Product-Information Electronical flow- and airflow-monitoring
Softstarter and brake unit
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We over us

The company SEIKOM is a worldwide active innovative enterprise and in 1994 from the enterprise rich in tradition Fritz A. mug, Electro automatic system resulted in Düsseldorf. One occupied himself already in front of more with the development of electronic flow and stream of air guardians gentle attempt and engine braking equipment there as 30 years. Growth due to and a continuous development of the product lines got under the permanently make when an independent enterprise SEIKOM-Electronic room created for a further growth steady. Today's enterprise SEIKOM-Electronic is aligned with the development, production and the sale of high-quality Sensorik and drive components for industrial use. Your satisfaction is our scale.

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Measuring principle Airflow monitoring
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 temperature measurement.

	NLSW2A **Adjustable hysteresis** **Design prooft RWTÜV**	**NLSW45-3*** **Air –20..+120°C** **Design prooft RWTÜV**
		
Article No.	**24V AC/DC = 66224** **230V/AC = 56558**	**24V AC/DC = 77029** **230VAC = 63377**
Operating voltage	24VDC, 24/115/230VAC	24VDC, 24/115/230VAC
Voltage tolerance	± 10%	± 10%
Over voltage category	II	II
Signal display, voltage	Green LED	Green LED
Power consumption, max.	4VA	4VA
Ambient temperature, unit	-20..+60°C	-20..+60°C
Switching Output airflow	Relay, 1change-over contact	Relay, 1change-over contact
Current and contact load capacity	250VAC, 10A, 2.5kVA	250VAC, 10A, 2.5kVA
Switching function at airflow	Relay energised when airflow is present	Relay energised when airflow is present
Signal lamp, airflow	Yellow LED	Yellow LED
Transistor output	-	-
Analogue output	-	-
Start up bypass	Optional: NLSW2aZ	Adjustable approx 5-60s
Display of start-up bypass	-	-
Media temperature range	0..+80°C	–20..+120°C
Switching output	Adjustable with potentiometer	Adjustable with potentiometer
Airflow range	0.5-30 m/s	0.1-20 m/s
Sensors	**F2, F3, F4.2**	**F2, F3, F4.2**
Electrical connection	10 Terminals, 2.5mm²	10 Terminals, 2.5mm²
Type of protection, housing	IP40	IP40
Type of protection, terminals	IP20	IP20
Contamination class	2	2
Housing dimensions	L=120mm , W=45mm, H=73mm	L=120mm , W=45mm, H=73mm
Certification symbols	O, 0	O, 0
Accessory	-	-

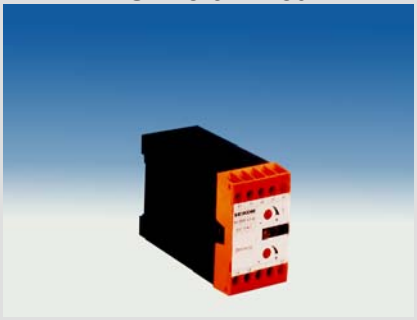
***For EEx application:**
The device NLSW45-3 is suitable for the flow supervision of gaseous media in connection with Z barriers all over in the Zone1+ temperature league T4 (NLSW45-3Ex). The sensor F3 can VDE0165Teil1, para. 3.21 = occurred as "simple electrical operating supplies" in the Zone1 acc. to EN60079 14 be.
The airflow-monitor NLSW45 3Ex must all over be installed and operated outside the explosive area!

Applications of Air-conditioning Controlling from fans, heating plants, filter, exhaust units, driers **Low-priced Alternative to** galley-proofs, vane-controller, V-belts controller **Industry** Monitoring of filling levels Detection of air bubbles in a close system Detection of stoppages and movements greater than 1 cm/s Airflow monitoring from explosive hazard atmospheres (**NLSW100-Ex1**)	**NLSW2AS3** **Airflow range at 10m/s** 	**NLSW2A/AEG** **2 Switching output** **Special appliances** 
Article No.	**24V AC/DC = 56241** **230V/AC = 56740**	**230VAC = 67644**
Operating voltage	24VDC, 24/115/230VAC	230V/AC
Voltage toleranz	± 10%	± 10%
Over voltage category	II	II
Signal display, voltage	Green LED	Green LED
Power consumption, max.	4VA	4VA
Ambient temperature, unit	-20..+60°C	-20..+60°C
Switching output airflow	Relay, 1 change-over contact and 1 make contact	Relay, 1 brake and 1 make contact
Current and contact load capacity	250VAC, 5A, 1.25kVA	250VAC, 5A, 1.25kVA
Switching function at airflow	Relay energised when airflow is present	Relay energised when airflow is present
Signal lamp, airflow	Yellow LED	Yellow LED
Transistor output	-	-
Analogue output	-	-
Start up bypass	-	Yes, approx 60s
Display of start-up bypass	-	-
Media temerature range	0..+70°C	0..+70°C
Switching output	Adjustable with potentiometer	Adjustable with potentiometer
Airflow range	10-20 m/s	0.1-20 m/s
Sensors	**F2, F2Sond.1, F3, F4.2**	**F2, F3, F4.2**
Electrical connection	10 Terminals, 2.5mm²	10 Terminals, 2.5mm²
Type of protection, housing	IP40	IP40
Type of protection, terminals	IP20	IP20
Contammination class	2	2
Housing dimensions	L=120mm , W=45mm, H=73mm	L=120mm , W=45mm, H=73mm
Certification symbols	0	0
Accessory	-	-

Flow controller NLSW45-4

The flow in fluids and gaseous media can be monitored reliably with the flow sensors F6.1, F6.2, F6.3 or F6.4 and the evaluation unit NLSW45-4. The sensitivity can be adjusted accurately with a coarse and fine potentiometer. After 2-3 minutes, re-adjusted the setting using the „Fine“ potentiometer if necessary to achieve stable switching point conditions. The switching state is indicated by an LED.

	NLSW45-4 Flow controller Liquid Media Design prooft RWTÜV	**NLSW45-5 Airflow controller**
		
Article No.	**24V AC/DC = 75108 230V/AC = 74297**	**24V AC/DC = 77566 230VAC = 77567**
Operating voltage	24VDC, 24/115/230VAC	24VDC, 24/115/230VAC
Voltage toleranz	± 10%	± 10%
Over voltage category	II	II
Signal display, voltage	Green LED	-
Power consumption, max.	4VA	4VA
Ambient temperature, unit	-20..+60°C	-20..+60°C
Switching output airflow	Relay, 1 change-over contact	Relay, 1 change-over contact
Current and contact load capacity	250VAC, 10A, 2.5kVA	250VAC, 10A, 2.5kVA
Switching function at airflow	Relay energised when airflow is present	Relay energised when airflow is present
Signal lamp, airflow	Yellow LED	Yellow LED
Transistor output	-	-
Analogue output	-	-
Start up bypass	Optional: NLSW45-4Z	Yes, approx 60s
Display of start-up bypass	-	-
Media temerature range	-10..+80°C	+10..+80°C
Switching output	Adjustable with potentiometer	Adjustable with potentiometer
Airflow range	0.05-3 m/s	0.1-15 m/s
Sensors	**F6.1, F6.2, F6.3, F6.4**	**F7**
Electrical connection	10 Terminals, 2.5mm²	10 Terminals, 2.5mm²
Type of protection, housing	IP40	IP40
Type of protection, terminals	IP20	IP20
Contamination class	2	2
Housing dimensions	L=120mm , W=45mm, H=73mm	L=120mm , W=45mm, H=73mm
Certification symbols	O, 0	0
Accessory	-	-

Airflow controller NLSW45-6 The device NLSW45-6 represents a further development of the device NLSW100-4. The advantages are the control of the probe in case of interruption as well as in case of a short circuit, a more compact design, adjustable bypass time and a temperature range of the medium from -20°C to +250°C/400°. The device is operated with the probe F8 (dimension identical to F2/F3). A temperature compensation maintains the switching point constant over the entire temperature range..	**NLSW45-6* Medium 250°C NLSW45-6.1 400° NLSW45-6Ex 250°** 	**NLSW75-A With Analogue-output** 

Article No. NLSW45-6.1 NLSW45-6Ex	**24V AC/DC = 80501 230V/AC = 81504 24V-81502/400 / 230V-81504/400 24V-80502/Ex / 230V-81504/Ex**	**24V AC/DC = 70789 230V/AC = 60620**
Operating voltage	24VDC, 24/115/230VAC	24VDC, 24/115/230VAC
Voltage toleranz	± 10%	± 10%
Over voltage category	II	II
Signal display, voltage	Green LED	Green LED
Power consumption, max.	4VA	4VA
Ambient temperature, unit	-20..+60°C	-20..+60°C
Switching output airflow	Relay, 1change-over contact	Relay, 1change-over contact
Current and contact load capacity	250VAC, 10A, 2,5kVA	250VAC, 10A, 2,5kVA
Switching function at airflow	Relay energised when airflow is present	Relay energised when airflow is present
Signal lamp, airflow	Yellow LED	Yellow LED
Transistor output	-	-
Analogue output	-	0..10V / 0..20mA relativ
Start up bypass	Adjustable approx 2-60s	-
Display of start-up bypass	-	-
Media temperature range	-20..+250°C	0..+70°C
Switching output	Adjustable with potentiometer	Adjustable with potentiometer
Airflow range	0.1-20 m/s	0.5-20 m/s
Sensors	**F8**	**F2, F3, F4.2**
Housing	10 Terminals, 2.5mm²	16 Terminals, 2.5mm²
Type of protection, housing	IP40	IP40
Type of protection, terminals	IP20	IP20
Contamination class	2	2
Housing dimensions	L=120mm , W=45mm, H=73mm	L=112mm , W=75mm, H=73mm
Certification symbols	0	0
Accessory	-	-

<u>*For EEx application:</u>

The device NLSW45-6 is suitable for the flow supervision of gaseous media in connection with Z barriers all over in the Zone1+ temperature league T1 (NLSW45-6Ex). The sensor F8 can VDE0165Teil1, para. 3.21 = occurred as "simple electrical operating supplies" in the Zone1 acc. to EN60079 14 be.
The airflow-monitor NLSW45-6Ex must all over be installed and operated outside the explosive area!

Airflow monitor NLSW100-Ex1

The NLSW100-Ex1 airflow monitor is designed to be used in conjunction with the F-Ex1 or F-Ex2 sensors to monitor the flow of gases in zone 1 and temperature category T4.It meets international standards DIN EN50014 and EN 50020 relating to EEx application [EEx ib] IIC.
The NLSW100-Ex1 airflow monitor has been tested by the Federal Testing Institute in Braunschweig and has the registration number 92.C.2063.
Important: The NLSW100-Ex1 controller must not be installed and operated in explosive hazard atmospheres.
The F-Ex1 sensor attached to the control unit monitors airflow in the explosion hazard atmosphere.

	NLSW100-Ex1 PTB-tested for the Ex-application	**NLSW75-TE Monitoring airflow and temperature**
		
Article No.	**230V/AC = 76760**	**24V AC/DC = 77052** **230VAC = 76761**
Operating voltage	230V/AC	24VDC, 24/115/230VAC
Voltage toleranz	± 10%	± 10%
Over voltage category	II	-
Signal display, voltage	-	Green LED
Power consumption, max.	4VA	4VA
Ambient temperature, unit	-20..+60°C	-20..+60°C
Switching output airflow	Relay, 1change-over contact	Relay, 1change-over contact
Current and contact load capacity	250VAC, 6A, 2,5kVA	250VAC, 10A, 2,5kVA
Switching function at airflow	Relay energised when airflow is present	Relay energised when airflow is present
Signal lamp, airflow	Yellow LED	Yellow LED
Transistor output	-	Option NLSW75-TET
Analogue output	-	-
Start up bypass	Fixed approx 30s	20s / 40s
Display of start-up bypass	-	-
Media temerature range	-15..+80°C	–20..+120°C
Switching output	Adjustable with potentiometer	Adjustable with potentiometer
Airflow range	0.5-15 m/s	0.1-20 m/s
Sensors	**F-Ex1, F-Ex2**	**F2, F3, F4.2**
Electrical connection	20 Terminals, 2.5mm²	16 Terminals, 2.5mm²
Type of protection, housing	IP40	IP40
Type of protection, terminals	IP20	IP20
Contamination class	2	2
Housing dimensions	L=120mm , W=45mm, H=73mm	L=120mm , W=45mm, H=73mm
Certification symbols	0	0
Accessory	-	-

Compact
Airflow monitoring

Type of protection, sensor IP67 with change over contact

The device is used for controlling of:
- Air / Air conditioning
- Ventilators
- Damper register.

	RLSW4 **Transistor or** **Switching output**	**RLSW5** **Airflow measuring probe** **Switching output** **Design prooft RWTÜV**
		
Article No.	**RLSW4 = 74825** **RLSW4/R = 74825/R**	**24V AC/DC = 81447/10** **230VAC = 80447/10**
Operating voltage	18..28VDC	24VDC, 24/115/230VAC
Voltage tolerance	-	± 10%
Over voltage category	-	II
Signal display, voltage	-	Green LED
Power consumption, max.	1VA	4VA
Ambient temperature, unit	-20..+60°C	-20..+60°C
Switching output airflow	Relay, 1make contact	Relay, 1change-over contact
Current and contact load capacity	250VAC, 5A, 1.2kVA	250VAC, 6A, 1.5kVA
Switching output airflow	PNP, 1 make contact	-
Switching function at airflow	Relay / Transistor is energised when airflow is present	Relay is energised when airflow is present
Signal lamp, airflow	Yellow LED	Yellow LED
Analogoue output	-	-
Start up bypass	-	60s (activated by jumper)
Display of start-up bypass	-	Yellow LED
Media temperature range	0..+70°C	-10..+80°C
Temperature gradient	15K/min	15K/min
Switching point	Adjustable with potentiometer	Adjustable with potentiometer
Measuring range	0.1-15 m/s	0.1-30 m/s
Sensor	**Integrated**	**Integrated**
Immersion depth	50mm	130mm
Process connection	PG7, Mounting flange	PG7, Mounting flange
Sensor material	MS58, Nickel-plated	MS58, Nickel-plated
Pressure resistance	10bar	10bar
Connection	4 Terminals, 2.5mm²	5 Terminals, 2.5mm²
Type of protection, housing	IP65	IP65
Type of protection, sensor	IP67	IP67
Contamination class	2	2
Housing dimensions	L=30mm; W=50mm; H=65mm	L=56mm; W=84mm; H=80mm
Certification symbols	CE	CE, RWTÜV
Accessory	Mounting flange 14mm	Mounting flange 10mm

Airflow monitor RLSW6 — RLSW6

General Information:
The electronic airflow monitors of the RLSW6 series are used for monitoring fans or butterfly valves, for the flow-related monitoring of humidifiers and electric heating dampers in accordance with DIN57100 Part420, or in conjunction with DDC systems.

Article-No.	**24V AC/DC = 77566A** **230VAC = 77567A**
Operating voltage	24VDC, 24/115/230VAC
Voltage tolerance	± 10%
Over voltage category	-
Signal display, voltage	Green LED
Power consumption, max.	5VA
Ambient temperature, unit	-20..+60°C
Switching output flow	Relay, 1change-over contact
Current and contact load capacity	250VAC, 10A, 2.5kVA
Switching function at airfflow	Relay energised when airflow is present
Signal display at airflow	Red LED
Output alarm	-
Switching output alarm	Relay, 1change-over contact
Current and contact load capacity	250VAC, 10A, 2.5kVA
Switching output alarm	Relaiy is energised when airflow isn`t present
Signal display at alarm	Yellow LED
Start up bypass	Adjustable with potentiometer (15-120s)
Break time	Adjustable with potentiometer (2-20s)
Media temperature range	-10..+80°C
Temperature gradient	15K/min
Switching point	Adjustable with potentiometer
Measuring range	0.1-15 m/s
Sensor	**F9**
Immersion depth	165mm
Process connection	Flange
Sensor material	MS58, nickel-plated
Pressure resistance	10bar
Electrical connection	11 Terminals, 2.5mm²
Type of protection, housing	IP65
Type of protection, sensor	IP67
Contamination class	2
Housing dimensions	L=55mm; W=160mm; H=80mm
Certification symbols	0

Compact flow measuring probes

RLSW4A / RLSW5A

The electronic air ammeters of the type row of RLSW4A, RLSW5A are used among others in the building instrumentation and control in the laminar flow area. Particularly suitable for the further processing with regulators and limiting value relays.

Custom-designed equipment explanations like e.g. RLSW5A into 3 leaders execution
(Operating voltage: 24 VDC analogous exit: 0..10 V can be delivered) for the business with DDC plants, on enquiry!

	RLSW4A **Relativ** **Analogous output**	**RLSW5A** **Relative** **Analogous output**
		
Article No.	**24V DC = 81449**	**24V AC/DC = 81448/10** **230VAC = 80448/10**
Operating voltage	18..28VDC	24VDC, 24/115/230VAC
Voltage tolerance	-	± 10%
Over voltage category	-	II
Signal display, voltage	Green LED	Green LED
Power consumption, max.	1VA	4VA
Ambient temperature, unit	-20..+60°C	-20..+60°C
Voltage output airflow	0..10V (Ra=10kOhm) relative	0..10V (Ra=10kOhm) relative
Current output airflow	3 leader	0..20mA (Ra=0,2kOhm) relative
Measurement error	± 10% v. MW	± 10% v. MW
Repeatability of the measured value	± 1%	± 1%
Media temperature range	-5..+60°C	0..+70°C
Temperature gradient	15K/min	15K/min
Switching point	Adjustable with potentiometer	Adjustable with potentiometer
Measuring range	0.2 - 15 m/s Optional (0.2 – 1 m/s)	0.1 - 30 m/s
Sensor	**Integrated** **(optional M8 plug connector)**	**Integrated**
Immersion depth	50mm	130mm
Process connection	Mounting flange	PG7, Mounting flange
Sensor material	MS58, Nickel-plated	MS58, Nickel-plated
Pressure resistance	10bar	10bar
Connection	4 Terminals , 2.5mm²	6 Terminals, 2.5mm²
Type of protection, housing	IP65	IP54
Type of protection, sensor	IP67	IP67
Contamination class	2	2
Housing dimensions	L=30, W=50mm, H=65mm	L=56mm, W=84mm, H=80mm
Certification sysmbols	0	0
Accessory	Mounting flange 14mm	Mounting flange 10mm

*** Reference conditions: Finish route > 10 x DN run route > 5 x DN a laminar flow; Air at 0 degrees Celsius and 1.013 bar**

Compact airflow-monitors RLSW5AL/RLSW8AL	**RLSW5AL Linear Analogous output**	**RLSW8AL Linear Analogous output**
The electronic airflow monitors of the type row of RLSW5AL/RLSW8AL are used among others in the building instrumentation and control in the laminar flow area. Particularly suitable for the further processing with regulators and limiting value relays. The airflow-monitors of the type row of RLSW5AL and RLSW8AL work in 3 leader technology!		
Article-No.	**81449**	**81500**
Operating voltage	18-28VDC, 24VAC	18-28VDC, 24VAC
Voltage tolerance	-	-
Over voltage category	II	II
Signal display, voltage	-	-
Power consumption, max.	4VA	4VA
Ambient temperature, unit	-20..+60°C	-20..+60°C
Voltage output airflow	0..10V (Ra=10kOhm) 3-leader	0..10V (Ra=10kOhm) 3-leader
Current output airflow	4..20mA (Ra=0,2kOhm) 3-leader	4..20mA (Ra=0,5kOhm) 3-leader
Measurement error	± 5% v. MW	± 5% v. MW
Repeatability of the measured value	± 1%	± 1%
Output alarm	-	Adjustable with potentiometer 0..5-8m/s (0.5-16m/s, 0.3-1m/s)
Signal output alarm	-	Relay, 1change-over contact
Current and contact load capacity		250VAC, 6A, 1.5kVA
Switching output alarm	-	Relaiy is energised when airflow isn`t present
Signal display at alarm	-	Red LED
Switching delay alarm	-	Adjustable with potentiometer 0-120s)
Media temperature range	-10..+60°C	-10..+60°C
Temperature gradient	15K/min	15K/min
Measuring range (Please indicate at order	0-1m/s, 0-8m/s, 0-16m/s	0-1m/s, 0-8m/s, 0-16m/s
Sensor	**Integrated**	**Integrated**
Immersion depth	160mm	160mm
Process connection	Mounting flange	Mounting flange
Sensor material	Synthetic material	Synthetic material
Pressure resistance	5bar	5bar
Electrical connection	5 Terminals , 2.5mm²	9 Terminals , 2.5mm²
Type of protection, housing	IP54	IP54
Type of protection, sensor	IP54	IP54
Contamination class	2	2
Housing dimensions	L=56, W=84mm, H=80mm	L=56, W=84mm, H=80mm
Certification symbols	0	0
Accessory	Mounting flange	Mounting flange

Flow monitor RLSW7

The flow in fluids can be monitored reliaby with the flow sensor RLSW7. The sensitivity can be switching with a coarse (rough) and fine potentiometer. The switching state is indicated by an LED. In this device sensor and monitor are a compact unit. The measuring probe is also used for mounting. The advantages are the application where a switch-gear or other technical equipment has to be mounted in a small room or where no room is planed for example additional mounting.
On request, we can manufacture sensors threads in a variety of designs.

	RLSW7 G¼“ Compact flow monitor for liquid Media Design prooft RWTÜV	**RLSW7 G½“ Compact flow monitor for liquid Media Design prooft RWTÜV**
		
Article-No.	**24V AC/DC = 74396** **230VAC = 74397**	**24V AC/DC = 74398** **230VAC = 74399**
Operating voltage	24VDC, 24/115/230VAC	24VDC, 24/115/230VAC
Voltage tolerance	± 10%	± 10%
Over voltage category	II	II
Signal display, voltage	Green LED	Green LED
Power consumption, max.	4.5VA	4.5VA
Ambient temperature, unit	-20..+60°C	-20..+60°C
Switching output flow	Relay, 1change-over contact	Relay, 1change-over contact
Current and contact load capacity	250VAC, 6A, 1,5kVA	250VAC, 6A, 1,5kVA
Switching function at flow	Relay energised when flow is present	Relay energised when flow is present
Signal display at flow	Yellow LED	Yellow LED
Start up bypass	-	-
Display of start-up bypass	-	-
Media temperature range	-10..+80°C	-10..+80°C
Temperature gradient	15K/min	15K/min
Switching point	Adjustable with potentiometer	Adjustable with potentiometer
Measuring range	0,05-3 m/s	0,05-3 m/s
Response time	1..10 s	1..10s
Sensor	**Integrated**	**Integrated**
Immersion depth	48mm	45mm
Process connection	G ¼“	G ½“
Sensor material	Stainless steel V2A, (1.4305)	Stainless steel V2A, (1.4305)
Pressure resistance	20bar	20bar
Electrical connection	5 Terminals, 2.5mm²	5 Terminals, 2,5mm²
Type of protection, housing	IP65	IP65
Type of protection, sensor	IP67	IP67
Contamination class	2	2
Housing dimensions	L=56mm; W=84mm; H=80mm	L=56mm; W=84mm; H=80mm
Certification sysmbols	O, 0	O, 0
Accessory	-	-

Airflow Sensor

A series of sensors have been developed for the various airflow controlers in our product range and their specific apllications. One feature which all our ensors have in common is their extremly fast reaction to minimal air flow changes. They differ in terms of their compensation functions (i.e. different reaction rates to changes in the media temperature and in terms of the temperature range of the medium. The technical data for the airflow controller which you have selected indicate which sensor you can use. Each sensor has cross-reference to the airflow controllers which it can be used with.

	Sensor F2 Air –10..+80°C	**Sensor F2Sond1 Flange sensor**
		
Article-No.	**50272**	**56242**
Media temperature range	-10..+80°C	-10..+80°C
Temperature gradient	15K/min	15K/min
Immersion depth	50mm	35mm
Process connection	PG7	Flange
Sensor material	MS58, Nickel-plated	MS58, Nickel-plated
Pressure resistance	10bar	10bar
Connecting cable	2.5m / 3x0.5mm²	2.5m / 3x0.5mm²
Protection sensor	IP67	IP67
Compatible appliances	NLSW2a, NLSW45-3, NLSW75-A, NLSW75-TE	NLSW2aS3

Sensor F3, F8 for high temperature

For measuring the airflow of gaseous media in the median temperature range from –20..+120°C and -20..+250°C.
The influence of the median temperature range in this range is compensated. The Seikom airflow sensor measures airflow velocities in the range of 0.1..30m/s based on the calorimetric measuring principle.
*The sensors F3 and F8 are all over NLSW45-3Ex and NLSW45-6Ex in connection with end judging electronics all over suitable (respectively with Z barriers) for the former area.

	F3* Air -20..+120°C	**F8* Air –20..+250°C (optional -20..+400°C)**
		
Article-No.	**50276**	**76106**
Media temperature range	-20..+120°C	-20..+250°/400°C
Temperature gradient	30K/min	20K/min
Immersion depth	50mm	50mm
Process connection	PG7	PG7
Sensor material	MS58, Nickel-plated	MS58, Nickel-plated
Pressure resistance	10bar	10bar
Connecting cable	2.5m / 3x0.5mm²	2.5m / 3x0.5mm²
Protection sensor	IP67	IP67
Compatible appliances	NLSW2a, NLSW45-3 (Ex), NLSW75-A, NLSW75-TE	NLSW45-6, NLSW45-6Ex

Sensor F7

For measuring the airflow of gaseous media in the median temperature range from –10..+80°C.
The influence of the median temperature range in this range is compensated.
The Seikom airflow sensor measures airflow velocities in the range of 0.1..15m/s based on the calorimetric measuring principle.
The sensor should not be used in gaseous media with high humidity (no more than 85% relative humidity).
The sensor F7 is obtainable with 165mm probe length (F7Sond1).
Article number.: 76108

	Sensor F4.2 Teflon	**Sensor F7 Air+10..+80°C**
		
Article-No.	**50311**	**80504**
Media temperature range	-10°C..+90°C	+10°C..+80°C
Temperature gradient	30K/min	30K/min
Immersion depth	60 mm	50mm
Process connection	M11x1	PG7
Sensor material	Teflon	MS58, Nickel-plated
Pressure resistance	4 bar	5bar
Connecting cable	2.5m / 3x0.5mm²	2.5m / 3x0.5mm²
Protection sensor	IP67	IP67
Compatible appliances	NLSW2a, NLSW45-3, NLSW75-A, NLSW75-TE	NLSW45-5

Sensor F-Ex1, F-Ex2

The NLSW100-Ex1 airflow monitor is designed to be used in conjunction with the F-EX1 or F-EX2 sensors to monitor the flow of gases in zone 1 and temperature category T4.
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	Sensor F-Ex1 Ex-Sensor	**Sensor F-Ex2 Ex-Sensor**
		
Article-No.	**76759**	**80444**
Media temperature range	-15..+80°C	-15..+80°C
Temperature gradient	15K/min	15K/min
Immersion depth	70mm	25mm
Process connection	M14x1	G ¼“
Sensor material	Stainless steel V4A, 1.4571	Stainless steel V4A, 1.4571
Pressure resistance	20bar	20bar
Connecting cable	2.5m / 4x0.34mm²	2.5m / 4x0.34mm²
Protection sensor	IP67	IP67
Compatible appliances	NLSW100-Ex1	NLSW100-Ex1

Sensors F6.2, F6.3, F6.4

The flow sensors F6.2, F6.3 and F6.4 are manufactured of high-grade steel and have (V2A)
no mechanically busy parts. This one construction of the sensor top grants cylindrical- a high operational safety also does media strongly soiled.
Working examples:

- Supervision of cooling circuits
- Pump supervision (dry run protection)

	Sensor F6.2 **V2A Stainless steel** **Liquid media**	**Sensor F6.3** **V2A Stainless steel** **Liquid media**
		
Article-No.	**75104**	**75104L**
Media temperature range	-10..+80°C	-10..+80°C
Temperature gradient	15K/min	15K/min
Immersion depth	25 mm	48mm
Process connection	G ¼“	G ¼“
Sensor material	Stainless steel V2A, 1.4305	Stainless steel V2A, 1.4305
Pressure resistance	20bar	20bar
Connecting cable	2.5m / 4x0.34mm²	2.5m / 4x0.34mm²
Protection sensor	IP67	IP67
Compatible appliances	NLSW45-4	NLSW45-4

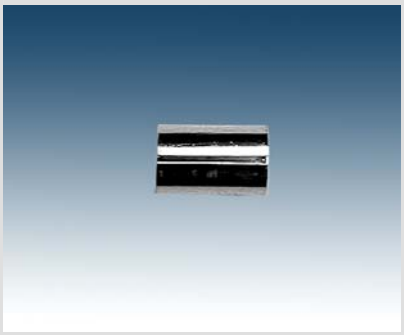
Sensor F9

The sensor F9 is in conjunction with the flange 79781/14 is very fast to mount on air ventilating system. The probe length is adjustable from 20-150mm

	Sensor F6.4 **V2A Stainless steel** **Liquid media**	**Sensor F9** **Channel sensor**
		
Article-No.	**75105**	**76107**
Media temperature range	-10..+80°C	-10..+80°C
Temperature gradient	15K/min	15K/min
Immersion depth	45mm	165mm
Process connection	G ½“	Mounting flange
Sensor material	Stainless steel V2A, 1.4305	MS58, Surface-treated
Pressure resistance	20bar	10bar
Connecting cable	2.5m / 4x0.34mm²	2.5m / 3x0.5mm²
Protection sensor	IP67	IP67
Compatible appliances	NLSW45-4	RLSW6

Custom-designed sensor explanations of all sensor on enquiry.

Sensor accessory

Mounting flange	Reducer G½“ to PG7 / G½“ to G¼“	Sensor case
		
Article-No.: **10mm = 79781**	Article-No.: **80399 (G½“ on PG7)**	Article-No.: **76109**
Article-No.: **14mm = 79781/14**	Article-No.: **80400 (G½“ on G¼“) für Fühler F6.2 / F-Ex2**	
Outside diameter 45mm Inside diameter 10mm / 14mm	G½“ Outside diameter to PG7 SW24	Sensor case
Sensor: F2 / F3 / F8 / F9 Aplliances: RLSW4 / RLSW5, RLSW5A, RLSW6	Sensor: F2 / F3 / F8 Appliances: RLSW4 / RLSW5 (5A)	Sensor: F2 / F3 / F7 / F8 Appliances: RLSW4 / RLSW5 (5A)
Material: Plastic to 90°C temperature	Material: MS58	Material: nickel-plated

Our stream of air guardians **NLSW2a, NLSW45 3, RLSW5** and **RLSW7** as well as the flow guardian **NLSW45 4** have a construction removal of the **RWTÜV in according to DINs EN 61010-1:1994-03 and DINs EN 61010-1 A2: 1998-11 and construction examining sign is provided with it.**

We deliver **various custom-built models** (other operating voltages, sensor pipe lengths, connection cable lengths etc.) of our equipment and feelers on enquiry.

Still questions? We are glad to help you along!

Large contrast strong 12.7 mm high 3 ½-digit LCD-display. Can show the loop current directly or changes into an arbitrary technical size such as flow.
Panel execution one springing up finished with professional design.
The 3 mm strong antireflex plate offer the advertisement before damages protection.
The advertisement is 38 mm bar in the racing term ace each other lining up.

- **Digital display without help energy**
- **4..20 mA**
- **Suitable for the flow guardians RLSW5AL+RLSW8AL**

Type	**DA0001**
Article-No.	**81449/DA**
Input signal	4..20mA
Tension burden	ca. 3,5 Volt
Ambient temperature, unit	-20..+80°C
Operating temperature	0..+50°C
Advertisement	3 ½-digit , 12.7 mm of high LCD advertisement
Precision	± 0.1%, ± 1 Digit
Sampling rate	3 measurings per second
Decimal point	arbitrarily putting cash
Measurement range	Please indicate at order!
Initial point	4 mA
End-point	20 mA
Temperature coefficient	100 ppm/K
Housing	Panelausführung
Windshield	Antireflex
Panel thickness	Max. 9,5mm
Scarf panel part	36 x73,2mm ±0,5 (H X B)
Connection	2 Klemmen, 1,5mm²
Housing dimensions	L=38mm; B=76mm; H=22mm
Compatible appliances	RLSW5AL, RLSW8AL
Certification symbols	CE

Pressure transmitter

The pressure transmitter of the series DTM01 and DTM02 are 2 channel Drucktransmitter these are started primarily for the supervision, control and regulation of pressure with the help of a regulator one of plc or a supervision plant.
Application areas:

- Feast attitude/control of a constant pressure in a given place in the channel system
- Feast attitude of a desired below atmospheric pressure in the channel system
- Volume measuring at difference pressure measuring about standard blank faceplate

- **2-channel pressure transmitter**
- **8 pressure ranges**
- **Signal output 0-10V und 4-20mA od. 0-20mA**
- **Linearity < 1%**
- **Resettaster**
- **Simple construction**

Type	**DTM01**	**DTM02**
Pressure range max.	**0-1500 Pa**	**0-5000 Pa**
Article-No.	**83001**	**83002**
Operating voltage	24V AC/DC	24V AC/DC
Voltage tolerance	± 20%	± 20%
Over voltage category	II	II
Signal display, voltage	-	-
Power consumption, max.	4VA	4VA
Ambient temperature, unit	-0..+50°C	-0..+50°C
Signal output	4 (2 for every channel)	4 (2 for every channel)
Signal output in V	0-10V	0-10V
Signal output in mA	4-20mA od. 0-20mA	4-20mA od. 0-20mA
Measurement error	+/- 3% v. MW Min. +/- 5 Pa	+/- 3% v. MW Min. +/- 30 Pa
Linearity	+/- 1%	+/- 1%
Reaction time	<5Sek.	<5Sek.
Pressure range	To be set with DIP switch (individually on each input channel)	To be set with DIP switch (individually on each input channel)
Pressure ranges	0-50, 0-100, 0-150, 0-250, 0-350, 0-500, 0-1000, 0-1500 Pa	0-1000, 0-1500, 0-2000, 0-2500, 0-3000, 0-3500, 0-4000, 0-5000 Pa
Resolution of the processor	0,01 V (0-10V signal) 0,016 mA (4-20 mA signal) 0,020 mA (0-20 mA signal)	0,01 V (0-10V signal) 0,016 mA (4-20 mA signal) 0,020 mA (0-20 mA signal)
Max. pressure	69 KPa	138 KPa
Type of protection, housing	IP54	IP54
Contamination class	2	2
Connection	12 Terminals, 1,5mm²	12 Terminals, 1,5mm²
Housing dimensions	L=75mm; B=125mm; H=125mm	L=75mm; B=125mm; H=125mm
Certification symbols	CE	CE

Single-phase soft start

1-phasige Seikom gentle attempt equipment of the row of NHLG12.1 is used by drive elements (belts, chains, gearings, clutches, bearing etc.), as a replacement from star triangle wirings and to the protection.
The engine residual current is reduced clearly and is ensured a calling gently at the engine, one switching pushes prevented.

NHLG12.1: Gentle attempt for one and three-phase motors.

- Rated voltage: 3 x400V/2 x230V/1 x230V AC/ 50-60 Hz.
- Internal bridging relay
- 45 mm of standard cases, screwing fastening and assembly on 35 mm DIN track.
- Protection degree: Case of IP40, clamps IP20

Type	Article-No.	Rated current (max)	Motor capacity 3x400V	Motor capacity 1/3x230V	Dimensions BxHxT (mm)
NHLG12.1	82253	12A	5,5kW	3kW	45x73x120

Three-phase soft start (standard housing)

The gentle attempt device **NHLG3-..** an electronic cause equipment is for three-phase current asynchronous machines, at which, instead of the main electrical circuit of semiconductor elements is headed by mechanical switching components.
At the equipment row of NHLG3-. do all 3 phases get fully controlled? Every phase contains two Thyristors (full bridge control) switched anti-parallelly which are partial or quite live during a half period. This Thyristor is live at this during the positiv, the different one during the negative half wave. The by letting time and with that the current river which are steered by a microprocessor for his part is determined by the firing angle of the Thyristor.

Typenreihe NHLG3-: Three-phase soft start unit in the 100mm standard housing

- Rated voltage (power and control unit): 3x400V AC / 50 Hz.
- Full bridge controll unit
- Integrated relay module run-up end / motor on
- System of protection: IP20

Type	Article-No.	Rated current (max)	Motor capacity at U=400V	Dimensions BxHxT (mm)
NHLG3-1,5	82249	4 A	1,5 kW	70x100x110
NHLG3-2,2	82250	5,5A	2,2 kW	70x100x110
NHLG3-4	82251	9 A	4 kW	70x100x110
NHLG3-5,5	82252	12 A	5,5 kW	70x100x110
NHLG3-7,5	82255	16 A	7,5 kW	100x100x110
NHLG3-11	82256	25 A	11 kW	100x100x120
NHLG3-15	82257	30 A	15 kW	100x100x120

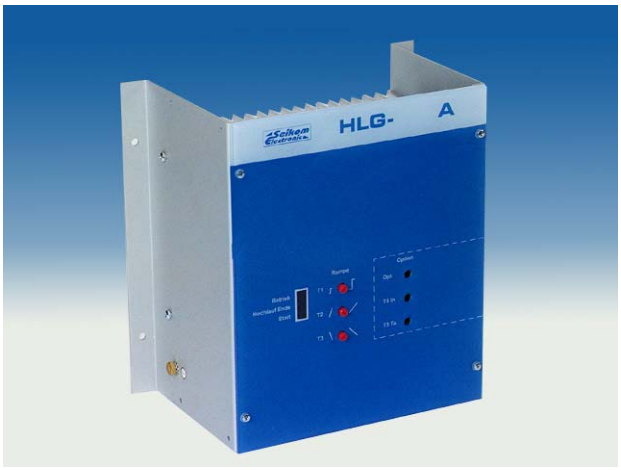
Three-phase soft start units

With Seikom soft start unit of the row of HLG A great residual currents and attempt moments are dropped. The operating supplies are driven controlledly on nominal speed in the critical one switching phase. By regulated reduction of currents and moments in the start-up phase the drive engine can be adapted to the respective requirements without problems. The user reaches a fundamentally longer life time of the drive elements as well as a reduction of maintenance dependent downtimes. The equipment also has to be integrated into existing plants without problems.

Type row of HLG A: High run equipment with led high and run (no braking function!)

For three-phase motors

- Rated voltage (power unit): 3 x400V AC/50 Hz.
- Supply voltage (Control unit): 230 V AC standard 24 VDC, 115, 400 V AC / 50-60 Hz possible.
- Per default built-in bridging relay for HLG3A and HLG6A.
- Tax relay "high run end" default installed after HLG12A.
- Protection degree: IP00 (above and below open) optional IP20 for HLG12 to HLG320A.



Type	Article-No.	Rated current (max)	Motor capacity at U=400V	Dimensions BxHxT (mm)
HLG 3A	78190	3A	1,5 kW	187x202x75
HLG 6A	79434	6A	3 kW	187x202x75
HLG 12A	76989	12A	5,5 kW	195x240x120
HLG 16A	70342	16A	7,5 kW	195x240x120
HLG 25A	71466	25A	11 kW	195x240x120
HLG 40A	71467	40A	22 kW	244x240x140
HLG 55A	76117	55A	30 kW	244x240x140
HLG 70A	76121	70A	37 kW	244x240x140
HLG 90A	80083	90A	45 kW	244x320x177
HLG 110A	80084	110A	55 kW	244x320x177
HLG 145A	80614	145A	75 kW	360x260x245
HLG 180A	80615	180A	90 kW	360x260x245
HLG 210A	80616	210A	110 kW	460x260x245
HLG 250A	80617	250A	132 kW	460x260x245
HLG 320A	80618	320A	160 kW	460x260x245
HLG 390A	80619	390A	200 kW	460x260x245
HLG 460A	80620	460A	250 kW	460x260x245
HLG 580A	80621	580A	315 kW	460x260x245
HLG 820A	80622	820A	450 kW	Auf Anfrage

Three-phase soft start and braking unit

With Seikom soft start and braking units of the row of **HLG E** great residual currents and attempt moments are dropped. The operating supplies are driven on nominal speed controlledly and taken by the integrated engine brake to a stop for certain and fast in the critical one switching phase.

Type row of HLG E: High run equipment with a led braking function

- Rated voltage (Power unit): 3 x400V AC/50 Hz.
- Supply voltage (Control unit): 230 V AC standard, 24 V DC, 115, 400 V AC, / 50-60 Hz possible.
- (fully electronic braking add-on connection no braking contactor required).
- Tax relay "high run end" installed per default.
- Protection degree: IP00 (above and below open), optional IP20 for HLG12 to HLG320E.

Type	Article-No.	Rated current (max)	Motor capacity at U=400V	Dimensions BxHxT (mm)
HLG 16E	77940	16A	7,5 kW	207x290x120
HLG 25E	78381	25A	11 kW	207x290x120
HLG 40E	78382	40A	22 kW	243x290x135
HLG 55E	78003	55A	30 kW	243x290x135
HLG 70E	78004	70A	37 kW	243x290x135
HLG 90E	79653	90A	45 kW	243x320x177
HLG110E	80309	110A	55 kW	243x320x177
HLG145E	80698	145A	75 kW	360x300x245
HLG180E	80699	180A	90 kW	460x300x245
HLG210E	80700	210A	110 kW	460x300x245
HLG250E	80701	250A	132 kW	460x300x245
HLG320E	80702	320A	160 kW	460x300x245
HLG390E	80703	390A	200 kW	460x300x245
HLG460E	80704	460A	250 kW	460x300x245
HLG580E	80705	580A	315 kW	460x300x245
HLG820E	80706	820A	450 kW	On enquiry

Electronic braking equipments

Engine braking units serves braking three-phase current asynchronous machines the fast and primarily wearfreely our electronic. The engine braking equipment replaces therefore mechanical brakes since it works wearfreely. E.g. wider use areas are work machines at the Wood industries retention (of the accident contraception regulations UVV).

Type row of NBG 1 A: Engine braking unit in the standard case

- Rated and supply voltage: 230 or 400 V AC2/ 40-60 Hz.
- Braking current-on-wiring by means of internal power relay.
- 100 mm of standard cases, screwing fastening and assembly on 35 mm DIN track.
- Protection degree: IP40, clamps IP20.
- One switching duration (ED): 25% for braking current, 100% for equipment.

Type	Article-No.	Rated current (max)	Voltage motor	Motor capacity	Dimensions BxHxT (mm)
NBG-1A	64771	16A	3x230V	2,2 kW	100x75x112
NBG-1A	64768	16A	3x400V	4 kW	100x75x112

Type row of EBG: Electronic engine braking unit

For three-phase current asynchronous machines

- Rated voltage (power unit): 2 or 3 x230V, 3 x400V (Standard) or 3 x550V AC/ 40-60 Hz.
- Supply voltage (control unit): 230 V AC standard, 24 V DC 115, 400 V AC / 50-60 Hz possible.
- Braking current-on-wiring by means of external contactor.
- Stopping time: 1 to 15 sec.
- Protection degree: IP00 (above and below open) Option IP20 for EBG30 to EBG600.
- One switching duration (ED): 20% at 2 of x Current rated

Type	Article-No.	Rated current (max)	Voltage motor	Motor capacity	Dimensions BxHxT (mm)
EBG 30	64777/2	30A	3x400V	7,5 kW	195x240x120
EBG 40	64783/2	40A	3x400V	11 kW	195x240x120
EBG 60	64786/2	60A	3x400V	15 kW	195x240x120
EBG 80	64789/2	80A	3x400V	22 kW	195x240x120
EBG 120	64795/2	120A	3x400V	30 kW	244x200x140
EBG 160	64802/2	160A	3x400V	37 kW	244x200x140
EBG 250	64808/2	250A	3x400V	55 kW	360x260x245
EBG 300	66312	300A	3x400V	75 kW	360x260x245
EBG 600	74075	600A	3x400V	145 kW	360x260x245
Option Lin-Br	82447	Speedo module for braking linear burden independently			

FAX report

Delivering program SEIKOM-Electronic GmbH&Co.KG

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further Informationen:

- ❑ Flow monitoring
  - ➔ Gaseous media
  - ➔ Lquid media
- ❑ High run equipment (soft starters) for three-phase current asynchronous machines
- ❑ High run and braking equipment for three-phase current asynchronous machines
- ❑ Braking equipment for three-phase current asynchronous machines

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