



EUREKA

AN ISO 9001:2008 CERTIFIED COMPANY

METAL TUBE ROTAMETER

Designed To Measure Flowrate Of Liquids & Gases Under Critical Conditions

HART[®]



COMMUNICATION PROTOCOL



**EUREKA
INDUSTRIAL
EQUIPMENTS
PVT. LTD.**

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"MT" series Rotameters are all Metal Variable Area Type Flow Meters designed to measure flow rate of liquids and gases under critical conditions. It consists of a tapered metal tube, an indicating assembly and float. A magnet encapsulated in float couples with rotating magnets connected to an indicating pointer as show in fig. A Thus the movement of the float, is accurately indicated in terms of flowrate.

ENGINEERING SPECIFICATIONS

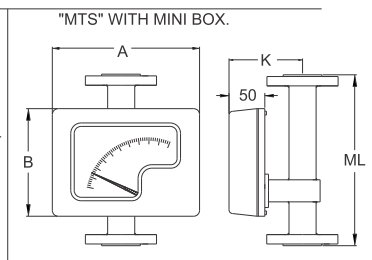
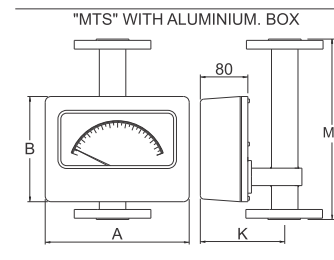
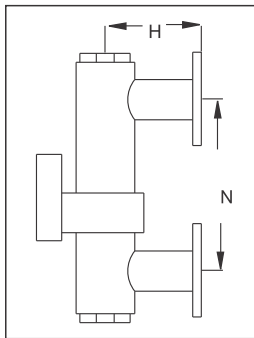
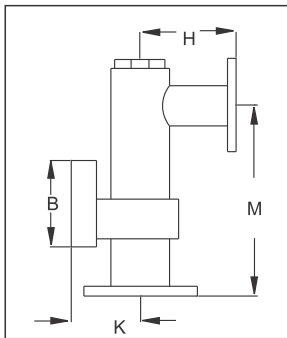
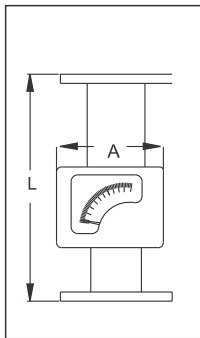
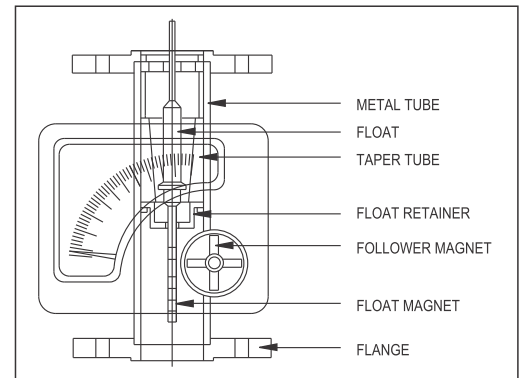
Rangeability	: 10 : 1
Accuracy	: $\pm 2\%$ of Full Flow, $\pm 1.5\%$ of Full Flow (optional) Better Accuracy on request
Repeatability	: 0.5%
Scale length	: 90° Angular
Pressure rating	: 40 Bar, 250 Bar (optional)
Allowable Fluid Temp.	: -20° to 250°C
Connection	: Flanged, Threaded, Sanitary fitting
Material of Construction	: SS316, SS316L, SS304, Hastelloy C, TITANIUM
Indicator box	: ABS, PC, Cast AL, SS (optional)
Protection class	: IP-65 & IP-66 & Other Protection on request (For MT Model encloser Exproof II A and IIB/IIC as per requirement) CCOE certificate for IIC Box



DIMENSIONS

ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE SPECIFIED

MT ROTAMETER SERIES "MT"	INDICATOR BOX MATERIAL						MT ROTAMETER SERIES "MTS"												
	ABS PLASTIC			ALUMINIUM			MINI BOX (ABS/PC)				ALUMINIUM BOX								
MODEL NO.	L	M	N	H	A	B	K	A	B	K	MODEL NO.	ML	A	B	K	A	B	K	
MT1-4	350	350	300	110	185	165	192	200	180	202	MTS1-4	250	175	160	110	235	160	155	
MT5-9											130				165				
MT10-12											145				180				
MT13-15	400	400	400	150	210	220	230	200	180	275	MTS13-15	350	185	175	165	220	220	205	
MT16-19											185				220				
MT20-22											175				205				
MT23	450	450						200	180	275									



CAPACITY TABLE

Line size	Model No.	Water at Amb. Temp.				Air at Amb. Temp. 760 Torr ABS				Pressure Drop mm WG	
		LPH		USGPM		nm ³ /hr		SCFM			
		Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum		
3/4"	MT-1	MTS-1	16	160	0.07	0.7	0.45	4.50	0.28	2.80	1200
	MT-2	MTS-2	25	250	0.1	1	0.75	7.5	0.475	4.75	
	MT-3	MTS-3	40	400	0.17	1.7	1.2	12	0.76	7.60	
	MT-4	MTS-4	60	600	0.26	2.6	1.2	12	0.76	7.6	
1"	MT-5	MTS-5	100	1000	0.44	4.4	3	30	1.90	19.00	1000
	MT-6	MTS-6	120	1200	0.53	5.3	3.5	35	2.20	22.00	
	MT-7	MTS-7	160	1600	0.7	7	4.5	45	2.80	28.00	
	MT-8	MTS-8	280	2800	1.25	12.5	8	80	5.00	50.00	
1.5"	MT-9	MTS-9	500	5000	2.2	22	14	140	8.80	88.00	1000
	MT-10	MTS-10	550	5500	2.5	25	14	140	8.80	88.00	
	MT-11	MTS-11	750	7500	3.3	33	16	160	10.00	100.00	
	MT-12	MTS-12	1000	10000	4.4	44	20	200	12.50	125.00	
2"	MT-13	MTS-13	1250	12500	5.5	55	30	300	19.00	190.00	1000
	MT-14	MTS-14	1600	16000	7	70	36	360	23.00	230.00	
	MT-15	MTS-15	2000	20000	8.8	88	46	460	36.00	360.00	
3"	MT-16	MTS-16	2000	20000	8.8	88	57.5	575	36.00	360.00	1000
	MT-17	MTS-17	2500	25000	11	110	57.5	575	36.00	360.00	
	MT-18	MTS-18	3000	30000	13.3	133	70	700	44.00	440.00	
	MT-19	-	4000	40000	17.5	175	86	860	54.00	540.00	
4"	-	MTS-19	4000	40000	17.5	175	115	1150	72.00	720.00	1200
	MT-20	MTS-20	5000	50000	22	220	115	1150	72.00	720.00	
	MT-21	MTS-21	6000	60000	26.6	266	145	1450	91.50	915.00	
	MT-22	-	8000	80000	35	350	-	-	-	-	
6"	MT-23	-	10000	100000	44	440	-	-	-	-	2000

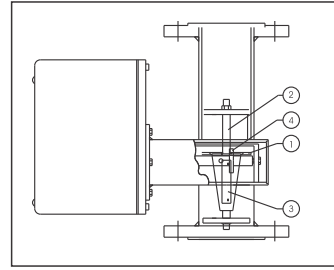
Accessories

- 1) Electronic Transmitter with 4-20mA O/P (HART/Foundation Field-bus Optional)
- 2) Digital Flowrate Indicator Totaliser
- 3) Minimum or Maximum Flow Switch

VARIABLE AREA FLOWMETER

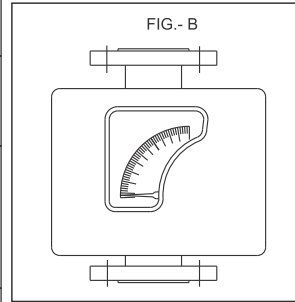
MTF SERIES

"MTF" series Rotameter is a precision flowrate measuring instrument. For details refer to fig.B. A float (2) is free to move up & down in a orifice (1). Fluid flow causes the float to take up a position in which the buoyancy forces & the weight are balanced. The vertical position of the float is a measure of the instantaneous flowrate. The scale can be calibrated in mass or volume flow units. The coupling magnet (3) fitted into float (2) transmits float position to the follower magnet (4) which is attached to the indicating assembly in the indicator box. Thus the pointer moves with the position of the float.



**CAPACITY TABLE (PTFE FLOAT)
WATER AT AMBIENT TEMP**

Line Size	Model NO	LPH		USGPM		Pressure Drop mmWG
		Mini	Max	Mini	Max	
3/4"	MTF-2	30	150	0.13	0.65	1000
	MTF-3	30	300	0.13	1.3	1000
	MTF-4	40	400	0.175	1.75	1000
1"	MTF-5	80	800	0.35	3.5	1000
	MTF-6	120	1200	0.525	5.25	1000
	MTF-7	140	1400	0.615	6.15	1000
	MTF-8	165	1650	0.725	7.25	1000
	MTF-9	250	2500	1.1	11	1000
1.5"	MTF-10	300	3000	1.3	13	1000
	MTF-11	400	4000	1.75	17.5	1000
	MTF-12	500	5000	2.2	22	1000
2"	MTF-13	600	6000	2.65	26.5	1000
	MTF-14	1000	10000	4.4	44	1000
3"	MTF-16	1600	16000	7	70	1000
	MTF-17	2000	20000	8.8	88	1000
	MTF-18	2800	28000	12.3	123	1000



DIMENSIONS

Model No.	Indicator Box Material					
	ABS Plastic			Aluminium		
	A	B	K	A	B	K
MTF1-12			192			202
MTF-13-14			192			202
MTF-16-18	185	165	220	200	180	230

ENGINEERING SPECIFICATIONS

Rangeability 10 : 1
 Accuracy ± 2 Of Full Flow
 Repeatability 0.5
 Scale length 90 Degrees Angular
 Max. pressure rating 20 Bar
 Allowable Fluid Temp. -20° to 100°
 Connection Process flanges machined as per customer's requirement.

Material of construction SS316 PTFE LINED
 Indicator box ABS, CAST AL
 Protection class IP-65 Against Request.

Accessories

- 1) Electronic Transmitter with 4 - 20 mA O/P
- 2) Digital Flowrate Indicator Totaliser
- 3) Minimum or Maximum Flow Switch

VARIABLE AREA FLOWMETER

MMT SERIES

"MMT" series Rotameter is a precision low flowrate measuring instrument. It consists of a special miniature orifice plate, tapered Float, and an indicating assembly. A magnet encapsulated in float couples with rotating magnets connected to an indicator pointer as show in fig. C. Thus the movement of the float, is accurately indicated in terms of flowrate.

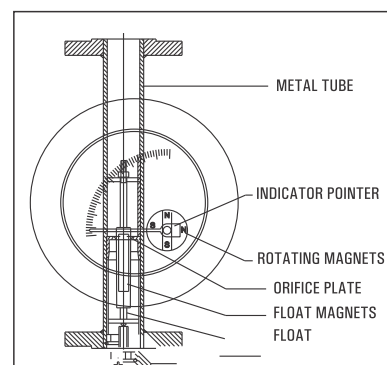
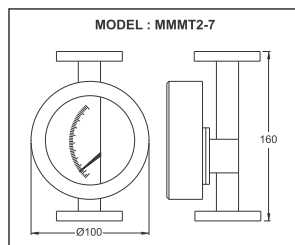
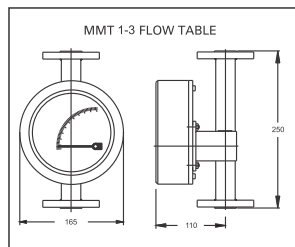
ENGINEERING SPECIFICATIONS

Application : Liquid
 Rangeability : 10 : 1
 Accuracy : $\pm 5\%$ of Full Flow
 Repeatability : 1.5%
 Float travel : 40 mm
 Scale length : 90 Degrees Angular
 Pressure rating : 40 Bar
 Allowable Fluid Temp. : -10° to 100°C
 Viscosity : ≤ 3 cp
 Connection : Process flanges machined as per customer's requirement.

Material of Construction : AISI316, AISI304
 Indicator box : Aluminium
 Protection class : IP-65 on Request.

Accessories (for MMT1-3)

- 1) Electronic transmitter with 4-20 mA O/P
- 2) Digital Flowrate Indicator Totaliser
- 3) Flow Switch
- 4) DP Regulator



CAPACITY TABLE

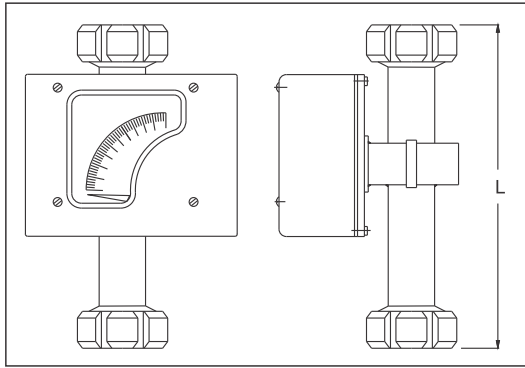
Model No.	Water at Abm. Temp		Precise Drop mm WG
	FLOW RANGE		
	LPH	USGPM	
MMT-1	3 - 30	0.014 - 0.14	1000 Approx.
MMT-2	5 - 50	0.022 - 0.22	
MMT-3	10 - 100	0.044 - 0.44	
MMMT-2	1 - 10	0.0044 - 0.044	
MMMT-3	1.6 - 16	0.0070 - 0.070	
MMMT-4	2.5 - 25	0.011 - 0.11	
MMMT-5	3 - 30	0.014 - 0.14	
MMMT-6	5 - 50	0.022 - 0.22	
MMMT-7	10 - 100	0.044 - 0.44	

VERIABLE AREA FLOWMETER SANITARY APPLICATIONS

MT-SAP SERIES

MODEL NO. IDENTIFICATION CHART

for EUREKA make Metal Tube Rotometer



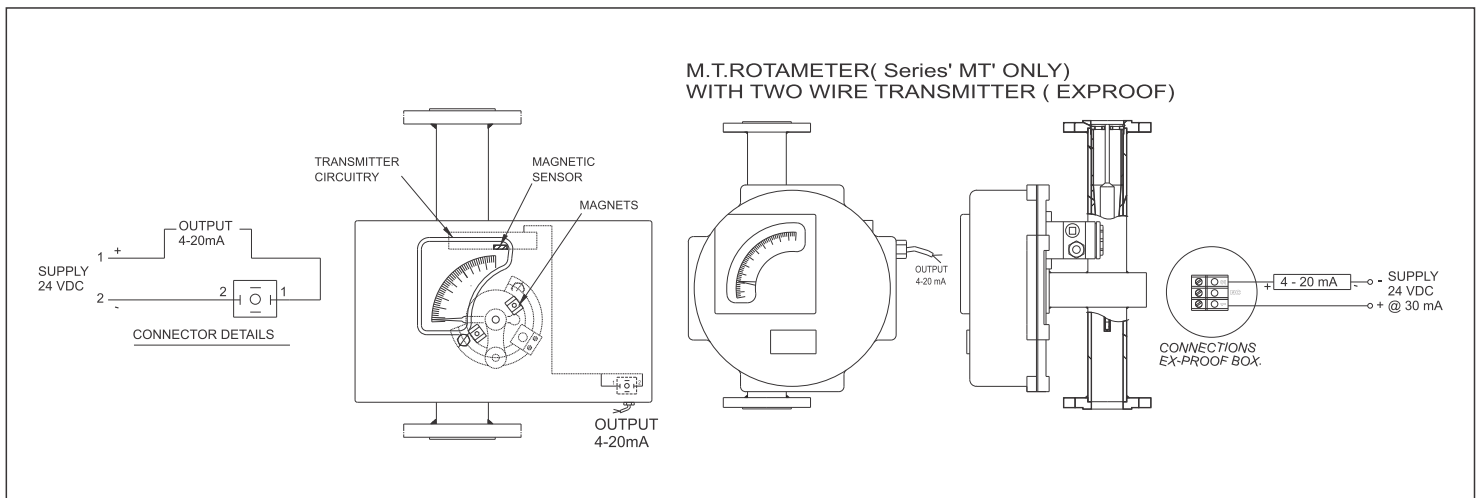
SMS Union Size	Model No.	L (mm)	Water At Amb. Temp.			
			LPH		USGPM	
			Minimum	Maximum	Minimum	Maximum
1.5"	SVS-MT-1-SAP	332	16	160	0.07	0.7
	SVS-MT-2-SAP		25	250	0.1	1
	SVS-MT-3-SAP		40	400	0.17	1.7
	SVS-MT-4-SAP		60	600	0.26	2.6
2"	SVS-MT-5-SAP	332	100	1000	0.44	4.4
	SVS-MT-6-SAP		120	1200	0.53	5.3
	SVS-MT-7-SAP		160	1600	0.7	7
	SVS-MT-8-SAP		280	2800	1.25	12.5
	SVS-MT-9-SAP		500	5000	2.2	22
2.5"	SVS-MT-10-SAP	332	550	5500	2.42	24.2
	SVS-MT-11-SAP		750	7500	3.13	31.3
	SVS-MT-12-SAP		1000	10000	4.4	44
3"	SVS-MT-13-SAP	332	1250	12500	5.5	55
	SVS-MT-14-SAP		1600	16000	7	70
4"	SVS-MT-16-SAP	385	2000	20000	8.8	88
	SVS-MT-17-SAP		2500	25000	11	110
	SVS-MT-18-SAP		3000	30000	13.2	132
	SVS-MT-19-SAP		4000	40000	17.6	176

MODEL NO	Material of construction	Material of construction	Inlet Outlet Connection Direction	Type of connection	Type of Rotameter	Tube Size	Modification in	Accessories
Stainless Steel	SS	TVF	Vertical (Inlet bottom, outlet top)	Flange	Metal Tube Rotameter (STD)	1 to 21	Standard Features	Flow switch (Proximity single point)**
SS PTFE Lined			Side conn. / Rear conn. / Inlet bottom, outlet side	Screwed	Metal Tube Rotameter (Small)		Enlarged Meter Connections	Flow switch (Proximity double point)**
					Metal Tube Rotameter (PTFE Lined)		Modified Extension	Flow Setting valve
					Mini Metal Tube Rotameter			Transmitter**
					Mini Mini Metal Tube Rotameter			Transmitter Ex-proof for IIA, IIB, IIC*
								Sanitary application

TYPICAL MODEL NO. : SS V F MT 8 - T

* AVAILABLE WITH MT CODES
** NOT AVAILABLE WITH MMMT CODES

METAL TUBE ROTAMETER WITH TRANSMITTERS



STANDARD VERSION (SERIES MT OR MTS)

THE TRANSMITTER USES A UNIQUE MAGNETIC SENSOR WHICH IS DIRECTLY PLACED ON THE PCB. AS THE FLOAT MOVES IN THE TAPER TUBE, THE MAGNETIC FLUX AROUND THE SENSOR CHANGES IN ACCORDANCE WITH THE FLOAT POSITION. THIS CHANGE IN MAGNETIC FLUX CAUSES THE CHANGE IN THE OUTPUT OF THE SENSOR, THIS OUTPUT IS AMPLIFIED AND LINE ARISED USING MICRO PROCESS BASED CIRCUITRY TO GET STANDARD LOOP POWERED. 4 - 20 mA DC O/P

We reserve the right to modify the Design & Specifications without notice

CAT CODE CC-11-R4-09-2015