# TLV. TEMPERATURE CONTROL STEAM TRAP MODEL FX1 QuickTrap.

UNIVERSAL ADJUSTABLE THERMOSTATIC TRAP TO CONTROL CONDENSATE DISCHARGE TEMPERATURE

### **Benefits**

Stainless steel-bodied bimetal thermostatic steam trap for accurate control of condensate discharge temperature. For use with steam tracing lines, storage tanks and instrument enclosures.\*

- 1. Two-bolt universal connector enables quick replacement and allows the trap to be positioned in the correct attitude, regardless of pipeline configuration.
- 2. Discharge temperatures can be set between 120 and 390 °F to utilize the sensible heat in condensate.
- 3. Includes a built-in auger device for removing scale and build-up from the valve seat.
- 4. One screen located in connector and one in trap ensure trouble-free operation.
- 5. Overexpansion mechanism prevents damage to the bimetal element and ensures long service life.
- Rapid venting of initial air and fast discharge of cold condensate reduce start-up time.
   \* See Applications on page 2.



## Specifications

Mod	lel			FX1		Connections and sizes in bold are standard			
Con	nection	So	rewed S	ocket Weld	Flanged	* Set temperature should be more than 27 °F			
Size	(in)		1⁄2, 3⁄4, 1			below the steam saturation temperature.			
Max	imum Operating Pressure	e (psig)	300			Designed for use with F46, F32 Connector Units			
Mini	mum Operating Pressure	(psig)	15			and VI/V2/VIP/V2P Trap Stations. Trap and			
Max	imum Operating Tempera	ature (°F)	662			Connector Units sent as separate units for			
Con	densate Temperature Set	ting Range (°F)	120 to 39	90* (see graph	right)	TIEXIDIE INSTAllation.			
Max	imum Allowable Pressure	(psig)	650			Temperature Setting Range			
Max	imum Allowable Tempera	ture (°F)	752			<u> </u>			
Con	nector Unit		F46						
Trap	) Unit			X1**		27 °F below saturated			
Nie	Description	Matarial		110	-	Steam temperature			
INO.	Description	Iviateriai	ASTIVI/AISI	JI3	-				
	Trap Body	Cast Stainless Steel	A351 Gr.CF8		_				
(2)	Cover	Stainless Steel	A182 Gr.F304		_				
(3)	Valve Stem	Stainless Steel	AISI420	SUS420J2	_	<b>a</b> 200			
(4)	Adjusting Screw	Stainless Steel	AISI303	SUS303	_	Ĕ <b>₩</b> + + + + + + + + + + + + + + + + + + +			
(5)	Bimetal Element	Bimetal			_	e et			
<u>(6)</u>	Washer	Stainless Steel	AISI304	SUS304	_	σ <sub>120</sub>			
(7)	Valve Seat	Stainless Steel	AISI303	SUS303	_	15 20 30 50 100 200 30			
(8)	Valve Seat Gasket	Stainless Steel	AISI316L	SUS316L	_	Operating Pressure (psig)			
	Overexpansion Spring	Stainless Steel	AISI304	SUS304					
(10)	Return Spring	Stainless Steel	AISI304	SUS304		<b>FION</b> serious injury. DO NOT use this product outside			
(11)	Snap Ring	Stainless Steel	AISI304	SUS304	<u> </u>	of the specification range I ocal regulations			
(12)	Spring Pin	Stainless Steel	AISI304	SUS304	<ul> <li>may restrict the</li> </ul>	use of this product to below the conditions quoted			
(13)	Seal Ring	Fluorine Rubber	D2000HK	FPM					
	Screen inside/outside	Stainless Steel	AISI430/304	SUS430/304	16	154323133171823245 27 33			
(15)	Lock Nut	Stainless Steel	AISI303	SUS303					
	Cap Nut	Cast Stainless Steel	A351 Gr.CF8	_					
17	Cover Gasket	Stainless Steel	AISI316L	SUS316L	_ Õ—				
(18)	Nameplate	Stainless Steel	AISI304	SUS304	_ 14				
(19)	Spring Guide	Stainless Steel	AISI304	SUS304	65				
20	Thrust Plate	Stainless Steel	AISI304	SUS304					
(21)	Cap Nut Gasket	Graphite	—	—					
22	Connector Flange	Carbon Steel	A105						
23	Retaining Ring	Stainless Steel	A479 Type304	—	- 0				
24	Outer Connector Gasket	Graphite/Stainless Steel	- /AISI304	- /SUS304					
(25)	Inner Connector Gasket	Graphite/Stainless Steel	- /AISI304	- /SUS304	- 0				
(26)	Connector Body	Cast Stainless Steel	A351 Gr.CF8	_					
(27)	Screen	Stainless Steel	AISI430	SUS430	- 8				
28	Screen Holder Gasket	Stainless Steel	AISI316L	SUS316L					
(29)	Screen Holder	Cast Stainless Steel	A351 Gr.CF8	_					
30	Connector Bolt**	Alloy Steel	A193 Gr.B7	—	- * Equivalar				
31	Caution Plate A	Stainless Steel	AISI304	SUS304	Equivalen				
32	Caution Plate B	Stainless Steel	AISI304	SUS304	_				
33	Connector Nameplate	Stainless Steel	AISI304	SUS304	<ul> <li>Contact TL</li> </ul>	V for available replacement parts.			
	Flange** 1/2", 3/4"	Cast Stainless Steel	A351 Gr.CF8	- 1					
(34)	riange 1"	Stl. Steel (Carbon Steel***)	AISI304 (A105***	SUS304 (-***	*)	- B <b>•</b>			
(35)	BD2 Blowdown Valve***	Cast Stainless Steel	A351 Gr.CF8	1 — `	-	Copyriaht © TI V			
(36)	Snap Ring	Stainless Steel	AISI304	SUS304	-				
					-				

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### **Dimensions**



FX1 s	(1 Screwed*/Socket Weld**							
Size	L	Н	W***	W1	φD	φC	h	Weight (lb)
1/2	31⁄8	4 1⁄4	65⁄8	41⁄8	<b>1</b> %16	0.855	$     \frac{5}{5} \frac{1/2}{9/16} $	4.2
3⁄4						1.065		
1	3 3/4		623/32	4 5/16	1 3⁄4	1.330		4.8

\* NPT, other standards available

\* ASME B16.11-2005, other standards available

\*\*\* With optional BD2 add approx. 9/16" to W

FX1 Flanged (in								
Size	L* Connects to ASME Class 150RF 300RF		Н	W***	W1	Weight** (Ib)		
1⁄2	SS: 5 <sup>7</sup> / <sub>8</sub> CS: 5 <sup>1</sup> / <sub>2</sub>	SS: 5 <sup>7</sup> / <sub>8</sub> CS: 5 <sup>1</sup> / <sub>2</sub>	4 1⁄4	65⁄8	4 <sup>1</sup> /8	7.0		
3⁄4	SS: 5 <sup>7</sup> / <sub>8</sub> CS: 6 <sup>1</sup> / <sub>2</sub>	SS: 5 <sup>7</sup> / <sub>8</sub> CS: 6 <sup>1</sup> / <sub>2</sub>				9.2		
1	SS: 6 <sup>5</sup> / <sub>16</sub>	SS: 6 <sup>5</sup> / <sub>16</sub>				11		

Other standards available, but length and weight may vary

SS: stainless steel, CS: carbon steel. Flange material refers only to flanges. F46 connector body material is always stainless steel.
 \*\* Weight is for Class 300 RF \*\*\* With optional BD2 add approx. 9/16" to W

## Sizing Charts

The set temperature of the trap determines the temperature at which the valve opens or closes. As the temperature drops further below the set temperature, the valve opens or allow the discharge of a greater amount of condensate. The set temperature should be set by the highest setting that is acceptable for the product being heated and the discharge capacity should be checked at the lowest allowable condensate temperature to ensure sufficient discharge capacity.

#### **Estimation of Discharge Capacity**

Example: A discharge temperature of 230 °F is the highest set temperature for acceptable product heating, and 200 °F is the lowest allowable discharge temperature for maintaining acceptable product heating. The pressure is 100 psig discharging to atmosphere.

#### Step 1: Use the discharge capacity graph

From the 200 °F condensate temperature on the horizontal axis, follow a vertical line until it intersects the 230 °F set temperature curve (point A). From A, follow a horizontal line across to the vertical axis (point B), and read the discharge capacity, 440 lb/h.



## Applications

DO NOT USE on any application except steam tracing lines, storage tank coils and instrument enclosures. SUITABLE for steam tracing lines or storage tank coils ONLY IF the required product viscosity will be maintained when the condensate is subcooled at least 27 °F, even to the point of the condensate having a lower temperature than the product temperature. SUITABLE for use on instrument enclosures ONLY IF the steam or condensate temperature in the enclosures will NOT damage the instrument.

## TLV: CORPORATION

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#### Step 2: Use the correction graph

Because the discharge capacity graph is based on a steam pressure of 300 psig, a correction factor must be used to adjust the discharge capacity value to the actual differential pressure at the trap. Read up from 100 psi on the horizontal axis to the diagonal line (point C), then across to the correction factor (point D), 0.57. Multiply the discharge capacity obtained in step 1 by the correction factor to get the actual discharge capacity: 440 lb/h  $\times$  0.57 = 250 lb/h.



Differential pressure is the difference between the inlet and outlet pressure of the trap.



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DO NOT DISASSEMBLE OR REMOVE THIS PRODUCT OR USE THE SCALE REMOVAL FUNCTION WHILE IT IS UNDER PRESSURE.

Allow internal pressure of this product to equal atmospheric pressure and its surface to cool to room temperature before disassembling, removing or using the scale removal feature. Failure to do so could cause burns or other injury. READ INSTRUCTION MANUAL CAREFULLY.





SDS A2008-03 Rev. 3/2025 Products for intended use only. Specifications subject to change without notice.