



Seikom Electronic RLSW4 Airflow Monitoring Device User Manual

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Airflow monitoring device
Manual for air flow monitor
RLSW4 / RLSW4R

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RLSW4 Airflow Monitoring Device



**Our products correspond to the
requirements of the European guidelines
WEEE 2012/19/EU – RoHS 2011/65/EU**

**UK
CA**

The RLSW4 is a calorimetric air flow monitor. It is a cheap access to the world of watching air flows and is an alternative to known pressure cell, vane switches and fan belt monitors.

You can install the device with its flange or its PG7 simply and fast. With its built-in potentiometer the switch point may be set infinitely variable. The transistor output is connected at flow and the yellow LED enlightens. Differences in the media temperature are compensated automatically.

Proper usage

The RLSW4 is to be used as an air flow monitoring device watching gaseous media within its technical data. Its application area is e.g. ventilation and air conditioning installations, filter watching, supply and exhaust gases.

Measuring principal

A temperature-sensitive resistor is heated according to the calorimetric measuring principle. The temperature-sensitive resistor is heated by a second resistor. A flow in the medium dissipates heat from the measuring resistor, causing the resistor temperature and impedance to change. This temperature change is evaluated. Since both the velocity and the temperature of the flowing medium affect the dissipated heat, a relationship must be created between flow and temperature. For this purpose, a second temperature-dependent measuring resistor is located next to the first one. The second measuring resistor (temperature compensation) is not heated and is only used for the temperature measurement.

flow \geq switch point	signal output switches	yellow LED enlightens
flow $<$ switch point	signal output does not switch	yellow LED does not enlighten

Technical data

Type	RLSW4	RLSW4R	RLSW4R/140
Article No.	74825	74825/R	74825R/140
supply voltage	24V AC/DC	24V AC/DC	24V AC/DC
supply voltage tolerance	$\pm 5\%$	$\pm 5\%$	$\pm 5\%$
signal. supply voltage		–	–
power consumption	WA	1VA	WA
ambient temperature	-20...+60 °C	-20...+60 °C	-20...+60 °C
signal output. flow		1 NOC	1 NOC
Relay output current and contact load Minimum switching load		250VAC. 5A. 1.2kVA (with optional plug: 150VAC. 5A. 0.75kVA) 10mA / 5V DC	250VAC. 5A. 1.2kVA (with optional plug: 150VAC. 5A. 0.75kVA) 10mA / 5V DC
switch function at flow	–	relays connects	relays connects
signal at flow	yellow LED	yellow LED	yellow LED
transistor output	PNP. max 150mA	relays	relays
media temperature range	-10...+80 °C	-10...+80 °C	-10...+80 °C
temperature gradient	15K/min (optional: 30K/min)	15K/min (optional: 30K/min)	15K/min (optional: 30K/min)
switch point	set up with potentiometer	set up with potentiometer	set up with potentiometer
metering range	0.1 – 15m/s	0.1 – 15mls	0.1 – 15m/s
sensor	installed	installed	installed

immersion depth approx.	50mm (optional: 140mm)	50mm	140mm
process connection	PG7. flange	PG7. flange	PG7. flange
sensor material	MS58. nickel plated (optional stainless steel)	MS58. nickel plated (optional stainless steel)	MS58. nickel plated (optional stainless steel)
pressure resistance	10bar	10bar	10bar
electrical connection	4 clems. 2.5mm= (optional M8 plug connector)	4 clems. 2.5mm= (optional M8 plug connector)	4 clems. 2.5mm= (optional M8 plug connector)
protection class housing	IP65	IP65	IP65
protection class sensor	IP67	IP67	IP67
dimensions	L=30mm: W=50mm: H=65mm	L=30mm: W=50mm: H=65mm	L=30mm: W=50mm: H=65mm
mark of conformity	CE	CE	CE
accessory	flange 14,2mm	flange 14.2mm	flange 10/14,2mm

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).

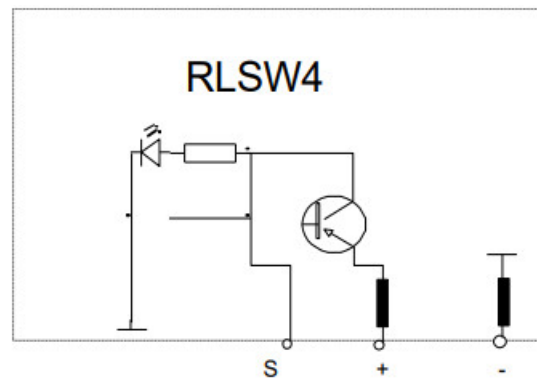
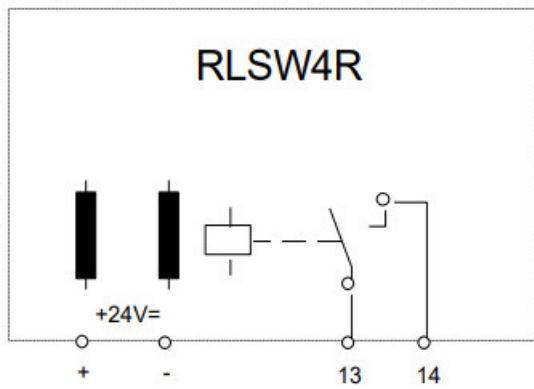
Installation Instruction:

- The sensor should be mounted in such a way that the air flow passes through the lateral opening. The marking is intended as an assembly aid.
- Installation where there is low turbulence, if possible.
- Do not install directly behind bends (distance approx 10x bend radius).
- Install the probe in the middle of the duct where possible (distance at least 1/3 of the duct diameter from the wall).
- Do not install directly behind the heating register (rapid changes in temperature may lead to the measured values being falsified).

Cleaning:

The airflow sensor contains a sensor element which is sensitivity to mechanical loading and which must not be touched with hard and pointed objects. Any cleaning that may be necessary is possible in water (also with addition of detergents). Let the unit drip off and dry renewed start-up.

Electrical connection

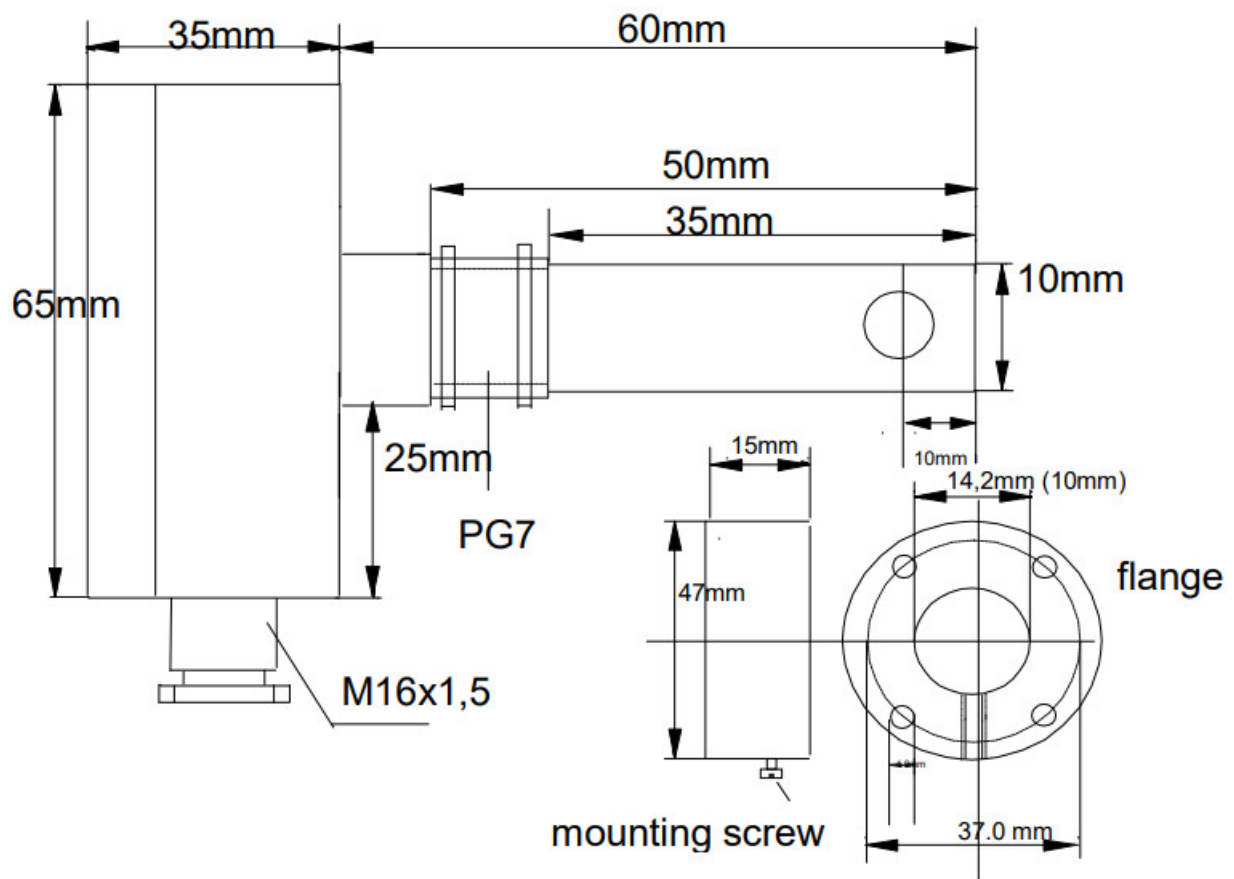


Optional plug connector

Pin	Colour	connection
1	brown	+Uv
2	white	GND
3	black	contact 13, NOC
4	blue	contact 14, GND

Dimension:

RLSW4R/140 immersion sensor tube differently about 130mm.



Setting the switch point

The relationship between air velocity and impedance change is non linear. In the lower flow velocity range, the impedance change is very large. In the upper flow velocity range, however, identical changes in flow velocity result in increasingly smaller impedance changes. When the switch point is set, it is important to note what change is to be monitored because different settings have certain disadvantages.

Note the following requirements:

Small flow change in high flow velocity range: The switch point must be selected very close to the normal flow reading since flow changes only lead to a very small change in the measured value. Since temperature compensation takes place with certain delay after the actual temperature change has occurred, this switch point setting is only suitable for the applications which have slow temperature changes in the medium.

Small flow change in low flow velocity range: The switch point can be selected at a greater interval from the normal flow reading because a change in flow velocity causes a very large change in the measured value. A temperature change has not effect on switching behaviour.

Large change in flow rate:

A Yes/NO statement is usually required here (e.g. fan running or fan stationary). You can therefore select a safety clearance which is so large that neither temperature changes nor turbulences can have an affect on switching behaviour.

Commissioning RLSW4 (R)

Commissioning the RLSW4 you need to follow these points:

1. install the device
2. connect the device regarding to the manual
3. set potentiometer "sensivity" (the unpainted trimmer to the right of the screw) to minimum sensitivity
4. switch on supply voltage; The device is instantly operational.
5. switch on the working flow
6. turn potentiometer "sensivity" slowly to maximum until the yellow LED enlightens and the transistor output changes. To ensure proper operation you may turn the potentiometer slightly over the switch point.
7. to check for proper operation, please lower or switch off the flow. The yellow LED should darken and the transistor output disconnects.

The monitoring device is now set to watch the flow.

Frequently asked questions


Problem	Cause	Sollution
RLSW4 does not operate	wrong or none supply v oltage	check the supply voltage
RLSW4 does not react on flow	sensor is installed wron gly	check the sensor's installation
RLSW4 shows unusual re sponse	sensor is highly pollute d	clean the sensor, refer to the regarding page in this man ual

Mistakes and misprints are not to be excluded. All information „without guarantee“.

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Documents / Resources

	<p>Seikom Electronic RLSW4 Airflow Monitoring Device [pdf] User Manual RLSW4 Airflow Monitoring Device, RLSW4, Airflow Monitoring DeviceMonitoring Device</p>
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Manuals+.