



OMNIPLUS

 **IO-Link**

INDUSTRIAL SENSORS
FLOW SENSORS



OMNIPLUS-F. Thermal flow measurement.

The all-rounder for calorimetry.
Fast, reliable and versatile in use.



“The new OMNIPLUS-F is the sum of our combined experience in thermal flow measurement.”

Oliver Dzierzon | Product Management GHM Honsberg

Editorial. Specialists by Competence.

Dear Reader,



The Center of Competence Honsberg of the GHM GROUP has been developing and producing industrial sensors for over a half-century at the production location in Remscheid. The experience and expertise of our staff are the foundation of this success. Fulfilment of the requirements that our customers and their applications place on us are our goal and incentive. Our products are a result of this philosophy.

On the following pages, we present the OMNIPLUS-F, one of the fastest, most versatile calorimetric sensors on the market. It is the sum of our combined experience in thermal flow measurement resulting from countless applications and discussions with our customers. Discover the sensor properties that make the device so universal in use!

If you are unable to find the right solution for your measuring task in our standard program, contact us. We can consult and support you, because we are **Specialists by Competence**.

Wolfgang Huckenbeck | Oliver Dzierzon | Marco Bick
Product Management Honsberg

OMNIPLUS-F – the all-rounder with a bonus.

Flow sensor, volume meter and thermometer in a single measuring device.

Quick and reliable

The measuring principle, which involves no moving parts and is thus practically wear-free, offers the ability to record media temperature in addition to flow measurement. The special arrangement of sensors developed by Honsberg in combination with optimised software algorithms makes the OMNIPLUS-F one of the fastest calorimetric flow sensors on the market.

The OMNIPLUS-F also offers a volume meter that counts the volumetric flow. All measurement variables are shown on a large and clear display and can be flexibly assigned to the analogue and digital outputs. The settings required for this purpose can be made directly on the device, comfortably and intuitively with the unique multifunction ring.

Fit for Industry 4.0

The integrated IO-Link interface enables the digital transfer of all measurements and other sensor data and the complete parameterisation of the sensor. Therefore, nothing stands in the way of integration into larger sensor networks. The selection of various process connections offers a solution for nearly every installation situation, making the OMNIPLUS-F the right choice for Industry 4.0 applications.

An overview of the characteristics

- Three measurement variables in a single device
- Reliability with the wear-free measuring principle
- Quick measurement with a special sensor arrangement and software
- Fit for the digital future with IO-Link
- Easy-to-read display
- Multifunction ring for comfortable parameterisation
- Intuitive operation thanks to plain text messages
- Analogue and digital outputs, configurable for every application purpose



OMNIPLUS

IO-Link



The calorimetric measuring principle.

No moving parts - no wear.

A pressure-proof and hermetically sealed stainless-steel probe is submersed in the liquid. The probe does not have any moving parts, which makes it practically wear-free. It contains two temperature sensors, one of which is heated. The heat output is regulated such that the temperature difference between the two sensors remains constant. The fluid flowing around the probe dissipates the thermal energy. The higher its flow speed is, the greater the heat output that must be applied in order to maintain the temperature difference at a constant level. The heat output is thus a measurement from which the flow speed can be derived. Because the method is based on the transfer of thermal energy, it is also referred to as a thermal or calorimetric measuring principle. All versions of the OMNIPLUS-F work according to the method described above.

No heating of the substance to be measured

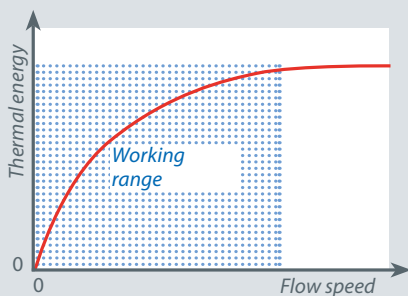
Measurement with two temperature sensors offers the advantage that the measurement is interruption-free and thus can be conducted very quickly. By regulating the heat output, unlike methods without regulation, the thermal energy supplied to the liquid is minimised so that no relevant heating of the medium to be measured takes

place, even when flow speeds are low. The regulation also has a beneficial influence on the characteristic curve, i.e. the relationship between the measurement signal and flow speed.

Advantages with lower flow speeds

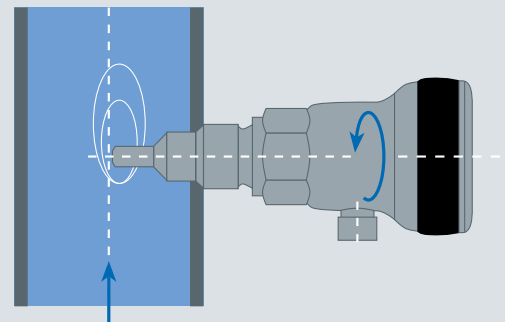
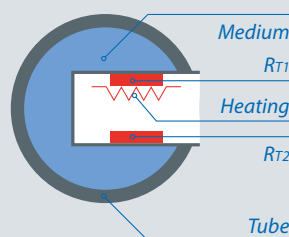
For physical reasons, the relationship between required heat output and flow speed is not linear, which makes the typical characteristic curve of a thermal flow sensor flatten as flow speed increases. Therefore, a useful measurement only makes sense up to a maximum speed and the maximum value depends on the substance to be measured. With the OMNIPLUS-F, the maximum flow speed for water is 300 cm/s. Thermal flow sensors have unique benefits in the lower speed range. They are particularly sensitive there, but do require a minimum speed in order to show reproducible results. The minimum speed for water with the OMNIPLUS-F is 2 cm/s.

OMNIPLUS-F working method



The characteristic curve of a calorimetric sensor shows less of a slope as the flow speed increases

Arrangement principle of the sensor elements



Heat extraction by the flow

The OMNIPLUS-F is on the lookout.

Safety with plant monitoring:

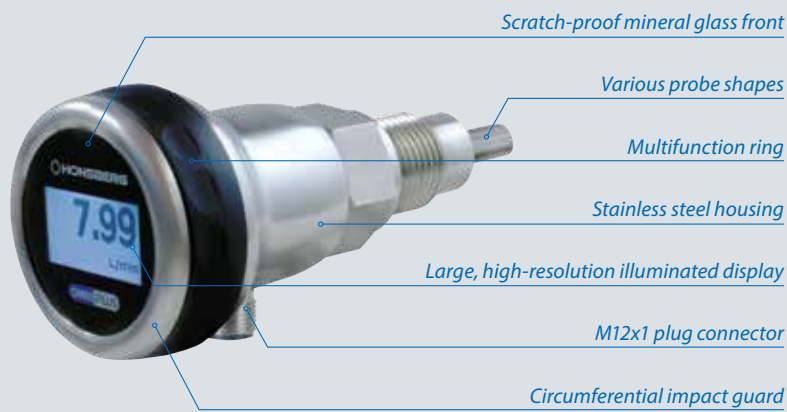


Reliable, wear-free, reproducible.

Based on the measuring principle, the OMNIPLUS-F measures the flow speed at a single point. This enables reproducible results for the volume flow under stable environmental conditions. Thus, together with the increased sensitivity in the lower speed range, the OMNIPLUS-F is ideally suited for minimum amount monitoring or recognition of setpoint deviations.

Typical applications include the monitoring of cooling and lubricant circuits and in pump protection for prevention of running dry. The OMNIPLUS-F offers high reliability in this respect, which ensures fault-free operation of the plant and prevents costly damage.

The wear-free measuring principle makes the OMNIPLUS-F practically maintenance-free. Because there are no moving parts, nothing can jam or become blocked, either. As long as the probe tip is not heavily contaminated, it will detect the flow reliably. In the event that the probe tip becomes contaminated, the measuring system will display a lower flow than is actually present and, in the worst case, signal the need for maintenance without damage coming to the plant. The analogue detection of the flow speed also enables early recognition of fluctuating measuring results and thus the planning of maintenance work.



Flow measurement value with unit

7.99
L/min

Display selection by rotating the multifunction ring

The ring can be rotated and shifted axially. The values are changed incrementally by rotating the ring. Shifting the ring axially works like a button and this function can be used for selection and confirmation of settings.

Comfortable operation with the multifunction ring

The OMNIPLUS-F can be fully parameterised with its multifunction ring.



Status of the outputs

7.99
Temp: 48 °C

Flow and temperature measurement

7.99
Σ 1563 m³

Flow measurement value and volume meter status



Button function with axial shifting of the ring

Design and function. Robust and reliable.

The robust industrial quality with a stainless steel housing in protection class IP 67 for accommodation of the electronics and the pressure resistance of the probe of up to 200 bar guarantee reliable function that pays off. Because there are no moving parts, there is also no wear.

Not lastly, the high-quality workmanship with a scratch-proof mineral glass front and the futuristic product design make the do-it-all OMNIPLUS-F a long-lasting and value-retaining device.

Reasons that impress:

- Cost reduction with one sensor for three measurements and reduced installation work
- Simple commissioning saves time
- Minimal wiring work with IO/Link and convenient adjustment options, as well as integration and closing functionalities
- Low downtimes with low-maintenance system
- User-friendly industrial version with intuitive menu guidance and display for speedy commissioning
- Reduced stock requirement with flexible adaptation to the pipe diameter

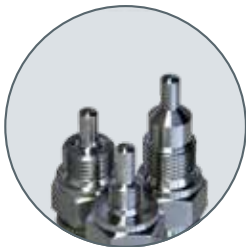
Features that leave an impression.

Practical and powerful.

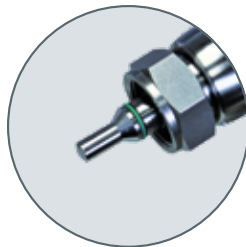
TECHNICAL DATA

Flow measuring range	2...300 cm/s	Display	30 mm (diagonal)	Measurement medium	
Accuracy	$\pm (7\% \text{ MW} + 2\% \text{ FS})$	IO-Link	●	H₂O	● (adjusted)
Reproducibility	5 cm/s	Analogue output	Current or voltage (can be switched)	Oil	● (configurable)
Temp. measuring range	-20...+120 °C	Limit value switch	2	Other liquids	● (configurable)
Accuracy	2 °C (at minimum flow speed)	Frequency/pulse output	1	Air	—
Resolution	1 °C	Volume meter	●		
Operating voltage	18...30 V DC	Pressure resistance	Up to 200 bar (probe dependent)		
Power consumption	< 150 mA				

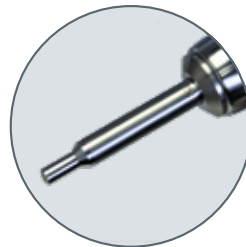
PROBE



Screw-in probe (various threads)



Insertion probe with union nut



Insertion probe with variable insertion depth



Integrated in measuring tube (various nominal widths)

An extensive range of accessories is available for installation and commissioning





Your direct contact to us



+49 2191 9672-0



info@ghm-group.de

Headquarters

GHM Messtechnik GmbH
GHM GROUP CORPORATE
Tenter Weg 2-8
42897 Remscheid | GERMANY
Phone +49 2191 9672-0
Fax +49 2191 9672-40
info@ghm-group.de
www.ghm-group.de

Center of Competence

GHM Messtechnik GmbH
GHM GROUP – Greisinger
Hans-Sachs-Straße 26
93128 Regenstauf | GERMANY
Phone +49 9402 9383-52
Fax +49 9402 9383-33
info@greisinger.de
www.greisinger.de

GHM Messtechnik GmbH
GHM GROUP – Honsberg
Tenter Weg 2-8
42897 Remscheid | GERMANY
Phone +49 2191 9672-0
Fax +49 2191 9672-40
info@ghm-group.de
www.ghm-group.de

GHM Messtechnik GmbH
GHM GROUP – Martens
Kiebitzhörn 18
22885 Barsbüttel | GERMANY
Phone +49 40 67073-0
Fax +49 40 67073-288
info@ghm-group.de
www.ghm-group.de

GHM Messtechnik GmbH
GHM GROUP – Imtron
Carl-Benz-Straße 11
88696 Owingen | GERMANY
Phone +49 7551 9290-0
Fax +49 7551 9290-90
info@ghm-group.de
www.ghm-group.de

Delta OHM S.r.l. a socio unico
GHM GROUP – Delta OHM
Via Marconi 5
35030 Caselle di Selvazzano
Padova (PD) | ITALY
Phone +39 049 8977150
info@deltaohm.com
www.deltaohm.com

Valco srl
GHM GROUP – Val.co
Via Rovereto 9/11
20014 S. Ilario di Nerviano
Milano (MI) | ITALY
Phone +39 0331 53 59 20
valco@valco.it
www.valco.it

GHM GROUP International

Brazil & Latin America
GHM Messtechnik Do Brasil Ltda
Av. José de Souza Campos,
1073, cj 06 | Campinas, SP
13025 320 | BRAZIL
Phone +55 19 98275 0069
info@grupoghm.com.br

Czech Republic / Slovakia
GHM Greisinger s.r.o.
Ovci hajek 2/2153
158 00 Prague 5
Nove Butovice | CZECH REPUBLIC
Phone +420 251 613828
Fax +420 251 612607
info@greisinger.cz
www.greisinger.cz

India
GHM Messtechnik India Pvt Ltd.
209 | Udyog Bhavan
Sonowala Road | Gregaon (E)
Mumbai - 400 063 | INDIA
Phone +91 22 40236235
info@ghmgroup.in
www.ghmgroup.in

Italy
Sales Greisinger & Delta OHM
GHM GROUP – Delta OHM
Via Marconi 5
35030 Caselle di Selvazzano
Padova (PD) | ITALY
Phone +39 049 8977150
info@deltaohm.com

Italy
Sales Honsberg, Martens, Valco
GHM GROUP – Val.co
Via Rovereto 9/11
20014 S. Ilario di Nerviano
Milano (MI) | ITALY
Phone +39 0331 53 59 20
alessandro.perego@valco.it

Netherlands
GHM Meettechnik BV
Zeeltweg 30
3755 KA Eemnes
NETHERLANDS
Phone +31 35 53805-40
Fax +31 35 53805-41
info@ghm-nl.com
www.ghm-nl.com

South Africa
GHM Messtechnik SA (Pty) Ltd
16 Olivier Street
Verwoerdpark, Alberton 1453
SOUTH AFRICA
Phone +27 74 4590040
j.grobler@ghm-sa.co.za



Visit us: www.ghm-group.de