

Air flow sensing relay JSL-1E

Mechanically operated



Technical data

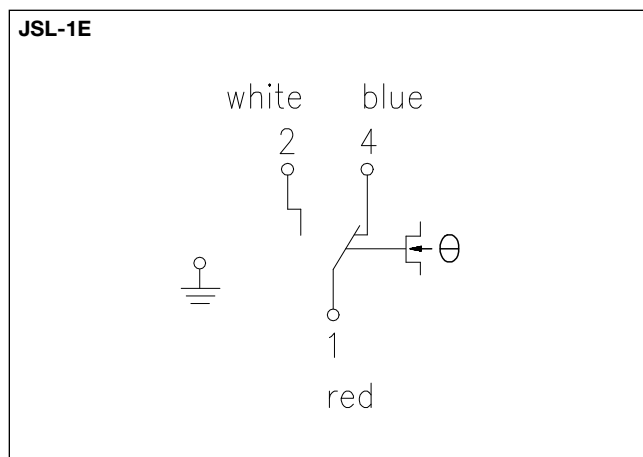
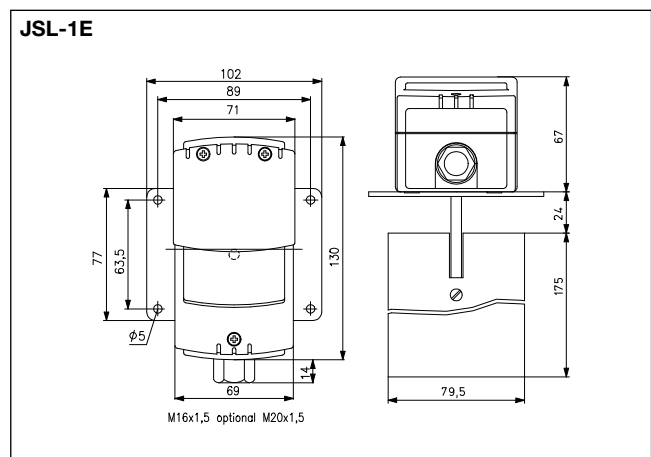
| | |
|------------------------------------|--|
| Switching capacity: | 15 (8) A, 24–250 V~, at 24 V~ min.150mA |
| Switching difference: | ≥ 1 m/s |
| Contact: | 1 microswitch as potential-free changeover contact |
| Degree of protection: | IP 65 (after installation, on the media side: IP20) |
| Protection class: | I |
| Ambient temperature: | -40... +80 °C |
| Max. temperature of medium: | 85 °C |
| Lever: | brass |
| Tag: | V2A (1.4301) |
| Colour: | grey (bottom part RAL 7016, upper part RAL 7035) |

Application

Supervision of airflows in channels or conduits or of airflows in the supply or exhaust air components or facilities of fans or of electrical heating coils.

The air flow sensing relay is, ex factory, adjusted to the minimum switching points. Turning the internal screw in clockwise direction enables to increase the switch-on or switch-off values. Installation from above in the vertical paddle position in a horizontal conduit/channel.

| Type | Item No. | Min. switch-on value | Min. switch-off value | Max. switch-on value | Max. switch-off value | PG |
|--|-----------|--------------------------------------|-----------------------|----------------------|-----------------------|-----------|
| JSL-1E | JA 070100 | 2 m/s | 1 m/s | 9.2 m/s | 8.0 m/s | G |
| Accessories | | | | | | PG |
| JZ-08 E | E 6150031 | spare tag , see pages 187–188 | | | | K |
| Option: screwed cable gland M 20 x 1.5 (standard: M 16 x 1.5) | | | | | | G |



Air flow monitor JSL-20/21

Electronic controller



Technical data

- Power supply:** 250 V ~ (24 V ~ at JSL-20/24 V and JSL-21/24 V)
- Working range:** 0.2 to 10 m/s
(max. air velocity = 10 m/s)
- Switching capacity:** 10 (3) A, 24–250 V ~, min. 150 mA at 24 V ~
- Measuring principle:** hot film anemometer
- Operating principle:** The air flow acts on a sensor housed inside a sensor tube in a cooling manner. The stronger the air flow, the higher the cooling effect on the sensor. A second sensing element serves to compensate the effect of the air temperature.
- Switching hysteresis:** 1 ... 10 %
- Switch-on delay:** 15 ... 120 s
- Fall delay time:** 2 ... 20 s
- Contact:** changeover contact (relay, potential-free)
- Degree of protection:** IP 65
- Protection class:** II
- Ambient temperature:** sensor: -20 ... +100 °C, controller: 0 ... 60 °C
- Fastening:** independent of position
- Colour:** grey (bottom part RAL 7016, upper part RAL 7035)

Application

For the flow-dependent supervision of fans, regulating valves of humidifiers and electric coil heating systems according to DIN 57100, part 420 or for the combined application with DDC units.

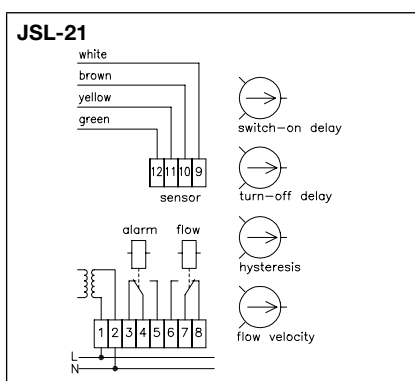
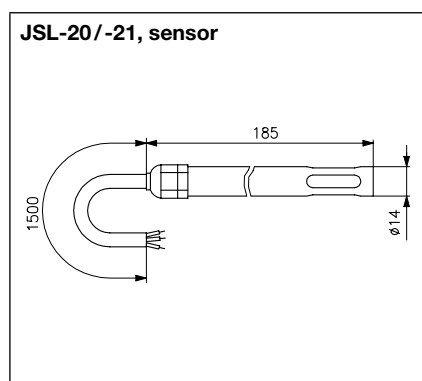
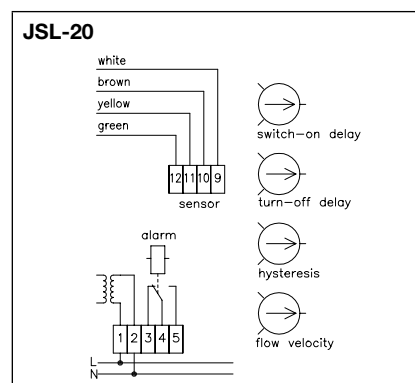
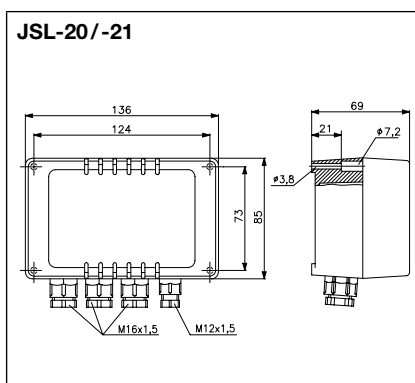
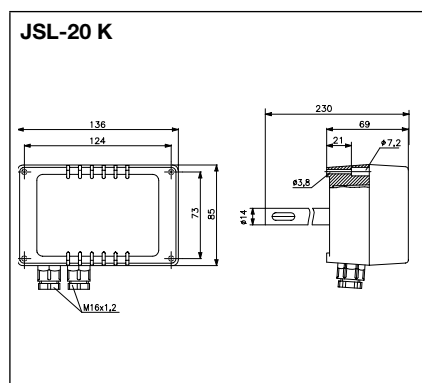
The sensor cable can be extended up to 100 m length.

The sensor line must not be laid in parallel with mains supply cables. Recommended cable: 4 x 0.75 mm², shielded. Sensor and monitor form a single unit with a joint order number.

| Type | Item No. | Relay | Integral sensor | Equipment | PG |
|--------------|-----------|-------|-----------------|-----------------|----|
| JSL-20 | G 8000004 | 1 | no | without locking | J |
| JSL-20/24 V | G 8000117 | 1 | no | without locking | J |
| JSL-20 K | G 8000204 | 1 | yes | without locking | J |
| JSL-21* | G 8000016 | 2 | no | with locking** | J |
| JSL-21/24 V* | G 8000133 | 2 | no | with locking** | J |

* without locking (on request)

** device to be disconnected and to be made voltage-free for resetting



Flow monitor JSF-1 E... 4 E

Mechanically operated – TÜV tested



Technical data

| | |
|---|---|
| Switching capacity: | 15 (8) A, 24–250 V~, min. 150 mA at 24 V~ |
| Contact: | 1 microswitch as potential-free changeover contact |
| Accuracy: | ± 15 % of adjusted set value |
| Degree of protection: | IP 65 |
| Protection class: | I |
| Ambient temperature: | -40 ... +85 °C |
| Max. temperature of medium: | 120 °C |
| Paddle: | V4A |
| Colour: | grey (bottom part RAL 7016, upper part RAL 7035) |
| TÜV type tested, "Flow 100" compliant up to 6" | |
| Component reference no.: | TÜV S. 04-016 1 ...-4 E TÜV S. 04-017 1 RE, 2 RE |

Application

Flow supervision of liquid media that flow through 1/2" up to 8" tubes or pipes, such as in oil, cooling or lubricant circuits. Can also be applied as protection against the lack of water.

Installation: vertical into a horizontal tube (also possible into vertically running tubes or pipes – see operating instructions).

Moderation distance needed: equivalent to min. 5fold tube diameter in front of and after the paddle.*

The max. flow can be significantly higher than the max. monitor setting value.

| Type | Item No. | Pipe | Max. operating pressure | Medium | Equipment | Carrier body | PG |
|-----------------|-----------|---------|-------------------------|---------------|-----------------------------------|--------------|----|
| JSF-3 E | JA 060500 | 1/2" | 5 bar | normal | attached T-piece (grey cast iron) | Brass | G |
| JSF-4 E | JA 060600 | 3/4" | 5 bar | normal | attached T-piece (grey cast iron) | Brass | G |
| JSF-1 E | JA 060100 | 1"...8" | 8 bar | normal | | Brass | G |
| JSF-1 RE | JA 060200 | 1"...8" | 5 bar | normal | reduced switching values** | Brass | G |
| JSF-2 E | JA 060300 | 1"...8" | 13 bar | aggressive*** | | V4A | G |
| JSF-2 RE | JA 060400 | 1"...8" | 5 bar | aggressive*** | reduced switching values** | V4A | G |

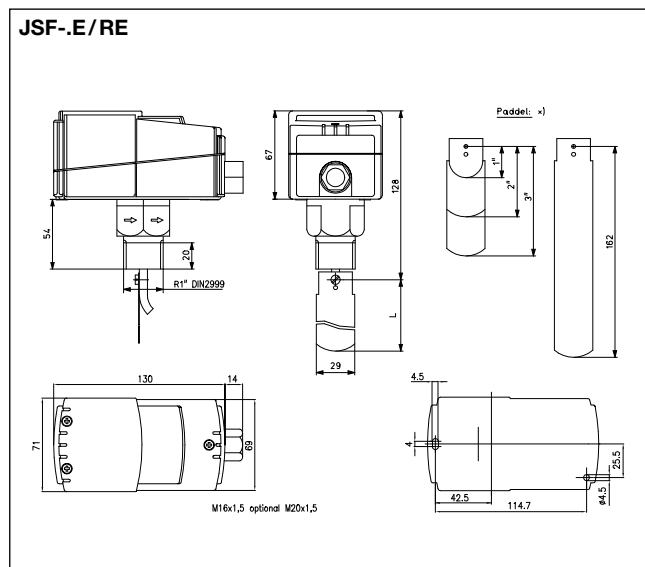
| Accessories | | | | | | | PG | |
|--|-----------|--|--|--|--|--|----|---|
| JZ-09 | E 6140170 | spare paddle (4 pieces each) as of 1"...8", see pages 187–188. | | | | | | K |
| Option: screwed cable gland M 20 x 1.5 (standard: M 16 x 1.5) | | | | | | | G | |

* for 1" = paddle 1
for 2" = paddle 1 and 2
for 3" up to 8" = paddle 1, 2 and 3

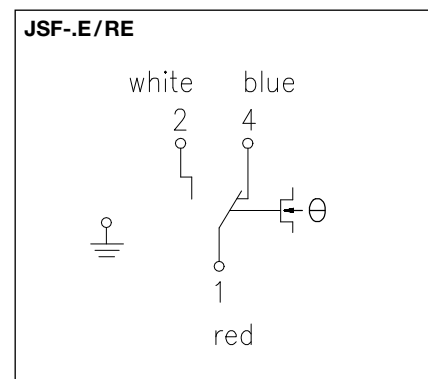
In the event it was necessary to attain reduced flow values (marked in the table in the column under the header „Pipe“ with the additional character Z), the paddle 4 needs to be used as follows:
at 4" = paddle 1, 2, 3, 4 (paddle 4 to be shortened to 92 mm)
at 5" = paddle 1, 2, 3, 4 (paddle 4 to be shortened to 117 mm)
at 6" = paddle 1, 2, 3, 4 (paddle 4 to be shortened to 143 mm)
at 7" and 8" = paddle 1, 2, 3, 4 (paddle 4 unshortened)

** Types for low throughput rates (see switching value table) "RE"

*** Aggressive types of media: all parts of the flow monitor in contact with the medium are made of V4A



| DN Nominal width | Pipe thread Inch |
|------------------------|------------------------|
| 6 | 1/8" |
| 8 | 1/4" |
| 10 | 3/8" |
| 15 | 1/2" |
| 20 | 3/4" |
| 25 | 1" |
| 32 | 1 1/4" |
| 40 | 1 1/2" |
| 50 | 2" |
| 65 | 2 1/2" |
| 80 | 3" |
| 100 | 4" |
| 125 | 5" |
| 150 | 6" |



Flow monitor JSF-1 E...4 E

Mechanically operated – TÜV tested

| Switching value table, specifications in m ³ /h for JSF-1 E/2 E/1 RE/2 RE | | | | | |
|--|---------------|-----------------------------------|-------|--------------|--------|
| Type | Pipe diameter | Min. setting (factory setting) | | Max. setting | |
| | | Off | On | Off | On |
| E | 1" | 0.55 | 0.86 | 2.00 | 2.10 |
| RE | 1" | 0.19 | 0.57 | 1.00 | 1.10 |
| E | 1¼" | 0.82 | 1.30 | 2.80 | 3.00 |
| RE | 1¼" | 0.24 | 0.90 | 1.40 | 1.60 |
| E | 1½" | 1.10 | 1.70 | 4.00 | 4.20 |
| RE | 1½" | 0.50 | 1.20 | 1.90 | 2.20 |
| E | 2" | 2.10 | 3.20 | 7.30 | 7.80 |
| RE | 2" | 0.90 | 2.30 | 3.60 | 4.10 |
| E | 2½" | 2.80 | 4.30 | 9.80 | 10.50 |
| RE | 2½" | 1.20 | 3.10 | 4.90 | 5.50 |
| E | 3" | 4.00 | 6.10 | 13.80 | 14.70 |
| RE | 3" | 2.10 | 4.90 | 7.40 | 8.20 |
| E | 4" | 10.40 | 15.40 | 32.00 | 33.90 |
| RE | 4" | 4.90 | 11.30 | 17.10 | 19.10 |
| E | 4" Z | 7.00 | 10.50 | 21.70 | 23.10 |
| RE | 4" Z | 3.30 | 7.70 | 11.60 | 13.00 |
| E | 5" | 20.80 | 30.60 | 63.50 | 67.30 |
| RE | 5" | 9.70 | 22.40 | 34.00 | 37.90 |
| E | 5" Z | 10.70 | 15.80 | 33.30 | 34.70 |
| RE | 5" Z | 5.00 | 11.50 | 17.50 | 19.60 |
| E | 6" | 29.20 | 43.00 | 89.10 | 94.50 |
| RE | 6" | 13.60 | 31.50 | 47.60 | 53.20 |
| E | 6" Z | 13.10 | 19.30 | 39.90 | 42.40 |
| RE | 6" Z | 6.10 | 14.10 | 21.40 | 23.90 |
| E | 8" | 72.60 | 85.10 | 165.70 | 172.50 |
| RE | 8" | 25.70 | 59.60 | 90.10 | 100.70 |
| E | 8" Z | 38.60 | 46.50 | 90.80 | 94.20 |
| RE | 8" Z | 21.70 | 36.50 | 55.30 | 61.80 |

Some values in the column under the header "Pipe diameter" have been marked with the character Z (= additional paddle). In any of these cases, the long fourth paddle, which is included in the scope of the delivery, must be used in addition to the 3 factory mounted paddles.

| Switching value table, specifications in l/h for JSF-3 E/-4 E | | | | | |
|---|---|-----|-----|-----|-----|
| 3 E | ½ | 174 | 480 | 846 | 948 |
| 4 E | ¾ | 138 | 408 | 768 | 858 |

The accuracy of the indicated values depends in particular on the actual tube or pipe diameter, on the actual shortening of the additional paddle and on the depth at which the flow monitor is installed.

Flow switch JSW

with appliance plug



Technical data

| | |
|------------------------------------|--|
| Switching capacity: | 5 A, 24–250 V~ |
| Contact: | 1 microswitch as potential-free changeover contact |
| Switching point fidelity: | ± 15 % of the end value |
| Degree of protection: | IP 65 |
| Protection class: | II |
| Max. temperature of medium: | 110 °C |
| max. pressure: | 25 bar |
| Colour: | black |
| Housing material: | brass |
| Paddle: | non-rusting (NIRO) |

Brass cap nut, r. 3/4", with O-ring and connecting piece for soldering into a standard copper T-piece with 1/2" tee included in the scope of the delivery.

Application

Supervision of lower and medium quantities of non-aggressive liquids in tubes of lower diameters ranging from 3/8" to 1".

Installation: vertical in a horizontal tube. Moderation distance needed: equivalent to min. 5 fold tube diameter in front of and after the paddle.

| Type | Item No. | Tube | DN | max. | Switch point, decreasing* | Switch point, increasing | l/min | PG |
|---------|----------|------|----|-----------|---------------------------|--------------------------|-------|----|
| JSW-3/8 | H 530943 | 3/8" | 10 | 10 l/min. | 3.5 ... 5.0 l/min | 4.0 ... 5.5 l/min | 0.5 | G |
| JSW-1/2 | H 530944 | 1/2" | 15 | 20 l/min. | 5.0 ... 6.5 l/min | 5.5 ... 7.0 l/min | 0.5 | G |
| JSW-3/4 | H 530945 | 3/4" | 20 | 40 l/min. | 7.0 ... 9.5 l/min | 9.0 ... 11.0 l/min | 2.0 | G |
| JSW-1 | H 530946 | 1" | 25 | 60 l/min. | 13.5 ... 16.5 l/min | 17.0 ... 20.5 l/min | 3.5 | G |



T-pieces (nickel-plated brass):

| | | |
|------|----------|---|
| 3/8" | H 530958 | G |
| 1/2" | H 530957 | G |
| 3/4" | H 530951 | G |
| 1" | H 530953 | G |

* The above indicated switching values apply only if the flow monitor is installed into our T-piece! The use of copper T-pieces will increase the effective switching values.

