

Fema Regelgeräte  
Honeywell AG  
Böblinger Straße 17  
D-71101 Schönaich

### ATTENTION!

Connection and commissioning must be performed by properly authorized and qualified personnel!



Connection to mains supply (L, N) must be made by means of a protected isolating switch with the usual fuses. As a matter of principle, the General VDE Regulations must be complied with (VDE 0100, VDE 0113, VDE 0160). If the potential-free contact is connected to an extra-low safety voltage, sufficient insulation must be provided for the connecting cables up to the terminal, since otherwise the double insulation to the mains voltage side may be impaired. The current load capacity of the potential-free contact is limited to 6 A. Therefore, the electrical circuit of the potential-free contact must be protected by a 6.3 A fuse.

### Commissioning

- Install and connect the flow controller in accordance with installation instructions and conditions.
- Set trimmer „Sensitivity“ to minimum sensitivity (left limit stop).
- Connect mains voltage. The green LED lights up. Set nominal rate of flow.
- Slowly turn coarse potentiometer „Sensitivity“ clockwise until the yellow LED lights up and the signal output switches. In order to avoid erroneous switching at low changes of flow, turn the fine potentiometer slightly past the switching point.
- Check this setting after about 2 – 3 minutes and, if required, readjust by turning the fine potentiometer.

### Trouble shooting

Problem	Possible Cause	Corrective Action
KSW.. does not function at all	None or wrong mains voltage connected	Check mains voltage and connection
KSW.. does not detect flow	Sensor not installed correctly	Check installation conditions
KSW.. exhibits changed tripping behavior	Sensor heavily contaminated by the medium	Carefully clean sensor with water
KSW.. switches at rapid temperature increase of the medium	Temperature gradient is outside of technical specifications	Turn potentiometer „Sensitivity“ slightly further clockwise. Check temperature gradient of the system.

**Should you have any further questions, please contact:**

TELEFON: 0 70 31 / 637-02 • FAX: 0 70 31 / 637-850 • INTERNET: <http://www.honeywell.de/fema>  
BANKEN: Deutsche Bank AG Böblingen 05 / 89 200 (BLZ 600 700 70) • Volksbank Schönbuch eG 784 001 (BLZ 603 628 04)  
VORSTAND: Horst Bellwied, Regine Blickwede, Joachim Frosch, Wolfgang Fuchs, Horst Wild, Michael Löffler (stellv.)  
VORSITZENDER DES AUFSICHTSRATES: Arnold Günther • SITZ: Offenbach am Main, Amtsgericht Offenbach am Main 5 HRB 6225 07/03/03

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## Flow Controller

### Operating Instructions for Flow Controller KSW..



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The flow controllers of the series KSW.. are used to monitor flow speeds of liquid and watery media within the stated technical specifications. The main area of application is the control of pumps and cooling circuits.

### Proper use

The flow controllers of the series KSW.. are intended to be used in monitoring of flow speeds of liquid and watery media within the specified technical data. The main area of application is the control of pumps and cooling circuits.

### Function principle

The flow controllers of the series KSW.. function according to the calorimetric principle. The units are switched when a certain pre-selected threshold value is reached.

Flow > / = threshold value	signal output switched	yellow LED „Flow“ is on
Flow < threshold value	signal output not switched	yellow LED „Flow“ is off

### Specifications

Type	KSW24	KSW230
Operating voltage	24 V AC/DC	230 V/AC
Voltage tolerance	±10%	±10%
Overvoltage category	II	II
Signal display, voltage	green LED	green LED
Power consumption, max.	4.5 VA	4.5 VA
Ambient temperature, unit	-20..+60°C	-20..+60°C
Signal output flow	1 change-over contact	1 change-over contact
Current and contact load capacity	250 VAC, 6 A, 1.5 kVA	250 VAC, 6 A, 1.5 kVA
Switching function at flow	relay picks up	relay picks up
Signal display at flow	yellow LED	yellow LED
Media temperature range	-10..+80°C	-10..+80°C
Temperature gradient	15 K/min	15 K/min
Switching point	adjustable with pot	adjustable with pot
Measuring range	0.05 – 3 m/s	0.05 – 3 m/s
Response time	1 .. 10 sec.	1 .. 10 sec.
Sensor	integrated	integrated
Immersion depth	48 mm	48 mm
Process connection	G ½"	G ½"
Sensor material	stainless steel V2A (1.4305)	stainless steel V2A (1.4305)
Pressure resistance	20 bar	20 bar
Type of protection, housing	IP65	IP65
Type of protection, sensor	IP67	IP67
Contamination class	2	2
Connection	5 terminals, 2.5 mm <sup>2</sup>	5 terminals, 2.5 mm <sup>2</sup>
Housing dimensions	L 56 mm, W 84 mm, H 80 mm	L 56 mm, B 84 mm, H 80 mm
Certification symbols	○	○

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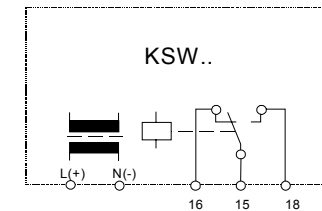
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### Installation Conditions KSW..

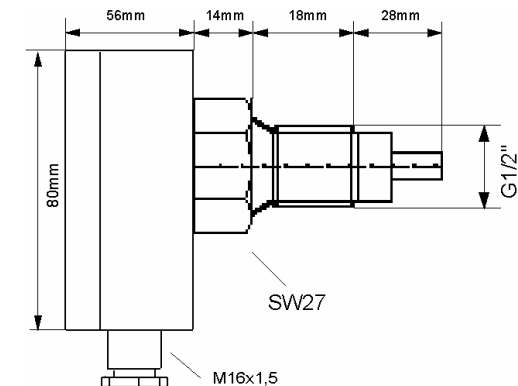
To avoid malfunctions, the following points should be observed.

- The tip of the sensor (15 mm) should be as close as possible to the center of the pipe and must be within the **full flow** of the gaseous medium.
- In case of deposits or air inclusions in horizontal pipes the KSW.. should be installed sideways.
- In case of vertical pipes, the direction of flow should be upwards.
- Maintain a free **inlet distance of 5xD** upstream of the sensor and **3xD outlet distance** downstream of the sensor.
- Screw in the flow controller by means of the hexagon of the sensor housing only.
- The flow controller can be installed in any position.

### Electrical connection



### Dimensions



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