ALIAFLOW

Electromagnetic Flowmeter

Model AWF400MPE Series

GENERAL

ALIAFLOW The AWF400MPE Series is a battery-powered electromagnetic flowmeter with a higher turndown ratio, high accuracy, and high sensitivity.

It features stainless steel housing, the absence of moving parts, and an IP68 protection class, which enables the meter to have capabilities such as anti-interference, no pressure loss, corrosion resistance, and waterproofing. Optional pressure sensors are also available for area leak detection.

The electromagnetic flowmeter uses the sanitary-type rubber liner and can be installed directly on drinking water pipelines, making it safe and reliable.

FEATURES

- Q3:Q1 turndown ratio as high as 400:1
- Low power consumption, battery life up to 5-10 years
- MODBUS RS485, Pulse Output
- The whole body adopts the material of S.S. 304
- Protection class IP68: suitable for long-term underwater operation
- LCD display, which shows flowrate, totalizer, alarm, leak detection
- Leak detection, achieved with reliable measurements
- Internal battery or external power auto switching

STANDARD SPECIFICATION

- Measuring Principle : Faraday's law of induction
- Size : 50-300 mm
- Q3 / Q1 (R) : 160:1, 250:1, 400:1
- Accuracy : R160: +/-1% (Q4-Q2), +/-2% (Q2-Q1)
  : R250, R400: +/-2% (Q4-Q2), +/-5% (Q2-Q1)
- Repeatability : +/-0.2% ~ +/-0.3% of reading
- Medium Temperature : 0.1~50 °C (T50)
- Ambient Temperature : -20~60 °C
- Ambient Humidity : 0-100% RH
- Resolution : 0.001 Unit (Minimum)
- Material
  - Electrode : Stainless Steel 316L
  - Measuring Tube : Stainless Steel 304
  - Flange : Carbon Steel (Standard)
  : Stainless Steel 304 (Option)
  - Coil Housing : Carbon Steel (Standard)
  : Stainless Steel 304 (Option)
  - Liner : Neoprene
  - Converter : Stainless Steel 304
- Conductivity : More than 50 μS/cm
- Process Connection : Flange
- Flange Type : PN10 / PN16 / JIS10K / JIS20K / ANSI 150#
- Protection Class : IP68
- Display : 12 Digits of totalizer, 5 Digits of flowrate
  5 Digits of velocity or pressure value
  alarm, battery level
- Units
  - Totalizer Unit : Liter, m^3, kg, Ton
  - Time Unit : second, minute, hour
  - Velocity Unit : m/s
  - Pressure Unit : MPa
- Operating Pressure : 20 bar (Maximum)
- Pressure Loss : △P25
- Severity Levels : Climatic and Mechanical class 0
  : Electromagnetic environment class E2
- Communication : MODBUS Protocol
- Pulse Output : Open collector (Passive)
  - Rating : 12-24 VDC 10 mA Max.
- Outlet Cable : 3.0 m (Standard)
- Data Storage : 72 times (months, years) for Totalizer
- Power Supply : Lithium battery 3.6 VDC 114 Ah
  (Size D * 6 pcs)
- Battery Life : ≥5-10 years (Depend on the applications)
- External Power Supply : 3.6-24 VDC
  - Switching Voltage : <3.6 V Turn to Internal Battery
- Option : Ambient Temperature Inspection

CE

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FLOW RANGE

R160 Class 1

Size	Overload Flowrate	Permanent Flowrate	Transitional Flowrate	Minimum Flowrate	Q4 / Q3	Q2 / Q1
	Q4 (m^3 / hr)	Q3 (m^3/hr)	Q2 (m^3/hr)	Q1 (m^3/hr)		
	R160					
DN50 (2")	50	40	0.40	0.25	1.25	1.6
DN80 (3")	125	100	1.00	0.63		
DN100 (4")	200	160	1.60	1.00		
DN150 (6")	500	400	4.00	2.50		
DN200 (8")	788	630	6.30	3.94		
DN250 (10")	1250	1000	10.00	6.25		
DN300 (12")	2000	1600	16.00	10.00		

Class 1 (R160) Accuracy in Range Q1-Q2:+/-3%, Q2-Q4:+/-1%, Base on OIML R49 EN14154 and ISO 4064:2024

R250 Class 2

Size	Overload Flowrate	Permanent Flowrate	Transitional Flowrate	Minimum Flowrate	Q4 / Q3	Q2 / Q1
	Q4 (m^3/hr)	Q3 (m^3/hr)	Q2 (m^3/hr)	Q1 (m^3/hr)		
	R250					
DN50 (2")	50	40	0.26	0.16	1.25	1.6
DN80 (3")	125	100	0.64	0.40		
DN100 (4")	200	160	1.02	0.64		
DN150 (6")	500	400	2.56	1.60		
DN200 (8")	788	630	4.03	2.52		
DN250 (10")	1250	1000	6.40	4.00		
DN300 (12")	2000	1600	10.24	6.40		

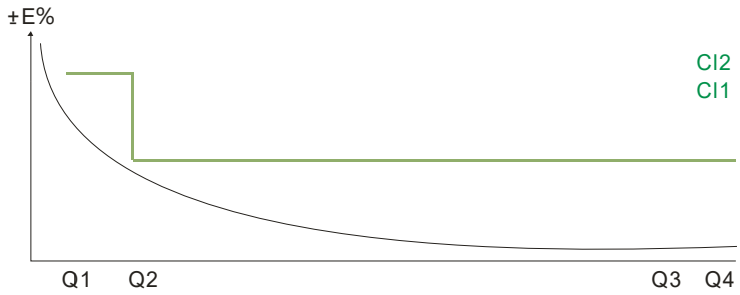
Class 2 (R250 / 400) Accuracy in Range Q1-Q2:+/-5%, Q2-Q4:+/-2%, Base on OIML R49 EN14154 and ISO 4064:2024

R400 Class 2

Size	Overload Flowrate	Permanent Flowrate	Transitional Flowrate	Minimum Flowrate	Q4 / Q3	Q2 / Q1
	Q4 (m^3/hr)	Q3 (m^3/hr)	Q2 (m^3/hr)	Q1 (m^3/hr)		
	R400					
DN50 (2")	50	40	0.16	0.10	1.25	1.6
DN80 (3")	125	100	0.40	0.25		
DN100 (4")	200	160	0.64	0.40		
DN150 (6")	500	400	1.60	1.00		
DN200 (8")	788	630	2.52	1.58		
DN250 (10")	1250	1000	4.00	2.50		
DN300 (12")	2000	1600	6.40	4.00		

Class 2 (R250 / 400) Accuracy in Range Q1-Q2:+/-5%, Q2-Q4:+/-2%, Base on OIML R49 EN14154 and ISO 4064:2024

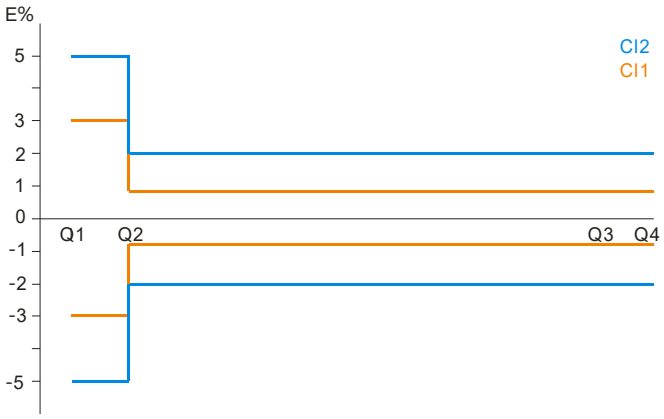
OIML R 49:2013 SPECIFICATION



Class 1: Q2 ≤ Q ≤ Q4 is +/-1% for 0.1 °C ≤ T ≤ 30 °C,
and +/-2% for T > 30 °C
: Q1 ≤ Q ≤ Q2 is +/-3%

Class 2: Q2 ≤ Q ≤ Q4 is +/-2% for 0.1 °C ≤ T ≤ 30 °C,
and +/-3% for T > 30 °C
: Q1 ≤ Q ≤ Q2 is +/-5%

ISO4064-2014 SPECIFICATION



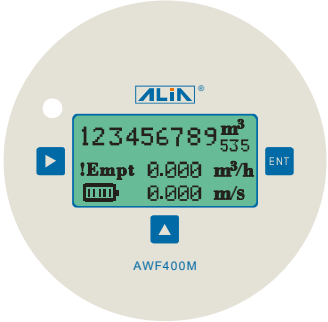
Class 1: Q2 ≤ Q ≤ Q4 is +/-1% for 0.1 °C ≤ T ≤ 30 °C,
and +/-2% for T > 30 °C
: Q1 ≤ Q ≤ Q2 is +/-3%

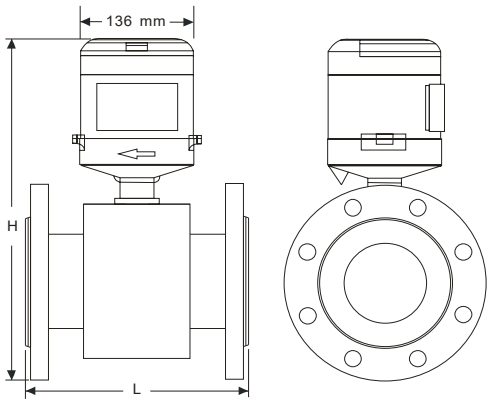
Class 2: Q2 ≤ Q ≤ Q4 is +/-2% for 0.1 °C ≤ T ≤ 30 °C,
and +/-3% for T > 30 °C
: Q1 ≤ Q ≤ Q2 is +/-5%

VALUES OF Q1, Q2, Q3, AND Q4

The value of Q3 (m^3/hr)																	
1		1.6		2.5		4		6.3		10		16		25		40		63
100		160		250		400		630		1000		1600		2500		4000		6300
The value of ratio Q3 / Q1																		
40		50		63		80		100		125		160		200		250		315
400		500		630		800		1000										
The ratio Q2 / Q1 shall be 1.6																		
The ratio Q4 / Q3 shall be 1.25																		

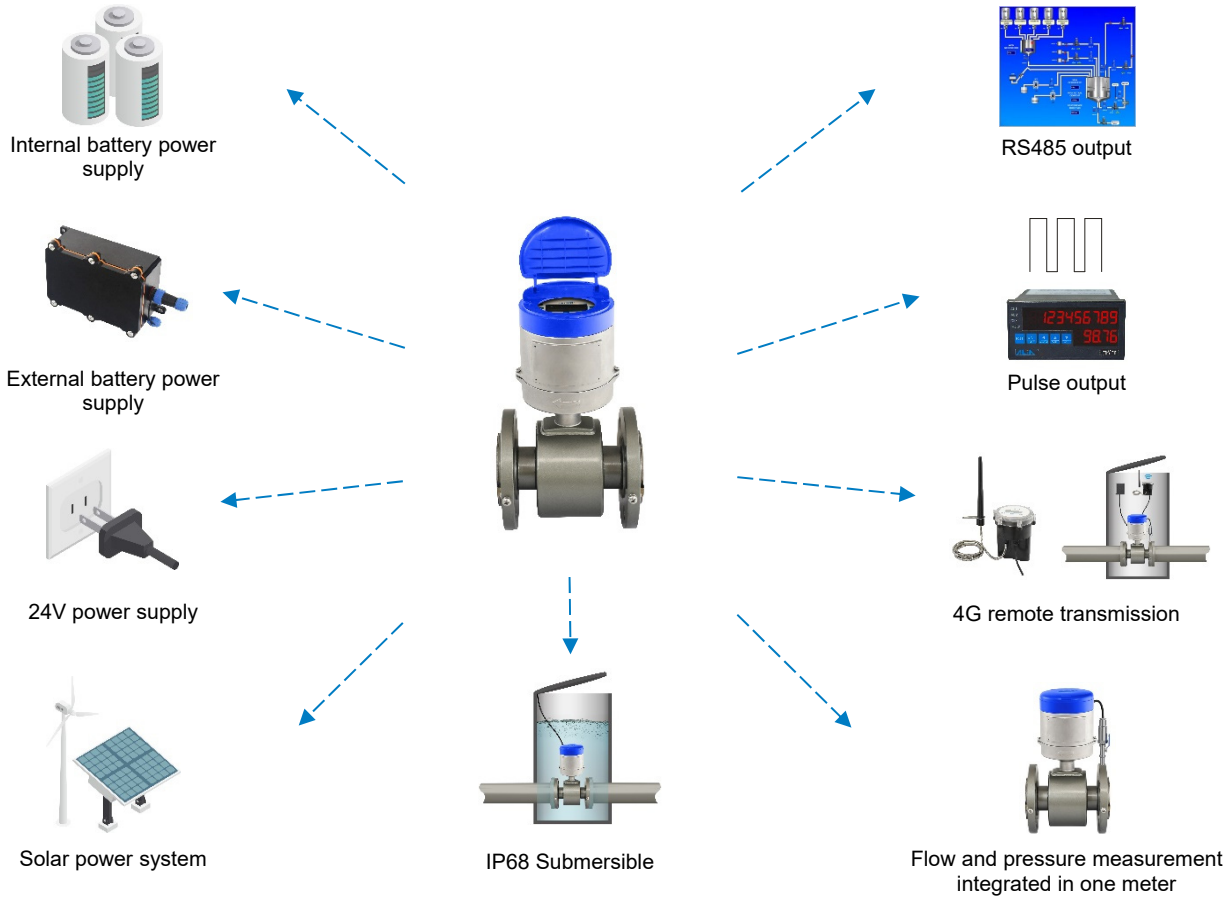
DISPLAY & DIMENSIONS





Size		L	H	Weight
DN	Inch	mm	mm	kg
50	2"	200	355	20
80	3"	200	360	25
100	4"	250	380	27
150	6"	300	445	38
200	8"	350	500	47
250	10"	450	550	76
300	12"	500	605	92

APPLICATION



MODEL SELECTION GUIDE

AWF400MPE Series								
Example: AWF400MPE-050-2S-MN-BX-EP								
AWF400MPE-	XXX	-X	X	-X	X	-XX	-XX	Description
Size	050-300							050, 080, 100, 150, 200, 250, 300 mm
Process Connection		-1						PN10
		-2						PN16
		-A						ANSI 150#
		-J						JIS 10K
		-K						JIS 20K
Flange & Housing			C					Carbon Steel
			S					S.S. 304
Accuracy & Q3:Q1				-N				Accuracy: Class2, R250
				-M				Accuracy: Class2, R400
				-H				Accuracy: Class1, R160
Output					N			Pulse / Frequency and RS485 (MODBUS)
Battery Power Supply						-BX		Internal Battery Box without Battery
						-BT		Internal Battery Box with Battery
Option							-NN	None
							-EB	External Battery Box without Battery (Can hold 3 pcs Size D)
							-EP	IP68 6P Plugs (External Power / Frequency / RS485)
							-PT	With Pressure sensor
							-AM	Ambient Temperature Inspection