www.ghm-group.de

GHMGROUP

Specialists by Competence.

Hygienic Food Industry.

Recipes for production.

Members of GHM GROUP: GREISINGER | HONSBERG | Martens | IMTRON | DeltaOHM | VAL.CO

Editorial. Specialists by Competence.

„The monitoring of food production is not based on good feeling, but on hard facts and standards. Our measuring devices are designed specifically for the requirements and needs of the market."

If you have any questions do not hesitate to contact us:
Phone: +49 7354 937233-0
info@ghm-group.de

GHMGROUP
Specialists by Competence.

Additional information is provided on our website at:
https://www.ghm-group.de/en/industry-sectors/food-beverage/

Dear readers,

Uncompromising cleanliness and hygiene are the basic prerequisites for avoidance of microbiological contamination in the industrial manufacturing and processing of foodstuffs and beverages.

Moreover, close or continuous inspection ensures the uniform high-quality of your products, and guarantees a consistent taste experience for the consumer. In addition, through seamless monitoring of the overall process you provide validation of the rigorous hygienic standards of your production, and with documentation of the measured data, you also place the likelihood of faulty batches on file.

Quality assurance plays an essential role as part of the overall process. Consequently, the measuring instruments used must satisfy the most rigorous requirements relative to hygiene and many other factors.

As GHM GROUP we offer an extensive range of sensors for hygienic and sterile applications in the area of groceries, beverages, dairy products, confectionery, pharmacy and cosmetics. Through many years of know-how, our exceptional ability to innovate, and technical opportunities across many sectors, we not only offer individual sensors or components but, rather entire systems or system solutions that guarantee the highest level of process security and plant availability.

The list of possible applications for the technologies and devices we use is long. You have the choice between various high-quality in-line sensors for temperature, flow rate, pressure, level, limit level, turbidity, conductivity, pH/Redox and analysis, as well as handheld measuring devices or laboratory instruments and data loggers. Our measuring devices are designed especially for your requirements and needs.

Thus, we enable you to save costs, ensure as well as increase quality, reduce waste and easily upgrade the existing plant.

We support you in your individual projects and applications. Contact us, we are **“Specialists by Competence”.**

Hygienic process control

Food and medical products safety is extremely important. Therefore, the measuring technology used in production must not only be precise and reliable – it must also satisfy the rigorous hygiene and cleaning requirements. In the late 1990s the Regulation on the hygiene of foodstuffs (LMHV) went into force in Germany and replaced the hygiene regulations of the individual federal states. Foodstuff hygiene is only assured by the manufacturer, if the measuring technology used in this industry has a hygienic design and complies with the applicable laws.

As GHM GROUP we are a complete supplier in this field and focused on the alignment in food, beverage and pharmaceutical technology. Through our company network, complete solutions can be offered in addition to individual sensors.

Special requirements

The basis for hygienic process control and the associated requirements imposed on the measuring technology are fundamentally the fulfilment of the following criteria:

- structure and design of the sensors and measuring
- devices in accordance with the rules of hygienic design
- standard surface roughness $R_a < 0.8\,\mu m$ (optionally 0.6 µm, 0.4 µm)
- cleanable in accordance with CIP (clean in place) and SIP (sterilization in place)
- use of materials that come into contact with media in accordance with the positive lists of the FDA and EU Regulations 1935/2004 and 10/2011
- test certification in accordance with DIN EN 10204:2004
- certification in accordance with EHEDG
- high protection rating IP67 or IP69K

Measuring technology – Optimized.

Optimally adapted to a wide variety of conditions.

The media to be processed or that occur in the food industry, often change their properties relative to density, consistency, conductivity and temperature.

Boilers, tanks and similar containers are filled with a variety of different media, to which the cleaning processes must be adapted and modified. Here there is no room for compromise.

The sensors of the entire GHM GROUP offer a reliable and safe measurement.

CIP and SIP processes.

Hygiene configured for the most rigorous requirements.

Sensors for the food industry have to be suitable for CIP and SIP processes and external cleaning processes. This means the most rigorous requirements are imposed on the housings, electronics and sensor systems. For the devices of the GHM GROUP this is no problem, because the components can be individually configured for the conditions that can be anticipated.

Recommended materials.
Use in a manner that reduces costs.
Food industry

GHMware GHMadapt **Patent** granted

certified

FDA ✓ CERTIFIED EHEDG ✓ Ordinance 1935/2004 ✓ Ordinance 10/2011 ✓

We place the highest value on the use of conformant materials that are approved for the food sector.

All parts of the sensors that come into contact with media and that are close to the process are capable of withstanding the cyclical cleaning and sterilization temperatures.

The materials used meet the requirements of

- FDA
- 3-A
- EHEDG
- EU Ordinance 1935/2004
- EU Ordinance 10/2011

The design of the developed process connections…

… is free of dead spaces and thus offers easy and cost-effective cleaning.

… satisfies the latest requirements imposed on effective, environmentally-friendly cleaning and sterilization.

GHMGROUP

GHMGROUP
Specialists by Competence.

Hygiene – measuring technology.

Overview

Measuring principle

From experience with continuously measuring level sensors gained over many years, a new measuring process for limit level switches has been developed.

Unlike the established systems, an oscillating circuit for which the medium forms the capacitor is not used, but rather the storage capacity of charge carriers of a medium is measured.

This measuring principle is ideally suited for determination of liquids, oils, and even solid materials, and it is resistant to foaming and adhesion of products.

Even with high-viscosity and highly adherent media, the limit level switches work reliably and are suitable for pump protection and dry-run protection.

Application area

- media detection
- level monitoring
- overfill safeguard

In tanks, containers and pipelines

- regulation
- pump dry-run protection
- control
- monitoring the switching function of valves

Can be used in the following industries

- food industry
- beverage industry (dairies, breweries etc.)
- biotechnology
- cosmetics industry
- pharmacy and life science

Fill level/ limit level. Capacitive.
Universal implementation also for powder, oils, foam and adhesions.
MLC series

GHMware GHMadapt

MLC422

wide-view LED status display with 180° visibility

MLC433

Advantages

- significantly reduced project planning times through sensors that can be used universally
- sensor tips that are not sensitive to adhesion, thus maintenance and cleaning are not required
- space is saved through a compact design

Technical features

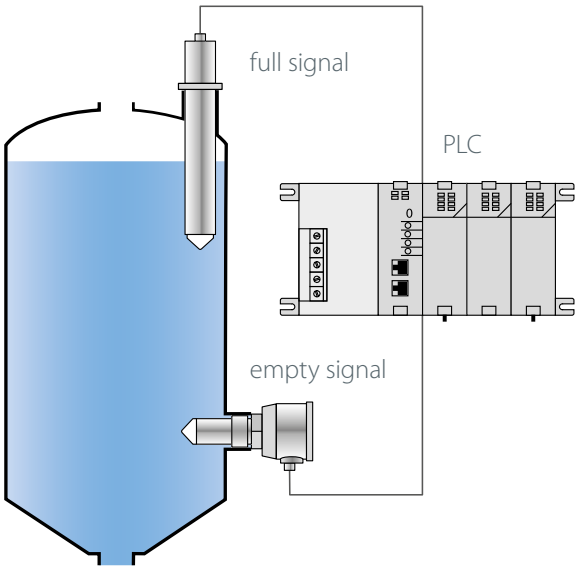
- applications for measurement of liquids, oils and solids
- process connection G ½" and G 1" hygienic
- adjustment of the ideal switching points with single-digit accuracy
- up to 2 switching outputs can be parameterized independently of each other, for phase separation of media
- wide-view LED status display
- installation position from above in the range of 130 mm .. 1 000 mm possible for tank monitoring
- alternative to vibrating forks/ vibration limit level switches
- parameterization via GHMware

Patent granted · CIP/SIP capable · protection type IP67/ IP69K · FDA · EHEDG

Patent granted

Fill level/ limit level. Capacitive.
The optimal sensor for every application.
MLC series

Patent granted



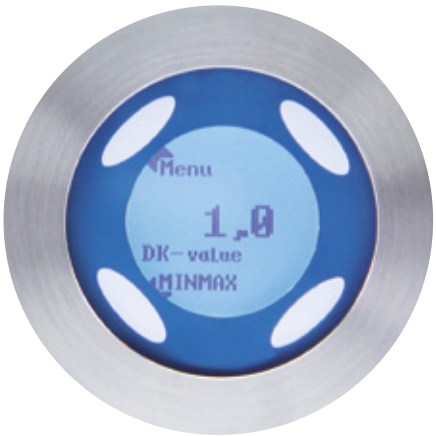
Detection of solid and liquid media through a new high frequency measuring process

With this measuring process the storage capacity of charges in the medium is used. In this process, the probe tip and the installation adapter form an electrical capacitor. If the probe is in the air, then a low initial capacitance is measured.

If the probe is then immersed in the medium, the capacitance value changes. This value is determined through the geometry of the probe and the DK value of the medium. Here are several examples in this regard:

medium	[DK] = [ε]
air	1
oil	1.5 .. 3
chocolate	2 .. 8
vinegar	6.2
ice cream	17

LC-Display MLC437



GHMGROUP

Fill level/ limit level. Capacitive.
Space is saved through a compact design.
MLC42x series and MLC49x series

MLC420 / 422

Technical features

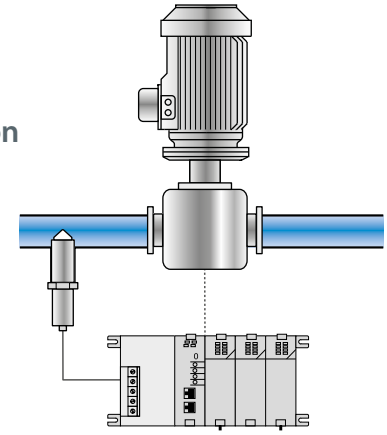
- compact design
- can be used for detection of aqueous liquids (MLC420), solids or oils (MLC422)
- condensate-resistant model
- housing entirely of stainless steel
- 1 switching output (PNP/ NPN)
- no moving parts in the medium being measured
- sensor tip is not sensitive to adhesions
- parameterization (e.g. switching function or attenuation) via GHMware

MLC490 / 492

Technical features

- installation in the cover or floor of containers or tanks, (max. install length 1 000 mm)
- function is identical to MLC420 or MLC422

Dry-run protection



Proven technology

This is a very cost-effective and flexible method of detecting the limit level of conductive liquids in tanks, containers and pipelines. In addition to media detection, this measuring principle can also be used for pump protection/ dryrun protection in pipelines. The probe can be designed as a single-rod probe or also as a multi-rod probe.
The rod probes can be retroactively shortened or even bent. Thus, an optimal adaptation to the measuring situation is ensured. The evaluation electronics can be installed in the probe head or externally in the switch cabinet.

Application areas

- in tanks, containers and pipelines
- media detection
- foam detection
- level monitoring
- overfill safeguard
- pump dry-run protection
- monitoring the switching function of valves

Advantages

- combination device for temperature and level limit eliminates the need of a 2nd measuring point
- sensor tip of solid material reduces downtimes
- individual adaptation of the length by the user optimizes inventory management

Technical features

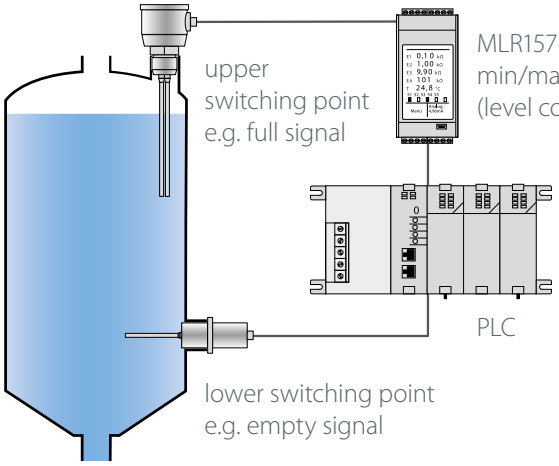
- electrode length: 5 .. 5 000 mm
- for all media with media conductivity > 2 µS
- up to 4 electrodes
- electrodes optionally PFA-coated for adhesions
- level detection and regulation
- measuring of 3 limit levels with integrated evaluation technology
- available with or without integrated evaluation electronics
- MLx series has integrated switching electronics
- configurable via GHMware
- wide-view LED status display

Fill level/ limit level. Conductive.
Easy, reliable and innovative.
SLx/ MLx series

GHMware GHMadapt

MLR433

MLR420-2



MLR430-3

CIP/SIP capable

protection type IP67/ IP69K

FDA

Fill level/ limit level. Conductive.
Variants that have what it takes.
SLx/ MLx series

GHMware GHMadapt

SLR420-2/ MLR420-2

Technical features

- small and compact design
- process connections for pipes, tanks and containers
- robust housing entirely of stainless steel
- sensors with (MLR420), or without electronics (SLR420)
- for sensors with integrated electronics (MLR420) parameterization (e.g. sensitivity adjustment) is possible via GHMware

SLR430-2/ MLR430-2

Technical features

- electrical connection with M12 plug connector or cable screw gland
- wide-view LED status display
- maximum 4 limit levels
- process connections for pipes, tanks and containers
- robust housing entirely of stainless steel
- for sensors with integrated electronics (MLR430) parameterization (e.g. sensitivity adjustment) is possible via GHMware

SLT420-2/ MLT430-2

Technical features

- proven technology and function, like SLR and MLR series with integrated temperature sensor (Pt1000)
- one sensor for capture of two physical variables
- cost savings for 2nd measuring point
- for sensors with integrated electronics parameterization (e.g. sensitivity adjustment) is possible via GHMware

FDA

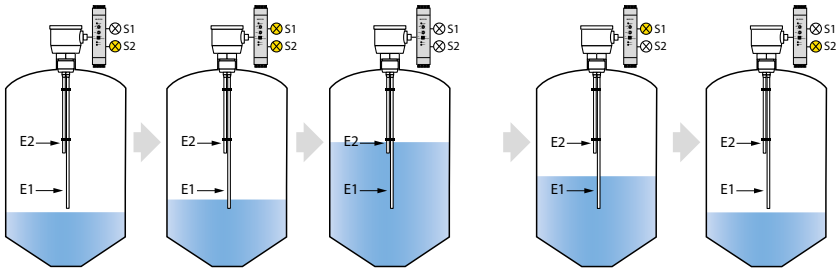
GHMGROUP

Fill level/ limit level. Conductive.
Controller for the switch cabinet.
MLR120 und MLR157

MLR120

Technical features

- limit level detection
- with integrated level control
  - The S2 output switches off when the level drops and electrode E1 is no longer covered. Output S2 maintains its status as long as, i.e. it only switches off, when the level increases and electrode E2 is covered.
  - Output S1 switches on when the medium covers E1 and the level is between E1 and E2 (not covered). Output S1 switches off when the level is outside of this range..



MLR157

GHMware

Technical features

- up to 4 electrode inputs + Pt100 input (for sensors with an integrated temperature probe)
- parameterization via rotary switch/ DIP switch
- touch screen or GHMware operating software
- 2 or 5 alarm outputs (changeover relay and transistor)
- measuring range 0.05 kΩ .. 500 kΩ
- wide-range power supply 18 .. 230 V AC/DC
- fast tripping times ≤ 50 ms .. 10 s
- housing widths 22.5 mm or 50 mm
- carrier rail mounting TS35 DIN EN 60715

Temperature measurement

The GTL product series of the GHM GROUP is based on a modular system of individual components that can be put together to form a probe. A total of 30 different probe variants can be produced. Thus, for any conceivable purpose or for the widest variety of install situations in the food industry, beverage industry, or pharmaceuticals industry, the optimally suited probe that is tailored to the application can be made available.

Technical features – measuring transducers

- conversion rate of ≤ 100 ms
- fast response to minimal changes
- 16-bit A/D converter
- high-resolution, stability and accuracy
- configuration as desired by the customer
- customer-side configuration through programming tool
- display (optional)

Technical features – measurement probes

- temperature sensors -40 .. + 200 °C
- integrated measuring transducers (optional)
- high accuracy (Cl. A, Cl. AA)
- available with factory calibration certificate
- process connection M12, G ½" (front-flush for small-pipelines), without thread with compression fitting or G ⅜" union nut with installation systems
- extension tube solution for high-temperature use
- electrical connection M12 plug-in connection, cable connection or fixed cable
- protection rating IP67 or IP69K
- stainless steel 1.4404 or 1.4435 for materials coming into contact with the product

GHMGROUP

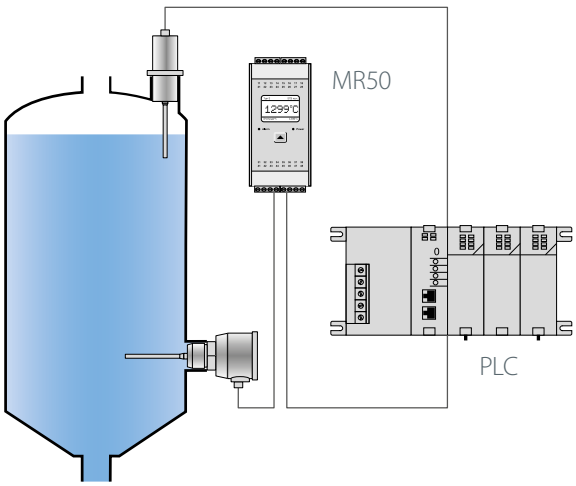
Temperature measurement.
The clever modular system for the optimal sensor.
GTL series

GTL479

GTL349

Advantages

- uniform quality through use of Pt100 technology
- two integrated Pt100 elements reduce costs for the reference measuring point
- space is saved through a compact design
- different electrical connections permit retrofitting without rewiring
- large selection of process connections enables installation
- in accordance with the user's specification



CIP/SIP capable

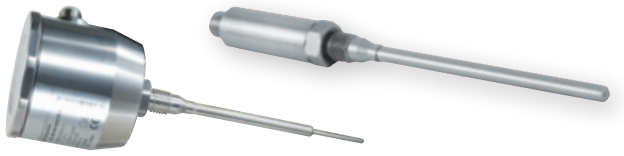
protection type IP67/ IP69K

FDA

Temperature measurement. Versions.
The clever modular system for the optimal sensor.
GTL series

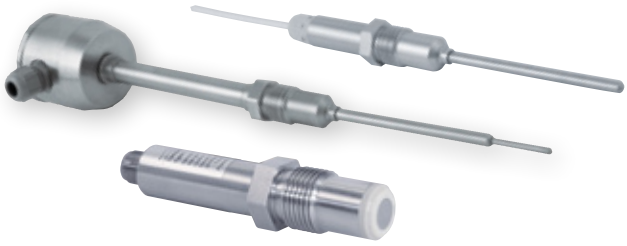
GTL1x

Process connection M12 hygienic
- for smaller nominal pipe widths



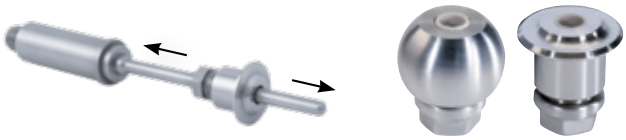
GTL2x

Process connection G ½" hygienic
- pipeline with vibration
- high-temperature version
- front-flush, pig gable and for agitators



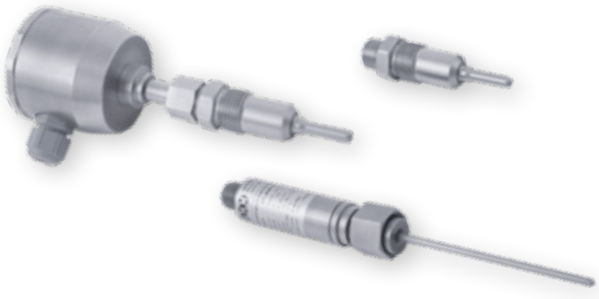
GTL3x

Without process connection
- immersion depth is individually adjustable



GTL4x

Process connection G ⅜" union nut
- sensor replacement without opening the process

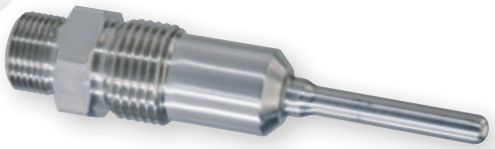


Temperature measurement. Installation systems. Removal of the sensor is possible at any time.

Hygienic system with ⅜" union nut

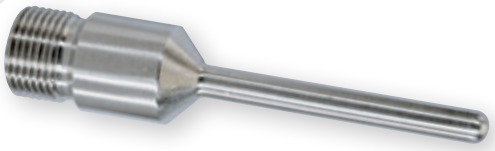
GHMadapt

APHG12 Adapter to G½" hygienic



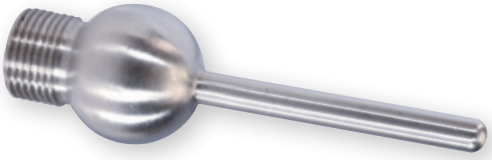
APHZ18 Welded-in immersion sleeve

- for tanks and containers

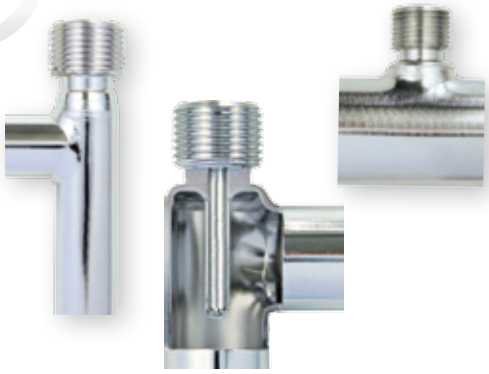


APHK25 Welded-in immersion sleeve with tapered muff

- for tanks, containers and pipelines



API Installation system in pipes



These hygienic systems offer the possibility of installing and removing the temperature sensor (e.g. for calibration) without opening the process. They are designed for temperature monitoring in closed, hygienic systems and were specially developed for our temperature sensors GTL459/ 479/ 499.

Application areas

- measuring the temperature in tanks, containers or pipeline systems even with small nominal diameters
- measuring the process temperature in superheated steam and pressure lines
- monitoring of the CIP/ SIP cleaning process

GHMGROUP

Dual sensor

To enable the user to simultaneously take a measurement at one measuring point on-site, the option exists to set up the measuring point as dual-sensor with two Pt100 probe inserts.

Combined with the appropriate evaluation electronics, a differential value, as well as a mean value measurement can be executed and displayed. However, it is also possible to display the individual values of the two Pt100 temperature probe inserts of a GTL sensor.

GTL737

Temperature measurement.
Clamp-on pipe-mounted sensor.
Monitoring of CIP/ SIP cycles, flash pasteurizer and ultra high temperature systems.
GTL7xx series

GTL737 and RLA

GTL723 and RLA

Technical features

- insensitive to vibration
- fast response times (up to 3 s)
- pipeline adapters for DN 10 .. DN 80 for all common pipe standards
- high measurement accuracy (up to 0.2 % of full scale value)
- high-temperature version for + 160 °C continuous temperature
- measuring probes are interchangeable for recalibration, without changing the measuring point arrangement and without interrupting the process
- optimized thermal transmission through 935 silver plates
- transmitter version can be configured with GTL configurator via programming adapter

Advantages

- clamp-on technology reduces costs for installation and commissioning
- precise, reproducible and fast measuring for quality checks
- can be used as a mobile unit with handheld terminal for system optimization
- single components allow optimized inventory management
- easy cleaning with chemicals and high-pressure cleaners
- robust design for a long service life

For any tank shape

The pressure measurement is based on the hydrostatic level measurement. Pressure occurs through the liquid column above the sensor and it is directly proportional to the fill height.

With the aid of the evaluation electronics appropriate for the sensor, the results can then be visualized or further processed. For the display of the level quantity or of the volume, the individual shape of the tank can also be taken into account.

Application areas

- hydrostatic level and volume measurement in tank systems

variants of SA11

Advantages

- long service life, even when used in harsh environments and outdoors
- front-flush membrane reduces cleaning time and prevents bacterial growth
- optional display in volume units permits on-site checks by the user

Technical features

- content measurement for any tank shape
- high measurement accuracy ≤ 0.5 %
- differential pressure measurement via 2x pressure measurement and evaluation device
- protection rating IP65 or IP69K
- suitable for tank linearizion via TA1010 or internal evaluation electronics, including prepared tank geometries

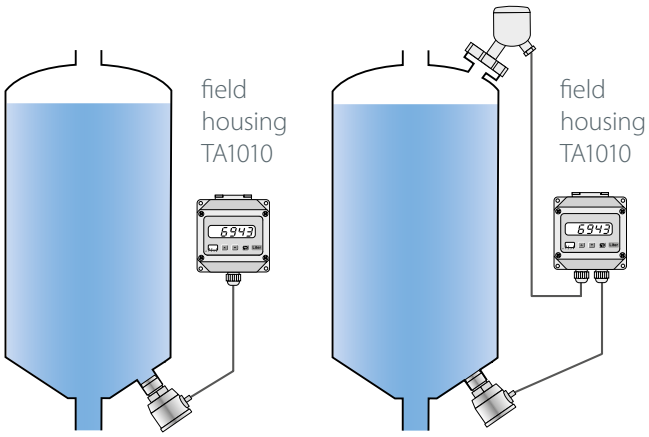
Level. Hydrostatic.

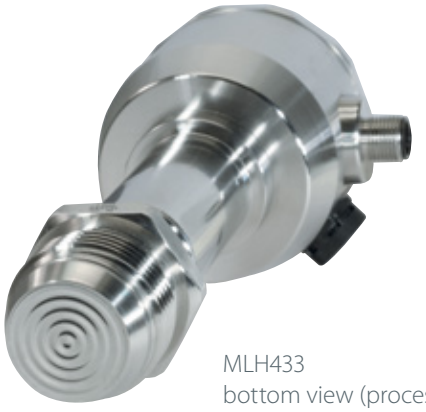
Measure process pressure & level with one sensor.

MLH series, SA11 series and TA1010

GHMware GHMadapt

MLH433





MLH433
bottom view (process connection)

CIP/SIP capable

protection type IP67/ IP69K

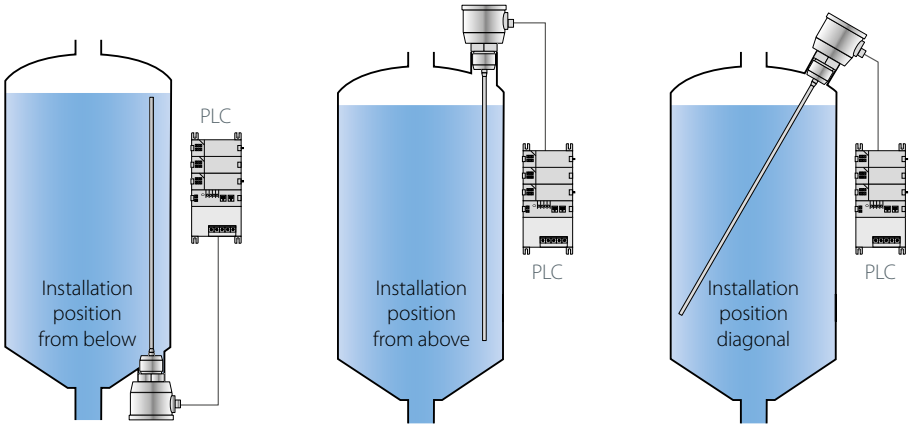
FDA

Potentiometric level measurement

With the MLP type series, the level of all liquids with a minimum conductivity of ≥ 20 µS/cm is measured. For the sensor with one measuring rod, alternatively a sensor with reference electrode (2-rod) can also be used. This also enables measurements in glass and plastic containers.

Application areas

- metal tanks, glass tanks and plastic tanks
- liquid, pasty, highly adherent, foaming and electrically conductive media
- continuous measuring, suitable for level regulation, in particular in small tanks (supply tanks and batching tanks) or filling systems



GHMGROUP

Level. Potentiometric.
Measuring even with foam and adhesion.
MLP series

GHMware GHMadapt

MLP437-MR
with reference electrode
for plastic tank

MLP433-OR
without reference electrode
for stainless steel tank

Advantages

- cost reduction in tanks that are charged with pressure because a second sensor is not required
- level measurement without moving parts minimizes maintenance and cleaning costs
- precise and fast measuring in filling processes, reduces waste quantities
- potentiometric measuring principle saves calibration costs when changing product

Technical features

- dynamic measuring at fill heights 10 cm to max. 2.5 m
- minimum conductivity ≥ 20 µS/cm
- high measuring accuracy less than ± 1.0 mm
- regardless of pressure, temperature and density
- suitable for constant high ambient temperatures up to + 130 °C
- 2 freely-configurable switching outputs, 0/4 .. 20 mA freely scalable with magnifying glass function
- millimeter-precise rod length can be delivered
- parameterization with GHMware via USB interface

CIP/SIP capable

protection type IP67/ IP69K

FDA

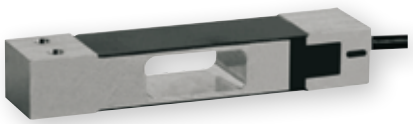
Load cells

These are an alternative to direct level measurement via inline sensors. Bending beam load cells are outstandingly suited for industrial scales or general measuring tasks for determination of the level measurement.

The additionally offered compressive force load cells are ideal for high accuracy measurements in containers, tanks or silo scales.

Application areas

- content determination of complete containers
- control of batch processes



PC22

Advantages – load cells

- reliable measuring system for solid matter storage tanks
- durable stainless steel housing reduces service costs even when used outdoors
- ex protection minimizes risk in explosive atmospheres

Technical features – load cells

- measuring sensors without contact to the medium
- DMS measuring bridges/ Ex approval
- measuring range from 0 .. 2 kg to 0 .. 5 000 kg to max. 0 .. 100 t
- basic accuracy 0.02 % .. 0.1 %
- repeatability ≤ 0.03 %
- max. overload 150 % .. 200 %
- protection rating IP40 .. IP67

Level. Weighing technology.
Measuring without sensor in the process.
Load cells PC22/ ULB/ RC3 & measuring transducer DMS50


RC3


ULB

DMS50

Advantages – evaluation electronics

- different load cells can be connected on one device
- simple device configuration saves time
- enables automated processes with external tare activation

Technical features – evaluation electronics

- 1 or 2 effective directions
- teach-in function
- tare function
- simulator function
- selectable units (kg, t, N, kN, Nm, bar)
- min./ max. value memory
- LED or LC display
- basic accuracy < 0.1 % to < 0.025 %
- Modbus/ Profibus DP connection
- up to 4 alarm outputs

protection type IP40 .. IP67

Transmitted light measurement

The MAT433/ 437 opacimeter is designed for phase recognition in the food and beverage industry. The transmitted light method (0°) according to DIN EN ISO 27027 additionally permits the measuring of significant opacities, and therefore allows a far greater measuring range as compared with scattered light measurements at 11° or 90°. The turbidity is output as a percentage of the maximum measured value.

This value can be converted with an integrated conversion table into material-specific concentrations or into the formazin-based unit FAU, and displayed.

Application areas

- product differentiation/ phase separation
- filter and separator monitoring
- yeast management in breweries

Technical features

- measuring according to DIN EN 27027, measuring angle 0° (absorption), wavelength 860 nm
- extraneous light compensation and self-monitoring
- calibration and display in % (absorption), FAU (Formazin Absorption Units), customer specific concentration units (e.g. ppm)
- 2 switching outputs and analogue output 0/4 .. 20 mA
- measuring according to EN 27027, measuring angle 0° (absorption), wavelength 860 nm
- compatible with CIP cleaning
- protection rating IP67 and IP69K

Analysis technology. Turbidity.

CIP separation and phase separation – easy & reliable.

MAT series

MAT437

MAT437

Advantages

- safe detection of products in the production cycle reduces waste quantities
- cost optimization through monitoring of the cleaning cycle
- integrated switching outputs enable fast intervention as part of quality monitoring
- easy and cost-effective installation through use of a Varinline* housing

*Registered trademark of GEA Tuchenhagen GmbH, 21514 Büchen, Germany

MAT433

FDA ✓ DIN EN 270027 ✓ CIP/SIP capable ✓ protection type IP67/ IP69K ✓

Suitable for all media

Measuring with conductive 2-pin and 4-pin sensors is the most prevalent method in practice. The variety of process connections enables measuring in virtually any application. From water to aggressive acid, every area is covered.

Application areas

- various designs (application dependent): 1 h at max. 140 °C steam sterilizable
- for measuring the concentration of cleaning media
- phase separation in CIP cycles
- high-temperature version up to 200 °C available
- compact immersion measuring cells for pools and wells to max. 10 bar
- immersion measuring cells for channels, pools, and open systems

Technical features

- 2-electrode and 4-electrode measuring cell available
- measuring ranges from 0.5 µS/cm .. 500 mS/cm
- measurement accuracy < 0.5 % full scale
- can be used for all standard media extending to ultrapure water
- temperature compensation (Pt100 or Pt1000)
- analog outputs for conductivity and temperature, galvanically separated

LF3433

LF1553

Analysis technology. Conductivity.

From ultrapure water to cleaning of wastewater – always the ideal sensor and the appropriate display.

Conductivity measuring cells of the LF series

GHMadapt

Advantages

- large measuring range enables guaranteed product detection and reduces waste quantities
- cost optimization through monitoring of the cleaning cycle
- modular design enables ideal adaptation to user specifications

UNICON-LF

LF4533

LF9648

CIP/SIP capable

Measuring principle

For the magnetic-inductive measurement, in a solenoid coil through a conductive liquid, a measurement voltage that is proportional to the flow speed is generated inductively. This measurement voltage is tapped by the measuring transducer via the electrodes, and with due consideration of the pipe cross-section it is converted into the actual volumetric flow.

The measuring process is virtually independent of pressure, density, temperature and viscosity, it involves no moving parts (wear-free) and has no pressure losses.

Application areas

- measuring of conductive liquids, pulpy and pasty media with minimum conductivity ≥ 5 µS/cm
- hygienic and sterile applications
- monitoring and control of processes, e.g. CIP cycles or filtration procedures
- measuring of pulsing liquids
- simple metering and dispensing tasks
- metering of flavorings, coloring agents, vitamins and enzymes

Advantages

- space is saved through a compact design
- assured detection of flow rates even in the smallest pipe diameters
- reduction of service and maintenance costs through a high-quality stainless steel design
- universal implementation in mobile and stationary systems
- media changes without additional teach-in enables fast filling without wait times

Technical features

- complete stainless steel construction
- nominal widths DN 1 .. 100
- vacuum-tight PFA cladding
- variable process connection concept
- bi-directional flow measurement
- rotating measuring transducer housing
- integrated metering control (optional)

Flow measurement. Magnetically inductive.
Robust, compact and precise.
MFI447

24 V DC battery supply

MFI447

6-line LC graphic display
backlit

CIP/SIP capable

FDA

Measurement of the smallest quantities

Detection of the most minute flow rates extending to droplets, e.g. of flavorings, spirits, water, but also chemical cleaning agents, can occur with the calorimetric measurement principle.

Here there are no moving mechanical parts in the flow – no turbine wheel or suspended bodies. Thus, this sensor can also be used for media that is burdened with solid objects.

Application areas

- monitoring and measuring of very small flow rates
- monitoring of leaks
- admixture of flavorings, oils, etc.
- filling of small volumes

Technical features

- different tube sizes (6 mm, 8 mm and 10 mm)
- flow rate: 0.001 .. 10 l/min
- pressure range: - 1 .. + 10 bar
- measuring accuracy: ± 2 %
- drop-by-drop metering

Flow measurement. Calorimetric.
For drops and minimal amounts.
HFK-FIN series

HFK30-FIN

HFK35-FIN

Advantages

- cost-effective alternative to Coriolis flow meters for non-conductive media
- automated and controlled mixing of media in minimal quantities, also drops
- lightweight, compact design enables installation in pipes without additional mounting
- optional display permits on-site checks by the user
- removable configuration ring guarantees the set parameters

Hygienic Design

CIP/SIP capable

FDA

Flow sensors

The calorimetric measuring principle is particularly suited for measuring aqueous liquids and oils, regardless of whether they have conductivity.

Application areas

- Pump protection/ dry-run protection
- leakage checks of pipe systems and valves
- medium detection e.g. of CIP returns

Advantages

- design without moving parts reduces service costs to a minimum
- fast process control due to minimal response time
- integrated switching outputs for fast intervention as part of quality monitoring
- enables function checks of pumps and valves in the area of plant safety

Technical features

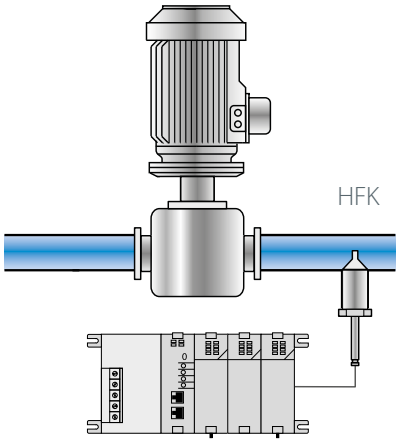
- process connection: Tri-Clamp or G ½"
- can be installed starting at DN 25 pipe diameter
- measuring range – water: 0.238 .. 3 m/s
- fast response time of 1 .. 2 s
- switching output, analogue output, frequency or pulse output
- optional: Monitor temperature analogue and flow rate by switching output

Flow measurement. Calorimetric.
Fast and reliable.
HFK series

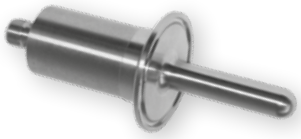
HFK35


HFK30

Pump protection




HFK12


HFK30-TC

CIP/SIP fähig

FDA

Taking on challenges

For process adaptation, the important thing is to select a hygienic process connection on the tank or in the pipeline that conforms with standards and that is appropriate for the application. Diameter, volume and design characterize the size and type of the connection; medium temperature and pressure characterize the possible measuring principle.

For all measuring principles, we offer major hygienic standards and special connections that offer optimized cleaning for all measuring principles.

Application areas

- stainless steel tanks
- stainless steel containers
- stainless steel pipelines

Advantages

- seal that is free of elastomers prevents downtimes due leakage points
- installation position through front-flush process connection reduces cleaning time and saves cleaning media
- replacement frequency of seals is reduced; this means that service costs are also reduced

Technical features

- thread sizes M12, G ½" and G 1"
- leakage bore optionally available
- flexible, modular adaptation on all major process connections, such as Tri-Clamp, SMS
- hygienic threaded fitting DIN 11864, Varivent, DRD flanges, DIN/ ISO flanges
- stainless steel 1.4404/1.4435

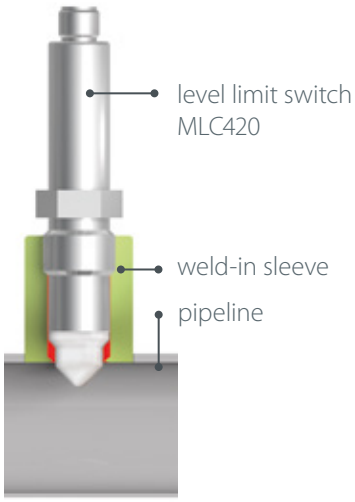
Process connection. Hygienic – GHMadapt.
Front-flush, elastomer-free and easy to clean.
APH series

Tri-Clamp adapter APH432

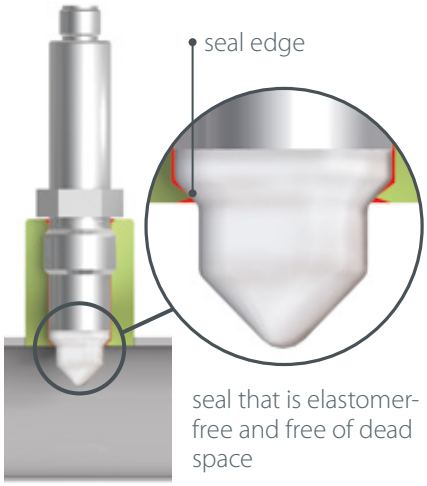
Weld-in aid AMH122

Installation example

Sensor being screwed in



Sensor screwed in



CIP/SIP capable

FDA

Process connections. GHMadapt.
Elastomer-free and easy to clean.
APH series. Sleeves and adapters

GHMadapt

Weld-in sleeves

APH121

- APH121 for installation in pipelines

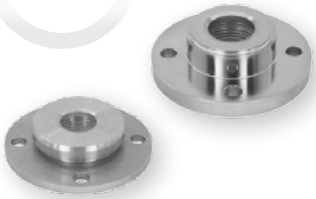
G ½"
APH122

G 1"
APH123

- APH112 and APH113 for weld-on installation on tanks, boilers, and containers

Process adapter

M12
APHx1



- BioControl

G ½"
APHx2

- Varivent*

*registered trademark of GEA Tuchenhagen GmbH, 21514 Büchen, Germany

G 1"
APHx3

- Tri-Clamp

FDA

GHMGROUP

Process connections. GHMadapt.
Elastomer-free and easy to clean.
Reducers. Pipe T-pieces

Reducers

G ½"
AMH131 G 1"

G ½"
AMH132 G ¾"

Weld-in aids

AMH122 G ½"

- reducer **AMH134** can also be used as an adapter for vibrating forks/ vibration limit level switches

Pipe T-piece

M12
APH501

G ½"
APH502

G 1"
APH503

Requirement imposed on succeeding generations

The market demands compact measuring devices that are easy to operate and that concentrate on the essential measuring technology functions without unnecessary, costly features. In the new generation of compact handheld measuring devices, this requirement has been consistently implemented.

Application areas

- quality assurance in the laboratory
- on-site inspection in food production
- water and waste water analysis
- inspection of the CIP process

Advantages

- quality assurance of the supply chain with just one device and interchangeable sensors
- robust housing and temperature-resistant material ensure a long service life, even for use under the most adverse conditions
- intuitive recording of quality data and process data with the hold function

Technical features

- measuring ranges G17xx - 200 .. + 450 °C
  measuring ranges G15xx 0 .. 14 pH
- ambient temperature - 20 .. + 50 °C
- illuminated display
- 180° rotating display
- battery life up to 5 000 hours
- standard AA battery
- dust-tight and watertight housing IP65/IP67

Laboratory technology.
Handheld measuring devices.
Small, robust and can be operated with one hand.
G1000 series

G 1700

Measuring

- temperature
- pH value
- conductivity
- oxygen
- pressure

G 1500

Verification in accordance with MAP

Packing under a protective gas atmosphere (Modified Atmosphere Packaging = MAP) has long been considered the state of the art. As part of quality control, today verification of the gases used or the residual oxygen concentration within the packaging have a high priority. At least it is the measurable indicator for the quality and the shelf-life of the packaged food products.

With the ResOx model residual oxygen measuring device, our Center of Competence Greisinger has developed a new generation of the proven and extremely popular GOG Set.

Application areas

- quality assurance in the laboratory
- inspection of delivered goods
- monitoring of production quality

Advantages

- Through the device's fast measurement readings, only a small volume of gas is required for the measurement, consequently food products that have been checked can be reused, because they are not damaged through the measurement.
- different gas mixtures can be measured with just one device, thanks to interchangeable sensors
- through the fast measurement readings, random sampling can be executed for quality assurance without impacting running production
- flexible use in production is possible because the device is suitable for soft, as well as rigid packaging materials, thanks to the various adhesive seals in our product range
- guaranteed quality of the measured data through simple on-site calibration

Residual oxygen measurement.
Protective gas packaging.
Modular, precise, simple – quality control for everyone.
ResOx series

Application

- measuring residual oxygen in packages with protective gas
- determining the CO_2 content of protective gases

Technical features

- operation does not require special technical skills
- measurement duration ≤ 20 s
- sample volume ≤ 20 ml
- measuring range 0 .. 100 % oxygen
- pump for extracting the protective gases
- housing is watertight and dust-tight in accordance with IP65/IP67
- saving the measured values to data loggers is possible
- transmission of the measured values from the data logger to PC

Seamless monitoring

The Global Food Safety Initiative (GFSI), the requirements of the European Union imposed on food safety (HAACP) and the standard EN 12830 result in a close but complex combination of customer benefits and requirements imposed on safety. The data loggers of the HD35 and HD208 series help ensure this. Whether in the seamless monitoring of temperature, humidity, CO_2 content, light and pressure within production facilities, storage rooms and cold-storage rooms, or during transport and in the refrigerated counter at the sales location. They also show whether critical limit values are exceeded or underranged on a display or via a connected PC. Moreover, the HD35 series also informs the responsible user or quality officer independently and automatically via SMS or email.

The products from our Center of Competence Delta OHM in Italy are ideally tailored to the most varied requirements in the food and beverage sectors. They are in conformance with FDA and CFR Part 11, and can be used for compliance with the quality standards stipulated in the HACCP concept.

Advantages

- multi-sensors reduce investment costs for monitoring production conditions
- monitoring of product quality through continuous measurement and recording
- seamless monitoring of the cooling chain through battery-operated stationary or mobile devices
- minimum costs for service and installation through wireless and self-monitoring devices

Applications

- monitoring of ambient conditions in production facilities and storage rooms
- measuring of pressure, temperature, light and CO_2
- guaranteeing the cooling chain from production to transport to the refrigerated counter
- monitoring the transport conditions (in the lorry and in the insulated packages)
- quality assurance as part of the HACCP concept
- laboratory applications

GHMGROUP

Data loggers. Monitoring.
Assurance of the cooling chain during production.
HD208 series and HD35 series

HD35AP

HD35EDG

HD208

Technical features – HD208 series

- small, compact design
- for mobile implementations in vehicles or in packages
- alarm status indication on the internal display
- long battery life
- easy operation and configuration
- PDF-reports generated automatically
- data can be read out via USB connection

Technical features – HD35 series

- mobile and stationary implementation
- multiple parameters can be measured, such as temperature, moisture, light, CO_2 and pressure
- installation outdoors and in buildings is possible
- water-tight housing
- wireless transmission for long distances
- info when exceeding the limit value via relay, SMS or email
- optional LC display
- monitoring of cold-storage rooms and refrigeration devices

HACCP Konform · DIN EN 12830 · FDA 21CFR part 11

Sales Germany

Sales Director
Germany & Austria

Thomas Stumpe

Mobile +49 172 4346882

Branch sales
Electronic & Automation Technology

Torsten Obermann

Mobile +49 172 4343551
t.obermann@ghm-messtechnik.de

Branch sales
Measurement Data Acquisition & Industrial electronics

Sebastian Behnke

Phone +49 40 67073-211
Mobile +49 151 12097947
s.behnke@ghm-messtechnik.de

Branch sales
Measurement Data Acquisition & Industrial electronics

Dieter Schubert

Mobile +49 151 12097415
d.schubert@ghm-messtechnik.de

Regional Sales Manager

17000 - 25999

Hans-Joachim Petermann

Phone +49 40 67998410
Mobile +49 172 4346881
h.petermann@ghm-messtechnik.de

Regional Sales Manager

40000 - 41999
45000 - 50999
52000 - 52999

Jürgen Kersten

Phone +49 2152 8090795
Mobile +49 172 5298587
j.kersten@ghm-messtechnik.de

Regional Sales Manager

70000 - 79999
88000 - 89999

Thomas Stumpe

Mobile +49 172 4346882
t.stumpe@ghm-messtechnik.de

Regional Sales Manager

29000 - 34999
37000 - 39999

Jörg Winter

Mobile +49 172 4346880
j.winter@ghm-messtechnik.de

Regional Sales Manager

35000 - 36999 53000 - 53999
42000 - 42999 57000 - 59999
44000 - 44999
51000 - 51999

Stefan Müller

Phone +49 202 6093374
Mobile +49 171 4108173
s.mueller@ghm-messtechnik.de

Junior
Regional Sales Manager

80000 - 89000
94000 - 94999

Fabian Graf

Mobile +49 157 87131381
f.graf@ghm-messtechnik.de

Regional Sales Manager

00000-16999
98000-99999

Sebastian Behnke

Phone +49 40 67073-211
Mobile +49 151 12097947
s.behnke@ghm-messtechnik.de

Regional Sales Manager

54000 - 56999
60000 - 60999
63000 - 69999

Christian Rösner

Mobile +49 151 12098192
c.roesner@ghm-messtechnik.de

Regional Sales Manager

90000 - 93999
95000 - 97999

Dieter Schubert

Mobile +49 151 12097415
d.schubert@ghm-messtechnik.de

Our International Area Sales Management Team

Mina Kamal
Teamleader Export

GHM GROUP – Headquarter
Tenter Weg 2-8
42897 Remscheid
GERMANY

Phone +49 176 47626790
m.kamal@ghm-messtechnik.de

Area:
Africa, Arabic States, Israel, Turkey, Greece, Switzerland, Spain, Portugal

Language:
English, Arabic

Feifan Jin
Area Sales Manager

GHM GROUP – Martens
Kiebitzhörn 18
22885 Barsbüttel
GERMANY

Phone +49 172 8460512
f.jin@ghm-messtechnik.de

Area:
China, Japan, South Korea, South-East Asia, Australia

Language:
Chinese, German, English

Parimal Sharma
Area Sales Manager

GHM GROUP – Headquarter
Tenter Weg 2-8
42897 Remscheid
GERMANY

Phone +49 151 112702283
p.sharma@ghm-messtechnik.de

Area:
Russia, East Europe, USA, New Zealand

Language:
English, Hindi, German

Peter Wüster
Area Sales Manager

GHM GROUP – Headquarter
Tenter Weg 2-8
42897 Remscheid
GERMANY

Phone +49 2191 96 72-35
p.wuester@ghm-messtechnik.de

Area:
Scandinavia, UK, Ireland, Belgium

Language:
German, English

Andrea Casati
Office Italy / Delta OHM S.r.l.

GHM Messtechnik GmbH
Via G. Marconi 5
35030 Caselle di Selvazzano
ITALY

Phone +39 049 89 77150
a.casati@ghm-messtechnik.de

Area:
Italy

Language:
Italian, English

GHM Sales Subsidiaries & GHM Foreign Sales

Occo Andriessen
Managing Director

GHM MEETTECHNIEK

Netherlands

GHM Meettechniek 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

Michal Doubek
Managing Director

GHM MĚŘICÍ TECHNIKA

Czech Republic / Slovakia

GHM Greisinger s.r.o.
Ovci hajek 2 / 2153
158 00 Prague 5
Nove Butovice
CZECH REPUPLIC

Phone +420 251 613-828
Fax +420 251 612-607
info@greisinger.cz
www.greisinger.cz

Erling Mathiesen
Managing Director

GHM MÅLETEKNIK

Denmark

GHM Maaleteknik ApS
Maarslet Byvej 2
8320 Maarslet
DENMARK

Phone +45 6464 92-00
Fax +45 6464 92-01
info@ghm.dk
www.ghm.dk

Jan Grobler
Managing Director

GHM MESSTECHNIK SA (PTY) LTD

South Africa

GHM Messtechnik
SA (PTY) Ltd
16 Olivier Street
Verwoerdpark, Alberton 1453
SOUTH AFRICA

Phone +27 74 4590040
j.grobler@ghm-sa.o.za
www.ghm-sa.co.za

Alban Jouanillou
Managing Director

GHM FRANCE

France

GHM GROUP France SAS
Parc des Pivolles,
9 Rue de Catalogne
69150 Décines-Charpieu (Lyon)
FRANCE

Phone +33 4 72 37 45 30
contact@ghm-group.fr
www.ghm-group.fr

Rafael Molina
Managing Director

GHM DO BRASIL

Brazil

GHM Do Brasil Ltda
R. Comendador Tórlogo
Dauntre, 74, cj 06
Cambuí, Campinas
SP, 13025-270
BRAZIL

Phone / Fax +55 19 3304 3408
r.molina@ghm-messtechnik.de
www.grupoghm.com.br

Mahendra Sule
Managing Director

GHM INDIA

India

GHM Messtechnik India Pvt Ldt.
209, Udyog Bhavan
Sonowala Road
Gregaon (E)
Mumbai - 400 063
INDIA

Phone +91 22 40236235
info@ghmgroup.in
www.ghmgroup.in

Michaela Zavan
Site Manager

DeltaOHM

Italy

Delta OHM S.r.l.
Via Marconi 5
35030 Caselle di Selvazzano
Padova (PD)
ITALY

Phone +39 049 8977150
Fax +39 049 635596
info@deltaohm.com
www.deltaohm.com

Alessandro Perego
Managing Director

VAL.CO

Italy

Valco srl
Via Rovereto 9/11
20014 S. Ilario di Nerviano
Milano (MI)
ITALY

Phone +39 0331 535920
Fax +39 0331 535442
valco@valco.it
www.valco.it

Alfred Fröstl
Area Sales Manager Austria

Sales

Austria

GHM Messtechnik GmbH
Breitenseer Straße 76/1/36
1140 Wien
AUSTRIA

Phone +43 660 7335603
a.froestl@ghm-messtechnik.de

GHMGROUP
Specialists by Competence.

Headquarter

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

Centers of Competences

GHM Messtechnik GmbH
GHM GROUP – Greisinger
Hans-Sachs-Straße 26
93128 Regenstauf | GERMANY
Phone +49 9402 9383-0
info@greisinger.de | www.greisinger.de

GHM Messtechnik GmbH
GHM GROUP – Honsberg
Tenter Weg 2-8
42897 Remscheid | GERMANY

GHM Messtechnik GmbH
GHM GROUP – Martens
Kiebitzhörn 18
22885 Barsbüttel | GERMANY

GHM Messtechnik GmbH
GHM GROUP – Imtron
Carl-Benz-Straße 11
88696 Owingen | GERMANY

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

Austria
GHM Messtechnik GmbH
Office Austria
Breitenseer Str. 76/1/36
1140 Vienna | AUSTRIA
Phone +43 660 7335603
a.froestl@ghm-messtechnik.de

Brazil & Latin America
GHM Messtechnik do Brasil Ltda
Av. José de Souza Campos, 1073, cj 06
Campinas, SP
13025 320 | BRAZIL
Phone +55 19 3304 3408
info@grupoghm.com.br

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

Denmark
GHM Maaleteknik ApS
Maarslet Byvej 2
8320 Maarslet | DENMARK
Phone +45 646492-00
Fax +45 646492-01
info@ghm.dk | www.ghm.dk

France
GHM GROUP France SAS
Parc des Pivolles
9 Rue de Catalogne
69150 Décines-Charpieu (Lyon) | FRANCE
Phone +33 4 72 37 45 30
contact@ghm-group.fr

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

Italy for Greisinger & Delta OHM
GHM GROUP – Delta OHM
Via Marconi 5
35030 Caselle di Selvazzano
Padova (PD) | ITALY
Phone +39 049 8977150
a.casati@ghm-messtechnik.de

Italy for Honsberg, Martens, Val.co
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 Meettechniek 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

...and more than
100 qualified distributors!

Visit us at: **www.ghm-group.de**