

| | | | |
|--------|----------|-------|--|
| SENSOR | MANIFOLD | VALVE | |
| OZONE | JOINT | CLAMP | |
| FILTER | OTHER | DATA | |

Karman Vortex System Flow Sensor KSL-5L/KSL-10L/KSL-30L/KSL-50L

Features

- As a sensor for monitoring the cooling water of equipment, a cumulative total of 60,000 units have been delivered to leading semiconductor and LCD equipment manufactures in the world.
- Measures and displays the flow rate and temperature.
- Allows use with high temperature water of 90°C.
- Analog output
- Alarm output
- Digital display

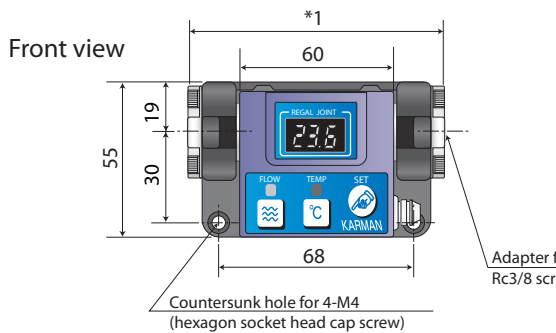


Electric wiring

• AWM20276: This is a cable with no terminal processing (9 core/0.2 mm²/500 mm).

• GND should be used as a common ground wire for all other signaling lines including power supply.

Dimensions

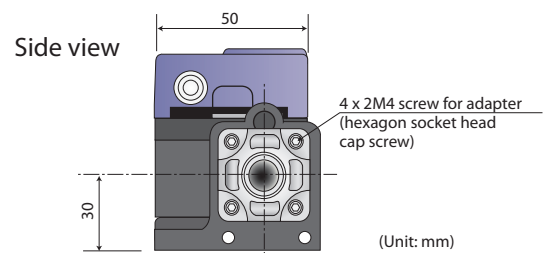
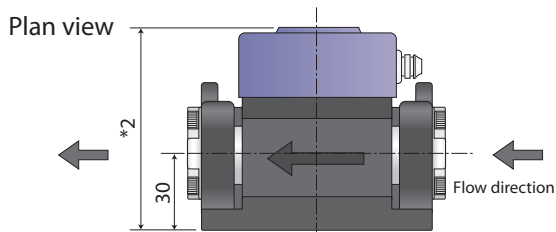


| Adapter for piping size | *1 Width | |
|-------------------------|----------|-----|
| | BsBM | SUS |
| Rc3/8 | 92 | 98 |
| R1/2 | 115 | 115 |

The value varies depending on the adapter type.

| Model | *2 Height |
|---------|-----------|
| KSL-5L | 68.5 |
| KSL-10L | 68.5 |
| KSL-30L | 75 |
| KSL-50L | 75 |

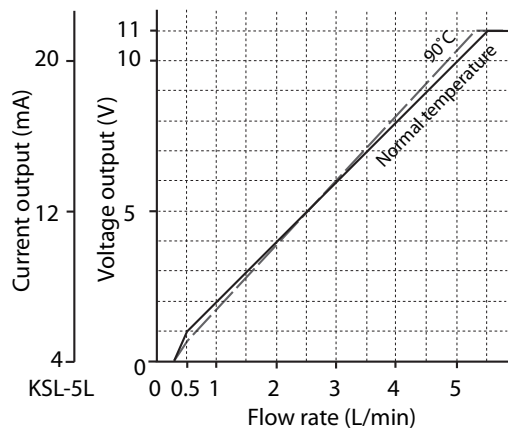
The size varies depending on the model.



Specifications

| Model | KSL-5L | KSL-10L | KSL-30L | KSL-50L |
|-----------------------------|---|----------------------------|---------------|---------------|
| Flow rate | 0.5 to 5 L/min | 1.5 to 10 L/min | 5 to 30 L/min | 7 to 50 L/min |
| Temperature detection range | 0 to 99°C | | | |
| Output | Flow rate | 0 to 10V, 4 to 20mA, Pulse | | |
| | Temperature measurement | 0 to 10V, 4 to 20mA | | |
| Alarm output | Open collector A or B (flow rate, temperature) | | | |
| Maximum operating pressure | 1 MPa (below 10kgf/cm ²) | | | |
| Fluid temperature | 0 to 90°C | | | |
| Ambient temperature | 0 to 40°C (Non-freezing) | | | |
| Flow direction | Specified direction | | | |
| Power supply | 12V DC±5% or 24V DC±10% (factory setting) | | | |
| Current consumption | 30 mA max. (70 mA max. in 4 to 20 mA specification) | | | |
| Accuracy | FS±2.0% | | | |
| Material of body | PPS | | | |
| Materials of detectors | Flow rate detector: PPS, temperature detector: SUS304 | | | |
| Material of adapter | SUS or BsBM + Ni plating | | | |
| Applicable fluid | Industrial water or service water | | | |
| Sealing O-ring | Fluororubber | | | |
| Coupling of pipings | Rc 3/8 or Rc1/2 | | | |
| Cable | AWM20276 9 cores/0.2 mm ² /500mm | | | |

Flow rate characteristics



| Model | 0 | 1 | 2 | 4 | 6 | 8 | 10 |
|---------|---|---|----|----|----|----|----|
| KSL-10L | 0 | 1 | 2 | 4 | 6 | 8 | 10 |
| KSL-30L | 0 | 3 | 6 | 12 | 18 | 24 | 30 |
| KSL-50L | 0 | 5 | 10 | 20 | 30 | 40 | 50 |

- The flow rate characteristics are temperature dependent as shown in the above graph.

Caution:

To maintain accuracy, secure a straight-pipe length of 7D or more on the upstream side and 5D or more on the downstream side. Moreover, be sure to install valves, branches, gauges, etc. on the downstream side.
(D: Diameter. For 5L, D = 4.1 mm; for 10L, D = 5.8 mm; for 30L, D = 10 mm; for 50L, D = 12 mm.)

Order format

| KSL | Flow rate | Power supply | Output | | Alarm | | Adapter Material | Adapter connection port dia. |
|-----|------------------------|-----------------------|--------------------|---------------|-----------|-------------|-------------------------|------------------------------|
| | Flow rate | | Flow rate | Temperature | Flow rate | Temperature | | |
| KSL | 5L 0.5 to 5 L/min | 12V DC12V | V 0 to 10V | | A | A | S SUS | 3/8 |
| | 10L 1.5 to 10 L/min | 24V DC24V | I 4 to 20mA | | B | B | B BsBM Ni plating | 1/2 |
| | 30L 5 to 30 L/min | | P* Pulse output | V 0 to 10V | | | | |
| | 50L 7 to 50 L/min | DPM DPM connection | I 4 to 20mA | | | | | |

Example KSL-5L-24V-V-A-B-S-3/8

Definition of alarm output and display LED

| Measurement value | Alarm | |
|-------------------------------|------------------|------------------|
| | A | B |
| Higher than the setting value | Green lamp ON | Red lamp OFF |
| Lower than the setting value | Red lamp OFF | Green lamp ON |

* The alarm is conductive when the open collector is ON and non-conductive when it is OFF.
* The alarm for the flow rate and that for the temperature can be set independently.

* "P" (pulse output) can be specified only for 5L and 30L and cannot be specified for 10L and 50L.
* When the output of the flow rate is set to "P" (pulse output), the temperature output is "V" or "I."
In temperature output, the pulse output cannot be selected. (The order format of the output is "PV" or "PI.")
Example: KSL-5L-24V-PV-A-B-S-3/8
* The "DPM" (DPM connection) is a pulse specification for using the external display "DPM" specified by REGAL JOINT.
* For 50L, only 1/2 can be specified as the adapter connection port diameter.
* To improve the performance, the shape and specifications are subject to change without prior notice.