

# Electromagnetic flow meter

## Wafer version

### Model FLC-1100J

WIKA data sheet FL 20.03

#### Applications

- Irrigation systems
- Refrigeration technology
- Firefighting
- Building and civil engineering

#### Special features

- Low investment and maintenance costs
- Ideal for agriculture and irrigation
- Compact and light-weight design
- Fully potted



**Model FLC-1100J**

#### Description

Electromagnetic flow meters are based on the Faraday principle, by which a conductor which traverses a magnetic field generates a potential oriented perpendicular to that field. The flow tube is enclosed by two flanges and also by two coils. The magnetic field which is generated by the electric current running through the coils induces a potential difference in the electrodes that is proportional to the flow being measured.

A WIKA signal converter, either attached directly to the instrument or separated from it (e.g. model FLC-608), generates the current to supply the magnetic coil, detects the potential difference between the electrodes, processes the signal to calculate the flow and manages communication with the external control systems.

The model FLC-1100J can be used wherever low-weight, compact dimensions and high reliability are needed. The flangeless sensors are available from DN 40 to DN 150.

As a “wafer sensor”, the model FLC-1100J is installed between two flanges, which ensures a high accuracy and repeatability. The installation is possible between UNI 2223 flanges from PN 16 to PN 40 or between ANSI 150 and 300 flanges. The sensor and the flange are sealed through two O-rings which are included in the delivery.

The flow tube from PA6 with glass-fibre reinforcement offers excellent resistance to aggressive media and agricultural fertilisers.

## Specifications

Diameter and weight						
mm	40	50	65	80	100	150
in	1.5	2	2.5	3	4	6
Weight in kg <sup>1)</sup>	1.5	1.8	2.5	3	4	6.5

1) In separated version, without packaging

The recommended maximum velocity for normal applications is about 2 to 3 m/s. The full scale value can be adjusted on-site via the keypad of the signal converter. The maximum value that can be set corresponds to a velocity of 10 m/s.

Basic information	
Compatible connecting flanges	Flanges per EN 1092-1, ANSI 150 and 300
Maximum pressure	16 bar
Medium temperature	0 ... 80 °C [32 ... 176 °F]
<b>Materials</b>	
Flow tube	PA6 polyamide and glass fibre
O-ring	NBR
Electrodes	<ul style="list-style-type: none"> <li>■ Stainless steel 316L (standard)</li> <li>■ Hastelloy C<sup>®</sup></li> <li>■ Titanium</li> </ul>
Sensor housing	Carbon steel, painted with acrylic
Ingress protection per EN 60529	IP67 (IP68 on request)
Compatible signal converters	<ul style="list-style-type: none"> <li>■ Model FLC-608A/B/R/P/I</li> <li>■ Model FLC-406</li> </ul>

### Calibration and maximum measuring deviation

The sensors of the model FLC-1100J belong to reference group B1 (per ISO 11631). Each sensor is wet-calibrated on a hydraulic test bench which is fitted with a reference weighting system and is SIT certified. The measuring deviation of the calibration is 0.2 % if the flow velocity is more than 0.2 m/s. The repeatability is 0.1 %.

### Integration of the flow meter

The model FLC-1100J sensors can be combined with all WIKA signal converters. In the separated version, the sensor is connected with the signal converter via two cables, whose lengths depend on the electric conductivity of the liquid. The maximum length of the cables is 100 m [328 ft] (30 m [98 ft]) in combination with battery-operated electronics).

With installation in plastic or lined pipelines, no grounding rings are required for liquid grounding due to the third electrode.

## Compatible flanges

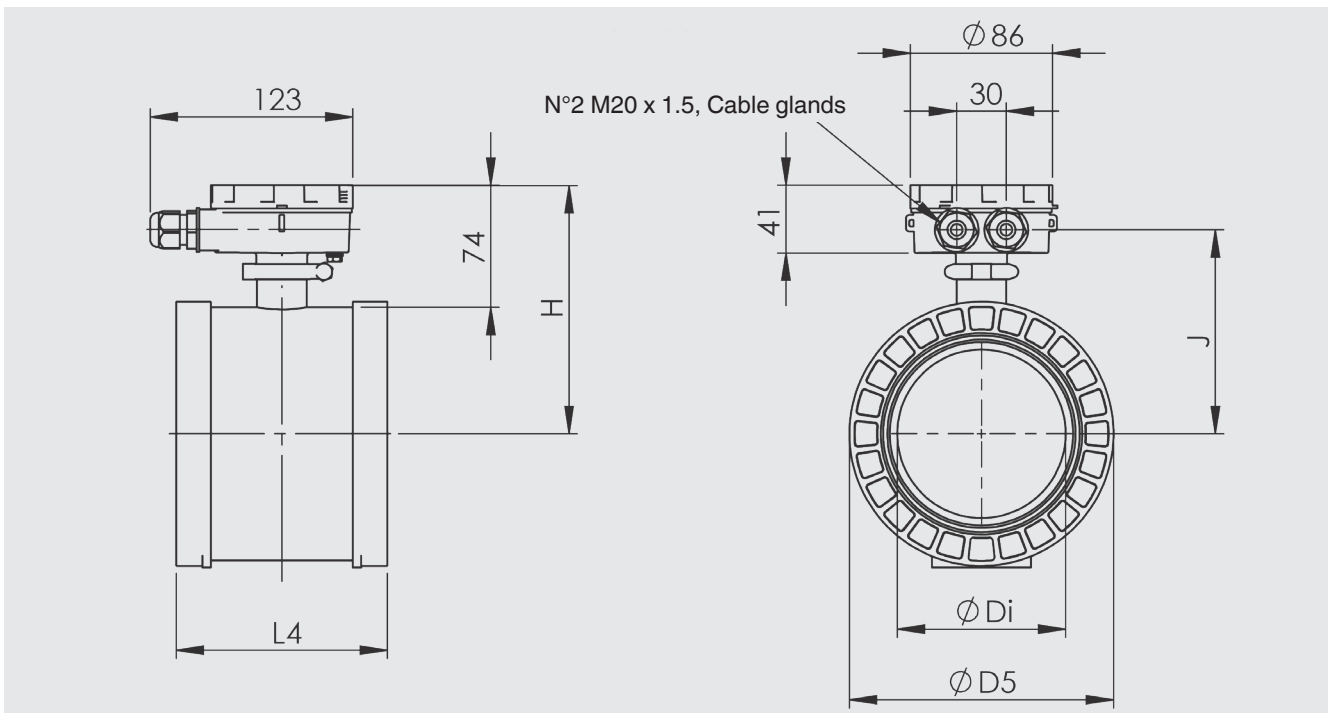
Compatible flanges <sup>1)</sup>																
DN in mm [in]	PN 16			PN 25			PN 40			ANSI 150			ANSI 300			Length in mm
	Db	Nb	T in Nm	Db	Nb	T in Nm	Db	Nb	T in Nm	Db	Nb	T in Nm	Db	Nb	T in Nm	
40 [1.5]	M16	4	30	M16	4	35	M16	4	41	1/2"	4	23	3/4"	4	30	96
50 [2]	M16	4	35	M16	4	40	M16	4	47	5/8"	4	33	5/8"	8	23	86
65 [2.5]	M16	4	48	M16	8	38	M16	8	38	5/8"	4	47	3/4"	8	30	104
80 [3]	M16	8	35	M16	8	40	M16	8	47	5/8"	4	60	3/4"	8	48	112
100 [4]	M16	8	48	M20	8	98	M20	8	116	5/8"	8	47	3/4"	8	68	130
150 [6]	M20	8	85	M22	8	110	M22	8	131	3/4"	8	81	3/4"	12	90	196

1) Prerequisite: Screws and nuts are new and properly lubricated.

### Legend

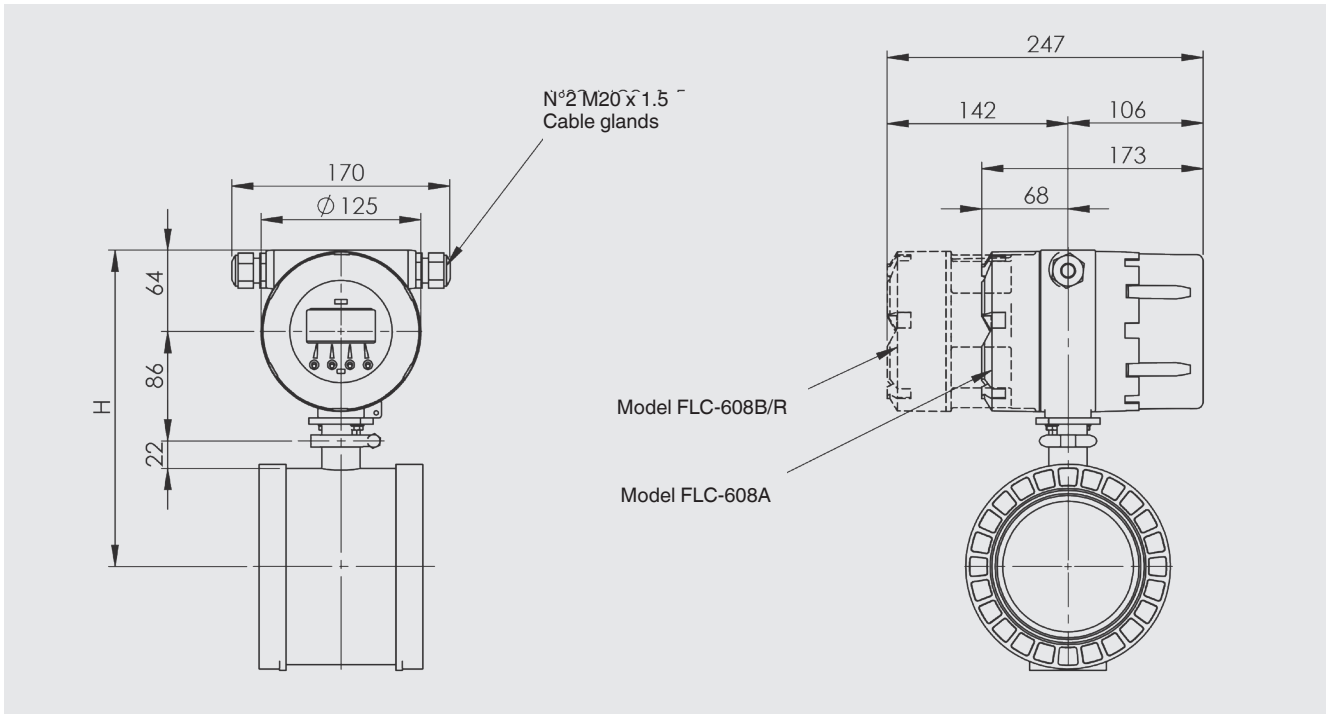
Db Diameter  
 Nb Number of screws  
 T Tightening torque

### Dimensions in mm



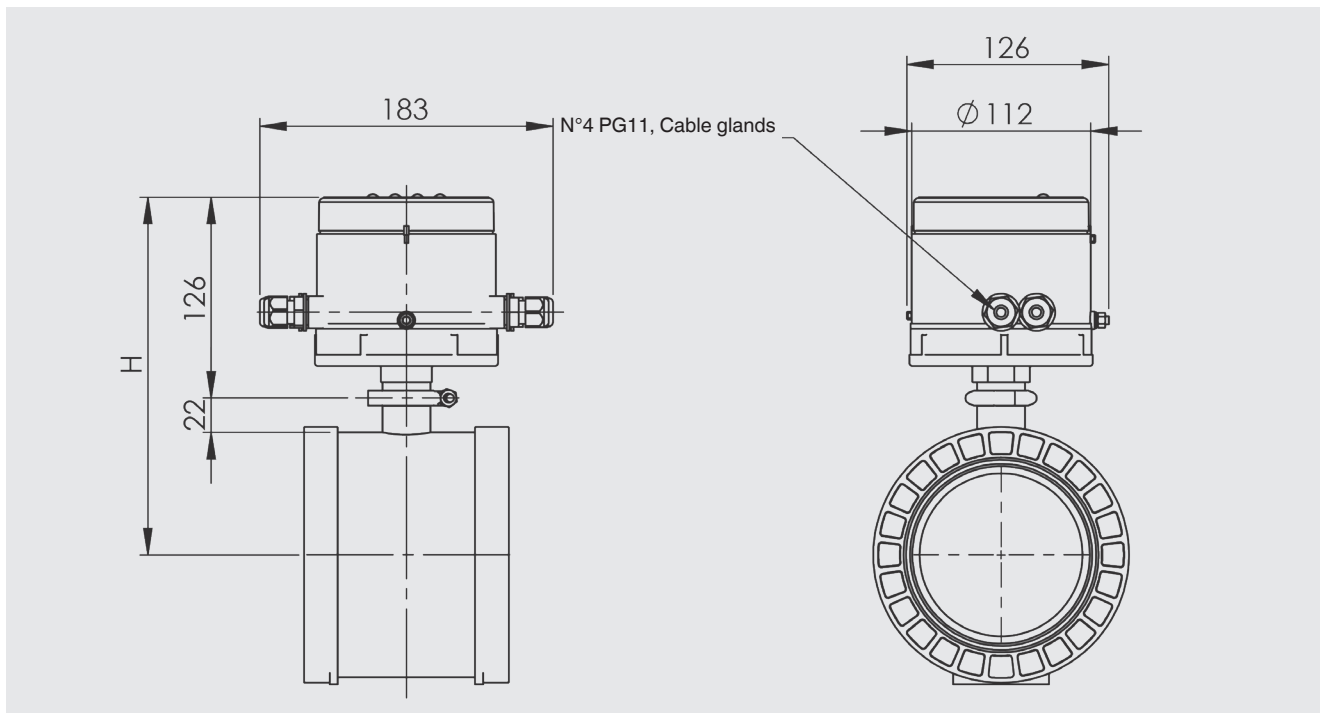
DN	L4	Tue	D5	H	J
40	96	37.6	86	113	87
50	86	45.9	103.2	122	95
65	104	62.5	122	131	105
80	112	78	134	137	111
100	128	102	160	150	124
150	196	147	220	180	154

Separated version: Model FLC-1100J in combination with signal converter, model FLC-608A/B/R



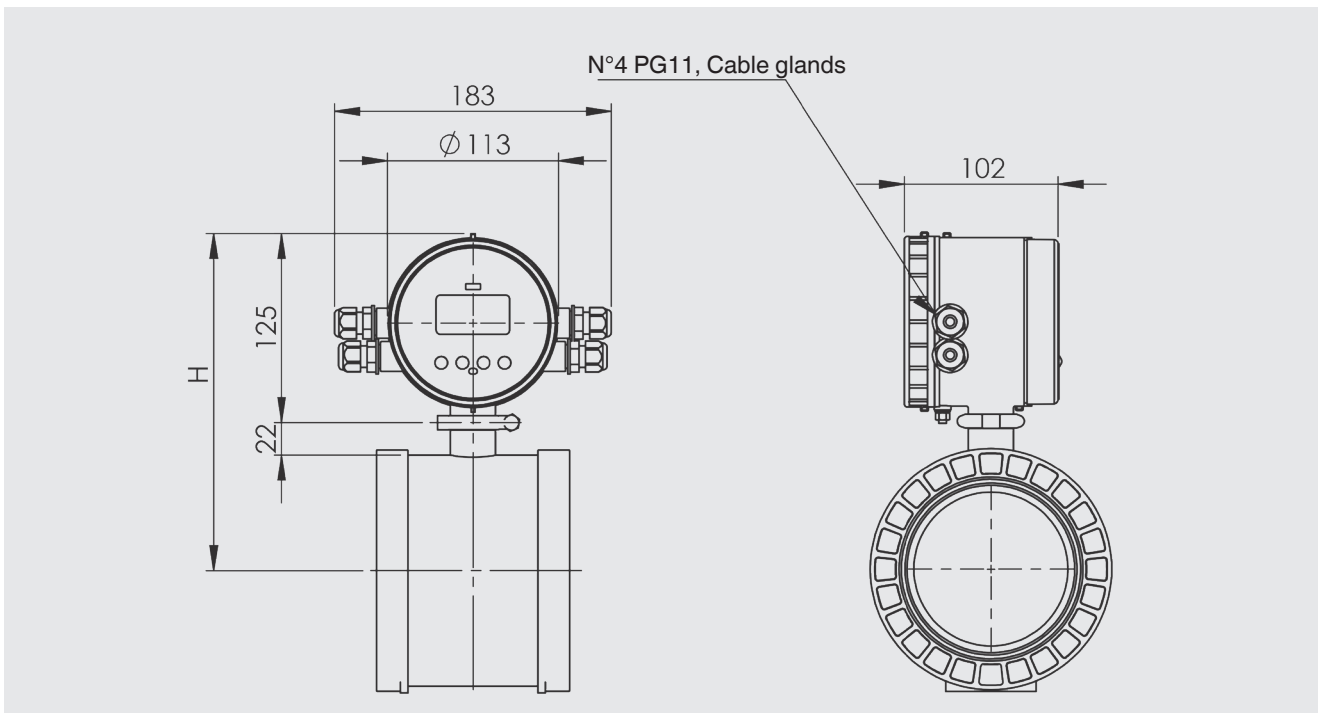
DN	H
40	211
50	220
65	229
80	235
100	248
150	278

Separated version: Model FLC-1100J in combination with signal converter, model FLC-406, back mount



DN	H
40	187
50	196
65	205
80	211
100	224
150	254

Separated version: Model FLC-1100J in combination with signal converter, model FLC-406, radial mount



DN	H
40	186
50	195
65	204
80	210
100	223
150	253

## Approvals

Logo	Description	Country
CE	<b>EU declaration of conformity</b>	European Union
	EMC directive	
	EN 61326 emission (group 1, class B) and immunity (industrial application)	
	Low voltage directive	

Approvals and certificates, see website

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