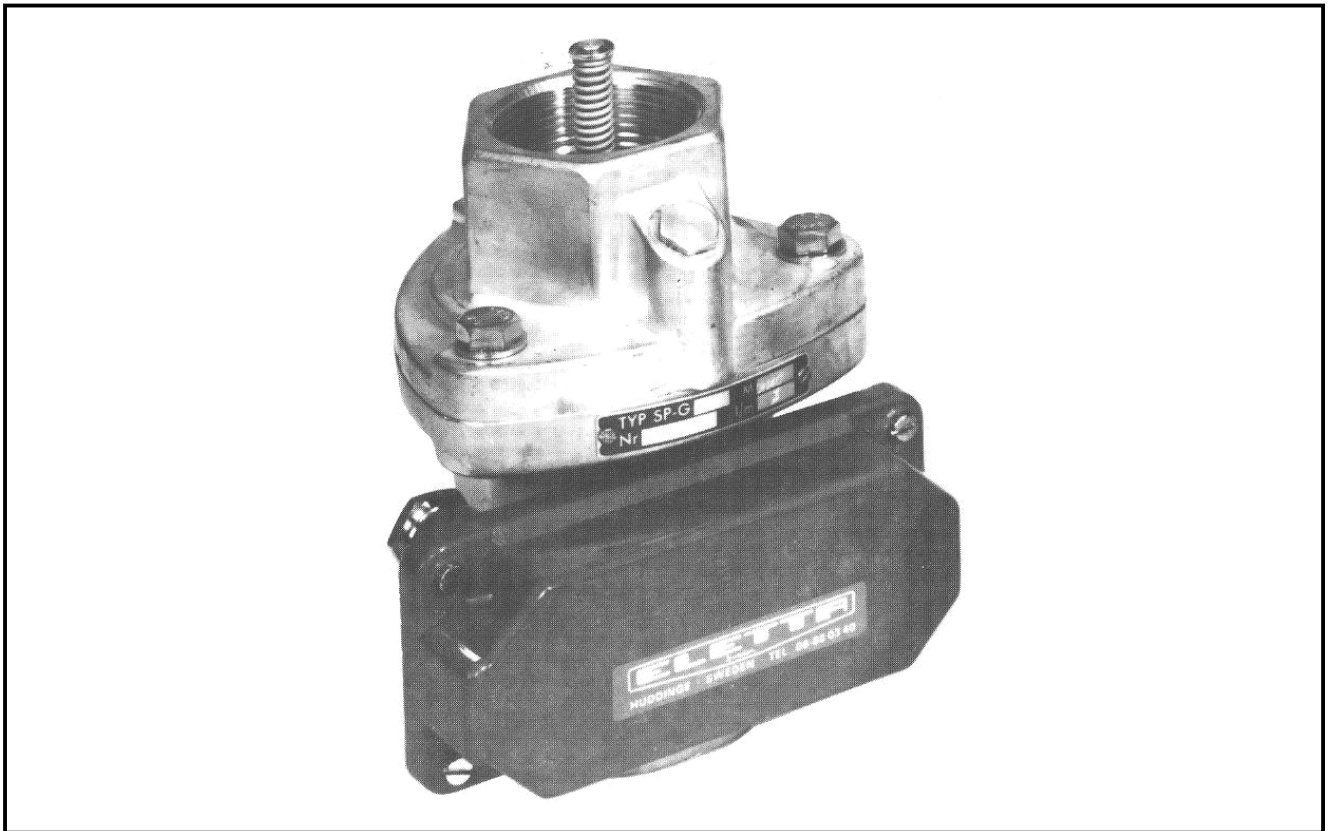


# LIQUID FLOW RELAY SP-GA



## DESIGN AND FUNCTION

The SP-GA liquid flow relay is intended for the monitoring and control of flow. The function is based on the flow of the liquid alone and is not affected by the static pressure in the system. The device is particularly suitable for contact-making to issue a signal when the liquid flow tends to approach 0 and in cases where the relay must be able to allow relatively large quantities of liquid to pass without excessive pressure drop. In order to permit such function the instrument has a variable flow passage area, designed in such a way that the flow area increases with increasing liquid flow rate.

The liquid flow relay can be used for a variety of applications. One example is car washing installations, where the relay functions as an automatic start and stop device for the high-pressure pump. The relay is installed in the carwash's water supply main and its electrical switching device is incorporated in the control circuit for the high-pressure pump's motor protection contactor. When washing is about to take place, the hose nozzle is opened and the main's water pressure forces a small flow of water through the hose. This small flow of water is nevertheless sufficient for the liquid flow relay to start the high-pressure pump, producing the flow of water under elevated pressure which is necessary for washing. When the work is finished and the nozzle is closed, the water flow ceases and the high-pressure pump is automatically turned off by the relay. This method has the following advantages:

- Automatic operation
- The high-pressure pump is only turned on during washing. Thus the pump will never, as is often the case with manual start and stop, have to run dry, which quickly destroys the pump unit.
- Simple, inexpensive electrical installation, low operating cost.

## DESIGN

The relay is designed for threaded pipe connection DN40 (R 1½"). It can also be fitted with reductions for connection DN25 (R 1") or DN32 (R 1¼"). The relay body is made of brass alloy SIS5170. Other parts which come into contact with liquid are made of brass and stainless steel. The diaphragm and packings are made of high-grade synthetic rubber. The relay is fitted with a dirt trap. The electrical cables enter through an entry gland and are connected to a terminal board inside the junction box. The box contains a terminal screw for protective earthing. The switch itself is protected by a corrosion-resistant hermetic enclosure.

## INSTALLATION, MAINTENANCE AND CARE

1. The relay can be installed in any position. But as condensation can form in the electrical junction box in certain installations, the relay should be installed in such a manner that any condensate which might form is drained off through the drainage hole in the junction box.
2. Make sure that the liquid is flowing in the direction indicated by the arrow on the relay body.
3. Make sure that the breaking capacity of the switch is not exceeded. Check the protective earth.
4. When the flow relay is used in a car-wash, the lowpressure side is connected. Check that there is no leakage in the pipework downstream of the relay.

|                                  |                   |
|----------------------------------|-------------------|
| Max. working pressure            | 25 bar            |
| Max. temp. standard switch       | 70°C (158°F)      |
| Max. temp. special switch        | 120°C (248°F)     |
| Min. temp.                       | -10°C (14°F)      |
| Min. signal point                | 3 l/min           |
| Max. signal point                | 70 l/min          |
| Pressure drop at signal point    | approx. 750 mm VG |
| Flow rate capacity               | > 300 l/min       |
| Hysteresis                       | approx. 20%       |
| Protective class as per IEC 144  | IP 43             |
| Insulation class as per SEN 2106 | 2                 |

**MEDIUM**

The standard version of the relay is designed for water. Relays are available for other liquids by special order.

**SIGNAL POINT**

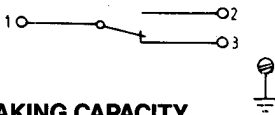
If not otherwise specified in the order, the signal point is 3-4 l/min.

**PRESSURE DROP**

Approximate pressure drop at different flows is shown in the chart.

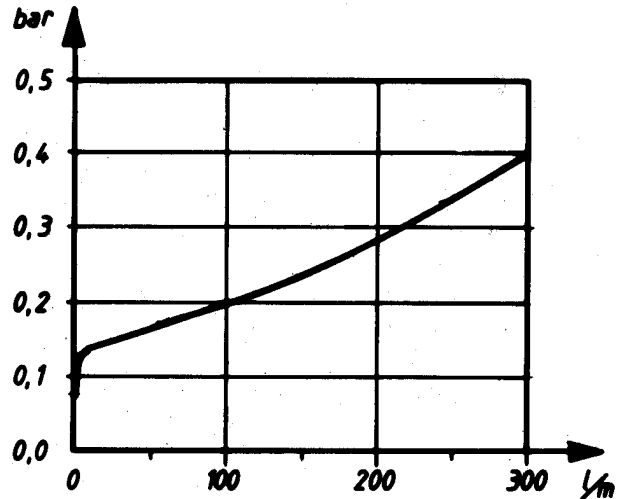
**SWITCH**

Contact function 1-pole, 2-way

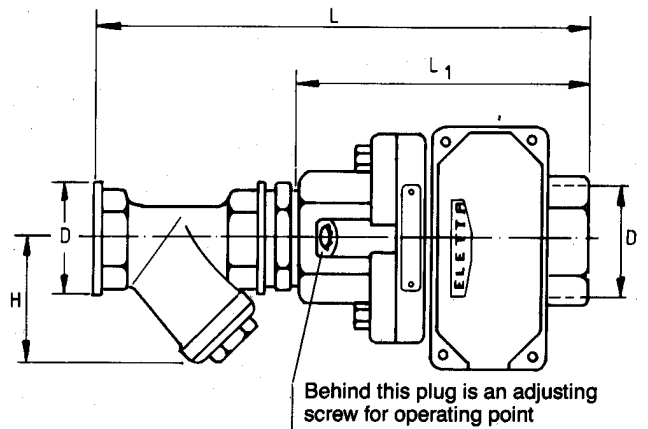
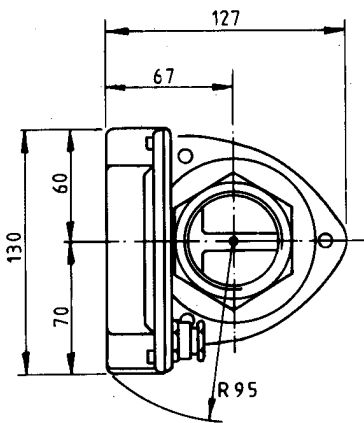


**BREAKING CAPACITY**

| Voltage<br>V | Resistive load | Inductive load |
|--------------|----------------|----------------|
|              | A              | A              |
| AC           |                |                |
| 125          | 5              | 5              |
| 250          | 5              | 5              |
| DC           |                |                |
| ≤ 30         | 5              | 3              |
| 50           | 1              | 1              |
| 75           | 0,75           | 0,25           |
| 125          | 0,5            | 0,06           |
| 250          | 0,25           | 0,03           |



**DIMENSIONS**



Dimensions in mm (unless otherwise specified)

| Type  | Connection     | D   | L   | L <sub>1</sub> | H   | Weight kg<br>excl. filter |
|-------|----------------|-----|-----|----------------|-----|---------------------------|
| SP-GA | DN 25 R 1"     | 260 | 170 | 65             | 3,5 |                           |
| SP-GA | DN 32 R 1 1/4" | 305 | 170 | 85             | 3,3 |                           |
| SP-GA | DN 40 R 1 1/2" | 285 | 150 | 85             | 3,2 |                           |



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We reserve the right to make alterations without notice.