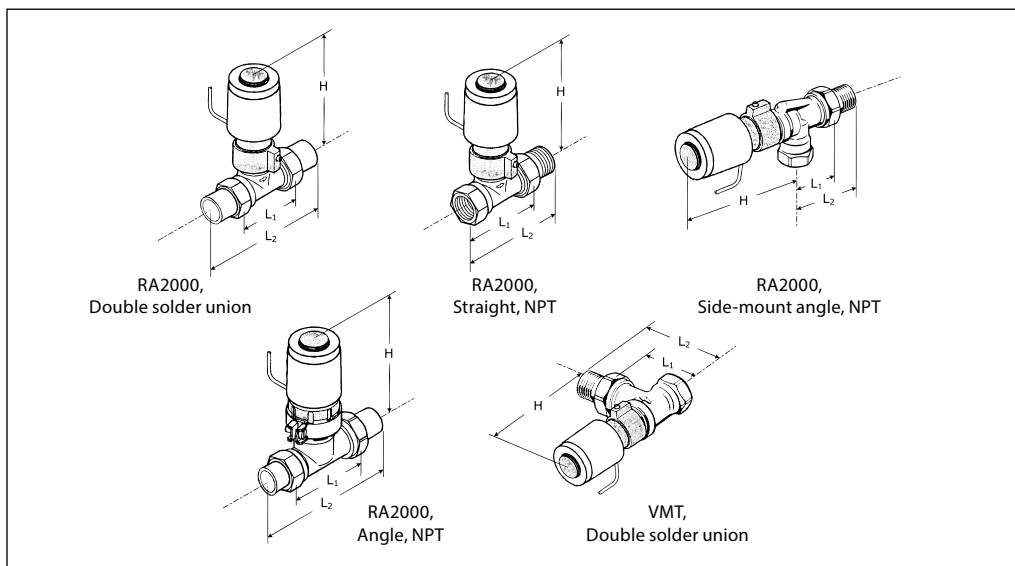
When 24 volts is applied to the actuator, the internal wax element heats up allowing the valve to actuate. Unlike valves that open and close quickly, the actuation of the TWA is slow, reducing water hammer and as a result performs similar to a modulating valve in certain situations.

When the TWA is used on systems with excessive temperatures, the orientation of the actuator should be horizontal to ensure proper airflow across the actuator. If it is mounted within an enclosure, proper airflow through the enclosure is essential to offset the increased ambient temperature's influence on the actuator.

**Identifying Mounting Valve Type:**

Valve Style	Distinguishing Dimension
RA 2000	7/8" (22.5 mm) outside diameter 
RAV / VMT	1 - 5/16" (34 mm) outside diameter 

**Dimensions:**  
in" (mm)



TWA-A, RA 2000				
<i>Straight Valve, Double Solder Union</i>				
Code No.	Size	L1	L2	H
013G8042	1/2"	2.6" (66)	3.9" (99)	3.8" (96)
013G8044	3/4"	2.9" (73)	4.6" (116)	3.9" (99)
<i>Straight Valve, NPT</i>				
Code No.	Size	L1	L2	H
013G8015	1/2"	2.6" (66)	3.3" (83)	3.6" (91)
013G8020	3/4"	2.9" (73)	4.8" (121)	3.8" (96)
013G8025	1"	3.5" (88)	5.0" (127)	3.8" (96)
013G8032	1-1/4"	4.3" (109)	5.3" (134)	3.8" (96)
<i>Side Mounted Angle Valve</i>				
Code No.	Size	L1	L2	H
013G8013	1/2"	1.1" (27)	2.3" (58)	4.2" (106)
013G8018	3/4"	1.3" (33)	2.6" (66)	4.2" (106)
013G8023	1"	1.6" (40)	3.0" (76)	4.2" (106)
013G8030	1-1/4"	1.8" (45)	3.4" (86)	4.1" (104)
<i>Angle Valve</i>				
Code No.	Size	L1	L2	H
013G8014	1/2"	1.2" (30)	2.3" (58)	3.6" (91)
013G8019	3/4"	1.3" (33)	2.6" (66)	3.8" (96)
013G8024	1"	1.6" (40)	3.0" (76)	3.8" (96)
013G8031	1-1/4"	1.8" (45)	3.4" (86)	4.2" (106)

TWA-V, VMT				
Code No.	Size	L1	L2	H
065F0102	1/2"	3.6" (91)	4.9" (124)	3.0" (76)
065F0104	3/4"	4.0" (101)	5.7" (144)	3.0" (76)

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