FIRE-SAFE THERMAL/ ELECTRO-THERMAL VALVES

BALL VALVES

APV AUSTRALIAN PIPELINE VALVE®

TORQTURN

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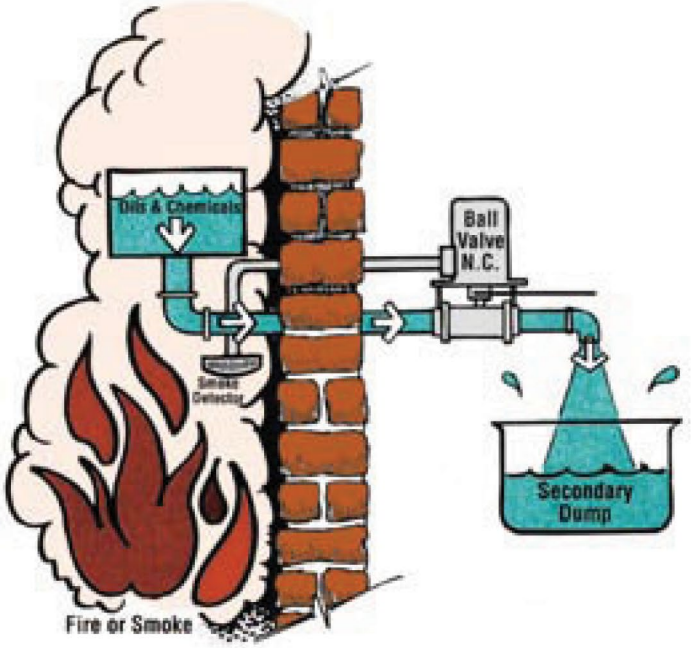
APV Application Sheet for Fire Safe Actuated Ball Valve

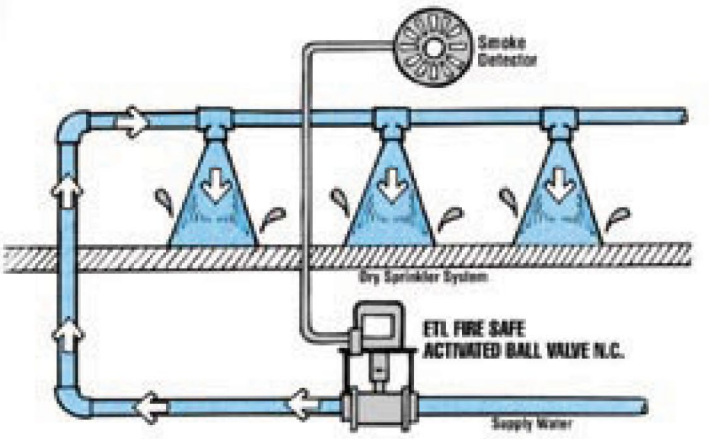
FIGURE 1
ETL Fire Safe Ball Valve with Smoke Detector



A) An Electro-Thermal link fire safe activated ball valve will open to dump flammable fluids to another source as shown.

B) A fire safe thermal shut-off ball valve will close to prevent fueling of a fire as in such cases of petroleum plants or hazard ous fluids in chemical processing plants.

FIGURE 2
Electro-Remote or Smoke Analyser**

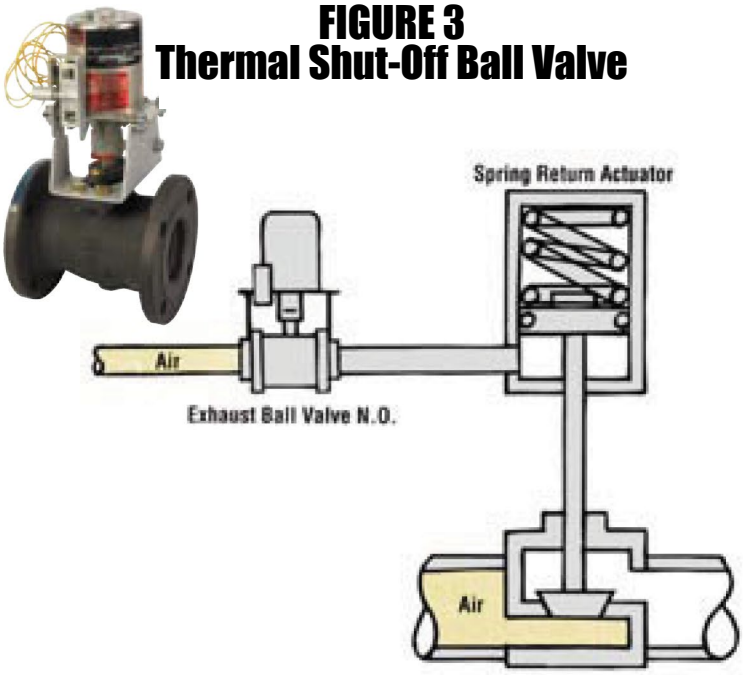


A) This system is used mainly where areas to be protected will be exposed to below freezing temperatures at some time during the year.

** If smoke analyzer is used be sure it operates below freezing.

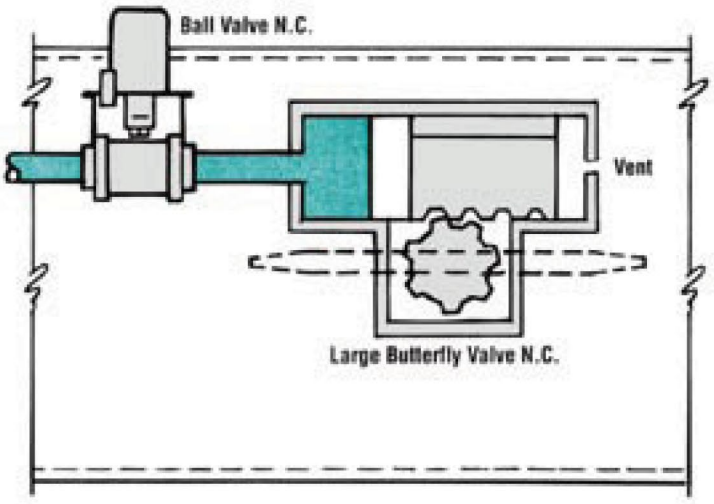
Smoke detectors are not UL listed for this service and are not claimed. It is also important to note that many detectors will activate the ETL when battery or power source is low so that a warning signal may be announced.

FIGURE 3
Thermal Shut-Off Ball Valve



A) thermal shut-off ball valve will close to block air supply to spring return valve actuator. Pressure in actuator will bleed off through exhaust ball valve.

FIGURE 4
Thermal Actiavated Ball Valve N.C.

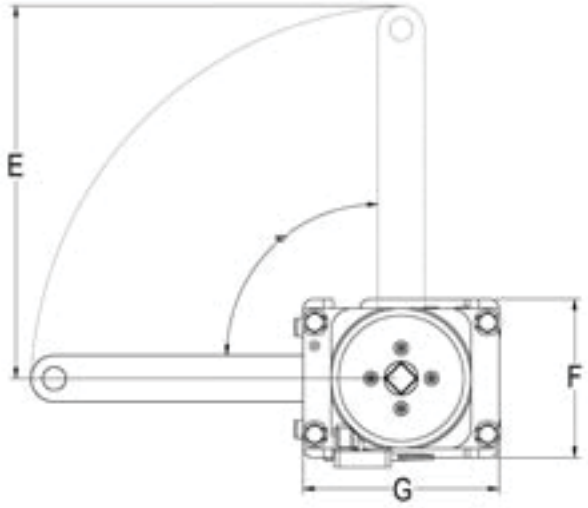


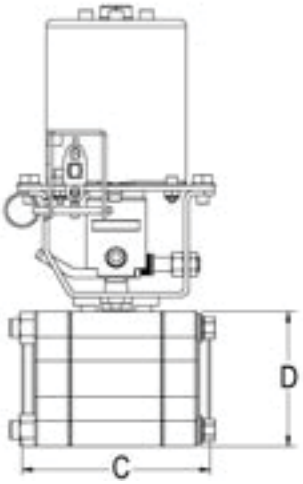
A) Thermal activated ball valve will open to allow pressure from auxiliary pressure supply to open a large valve such as a butterfly to allow ventilation of dangerous gases or fumes.

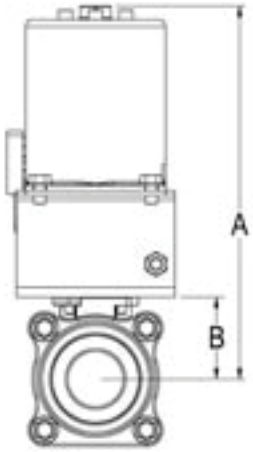
B) thermal shut-off ball valve will also close main supply pressure to large pinch valve to allow valve to open.

Threaded / Socket-weld / Butt-weld Assembly Dimensions

Thermal Link Assemblies

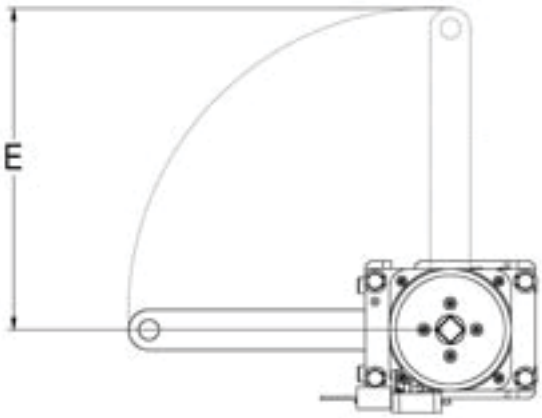


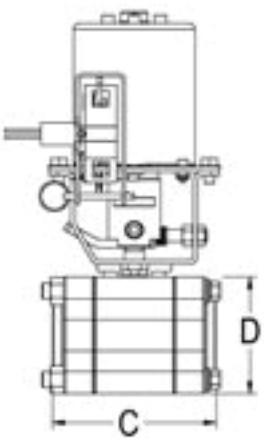


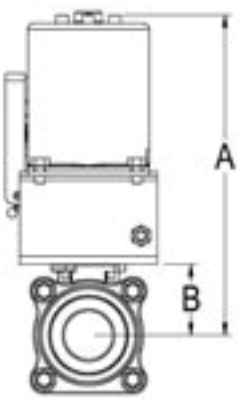


			THREADED/SOCKET-WELD	BUTT-WELD				
	A	B	C	C	D	E	F	G
1/4" - 3/8"		CALL	FOR	INFORMATION				
1/2"	6.9	1.1	2.6	2.9	2.1	7.8	3.3	4.8
3/4"	7.1	1.3	3.1	3.4	2.3	7.8	3.3	4.8
1"	7.5	1.7	3.7	4.0	2.6	7.8	3.3	4.8
1-1/4"	9.7	1.8	4.3	4.6	2.9	10.0	4.3	5.3
1-1/2"	10.0	2.1	4.6	5.5	3.4	10.0	4.3	5.3
2"	10.2	2.3	5.2	6.0	3.7	10.0	4.3	5.3
2-1/2"	10.2	2.3	6.5	N/A	4.6	10.0	4.3	5.3

Electro-Thermal Link Assemblies







			THREADED/SOCKET-WELD	BUTT-WELD				
	A	B	C	C	D	E	F	G
1/4" - 3/8"		CALL	FOR	INFORMATION				
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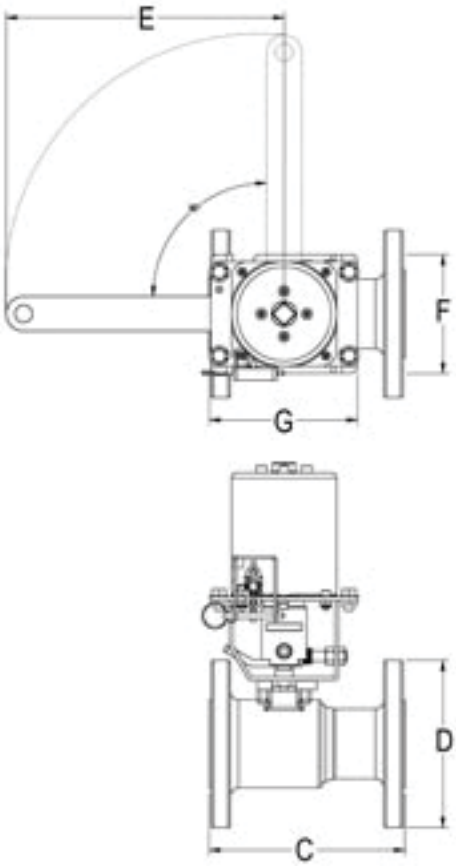
3/4"	7.1	1.3	3.1	3.4	2.3	7.8	3.3	4.8
1"	7.1	1.7	3.7	4.0	2.6	7.8	3.3	4.8
1-1/4"	9.7	1.8	4.3	4.6	2.9	10.0	4.3	5.3
1-1/2"	10.0	2.1	4.6	5.5	3.4	10.0	4.3	5.3
2"	10.1	2.3	5.2	6.0	3.7	10.0	4.3	5.3
2-1/2"	10.2	2.3	6.5	N/A	4.6	10.0	4.3	5.3

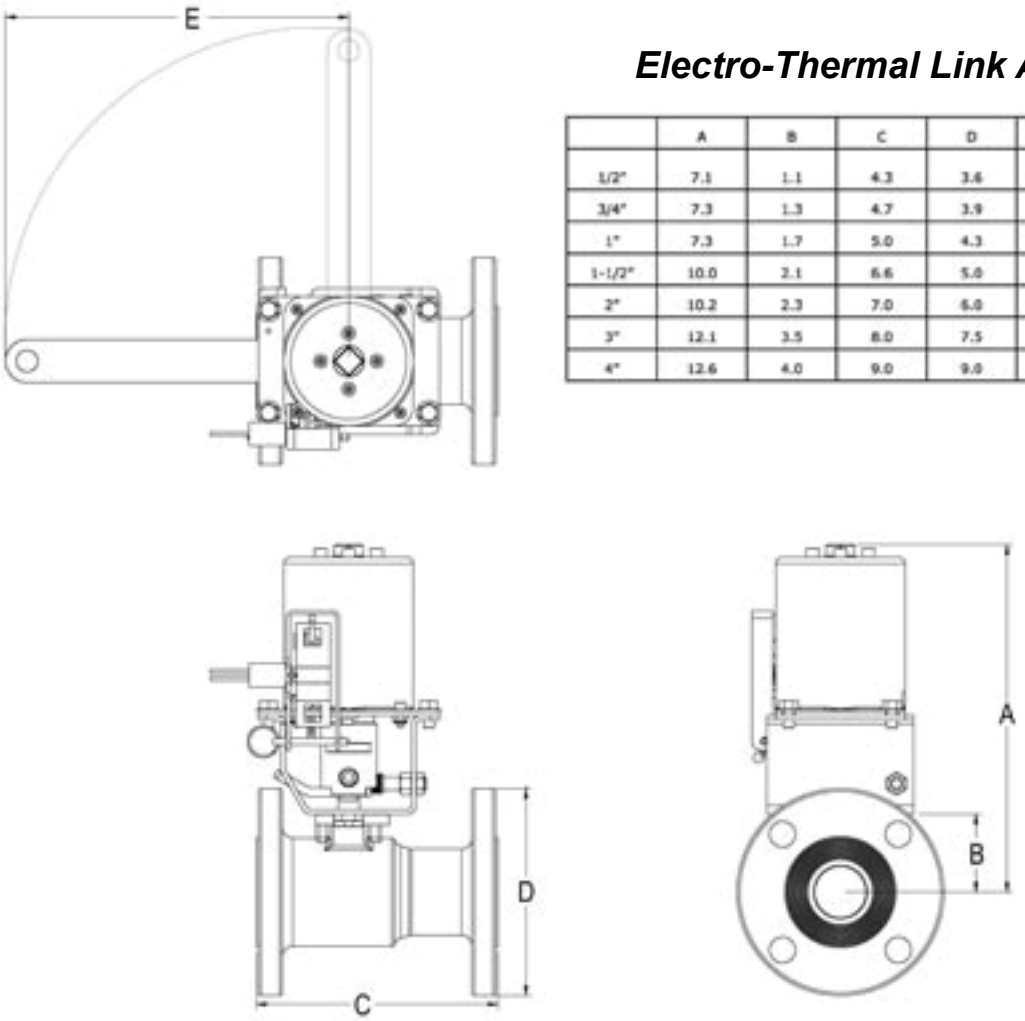
Flanged Assembly Dimensions

Thermal Link Assemblies



	A	B	C	D	E	F	G
1/2"	6.9	1.1	4.3	3.6	7.8	3.3	4.8
3/4"	7.0	1.3	4.7	3.9	7.8	3.3	4.8
1"	7.4	1.7	5.0	4.3	7.8	3.3	4.8
1-1/2"	10.0	2.1	6.6	5.0	10.0	4.3	5.3
2"	10.2	2.3	7.0	6.0	10.0	4.3	5.3
3"	12.1	3.5	8.0	7.5	10.0	4.3	5.3
4"	12.6	4.0	9.0	9.0	18.0	4.3	5.3

Electro-Thermal Link Assemblies



	A	B	C	D	E	F	G
1/2"	7.1	1.1	4.3	3.6	7.8	3.3	4.8
3/4"	7.3	1.3	4.7	3.9	7.8	3.3	4.8
1"	7.3	1.7	5.0	4.3	7.8	3.3	4.8
1-1/2"	10.0	2.1	6.6	5.0	10.0	4.3	5.3
2"	10.2	2.3	7.0	6.0	10.0	4.3	5.3
3"	12.1	3.5	8.0	7.5	10.0	4.3	5.3
4"	12.6	4.0	9.0	9.0	18.0	4.3	5.3

Thermal Shut-Off, Heat Actuated Ball Valve

Thermal Link - Figure 1

The Essex thermal actuated shut-off ball valve combines the operating characteristics of a manual operated ball valve with the added safety feature of automatic operation. To the event of fire or other determined ambient temperature, the operation can be set to automatically open or close as required.

Thermal links may be furnished U.L. listed for 135°, 165°, 212°, 286°, 360°, and 500° F.

All links are Factory Mutual approved.

Applications include activating sprinkler systems for fire control, or shutting off hazardous lines in event of fire.

The Essex standard thermal shut-off ball valve. THR0001CT, will operate with pressures in excess of 1000 psi at temperatures of -20 to 425° F (for upper limit 500° F thermal link.

Factory Mutual approved rating is for flammable liquids and 125 psi.

MODEL TA0001X, TA0002X, TA0003X - Factory Mutual Approved

VALVE OPTIONS

- **Stainless steel, carbon steel, monel, inconel, hastelloy B&C, alloy 20, copper and brass.**
- **Valves sizes 1/4 thru 4 inches.**
- **Valves in figures 1 and 2 are shown with removeable handle.**
- **Manual remote models are optional. Send for catalogue application sheet HR-3**

Electro-Thermal Shut-Off, Electric or Heat Actuated Ball Valve

The electro-thermal link (ETL) used on the APV actuated shut-off ball valves is compatible with most smoke or gas dectectors on the market.

The operating range of the link is 6 to 30 VAC or 6 to 30 VDC. It requires less than 0.2 amperes of power, .5 milliseconds at 24 volts. The unit may be used with other similar cicuitry such as a rate or rise detector or other automatic alarm switch (see application sheet HR-1 & HR-2).

Applications include those of the 74ºC Torqturn standard thermal link shown in Fig1, but, in addition will operate when subjected to an electrical impulse of low power and short duration from local or remote location.

ETL may be furnished at 100ºC or 124ºC but are not U.L. listed.

This unit used with fuel and combustion controls, combustion safe-guards, electrical signaling systems which are:

a) heat activated
b) smoke or gas activated
c) flame-energy activated
d) activated by rate or rise or maximum temperature

MODEL EA0001X, EA0002X and EA0003X - Factory Mutual Approved

VALVE OPTIONS:

- **Thermal links may be furnished U.L. listed for 57ºC, 74ºC, 100ºC, 141ºC, 182ºC, and 260ºC.**
- **Heat or electrical actuated links are U.L. listed for 74ºC - Not U.L. listed for 100ºC and 124ºC.**
- **May be purchased as a dadman handle without fusible link.**
- **Only the ETL in Fig 2. is listed. Components used in conjunction with this unit are not claimed.**

ETL (Electro-Thermal-Link) - Figure 2

The thermal shut off ball valve may be purchased to shut, open, or be activated to its last position.

The primary function of this unit is to have the valve unit shut itself off in case of fire. This is in effect prevents a fire from spreading by fueling itself when the piping system ruptures and carries flammable fluids such as oil, gasoline, paints, natural gas, etc.

In additional, the unit as an option may be purchased to sense and activate itself during other hazardous conditions such as in the presence of a gas leak, smoke, heat, dust or over-pressurisation, when connected with appropriate sensor not furnished, claimed or approved by APV.

The basic unit comes standard with a 74ºC thermal link, but may be purchased as an option with other links set at 57ºC, 100ºC, 141ºC, 182ºC and 260ºC, or you may, as an option, purchase the unit with an ETL (Electro Thermal Link) for operating the unit remotely or for the purpose of hooking the unit to a gas or smoke detector, etc.

The unit's power output is self contained an operates automatically when dangerous situations occur. The unit also may be operated manually to the on-off position or remote manually operated from over 30 feet without tampering with or voiding the fusible links warranty under normal operating conditions (i.e. the valve is like any other manually operated fire safe ball valve used in on-off service). If fire or other hazardous conditions occur and the valve is left in the open position, the valve will close itself automatically.

The unit is available from 6NB through 100NB in size and the valve may be purchased in 316SS or Carbon Steel as standard or optional materials such as inconel, monel, alloy 20, hastelloy, etc. the unit may also be purchased with a removable handle to prevent injury or damage from the high powered quick acting handle in the event of actuation due to fire or other hazards. Optional instrument packages such as lights, siren, horns, etc. used to indicate the status of the APV valve are available, but not provided by APV. These device can indicate if the valve has been operated manually, or if the thermal link override operation has been activated due to an emergency such as fire, smoke, gas leak, etc.

Standard Combinations of Fire-Safe Ball Valves

MODEL TYPE	Standard Valve Sizes in Inches									
	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	3	4
Screwed End	•	•	•	•	•	•	•	•	•	
Socket Weld	•	•	•	•	•	•	•	•	•	
Butt Weld	•	•	•	•	•	•	•	•	•	
Flanged End 150 lb Rating			•	•	•		•	•	•	•
Flanged End 300 lb Rating			•	•	•		•	•	•	

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The information and approximate dimensions herein were considered correct at the time of printing. However, valve companies improve or modify products without notice or obligation to revise the products in service, or those being sold.

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