



Electromagnetic (Mag) Meter

Electromagnetic Series



Electromagnetic Series

Measure Fluid Flow In Wastewater And Slurries

FEATURES

- Open flow tube design...no head loss, no moving parts to fail
- Works with most solids common in liquid systems...great for well water and reclaimed water systems...not fouled by sand, gravel, or debris
- Bi-directional flow measurement capability...suitable for inter-city billing
- Password protection...protect against unwanted program changes
- Wide flow range...exceeds operating characteristics of turbine and propeller meters
- 0.25% accuracy independent of fluid viscosity, density, and temperature
- Corrosion resistant liners...ensures long life
- Rubber or PTFE lined...application flexibility
- Electronics (head) can be mounted remotely...added control options

DESCRIPTION

Electromagnetic (mag) flow meters are capable of measuring flow in almost any liquid, slurry, or paste with a minimum of electrical conductivity using Faraday's law of induction. These meters are highly accurate, at 0.25% or better, exceeding AWWA accuracy standards for mechanical meters. The smart, micro-processor based electronics are simple to operate, with AMR and SCADA ready standard outputs. The NEMA 4X enclosure provides durability.

APPLICATIONS

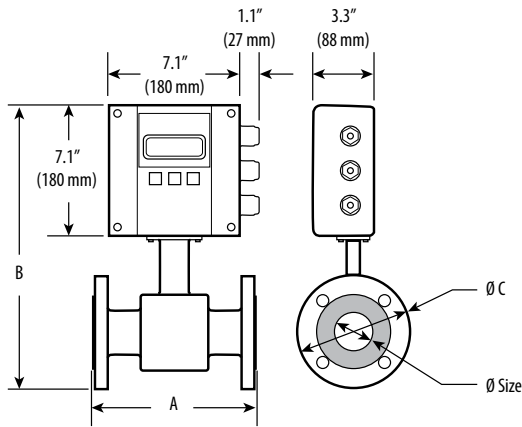
- Monitoring flow in systems likely to contain solids

SPECIFICATIONS

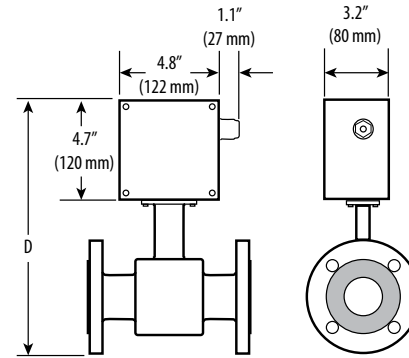


Flow Range	0.1 to 39.4 fps (0.03 to 12 m/s)
Max. Operating Pressure	150 psi
Accuracy	±0.25% of rate for velocities greater than 1.64 fps (0.50 m/s); ±0.004 fps (±0.001 m/s) for velocities less than 1.64 fps (0.50 m/s)
Repeatability	±0.1%
Analog Outputs	4-20mA, 0-20mA, 0-10mA, 2-10mA (programmable and scalable) Voltage sourced 24VDC (isolated); max. loop resistance < 800 Ω
Digital Outputs	Four total, configurable 24VDC sourcing active output (up to two), 100mA total, 50mA each; sinking open collector output (up to four), 30VDC max., 100mA each; AC solid-state relay (up to two), 48VAC, 500mA max.
Pulse Outputs	Scalable up to 10 kHz, passive open collector up to 10 kHz, active switched 24VDC. Up to two outputs (forward and reverse) Pulse width programmable from 1-1100 msec or 50% duty cycle
Flow Direction	Unidirectional or bidirectional, 2 separate totalizers (programmable)
Coil Power	Pulsed DC
Minimum Conductivity	5.0 micromhos/cm
Electrode Materials	Standard: alloy C; Optional: 316 stainless steel, gold/platinum plated, tantalum, platinum/rhodium
Liner Material	PFA up to 3/8", PTFE 1/2" thru 24", soft or hard rubber from 1" thru 54"
NSF Listed	Models with hard rubber liner 4" size and up; Models with PTFE liner all sizes
Fluid Temperature	With remote amplifier: PFA, PTFE, 155°C (311°F) With Meter Mounted Amplifier: Rubber 80°C (178°F); PFA, PTFE 100°C (212°F)
Pipe Spool Material	316 stainless steel
Meter Housing Material	Carbon steel welded
Flanges	Standard (ANSI B16.5 Class 150 RF): carbon steel; Optional: 316 stainless steel
Meter Enclosure Classification	NEMA 4X (IP66); Optional: Submersible NEMA 6P (remote amplifier required)
Junction Box Enclosure Protection	For remote amplifier option: powder coated die-cast aluminum, NEMA 4 (IP65)
Cable Entries	1/2" NPT cord grip
Optional Stainless Steel Grounding Ring Thickness	For meter sizes up to 10": 0.135" thickness per ring; For meter sizes above 10": 0.187" thickness per ring
POWER SUPPLY	
AC	85-265VAC; typical power: 20VA or 15W; max. power: 26VA or 20W
DC (optional)	10-36VDC; Typical power: 10W; max. power: 14W

DIMENSIONAL DRAWINGS



Meter with M2000 amplifier



Meter with junction box for remote M2000 amplifier

Size		A		B		C		D		Est. Weight with M-2000		Flow Range			
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	lb	kg	LPM		GPM	
												min	max	min	max
1/4	6	6.7	170	14.0	356	3.5	89	11.4	288	10	4.5	0.063	20	0.02	5
5/16	8	6.7	170	14.0	356	3.5	89	11.4	288	10	4.5	0.114	34	0.03	9
3/8	10	6.7	170	14.0	356	3.5	89	11.4	288	10	4.5	0.177	53	0.05	14
1/2	15	6.7	170	14.0	356	3.5	89	11.4	288	10	4.5	0.416	125	0.11	33
3/4	20	6.7	170	14.2	361	3.9	99	11.5	293	13	5.5	0.75	225	0.2	59
1	25	8.9	225	14.4	366	4.3	108	11.7	298	18	8.0	1.20	350	0.3	93
1-1/4	32	8.9	225	15.2	386	4.6	117	12.5	318	20	9.0	2.00	575	0.5	152
1-1/2	40	8.9	225	15.4	390	5.0	127	12.7	322	21	9.5	3.00	900	0.8	239
2	50	8.9	225	15.9	403	6.0	152	13.2	335	26	11.5	4.70	1400	1	373
2-1/2	65	11.0	280	17.1	434	7.0	178	14.4	366	52	23.5	8	2400	2	631
3	80	11.0	280	17.3	440	7.5	191	14.7	372	54	24.5	12	3600	3	956
4	100	11.0	280	18.4	466	9.0	229	15.7	398	56	25.5	19	5600	5	1493
5	125	15.8	400	19.6	498	10.0	254	16.9	430	58	26.0	30	8800	8	2334
6	150	15.8	400	20.6	524	11.0	279	17.9	456	60	27.0	40	12700	11	3361
8	200	15.8	400	22.5	572	13.5	343	20.4	518	86	39.0	75	22600	20	5975
10	250	19.7	500	26.8	681	16.0	406	24.1	613	178	81.0	120	35300	30	9336
12	300	19.7	500	28.9	734	19.0	483	26.2	666	207	94.0	170	50800	45	13444
14	350	19.7	500	30.8	782	21.0	533	28.2	716	258	117	230	69200	60	18299
16	400	23.6	590	33.7	856	23.5	597	31.0	788	306	139	300	90400	80	23901
18	450	23.6	590	35.0	890	25.0	635	32.4	822	400	181	380	114000	100	30250
20	500	23.6	590	38.2	969	27.5	699	35.5	901	493	224	470	140000	125	37346
22	550	23.6	590	39.6	1005	29.5	749	36.9	937	523	237	570	170000	150	45188
24	600	23.6	590	42.2	1071	32.0	813	39.5	1003	552	251	680	200000	180	53778
28	700	23.6	590	46.2	1173	36.5	927	44.0	1118	648	294	920	275000	240	73100
30	750	31.5	800	48.3	1228	39.0	984	45.7	1161	702	319	1060	315000	280	84000
32	800	31.5	800	52.2	1325	41.4	1015	49.5	1257	768	349	1200	361000	320	95600
36	900	31.5	800	55.3	1405	46.0	1168	54.1	1374	848	385	1500	457000	400	121000
40	1000	31.5	800	60.0	1525	50.2	1230	57.4	1457	922	419	1900	565000	500	149300
42	1050	36.0	914	66.0	1675	53.0	1346	63.4	1610	1198	499	2100	620000	550	164600
48	1200	39.4	1000	69.9	1775	59.4	1455	67.2	1707	1208	549	2700	814000	720	215100
54	1400	39.4	1000	78.5	1995	68.4	1675	75.9	1927	1362	619	3700	1100000	980	292700

Ordering Information on Next Page

Electromagnetic (Mag) Meter, Continued

ORDERING INFORMATION

MODEL	MANUF. PART #	DESCRIPTION
U020-0001	M20HR010F15SACXX-MMXXVACGRXX	Flow,Mag,1",Hard Rubber Liner,Grounding Ring,Amp
U020-0002	M20HR020F15SACXX-MMXXVACGRXX	Flow,Mag,2",Hard Rubber Liner,Grounding Ring,Amp
U020-0003	M20HR030F15SACXX-MMXXVACGRXX	Flow,Mag,3",Hard Rubber Liner,Grounding Ring,Amp
U020-0004	M20HR040F15SACXX-MMXXVACGRXX	Flow,Mag,4",Hard Rubber Liner,Grounding Ring,Amp
U020-0005	M20HR050F15SACXX-MMXXVACGRXX	Flow,Mag,5",Hard Rubber Liner,Grounding Ring,Amp
U020-0006	M20HR060F15SACXX-MMXXVACGRXX	Flow,Mag,6",Hard Rubber Liner,Grounding Ring,Amp
U020-0007	M20HR060F15SACXX-RM030VACGRXX	Flow,Mag,6",Hard Rubber Liner,Grounding Ring,Remote Amp
U020-0008	M20HR080F15SACXX-MMXXVACGRXX	Flow,Mag,8",Hard Rubber Liner,Grounding Ring,Amp
U020-0009	M20HR080F15SACXX-RM030VACGRXX	Flow,Mag,8",Hard Rubber Liner,Grounding Ring,Remote Amp
U020-0010	M20HR100F15SACXX-MMXXVACGRXX	Flow,Mag,10",Hard Rubber Liner,Grounding Ring,Amp
U020-0011	M20HR100F15SACXX-RM030VACGRXX	Flow,Mag,10",Hard Rubber Liner,Grounding Ring,Remote Amp
U020-0012	M20HR120F15SACXX-MMXXVACGRXX	Flow,Mag,12",Hard Rubber Liner,Grounding Ring,Amp
U020-0013	M20HR120F15SACXX-RM030VACGRXX	Flow,Mag,12",Hard Rubber Liner,Grounding Ring,Remote Amp
U020-0014	M20HR120F30SACXX-RS030VACGRXX	Flow,Mag,12",Hard Rubber Liner,Grounding Ring,Submersible Amp
U020-0015	M20HR140F15SACXX-MMXXVACGRXX	Flow,Mag,14",Hard Rubber Liner,Grounding Ring,Amp
U020-0016	M20HR160F15SACXX-MMXXVACGRXX	Flow,Mag,16",Hard Rubber Liner,Grounding Ring,Amp
U020-0017	M20HR200F15SACXX-MMXXVACGRXX	Flow,Mag,20",Hard Rubber Liner,Grounding Ring,Amp
U020-0018	M20HR240F15SACXX-MMXXVACGRXX	Flow,Mag,24",Hard Rubber Liner,Grounding Ring,Amp
U020-0019	M20TE007F15SACXX-MMXXVACGRXX	Flow,Mag,3/4",PTFE Liner,Grounding Ring,Amp
U020-0020	M20TE010F15SACXX-MMXXVACGRXX	Flow,Mag,1",PTFE Liner,Grounding Ring,Amp
U020-0021	M20TE020F15SACXX-MMXXVACGRXX	Flow,Mag,2",PTFE Liner,Grounding Ring,Amp
U020-0022	M20TE020F15SACXX-RM030VACGRXX	Flow,Mag,2",PTFE Liner,Grounding Ring,Remote Amp
U020-0023	M20TE030F15SACXX-MMXXVACGRXX	Flow,Mag,3",PTFE Liner,Grounding Ring,Amp
U020-0024	M20TE030F15SACXX-RM030VACGRXX	Flow,Mag,3",PTFE Liner,Grounding Ring,Remote Amp
U020-0025	M20TE040F15SACXX-MMXXVACGRXX	Flow,Mag,4",PTFE Liner,Grounding Ring,Amp
U020-0026	M20TE060F15SACXX-MMXXVACGRXX	Flow,Mag,6",PTFE Liner,Grounding Ring,Amp
U020-0027	M20TE100F15SACXX-MMXXVACGRXX	Flow,Mag,10",PTFE Liner,Grounding Ring,Amp
U020-0028	M20TE120F15SACXX-MMXXVACGRXX	Flow,Mag,12",PTFE Liner,Grounding Ring,Amp
U020-0029	M20TE140F15SACXX-MMXXVACGRXX	Flow,Mag,14",PTFE Liner,Grounding Ring,Amp
U020-0030	M20TE140F15SACXX-RM030VACGRXX	Flow,Mag,14",PTFE Liner,Grounding Ring,Remote Amp
U020-0031	M20TE240F15SACXX-MMXXVACGRXX	Flow,Mag,24",PTFE Liner,Grounding Ring,Amp

Other meter sizes and configurations are available. Consult Veris for availability.