Eletta Liquid Flow Switch

for safe and reliable flow control

SP-GA

SP-G

EF-G

Eletta flow

when you want to know

SP-G series

EF-G series

Process connection for the SP-G and EF-G is either a female DN15 ($^1/_2$") or a male DN20 ($^3/_4$") and the switches are made of a copper alloy with internals in stainless steel and the EF-G has also a epoxy plastic laminate part which protects the inductive sensor.

SP-GA series

SP-GA Flow Switches are made in brass alloy/stainless steel and they are designed for threaded pipe connection DN40 (1 $^1/_2$") as a standard with the possibility to reduce the process connection to DN32 (1 $^1/_4$") or DN25 (1") with a reducing nipple (optional).

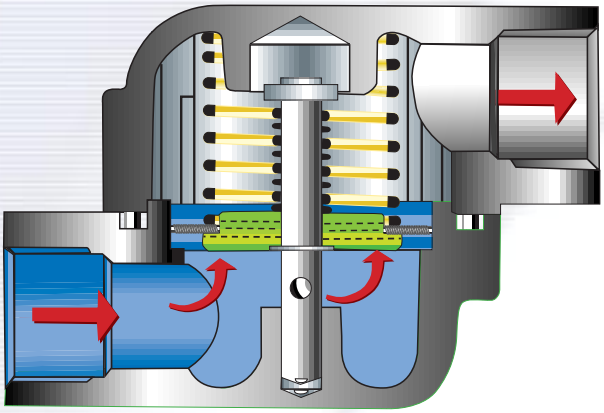
Benefits of the series

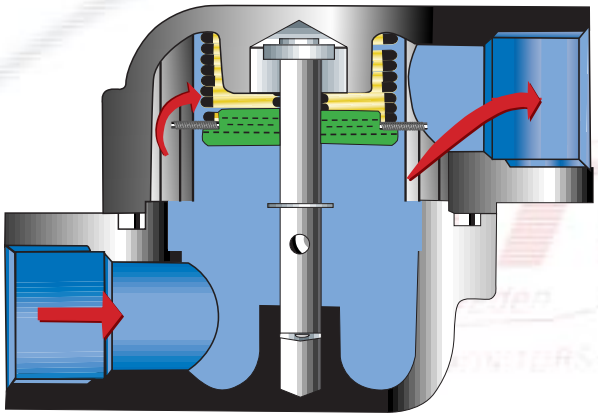
- **Rugged and sturdy design**
- **Insensitive to magnetic fields**
- **Simple and economical installation**
- **One adjustable SPDT micro switch for flow alarm**
- **Can be mounted horizontally or vertically**
- **Pressure up to 100 bar**
- **Can be used in any liquid**
- **Function based on flow and not affected by the static line pressure.**

Important applications and product features

The Eletta Liquid Flow Switches reliable function has been proven for over 50 years and is of our own design and manufacture. It has been recognized all over the world for its economical and simple construction, which includes the unique lever sealing design, used in our complete Flow Products line including the differential pressure monitors. The switches are used in a variety of tough industrial applications that requires the reliability and sturdiness given by each instrument.

- Dry pump protection
- Low flow alarm in cooling circuits
- Antifreeze protection of heat pump systems
- Protecting heating tool in induction heating machines
- Low cost solution for difficult applications
- Very low flow switching point possible
- Needs no straight runs before or after the switch
- Pre adjusted switch points exclude the need of adjustments in the field





Working Principle

Closed

Inside the Flow Switch there is a spring loaded calibrated disc, which will be lifted by the fluid passing. The shaft holding the disc is mechanically connected to a lever, which will influence the micro switch to trip at a preset flow value.

Open

As soon as the micro switch has tripped a pump to start or open a valve, the flow incrases and the possible flow area increases. The increasing flow volume will push the disc to open fully. Max flow passage is only limited by the pump capacity and the applications accepted pressure drop.

The Eletta Liquid SP-GA Flow Switch

The SP-GA Flow Switch is designed to give an initial alarm at a very low flow and still capable of allowing a high full liquid flow passing through when pumps or valves are activated by the micro switch.

This is since the SP-GA Flow Switch is designed with a variable flow passage area which increases as the liquid flow rate increases.

The SP-GA is also equipped with an internal rubber diaphragm to make the switch even more sensitive at low liquid flows.

As the disc inside is spring loaded, it is possible to install the Eletta SP-GA Flow Switch in any position, vertical, horizontal or even up side down.

This gives an advantage over other types of flow switches such as Rotameters, Target or Paddle, which generally requires vertical mounting.

The function is based on fluid flow activation only and therefore it is not affected by changes in static pressure."

The Eletta Liquid SP-G and EF-G Flow Switch

As an add to the larger SP-GA we have designed the Eletta SP-G and EF-G Flow Switch to be able to fit smaller flow and line sizes. These switches also work on the principle of variable flow area where the alarm switch point is allowed to bet set at a very low flow and still the switch is capable of handling large flows without creating a large pressure drop.

The construction also allows horizontal or vertical mounting of the switch as the spring loaded disc will work independent of installation. Another feature is that the outlet can be rotated 90° or 180° with respect to the inlet, according to the application and hence, the Eletta SP-G and EF-G can be installed in places where space is very limited.

The flow switch have an internal calibrated disc that activates the micro switch at the ordered flow rate and this disc is adjusted before delivery. The two different models varies such as the SP-G Flow Switch contains a micro switch to give a signal and the EF-G has an inductive sensor. The inductive sensor version EF-G, allows a higher process pressure up to a maximum of 100 bar.

Specifications

SP-GA

Flow range:	0 –300 l/min
Min switch point:	3 l/min
Max. switch point:	70 l/min
Wetted materials:	Copper alloy and stainless steel 316
Rubber parts:	EPDM and Fluorinated rubber (FPM) as option
Max. pressure:	25 bar (363 PSI)
Process connection:	DN40 (BSP 1 $^1/_2$") standard and DN32 (BSP 1$^1/_4$") or DN25 (BSP 1") with a reducing nipple (option)
Max temp:	90°C (195°F) std with 120°C (248°F) as option
Enclosure material:	Polycarbonate (Lexan®)
Protection class:	IP43 (NEMA 3R) with cable gland PR18,6 included
Alarm:	The SP-GA has one (1) micro switch contact, adjustable to trip within the above mentioned min/max switch point
Micro switch spec.:	Contact surfaces are silver plated as standard Type: SPDT Hystereses: apx. 20% Current rating: 250V/8 A Nominal 250V/10 A Thermal
Pre set alarm:	3 l/min increasing flow (if not ordered differently)
Pressure drop:	apx. 0,075 bar/3 l/min. (lowest switching point)
Approvals:	The Eletta Liquid Flow Switches conforms with the EU directive for low voltage no: 72/23/EEC (EN 60 204-1, part 1). They also comply with applicable parts in the PE-directive 97/23/EC.

SP-G and EF-G

Flow range:	0 – 3,5 m/s. Max flow limited by pump capacity and acceptable pressure drop
Min switch point:	1,5 l/min
Max. switch point:	30 l/min
Wetted materials:	De-zincificated copper alloy, stainless steel 316 and PTFE
Rubber parts:	Nitrile (HNBR)
Max. pressure:	SP-G: 25 bar (363 PSI) EF-G: 100 bar (1450 PSI)
Process connection:	DN15 (BSP1 $^1/_2$") female DN20 (BSP $^3/_4$") male
Max temp:	SP-G: –20 - 90°C (–4 - 195°F) std –20 - 150°C (–4 - 302°F) option EF-G: –20 - 70°C (–4 - 158°F)
Enclosure material:	Polycarbonate (Lexan®) on SP-G
Enclosure protection:	SP-G: IP43 (NEMA 3R) with cable gland PR18 EF-G: IP67 (NEMA 6)
Alarm SP-G:	The SP-G has one (1) micro switch contact, adjustable to trip within the above mentioned min/max switch point
Micro switch spec.:	Contact surfaces are nickel silver gold alloy Type: SPDT Hystereses: apx. 10% Current rating: 250V/8 A Nominal 250V/10 A Thermal
Alarm EF-G:	The EF-G has one (1) inductive sensor with 1,5 meter cable Voltage: 20 - 265 V DC/AC
Pre set alarm:	1,5 l/min increasing flow (if not ordered differently)
Pressure drop:	apx. 0,03 bar/1,5 l/min. (lowest switching point)
Approvals:	The Eletta Liquid Flow Switches conforms with the EU directive for low voltage no: 72/23/EEC (EN 60 204-1, part 1) . They also comply with applicable parts in the PE-directive 97/23/EC.

Eletta Flow Monitors

The name Eletta has become synonymous with flow monitoring in many industries world wide where the Products are appreciated for their sturdy and robust design.

Eletta Flow Monitors are of our own proprietary design and our manufacturing as well as the whole company is certified to ISO 9001 and ISO 14001 quality standards since 1996.

We export our Products all over the world and we have Authorized Distributors in most European countries, Australia, South Africa, India, China, Japan and USA.

Find out more

In our technical leaflets and manuals you will find full details of the design, pressure drop graphs, measuring ranges and dimensional drawings. We welcome you to our at all time updated web site at **www.eletta.com** for the most recent and accurate information about Eletta and our Products. At this site you can find most of the documentation on down-loadable files. Whatever your request for information is, our e-mail address: **info@eletta.com** is the fastest way to get in contact with our Customer Support and technical department. Of course, your local Eletta Distributor, which address you can find at our homepage, can assist you in most cases.

ELETTA

FLOW MONITORS

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