



## DEM8 ELECTROMAGNETIC FLOWMETER



### Série : DEM8

- > Communication: HART ~ RS485 Modbus RTU ~ 4-20 mA ~ Pulse ~ Alarms
  - > Minimum maintenance: without moving parts, low pressure loss
  - > Multiple choice of models: Coating ~ Electrodes ~ Structures
    - > Accuracy:  $\pm 0.5\%$  standard ~ Optional  $\pm 0.3\%$  or  $\pm 0.2\%$ 
      - > Conductivity of the liquid: up to 5microS / cm
      - > Power supply: AC220V ~ DC24V ~ Battery
        - > Measuring range: DN15 to DN2400
        - > Display: Backlit LCD screen
        - > Rangeability: 1: 100

## PRESENTATION

The **DEM8** Electromagnetic flowmeter range, available in diameters from 10 to 2400 mm, has been specially designed for use in many industrial applications, such as the field of wastewater treatment and drinking water, or the chemical, pharmaceutical and food industries.

It has an innovative modular design "PLUG & PLAY" very convenient for installation, use and maintenance that are done with ease and safety.

It can be seamlessly integrated into your production management tool, providing accurate and reliable information.

Its communication protocols and ports, built-in recorder, high-definition backlit LCD display and optical function keys make it ideal for your application.

Equipped with quality materials, a new generation compact electronics, It offers flexibility and reliability for a long life and a certain return on investment.

## APPLICATIONS

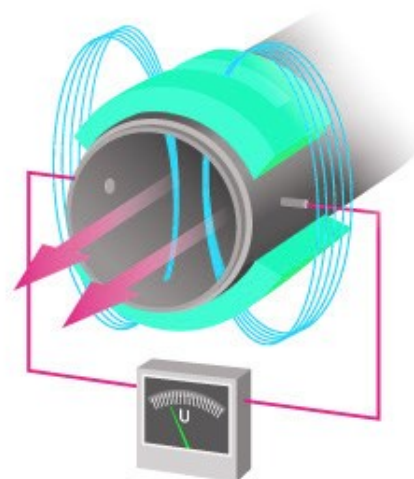
- > **Drinking water and wastewater treatment industry**
- > **Pharmaceutical Industry**
- > **Chemical Industry**
- > **Agribusiness industry**
- > **Metallurgy, stationery, electrical energy, textile ...**



## OPERATION

An electromagnetic flowmeter is a device that operates according to the Faraday principle for the measurement of the flow of a clear or viscous liquid, pasty, impure, abrasive or highly corrosive provided that it is electrically conductive (ie which is not the case for hydrocarbons). In practice the electromagnetic field is obtained through two coils placed on either side of the pipe and fed alternately. This avoids polarization of the electrodes. The signal collected is therefore of the same frequency and amplified by a differential amplifier before demodulating it classically.

The sensor consists of a non-magnetic, non-conductive tube with two measuring electrodes. To create an alternating magnetic field, two coils are mounted on the tube parallel to the plane defined by the active parts of the measuring electrodes. If a conductive liquid flows through the magnetic field, a voltage proportional to the speed of the liquid and the length of the conductor is generated between the measuring electrodes. One of the strong points of this method is that the sensor does not disturb the flow which is to say that the viscosity of the fluid does not intervene absolutely not in the result, as well as the temperature which can be relatively high (a few hundred ° C).



## AVANTAGES

**No loss of charge**

**The measured quantity is directly proportional to the flow rate**

**Wide range of driving diameters possible**

**Can measure bidirectional flow**

**Usable with aggressive and corrosive liquids, with sludge**

**Relatively insensitive to the density, viscosity and flow profile of the fluid**

**Calibration factor does not change over time**

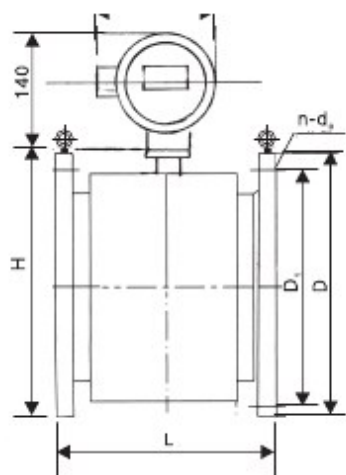
**May be preceded by a short straight length**

## SPECIFICATIONS

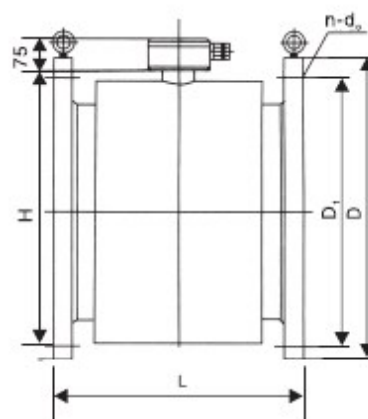
ELECTROMAGNETIC FLOWMETER DEM8	
Measuring range	DN15 to DN2400
Accuracy	± 0.5% standard ~ ± 0.3% ~ ± 0.2% in option
Repeatability	0.15% ~ 0.25% ~ 0.5%
Rangeability	1 : 100
Flow range	0.1 à 10m/s
Built-in Type	Integrated ~ Remote ~ Submerged IP68 ~ Integrated Explosion Proof ~ Remote Explosion Proof
Measurable Media	Conductive Fluids Bidirectional measurement
Operating Temperature	Inegrated type : -10 °C à 50 °C Remote type : - 20 °C à 70 °C
Fluid temperature	Inegrated type : max. 80 °C Remote type : max. 80 °C ou 130 °C (revêtement PTFE)
Conductivity of the fluid	≥ 5 us/cm
Humidity	5 % ~ 95 % RH
Rated pressure	0.6 MPa ~ 42.0 Mpa
Installation	straight line 5D upstream 2D downstream
Electrode	Inox ~ Hastelloy B or C ~ Titanium ~ Tantalum ~ Carbonated tungsten ~ Platinum Iridium ...
Coating	PTFE ~ Synthetic Rubber ~ Other please specify...
Measuring tube	Stainless Steel
Flanges	Carbon Steel or Stainless Steel GB, DIN, ANSI, JIS ...
Flameproof version	Exdeia II CT4
Power Supply	220VAC 47/63 Hz ~ 24VDC +/- 5% ~ Battery
Communications	RS485 ~ 4-20 mA ~ 0-10 mA ~ Impulsions ~ Alarms ~ Datalogger
Communication Protocol	HART ~ Modbus RTU
Display & Features	Backlit LCD Display ~ Touch Function Keys ~ Setting Menu 3-Level Protection Password ~ Many Alarms ~ Zero Stabilization Low flow detection ...
alues displayed	Actual flow rate (m3/hr, L/sec, L/min, US.gal/min, UK.gal/min), volume (m3, L, US.gal, UK.gal) Positive, negative, total volume, Speed ...
Protection	DN15 à DN1200 IP68 ~ IP67
Vibration	55 Hz
Amplitude	0.55 mm
Ambient magnetic field	Max. 400 A/m



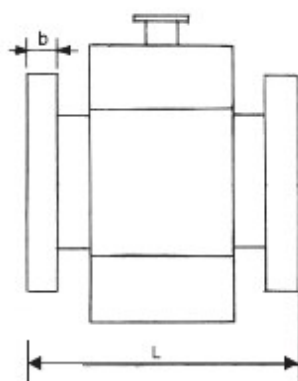
## DIMENSIONS & TYPES



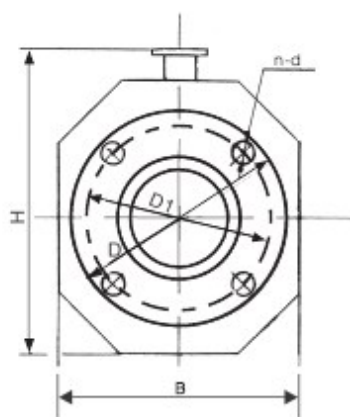
Integral Type  
( $\geq \text{DN}100$ )



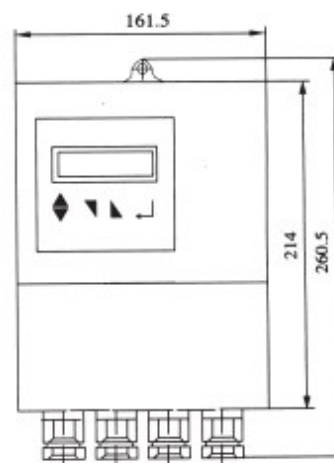
Separate Type  
( $\geq \text{DN}100$ )



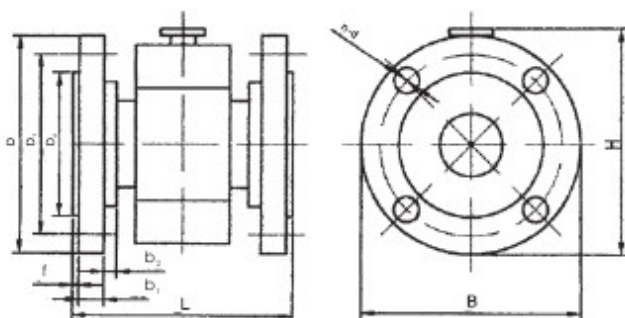
d Sensor (DN15~DN80)



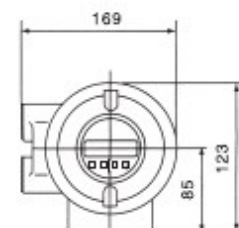
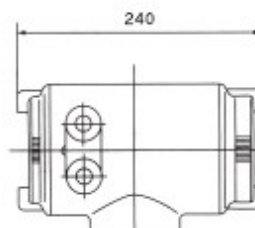
(DN15~DN80)



Intelligence Transmitter  
(Square Type)



High Pressure Sensor dimension



Transmetteur Standard

## DIMENSIONS & WEIGHT

DN (mm)	Dimension (mm)				Dimension connexion bride (mm)				Poids (kg)
	L	B	H	D	D <sub>i</sub>	n-d	Th	b	
	PN4.0MPa				JB/T82-94/GB9119.10-2000				
15	200	130	220	95/95	65	4-φ 14	M12	16	8
20	200	130	220	105/105	75	4-φ 14	M12	18	10
25	200	142	230	115/115	85	4-φ 14	M12	18	12
32	200	142	230	135/140	100	4-φ 18	M16	20	14
40	200	158	255	145/150	110	4-φ 18	M16	22	16
50	200	170	260	160/165	125	4-φ 18	M16	24	18
65	200	185	275	180/185	145	8-φ 18	M16	24	22
80	200	200	285	195/200	160	8-φ 18	M16	26	26
100	250	235	290	230/235	190	8-φ 23	M20	28	30
125	250	270	325	270/270	220	8-φ 25	M22	30	36
150	300	300	350	300/300	250	8-φ 25	M22	30	42
	PN1.6MPa				JB/T82-94/GB9119.4-2000				
200	350	340	385	335/340	295	12-φ 23	M20	30	55
250	400	405	445	405/405	355	12-φ 25	M22	32	70
300	500	460	515	460/460	410	12-φ 25	M22	32	85
350	500	520	570	520/520	470	16-φ 25	M22	34	100
400	600	580	630	580/580	525	16-φ 30	M27	38	120
450	600	640	690	640/640	585	20-φ 30	M27	42	150
500	600	715	760	705/715	650	20-φ 34	M30	48	200
600	600	840	880	840/840	770	20-φ 41	M36	50	260
	PN1.0MPa				GB9115.3-2000				
700	700	895	970	895	840	24-φ 30	M27	46	360
800	800	1015	1080	1015	950	24-φ 33	M30	52	460
900	900	1115	1180	1115	1050	28-φ 33	M30	56	570
1000	1000	1230	1285	1230	1160	28-φ 36	M33	62	730
	PN0.6MPa				GB9119.2-2000				
1200	1200	1405	1480	1405	1340	32-φ 33	M30	60	600
1400	1400	1630	1695	1630	1560	36-φ 36	M33	68	840
1600	1600	1830	1895	1830	1760	40-φ 36	M33	76	1330
1800	1800	2045	2110	2045	1970	44-φ 39	M36	84	1800
2000	2000	2265	2315	2265	2180	48-φ 42	M39	92	2300
	PN0.6MPa				GB9115.2-2000				
2200	2200	2475	2520	2475	2390	52-φ 42	M39	42	2800
2400	2400	2685	2725	2685	2600	56-φ 42	M39	44	3300
2600	2600	2905	2950	2905	2810	60-φ 48	M45	46	3880
2800	2800	3115	3165	3115	3020	64-φ 48	M45	48	4930
3000	3000	3315	3365	3315	3220	68-φ 48	M45	50	5580

## MODEL SELECTION

DEM8 Electromagnetic Flowmeter :	1	2	3	4	5	6	7	8
	DN	Nominal Pressure	Flange	Power	Lining Material	Electrode	Structure	Com.
<b>1 : DN Pipe Line</b>								
De 15 à 2400								
<b>2 : Nominal Pressure (MPa)</b>								
0.6, 1, 1.6, 2.5, 4, 6.4, 10, 15, 25, 42 <b>Mpa</b>								
<b>3 : Flange Type</b>								
GB, DIN, ANSI, JIS, Autres								
<b>4 : Power supply</b>								
AC(85~220)V, DC(16~36)V, Batterie								
<b>5 : Lining Material</b>								
PTFE, Synthetic Rubber ~ Other...								
<b>6 : Electrode</b>								
Inox 316L, Hastelloy B or C, Titanium, Tantalum, Platine Iridium...								
<b>7 : Structure</b>								
Integrated (Round or Square converter), Remote, Immersion remote IP68), Integrated Explosion Proof ~ Remote Explosion Proof								
<b>8 : Communication</b>								
4-20 mA or 0-10 mA, Pulse, RS485 Modbus RTU, HART								

