

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) |

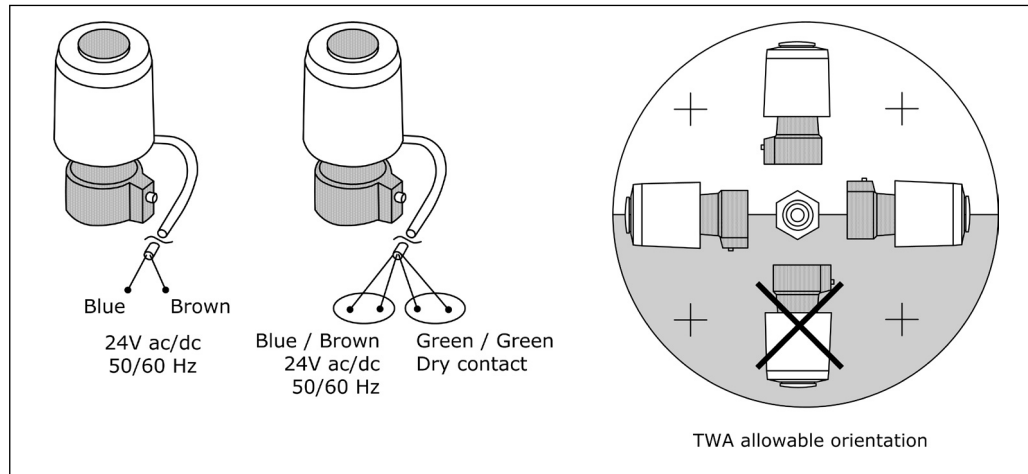
* TWA-V is not to be used with VMT valves having Cv > 2.7 GMP

Specifications:

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



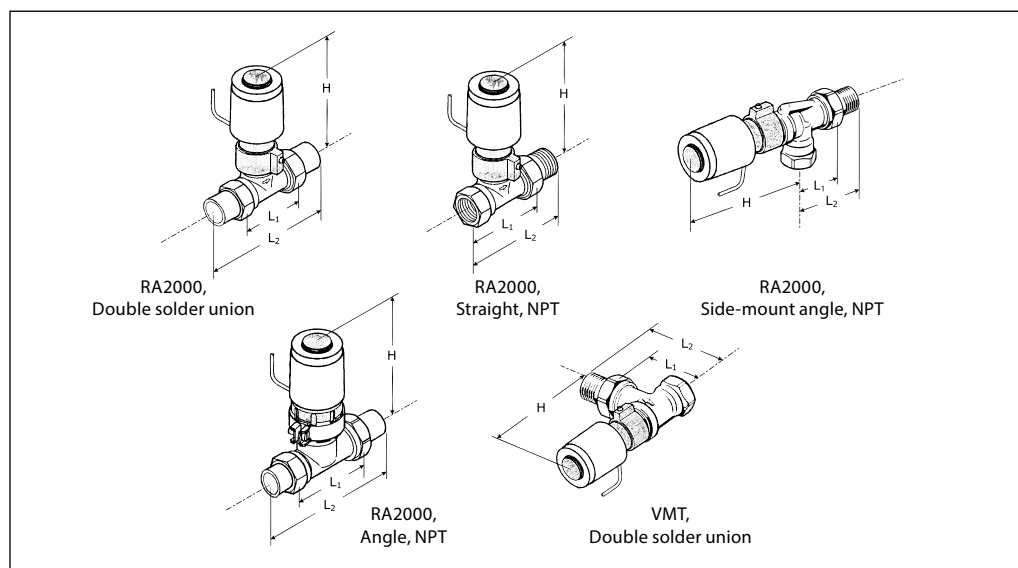
When 24 volts is applied to the actuator, the internal wax element heats up allowing the valve to actuate. Unlike valves that open and close quickly, the actuation of the TWA is slow, reducing water hammer and as a result performs similar to a modulating valve in certain situations.

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 | <p>7/8" (22.5 mm) outside diameter</p> |
| RAV / VMT | <p>1 - 5/16" (34 mm) outside diameter</p> |

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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