

OEM INDUCTIVE FLOW METER

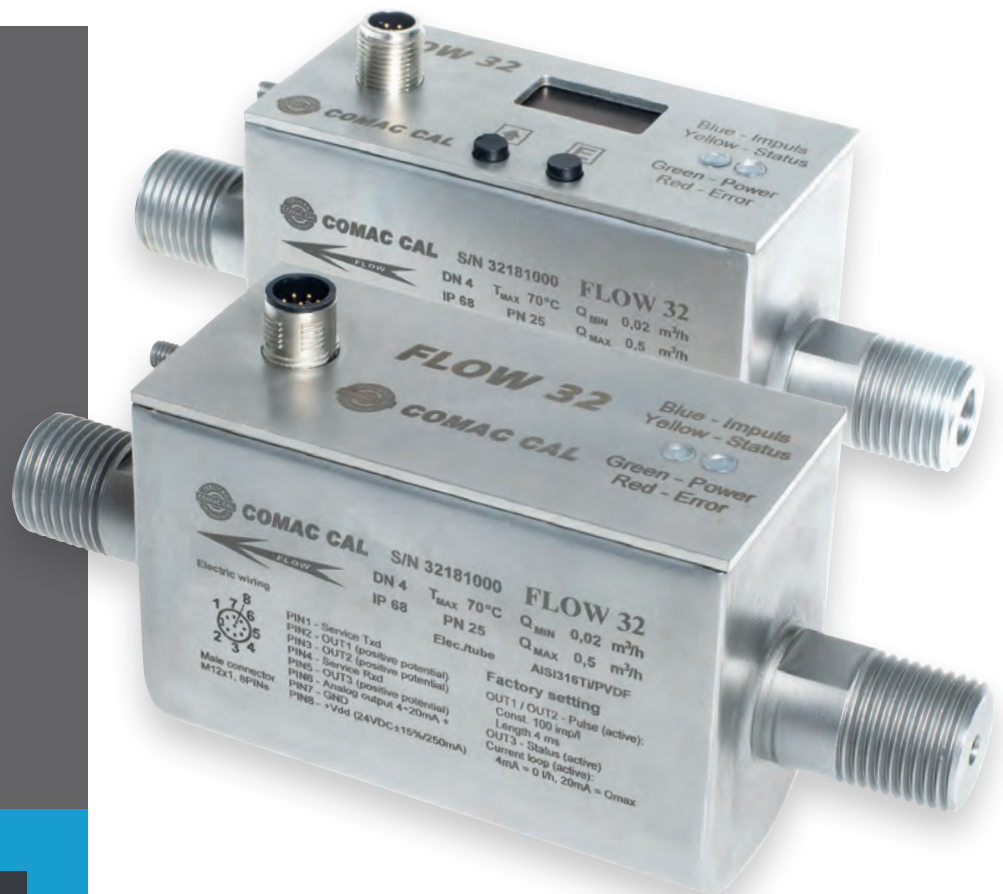
# FLOW 32

It is OEM flowmeter designed for serial production – repeating production to various devices for measuring and batching of liquids


Flowmeter is always modify to the customers requests and needs in a certain number of pieces.

This is induction flow meter with an implemented evaluation unit inside the flow meter. Lining material is always PVDF. Thanks to its small size can be used where minimalization is primarily required. The flow meter is equipped by 2 LED diodes in three colors displaying the meter status. The outputs of the flow meter are 2 impulse, status and current output 4÷20mA. Electrical connection is ensured by the 8-pin M12 connector where IO LINK communication is brought out and the meter can also be equipped with Bluetooth communication or with LCD display (with two control buttons).

The meter can be also used as a flow monitor. Sampling 900 samples per second.



## MAIN MERITS

- Tailor-made production
- Low size of the flowmeter
- High variability of type:
  - IO LINK communication
  - IO LINK and  Bluetooth™ communication
  - LCD and IO LINK communication
- Variable flow pulse number and pulse width
- 4÷20 mA output
- 2x LEDs indicate status of the meter by three colours
- Three digital outputs (2x impulse and 1x status) and one analogue output

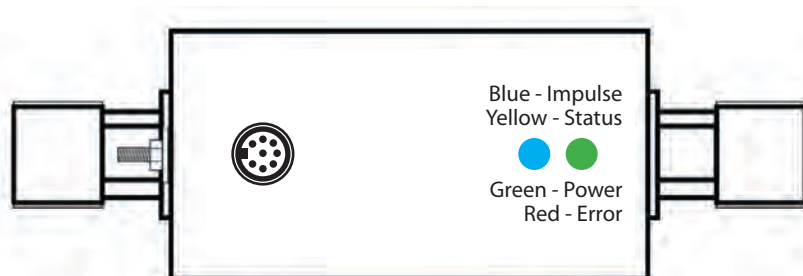
## TECHNICAL DATA

Power	24V DC±15% power with polarity reversal protection
Input power	3 VA
Diameter Nominal	DN 4÷20
Lining material	PVDF
Measured fluid min. conductivity	20 µS/cm (at a lower conductivity, upon agreement with the manufacturer)
Sampling	900 samples per second (standart)
Standard process connection	DN4÷DN15 - G1/2"; DN20 - G3/4"
Electrical connection	connector M12, 8 pin
Meter IP code	IP65
Display	4x LED; LCD display (4x8)
Maximum temperature of medium	70 °C (as per lining), at i higher temperature, upon agreement with manufacturer
Electrode material	CrNi steel DIN 1.4571
Material coming in contact with medium	stainless steel
	EPDM and Silicone seals
Accuracy	PVDF
	1% for 1÷10 m/s (repeatability up to 0,5%)
Outputs (active)	2% for 0,2÷1 m/s (repeatability up to 0,5%)
	OUT1 – impulse (max. 800 Hz)
	OUT2 – impulse/status (max. 800 Hz)
	OUT3 – status
Communication	Analog 4÷20 mA
	IO LINK (A1)
	Bluetooth and IO LINK (A2)
Ambient humidity	LCD display and IO LINK (A3)
	max. 90 %
Pressure	PN 25

## METER STATES DISPLAYED

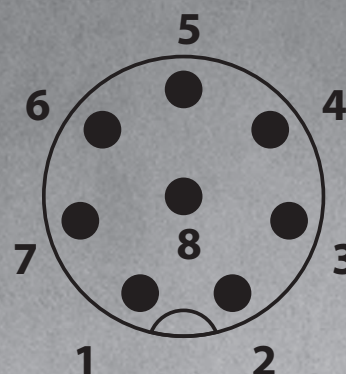
It is continuously displayed by two indicator LEDs located in the evaluation unit top cover. The meter status indicated by the LEDs can be as follows:

LED 1	LED 2	Description	Current output
● green	–	The meter is in order and the flow rate is zero or negative (unless bidirectional measurement is set)	4 mA
● green	● blue LED is flashing	The meter is in good order and the flow is positive where the blue LED is indicating the transmission of volumetric pulses	4÷20 mA
● red LED	–	Meter is not of order, service necessary	<4 mA
● red LED	● yellow LED	Meter is temporarily beyond parameters	<4 mA
–	–	Supply voltage error	–



## M12 CONNECTOR PINOUT

**Standard M12 male connector on meter's body pinout:** 8-pin M12 connector for 24V DC±15 % power, pulse output and current loop.



PIN1	Not connected
PIN2	OUT1 impulse (collector – positive potential)
PIN3	OUT2 impulse/FlowSwitch/direction (collector – positive potential)
PIN4	IO-LINK
PIN5	OUT3 failure (collector – positive potential)
PIN6	Analog output 4÷20mA +
PIN7	GND
PIN8	+Vdd (24VDC±15%)

## FLOW RANGES

Instantaneous flow rate corresponding to flow velocity

Diameter nominal [mm]	$Q_{min}$ [m <sup>3</sup> /h] us $Q_{min}/Q_{max}$	$Q_{max}$ [m <sup>3</sup> /h]
	1/60 (0.2 m/s)	– (12 m/s)
DN 4	0,02	0,5
DN 6	0,03	1
DN 8	0,04	2
DN 10	0,06	3
DN 15	0,2	7
DN 20	0,25	10

# FLOW 32

## FEASIBLE OUTPUT CONFIGURATIONS

OUT1 (IMPULSE)	OUT2 (STATUS/IMPULSE)	ANALOG OUT
impulse in flow direction	impulse in flow direction	4÷20mA in flow direction
impulse in flow direction	impulse in reverse flow direction	4÷20mA in flow direction
impulse in both flow directions	flow direction	4÷20mA in both flow directions
impulse in flow direction	iimpulses in flow direction, phaseshifted	4÷20mA in flow direction
impulse in flow direction	flow monitoring (in flow direction only)	4÷20mA in flow direction

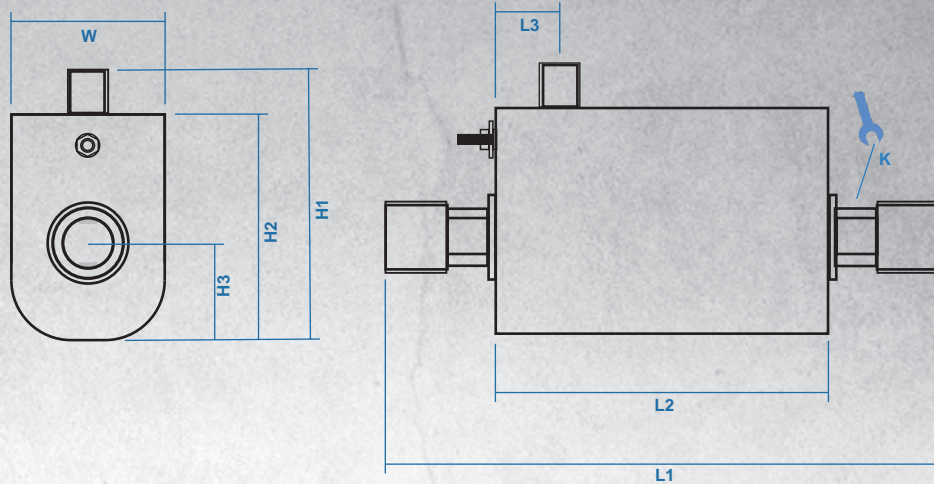
The status output OUT3 (active) is specified for sending the **FAULTY STATE** information, whereas the faulty state is one of the two states:

- detective flow sensor
- measured signal is beyond limits (signal cannot be measured)

Note: The failure status is indicated by open outputs!

## TECHNICAL DRAWING (EN ISO 228-1)

### THREADED DESIGN (EN ISO 228-1)



## DIMENSIONAL TABLE

Dimension [mm]	Length [mm]				Height [mm]			Mounting bracket
DN	L1	L2	L3	W	H1	H2	H3	K
4	161	97	16,5	49	80	70	32	17
6	161	97	16,5	49	80	70	32	17
8	161	97	16,5	49	80	70	32	17
10	161	97	16,5	49	80	70	32	17
15	161	97	16,5	49	80	70	32	17
20	161	97	16,5	49	80	70	32	22

# DISPLAY

## BASIC DISPLAY VIEW

- Current flow rate Q [m<sup>3</sup>/h]
  - Volumetric counter V [m<sup>3</sup>]
- Both values are shown in 3 decimal places.

## DISPLAY SETTING VIEW

- DO1 digital output: ±Imp / +Imp (bidirectional/unidirectional)
- DO2 digital output: Pos/Neg / +FS / Pha / +Imp / -Imp (direction of flow/monitor of flow in positive direction/phase-shifted DO1 /impulses in positive direction/impulses in negative direction where the impulse constant is always equal as in DO1)
- Flow monitor +FS [l/h] (at DO2 output): switching point in positive direction of flow / hysteresis in per cents
- AO analogue output: ±Loop/+Loop (Current loop active during the flow in both directions / in positive direction whereas the setting is specified by DO1 mode)
- Limit of current output [l/h]: for 4mA / for 20mA / offset for 4mA / offset for 20mA
- Starting flow rate measurement: ±Q [l/h]
- Flow direction: Inlet/Outlet (in the direction of the arrow on the meter's name-plate)
- Flow rate simulation: +Q [l/h] (for verification of the flow meter functionality and connection to a higher-level system, after 3 minutes, the flow meter goes back automatically to measurement mode)
- Factory reset: (restoring the meter to factory default state)

Corresponding set point values are displayed according to output pre-selections. Possible output combinations correspond to the previous Possible output configurations Table.



## DISPLAY WARNING OR ERROR VIEWS

- Excitation circuit error
- Impulse output flooding
- Unstable measuring signal
- Signal out of measuring window

Warning or error messages displayed are flashing in regular intervals and a LED indicator according to message type is also lit (Error — red LED, warning — amber LED) and the DO3 digital status output is activated at the same time.

If you wish to change parameters, you need to initiate the setup mode within 3 minutes after powering of the meter (the command to modify setting is sent via the communication interface, or E-button is pressed and held for approx. 4 seconds). After this period is over, it is only possible to view the current settings, the modification of parameters is blocked).

FLOW 32	FL32/DNxxx/Ax/Bx/C3/D8/E1/Fx/Gx/H1/I0/Jx
<b>DN (diameter nominal)</b> DN... 4÷20	<b>J (oposit connector M12, 8 pin)</b> J1... Yes J2... No
<b>A (design)</b> A1... IO LINK A2... Bluetooth and IO LINK A3... LCD display and IO LINK	<b>I0 (measuring range Q<sub>min</sub>/Q<sub>max</sub>)*</b>
<b>B (connection)</b> B1... flanged B2... sandwich B3... threads B4... diary fitting B5... clamp B6... stainless steel flange SS304 B7... stainless steel flange SS316	<b>H (power)</b> H1... 24 VVDC
<b>C (pressure)</b> C3... PN25 (DIN)	<b>G (output)</b> G1... impulse/switch (flow switch) G2... imp./sw. + 4÷20 mA
<b>D (lining)</b> D8... PVDF	<b>F (sensor degree protection)</b> F1... IP65 F2... IP67 F3... IP68
	<b>E (electrode)</b> E1... steel 316 TI

Standard set include installation manual. For other requirements, please contact the manufacturer directly.  
\*Measuring range corresponds to the dimensions according to table „Flow range“.