

**Fuel Sensor**

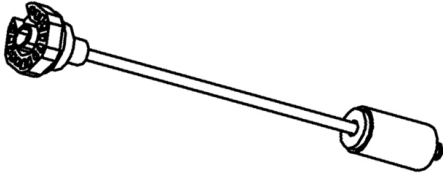


Figure 1. Diagram of fuel float sensor

**Features**

- Ability to activate and control switching up to nine switching points
- Hermetically sealed
- Ability to work under very hot and cold temperatures as normal operation
- Ability to withstand very toxic chemical atmosphere without any material degradation
- Dynamically tested contacts
- Reliable switching
- Designed to handle high shock environments
- Millions of reliable switching operations

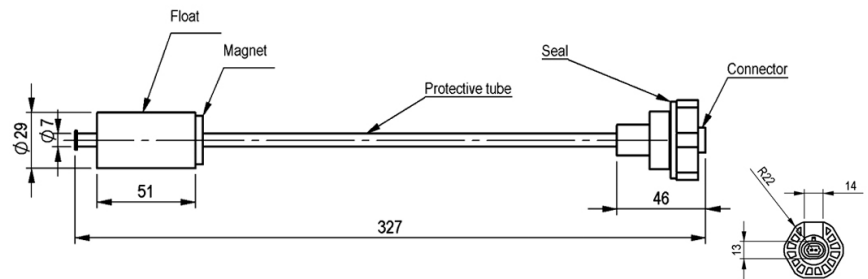
**Applications**

- Fuel monitoring systems
- Ability to monitor any liquid level particularly when multiple point monitoring is required

**Introduction**

All trucks and automobiles currently utilizing internal combustion engines have fuel tanks. To the driver of the fueled motor vehicle, one of the most important instruments on his front panel is his fuel gage. It is important that the gage provides an accurate reading of the fuel level. To properly measure the fuel, some form of instrument must exist inside the fuel tank. To survive this environment and make accurate measurements is not an easy undertaking. To supply the reliability and assurance of accurate fuel readings, Reed Sensors are being widely used because they operate reliably and accurately, while presenting an economical solution.

**Dimensions (mm)**



**Circuit Diagram**

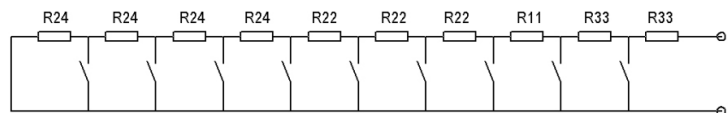


Figure 2. Sensor Physical Layout and Schematic Diagram

**MEDER's New Fuel Float Reed Sensors Offer Multiple Monitoring Positions To Give Accurate Fuel Levels.**

MEDER has developed a new float series having up to nine sensing points over a 300 mm sensing distance. These sensors are being designed into fork lifts, front end loaders, and various construction vehicles. These sensors are designed to withstand potential deterioration caused by exposure to the chemically active ingredients in gasoline (petro). The tube is made of stainless steel (see Figure 2) and the float that rides up and down over the tube is made of Nitrile Butadiene Rubber (NBR). This NBR is a special plastic designed to be impervious to oil, fuel and maintain its excellent features under high temperatures. These features include stable resistance to temperature, the ability to maintain buoyancy, chemical resistance to these liquids, mechanical strength, shock resistance and no changes in dimensional characteristics.

The LS Sensor Series can have anywhere from two up to nine sensing points. Each sensing point has a resistor in series, setting up a resistor network. As the float moves over the sensor tube, Reed Switches will be sequentially activated, changing the resistance in the resistor network. This change in resistance is then converted into an accurate depth measurement of the fuel.

## Specifications (@ 20°C) KSS Series

Operate specs	Min	Max	Units
Must close distance	ref	ref	mm
Must open distance	ref	ref	mm
Hysteresis			





Load Characteristics	Min	Max	Units
Switching voltage		200	V
Switching current		0.5	Amps
Carry current		1.25	Amps
Contact rating		10	Watts
Static Contact resistance		250	mΩ
Dynamic contact resistance		250	mΩ
Breakdown voltage	225		V
Operate time		0.5	msec
Release time		0.1	msec
Operate Temp	-10	90	°C
Storage Temp	-20	90	°C



With the requirement of different switching points for different vehicles it can be costly to have a different sensor for each different number of switching points. MEDER's engineering team took this into consideration during the sensors initial design concepts and found a way to come up with a "one design" approach that can generate multiple switching points. This approach basically eliminates the need for new tooling for each different sensor length.

Using Reed Switches for each sensing point guarantees reliable operation. Because the Reed Switch has excellent repeatability, It insures accurate operate points are achieved over the life of the sensor. These repeatable operate points are also achieved over the entire operating range from -10°C to 90°C.

These construction and/or warehouse vehicles are usually in use for 15 to 20 years. So accuracy and reliability are critical. These Reed Sensors are designed to give fault free operation for 10's of millions of operations.

Consult our engineering group with your specific applications.

Liquid Level Series				Illustration
Series	Dimensions		mm	
	mm	inches		
KSS-BV50860	W	29.0	1.142	
	H	29.0	1.142	
	L	327.0	12.874	
LS01	W	19	0.748	
	H	24	0.945	
	L	42	1.654	
LS02	W	19	0.748	
	H	24	0.945	
	L	75	2.953	
LS03	W	25	0.984	
	H	25	0.984	
	L	80	3.150	

Adaptable Liquid Level Series				Illustration
Series	Dimensions		mm	
	mm	inches		
LS04	W	25	0.984	
	H	25	0.984	
	L	165	6.496	
LS05	W	7-16	0.276-0.630	
		7-16	0.276-0.630	
	H	80-2000	3.150-78.740	

\*\*Consult the factory for more options not listed above.