

# Product Bulletin

Fluid Sensors  
Position Sensors  
Networking Products

Sensor Technology for Level Control Applications

## KN Compact Level Sensor

...Reliable Capacitive sensing technology

...Low profile mounting

...Easy setup via "teach" function

...Visual indication of operating conditions

### Introduction

Traditional level indicating techniques rely on sight glasses with graduations or visible markers. Other methods use float levels and Hall effect switches that depend on mechanical movement for level detection. These switches eventually fail due to product "buildup" on moving components which cause the switches to stick open or closed. The new KN compact level sensors work on proven capacitive sensing technology. The KN has no moving parts that can stick or break. The KN compact level sensor incorporates a unique mounting system for attaching the sensor to sight glasses and small containers without the need for large brackets or costly accessories.

### Features and Benefits

#### ■ Reliable capacitive sensing technology

The KN sensor utilizes capacitive technology to sense through non-metal sight glasses or tanks for level indication of materials such as granular solids or liquids. Industrial environments are increasingly being subjected to electrical noise generated by switching power supplies, variable frequency drives and high frequency "walkie-talkies". The new KN compact level sensors incorporate a new "charge balance" circuit design that provides excellent immunity to electromagnetic interference.

#### ■ Low profile mounting

The low profile KN housing allows the sensor to be mounted on small sight glasses that cannot accommodate larger sensor housings. The KN sensor is only 10mm thick and has the same sensing range as a traditional 30mm diameter tubular capacitive switch. Tubular capacitive sensors consume space by protruding away from the sensing area and can easily be damaged. Mounting tubular capacitive sensors can also be difficult and generally require fabrication of custom brackets or costly accessories. The KN sensor does not require tools for mounting. A mounting clip and strap are all that is required.



KN compact level sensor mounted on a sight glass

#### ■ Easy setup via "teach" function

The microprocessor used in the KN compact level sensor has the ability to learn the optimum conditions for high/low levels. The sensitivity is automatically calibrated to provide the safest condition to energize the output. This feature allows the sensor to compensate for "buildup" over time. Additionally, the sensor can also be remotely programmed to allow the user to calibrate the sensor in applications where the sensor is difficult to access.

#### ■ Visual indication of operating conditions

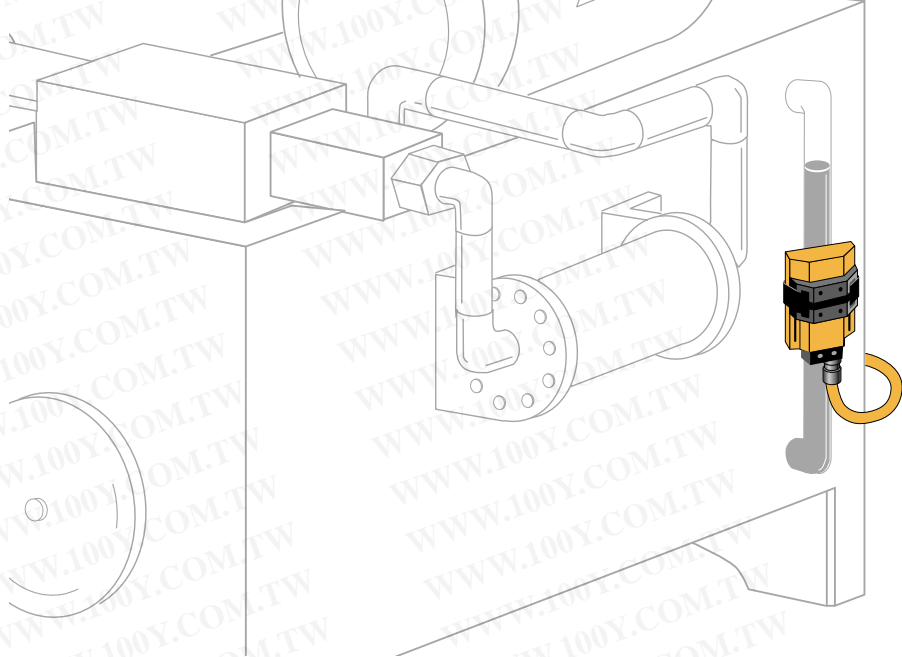
The KN compact level sensors incorporate LEDs for visual feedback. These indicators simplify the installation of the sensor and allow the operator to quickly identify marginal sensing conditions. LEDs also verify power to the sensor and the switching output status.

勝特力材料 886-3-5753170  
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# Applications

- ... Level detection of fluid in a hydraulic power unit
- ... Lubrication level in a sight glass
- ... Level of powders pneumatically conveyed in plastic pipes



KN level switch can verify the correct level of hydraulic oil in a hydraulic power unit.

## Specifications

Supply Voltage	10 to 36 VDC
Maximum Load Current	150 mA
Supply Current	<30 mA
Function Check Output	10 mA
Voltage Drop	<2.5 V
Switching Frequency	5 Hz
Short Circuit Protection	Yes
Reverse Polarity Protection	Yes
Status Indication	Yellow LED: Output Green LED: Power Red LED: Marginal Signal
Protection Rating	NEMA 3, 4, 6, 12, 13. IP 67
Ambient Temperature	-13 to 176 F (-25 to 80 C)
Housing Material	Polycarbonate, Polybutyleneterephthalate

## Ordering Information

Part No.	Connection	Output	
KN5105	Pre-wired	PNP	
KN5107	Pico (M8)	PNP	
KN5104	Pre-wired	NPN	
KN5106	Pico (M8)	NPN	

## Cable Accessories

### Straight Pico (M8)

<b>Part No:</b> E10859 <b>Cable Length:</b> 2 m	
<b>Part No:</b> E10860 <b>Cable Length:</b> 5 m	

## Mounting Accessories

<b>Part No:</b> E10879 Mounting Clip	<b>Part No:</b> E10880 Mounting Strap

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