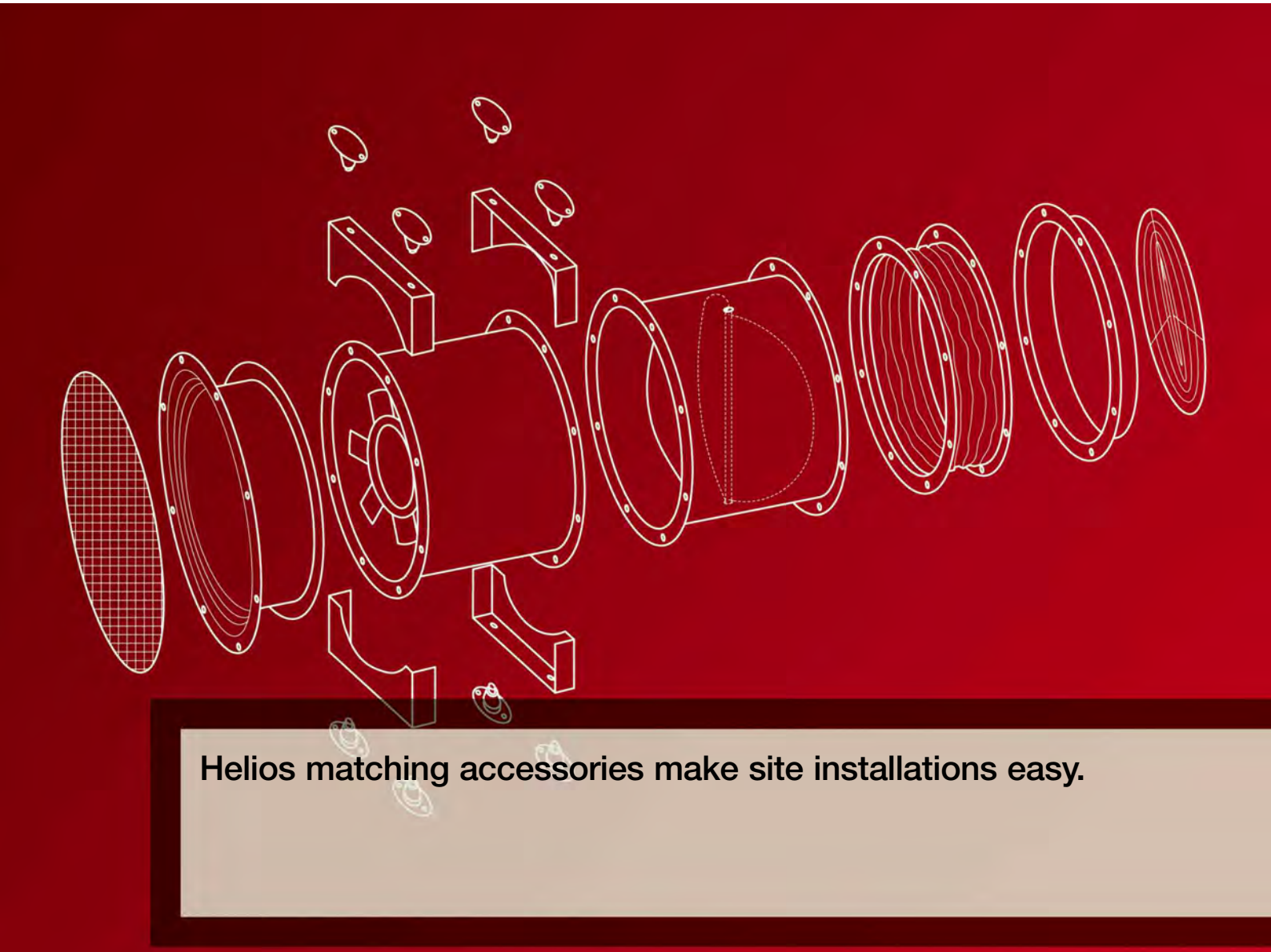
Helios supply a range of matching ancillaries, for all in-line fans, to suit your installation. From bell mouth inlets, electric backdraught shutters, anti vibration mounts and many more.

Simple installation with matched Helios accessories that reduce on site time and costs.

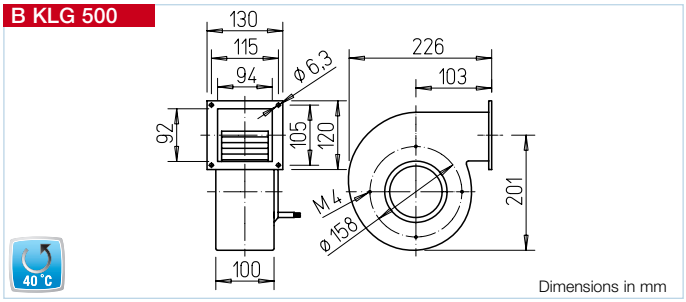
Our comprehensive range of accessories ensure that all installation needs are catered for.

In addition to the mounting accessories for smoke and heat exhaust fans there are further system components on the following pages.



Helios matching accessories make site installations easy.

B KLG 500



Dimensions in mm

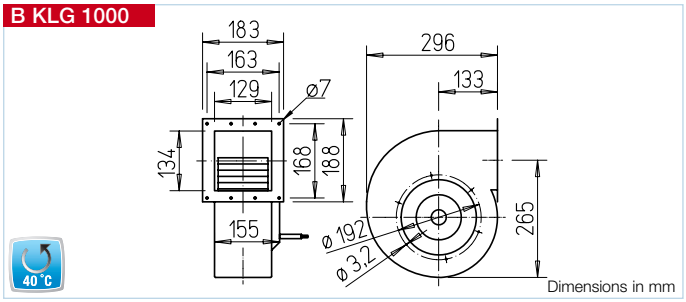
Centrifugal cooling air fan
with separat external thermal contact for smoke and heat exhaust fans F600 for motor ventilation.

In ventilation mode, an air flow monitor (SWE Type, No. 0065, accessories) to control the motor cooling is required.

Technical data
For centrifugal cooling air fan

B KLG 500	No. 2798
Protection to	IP44
Voltage	230 Volt
Frequency	50 Hz
Current	0,7 Amp.
Power	160 Watt
Max. ambient temperature	40 °C
Speed	2400 1/min
Air flow volume	500 m³/h

B KLG 1000



Dimensions in mm

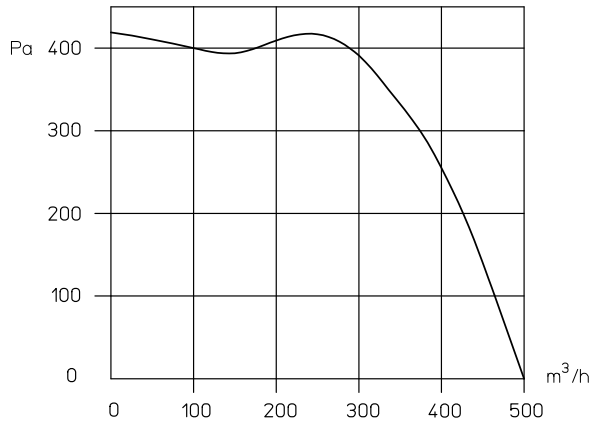
Centrifugal cooling air fan
with separat external thermal contact for smoke and heat exhaust fans F600 for motor ventilation.

In ventilation mode, an air flow monitor (SWE Type, No. 0065, accessories) to control the motor cooling is required.

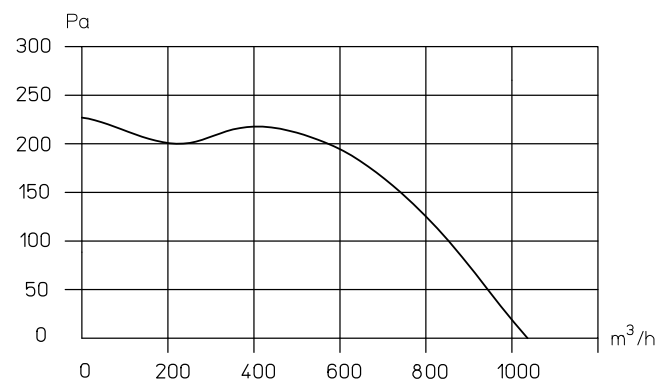
Technical data
For centrifugal cooling air fan

B KLG 1000	No. 2799
Protection to	IP44
Voltage	230 Volt
Frequency	50 Hz
Current	0,85 Amp.
Power	195 Watt
Max. ambient temperature	40 °C
Speed	1330 1/min
Air flow volume	960 m³/h

B KLG 500 R.P.M. =2400



B KLG 1000 R.P.M. =1330



Selection table – Cooling air flow rate for B VAR..

Type	Fan	Air flow rate	Qty.	B VAR casing	still available
B VAR	B KLG	required, V̇ [m³/h]	pc	[Pa]¹	Δpex [Pa]²
500	500	250	1	95	314
560	500	340	1	175	187
630	1000	445	1	80	129
710	1000	565	1	125	73
800	500	700	2	190	160
900	1000	850	2	70	140
1000	1000	1000	2	100	106
1120	-	-	-	-	-
1250	-	-	-	-	-

Max cooling air temperature 40 °C
¹ Resistance in the fan/cooling system
² Available pressure at the discharge of cooling air fan

Selection table – Cooling air flow rate for B AVD..

Type	fan	Air flow rate	Qty.	B AVD casing	still available
B AVD	B KLG	required, V̇ [m³/h]	pc	[Pa]¹	Δpex [Pa]²
500	500	250	1	95	314
560	500	280	1	115	290
630	500	315	1	150	235
710	500	355	1	190	155
800	500	400	1	65	207
900	1000	450	1	80	129
1000	1000	500	1	100	106
1120	1000	875	2	75	135
1250	1000	1250	2	155	31

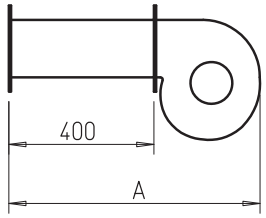
Max cooling air temperature 40 °C
¹ Resistance in the fan/cooling system
² Available pressure at the discharge of cooling air fan

Selection table – Cooling air fan B KLG.. for B VAR and B AVD

Type	Ø F600	B AVD Dim. A (mm)	B VAR Dim. A (mm)	
B KLG 500	500	626	626	
	560	626	626	
	630	626	696	
	710	626	696	
	800	626	626	
B KLG 1000	900	696	696	
	1000	696	696	
	1120	696	-	
	1250	696	-	

B KLG ..

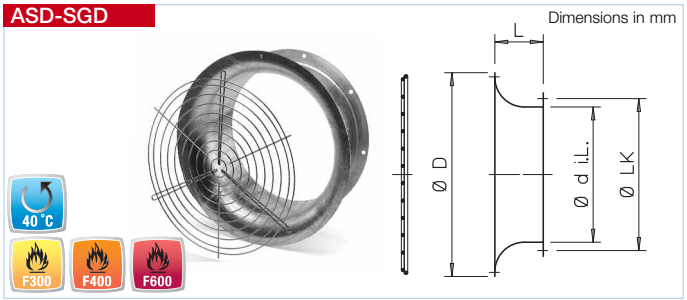
Dimensions in mm



Classification, see table on the left.

ASD-SGD

Dimensions in mm

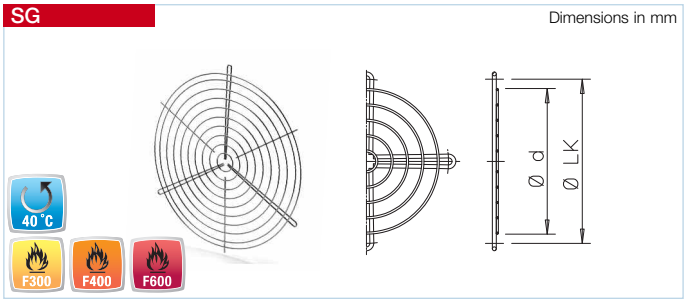


Bell mouth + guard in optimum shape, with large inlet radius made from hot dipped galvanised steel. Dimensions and holes to match fans and accessories to DIN 24155-2. Powder coated wire guard (zinc plated from Ø 800) giving protection to DIN EN ISO 13857.

Type	Ref.No.	ø D	L	ø d i.L.	ø LK	Weight in kg
ASD-SGD 280	1415	400	140	280	322	3,2
ASD-SGD 315	1416	435	140	315	356	3,5
ASD-SGD 355	1417	475	140	355	395	4,0
ASD-SGD 400	1418	545	140	400	438	4,5
ASD-SGD 450	1419	595	140	450	487	5,7
ASD-SGD 500	1420	625	140	500	541	6,3
ASD-SGD 560	1421	745	130	560	605	7,0
ASD-SGD 630	1422	815	130	630	674	7,6
ASD-SGD 710	1423	955	200	710	751	19,5
ASD-SGD 800	1424	1060	200	800	837	22,3
ASD-SGD 900	1309	1140	200	900	934	25,0
ASD-SGD 1000	1310	1240	200	1000	1043	28,5
ASD-SGD 1120	1910	1360	200	1120	1174	39,0
ASD-SGD 1250	1911	1510	200	1250	1311	45,0

SG

Dimensions in mm

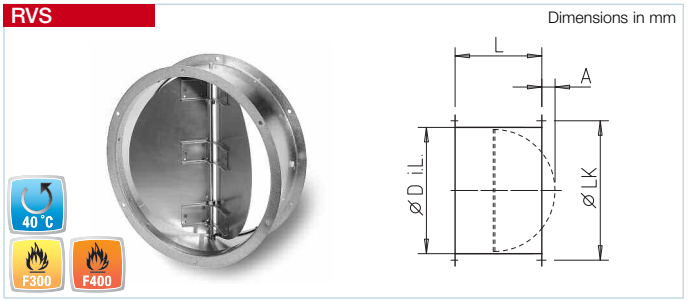


Guard SG to cover impeller opening. Powder coated in silvermetallic (zinc plated from Ø 800). Dimensions and accessories to DIN 24155-2. Giving protection to DIN EN ISO 13857.

Type	Ref.No.	ø d	ø LK	Weight in kg	Number of fixing points
SG 280	1428	270	322	0,3	4
SG 315	1237	310	356	0,4	4
SG 355	1238	350	395	0,4	4
SG 400	1239	390	438	0,5	3
SG 450	1240	450	487	0,6	3
SG 500	1241	490	541	0,7	3
SG 560	1242	550	605	0,9	4
SG 630	1243	630	674	1,5	4
SG 710	1244	710	751	1,8	4
SG 800	1245	790	837	2,2	4
SG 900	1246	890	934	2,7	4
SG 1000	1290	990	1043	3,5	4
SG 1120	1361	1140	1147	6,5	4
SG 1250	1914	1270	1311	8,0	4

RVS

Dimensions in mm

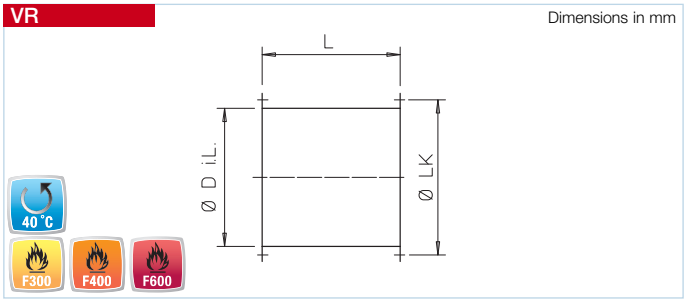


Automatic back draught shutter with spring closing[1)]
Horizontal installation for air flow in any direction. Vertical for with air flow direction going upwards. Automatic opening on fan operation. Spring mechanism for closing. Closing force adjustable to suit fan power and installation position. Spring mechanism outside the air flow. Shutters and casing manufactured from galvanised steel, ND 225-560 shutters made from aluminium. Flanges on both sides, drillings to DIN 24155, Pt. 2.

Type[2)]	Ref.No.	ø D i.L.	L	A	ø LK	Weight in kg
RVS 280	2593	280	300	–	322	3,9
RVS 315	2594	315	300	–	356	4,3
RVS 355	2595	355	300	–	395	5,0
RVS 400	2596	400	330	–	438	7,2
RVS 450	2597	454	330	15	487	10,4
RVS 500	2598	504	330	40	541	11,7
RVS 560	2599	560	330	65	605	16,1
RVS 630	2600	630	400	115	674	19,5
RVS 710	2601	710	400	155	751	26,5
RVS 800	2602	800	420	200	837	37,3
RVS 900	2603	900	420	250	934	41,8
RVS 1000	2604	1000	420	300	1043	47,3
RVS 1120	2605	1120	420	335	1174	54,1
RVS 1250	2606	1250	570	250	1311	75,0

VR

Dimensions in mm



Extension duct VR
Ducting with flanges on both sides and holes to DIN 24155, Pt. 2. Manufactured from galvanised steel, to elongate the fan casing. For models where the motor protrudes from the casing when installed into ducting. Avoids drops in performance at free extract.

Type	Ref.No.	ø D i.L.	L	ø LK	Weight in kg
VR 280	1403	280	300	322	3,2
VR 315	1404	315	300	356	3,5
VR 355	1405	355	300	395	4,0
VR 400	1406	400	330	438	6,0
VR 450	1407	454	330	487	9,0
VR 500	1408	504	330	541	10,0
VR 560	1409	560	500	605	14,0
VR 630	1410	630	500	674	15,5
VR 710	1411	710	500	751	21,5
VR 800	1412	800	420	837	31,0
VR 900	1311	900	420	934	34,0
VR 1000	1312	1000	420	1043	37,6
VR 1120	1932	1120	420	1174	42,1
VR 1250	1933	1250	570	1311	60,0

[1)] Pressure drop diagram and motor-operated version of RVM for ventilation mode (cold operation 40 °C) see Helios main catalog

[2)] Ambient temperature –30 to +100 °C

STSB

Dimensions in mm

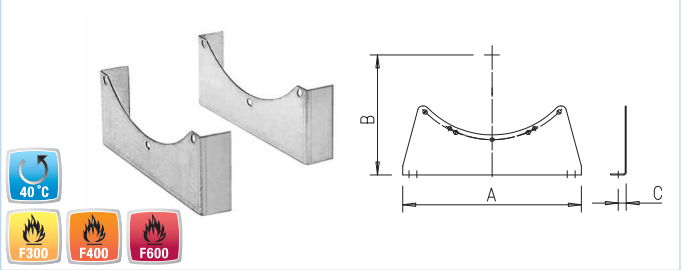
Flanged flexible connector STSB
Flexible connector to be fitted between fan and ducting to reduce vibration transmission.
Flexible sleeve consists of glass fibre (max. + 600 °C) and has zinc plated metal counter or flat flanges fitted at both ends for F400 and F600. Dimensions to DIN 24155, Pt. 2. (Permissible operating temperature + point see table).

Type	Ref.No.	Type	No.	ND mm	ø D i.L.	ø LK	Weight in kg
F400		40°					
STSB 280 F400	14739	**STS 280**	1231	280	288	322	1,5
STSB 315 F400	14738	**STS 315**	1221	315	322	356	1,8
STSB 355 F400	14744	**STS 355**	1222	355	361	395	2,3
STSB 400 F400	14743	**STS 400**	1223	400	404	438	2,5
STSB 450 F400	14742	**STS 450**	1224	450	453	487	3,8
STSB 500 F400	1915	**STS 500**	1225	500	507	541	3,4
STSB 560 F400	1916	**STS 560**	1226	560	570	605	4,5
STSB 630 F400	1917	**STS 630**	1228	630	638	674	4,6
STSB 710 F400	1918	**STS 710**	1229	710	711	751	7,0
STSB 800 F400	1919	**STS 800**	1233	800	801	837	7,5
STSB 900 F400	1920	**STS 900**	1234	900	898	934	7,5
STSB 1000 F400	1921	**STS 1000**	1235	1000	1004	1043	15,0
STSB 1120 F400	1922	**STS 1120**	8506	1120	1120	1174	16,5
STSB 1250 F400	1923			1250	1250	1311	19,0
F600							
STSB 500 F600	2003			500	507	541	3,4
STSB 560 F600	2004			560	570	605	4,5
STSB 630 F600	2005			630	638	674	4,6
STSB 710 F600	2006			710	711	751	7,0
STSB 800 F600	2007			800	801	837	7,5
STSB 900 F600	2008			900	898	934	7,5
STSB 1000 F600	2009			1000	1004	1043	15,0
STSB 1120 F600	2010			1120	1120	1174	16,5
STSB 1250 F600	2011			1250	1250	1311	19,0

Note
Flexible sleeves for ventilation mode (cold operation 40 °C) as well as temperature classes F300, F400, F600
on request

MK

Dimensions in mm



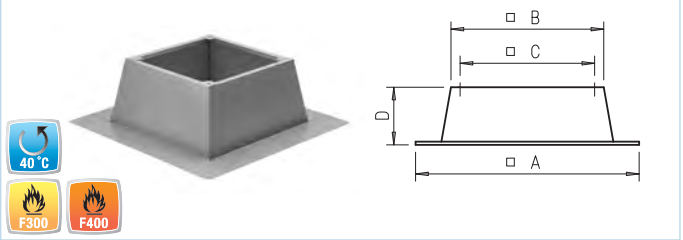
Mounting feet
To fix cased fans on ceiling, wall or floor. Made from galvanised sheet steel (till Ø 1000 mm) or hot dipped galvanised steel. Fixing holes fit casing flanges. Set includes a pair of feet, nuts and bolts.

Note:
If motors of high weight are installed, an extension duct (VR...) is recommended to move the centre of gravity within the mounting feet. Mount feet on the outer flange.

Type	Ref.No.	A	B	C	Weight in kg
MK 280	1447	340	227/245	20	1,7
MK 315-355	1448	380	281/300	25	2,2
MK 400-450	1449	360	311/335	25	2,6
MK 500-560	1450	570	383/415	25	5,3
MK 630	1333	600	465	30	8,5
MK 710	1372	670	515	35	10,5
MK 800	1373	680	565	35	16,0
MK 900	1374	760	625	35	18,0
MK 1000	1375	840	690	35	19,5
MK 1120	1376	920	710	35	28,5
MK 1250	1912	1060	800	35	37,0

FDS B

Dimensions in mm



Flat roof base FDS B
For roof fans on flat roofs. From galvanised sheat steel with abrasion proof, sound and heat absorbing insulation. Check snow height per application

Installation:
To be installed above the ceiling opening (roof). Roof coating to be covered completely with felt and to be sealed with tar.

Type	Ref.No.	A in mm	B in mm	C in mm	D in mm
FDS B 315	6650	860	500	450	285
FDS B 400	6651	940	585	535	285
FDS B 500	6654	1160	800	750	285
FDS B 560	6654	1160	800	750	285
FDS B 630	6655	1325	965	840	285
FDS B 710	6652	1550	1190	1050	285

SDD

SDD 1–3

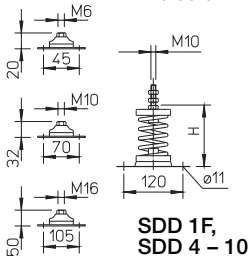
SDD 1F, 4 – 10

Dimensions in mm

SDD 1

SDD 2

SDD 3



SDD 1F, SDD 4 – 10

Anti vibration mounts for compression
To reduce noise and vibration transmission of fans installed on horizontal surfaces.

Rubber elements are suitable for temperatures up to max. +60 °C. Spring elements are suitable for higher temperatures above + 60 °C (e.d. smoke extraction).

Type	Ref.No.	Max. fan weight kg	H Height in mm	Spring element	Contents 1 set = 4 pieces
SDD 1	1452	80	*		
SDD 1F	1942	70	112 – 82	•	
SDD 2	1453	180	*		
SDD 3	1367	750	*		
SDD 4	1944	130	112 – 86	•	
SDD 5	1924	210	112 – 86	•	
SDD 6	1926	400	112 – 80	•	
SDD 7	1928	580	112 – 82	•	
SDD 8	1930	900	112 – 82	•	
SDD 9	1934	1300	112 – 85	•	
SDD 10	1951	1800	112 – 88	•	

* shown in dimensional drawing

SDZ

SDZ 1 – 2

SDZ 3
(without picture.,
with a square four-point mounting)

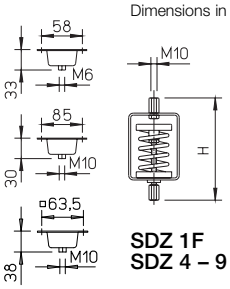
SDZ 1F, 4 – 9

Dimensions in mm

SDZ 1

SDZ 2

SDZ 3



SDZ 1F SDZ 4 – 9

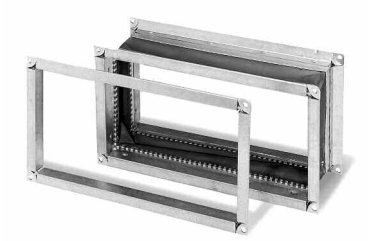
Anti vibration mounts for suspension to reduce noise and vibration transmission of fans installed hanging from ceilings. Specification as model SDD.

Important note for installation!
Make sure that fan system is well balanced (centre of gravity of heavy motor may cause uneven loading of mounts).

Type	Ref.No.	Max. fan weight kg	H Height in mm	Spring element	Contents 1 set = 4 pieces
SDZ 1	1454	60	*		
SDZ 1F	1943	70	190 – 220	•	
SDZ 2	1455	160	*		
SDZ 3	1366	300	*		
SDZ 4	1945	130	190 – 216	•	
SDZ 5	1925	210	190 – 216	•	
SDZ 6	1927	400	190 – 221	•	
SDZ 7	1929	580	190 – 220	•	
SDZ 8	1931	900	190 – 220	•	
SDZ 9	1935	1300	190 – 217	•	

* shown in dimensional drawing

GF and VS



F300 F400

Counter flange GF

Designed for connecting rectangular fans and accessories to ducting. Flange frames are made of galvanised steel.

Connector VSB

With flange frames on both ends. To prevent vibration transmission and compensate small misalignments on site.

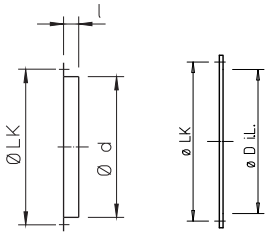
For in-line rectangular smoke exhaust fans BK.. Counter flange GF Type	Ref.No.	Connector VSB Type	Ref.No.	Suitable for in-line retangular smoke exhaust fan - nominal size mm
GF 40/20	6919	VSB 40/20 F400	6844	400 x 200
GF 50/30	6921	VSB 50/30 F400	6834	500 x 300
GF 60/35	6923	VSB 60/35 F400	6835	600 x 350
GF 70/40	6924	VSB 70/40 F400	6836	700 x 400
GF 80/50	6925	VSB 80/50 F400	6838	800 x 500
GF 100/50	6926	VSB 100/50 F400	6839	1000 x 500
GF 120/60	6845	VSB 120/60 F400	6842	1200 x 600
GF 140/70	6846	VSB 140/70 F400	6843	1400 x 700

For centrifugal smoke exhaust fan BR.. Counter flange GFB Type	Ref.No.	Connector VSB Type	Ref.No.	Centrifugal smoke exhaust fan - nominal size mm
GFB 30/15	6820	VSB 30/15 F400	6827	225
GFB 30/15	6820	VSB 30/15 F400	6827	250
GFB 37/20	6821	VSB 37/20 F400	6828	280
GFB 45/25	6822	VSB 45/25 F400	6829	400
GFB 50/27	6823	VSB 50/27 F400	6830	450
GFB 55/30	6824	VSB 55/30 F400	6831	500
GFB 61/33	6825	VSB 61/33 F400	6832	560
GFB 67/36	6826	VSB 67/36 F400	6833	630

FR / FF

40 °C

F300 F400 F600



Dimensions in mm

Counter flange FR / Flat flange FF

Made of galvanised steel. Dimensions and holes to match the fans and accessories to DIN 24155, Pt. 2.

Type	Ref.No.	Type	Ref.No.	ø LK	l	ø d	ø d i.L.	Weight in kg
FR 280	1214	FF 280	4942	322	30	292	286	0,9
FR 315	1204	FF 315	4943	356	30	326	321	1,0
FR 355	1205	FF 355	4944	395	30	365	361	1,1
FR 400	1206	FF 400	4945	438	30	408	409	1,2
FR 450	1207	FF 450	4946	487	35	457	459	1,3
FR 500	1208	FF 500	4947	541	35	511	509	1,5
FR 560	1209	FF 560	4948	605	35	574	569	2,1
FR 630	1211	FF 630	4949	674	35	642	639	2,3
FR 710	1212	FF 710	4950	751	35	715	719	3,1
FR 800	1198	FF 800	4951	837	35	806	809	3,9
FR 900	1199	FF 900	4952	934	35	903	909	4,4
FR 1000	1210	FF 1000	4953	1043	35	1012	1009	9,5
FR 1120	1362	FF 1120	4954	1174	50	1126	1129	11,0
FR 1250	1913	FF 1250	4955	1311	50	1256	1259	12,5

VSB = Temperatures restistance from -30 °C to +200 °C, 400 °C for 2 hours. Fire protection classification according to DIN 4102 A2 and NORM VI Q3.

Specification – Installation

Casing made of galvanised steel, acoustically lined with high quality mineral wool covered with cloth to prevent erosion. Dimensions and tapped flange holes of all sizes fit fan's nominal diameter (R 20). Tapped holes in accordance to DIN 24155, Pt. 2.

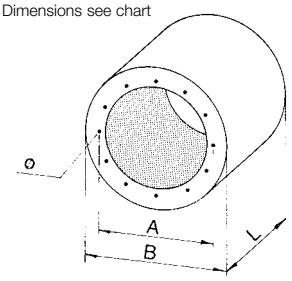
Insertion loss

To increase the attentuation, several attenuators can be installed in-line.

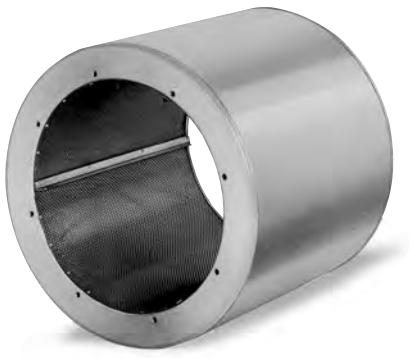
Pressure drop

The resistance of the RSD attenuators is very low. When designing the system consider twice the pressure drop of rigid ducting.

Dimensions see chart



RSD



40 °C F300 F400

Type Nominal-ø	Ref.No.	Basic length	Dimensions in mm L	A	B	Hole ø	Nominal weight kg	Insertion loss level D_e dB 125	250	500	1000	2000	4000	8000	Average attenuation
RSD 280/ 400	8740	1	400	322	454	8 x M 8	10	4	5	8	14	9	8	6	8
RSD 280/ 800	8741	2	800	322	454	8 x M 8	18	7	9	16	28	18	17	14	14
RSD 280/1200	8742	3	1200	322	454	8 x M 8	25	9	12	23	37	23	20	16	18
RSD 315/ 400	8743	1	400	356	504	8 x M 8	11	3	3	7	13	8	7	5	5
RSD 315/ 800	8744	2	800	356	504	8 x M 8	19	6	8	14	26	16	12	9	12
RSD 315/1200	8745	3	1200	356	504	8 x M 8	28	9	12	21	36	18	17	14	18
RSD 355/ 400	8746	1	400	395	564	8 x M 8	13	3	4	7	11	7	6	4	6
RSD 355/ 800	8747	2	800	395	564	8 x M 8	23	6	7	13	22	14	12	8	11
RSD 355/1200	8748	3	1200	395	564	8 x M 8	33	8	11	17	29	18	15	10	17
RSD 400/ 400	8749	1	400	438	564	12 x M 8	12	3	4	6	9	7	5	3	6
RSD 400/ 800	8750	2	800	438	564	12 x M 8	21	6	6	12	18	13	12	8	9
RSD 400/1200	8751	3	1200	438	564	12 x M 8	30	7	10	14	22	18	13	9	15
RSD 450/ 400	8752	1	400	487	634	12 x M 8	17	4	5	8	10	8	7	5	8
RSD 450/ 800	8753	2	800	487	634	12 x M 8	27	6	7	13	18	13	12	9	11
RSD 450/1200	8754	3	1200	487	634	12 x M 8	38	8	10	18	23	17	14	10	15
RSD 500/ 600	8755	1	600	541	714	12 x M 8	27	4	5	9	11	9	9	6	8
RSD 500/ 900	8756	2	900	541	714	12 x M 8	36	6	8	14	16	13	13	9	12
RSD 500/1200	8757	3	1200	541	714	12 x M 8	45	8	11	22	24	17	16	12	17
RSD 560/ 600	8758	1	600	605	804	8 x M 10	32	3	5	9	9	8	8	6	8
RSD 560/1200	8759	2	1200	605	804	8 x M 10	52	6	10	19	19	16	13	10	15
RSD 630/ 600	8760	1	600	674	900	8 x M 10	44	3	5	8	8	8	7	5	8
RSD 630/1200	8761	2	1200	674	900	8 x M 10	68	5	10	16	15	15	11	8	15
RSD 710/ 600	8762	1	600	751	1000	8 x M 10	51	3	5	7	7	7	6	4	8
RSD 710/1200	8763	2	1200	751	1000	8 x M 10	80	5	10	14	13	13	10	7	15
RSD 800/ 600	8764	1	600	837	1100	12 x M 10	57	2	5	7	6	6	5	4	8
RSD 800/1200	8765	2	1200	837	1100	12 x M 10	88	5	9	13	11	11	9	6	14
RSD 900/ 900	8766	1	900	934	1220	12 x M 10	82	2	4	10	9	6	5	4	6
RSD 900/1800	8767	2	1800	934	1220	12 x M 10	135	4	9	21	17	13	9	8	14
RSD 1000/ 900	8768	1	900	1043	1350	12 x M 10	96	2	4	8	7	5	4	3	6
RSD 1000/1800	8769	2	1800	1043	1350	12 x M 10	157	4	7	16	14	10	7	6	11
RSD 1120/ 900	8770	1	900	1174	1350	12 x M 10	81	2	3	7	6	4	3	3	5
RSD 1120/1800	8771	2	1800	1174	1350	12 x M 10	136	3	6	14	11	8	6	5	9
RSD 1250/ 900	8772	1	900	1311	1460	12 x M 10	86	1	2	5	4	3	2	2	3
RSD 1250/1800	8773	2	1800	1311	1460	12 x M 10	146	2	4	11	9	7	5	4	6

Examples of gas warning systems (GWA)

1. **Demand-oriented, economical ventilation.**
   The daily ventilation operation is controlled by the harmful gas detection (CO, NO_2, LPG), in which the control of the jet fans and central exhaust fans is carried out according to the maximum allowable pollutant concentration. Due to this demand-oriented ventilation single jet fans run at a low pollutant concentration with a low speed or are switched off by the control system. It is the same with the main exhaust fans.
   Compared to a conventional control technology, the operating costs of the car park ventilation system are therefore lowered considerably by controlled regulation, depending on the detected harmful gas.

2. **Maximum thrust in operating condition „smoke extration“.**
   If the ventilation system serves in addition also the powered smoke extraction, the use of a fire alarm system is required. Smoke detector (on site) locate the source of fire. The intelligent control logic of the GWA develops a control scenario from all incoming messages and switches on demand-oriented the jet fans and central exhaust air fans. By this selective smoke extraction of the fire location and the specific smoke removal, smoke-free areas (primary protection aim) are created in the car park.
   Thus, a safe escape and rapid evacuation from the danger zone is possible. Emergency services can start fast and safe with the rescue and firefighting.

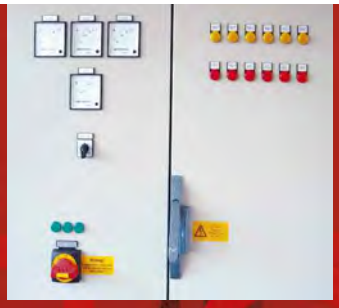
NEW!

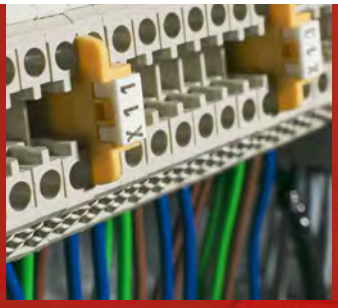
„Helios full-service“:
Car park control technology and gas warning systems.

For the economic and safe operation of car park systems a modern control system and control technology is essential. The extensive Helios program offers a variety of system solutions that allow an individual adaptation to the object.
With a variety of clever and unique features, the new gas warning systems meet (GWA) highest demands in terms of performance, power and cost efficiency.

At the heart of the gas warning system the controller with a sophisticated logic takes over the analysis of all incoming sensor signals (CO, NO_2, LPG) and issues commands to connected fans and reporting parts.
Potential free relays and analog and digital inputs (e.g. fire alarm system) enable a wide variety of system applications. Freely configurable parameters and setpoints allow optimum adaptation to different ventilation and smoke extraction scenarios.

Additional, often costly programmable logic controllers (PLC) in the control cabinet can be omitted. The individual, almost unlimited variable use of GWA Helios controllers is the key to optimized, economical and energy-efficient car park ventilation and smoke extraction.
The synergy between innovative measuring technology, control and regulation technology and most modern, high-performance fans makes Helios the technically leading supplier in the car park ventilation technology.



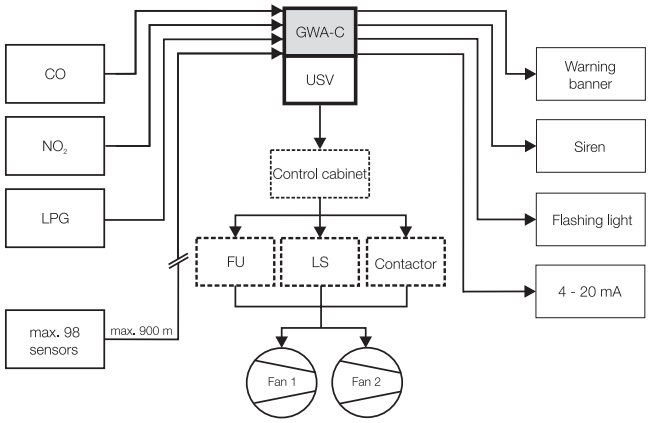


Also for car parks Helios offers, beside the ventilation technology, a complete product portfolio n the field of measuring, control and regulation technology.

Digital or analog gas warning systems are available alternatively in a compact surface-mounted casing or for the contol cabinet installation. The connection of car park fans is possible without an additional external control devices. „All from a single source“. This makes Helios to a full-service partner for car park systems - from planning to purchase.

GWA

System sketch analog gas warning system GWA



The analog GWA gas warning system is particularly suitable for smaller car parks. The complete system consisting of controller, including uninterruptible power supply (UPS), power part, sensors as well as acoustic and visual signals will be configured according to the specific project requirements. The system components are available for cars with petrol, diesel and / or LPG motors (CO, NO_2, LPG). All components match to each other, which makes installation and start-up simply and smoothly.

Note

Controller and uninterruptible power supply (UPS) are available in surface-mounted casings (see dimensions in table). Optionally the components are also available for the control cabinet installation on request.

Outstanding features

- Specific power parts (types .. LS, FU .. or - individually planned - GWA- LT, see accessories) allow the direct control of car park fans and make additional external controls needless and costly.
- Simple operation of the controller, equipped with LCD display via six entry keys.
- Comprehensive, easy to understand installation concept for all components.
- High system reliability through continuous sensor monitoring and error message on the LCD display.

Description

Casing

- Robust polymer casing (color RAL 7035) with transparent, hinged viewing windows.
- Cable entries to the plastic casing already exist.

Scope of delivery

The analog controllers GWA-C are supplied in two units:

Controller (casing 1)

The sensors can be connected directly to the powerful analog controller GWA-C. Due to the expanability on up to 30 relays and two analog outputs nearly all system requirements are performable.
An external control of relays (e.g. fire alarm in the building) with simultaneous activation of warning banners and sirens is possible via the four digital inputs.

- Three analog controllers (see table) are available as standard:
  - GWA-C 4-5 (4 analog inputs, 5 relays)
  - GWA-C 8-10 (8 analog inputs, 10 relays)
  - GWA-C 12-15 (12 analog inputs, 15 relays)
- On request, the controller is configurable with up to 98 analog inputs and up to 30 relay.
- The power supply for the controller, sensors, warning banners and sirens is provided via the integrated 24 V power supply.

Uninterruptible power supply USV (casing 2)

Some countries an USV is required which guarantees the function of the gas warning system for the duration of one hour at power failure. Here, all electricity consumers (sensors, warning banners, sirens, etc.) of the system must be considered.

Note

The start-up of the complete gas warning system is made by the Helios service partner in accordance to project-related offer.

Power parts to control car park fans:
GWA-LT **project-related**
System-specific power part (Ref.No. 8231, see on the right).

LS.. **Page 158**
Compact ventilation control for two fan units.

FU.. **Page 162**
Frequency inverter for 3-phase fans.

Type	Ref.No.	Max. current **mains adaptor** 24 Volt	Max. current **USV** 1h	Analog Inputs	Digital Inputs	Analog Outputs	Relays	Mains warning lamp	Protection to	Weight **controller**[1]	Weight **USV**[2]	Dimensions **controller**[1] (WxHxD)	Dimensions **USV**[2] (WxHxD)
		A	Ah	4-20 mA		4-20 mA			IP	kg	kg	mm	mm
1~, 230 V, 50/60 Hz													
GWA-C 4-5	8200	2,2	1,22	4	4	2	5	ja	65	2,7	2,5	298x260x140	298x260x140
GWA-C 8-10	8201	4,5	4,32	8	4	2	10	ja	65	3,5	5,2	298x420x140	410x260x140
GWA-C 12-15	8202	4,5	4,32	12	4	2	15	ja	65	4,0	5,2	298x420x140	410x260x140

[1] Casing 1 [2] Casing 2

Sensors

■ **Sensors for detecting the concentration of pollutants in the ambient air. Calibration directly at the sensor. Easy start-up.**

	CO-sensor for petrol motors Type	Ref.-No.	NO_2-sensor for diesel motors Type	Ref.No.	LPG-sensor for lique. gas motors Type	Ref.No.	Dim. in mm width	height	depth
Surface-mount. polymer casing, IP 43	**GWA-S CO K1**	8203	**GWA-S NO_2 K1**	8206	**GWA-S LPG K1**	8209	94	65	57
Surface-mount. polymer casing, IP 65	**GWA-S CO K2**	8204	**GWA-S NO_2 K2**	8207	**GWA-S LPG K2**	8210	94	130	57
Surface-mount. stainless steel casing, IP 54	**GWA-S CO VA**	8205	**GWA-S NO_2 VA**	8208	**GWA-S LPG VA**	8211	113	135	45
Technical data									
Measuring range	0-300 ppm		0-20 ppm		0-100% UEG				
Output signal	4-20 mA or 0-10 V		4-20 mA or 0-10 V		4-20 mA or 0-10 V				
Voltage	24 V DC		24 V DC		24 V DC				
Nominal current	22 mA		22 mA		35 mA				

■ **Opener for stainless steel sensor casing**

Special tool to open the vandal-proof stainless steel casing GWA-... VA.

GWA-S OE Ref.No. 8215

GWA-H

■ **Siren**

Siren in impact-resistant polymer casing for wall / ceiling mounting. Tone and volume adjustable.

GWA-H	Ref.No. 8217
Volume approx.	108 dB
Voltage	24 V DC
Nominal current approx.	68 mA
Dimensions mm	Ø 93 x H 93

GWA-BL

■ **Flashing light**

Flashing light in impact-resistant polymer casing for wall / ceiling mounting.

GWA-BL	Ref.No. 8216
Voltage	24 V DC
Nominal current approx.	68 mA
Dimensions mm	Ø 93 x H 65

GWA-WT

■ **Warning banner**

Warning banner with yellow symbols corresponding to VDI 2053 (risk of poisoning, stop motor, exit the car park) on white background. Optional audible signal. Incl. terminal box, cable 1,8 m long.

GWA-WT 1	Ref.No. 8213
Voltage	24 V DC
Nominal current approx.	200 mA
Dimensions mm	W 642 x H 203 x D 22

GWA-WT 1S	No. 8214
With buzzer, volume approx.	87 dB
Voltage	24 V DC
Nominal current approx.	200 mA
Dimensions mm	W 642 x H 203 x D 22

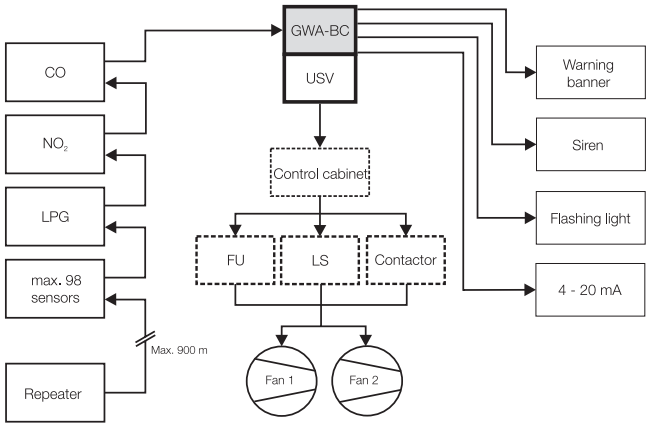
■ **Power part, project-related**

System-specific power part to control car park fans.

GWA-LT Ref.No. 8252

GWA-B

System sketch digital gas warning system GWA-B



The digital bus gas warning system GWA-B is particularly suitable for large car parks and connection to a central building control system.
The complete system consisting of controller, including uninterruptible power supply (UPS), power part, if necessary with repeater, gateway, sensors as well as acoustic and visual signals will be configured according to the specific project requirements.
The system components are available for cars with petrol, diesel and / or LPG motors (CO, NO_2, LPG). All components match to each other, which makes installation and start-up simply and smoothly.

Note

Bus controller and uninterruptible power supply (UPS) are available in surface-mounted casings (see dimensions in table). Optionally the components are also available for the control cabinet installation on request.

Outstanding features

- Specific power parts (types .. LS, FU .. or - individually planned - GWA- LT, see accessories) allow the direct control of car park fans and make additional external controls needless and costly.
- The sensors can communicate via RS485 bus
- Simple operation of the controller, equipped with LCD display via six entry keys.
- Comprehensive, easy to understand installation concept for all components.
- High system reliability through continuous sensor monitoring and error message on the LCD display.

Description

Casing

- Robust polymer casing (color RAL 7035) with transparent, hinged viewing windows.
- Cable entries to the plastic casing already exist.

Scope of delivery

The analog controllers GWA-BC are supplied in two units:

Controller (casing 1)

Up to 98 sensors can be connected to the powerful bus controller GWA-BC. Due to the expanability on up to 30 relays and two analog outputs nearly all system requirements are performable.
An external control of relays (e.g. fire alarm in the building) with simultaneous activation of warning banners and sirens is possible via the four digital inputs.

- Two bus controllers (see table) are available as standard:
- GWA-BC 8-10 (8 analog inputs, 10 relays)
- GWA-BC 12-15 (12 analog inputs, 15 relays)
- On request, the controller is configurable with up to 30 relays.
- The power supply for the controller, sensors, warning banners and sirens is provided via the integrated 24 V power supply.

Uninterruptible power supply USV (casing 2)

Some countries an USV is required which guarantees the function of the gas warning system for the duration of one hour at power failure. Here, all electricity consumers (sensors, warning banners, sirens, etc.) of the system must be considered.

Note

The start-up of the complete gas warning system is made by the Helios service partner in accordance to project-related offer.

Power parts to control car park fans:
GWA-LT **project-related**
System-specific power part (Ref.No. 8231, see on the right).

LS.. **Page 158**
Compact ventilation control for two fan units.

FU.. **Page 162**
Frequency inverter for 3-phase fans.

Type	Ref.No.	Max. current **mains adaptor** 24 Volt	Max. current **USV** 1h	RS 485 Bus	Analog Inputs	Digital Inputs	Analog Outputs	Relays	Mains warning lamp	Protection to	Weight **controller**[2]	Weight **USV**[3]	Dimensions **controller**[2] (WxHxD)	Dimensions **USV**[3] (WxHxD)
		A	Ah		4-20 mA		4-20 mA			IP	kg	kg	mm	mm
1~, 230 V, 50/60 Hz														
GWA-BC 8-10	8240	4,5	4,32	ja	8[1]	4	2	10	ja	65	3,5	5,2	298x420x140	410x260x140
GWA-BC 12-15	8241	4,5	4,32	ja	12[1]	4	2	15	ja	65	4,5	5,2	298x570x140	410x260x140

[1] Optionally usable with analog sensors
[2] Casing 1
[3] Casing 2

Sensors

■ **Sensors for detecting the concentration of pollutants in the ambient air. Calibration directly at the sensor. Easy start-up.** Communication via RS 485 bus.

	CO-sensor for petrol motors Type	Ref.No.	NO_2-sensor for diesel motors Type	Ref.No.	LPG-sensor for lique. gas motors Type	Ref.No.	Dim. in mm width	height	depth
Surface-mount. polymer casing, IP 65	**GWA-BS CO K1**	8242	**GWA-BS NO_2 K1**	8244	**GWA-BS LPG K1**	8246	94	65	57
Surface-mount. stainless steel casing, IP 54	**GWA-BS CO VA**	8243	**GWA-BS NO_2 VA**	8245	**GWA-BS LPG VA**	8247	113	135	45
Technical data									
Measuring range	0-300 ppm		0-20 ppm		0-100% UEG				
Output signal	4-20 mA or 0-10 V		4-20 mA or 0-10 V		4-20 mA or 0-10 V				
Voltage	24 V DC		24 V DC		24 V DC				
Nominal current	22 mA		22 mA		35 mA				

■ **Opener for stainless steel sensor casing**

Special tool to open the vandal-proof stainless steel casing GWA-... VA.

GWA-S OE Ref.No. 8215

GWA-H

■ **Siren**

Siren in impact-resistant polymer casing for wall / ceiling mounting. Tone and volume adjustable.

GWA-H Ref.No. 8217

Volume approx.	108 dB
Voltage	24 V DC
Nominal current approx.	68 mA
Dimensions mm	Ø 93 x H 93

GWA-BL

■ **Flashing light**

Flashing light in impact-resistant polymer casing for wall / ceiling mounting.

GWA-BL Ref.No. 8216

Voltage	24 V DC
Nominal current approx.	68 mA
Dimensions mm	Ø 93 x H 65

GWA-WT

■ **Warning banner**

Warning banner with yellow symbols corresponding to VDI 2053 (risk of poisoning, stop motor, exit the car park) on white background. Optional audible signal. Incl. terminal box, cable 1,8 m long.

GWA-WT 1 Ref.No. 8213

Voltage	24 V DC
Nominal current approx.	200 mA
Dimensions mm	W 642 x H 203 x D 22

GWA-WT 1S No. 8214

With buzzer, volume approx.	87 dB
Voltage	24 V DC
Nominal current approx.	200 mA
Dimensions mm	W 642 x H 203 x D 22

■ **Bus gateway**

For connection to the building control system, for mounting on top hat rail. The system states are monitored and displayed, there is no possibility of intervention.

– for LON-Bus

GWA-BG LON Ref.No. 8250

– for Modbus

GWA-BG Modbus Ref.No. 8251

■ **Repeater**

For bus line extension for a further 900 m or formation of spurs. In the repeater, the bus signal is amplified and the 24 V voltage supply is fed again.

In addition, the bus line is protected against failures and short circuits.

– Surface-mounted version

GWA-BR 24 V AP Ref.No. 8248

– Top hat rail version

GWA-BR 24 V Ref.No. 8249

■ **Power part, project-related**

System-specific power part to control car park fans.

GWA-LT Ref.No. 8252

LS

☐ **Note**

Custom control cabinets for large systems for car park ventilation available on request.

Car park ventilation control

The car park ventilation control of Helios was specifically developed to meet the requirements of a modern and efficient ventilation of car parks. Dangers are significantly lowered by the application of the Helios fans and the ventilation control LS to people by toxic gases like carbon monoxide (CO) and nitrogen dioxide (NO_2).

☐ Via the ventilation control LS two ventilators are operated and supervised according to the provisions of the car park regulations. Harmful substances resulting with the car park use are diluted and discharged by the air change stipulated by the respectively valid car park regulation (GaVO).

☐ The LS monitors the control and load circuits, detects faults or power failures and switches over to the system still able to operate.

☐ In addition to the automatic mode, the fans also can be operated individually, together or to achieve the same fan running times alternately.

☐ For operation only of one fan the car park ventilation control LS is programmed in such a way that if it fails, the second fan automatically goes into operation and a fault signal is given.

Delivery program

The Helios program includes car park ventilation controls according to table below 1~ and 3 ~ models in different performance ranges for direct and star-delta starting, and with Dahlander connection for the fan operating at two different speeds. All models are optionally available with additional smoke exhaust function (B LS).

Ordering information

When ordering the car park ventilation control, the following information is mandatory:

– Required control model
Car park ventilation control (LS) or car park control with additional smoke exhaust function (B LS).

– Fan
The power range, switching mode and motor protection device of the car park ventilation control results from the type name of the fans (Helios Ref.No.) to be controlled.

Casing

Delivery is ready for use, installation and service friendly in a polymer casing (types up to 4 kW) or in stable control cabinet casing from sheet metal (types from 4 kW).

Operation

Mode of operation and fan sequence can be set using the rotary switch on the control panel. The running times of the connected fans can be programmed individually at the analog timer.

	Position	Function
☐ **Fan sequence**	„1“	Fan 1 is switched on for operation. In case of failure switchover to fan 2.
	„2“	Fan 2 is switched on for operation. In case of failure switchover to fan 1.
	„1+2“	Both fans are switched on successively for operation.
	„1/2“	Both fans are alternately switched on for operation to achieve the same runtime.
☐ **Mode**	„Auto“	Selected fan sequence is controlled by the timer.
	“ Hand“	Fan operation is controlled by manually setting the rotary switch “Fan sequence”.
	„Aus-/ Entriegeln“	The control is switched off. Failures are deleted..
☐ **Timer**		The analog switch allows individual adjustment of the fan running times to the respective situation in the car park to be ventilated. For the corresponding control of programmed times the mode „**Auto“ has to be chosen at the car park ventilation control. The shortest switching sequence of the timer is 20 minutes.**

Display function

The operating status of the connected fans as well as the position of the intake-/extract air shutters takes place for each fan separately via LEDs. Fault signals and triggered fire dampers are indicated beside the acoustic warning via the optionally connectable siren also by LEDs on the control.

	Mode	Function
☐ **Damper OPEN**	Green LED lights up	Intake or extract air damper is open, fan runs 30 seconds delayed.
	Green LED goes off	Intake or extract air damper is closed, fan is off.
☐ **Fan ON**	Green LED lights up	Fan is in operation, respective intake or extract air damper is open.
	Green LED goes off	Fan is not in operation, respective intake and extract air damper is closed.
☐ **Error**	Red LED flashes	Fan error.
☐ **Fire damper**	Red LED lights up	Fire damper has triggered.

Delivery program

Ventilation control	Control with smoke exhaust function	Switching mode	Phase	Voltage	Power range
LS-W	**B LS-W**	direct	1~	230 V	up to 4,0 kW
LS-D	**B LS-D**	direct	3~	400 V	up to 2,2 kW
LS-SD	**B LS-SD**	Y/Δ	3~	400 V	from 3,0 kW to 18,5 kW
LS-DA	**B LS-DA**	Y/YY	3~	400 V	up to 18,5 kW

Models with higher power on request.

Car park ventilation control with smoke exhaust function B LS

If in addition to the ventilation mode and the associated reduction of the pollutant concentration requirements are made on the car park smoke extraction in case of fire, the car park ventilation control B LS with smoke exhaust control is the optimal solution.

- ☐ By connecting the smoke gas car park ventilation control B LS to a smoke detector line the smoke exhaust function is triggered automatically in the case of fire. For the manual triggering by car park users and fire brigade a push button alarm and a fireman's switch can be attached.
- ☐ After release of the smoke exhaust function all motor protective devices are bridged and the smoke exhaust fans are running at rated speed. For controls with Dahlander connection speed level 2 (maximum fan speed) is set automatically.
- ☐ An operation of F600 smoke exhaust fans with cooling air fan is not possible by the Helios smoke gas car park ventilation control.

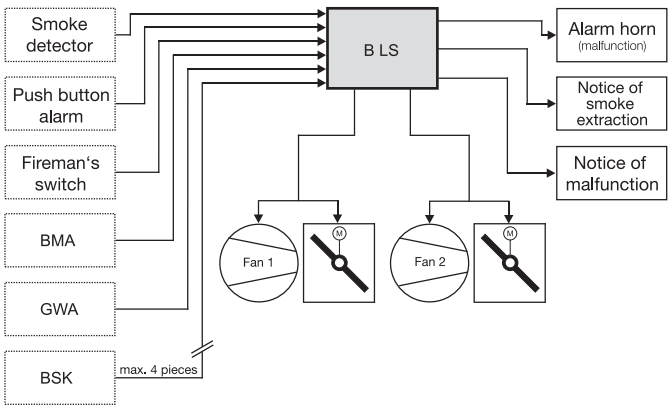
Note

- ☐ In accordance with valid car park regulations and VDI Guideline the ventilation system needs two fans, each of which provides at least 50 % of the total air flow volume. With fan failure, the remaining fan must be able to support 2/3 of the total air flow volume.
- ☐ The car park ventilation control LS and both fans are to be provided via separate electrical feeds.

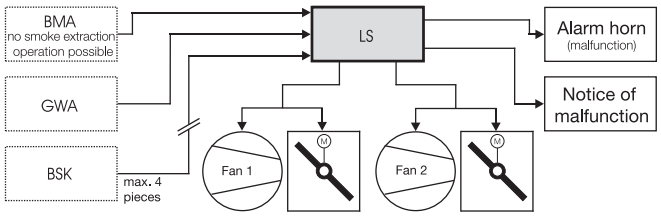
Operating and display panel

Function and operation of the Helios car park ventilation control are adjustable at the clearly arranged control and display panel, the front panel is well protected by a lockable cover against access by unauthorized persons.

System sketch B LS with smoke exhaust function



System sketch LS



Motor protection

- ☐ The motors of the connected fans are protected via the car park ventilation control by cut-off in case of overload. For motors with PTC thermistor or thermal contact, this can be connected to the terminal strip of the car park ventilation control. For motors without thermal contacts or PTCs the car park ventilation control has motor protection circuit breakers. With release of the motor protection device a fault signal is given, which can be unlocked after cause investigation by the rotary switch for the operating mode.
- ☐ For the smoke gas car park ventilation control B LS all motor protection devices are bridged in case of smoke extraction. The smoke exhaust function is ensured by this until the destruction of the fan.

Optional accessories

RMR-R Ref.No. 4486
Smoke detector with relay for automatic activation of the system at smoke detection.

DKM Ref.No. 4985
Push button alarm for die manual activation of the system.

FWS 1 Ref.No. 8254
Fireman's switch to connect on-site DIN profile half cylinder.

FWS 2 Ref.No. 8255
Fireman's switch (incl.LED) to connect on-site DIN profile half cylinder.

GWA-H Ref.No. 8218
Siren 230 V

Connection options

☐ Input
- – CO-warning system
- – Fire dampers
- – Fire alarm system (B LS)
- – Smoke detector (B LS) ┐
- – Push button alarm (B LS) ┘ Σ15 St.
- – Fireman's switch (B LS) 1 St.
- – PTC resistor or thermal contact of fan

☐ Output
- – Floating or non-floating fault signal
- – Siren 230 V
- – Damper 230 V

Label

- – Approval by TÜV
- – CE

Technical data

Timer		24 h
Switching sequence		20 min.
Switching power	Damper	500 VA
	Siren	500 VA
Switching current	Damper	max. 2 A
	Siren	max. 2 A
Control fuse		12 V 0,5 A
		230 V 2 A
Ambient temperature		–10 to +40 °C
Protection to		IP 54
Installation position		vertical

EVS

Note

One smoke extaust fan can be connected and operated per EVS. On request smoke exhaust fan controls are also available for the connection of several smoke exhaust fans.

Smoke exhaust fan control

☐ By generating low-smoke layers and areas Helios smoke exhaust fans allow the safe evacuation of people. For the control of the fans that are available in temperature classes F300, F400 and F600, the smoke exhaust fan control EVS was specifically designed.

☐ EVS is particularly suitable for smoke extraction of small objects as well as individual fire areas and has a ventilation function in addition. This provides a significant improvement in the air quality in the normal operation by a regular air change.

Delivery program

The Helios program includes smoke exhaust fan controls according to table below 1~ and 3 ~ models in different performance ranges for direct and star-delta starting, and with Dahlander connection for the fan operating at two different speeds.

Ordering information

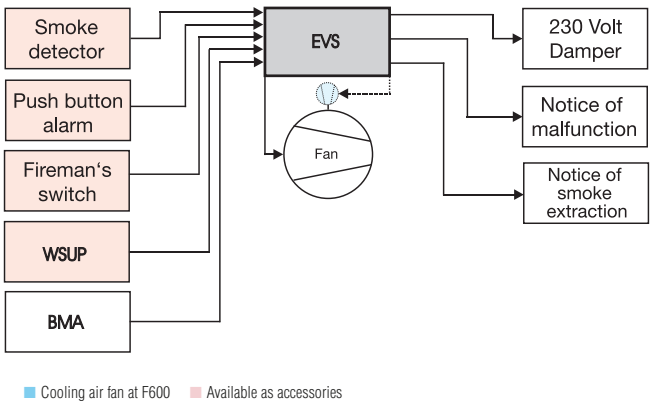
When ordering the smoke exhaust fan control, the following information is mandatory:

– Smoke exhaust fan
The power range, switching mode and motor protection device of the smoke exhaust fan control results from the type name of the fans (Helios Ref.No.) to be controlled.

Casing and operation

The delivery of the EVS types up to 22 kW is in a light grey ISO casing (IP 54). The models from 30 kW are designed in a robust metal casing with a laterally mounted, lockable "Emergency Stop" main switch, which can be plumbed in the "ON" position. The front control and display panel allows the control of the individual functions with visual indication of the current operating conditions. Casing type of EVS for F600 with addition for cooling air fan and casing dimensions of the respective control on request.

System sketch EVS



Functions

The functionality of the Helios smoke exhaust fan control complies with the requirements of the VDMA standard sheet 24177. Via the control panel attached to the EVS casing the following control functions are adjustable:

☐ Ready:
The smoke exhaust fan is switched off. The activation of the smoke extraction mode is carried out by EVS release over smoke detector, push button alarm or other external smoke extraction warning device.

☐ Smoke extraction:
All motor protection devices of the smoke exhaust fan are bridged. After opening the damper by the EVS the smoke exhaust fan runs on the nominal speed. For controls with Dahlander connection speed level 2 (maximum fan speed) is set automatically.

☐ ON (for 1-speed fan) or Level 1 and 2 (for 2-speed fan):
All motor protection devices for overload protection are activated. After opening the damper by the EVS the smoke exhaust fan runs in ventilation mode on the selected speed. The activation of the smoke extraction mode is carried out by EVS release over smoke detector, push button alarm or other external smoke extraction warning device.

Note

The installation of the EVS should be as close as practicable to the associated smoke exhaust fan, but outside the area from which smoke is to be extracted.
The power supply for the EVS and the smoke exhaust fan must be installed function-preserving and directly connected to the low-voltage main distribution board.

Delivery program and technical data

Type	Switching mode	Power consumption	Voltage	Ambient temperture
EVS-W	Direkt	up to 4,0 kW	230 V	0 to +40 °C
EVS-D	Direkt	up to 2,2 kW	400 V	0 to +40 °C
EVS-SD	Y/Δ	from 3,0 to 55 kW	400 V	0 to +40 °C
EVS-DA	Y/YY	up to 55 kW	400 V	0 to +40 °C

Connection options

☐ Input:
- Fire alarm system
- Smoke detector] Σ15 St.
- Push button alarm]
- Fireman's switch 1 St.
- PTC resistor or thermal contact of smoke exhaust fan
- WSUP
- WSUP-S

☐ Output:
- Smoke exhaust fan
- 230 V damper
- Smoke exhaust or fault signal over potential-free contact
- Cooling air fan for F600 smoke exhaust fan, flow control device included

Motor protection

In the ventilation mode the motor of smoke exhaust fan is protected by cut-off in case of overload. This motor protection is provided by the thermal contact or PTC resistor of the smoke exhaust fan, which is connected to the EVS.
If the motor of the smoke exhaust fan has no thermal contact or PTC resistor, then a motor protection relay in the EVS protects the engine from overload.

☐ For the smoke exhaust fan control EVS all motor protection devices are bridged in case of smoke extraction. The smoke exhaust function is ensured by this until the destruction of the fan.

EVS for F600 smoke exhaust fans

The motor cooling of Helios F600 smoke exhaust fans is carried out using separate cooling fans (KLG, accessories). These cooling air fans are also controlled by the EVS and monitored in the ventilation mode by flow control devices. The flow control devices are already installed in the EVS.

Customised solutions

Helios provides on request individual control cabinets and thus for each project the appropriate smoke exhaust fan control.

Label

- Approval by TÜV
- CE

Accessories

Smoke dedector

RMR-R Ref.No. 4486

Smoke detector with relay for automatic release of smoke exhaust funktion in case of smoke detection. Simple installation by bayonet lock.

Voltage	8-30 V DC
Standby current	50 µA
Protection to	IP 40
Dimensions mm	Ø 127 x H 55

Push button alarm

DKM Ref.No. 4985

Push button alarm for the manual activation of the smoke exhaust system. Easy replaceable glass pane in the lockable casing. LED display: Operation/Release/Error.

Voltage	24V DC
Colour	RAL 2011
Dimension mm	W 123 x H 123 x D 40

Fireman's switch

FWS 1 Ref.No. 8254

Fireman's switch to connect on-site DIN profile half cylinder. Priority circuit for the fire department to operate the smoke exhaust system. Adjustable operating conditions of the system: Ready/Smoke extraction/Off

FWS 2 Ref.No. 8255

with LED display: Overload/Ready/Smoke extraction

Voltage	24 V DC
Colour	gray/red
Protection to	IP 44
Dimensions mm	W 125 x H 125 x D 70

Weekly autotimer

WSUP Ref.No. 9990

Digital autotimer with LCD display for automatic control of the smoke exhaust function of the EVS. Installation in dry surroundings.

Voltage	230 V, 1~, 50 Hz
Current	1 mA / 20 mV DC
Switching contact	potential-free changeover, 250 V, 1~, 8 A cos φ ≈ 1, µ-contact
Protection to / class	IP 20 / II
Dimensions mm	W 85 x H 85 x D 52
Installation	AP casing, UP box
Temperature range	-10 °C to +35 °C
Memory cells (switching time)	42
Wiring diagram	SS-862

Weekly autotimer for installation in a control cabinet

WSUP-S Ref.No. 9577

Digital, with LCD display for automatic control of operational mode of the EVS according to the technical data.

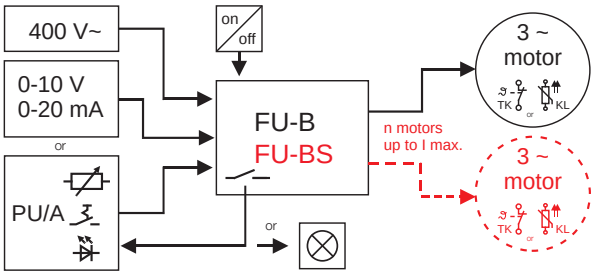
Voltage	230 V, 1~, 50-60 Hz
Current	1 mA / 20 mV DC
Switching contact	potential-free changeover 250 V, 1~, 16 A cos φ ≈ 1 2 A cos φ ≈ 0,6, µ-contact
Protection to / class	IP 20 / II
Dimensions mm	W 36 x H 93 x D 70
Installation	DIN top hat rail mounting control cabinet
Temperature range	-30 °C to +55 °C
Memory cells (switching time)	56
Wiring diagram	SS-1038

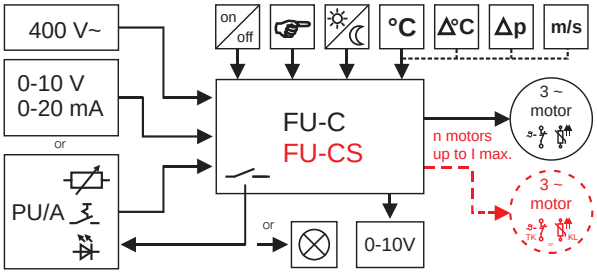
Note

Cooling air fan B KLG for F600 smoke exhaust fan 147 on

FU-B and FU-BS

FU-C and FU-CS





Description
FU-B „Basic“

- ☐ Frequency inverter FU-B in basic version without sine filter for the speed control of a single fan.
- ☐ The speed selection takes place via the 0-10 V control signal (e.g. potentiometer PU/PA, accessories).
- ☐ Cable length between FU-B and fan up to 10 m with shielded cable.
- ☐ The fan must be designed for operation with frequency inverter (EMC-compatible fan/motor, optional special version).
- ☐ The FU-B is fixed at its rated current.
- ☐ For FU-B operation (without sine filter) the frequency inverter capability must be specified when ordering the fan.

Description
FU-BS „Basic-Sinus“

- ☐ Frequency inverter FU-BS in basic version with integrated, allpole effective sine filter.
- ☐ For speed control of one or more fans. The permitted number of fans results from the maximum FU current.
- ☐ The speed selection takes place via the 0-10 V control signal (e.g. potentiometer PU/PA, accessories).
- ☐ Cable length between FU-BS and fan over 10 m is possible:
- ☐ No additional EMC shielding of electrical cables required. The fans including motor need no special EMV precautions for the frequency inverter operation.
- ☐ The FU-BS is fixed at its rated current.
- ☐ When using the frequency inverter with integrated sine filter standard fans/motors are applicable.

Description
FU-C „Comfort“

- ☐ Frequency inverter FU-C in comfort version without sine filter for the speed control of a single fan.
- ☐ Including display and three operating buttons to adjust the fan and control parameters.
- ☐ Programming und control options via Modbus.
- ☐ With integrated, adequate control system for temperature, pressure and air velocity. The required sensors LDF 500, LGF 10, LT.. are available as accessories (see EUR EC page).
- ☐ The speed selection takes place via the 0-10 V control signal (e.g. potentiometer PU/PA, accessories) or entered directly at the display.
- ☐ Cable length between FU-C and fan up to 10 m with shielded cable.
- ☐ The fan must be designed for operation with frequency inverter (EMC-compatible fan/motor, optional special version).
- ☐ For FU-C operation (without sine filter) the frequency inverter capability must be specified when ordering the fan..

Description
FU-CS „Comfort-Sinus“

- ☐ Frequency inverter FU-CS in comfort version with integrated, allpole effective sine filter.
- ☐ For speed control of one or more fans. The permitted number of fans results from the maximum FU current.
- ☐ Including display and three operating buttons to adjust the fan and control parameters.
- ☐ Programming und control options via Modbus.
- ☐ With integrated, adequate control system for temperature, pressure and air velocity. The required sensors LDF 500, LGF 10, LT.. are available as accessories (see EUR EC page)
- ☐ Speed selection, cable length, EMC precautions see descrition of FU BS.
- ☐ When using the frequency inverter with integrated sine filter standard fans/motors are applicable.

General features

- Specially for the HLK usage of optimised inverter.
- Considerable energy savings through on demand fan speed.
- Specially designed for fans, resulting in minimum energy consumption and minimum noise production in parcial load zone.
- Suitable for maintenance free three phase asynchronous motors of all sizes and performance levels.
- No power limitation if standard motors are used.
- Operation indication via potential free contact.
- Potentiometer power supply: 10 V DC / 10 mA for Poti with e.g. 10 kOhm
- Analog input for speed selection (0-10 V, 0(4)-20 mA). e.g. with potentiometer
- Protection against earth leakage and short circuit.
- Built-in electronic motor protection via thermal contacts or PTC.
- Control circuit gavanically separated.
- Protection against peak voltage.
- Suitable also for installation in control cabinet.
- At ambient temperatures above 40 °C to 55 °C, a derating must be observed (see operating instructions).

Type-specific features

Basic types:

- Additional power supply: 24 V DC / 70 mA for control of digital inputs and additional external components.

Sine types:

- Includes internal, all-pole effective sine filter.
- For simple, subsequent expansion of existing ventilation systems.

Comfort types:

- Programmable acceleration and deceleration times to reduce starting noise.
- Additional power supply: 24 V DC / 120 mA for control of digital inputs and additional external components.
- Simple adjustment and control of values via display.
- Extensive diagnostic display in case of failure.
- Speed setting directly on the device via the display.
- Serial port RS 485 / Modbus-RTU.
- Configurable, on-demand power adjustment.

Information

- **Internal, all-pole effective sine filter** (FU-..S)
  Filters the voltages between the individual phases and the phase voltage between phase and protective earth. Thus, the output voltage of the frequency inverter is purely sinusoidal and corresponds to the quality of a standard mains voltage.
- **FI circuit breaker** (all types)
  When using the frequency inverter in an area that requires a **FI circuit breaker**, this must be sensitive to universal current, Type B +, corresponding to 300 mA.
- **EMC**
  All FU types comply with the EMC Directive 2004/108/EC and the valid standards such as DIN EN 60335-1 and DIN EN 550011. Radio interference filters for compliance with the class B (residential area) are integrated.
  For FU-B and FU-C the cable between fan and frequency inverter is to be shielded and can be up to 10 m long. Motor supply and temperature monitoring must be installed separately.
- **Rating motor current/ frequency**
  When selecting a suitable frequency inverter, the max. motor current must be considered. If a number of fans are controlled the sum of all the individual currents must be taken. In order to avoid faults and breakdowns, a reserve of 10 % must be kept. The maximum frequency of 50 Hz must not be exceeded with standard fans, as the motor will overload and thus fail. An operation with higher frequency is available on request.
- **Motor protection**
  A maximum motor protection is achieved by monitoring (thermal contact/PTC), in which max. 6 PTC resistors in series can be connected to a device. An increase in the number of PTC is possible through the use of monitoring devices (MSA, accessories).

Accessories for all FU-types

PU 24/PA 24 No. 1736/1737
Speed potentiometer, for flush/surface mounted installation, LED 24 V, Poti 10 V/1,3-10 V

SU-3 10/SA-3 10 No. 4266/4267
Three step speed switch, for flush/surface mounted installation, 10 V / 1,7-10 V

WSUP Ref.No. 9990
Weekly autotimer with LCD display, potential-free contact

WSUP-S Ref.No. 9577
Weekly autotimer, potential-free contact, for DIN top hat rail

EDR Ref.No. 1437
Electronic differential pressure controller
0-1000 Pa, 10-24 V/0-10 V

ETR Ref.No. 1438
Electronic temperature controller
Temperature sensor, see ETR accessories

EUR EC Ref.No. 1347
Electronic universal controller
Sensor see EUR EC accessories

MSA Ref.No. 1289
Motor full protection for PTC

General technical data

Mains voltage	3~, 208-480 V
Mains frequency	50/60 Hz
Output voltage	95 % von U_{Netz}
Output frequency	50 Hz
Protection to	IP 54
Ambient temperature	0 to +40 °C (-20° not de-energised)

Type	Ref.No.	Maximum power Output current	Maximum power Motor	Cable cross-sections from the mains and to motorCable	Wiring diagram	Dimensions Height	Dimensions Width	Dimensions Depth	Nom. weight approx.
		A	kW	mm²	No.	mm	mm	mm	kg
Basic version without sine filter for 3 ph. alternating current fans, 400 V, 50/60 Hz, protection to IP 54									
FU-B 3,6	5453	3,6	1,5	4 x 1,5 [1]	1020	284	240	115	2,6
FU-B 5,0	5454	5,0	2,2	4 x 1,5 [1]	1020	302	250	196	4,6
FU-B 8,5	5456	8,5	4,0	4 x 1,5 [1]	1020	302	250	196	5,6
FU-B 12	5457	12,0	5,5	4 x 1,5 [1]	1020	302	250	196	5,7
FU-B 17	5458	17,0	7,5	4 x 1,5 [1]	1020	302	250	196	5,9
Basic version with all-pole effective sine filter for 3 ph. alternating current fans, 400 V, 50/60 Hz, protection to IP 54									
FU-BS 2,5	5459	2,5	[2]	4 x 1,5	1028	284	240	115	2,7
FU-BS 5,0	5460	5,0	[2]	4 x 1,5	1028	302	250	196	5,2
FU-BS 8,0	5461	8,0	[2]	4 x 1,5	1028	302	250	196	6,3
FU-BS 10	5462	10,0	[2]	4 x 1,5	1028	302	250	196	6,8
FU-BS 14	5463	14,0	[2]	4 x 1,5	1028	302	250	196	6,9
Comfort version without sine filter for 3 ph. alternating current fans, 400 V, 50/60 Hz, protection to IP 54									
FU-C 25	5464	25,0	11	5 x 4,0 [1]	1030	355	280	239	12,5
FU-C 32	5465	32,0	15	4 x 6,0 [1]	1030	524	386	283	24,5
FU-C 39	5466	39,0	18,5	4 x 10,0 [1]	1030	524	386	283	26,3
FU-C 46	5467	46,0	22	4 x 10,0 [1]	1030	524	386	283	26,3
FU-C 62	5468	62,0	30	4 x 16,0 [1]	1030	524	386	283	26,3
Comfort version with all-pole effective sine filter for 3 ph. alternating current fans, 3~, 400 V, 50/60 Hz, protection IP 54									
FU-CS 18	5469	18,0	[2]	4 x 2,5	1032	302	250	196	9,1
FU-CS 22	5470	22,0	[2]	5 x 4,0	1032	355	280	239	14,5
FU-CS 32	5471	32,0	[2]	4 x 6,0	1032	525	386	283	29,6
FU-CS 40	5472	40,0	[2]	4 x 10,0	1032	525	386	283	29,6
FU-CS 50	5473	50,0	[2]	4 x 16,0	1032	525	386	283	32,8

[1] max. 10 m shielded, motor power supply and motor protection laid separately [2] For the design the max. current of all connected fans is relevant

	FU-B and FU-BS
Analog inputs	1 x 0-10 V, Ri 100 kOhm or 0-20 mA
Logic inputs	1 x digital 24V, release
Analog output	–
Relay output	1 x closer 250V/2A ind.
Suppy for modules	1 x 10 V DC, 10 mA 1 x 24 V DC, 70 mA
Motor temperature monitoring	Thermal contact or PTC

	FU-C and FU-CS
Analog inputs	2 x 0-10 V, Ri 100 kOhm or 0-20 mA, or KTY
Logic inputs	2 x digital 24V, function can be parameterized
Analog output	1 x 0-10 V DC, 10 mA
Relay output	2 x changeover 250V/2A ind.
Suppy for modules	1 x 10 V DC, 10 mA (in the analog output) 1 x 24 V DC, 70 mA
Motor temperature monitoring	Thermal contact or PTC

■ Universal controller EUR 6 C Electronic control automatic with power supply unit operating on the phase control principle.

□ Operation

For control of central ventilation systems or for stepless control of one or several speed controllable 1 ph. fans.
In domestic, commercial, industrial and agricultural applications.

□ Control functions

Simple and quick start-up of parameters via integrated "start-up wizard". Depending on the connected sensor a control can be carried out according to following control variables:

- **Manual speed control**, e.g. adjustable via keyboard
- **Temperature standard** (required accessory, temperature sensor LTR 40 or LTK 40)
- **Temperature with additional functions** hard-wired, (required accessory, temperature sensor LTR 40 or LTK 40)
- **Differential temperature control** (required accessory, temperature sensor LTR 40 or LTK 40)
- **Differential pressure standard** (required accessory, differential air pressure sensor LDF 500)
- **Differential pressure with outside temperature compensation** (required accessory, diffferential air pressure and temperature sensor LDF 500 and LTR 40 or LTK 40). Ideally used in central extract ventilation systems according to DIN 18017 in domestic applications.
- **Air velocity** (required accessory, air velocity sensor LGF 10)

The required sensor is to be ordered as accessory separately. The control ranges are freely adjustable within the sensor's range.

The aligned output voltage according to nominal value and current value is between 0 % (35 V) to 100 % (correspond to approx. 80 V – 230 V).

The selection of minimum and maximum values are possible.

- Main switch with positions:
  "0" = Controller off
  "I" = Automatic operation
  "230 V" = uncontrolled direct supply.

Inputs and outputs:

Outputs:
- 1 x motor connection based on phase control principle.
- 1 x analogue output 0–10 V control of e.g. a frequency inverter, shutter, EC-motor.
- 2 x voltage free relays, programmable, alarm, heating or status signals.

Inputs:
- 2 x sensor inputs, programmable on the particularly needed sensor type.
- Connection of thermal contacts for motor protection.

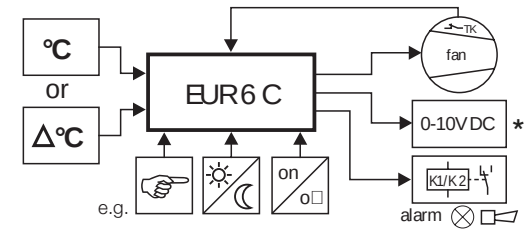
The whole system stops when a thermal contact trips. It must be restarted manually after the motor has cooled down.
- 2 x digital inputs, programmable to enable, external interference, limit on/off, switching night time mode, internal/external, automatic/manual, reset, max. speed on/off.

Settings
- Stepless selection of nominal values and control range
- Min./max. power (speed) limitation
- On/off switching of minimum air flow volume
- Setting for a switched output e.g. for a heater via programmable relay
- Stepless selection for alarm indication at over and under temperature, Output on display or additionally on relay
- Min. and max. shutter opening
- Reverse control functions
- Continuous control of ventilation dampers
- The setting is carried out through a dirt resistant membrane keyboard

□ Display
- Multi functions LC-display
- Numerical nominal and actual value display with scale
- Symbols (alarm, heater, selection)
- Bar graph/level indicator
- Text display for menu, status and fault indications

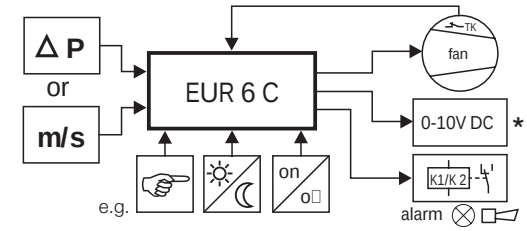
EUR 6 C

Mode 2.03: Temperature control with additional function
Mode 2.05: Differential temperature control



* e.g. for EC-Motor, shutter, frequency inverter

Mode 4.01: Differential pressure control
Mode 6.01: Air velocity control



* e.g. for EC-Motor, shutter, frequency inverter

EUR 6 C	Ref.No. 1321
Voltage	230 V, 1 ph., 50/60 Hz
max. current	6 A
Required minimum current	0.2 A
Controlled output voltage	0 – 100 %
Control range temperature	0 – 40 °C
Control range pressure	0 – 500 Pa
Control range velocity	0 – 10 m/s
Permitted ambient temperature	0 to +40 °C
Protection to	IP 54
Casing	Surface mounted installation, polymer, light gray
Dimensions mm	W 223 x H 200 x D 131
Weight	ca. 1,4 kg
Wiring diagram	SS-911

□ Note

Electronic speed controllers may produce motor humming. For noise critical applications transformer controllers to be used.

■ Required accesories

LDF 500 Ref.No. 1322
Differential air pressure sensor
Range 0 – 500 Pa

LGF 10 Ref.No. 1325
Air velocity sensor
Range 0 – 10 m/s

LTA 40 Ref.No. 1336
Temperature sensor for outside
Range –20 to +60 °C

LTK 40 Ref.No. 1324
Temperature sensor for in-duct installation
Range 0 to +40 °C

LTR 40 Ref.No. 1323
Room temperature sensor
Range 0.5 to +40 °C

ESD

The Helios range of speed controllers offer a simple solution between fans and building management systems!

■ Common features

- ☐ Control via analogue 0–10 V input signal on the building site, electronic control system EUR 6 C or other control units.
- ☐ A number of different fans can be controlled by one controller up to its maximum load.
- ☐ Several controllers can be controlled in parallel by a building management system that allows the ventilation to be divided in several fans or fan units and therefore in several circuits.

■ Accessories for both ranges

An universal control unit with 10 V can be used if the fans are not controlled by a building management system.

EUR 6 C Ref. No. 1321
For specification see the page of electronic control system.

■ Specification ESD

Convenient, stepless, electronic speed controller for 3 ph. fans, which can be controlled via phase control through voltage lowering (except KVD.. Ex models).
The most modern technology by use of micro controllers.

■ Adjusting possibilities/Display

- ☐ On/off and stepless speed selection via rotary potentiometer.
- ☐ 0-10 V input. Thereby can be remote controlled by an external rotary potentiometer (22 kOhm).
- ☐ 3 ph. phase monitoring, Protection against phase failure.
- ☐ Smooth start-up function.
- ☐ Automatic minimum initial voltage 80 V.
- ☐ Fulfills EMV requirements class B, no need for shrouded wiring between unit and motor.
- ☐ LEDs as status and fault display.
- ☐ Integrated protection for electronics against overload.
- ☐ Motor full protection through monitoring the thermal contacts of motors.

■ Casing

- ☐ Polymer casing, light grey with wide cooling element.
- ☐ Can be used directly even in dirty areas (e.g. kitchen) through the protection to IP 65.

■ Model range

Type	Ref.No.	Output current	Power input	Wiring diagram	Dimensions H	W	D	Cooling element width	Weight	Protection to
		A	kW	No.	mm	mm	mm	mm	kg	IP
For alternating current fans, 3 ph., 400 V, 50/60 Hz										
ESD 5	0501	5,0	2,2	831	160	115	165	23	1,5	65
ESD 11,5	0502	11,5	5,5	831	160	160	165	68	1,7	65

MWS

Transformer speed contr. MWS with motor full protection facility
1 ph. alternating current, 230 V
Five step speed controller with integrated tripping unit for 230 V, 1 ph. fans. To connect thermal contacts wired to the terminal box. A number of fans can be controlled up to the nominal load. If a thermal contact trips all fans will be disconnected. Step switch and control lamp included. Restarting via "0" position after interference or power cut off.

Type	Ref. No.	I max. A	Casing IP 54 made of	Dimensions in mm W	H	D	Weight approx. kg
MWS 1,5	1947	1,5	Polymer	200	254	98	3,0
MWS 3	1948	3,0	Polymer	200	254	98	4,0
MWS 5	1949	5,0	Polymer	200	254	167	5,3
MWS 7,5	1950	7,5	Polymer	236	316	188	10,0
MWS 10	1946	10,0	Polymer	236	316	188	13,5

Connection according to wiring diagram No. SS-440.4

RDS

Transformer speed controller RDS with motor full protection facility
3 ph. alternating current, 400 V
Five step speed controller with integrated thermal contact tripping unit for 400 V, 3 ph. alternating current fans. To connect thermal contacts wired to the terminal box. A number of fans can be controlled up to the nominal load. If a thermal contact trips all fans will be disconnected. Step switch and control lamp included. Restarting via "0" position after interference or power cut off.

Type	Ref. No.	I max. A	Casing IP 54 made of	Dimensions in mm W	H	D	Weight approx. kg
RDS 1	1314	1,0	Polymer	236	316	128	6,0
RDS 2	1315	2,0	Polymer	236	316	128	9,7
RDS 4	1316	4,0	Polymer	236	316	128	10,5
RDS 7	1578	7,0	Steel	300	300	150	21,0
RDS 11	1332	11,0	Steel	300	400	200	26,0

Designed to comply with VDE 0550, fully impregnated transformers in V switching.
Max. permitted ambient temperature + 40 °C. Wiring diagram-No. SS-139..

TSW

Transformer speed contr. TSW
For one or more alternating current fans.
1 ph. alternating current, 230 V

Type	Ref. No.	I max. A	Dim. in mm W	H	D
TSW 1,5	1495	1,5	154	200	79
TSW 3,0	1496	3,0	154	200	148

Wiring diagram SS-960

TSD

Speed control transformer TSD
As TSW, but for 3 phase fans.
3 ph. alternatin current, 400 V

Type	Ref. No.	I max. A	Dim. in mm W	H	D
TSD 1,5	1501	1,5	200	254	167
TSD 3,0	1502	3,0	200	254	167
TSD 5,5	1503	5,5	300	300	150
TSD 7,0	1504	7,0	300	300	150

Wiring diagram SS-436.2

Pole switches
– for separate windings PGWA
– for Dahlander windings PDA

For surface mounting
Surface mounted operation switch for pole-switching fans

Type	Ref.No.	Current	SS-No.
For separate windings			
PGWA 12	5083	AC 3/5,5 kW 12 A	345
PGWA 25	5061	AC 3/11 kW 25 A	345
For Dahlander windings			
PDA 12	5081	AC 3/5,5 kW 12 A	733[1)]
PDA 25	5060	AC 3/11 kW 25 A	733[1)]
PDA 63	1283	AC 3/37 kW 63 A	733[1)]
PDA 115	1352	AC 3/65 kW 115 A	733[1)]

[1)] For motors without TK: SS-732

Technical data for all models

Voltage	400 V, 3 ph., 50/60 Hz
Protection to	IP 65

Type	Dimensions mm W	H	D	Weight kg
P.. 12	82	82	130	0,4
P.. 25	92	92	140	0,5

Pole switches
– for separate windings PGWU
– for Dahlander windings PDU

For flush mounting

Pole switch PGWU / PDU
Flush mounted operation switch for pole changing fans.

Type	Ref.No.	Current	SS-No.
For separate windings			
PGWU 12	5084	AC 3/5,5 kW 12 A	345
For Dahlander windings			
PDU 12	5082	AC 3/5,5 kW 12 A	733[1)]

[1)] For motors with thermal contacts; without TK: Connection to wiring diagram-No. SS-732

Technical data for both models

Voltage		400 V, 3 ph., 50/60 Hz
Protection to		IP 30
Dim. mm	Installation depth	87
	Excess length	40
	Cover plate	80 x 80
Delivery		incl. flush mounting box
Weight		approx. 0.2 kg

Reverse and pole switch
– for separate windings PWGW
– for Dahlander windings PWDA

For surface mounting

PWGW Ref.No. 1281
For separate windings

PWDA Ref.No. 1282
For Dahlander windings

To switch speed and air flow direction of pole changing fans. Grey polymer casing.

Technical data for both models

Voltage	400 V, 3 ph., 50/60 Hz
Current	AC 3 / 7.5 kW
Protection to	IP 55
Dimensions mm	W 96 x H 105 x D 147
Weight approx.	0.5 kg
Wiring diagram-No. for PWGW	SS-13
Wiring diagram-No. for PWDA	SS-11

Speed reversing switches DS 2..

– for two speed three phase Y/Δ fans

DS 2 Ref.No. 1351
On/off and speed reversing switch for two speed three phase Y/Δ fans. Grey polymer casing for surface mounting.

Technical data for both models

Voltage	400 V, 3 ph., 50/60 Hz
Current	AC 3 / 5.5 kW / 12 A
Dimensions mm	W 82 x H 82 x D 130
Weight	approx. 0.4 kg
Protection to, DS 2	IP 65
Wiring diagram-No. for DS 2	SS-87

– for two speed alternating current fans (SlimVent, RR)

DS 2/2 Ref.No. 1267
On/off and speed reversing switch for two speed 1 ph. fans, RR and SlimVent SVR, SVS.

Protection to, DS 2/2	IP 54
Wiring diagram-No. for DS 2/2	SS-934

Isolator switches RHS

RHS 3 + 1 Ref.No. 1594
Position “0” is lockable via padlock. Conforms to DIN EN 60204 T.1 / VDE 0113-1. Polymer casing for surface mounting. 3-pole isolator with additional terminals, for single speed and speed controlled fans.

Technical data

Voltage	400 V, 3 ph., 50 Hz
Current	
– Main contact	AC 3 / 5.5 kW 12 A ind.
– Auxiliary contact	AC 3 / 2.2 kW 4 A ind.
Protection to	IP 54
Dimensions mm	W 101 x H 126 x D 104
Weight approx.	0.35 kg
Wiring diagram-No.	SS-505.2

RHS 6 + 2 Ref.No. 1595
Position “0” is lockable via padlock. Conforms to DIN EN 60204 T.1 / VDE 0113-1. Polymer casing for surface mounting. 6-pole isolator with 2 additional terminals, for all pole changing fans..

Technical data

Voltage	400 V, 3 ph., 50/60 Hz
Current	AC 3 / 5.5 kW
Protection to	IP 65
Dimensions mm	W 82 x H 82 x D 125
Weight approx.	0.3 kg
Wiring diagram-No.	SS-505.3

Motor protection
Regulations and standards

The harmonised European standards and national installation directives require thermal overload protection for electric motors. This can be achieved in various ways and depends on the motor specification.

☐ Optimal protection is provided by thermal contacts (“TK” consecutively), which monitor the motor winding temperature. These contacts protect also the speed controlled motors.

☐ For low motor powers,the thermal contacts are wired in series with the motor windings, in other words, they are internally wired. This ensures an automatic function (resetting after cooling), without the operator reacting necessarily on the inter-ference.

☐ For motors/fans with higher performances the leads of the thermal contacts or PTC thermistor-temperature sensor are wired to the terminal block and must be connected to the adjacent motor full protection/ tripping units. Only under this condition is the warranty claim valid.

☐ Motors/fans without thermal monitoring elements in the windings (e. g. IEC norm motors) must be secured on all poles by a suitable motor protection switch.

☐ Information	Page
Transformer controllers with motor full protection unit	
– for 1 ph. motors MWS	149
– for 3 ph. motors RDS	149

For 1 ph. fans with thermal contact leads wired to the terminal block

Motor full protection switch MW
Operation and full protection unit in polymer casing for surface mounting or installation in fuse board (clamping assembly for support rail).

MW Ref.No. 1579
On/off operation via push-button switch. Manual reset function interference.
Volt free auxiliary contact for connection of failure indication alarm.
230 V, 1 ph., 50/60 Hz, applicable from 80 V
Nominal current 0.4 to 10 A
Protection to IP 55 Weight approx. 0.5 kg
Dimensions mm W 80 x H 140 x D 95
Wiring diagram-No. SS-517

For 3 ph. fans with thermal contacts

Motor full protection switch MD
Operation and full protection unit in polymer casing for surface mounting or installation in fuse board (clamping assembly for support rail).

MD Ref.No. 5849
On/off operation via push-button switch. Manual reset function interference.
Volt free auxiliary contact for connection of failure indication alarm.
400 V, 3 ph., 50/60 Hz, applicable from 80 V
Nominal current 0.1 to 25 A
Protection to IP 55 Weight approx. 0.5 kg
Dimensions mm W 80 x H 140 x D 95
Wiring diagram-No. SS-518

For pole changing 3 ph. fans with separate windings and thermal contacts

Motor full protection switch M 2
Switching and full protection unit in light grey polymer casing with control lamp for surface mounting.

M 2 Ref.No. 1292
If the thermal contact opens the motor disconnects from the supply. Restarting after interference via “0“ position on the switch.

Voltage 400 V, 50/60 Hz
Power AC 3 / 5.5 kW
Nominal current approx. 12 A
Protection to IP 55 Weight approx. 1.0 kg
Dimensions mm W 170 x H 135 x D 115
Wiring diagram-No. SS-142

For pole changing 3 ph. fans with Dahlander windings and thermal contacts
Motor full protection switch M 3
Design and functions as M 2
For two speed 3 ph. fans with Y/Δ switching and thermal contacts
Motor full protection switch M 4
Design and function as M 3

M 3 Ref.No. 1293
As M 2, but suitable for pole changing 3 ph. fans with Dahlander windings and built-in thermal contacts.
Dimensions mm W 170 x H 135 x D 135
Wiring diagram-No. SS-143

M 4 Ref.No. 1571
As M 3, but suitable for two speed 3 ph. fans with Y/Δ switching and built-in thermal contacts.
Wiring diagram-No. SS-144

For 3 ph. fans with built-in positive temperature coefficient thermistors (PTC temperature sensors) for thermal motor protection. Specified for use in speed controlled, explosion proof fans.

Motor full protection switch MSA
Tripping unit with manual reset for 1 to 6, PTC thermistors wired in series.

MSA Ref.No. 1289
For thermal protection of electric motors to DIN 44081 and 44082 (by guideline 94/9/EG (ATEX)). If the nominal response temperature in PTC thermistors reaches a set limit the built-in relay disconnects the motor. The fault is indicated by a light emitting diode. Restarting via pressing the “Reset” button or an external switch. Casing made of polymer, suitable for fuse board installation on support rail according to DIN EN 60715.
Voltage 230 V ± 15 %, 50/60 Hz
3 phase operation via contactor
Current at 230 V 3 A AC 15
Connection options 1 to 6 PTCs in series
Tested by Physikalisch-Technische Bundesanstalt, according to DIN EN 60079-14/ VDE 0165, DIN EN 60079-0/VDE 0170-1 or DIN EN 60079-10/VDE 0165 T. 101
Protection to IP 20 Weight approx. 0.2 kg
Dimensions mm W 35 x H 90 x D 58
Wiring diagram-No. SS-325.1

The unsurpassed wide Helios program offers integrated complete solutions for diverse areas of application in ventilation-, heating-, cooling- and drying sectors. Innovative standard products are complemented with customised projects. Impeller diameters up to 7.10 m and flow rates up to 2.2 million m³/h underline the ventilation competency of the traditional brand Helios.

In addition, Helios makes often with unusual projects a name of itself. Whether with a simulator for prospective skydiver or the first artificially generated tornado with 22 m in height. Even with the indoor surfing Helios fans provide for the necessary stiff breeze with wind force from up to approx. 7 Beauforts. The sport has also top priority in the Helios Arena, the home stadium of Schwenningen's professional hockey team, "Wild Wings".

Special designs for every ventilation demands.

The core competencies of Helios include the production of special solutions that are developed according to specific individual requirements in dialogue with the customer.

The adjacent mobile fan units are hydraulically adjustable and produce up to 150 000 m³/h. A downstream guide vane provides a linear flow pattern and allows the realistic simulation of different flow situations.

Strong in safety-relevant application

For safety-related applications the Helios program contains smoke and heat exhaust as well as explosion-proof fans in all pressure and performance ranges.

The picture shows axial roof fans with each 1 800 mm in impeller diameter and a total capacity of 1.2 million m³/h They ensure the heat extraction from transformer halls.

The professionals choice

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