conductive probes 1200

design		**G½“** **G1“** **G1½“**
level detection	probe length	**500mm** **1000mm** **1600mm**

- ✓ **process pressures up to 10bar**
- ✓ **process temperature up to +110°C**

up to 4 levels per probe can be shortened (to any length)

description

In connection with the respective filling level relays, ***ipf electronic*** probes serve the task of conductive limit status recognition in electrically conductive filling materials.
The electrode rods are fastened to one process connection, wherein the rods may measure a length of up to 1600mm. In order to discriminate between different filling heights, the electrode rods can be shortened to the desired length. Several tasks can be fulfilled at the same time with up to five contact electrodes. These include for example, securing against leakage and overfilling, minimum protection/ maximum protection and/or multi-point detection in containers, pump protection and/or protecting pumps from running dry when in pipes as well as the two step controlling of pumps.
The electron probes are designed for a wide range of applications. Conductivities over 1 µS/cm can be detected in the case of process temperatures of -15°C to +110°C and pressures of -1bar to +10bar.
The probe is either installed above the respective process connection in the container wall and/or the pipe wall or installed by means of a suitable holder above the filling material.
The AC voltage generated by the **FV56** filling level relay is then either applied between the electrode rods or between the electrode rods and the metallic container wall and/or the pipe wall connected with the filling level relay.
As soon as the electrically conductive filling material forms a connection between the electrodes and/or between the electrode and the metallic container wall and/or the pipe wall, a measurable current flows which causes the connected filling level relay to react. Through the use of an AC current corrosion is avoided on the electrode as well as electrolytic decomposition of the filling material .

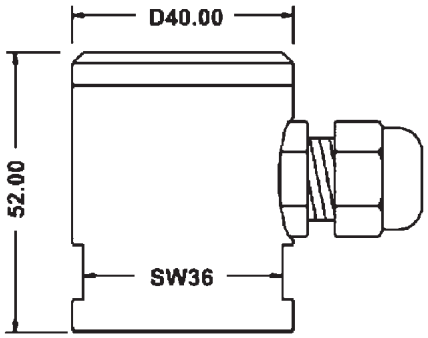
application examples

- as a security device to guard against leakage and overfilling
- as a protection against running dry of pumps
- as a two step control in systems
- limit state checks in containers

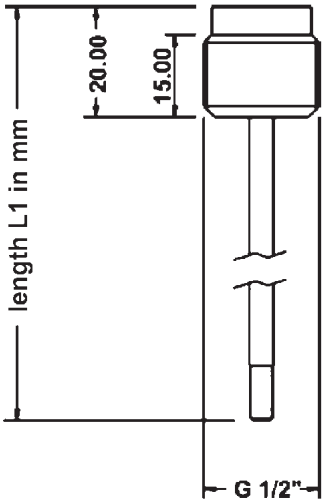
filling level sensors

1200 conductive probes

article-no.	**FS906000**	**FS906001**
connection sensing element	**G½“**	**G½“**
version	**1 probe, L1: 500mm, Ø4mm**	**2 probe, L1: 1000mm, Ø4mm**



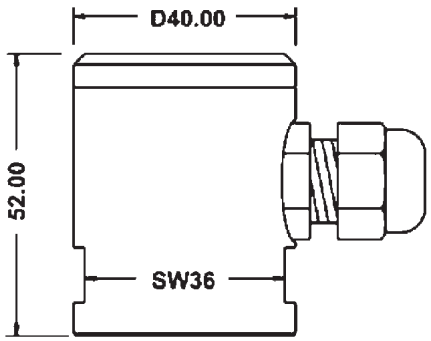
connection housing
Ø 40 mm



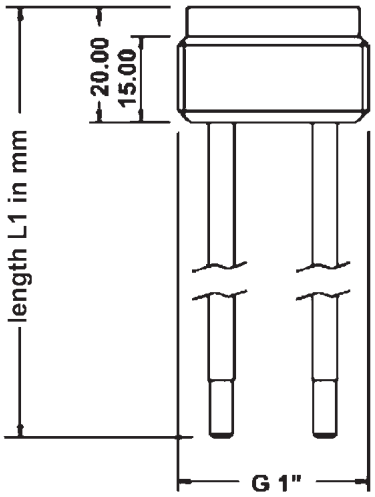
TECHNICAL DATA

connection sensing element	G½“	G½“
version	1 probe, L1: 500mm, Ø4mm	2 probe, L1: 1000mm, Ø4mm
housing material	POM - polyoxymethylene	POM - polyoxymethylene
sensing element material	stainless steel 1.4404 insulation: PA - polyamide	stainless steel 1.4404 insulation: PA - polyamide
operating temperature	-10 ... +100°C	-10 ... +100°C
pressure resistance (operation)	-1 ... +10bar	-1 ... +10bar
system of protection (EN 60529)	IP67	IP67
connection	terminals	terminals

article-no.	**FS926030**	**FS92A789**
connection sensing element	**G1“**	**G1“**
version	**3 probes, L1: 1000mm, Ø 4mm**	**4 probes, L1: 1000mm, Ø 4mm**



connection housing
Ø 40 mm



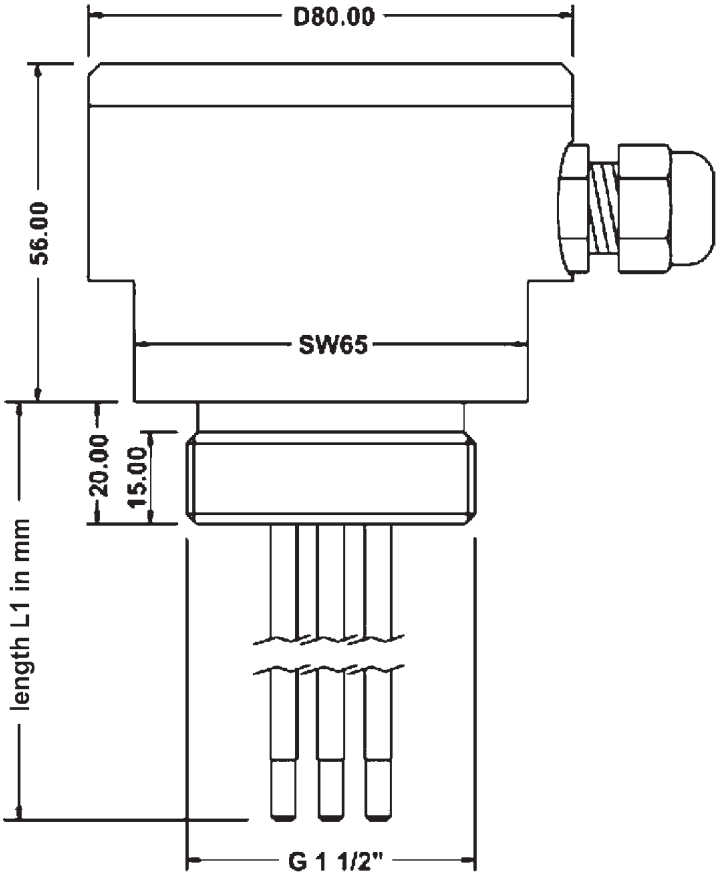
TECHNICAL DATA

connection sensing element	G1“	G1“
version	3 probes, L1: 1000mm, Ø 4mm	4 probes, L1: 1000mm, Ø 4mm
housing material	POM - polyoxymethylene	POM - polyoxymethylene
sensing element material	stainless steel 1.4404 insulation: PA - polyamide	stainless steel 1.4404 insulation: PA - polyamide
operating temperature	-10 ... +100°C	-10 ... +100°C
pressure resistance (operation)	-1 ... +10bar	-1 ... +10bar
system of protection (EN 60529)	IP67	IP67
connection	terminals	terminals

filling level sensors

1200 conductive probes

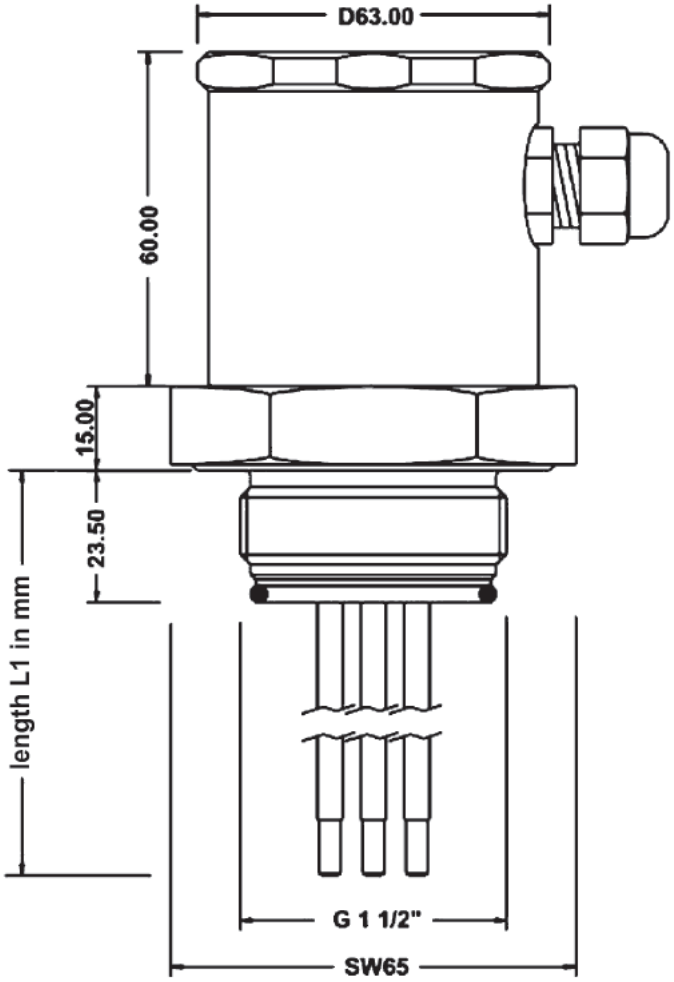
article-no.	FS94A946	FS94C375
connection sensing element	G1½“	G1½“
version	5 probes, L1: 1000mm, Ø 4mm	4 probes, L1: 1600mm, Ø 4mm



TECHNICAL DATA

connection sensing element	G1½“	G1½“
version	5 probes, L1: 1000mm, Ø 4mm	4 probes, L1: 1600mm, Ø 4mm
housing material	POM - polyoxymethylene	POM - polyoxymethylene
sensing element material	stainless steel 1.4404 insulation: PA - polyamide	stainless steel 1.4404 insulation: PA - polyamide
operating temperature	-10 ... +100°C	-10 ... +100°C
pressure resistance (operation)	-1 ... +10bar	-1 ... +10bar
system of protection (EN 60529)	IP67	IP67
connection	terminals	terminals

article-no.	**FS946031**
connection sensing element	**G1½“**
version	**3 probes, L1: 1000mm, Ø 4mm**



TECHNICAL DATA

connection sensing element	G1½“
version	3 probes, L1: 1000mm, Ø 4mm
housing material	POM - polyoxymethylene
sensing element material	stainless steel 1.4404 Isolation: E-CTFE-Ethylen-Chlorotrifluorethylen
operating temperature	-15 ... +110°C
pressure resistance (operation)	-1 ... +10bar
system of protection (EN 60529)	IP67
connection	terminals

1200 conductive probes

installation notes

The system must be free from pressure before assembling or disassembling the device. In order to avoid injuries, high pressures should be avoided. In order to insert the probe without the use of force into the system, plan for sufficient assembly space outside of the container.

As the case may be, mount the device in a bypass if you expect dense, heavy foam, strong turbulence or foamed liquid.

Mount the probe to a place in the container where no lateral forces, e.g. stirrers or filling openings can have an effect on the electrode rods. This is especially the case with particularly long electrode rods. When installed, the bare electrode tips should not touch the container wall if these are made from metal or electrically conductive plastic.

In the case of electrode rods over 0.5m these should be stabilized both among each other as well as with respect to the container wall. This is especially the case when filling material is involved that is moved to a great extent. In such conditions, use appropriately insulated spacers. The distance between the spacers should be 0.5m max.

In the case of horizontal, lateral installation in a container or in a pipe, the length of the electrode rod should be 200mm max. (for reasons of stability). In the case of horizontal installation, the electrode rods should be mounted with electrode tips pointing slightly downwards (approx. 20°). This is to enable easier discharge of filling material residue and with it, also to avoid the formation of build up.

In the case of horizontal lines, the electrode lengths should be selected to be so long that the electrically conductive filling material connection between the electrodes and the wall and/or between the two electrodes can also pull apart in the case of an empty pipe, despite liquid residue. Otherwise, this can be reported as filled, despite an empty pipe.

In the case of process connections with a screw in thread, the tightening of the process connection may only take place on the hexagonal bolt by means of a suitable wrench. The maximum permissible torque is 100Nm. The screwing in of the process connection by means of the connection housing is not permissible.

connection

For the connection, only use a suitable cable with 25Ω max. for each wire. This cable must fulfill the requirements e.g. with respect to temperature, material or laying at the place of installation.

The cable connection is suitable for cable diameters of 3.5 to 8mm. After installing the cable, screw the cable connection tight in order to make sure the connection housing has a good seal.

Signal and measurement lines should be laid which are shielded as much as possible from other current-carrying lines. In the case of strong electro-magnetic radiation, you should use a shielded cable as a matter of course. Ground the cable shield on one side of the cable.

A suitable type **FV56** evaluation device should be connected to the electrode rods on the inside of the terminal housing via the connecting cable. The cable connection to the electrode rods takes place via terminals for a wire cross section of up to 2.5mm or via screw connections in the terminal housing. For the connection, use insulated cable shoes.

In the case of devices with a metal process connection, contact can be made with this connection via a blade terminal.

Warning: Never use these devices in applications where the safety of a person depends on their functionality.