



## Top product features!

- Accurate point-level indication of liquids and solids with low dielectric constant (e.g. oils, plastic pellets)
- Additional features such as plug-and-play replacement, real-time recipe changes and diagnostic feedback
- Continuous digital transmission of capacitance value with IO-Link
- Senses level through mounting well, sight glass, plastic tank or by direct contact with media
- Sensor offers superior immunity to electrical noise
- Broad range of mounting well accessories

## Reliable point-level detection with pushbutton teach function



ifm point-level sensors provide accurate level detection of solid and liquid materials. A ring LED display provides output status indication that is visible from long distances.

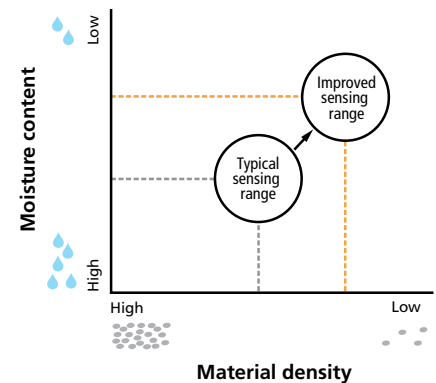
### Pushbutton teach function

The KI and KG Series point-level sensors feature a two pushbutton teach function that calibrates the proper setpoint value and simplifies the setup process. The sensor is quickly and easily adjusted for a specific application. The integrated micro-processor automatically balances the sensitivity to provide the safest operating condition.



### Improved noise immunity

ifm's patented "charge balance" circuit design for level sensors offers reliable noise immunity and enables ifm level sensors to perform effectively in high noise level environments.



Plastic materials are now being dried at higher temperatures producing very low moisture content. The resulting materials can cause sensing problems for traditional capacitive level sensors.

ifm's capacitive level sensors incorporate sensing electrodes and patented circuitry to detect low-moisture, low-density materials. Combined, these innovations enable the sensors to perform in today's plastic processing applications.

Company	IO-Link	Position Sensors					Motion Control	Vision Sensors	
		Inductive	Capacitive	Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Encoders / Speed monitors	2D / 3D inspection
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KG Series with terminal chamber connection

KI6000 Series with innovative bar display

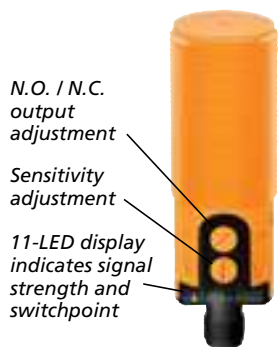
KI Series prewired and pigtail

KG Series prewired and pigtail

## Top product features!

- No moving parts for reliable point-level indication
- ⚙️ Additional features such as plug-and-play replacement, real-time recipe changes and diagnostic feedback
- Easy setpoint adjustment with multi-turn potentiometer
- Senses level through mounting well, sight glass, plastic tank or by direct contact with media
- Sensor offers superior immunity to electrical noise

## Point-level sensor with easy setpoint adjustment saves time!



N.O. / N.C. output adjustment

Sensitivity adjustment

11-LED display indicates signal strength and switchpoint

**NEW!** ifm's KI6000 and KG6000 point-level sensors provide accurate level detection of solid and liquid materials. A unique 11-LED bar display indicates power and output and alerts the user if conditions have changed, build-up is occurring or if more material needs to be delivered.

The setup process is simplified by using a potentiometer to select a normally open or normally closed output and to adjust sensitivity for your application.

### Reliable level detection

ifm offers a variety of point-level sensors to fit your application. Standard housings are available with AC or DC voltage and various

connections. Using capacitive technology, they feature a potentiometer that adjusts the sensitivity of the sensors for a specific application. LEDs provide power and output indication. LEDs can alert if conditions have changed, buildup is occurring, or if more materials need to be delivered.

### Improved noise immunity

ifm's patented "charge balance" circuit design for level sensors offers reliable noise immunity and enables ifm level sensors to perform effectively in high noise environments.



The KI and KG sensors detect granulars such as plastic regrind.







Using a mounting well, the sensor detects the level of liquid.





Company	IO-Link	Position Sensors					Motion Control	Vision Sensors	
	IO-Link	Inductive	Capacitive	Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Encoders / Speed monitors	2D / 3D inspection
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# Product + accessory selector

Output Function	Housing Diameter	Sensing Face Temperature	Electrical Connection	Supply Voltage	Part No.	List Price (1-pc.)
<b>DC units</b> 						
<b>NEW!</b> PNP, N.O. / N.C.	30 mm	-13...176 °F (-25...80 °C)	M12 connector	10...36 VDC	<b>KI6000</b> 	<b>\$99.00</b>
PNP, N.O. / N.C.	30 mm	-13...176 °F (-25...80 °C)	0.1 m pigtail with M12 micro DC	10...36 VDC	<b>KI5209</b>	<b>\$132.00</b>
NPN, N.O. / N.C.	30 mm	-13...176 °F (-25...80 °C)	0.1 m pigtail with M12 micro DC	10...36 VDC	<b>KI5210</b>	<b>\$132.00</b>
PNP, N.O.	18 mm	-13...176 °F (-25...80 °C)	Prewired, 2 m cable	10...36 VDC	<b>KG5043</b>	<b>\$199.00</b>
PNP, N.C.	18 mm	-13...176 °F (-25...80 °C)	Prewired, 2 m cable	10...36 VDC	<b>KG5044</b>	<b>\$199.00</b>
<b>NEW!</b> PNP, N.O.	18 mm	-13...176 °F (-25...80 °C)	M12 connector	10...36 VDC	<b>KG6000</b> 	<b>\$99.00</b>
<b>AC units</b> 						
N.O.	30 mm	-13...158 °F (-25...70 °C)	Prewired, 2 m cable	20...250 VAC	<b>KI0202</b>	<b>\$159.00</b>
N.C.	30 mm	-13...158 °F (-25...70 °C)	Prewired, 2 m cable	20...250 VAC	<b>KI0203</b>	<b>\$159.00</b>
N.O. / N.C.	30 mm	-13...158 °F (-25...70 °C)	Terminal chamber	20...250 VAC	<b>KI0205</b>	<b>\$171.00</b>
N.O. / N.C.	30 mm	-13...158 °F (-25...70 °C)	0.1 m pigtail with 1/2" Micro AC	20...250 VAC	<b>KI0206</b>	<b>\$159.00</b>
N.O. / N.C.	30 mm	-13...158 °F (-25...70 °C)	0.1 m pigtail with 1/2" Micro AC	20...250 VAC	<b>KI0207</b>	<b>\$159.00</b>
N.O.	18 mm	-13...158 °F (-25...70 °C)	Prewired, 2 m cable	20...250 VAC	<b>KG0009</b>	<b>\$178.00</b>
N.C.	18 mm	-13...158 °F (-25...70 °C)	Prewired, 2 m cable	20...250 VAC	<b>KG0010</b>	<b>\$178.00</b>
N.O. / N.C.	18 mm	-13...158 °F (-25...70 °C)	Terminal chamber	20...250 VAC	<b>KG0008</b>	<b>\$178.00</b>

## Optional Accessories

Type	Description	Part No.	List Price (1-pc.)
	3/4" NPT Mounting adapter, PTFE (KG series 18 mm housing)	<b>U10000</b>	<b>\$46.00</b>
	1-1/4" NPT Mounting adapter, PTFE (KI series 30 mm housing)	<b>U10003</b>	<b>\$48.00</b>
	1/2" OD... 3/4" OD Sight glass mounting set, Delrin (KI series 30 mm housing)	<b>U20213</b>	<b>\$38.00</b>

## Cordsets

Type	Description	Part No.	List Price (1-pc.)
	1/2" Micro AC 2 m, PVC	<b>E18212</b>	<b>\$15.00</b>
	1/2" Micro AC 5 m, PVC	<b>E18213</b>	<b>\$19.00</b>
	1/2" Micro AC 2 m, PVC	<b>E18214</b>	<b>\$15.00</b>
	1/2" Micro AC 5 m, PVC	<b>E18215</b>	<b>\$19.00</b>
	M12 Micro DC (4-pin) 2 m, PUR	<b>EVC001</b>	<b>\$11.00</b>
	M12 Micro DC (4-pin) 5 m, PUR	<b>EVC002</b>	<b>\$15.00</b>
	M12 Micro DC (4-pin) 2 m, PUR	<b>EVC004</b>	<b>\$11.00</b>
	M12 Micro DC (4-pin) 5 m, PUR	<b>EVC005</b>	<b>\$15.00</b>

## Technical Specs

### DC sensors

Maximum load current: 250 mA, 500 mA (KI6000, KG6000)  
 Voltage drop: <2.5  
 Protection rating: IP65 (KI020x, KI520x, KI6000, KG6000), IP67 (KI6000, KG00xx, KG504x, KG6000), IP69K (KI6000, KG6000)

### AC sensors

Maximum load current: 250 mA @ 50 °C (KI020x), 350 mA @ 50°C (KG00xx)  
 Min. load current: 5 mA (KI020x), 4 mA (KG00xx)  
 Leakage current: <2.5 mA @ 250 VAC, <1.7 mA @ 110 VAC  
 Voltage drop: <10 VAC (KI020x), <6 VDC (KG00xx)  
 Protection rating: IP65

Safety Technology

Process Sensors

Industrial Networks

ID Systems

Machine Condition

Power Supplies

Wiring Technology

Safety products

Pressure

Flow

Level

Temperature

AS-i network

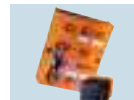
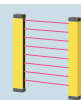
Safety systems

RF identification systems

Diagnostic systems

Power supplies

Cordset solutions



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## Top product features!

- Detects bulk materials or liquids through non-metallic materials such as plastic and glass
- Additional features such as plug-and-play replacement, real-time recipe changes and diagnostic feedback
- Continuous digital transmission of capacitance value with IO-Link
- Sensor offers low-profile mounting – less than 15 mm high – provides same sensing range as traditional 30 mm tubular sensor
- Mounts on a flat surface, sight glass, plastic tube, or bypass pipe using brackets or cable ties
- Several models offer auto detection of PNP or NPN output loads

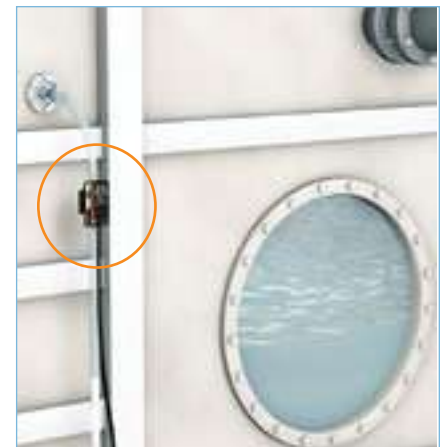
## KQ Series point-level sensor with simple pushbutton setup

The KQ capacitive point-level sensor offers low-profile mounting for level sensing applications. The sensor detects bulk materials or liquids through non-metallic materials such as plastic and glass. The compact sensor is only 14 mm high and has the same sensing range as a traditional 30mm tubular sensor.

Application parameters are quickly set up with the sensor's pushbuttons. The sensor's teach function eliminates difficult sensitivity adjustments. Several models offer automatic detection of the PNP or NPN output loads. ifm's patented "charge balance" circuit design provides reliable noise immunity and enables the sensor to reliably perform in high noise level environments.

The sensor mounts on a flat surface, sight glass, plastic tube, or bypass pipe using brackets or cable ties. The 3-wire DC sensors are available in three models: 2m cabled, pigtail with M8 connector, and pigtail with M12 connector.

## Detects bulk materials and liquids through non-metallic materials



Detection of liquids on a bypass tube.



Company	IO-Link	Position Sensors		Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Motion Control	Vision Sensors
		Inductive	Capacitive					Encoders / Speed monitors	2D / 3D inspection
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# Product + accessory selector

Outputs	Operating Voltage	Max. Load Current	Supply Current	Voltage Drop	Sensor Connection	Part No.	List Price (1-pc.)
PNP / NPN, N.O. / N.C.	10...30 VDC	100 mA	17 mA	2.5 V	2m PVC cable	<b>KQ6001</b>	<b>\$100.00</b>
PNP, N.O. / N.C.	10...30 VDC	100 mA	17 mA	2.5 V	2m PVC cable	<b>KQ6002</b>	<b>\$100.00</b>
PNP / NPN, N.O. / N.C.	10...30 VDC	100 mA	17 mA	2.5 V	40 mm PVC pigtail with M8 Pico DC	<b>KQ6003</b>	<b>\$99.00</b>
PNP, N.O. / N.C.	10...30 VDC	100 mA	17 mA	2.5 V	40 mm PVC pigtail with M8 Pico	<b>KQ6004</b>	<b>\$99.00</b>
PNP, N.O. / N.C.	10...30 VDC	100 mA	17 mA	2.5 V	100 mm PVC pigtail with M12 Micro DC	<b>KQ6005</b>	<b>\$108.00</b>




## Mounting Accessories

Type	Description	Part No.	List Price (1-pc.)
	Mounting straps (set of 5)	<b>E10880</b>	<b>\$7.00</b>
	Mounting adapter for strap mounting	<b>E12153</b>	<b>\$7.00</b>

## Cordsets

Type	Description	Part No.	List Price (1-pc.)
	M12 Micro DC (4-pin) 2 m, PUR	<b>EVC001</b>	<b>\$11.00</b>
	M12 Micro DC (4-pin) 5 m, PUR	<b>EVC002</b>	<b>\$15.00</b>
	M12 Micro DC (4-pin) 10 m, PUR	<b>EVC003</b>	<b>\$19.00</b>
	M8 Pico DC (4-pin) 2 m, PUR cable	<b>EVC150</b>	<b>\$15.00</b>
	M8 Pico DC (4-pin) 5 m, PUR cable	<b>EVC151</b>	<b>\$18.00</b>

## Optional Accessories

	LineRecorder Device, software for parameter setting (requires E30390 cable)	<b>QA0011</b>	<b>\$110.00</b>
	USB IO-Link master cable for parameter setting	<b>E30390</b>	<b>\$367.00</b>
	Memory plug to store sensor's parameters for easy upload without a computer	<b>E30398</b>	<b>\$51.00</b>

 For more information on IO-Link, see pages 6 - 21.

## Technical Specs

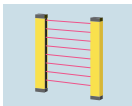






Dimensions: 48 x 20 x 14 mm  
 Ambient temperature: -13...176 °F (-25...80 °C)  
 Housing materials: Plastic (PBT, TPE-U and PC)  
 Protection rating: IP65/IP67



### Reliable service center

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Safety Technology	Process Sensors	Industrial Networks	ID Systems	Machine Condition	Power Supplies	Wiring Technology
Safety products	Pressure	AS-i network	RF identification systems	Diagnostic systems	Power supplies	Cordset solutions
						
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## Top product features!

- Protects against overflow in fluid sensing applications
- Capacitive sensing principle with no moving parts
- Polypropylene housing resistant to most chemicals
- Top-down mounting and simple setup with two pushbuttons
- Available in four lengths with adjustable insertion depths

## New generation of overflow level sensors

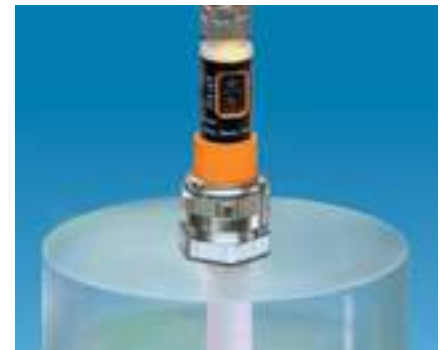


The LI Series level sensor offers reliable limit level detection in tanks, indicating high or low level of hydraulic oils and coolants. They may also be used to monitor the minimum level, leakage or overflow of tanks.

The sensor can be used as an independent overflow protection device or with other level sensors for added security against overflow.

The sensor's 16mm diameter probe is inserted directly into the fluid and is highly resistant to aggressive oils and lubricants. Setup and adjustment is easy using the sensor's "output on - output off" pushbutton teach function without removing the sensor from the process.

### Pushbutton setup



The operating concept enables setting and adjustment of the output function via two pushbuttons. Deposits can be suppressed during operation without carrying out a new adjustment.

	IO-Link	Position Sensors					Motion Control	Vision Sensors	
Company	IO-Link	Inductive	Capacitive	Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Encoders / Speed monitors	2D / 3D inspection
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## Product + accessory selector

Output	Probe Length	Active Sensing Area (from bottom of probe)	Process Connection	Medium Temperature Range	Part No.	List Price (1-pc.)
PNP, N.O. / N.C.	132 mm	31 mm	See Required Accessories	32...149 °F (0...65 °C)	LI5141	\$173.00
PNP, N.O. / N.C.	273 mm	31 mm	See Required Accessories	32...149 °F (0...65 °C)	LI5142	\$179.00
PNP, N.O. / N.C.	481 mm	31 mm	See Required Accessories	32...149 °F (0...65 °C)	LI5143	\$184.00
PNP, N.O. / N.C.	737 mm	31 mm	See Required Accessories	32...149 °F (0...65 °C)	LI5144	\$191.00

### Required Accessories (choose one)

Type	Description	Part No.	List Price (1-pc.)
	3/4" NPT adapter	E43012	\$41.00
	1" NPT adapter	E43013	\$45.00
	G3/4 BSP adapter	E43003	\$41.00
	G1 BSP adapter	E43004	\$43.00
	Flange adapter	E43001	\$39.00
	Weldable adapter	E43002	\$41.00

### Cordsets

Type	Description	Part No.	List Price (1-pc.)
	M12 Micro DC (4-pin) 2 m, PUR	EVC001	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC002	\$15.00
	M12 Micro DC (4-pin) 10 m, PUR	EVC003	\$19.00
	M12 Micro DC (4-pin) 2 m, PUR	EVC004	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC005	\$15.00
	M12 Micro DC (4-pin) 10 m, PUR	EVC006	\$19.00

▶ Can't find the right sensor for your application, call 800-441-8246 or visit [www.ifm.com/us](http://www.ifm.com/us)

### Technical Specs

Supply voltage: 10...36 VDC  
 Maximum load current: 200 mA  
 Pressure rating: 7 psi  
 Wetted parts: Polypropylene (PP)  
 Recommended media: Aqueous coolant, oil, water, water-based media  
 Operating temperature range: -13...176 °F (-25...80 °C)  
 Protection rating: IP67



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<b>Safety Technology</b>	<b>Process Sensors</b>				<b>Industrial Networks</b>		<b>ID Systems</b>	<b>Machine Condition</b>	<b>Power Supplies</b>	<b>Wiring Technology</b>
Safety products	Pressure	Flow	Level	Temperature	AS-i network	Safety systems	RF identification systems	Diagnostic systems	Power supplies	Cordset solutions
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## Top product features!

- Point level sensor with the most reliable deposit suppression on the market
- Additional features such as plug-and-play replacement, real-time recipe changes and diagnostic feedback
- Media differentiation is possible via IO-Link
- Plug and play setup with factory media settings for water or oil
- Compact stainless steel housing with IP69K environmental protection
- Robust electronics with high shock and vibration resistance

## Point level sensor reliably suppresses residues, splashes and foam

**NEW!** The LMC family reliably monitors level in a variety of industrial applications including machine tools, wastewater management, hydraulic systems, and pump run dry protection. Additionally, the back thread option provides a top-mount level solution for custom depths.

### Versatile sensor for all media types

The LMC sensor can be set to detect almost any liquid or viscous media as well as bulk materials. Permanent media temperatures up to 212 °F (100 °C) or heavy adhesion are no problem for the LMC.

Identifying two different types of media is possible due to the two programmable switching outputs. Parameters can be set for each output independently with IO-Link LR device software and USB cable accessory.



The LMC sensor is ideal for pipe level applications and eliminates obstructions in the flow path that reduce throughput.

Company	IO-Link	Position Sensors		Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Motion Control	Vision Sensors
		Inductive	Capacitive					Encoders / Speed monitors	2D / 3D inspection
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# Product + accessory selector

Process Connection	Insertion Length (mm)	Factory Default Media Setting	Programmable	Medium Temp	Part No.	List Price (1-pc.)
<b>M12 connector · N.O. / N.C. complementary</b>						
1/2" NPT	34	Water-based	Yes	-13...212 °F	<b>LMC500</b>	<b>\$145.00</b>
1/2" NPT	34	Oil-based	Yes	-13...212 °F	<b>LMC510</b>	<b>\$145.00</b>
1/2" NPT	38	Water-based	Yes	-13...212 °F	<b>LMC502</b>	<b>\$213.00</b>
G 1/2 BSPP	12	Water-based	Yes	-13...212 °F	<b>LMC100</b>	<b>\$145.00</b>
G 1/2 BSPP	12	Oil-based	Yes	-13...212 °F	<b>LMC110</b>	<b>\$145.00</b>
G 1/2 BSPP Thread at the back	21	Water-based	Yes	-13...212 °F	<b>LMC400</b>	<b>\$145.00</b>
G 1/2 BSPP Thread at the back	21	Oil-based	Yes	-13...212 °F	<b>LMC410</b>	<b>\$145.00</b>

## Optional Accessories

Type	Description	Part No.	List Price (1-pc.)
	Welding adapter for LMC4xx, G 1/2, 316 stainless steel	<b>E43375</b>	<b>\$12.00</b>
	Flat seal for LMC1xx and LMC4xx, pack of 6	<b>E43376</b>	<b>\$4.00</b>
	LR device (supplied on USB flash drive) Software for online and offline parameter setting	<b>QA0011</b>	<b>\$110.00</b>
	USB IO-Link master cable for parameter setting	<b>E30390</b>	<b>\$367.00</b>
	Memory plug to store sensor's parameters for easy upload without a computer	<b>E30398</b>	<b>\$51.00</b>

## Cordsets

Type	Description	Part No.	List Price (1-pc.)
	M12 Micro DC (4-pin) 2 m, PUR	<b>EVC001</b>	<b>\$11.00</b>
	M12 Micro DC (4-pin) 5 m, PUR	<b>EVC002</b>	<b>\$15.00</b>
	M12 Micro DC (4-pin) 2 m, PUR	<b>EVC004</b>	<b>\$11.00</b>
	M12 Micro DC (4-pin) 5 m, PUR	<b>EVC005</b>	<b>\$15.00</b>

For more information on IO-Link, see pages 6 - 21.

## Technical Specs

Operating Voltage: 18...30 V DC  
 Current Rating: 100 mA  
 Housing materials: 316L stainless steel  
 Materials wetted parts: PEEK, 316L stainless steel, FPM  
 Protection: IP 68 / IP 69K  
 Ambient temp: -13...185 °F  
 Medium temp: -13... 212 °F



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Safety Technology	Process Sensors	Industrial Networks	ID Systems	Machine Condition	Power Supplies	Wiring Technology				
Safety products	Pressure	Flow	Level	Temperature	AS-i network	Safety systems	RF identification systems	Diagnostic systems	Power supplies	Cordset solutions
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Water-based media

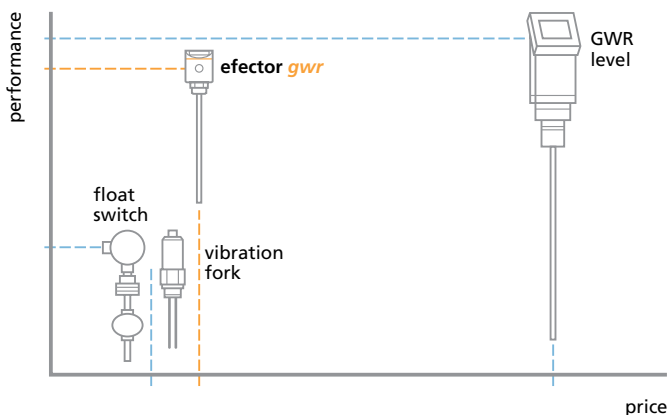
## Top product features!

- Ideal for level detection of water-based media in compact tanks
- ⚙️ Additional features such as plug-and-play replacement, real-time recipe changes and diagnostic feedback
- ⚙️ Easy setup and commissioning with IO-Link parameterization
- No moving parts – replaces float switches
- Built-in switching and analog output
- Simple mounting with cut-to-length measuring probe

## High performance at a great value

The **efector gwr** provides all of the advantages of reliable level detection using innovative guided wave radar technology at a very low price. Alternative level solutions may offer a lower price but may not perform in challenging applications.

Mechanical float switches can stick in an application due to deposits. Vibration forks offer slightly better performance, but multiple units are required to detect the level of the medium. Traditional GWR level sensors offer an improved performance, but at a very high price point.



## Easy installation



The **efector gwr** is directly mounted into the tank via a threaded process connection or metal bracket. Power and output are provided with an M12 connector. If needed, the probe can be cut to length by the user.

## Longer probe lengths



The LR Series offers long probe lengths for depths up to 63".

Company	IO-Link	Position Sensors		Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Motion Control	Vision Sensors
	IO-Link	Inductive	Capacitive					Encoders / Speed monitors	2D / 3D inspection
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# Product + accessory selector

	Output	Process Connection	Probe Length	Media	Medium Temperature Range	Part No.	List Price (1-pc.)
<b>With 4-digit LED Display</b>							
<b>NEW!</b>	4...20 mA / 0...10 V and PNP, N.O. / N.C.	3/4" NPT	See required accessories	Water-based solutions	-4...212 °F (-20...100 °C)	<b>LR2350</b>	<b>\$525.00</b>
	2 x PNP, N.O. / N.C.	3/4" NPT	See required accessories	Water-based solutions	32...176 °F (0...80 °C)	<b>LR7300</b>	<b>\$441.00</b>
	4 x PNP, N.O. / N.C.	3/4" NPT	See required accessories	Water-based solutions	32...176 °F (0...80 °C)	<b>LR8300</b>	<b>\$518.00</b>
	4...20 mA / 0...10 V and PNP, N.O. / N.C.	3/4" NPT	See required accessories	Water-based solutions	32...176 °F (0...80 °C)	<b>LR3300</b>	<b>\$526.00</b>
<b>NEW!</b>	4...20 mA / 0...10 V and PNP, N.O. / N.C..	G3/4 BSPP	See required accessories	Water-based solutions	-4...212 °F (-20...100 °C)	<b>LR2050</b>	<b>\$525.00</b>
	2 x PNP, N.O. / N.C.	G3/4 BSPP	See required accessories	Water-based solutions	32...176 °F (0...80 °C)	<b>LR7000</b>	<b>\$441.00</b>
	4 x PNP, N.O. / N.C.	G3/4 BSPP	See required accessories	Water-based solutions	32...176 °F (0...80 °C)	<b>LR8000</b>	<b>\$518.00</b>
	4...20 mA / 0...10 V and PNP, N.O. / N.C.	G3/4 BSPP	See required accessories	Water-based solutions	32...176 °F (0...80 °C)	<b>LR3000</b>	<b>\$526.00</b>
<b>Without Display</b>							
	4...20 mA / 0...10 V DC	G3/4 BSPP	See required accessories	Water-based solutions	32...176 °F (0...80 °C)	<b>LR9020</b>	<b>\$386.00</b>

## Required Accessories (choose one)

Type	Description	Part No.	List Price (1-pc.)
	240 mm Sensing probe, 316 SS	<b>E43203</b>	<b>\$19.00</b>
	450 mm Sensing probe, 316 SS	<b>E43204</b>	<b>\$31.00</b>
	700 mm Sensing probe, 316 SS	<b>E43205</b>	<b>\$42.00</b>
	1000 mm Sensing probe, 316 SS	<b>E43207</b>	<b>\$68.00</b>
	1200 mm Sensing probe, 316 SS	<b>E43208</b>	<b>\$79.00</b>
	1400 mm Sensing probe, 316 SS	<b>E43209</b>	<b>\$94.00</b>
	1600 mm Sensing probe, 316 SS	<b>E43210</b>	<b>\$110.00</b>
	2000 mm Sensing probe, 316 SS for LR2xxx	<b>E43353</b>	<b>\$105.00</b>

## Optional Accessories

Type	Description	Part No.	List Price (1-pc.)
	Mounting flange, 3/4" NPT	<b>E43206</b>	<b>\$48.00</b>
	Mounting flange, G3/4 BSPP	<b>E43201</b>	<b>\$48.00</b>
	LineRecorder Device, software for parameter setting (requires E30390 cable)	<b>QA0011</b>	<b>\$110.00</b>
	USB IO-Link master cable for parameter setting	<b>E30390</b>	<b>\$367.00</b>
	Memory plug to store sensor's parameters for easy upload without a computer	<b>E30398</b>	<b>\$51.00</b>

## Cordsets

Type	Description	Part No.	List Price (1-pc.)
	M12 Micro DC (4-pin) 2 m, PUR	<b>EVC001</b>	<b>\$11.00</b>
	M12 Micro DC (4-pin) 5 m, PUR	<b>EVC002</b>	<b>\$15.00</b>
	M12 Micro DC (4-pin) 10 m, PUR	<b>EVC003</b>	<b>\$19.00</b>
	M12 Micro DC (4-pin) 2 m, PUR	<b>EVC004</b>	<b>\$11.00</b>
	M12 Micro DC (4-pin) 5 m, PUR	<b>EVC005</b>	<b>\$15.00</b>
	M12 Micro DC (4-pin) 10 m, PUR	<b>EVC006</b>	<b>\$19.00</b>
	M12 Micro DC (8-pin) 2 m, PUR (for LR8)	<b>E11231</b>	<b>\$29.00</b>
	M12 Micro DC (8-pin) 5 m, PUR (for LR8)	<b>E11232</b>	<b>\$36.00</b>
	T-splitter (8-pin female M12 to two 4-pin male M12)	<b>E11627</b>	<b>\$55.00</b>

## Technical Specs

Supply voltage: 18...30 VDC  
 Maximum load current: 200 mA per output  
 Pressure rating: -14.5...58 psi (-1...4 bar)  
 Accuracy: ±0.6" +0.5% of full range (±1.5 cm +0.5% of full range)  
 Repeatability: ±0.2" (±0.5 cm)  
 Wetted parts: 316 stainless steel, PTFE, NBR, FKM  
 Protection rating: IP67, IP169K (LR2350, LR2050, LR9020)

For more information on IO-Link, see pages 6 - 21.

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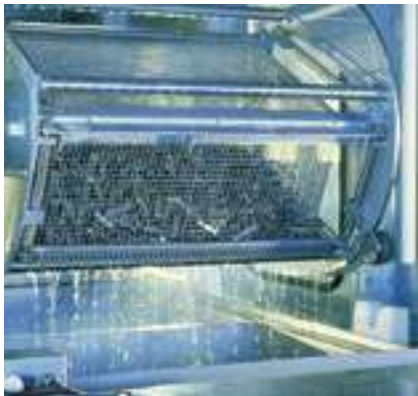
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Oil and water-based media

## Top product features!

- Modular level sensor is ideal for level detection of oils or water-based media in compact tanks
- ⚙️ Additional features such as plug-and-play replacement, real-time recipe changes and diagnostic feedback
- ⚙️ Easy setup and commissioning with IO-Link parameterization
- Stainless steel housing with no moving parts that can stick is an ideal alternative to float switches
- Built-in switching and analog output
- Simple mounting with cut-to-length measuring probe



## Reliable level detection for oils or water-based media

### Versatile level sensor for harsh applications

The LR Series level sensor's measuring principle uses guided wave radar technology to detect liquid level in applications such as parts cleaning, coolant monitoring, water treatment, hydraulic power units and hot glue in corrugated cardboard manufacturing. This technology enables a powerful signal and the ability to suppress foam and buildup that causes false triggers.

### Quick and easy installation

The modular design consists of a compact, 316 stainless steel sensor housing with digital display, pushbutton setup and stainless steel measuring probe that easily attaches to the sensor housing. A wide variety of common adapters and probe lengths are available. Probes can be cut to fit any custom length.

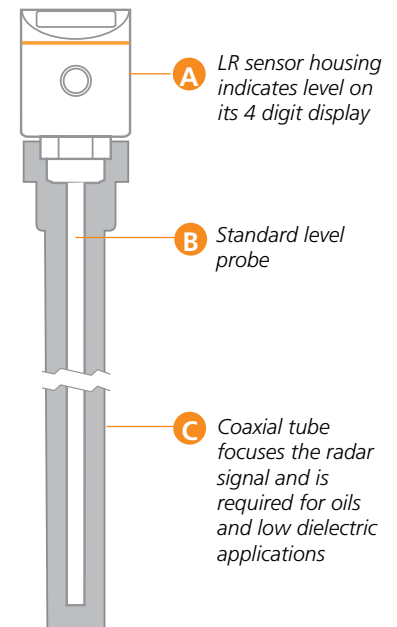
To monitor oil and low-dielectric fluids, a coaxial tube is required that slips over the probe and provides a direct 3/4" NPT (or G3/4 BSPP) process connection.

### Resistant construction materials

The one-piece, completely welded LR2050 sensor eliminates moisture ingress and has a high protection rating of IP 69K. Parameters are easily set by using the sensor's pushbutton menu, ifm's LineRecorder software or IO-Link.

ifm's LR Series continuous level sensor has no moving parts to stick and break, withstands the harshest of environments and provides long life-in-application.

## Modular level system is easy to install



Company	IO-Link		Position Sensors					Motion Control		Vision Sensors
	IO-Link		Inductive	Capacitive	Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Encoders / Speed monitors	2D / 3D inspection
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# Product + accessory selector

## A LR Level Sensor

Output	Display	Media	Medium Temperature Range	Part No.	List Price (1-pc.)
4...20 mA and PNP / NPN switching	4 digit LED	Oil and water-based solutions	-4...212 °F (-20...100 °C)	LR2050	\$525.00
2 x PNP, N.O. / N.C.	4 digit LED	Oil and water-based solutions	32...176 °F (0...80 °C)	LR7000	\$441.00
4 x PNP, N.O. / N.C.	4 digit LED	Oil and water-based solutions	32...176 °F (0...80 °C)	LR8000	\$518.00
4...20 mA / 0...10 V and PNP, N.O. / N.C.	4 digit LED	Oil and water-based solutions	32...176 °F (0...80 °C)	LR3000	\$526.00
4...20 mA / 0...10 V DC	No display	Oil and water-based solutions	32...176 °F (0...80 °C)	LR9020	\$386.00

## B Required Accessory - Probe (choose one)

Type	Description	Part No.	List Price (1-pc.)
	240 mm Probe, 316 SS	E43203	\$19.00
	450 mm Probe, 316 SS	E43204	\$31.00
	700 mm Probe, 316 SS	E43205	\$42.00
	1000 mm Probe, 316 SS	E43207	\$68.00
	1200 mm Probe, 316 SS	E43208	\$79.00
	1400 mm Probe, 316 SS	E43209	\$94.00
	1600 mm Probe, 316 SS	E43210	\$110.00
	2000 mm Probe, 316 SS for LR2xxx	E43353	\$105.00

## Cordsets

Type	Description	Part No.	List Price (1-pc.)
	M12 Micro DC (4-pin) 2 m, PUR	EVC001	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC002	\$15.00
	M12 Micro DC (4-pin) 10 m, PUR	EVC003	\$19.00
	M12 Micro DC (4-pin) 2 m, PUR	EVC004	\$11.00
	M12 Micro DC (4-pin) 5 m, PUR	EVC005	\$15.00
	M12 Micro DC (4-pin) 10 m, PUR	EVC006	\$19.00
	M12 Micro DC (8-pin) 2 m, PUR for (LR8)	E11231	\$29.00
	M12 Micro DC (8-pin) 5 m, PUR (for LR8)	E11232	\$36.00
	T-splitter (8-pin female M12 to two 4-pin male M12)	E11627	\$55.00

## Technical Specs

Supply voltage: 18...30 VDC  
 Maximum load current: 200 mA per output  
 Pressure rating: -14.5...58 psi (-1...4 bar)  
 Accuracy: ±0.6" +0.5% of full range; (±1.5 cm +0.5% of full range)  
 Repeatability: ±0.2" (±0.5 cm)  
 Wetted parts: 316 stainless steel, PTFE, NBR, FKM  
 Protection rating: IP67; IP69K (LR2350, LR2050, LR9020)

## C Required Accessory - Coaxial Tube (choose one)

Type	Description	Part No.	List Price (1-pc.)
	450 mm tube, 3/4" NPT, 304 SS	E43218	\$92.00
	700 mm tube, 3/4" NPT, 304 SS	E43219	\$105.00
	1000 mm tube, 3/4" NPT, 304 SS	E43220	\$120.00
	1200 mm tube, 3/4" NPT, 304 SS	E43223	\$144.00
	1400 mm tube, 3/4" NPT, 304 SS	E43224	\$170.00
	1600 mm tube, 3/4" NPT, 304 SS	E43221	\$191.00
	2000 mm tube, 3/4" NPT (for LR2xxx only)	E43378	\$218.00
	240 mm tube, G3/4 BSPP, 304 SS	E43211	\$80.00
	450 mm tube, G3/4 BSPP, 304 SS	E43212	\$92.00
	700 mm tube, G3/4 BSPP, 304 SS	E43213	\$105.00
	1000 mm tube, G3/4 BSPP, 304 SS	E43214	\$120.00
	1200 mm tube, G3/4 BSPP, 304 SS	E43215	\$144.00
	1400 mm tube, G3/4 BSPP, 304 SS	E43216	\$169.00
	1600 mm tube, G3/4 BSPP, 304 SS	E43217	\$191.00

## Optional Accessories

Type	Description	Part No.	List Price (1-pc.)
	Replacement centering piece with fixing bracket and o-ring for coaxial tubes	E43222	\$15.00
	LineRecorder Device, software for parameter setting (requires E30390 cable)	QA0011	\$110.00
	USB IO-Link master cable for parameter setting	E30390	\$367.00
	Memory plug to store sensor's parameters for easy upload without a computer	E30398	\$51.00

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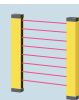
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## Top product features!

- *Electronic level sensor replaces mechanical float switches that can stick*
- *Additional features such as plug-and-play replacement, real-time recipe changes and diagnostic feedback*
- *Pushbutton setup allows the sensor's parameters to be easily adjusted without removing the sensor from the process*
- *Independent overflow protection*
- *Highly visible numeric display*
- *Models are available with integrated temperature monitoring*

## Replaces mechanical float switches

Fluids that contain particles such as metal chips can cause floats on traditional mechanical level switches to stick. ifm efector's LK level sensor is an electronic "floatless" sensor that accurately detects fluid level without any moving parts. Using ifm's patented capacitive sensing technology, the sensor determines level by measuring the point of dielectric contrast that occurs at the level height.



LK level sensors feature an enhanced software algorithm that scans 16 sensing fields along the length of a probe to determine the point at which the change in dielectric occurs. Upon startup, the sensing fields are evaluated every eight milliseconds to provide precise continuous level indication.

### Replaces up to four binary switches

ifm's LK level sensors are available with 2 or 4 switching outputs, as well as an analog and switching output model. Thus, one level sensor can replace up to four binary switches, reducing wiring, material, and mounting costs. Versions are available with a single switchpoint indicating an overflow alarm.

Pt element at the base of the probe and are capable of monitoring temperature as well as continuous level indication.

## Easy mounting



ifm's electronic LK level sensors can be inserted into a tank opening as small as 20 mm in diameter.

Company	IO-Link		Position Sensors					Motion Control	Vision Sensors
	IO-Link	Inductive	Capacitive	Cylinder / valve position	Photoelectrics / lasers / fiber optics	Distance / Application specific	Ultrasonic	Encoders / Speed monitors	2D / 3D inspection
1 - 5	6 - 21	22 - 55	56 - 61	62 - 71	72 - 111	112 - 117	118 - 119	120 - 127	128 - 143



# Product + accessory selector

Output	Probe Length	Active Measuring Zone	Required Accessories	Suitable Media	Part No.	List Price (1-pc.)
<b>Continuous Level Monitoring</b>						
2x PNP / NPN, N.O. / N.C.	264 mm	196 mm	See below	Water / Oil	<b>LK1022</b>	<b>\$441.00</b>
2x PNP / NPN, N.O. / N.C.	472 mm	391 mm	See below	Water / Oil	<b>LK1023</b>	<b>\$478.00</b>
2x PNP / NPN, N.O. / N.C.	729 mm	584 mm	See below	Water / Oil	<b>LK1024</b>	<b>\$510.00</b>
3x PNP / NPN, N.O. / N.C. & OP*	264 mm	196 mm	See below	Water / Oil	<b>LK8122</b>	<b>\$503.00</b>
3x PNP / NPN, N.O. / N.C. & OP*	472 mm	391 mm	See below	Water / Oil	<b>LK8123</b>	<b>\$546.00</b>
3x PNP / NPN, N.O. / N.C. & OP*	729 mm	584 mm	See below	Water / Oil	<b>LK8124</b>	<b>\$575.00</b>
4...20 mA / 0...10 V & OP*	264 mm	196 mm	See below	Water / Oil	<b>LK3122</b>	<b>\$509.00</b>
4...20 mA / 0...10 V & OP*	472 mm	391 mm	See below	Water / Oil	<b>LK3123</b>	<b>\$552.00</b>
4...20 mA / 0...10 V & OP*	729 mm	584 mm	See below	Water / Oil	<b>LK3124</b>	<b>\$581.00</b>

\*Dedicated overflow output protection

## Continuous Level and Temperature Monitoring

<b>NEW!</b> 4...20 mA / 0...10 V, PNP / NPN, N.O. / N.C.	264 mm	195 mm	See below	Water / Oil	<b>LT3022</b>	<b>\$530.00</b>
<b>NEW!</b> 4...20 mA / 0...10 V, PNP / NPN, N.O. / N.C.	472 mm	391 mm	See below	Water / Oil	<b>LT3023</b>	<b>\$565.00</b>
<b>NEW!</b> 4...20 mA / 0...10 V, PNP / NPN, N.O. / N.C.	728 mm	585 mm	See below	Water / Oil	<b>LT3024</b>	<b>\$590.00</b>
2x PNP / NPN, N.O. / N.C. (level and temp)	264 mm	196 mm	See below	Water / Oil	<b>LT8022</b>	<b>\$536.00</b>
2x PNP / NPN, N.O. / N.C. (level and temp)	472 mm	391 mm	See below	Water / Oil	<b>LT8023</b>	<b>\$577.00</b>
2x PNP / NPN, N.O. / N.C. (level and temp)	729 mm	584 mm	See below	Water / Oil	<b>LT8024</b>	<b>\$606.00</b>

## Required Accessories

Type	Description	Part No.	List Price (1-pc.)
	3/4" NPT adapter	<b>E43012</b>	<b>\$41.00</b>
	1" NPT adapter	<b>E43013</b>	<b>\$45.00</b>
	G3/4 BSPP adapter	<b>E43003</b>	<b>\$41.00</b>
	G1 BSPP adapter	<b>E43004</b>	<b>\$41.00</b>
	Flange adapter	<b>E43001</b>	<b>\$39.00</b>
	Weldable adapter	<b>E43002</b>	<b>\$41.00</b>

## Technical Specs

Supply voltage:	18...30 VDC
Maximum load current:	200 mA per channel
Pressure rating:	7 psi
Media temperature:	32...149 °F (0...65 °C)
Accuracy:	±5% of full range
Repeatability:	±2% of full range
Wetted parts:	PP
Protection rating:	IP67

## Optional Accessory and Cordsets

Type	Description	Part No.	List Price (1-pc.)
	T-splitter (8-pin female M12 to two 4-pin male M12)	<b>E11627</b>	<b>\$52.00</b>
	LineRecorder Device, software for parameter setting (requires E30390 cable)	<b>QA0011</b>	<b>\$110.00</b>
	USB IO-Link master cable for parameter setting	<b>E30390</b>	<b>\$367.00</b>
	Memory plug to store sensor's parameters for easy upload without a computer	<b>E30398</b>	<b>\$51.00</b>
	M12 Micro DC (4-pin) 5 m, PUR	<b>EVC002</b>	<b>\$15.00</b>
	M12 Micro DC (4-pin) 10 m, PUR	<b>EVC003</b>	<b>\$19.00</b>
	M12 Micro DC (4-pin) 5 m, PUR	<b>EVC005</b>	<b>\$15.00</b>
	M12 Micro DC (4-pin) 10 m, PUR	<b>EVC006</b>	<b>\$19.00</b>
	M12 Micro DC (8-pin) 5 m, PUR (for LK8 and LT8)	<b>E11232</b>	<b>\$36.00</b>

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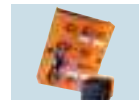
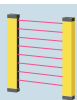
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