OEM INDUCTIVE FLOW METER

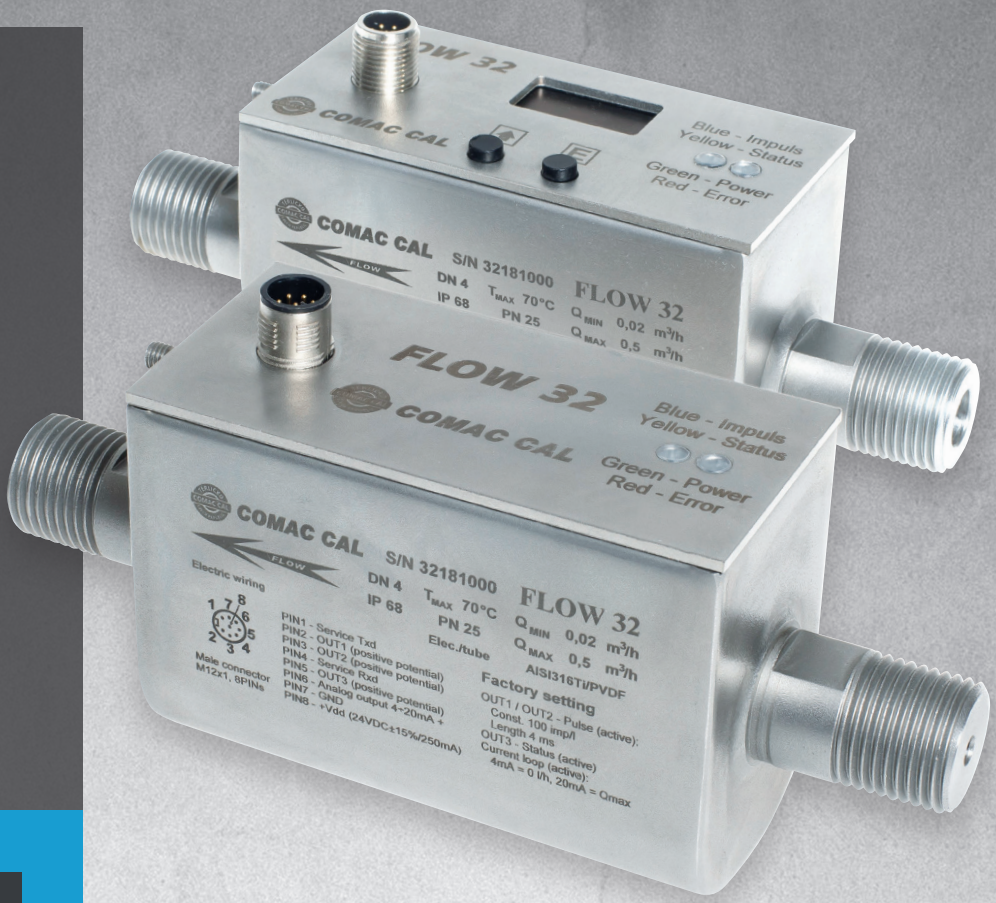
FLOW 32

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

TĚRLICKO COMAC CAL CZECH REPUBLIC

COMAC CAL

TECHNICAL DATA

Power	*24V DC±15% power with polarity reversal protection*
Imput 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*
Materail coming in contact with medium	*stainless steel*
	EPDM and Silicone seals
	PVDF
Accuracy	*1% for 1...10 m/s (repeatability up to 0,5%)*
	2% for 0,2...1 m/s (repeatability up to 0,5%)
Outputs (active)	*OUT1 – impulse (max. 800 Hz)*
	OUT2 – impulse/status (max. 800 Hz)
	OUT3 – status
	Analog 4...20 mA
Communication	*IO LINK (A1)*
	Bluetooth and IO LINK (A2)
	LCD display and IO LINK (A3)
Ambient humidity	*max. 90 %*
Pressure	*PN 25*

METER STATES DISPLAYED

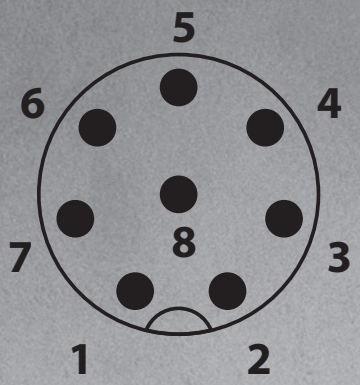
It is continuously displayed by two indicarot LEDs located in the evaluation unit top cover. The meter status indicated by the LEDs can be as follows:

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*	*Mater is temporarily beyond paramateres*	*<4 mA*
–	–	*Supply voltage error*	–



M12 CONNECTOR PINOUT

Standard M12 male connector on meter's body pinout: 8-pin M12 connector for 24 V 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} [m³/h] us Q_{min}/Q_{max}*	*Q_{max} [m³/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

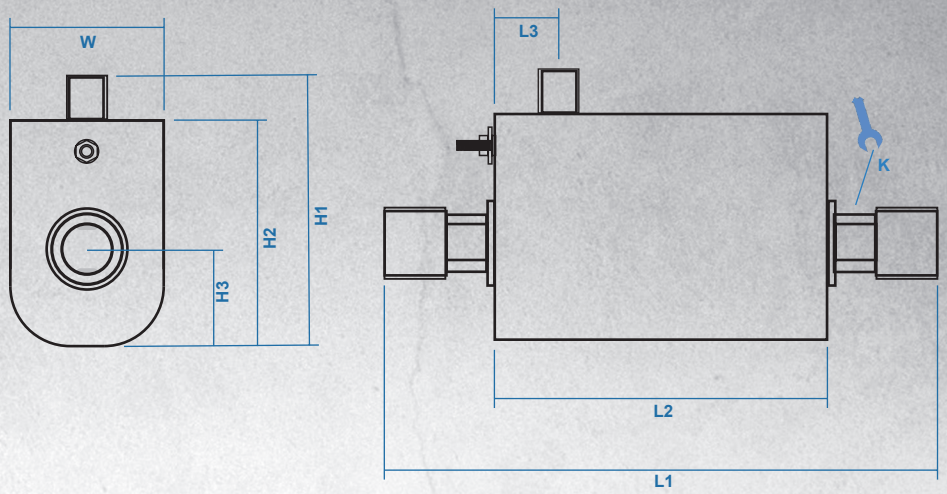
FEASIBLE OUTPUT CONFIGURATIONS

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]			Mountain wrantch
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 [m³/h]
- Volumetric counter V [m³]

  Both values are shown in 3 decimal places.

DISPLAY SETTING VIEW

- DO1 digital output: ±Imp / +Imp (bidirectional/unidirectional)
- D02 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 D03 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).

PRODUCT ORDERING CODE

FLOW 32 **FL32/DNxxx/Ax/Bx/C3/D8/E1/Fx/Gx/H1/I0/Jx**

DN (diameter nominal)
DN… 4...20

A (design)
A1… IO LINK
A2… Bluetooth and IO LINK
A3… LCD display and IO LINK

B (connection)
B2… sandwich
B3… threaded
B4… diary fitting
B5… clamp

C (pressure)
C3… PN25 (DIN)

D (lining)
D8… PVDF

J (oposit connector M12, 8 pin)
J1… Yes
J2… No

I0 (measuring range Q_{min}/Q_{max})*

H (power)
H1… 24 V/VDC

G (output)
G1… impulsne/switch (flow switch)
G2… imp./sw. + 4...20 mA

F (sensor degree protection)
F1… IP65
F2… IP67
F3… IP68

E (electrode)
E1… steel 316 Ti

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

COMAC CAL s.r.o.
Czech Republic, 735 42 Těrlicko
tel.: +420 556 205 322
e-mail: export@comaccal.com
WWW.COMACCAL.COM

Exclusive partner:

Errata and technical changes reserved. The figures and photographs shown are only for illustration purposes.