Plug fans with EC motor

version 10/2009

The engineer's choice

ebmpapst

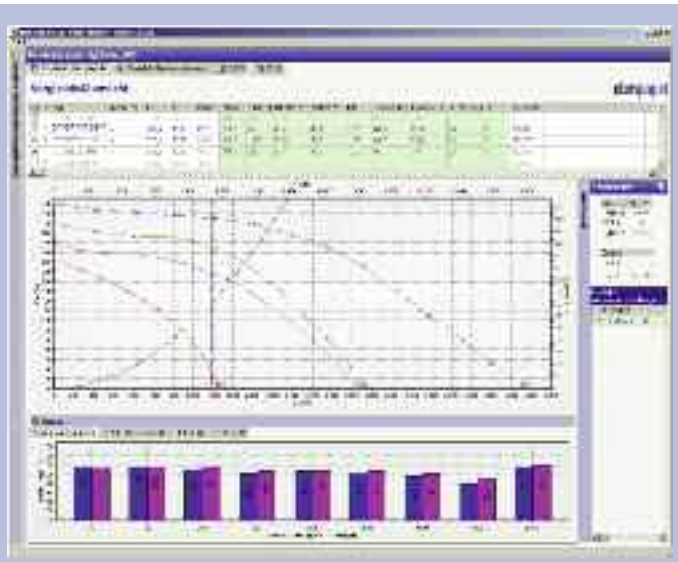
New Plug fans with EC motor

The newly improved ebm-papst Plug Fans meet the ever tougher specifications in air-conditioning and ventilation. Our Plug Fans are designed for operation without scroll housing and for use in air-conditioning units. Further fields of applikation are, for instance, cooling of power electronics and various other applications in industry.

In view of the upcoming directives on minimum efficiencies, the overall efficiency of the fans was optimised. On top of this, the acoustic characteristics of the new line were adjusted to more demanding market requirements.

There are 8 sizes available, with their outer diameters ranging from 250 to 560 mm, which are driven by energy-saving EC external rotor motors with drive capacities between 400 W and 6 kW.

The welded impellers with their 7 backward curved blades are made of aluminium as this minimises the bearing load of the motors and maximises durability with high circumferential velocity. The position of the impellers on the EC external-rotor motors has been optimised to in terms of aerodynamics and installation requirements.



Additional, and for selecting the proper fan, you can take advantage of the ebm-papst software "Product Selector" with integrated “Black-Box" module for integration in system configuration programmes on customer side. For more detailed information, simply ask your ebm-papst contact!

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EC Centrifugal fan modules

K3G 250 to K3G 560

Text for tenders

ebm-papst high performance centrifugal fan modules
Single inlet; direct drive; 2D centrifugal impeller with circumferential diffuser mounted on an electronically commutated external-rotor motor with integrated electronics; backward curved impeller blades; inlet nozzle made of galvanised sheet steel with pressure relief; complete unit statically and dynamically balanced in two planes according to DIN / ISO 1940 and to balancing quality G 6.3; EC external-rotor motor with maintenance-free ball bearings and permanent lubrication; wide voltage input 1~200-277V, 50/60 Hz respectively 3~380-480V, 50/60Hz; unit can be operated on all standard Electricity Board networks at identical air performance; optimised motor technology; soft start; integrated current limitation; connection via brought-out variable cable connector (motor size 084) or via easy-to-mount and robust integrated terminal box made of aluminium with spring loaded terminals (motor sizes 112 and 150); extremely compact electronics; with adjustable PID controller (motor sizes 112 and 150); meets all necessary EMC directives and all requirements as to current reverse transfer; no complicated installation with shielded cables required; very low-noise commutation logic; 100% controllability.
If structure-borne noise needs to be decoupled, any such action has to be taken by the customer.

Optionally: Modules with higher protection against corrosion.

For technical details, dimensions and connection - see data sheet

K3G 250-AT39 -72 / -74
K3G 250-AV29 -B2 / -B4
K3G 280-AT04 -72 / -74
K3G 280-AU06 -B2 / -B4
K3G 280-AU06 -C2 / -C4
K3G 310-AX52 -02 / -32
K3G 355-AX56 -02 / -32
K3G 355-AY40 -02 / -32
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K3G 560-AQ04 -03 / -33
K3G 310-AZ88 -02
K3G 450-AZ26 -03

Protective features

- Alarm relay with zero-potential change-over contacts (250 V AC/2 A, cos φ = 1)
- Locked-rotor protection
- Phase failure detection
- Soft start of motors
- Mains under-voltage detection
- Over-temperature protection of electronics and motor
- Short-circuit protection

Technical data

- Air flow	V	=	_____ m^3/h
- Static pressure	ΔP_F	=	_____ Pa
- Voltage range	U	=	_____ V
- Frequenzy	f	=	_____ Hz
- Fan speed	n	=	_____ min^{-1}
- Power input	P_1	=	_____ kW
- Current input	I	=	_____ A
- Noise level	L_P	=	_____ dBA
- Perm. ambient temperature	t	=	_____ °C
- Fan mass		=	_____ kg
- Approvals		=	_____

Fan type

_____

EC centrifugal fans

R3G 250 to R3G 560

Text for tenders

ebm-papst high performance centrifugal fans

Single inlet; direct drive; 2D centrifugal impeller with circumferential diffuser mounted on an electronically commutated external-rotor motor with integrated electronics; backward curved impeller blades; inlet nozzle made of galvanised sheet steel; complete unit statically and dynamically balanced in two planes according to DIN / ISO 1940 and to balancing quality G 6.3; EC external-rotor motor with maintenance-free ball bearings and permanent lubrication; wide voltage input 1~200-277V, 50/60 Hz respectively 3~380-480V, 50/60Hz; unit can be operated on all standard Electricity Board networks at identical air performance; optimised motor technology; soft start; integrated current limitation; connection via brought-out variable cable connector (motor size 084) or via easy-to-mount and robust integrated terminal box made of aluminium with spring loaded terminals (motor sizes 112 and 150); extremely compact electronics; with adjustable PID controller (motor sizes 112 and 150); meets all necessary EMC directives and all requirements as to current reverse transfer; no complicated installation with shielded cables required; very low-noise commutation logic; 100% controllability.

For technical details, dimensions and connection - see data sheet

Protective features

- Alarm relay with zero-potential change-over contacts (250 V AC/2 A, cos φ = 1)
- Locked-rotor protection
- Phase failure detection
- Soft start of motors
- Mains under-voltage detection
- Over-temperature protection of electronics and motor
- Short-circuit protection

Technical Data

- Air flow	V	= _____	m^3/h
- Static pressure	ΔP_F	= _____	Pa
- Voltage range	U	= _____	V
- Frequenzy	f	= _____	Hz
- Fan speed	n	= _____	min^{-1}
- Power input	P_1	= _____	kW
- Current input	I	= _____	A
- Noise level	L_P	= _____	dBA
- Perm. ambient temperature	t	= _____	°C
- Fan mass		= _____	kg
- Direction of rotation		= clockwise	
- Approvals		= _____	

Fan type

_____

EC centrifugal fans and modules

backward curved, Ø 250

- **Material:** Support bracket: Steel, coated in black
  Support plate: Sheet aluminium
  Impeller: Sheet aluminium, laser-welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium
- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54
- **Insulation class:** "B"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

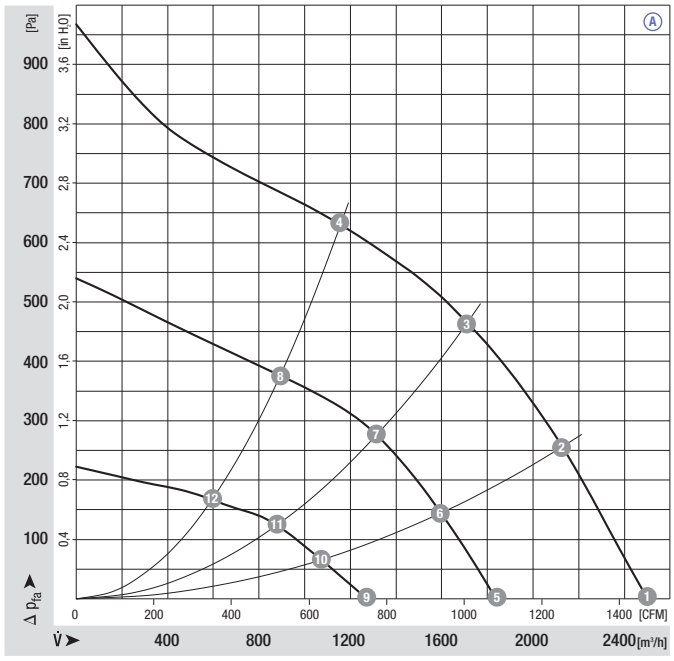
Nominal data

Type	Motor	Curve	Nominal voltage range	Frequency	Speed/rpm(1)	Max. power input(1)	Max. current draw(1)	Perm. amb. temp.	Electr. connection
			VAC	Hz	rpm	W	A	°C	p. 44
*3G 250	M3G 084-DF	Ⓐ	1~ 200-277	50/60	2920	420	2,50	-25..+40	K1)

subject to alterations

(1) Nominal data in operating point with maximum load and 230 VAC

Curves



	n [rpm]	P_1 [W]	I [A]	Lw_A [dB(A)]
Ⓐ 1	3095	360	2,15	86
Ⓐ 2	2965	396	2,35	81
Ⓐ 3	2920	420	2,50	73
Ⓐ 4	2935	404	2,40	73
Ⓐ 5	2270	137	0,88	80
Ⓐ 6	2220	163	1,03	78
Ⓐ 7	2180	180	1,14	70
Ⓐ 8	2220	169	1,07	70
Ⓐ 9	1565	56	0,40	74
Ⓐ 10	1525	62	0,43	72
Ⓐ 11	1510	68	0,47	67
Ⓐ 12	1520	64	0,44	60

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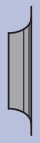
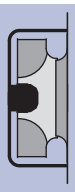
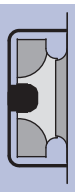
– **Technical features:**
  - PFC (passive)
  - Control input 0-10 VDC / PWM
  - Output 10 VDC max. 1.1 mA
  - Alarm relay
  - Over-temperature protected electronics / motor
– **EMC:** Interference emission acc. to EN 61000-6-3
  Interference immunity acc. to EN 61000-6-2
  Harmonics acc. to DIN EN 61000-3-2/3
– **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
– **Cable exit:** Variable
– **Protection class:** I
– **Product conforming to standards:** EN 61800-5-1, CE
– **Approvals:** UL, CSA; VDE, CCC, GOST are applied for



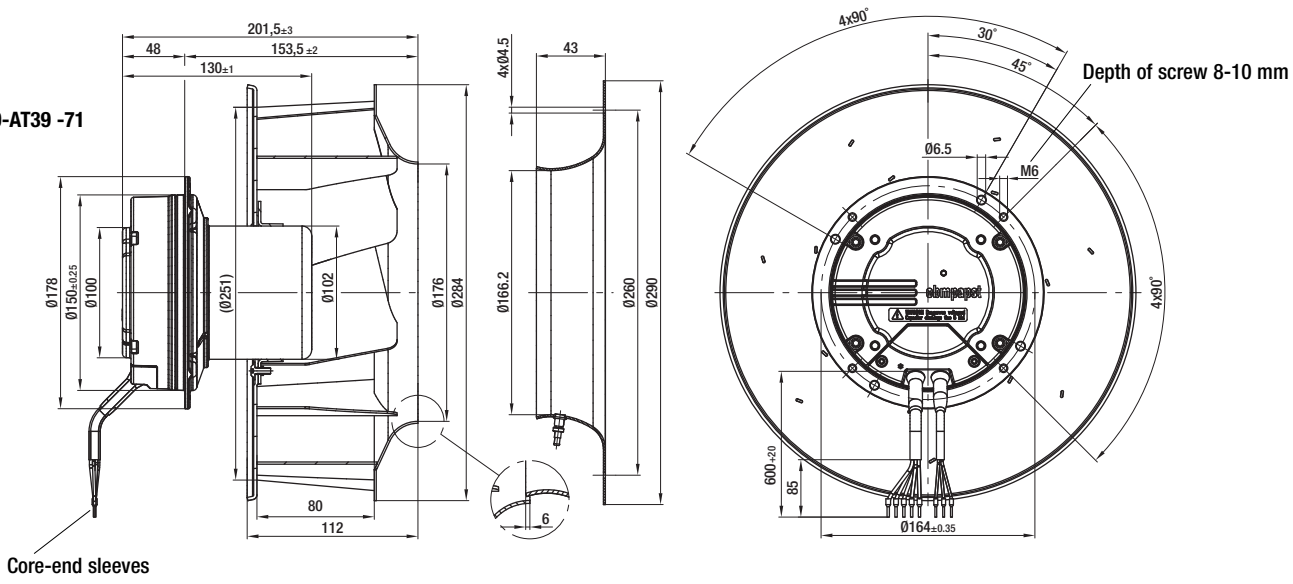




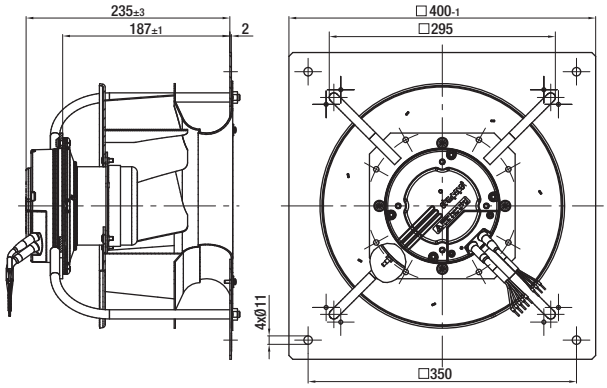
Centrifugal fan	Mass of centrifugal fan kg	Inlet nozzle with one pressure tap	Centrifugal module w. support bracket	Mass of centrifugal module with support bracket kg	Centrifugal module w. support bracket (2)	Mass of centrifugal module with support bracket kg
R3G 250-AT39 -71	4,5	25075-2-4013	**K3G 250-AT39 -72**	9,4	**K3G 250-AT39 -74**	9,4

(2) Centrifugal module with higher protection against corrosion

R3G 250-AT39 -71



K3G 250-AT39 -72 / -74



Inlet nozzle p. 42 | Guard grille p. 43 | Electr. connection p. 44

EC centrifugal fans and modules

backward curved, Ø 250

- **Material:** Support bracket: Steel, coated in black
  Support plate: Sheet aluminium
  Impeller: Sheet aluminium, laser-welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium
- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54
- **Insulation class:** "B"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

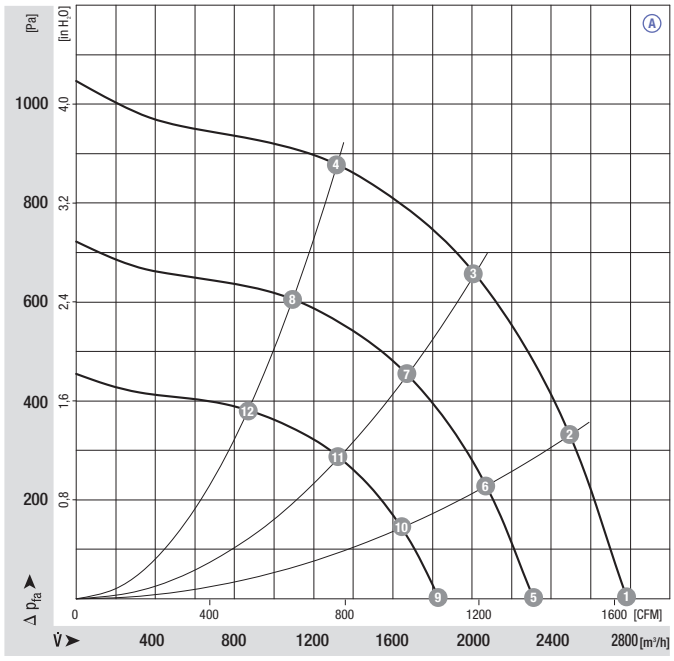
Nominal data

Type	Motor	Curve	Nominal voltage range	Frequency	Speed/rpm(1)	Max. power input(1)	Max. current draw(1)	Perm. amb. temp.	Electr. connection
			VAC	Hz	rpm	W	A	°C	p. 47
*3G 250	M3G 084-FA	Ⓐ	1~ 200-277	50/60	3450	690	4,12	-25..+40	L7)

subject to alterations

(1) Nominal data in operating point with maximum load and 230 VAC

Curves



		n [rpm]	P_1 [W]	I [A]	Lw_A [dB(A)]
Ⓐ	1	3450	496	2,96	88
Ⓐ	2	3450	620	3,67	85
Ⓐ	3	3450	690	4,12	76
Ⓐ	4	3450	649	3,86	77
Ⓐ	5	2865	284	1,70	84
Ⓐ	6	2865	355	2,10	81
Ⓐ	7	2865	396	2,36	72
Ⓐ	8	2865	372	2,21	73
Ⓐ	9	2275	142	0,85	79
Ⓐ	10	2275	178	1,05	76
Ⓐ	11	2275	198	1,18	67
Ⓐ	12	2275	186	1,11	68

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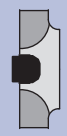
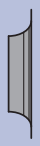
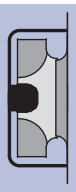
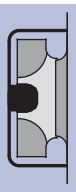
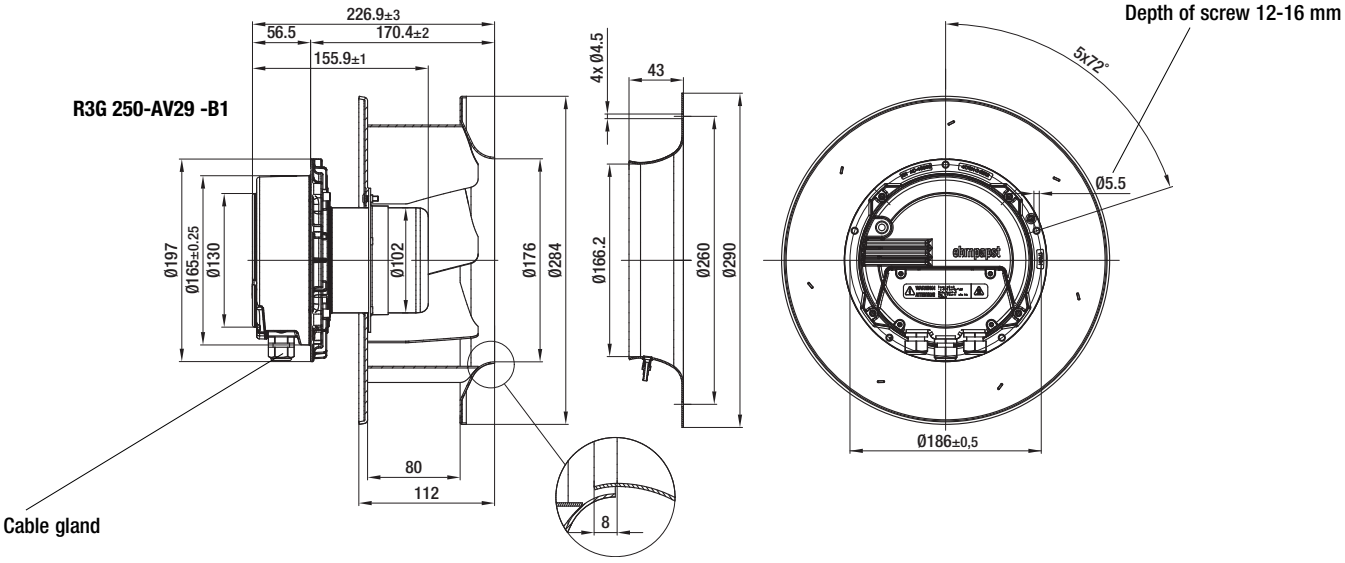
– **Technical features:**
  - PFC (active)
  - Integrated PID controller
  - Control input 0-10 VDC / PWM
  - Input for sensor 0-10 V or 4-20 mA
  - Slave output 0-10 V max. 3 mA
  - Output 20 VDC (±20 %) max. 50 mA
  - Output 10 VDC (+10 %) max. 10 mA
  - RS485 MODBUS
  - Alarm relay
  - Line undervoltage detection
  - Motor current limitation
  - Electronics / motor overtemperature protection
  - Locked-rotor protection
  - Soft start
– **EMC:** Interference emission acc. to EN 61000-6-3
  Interference immunity acc. to EN 61000-6-2
  Harmonics acc. to DIN EN 61000-3-2/3
– **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
– **Connection leads:** Via terminal strip
– **Protection class:** I (acc. to EN 61800-5-1)
– **Product conforming to standard:** CE
– **Approvals:** VDE, UL, CSA, CCC, GOST are applied for

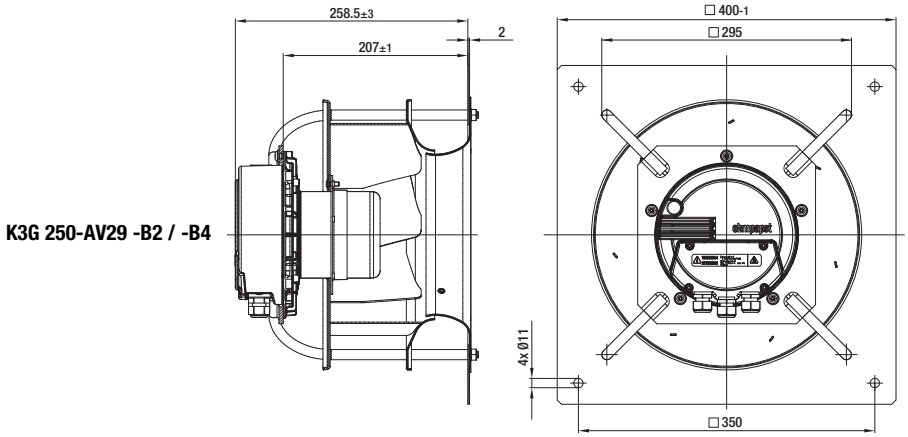
	Mass of centrifugal fan			Mass of centrifugal module with support bracket		Mass of centrifugal module with support bracket
Centrifugal fan	**kg**	**Inlet nozzle with one pressure tap**	**Centrifugal module w. support bracket**	**kg**	**Centrifugal module w. support bracket** (2)	**kg**
R3G 250-AV29 -B1	5,7	25075-2-4013	**K3G 250-AV29 -B2**	10,6	**K3G 250-AV29 -B4**	10,6

(2) Centrifugal module with higher protection against corrosion

R3G 250-AV29 -B1



K3G 250-AV29 -B2 / -B4



EC centrifugal fans and modules

backward curved, Ø 280

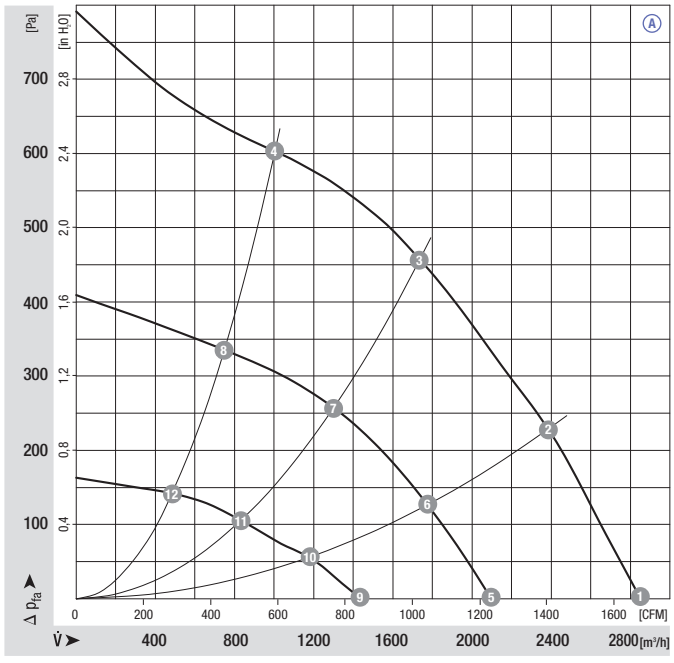
- **Material:** Support bracket: Steel, coated in black
  Support plate: Sheet aluminium
  Impeller: Sheet aluminium, laser-welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium
- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54
- **Insulation class:** "B"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage range	Frequency	Speed/rpm(1)	Max. power input(1)	Max. current draw(1)	Perm. amb. temp.	Electr. connection
Type	**Motor**		**VAC**	**Hz**	**rpm**	**W**	**A**	**°C**	p. 44
***3G 280**	M3G 084-FA	Ⓐ	1~ 200-277	50/60	2290	390	2,30	-25..+40	K1)

subject to alterations

(1) Nominal data in operating point with maximum load and 230 VAC

Curves



		n [rpm]	P_1 [W]	I [A]	Lw_A [dB(A)]
Ⓐ	1	2420	320	1,94	82
Ⓐ	2	2320	367	2,20	75
Ⓐ	3	2290	390	2,30	69
Ⓐ	4	2340	361	2,17	75
Ⓐ	5	1770	124	0,81	75
Ⓐ	6	1730	148	0,95	70
Ⓐ	7	1730	156	1,00	63
Ⓐ	8	1760	143	0,93	67
Ⓐ	9	1195	49	0,36	68
Ⓐ	10	1175	56	0,40	64
Ⓐ	11	1165	54	0,39	55
Ⓐ	12	1155	53	0,38	56

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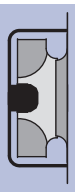
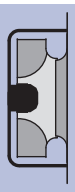
– **Technical features:**
  - PFC (passive)
  - Control input 0-10 VDC / PWM
  - Output 10 VDC max. 1.1 mA
  - Alarm relay
  - Over-temperature protected electronics / motor
– **EMC:** Interference emission acc. to EN 61000-6-3
  Interference immunity acc. to EN 61000-6-2
  Harmonics acc. to DIN EN 61000-3-2/3
– **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
– **Cable exit:** Variable
– **Protection class:** I
– **Product conforming to standards:** EN 61800-5-1, CE
– **Approvals:** UL, CSA; VDE, CCC, GOST are applied for

Mass of centrifugal fan



Mass of centrifugal module with support bracket

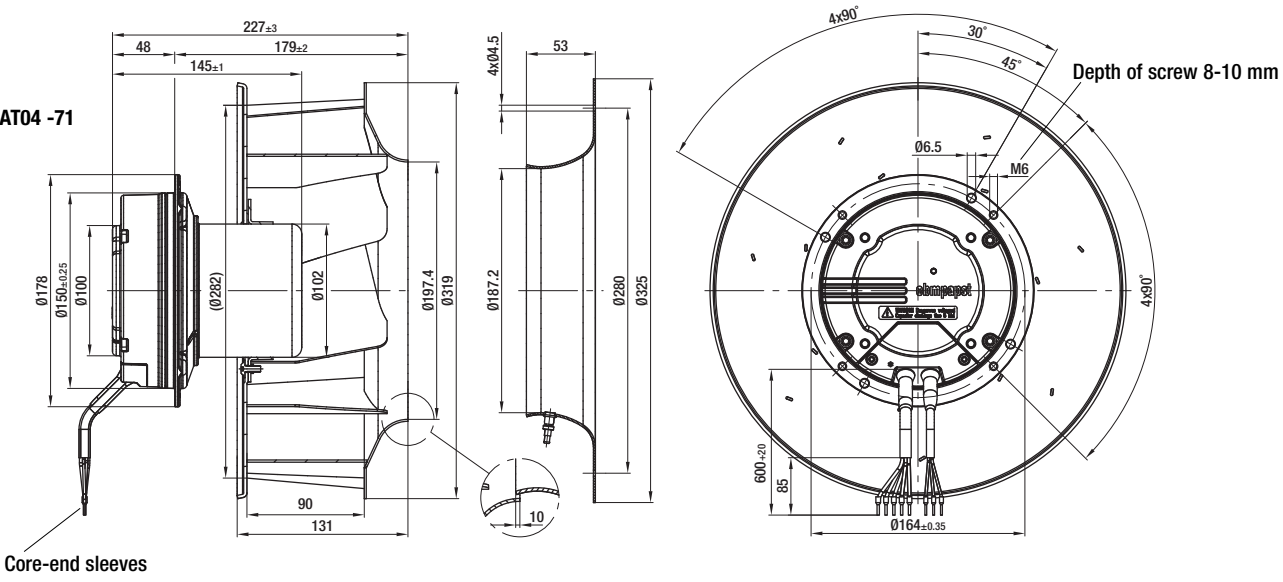


Mass of centrifugal module with support bracket

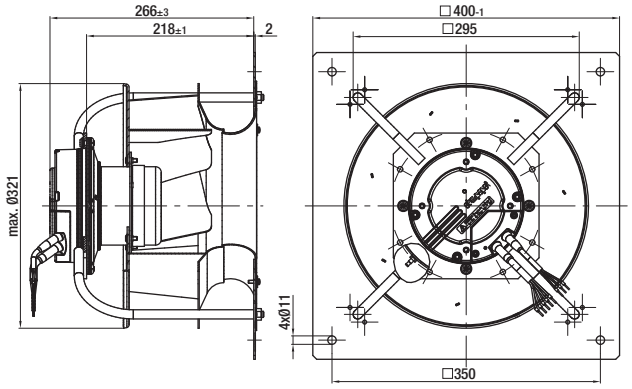
Centrifugal fan	kg	Inlet nozzle with one pressure tap	Centrifugal module w. support bracket	kg	Centrifugal module w. support bracket (2)	kg
R3G 280-AT04 -71	5,4	28075-2-4013	**K3G 280-AT04 -72**	10,4	**K3G 280-AT04 -74**	10,4

(2) Centrifugal module with higher protection against corrosion

R3G 280-AT04 -71



K3G 280-AT04 -72 / -74



Inlet nozzle p. 42
Guard grille p. 43
Electr. connection p. 44

EC centrifugal fans and modules

backward curved, Ø 280

- **Material:** Support bracket: Steel, coated in black
  Support plate: Sheet aluminium
  Impeller: Sheet aluminium, laser-welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium
- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54
- **Insulation class:** "B"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

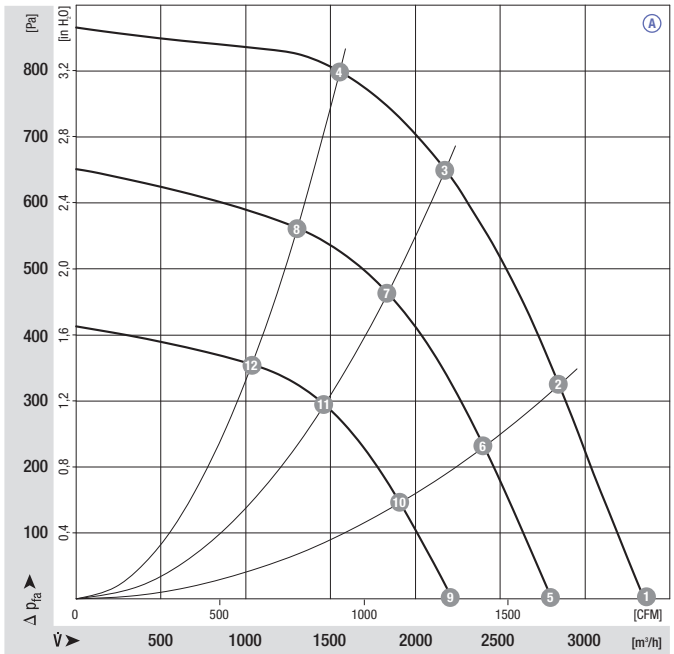
Nominal data

Type	Motor	Curve	Nominal voltage range	Frequency	Speed/rpm(1)	Max. power input(1)	Max. current draw(1)	Perm. amb. temp.	Electr. connection
			VAC	Hz	rpm	W	A	°C	p. 47
*3G 280	M3G 084-GF	Ⓐ	1~ 200-277	50/60	2800	670	2,93	-25..+40	L7)

subject to alterations

(1) Nominal data in operating point with maximum load and 230 VAC

Curves



	n [rpm]	P_1 [W]	I [A]	Lw_A [dB(A)]
Ⓐ 1	2800	435	1,90	83
Ⓐ 2	2800	580	2,52	79
Ⓐ 3	2800	670	2,93	76
Ⓐ 4	2800	629	2,74	79
Ⓐ 5	2325	260	1,14	79
Ⓐ 6	2325	349	1,53	75
Ⓐ 7	2325	396	1,74	73
Ⓐ 8	2325	355	1,55	72
Ⓐ 9	1850	138	0,64	74
Ⓐ 10	1850	179	0,81	71
Ⓐ 11	1850	207	0,92	69
Ⓐ 12	1850	183	0,83	68

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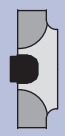
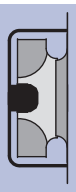
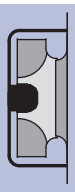
– **Technical features:**
  - PFC (active)
  - Integrated PID controller
  - Control input 0-10 VDC / PWM
  - Input for sensor 0-10 V or 4-20 mA
  - Slave output 0-10 V max. 3 mA
  - Output 20 VDC (±20 %) max. 50 mA
  - Output 10 VDC (+10 %) max. 10 mA
  - RS485 MODBUS
  - Alarm relay
  - Line undervoltage detection
  - Motor current limitation
  - Electronics / motor overtemperature protection
  - Locked-rotor protection
  - Soft start
– **EMC:** Interference emission acc. to EN 61000-6-3
  Interference immunity acc. to EN 61000-6-2
  Harmonics acc. to DIN EN 61000-3-2/3
– **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
– **Connection leads:** Via terminal strip
– **Protection class:** I (acc. to EN 61800-5-1)
– **Product conforming to standard:** CE
– **Approvals:** VDE, UL, CSA, CCC, GOST are applied for

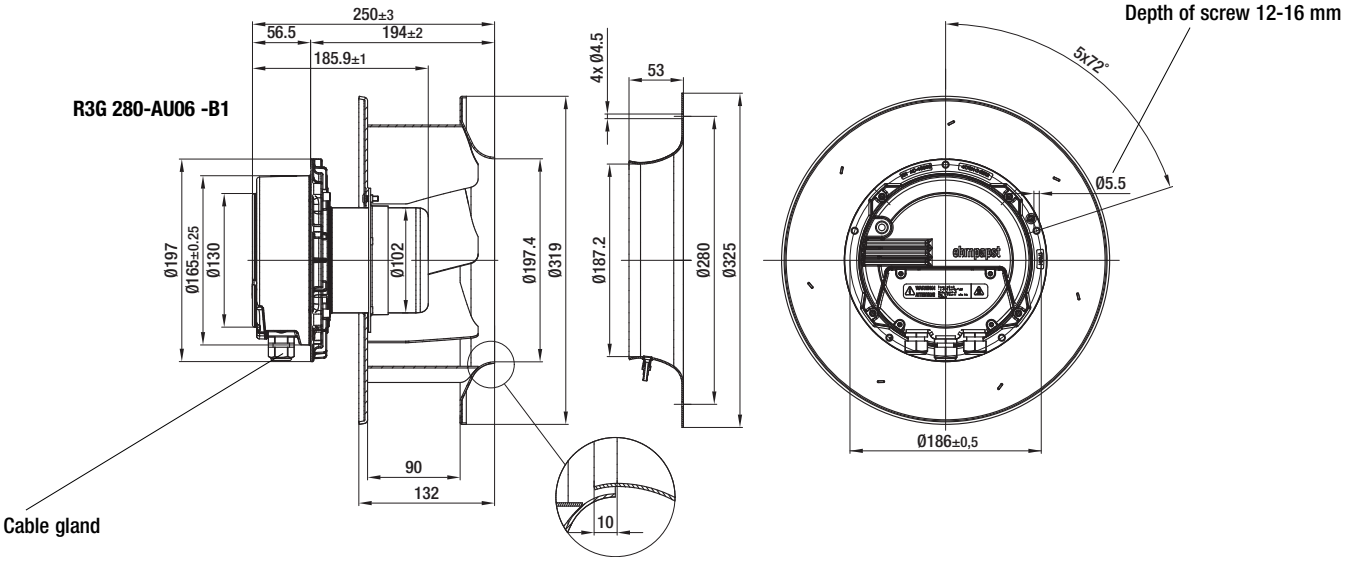


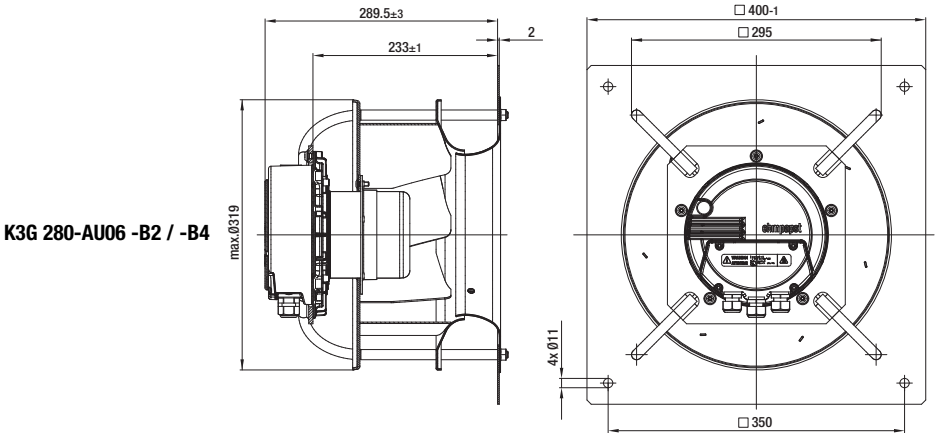
Centrifugal fan	Mass of centrifugal fan kg	Inlet nozzle with one pressure tap	Centrifugal module w. support bracket	Mass of centrifugal module with support bracket kg	Centrifugal module w. support bracket (2)	Mass of centrifugal module with support bracket kg
R3G 280-AU06 -B1	6,7	28075-2-4013	**K3G 280-AU06 -B2**	12,0	**K3G 280-AU06 -B4**	12,0

(2) Centrifugal module with higher protection against corrosion

R3G 280-AU06 -B1



K3G 280-AU06 -B2 / -B4



EC centrifugal fans and modules

backward curved, Ø 280

- **Material:** Support bracket: Steel, coated in black
  Support plate: Sheet aluminium
  Impeller: Sheet aluminium, laser-welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium
- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54
- **Insulation class:** "B"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** None
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

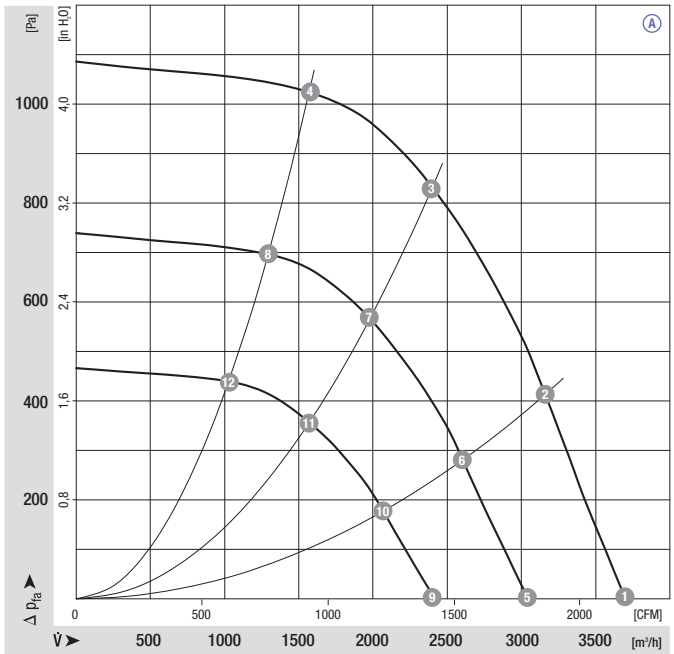
Nominal data

Type	Motor	Curve	Nominal voltage range	Frequency	Speed/rpm(1)	Max. power input(1)	Max. current draw(1)	Perm. amb. temp.	Electr. connection
			VAC	Hz	rpm	W	A	°C	p. 45
*3G 280	M3G 084-GF	Ⓐ	3~ 380-480	50/60	3100	940	1,60	-25..+60	L6)

subject to alterations

(1) Nominal data in operating point with maximum load and 230 VAC

Curves

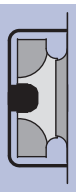
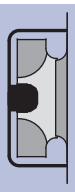


		n [rpm]	P_1 [W]	I [A]	Lw_A [dB(A)]
Ⓐ	1	3100	603	0,99	87
Ⓐ	2	3100	816	1,30	83
Ⓐ	3	3100	940	1,60	80
Ⓐ	4	3100	835	1,33	82
Ⓐ	5	2575	337	0,55	83
Ⓐ	6	2575	456	0,73	79
Ⓐ	7	2575	529	0,83	76
Ⓐ	8	2575	468	0,75	78
Ⓐ	9	2045	169	0,28	78
Ⓐ	10	2045	229	0,36	74
Ⓐ	11	2045	265	0,42	71
Ⓐ	12	2045	234	0,37	73

ebmpapst

– **Technical features:**
  - PFC (passive)
  - Integrated PID controller
  - Control input 0-10 VDC / PWM
  - Input for sensor 0-10 V or 4-20 mA
  - Slave output 0-10 V max. 3 mA
  - Output 20 VDC (±20 %) max. 50 mA
  - Output 10 VDC (+10 %) max. 10 mA
  - RS485 MODBUS
  - Alarm relay
  - Line undervoltage / phase failure detection
  - Motor current limitation
  - Electronics / motor overtemperature protection
  - Locked-rotor protection
  - Soft start
– **EMC:** Interference emission acc. to EN 61000-6-3
  Interference immunity acc. to EN 61000-6-2
  Harmonics acc. to DIN EN 61000-3-2/3
– **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
– **Connection leads:** Via terminal strip
– **Protection class:** I (acc. to EN 61800-5-1)
– **Product conforming to standard:** CE
– **Approvals:** VDE, UL, CSA, CCC, GOST are applied for

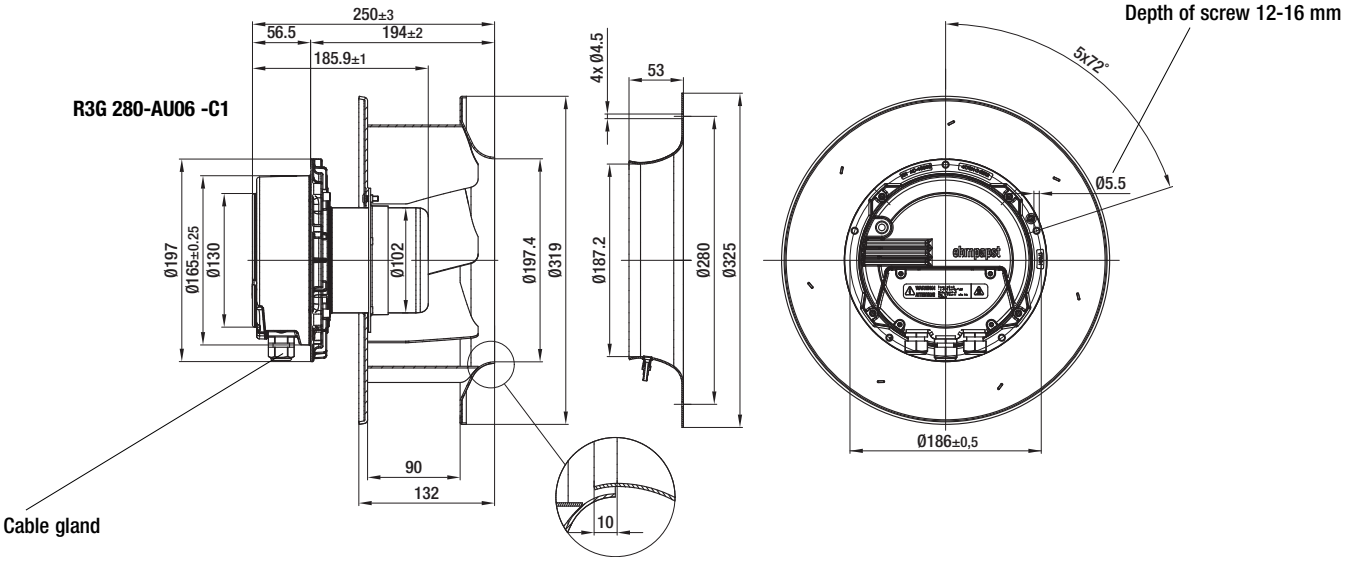


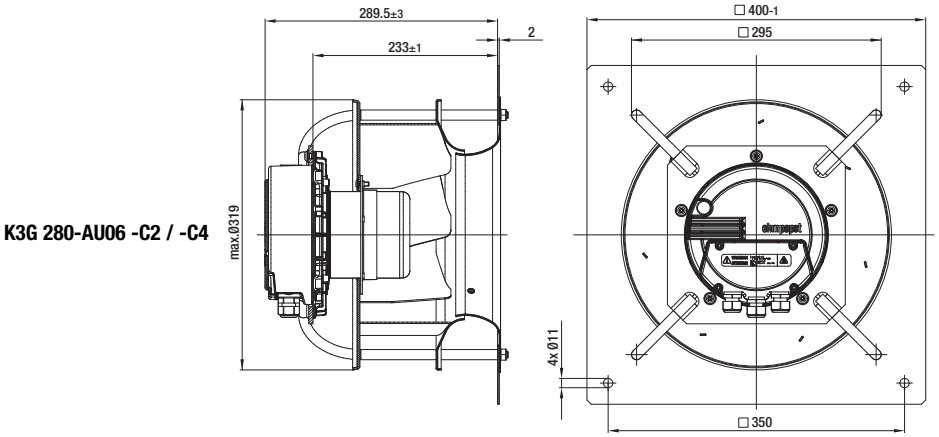
Centrifugal fan	Mass of centrifugal fan kg	Inlet nozzle with one pressure tap	Centrifugal module w. support bracket	Mass of centrifugal module with support bracket kg	Centrifugal module w. support bracket (2)	Mass of centrifugal module with support bracket kg
R3G 280-AU06 -C1	6,7	28075-2-4013	**K3G 280-AU06 -C2**	12,0	**K3G 280-AU06 -C4**	12,0

(2) Centrifugal module with higher protection against corrosion

R3G 280-AU06 -C1



K3G 280-AU06 -C2 / -C4



EC centrifugal fans and modules

backward curved, Ø 310

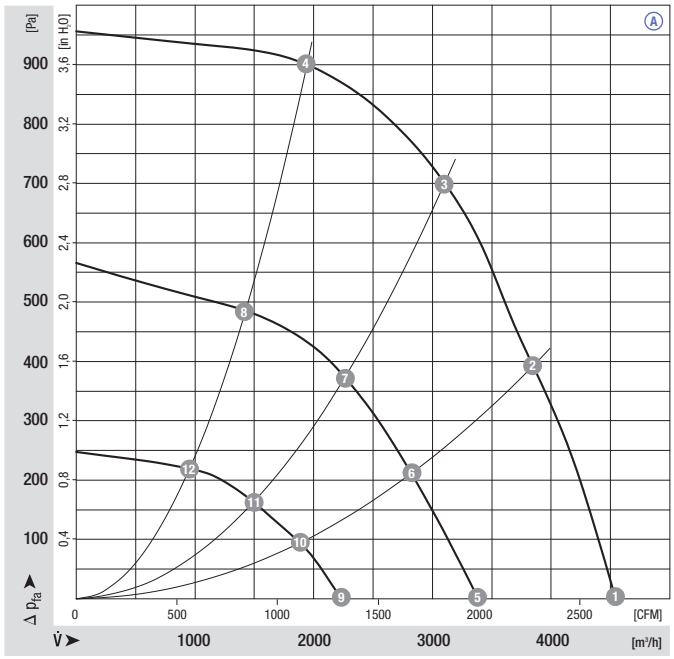
- **Material:** Support bracket: Steel, coated in black
  Support plate: Galvanised sheet steel
  Impeller: Sheet aluminium, laser-welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium
- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** "F"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage range	Frequency	Speed/rpm(1)	Max. power input(1)	Max. current draw(1)	Perm. amb. temp.	Electr. connection
Type	**Motor**		**VAC**	**Hz**	**rpm**	**W**	**A**	**°C**	p. 45
***3G 310**	M3G112-EA	Ⓐ	3~ 380-480	50/60	2580	990	1,70	-25..+55	L2)

subject to alterations

(1) Nominal data in operating point with maximum load and 400 VAC

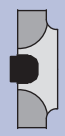
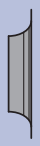
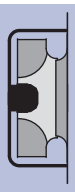
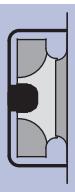
Curves



	n [rpm]	P_1 [W]	I [A]	Lw_A [dB(A)]
Ⓐ 1	2580	669	1,17	88
Ⓐ 2	2580	862	1,46	81
Ⓐ 3	2580	990	1,70	77
Ⓐ 4	2580	907	1,53	79
Ⓐ 5	1930	288	0,57	80
Ⓐ 6	1910	348	0,69	74
Ⓐ 7	1900	396	0,77	70
Ⓐ 8	1905	360	0,72	71
Ⓐ 9	1305	123	0,28	72
Ⓐ 10	1305	144	0,33	67
Ⓐ 11	1305	151	0,34	62
Ⓐ 12	1300	151	0,34	62

ebmpapst

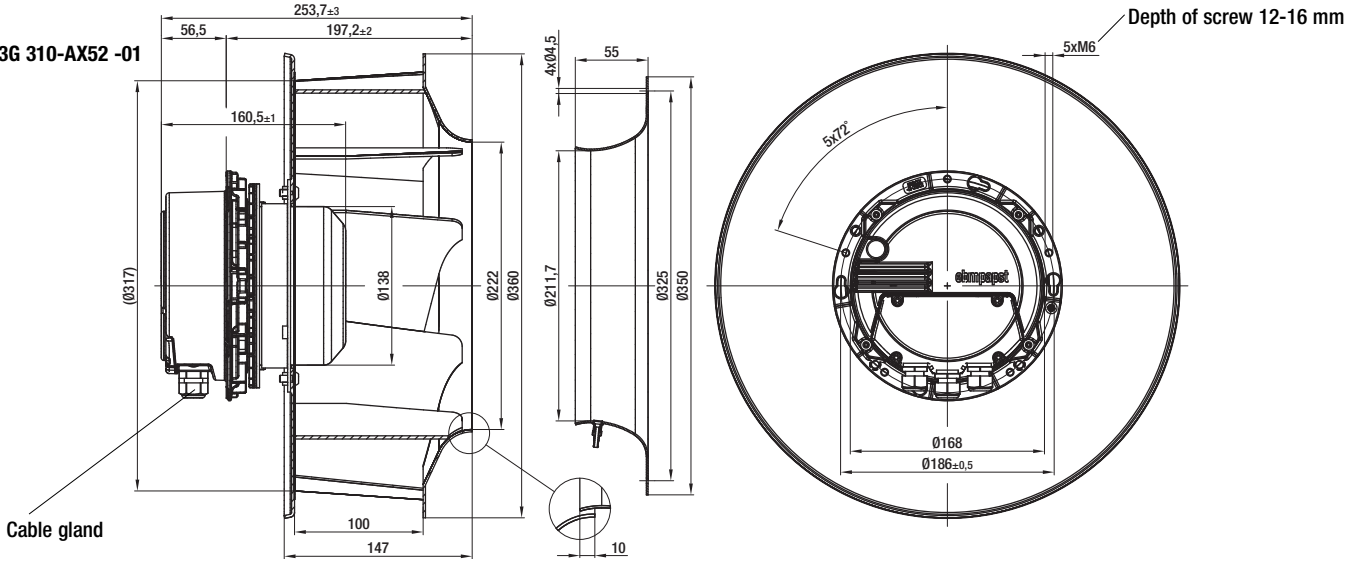
- **Technical features:**
  - PFC (passive)
  - Integrated PID controller
  - Control input 0-10 VDC / PWM
  - Input for sensor 0-10 V or 4-20 mA
  - Slave output 0-10 V max. 3 mA
  - Output 20 VDC (±20 %) max. 50 mA
  - Output 10 VDC (+10 %) max. 10 mA
  - RS485 ebmBUS
  - Alarm relay
  - Line undervoltage / phase failure detection
  - Motor current limitation
  - Electronics / motor overtemperature protection
  - Locked-rotor protection
  - Soft start
- **EMC:** Interference emission acc. to EN 61000-6-3
  Interference immunity acc. to EN 61000-6-2
  Harmonics acc. to DIN EN 61000-3-2/3
- **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
- **Connection leads:** Via terminal strip
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standard:** CE
- **Approvals:** VDE, UL, CSA, CCC, GOST are applied for

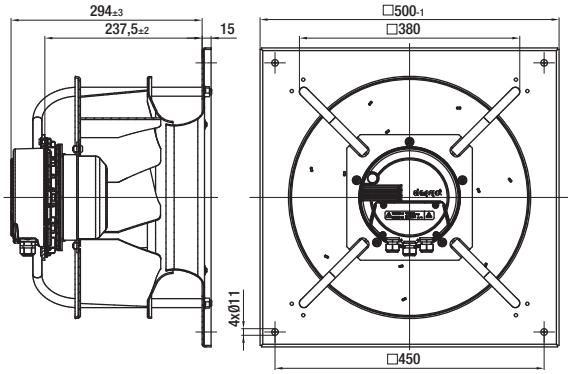
Centrifugal fan	Mass of centrifugal fan kg	Inlet nozzle with one pressure tap	Centrifugal module w. support bracket	Mass of centrifugal module with support bracket kg	Centrifugal module w. support bracket (2)	Mass of centrifugal module with support bracket kg
R3G 310-AX52 -01	9,3	31575-2-4013	**K3G 310-AX52 -02**	15,9	**K3G 310-AX52 -32**	15,9

(2) Centrifugal module with higher protection against corrosion

R3G 310-AX52 -01



K3G 310-AX52 -02 / -32



EC centrifugal fans and modules

backward curved, Ø 355

- **Material:** Support bracket: Steel, coated in black
  Support plate: Galvanised sheet steel
  Impeller: Sheet aluminium, laser-welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium
- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** "F"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

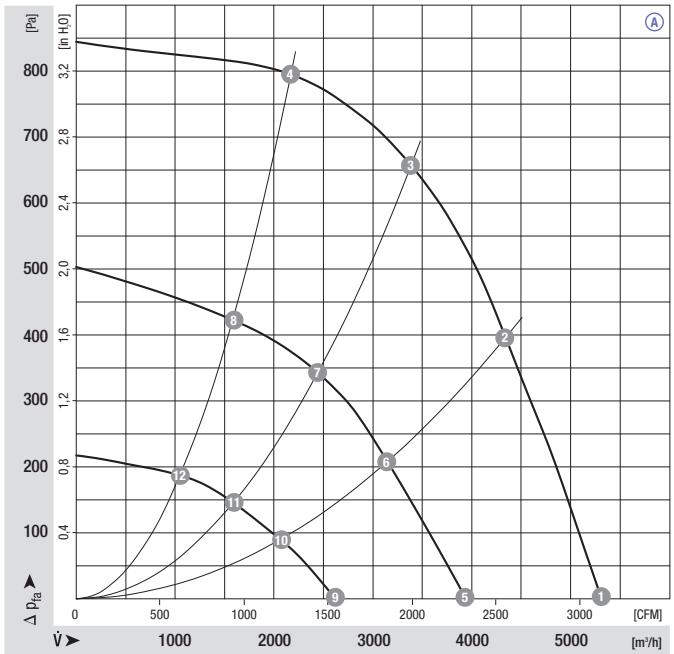
Nominal data

Type	Motor	Curve	Nominal voltage range	Frequency	Speed/rpm(1)	Max. power input(1)	Max. current draw(1)	Perm. amb. temp.	Electr. connection
			VAC	Hz	rpm	W	A	°C	p. 45
*3G 355	M3G112-EA	Ⓐ	3~ 380-480	50/60	2140	1000	1,75	-25..+60	L2)

subject to alterations

(1) Nominal data in operating point with maximum load and 400 VAC

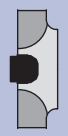
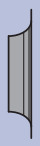
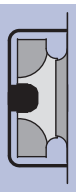
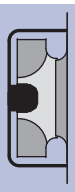
Curves



		n [rpm]	P_1 [W]	I [A]	Lw_A [dB(A)]
Ⓐ	1	2140	656	1,14	87
Ⓐ	2	2140	893	1,50	77
Ⓐ	3	2140	1000	1,75	75
Ⓐ	4	2140	918	1,54	78
Ⓐ	5	1610	286	0,57	79
Ⓐ	6	1595	350	0,68	70
Ⓐ	7	1580	387	0,74	69
Ⓐ	8	1585	366	0,70	70
Ⓐ	9	1080	113	0,28	71
Ⓐ	10	1065	133	0,31	64
Ⓐ	11	1065	143	0,33	60
Ⓐ	12	1060	135	0,32	61

ebmpapst

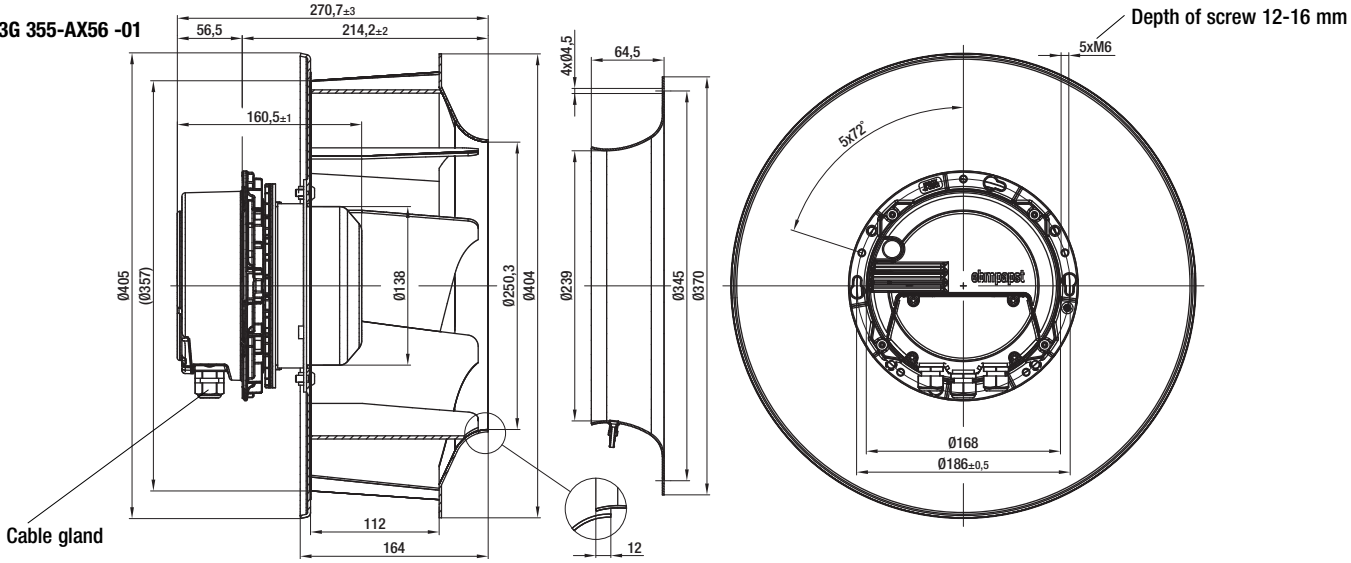
– **Technical features:**
  - PFC (passive)
  - Integrated PID controller
  - Control input 0-10 VDC / PWM
  - Input for sensor 0-10 V or 4-20 mA
  - Slave output 0-10 V max. 3 mA
  - Output 20 VDC (±20 %) max. 50 mA
  - Output 10 VDC (+10 %) max. 10 mA
  - RS485 ebmBUS
  - Alarm relay
  - Line undervoltage / phase failure detection
  - Motor current limitation
  - Electronics / motor overtemperature protection
  - Locked-rotor protection
  - Soft start
– **EMC:** Interference emission acc. to EN 61000-6-3
  Interference immunity acc. to EN 61000-6-2
  Harmonics acc. to DIN EN 61000-3-2/3
– **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
– **Connection leads:** Via terminal strip
– **Protection class:** I (acc. to EN 61800-5-1)
– **Product conforming to standard:** CE
– **Approvals:** VDE, UL, CSA, CCC, GOST are applied for

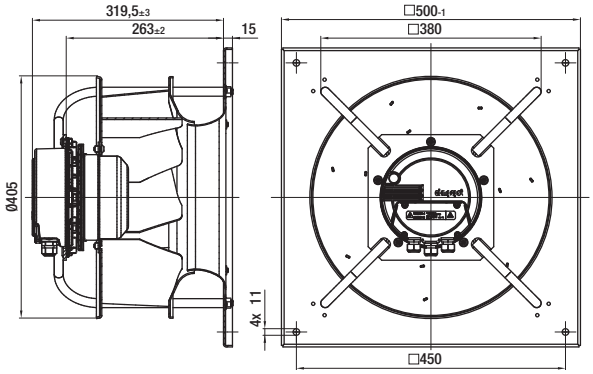
Centrifugal fan	Mass of centrifugal fan kg	Inlet nozzle with one pressure tap	Centrifugal module w. support bracket	Mass of centrifugal module with support bracket kg	Centrifugal module w. support bracket (2)	Mass of centrifugal module with support bracket kg
R3G 355-AX56 -01	9,8	35675-2-4013	**K3G 355-AX56 -02**	17,6	**K3G 355-AX56 -32**	17,6

(2) Centrifugal module with higher protection against corrosion

R3G 355-AX56 -01



K3G 355-AX56 -02 / -32



EC centrifugal fans and modules

backward curved, Ø 355

- **Material:** Support bracket: Steel, coated in black
  Support plate: Galvanised sheet steel
  Impeller: Sheet aluminium, laser-welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium
- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** "F"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

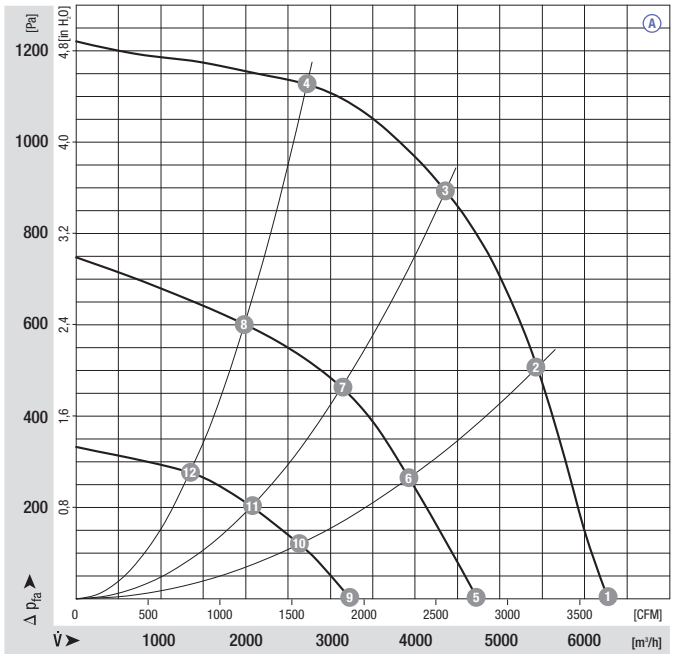
Nominal data

Type	Motor	Curve	Nominal voltage range	Frequency	Speed/rpm(1)	Max. power input(1)	Max. current draw(1)	Perm. amb. temp.	Electr. connection
			VAC	Hz	rpm	W	A	°C	p. 46
*3G 355	M3G112-GA	Ⓐ	3~ 380-480	50/60	2600	1700	2,60	-25..+45	L5)

subject to alterations

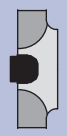
(1) Nominal data in operating point with maximum load and 400 VAC

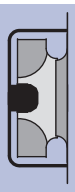
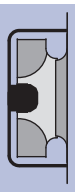
Curves



	n [rpm]	P_1 [W]	I [A]	Lw_A [dB(A)]
Ⓐ 1	2600	1140	1,74	92
Ⓐ 2	2600	1510	2,30	83
Ⓐ 3	2600	1700	2,60	79
Ⓐ 4	2600	1594	2,42	83
Ⓐ 5	1940	436	0,73	84
Ⓐ 6	1910	541	0,88	76
Ⓐ 7	1885	533	0,95	73
Ⓐ 8	1905	558	0,91	76
Ⓐ 9	1330	194	0,40	76
Ⓐ 10	1315	226	0,45	70
Ⓐ 11	1305	239	0,47	66
Ⓐ 12	1305	236	0,46	66

– **Technical features:**
  - PFC (passive)
  - Integrated PID controller
  - Control input 0-10 VDC / PWM
  - Input for sensor 0-10 V or 4-20 mA
  - Slave output 0-10 V max. 3 mA
  - Output 20 VDC (±20 %) max. 50 mA
  - Output 10 VDC (+10 %) max. 10 mA
  - RS485 MODBUS
  - Motor current limitation, Alarm relay
  - Line undervoltage / phase failure detection
  - Electronics / motor overtemperature protection
  - Locked-rotor protection, Soft start
  - Digital inputs for day/night switch, enabling, cooling / heating
– **EMC:** Interference emission acc. to EN 61000-6-3
  Interference immunity acc. to EN 61000-6-2
  Harmonics acc. to DIN EN 61000-3-2/3
– **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
– **Connection leads:** Via terminal strip
– **Protection class:** I (acc. to EN 61800-5-1)
– **Product conforming to standard:** CE
– **Approvals:** VDE, UL, CSA, CCC, GOST are applied for

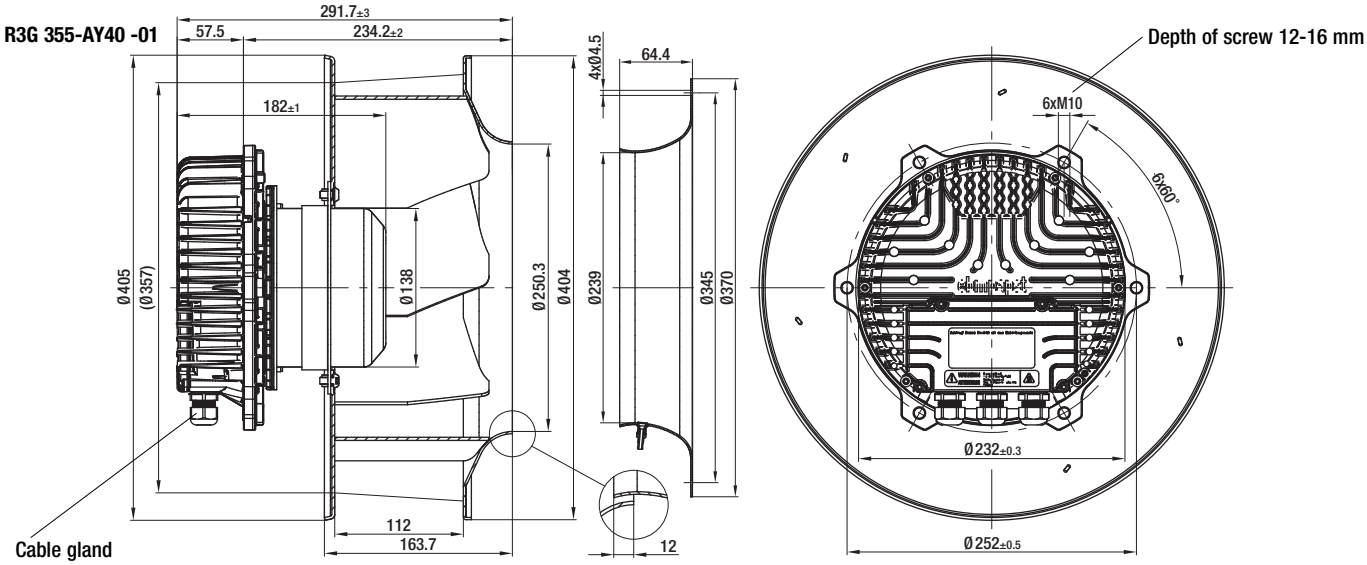


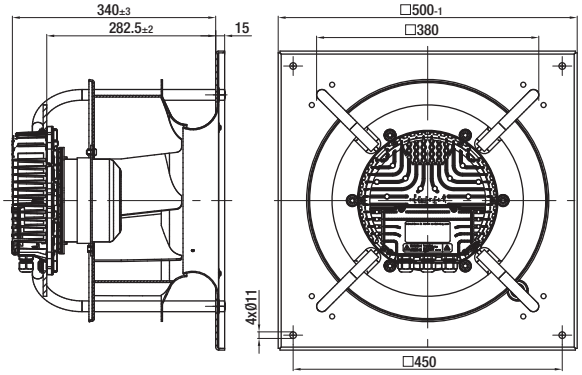
Centrifugal fan	kg	Inlet nozzle with one pressure tap	Centrifugal module w. support bracket	kg	Centrifugal module w. support bracket (2)	kg
R3G 355-AY40 -01	13,0	35675-2-4013	**K3G 355-AY40 -02**	23,0	**K3G 355-AY40 -32**	23,0

(2) Centrifugal module with higher protection against corrosion

R3G 355-AY40 -01



K3G 355-AY40 -02 / -32



Inlet nozzle p. 42 | Guard grille p. 43 | Electr. connection p. 46

EC centrifugal fans and modules

backward curved, Ø 400

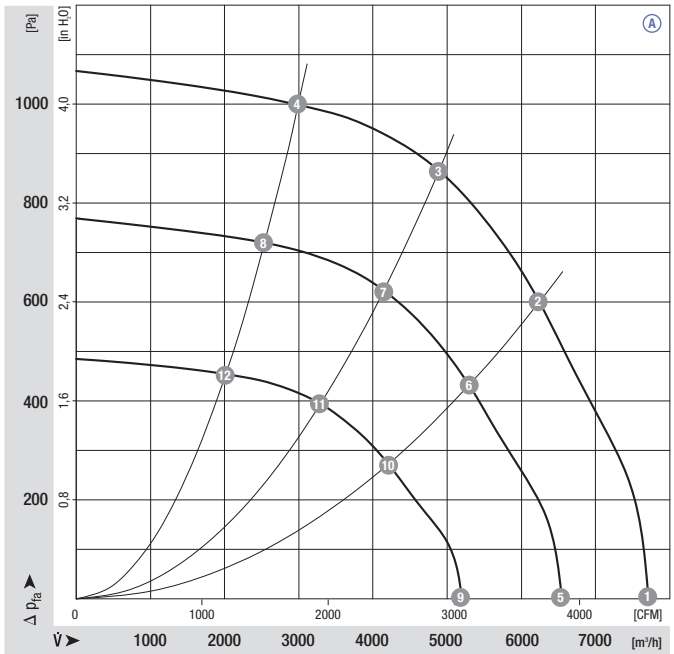
- **Material:** Support bracket: Steel, coated in black
  Support plate: Galvanised sheet steel
  Impeller: Sheet aluminium, welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium
- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** "F"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage range	Frequency	Speed/rpm(1)	Max. power input(1)	Max. current draw(1)	Perm. amb. temp.	Electr. connection
Type	**Motor**		**VAC**	**Hz**	**rpm**	**W**	**A**	**°C**	p. 46
***3G 400**	M3G112-IA	Ⓐ	3~ 380-480	50/60	2180	1850	2,90	-25..+50	L5)

subject to alterations

(1) Nominal data in operating point with maximum load and 400 VAC

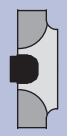
Curves

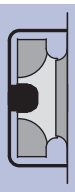
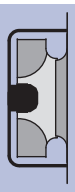


		n [rpm]	P_1 [W]	I [A]	Lw_A [dB(A)]
Ⓐ	1	2180	1178	1,81	89
Ⓐ	2	2180	1748	2,66	82
Ⓐ	3	2180	1850	2,90	81
Ⓐ	4	2180	1638	2,49	84
Ⓐ	5	1850	720	1,10	85
Ⓐ	6	1850	1063	1,62	78
Ⓐ	7	1850	1132	1,72	77
Ⓐ	8	1850	1001	1,52	80
Ⓐ	9	1470	361	0,55	80
Ⓐ	10	1470	533	0,81	73
Ⓐ	11	1470	568	0,86	72
Ⓐ	12	1470	502	0,76	75

ebmpapst

– **Technical features:**
  - PFC (passive)
  - Integrated PID controller
  - Control input 0-10 VDC / PWM
  - Input for sensor 0-10 V or 4-20 mA
  - Slave output 0-10 V max. 3 mA
  - Output 20 VDC (±20 %) max. 50 mA
  - Output 10 VDC (+10 %) max. 10 mA
  - RS485 MODBUS
  - Motor current limitation, Alarm relay
  - Line undervoltage / phase failure detection
  - Electronics / motor overtemperature protection
  - Locked-rotor protection, Soft start
  - Digital inputs for day/night switch, enabling, cooling / heating
– **EMC:** Interference emission acc. to EN 61000-6-3
  Interference immunity acc. to EN 61000-6-2
  Harmonics acc. to DIN EN 61000-3-2/3
– **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
– **Connection leads:** Via terminal strip
– **Protection class:** I (acc. to EN 61800-5-1)
– **Product conforming to standard:** CE
– **Approvals:** VDE, UL, CSA, CCC, GOST are applied for

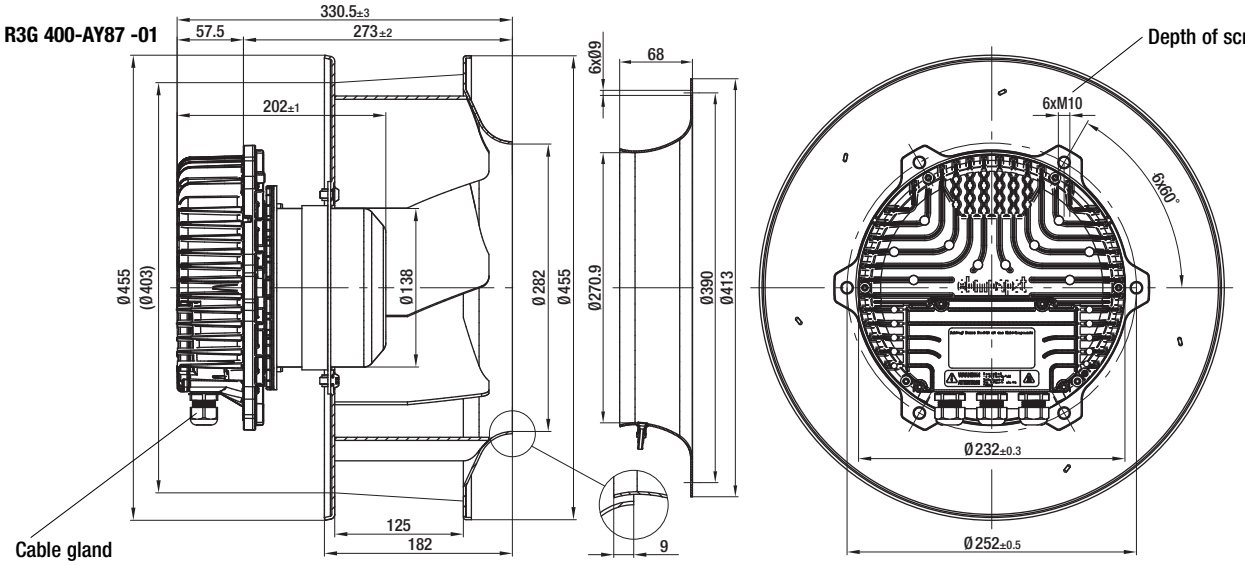


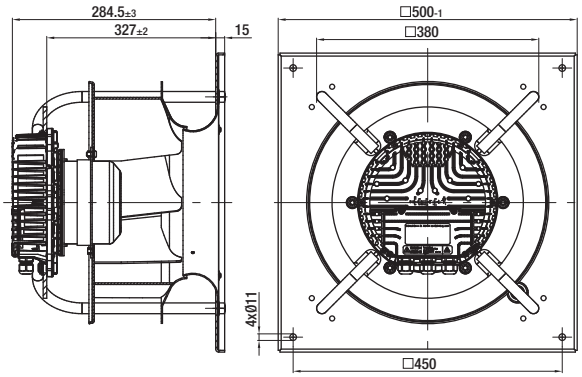
Centrifugal fan	kg	Inlet nozzle with one pressure tap	Centrifugal module w. support bracket	kg	Centrifugal module w. support bracket (2)	kg
R3G 400-AY87 -01	14,0	40075-2-4013	**K3G 400-AY87 -02**	25,0	**K3G 400-AY87 -32**	25,0

(2) Centrifugal module with higher protection against corrosion

R3G 400-AY87 -01



K3G 400-AY87 -02 / -32



EC centrifugal fans and modules

backward curved, Ø 400

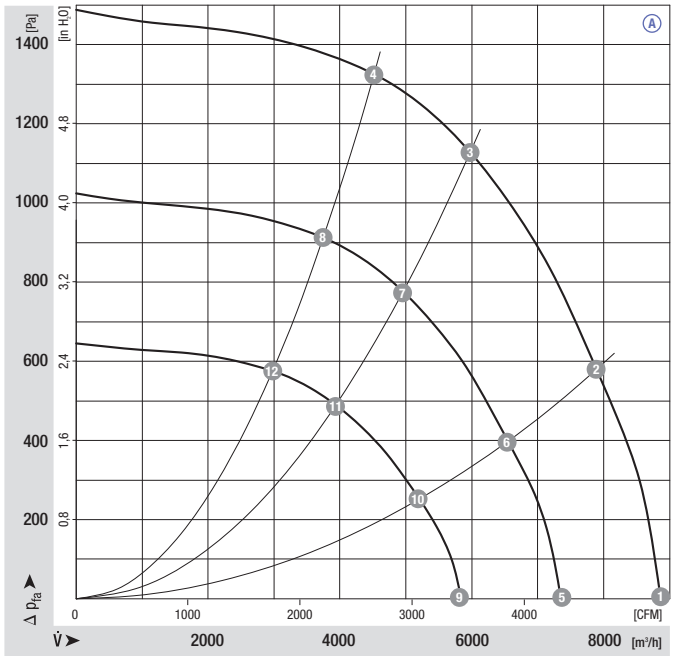
- **Material:** Support bracket: Steel, coated in black
  Support plate: Galvanised sheet steel
  Impeller: Sheet aluminium, welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium
- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** "F"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage range	Frequency	Speed/rpm(1)	Max. power input(1)	Max. current draw(1)	Perm. amb. temp.	Electr. connection
Type	**Motor**		**VAC**	**Hz**	**rpm**	**W**	**A**	**°C**	p. 46
***3G 400**	M3G150-FF	Ⓐ	3~ 380-480	50/60	2550	3000	4,60	-25..+60	L5)

subject to alterations

(1) Nominal data in operating point with maximum load and 400 VAC

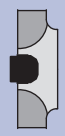
Curves

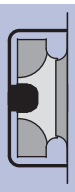
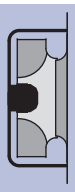


		n [rpm]	P_1 [W]	I [A]	Lw_A [dB(A)]
Ⓐ	1	2550	1989	3,03	93
Ⓐ	2	2550	2578	3,92	87
Ⓐ	3	2550	3000	4,60	85
Ⓐ	4	2550	2890	4,41	87
Ⓐ	5	2115	1135	1,73	89
Ⓐ	6	2115	1471	2,24	83
Ⓐ	7	2115	1709	2,61	81
Ⓐ	8	2115	1649	2,52	83
Ⓐ	9	1680	569	0,87	84
Ⓐ	10	1680	737	1,12	78
Ⓐ	11	1680	857	1,31	76
Ⓐ	12	1680	826	1,26	78

ebmpapst

– **Technical features:**
  - PFC (passive)
  - Integrated PID controller
  - Control input 0-10 VDC / PWM
  - Input for sensor 0-10 V or 4-20 mA
  - Slave output 0-10 V max. 3 mA
  - Output 20 VDC (±20 %) max. 50 mA
  - Output 10 VDC (+10 %) max. 10 mA
  - RS485 MODBUS
  - Motor current limitation, Alarm relay
  - Line undervoltage / phase failure detection
  - Electronics / motor overtemperature protection
  - Locked-rotor protection, Soft start
  - Digital inputs for day/night switch, enabling, cooling / heating
– **EMC:** Interference emission acc. to EN 61000-6-3
  Interference immunity acc. to EN 61000-6-2
  Harmonics acc. to DIN EN 61000-3-2/3
– **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
– **Connection leads:** Via terminal strip
– **Protection class:** I (acc. to EN 61800-5-1)
– **Product conforming to standard:** CE
– **Approvals:** VDE, UL, CSA, CCC, GOST are applied for

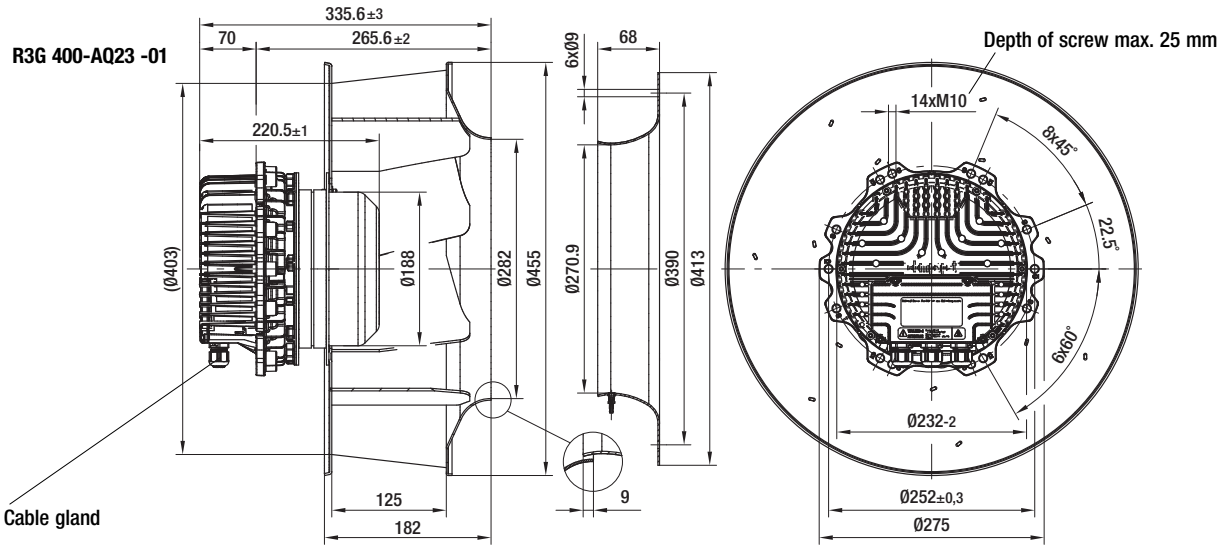


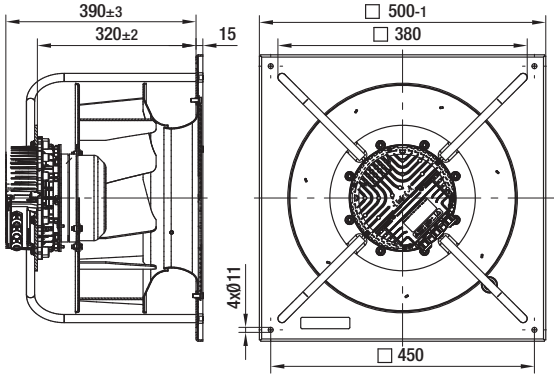
Centrifugal fan	Mass of centrifugal fan kg	Inlet nozzle with one pressure tap	Centrifugal module w. support bracket	Mass of centrifugal module with support bracket kg	Centrifugal module w. support bracket (2)	Mass of centrifugal module with support bracket kg
R3G 400-AQ23 -01	22,0	40075-2-4013	**K3G 400-AQ23 -01**	34,0	**K3G 400-AQ23 -31**	34,0

(2) Centrifugal module with higher protection against corrosion

R3G 400-AQ23 -01



K3G 400-AQ23 -01 / -31



Inlet nozzle p. 42
Guard grille p. 43
Electr. connection p. 46

EC centrifugal fans and modules

backward curved, Ø 450

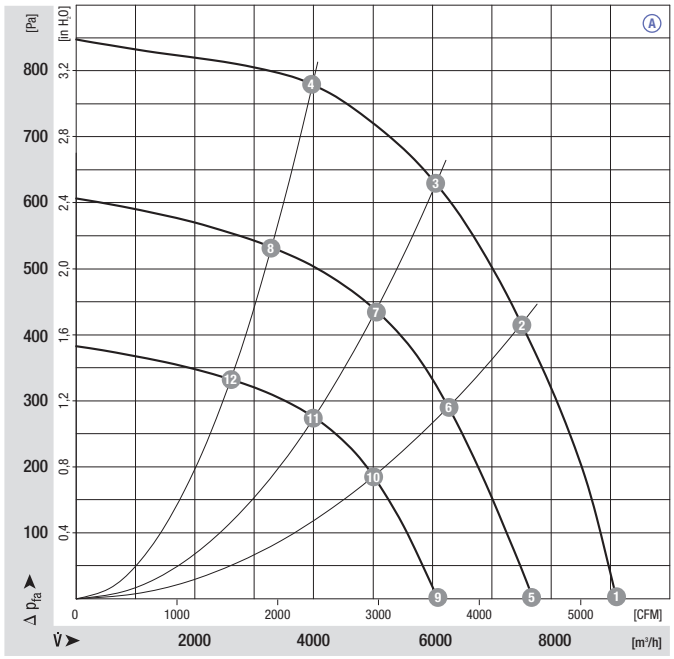
- **Material:** Support bracket: Steel, coated in black
  Support plate: Galvanised sheet steel
  Impeller: Sheet aluminium, welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium
- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** "F"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage range	Frequency	Speed/rpm(1)	Max. power input(1)	Max. current draw(1)	Perm. amb. temp.	Electr. connection
Type	**Motor**		**VAC**	**Hz**	**rpm**	**W**	**A**	**°C**	p. 46
***3G 450**	M3G112-IA	Ⓐ	3~ 380-480	50/60	1750	1616	2,50	-25..+50	L5)

subject to alterations

(1) Nominal data in operating point with maximum load and 400 VAC

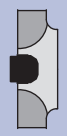
Curves

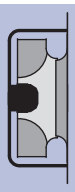
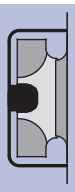


	n [rpm]	P_1 [W]	I [A]	Lw_A [dB(A)]
Ⓐ 1	1750	1036	1,61	87
Ⓐ 2	1750	1457	2,25	80
Ⓐ 3	1750	1616	2,50	77
Ⓐ 4	1750	1524	2,33	80
Ⓐ 5	1450	571	0,92	82
Ⓐ 6	1450	812	1,28	75
Ⓐ 7	1450	906	1,42	73
Ⓐ 8	1450	810	1,27	76
Ⓐ 9	1155	306	0,56	76
Ⓐ 10	1155	427	0,73	69
Ⓐ 11	1155	462	0,77	67
Ⓐ 12	1155	411	0,70	69

ebmpapst

– **Technical features:**
  - PFC (passive)
  - Integrated PID controller
  - Control input 0-10 VDC / PWM
  - Input for sensor 0-10 V or 4-20 mA
  - Slave output 0-10 V max. 3 mA
  - Output 20 VDC (±20 %) max. 50 mA
  - Output 10 VDC (+10 %) max. 10 mA
  - RS485 MODBUS
  - Motor current limitation, Alarm relay
  - Line undervoltage / phase failure detection
  - Electronics / motor overtemperature protection
  - Locked-rotor protection, Soft start
  - Digital inputs for day/night switch, enabling, cooling / heating
– **EMC:** Interference emission acc. to EN 61000-6-3
  Interference immunity acc. to EN 61000-6-2
  Harmonics acc. to DIN EN 61000-3-2/3
– **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
– **Connection leads:** Via terminal strip
– **Protection class:** I (acc. to EN 61800-5-1)
– **Product conforming to standard:** CE
– **Approvals:** VDE, UL, CSA, CCC, GOST are applied for

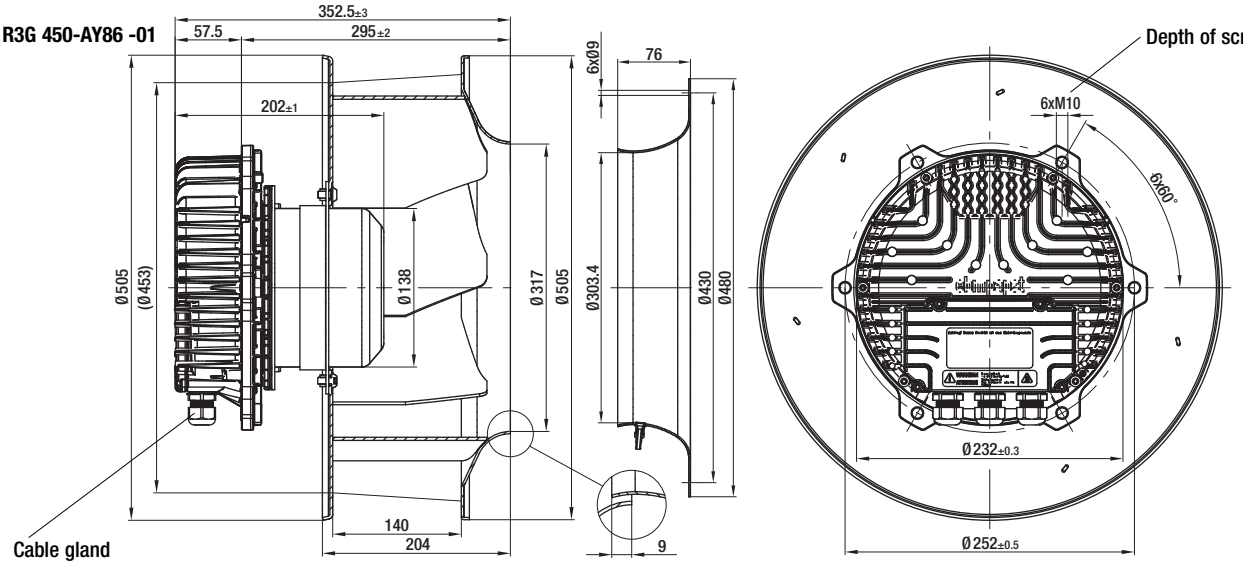


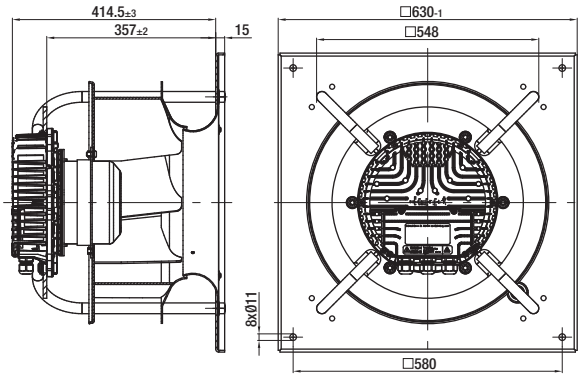
Centrifugal fan	kg	Inlet nozzle with one pressure tap	Centrifugal module w. support bracket	kg	Centrifugal module w. support bracket (2)	kg
R3G 450-AY86 -01	15,0	45075-2-4013	**K3G 450-AY86 -02**	31,0	**K3G 450-AY86 -32**	31,0

(2) Centrifugal module with higher protection against corrosion

R3G 450-AY86 -01



K3G 450-AY86 -02 / -32



EC centrifugal fans and modules

backward curved, Ø 450

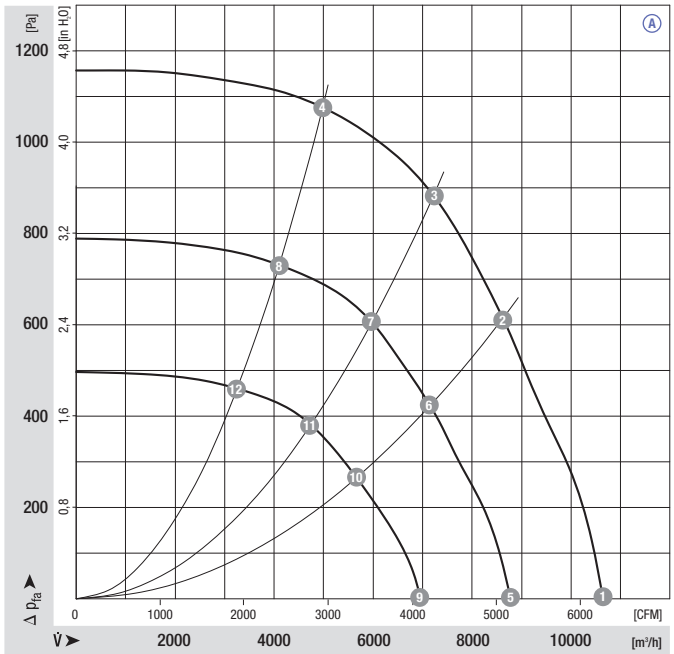
- **Material:** Support bracket: Steel, coated in black
  Support plate: Galvanised sheet steel
  Impeller: Sheet aluminium, welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium
- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** "F"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage range	Frequency	Speed/rpm(1)	Max. power input(1)	Max. current draw(1)	Perm. amb. temp.	Electr. connection
Type	**Motor**		**VAC**	**Hz**	**rpm**	**W**	**A**	**°C**	p. 46
***3G 450**	M3G150-FF	Ⓐ	3~ 380-480	50/60	2040	2730	4,20	-25..+60	L5)

subject to alterations

(1) Nominal data in operating point with maximum load and 400 VAC

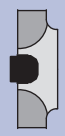
Curves

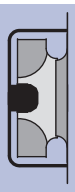
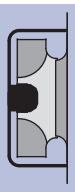


		n [rpm]	P_1 [W]	I [A]	Lw_A [dB(A)]
Ⓐ	1	2040	1773	2,71	92
Ⓐ	2	2040	2500	3,80	83
Ⓐ	3	2040	2730	4,20	81
Ⓐ	4	2040	2587	3,96	83
Ⓐ	5	1695	991	1,52	88
Ⓐ	6	1695	1428	2,17	79
Ⓐ	7	1695	1548	2,35	77
Ⓐ	8	1695	1450	2,22	79
Ⓐ	9	1345	495	0,76	83
Ⓐ	10	1345	713	1,09	74
Ⓐ	11	1345	774	1,18	72
Ⓐ	12	1345	725	1,11	74

ebmpapst

- **Technical features:**
  - PFC (passive)
  - Integrated PID controller
  - Control input 0-10 VDC / PWM
  - Input for sensor 0-10 V or 4-20 mA
  - Slave output 0-10 V max. 3 mA
  - Output 20 VDC (±20 %) max. 50 mA
  - Output 10 VDC (+10 %) max. 10 mA
  - RS485 MODBUS
  - Motor current limitation, Alarm relay
  - Line undervoltage / phase failure detection
  - Electronics / motor overtemperature protection
  - Locked-rotor protection, Soft start
  - Digital inputs for day/night switch, enabling, cooling / heating
- **EMC:** Interference emission acc. to EN 61000-6-3
  Interference immunity acc. to EN 61000-6-2
  Harmonics acc. to DIN EN 61000-3-2/3
- **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
- **Connection leads:** Via terminal strip
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standard:** CE
- **Approvals:** VDE, UL, CSA, CCC, GOST are applied for

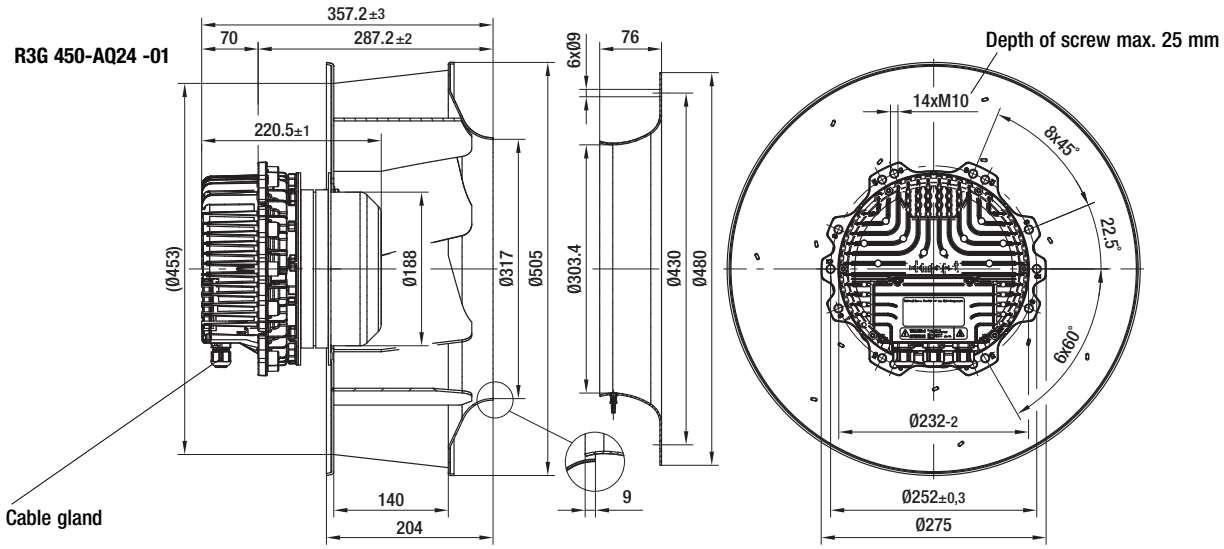


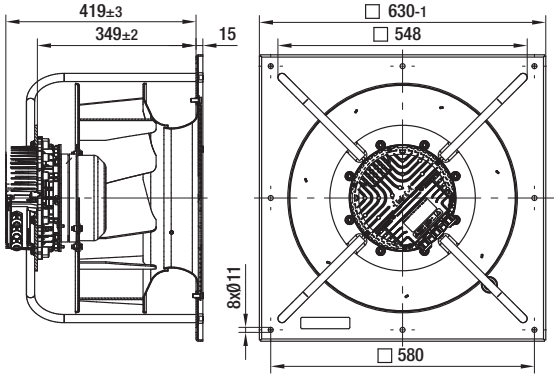
Centrifugal fan	Mass of centrifugal fan kg	Inlet nozzle with one pressure tap	Centrifugal module w. support bracket	Mass of centrifugal module with support bracket kg	Centrifugal module w. support bracket (2)	Mass of centrifugal module with support bracket kg
R3G 450-AQ24 -01	22,5	45075-2-4013	**K3G 450-AQ24 -01**	38,5	**K3G 450-AQ24 -31**	38,5

(2) Centrifugal module with higher protection against corrosion

R3G 450-AQ24 -01



K3G 450-AQ24 -01 / -31



EC centrifugal fans and modules

backward curved, Ø 500

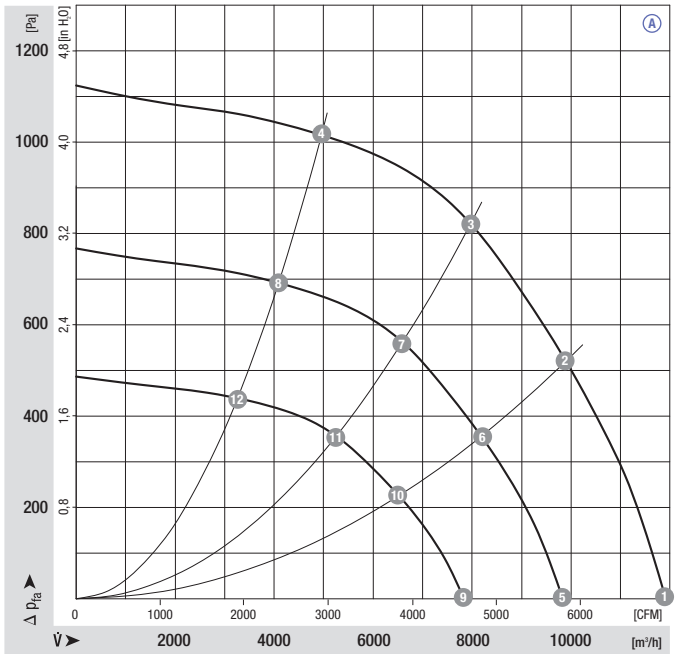
- **Material:** Support bracket: Steel, coated in black
  Support plate: Galvanised sheet steel
  Impeller: Sheet aluminium, welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium
- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** "F"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage range	Frequency	Speed/rpm(1)	Max. power input(1)	Max. current draw(1)	Perm. amb. temp.	Electr. connection
Type	**Motor**		**VAC**	**Hz**	**rpm**	**W**	**A**	**°C**	p. 46
***3G 500**	M3G150-FF	Ⓐ	3~ 380-480	50/60	1780	2825	4,30	-25..+60	L5)

subject to alterations

(1) Nominal data in operating point with maximum load and 400 VAC

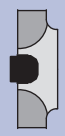
Curves

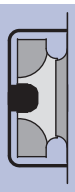
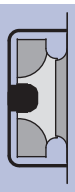


	n [rpm]	P_1 [W]	I [A]	Lw_A [dB(A)]
Ⓐ 1	1780	1746	2,70	94
Ⓐ 2	1780	2490	3,82	85
Ⓐ 3	1780	2825	4,30	80
Ⓐ 4	1780	2582	3,96	83
Ⓐ 5	1475	985	1,52	89
Ⓐ 6	1475	1411	2,16	81
Ⓐ 7	1475	1600	2,46	76
Ⓐ 8	1475	1452	2,23	79
Ⓐ 9	1175	498	0,77	84
Ⓐ 10	1175	713	1,09	76
Ⓐ 11	1175	809	1,24	71
Ⓐ 12	1175	734	1,13	74

ebmpapst

– **Technical features:**
  - PFC (passive)
  - Integrated PID controller
  - Control input 0-10 VDC / PWM
  - Input for sensor 0-10 V or 4-20 mA
  - Slave output 0-10 V max. 3 mA
  - Output 20 VDC (±20 %) max. 50 mA
  - Output 10 VDC (+10 %) max. 10 mA
  - RS485 MODBUS
  - Motor current limitation, Alarm relay
  - Line undervoltage / phase failure detection
  - Electronics / motor overtemperature protection
  - Locked-rotor protection, Soft start
  - Digital inputs for day/night switch, enabling, cooling / heating
– **EMC:** Interference emission acc. to EN 61000-6-3
  Interference immunity acc. to EN 61000-6-2
  Harmonics acc. to DIN EN 61000-3-2/3
– **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
– **Connection leads:** Via terminal strip
– **Protection class:** I (acc. to EN 61800-5-1)
– **Product conforming to standard:** CE
– **Approvals:** VDE, UL, CSA, CCC, GOST are applied for

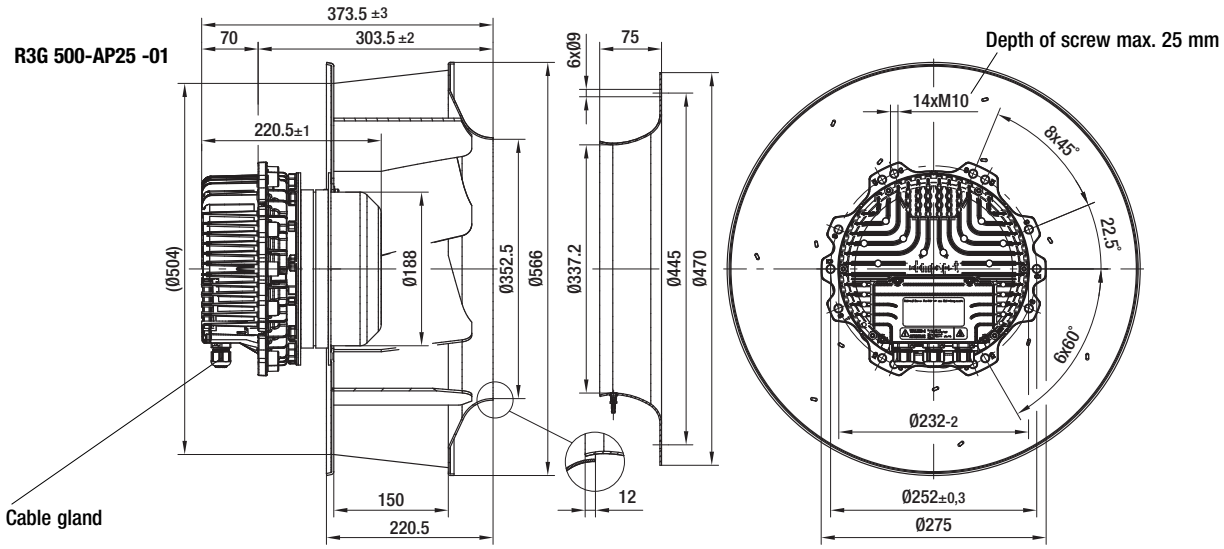


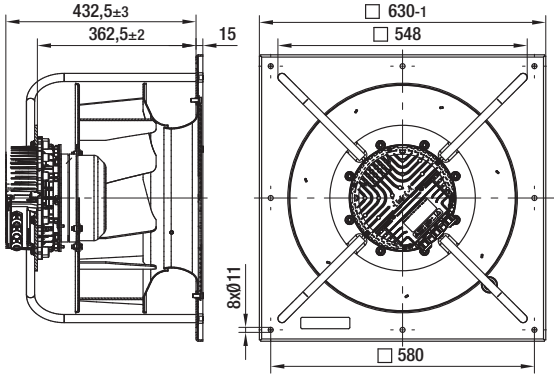
Centrifugal fan	Mass of centrifugal fan kg	Inlet nozzle with one pressure tap	Centrifugal module w. support bracket	Mass of centrifugal module with support bracket kg	Centrifugal module w. support bracket (2)	Mass of centrifugal module with support bracket kg
R3G 500-AP25 -01	25,0	64025-2-4013	**K3G 500-AP25 -01**	41,5	**K3G 500-AP25 -31**	41,5

(2) Centrifugal module with higher protection against corrosion

R3G 500-AP25 -01



K3G 500-AP25 -01 / -31



Inlet nozzle p. 42
Guard grille p. 43
Electr. connection p. 46

EC centrifugal fans and modules

backward curved, Ø 500

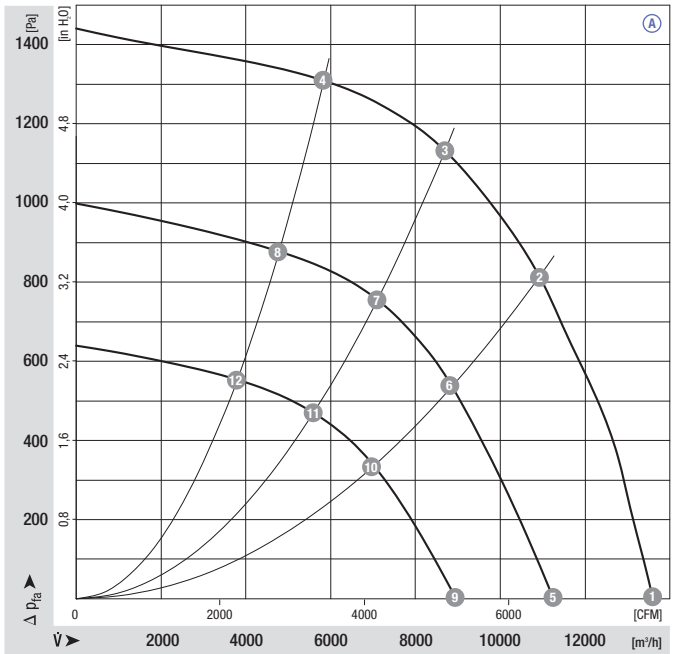
- **Material:** Support bracket: Steel, coated in black
  Support plate: Galvanised sheet steel
  Impeller: Sheet aluminium, welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium
- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** "F"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage range	Frequency	Speed/rpm(1)	Max. power input(1)	Max. current draw(1)	Perm. amb. temp.	Electr. connection
Type	**Motor**		**VAC**	**Hz**	**rpm**	**W**	**A**	**°C**	p. 47
***3G 500**	M3G150-IF	Ⓐ	3~ 380-480	50/60	2000	4300	6,60	-25..+45	M2)

subject to alterations

(1) Nominal data in operating point with maximum load and 400 VAC

Curves

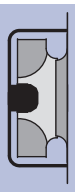
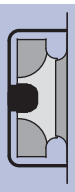


	n [rpm]	P_1 [W]	I [A]	Lw_A [dB(A)]
Ⓐ 1	2000	2683	4,07	98
Ⓐ 2	2000	4038	6,15	87
Ⓐ 3	2000	4300	6,60	84
Ⓐ 4	2000	3813	5,79	87
Ⓐ 5	1660	1509	2,33	92
Ⓐ 6	1660	2042	3,13	82
Ⓐ 7	1660	2233	3,41	79
Ⓐ 8	1660	2001	3,07	82
Ⓐ 9	1320	801	1,32	85
Ⓐ 10	1320	1067	1,71	76
Ⓐ 11	1320	1134	1,80	74
Ⓐ 12	1320	1033	1,66	75

ebmpapst

– **Technical features:**
  - PFC (passive)
  - Integrated PID controller
  - Control input 0-10 VDC / PWM
  - Input for sensor 0-10 V or 4-20 mA
  - Slave output 0-10 V max. 3 mA
  - Output 20 VDC (±20 %) max. 50 mA
  - Output 10 VDC (+10 %) max. 10 mA
  - RS485 ebmBUS
  - Alarm relay
  - Line undervoltage / phase failure detection
  - Motor current limitation
  - Electronics / motor overtemperature protection
  - Locked-rotor protection
  - Soft start
– **EMC:** Interference emission acc. to EN 61000-6-3
  Interference immunity acc. to EN 61000-6-2
  Harmonics acc. to DIN EN 61000-3-2/3
– **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
– **Connection leads:** Via terminal strip
– **Protection class:** I (acc. to EN 61800-5-1)
– **Product conforming to standard:** CE
– **Approvals:** VDE, UL, CSA, CCC, GOST are applied for

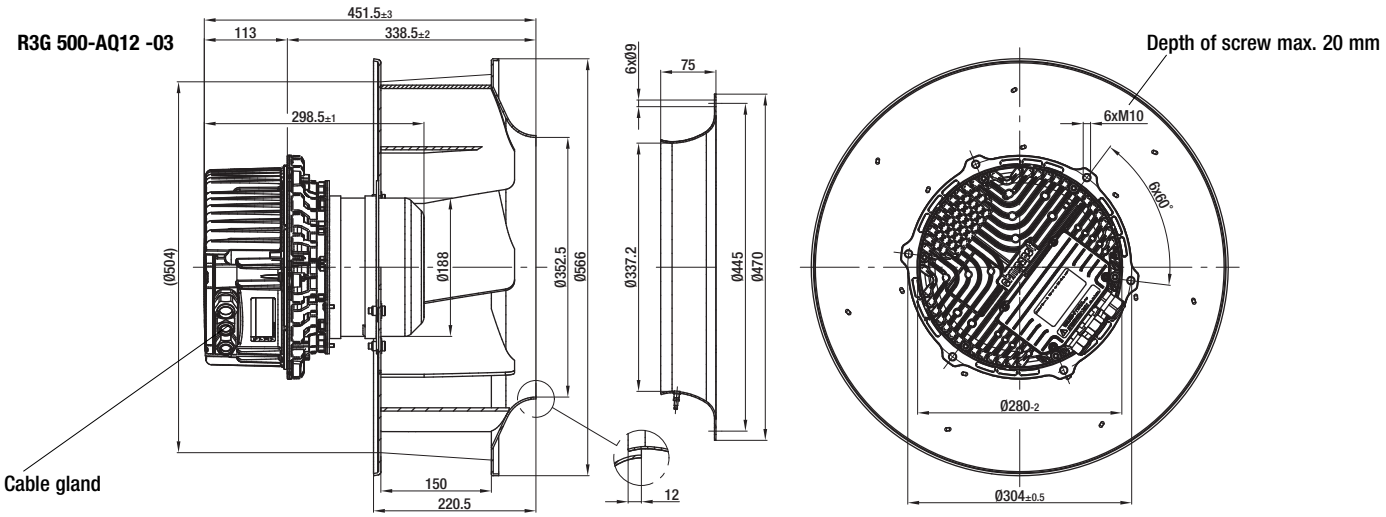


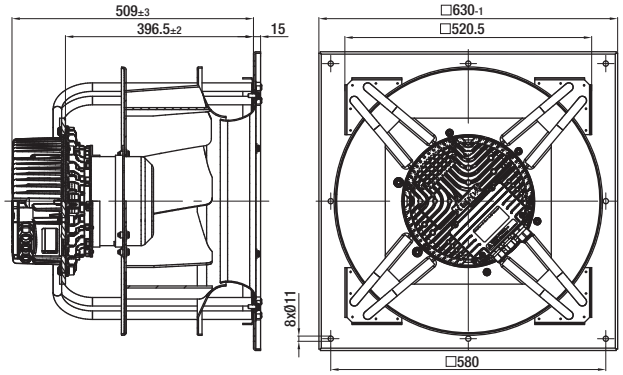
Centrifugal fan	Mass of centrifugal fan kg	Inlet nozzle with one pressure tap	Centrifugal module w. support bracket	Mass of centrifugal module with support bracket kg	Centrifugal module w. support bracket (2)	Mass of centrifugal module with support bracket kg
R3G 500-AQ12 -03	33,8	64025-2-4013	**K3G 500-AQ12 -03**	61,7	**K3G 500-AQ12 -33**	61,7

(2) Centrifugal module with higher protection against corrosion

R3G 500-AQ12 -03



K3G 500-AQ12 -03 / -33



Inlet nozzle p. 42
Guard grille p. 43
Electr. connection p. 47

EC centrifugal fans and modules

backward curved, Ø 560

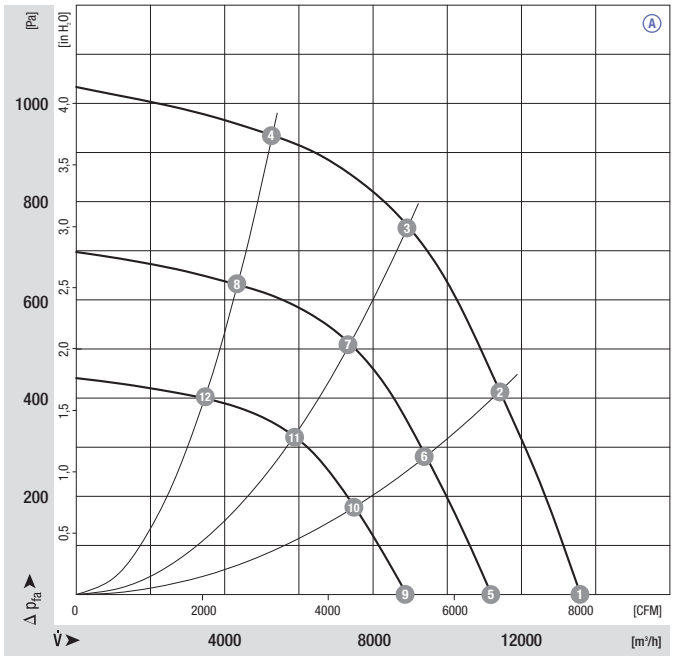
- **Material:** Support bracket: Steel, coated in black
  Support plate: Galvanised sheet steel
  Impeller: Sheet aluminium, welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium
- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** "F"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage range	Frequency	Speed/rpm(1)	Max. power input(1)	Max. current draw(1)	Perm. amb. temp.	Electr. connection
Type	**Motor**		**VAC**	**Hz**	**rpm**	**W**	**A**	**°C**	p. 46
***3G 560**	M3G150-IF	Ⓐ	3~ 380-480	50/60	1500	2965	4,60	-25..+50	L5)

subject to alterations

(1) Nominal data in operating point with maximum load and 400 VAC

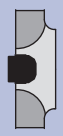
Curves

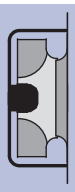
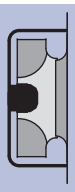


	n [rpm]	P_1 [W]	I [A]	Lw_A [dB(A)]
Ⓐ 1	1500	1830	2,82	95
Ⓐ 2	1500	2485	3,78	87
Ⓐ 3	1500	2965	4,60	81
Ⓐ 4	1500	2629	4,02	84
Ⓐ 5	1245	1023	1,58	91
Ⓐ 6	1245	1402	2,14	82
Ⓐ 7	1245	1660	2,53	77
Ⓐ 8	1245	1458	2,23	79
Ⓐ 9	990	515	0,79	86
Ⓐ 10	990	705	1,07	77
Ⓐ 11	990	835	1,27	72
Ⓐ 12	990	733	1,12	74

ebmpapst

- **Technical features:**
  - PFC (passive)
  - Integrated PID controller
  - Control input 0-10 VDC / PWM
  - Input for sensor 0-10 V or 4-20 mA
  - Slave output 0-10 V max. 3 mA
  - Output 20 VDC (±20 %) max. 50 mA
  - Output 10 VDC (+10 %) max. 10 mA
  - RS485 MODBUS
  - Motor current limitation, Alarm relay
  - Line undervoltage / phase failure detection
  - Electronics / motor overtemperature protection
  - Locked-rotor protection, Soft start
  - Digital inputs for day/night switch, enabling, cooling / heating
- **EMC:** Interference emission acc. to EN 61000-6-3
  Interference immunity acc. to EN 61000-6-2
  Harmonics acc. to DIN EN 61000-3-2/3
- **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
- **Connection leads:** Via terminal strip
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standard:** CE
- **Approvals:** VDE, UL, CSA, CCC, GOST are applied for

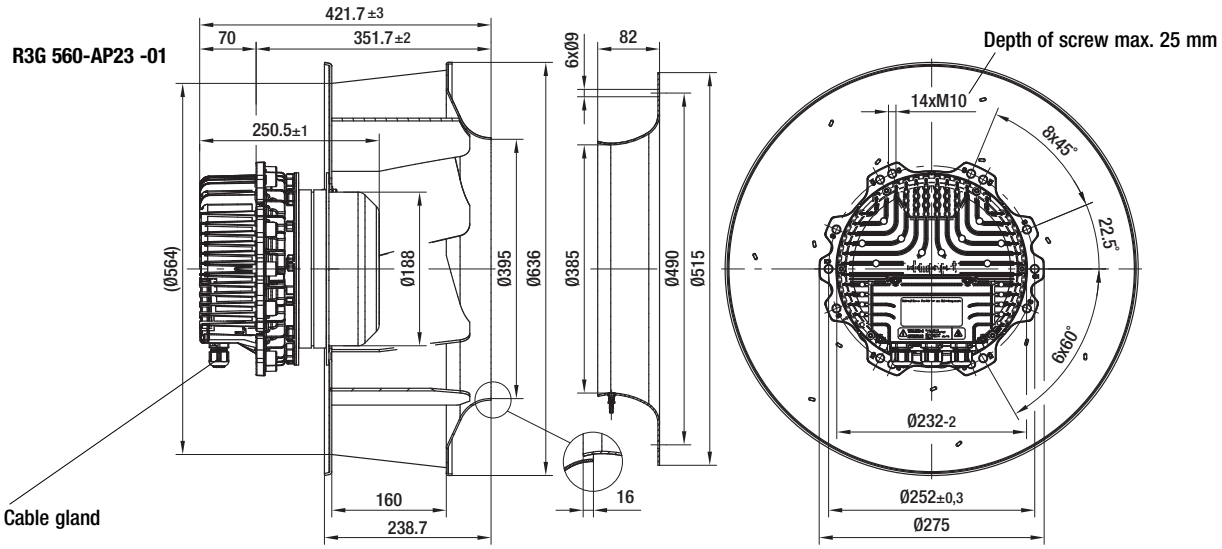


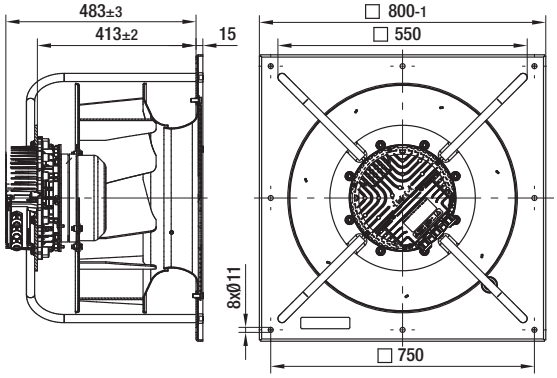
Centrifugal fan	Mass of centrifugal fan kg	Inlet nozzle with one pressure tap	Centrifugal module w. support bracket	Mass of centrifugal module with support bracket kg	Centrifugal module w. support bracket (2)	Mass of centrifugal module with support bracket kg
R3G 560-AP23 -01	30,0	64030-2-4013	**K3G 560-AP23 -01**	52,5	**K3G 560-AP23 -31**	52,5

(2) Centrifugal module with higher protection against corrosion

R3G 560-AP23 -01



K3G 560-AP23 -01 / -31



Inlet nozzle p. 42 | Guard grille p. 43 | Electr. connection p. 46

EC centrifugal fans and modules

backward curved, Ø 560

- **Material:** Support bracket: Steel, coated in black
  Support plate: Galvanised sheet steel
  Impeller: Sheet aluminium, welded
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium
- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** "F"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

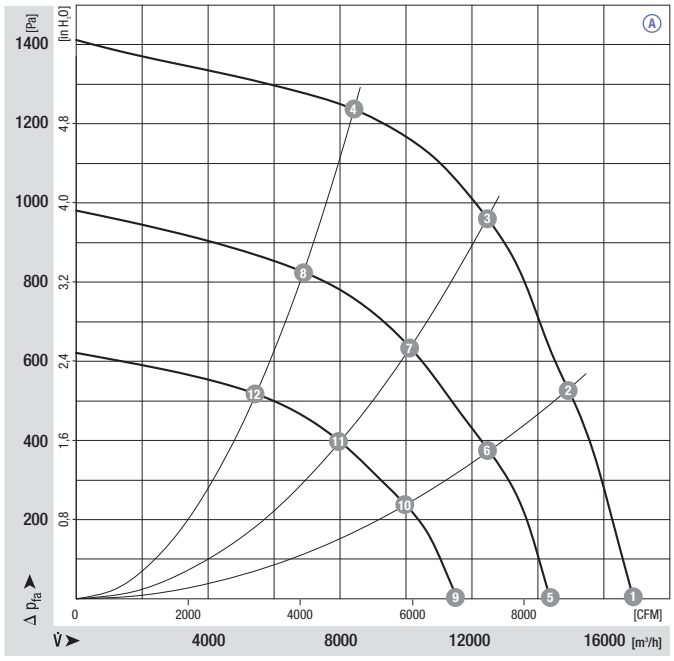
Nominal data

Type	Motor	Curve	Nominal voltage range	Frequency	Speed/rpm(1)	Max. power input(1)	Max. current draw(1)	Perm. amb. temp.	Electr. connection
			VAC	Hz	rpm	W	A	°C	p. 47
*3G 560	M3G150-NA	Ⓐ	3~ 380-480	50/60	1750	5030	7,70	-25..+40	M2)

subject to alterations

(1) Nominal data in operating point with maximum load and 400 VAC

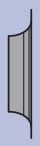
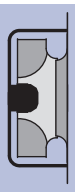
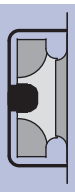
Curves



	n [rpm]	P_1 [W]	I [A]	Lw_A [dB(A)]
Ⓐ 1	1750	3212	4,89	98
Ⓐ 2	1750	4247	6,47	91
Ⓐ 3	1750	5030	7,70	84
Ⓐ 4	1750	4806	7,30	85
Ⓐ 5	1450	1723	2,66	94
Ⓐ 6	1450	2247	3,43	86
Ⓐ 7	1450	2577	3,93	82
Ⓐ 8	1450	2417	3,69	82
Ⓐ 9	1150	922	1,51	87
Ⓐ 10	1150	1171	1,85	79
Ⓐ 11	1150	1304	2,04	75
Ⓐ 12	1150	1222	1,93	75

ebmpapst

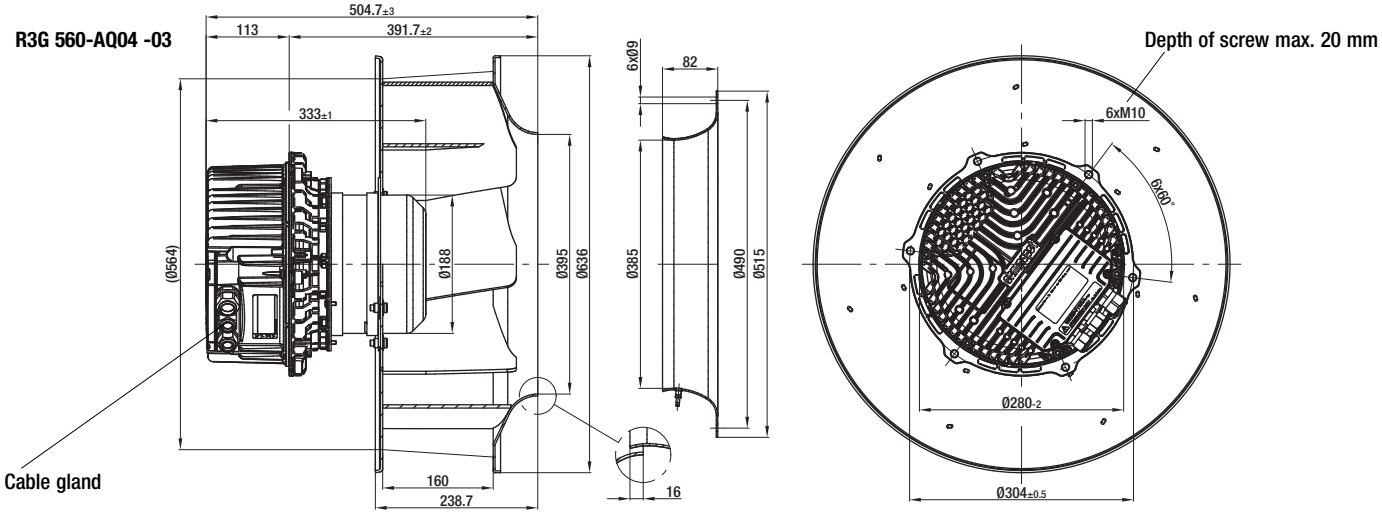
- **Technical features:**
  - PFC (passive)
  - Integrated PID controller
  - Control input 0-10 VDC / PWM
  - Input for sensor 0-10 V or 4-20 mA
  - Slave output 0-10 V max. 3 mA
  - Output 20 VDC (±20 %) max. 50 mA
  - Output 10 VDC (+10 %) max. 10 mA
  - RS485 ebmBUS
  - Alarm relay
  - Line undervoltage / phase failure detection
  - Motor current limitation
  - Electronics / motor overtemperature protection
  - Locked-rotor protection
  - Soft start
- **EMC:** Interference emission acc. to EN 61000-6-3
  Interference immunity acc. to EN 61000-6-2
  Harmonics acc. to DIN EN 61000-3-2/3
- **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
- **Connection leads:** Via terminal strip
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standard:** CE
- **Approvals:** VDE, UL, CSA, CCC, GOST are applied for

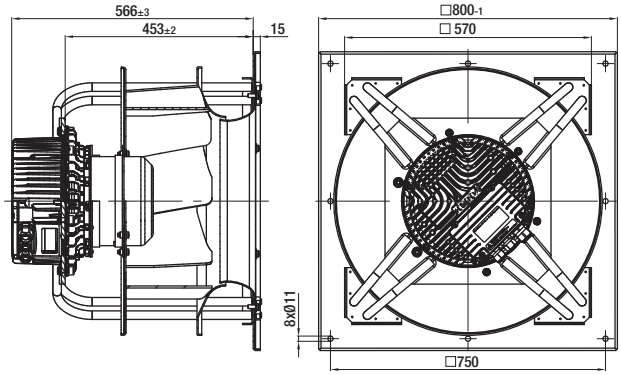
Centrifugal fan	Mass of centrifugal fan kg	Inlet nozzle with one pressure tap	Centrifugal module w. support bracket	Mass of centrifugal module with support bracket kg	Centrifugal module w. support bracket (2)	Mass of centrifugal module with support bracket kg
R3G 560-AQ04 -03	38,2	64030-2-4013	**K3G 560-AQ04 -03**	68,4	**K3G 560-AQ04 -33**	68,4

(2) Centrifugal module with higher protection against corrosion

R3G 560-AQ04 -03



K3G 560-AQ04 -03 / -33



EC centrifugal fans and module

backward curved, Ø 310 - Design for use in sanitation units -

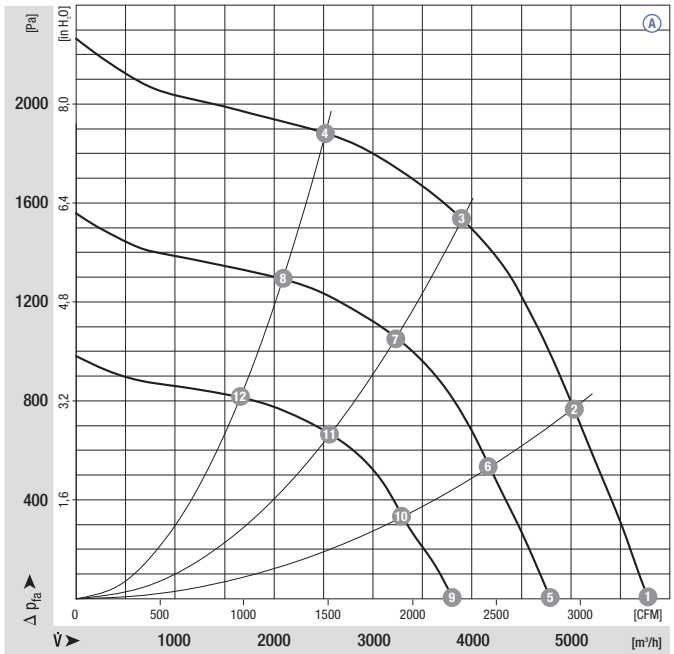
- **Material:** Support bracket: Steel, coated in white
  Support plate: Galvanised sheet steel, coated
  Impeller: Sheet aluminium, laser-welded, coated
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium, coated
- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** "F"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

Nominal data		Curve	Nominal voltage range	Frequency	Speed/rpm(1)	Max. power input(1)	Max. current draw(1)	Perm. amb. temp.	Electr. connection
Type	**Motor**		**VAC**	**Hz**	**rpm**	**W**	**A**	**°C**	p. 46
***3G 310**	M3G112-IA	Ⓐ	3~ 380-480	50/60	4100	2915	4,50	-25..+40	L5)

subject to alterations

(1) Nominal data in operating point with maximum load and 400 VAC

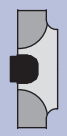
Curves



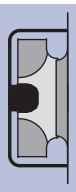
	n [rpm]	P_1 [W]	I [A]	Lw_A [dB(A)]
Ⓐ 1	4100	1976	3,03	97
Ⓐ 2	4100	2488	3,77	91
Ⓐ 3	4100	2915	4,50	89
Ⓐ 4	4100	2750	4,19	93
Ⓐ 5	3400	1127	1,73	93
Ⓐ 6	3400	1428	2,17	87
Ⓐ 7	3400	1659	2,53	85
Ⓐ 8	3400	1566	2,39	89
Ⓐ 9	2700	564	0,87	88
Ⓐ 10	2700	715	1,08	82
Ⓐ 11	2700	831	1,27	80
Ⓐ 12	2700	784	1,19	84

ebmpapst

– **Technical features:**
  - PFC (passive)
  - Integrated PID controller
  - Control input 0-10 VDC / PWM
  - Input for sensor 0-10 V or 4-20 mA
  - Slave output 0-10 V max. 3 mA
  - Output 20 VDC (±20 %) max. 50 mA
  - Output 10 VDC (+10 %) max. 10 mA
  - RS485 MODBUS
  - Motor current limitation, Alarm relay
  - Line undervoltage / phase failure detection
  - Electronics / motor overtemperature protection
  - Locked-rotor protection, Soft start
  - Digital inputs for day/night switch, enabling, cooling / heating
– **EMC:** Interference emission acc. to EN 61000-6-3
  Interference immunity acc. to EN 61000-6-2
  Harmonics acc. to DIN EN 61000-3-2/3
– **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
– **Connection leads:** Via terminal strip
– **Protection class:** I (acc. to EN 61800-5-1)
– **Product conforming to standard:** CE
– **Approvals:** VDE, UL, CSA, CCC, GOST are applied for



Mass of centrifugal fan

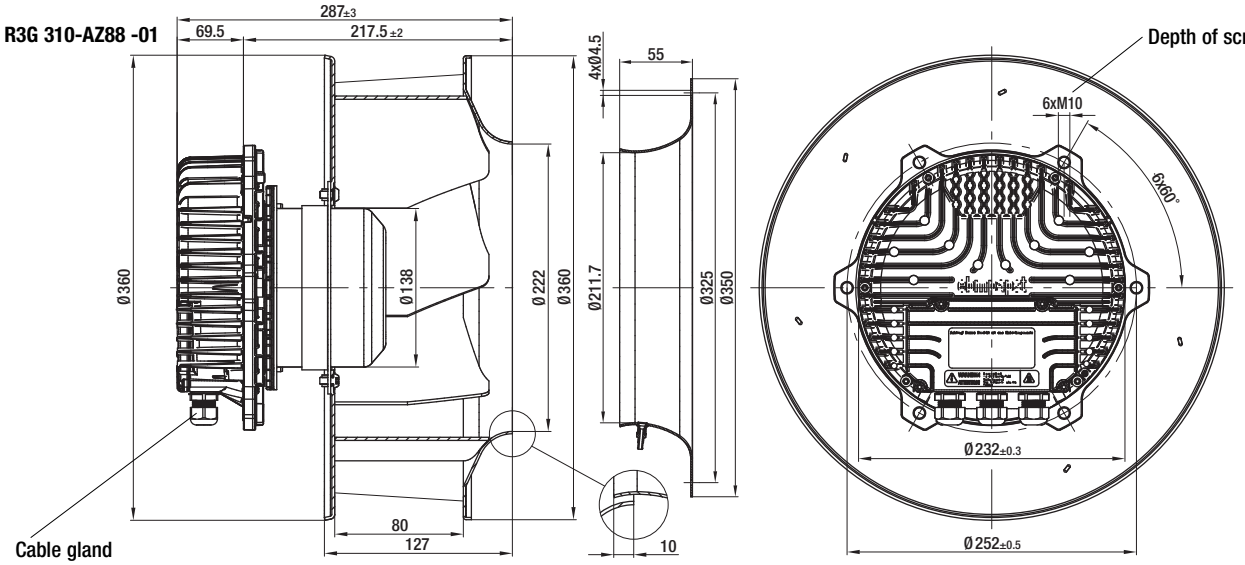


Mass of centrifugal module with support bracket

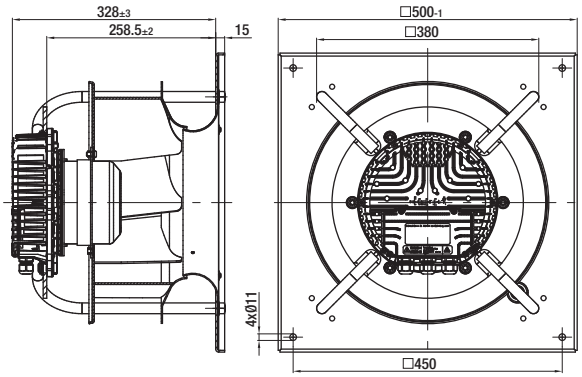
Centrifugal fan (2)	kg	Inlet nozzle with one pressure tap	Centrifugal module w. support bracket (2)	kg
R3G 310-AZ88 -01	15,0	31576-1-4013	K3G 310-AZ88 -02	25,0

(2) With higher protection against corrosion

R3G 310-AZ88 -01



K3G 310-AZ88 -02



EC centrifugal fans and module

backward curved, Ø 450 - Design for use in sanitation units -

- **Material:** Support bracket: Steel, coated in white
  Support plate: Galvanised sheet steel, coated
  Impeller: Sheet aluminium, welded, coated
  Rotor: Coated in black
  Electronics enclosure: Die-cast aluminium, coated
- **Number of blades:** 7
- **Direction of rotation:** Clockwise, seen on rotor
- **Type of protection:** IP 54 (acc. to EN 60529)
- **Insulation class:** "F"
- **Mounting position:** Shaft horizontal or rotor on bottom; rotor on top on request
- **Condensate discharges:** Rotor-side
- **Mode of operation:** Continuous operation (S1)
- **Bearings:** Maintenance-free ball bearings

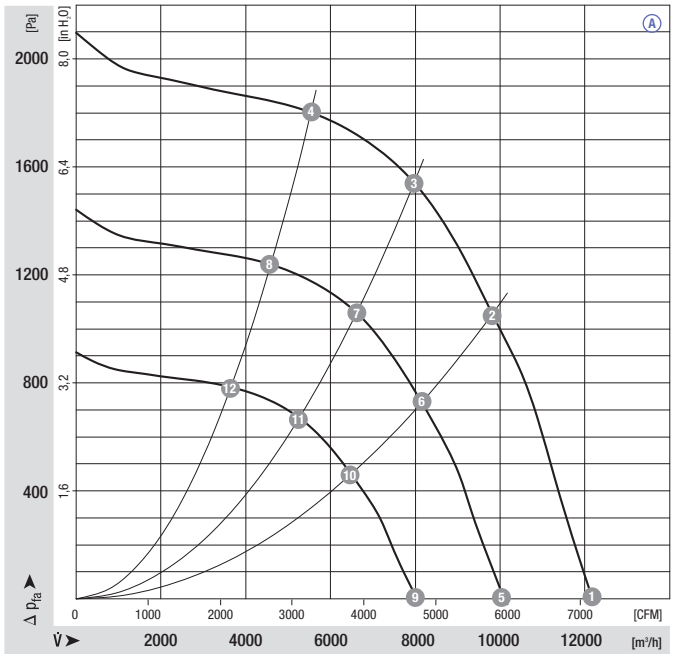
Nominal data

Type	Motor	Curve	Nominal voltage range	Frequency	Speed/rpm(1)	Max. power input(1)	Max. current draw(1)	Perm. amb. temp.	Electr. connection
			VAC	Hz	rpm	W	A	°C	p. 47
*3G 450	M3G150-IF	Ⓐ	3~ 380-480	50/60	2750	5370	8,30	-25..+40	M2)

subject to alterations

(1) Nominal data in operating point with maximum load and 400 VAC

Curves



	n [rpm]	P_1 [W]	I [A]	Lw_A [dB(A)]
Ⓐ 1	2750	3105	4,79	100
Ⓐ 2	2750	4841	7,47	90
Ⓐ 3	2750	5370	8,30	89
Ⓐ 4	2750	5060	7,80	93
Ⓐ 5	2280	1769	2,73	96
Ⓐ 6	2280	2759	4,26	86
Ⓐ 7	2280	3058	4,70	85
Ⓐ 8	2280	2884	4,44	89
Ⓐ 9	1815	893	1,38	91
Ⓐ 10	1815	1392	2,15	81
Ⓐ 11	1815	1543	2,37	80
Ⓐ 12	1815	1455	2,24	84

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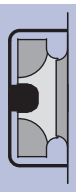
- **Technical features:**
  - PFC (passive)
  - Integrated PID controller
  - Control input 0-10 VDC / PWM
  - Input for sensor 0-10 V or 4-20 mA
  - Slave output 0-10 V max. 3 mA
  - Output 20 VDC (±20 %) max. 50 mA
  - Output 10 VDC (+10 %) max. 10 mA
  - RS485 ebmBUS
  - Alarm relay
  - Line undervoltage / phase failure detection
  - Motor current limitation
  - Electronics / motor overtemperature protection
  - Locked-rotor protection
  - Soft start
- **EMC:** Interference emission acc. to EN 61000-6-3
  Interference immunity acc. to EN 61000-6-2
  Harmonics acc. to DIN EN 61000-3-2/3
- **Leakage current:** < 3.5 mA acc. to EN 61800-5-1
- **Connection leads:** Via terminal strip
- **Protection class:** I (acc. to EN 61800-5-1)
- **Product conforming to standard:** CE
- **Approvals:** VDE, UL, CSA, CCC, GOST are applied for

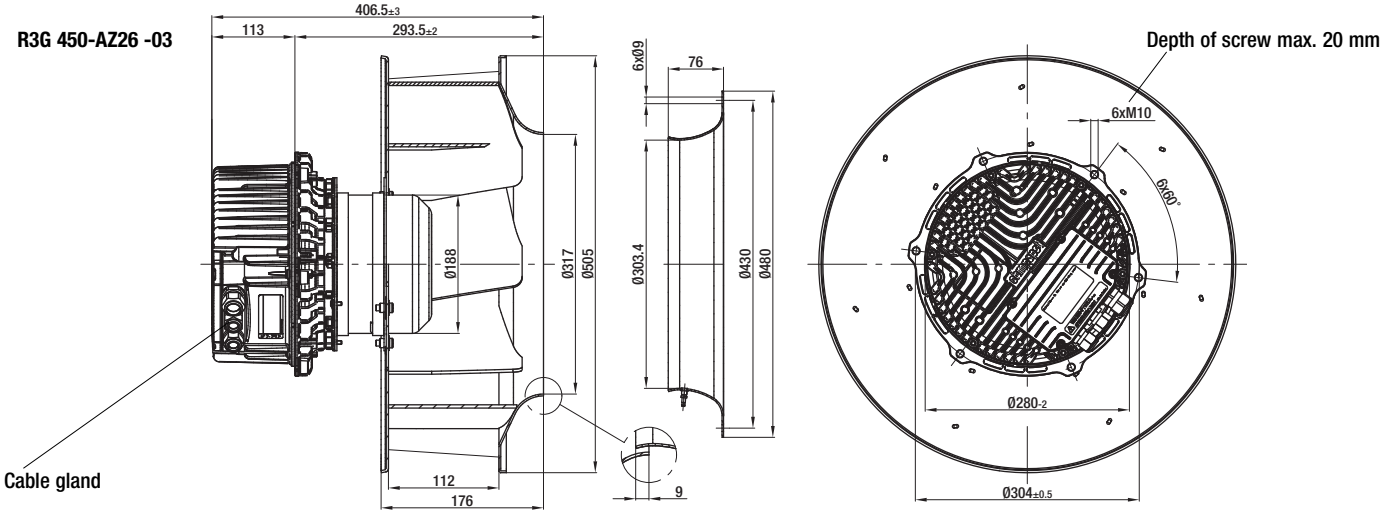




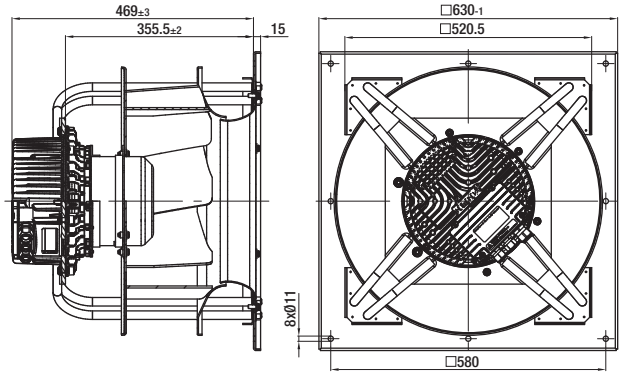
Centrifugal fan (2)	Mass of centrifugal fan kg	Inlet nozzle with one pressure tap	Centrifugal module w. support bracket (2)	Mass of centrifugal module with support bracket kg
R3G 450-AZ26 -03	31,5	45076-1-4013	K3G 450-AZ26 -03	55,0

(2) With higher protection against corrosion

R3G 450-AZ26 -03

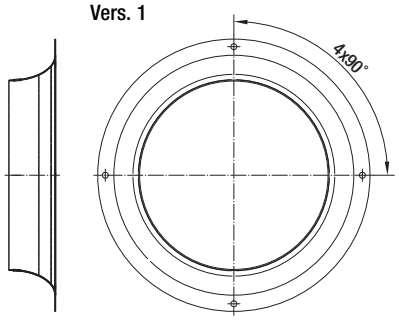


K3G 450-AZ26 -03

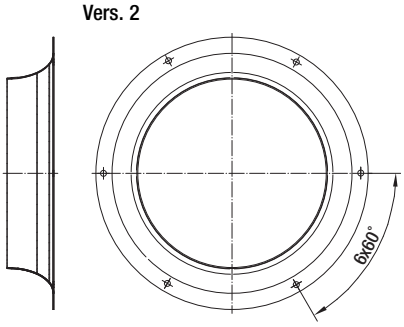


Accessories

Vers. 1



Vers. 2



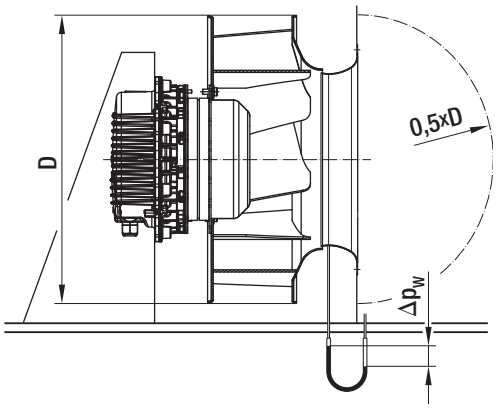
- **Material:** galvanised sheet steel

Inlet nozzles without measuring device for backward curved centrifugal fans

Part no.	Size	Vers.	For dimensions, see
25070-2-4013	250	1	page 7
28070-2-4013	280	1	page 11
31570-2-4013	310	1	page 17
35670-2-4013	355	1	page 19
40070-2-4013	400	2	page 23
45070-2-4013	450	2	page 27
63072-2-4013	500	2	page 31
63071-2-4013	560	2	page 35

subject to alterations

Air flow determination:



The differential pressure approach compares the static pressure before the inlet nozzle with the static pressure inside the inlet nozzle. Air flow can be calculated on the basis of the differential pressure (difference in pressure of the static pressures) in keeping with the following equation:

$$\dot{V} = k \cdot \sqrt{\Delta p_W} \qquad \dot{V} \text{ in } [m^3/h] \text{ und } \Delta p_W \text{ in } [Pa]$$

If constant air flow is to be controlled to, then the nozzle pressure has to be kept constant:

$$\Delta p_W = \dot{V}^2 : k^2$$

k takes into account the specific nozzle characteristics.
Differences in static pressure are measured in 1/4 measuring point(s) along the circumference of the inlet nozzle. Connection on the customer side is acomplished via a pre-mounted T tube connector. This tube connector is suited for pneumatic hoses with an internal diameter of 4 mm.

Inlet nozzles with measuring device to determine air flow for backward curved centrifugal fans

Part no. Part no.	Size	k-value	For dimensions, see
25075-2-4013[1] / 25080-2-4013[2]	250	70	page 7
28075-2-4013[1] / 28080-2-4013[2]	280	93	page 11
31575-2-4013[1] / 31580-2-4013[2]	310	116	page 17
35675-2-4013[1] / 35680-2-4013[2]	355	148	page 19
40075-2-4013[1] / 40080-2-4013[2]	400	188	page 23
45075-2-4013[1] / 45080-2-4013[2]	450	240	page 27
64025-2-4013[1] / 64002-2-4013[2]	500	281	page 31
64030-2-4013[1] / 64001-2-4013[2]	560	348	page 35

subject to alterations [1] with one pressure tap [2] with piezometer ring (4 pressure taps connected by tubing)

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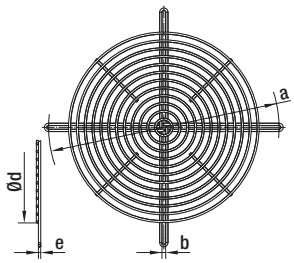
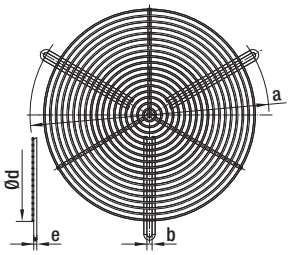
Accessories

Vers. 1



Vers. 2



- **Material:** sheet steel, plastic coated, silver-metallic gloss

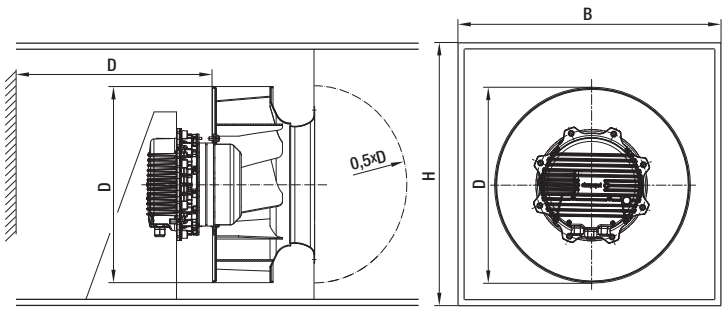
Air intake guard grilles for backward curved centrifugal fans (according to EN 294)

Part no.	Size	Vers.	a	b	d	e	Strut pitch
78129-2-4039	250	1	260	4,5	191	2,8	4 x 90°
78130-2-4039	280	1	280	4,5	229	2,8	4 x 90°
78131-2-4039	310	1	325	4,5	248	2,8	4 x 90°
78132-2-4039	355	1	345	4,5	305	2,8	4 x 90°
78133-2-4039	400	2	390	8,5	343	3,8	3 x 120°
78134-2-4039	450	2	430	8,5	381	3,8	3 x 120°
78139-2-4039	500	2	445	8,5	410	3,8	3 x 120°
78137-2-4039	560	2	490	8,5	430	3,8	3 x 120°

subject to alterations

Effects of installation space

When mounting our product in a rectangular box, air performance might be reduced.



d_h = Hydraulic diameter

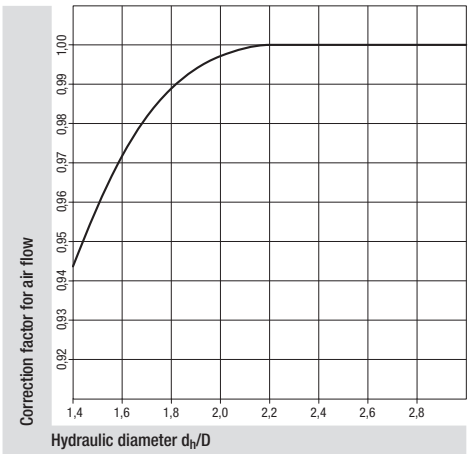
Formula: $d_h = 2 \times B \times H / (B + H)$

B = Width of box

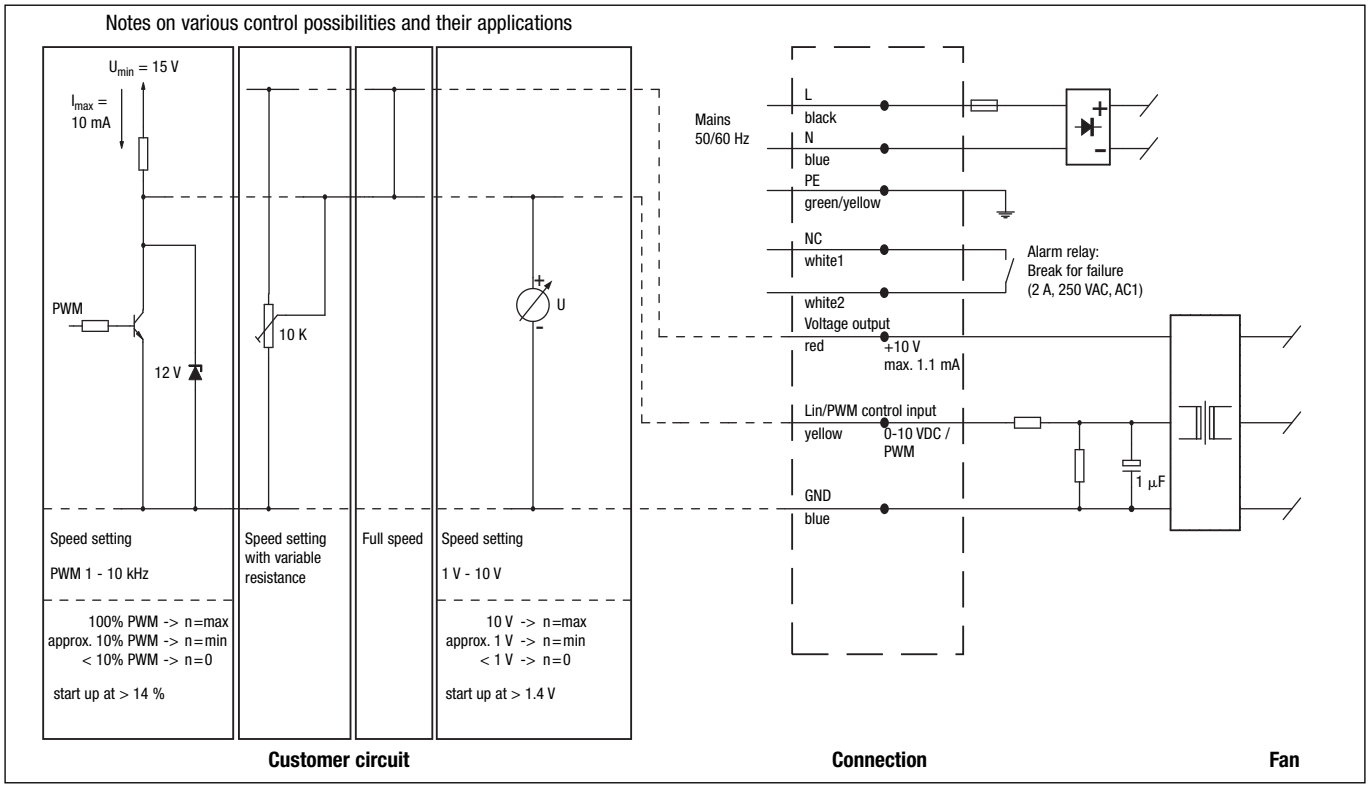
H = Height of box

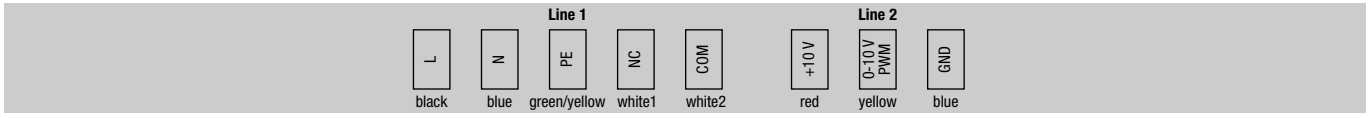
D = Outer diameter of the fan

Curve



K1)

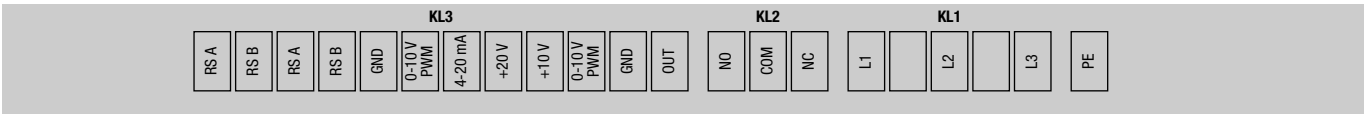




Line	Connection	Colour	Assignment / function
1	L	black	Mains 50/60 Hz, phase
	N	blue	Mains 50/60 Hz, neutral
	PE	green/yel	Protective earth
	NC	white1	Alarm relay, break for failure
	COM	white2	Alarm relay, COMMON

Line	Connection	Colour	Assignment / function
2	+10 V	red	Voltage output +10 V max. 1.1 mA
	0-10 V / PWM	yellow	Control input (Impedance 100 kΩ)
	GND	blue	GND

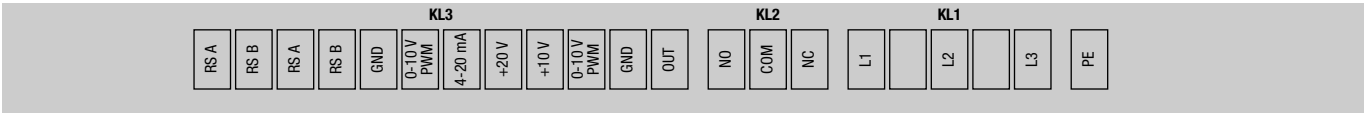
L2)



Connector	Connection	Assignment / function
PE	PE	Protective earth
KL1	L3	Mains; L3
	L2	Mains; L2
	L1	Mains; L1
KL2	NC	Alarm relay, break for failure
	COM	Alarm relay, COMMON (2A, 250 VAC, AC1)
	NO	Alarm relay, make for failure

Connector	Connection	Assignment / function
KL3	OUT	Master output 0-10 V max. 3 mA
	GND	GND
	0-10 V / PWM	Control / Actual value input (Impedance 100 kΩ)
	+10 V	Supply for external potentiometer,
		10 VDC (+10 %) max. 10 mA
	+20 V	Supply for external sensor,
		20 VDC (±20 %) max. 50 mA
	4-20 mA	Control / Actual value input
	0-10 V / PWM	Control / Actual value input
	GND	GND
	RSB	RS485 interface for ebmBUS; RS B
	RSA	RS485 interface for ebmBUS; RS A
	RSB	RS485 interface for ebmBUS; RS B
	RSA	RS485 interface for ebmBUS; RS A

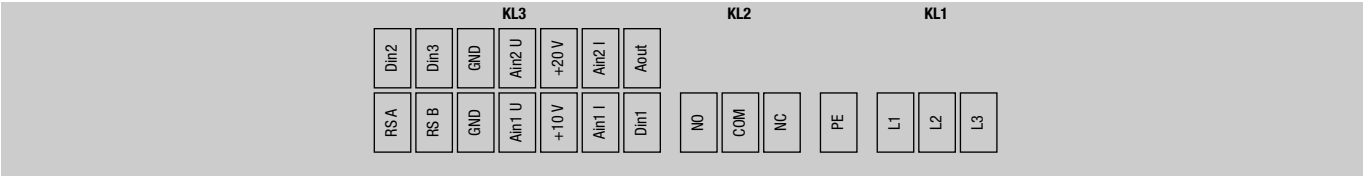
L6)



Connector	Connection	Assignment / function
PE	PE	Protective earth
KL1	L3	Mains; L3
	L2	Mains; L2
	L1	Mains; L1
KL2	NC	Alarm relay, break for failure
	COM	Alarm relay, COMMON (2A, 250 VAC, AC1)
	NO	Alarm relay, make for failure

Connector	Connection	Assignment / function
KL3	OUT	Master output 0-10 V max. 3 mA
	GND	GND
	0-10 V / PWM	Control / Actual value input (Impedance 100 kΩ)
	+10 V	Supply for external potentiometer,
		10 VDC (+10 %) max. 10 mA
	+20 V	Supply for external sensor,
		20 VDC (±20 %) max. 50 mA
	4-20 mA	Control / Actual value input
	0-10 V / PWM	Control / Actual value input
	GND	GND
	RSB	RS485 interface for MODBUS RTU; RS B
	RSA	RS485 interface for MODBUS RTU; RS A
	RSB	RS485 interface for MODBUS RTU; RS B
	RSA	RS485 interface for MODBUS RTU; RS A

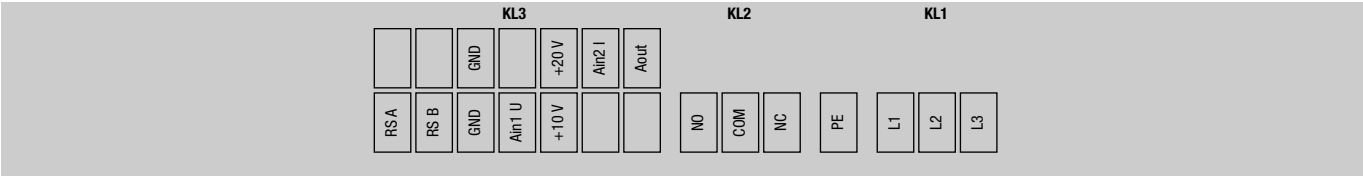
L5)



Connector	Connection	Assignment / function
KL1	L3	Mains; L3
	L2	Mains; L2
	L1	Mains; L1
PE	PE	Protective earth
KL2	NC	Alarm relay, break for failure
	COM	Alarm relay, COMMON (2A, 250 VAC, AC1)
	NO	Alarm relay, make for failure

Connector	Connection	Assignment / function
KL3	Din1	Digital input 1 (enabling / disabling of electronics),,
		Enabling: Pin open or applied voltage 5...50 VDC
		Disabling: Bridge to GND or applied voltage < 1 VDC
	Ain1 I	Analogue set value input, 4-20 mA (impedance 100 Ω),
		only to be used as alternative to terminal Ain1 U
	+10 V	Supply for external potentiometer,
		10 VDC (±3 %) max. 10 mA
	Ain1U	Analogue set value input, 0-10 V (impedance 100 kΩ),
		only to be used as alternative to terminal Ain1 I
	GND	GND
	RSB	RS485 interface for MODBUS RTU; RS B
	RSA	RS485 interface for MODBUS RTU; RS A
	Aout	Analogue output 0-10 V max. 5 mA, reading of current
		motor speed / current motor control factor
	Ain2 I	Analog. actual value input, 4-20mA (impedance 100Ω),
		only to be used as alternative to terminal Ain2 U
	+20 V	Supply for external sensor,
		20 VDC (+25 % / -10%) max. 40 mA
	Ain2 U	Analog. actual value input, 0-10 V (impedance 100 kΩ),
		only to be used as alternative to terminal Ain2 I
	GND	GND
	Din3	Digital input 3 (switch Normal / Inverse),
		The preset effective direction of the integrated
		controller can be selected via BUS or via digital input
		Normal/Inverse.
		Normal: Pin open or applied voltage 5...50 VDC
		Inverse: Bridge to GND or applied voltage < 1 VDC
	Din2	Digital input 2 (switch Day / Night),
		The preset set of parameters can be selected via BUS
		or via digital input Day/Night.
		Day: Pin open or applied voltage 5...50 VDC
		Night: Bridge to GND or applied voltage < 1 VDC

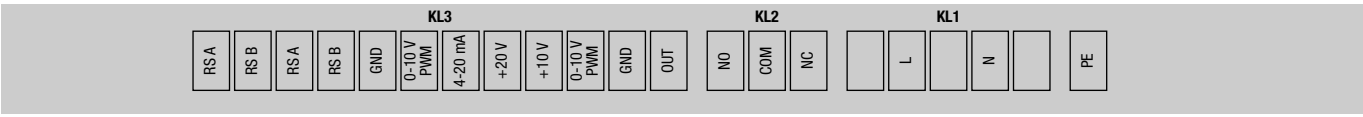
M2)



Connector	Connection	Assignment / function
KL1	L3	Mains; L3
	L2	Mains; L2
	L1	Mains; L1
PE	PE	Protective earth
KL2	NC	Alarm relay, break for failure
	COM	Alarm relay, COMMON (2A, 250 VAC, AC1)
	NO	Alarm relay, make for failure

Connector	Connection	Assignment / function
KL3	+10 V	Supply for external potentiometer,
		10 VDC (±3 %) max. 10 mA
	Ain1U	Analogue set value input, 0-10 V (impedance 100 kΩ),
		only to be used as alternative to terminal Ain2 I
	GND	GND
	RSB	RS485 interface for ebmBUS; RS B
	RSA	RS485 interface for ebmBUS; RS A
	Aout	Analogue output 0-10 V max. 5 mA,
		reading of the current motor control factor
	Ain2 I	Analog. actual value input, 4-20mA (impedance 100Ω),
		only to be used as alternative to terminal Ain1 U
	+20 V	Supply for external sensor,
		20 VDC (+25 % / -10%) max. 40 mA
	GND	GND

L7)



Connector	Connection	Assignment / function
PE	PE	Protective earth
KL1	N	Mains 50/60 Hz. neutral
	L	Mains 50/60 Hz, phase
KL2	NC	Alarm relay, break for failure
	COM	Alarm relay, COMMON (2A, 250 VAC, AC1)
	NO	Alarm relay, make for failure

Connector	Connection	Assignment / function
KL3	OUT	Master output 0-10 V max. 3 mA
	GND	GND
	0-10 V / PWM	Control / Actual value input (Impedance 100 kΩ)
	+10 V	Supply for external potentiometer,
		10 VDC (+10 %) max. 10 mA
	+20 V	Supply for external sensor,
		20 VDC (±20 %) max. 50 mA
	4-20 mA	Control / Actual value input
	0-10 V / PWM	Control / Actual value input
	GND	GND
	RSB	RS485 interface for MODBUS RTU; RS B
	RSA	RS485 interface for MODBUS RTU; RS A
	RSB	RS485 interface for MODBUS RTU; RS B
	RSA	RS485 interface for MODBUS RTU; RS A

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compact fan agent
motor specialist
motor agent

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37797-7-8811 · RA-10/09-3'
Printed in Germany

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