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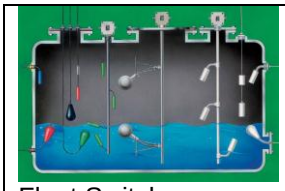
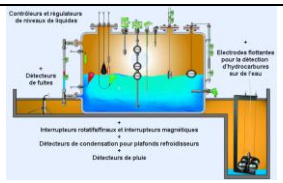
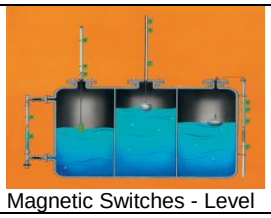
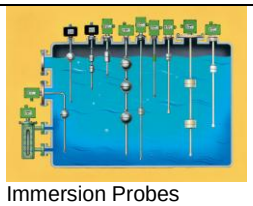
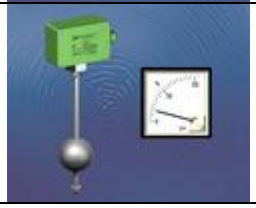
A T T E N T I O N!

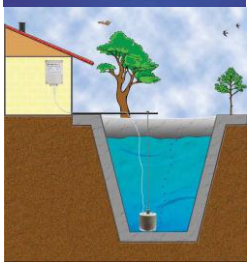
*** Automation Engineer** *** Engineering Manager** *** Electrical Engineer**
*** Maintenance Engineer** *** Instrument Engineer** *** Project Manager**

Germany: Level, Spill, Leak, Moisture Detectors (for Hazardous Areas):

 Float Switches	 Applications	 Magnetic Switches - Level	 Immersion Probes

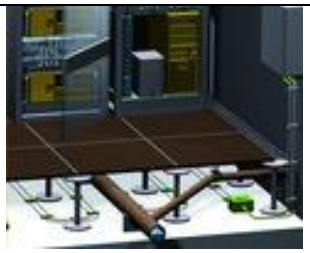
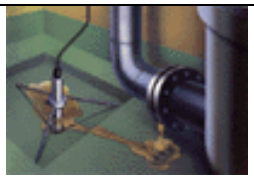
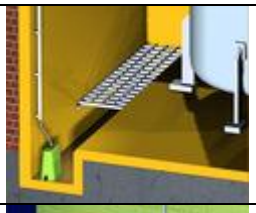
LEVEL MONITORING:

Floating Switches and Immersion Probes: Mercury-free floating switches and immersion probes Controlling devices with ball-operated micro-switch, for signalling or control of liquid levels	
Float Switches SM Ex: SM... float switches Control units with rod operated micro switch for liquid level indication or control of liquid levels for electrical systems and for pneumatic systems	
Immersion Probes TSR Ex: For signalling or control of liquid levels. For use in low viscosity, non-adhesive liquids that are free of solids and do not attack the component materials	
Magnetic Switches and level indication with TAPS: Magnetic switches, level indicators with taps and level controllers with built-in magnetic switches for level control in tanks	
Continuous Level Measurement (Float Method): Continuous liquid level measurement with TSQ 4-20/... and TSK 4-20/... liquid level indicators for remote transmission of liquid levels using the float method	

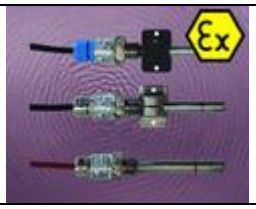
Continuous Level Measurement (Bubbler method): PKG 4-20 Liquid Level Transmitter for continuous level measurement for remote transmission of liquid levels using the air bubbler method Due to the force of gravity and as a function of the specific gravity of the liquid, the pressure at the bottom of a tank is proportional to the liquid level in the tank. The pressure corresponding to the liquid level is measured by means of an immersion bell mounted just above the bottom of the tank or an immersion tube which is open at the end and suspended slightly above the bottom of the tank. An air pump integrated in the liquid level Transmitter pumps air into the bell or tube via a hose for 10 seconds every 50 seconds. The air pressure at the bottom edge of the immersion bell or at the end of the immersion tube following the injection of air is equal to the pressure generated by the liquid. The air pressure in the immersion bell or immersion tube is measured by a pressure sensor integrated in the liquid level transmitter and converted into a load-independent current signal of between 4 and 20 mA via an integrated current loop transmitter.	 
Conductive controlling devices (water, acids etc): For automatic control, regulation and signalling of liquid levels Electrode controls are used for the automatic control of pumps or electromagnetic valves as well as overflow or run-dry protection in wells or tanks with conductive liquids. The liquid levels are monitored by electrodes which give switching commands to the electronic relay if they come into contact with the liquid.	
Capacitive Level Controllers (water, acids, oils, solvents): For automatic control, regulation and signalling of levels of conductive and non-conductive liquids or pourable bulk goods The function of the proximity sensors is based on the change in capacity of the electrode located in the active surface of the proximity sensor. This change in capacity is generated by proximity or contact of the liquid/pourable bulk good to/with the active surface of the proximity sensor.	
Protection and Alarm Relays: **Protection relays:** for connection of binary sensors (e.g. Jola floating switches or Jola immersion probes) or for connection of Namur-sensors (e.g. inductive or capacitive proximity sensors) **Alarm relays:** for connection of several relays to one alarm relay or for connection of binary sensors (e.g. Jola floating switches or Jola immersion probes)	

Liquid Leaks or Spills:

Leakage Detector Leckstar (Conductive e.g water, acids): For use in conductive liquids like water, acids. Utilises plate electrodes, rod electrodes, suspension electrodes with cable breakage monitoring. As soon as a trace of a conductive liquid creates a conductive path between the two electrode plates, a control current flows from the corresponding electrode relay. The latter is then energized and a contact is made via the Leckstar 101 Relay.	
Leakage Detectors Leckmaster (Capacitive e.g for oils, solvents, fuels): For conductive and non-conductive liquids; can basically be used for the detection of all low-viscosity liquids for such tasks as signalling the presence of fuel oil on the floor of a tank room or in a collection tub located underneath a fuel oil burner. The COW/L and OWE 2/C sensors are designed for connection to the Leckmaster 101relay.	

Leakage Detectors Leckwatcher (Conductive e.g water, acids): **Types of detectors:** Point sensors: leakage detectors which can detect leakage at a specific point: plate electrodes, wall-mounted electrodes, rod electrodes, suspension electrodes Line sensors: leakage detectors which can detect a leakage over the entire length of their electrode leads having cable electrodes or tape electrodes Surface sensors: leakage detectors which can detect a leakage over the entire surface area of a network of interconnected electrode leads: - sleeve electrodes	
Leakage Detectors Leckwatcher (Capacitive e.g oils, solvents, fuels): Types of Detectors: Capacitive suspension sensors with stainless steel housing Capacitive suspension sensors with plastic housing Capacitive plate sensors with plastic housing	
Leakage Detectors Liqui-Switch (Conductive e.g water, acids) Designed to signal the presence of a conductive liquid caused, for example, by burst pipes. Plate electrodes should only be used in normally dry environments. They must be installed on the floor in such a way that the sensor side faces downwards and the label side upwards.	
Leakage Detectors Liqui-Switch (Capacitive) for oils, fuels, solvents: For signalling the presence of a non-conductive or conductive liquid. Can in principle be used for all low-viscosity media – e.g. for signalling the presence of heating oil on the floor of a tank room or in a collection tub located underneath a heating oil burner. Capacitive suspension sensors should only be used in normally dry environments.	
Leakage Detector L-Pointer (Conductive): The conductive leakage detectors can only be used for the detection of leakage of conductive liquids like water, caustic soda, hydrochloric acid, nitric acid, ferric chloride, and similar liquids.	
Leakage Detector L-Pointer (Capacitive): For oils, fuels, solvents for extra low voltage SELV or PELV, for connection to NAMUR isolation amplifier or NAMUR fieldbus terminal. The capacitive leakage detectors are primarily designed for the detection of leakage of nonconductive liquids but can also be used for the detection of conductive liquids.	
Floating Electrodes for Oil in Water: For detection of a thin layer of non-conductive liquids with a lower specific gravity on top of conductive liquids with a higher specific gravity. Floating electrodes are designed for use only in pits, reservoirs, and pump shafts, separator plants for light liquids or similar areas.	

OTHERS:

Moisture or Condensation Detector (cooling ceilings): FTS/KO-1 film sensor for cooling ceiling controller. The FTS/KO-1 film sensor is a PCB film which can be stuck to a copper pipe or an even metal surface. The back of the film sensor is coated with an adhesive agent and a protective film. The film sensor is equipped with parallel-routed printed conductors (sensitive surface) which are gold-plated for improved surface protection. The sensor acts as a conductivity measuring cell. The conductivity is measured using alternating current in order to prevent corrosion and polarisation effects. The sensor is available with connected 3-metre long thin white wire. Other connecting line lengths are available on request The film sensor should be installed at the point in the cooling ceiling system where moisture is most probably expected to occur.	 
Limit Switches with ball operated micro-switch(RK, RAT-Ex): The limit switches RAT/./E/Ex-1G are recommended for use wherever the use of conventional flameproof encapsulated limit switches is difficult due to demanding ambient conditions. Such conditions include, for example, wet or soiled environments. The specific limit switch RAT/./E/Ex-1G is mounted via a continuous borehole in the head section of the unit. The limit switches RAT/./E/Ex-1G are fitted with a micro-switch (changeover contact) as electrical switching element, and this element is activated by an internal metal ball. Switchover takes place when the limit switch is positioned approx. 17° +/- 8° above or approx. 3° +/- 3° below the horizontal plane. The model RK is external mountable limit switch. **The limit switches are not suitable for use on rotating shafts.** **Limit switches RAT/./E/Ex-1G II 2 G Ex d IIB T6 or T4**	 
Magnetic Switches MBK Ex: in protection class “intrinsically safety” EEx ia IIC T6, T4 or T3 for use in intrinsically safe circuits in potentially explosive atmospheres in categories zone 0, 1 or 2; EC type examination certificate INERIS 04ATEX0096 Needs Jola protection relay KR 5/Ex I (M1) / II (1) GD [EEx ia] I / IIC	

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Name:----------Designation:----------

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Phone: ---------- --------Fax: ----------

E-mail:----------

Product / Application Interest: ----------
