Mark 85 Series

"Controlled Failure" Temperature Regulators

The Mark 85 is a self-operated temperature regulator with controlled failure option which allows you to predetermine the position of the valve in the event of a thermal system failure. The Mark 85 is designed to fail closed on heating application and to fail open on cooling applications.

Operation

The direct acting Mark 85 is normally open, held in this position by a vacuum in the thermal system. As the process temperature increases, the vacuum decreases, allowing the spring to pull the diaphragm downward to close the seats. A leak in the thermal system will again decrease the vacuum and cause the seats to close.

An inherent feature of the controlled failure design is that it is slower responding than a standard temperature regulator and cannot compensate as quickly for rapid load changes. It is ideal for slower responding systems such as autoclaves and large storage tanks.

Features

- Rugged actuator long service life
- Replaceable thermal system – can be replaced in the field for range changes. Available with capillaries up to 100 feet long (1,5 meters), although long capillaries should be avoided if possible
- Sliding Gate Seats – features advanced sliding gate seat technology
  - — Straight-through flow for reduced turbulence and quiet operation
  - — Short stroke for fast response and accurate regulation
  - — Easily interchangeable Cv's
  - — Tight shutoff due to overlap of seat closure area

JORDANVALVE

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SPECIFICATIONS

Sizes: 1/2" (DN15) and 3/4" (DN20) *(Note: 1/2" body can be supplied with reducing bushings for use on 1/4" & 3/8" lines)*

End Connections
- Threaded – FNPT, BSPT, BSPP
- Flanged

Body Materials
- Ductile Iron
- Bronze
- Carbon Steel
- Stainless Steel

Trim Materials
- 303SS for DI, BRZ & CS body valves
- 316SS for SS body valves

Seat Materials
- Jorcote on SST — Standard
- Other materials available — Consult factory

Yoke Material: Cast Iron

Stem Packing Materials: Spring-loaded Teflon (up to 450°F, 232°C)

Thermal System
- Actuator: Cast Iron
- Standard Capillary: 8' (2,4 m) Cooper
- Standard Armor: 316SS
- Optional Temperature Gauge

Note: other sizes and materials available on request (capillaries)

Service: Steam, water, oil, gas, air and chemicals

Shutoff: ANSI Class IV

Action
- Direct (increase in temperature closes valve — fails closed)
- Reverse (increase in temperature opens valve – fails open)

Overheat Protection: 130°F (54°C) above the top end of the control range

Body Rating: Ductile Iron up to 988 psi (68,1 bar) and 450°F (232°C); Carbon Steel and Stainless Steel up to 1480 psi (102 bar) and 450°F (232°C); Bronze up to 500 psi (34,5 bar) and 400°F (204°C) depending on specific construction. -20°F (28,9°C) temperature limit on all materials; for other temperatures, consult factory

Ranges of Temperature Control

Select range that contains your required setpoint

40-80°F (4-27°C)	75-115°F (24-46°C)	100-135°F (38-57°C)	130-165°F (54-74°C)	155-190°F (68-88°C)
170-210°F (77-99°C)	190-230°F (88-110°C)	210-250°F (99-121°C)	240-285°F (116-141°C)	270-325°F (132-163°C)

Cv Values & Maximum Differential Pressures

Valve Size		Flow Coefficient		Seat Material	Max ΔP	
Inches	DN	Cv	Kv		PSI	Bar
1/4" or 3/8"	8 & 12	0.84 or 1.6	0,7 or 1,4	SST	50	3,5
				Jorcote	60	4,1
1/2" & 3/4"	15 & 20	2.5 or 4.4	2,2 or 3,8	SST	50	3,5
				Jorcote	60	4,1

Low Flow Cv's (Kv's) Available: reduced Cv's (Kv's) can be used in any size valve as long asit is a smaller value than the standard Cv (kv) for that particular size. In addition, the following special low flows can be provided:

0.42 (0,4)	0.2 (0,18)	0.08 (0,07)	0.04 (0,03)	0.02 (0,017)
0.008 (0,007)	0.004 (0,003)	0.002 (0,0017)	0.0008 (0,0007) (N/A in 316SS)	

Standard Bulb Dimensions

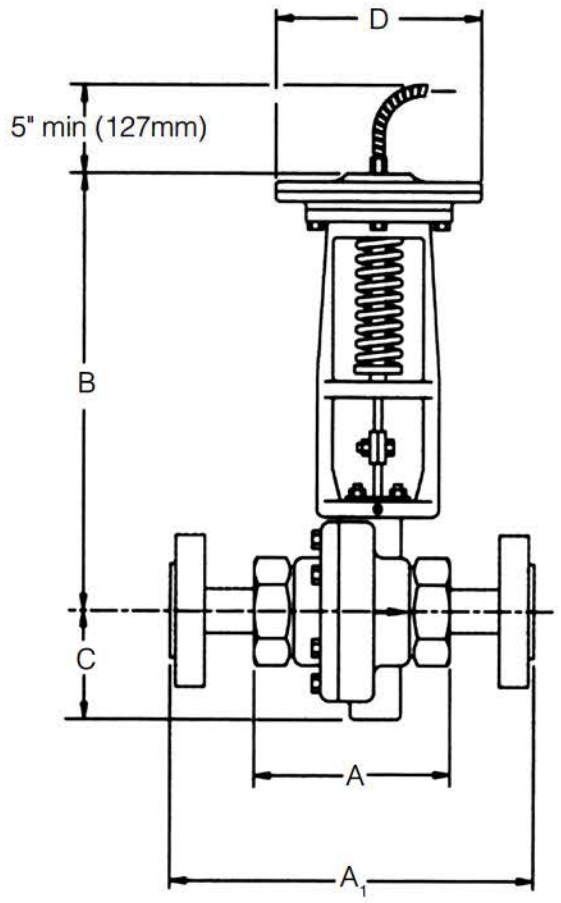
Bulb Type	Nominal Bulb Size (diameter x length)*	
	101°F (38,3°C) or above	100°F (37,7°C) or below
A & B	3/4" x 14" (19mm x 356mm)	3/4" x 20" (19mm x 508mm)
C	1" x 12" (SST only) (25mm x 305mm)	1" x 14" (SST only) (25mm x 356mm)
	1-1/8" x 14" (Copper only) (29mm x 356mm)	1-1/8" x 14" (Copper only) (29mm x 356mm)
D - E - F	3/4" x 14" (19mm x 356mm)	3/4" x 20" (19mm x 508mm)

*Consult factory for insertion length and special bulb

Wells

Type	Bulb
A - Standard	To fit bulb with 1" (25mm) NPT tank fitting
B - Flanged	To fit bulb with 1-1/2" (38mm) or 2" (51mm) x 150# or 300# flange

DIMENSIONS



- Threaded & FSW Ends

Valve Size	Material	Dimensions (Inches)				Weight lbs
		A	B	C	D	
1/2"	DI/BRZ	3.62	12.00	2.25	7.00	23
	CS/SS	3.65	12.00	2.25	7.00	23
3/4"	DI/BRZ	3.62	12.00	2.25	7.00	23
	CS/SS	3.65	12.00	2.25	7.00	23

- Threaded & FSW Ends, DIN

Valve Size	Material	Dimensions (Metric)				Weight kgs
		A	B	C	D	
DN15	DI/BRZ	92	305	57	178	10,4
	CS/SS	93	305	57	178	10,4
DN20	DI/BRZ	92	305	57	178	10,4
	CS/SS	93	305	57	178	10,4

- Flanged Ends

Valve Size	ANSI Flange	Dimensions (Inches)				Weight lbs
		A	B	C	D	
1/2"	150#	7.25	12.00	2.25	7.00	25
	300#	7.50	12.00	2.18	7.00	25
3/4"	150#	7.25	12.00	2.25	7.00	27
	300#	7.62	12.00	2.31	7.00	27

- Flanged Ends, DIN

Valve Size	ANSI Flange	Dimensions (Metric)				Weight kgs
		A	B	C	D	
DN15	10/16	130	305	57	178	11,3
	25/40	130	305	55	178	11,3
DN20	10/16	150	305	57	178	12,2
	25/40	150	305	59	178	12,2

Model No	Size	Body Mat'l	/	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

	Model
85	Standard
85T	with Temperature Gauge

	Size
025	1/4" (DN8)
038	3/8" (DN10)
050	1/2" (DN15)
075	3/4" (DN20)

	Body Material
DI	Ductile Iron
BR	Bronze
CS	Carbon Steel (WCB)
S6	Stainless Steel (CF8M)

1 & 2	End Connections
PT	NPT
BT	BSPT
BP	BSPP
SW	FSW
I5	150# IFE CS or SST valves
F5	150# FE (except IFE)
I3	300# IFE
F3	300# FE (except IFE)
ZZ	Non-Standard

ORDERING SCHEMATIC (CON'T)

3 & 4	Trim
T3	303SS
T6	316SS
ZZ	Non-standard

5 & 6	Seats		
	Material	Cv (Kv)	
A	303 SST	1	0.21 (0.18)
B	316 SST	2	0.42 (0,36)
V	303SS/Jorcote	3	0.84 (0,72)
W	316SS/Jorcote	4	1.6 (1,4)
		5	2.5 (2,2)
		6	4.4 (3,8)
ZZ	Non-Standard		

7 & 8	Range
20	40~80°F
32	75~115°F
40	100~135°F
51	130~165°F
55	155~190°F
59	170~210°F
61	190~230°F
67	210~250°F
74	240~285°F
82	270-325°F
ZZ	Non-Standard

9 & 10	Thermowell		
	Type, Fitting, & Mat'l	Size: For Bulb Dia x Length	
C	Type A, 3/4" NPT, Cu	J	3/4" x 14
D	Type A, 3/4" NPT, SST	K	3/4 x 20
E	Type B, 1-1/2"x150#, SST		
F	Type B, 1-1/2"x300#, SST		
G	Type B, 2"x150#, SST		
H	Type B, 2"x300#, SST		
NN	None		
ZZ	Non-Standard		
	Tank Fitting Only		
21	3/4" NPT Brass for 3/4" Bulb		
22	3/4" NPT SST for 3/4" Bulb		
23	1" NPT Brass for 3/4" Bulb		
24	1" NPT SST for 3/4" Bulb		
NN	None		
ZZ	Non-Standard		

11 & 12	Bulb		
	Type & Material	Dia x Length	
	Type A & B Bulbs		
A	Type A Cu	5	3/4" x 14"
G	Type A SST	6	3/4" x 20
H	Type B SST		
J	Teflon Coated B		
ZZ	Non-Standard		
	Type C Bulbs		
C9	Type C Cu	1-1/8" x 14"	
C1	Type C SST	1" x 12"	
C2	Type C SST	1" x 14"	
ZZ	Non-Standard		

13 & 14	Capillary/Armor		
	Material	Length	
A	Cu	1	8' (2,4 m)
B	SST	2	10' (3,0 m)
T	Teflon Coated	3	12' (3,7 m)
		4	15' (4,6 m)
		5	20' (6,1 m)
		6	30' (9,1 m)
Z	Non-Standard		

15	Actuator
7	Standard
Z	Non-Standard

16	Action
D	Direct
R	Reverse

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