

Air Flow

RHEASGARD® & RHEASREG®

Air flow velocity and volume flow

Our new product family of precise electronic air flow sensors increases well-being and improves energy efficiency.

In addition to duct sensors, there are other housing versions available for on-wall or top-hat rail mounting with external duct probe.

Application Areas

- Ventilator flow monitoring, butterfly valves, heating registers and humidifiers
- Ventilation and air conditioning
- Energy management
- Residential, working and conference rooms
- Movie theaters, showrooms and retail stores
- Institutes and laboratories





RHEASGARD® & RHEASREG® AIR FLOW SENSORS AND AIR FLOW MONITORS

Airflow sensors and monitors, electronic

KHSSF	Top-hat rail airflow sensor (with external duct probe)	NEW 629
KHSSW	Top-hat rail airflow monitor (with external duct probe)	NEW 629
KLSW/KLGF	Duct airflow monitor	NEW 637
KLGFVT	Top-hat rail airflow monitor for air flow, volume flow and temperature	NEW 637
PLSW/PLGF	Pendulum airflow monitor (with external duct probe)	NEW 633
PLGFV	Pendulum airflow monitor for air flow and volume flow (with external duct probe)	NEW 633



Airflow monitors, mechanical

SW	Flow monitor, mechanical, with paddle	641
WFS	Wind vane switch, mechanical, with paddle	639

Accessories

see chapter Accessories	652
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**Duct top-hat rail airflow sensor / airflow monitor,
electronic, external flow probe incl. mounting flange,
with active / switching output**

Electronic duct top-hat rail airflow sensor **RHEASGARD® KHSSF** with active / switching output, housing for installation in distributor boxes or control cabinets with 35 mm mounting rail, external flow probe incl. mounting flange, for determining the flow velocity (0.1...20 m/s). The measuring transducer automatically detects the required output type and converts the measurands into the required standard signal of 0–10 V or 4...20 mA (**Automatic Output Switching**).

Electronic duct top-hat rail airflow monitor **RHEASREG® KHSSW** with switching output, housing for installation in distributor boxes or control cabinets with 35 mm mounting rail, external flow probe incl. mounting flange, for determining the flow velocity (0.1...20 m/s).

The flow sensors / flow monitors are suitable for monitoring or controlling airflows in ducts, at fans and dampers, for flow-dependent monitoring of humidifiers and electric heating registers according to DIN 57100, Sect. 420, or for use in connection with DDC systems.

TECHNICAL DATA

Power supply:	24 V AC / DC (± 10 %) (KHSSW-W24, KHSSF-W) 230 V AC (± 10 %), 50 Hz (KHSSW-W230)
Current consumption:	approx. 3 VA
Outputs:	KHSSF-W 0–10 V / 4...20 mA (via Automatic Output Switching – the unit recognises the required output type and automatically switches to U or I output); 24 V changeover contact (max. 5 A, cos φ = 1) KHSSW-W24 24 V changeover contact (max. 5 A, cos φ = 1) KHSSW-W230 230 V AC changeover contact (max. 10 A, cos φ = 1)
Data point:	flow velocity [m/s]
Sensor:	calorimetric, temperature compensated, sensor breakage protection
Measuring range:	0.1...20 m/s
Accuracy:	± 0.5 m/s + max. ± 3 % of final value (22°C, 50% RH, 1013 mbar)
Long-term stability:	± 0.5 % of final value per year
Reproducibility:	± 1.0 % of final value
Switching point:	1...20 m/s, threshold can be adjusted via potentiometer
Switching hysteresis:	2.0 % of final value
Warm-up time:	< 2 min
Response time:	< 5 s
Start-up override:	60 s (changeover contact switched or 10 V / 20 mA at output, after applying the supply voltage)
Medium:	non-precipitating air free of harmful substances, without below- and/or above-pressure
Medium temperature:	0...+70 °C
Operating status indicator:	2 colour LEDs on the front of the housing (see table)
Housing:	PC / ABS (UL94-V0) material, light grey colour, 36 mm (2TE) wide for 35 mm mounting rail, approx. 90 x 36 x 58 mm (H x W x D)
Probe/sensor:	Polyamide (PA6) material, white colour (blue sensor holder), with torsion protection, Ø 12 mm, EL = approx. 20–155 mm, v _{max} = 30 m/s (air)
Sensor cable:	PVC LiYY, 3-wire, KL = approx. 2.4 m
Electrical connection:	0.14 - 2.5 mm ² , via screw terminal
Process connection:	by means of mounting flange with seal (included in the scope of delivery)
Ambient temperature:	storage –20...+50 °C; operation 0...+60 °C
Permitted humidity:	< 98 % RH, non-precipitating air
Protection class:	II (according to EN 60 730) with UB = 230 V (KHSSW-W230) III (according to EN 60 730) with UB = 24 V (KHSSW-W24, KHSSF-W)
Protection type:	IP 30 (according to EN 60 529) housing IP 20 (according to EN 60 529) sensor technology
Standards:	CE conformity according to EMC Directive 2014 / 30 / EU

KHSSW	Relay	1. LED top (yellow)	off = Switching point not reached (contact 5-6 open) illuminated = Switching point reached (contact 5-6 closed) blinking = Start-up override (s.b.) active
	On/Off	2. LED bottom (green)	off = Device defective illuminated = Device in operation blinking = Fault with sensor or sensor cable
KHSSF	Relay	1. LED top (green)	off = Switching point not reached (contact 5-6 open) illuminated = Switching point reached (contact 5-6 closed)
	s.b.	2. LED bottom (yellow)	off = Start-up override (s.b.) inactive illuminated = Start-up override (s.b.) active



S+S REGELTECHNIK

NEW

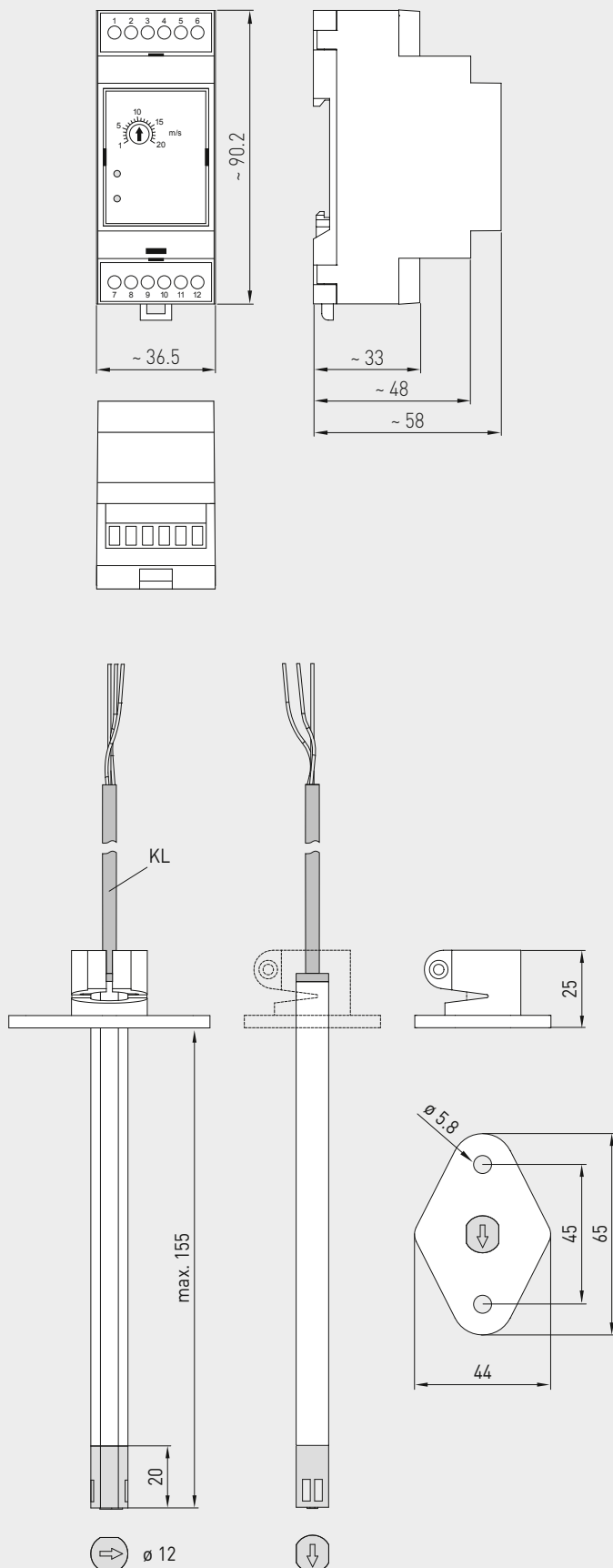
RHEASGARD® KHSSFxx
RHEASREG® KHSSWxx

Duct top-hat rail airflow sensor / airflow monitor,
electronic, external flow probe incl. mounting flange,
with active / switching output



Dimensional drawing
[mm]

KHSSF xx
KHSSW xx



KHSSF xx
Housing



KHSSW xx
Housing



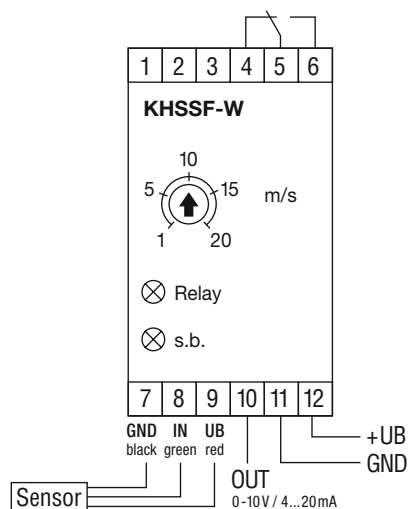
KHSSF xx
KHSSW xx
Probe





Schematic diagram

KHSSF-W



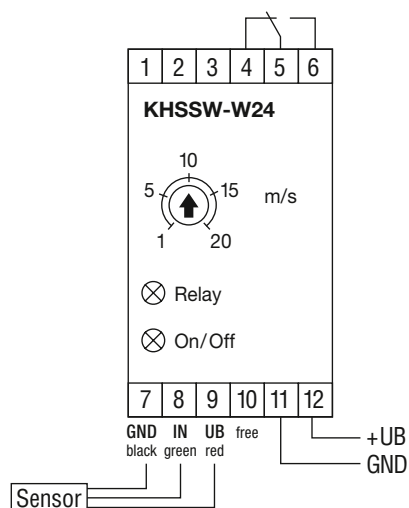
Automatic detection and switching
to standard signal 0...10 V or 4...20 mA



AOS-PATENTED
AUTOMATIC OUTPUT SWITCHING

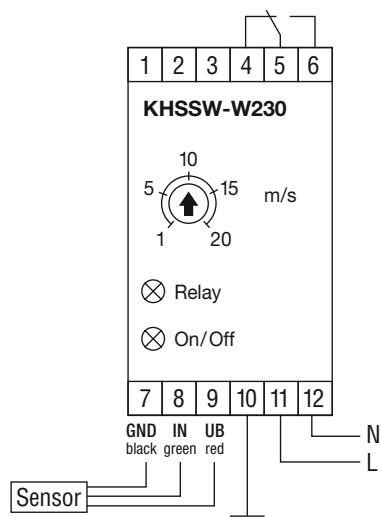
Schematic diagram

KHSSW-W24



Schematic diagram

KHSSW-W230



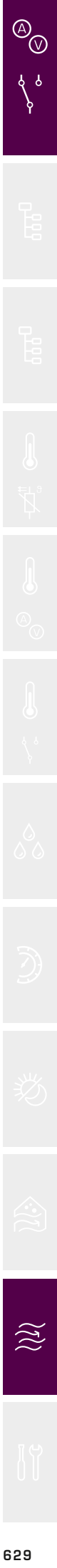


NEW

S+S REGELTECHNIK

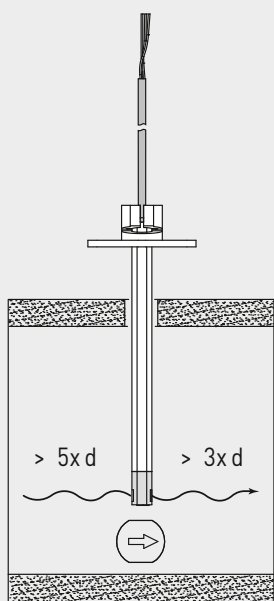
RHEASGARD® KHSSFxx
RHEASREG® KHSSWxx

Duct top-hat rail airflow sensor / airflow monitor,
electronic, external flow probe incl. mounting flange,
with active / switching output



Mounting diagram

KHSSF xx
KHSSW xx



Note for mounting:
Sensor works unidirectionally.
Observe the markings for the
direction of flow!



KHSSF xx
KHSSW xx
Probe



Type / WG01	Power supply	Output active	Output switching	Item no.
RHEASGARD® KHSSF Duct top-hat rail airflow sensor, with active and switching output				
RHEASREG® KHSSW Duct top-hat rail airflow monitor, with switching output				
KHSSF		AOS		
KHSSF-W	24 V AC / DC	0-10 V / 4...20 mA	1 changeover contact	1701-5118-0102-001
KHSSW				
KHSSW-W24	24 V AC / DC	–	1 changeover contact	1701-5113-0102-001
KHSSW-W230	230 V AC	–	1 changeover contact	1701-5133-0102-001
Note: Changeover contact with automatic reset (relay opens automatically when value falls below the threshold again) AOS (Automatic Output Switching) = patented analogue interface (patent no. DE 10 2015 015 941 B4), the unit automatically detects the required output type 0-10 V or 4...20 mA				



**Pendulum airflow sensor / airflow monitor, electronic,
on-wall housing with external duct probe, incl. mounting flange,
with active / switching output**

Electronic pendulum airflow sensor **RHEASGARD® PLGF** with active output,
housing made of impact-resistant plastic with quick-locking screws, with cable gland, with/without display,
with external duct probe incl. mounting flange, to determine the flow velocity (0.1...20 m/s).
The measuring transducer converts the measurement signal into a standard signal of 0 - 10 V.

Electronic pendulum airflow sensor/monitor **RHEASGARD® PLGF** (without display) and **PLGFV** (with display)
with active and switching output, housing made of impact-resistant plastic with quick-locking screws,
with cable gland, with external duct probe incl. mounting flange, to determine the flow velocity (0.1...20 m/s).
For unit type **PLGFV**, the calculated volume flow parameter can be retrieved as an alternative to the flow
(configurable on the display). The measuring transducer automatically detects the required output type and
converts the measurands into the required standard signal of 0 - 10 V or 4...20 mA (**Automatic Output Switching**).

Electronic pendulum airflow monitor **RHEASREG® PLSW** with switching output,
housing made of impact-resistant plastic with quick-locking screws, with cable gland, with/without display,
with external duct probe incl. mounting flange, to determine the flow velocity (0.1...20 m/s).

The flow sensors are suitable for monitoring or controlling airflows in ducts, at fans and dampers, for flow-dependent monitoring
of humidifiers and electric heating registers according to DIN 57100, Sect. 420, or for use in connection with DDC systems.

TECHNICAL DATA

Power supply:	24 V AC / DC (± 10 %)
Current consumption:	approx. 3 VA (PLGF, PLSW-W24) approx. 4 VA (PLGF, PLGFV)
Data points:	flow velocity [m/s], volume flow [m³/h]
Outputs:	PLGF 1x 0-10 V (U variant) PLGF(V) 1x 0-10 V / 4...20 mA (via Automatic Output Switching – the unit recognises the required output type and automatically switches to U or I output); 24 V changeover contact (max. 5 A, cos φ = 1.0) PLSW-W24 24 V changeover contact (max. 5 A, cos φ = 1.0)

AIRFLOW

Sensor:	calorimetric, temperature compensated, sensor breakage protection, with manual zero-point calibration (via push-button)
Measuring range:	0.1...20 m/s
Accuracy:	± 0.5 m/s + max. ± 3 % of final value (22°C, 50% RH, 1013 mbar)
Long-term stability:	± 0.5 % of final value per year
Reproducibility:	± 1.0 % of final value
Switching point:	1...20 m/s, threshold can be adjusted via potentiometer
Switching hysteresis:	2.0 % of final value
Warm-up time:	< 2 min
Response time:	< 5 s
Start-up override:	0 / 60 s (PLGF/PLSW without display), can be activated via DIP switch 0...120 s (PLGF/PLSW with display, PLGF/PLGFV), can be adjusted via potentiometer
Medium:	non-precipitating air free of harmful substances, without below- and/or above-pressure
Medium temperature:	0...+70 °C
Housing:	plastic, UV-resistant, polyamide material, 30 % glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), housing cover for display is transparent!
Housing dimensions:	126 x 90 x 50 mm (Tyr 2)
Cable connection:	cable gland , plastic (M 16 x 1.5; with strain relief, exchangeable, max. inner diameter 10.4 mm)
Electrical connection:	0.2 - 1.5 mm², via push-in terminal
Probe/sensor:	polyamide (PA6) material, white colour (blue sensor holder), with torsion protection, Ø 12 mm, EL = approx. 20 - 155 mm, v _{max} = 30 m/s (air)
Sensor cable:	PVC LiYY, 5-wire, KL = approx. 2.4 m
Process connection:	by means of mounting flange with seal (included in the scope of delivery)
Mounting:	on-wall housing with external duct probe – observe flow direction!
Ambient temperature:	storage -20...+50 °C; operation 0...+50 °C
Permitted humidity:	< 98 % RH, non-precipitating air
Protection class:	III (according to EN 60 730) where UB = 24 V
Protection type:	IP 65 (according to EN 60 529) housing; IP20 sensor technology
Standards:	CE conformity according to EMC Directive 2014 / 30 / EU
Optional:	display with illumination , three-line, cutout approx. 70 x 40 mm (W x H), to indicate the flow velocity and volume flow



NEW

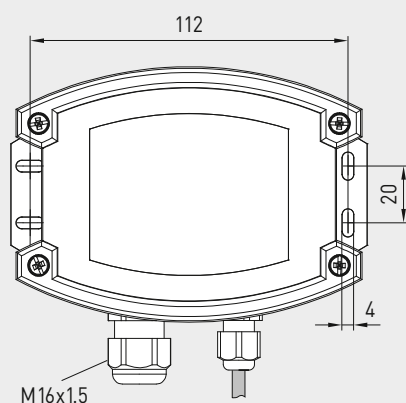
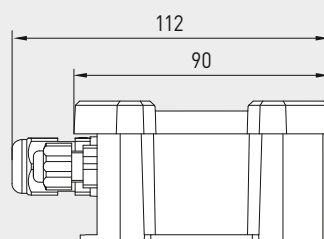
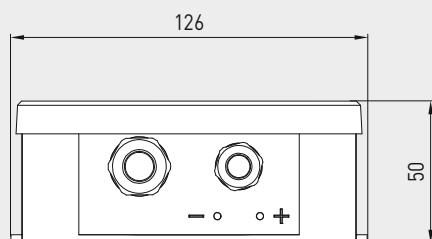
S+S REGELTECHNIK

RHEASGARD® PLGFxx
RHEASREG® PLSWxx

Pendulum airflow sensor / airflow monitor, electronic,
on-wall housing with external duct probe, incl. mounting flange,
with active / switching output



Dimensional drawing
[mm]

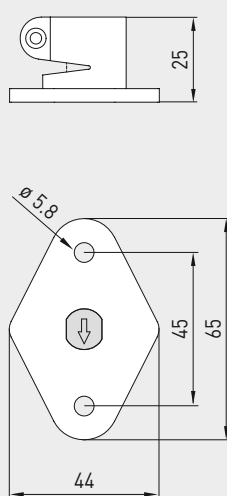
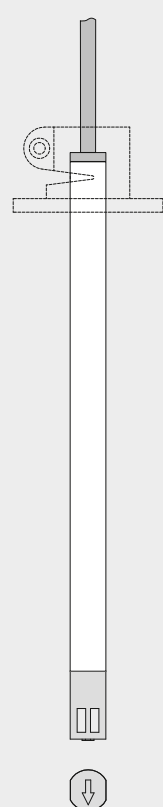
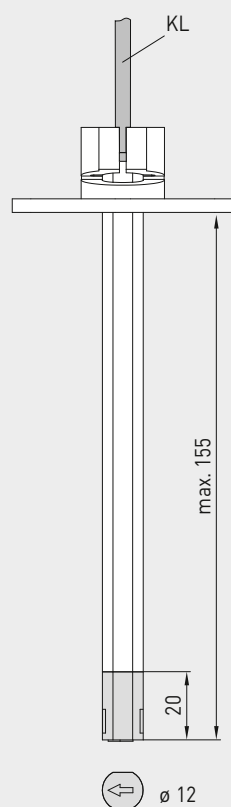


PLGF
PLSW
Housing

PLGF
PLSW
Housing with
external probe



Dimensional drawing
[mm]



PLGF
PLSW
Probe

Automatic detection and switching
to standard signal 0...10V or 4...20mA

 **AOS-PATENTED**
AUTOMATIC OUTPUT SWITCHING



RHEASGARD® PLGFxx RHEASREG® PLSWxx

Pendulum airflow sensor / airflow monitor, electronic,
on-wall housing with external duct probe, incl. mounting flange,
with active / switching output

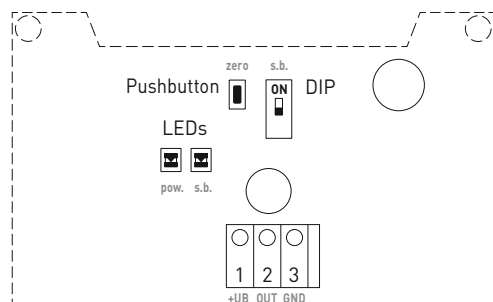
NEW



S+S REGELTECHNIK

Schematic diagram

PLGF-U



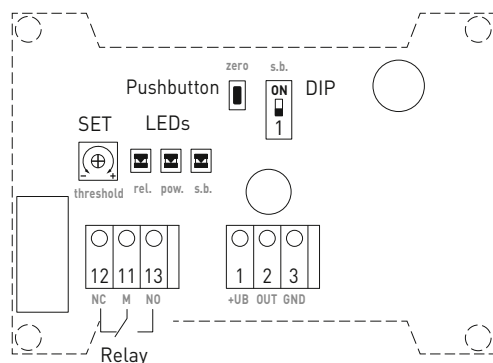
Connection diagram

PLGF-U
without display

- 1 +UB 24V AC/DC
- 2 Output 0-10V Flow velocity
- 3 -UB GND

Schematic diagram

PLSW-W24



Connection diagram

PLSW-W24
without display

- 1 +UB 24V AC/DC
 - 2 free
 - 3 -UB GND
-
- 12 NC Normally Closed
 - 11 M Common
 - 13 NO Normally Open

PLSW-W24

with changeover contact,
UB = 24 V



PLGF-U

with output 0-10V,
UB = 24 V



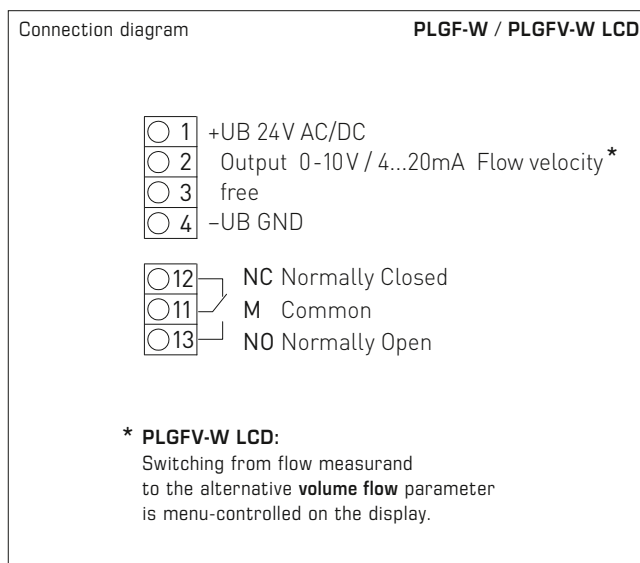
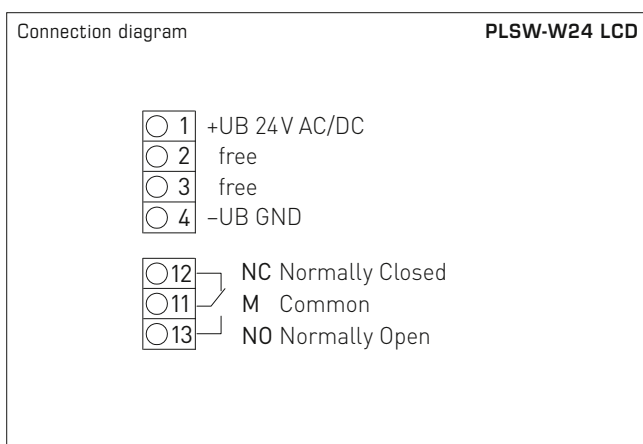
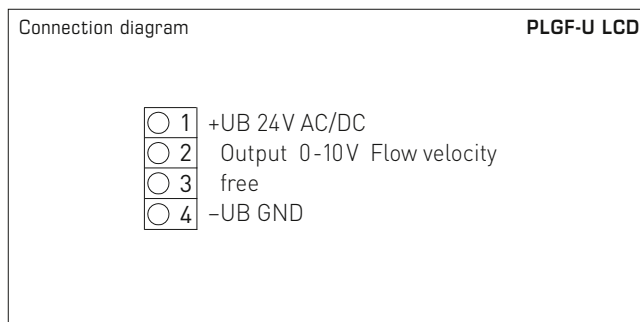
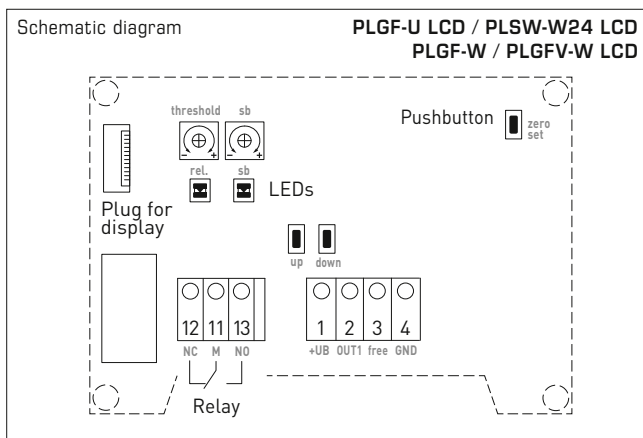


S+S REGELTECHNIK

NEW

RHEASGARD® **PLGFxx**
RHEASREG® **PLSWxx**

Pendulum airflow sensor / airflow monitor, electronic,
on-wall housing with external duct probe, incl. mounting flange,
with active / switching output



RHEASGARD®	PLGF	Pendulum airflow sensor, electronic, with active output
RHEASGARD®	PLGF(V)-W	Pendulum airflow sensor, electronic, with active and switching output
RHEASREG®	PLSW-W24	Pendulum airflow monitor, electronic, with switching output

Type / WG01	Power supply	Output active	Output switching	additional Parameters	Display	Item no.
PLGF		U variant				
PLGF-U	24V AC / DC	1x 0-10V	–	–		1701-6111-0101-000
PLGF-U LCD	24V AC / DC	1x 0-10V	–	–	■	1701-6111-1101-000
Optional:	Cable connection with M12 connector according to DIN EN 61076-2-101					on request
PLGF(V)-W		AOS				
PLGF-W	24V AC / DC	1x 0-10V / 4...20mA	1 changeover contact	–		1701-6118-0100-001
PLGFV-W LCD	24V AC / DC	1x 0-10V / 4...20mA	1 changeover contact	V	■	1701-6118-1300-001
PLSW-W24						
PLSW-W24	24V AC / DC	–	1 changeover contact	–		1701-6113-0101-001
PLSW-W24 LCD	24V AC / DC	–	1 changeover contact	–	■	1701-6113-1101-001

Note:

Changeover contact with automatic reset
(relay opens automatically when value falls below the threshold again)

AOS (Automatic Output Switching) = patented analogue interface (patent no. DE 10 2015 015 941 B4), the unit automatically detects the required output type 0-10 V or 4...20 mA

V = volume flow (0...200,000 m³/h) – alternative parameter, can be configured via display!



Electronic duct air flow sensor **RHEASGARD® KLGF** with active output, housing made of impact-resistant plastic with quick-locking screws, with cable gland, with/without display, to determine the flow velocity (0.1...20 m/s). The measuring transducer converts the measurement signal into a standard signal of 0 - 10 V.

Electronic duct air flow sensor/monitor **RHEASGARD® KLGF** (without display) and **KLGFVT** (with display) with active and switching output, housing made of impact-resistant plastic with quick-locking screws, with cable gland, to determine the flow velocity (0.1...20 m/s) and temperature (0...+50 °C). For device type **KLGFVT**, the calculated volume flow parameter can be retrieved as an alternative to the flow (configurable on the display). The measuring transducer automatically detects the required output type and converts the measurands into the required standard signal of 0 - 10 V or 4...20 mA (**Automatic Output Switching**).

Electronic duct airflow monitor **RHEASREG® KLSW** with switching output, housing made of impact-resistant plastic with quick-locking screws, with cable gland, with/without display, to determine the flow velocity (0.1...20 m/s). The flow sensors are suitable for monitoring or controlling airflows in ducts, at fans and dampers, for flow-dependent monitoring of humidifiers and electric heating registers according to DIN 57100, Sect. 420, or for use in connection with DDC systems.

TECHNICAL DATA

Power supply:	24 V AC / DC (± 10 %) (KLSW-W24, KLGF xx) 230 V AC, 50 Hz (KLSW-W230)
Current consumption:	approx. 3 VA (KLGF, KLSW-W24, KLSW-W230) approx. 4 VA (KLGFVT, KLGFVT)
Data points:	flow velocity [m/s], volume flow [m³/h], temperature [°C]
Outputs:	KLGF 1x 0 - 10 V (U variant) KLGF(V)T 2x 0 - 10 V / 4...20 mA (via Automatic Output Switching – the unit recognises the required output type and automatically switches to U or I output); changeover contact 24 V (max. 5 A, cos φ = 1.0) KLSW-W24 changeover contact 24 V (max. 5 A, cos φ = 1.0) KLSW-W230 changeover contact 230 V AC (max. 5 A, cos φ = 1.0)

AIR FLOW

Sensor:	calorimetric, temperature compensated, sensor breakage protection, with manual zero-point calibration (via button)
Measuring range:	0.1...20 m/s
Accuracy:	± 0.5 m/s + max. ± 3% of final value (22°C, 50% RH, 1013 mbar)
Long-term stability:	± 0.5 % final value per year
Reproducibility:	± 1.0 % final value
Switching point:	1...20 m/s, threshold can be adjusted via potentiometer
Switching hysteresis:	2.0 % of final value
Warm-up time:	< 2 min
Response time:	< 5 s
Start-up override:	0 / 60 s (KLGF/KLSW without display), can be activated via DIP switch 0...120 s (KLGF/KLSW with display, KLGFVT/KLGFVT), can be adjusted via potentiometer
Medium:	non-precipitating air free of harmful substances, without below- and/or above-pressure
Medium temperature:	0...+70 °C

TEMPERATURE

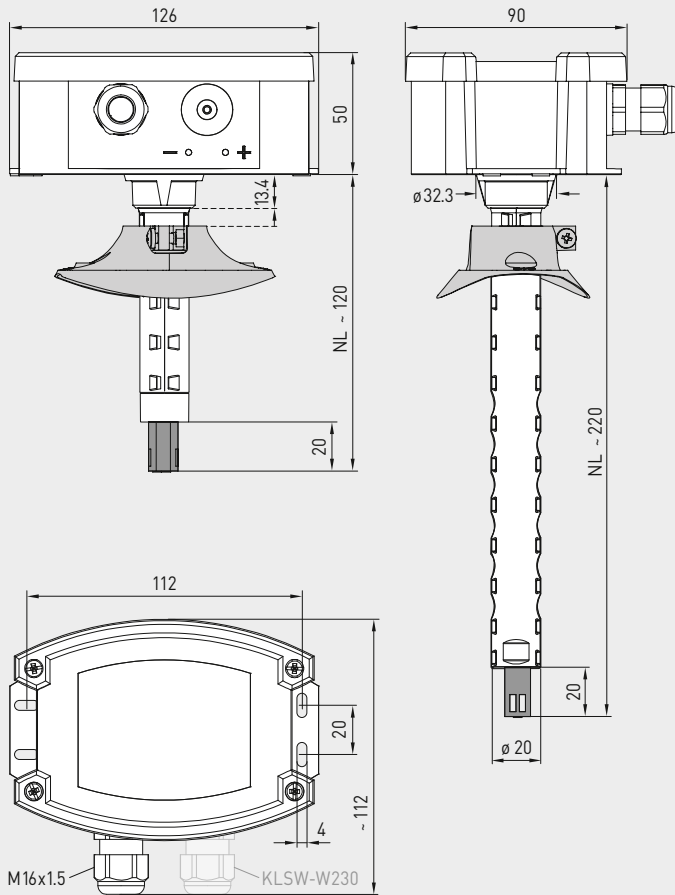
Sensor:	NTC 10k
Measuring range:	0...+50 °C
Accuracy:	typical ± 0.5 K at +25 °C
Protective tube:	PLEUROFORM™ , material polyamide (PA6), with torsion protection, Ø 20 mm, NL = 120 mm / 220 mm, $v_{max} = 30$ m/s (air), optional on request made of stainless steel V2A (1.4301), Ø 16 mm
Housing:	plastic, UV-resistant, polyamide material, 30 % glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), housing cover for display is transparent!
Housing dimensions:	126 x 90 x 50 mm (Tyr 2)
Cable connection:	cable gland , plastic (M 16 x 1.5; with strain relief, exchangeable, max. inner diameter 10.4 mm)
Electrical connection:	0.2 - 1.5 mm², via push-in terminal
Process connection:	by means of plastic mounting flange (included in the scope of delivery)
Ambient temperature:	storage -20...+50 °C; operation 0...+50 °C
Permitted humidity:	< 98 % RH, non-precipitating air
Protection class:	II (according to EN 60 730) with UB = 230 V (KLSW-W230) III (according to EN 60 730) with UB = 24 V (KLSW-W24, KLGF xx)
Protection type:	IP 65 (according to EN 60 529) housing; IP 20 sensor technology
Standards:	CE conformity according to EMC Directive 2014 / 30 / EU
Optional:	display with illumination , three-line, cutout approx. 70 x 40 mm (W x H), to display the flow velocity, volume flow and temperature

Protective tube
(NL) 120 mm

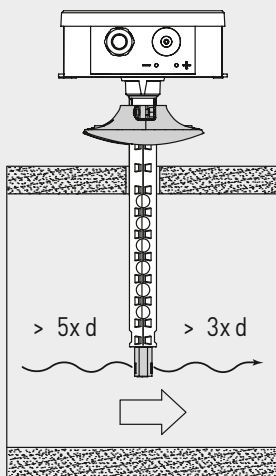
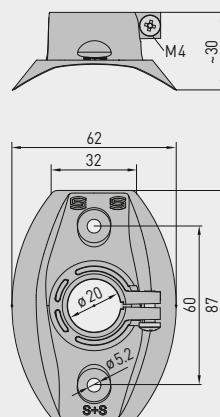


Protective tube
(NL) 220 mm



**NEW****S+S REGELTECHNIK****RHEASGARD® KLGF xx**
RHEASREG® KLSW xxDuct air flow sensors / air flow monitors,
incl. mounting flange, electronic,
with active / switching outputDimensional drawing
[mm]**KLGF xx**
KLSW xx**KLGF xx**
KLSW xx
without display**KLSW-W230**
without display**KLSW / KLGF**
with display**KLGFVt**
with display

Installation diagram

KLGF xx
KLSW xxDimensional drawing
[mm]**MFT-20-K****MFT-20-K**
Mounting flange
made of plasticAutomatic detection and switching
to standard signal 0...10V or 4...20mA**AOS-PATENTED**
AUTOMATIC OUTPUT SWITCHING



RHEASGARD® KLGF xx RHEASREG® KLSWxx

Duct air flow sensors / air flow monitors,
incl. mounting flange, electronic,
with active / switching output

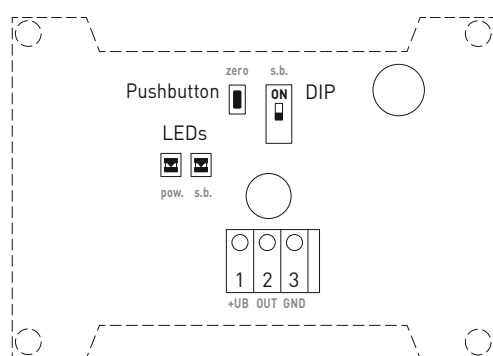
NEW



S+S REGELTECHNIK

Schematic diagram

KLGF-U



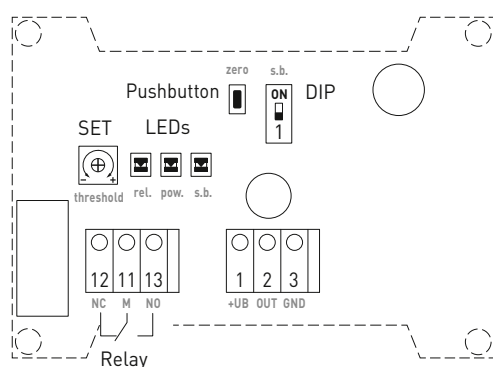
Connecting diagram

KLGF-U
without display

- 1 +UB 24V AC/DC
- 2 Output 0-10V Flow velocity
- 3 -UB GND

Schematic diagram

KLSW-W24



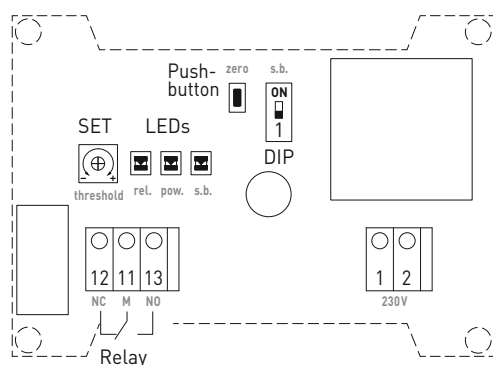
Connecting diagram

KLSW-W24
without display

- 1 +UB 24V AC/DC
 - 2 free
 - 3 -UB GND
-
- 12 NC Normally Closed
 - 11 M Common
 - 13 NO Normally Open

Schematic diagram

KLSW-W230



Connecting diagram

KLSW-W230
without display

- 1 L 230V AC
 - 2 N
-
- 12 NC Normally Closed
 - 11 M Common
 - 13 NO Normally Open

KLGF-U

with output 0-10V,
UB = 24V

KLSW-W24

with changeover contact,
UB = 24V

KLSW-W230

with changeover contact,
UB = 230V

KLGF/KLSW-xx LCD
KLGF-T-W

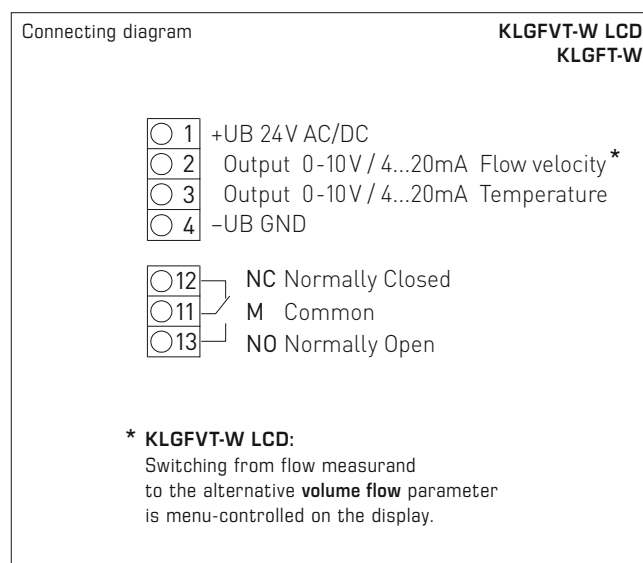
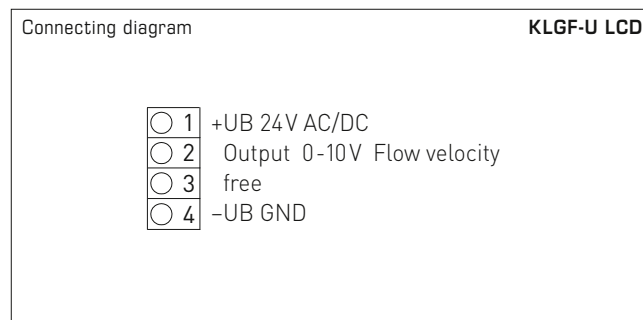
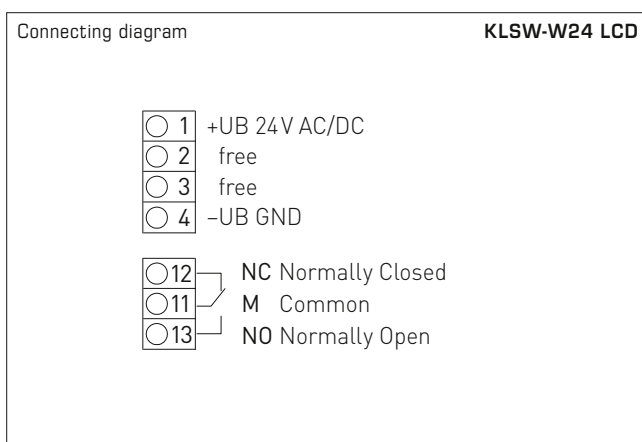
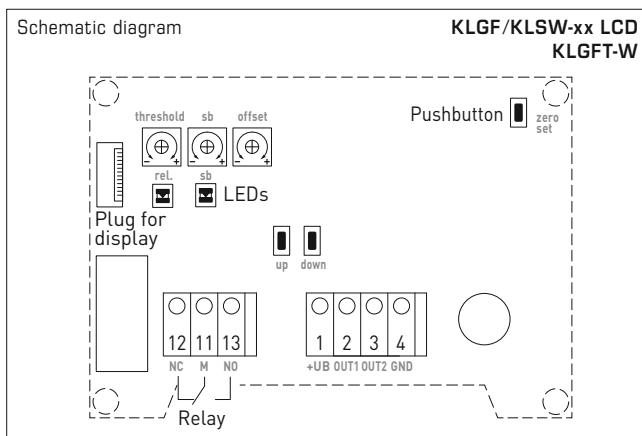
with display on/ad temperatur,
UB = 24V



**NEW**

S+S REGELTECHNIK

RHEASGARD® KLGF xx
RHEASREG® KLSWxx

Duct air flow sensors / air flow monitors,
incl. mounting flange, electronic,
with active / switching output


RHEASGARD® KLGF		Duct air flow sensor, electronic, with active output			
RHEASGARD® KLGF(V)T		Duct air flow sensor, electronic, with active and switching output			
RHEASREG® KLSW		Duct air flow monitor, electronic, with switching output			
Type / WG01	Power supply	Output active	Output switching	Display (NL)	Item no.
KLGF		U variant			
KLGF-U 120mm	24 V AC / DC	1x 0-10V	–	120 mm	1701-4111-0102-000
KLGF-U	24 V AC / DC	1x 0-10V	–	220 mm	1701-4111-0101-000
KLGF-U LCD	24 V AC / DC	1x 0-10V	–	220 mm	■ 1701-4111-1101-000
Optional:	Cable connection with M12 connector according to DIN EN 61076-2-101 on request				
KLGF(V)T		AOS			
KLGF-T-W	24 V AC / DC	2x 0-10V / 4...20 mA	1 changeover contact	220 mm	1701-4118-0201-001
KLGFVT-W LCD	24 V AC / DC	2x 0-10V / 4...20 mA	1 changeover contact	220 mm	■ 1701-4118-1401-001
KLSW-W24					
KLSW-W24 120mm	24 V AC / DC	–	1 changeover contact	120 mm	1701-4113-0102-001
KLSW-W24	24 V AC / DC	–	1 changeover contact	220 mm	1701-4113-0101-001
KLSW-W24 LCD	24 V AC / DC	–	1 changeover contact	220 mm	■ 1701-4113-1101-001
KLSW-W230					
KLSW-W230 120mm	230 V AC	–	1 changeover contact	120 mm	1701-4133-0102-001
KLSW-W230	230 V AC	–	1 changeover contact	220 mm	1701-4133-0101-001
Note:	Changeover contact with automatic reset (relay opens automatically when value falls below the threshold again) AOS (Automatic Output Switching) = patented analogue interface (patent no. DE 10 2015 015 941 B4), the unit automatically detects the required output type 0 - 10 V or 4...20 mA				
KLGF-T, KLGFVT	T = temperature (0...+50 °C) – additional measurand V = volume flow (0...200,000 m³/h) – alternative parameter, can be configured via display!				

Vane switch, mechanical, with paddle, with switching output

Mechanical wind vane switch **RHEASREG® WFS** with switching output, in an impact-resistant plastic housing, with stainless-steel paddle, for flow monitoring of gaseous, non-aggressive media.

The flow sensor is used as a flow controller or air flow monitor in air conditioning ducts, in air intake or exhaust devices of ventilators or electric heating registers (also for contaminated, oily air).

TECHNICAL DATA

Switching capacity: (Contact load)	15 (8) A; 24...250 V AC at 24 V AC min. 150 mA
Contact:	dustproof microswitch as single-pole, potential-free changeover contact
Housing:	plastic, UV-resistant, material polyamide, 30 % glass-globe reinforced, colour traffic white (similar to RAL 9016)
Housing dimensions:	108 x 70 x 73.5 mm (Thor 2)
Base body:	galvanised steel
Moving arm:	brass
Vane:	stainless steel V2A (1.4301)
Cable connection:	cable gland , plastic (M20 x 1.5; with strain relief, exchangeable, inner diameter 8 - 13 mm)
Housing temperature:	-40...+85 °C
Operating difference:	≥ 1,5 m / s
Electrical connection:	0.14 - 1.5 mm ² , via screw terminals
Protection class:	I (according to EN 60 730)
Protection type:	IP 65 (according to EN 60 529)
Standards:	CE conformity, EMC directive 2014 / 30 / EU, low-voltage directive 2014 / 35 / EU

FUNCTION

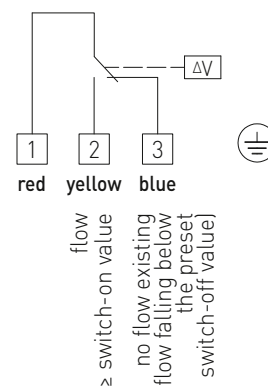
Monitor:	Contact 1 - 3 breaks when flow rate drops to the preset value. Simultaneously, contact 1 - 2 closes and can be used as signal contact.
Assembly note:	the installation is only possible in horizontal air ducts. Make sure that there is a damping section (≥ 5 times the pipe diameter) before and after the installation location. For wind speeds > 5 m/s , cut the vane/paddle at the marked spots. This will result in an increase of the default values (see table).

WFS



Connecting diagram

WFS





S+S REGELTECHNIK

RHEASREG® WFS

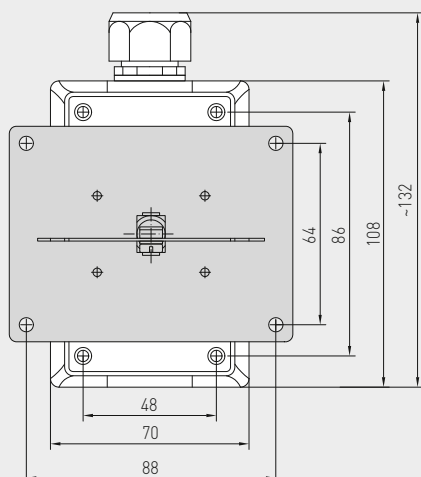
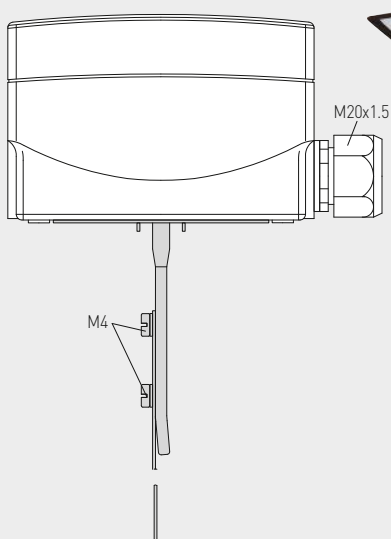
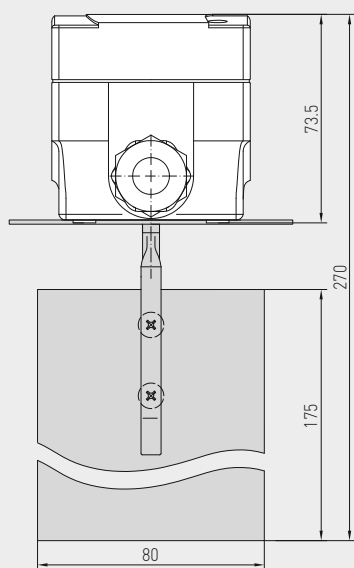
Vane switch, mechanical, with paddle,
with switching output



Dimensional drawing

WFS

WFS



RHEASREG® WFS Vane switch, mechanical, with paddle

Type / WG01	Switch-on value [m/s]		Switch-off value [m/s]		Item No.
	min.	max.	min.	max.	
WFS					
WFS-1E	2,5 (4,0)	9,2	1,0 (2,5)	8,0	1702-3020-0000-000
Note: Minimum values in brackets apply to wind speeds > 5 m/s					
Spare part					
PWFS-08	Spare paddle for WFS (Stainless steel vane)				7700-0010-2000-000

Flow monitors, mechanical, with paddle, with switching output

Mechanical paddle flow monitor **RHEASREG® SW** with switching output, in an impact-resistant plastic housing, with stainless-steel paddle, for flow monitoring of liquid and gaseous, non-aggressive media in pipes, hydraulic systems of ¾" through ½" to 8" diameter.

The flow sensor is used as a flow controller or low water alarm, e.g. for pumps in oil and cooling circuits, cooling systems, evaporators, compressors and heat exchangers, with brass or stainless-steel bodies.

TECHNICAL DATA

Switching capacity:	15 (8) A; 24...250 V AC, at 24 V AC min. 150 mA
Contact:	dustproof microswitch as potential-free single-pole changeover contact
Housing:	plastic, UV-resistant, material polyamide, 30% glass-globe reinforced, colour traffic white (similar to RAL 9016)
Housing dimensions:	108 x 70 x 73.5 mm (Thor2)
Base body:	galvanised steel
Screwed socket:	brass or stainless steel (see table)
Paddle:	stainless steel V4A (1.4401)
Cable connection:	cable gland , plastic (M20 x 1.5; with strain relief, exchangeable, inner diameter 8 - 13 mm)
Housing temperature:	-40...+85 °C
Max. temperature of medium:	+120 °C
Electrical connection:	0.14 - 1.5 mm ² , via screw terminals
Protection class:	I (according to EN 60 730)
Protection type:	IP 65 (according to EN 60 529)
Standards:	CE conformity, EMC directive 2014/30/EU, low-voltage directive 2014/35/EU

FUNCTION

Monitor:	Contact COM-NO (red - yellow) breaks when flow rate drops to the preset value. Simultaneously, contact COM-NC (red - blue) closes and can be used as signal contact. Device is factory-set to the minimum switch-off value, which can be increased by turning the range adjusting screw clockwise.
Installation:	vertical in horizontal pipes, tee R x" according to DIN 2950, min. smoothing distance = 5 x pipe diameter upstream and downstream of paddle

Table of switching values

Pipe Ø DN (inches)	Paddle combination PSW-09	Factory Setting OFF / ON (m ³ /h)	Max. Setting OFF / ON (m ³ /h)
SW-1 / SW-2			
1"	1	0.6 / 1.0	2.0 / 2.1
1 ¼"	1	0.8 / 1.3	2.8 / 3.0
1 ½"	1	1.1 / 1.7	3.7 / 4.0
2"	1, 2	2.2 / 3.1	5.7 / 6.1
2 ½"	1, 2	2.7 / 4.0	6.5 / 7.0
3"	1, 2, 3	4.3 / 6.2	10.7 / 11.4
4"	1, 2, 3	11.4 / 14.7	27.7 / 29.0
	1, 2, 3, 4	6.1 / 8.0	17.3 / 18.4
5"	1, 2, 3	22.9 / 28.4	53.3 / 55.6
	1, 2, 3, 4	9.3 / 12.9	25.2 / 26.8
6"	1, 2, 3	35.9 / 43.1	81.7 / 85.1
	1, 2, 3, 4	12.3 / 16.8	30.6 / 32.7
8"	1, 2, 3	72.6 / 85.1	165.7 / 172.5
	1, 2, 3, 4	38.6 / 46.5	90.8 / 94.2
SW-3 / SW-4			
½"	—	0.174 / 0.48	0.846 / 0.948
¾"	—	0.138 / 0.408	0.768 / 0.858

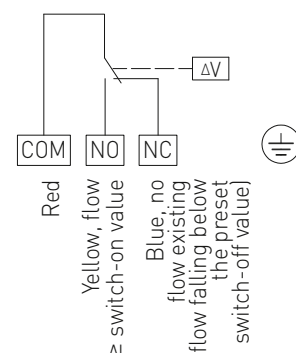


SW

SW-3E
SW-4E

Incl. attached Tee Fitting
according to DIN 2950

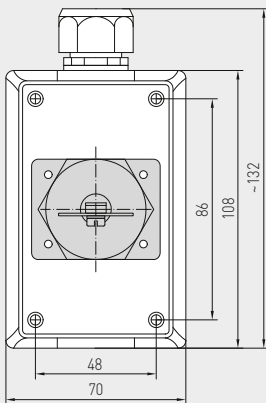
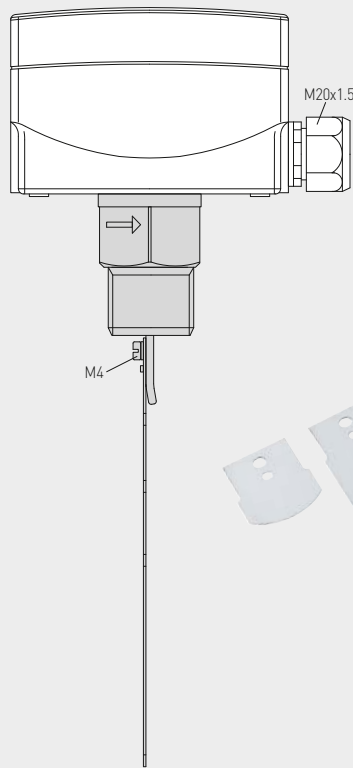
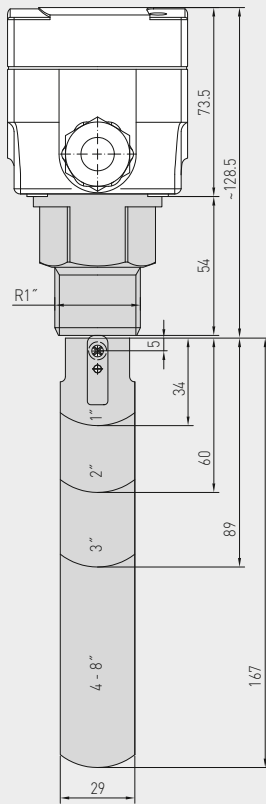
Connecting diagram



SW

Dimensional drawing

SW
PSW-09



PSW-09
Set of stainless steel
paddles (Spare part)

Pipe diameters with paddle combinations

Pipe Ø DN (inches)	(mm)	Paddle combination PSW-09
1/2"	15 mm	– (SW-3E incl. Tee Fitting)
3/4"	20 mm	– (SW-4E incl. Tee Fitting)
1"	25 mm	1
1 1/4"	32 mm	1
1 1/2"	40 mm	1
2"	50 mm	1, 2
2 1/2"	65 mm	1, 2
3"	80 mm	1, 2, 3
4"	100 mm	1, 2, 3 plus 4 (shorten to 92 mm)
5"	125 mm	1, 2, 3 plus 4 (shorten to 117 mm)
6"	150 mm	1, 2, 3 plus 4 (shorten to 143 mm)
8"	200 mm	1, 2, 3 plus 4 (unshortened)

RHEASREG® SW Flow monitors, mechanical, with paddle

Type/ WG01	Pipe Ø DN	Max. Operating Pressure PN max	Medium	(Contacting Parts Made of)	Incl. attached Tee Fitting according to DIN 2950	Item No.
SW						
SW-1E	1" - 8"	11 bar	normal	(brass)	–	1702-3011-0000-000
SW-2E	1" - 8"	30 bar	aggressive	(stainless steel V4A)	–	1702-3012-0101-000
SW-3E	1/2"	11 bar	normal	(brass)		1702-3013-0031-000
SW-4E	3/4"	11 bar	normal	(brass)		1702-3014-0041-000
Spare part						
PSW-09	Set of stainless steel paddles, 4 pieces, pipe Ø 1" - 8", for SW-1E and SW-2E (included in the scope of delivery)					7700-0010-1000-000