



Magnetic Flowmeter

Datasheet

WELTER electromagnetic flowmeter can be used to measure the volume flow of conductive fluid in a closed pipeline. It is widely applied in the flow measurement and control in the fields of chemical and petroleum industry, metallurgy industry, water and waste water, agriculture and irrigation, paper making, food and beverage industry and pharmaceutical industry.

Features:

- Measurement is not affected by the variation of flow density, viscosity, temperature, pressure and conductivity. High accuracy measurement is guaranteed according to the linear measurement principle.
- No obstacle in the pipe, no pressure-loss and lower requirement for straight pipeline.
- DN 6 to DN2000 covers a wide range of pipe size. A variety of liners and electrodes are available to satisfy different flow characteristic.
- Programmable low frequency square wave field excitation, improving measurement stability and reducing power consumption.
- Implementing 16 bits MCU, providing high integration and accuracy; Full-digital processing, high noise resistance and reliable measurement; Flow measurement range up to 1500:1.
- High definition LCD display with backlight.
- RS485 or RS232 interface supports digital communication.
- Intelligent empty pipe detection and electrodes resistance measurement diagnosing empty pipe and electrodes contamination accurately.
- SMD component and surface mount technology (SMT) are implemented to improve the reliability.



Flange type



Clamp type



Thread type

Ambient Conditions

Ambient temperature:

sensor: -25°C to + 60°C;

converter: -25°C to + 60°C.

Relative humidity: 5% to 90%;

Working Conditions

Maximum fluid temperature:

Compact type: 60°C

Remote type: Teflon 150°C

Neoprene 80°C; 120°C

Polyurethane 70°C

Fluid conductivity: ≥ 5 S/cm

Technical Specification

Nominal diameter	3-2000mm			
Velocity range	0—15m/s			
Degree of accuracy	0.5%, 0.2%			
Medium conductivity	$\geq 5\mu\text{S/cm}$, Actual conductivity $\geq 30\mu\text{S/cm}$			
Nominal pressure	0.6MPa	1.0MPa	1.6MPa	4.0MPa
	DN400-2000	DN700-1200	DN200-600	DN0-150
Environment temperature	Sensor	0°C - +80°C or -25°C - +120°C or + 70 -+ 250°C		
	Compact type	-10°C - +55°C		
Highest medium temperature	Compact type	+80°C		
	Remote type	CR chloroprene rubber liner (CR)	+80°C	
		Polytetrafluoroethylene lining(F4)	+120°C	
		Politef lining(F46)		
		Teflon(PFA)	+180°C	
Fluorosilicone rubber(FVMQ)	+250°C			
Output signal	4-20mA; Pulse/Frequency 2kHz(Default), 5KHz(Max)			
Supply voltage	AC 85-265V, 45-63Hz, $\leq 20\text{W}$; DC 11-40V			
Power dissipation	$\leq 15\text{VA}$			
Communication	RS485, RS232, MODBUS,REMOTE			
Electrode material	Stainless steel 316L,Hastelloy C,Hastelloy B,titanium, tantalum, platinum			
Form of electric pole	Interpolating, extrapolating electrode need to customize			
Number of electrodes	Standard configuration 3-4 electrodes (two measuring electrodes plus a			

	grounding electrode)	
Flange Standard	Conform to the international GB9119 (can be customized)	
Flange material	Standard carbon steel and stainless steel are needed to be customized	
Grounding ring material	Stainless steel, and stainless steel that contains molybdenum, etc.	
	DN15-DN450	Stainless steel 1Cr18Ni9Ti(Ordinary SUS321)
Housing material	Standard carbon steel and stainless steel are needed to be customized	
Level of protection	Remote type	IP68、IP65
	Compact type	IP65
Cable length	10m standard configuration connecting line, optional 15m, 20m,	

Note : The flowmeter is compliant to Standard “JB/T 9248-1999 Electromagnetic Flow Meter”.

Electromagnetic flowmeter range selection sheet

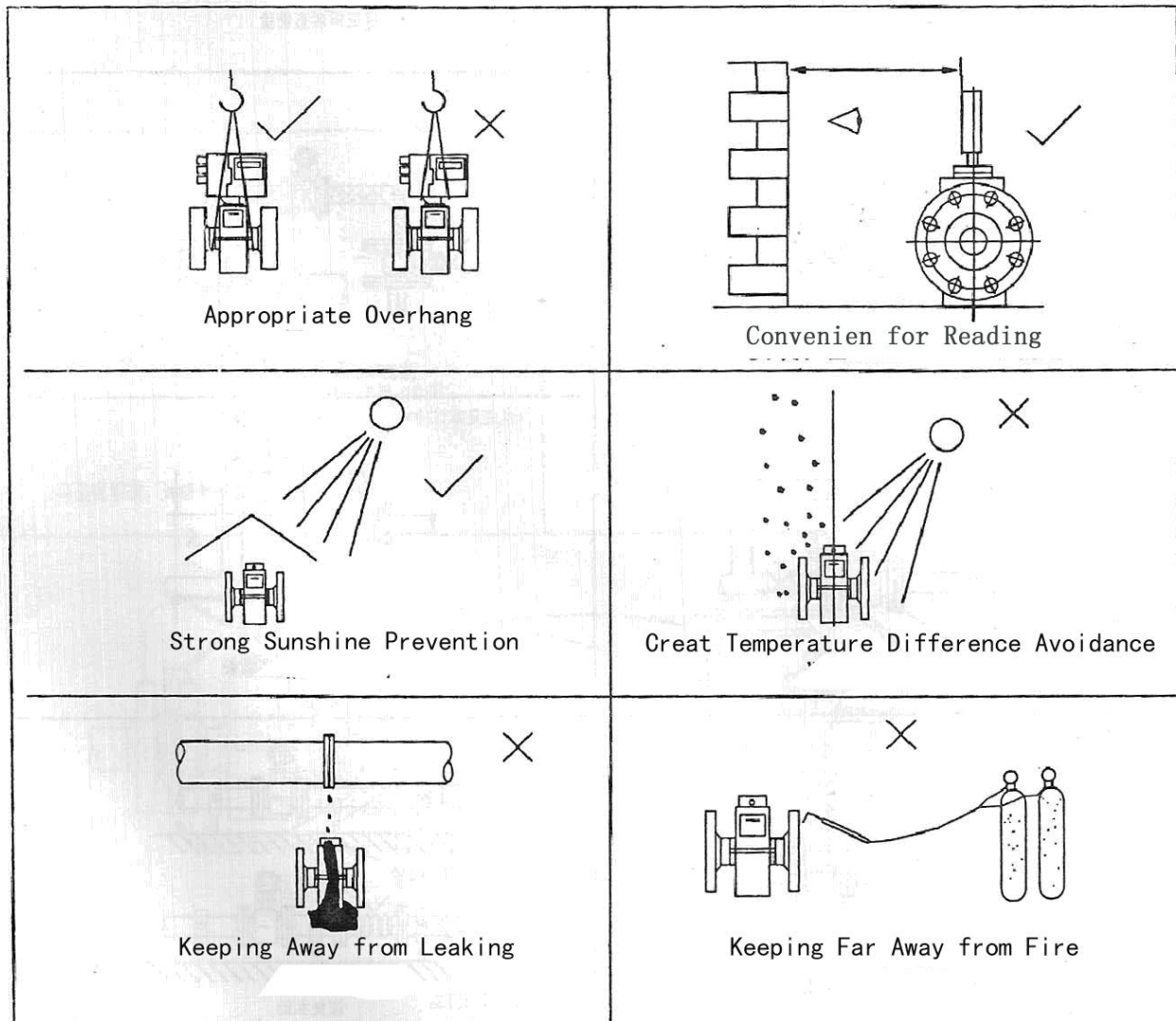
DN (mm)	Measure Range (m ³ /h)			Factorysetting range
10	0.02827-0.25	0.3-1.6	2.0-3.3924	0.15-1.5
15	0.0636-0.6	0.8-3.0	4.0-7.632	0.3-3
20	0.131-1.0	1.2-5.0	6.0-13.6	0.5-5
25	0.176-1.6	2.0-8.0	10-21	0.7-7
32	0.2895-2.5	3.0-12	16-35	1.2-12
40	0.4524-4.0	5.0-20	25-45	2-20
50	0.707-6.0	8.0-40	50-85	3-30
65	1.195-10	12-60	80-143	5-50
80	1.81-16	20-120	160-217	7-70
100	2.83-25	30-160	200-339	12-120
125	4.42-40	50-250	300-530	18-180
150	6.36-60	80-400	500-763	25-250
200	11.3-100	120-600	800-1357	45-450
250	17.7-160	200-800	1000-2120	70-700
300	25.45-250	300-1200	1600-3054	100-1000
350	34.6-300	400-1600	2000-4157	140-1400
400	45.2-400	500-2000	2500-5429	180-1800
450	57.3-500	600-2500	3000-6871	230-2300

500	70.7-600	800-3000	4000-8482	280-2800
600	102-800	1000-4000	5000-12216	400-4000
700	139-1200	1600-5000	6000-16620	550-5500
800	181-1600	2000-6000	8000-21720	720-7200
900	229-1600	2000-8000	10000-27480	910-9100
1000	283-2000	2500-10000	12000-33924	1100-11000
1200	407-2500	3000-12000	16000-48833	1200-12000

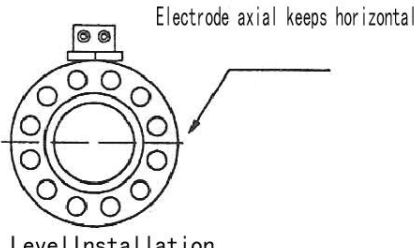
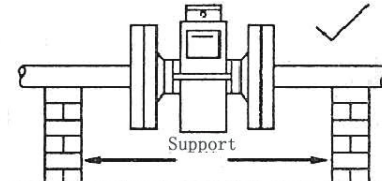
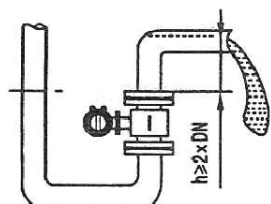
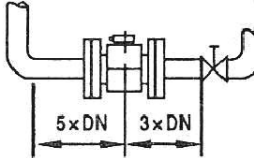
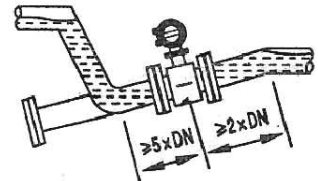
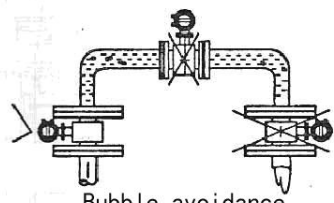
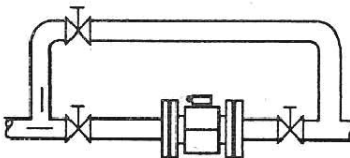
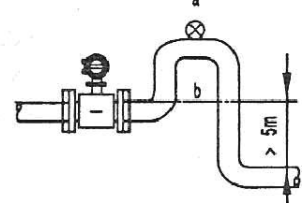
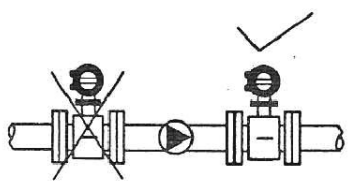
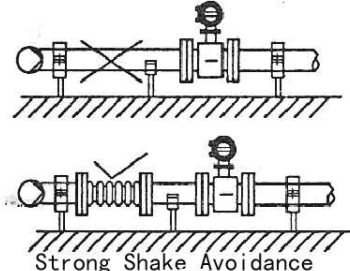
Note: The overall range of optional range, the blue area data for suggestion using range, red for the factory setting range.

Installation

The installation of flowmeter is shown as Fig. 7.



The correct installation flowmeter

 <p>Electrode axial keeps horizontal</p> <p>Level Installation</p>	 <p>Support</p> <p>Reasonable Support</p>
 <p>$l \geq 2 \times DN$</p> <p>Full of Pipe</p>	 <p>$5 \times DN$ $3 \times DN$</p> <p>Ensure the Requir. of the Straight Pipe section</p>
 <p>$\geq 5 \times DN$ $\geq 2 \times DN$</p> <p>Measurement for the Precipitable</p>	 <p>Bubble avoidance</p>
 <p>Easy to Maintenance and Clean-up</p>	 <p>a</p> <p>b</p> <p>5m</p> <p>Negative Pressure and Non-filled pipe Avoidance</p>
 <p>Not Installed in Front of the Inlet of Pump</p>	 <p>Strong Shake Avoidance</p>

Ordering code

SPE	Suffix Code							Introduction
Pressure Level	1.0							Sensor Pressure Level * 1 (0.6,1.0,1.6,4.0Mpa etc.)
Caliber		50						Pipe size
Electrode Material			K1					Stainless steel 316L
			K2					Hastalloy C(HC)
			K3					Hastalloy B(HB)
			K4					Titanium (Ti)
			K5					Tantalum(Ta)
			K6					Platinum(Pt)
Lining Material			F1					Chloroprene rubber(CR)
			F2					Fluorosilicone rubber(FVMQ)
			F3					FEP F46
			F4					FEP F46 Steel mesh
			F5					Teflon(PFA)
			F6					Ptfe ethylene propylene(PTFE)
Working Temperature			A1					≤80℃
			A2					≤150℃
Flowmeter Type					C1			Incorporate type*7
					C2			Separate body-type *8
Power Supply						P0		AC 85-265V
						P1		DC 11-40V
Signal Output							S1	4-20mA
							S2	RS-485 Communication
							S3	Frequency / pulse output