ThermOmegaTech®

APPLICATION PROFILE #2

MANUAL VS. AUTOMATIC CONTROL OF STEAM TRACING SUPPLY USING US/A OR TV/SC-A VALVES

EXAMPLE:

A winterizing steam tracing system in a plant located in Philadelphia, PA consumes about 500 pounds per hour of steam.

This system was manually turned on when danger of freezing temperatures approached (mid-September) and turned off in late Spring when danger of freezing had passed (mid-April). Total operating hours are 5,088:

212 days x 24 hours = 5,088 hours in potential freeze season.

The plant's steam cost is $ 8.00 / 1,000 pounds of steam. The operating cost of this system can be calculated as follows:

COST OF MANUALLY OPERATED SYSTEM:

500 pounds per hour x 5,088 hours x $ 8.00/thousand pounds = $20,352.00 per winter season.

COST OF AUTOMATICALLY OPERATED SYSTEM:

When using Therm-Omega-Tech® ambient sensing TV/SC-A or US/A valves, steam tracing will be turned off automatically whenever ambient temperatures rise above 45°F (other closing temperatures can also be specified). Based on U.S. Weather Bureau data for Philadelphia, steam will be on for only 2,895 hours each winter.

500 pounds per hour x 2,895 hours x $ 8.00/thousand pounds = $ 11,580.00 per winter season.

SAVINGS REALIZED PER WINTER SEASON BY USING THERM-OMEGA-TECH® VALVES:

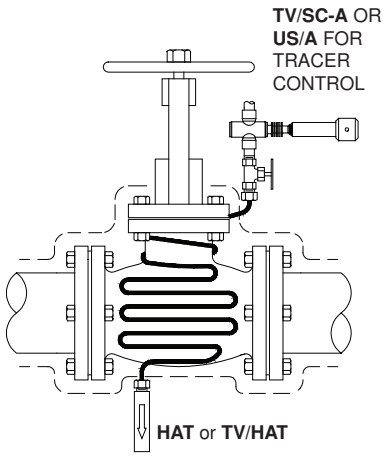
$20,352.00 less $11,580.00 = $ 8,772.00 per year

SIMPLIFIED PAYBACK (R.O.I. RETURN ON INVESTMENT)

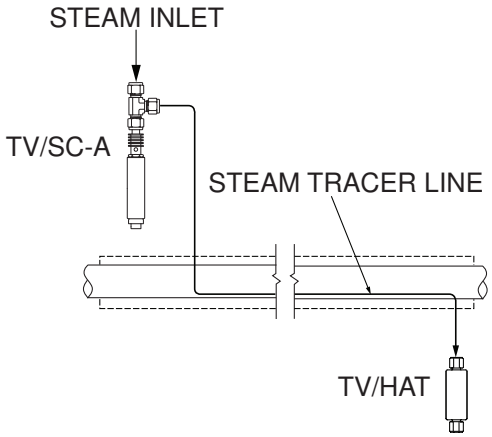
Assuming an installed cost of $ 500.00 for the Therm-Omega-Tech® valve to control the above system, the simplified payback on investment for this application is:

$8,772.00 ÷ $ 500.00 = 17.5 R.O.I.

TRACING A CONTROL VALVE, PUMP CASE, ETC.



PROCESS LINE TRACING



ESTIMATED SAVINGS PER TRACER

Location	Number of Months Annually That Air Temperature Can Fall to 32°F or Lower[1]	Normal Hours Below 45°F[2]	% Of Steam Saved During Months Freeze Can Occur[3]	Dollars Saved Annually, With Tracers on During Months Freezing Can Occur[4]				Dollars Saved Annually, With Tracer on 12 Months[5]			
				Winterization Steam Use, lb/hr				Winterization Steam Use, lb/hr			
				10	20	30	50	10	20	30	50
Great Falls, MT	9	4152	36	186.62	373.25	559.87	933.12	359.42	546.05	732.67	1105.92
Buffalo, NY	8	3829	34	156.67	313.34	460.42	783.36	387.07	543.74	690.82	1013.76
Charleston, WV	7	2716	46	185.47	370.94	556.42	927.36	473.47	658.94	844.42	1215.36
Charlotte, NC	6	1769	59	203.90	407.81	611.71	1019.52	549.50	753.41	957.31	1365.12
Chicago, IL	8	3838	33	152.06	304.13	456.19	760.32	382.46	534.53	686.59	990.72
Cleveland, OH	8	3499	39	179.71	359.42	539.14	898.56	410.11	589.82	769.54	1128.96
Houston, TX	5	229	94	270.72	541.44	812.16	1353.60	673.92	944.64	215.36	1756.80
Los Angeles, CA	2	117	92	105.98	211.97	317.95	529.92	739.58	787.97	893.95	1105.92
Memphis, TN	6	1829	58	200.45	400.90	601.34	1002.24	546.05	746.50	946.94	1319.04
Mobile, AL	4	759	74	170.50	340.99	511.49	852.48	631.30	801.79	972.29	1313.28
New Orleans, LA	4	468	84	193.54	387.07	580.61	967.68	654.34	847.87	1041.41	1428.48
New York, NY	6	2856	34	117.50	235.01	352.51	587.52	463.10	580.61	436.32	933.12
Philadelphia, PA	7	2895	43	173.38	346.75	520.13	866.88	461.76	634.75	808.13	1154.88
Pittsburgh, PA	7	3512	30	120.96	241.92	362.88	604.80	408.96	529.92	650.88	892.80
Portland, ME	8	4140	28	129.02	258.05	387.07	645.12	359.42	488.45	617.47	875.52
St. Louis, MO	7	2838	44	177.41	354.82	532.22	887.04	465.41	642.82	820.22	1175.04
Seattle, WA	6	2915	33	114.05	228.10	342.14	570.24	460.48	573.70	687.90	915.84
Tulsa, OK	6	2127	51	176.26	352.51	528.77	881.28	521.86	698.11	874.37	1226.88

NOTES

1. U.S. Weather Bureau Data. It is assumed that tracers for winterization are normally left on during this time.
2. Therm-Omega-Tech® valves automatically turn on steam to tracers.
3. Based on number of hours ambient air temperature is above 45°F. Therm-Omega-Tech® valves automatically turn off steam to tracers.
4. Steam Cost Assumed: $8.00/1,000 lb. Steam Load should include needed heat plus losses due to leaks.
5. Steam Cost Assumed: $8.00/1,000 lb. It is assumed that steam use is a constant 10 lb/hr during "Summer".
   Example: Winterization steam may average 30 lb/hr during 7 months when freezing can occur. For the balance of the year (5 months), if tracer is allowed to remain active, it has been assumed steam use is 10 lb/hr.

Therm-Omega-Tech®, Inc.
353 Ivyland Road
Warminster, PA 18974
1-877-379-8258
www.ThermOmegaTech.com
valves@thermomegatech.com

Application02
Rev: 5/1/2020

Because of continuous improvements, Therm-Omega-Tech®, Inc. reserves the right to change the design and specifications without notice