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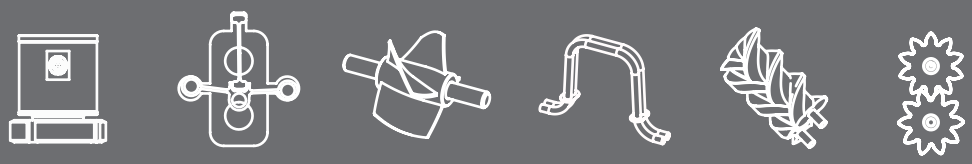
Küppers Elektromechanik GmbH

Custom Design is our Standard!

KEM - Your Partner for Flow Measurement Technologies



DESIGN | PRODUCTION | DISTRIBUTION

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Content

Content

KEM - MADE IN GERMANY!

KEM Küppers Elektromechanik GmbH is headquartered in Karlsfeld near Munich and is the company`s centre of excellence.

The following departments are located there:

- management
- bookkeeping
- human resources
- sales
- service
- application laboratory
- manufacturing
- electronics development (hardware and software)

KEM Küppers Elektromechanik GmbH
Liebigstraße 5
D-85757 Karlsfeld

Sales and development centre (Karlsfeld)

Manufacturing centre (Bad Kötzting)

KEM Küppers Elektromechanik GmbH manufacturing centre is located in Bad Kötzting.

The following departments are located there:

- mechanical manufacturing
- electrical manufacturing
- assembly
- repairs
- quality assurance
- the DAkkS calibration laboratory
- dispatch department

KEM Küppers Elektromechanik GmbH
Wettzeller Straße 22
D-93444 Bad Kötzting

made in Germany

Company profile

With our wide range of products we can offer a suitable solution for your requirements.

- Gear flow meters
- Turbine flow meters
- Helical flow meters
- Coriolis mass flow meters
- Micro flow meters
- Optical turbidity meters
- Dispense Control Device

Special facilities

- CAD- and FEM systems
- CNC processing centres
- application laboratory
- calibration rigs

Our goals

- customer satisfaction
- innovative products
- solid growth
- global orientation in different industries

KEM - Your partner for reliable measurement technologies & demanding measuring tasks

KEM has more than 45 years of experience in the field of flow measurement, coupled with innovative and customized product development.

High-class products and individual service are the foundation of our success. Constant presence in various branches of the industry and concentrating on the needs of our clients allow us to manufacture high-quality, reliable and technologically sophisticated products, perpetuating a constant process of development and growth.

KEM Küppers Elektromechanik GmbH was founded in 1965, specializing in the field of flow measurement technology.

In order to remain an innovative and reliable partner, KEM constantly supervises and optimizes new processes.

Comprehensive consulting, individual solutions and customer proximity are our top priority.

Development and manufacturing

Every year KEM Küppers invests in design, development and assembly. In addition KEM uses specialized software such as complex CAD and FEM systems for product design and simulation, using the most modern CNC processing centers to achieve efficient production of the flow products.

Quality management

One of the most important factors who accounted for our success is adhering strictly to the agreements with our customers. It is of utmost importance to achieve high quality standards and to expedite innovations. Intensive customer consultation and continuous improvement of our quality standards are indispensable to KEM. Since 1994 KEM has been running a certified quality management system in accordance with DIN EN ISO 9001. Environmental protection and employment protection regulations are strictly adhered in our documented processes through special requirements that our products are ATEX, CSA and UL certified.

Your requirements are our opportunities

KEM offers a wide choice of model variants and customization. Your requirements enable us to expand our product line constantly.

We have been converting challenges into opportunities via the development of optimized solutions.

Here are some of the examples:

- use of special materials
- design and development of the following customized features
  - special connections
  - high temperature applications
  - high pressure applications
  - compact designs
  - lightweight designs
- OEM design, etc.

Custom Design is our Standard!

CUSTOM Design

Custom Design is our Standard!

ZHM Gear flow meter

Standard version

Standard version: Stainless steel meters for lubricating and nonlubricating fluids and pressures up to 630 bar.

Cartridge design

Cartridge design: Stainless steel meter with optimized space for quick media changes and short wash cycles. Patented “light-weight design“.

Aluminium version

Aluminium version: Cost-effective flow meter for lubricating fluids and pressures up to 300 bar. Ideal choice for hydraulic applications.

Other versions are available at: www.kem-kueppers.com

OEM versions are always available upon request.
Name your application and we will provide the appropriate solution!

DAkkS Deutsche Akkreditierungsstelle

ZHM Gear flow meter

Gear flow meters (ZHM) are positive displacement meters. Two precise gears are rotating freely inside the measuring chamber.

Closed chambers are created between the gears and the housing. The measured medium is then “forced through”, causing the gears to rotate. The gears run freely in the medium. Their rotational frequency is proportional to the instantaneous flow rate and is measured by pickups through the housing wall whereas the fluid remains contact free.

These meters are suitable for accurate measurement of different liquids with viscosities of approximately 5 to 25,000 mm²/s. The small gear and ball bearing versions can also be used with low viscosity mediums and fuels, maintaining high measurement accuracy.

Thanks to high output frequencies, excellent resolution and short reaction times our gear flow meters are ideal for measuring pulsating streams and for measuring liquids.

For applications in hazardous areas, we offer intrinsically safe sensors and amplifiers with Ex protection in accordance with ATEX, RTN, CSA and other testing standards.

More information is available at:
www.kem-kueppers.com

Versions

- Standard version
- Ball bearing version
- Cartridge design
- Heating jackets
- Aluminium version
- High pressure version

Technical Data

- Measuring ranges: 0.002 – 1,000 l/min
- Viscosity range: 5 – 25,000 mm²/s
- Linearity: ± 0.5% of actual value
- Repeatability: < 0.1%
- Maximum pressure: up to 1,000 bar
- Temperature range: -40 up to 180°C (-40 up to 356°F)

Measurable Media

- Water-based paints, paints, two component paints, highly filled metallic paints and Soft-feel paints
- Preservative waxes, glues, PVC, epoxy resins, filled and abrasive media
- Polyol and isocyanate
- Oils, fats (also food and cosmetics)
- Hydraulic oil and fuel

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HM Turbine flow meter

Pipe fitting

Pipe fitting: The compact design allows for perfect integration into existing lines. The standard version can easily manage pressures of up to 630 bar. Versions with different internal and external threads are available.

Flange version

Flange version: The flange turbine can be used for extremely high flow rates of 0.03 up to 25,000 l/min. without any problems. Numerous variants are available with DIN-, ANSI- and RTJ- flanges as well as Tri-Clamp mounting for different pressure values.

High pressure version

High pressure version: These turbines are used in all types of offshore applications. Due to their high compressive strength of up to 5,600 bar, they can also be used in water jet cutting systems for example.

Other versions are available at: www.kem-kueppers.com

OEM versions are always available upon request.
Name your application and we will provide the appropriate solution!

DAkkS Deutsche Akkreditierungsstelle

HM Turbine flow meter

Turbine flow meters (HM) are flow meters working according to the principle of Woltmann meters. They assess the flow through the cross-section of a pipe by means of the mean flow velocity.

A low mass turbine wheel is concentrically mounted in the tubular body of the turbine. The flowing medium hits it in the axial direction and rotates it. Flow conditioners smooth the medium, so that the wheel is in contact with a uniform flow. The speed of the turbine wheel is proportional to the average flow velocity in the pipe cross section and is therefore mostly proportional to the flow rate.

They are used for precise measurement of instantaneous flow rates and flow-metering of low viscosity liquids.

KEM turbines have a short response time and a resolution of up to 100,000 pulses/l., which is an advantage in the case of filling operations which require accuracy. The response time, depending on the nominal diameter of the source is between 5 and 50 msec. This guarantees precise detection of rapidly changing flow rates and pulsing flows.

For applications in hazardous areas, we offer intrinsically safe sensors and amplifiers with Ex protection in accordance with ATEX, RTN, CSA and other testing standards.

More information is available at:
www.kem-kueppers.com

Versions

- Pipe fitting
- Tri-Clamp mounting version
- Flange version
- High pressure version
- Aluminium version

Technical Data

- Measuring ranges: 0.03 – 25,000 l/min
- Viscosity range: 0.8 – 100 mm²/s
- Linearity: from 0.1% of actual value
- Repeatability: < 0.1%
- Maximum pressure: up to 5,600 bar
- Temperature range: -273 up to 350°C (-459 up to 662°F)

Measurable Media

- Water (normal and demineralized water)
- Heating oil
- Fuels
- Solvent
- Liquified gases and cryogenic liquids
- Pharmaceutical liquids

made in Germany

SRZ Helical flow meter

Standard version

Standard version: Stainless steel version for high- and low-viscosity, filled or non-lubricating media.

Compact version

Compact version: Versions with integrated impulse pickups have a higher resolution and the ability to recognize flow direction.

Ball bearing version

Ball bearing version: Cost-effective version for lubricating media and pressures of up to 250 bar.

Other versions are available at: www.kem-kueppers.com

OEM versions are always available upon request.
Name your application and we will provide the appropriate solution!

SRZ Helical flow meter

Helical flow meters (SRZ) are positive displacement meters with two cycloidal screws with geometrically overlapping profiles. These profiles mesh in a cylindrical housing. This creates a measuring chamber between the spindle profiles and the housing walls.

The flow of the measuring medium is forced axially through the spindle profiles along the two measuring chamber holes, which causes the spindles to rotate. This occurs without pulsation and with minimum leakage. Using a magnet wheel with a high number of teeth the pickup detects the frequency of the spindle pair through the housing wall. The speed is proportional to the flow volume. The pickup has no direct contact to the fluid.

Because of their design, these devices are ideal for measuring the flow of highly viscous media. Due to their wide measuring ranges, high accuracy, resolution and low pressure losses, they are ideal for laminating, painting, bonding systems, polyurethane systems and dosing systems for various media. Additionally they are insensitive to viscosity changes.

They are also insensitive to pulsating flows and provide a pulsation free measurement. Due to the high quality materials and bearing components used, KEM helical flow meters are extremely corrosion resistant.

For applications in hazardous areas, we offer intrinsically safe sensors and amplifiers with Ex protection in accordance with ATEX, RTN, CSA and other testing standards.

More information is available at:
www.kem-kueppers.com

Versions

- Standard version
- Ball bearing version
- Compact version

Technical Data

- Measuring ranges: 0.01 – 400 l/min
- Viscosity range: 1 – 1,000,000 mm²/s
- Linearity: ± 0.25% of actual value
- Repeatability: < 0.1%
- Maximum pressure: up to 400 bar
- Temperature range: -40 up to 150°C (-40 up to 302°F)

Measurable Media

- Polyurethane and polymers
- Adhesives and sealants
- Heavy heating oil
- Petrochemical products
- Thixotropic liquid
- Different types of oils and fats
- Hydraulic test rigs with varying viscosities

made in Germany

KCM Coriolis mass flow meter

Compact version

Compact version: The compact version of the C-flow mass flow meter is the perfect choice when a local display unit is required. The hermetically sealed metal housing provides excellent EMC characteristics and with an IP67 protection class (IP68 on request), these devices are also suitable for critical environmental conditions.

Versions in accordance with ATEX, EX, RTN and other testing standards are also available for use in hazardous areas.

Remote version

Remote version: The remote version is available for cases where the control unit is not desired or not allowed at the location of the process measurement. While providing the same protection class as the compact version and comparable EMC data, it provides more freedom in the positioning of the control unit.

Remote display

Remote display: If for technical reasons both a compact version and a remote display unit are necessary, the KRD8001 can be used in addition to the built-in control panel. In this case, the permissible distance between KRD and KCE is 1,000 m.

Other versions are available at: www.kem-kueppers.com

OEM versions are always available upon request.
Name your application and we will provide the appropriate solution!

DAkkS Deutsche Akkreditierungsstelle

KCM Coriolis mass flow meter

Coriolis mass flow meters (KCM) contain two parallel tubes that vibrate at their resonance frequency. Should a measurement flow enter the measuring tube, Coriolis forces are the result. Coriolis forces appear in oscillating systems when a mass moves towards or away from a rotational axis. These forces act on the inlet and outlet side in the opposite direction and minimally deform the measuring tubes. The deflection of the measuring tubes is measured by the pickups on the inflow and outflow side. A time shift proportional to the mass flow occurs at the pickups.

The resonance frequency of the tubes varies depending on the density of the medium to be measured. This effect is used to measure the density of the medium.

Since the elastic properties of the flow tubes depend on the temperature, a temperature measurement is carried out for compensation.

The primary characteristics such as mass flow rate, density and temperature are measured with a single meter. The flow volume can be determined based on the mass flow rate and density.

The KCM is suitable for all kinds of liquids. It is particularly suitable for measuring the flow of paints, chemicals, fuels and artificial resins components as well as aggressive and contaminated media.

For applications in hazardous areas, we offer Ex protected versions in accordance with ATEX, RTN, CSA and other testing standards.

More information is available at:
www.kem-kueppers.com

Versions

- Compact version
- Remote version
- Tri-Clamp version
- High pressure version

Technical Data

- Measuring ranges: 4.5 – 60,000 kg/h
- Density: 500 – 2,500 kg/m³
- Measuring accuracy: up to ± 0.1% of the reading ± [zero point stability]
- Maximum pressure: up to 350 bar
- Process temperature: -40°C up to +125°C (-40 up to 257°F)
- HART-communication, Foundation fieldbus optional

Measurable Media

- PU components
- Paints
- Liquified gases
- Aggressive and contaminated media

TRICOR
Coriolis Technology

made in Germany

LFM Micro flow meter

Versions

- Standard version
- Cartridge housing

Technical Data

- Measuring ranges: 0.005 – 0.25 l/min
- Viscosity: 0.6 – 5 mm²/s
- Linearity: ± 2.5% of actual value
- Maximum pressure: up to 100 bar
- Temperature: from -60°C up to +180°C (-76 up to 356°F)
- High resolution

Measurable Media

- Additives
- Pharmaceuticals
- Smell and odour emitting media
- Tap water and demineralized water
- Liquified gases
- Foodstuffs
- Two and three component applications

Micro-flow meters (LFM) are based on a double ring piston pendulum. Due to the low pendulum weight and minimal friction losses the LFM even responds to the smallest volume flows. The piston design additionally minimizes leakages and guarantees good linearity and repeatability.

The LFM is a flow meter for low viscosity liquids of all kinds used in dosing and filling operations. It can be used for extremely low flow rates from 0.005 l/min with high resolution.

For applications in hazardous areas, we offer intrinsically safe sensors and amplifiers with Ex protection in accordance with ATEX, RTN, CSA and other testing standards.

More information is available at:
www.kem-kueppers.com

LFM

made in Germany

KPS Turbidity meter

Optical turbidity meters (KPS) are used to optimize industrial production processes and are particularly suitable for liquid foods.

The optical sensors detect and analyze even the slightest changes in product composition of various liquids. An output signal of 4-20 mA depending on the turbidity level is available to the user for process control purposes. Due to a wide range of process interfaces, the device can be used in the pharmaceutical and food industry.

It is suitable for the detection of product transitions and concentration changes in a variety of applications in the food industry. Among these applications are for example the monitoring of processing and phase separation of milk, ice cream, yoghurt, whey, juices, beer or water.

The KPS can be used with pharmaceutical and chemical liquids, sludge, sewage, pulp and paper. Due to the nonthreaded Tri-Clamp connections it is compatible with 3A sanitary standards. Among other applications the KPS can be used to monitor filters and filter malfunctions.

More information is available at:
www.kem-kueppers.com

Versions

- Dairy pipe mounting
- Tri-Clamp mounting version
- Varivent mounting

Technical Data

- Measuring ranges: approx. 150 – 4,000 NTU
- Linearity: ± 0.2% of full scale
- Repeatability: ± 1% of full scale
- Maximum pressure: up to 14 bar
- Temperature
  - Environment: 0 up to +50°C (32 up to 122°F)
  - Process: 0 up to +100°C (32 up to 212°F)
  - CIP cleaning: 0 up to +150°C (32 up to 302°F)

Applications

- Product monitoring
- CIP monitoring
- Phase separation
- Filter monitoring
- Waste water management

KPS

made in Germany

DCD Dispense Control Device

Versions

- for industrial and automotive varnishing
- for mono and multi components

Technical Data - ZHM measuring cell

- Dosing range: 0.005 to 2 l/min
- Measuring accuracy: ± 0.5% of actual value
- Repeatability: 0.1%
- Pulse rate: approximately 26,500 pulses/l
- Operating pressure: max. 40 bar

Technical Data - Gear pump

- Output: 0.3 to10.0 cm^3/U
- Lip seal and buffer fluid reservoir
- r.p.m: 10 min^{-1} up to 200 min^{-1}, depending on the pumped medium
- Standard rotation direction: right, left
- Terminal block: G1/4”; 3/8“; 1/2“
- Drive shaft: Ø 12mm
- Weight: approx. 2.5 kg

Measurable Media

- PU components
- Hardeners
- Paints
- Silicone
- Epoxy resins
- Adhesives

The **Dispense Control Device (DCD)** is the result of KEM`s co-operation with the Swiss pump manufacturer POMTAVA. It includes a gear dosing pump with a gear flow meter incorporated into the connector block, which measures the actual flow rate and provides a corresponding output signal. This way the set point can be constantly adjusted and permanently monitored, even at small deviations.

The application of this device is particularly useful when the system is automated and all required parameters are controlled by an intelligent control system. The output monitoring is guaranteed at all times and ensures safe operation of a production plant.

Compact design and small manufacturing tolerances ensure a high degree of accuracy. The operating range of the DISPENSE CONTROL DEVICE is 0.005 to 2 l./min and can be adjusted with a tolerance of ± 0.5%. DISPENSE CONTROL DEVICES for higher flow rates are available upon request.

Features:

- Easily purgeable
- Accuracy
- Minimal pressure losses
- Compact design
- Ex-protected versions
- Perfect for fully automated systems
- Internal connections
- Small space requirements

Dispense Control Devise

Küppers Elektromechanik GmbH

www.kem-kueppers.com

www.pomtava.com

Testing facilities

The KEM DAkkS calibration laboratory

KEM Küppers has been operating a calibration laboratory for flow meters since 1993 which is directly traceable to the German National Institute (PTB).

The DAkkS-calibration records which KEM issues are documents of conformity. Calibrations performed by an accredited DAkkS laboratory serve as a basis for monitoring equipment used for measuring and testing within our quality management system.

KEM application laboratory

Our facility tests special flow measuring devices with critical media such as paints or highly viscous liquids.

So the flow meters are optimized and modified to suit individual applications. The tests are performed with close co-operation with paint and fluid manufacturers.

Range of media tested:

- **Paints & coatings:** water-based paints, UV paints, solvent paints
- **Highly viscous media:** PU components, heavy corrosion protective agents, undercoating, adhesives
- **Thin liquid media:** solvents, fuels, odor emitting media

KEM test rigs for fluids

- Flow rates from 0.001 up to 20,000 l/min
- Viscosity from 0.8 up to 3,000 mm²/s
- Accredited according to DIN EN ISO/IEC 17025
- DAkkS accreditation

Application laboratory test range

- Temperature tests (-40 up to 350°C) (-40 up to 662°F)
- High-pressure tests (up to 2,000 bar)
- Long term/ wear tests
- Review of electronic and mechanical functions
- Simulation of filling and dosing operations
- Application tests with various media
- Viscosity measurements
- Test setups planning

DAkkS Deutsche Akkreditierungsstelle

Impulse pickup systems

Pickups for Flow meters

In order to detect rotary movements in measuring cells KEM offers pick-ups with different sensing elements which are optimally adapted to the different flow meters.

Radio frequency

Carrier frequency: A carrier frequency is damped by the teeth of a gear wheel or turbine blades. This way the unit measures the rpm. With a wide frequency range (from well below 1 Hz to about 5 kHz input frequency), noise immunity and power consumption which is small enough for 4-20 mA passive pickups, these carrier frequency pickups are prefered options. They are not suitable for measuring cells made of aluminium.

Hall-effect

Hall-effect: A weak magnetic field is deflected by the gear wheels or turbine blades and thereby changes the output signal of a Hall element. These sensors also have a wide frequency range (from well below 1 Hz to about 5 kHz input frequency) . They are unsensitive to noise.

Inductive

Inductive: A weak magnetic field is deflected by the gear wheels or turbine blades and thereby induces a small voltage in a coil. The inductive method requires the smallest power supply and is therefore especially suitable for battery-powered devices. Versions suitable for extremely low or high temperatures are also available.

Radio frequency pulse amplifiers

Radio frequency pickups contactlessy detect the rpm of the KEM flow meters. Each time a gear tooth passes by, the amplitude of the signal is charted.

The frequency of the resulting amplitude modulation of the carrier is equal to the wheel`s rpm and therefore corresponds to the value of the flow. The output signal of the pickup is amplified, converted and transmitted in the form of current or voltage rectangular pulses.

Carrier frequency pickups are characterized by a wide frequency range, low power consumption and high noise immunity.

For applications in hazardous areas, we offer intrinsically safe sensors and amplifiers with Ex protection in accordance with ATEX, RTN, CSA and other testing standards.

More information is available at:
www.kem-kueppers.com

Versions

- Round stainless steel housing for all measuring cells
- Aluminium die-cast housing for gear flow meters
- Cartridge housing for micro meters and gear flow meters
- Double pickup for forward / backward detection and pulse multiplication

Technical Data

- Frequency range: 0.5 – 5,000 Hz
- Frequency output: Push Pull or Open Collector
- Medium temperature: up to +150°C (302°F)
- Ex-approval

VTE*/P

COMPACT:

Compact radio frequency impulse pickup system with integrated amplifier in a screw-on stainless steel housing. Suitable for almost all KEM flow meters

VTE-C

CARTRIDGE DESIGN:

Plug-in compact radio frequency impulse pickup system with an integrated amplifier for gear meters

TD

QUADRATURE:

Plug-in radio frequency impulse pickup system with double pickup for gear flow meters with rotation direction recognition and frequency doubling

Hall effect pulse amplifiers

Versions

- Single pickup with M14x1.5 mounting thread for all measuring cells
- Single pickup for direct mount for gear flow meters
- Double pickup for forward /backward detection and pulse multiplication

Technical Data

- Frequency range: 1 – 3,000 Hz
- Frequency output: Push Pull
- Medium temperature: up to +70°C (158°F)

Hall-pickups contactlessly detect the rpm of the KEM flow meters without contact. A weak magnetic field is deflected by the gear wheels or turbine blades and thereby changes the output signal of a Hall element.

The output signal of the Hall element is amplified, converted and given out in the form of current or voltage rectangular pulses

Hall sensors are characterized by a wide frequency range and high noise immunity. They can also be used with measuring cells with aluminium housing.

More information is available at:
www.kem-kueppers.com

VHE

Hall pickup in a compact housing designed primarily for aluminium gear meters

VHD

QUADRATURE:

Hall-pickup with double pickup encased in a compact housing with optional rotation direction detection and pulse multiplication features

Inductive pickups and amplifiers

Inductive pickups detect the rpm of KEM flow meters. A weak magnetic field is deflected by the gear wheels or turbine blades and thereby induces a small voltage in a coil.

In the case of the IF version this voltage must be amplified by means of an external amplifier to a standard 24 V DC. This amplifier is already integrated in the VIE* version.

Inductive pickups are especially suitable for high temperatures (up to 350°C) and for battery powered applications. They can also be used with measuring cells with aluminium housing.

For applications in hazardous areas, we offer intrinsically safe sensors and amplifiers with Ex protection in accordance with ATEX, RTN, CSA and other testing standards.

More information is available at:
www.kem-kueppers.com

Versions

- IF pickup without pre-amplifier
- VIE* pickup with pre-amplifier
- Separate pre-amplifier VIEG

Technical Data

- Frequency range: 7 – 3,000 Hz (pickup dependent)
- Frequency output: IF: unreinforced Sinus
- Frequency output: VIE*: Push Pull or Open Collector
- Medium temperature: up to 350°C (662°F)
- Ex-approval

IF with heatsink

High temperature version equipped with a heatsink for media with a temperature up to 350°C

VIE*

Inductive pickup with integrated amplifier

Intelligent pickups

Versions

- WT.02: Carrier frequency pickup with a wide frequency range
- WI.02: Inductive pickup for higher temperatures
- CON.USB.WT: Optional USB interface adapter

Technical Data

- Frequency range: 0.5 – 5,000 Hz (WT)
- Frequency output: Open Collector, freely scalable
- Medium temperature: up to +150°C (302°F)
- Ex-approval
- Linearization
- Data logging with CON.USB.WT

WT.02 / WI.02

The **Local converters WT.02 / WI.02** are passive 4-20 mA pickups with carrier-frequency input stage (WT.02) or inductive input stage (WI.02).

The WT.02 carrier frequency converters are specifically designed for low flow rates due to their lower frequency limit (typically <0.5 Hz). The WI.02 inductive converters are designed for higher media temperatures (up to 150° C).

In addition to the analogue output signal, a galvanically isolated open-collector output is available, which can be used either as a switching or frequency output. The frequency output is freely scalable. This way the frequency output can be adjusted to the flow independent of the measuring cell.

The interface of W*.02 models are integrated into the M12 sensor plug. With the help of the CON.USB.WT interface adapter and the programming and visualization software „KEM Easy Control“, it is possible to adjust the operating parameters and read the input frequency and temperature.

Both the analogue output and the frequency output can be linearized with up to 20 points. If the W*.02 model is ordered with a measuring cell, the analogue output is preset to the cell.

For applications in hazardous areas, the WT02 and WI02 are offered with ATEX.

More information is available at:
www.kem-kueppers.com

Local display units

The **VTC** and **VTG** are accurate **local display units** with carrying frequency pickup.

All units in this series are equipped with a graphical display, have an intuitive user interface, an adjustable 4-20 mA output and a frequency output. The K-factor and the units are adjustable and can be adapted to each measuring cell and for each application.

Additional features include 20-point linearization, control input and output for filling applications, limit monitoring and a built-in interface.

The units can be operated either in a 2 wire (4-20 mA passive) or in a 3-wire mode.

Remote control software EasyControl is available free of charge for WINDOWS® XP, WINDOWS 7, VISTA and for simple test tasks in the laboratory and for quick adjustment of individual parameters.

For applications in hazardous areas, we offer the VTC and VTG with Ex protection in accordance with ATEX.

More information is available at:
www.kem-kueppers.com

Versions

- Local display unit for direct installation
- Local display unit with remote pickup for wall installation

Technical Data

- Analogue output: 4-20 mA
- Frequency output: 24V , freely scalable
- Medium temperature : 120°C (248°F)
- Switching output and control input
- Optional
  - 20-point linearization of the reading
  - HART or USB interface
- Ex-approval

VTC

Local display unit for direct installation in flow meters. Exi approval.

VTG

Local display unit with remote pickup for wall installation

Local display units

Versions

- Aluminium housing for standard applications
- Stainless steel housing for offshore applications

Technical Data

- Medium temperature: up to 150°C (302°F)
- Battery life: typically 5 years

The **VTB** are **battery powered local display units** for displaying flow rate and total amount.

Radio frequency pickups detect contactless the rpm of the KEM flow meters. Each time a gear tooth passes by, the amplitude of the singnal is charted.

The rpm is calculated from the modulation of the resonant circuit, which is then used to calculate the flow rate.

Flow or total amount are displayed on a large, clear LCD display.

Since the K-factor is adjustable, the VTB is compatible with any measuring cell and any application.

For applications in hazardous areas, we offer the VTB with Ex protection in accordance with ATEX and IECEx.

More information is available at:
www.kem-kueppers.com

VTB

Battery powered local display with remote pickup

Remote display units

The **FAS100 / FAW100** are **high-precision frequency meters** with control outputs for either panel mounting or wall mounting.

All units are equipped with a graphical display, an adjustable 4-20 mA output and a frequency output. Since the K-factor and the units are adjustable, these devices can be adapted to each flow meter application.

The input is either a 24 V digital input or a sensitive analogue input for inductive sensors. Optional features include control inputs and outputs for filling applications and limit monitoring, a built-in RS485 interface and 20-point linearization.

The FAS100 needs a 24 V DC supply, the FAW100 is available for a 90 - 250 V AC mains supply as well.

For simple test tasks in the laboratory and for the quick adjustment of particular parameters, the remote control software EasyControl is available free of charge for WINDOWS® XP, WINDOWS 7 and VISTA .

More information is available at:
www.kem-kueppers.com

Versions

- Input for inductive sensors or for sensors with a digital 24 V output
- Basic version with 4-20 mA output and frequency output
- Full version with linearization and interface

Technical Data

- Frequency input: for 24 V digital signals or for inductive sensors
- Analogue output: 4 - 20 mA
- Frequency output: 24 V, freely scalable
- 20-point linearization of the reading
- Switching output and control input
- RS485 interface
- 90-250V mains supply (FAW100 only)

FAS100 for panel mount

FAS100

FAW100 for wall mount

FAW100

Certifications

DAkkS
Deutsche
Akkreditierungsstelle

Contact

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