

KSR KUEBLER





KSR KUEBLER
Niveau-Messtechnik AG

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KSR KUEBLER
We're on your Level

Product Range

Magnetic Float Switches
Level Sensors
Bypass Level Indicators
Top Mounted Level Indicators
Paddle Switches
Safety Leakage Detectors
Flow Monitors
Ultrasonic Level Sensors
Conductive Level Relays
Electrodes
Magnetic Switches
Controls / Transmitters
Level Displays

Approvals

Germany

Technischer Überwachungsverein
Südwestdeutschland e.V.
Physikalisch Technische Bundesanstalt PTB
Bundesamt für Wehrtechnik und Beschaffung
Germanischer Lloyd
IBExU Institut für Sicherheitstechnik GmbH

France

Laboratoire Central des Industries Electriques
Bureau Veritas

Netherlands

KEMA

Norway

Det Norske Veritas

Czechia

Osvědčení o Nevybušnosti
FTZÚ Ostrava Radvanice

Slovakia

Osvědčení o Nevybušnosti
EVPÚ Nová Dubnica

Russia

Gosgortekhnadzor OGS Oil & Gas Safety

USA

Factory Mutual Research Corporation
Underwriters' Laboratories, Inc.

Canada

Canadian Standards Association



NULLA DIES SINE LINEA

No day without goal (Apelles)

For 40 years KSR KUEBLER has designed and manufactured measurement and control devices for liquids and bulk materials.

The foundation for the development of KSR KUEBLER was laid in 1962 by Dipl.-Ing. Heinrich Kübler with the invention of the magnetic switch - something completely new at that time, and a very simple design concept which rapidly spread across the whole world.

A series of developments like the KSR Magnetic Float Switch, the KSR Level Sensor and the KSR Bypass Level Indicator followed.

"In the beginning was water", one could say. Indeed!

However, this was just the beginning. Highly aggressive, caustic, viscous and soiled liquids have been added to basic water. The problems and requirements have become constantly more complex and demanding and our field of activity has expanded.

KSR KUEBLER AG today manufactures a broad range of level measurement devices covering temperatures up to 450°C and pressures up to 40 MPa. Tailor-made solutions for chemical and pharmaceutical plants, offshore and oil industry, shipbuilding, plant construction, food and beverages industry, water purification plants and an ever growing number of applications in the environmental industry make up a big share of our new developments.

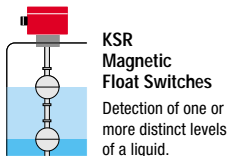
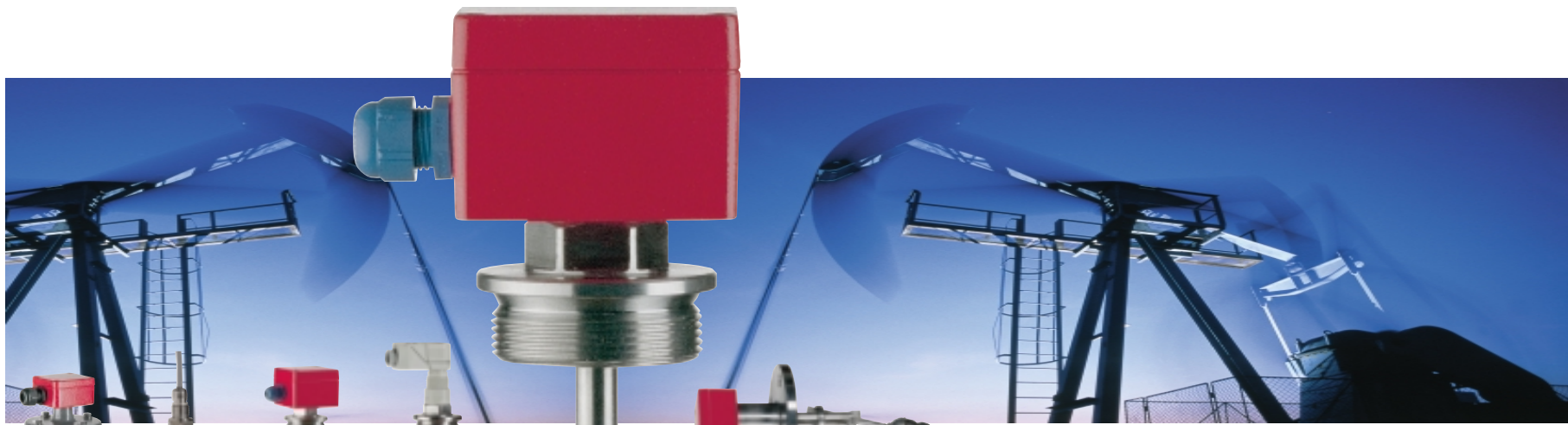
Our highly qualified staff is constantly engaged in new customised solutions to individual problems. This goes hand in hand with maximum quality as a matter of course.

The latest in production technology, an uncompromising commitment to quality and national and international approvals are the foundations that build up the reputation of our company.

Over the past decades, a strategy of steady expansion led to the forming of our branches in UK, Singapore and the USA, a joint venture in China and a global net of distributors. This makes KSR KUEBLER a global player.

Putting ourselves in the customers' position, searching with him for the best solution, working as a team, live the strive for constant improvement - this is our daily goal - this is our philosophy.





Operating Principle

Magnetic Float Switches are based on the float principle with individual reed contacts for every level to be monitored.

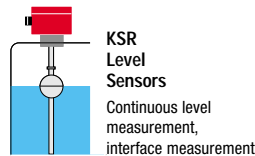
A float with a built-in magnetic system actuates the small preset contacts through the wall of the guide tube enabling the detection of distinct levels of the liquid.

This simple and proven operating principle is suitable for a wide variety of applications.

The measurement is independent of foam, conductivity, dielectric constant, pressure, vacuum, temperature, vapour, condensation, bubbles, boiling effects and vibration.

Technical Advantages

- Suitable for virtually all liquids
- Switching operation is without direct contact with the liquid, free of wear and tear and does not require any power supply.
- Universal signal processing of volt-free contacts:
- PLC Initiator circuit to DIN NAMUR 60947-5-6
- Multiple switch points in one unit (up to 8)
- Explosion-proof designs
- Temperature -196 °C to +300 °C
- Pressure Vacuum to 10 MPa
- S.G. $\geq 400 \text{ kg/m}^3$
- Interface measurement $\Delta \geq 50 \text{ kg/m}^3$
- Application specific designs available.
- Simple installation and commissioning, maintenance-free



Operating Principle

Level Sensors are based on the float principle with a 3-wire potentiometer circuit.

A float with a built-in magnetic system actuates small reed contacts through the wall of the guide tube. These reed switches form a resistance measuring chain that continuously generates a voltage proportional to the height of the level.

The resistance measuring chain is closely stepped and is made up from small chips soldered onto a PCB. The chips contain the necessary reed contact-resistor combination. Due to this assembly the generated voltage is virtually continuous. Depending on requirements and design, different contact separations from 5 to 20 mm are available.

Continuous measurement of liquid levels independent of foam, conductivity, dielectric constant, pressure, vacuum, temperature, vapour, condensation, bubbles, boiling effects and vibration.

Technical Advantages

- Signal transmission over large distances
- Simple installation and commissioning, one-time calibration only, no re-calibration necessary
- Display proportional to the height of the level or the contents of the vessel.
- Set point relays continuously adjustable over full range
- High repeatability of set points
- Explosion-proof designs available
- Temperature range -80 °C to +200 °C
- Pressure Vacuum to 10 MPa
- S.G. $\geq 400 \text{ kg/m}^3$
- Interface and product level measurement simultaneously possible at S.G. $\Delta \geq 50 \text{ kg/m}^3$
- Application specific designs available

Signal transmission:

- External control units and set point relays
- 2-wire head-mounted transmitters with 4 ... 20 mA signal
- Programmable HART®-Protocol / Profibus PA



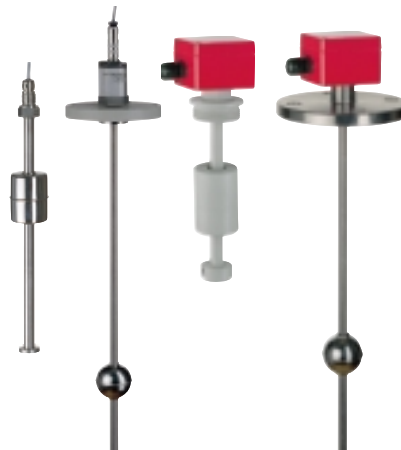
Corrosion resistant materials for applications in all industry sectors



Set Point Relay
Pump / Solenoid Valve
Control

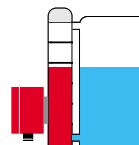


Magnetostrictive sensors with an accuracy of < 1.0 mm are available for highest precision.





Engineering,
Quality Management
and Craftsmanship are
vital Ingredients to the
high Quality of KSR Products



KSR Bypass Level Indicators

Continuous level measurement with visual indication of level without power supply

Operating Principle

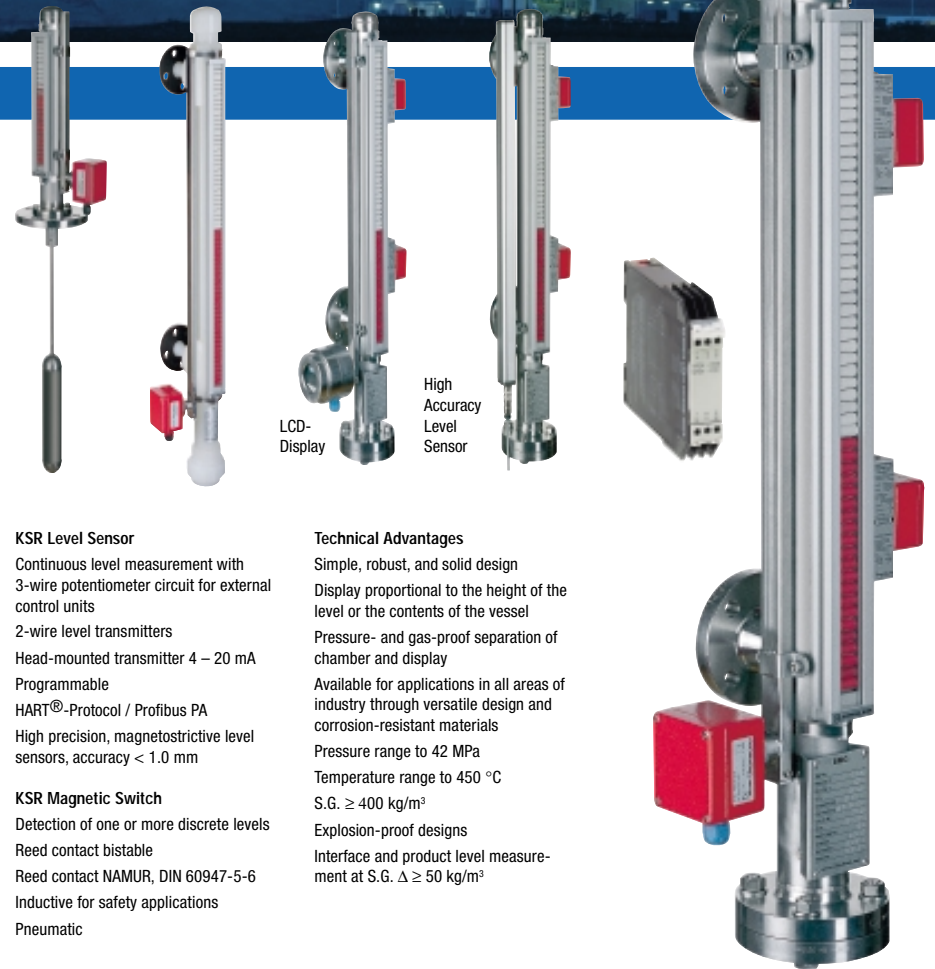
A communicating bypass chamber is connected to the side of a vessel. As the liquid level in the tank rises or falls, a float with a built-in magnetic system inside the chamber rises or falls with it.

The radial magnetic field of the permanent magnet of the float actuates the level display and sensors mounted on the outside of the bypass chamber.

KSR Magnetic Roller Display
bi-coloured continuous visual display of the current level without power supply



Head-mounted transmitter 4 – 20 mA
Programmable HART®-Protocol/Profibus PA



KSR Level Sensor

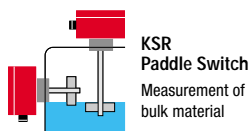
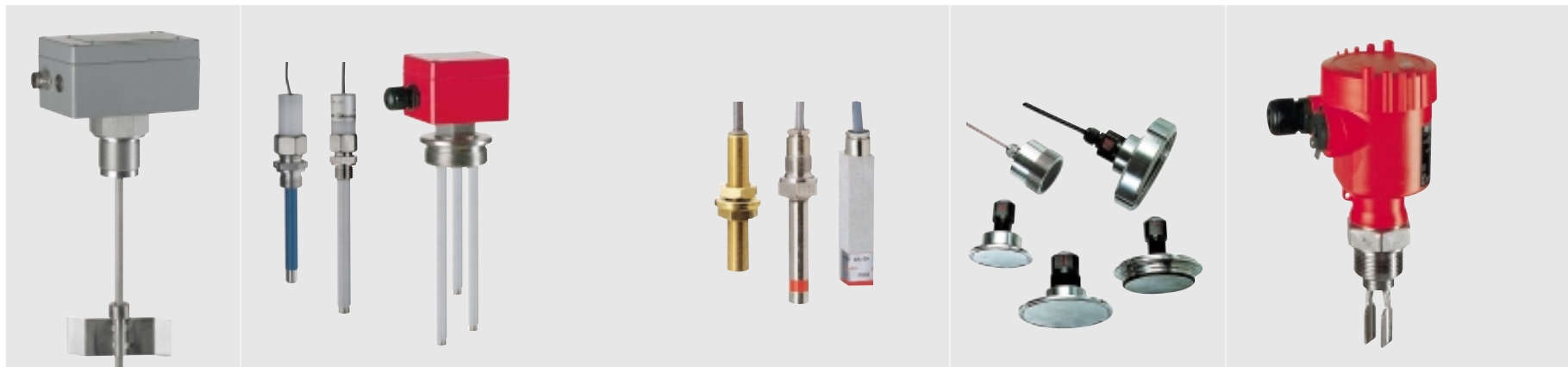
Continuous level measurement with 3-wire potentiometer circuit for external control units
2-wire level transmitters
Head-mounted transmitter 4 – 20 mA
Programmable
HART®-Protocol / Profibus PA
High precision, magnetostrictive level sensors, accuracy < 1.0 mm

KSR Magnetic Switch

Detection of one or more discrete levels
Reed contact bistable
Reed contact NAMUR, DIN 60947-5-6
Inductive for safety applications
Pneumatic

Technical Advantages

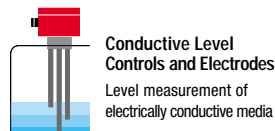
Simple, robust, and solid design
Display proportional to the height of the level or the contents of the vessel
Pressure- and gas-proof separation of chamber and display
Available for applications in all areas of industry through versatile design and corrosion-resistant materials
Pressure range to 42 MPa
Temperature range to 450 °C
S.G. ≥ 400 kg/m³
Explosion-proof designs
Interface and product level measurement at S.G. Δ ≥ 50 kg/m³



KSR Paddle Switch
Measurement of bulk material

The paddle switch type FWU is especially suited for powders, granules and viscous media like sand, fodder, oats, small components etc. The paddle switch can be top or side mounted on the container or silo.

- Supply voltages
24V AC/DC, 110V AC, 230V AC
- Magnetic clutch for pressurised containers
- Flat and cross paddle
- Adjustable position of paddle

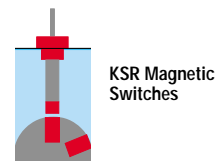


Conductive Level Controls and Electrodes
Level measurement of electrically conductive media

Adjustable sensitivity
Multiple electrodes, adjustable
Materials: stainless steel, Hastelloy, titanium, PTFE-insulated, ECTFE-coated

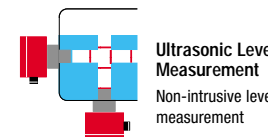
KSR Flow Monitors

Variable-area flow measurement at any mounting position for gases or liquids
Adjustable switches (reed contact or proximity switch)
Materials: stainless steel, brass nickel-plated



KSR Magnetic Switches

Temperature range to 180°C
Switch functions:
closing, opening or change-over on rising level monostable, bistable or polarised
Materials: polyamide, aluminium, stainless steel
Explosions-proof designs available



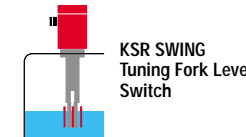
Ultrasonic Level Measurement
Non-intrusive level measurement

An ultrasonic transducer generates an ultrasonic impulse that travels through the tank wall and enters into the liquid.

UltraControl Discrete Level Measurement
If liquid is present, the impulse will be reflected at the opposite side of the tank. This reflection is detected by the transducer (ultrasonic pulse echo measurement). The reflection will be processed by the KSR UltraControl unit which provides a relay output.

UltraMeter Continuous Level Measurement
If liquid is present, the impulse will be reflected at the surface of the liquid. This reflection is detected by the transducer. The UltraMeter will then calculate the level inside the tank.

- Technical Advantages**
- Non-intrusive
 - Independent of vessel material
 - Temperature range -20°C to 135°C
 - Temperature compensated
 - Signal 4-20mA
 - Resolution: 1% FS, max.1 mm
 - Display: LCD-Display 4 digits
 - Relay output
 - Explosion-proof designs available



KSR SWING Tuning Fork Level Switch

Tuning fork level switch with integrated electronics as protection against overfilling or running dry.

- Simple commissioning without calibration
- Temperature range to 200°C
- Switch independent of type of liquid
- High accuracy
- Highly corrosion-resistant materials
- Length of fork 40 mm

Approvals
Overfill protection to WHG
Ex Zone 0, ATEX II 1G EEx ia IIC T6, WHG, AK3 to DIN 19251



• Experience, Know-How and Strive for Excellence
• generate better solutions



To address our customers' problems on site we work through our branches and distributors in the Middle and Far East, in Africa, the USA, and of course in Germany and Europe.



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Individual problems require tailor-made solutions



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Off-Shore- and oil industry



Shipbuilding



Plant construction



Water purification and environmental industry



Food and beverage industry



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SHANGHAI KSR-KUEBLER
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