

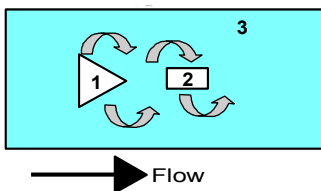
Counter OMNI-C-CF



- Flow measurement device using the vortex measurement principle
- Simple totalisation
- Simple filling counter with programmable end signal
- Control switchover at preset value
- Automatic, dynamic change of display unit and decimal places in the graphics display
- Antivalent outputs
- Simple guided menu via graphics display
- Very compact dimensions
- Full metal housing with high protection class
- Rotatable head for optimum reading direction

Characteristics

A narrow triangular body (1), which goes through the complete cross-section of the measurement pipe, creates vortices in the medium when there is a flow (Kármán vortex street, vortex effect). The frequency of the vortex is proportional to the flow, and is detected using a piezo-sensor (2), which lies behind the triangular body. The complete unit, vortex body, and detector are designed as a plug-in unit (3), and are inserted into the pipe. Here, a lightning fast separation between measurement pipe and the complete measurement unit is possible.



The totaliser of the OMNI flow rate system enables a totalisation or measurement of consumption for all HONSBERG device families (for fluids and gases) with which the OMNI system is compatible; this is independent of the input signal, pulse or analog input, and of the measurement process.

Simple filling control is also possible. Here, the counter can be set to count upwards or downwards. When the preset point is reached, a switching signal is emitted which is available in antivalent form at two outputs. Resetting can be carried out by means of a signal input or also by the programming ring.

The state of the counter is indicated in an LCD display with only four digits. Here, the number of decimal places and the unit displayed is continuously matched to the current state of the counter. In this case, the smallest value which can be displayed is 0.001 ml (= 1 µl), and the largest is 9999 m³. The counter therefore has 13 places, of which the four most significant are displayed at

any one time. The display resolution at all times is therefore at least 1 per thousand of the displayed value, or better, and this generally exceeds the accuracy of the connected flow transmitter. The non-displayed digits of the counter are in that case irrelevant to the accuracy of the measurement.

The automatic dynamic changeover of units in the display in relation to the state of the counter makes the value easy to read in spite of a display with only four digits. In addition, user configuration of the counter is unnecessary. In addition to the totalised value, the present flow rate can be displayed.

The stainless steel case has a hardened non-scratch mineral glass pane. It is operated by a programming ring fitted with a magnet, so there is no need to open the operating controls housing, and its leakproofness is permanently ensured.

By turning the ring to right or left, it is simple to modify the parameters (e.g. switching point, hysteresis...). To protect from unintended programming, it can be removed, turned through 180° and replaced, or completely removed, thus acting as a key.



Technical data

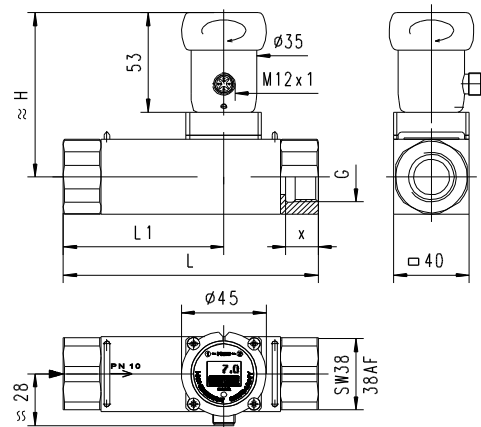
| | | |
|-------------------------------------|---|------------------------------------|
| Sensor | vortex principle | |
| Nominal width | DN 8..25 | |
| Process connection | female thread G 1/4..G 1 (others available on request) | |
| Metering range | 0.9..150 l/min for details, see table "Ranges" | |
| Measurement accuracy | up to 50 % of full scale value: ±1 % of measured value from 50 % of full scale value: ±2 % of measured value | |
| Pressure resistance | PN 10 bar | |
| Medium temperature | 0..60 °C | |
| Ambient temperature | -20..+70 °C | |
| Materials medium-contact | Housing | CW614N plated, 1.4571 or POM GF |
| | Connection | CW614N plated, 1.4571 or POM |
| | Detector | ETFE PA6T6I 40 % GF |
| Materials non-medium-contact | Housing | stainless steel 1.4305 |
| | Glass | mineral glass, hardened |
| | Magnet | samarium-Cobalt |
| | Ring | POM |
| Counter range | 0.000 ml to 9999 m³ with automatic setting for decimal places and the appropriate unit. | |

Product Information

OMNI-C-CF

| | |
|---|---|
| Switching signal outputs (Pin 4 + 5) | 2 x push-pull output, max. 100 mA, resistant to short circuits and polarity reversal, antivalent states, configurable on the device as a wiper signal or edge signal |
| Counter reset signal (Pin 2) | input 18..30 V resistant to short circuits and polarity reversal PIN 2, wipe signal, pos. or neg., edge pos. or neg., can be selected on site |
| Counting input | (normally not directly accessible from device) frequency output 0..10 kHz analog input 0/4..20 mA analog input 0..10 V |
| Supply voltage | 18..30 VDC |
| Power consumption | < 1 W |
| Display | backlit graphical LCD-Display (transreflective), extended temperature range -20..+70 °C, 32 x 16 pixels, background illumination, displays value and unit, flashing LED signal lamp with simultaneous message on the display. |
| Electrical connection | for round plug connector M12x1, 5-pole |
| Ingress protection | IP 67 / (IP 68 when oil-filled) |
| Weight | see table "Dimensions" |
| Conformity | CE |

Dimensions



| G | DN | Types | H | L | L1 | X | Weight* kg |
|-------|-------|---------------|----|-----|----|------|---------------|
| G 1/4 | DN 8 | OMNI-C-CF-008 | 86 | 125 | 69 | 12.5 | 2.8 |
| G 3/8 | DN 10 | OMNI-C-CF-010 | 84 | 100 | 50 | | 2.45 |
| G 1/2 | DN 15 | OMNI-C-CF-015 | 86 | | | 14.5 | 2.45 |
| G 3/4 | DN 20 | OMNI-C-CF-020 | 88 | 135 | 85 | 16.5 | 2.85 |
| G 1 | DN 25 | OMNI-C-CF-025 | 90 | 155 | 95 | 18.5 | 2.65 |

*Weight details for metal model. Plastic models available on request

Ranges

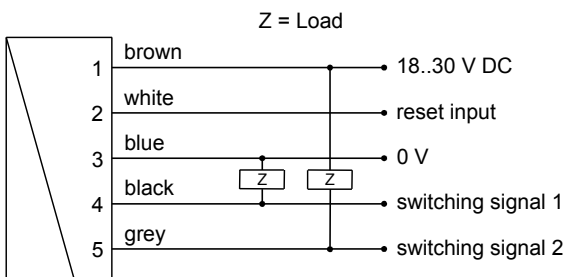
| G | Types | Range l/min H ₂ O |
|-------|---------------|---------------------------------|
| G 1/4 | OMNI-C-CF-008 | 0.9.. 15 l/min |
| G 3/8 | OMNI-C-CF-010 | 1.8.. 32 l/min |
| G 1/2 | OMNI-C-CF-015 | 3.5.. 50 l/min |
| G 3/4 | OMNI-C-CF-020 | 5.0.. 85 l/min |
| G 1 | OMNI-C-CF-025 | 9.0..150 l/min |

Gooseneck option

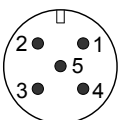


A gooseneck (optional) between the electronics head and the primary sensor provides freedom in the orientation of the sensor. This option simultaneously provides thermal decoupling between the two units. Length of the gooseneck is 140 mm.

Wiring



Connection example: PNP NPN



Before the connecting the supply voltage, it must be ensured that this corresponds with the data sheet. The use of shielded cabling is recommended

Handling and operation

Installation

The vortex flow meter requires a run-in length of 5..10 x D in order to achieve its specified accuracy. If deposits are to be expected, sensor and electronics should not be installed underneath. It should be ensured that the sensor is installed in the direction of the flow arrow. If the sensor is to be cleaned, the clamps should be released, and the device removed (the pipe should be pressure-free for this). It should be ensured during cleaning that the oscillating vortex body is not exposed to impact (in the moulded part there is a sensitive piezo-ceramic sensor, which can break).

Product Information

OMNI-C-CF

Programming

On the display, the counter indicates the state of the totaliser as a value and unit. The units ml, L, m³ are set automatically.

For operation as a totaliser, no configuration by the user is necessary.

To use the other functions, configuration may be required. This is carried out using the programming ring located on the device.

The annular gap of the programming ring can be turned to positions 1 and 2. The following actions are possible:



Set to 1 = continue (STEP)
Set to 2 = modify (PROG)

Neutral position between
1 and 2

The ring can be removed to act as a key, or turned through 180° and replaced to create a programming protector. Operation is by dialog with the display messages, which makes its use very simple.

The control display of the present flow rate depends on the metering range of the selected flow transmitter, and has already been set appropriately in the factory (ml/min, l/min, l/h, m³/h).

It is activated by turning the ring to position 1

After 10 seconds, the display automatically returns to the totaliser display mode.

For operation as a preset counter, the following must be set:

1. The preset point
2. The type of output signal ("Preset has been reached"):
Signal edge / wiper pulse
width of the wiper pulse, if required
3. The unit of the preset point:
(ml, litre, m³).

Starting from the normal display (total and unit), if 1 (STEP) is selected repeatedly, then the counter shows the following information:

- Normal display is total and unit (e.g. litre)
- Display of present value (e.g. l/min)
- Preset point incl. type of switching output.
- Code

The code gives access to various input levels into which parameters can be entered (so that this does not occur unintentionally, the code must be entered!)

Code 111:

- Gate time
- Filter time
- Direction of count (pos. / neg.)
- Unit for switching value/reset point
- Decimal place for switching value/reset point
- Switching type for switching value (edge/wiper signal)
- Pulse duration (for wiper signal)
- Reset method (manual / via signal)

Code 100:

- Manual reset for totaliser

The detailed flow chart for operation is available in the "Operating instructions for OMNI-C".

Product Information

OMNI-C-CF

Ordering code

The basic device is ordered e.g. CF-xxx
 with electronics z.B. OMNI-C-CF-xxx

CF- 1. 2. 3. 4. 5. 6. 7.

OMNI-C-CF- 8. 9. 10. 11.

○=Option

Accessoires

- Cable/round plug connector (KB...) see additional information "Accessories"
- Device configurator ECI-1

| | | | | | | | | | |
|----------------------------------|---|--|--|--|--|--|--|--|---|
| 1. Nominal width | | | | | | | | | |
| 008 | DN 8 - G 1/4 | | | | | | | | |
| 010 | DN 10 - G 3/8 | | | | | | | | |
| 015 | DN 15 - G 1/2 | | | | | | | | |
| 020 | DN 20 - G 3/4 | | | | | | | | |
| 025 | DN 25 - G 1 | | | | | | | | |
| 2. Process connection | | | | | | | | | |
| G | female thread | | | | | | | | |
| 3. Connection material | | | | | | | | | |
| M | CW614N plated | | | | | | | | |
| K | ○ 1.4571 | | | | | | | | |
| P | ○ POM | | | | | | | | |
| 4. Body material | | | | | | | | | |
| M | CW614N plated | | | | | | | | |
| K | 1.4571 | | | | | | | | |
| P | ○ POM GF | | | | | | | | |
| 5. Metering range | | | | | | | | | |
| 015 | 0.9.. 15 l/min | | | | | | | | ● |
| 032 | 1.8.. 32 l/min | | | | | | | | ● |
| 050 | 3.5.. 50 l/min | | | | | | | | ● |
| 085 | 5.0.. 85 l/min | | | | | | | | ● |
| 150 | 9.0..150 l/min | | | | | | | | ● |
| 6. Seal material | | | | | | | | | |
| E | EPDM | | | | | | | | |
| 7. Connection for | | | | | | | | | |
| E | electronics | | | | | | | | |
| 8. For nominal width | | | | | | | | | |
| 008 | DN 8 - G 1/4 | | | | | | | | ● |
| 010 | DN 10 - G 3/8 | | | | | | | | ● |
| 015 | DN 15 - G 1/2 | | | | | | | | ● |
| 020 | DN 20 - G 3/4 | | | | | | | | ● |
| 025 | DN 25 - G 1 | | | | | | | | ● |
| 9. Signal output | | | | | | | | | |
| A | antivalent switching signal (counter state reached) | | | | | | | | |
| 10. Electrical connection | | | | | | | | | |
| S | for round plug connector M12x1, 5-pole | | | | | | | | |
| 11. Option | | | | | | | | | |
| H | ○ gooseneck | | | | | | | | |
| | tropical model | | | | | | | | |
| O | ○ oil-filled version for heavy duty or external use | | | | | | | | |