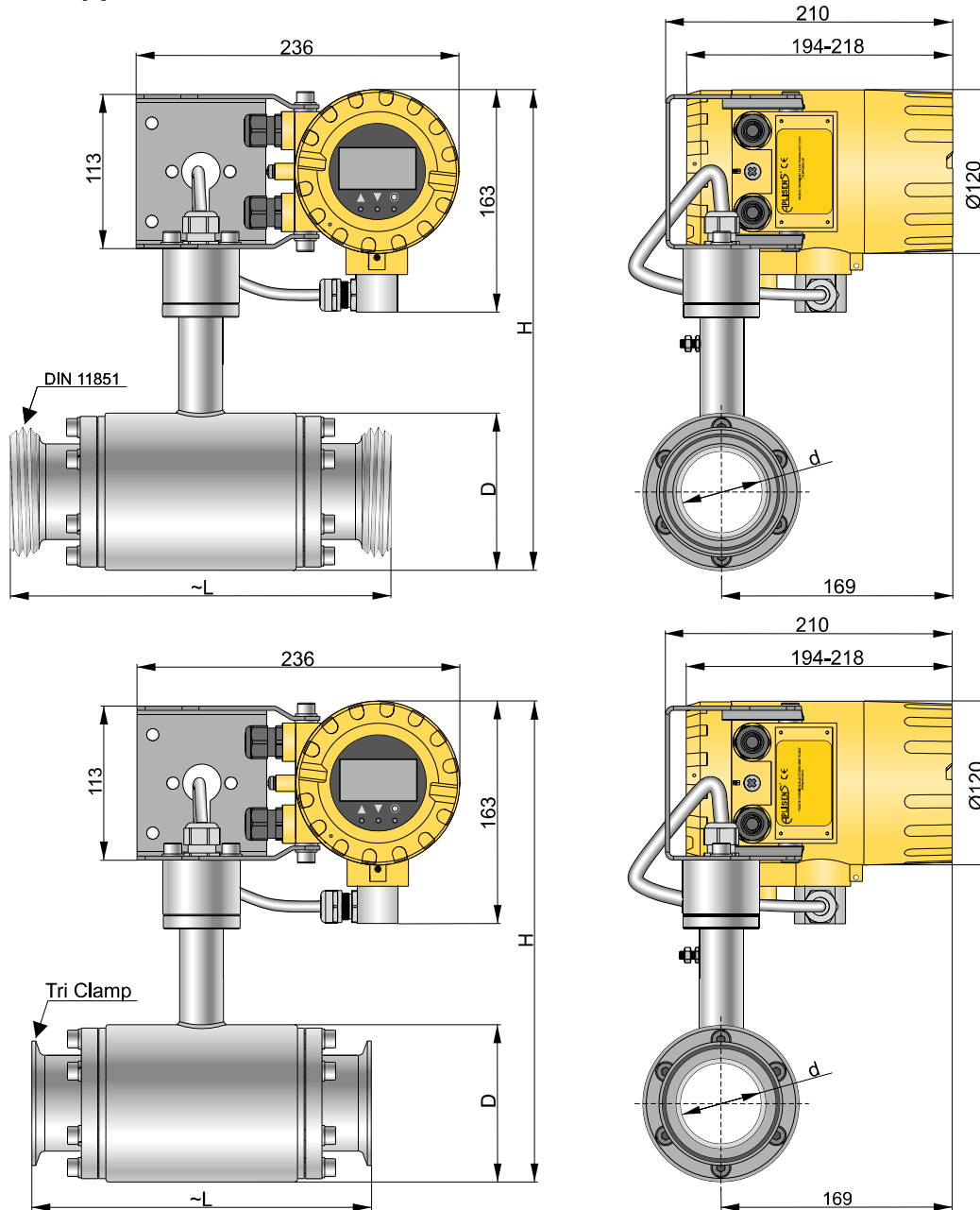


## PEM-1000 electromagnetic flow meters with DIN and Clamp hygienic connections

- ✓ Output Signal: 4-20 mA, pulse, frequency, solid-state, digital
- ✓ Communication via Modbus RTU / RS485
- ✓ Pulse output (unidirectional or bidirectional) or frequency output
- ✓ Hygienic approval



Nominal Size	H [mm]	L [mm] DIN 11851	L [mm] Tri Clamp	D [mm]	d [mm] (Inside Diameter of Sensor)
DN 25	290	220	200	83	24
DN 40	300	220	200	94	35
DN 50	340	220	200	108	45
DN 65	360	270	250	133	59
DN 80	360	270	250	133	72
DN 100	380	270	250	159	98

### The Basics

Electromagnetic flow meter PEM-1000 is designed for the volumetric flow measurement of liquids and slurries having conductive electrical properties.

Accurate measurement of flow and volume of a liquid moving in both directions is possible provided the sensor tube is full of the medium.

### Electronics

The converter housing is made of high pressure die-cast aluminum. Consisting of a body with two detachable covers: one with display, the other a blind covering of the terminals connections. On the electronics module, under the display there are buttons for local device configuration and menu scrolling.

### Sensor

The flow meter sensor does not contain any internal mechanical components which ensures undisturbed flow of the measured medium through the full section of the pipeline. The sensor housing is made of acid-resistant steel includes hygienic connections type DIN 11851 or Tri Clamp for mounting the sensor on the pipe and meeting the requirements of the food and pharmaceutical industries. Inside the sensor is an insulating Teflon liner and polished 316LSS electrodes.

### Applications

The flow meter can measure flows of pure liquids, but also suspensions, pulps, slurry and chemically aggressive solutions.

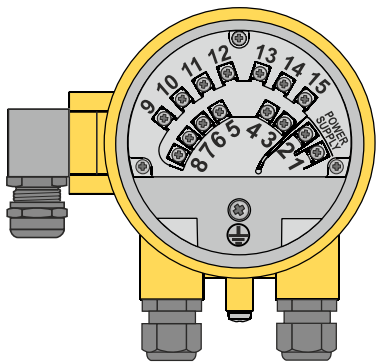
Due to the hygienic connections used, the Sanitary PEM-1000 is generally applied to food, beverage and pharmaceutical applications.

### Configuration

Configuration and reading of the flowmeter parameters takes place using local display and keypad or via the RS485 interface and Modbus RTU protocol.

Aplisens easy to use RAPORT 2 software can also be employed to streamline configuration and registers as required.

The user can program, among other things empty pipe signaling, low flow detection, status outputs, dosing, alarming and archiving measurements and events.

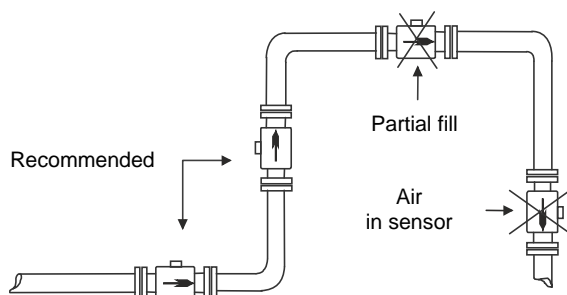
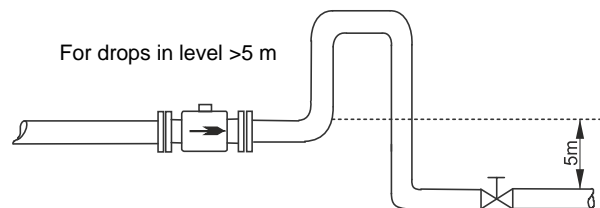
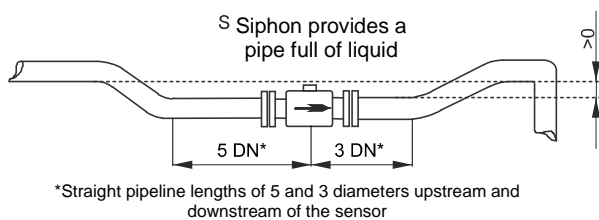


Terminal Compartment

### Electrical Connections

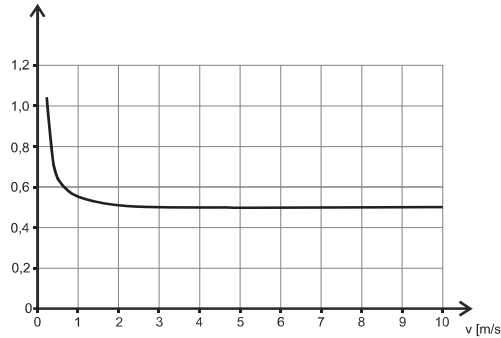
	Pin No.	Description	
Power Supply	1	90...260 VAC	(-)
	2		(+)
Alarm Output 1	3	Polarity Independent, galvanic isolation, passive	
	4		
Pulse/Frequency output	5	Polarity Independent, galvanic isolation, passive	
	6		
4-20 mA	7	(+)	Active (Optional passive)
	8	(-)	
Communication	9	RS 485 A	
	10	RS 485 B	
	11	RS 485	
		GND / screen	
Digital Input (passive)	12	Polarity Independent, galvanic isolation	
	13		
Alarm Output 2	14	Polarity Independent, galvanic isolation, passive	
	15		

### Recommended way of mounting the flowmeter



**Technical Data**

Minimum conductivity	≥ 5µS/cm
Input Resistance	≥ 10 <sup>10</sup> Ω
Error*	±0,5% of the displayed value 20... 100% Q <sub>(10m/s)</sub>



Error as a function of velocity

\*Measurement conditions according to PN-EN 29104: 2003 - Measurement of the flow stream in closed pipes - Methods of determination properties of electromagnetic flow meters for liquids.

Low flow cut-off level	Set value
Flow	Bi-direction (l/s, m <sup>3</sup> /h, m <sup>3</sup> /s, other)
Totalizer	3 counters: total, positive, negative (m <sup>3</sup> , other)
Low flow Alarm	Adjustable, any value
Configuration	LCD display/buttons or Modbus RTU via RS485
Empty pipe detection	cyclic, configurable
Analogue Output	4-20 mA / 500 ohm
Pulse/Frequency output	Max. 24V / 10mA DC; 0.1 ... 2000 Hz in frequency mode; up to 500Hz in pulse mode
Alarm outputs	Passive output, Galvanic isolation; Any polarity Quantity: two; open collector. 35V DC / 100mA max for each output.
Communication Protocol	Galvanic isolation; Any polarity Modbus RTU/RS 485
Digital input	5...35V DC/2 mA
Power Supply	Mains: 90 ... 260V AC / 50Hz / 15VA Low voltage: 10 ... 36V DC / 15W (protected against reverse voltage polarity)
Protection Class	IP66
Ambient temperature	-20...60°C

**Technical Data of the Sensor**

Process connections	DIN 11851; Tri Clamp
Nominal size	DN25; DN40; DN65; DN50; DN80; DN100
Maximum pressure	1,6 MPa
Operating temperature range (ambient)	-20...60°C
Operating temperature range (medium)	-25...90°C (-25 to 140°C on request) Suitable for CIP & SIP processes
Connection cable (for PEM-1000NW)	8 m
Special version	12, 24, 32, 40, 48 m
Electrode material	SS 316L
Liner material	Teflon
Body	SS 316L
Accessories	Stainless steel grounding rings (for plastic pipes)
Excitation coil insulation class	E
The degree of protection of the housing	IP67
Principle of measurement	Electromagnetic

**Order Code**

**Integral Electronics:**

PEM-1000ALW / \_\_\_ / \_\_\_

Proces connection:  
DIN 11851 DN\_\_\_ ; Tri Clamp DN\_\_\_

Power supply: 90...260 V AC, 10...36 V DC

**Remote Electronics:**

PEM-1000NW / \_\_\_ / \_\_\_ / L= \_\_\_ m

Process connection:  
DIN 11851 DN\_\_\_ ; Tri Clamp DN\_\_\_

Power supply: 90...260 V AC, 10...36 V DC

Sensor cable length: 8, 12, 24, 32, 40, 48 (standard L=8 m)