

Product Information 2018

Flow Controller



Softstart and Brake Units



Sensors



Airflow Controller

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About us

We are a globally active enterprise, based in Germany, which emerged in 1994 from the well established company Fritz A. Seidel, Elektro Automatik in Düsseldorf. Thereby we were able to retain the experience in the development and manufacturing of electrical flow meters, which began to consolidate more than 65 years ago.

We develop, manufacture and offer high quality flow meters to monitor and measure air and water flows in the industrial sector. Our air flow sensors can withstand temperatures up to 400 °C and can also be applied in areas exposed to explosion hazards.

Our continuous pursuit of well-thought-out and application-oriented solutions has contributed to us being recognized as a flexible and reliable partner of our national and international customers.

Our definition of growth is not limited to financial indicators but also includes our daily efforts towards customer proximity, flexibility, reliability, maintenance and enhancement of our quality standard.

Your satisfaction is of utmost importance to us.





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Analyze electronics for gaseous media

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NLSW2A/AEG	0...+80°C	230V AC	1 break, 1 make contact	67644	7
NLSW2AS3	0...+80°C	24V AC/DC	1make, 1change-over contact	56241	7
NLSW2AS3	0...+80°C	230V AC	1make, 1 change-over contact	56740	7
NLSW2AZ	-20...+80 °C	24V AC/DC	1 change-over contact	66233	6
NLSW2AZ	-20...+80 °C	230V AC	1 change-over contact	56560	6
NLSW45-3	-25...+120°C	24V AC/DC	1 change-over contact	77029	8
NLSW45-3	-25...+120°C	230V AC	1 change-over contact	63377	8
NLSW45-3Ex	-20...+120°C	24V DC	1 change-over contact	77029/Ex	8
NLSW45-3Ex	-20...+120°C	230V AC	1 change-over contact	63377/Ex	8
NLSW45-3Ex	-20...+120°C	24V AC	1 change-over contact	77029/AC/Ex	8
NLSW45-5	-10...+80°C	24V AC/DC	1 change-over contact	77566	9
NLSW45-5	-10...+80°C	230V AC	1 change-over contact	77567	9
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NLSW45-6.1	-20...+400°C	24V AC/DC	1 change-over contact	80502/400°	10
NLSW45-6.1	-20...+400°C	230V AC	1 change-over contact	80504/400°	10
NLSW45-6Ex	-20...+250°C	24V AC/DC	1 change-over contact	80502/Ex	10
NLSW45-6Ex	-20...+250°C	230V AC	1 change-over contact	81504/Ex	10
NLSW45-6Ex	-20...+250°C	24V AC	1 change-over contact	81502/AC/Ex	10
NLSW75-A	0...+70°C	24V AC/DC	Analogue output	70789	11
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Analyze electronics for liquid media

NLSW45-4	-10...+80°C	24V AC/DC	1 change-over contact	75108	9
NLSW45-4	-10...+80°C	230V AC	1 change-over contact	74297	9
NLSW45-4Z	-10...+80°C	24V AC/DC	1 change-over contact	77048	9
NLSW45-4Z	-10...+80°C	230V AC	1 change-over contact	74298	9

Compact airflow monitor for gaseous media

RLSW4	-10...+80°C	24V AD/DC	PNP, 1 make contact	74825	12
RLSW4A	0...+70°C	24V DC	Analogous	74825A	13
RLSW4R	-10...+80°C	24V AC/DC	1 make contact	74825/R	12
RLSW5	-10...+80°C	24V AC/DC	1 change-over contact	81447/10	12
RLSW5	-10...+80°C	230V AC	1 change-over contact	80447/10	12
RLSW5/F3	-20...+90°C	24V AC/DC	1 change-over contact	81447/10/F3	12
RLSW5/F3	-20...+90°C	230V AC	1 change-over contact	80447/10/F3	12
RLSW5A	0...+60°C	24V AC/DC	Analogous, relative	81448/10	13
RLSW5A	0...+60°C	230V AC	Analogous, relative	80448/10	13
RLSW6	-10...+80°C	24V AC/DC	1 change-over contact	77566A	14
RLSW6	-10...+80°C	230V AC	1 change-over contact	77567A	14
RLSW8AL V2 LCD	-25...+80°C	24V AC	Analogous	81500V2	15
RLSW8AL V2 LCD M8	-25...+250°C	24V AC	Analogous, LC display	81530	15

Compact flow monitor for liquid media

RLSW7 ¼"	-10...+80°C	24V AC/DC	1 change-over contact	74396	16
RLSW7 ¼"	-10...+80°C	230V AC	1 change-over contact	74397	16
RLSW7 ½"	-10...+80°C	24V AC/DC	1 change-over contact	74398	16
RLSW7 ½"	-10...+80°C	24V AC	1 change-over contact	74398/AC	16
RLSW7 ½"	-80...+80°C	24V AC/DC	1 change-over contact	74398/150	16
RLSW7 ½"	-10...+80°C	230V AC	1 change-over contact	74399	16
RLSW7 ½"	-10...+80°C	230V AC	1 change-over contact	74399/150	16



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Sensors for gaseous media

Type	Media temperature	Sensor material	Immersion depth About	Article-No.	Catalog page
F2	-10...+80°C	MS58 n.p.	50mm / PG7	50272	17
F2 Sond.1	-10...+80°C	MS58 n.p.	35mm / Flange	56242	17
F3	-20...+120°C	MS58 n.p.	50mm / PG7	50276	17
F3Ex	-20...+120°C	MS58 n.p.	50mm / PG7	50276/Ex	17
F3.1	-20...+120°C	MS58 n.p.	130mm / PG7	50276/130	17
F3.2	-20...+120°C	MS58 n.p.	165mm / PG7	50276/150	17
F3.3	-20...+120°C	MS58 n.p.	300mm / PG7	50276/300	17
F4.2	-20...+90°C	Teflon	60mm / M12x1	50311	18
F4.3	-20...+90°C	Teflon	115mm / Sensor tube	69829	18
F4.4	-20...+90°C	Teflon	12mm		
		Teflon	145mm / Sensor tube	69830	18
F7	-10...+80°C	MS58 n.p.	50mm / PG7	80504	18
F7 Sond.1	-10...+80°C	MS58 n.p.	165mm / PG7	80504/165	18
F8	-20...+250°C	VA	50mm / PG7	76106	19
F8Ex	-20...+250°C	VA	50mm / PG7	76106/Ex	19
F8.1	-20...+250°C	VA	130mm / PG7	76106/130	19
F8.2	-20...+250°C	VA	165mm / PG7	76106/150	19
F8.3	-20...+250°C	VA	300mm / PG7	76106/300	19
F8/400°C	-20...+400°C	VA	50mm / PG7	76106/400	19
F9	-10...+80°C	MS58 n.p.	165mm / Flansch	76107	19
F9.1	-10...+80°C	MS58 n.p.	50mm / PG7	76107/F2	19

Sensors for liquid media

F6.1	-10...+80°C	V2A (1.4305)	70mm / M14x1	76105	20
F6.2	-10...+80°C	V2A (1.4305)	25mm / G¼"	75104	20
F6.3	-10...+80°C	V2A (1.4305)	48mm / G¼"	75104L	20
F6.4	-10...+80°C	V2A (1.4305)	45mm / G½"	75105	20
F6.5	-10...+80°C	V2A (1.4305)	150mm / G½"	75105/150	20

Accessories

Type	Features	Material	Sensor/Monitor	Article-No.	Catalog page
Mounting flange	10mm	Plastic	F2 / F3 / F7 / F8	79781	21
Mounting flange	12,2mm	Plastic	F2 / F3 / F7 / F8	79781/12,5	21
Mounting flange	14,2mm	Plastic	F9	79781/14	21
Reducer	G½" to G¼"	MS58	F6.2 / F6.3	80400	21
Reducer	G½" to PG7	MS58	F2 / F3 / F7 / F8	80399	21
Reducer	M20x1,5 to PG7		F2 / F3 / F7 / F8	80402	21
Reducer	M16x1,5 to PG7		F2 / F3 / F7 / F8	80403	21
Wall mounting set		Plastic	RLSW5/6/7/8	79783	21

Pressure transducer

Type	Pressure range	Voltage	Output	Article-No.	Catalog page
DTM05	0-2500 Pa	24V AC/DC	Analogues	83005	22



Softstarter

Type	Features	Motor capacity	Rated current (max.)	Article-No.	Catalog page
NHLG12.1A	1-phase / Standard housing	3-5,5kW	12A	82253	23
HLG-A	3-phase / Compact unit	1,5-450kW	3-820A		23

Brake unit

NBG-1A	Standard housing	4kW	16A	64768	24
EBG	Compact unit	7,5-145kW	30-600A		24

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



Article No.	24V AC/DC = 66224 230V AC = 56558 115V AC = 66223
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Operating voltage	24V DC, 24/115/230V AC
Voltage tolerance	± 5%
Over voltage category	II
Signal display, voltage	Green LED
Power consumption, max.	4VA
Ambient temperature, unit	-20..+60°C


Switching Output airflow	Relay, 1 change-over contact
Current and contact load capacity	250V AC, 8A, 2kVA
Switching function at airflow	Relay energised when airflow is present
Signal lamp, airflow	Yellow LED
Transistor output	-
Analogue output	-

Start up bypass	Optional: NLSW2aZ
Display of start-up bypass	-

Media temperature range	-20...+80°C
Switching output	Adjustable with potentiometer
Airflow range	0.5-30 m/s

Sensors	F2, F3, F3.1, F3.2, F3.3, F4.2, F4.3, F4.4, F9, F9.1
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Electrical connection	10 Terminals, 2.5mm ²
Type of protection, housing	IP40
Type of protection, terminals	IP20
Contamination class	2
Housing dimensions about	L=120mm , W=45mm, H=73mm

Certification symbols	 Type examination TÜV Nord DIN EN 61010-1:2011-07
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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**)

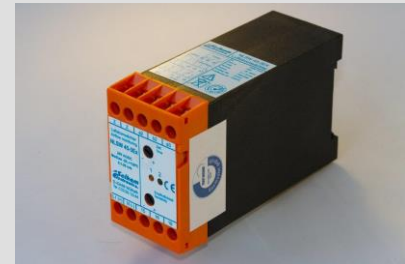
NLSW2AS3 Airflow range at 10m/s



NLSW2A/AEG 2 Switching output Special appliances



Article No.	24V AC/DC = 56241 230V AC = 56740	230V AC = 67644 24V AC/DC = 67645
Operating voltage	24V DC, 24/115/230V AC	230V AC, 24V AC/DC
Voltage toleranz	± 5%	± 5%
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 NO and 1 NC contact
Current and contact load capacity	250V AC, 5A, 1.25kVA	250V AC, 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	-20...+80°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, F3.1, F3.2, F3.3, F4.2, F4.3, F4.4, F9, F9.1
Electrical connection	10 Terminals, 2.5mm ²	10 Terminals, 2.5mm ²
Type of protection, housing	IP40	IP40
Type of protection, terminals	IP20	IP20
Contamination class	2	2
Housing dimensions about	L=120mm , W=45mm, H=73mm	L=120mm , W=45mm, H=73mm
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Airflow monitor
**NLSW45-3
Air -20...+120°C**
**NLSW45-3Ex
Air -20...+120°C
Zone 1, Temperature Class 3**


Article No.	24V AC/DC = 77029 230V AC = 63377 115V AC = 63377/115	24V AC/DC = 77029/Ex 230V AC = 63377/Ex 115V AC = 63377/115/Ex
Operating voltage	24V DC, 24/115/230V AC	24V DC, 24/115/230V AC
Voltage toleranz	± 5%	± 5%
Signal display, voltage	Green LED	Green LED
Power consumption, max.	4VA	4VA
Ambient temperature, unit	-20...+60°C	-20...+60°C
Switching output airflow	1 change-over contact	1 change-over contact
Current and contact load capacity	250V AC, 8A, 2kVA	250V AC, 8A, 2kVA
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	5-60s	5-60s
Display of start-up bypass	-	-
Media temperature range	-20...+120°C	-20...+120°C
Switching output	Adjustable with potentiometer	Adjustable with potentiometer
Airflow range	0.1-30 m/s	0.1-30 m/s
Sensors	F2, F3 - F3.3, F4.2, F4.3, F4.4, F9	F3Ex, F3.1Ex, F3.2Ex, F3.3Ex
Electrical connection	10 Terminals, 2.5mm ²	10 Terminals, 2.5mm ²
Type of protection, housing	IP40	IP40
Type of protection, terminals	IP20	IP20
Contamination class	2	2
Housing dimensions about	L=120mm , W=45mm, H=73mm	L=120mm , W=45mm, H=73mm
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For EEx application

The device NLSW45-3Ex is suitable for the flow supervision of gaseous media in connection with Z barriers all over in the Zone1+ temperature league T4. The sensor F3Ex 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!

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



NLSW45-5 Airflow controller



Article No.	24V AC/DC = 75108 230V AC = 74297 115V AC = 74298/115	24V AC/DC = 77566 230V AC = 77567 115V AC = 77565
Operating voltage	24V DC, 24/115/230V AC	24V DC, 24/115/230V AC
Voltage toleranz	± 5%	± 5%
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	Relay, 1 change-over contact
Current and contact load capacity	250V AC, 8A, 2kVA	250V AC, 8A, 2kVA
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 temperature range	-10...+80°C	-10...+80°C
Switching output	Adjustable with potentiometer	Adjustable with potentiometer
Flow range air	0.5-20m/s	0.1-15 m/s
Flow range water	0.05-3 m/s	
Sensors	F6.1, F6.2, F6.3, F6.4, F6.5	F7, F Sond.1
Electrical connection	10 Terminals, 2.5mm ²	10 Terminals, 2.5mm ²
Type of protection, housing	IP40	IP40
Type of protection, terminals	IP20	IP20
Contamination class	2	2
Housing dimensions about	L=120mm , W=45mm, H=73mm	L=120mm , W=45mm, H=73mm
Certification symbols	Type examination TÜV Nord DIN EN 61010-1:2011-07	
		

Airflow controller NLSW45-6 / NLSW45-6Ex

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°C



NLSW45-6Ex Medium 250°C Zone 1, Temperature Class 1



Article No.	24V AC/DC = 80501 230V/AC = 81504 24V-81502/400 / 230V-81504/400	24V AC/DC = 70789/Ex 230V/AC = 60620/Ex
NLSW45-6.1		
Operating voltage	24V DC, 24/115/230V AC	24V DC, 24/115/230V AC
Voltage toleranz	± 5%	± 5%
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	250V AC, 8A, 2kVA	250V AC, 8A, 2kVA
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	Adjustable approx 2-60s
Display of start-up bypass	-	-
Media temperature range NLSW45-6	-20...+250°C	-20...+250°C
NLSW45-6.1	-20...+400°C	
Switching output	Adjustable with potentiometer	Adjustable with potentiometer
Airflow range	0.1-30 m/s	0.1-30 m/s
Sensors NLSW45-6	F8, F8.1, F8.2, F8.3	F8Ex, F8.1Ex, F8.2Ex, F8.3Ex
NLSW45-6.1	F8/400°C, F8.1/400°C, F8.2/400°C, F8.3/400°C	
Housing	10 Terminals, 2.5mm ²	10 Terminals, 2.5mm ²
Type of protection, housing	IP40	IP40
Type of protection, terminals	IP20	IP20
Contamination class	2	2
Housing dimensions about	L=120mm , W=45mm, H=73mm	L=112mm , W=75mm, H=73mm
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For EEx application

The device NLSW45-6Ex 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 F8Ex 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 controller
NLSW75-A / NLSW75-AEx**

**NLSW75-A
With Analogue-output**

**NLSW75-AEx
With Analogue-output
Zone 1, Temperature Class 3**



Article No.	24V AC/DC = 70789 230V/AC = 60620	24V AC/DC = 70789/Ex 230V/AC = 60620/Ex
Operating voltage	24V DC, 24/115/230V AC	24V DC, 24/115/230V AC
Voltage toleranz	± 5%	± 5%
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	250V AC, 8A, 2kVA	250V AC, 8A, 2kVA
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	0..10V / 0..20mA relativ
Start up bypass	-	-
Display of start-up bypass	-	-
Media temperature range	0...+70°C	0...+70°C
Switching output	Adjustable with potentiometer	Adjustable with potentiometer
Airflow range	0.5-20 m/s	0.5-20 m/s
Sensors	F3, F3.1, F3.2, F3.3, F4.2, F4.3, F4.4	F3Ex, F3.1Ex, F3.2Ex, F3.3Ex
Housing	16 Terminals, 2.5mm ²	16 Terminals, 2.5mm ²
Type of protection, housing	IP40	IP40
Type of protection, terminals	IP20	IP20
Contamination class	2	2
Housing dimensions about	L=112mm , W=75mm, H=73mm	L=112mm , W=75mm, H=73mm
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For EEx application

The device NLSW75-AEx is suitable for the flow supervision of gaseous media in connection with Z barriers all over in the Zone1+ temperature league T4. The sensor F3Ex can VDE0165Teil1, para. 3.21 = occurred as "simple electrical operating supplies" in the Zone1 acc. to EN60079 14 be.

The airflow-monitor NLSW75-AEx must all over be installed and operated outside the explosive area!

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 / RLSW5/F3 Airflow measuring probe Switching output



Article No.	RLSW4 = 74825 RLSW4R = 74825R RLSW4R/140 = 74825R/140	24V AC/DC = 81447/10 230V AC = 80447/10 24V AC/DC = 81447/10/F3 230V AC = 80447/10/F3
Operating voltage	24V AC/DC	24V DC, 24/115/230V AC
Voltage tolerance	-	± 5%
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	250V AC, 5A, 1.2kVA	250V AC, 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
Analogue output	-	-
Start up bypass	-	60s (activated by jumper)
Display of start-up bypass	-	Yellow LED
Media temperature range	-10..+80°C	-10..+80°C / F3=-20..+90°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 about	50mm / 130mm	130mm / 50mm
Process connection	PG7, Mounting flange	PG7, Mounting flange
Sensor material	MS58, Nickel-plated	MS58, Nickel-plated
Pressure resistance	10bar	10bar
Connection	4 Terminals, 2.5mm ²	5 Terminals, 2.5mm ²
Type of protection, housing	IP65	IP65
Type of protection, sensor	IP67	IP67
Contamination class	2	2
Housing dimensions about	L=30mm; W=50mm; H=65mm	L=56mm; W=84mm; H=80mm
Certification symbols		Type examination TÜV Nord DIN EN 61010-1:2011-07
		

Accessory

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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 V DC 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 = 74825A	24V AC/DC = 81448/10 230V AC = 80448/10
Operating voltage	18...28V DC	24V DC, 24/115/230V AC
Voltage tolerance	-	± 5%
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% measured value	± 10% measured value
Repeatability of the measured value	± 2% upper range value	± 2% upper range value
Media temperature range	0...+70°C	0...+70°C
Temperature gradient	15K/min	15K/min
Switching point	Adjustable with potentiometer	Adjustable with potentiometer
Measuring range	0.2 – 30 m/s	0.1 - 30 m/s
Sensor	Integrated (optional M8 plug connector)	Integrated
Immersion depth about	50mm	130mm
Process connection	Mounting flange	PG7, Mounting flange
Sensor material	MS58, Nickel-plated	MS58, Nickel-plated
Pressure resistance	10bar	10bar
Connection	4 Terminals , 2.5mm ²	6 Terminals, 2.5mm ²
Type of protection, housing	IP65	IP54
Type of protection, sensor	IP67	IP67
Contamination class	2	2
Housing dimensions about	L=30, W=50mm, H=65mm	L=56mm, W=84mm, H=80mm
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* Reference conditions: Finish route > 10 x DN run route > 5 x DN a laminar flow; Air at 0 degrees Celsius and 1.013 bar

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 230V AC = 77567A
Operating voltage	24V DC, 24/115/230V AC
Voltage tolerance	± 5%
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	250V AC, 10A, 2.5kVA
Switching function at airflow	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	250V AC, 10A, 2.5kVA
Switching output alarm	Relay 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	0.1-25 m/s
Sensor	F9, F9.1
Immersion depth about	165mm, 50mm
Process connection	Flange
Sensor material	MS58, nickel-plated
Pressure resistance	10bar
Electrical connection	11 Terminals, 2.5mm ²
Type of protection, housing	IP65
Type of protection, sensor	IP67
Contamination class	2
Housing dimensions about	L=55mm; W=160mm; H=80mm

**Compact airflow-monitors
RLSW8AL V2 /
RLSW8AL V2 LCD**

The electronic airflow monitors of the type row of 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.



**RLSW8AL V2
Linear
Analogous output**



**RLSW8AL V2 LCD
Linear
Analogous output**

Article-No.	81500V2	81530 or 81530M8
Operating voltage	24V AC	24V AC
Voltage tolerance	+/- 5%	+/- 5%
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) linear	0...10V (Ra=10kOhm) linear
Current output airflow	4...20mA (Ra=0,2kOhm) linear	4...20mA (Ra=0,2kOhm) linear
Measurement error	± 5% v. measured value	± 5% measured value
Repeatability of the measured value	± 2%	± 2%
Output alarm	Adjustable with potentiometer	Adjustable with potentiometer
Signal output alarm	1 make contact	1 make contact
Current and contact load capacity	200V DC or peak AC, 1A, 15W	200V DC or peak AC, 1A, 15W
Switching output alarm	Relay is energised when airflow isn't present	Relay is energised when airflow isn't present
Signal relay at alarm		
Media temperature range	-25...+80°C	-25...+250°C / 350°C max!
Temperature gradient	30K/min	30K/min
Measuring range	0,1-30m/s	0,1-30m/s
Sensor	integrated	seperate
Immersion depth about	130mm	130mm
Process connection	Mounting flange	Mounting flange
Sensor material	Synthetic material	Synthetic material
Pressure resistance	10bar	10bar
Electrical connection	9/10 Terminals , 1,5mm ²	9/10 Terminals , 1,5mm ²
Type of protection, housing	IP65	IP65
Type of protection, sensor	IP50/IP67	IP50
Contamination class	2	2
Housing dimensions about	L=56, W=84mm, H=82mm	L=56, W=84mm, H=82mm
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Flow monitor RLSW7

The flow in fluids can be monitored reliably 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 planned for example additional mounting. On request, we can manufacture sensors threads in a variety of designs.

RLSW7 G $\frac{1}{4}$ " Compact flow monitor for liquid Media



RLSW7 G $\frac{1}{2}$ " Compact flow monitor for liquid Media



Article-No.	24V AC/DC = 74396 230V AC = 74397	24V AC/DC = 74398 24V AC = 74398/AC 230V AC = 74399 24V AC/DC = 74398/150 230V AC = 74399/150
Operating voltage	24V DC, 24/115/230V AC	24V DC, 24/115/230V AC
Voltage tolerance	± 5%	± 5%
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, 1 change-over contact	Relay, 1 change-over contact
Current and contact load capacity	250V AC, 6A, 1,5kVA	250V AC, 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 about	48mm	46mm / 150mm
Process connection	G $\frac{1}{4}$ "	G $\frac{1}{2}$ "
Sensor material	Stainless steel V2A	Stainless steel V2A
Pressure resistance	20bar	20bar
Electrical connection	5 Terminals, 2,5mm ²	5 Terminals, 2,5mm ²
Type of protection, housing	IP65	IP65
Type of protection, sensor	IP67	IP67
Contamination class	2	2
Housing dimensions about	L=56mm; W=84mm; H=80mm	L=56mm; W=84mm; H=80mm
Certification symbols	Type examination TÜV Nord DIN EN 61010-1:2011-07	Type examination TÜV Nord DIN EN 61010-1:2011-07
Accessory	page 21	page 21

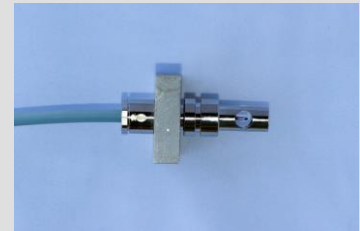
Airflow Sensor

A series of sensors have been developed for the various airflow controllers in our product range and their specific applications. One feature which all our sensors have in common is their extremely 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 F2 Sond.1 Flange sensor



Article-No.	50272 / 50272M16	56242
Media temperature range	-10...+80°C	-10...+80°C
Temperature gradient	15K/min	15K/min
Immersion depth about	50mm (optional 130/165/300mm)	35mm
Process connection	PG7 / M16x1,5	Flange
Sensor material	MS58, Nickel-plated	MS58, Nickel-plated
Pressure resistance	10bar	10bar
Connecting cable	2.5m / 3x0.5mm ²	2.5m / 3x0.5mm ²
Protection sensor	IP67	IP67
Compatible appliances	NLSW2a, NLSW45-3, NLSW75-A	NLSW2aS3

Sensor F3, F3Ex

For measuring the airflow of gaseous media in the median temperature range from -20...+120°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 sensor F3Ex is all over NLSW45-3Ex in connection with end judging electronics suitable (respectively with Z barriers) for the former area.

F3 Air -20...+120°C



F3Ex Air -20...+120°C



Article-No.	50276 / 50276M16 F3.1 130mm – 50276/130 F3.2 165mm – 50276/150 F3.3 300mm – 50276/300	50276/Ex F3.1Ex 130mm – 50276/130/Ex F3.2Ex 165mm – 50276/150/Ex F3.3Ex 300mm – 50276/300/Ex
Media temperature range	-20...+120°C	-20...+120°C
Temperature gradient	30K/min	20K/min
Immersion depth about	50mm (optional 130/165/300mm)	50mm (optional 130/165/300mm)
Process connection	PG7 / M16x1,5	PG7
Sensor material	MS58, Nickel-plated	MS58, Nickel-plated
Pressure resistance	10bar	10bar
Connecting cable	2.5m / 3x0.5mm ²	2.5m / 3x0.5mm ²
Protection sensor	IP67	IP67
Compatible appliances	NLSW2a, NLSW45-3, NLSW75-A	NLSW45-3, NLSW45-3Ex

Sensor F2, F3, F3Ex Type examination TÜV Nord DIN EN 61010-1:2011-07

Sensor F4

Sensor F4.2 Teflon

Sensor F4.3 / F4.4 Teflon



Article-No.	50311	69829 / 69830
Media temperature range	-20°C...+90°C	-20°C...+90°C
Temperature gradient	30K/min	30K/min
Immersion depth about	60 mm	115 mm / 145mm
Process connection	M11x1	Sensor tube 12mm
Sensor material	Teflon	Teflon
Pressure resistance	4 bar	6 bar
Connecting cable	2.5m / 3x0.5mm ²	2.5m / 3x0.5mm ²
Protection sensor	IP67	IP67
Compatible appliances	NLSW2a, NLSW45-3, NLSW75-A	NLSW2a, NLSW45-3, NLSW75-A

Sensor F4 Type examination TÜV Nord DIN EN 61010-1:2011-07



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 F7 + F7 Sond.1 Air +10...+80°C



Article-No.	80504 / 76108
Media temperature range	+10°C...+80°C
Temperature gradient	15K/min
Immersion depth about	50mm / 165mm
Process connection	PG7
Sensor material	MS58, Nickel-plated
Pressure resistance	10bar
Connecting cable	2.5m / 3x0.5mm ²
Protection sensor	IP67
Compatible appliances	NLSW45-5

Sensor F7 Type examination TÜV Nord DIN EN 61010-1:2011-07



Sensor F8 for high temperature

For measuring the airflow of gaseous media in the median temperature range from -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 sensor F8Ex is all over NLW45-6Ex in connection with end judging electronics suitable (respectively with Z barriers) for the former area.

F8 / F8 400 °C
Air -20...+250°C
Air -20...+400°C



F8Ex
Air -20...+250°C



Article-No.	76106 76106/400°C	76106 / 76106/Ex
	F8.1- 76106/130 / F8.1 400°C - 76106/130/400°C	F8.1Ex - 76106/130/Ex
	F8.2 - 76106/150 / F8.2 400°C - 76106/150/400°C	F8.2Ex - 76106/150/Ex
	F8.3 - 76106/300 / F8.3 400°C - 76106/300/400°C	F8.3Ex - 76106/300/Ex

Media temperature range	-20...+250°/400°C	-20...+250°
Temperature gradient	30K/min	20K/min
Immersion depth about	50mm (optional 130/165/300mm)	50mm (optional 130/165/300mm)
Process connection	PG7 / M16x1,5	PG7
Sensor material	stainless steel V4A	stainless steel V4A
Pressure resistance	10bar	10bar
Connecting cable	2.5m / 3x0.5mm ²	2.5m / 3x0.5mm ²
Protection sensor	IP67	IP67

Compatible appliances	NLSW45-6, NLSW45-6.1	NLSW45-6Ex
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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 F9 / F9.1 Channel sensor



Article-No.	76107 / 76107/F2
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Media temperature range	-10...+80°C
Temperature gradient	15K/min
Immersion depth about	165mm / 50mm
Process connection	Mounting flange / PG7
Sensor material	MS58, Surface-treated
Pressure resistance	10bar
Connecting cable	2.5m / 3x0.5mm ²
Protection sensor	IP67

Compatible appliances	RLSW6
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Sensors F6.1, F6.2, F6.3, F6.4, F6.5

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 F6.1 V2A Stainless steel Liquid media



Sensor F6.2 V2A Stainless steel Liquid media



Article-No.	76105	75104
Media temperature range	-10...+80°C	-10...+80°C
Temperature gradient	15K/min	15K/min
Immersion depth about	70mm	25mm
Process connection	M14x1,5	G ¼"
Sensor material	Stainless steel V2A	Stainless steel V2A
Pressure resistance	20bar	20bar
Connecting cable	2.5m / 4x0.34mm ²	2.5m / 4x0.34mm ²
Protection sensor	IP67	IP67
Compatible appliances	NLSW45-4	NLSW45-4

Sensor F6.4 / F6.5

Sensor F6.3 V2A Stainless steel Liquid media



Sensor F6.4 / F6.5 V2A Stainless steel Liquid media



Article-No.	75104L	75105 / 75105/150
Media temperature range	-10...+80°C	-10...+80°C
Temperature gradient	15K/min	15K/min
Immersion depth about	48mm	46mm / 150mm
Process connection	G ½"	G ½"
Sensor material	Stainless steel V2A	Stainless steel V2A
Pressure resistance	20bar	20bar
Connecting cable	2.5m / 4x0.34mm ²	2.5m / 3x0.5mm ²
Protection sensor	IP67	IP67
Compatible appliances	NLSW45-4	NLSW45-4

Sensor F6 Type examination TÜV Nord DIN EN 61010-1:2011-07



Custom-designed sensor explanations of all sensors on enquiry.

Sensor accessories

Mounting flange	Reducer	Sensor case
Article-No.: 10mm = 79781 (not for Ex-sensor F3Ex, F8Ex)	Article-No.: 80399 G½" on PG7	Article-No.: 76109
Article-No.: 12,5mm = 79781/12,5 (not for Ex-sensor F3Ex, F8Ex)	Article-No.: 80400 G½" on G¼"	Not available from 01.05.2014 !
Article-No.: 14,2mm = 79781/14 (not for Ex-sensor F3Ex, F8Ex)	Article-No.: 80402 M20x1,5 on PG7	
	Article-No.: 80403 M16x1,5 on PG7	
Outside diameter 45mm Inside diameter 10mm / 12,5mm / 14,2mm	G½" Outside diameter to PG7 SW24	Sensor case
Sensor: F2 / F3 / F7 / F9 Appliances: RLSW4 / RLSW5, RLSW5A, RLSW6	Sensor: F2 / F3 / F6.2 / F6.3 / 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



Wall mounting set
 Artikel No. 79783 for case RLSW5/6/7/8

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 **TÜV Nord** in accordance to **DIN EN 61010-1:2011-07** 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.

DTM05 is an electronic pressure transducer designed primarily to measure total and differential air pressures in ventilation systems. The resulting measurements are used for monitoring, control and regulation purpose via a regulator, PLC or monitoring system.

DTM05

Pressure transducer

Typical applications include:

The maintenance/control of constant pressure at a given position within the duct system.

The maintenance/control of desired underpressure within the duct system.

The measurement of pressure differentials across filters to determine optimum filter replacement time.

Flow determination via differential pressure measurements across a standard aperture.

◆ **Output signal**
0-10V DC, 2-10V DC
and 4-20 mA or 0-20 mA

◆ **Linearity <1%**



Article-No.	83005
Full scale pressure range	0-2500 Pa
Supply voltage	16 – 28V DC, 24V AC ± 15%
Own consumption	4VA
Ambient temperature	-20...+40°C
Output signal (selectable)	0-10V DC, 2 -10V DC 4-20mA or 0-20mA
Accuracy	+/- 3% (recorded value)
Accuracy (<350 Pa)	+/- 10 Pa
Linearity	(-20/+40°)+/- 1% of transducer full scale
Dampering (selectable)	0,4 s or 10 s
Possible settings	-50+50, 0-100, 0-150, 0-300, 0-500, 0-1000, 0-1600 Pa, 0-2500 Pa
Max. pressure	20 kPa
Enclosure	IP54
Dimensions	75 x 36 x 91mm
Cable dimensions	3 x max. 1,5 mm ²
Pressure connector	2 x 6,2 mm diameter

Applied standards

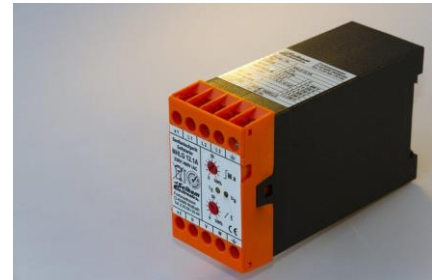
EN 61000-6-2 and EN 61000-6-3
 Electromagnetic compatibility (EMC)

Single-phase soft start

1-phase 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 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 V DC, 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

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 AC/ 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 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			
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