



MAG HUNTER magnetic flowmeter



Flanged Remote Sensor **F**



Wafer Remote Sensor **W**



Sanitary Remote Sensor **S**



Transmitter

ECHO Process Instrumentation, Inc.
Mail: PO Box 800
Shalimar, FL 32579 USA
Tel: 850.609.1300
Fax: 850.651.4777
Email: info@echopi.com



Flanged Integral Version **F**

MAG HUNTER is a volume flow rate meter for conductive fluids in pipelines. It allows measurement of flow rates in both directions with high accuracy in a wide range of flow rates (0.3 – 40 ft/s). The advanced transmitter offers a wide variety of binary, frequency pulse, relay contacts, analog, digital inputs and outputs. Absence of moving parts and sophisticated dynamic noise filter algorithms ensure long-term accuracy and stability in the toughest liquid, slurry or mud flow applications. A main benefit of the MAG

HUNTER transmitter is its versatility, from a basic blind unit to a full functional LCD display and keypad unit with plenty of I/O plug-in modules. Thus, the customer only pays for the functionality required.

Sensors are obtainable in 4 ranges:

- Sensor F** = Flanged
- Sensor W** = Wafer
- Sensor T** = Threaded
- Sensor S** = Sanitary

Sensor general specifications are from 3/8" to 48" diameter at 150lb

or 300lb flange rating and temperatures up to 300°F (150°C). Depending on the measured liquid, we use sensor linings with soft rubber, hard rubber, special rubber or PTFE. Measured electrodes are manufactured from Stainless Steel AISI 316Ti, Hastelloy C-276 or Platinum. The transmitter can be integral or remote mounted up to 650 ft with special double sensor cable. The transmitter has a NEMA 6 (IP67) rating and the sensor is standard NEMA 6 (IP67) and optional NEMA 6P (IP68).

TECHNICAL SPECIFICATIONS - Transmitter

Power supply	85..240VAC, Options: 10..18VDC, 18..36VDC, 24VAC
Consumption	5..8VA
Analog output	Module options: A0 = None, A1 = 0(4)..20mA (12bit) - active, A2 = 0(4)..20mA (16bit) - active, A3 = 4..20mA (16bit) - active, A4 = 4..20mA (16bit) - passive; <i>all galvanically isolated and max load 1000Ω</i>
Binary/Relay output	Module options: B0 = None, B1 = 0..1kHz passive pulse, B2 = 0..10kHz passive pulse, B4 = 0..10kHz active pulse (5, 12, 24V), B5 = relay contact 250 VAC @ 1A; <i>all galvanically isolated</i>
Interface	Module options: C0 = None, C1 = RS232, D1 = RS485, D2 = 0/20mA loop, D3 = M-Bus; <i>all galvanically isolated</i>
Display	Module options: V0 = Blind, V1 = LCD and keyboard – 2x16 characters (9,6 mm high)
Electrode cleaning & Full pipe	Module options: F0 = None, F1 = electrochemical electrode cleaning, F2 = pipeline full indication, F3 = F1+F2
Protection	NEMA 6 (IP67)
Min conductivity of the liquid	20μS/cm (5μS/cm for some liquids)

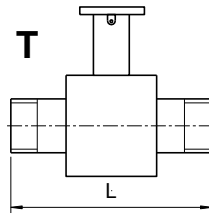
TECHNICAL SPECIFICATIONS - Sensors

Nominal diameter	3/8" to 48" (DN10..DN1200)
Nominal pressure	150lb, 300lb (PN6, PN10, PN16, PN25, PN40, PN64)
Connection	Flanged F (DIN, ANSI, ASA), Wafer W , Sanitary fittings (DIN11851) S , Threaded (NPT) T
Electrode material	Stainless Steel 316Ti, Hastelloy C-276, Platinum
Lining	Hard rubber (TG) Soft rubber (MG), Special rubber (NG), PTFE (TF)
Liquid temperature	TG and MG = 32 - 176°F (0 - 80°C), NG = 32 - 194°F (0 - 90°C), TF = 32 - 194°F (0 - 150°C)
Protection	NEMA 6 (IP67), optional NEMA 6P (IP68)
Installation	Integral or remote version

Installation Lengths

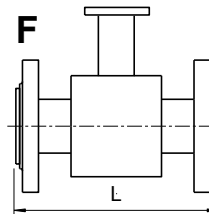
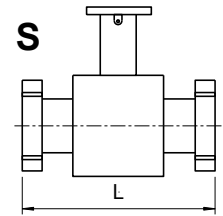
Flanged version - L [mm]

F inch	Lining TG, MG	Lining TF, NG
1/2, 3/4	138	134
1 - 4	215	213
5, 6	305	301
8, 10	380	376
12 - 20	515	511
24	615	611
28	715	711
32, 36	815	811
40, 48	1015	1011



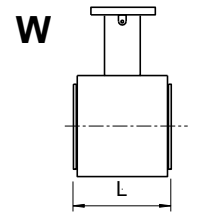
Thread version - L [mm]

T, S inch	Lining TG, MG	Lining TF, NG
1/2, 3/4	150	150
1 - 4	215	213
5, 6	305	301



Wafer version - L [mm]

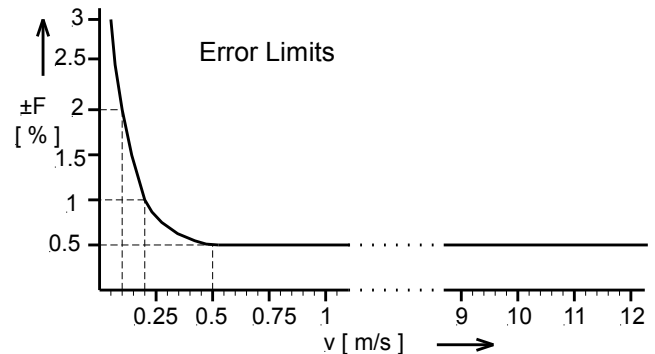
W inch	Lining TG, MG	Lining TF, NG
3/8	-	62
1/2, 3/4	72	70
1 - 4	102	100
5, 6	132	130



Flow Ranges/ Error Limits

DN - DIA		Flow rate GPM		Flow rate m ³ /h	
mm	inch	Q _{min}	Q _{max}	Q _{min}	Q _{max}
10	3/8"	0.1236	14.937	0.0282	3.392
15	1/2"	0.2789	33.602	0.0636	7.634
20	3/4"	0.4977	59.739	0.1130	13.57
25	1"	0.7766	93.358	0.1767	21.20
32	1 1/4"	1.2743	152.95	0.2895	34.74
40	1 1/2"	1.9908	238.86	0.4523	54.28
50	2"	3.1114	373.43	0.7068	84.82
65	2 1/2"	5.259	631.00	1.194	143.3
80	3"	7.966	955.93	1.809	217.1
100	4"	12.447	1493.73	2.827	339.2
125	5"	19.448	2329.9	4.417	530.1
150	6"	28.00	3360.2	6.361	763.4
200	8"	49.78	5973.9	11.30	1357
250	10"	77.79	9335.8	17.67	2120
300	12"	112.03	13444.2	25.44	3053
350	14"	152.49	18291	34.63	4156
400	16"	199.08	23886	45.23	5428
450	18"	252.0	30242	57.25	6870
500	20"	311.1	37343	70.68	8482
600	24"	448.0	53764	101.7	12214
700	28"	609.9	73196	138.5	16625
800	32"	796.6	95593	180.9	21714
900	36"	1008	121001	229.0	27482
1000	40"	1244	149373	282.7	33929
1200	48"	1791	215104	407.1	48858

IMPORTANT: Selected sensor operational velocity range between 1.6 to 16.4 ft/s (0.5 to 5 m/s) to achieve +/- 0.5% accuracy. Volume flow rate limits for the sensor dimensions are shown in the table. It is recommended to choose the normal operational velocity range between 1.6 to 16.4 ft/s (0.5 to 5 m/s) to achieve +/- 0.5% accuracy. The maximum measurement error limits depending on the liquid flow velocity are shown on the graph below.



Note to End Users: These specifications are subject to change at any time without notice. ECHO Process Instrumentation, Inc. takes no responsibility for the use of these figures. Please consult us for the latest specifications before using them in tender submissions or billing. All figures are based on test conditions and are subject to variation due to site conditions.