

VersaFlow Mag 2000 SW Electromagnetic Flow Sensor Technical Datasheet

34-VF-03-22
August 27th, 2008

Specification

Solution with high-tech ceramics

The VersaFlow Mag 2000 SW electromagnetic flow sensor is the standard in accuracy. VersaFlow Mag 2000 SW is highly resistant against abrasion.

Highlights

- Excellent long-term stability and accuracy
- Transfer standard of international metrological authorities
- For most aggressive and abrasive fluids
- Fully vacuum-resistant
- High-tech ceramics liner
- Insensitive against temperature shocks

Industries

- Chemicals
- Pulp & Paper
- Water
- Wastewater
- Minerals & Mining
- Automotive

Applications

- Transfer standard
- Dosing of additives
- Water meter calibration
- Volumetric dosing
- Chemical dosing
- Automotive (engine test rigs)
- Calibration of diaphragm pumps

Figure 1 – VersaFlow Electromagnetic Flow Sensor






1. Sandwich design
2. Ceramic liner
3. Cermet electrodes






Electromagnetic product range

VersaFlow converters: All converters fit to all sensors

TWM 9000 High-performance solution

		
<p>Integral Mounted</p>	<p>Field Mounted</p>	<p>Wall Mounted</p>

VersaFlow Sensors

				
<p>VersaFlow Mag1000 Economical solution</p>	<p>VersaFlow Mag1000 Solution for the water and wastewater industry</p>	<p>VersaFlow Mag4000 Standard solution for the process industry</p>	<p>VersaFlow Mag2000 Solution with high- tech ceramics</p>	<p>VersaFlow Mag3000 sanitary and hygienic solution</p>

Technical Data

Nominal diameter	MM51										
ASME [inch]	1/10"	1/8"	1/4"	3/8"	1/2"	1"	1 1/2"	2"	3"	4"	
DN [mm]	2.5	4	6	10	15	25	40	50	80	100	

Nominal flange pressure

EN 1092-1 - PN40											
EN 1092-1 - PN25											
EN 1092-1 - PN16											
ASME B16.5 - 150lbs RF											
ASME B16.5 - 300lbs RF											

Measuring tube

Ceramic											
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Electrodes

Cermet											
Platinum											

Rings / Gaskets

Stainless steel AISI 316Ti (1.4571) FKM/FPM (1)											
Without / Gylon											
Hastelloy C4 / FKM/FPM (1)											
Hastelloy C4 / EPDM											
Hastelloy C4 / Kalrez											
Stainless steel AISI 316Ti (1.4571) / EPDM											
Titanium / EPDM											
Titanium / Kalrez											
Titanium / PTFE-PF 29											
Without / Chemotherm											
Hastelloy C4 / Chemotherm											
Hastelloy C4 / Gylon											
PTFE (integrated) / no gasket required											
Stainless steel AISI 316Ti (1.4571) / Chemotherm											
Stainless steel AISI 316Ti (1.4571) / Gylon											

Stud bolts and nuts

Steel											
Stainless Steel, rubber, centering screws											

(1) acc. DIN ISO 1629 / ASTM D 1418

Nominal diameter	MM51									
ASME [inch]	1/10"	1/8"	1/4"	3/8"	1/10"	1"	1 1/2"	2"	3"	4"
DN [mm]	25	4	6	10	15	25	40	50	80	100

Materials

Flow sensor housing (PU coated)										
- stainless steel Duplex (1.4462)	■	■	■	■	■	■	■	■	■	■
- stainless steel AISI 304 (1.4306)	□	□	□	□	□	■	■	■	■	■
Flow converter housing (compact design)										
- die cast aluminium (PU coated)	■	■	■	■	■	■	■	■	■	■
- stainless steel AISI 304 (1.4306)	■	■	■	■	■	□	□	□	□	□
Connection box (separate design)										
- die cast aluminium (PU coated)	■	■	■	■	■	■	■	■	■	■
- stainless steel AISI 304 (1.4306)	■	■	■	■	■	■	■	■	■	■
	Other materials on request									

Protection category

IP 66 / 67 eq. NEMA 4/4X / 6	■	■	■	■	■	■	■	■	■	■
IP 68 field eq. NEMA 6P	■	■	■	■	■	■	■	■	■	■
IP 68 factory eq. NEMA6P	■	■	■	■	■	■	■	■	■	■
	IP68 only available with stainless steel connection box									

Approvals

Non-Ex	■	■	■	■	■	■	■	■	■	■
EEx zone 1 / 2	■	■	■	■	■	■	■	■	■	■
FM – class I div. 1 / 2	■	■	■	■	■	■	■	■	■	■
CSA – GP / class I div. ½	■	■	■	■	■	■	■	■	■	■
	Please note the approval are for flow sensors only									

Versions

Compact+ TWM 9000 C	■	■	■	■	■	■	■	■	■	■
Separate+ TWM 9000 F, R, W	■	■	■	■	■	■	■	■	■	■

Vacuum load

0mbar / 0psi absolute	■	■	■	■	■	■	■	■	■	■
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Conductivity

≥ 1 μS/cm (non-water)	□	□	□	□	□	■	■	■	■	■
≥ 5 μS/cm (non-water)	□	■	■	■	■	□	□	□	□	□
≥ 10 μS/cm (non-water)	■	□	□	□	□	□	□	□	□	□
≥ 20 μS/cm (demineralised cold water)	■	■	■	■	■	■	■	■	■	■

■ standard ■ optional □ on request

Dimensions and Weights

Nominal size		Dimensions [mm]					Approx.** weight
DN	PN	L*	H	W	T		[kg]
[mm]	[bar]				box	TWM9000	

SI – Dimensions

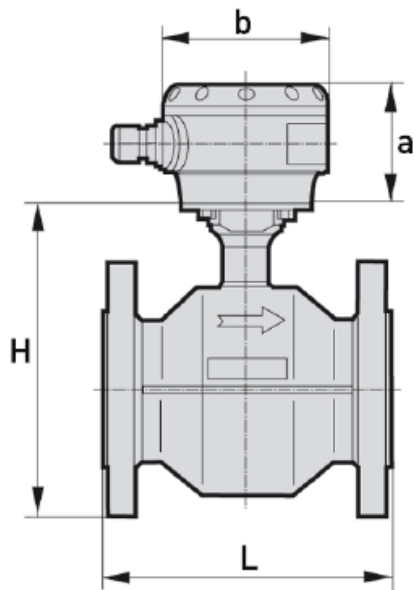
2.5	40	65	123	44	200	278	1.6
4	40	65	123	44	200	278	1.6
6	40	65	123	44	200	278	1.6
10	40	65	123	44	200	278	1.6
15	40	65	123	44	200	278	1.6
25	40	58	116	68	193	271	1.6
40	40	83	131	83	208	286	2.4
50	40	103	149	101	226	304	2.9
80	40	153	181	133	258	336	6.4
100	16	203	206	158	283	361	8.8
*Total fitting length							
DN 2.5-15, flowmeter with integrated rings: Dim. L + 2 x gasket thickness							
DN 25-100, flowmeter without rings: Dim. L only (no gasket required)							
**Approx weight of meter body							

Nominal size		Dimensions 150 lbs [inch]					Approx.** weight
DN	PN	L	H	W	T		[lbs]
[inch]	[psig]				box	TWM9000	

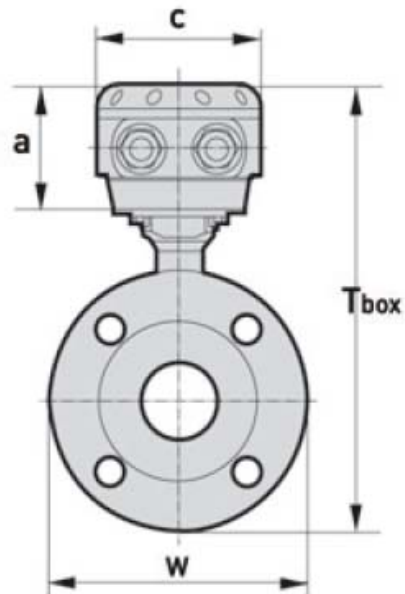
ASME – Dimensions

1/10"	580	2.56	4.84	1.73	7.87	10.94	10.94
1/8"	580	2.56	4.84	1.73	7.87	10.94	10.94
1/4"	580	2.56	4.84	1.73	7.87	10.94	10.94
3/8"	580	2.56	4.84	1.73	7.87	10.94	10.94
1/2"	580	2.56	4.84	1.73	7.87	10.94	10.94
1"	580	2.28	4.57	2.68	7.6	10.67	10.67
1 1/2"	580	3.27	5.16	3.27	8.19	11.26	11.26
2"	580	4.06	5.87	3.98	8.9	11.97	11.97
3"	580	6.02	7.13	5.24	10.16	13.23	13.23
4"	232	7.99	8.11	6.22	11.14	14.21	14.21
*Total fitting length							
ASME 1/10" – 1/2, flowmeter with integrated rings: Dim. L + 2 x gasket thickness							
ASME 1" – 4", flowmeter without rings: Dim. L only (no gasket required)							
**Approx weight of meter body							

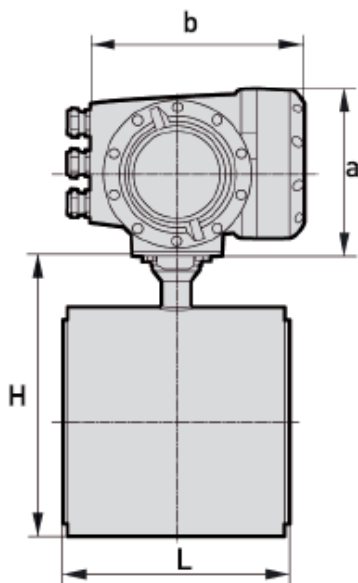
Frontview - Remote Converter



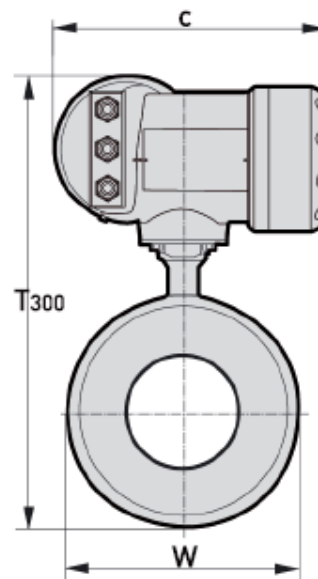
Sideview - Remote Converter



Frontview - Compact



Sideview - Compact



Dimensions housing

Type	Dimension a		Dimension b		Dimension c	
	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)
Connection box	77	3.1	111	4.4	106	4.2
TWM 9000 Compact converter	155	6.1	202	7.8	260	10.2

Temperature range

Temperature range	Process (°C)		Ambient (°C)		Process (°F)		Ambient (°F)	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.

Separate flow sensor	-60	180	-40	65	-76	356	-40	149
Compact+TWM 9000	-60	140	-40	65	-76	284	-40	149

Temperature change	Max. permissible temperature change (°C)				Max. permissible temperature change (°F)			
	10 minutes (°C)		Sudden change (°C)		10 minutes (°F)		Sudden change (°F)	
	rising	falling	rising	falling	rising	falling	rising	falling
DN2.5... 15	150	120	120	90	302	248	248	194
DN25... 100	150	100	120	60	302	212	248	176

Ordering Information

Contact your nearest Honeywell sales office, or

In the U.S.:

Honeywell Process Solutions
Honeywell International Inc
2500 West Union Hills Drive
Phoenix, AZ 85027 1-800-343-0228

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Republic of Singapore

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