

SteaMon

Description

The Forbes Marshall SteaMon is a flow measurement device for saturated steam application. It operates on the shedding frequency measuring principle and can measure volumetric as well as mass flow rate.

Sizes and Pipeline Connections

DN 25, 40, 50, 80 and DN 100 Sandwich version

Approvals

SteaMon is available with following approvals

IBR

EMI/EMC (Criteria A) as per IEC 61000-4-2 to 6 and 8

IP65

Vibration IEC 60068-2-6

BUMP IEC 60068-2-29

Limiting Conditions

Ambient temperature	-20 to 70°C
Operating temperature	-20...+ 210°C max
Process products	Dry saturated steam
Density compensation	Internal for saturated steam
Product pressure limit	Max. 17.5 bar g

Measurement Accuracy

+2% of reading for flow rate measurement

Installation and Maintenance Instructions

The SteaMon can be installed in horizontal or vertical line. The minimum required straight lengths are-

Inlet run	> 20 x DN
Outlet run	> 5 x DN

Please refer the user manual for details

How to Order

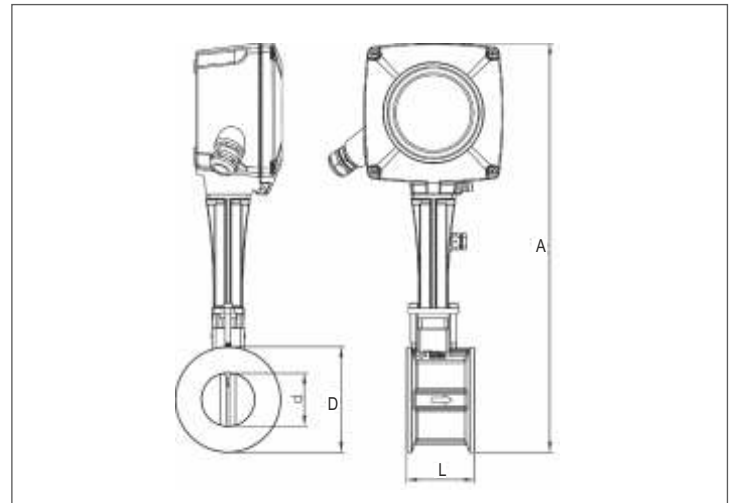
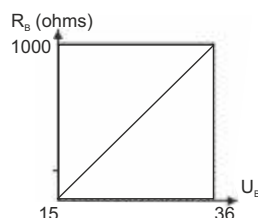
Example :1 no. Forbes Marshall SteaMon, DN25 for saturated steam pressure of 10 bar.

Signal Converter Technical Data

Power supply U_B (2-wire) 15-36 V DC

Current output terminals, 4-20 mA, DC, 2-wire

Maximum load resistance $R_B = \frac{U_B - 15 V}{20 mA}$



Dimensions/weights (approx.) in mm/ weight in kg

Size(DN)	ϕd	ϕD	A	L	Weight
25	24	60	353	65	2.7 kg
40	38	80	370	65	3.4 kg
50	50	100	386	65	4 kg
80	74	130	413	65	4.7 kg
100	97	158	438.5	65	5.6 kg

Sensor	CF8
Electronics casing	Aluminium
Sensor gasket	1.4435

Mass flow measurement	Online for saturated steam 210 °C. Temperature sensor standard built-in with primary steam flow sensor
Temp. measurement accuracy	± 0.3 °C of measured value
Current output	Operating data programmable galvanically isolated from power terminals
Current	4-20mA corresponding to 0 & max flow value programmed
Accuracy	± 0.02 mA
Temp. coefficient	± 0.02 mA per °K change
Power supply influence	± 0.0001% of full-scale range for 15-36V variation in the voltage

SteMon Sizing Sheet for dry saturated steam

P	T	ρ	Suitable meter size										V*
			Mass flow					Volumetric flow					
			Min - Max flow (Kg/hr)					Min - Max flow (m³/hr)					
g	°C	kg/m³	1 inch	1.5 inch	2 inch	3 inch	4 inch	1 inch	1.5 inch	2 inch	3 inch	4 inch	Min - Max (m/s)
0.5	111.6	0.87	10 - 71	26 - 284	45 - 492	98 - 1077	169 - 1851	12 - 81	30 - 327	52 - 565	113 - 1239	194 - 2128	7.3 - 80.0
1.0	120.4	1.14	12 - 92	30 - 371	51 - 642	112 - 1407	193 - 2417	10 - 81	26 - 327	45 - 565	99 - 1239	170 - 2128	6.4 - 80.0
1.5	127.6	1.40	13 - 114	33 - 457	57 - 791	125 - 1732	214 - 2976	9 - 81	24 - 327	41 - 565	89 - 1239	153 - 2128	5.8 - 80.0
2.0	133.7	1.66	14 - 135	36 - 541	62 - 937	136 - 2053	233 - 3527	9 - 81	22 - 327	37 - 565	82 - 1239	141 - 2128	5.3 - 80.0
2.5	139.0	1.91	15 - 156	38 - 625	67 - 1082	146 - 2371	251 - 4074	8 - 81	20 - 327	35 - 565	76 - 1239	131 - 2128	4.9 - 80.0
3.0	143.8	2.17	16 - 177	41 - 708	71 - 1227	155 - 2687	267 - 4616	8 - 81	19 - 327	33 - 565	72 - 1239	123 - 2128	4.6 - 80.0
3.5	148.0	2.42	17 - 197	43 - 791	75 - 1370	164 - 3000	282 - 5155	7 - 81	18 - 327	31 - 565	68 - 1239	116 - 2128	4.4 - 80.0
4.0	152.0	2.67	18 - 218	46 - 874	79 - 1512	173 - 3313	296 - 5692	7 - 81	17 - 327	29 - 565	65 - 1239	111 - 2128	4.2 - 80.0
4.5	155.6	2.93	19 - 238	48 - 955	82 - 1654	180 - 3623	310 - 6225	6 - 81	16 - 327	28 - 565	62 - 1239	106 - 2128	4.0 - 80.0
5.0	158.9	3.17	20 - 259	50 - 1037	86 - 1795	188 - 3933	323 - 6757	6 - 81	16 - 327	27 - 565	59 - 1239	102 - 2128	3.8 - 80.0
5.5	162.1	3.42	21 - 279	51 - 1118	89 - 1936	195 - 4241	335 - 7287	6 - 81	15 - 327	26 - 565	57 - 1239	98 - 2128	3.7 - 80.0
6.0	165.1	3.67	21 - 299	53 - 1199	92 - 2077	202 - 4548	347 - 7815	6 - 81	15 - 327	25 - 565	55 - 1239	95 - 2128	3.6 - 80.0
6.5	167.9	3.92	22 - 319	55 - 1280	95 - 2217	209 - 4855	359 - 8342	6 - 81	14 - 327	24 - 565	53 - 1239	92 - 2128	3.4 - 80.0
7.0	170.5	4.17	23 - 339	57 - 1361	98 - 2356	215 - 5161	370 - 8868	5 - 81	14 - 327	24 - 565	52 - 1239	89 - 2128	3.3 - 80.0
7.5	173.0	4.41	23 - 359	58 - 1442	101 - 2496	222 - 5467	381 - 9393	5 - 81	13 - 327	23 - 565	50 - 1239	86 - 2128	3.2 - 80.0
8.0	175.5	4.66	24 - 379	60 - 1522	104 - 2635	228 - 5772	391 - 9917	5 - 81	13 - 327	22 - 565	49 - 1239	84 - 2128	3.2 - 80.0
8.5	177.8	4.91	25 - 399	62 - 1602	107 - 2774	234 - 6076	402 - 10440	5 - 81	13 - 327	22 - 565	48 - 1239	82 - 2128	3.1 - 80.0
9.0	180.0	5.15	25 - 419	63 - 1682	109 - 2913	239 - 6380	411 - 10963	5 - 81	12 - 327	21 - 565	46 - 1239	80 - 2128	3.0 - 80.0
9.5	182.1	5.40	26 - 439	65 - 1763	112 - 3052	245 - 6684	421 - 11485	5 - 81	12 - 327	21 - 565	45 - 1239	78 - 2128	2.9 - 80.0
10.0	184.2	5.64	26 - 459	66 - 1843	114 - 3190	251 - 6988	431 - 12006	5 - 81	12 - 327	20 - 565	44 - 1239	76 - 2128	2.9 - 80.0
10.5	186.1	5.89	27 - 479	68 - 1904	117 - 3296	256 - 7220	440 - 12406	5 - 81	11 - 323	20 - 560	43 - 1227	75 - 2108	2.8 - 79.2
11.0	188.0	6.13	27 - 499	69 - 1943	119 - 3364	261 - 7369	449 - 12661	4 - 81	11 - 317	19 - 549	43 - 1202	73 - 2065	2.8 - 77.6
11.5	189.9	6.38	28 - 519	70 - 1982	122 - 3431	266 - 7514	458 - 12911	4 - 81	11 - 311	19 - 538	42 - 1179	72 - 2025	2.7 - 76.1
12.0	191.7	6.62	29 - 539	72 - 2019	124 - 3496	271 - 7657	466 - 13157	4 - 81	11 - 305	19 - 528	41 - 1157	70 - 1987	2.6 - 74.7
12.5	193.4	6.86	29 - 559	73 - 2056	126 - 3560	276 - 7797	475 - 13397	4 - 81	11 - 300	18 - 519	40 - 1136	69 - 1952	2.6 - 73.4
13.0	195.1	7.11	30 - 579	74 - 2092	128 - 3623	281 - 7935	483 - 13634	4 - 81	10 - 294	18 - 510	40 - 1116	68 - 1918	2.6 - 72.1
13.5	196.8	7.35	30 - 599	75 - 2128	131 - 3684	286 - 8070	492 - 13866	4 - 81	10 - 289	18 - 501	39 - 1097	67 - 1886	2.5 - 70.9
14.0	198.4	7.60	31 - 619	77 - 2163	133 - 3745	291 - 8203	500 - 14095	4 - 81	10 - 285	17 - 493	38 - 1080	66 - 1855	2.5 - 69.7
14.5	199.9	7.84	31 - 639	78 - 2198	135 - 3805	296 - 8334	508 - 14320	4 - 81	10 - 280	17 - 485	38 - 1063	65 - 1826	2.4 - 68.6
15.0	201.5	8.09	32 - 659	79 - 2232	137 - 3864	300 - 8463	516 - 14542	4 - 81	10 - 276	17 - 478	37 - 1046	64 - 1798	2.4 - 67.6
15.5	202.9	8.33	32 - 678	80 - 2265	139 - 3922	305 - 8590	523 - 14760	4 - 81	10 - 272	17 - 471	37 - 1031	63 - 1771	2.4 - 66.6
16.0	204.4	8.58	33 - 698	81 - 2298	141 - 3979	309 - 8715	531 - 14975	4 - 81	10 - 268	16 - 464	36 - 1016	62 - 1746	2.3 - 65.6
16.5	205.8	8.82	33 - 718	83 - 2331	143 - 4035	313 - 8839	538 - 15187	4 - 81	9 - 264	16 - 457	36 - 1002	61 - 1722	2.3 - 64.7
17.0	207.2	9.07	33 - 738	84 - 2363	145 - 4091	318 - 8961	546 - 15397	4 - 81	9 - 261	16 - 451	35 - 988	60 - 1698	2.3 - 63.8
17.5	208.5	9.31	34 - 758	85 - 2395	147 - 4146	322 - 9081	553 - 15604	4 - 81	9 - 257	16 - 445	35 - 975	59 - 1676	2.2 - 63.0

* For 1 inch size, maximum velocity is limited to 50 m/s for all pressures



www.forbesmarshall.com

Forbes Marshall Arca

Codel International

Krohne Marshall

Forbes Vyncke

Forbes Marshall Steam Systems

A: Forbes Marshall Pvt. Ltd.
Opp. 106th Milestone, CTS 2220,
Mumbai-Pune Road, Kasarwadi,
Pune MH 411034 INDIA

P: +91(0)20-68138555

F: +91(0)20-68138402

E: ccmidc@forbesmarshall.com

© All rights reserved. Any reproduction or distribution in part or as a whole without written permission of Forbes Marshall Pvt Ltd, its associate companies or its subsidiaries ("FM Group") is prohibited.

Information, designs or specifications in this document are subject to change without notice. Responsibility for suitability, selection, installation, use, operation or maintenance of the product(s) rests solely with the purchaser and/or user. The contents of this document are presented for informational purposes only. FM Group disclaims liabilities or losses that may be incurred as a consequence of the use of this information.

Forbes Marshall International Pte. Ltd.

16A, Tuas Avenue 1,
#05-21, JTC Space @Tuas
Singapore - 639533

P: +65 6219 3890

CIN No: U28996PN1985PTC037806

DOC# FMSS/0824/TIS-SteMon/R3