Condensing boiler technology

Product Catalogue 2019-03

ebmpapst

the engineer's choice

EC radial blowers for condensing boiler technology

ebmpapst

the engineer's choice

About ebm-papst

ebm-papst is a leader in ventilation and drive engineering technology and a much sought-after engineering partner in many industries. With around 20,000 different products, we have the perfect solution for practically every requirement. We have placed the highest emphasis on economy and ecology for many years.

We believe the consistent further development of our highly-efficient GreenTech EC technology provides our customers with the best opportunities for the future in industrial digitization. With GreenIntelligence, ebm-papst already offers intelligent networked complete solutions that are unique anywhere in the world today and that secure our customers a decisive advantage.

ebmpapst

the engineer's choice

Six reasons that make us the ideal partner:

Our systems expertise.
You want the best solution for every project. The entire ventilation system must thus be considered as a whole. And that's what we do – with motor technology that sets standards, sophisticated electronics and aerodynamic designs – all from a single source and perfectly matched.

Our spirit of invention.
We are also always able to develop customized solutions for you with our versatile team of over 600 engineers and technicians.

Our lead in technology.
We are not only pioneers and trailblazers in the development of highly efficient EC technology, we also recognized the opportunities of digitization at an early stage. Therefore, we can offer solutions today that combine the highest energy efficiency with the advantages of IoT and digital networking.

Closeness to our customers.
ebm-papst has 25 production locations worldwide (including facilities in Germany, China and the USA), together with 49 sales offices, each of which has a dense network of sales representatives. You will always have a local contact, someone who speaks your language and knows your market.

Our standard of quality.
Our quality management is uncompromising, at every step in every process. This is underscored by our certification according to international standards including DIN EN ISO 9001, TS declaration of conformity and DIN EN ISO 14001.

Our sustainable approach.
Assuming responsibility for the environment, for our employees and for society is an integral part of our corporate philosophy. We develop products with an eye to maximum environmental compatibility, in particular resource-preserving production methods. We promote environmental awareness among our young staff and are actively involved in sports, culture and education. That's what makes us a leading company – and an ideal partner for you.

The next level *of Green*

Sustainability and environmental protection are more than just buzzwords for us, they are a pivotal part of our company philosophy. Our commitment includes green production, dealing responsibly with resources and society, and finished products that use energy efficiently – things for which our globally respected GreenTech label has stood for many years.

GreenIntelligence is the logical next step in the evolution of GreenTech. In a nutshell, it is everything GreenTech stands for, enhanced by the possibilities and opportunities of digital connectivity, the Internet of Things and artificial intelligence. For our customers, that means we bring their applications to a completely new level by adding new value that goes far beyond the purely physical capabilities of individual fans or drives. Think of remote monitoring, predictive maintenance, self-optimizing processes: ebm-papst makes all of these things possible today with integrated solutions featuring smart connectivity for ventilation and drive engineering applications. Or simply: the next level of Green.

GreenIntelligence optimizes processes.
Today, the greatest economic opportunities for industrial systems are in process efficiency. Digital connectivity for all components enables better process planning, faster troubleshooting, and optimization of their overall interaction. ebm-papst supplies both the physical components and the smart control systems that are required for this.

GreenIntelligence for smart solutions.
When it comes to choosing the right drive or fan, product characteristics such as energy efficiency and performance figures are no longer the only crucial factors; the optimum interaction of all components in a process is what matters. Our GreenIntelligence solutions can communicate with their environment. They gather and analyze data and adjust to conditions to ensure the best possible performance.

GreenIntelligence is limitless connectivity.
All GreenIntelligence products have full Industry 4.0 capability and can be integrated in any system quickly and easily thanks to plug & play, minimizing the amount of effort involved in installation and adjustment for our customers.

GreenIntelligence is self-improving.
In the data it gathers, the system software supplied by ebm-papst can recognize potential for optimization and, if desired, implement it automatically – the first step toward artificial intelligence.

Here is how much GreenIntelligence there is in RadiMix:
- Future-proof thanks to full Industry 4.0 capability
- System data readout through LIN bus connectivity
- Easy integration of digital heating functionality
- Status monitoring of blower and environment
- Predictive maintenance for lower servicing costs – maintenance only when really needed
- Can be used in combination with renewable energy sources
- Perfectly adjusted and network-capable integrated solution from a single source

Gas condensing technology
That's ebm-papst

Since creating the world's first gas blower for condensing technology, we have been the market leader for efficient components and complete, perfectly matched systems. We develop blowers, venturis, valves and burner controls together with our customers and supply everything as a full package. Enjoy the benefits of our well-established and constantly updated technology combined with unique system expertise.

More than just combustion

Modern gas condensing units are known for their productivity and efficient energy utilization. They have to be supplied with exactly the right amount of gas and air in an ideal ratio for every operating status and under all ambient conditions. Only then is hygienic and efficient combustion guaranteed. Compact dimensions keep the installation space to a minimum and at the same time provide better accessibility.

ebm-papst offers the world's most extensive product range for condensing technology. From just a few kilowatts for use in private households to several megawatts for supplying entire residential areas: We will always find the right solution. Our portfolio contains efficient EC radial blowers, gas valves and perfectly matched system solutions for every application.

Advantages at a glance

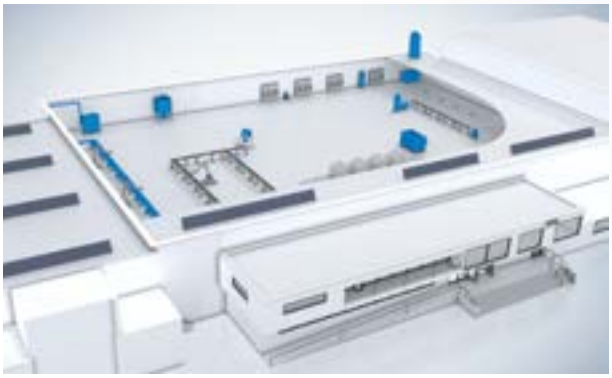
– System and development expertise from the market leader
– Unrivaled power and modulation spectrum
– Well-established technology guarantees a long service life
– High power density thanks to compact design
– Outstanding efficiency levels
– Extremely smooth operation with a low noise level
– Pre-matched components for easy adaptation to the respective application
– Future-proof thanks to BUS connection option

Ideally suited
for all applications

Residential technology 150 kW

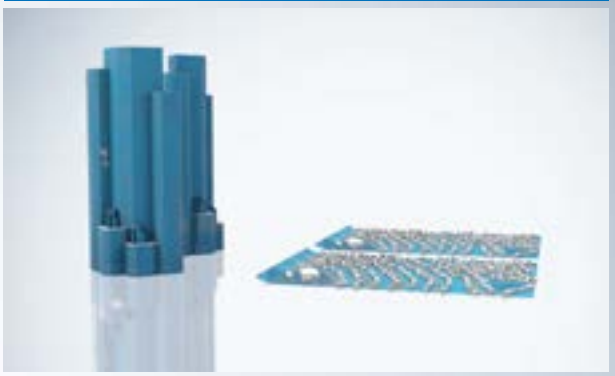
- Gas condensing heating systems for private households
- Use as heating unit only, as combi-boiler or in conjunction with regenerative energies

Commercial technology

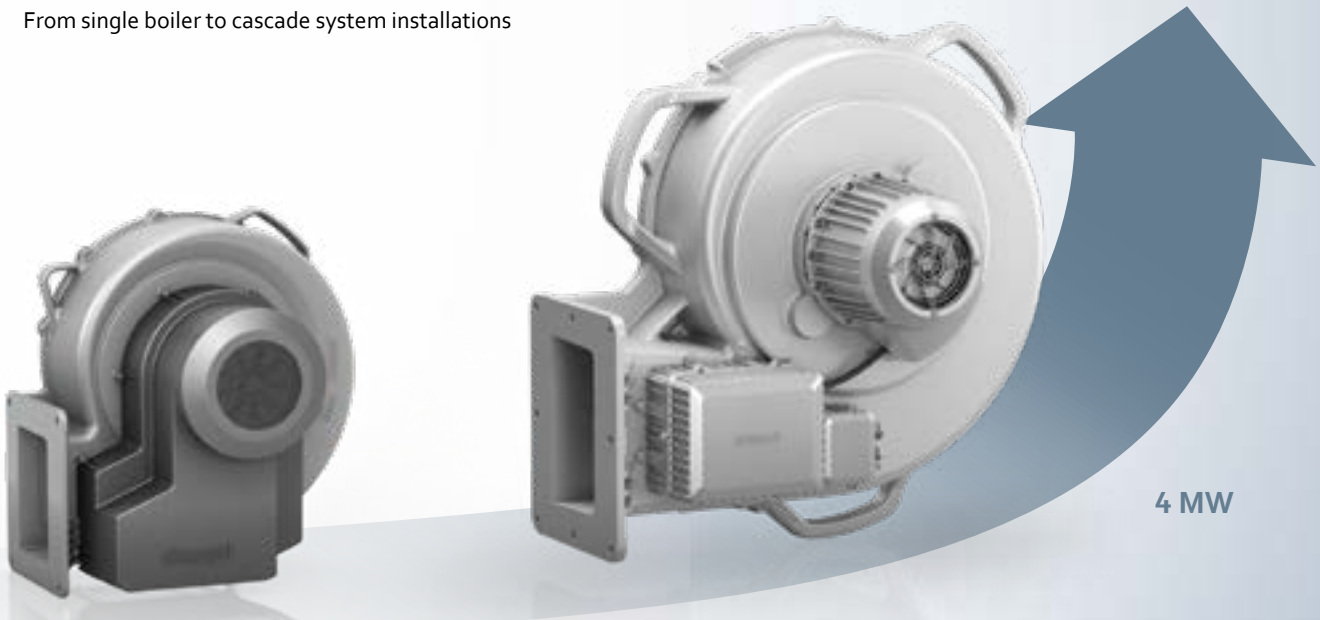


- Gas condensing heating systems for applications ranging from small trade businesses to heating installations in large industrial plants
- From single boiler to cascade system installations

Apartment blocks / residential areas



- The first condensing blower for heat output up to 4 MW rounds off our extensive product portfolio
- For decentralized heating solutions keeping construction work and heat loss from long pipes to a minimum compared to large Combined Heat and Power stations



Laboratory equipment

As market and technology leaders, we are constantly endeavoring to improve our performance and provide our customers with the best possible complete solution. Our engineers and technicians assist our customers with the development of their application right from the start to help advance the process of improvement. Before series launch we conduct extensive tests to ensure compliance with legal requirements and customer specifications. We have a wide range of measuring equipment at our disposal for this purpose.

For example our checks include examining design influences such as modifications to the gas-air mixing device, the backflow flaps or the venturi. All these factors can affect the efficiency, noise level and functionality of a condensing heating system. We take measurements on gas-air composite systems directly in the heating unit to ensure ideal matching of the individual components and motor performances. This is accompanied by flow simulation with direct incorporation of the results obtained.

Gas laboratory:

- Highly advanced measuring equipment with all the standard test and limit gases used in Europe, America and Asia
- Exhaust gas measurements (CO_2, CO, air ratio), measurements with variable aerodynamic parameters (venturi pressure, mass flow, exhaust gas back pressure) to increase and optimize the modulation range
- Measurement of thermal and electrical performance data
- Simulation of wind and turbulence in the exhaust gas area, e. g. for electronic gas-air composite systems
- Communication with all standard bus systems, e. g. CANbus, LINbus, Modbus, ebus, OpenTherm

Climate chambers:

- Environmental simulation and service life tests with more than 30 climatic, cold and warm chambers
- Simulation of temperature range from 70°C to 300°C possible

Air performance test stands:

Checking of the operating characteristics of blowers and systems with recording of the air performance curves

Endurance test rooms:

About 150 different endurance tests with over 700 specimens in progress

Sound measurement laboratory:

Precise sound power and gas measurement technology with incorporation of real conditions

Vibration test:

For simulation of transportation and operation with different vibration profiles

EMC measurement room:

Emission and immission measurements

Approvals:

AGA, CCC, CSA, DVGW, EAC, KIWA, TÜV, UL, VDE

Standards and Directives:

– Low-Voltage Directive
– Machinery Directive
– Gas Appliance Regulation
– EMC Directive

Additional equipment:

– 3D microscope
– 3D plotter

Gas valve test stands:

For gas valves with pneumatic and electronic modulation

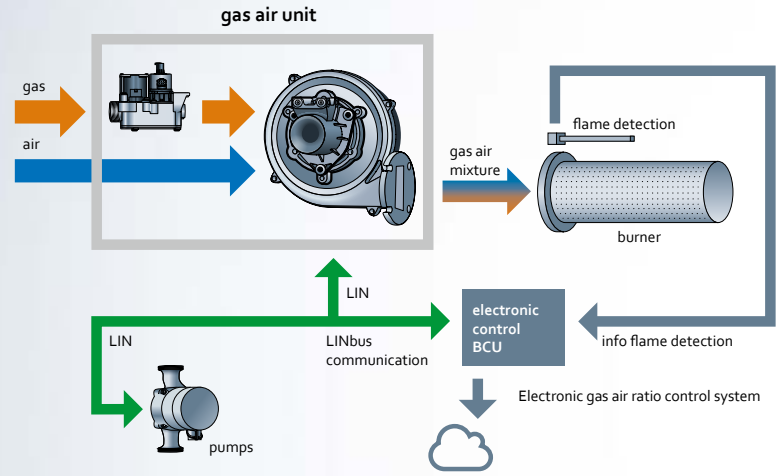
Systems
for condensing boiler technology

Information

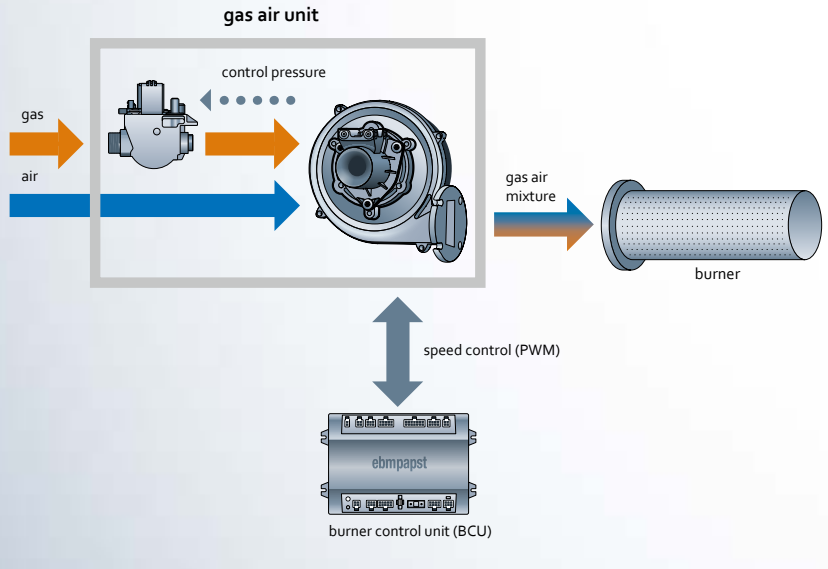
An optimum gas-air mixing ratio is crucial to the energy yield realized during combustion. The mixing ratio needs to be exactly adjusted to the heating value of the gases being used (e.g. natural gas, LPG or biogas). An additional challenge is the flexibility of heat output. The greater the modulation range of a heating system, the better its heating output can be adjusted to actual needs. The limits of the modulation level are determined among others by the minimum and maximum output of the premixing blower. This means its components need to be perfectly matched. That's why we offer complete heating systems including gas blowers, venturis, gas valves and burner control units from a single source.

Ideally suited for use in electronic or pneumatic gas air ratio control systems

Electronic gas air ratio control system



Pneumatic gas air ratio control system



Gas blower:
State-of-the-art blower technology for modulating operation with low noise and a long service life

Venturi:
The pressure generated by the venturi effect provides an optimum mixture of gas and air in the pneumatic gas-air ratio control

Gas valve:
The component required for the reliable supply of gas has a particularly compact design

Burner control with display:
The electronic control is matched precisely to the system. Signals from the burner control can be evaluated in the lab using LabVision software

Our system solutions
at a glance

All heating technology components must be perfectly harmonized in order to achieve optimum performance and efficiency. This is why we offer complete heating systems, including gas blower, venturi and gas valve, from a single source.

A key benefit of our gas-air composite systems is their optimal mixing ratio with simultaneously high modulation ranges. To achieve this high level of efficiency, we provide different venturi elements for multi-venturis, depending on the heat output range.

Our multi-venturi solutions provide you with a wide variety of motor performances and options for assigning our systems to your devices. This gives you the benefit of flexible integration into compact spaces.

We supply our systems as completely tested, harmonized units with optimized interfaces to minimize your effort.

Mounting positions

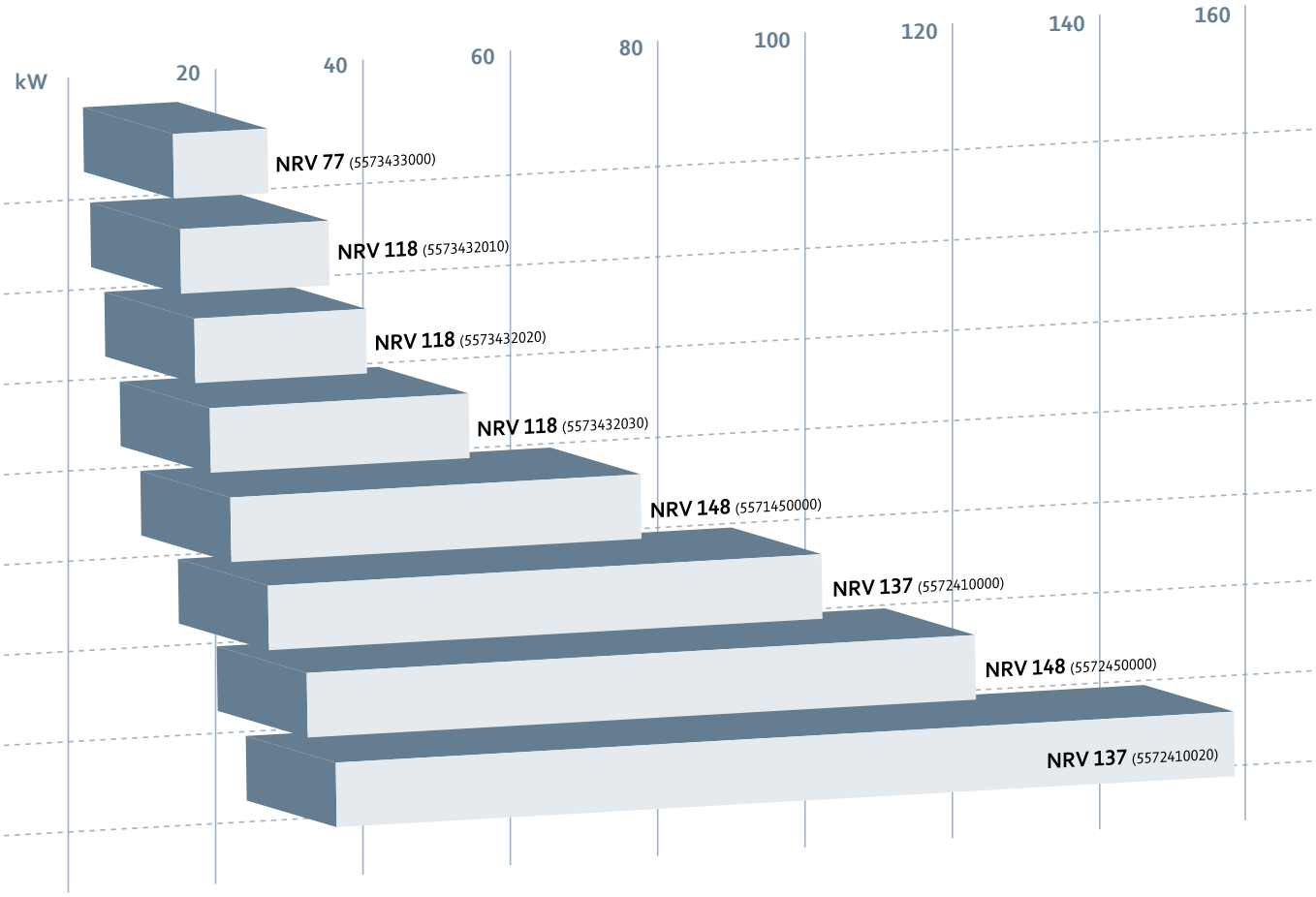
With horizontal shaft or vertical shaft with motor positioned at top

Illustration examples

System solutions

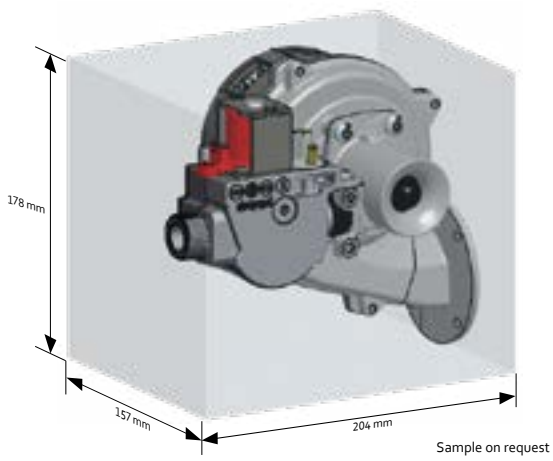
System	Heat output range	Gas valve	Max. motor power
	[kW]		[W]
HS0077E1PXXS (NRV 77)	2 – 15	G15 E01	62
	5 – 28		
	7 – 35		
HS0118E1PXXS (NRV 118)	3 – 23	G15 E01	70
	5 – 28		
	7 – 42		
HS0148D1PXXS (NRV 148)	10 – 65	G15 D01	200
	20 – 110	G20 D01	
HS0137D1PXXS (NRV 137)	15 – 90	G20 D01	200
	24 – 145		300

Heat load in kW



Heat output range depending on type of gas concerned and system conditions.

Our system solutions
at a glance



Sample on request

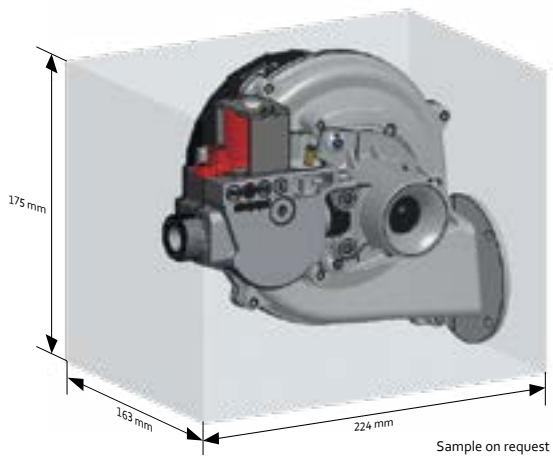
NRV 77 The system for heat outputs from 2 to 35 kW

– Gas blower NRG 77 with multi-venturi
– Gas valve G15 E01
– Operating voltage 230 V, option of 120 V
– 24 V gas valve on request
– Further heat output ranges on request

Nominal data

Type	Heat output range [kW] *	Part number
HS0077E1PXXS	2 – 15	**5573433000**
	5 – 28	**5573433010**
	7 – 35	**5573433020**

* Approximate figures. Heat output range depending on type of gas concerned and system conditions.



Sample on request

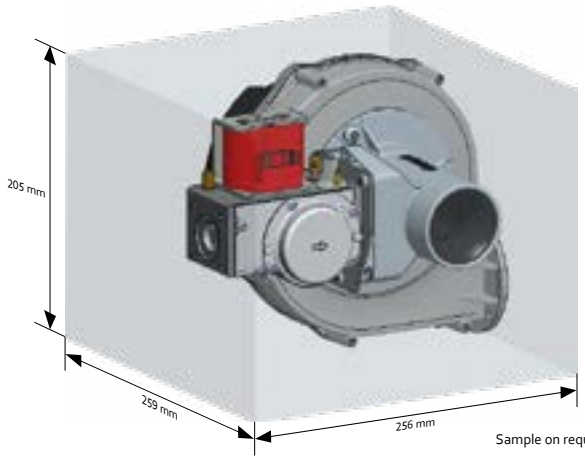
NRV 118 The system for heat outputs from 3 to 42 kW

– Gas blower NRG 118 with multi-venturi
– Gas valve G15 E01
– Operating voltage 230 V, option of 120 V
– 24 V gas valve on request
– Further heat output ranges on request

Nominal data

Type	Heat output range [kW] *	Part number.
HS0118E1PXXS	3 – 23	**5573432010**
	5 – 28	**5573432020**
	7 – 42	**5573432030**

* Approximate figures. Heat output range depending on type of gas concerned and system conditions.



Sample on request

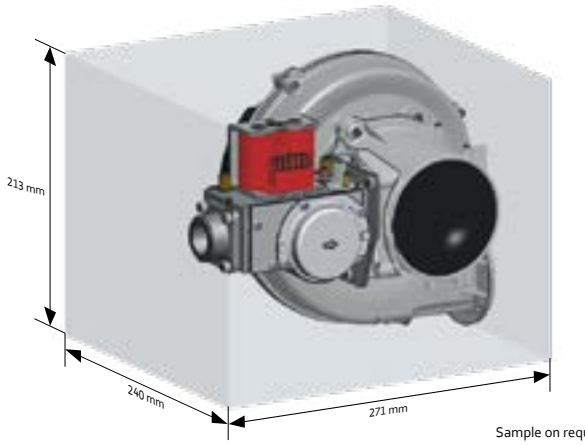
NRV 148 The system for heat outputs from 10 to 110 kW

– Gas blower RG 148 with multi-venturi
– Gas blower G15 D01 (5571450000);
G20 D01 (5572450000)
– Operating voltage 230 V, option of 120 V
– 24 V gas valve on request

Nominal data

Type	Heat output range [kW] *	Part number
HS0148D1PXXS	10 – 65	**5571450000**
	20 – 110	**5572450000**

* Approximate figures. Heat output range depending on type of gas concerned and system conditions.



Sample on request

NRV 137 The system for heat outputs from 15 to 145 kW

– Gas blower NRG 137 with multi-venturi
– Gas valve G20 D01
– Operating voltage 230 V, option of 120 V
– 24 V gas valve on request

Nominal data

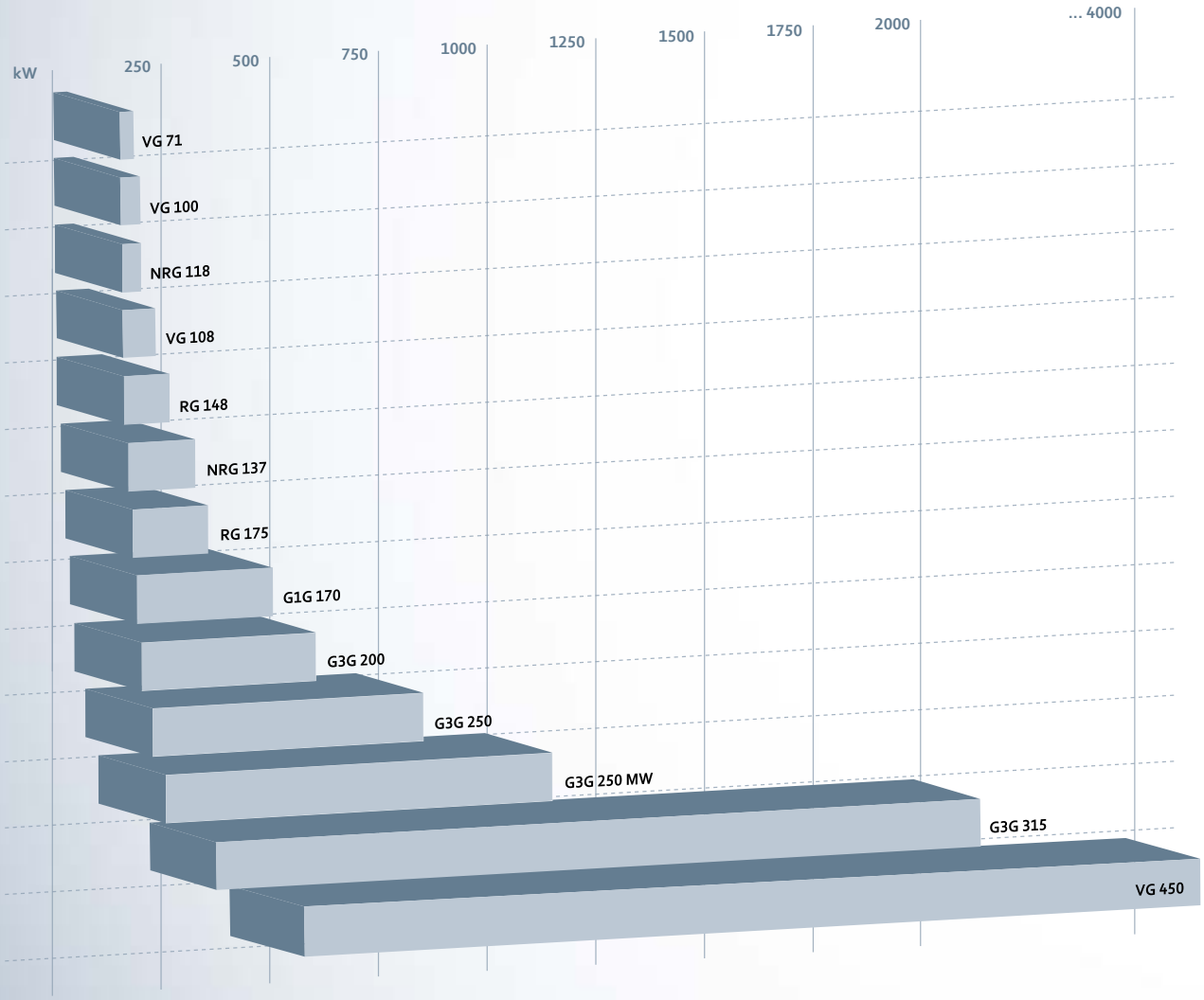
Type	Heat output range [kW] *	Part number
HS0137D1PXXS	15 – 90	**5572410000**
	24 – 145	**5572410020**

* Approximate figures. Heat output range depending on type of gas concerned and system conditions.

EC radial blowers

Modern gas-fired modulated condensing units have to be supplied with the optimum volume and mixture of air and fuel in all operating modes and ambient conditions. They require adjustable blowers with steep pressure/air flow characteristic curves and high maximum pressures. ebm-papst played a significant role in developing EC blowers for this purpose and now offers the widest range of solutions for this application area. However, the special properties of these blowers make them suitable for many other applications as well. Examples include gas-powered cooking appliances for the food service industry or gas-powered deep fryers for commercial use.

Heat load in kW



Heat output range depending on type of gas concerned and system conditions.

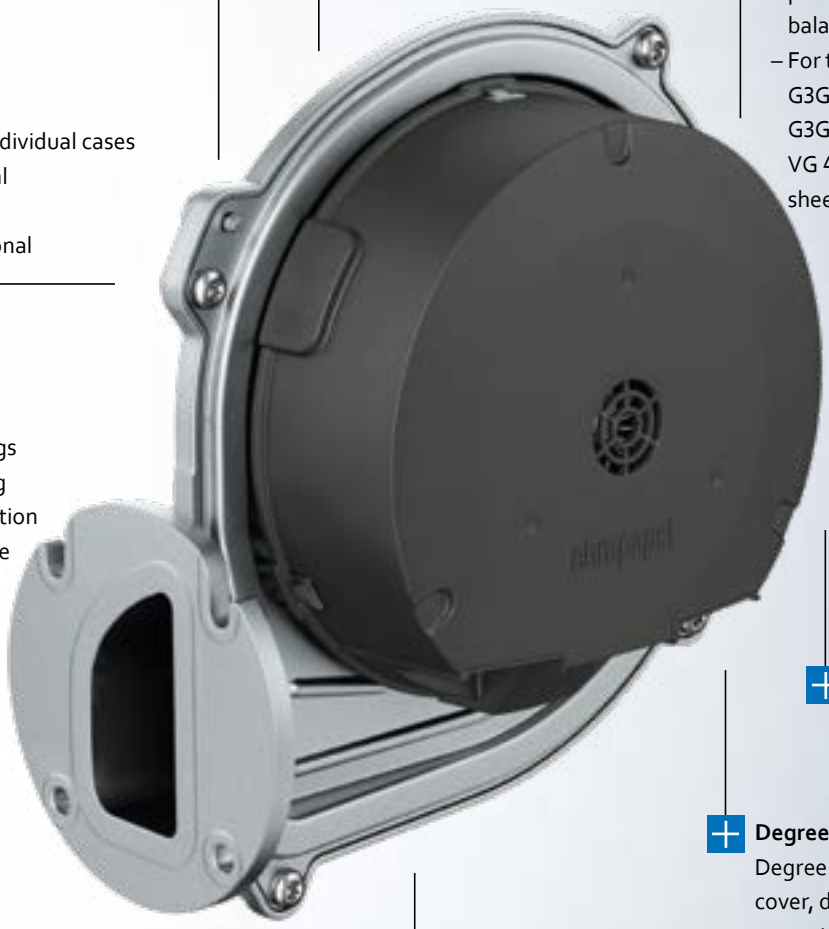
Drive:
– Brushless DC (EC) motors with integrated electronics
– Vibration-free mounting to minimize structure-borne sound
– Adjustment of motor power on an individual basis

Commutation electronics:
– Integrated into the blower unit and perfectly harmonized with the motor
– Integrated blockage switch-off and overheating protection as per EN 60335
– Various standard interfaces available for the respective burner control
– Optimized in accordance with EMC emissions and pollution

Housing:
– Made of die-cast aluminum
– (respectively cast aluminium/sheet steel)
– Required density thanks to special seal for housing halves and drive shaft conduit
– Outlet flange adjustable to many designs

Impellers:
– For type VG, NRG und RG blowers of pentane-resistant plastic: dynamically fine balanced
– For the G1G 170, G3G 200, G3G 250, G3G 250MW, G3G 315 and VG 450 models made of sheet aluminum

Speed controls:
– Adjustment required in individual cases
– Controlled via PWM signal
– 0–10 V input optional
– Bus communication optional



Bearings:
– Maintenance-free ball bearings covered on both sides for long service life and smooth operation
– Use of lubricants suited for the particular application

Protection class:
Protection class I

Degree of protection:
Degree of protection IP20 with cover, depending on the Installation position

Mounting positions:
– With horizontal shaft or vertical shaft with motor positioned at top
– For vibration-cushioned motor installation, the motor's weight is additionally supported by a flexible element.

Speed output:
– With Hall IC signal output; in case of motors for line voltage operation, speed signal output is galvanically isolated
– VG, NRG and RG blowers, each with two pulses per revolution
– G1G and G3G blowers, each with three pulses per revolution
– G3G 250 MW blower with four pulses per revolution
– G3G 315 and VG 450 blower with five pulses per revolution

EC radial blower

VG 71

on Page 14	Possible mounting positions
on Page 46	Mains connector X, interface connector W
on Page 48	Electrical interfaces
More at	www.ebmpapst.com

Material/surface

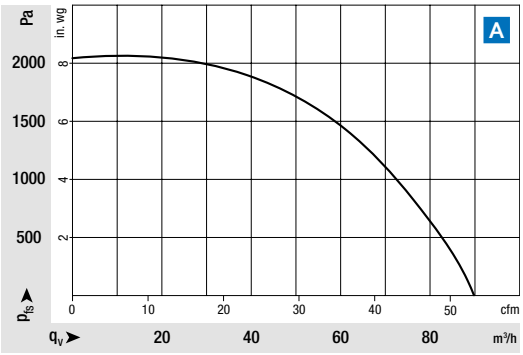
- Housing: Die-cast aluminium/sheet steel
- Impeller: Plastic
- Motor protection cap: Plastic

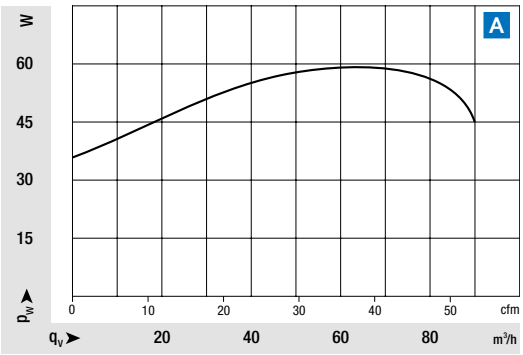
Mechanical data

- Degree of protection: IP20 with cover, depending on the installation position
- Installation position: With horizontal shaft or for vertical shaft with motor position above
- Mounting: Ball bearings
- Multiventuri on request

Electrical data

- Protection class I





Measuring requirements

Air performance measured according to: ISO 5801 with ebm-papst scroll housing without touch protection. The information is only applicable under the specified measuring or standard conditions (15 °C, 1013 hPa, 1,225 kg/m³) and may change depending on the installation conditions.In case of deviation from the standard configuration and depending on the type of gas, the heat output must be checked when installed.

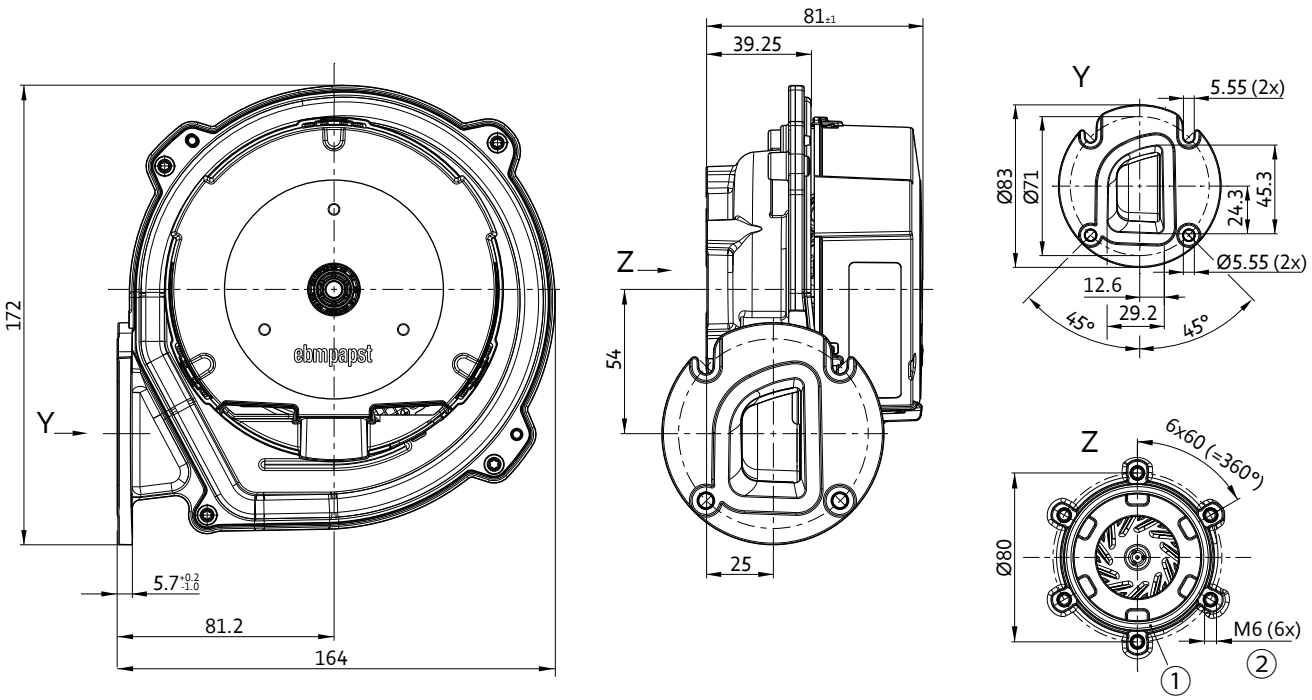
Curve	Max. speed n	Max. input power P_{ed}	Max. perm. amb. motor temp.	Max. perm. temp. of medium
	min⁻¹	W	°C	°C
Nominal voltage 220/240 V AC, 50/60 Hz				
A	14000	65	60	60

Subject to change. Available with the option of a more powerful motor.

Curve	EC radial blower		
	Type	Part number	Weight
			kg
A	VGR0071MSGBS	**5566780050**	0.9

A Technical drawing

Dimensions in mm



(1) Groove suitable for round sealing ring 63 x 3

(2) 6.5 deep

EC radial blower

VG 100

on Page 14	Possible mounting positions
on Page 46	Mains connector X, interface connector W
on Page 48	Electrical interfaces
More at	www.ebmpapst.com

Material/surface

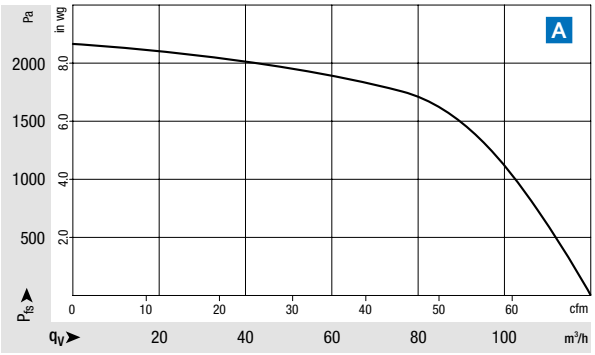
- Housing: Die-cast aluminium/sheet steel
- Impeller: Plastic
- Motor protection cap: Plastic

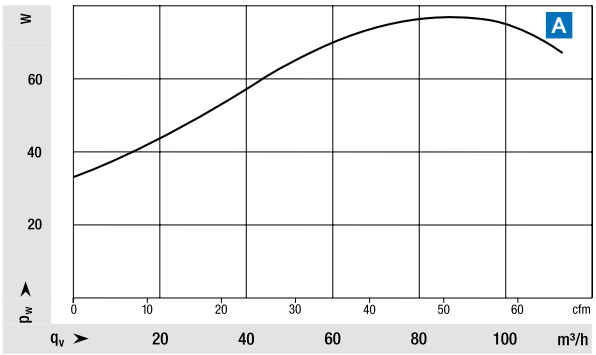
Mechanical data

- Degree of protection: IP20 with cover, depending on the installation position
- Installation position: With horizontal shaft or for vertical shaft with motor position above
- Mounting: Ball bearings
- Multiventuri on request

Electrical data

- Protection class I





Measuring requirements

Air performance measured according to: ISO 5801 with ebm-papst scroll housing without touch protection. The information is only applicable under the specified measuring or standard conditions (15 °C, 1013 hPa, 1,225 kg/m³) and may change depending on the installation conditions.In case of deviation from the standard configuration and depending on the type of gas, the heat output must be checked when installed.

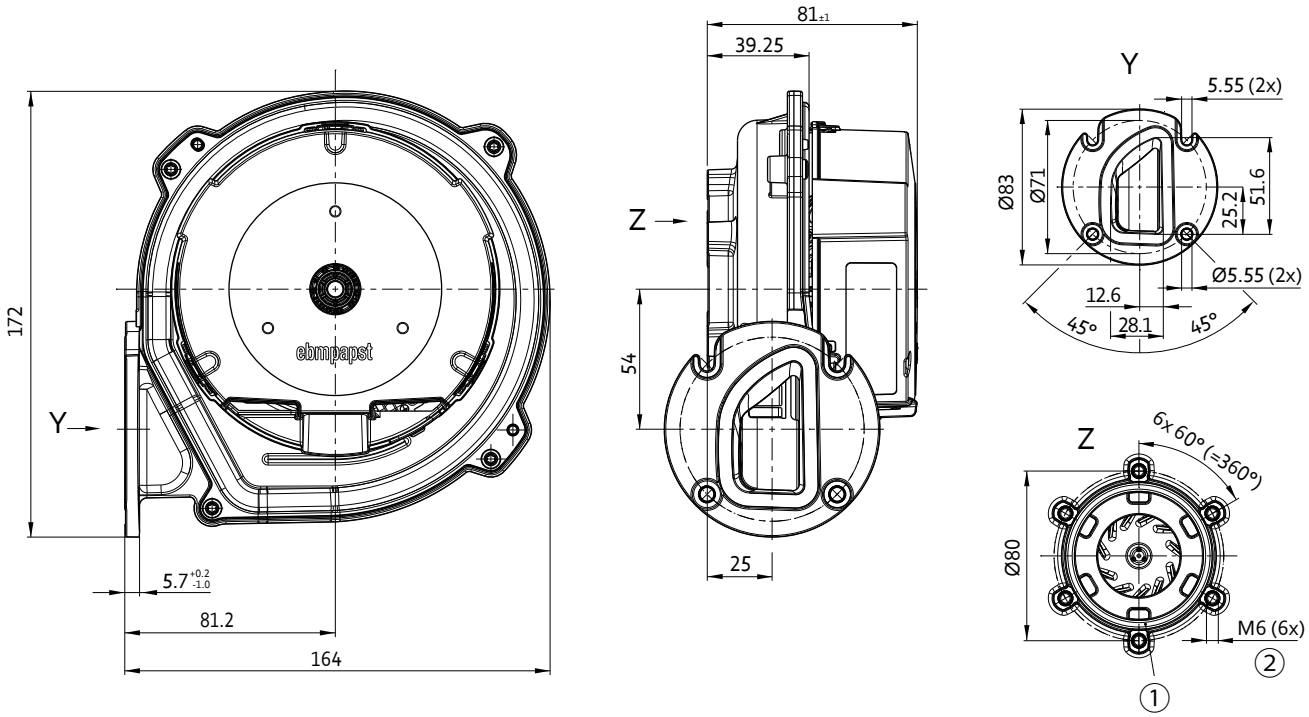
Curve	Max. speed n	Max. input power P_{ed}	Max. perm. amb. motor temp.	Max. perm. temp. of medium
	min⁻¹	W	°C	°C
Nominal voltage 220/240 V AC, 50/60 Hz				
A	10000	90	60	60

Subject to change. Available with the option of a more powerful motor.

Curve	EC radial blower		
	Type	Part number	Weight
			kg
A	VGR0100MSGBS	**5566780041**	0.9

A Technical drawing

Dimensions in mm



(1) Groove suitable for round sealing ring 63 x 3

(2) 6.5 deep

EC radial blower

VG 108

on Page 14	Possible mounting positions
on Page 46	Mains connector X, interface connector W
on Page 48	Electrical interfaces
More at	www.ebmpapst.com

Material/surface

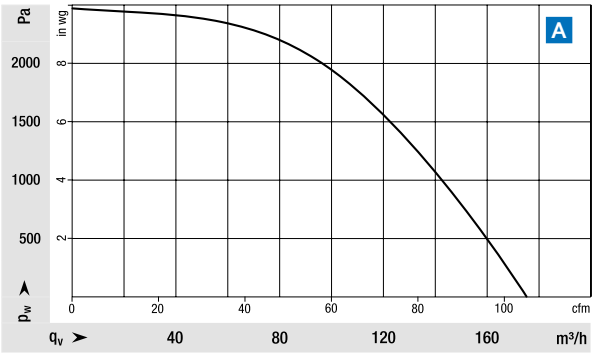
- Housing: Die-cast aluminium/sheet steel
- Impeller: Plastic
- Motor protection cap: Plastic

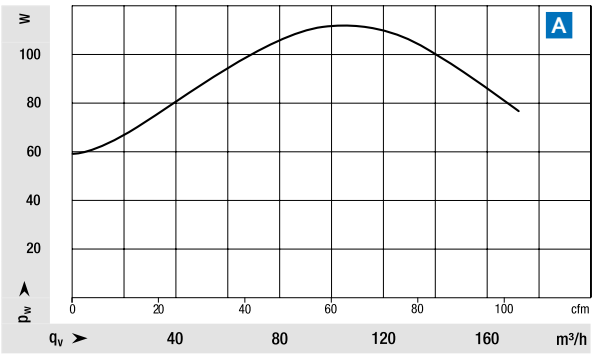
Mechanical data

- Degree of protection: IP20 with cover, depending on the installation position
- Installation position: With horizontal shaft or for vertical shaft with motor position above
- Mounting: Ball bearings
- Multiventuri on request

Electrical data

- Protection class I





Measuring requirements

Air performance measured according to: ISO 5801 with ebm-papst scroll housing without touch protection. The information is only applicable under the specified measuring or standard conditions (15 °C, 1013 hPa, 1,225 kg/m³) and may change depending on the installation conditions.In case of deviation from the standard configuration and depending on the type of gas, the heat output must be checked when installed.

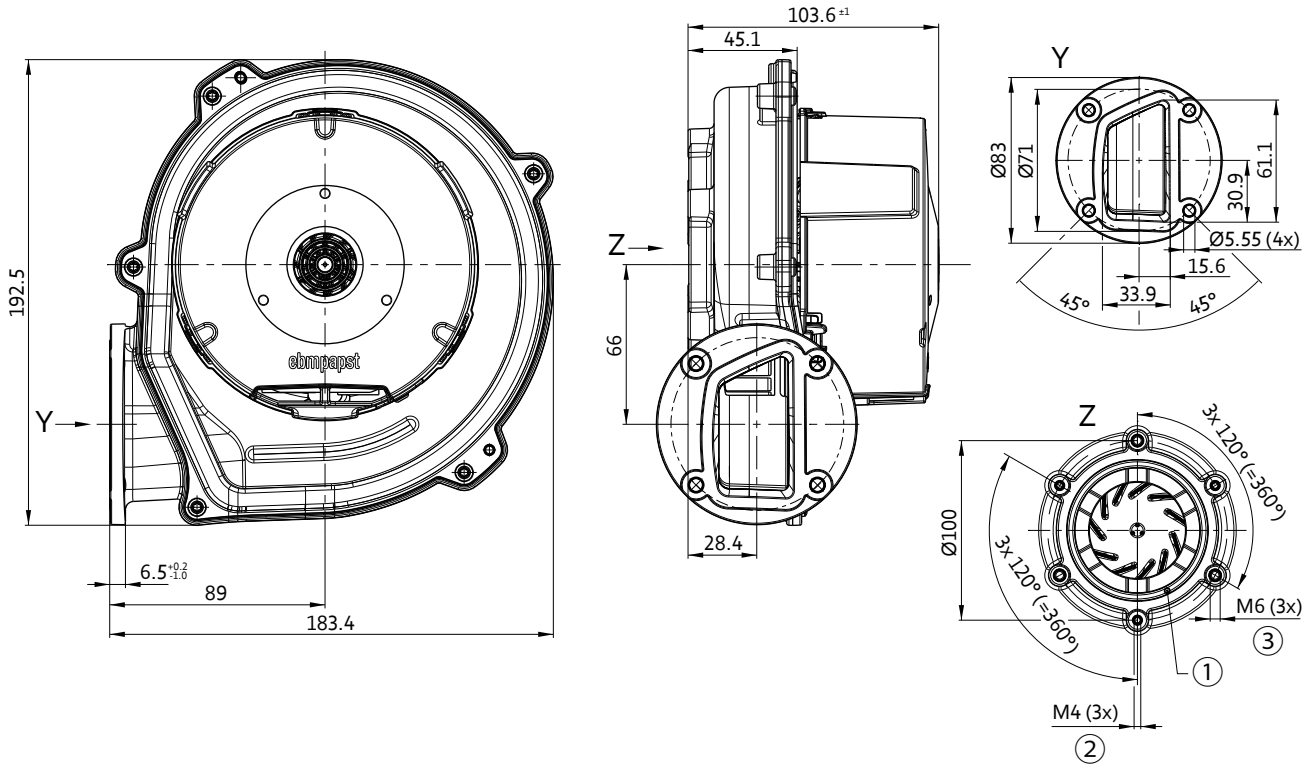
Curve	Max. speed n	Max. input power P_{ed}	Max. perm. amb. motor temp.	Max. perm. temp. of medium
	min⁻¹	W	°C	°C
Nominal voltage 220/240 V AC, 50/60 Hz				
A	10000	135	60	60

Subject to change. Available with the option of a more powerful motor.

Curve	EC radial blower		
	Type	Part number	Weight
			kg
A	VGR0108MSGDS	**5566780061**	1.1

A Technical drawing

Dimensions in mm



(1) Groove suitable for round sealing ring 70 x 3

(2) 6.5 deep

(3) 7.5 deep

EC radial blower

NRG 118

on Page 14	Possible mounting positions
on Page 46	Mains connector X, interface connector W
on Page 48	Electrical interfaces
More at	www.ebmpapst.com

Material/surface

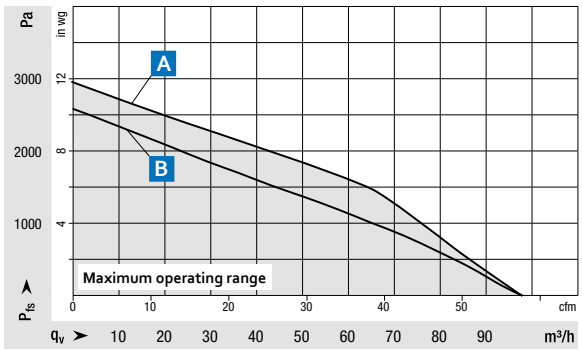
- Housing: Aluminium
- Impeller: Plastic
- Motor protection cap: Plastic

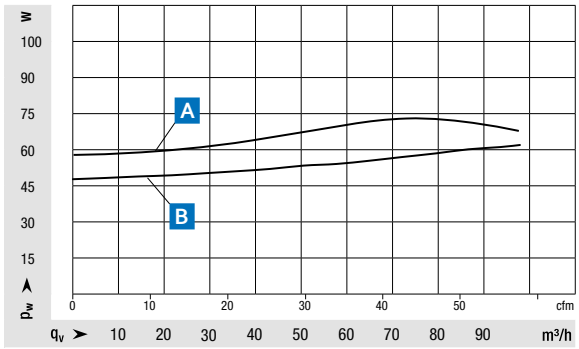
Mechanical data

- Degree of protection: IP20 with cover, depending on the installation position
- Installation position: With horizontal shaft or for vertical shaft with motor position above
- Mounting: Ball bearings
- Multi-venturi available

Electrical data

- Protection class I





Measuring requirements

Air performance measured according to: ISO 5801 with ebm-papst scroll housing without touch protection. The information is only applicable under the specified measuring or standard conditions (15 °C, 1013 hPa, 1,225 kg/m³) and may change depending on the installation conditions.In case of deviation from the standard configuration and depending on the type of gas, the heat output must be checked when installed.

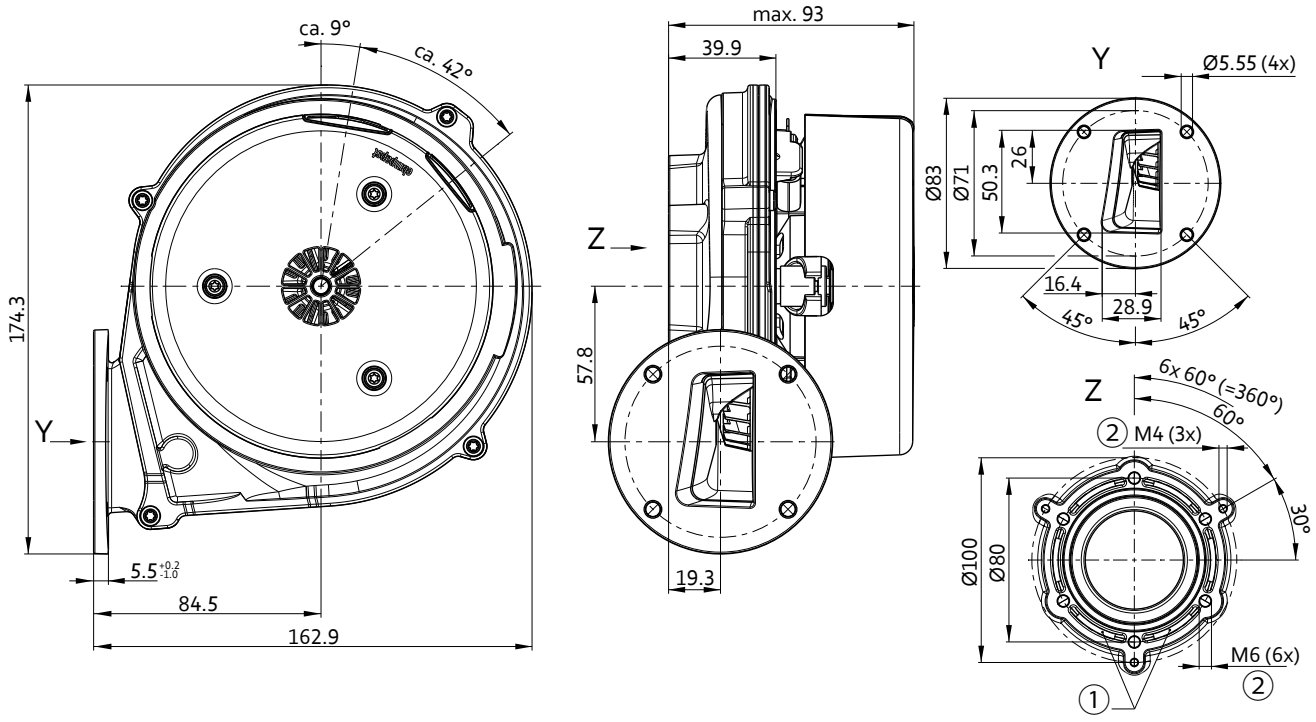
Curve	Max. speed n	Max. input power P_{ed}	Max. perm. amb. motor temp.	Max. perm. temp. of medium
	min⁻¹	W	°C	°C
Nominal voltage 230 V AC, 50 Hz				
A	10000	70	60	60 [1]
Nominal voltage 115 V AC, 60 Hz				
B	10000	61	60	60 [1]

Subject to change. Available with the option of a more powerful motor.
[1] Temperature depending on temperature-time profile. Higher temperatures on request.

Curve	EC radial blower		
	Type	Part number	Weight
			kg
A	VGR0118NSHCS	**5566731160**	1.0
B	VGR0118NSHCS	**5566730030**	1.0

A Technical drawing

Dimensions in mm



(1) Groove suitable for round sealing ring 63 x 3
(2) 6.5 deep

EC radial blower

RG 148

on Page 14	Possible mounting positions
on Page 46	Mains connector X, interface connector W
on Page 48	Electrical interfaces
More at	www.ebmpapst.com

Material/surface

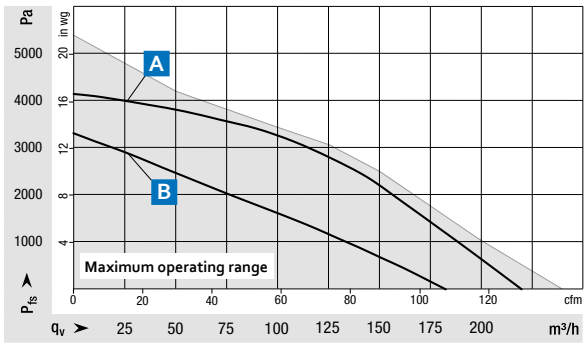
- Housing: Aluminium
- Impeller: Plastic
- Motor protection cap: Plastic

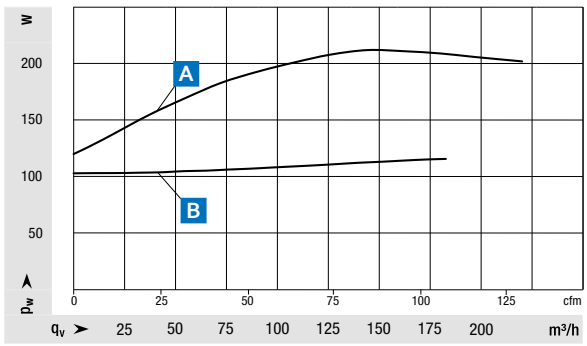
Mechanical data

- Degree of protection: IP20 with cover, depending on the Installation position
- Installation position: With horizontal shaft or for vertical shaft with motor position above
- Mounting: Ball bearings
- Multi-venturi available

Electrical data

- Protection class I





Measuring requirements

Air performance measured according to: ISO 5801 with ebm-papst scroll housing without touch protection. The information is only applicable under the specified measuring or standard conditions (15 °C, 1013 hPa, 1,225 kg/m³) and may change depending on the installation conditions.In case of deviation from the standard configuration and depending on the type of gas, the heat output must be checked when installed.

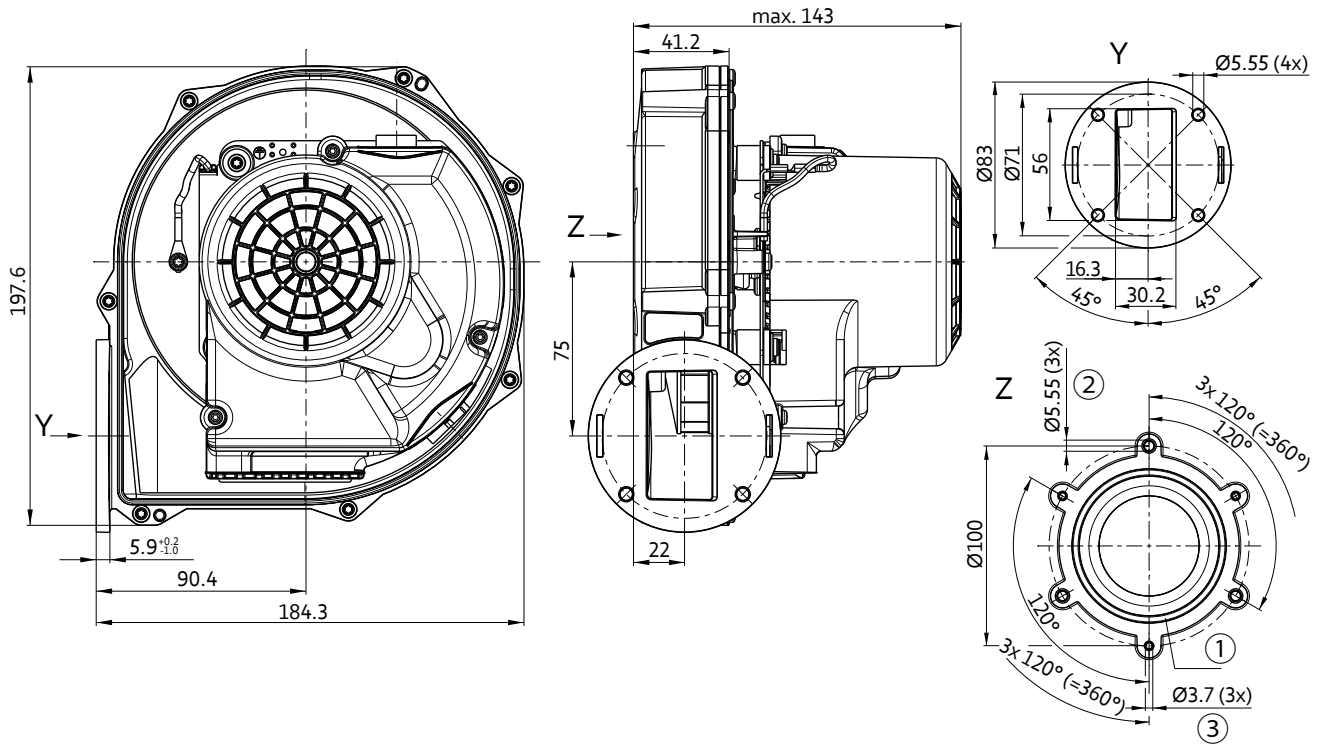
Curve	Max. speed n	Max. input power P_{ed}	Max. perm. amb. motor temp.	Max. perm. temp. of medium
	min⁻¹	W	°C	°C
Nominal voltage 230 V AC, 50/60 Hz				
A	9000	200	60	60
Nominal voltage 120 V AC, 60 Hz				
B	8200	130	60	60

Subject to change. Available with the option of a more powerful motor.

Curve	EC radial blower		
	Type	Part number	Weight
			kg
A	VGR0148XSHGS	**5566725230**	2.1
B	VGR0148XSHGS	**on request**	2.0

A Technical drawing

Dimensions in mm



(1) Groove suitable for round sealing ring 70 x 3

(2) 10.5 deep

(3) 9.5 deep

EC radial blower

NRG 137

on Page 14	Possible mounting positions
on Page 46	Mains connector X, interface connector W
on Page 48	Electrical interfaces
More at	www.ebmpapst.com

Material/surface

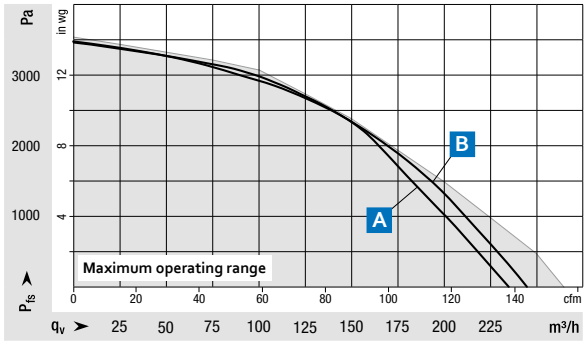
- Housing: Aluminium
- Impeller: Plastic
- Motor protection cap: Plastic

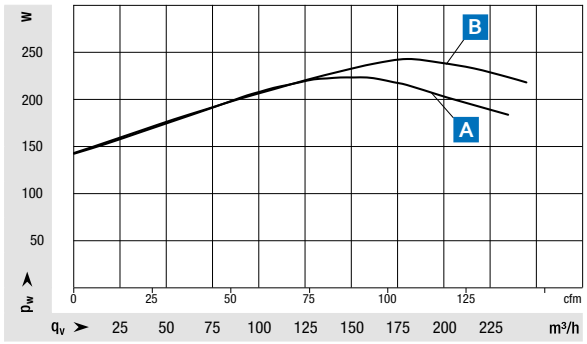
Mechanical data

- Degree of protection: IP20 with cover, depending on the Installation position
- Installation position: With horizontal shaft or for vertical shaft with motor position above
- Mounting: Ball bearings
- Multi-venturi available

Electrical data

- Protection class I





Measuring requirements

Air performance measured according to: ISO 5801 with ebm-papst scroll housing without touch protection. The information is only applicable under the specified measuring or standard conditions (15 °C, 1013 hPa, 1,225 kg/m³) and may change depending on the installation conditions.In case of deviation from the standard configuration and depending on the type of gas, the heat output must be checked when installed.

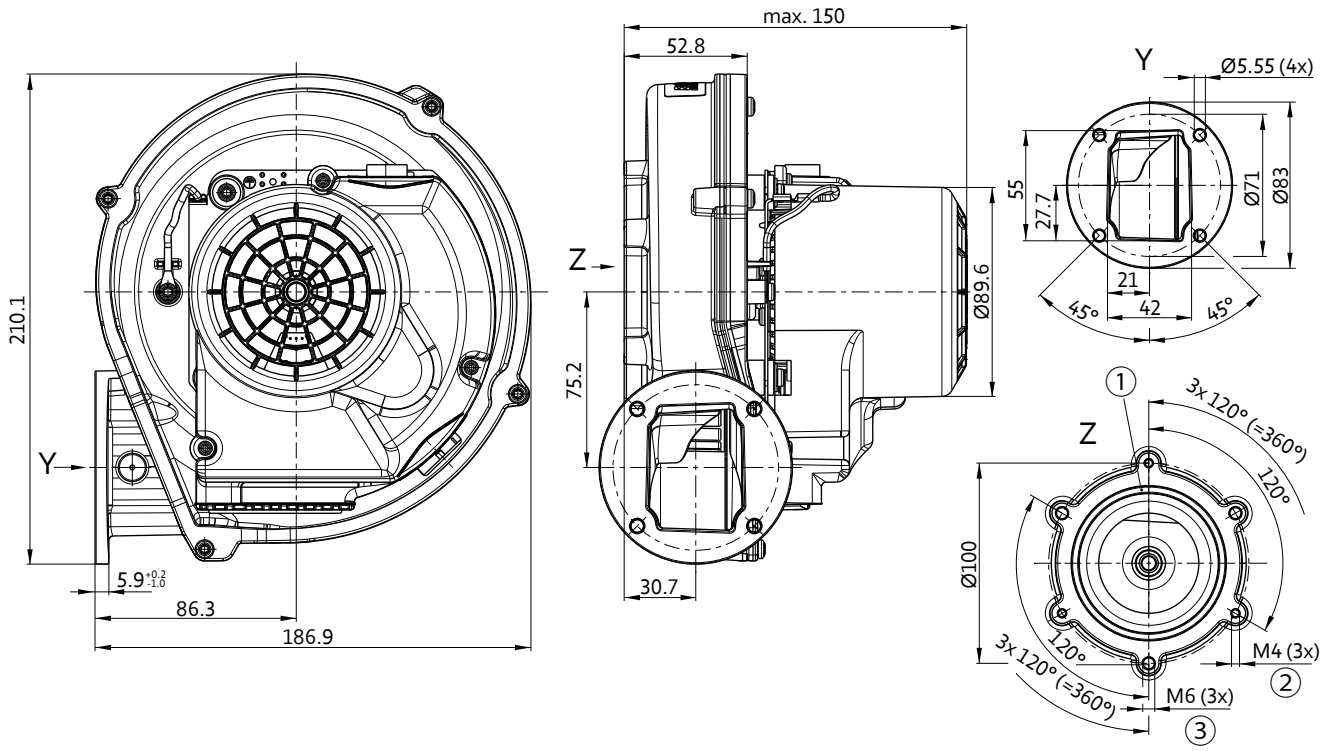
Curve	Max. speed n	Max. input power P_{ed}	Max. perm. amb. motor temp.	Max. perm. temp. of medium
	min⁻¹	W	°C	°C
Nominal voltage 230 V AC, 50/60 Hz				
A	8500	220	60	60
Nominal voltage 120 V AC, 60 Hz				
B	8500	250	60	60

Subject to change. Available with the option of a more powerful motor.

Curve	EC radial blower		
	Type	Part number	Weight
			kg
A	VGR0137NSHGS	**5566733110**	1.9
B	VGR0137NSHGS	**5566733040**	2.4

A Technical drawing

Dimensions in mm



(1) Groove suitable for round sealing ring 70 x 3
(2) 6.5 deep
(3) 7.5 deep

EC radial blower

RG 175

Material/surface

- Housing: Aluminium
- Impeller: Plastic
- Motor protection cap: Plastic

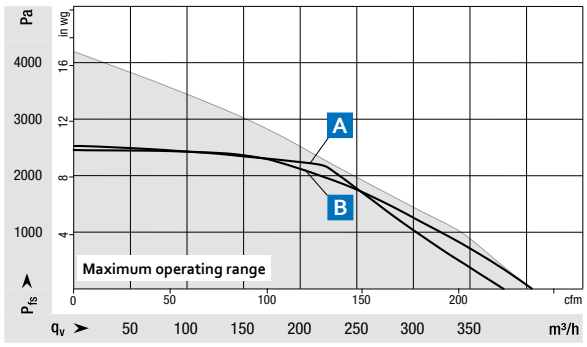
Mechanical data

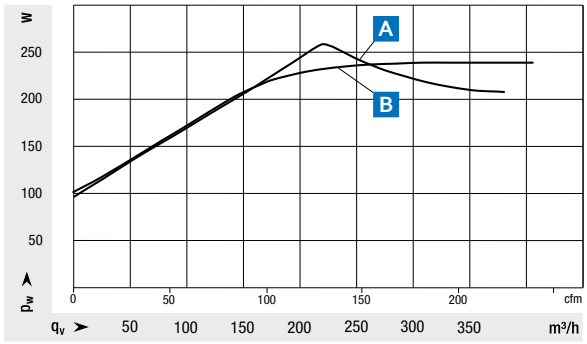
- Degree of protection: IP20 with cover, depending on the Installation position
- Installation position: With horizontal shaft or for vertical shaft with motor position above
- Mounting: Ball bearings

Electrical data

- Protection class I

on Page 14	Possible mounting positions
on Page 46	Mains connector X, interface connector W
on Page 48	Electrical interfaces
More at	www.ebmpapst.com





Measuring requirements

Air performance measured according to: ISO 5801 with ebm-papst scroll housing without touch protection. The information is only applicable under the specified measuring or standard conditions (15 °C, 1013 hPa, 1,225 kg/m³) and may change depending on the installation conditions.In case of deviation from the standard configuration and depending on the type of gas, the heat output must be checked when installed.

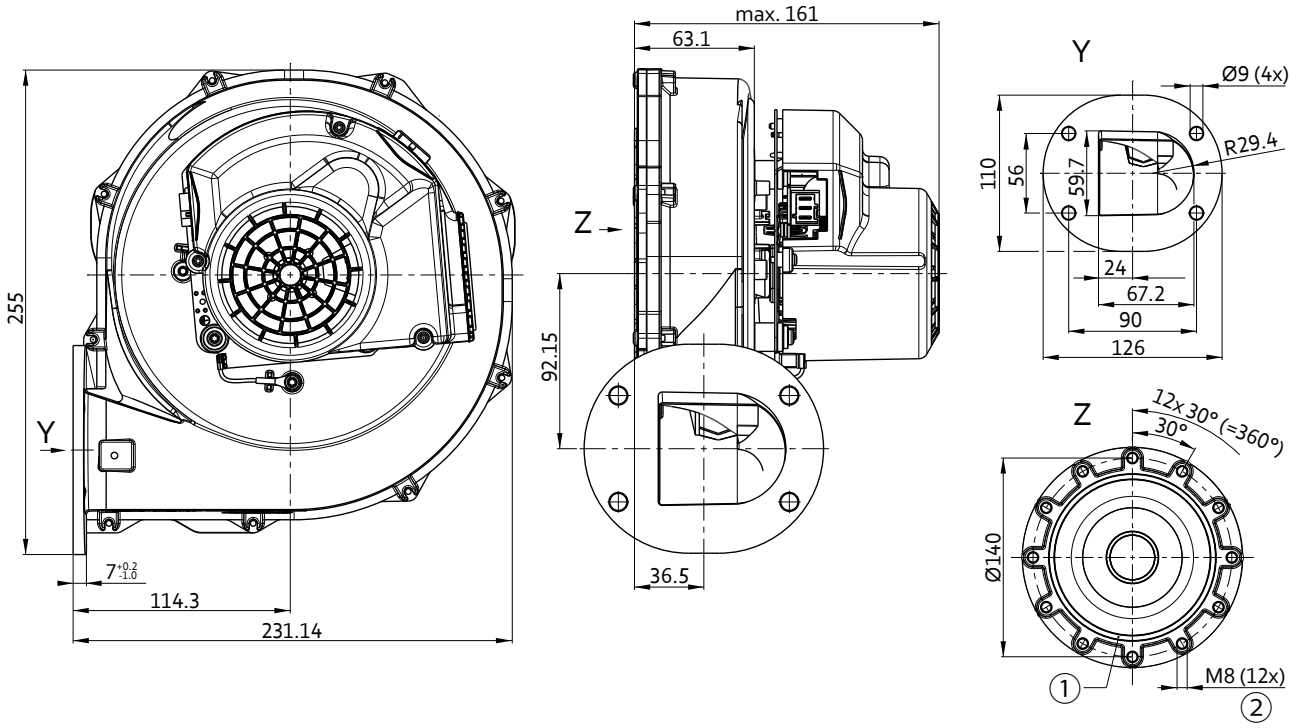
Curve	Max. speed n	Max. input power P_{ed}	Max. perm. amb. motor temp.	Max. perm. temp. of medium
	min⁻¹	W	°C	°C
Nominal voltage 230 V AC, 50/60 Hz				
A	6250	270	60	60
Nominal voltage 120 V AC, 60 Hz				
B	6250	240	60	60

Subject to change. Available with the option of a more powerful motor.

Curve	EC radial blower		
	Type	Part number	Weight
			kg
A	VGR0175XSHGS	**5566714090**	2.9
B	VGR0175XSHGS	**5566714002**	2.8

A Technical drawing

Dimensions in mm



(1) Groove suitable for round sealing ring 110 x 3.4
(2) 8.5 deep

EC radial blower

G1G 170

on Page 14	Possible mounting positions
on Page 46	Mains connector X, interface connector W
on Page 48	Electrical interfaces
More at	www.ebmpapst.com

Material/surface

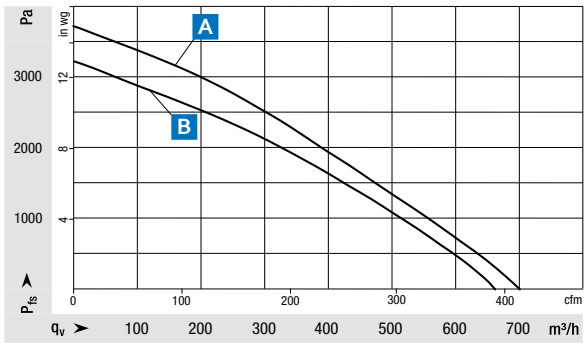
- Housing: Aluminium
- Impeller: Sheet aluminium
- Motor protection cap: Plastic

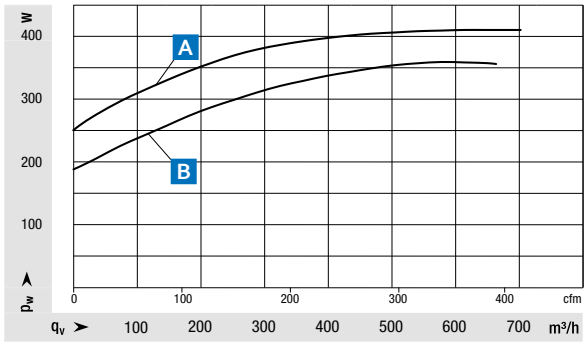
Mechanical data

- Degree of protection: IP20 with cover, depending on the Installation position
- Installation position: With horizontal shaft or for vertical shaft with motor position above
- Mounting: Ball bearings

Electrical data

- Protection class I





Measuring requirements

Air performance measured according to: ISO 5801 with ebm-papst scroll housing without touch protection. The information is only applicable under the specified measuring or standard conditions (15 °C, 1013 hPa, 1,225 kg/m³) and may change depending on the installation conditions.In case of deviation from the standard configuration and depending on the type of gas, the heat output must be checked when installed.

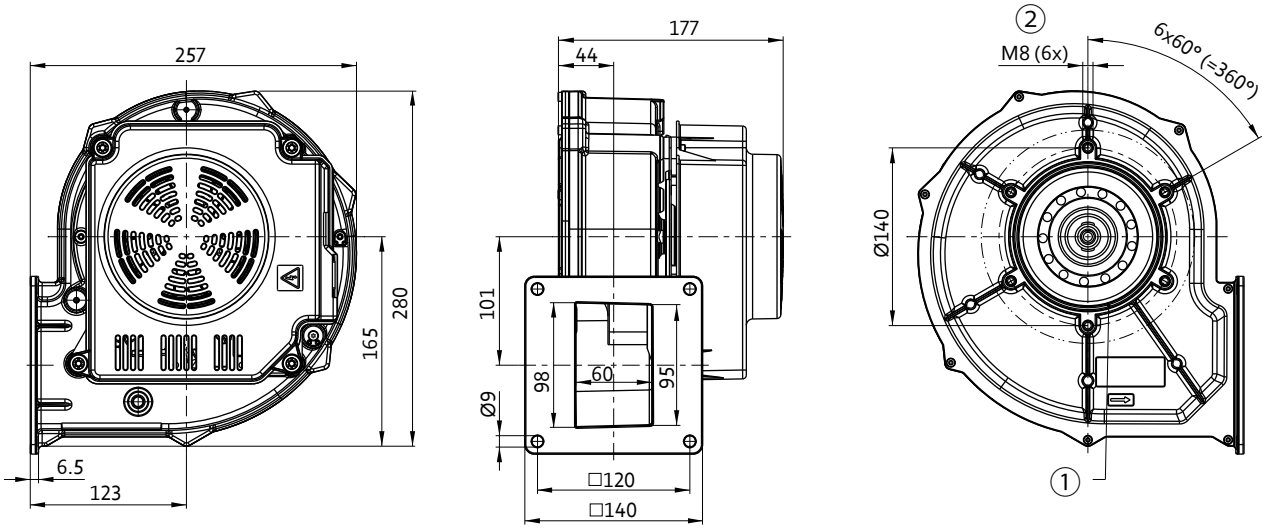
Curve	Max. speed n	Max. input power P_{ed}	Max. perm. amb. motor temp.	Max. perm. temp. of medium
	min⁻¹	W	°C	°C
Nominal voltage 1~230 V AC, 50/60 Hz				
A	7200	420	55	80
Nominal voltage 1~115 V AC, 50/60 Hz				
B	7200	360	55	80

Subject to change.

Curve	EC radial blower		
	Type	Part number	Weight
			kg
A	VGR0170XSPGS	**5560001180**	5.0
B	VGR0170XSPGS	**5560001010**	5.0

B Technical drawing

Dimensions in mm



(1) Groove suitable for round sealing ring 110 x 3.2

(2) 9.5 deep

EC radial blower

G3G 200

on Page 14	Possible mounting positions
on Page 46	Mains connector X, interface connector W
on Page 48	Electrical interfaces
More at	www.ebmpapst.com

Material/surface

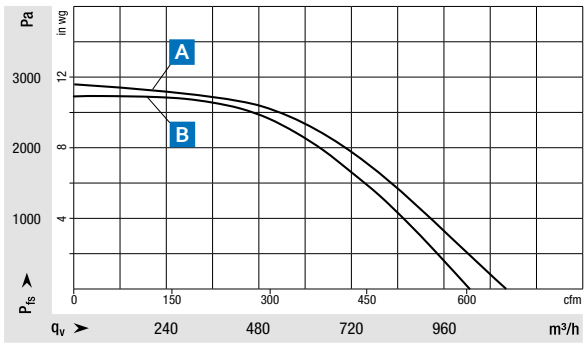
- Housing: Aluminium
- Impeller: Sheet aluminium
- Motor protection cap: Plastic

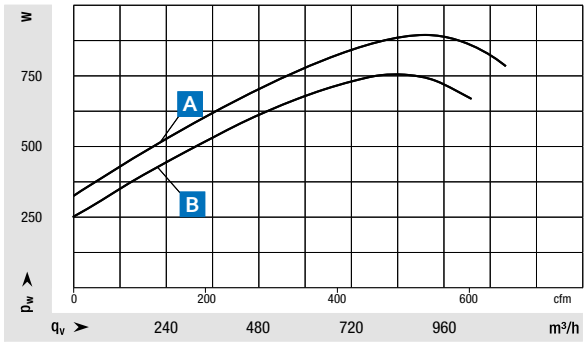
Mechanical data

- Degree of protection: IP20 with cover, depending on the Installation position
- Installation position: With horizontal shaft or for vertical shaft with motor position above
- Mounting: Ball bearings

Electrical data

- Protection class I





Measuring requirements

Air performance measured according to: ISO 5801 with ebm-papst scroll housing without touch protection. The information is only applicable under the specified measuring or standard conditions (15 °C, 1013 hPa, 1,225 kg/m³) and may change depending on the installation conditions.In case of deviation from the standard configuration and depending on the type of gas, the heat output must be checked when installed.

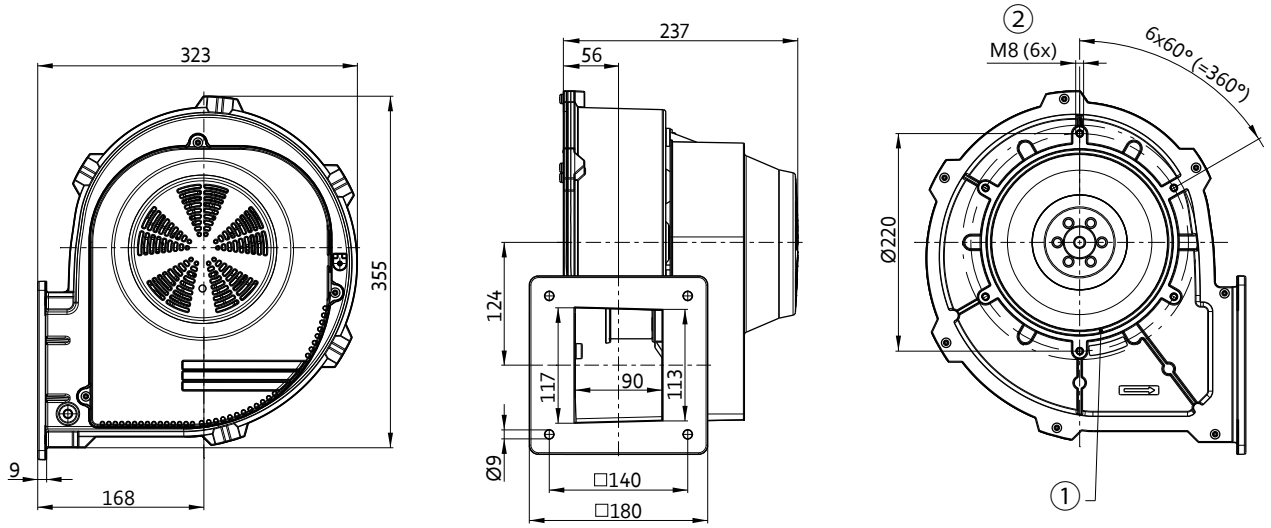
Curve	Max. speed n	Max. input power P_{ed}	Max. perm. amb. motor temp.	Max. perm. temp. of medium
	min⁻¹	W	°C	°C
Nominal voltage 1~230 V AC, 50/60 Hz				
A	6100	890	50	50
Nominal voltage 1~115 V AC, 50/60 Hz				
B	5700	800	60	60

Subject to change.

Curve	EC radial blower		
	Type	Part number	Weight
			kg
A	VGR0200XSPKS	**5560003030**	10
B	VGR0200XSPKS	**5560003051**	10

A Technical drawing

Dimensions in mm



(1) Groove suitable for round sealing ring 180 x 3.5

(2) 12 deep

EC radial blower

G3G 250

on Page 14	Possible mounting positions
on Page 46	Mains connector X, interface connector W
on Page 48	Electrical interfaces
More at	www.ebmpapst.com

Material/surface

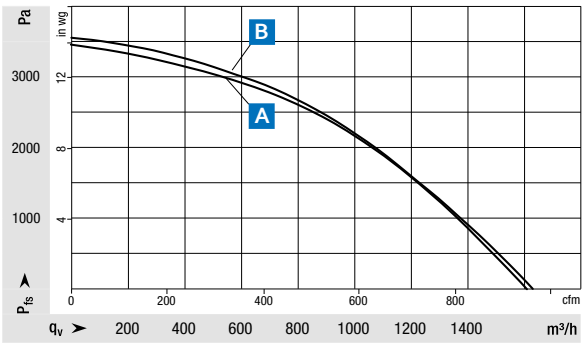
- Housing: Aluminium
- Impeller: Metall
- Motor protection cap: Plastic

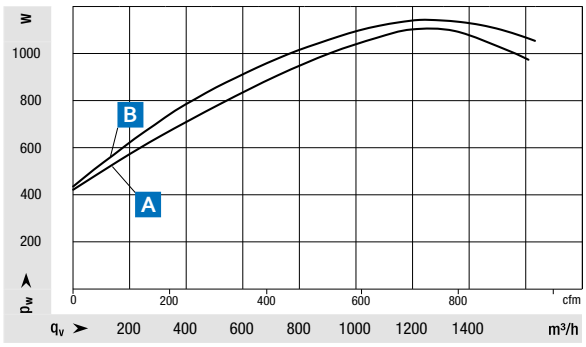
Mechanical data

- Degree of protection: IP20 with cover, depending on the Installation position
- Installation position: With horizontal shaft or for vertical shaft with motor position above
- Mounting: Ball bearings

Electrical data

- Protection class I





Measuring requirements

Air performance measured according to: ISO 5801 with ebm-papst scroll housing without touch protection. The information is only applicable under the specified measuring or standard conditions (15 °C, 1013 hPa, 1,225 kg/m³) and may change depending on the installation conditions.In case of deviation from the standard configuration and depending on the type of gas, the heat output must be checked when installed.

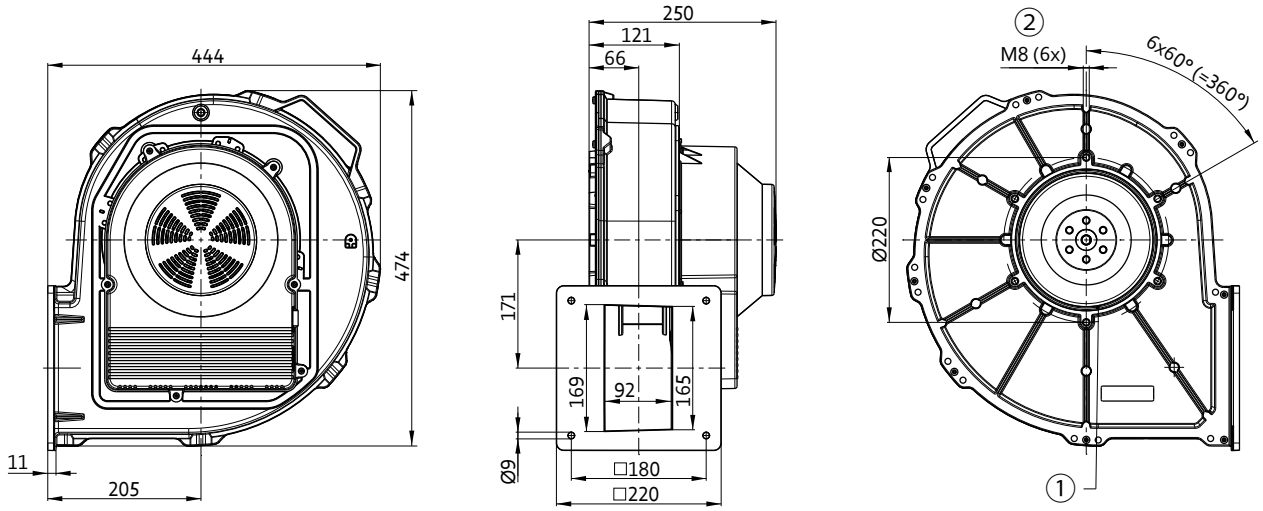
Curve	Max. speed n	Max. input power P_{ed}	Max. perm. amb. motor temp.	Max. perm. temp. of medium
	min⁻¹	W	°C	°C
Nominal voltage 1~230 V AC, 50/60 Hz				
A	5200	1150	60	60
Nominal voltage 1~115 V AC, 50/60 Hz				
B	5200	1200	60	60

Subject to change.

Curve	EC radial blower		
	Type	Part number	Weight
			kg
A	VGR0250XSPKS	**5560005021**	13
B	VGR0250XSPKS	**5560005051**	13

A Technical drawing

Dimensions in mm



① Groove suitable for round sealing ring 180 x 3.5

② 12 deep

EC radial blower

G3G 250 MW

on Page 14	Possible mounting positions
on Page 46	Mains connector X, interface connector W
on Page 48	Electrical interfaces
More at	www.ebmpapst.com

Material/surface

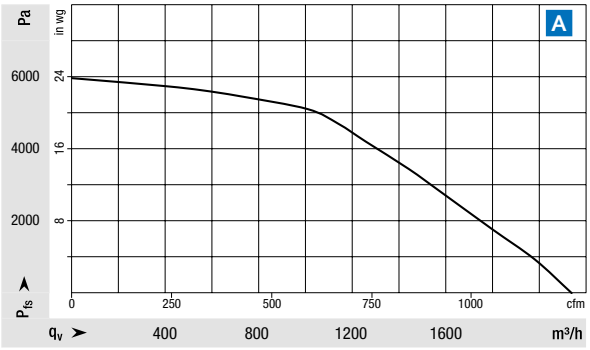
- Housing: Aluminium
- Impeller: Sheet aluminium
- Motor housing: Metall

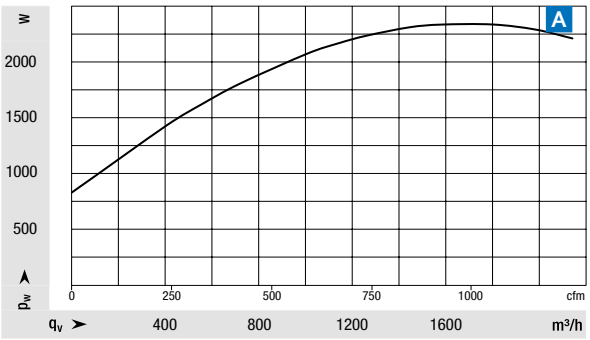
Mechanical data

- Degree of protection: IP20 with cover, depending on the Installation position
- Installation position: With horizontal shaft or for vertical shaft with motor position above
- Mounting: Ball bearings

Electrical data

- Protection class I





Measuring requirements

Air performance measured according to: ISO 5801 with ebm-papst scroll housing without touch protection. The information is only applicable under the specified measuring or standard conditions (15 °C, 1013 hPa, 1,225 kg/m³) and may change depending on the installation conditions.In case of deviation from the standard configuration and depending on the type of gas, the heat output must be checked when installed.

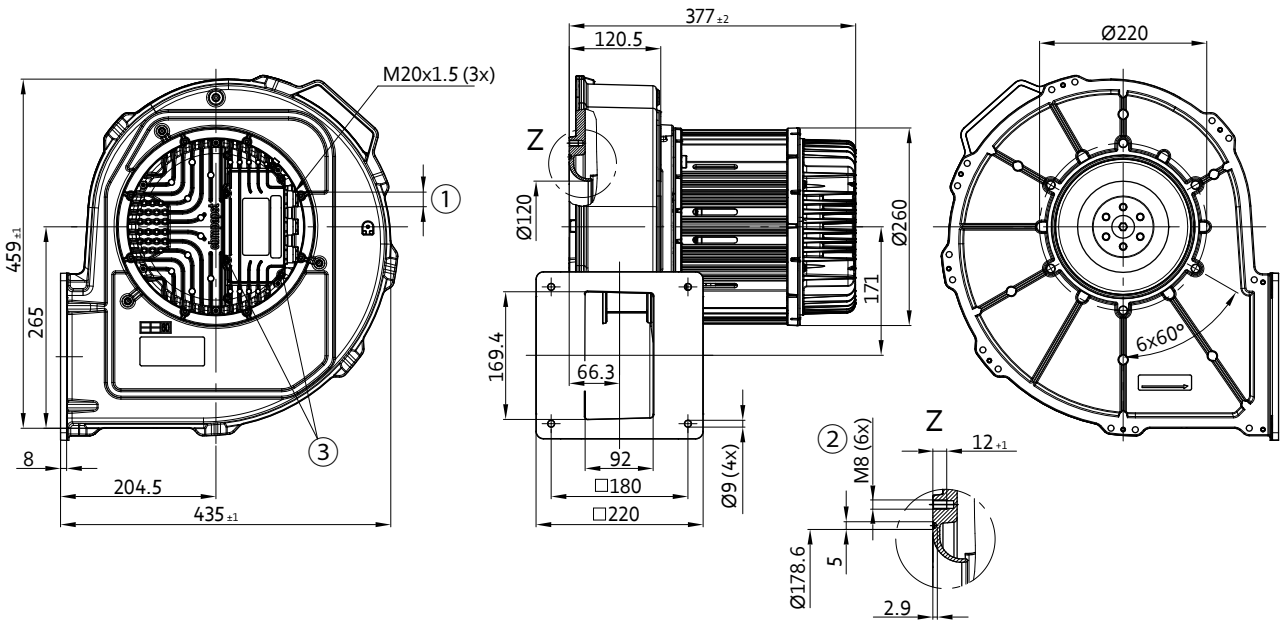
Curve	Max. speed n	Max. input power P_{ed}	Max. perm. amb. motor temp.	Max. perm. temp. of medium
	min⁻¹	W	°C	°C
Nominal voltage 3~380 – 480 V AC, 50/60 Hz				
A	6400	2500	50	50

Subject to change.

Curve	EC radial blower		
	Type	Part number	Weight
			kg
A	VGR0250XTRHS	G3G250MW5001	24

A Technical drawing

Dimensions in mm



(1) Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm

(2) Clearance for screw 10-12 mm, tightening torque 20 ± 3 Nm

(3) Tightening torque 3.5 ± 0.5 Nm

EC radial blower

G3G 315

Material/surface

- Housing: Aluminium
- Impeller: Sheet aluminium
- Motor protection cap: Plastic

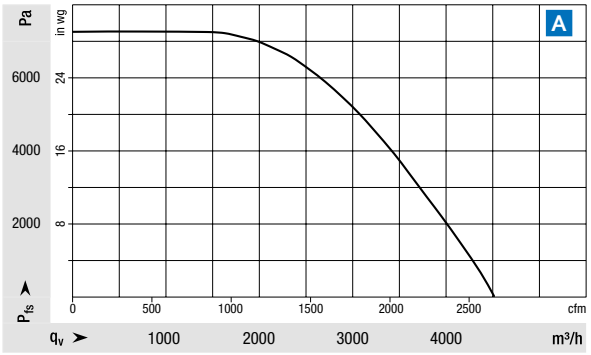
Mechanical data

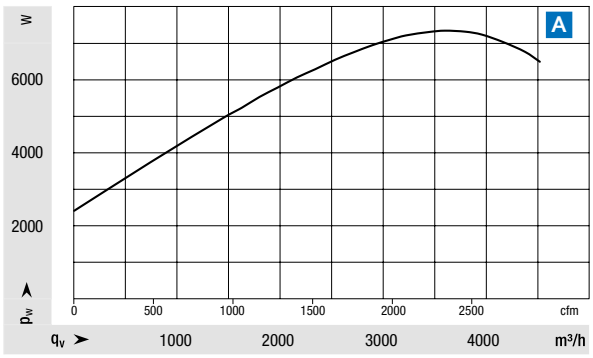
- Degree of protection: IP20 with cover
- Installation position: Any
- Mounting: Ball bearings

Electrical data

- Protection class I

on Page 14	Possible mounting positions
on Page 46	Mains connector X, interface connector W
on Page 48	Electrical interfaces
More at	www.ebmpapst.com





Measuring requirements

Air performance measured according to: ISO 5801 with ebm-papst scroll housing without touch protection. The information is only applicable under the specified measuring or standard conditions (15 °C, 1013 hPa, 1,225 kg/m³) and may change depending on the installation conditions.In case of deviation from the standard configuration and depending on the type of gas, the heat output must be checked when installed.

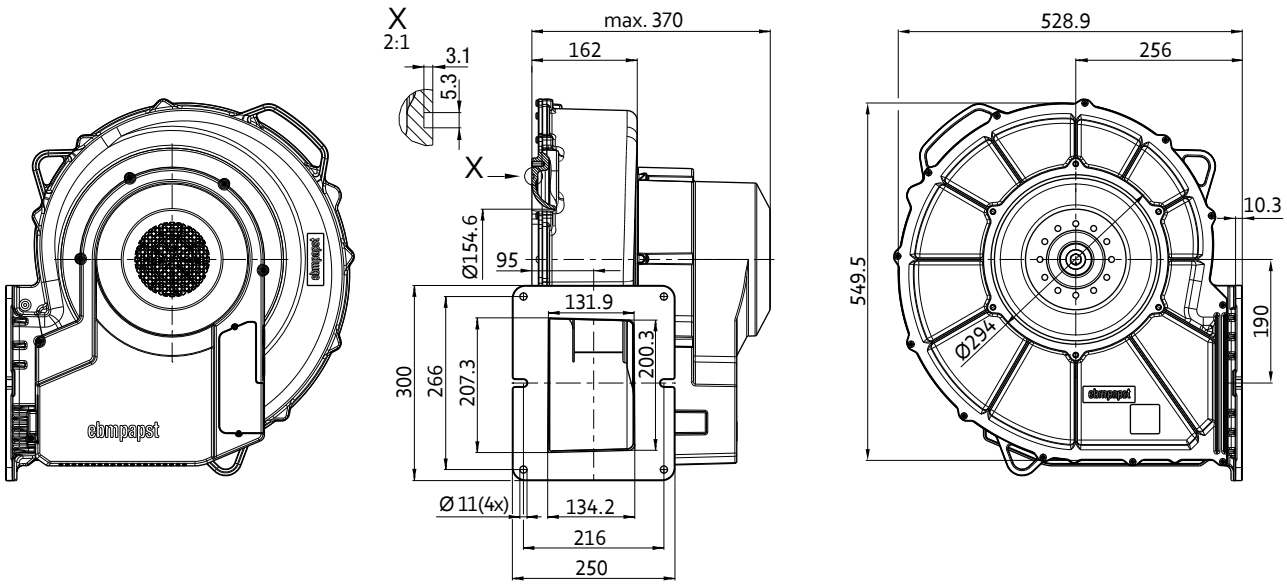
Curve	Max. speed n	Max. input power P_{ed}	Max. perm. amb. motor temp.	Max. perm. temp. of medium
	min⁻¹	W	°C	°C
Nominal voltage 3~380 – 480 V AC, 50/60 Hz				
A	6000	8000	60	60

Subject to change.

Curve	EC radial blower		
	Type	Part number	Weight
			kg
A	VGR0315XTTLS	**5560007000**	36

A Technical drawing

Dimensions in mm



EC radial blower

VG 450

on Page 14	Possible mounting positions
on Page 46	Mains connector X, interface connector W
on Page 48	Electrical interfaces
More at	www.ebmpapst.com

Material/surface

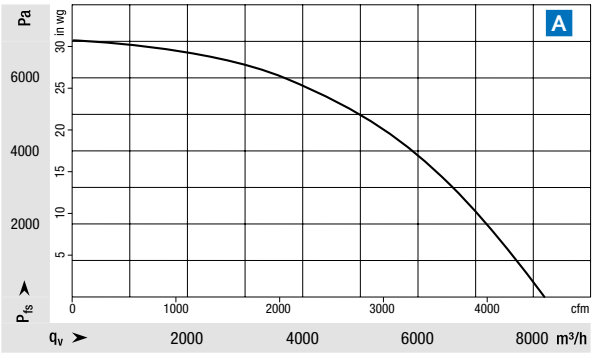
- Housing: Die-cast aluminium
- Impeller: Sheet aluminium
- Motor casing: Cast aluminium
- Electronics box: Cast aluminium

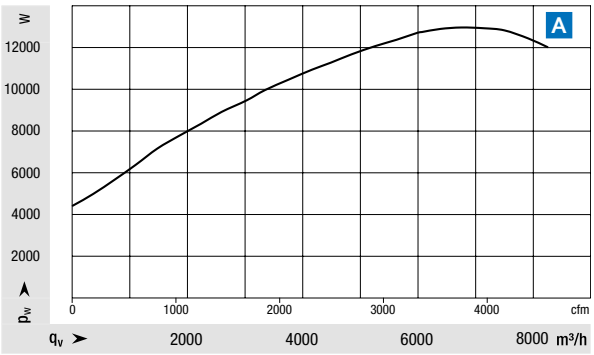
Mechanical data

- Protection class blower: IP00
  Protection class electronics: IP54
  Protection class motor: IP20
  Installation position: Any
- Mounting: Ball bearings

Electrical data

- Protection class I





Measuring requirements

Air performance measured according to: ISO 5801 with ebm-papst scroll housing without touch protection. The information is only applicable under the specified measuring or standard conditions (15 °C, 1013 hPa, 1,225 kg/m³) and may change depending on the installation conditions.In case of deviation from the standard configuration and depending on the type of gas, the heat output must be checked when installed.

Curve	Max. speed n	Max. input power P_{ed}	Max. perm. amb. motor temp.	Max. perm. temp. of medium
	min⁻¹	W	°C	°C
Nominal voltage 3~380-480 V AC, 50/60 Hz				
A	4250	14000	40[1)]	50

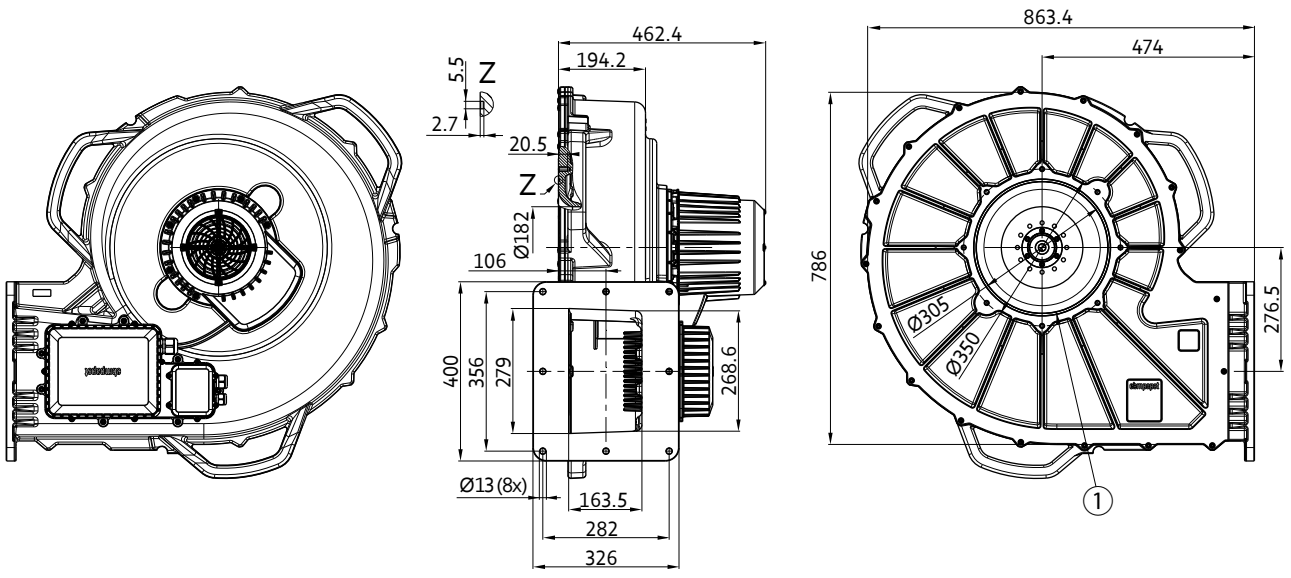
[1)] short-term 60

Subject to change.

Curve	EC radial blower		
	Type	Part number	Weight
			kg
A	VGR450XTTPS	on request	85

A Technical drawing

Dimensions in mm



① Seal groove

Connectors

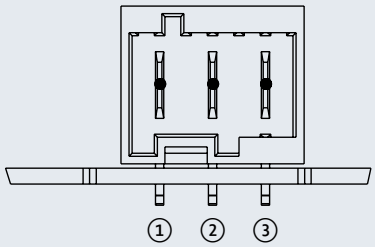
Connector		VG 71	VG 100	VG 108	NRG 118	RG 148	NRG 137	RG 175	G1G 170	G3G 200	G3G 250	G3G 250 MW	G3G 315	VG 450
1	Mains connector X	x	x	x	x	x	x	x				see operating instructions	see operating instructions	see operating instructions
2	Mains connector X				x	x	x	x	x	x	x			
3	Interface connector W	x	x											
4	Interface connector W			x	x	x	x	x	x					
5	Interface connector W									x	x			
6	Interface connector W													
	Interface 04600451...	31	31	31	04	04	04	04	38	39	39	64	61	63

Connectors refer to 230 V versions. Further connector types on request.

1 Mains connector X

3-pin pin-connector with coding type 0A according to RAST 5
in 90° angled / horizontal design
with locking feature on top or down for locking device suitable for mating connector according to RAST 5
with coding type 0A as e. g.
CoHaMo YY-A5002-H03-K01 or Lumberg 3623 03 K01

Part number for mating connector:
2431045025



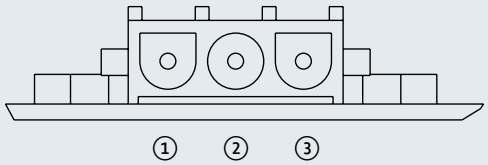
1 Power supply AC
2 Protective earth
3 Power supply AC

2 Mains connector X

3-pin pin-connector according RAST 6.35
in 90° angled / horizontal design
suitable for mating connector according to RAST 6.35
e. g. Tyco Universal MATE-N-LOK

Order number: 1586847-1 and 3 x socket 926882-1

Part number for mating connector:
Connector shell 2430945012; Crimp socket 2430745002/3



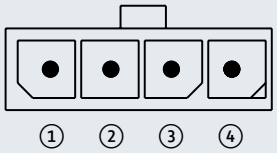
1 Protective earth
2 Power supply AC
3 Power supply AC

3 Interface connector W

4-pin pin-connector according RAST 3.0
in 90° angled / horizontal design
suitable for mating connector according RAST 3.0
e. g. Molex Micro-Fit 3.0

Order number:
43645-0408 and 4 x socket 43030-0001

Part number for mating connector:
Plug shell 2431045133;
Crimp socket 2430045128



1. Power supply - (GND)
2. PWM Input
3. Hall Sensor OUT
4. Power supply +

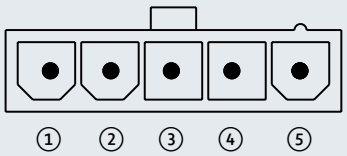
4 Interface connector W

5-pin pin-connector according RAST 4.2
in 90° angled / horizontal design
suitable for mating connector
e. g. Stocko STO-FIT, CoHaMo

Order number Stocko:
EH 705-005-004-960 and 5 x socket RBB 8230.120

Order number CoHaMo:
YY-5700-H05AS-GW

Part number for mating connector:
Connector shell 2430945035; Crimp socket 2430845065



1. Power supply - (GND)
2. PWM Input
3. NC
4. Hall Sensor OUT
5. Power supply +

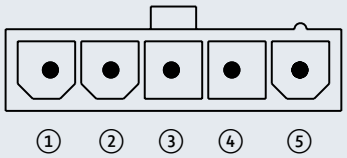
5 Interface connector W

5-pin pin-connector according RAST 4.2
in 90° angled / horizontal design
suitable for mating connector
e. g. Stocko STO-FIT, CoHaMo

Order number Stocko:
EH 705-005-004-960 and 5 x socket RBB 8230.120

Order number CoHaMo:
YY-5700-H05AS-GW

Part number for mating connector:
Connector shell 2430945035; Crimp socket 2430845065



1. Power supply - (GND)
2. PWM Input
3. Input 0-10 V DC Control
4. Hall Sensor OUT
5. Power supply +

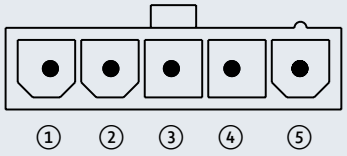
6 Interface connector W

5-pin pin-connector according RAST 4.2
in 90° angled / horizontal design
suitable for mating connector
e. g. Stocko STO-FIT, CoHaMo

Order number Stocko:
EH 705-005-004-960 and 5 x socket RBB 8230.120

Order number CoHaMo:
YY-5700-H05AS-GW

Part number for mating connector:
Connector shell 2430945035; Crimp socket 2430845065

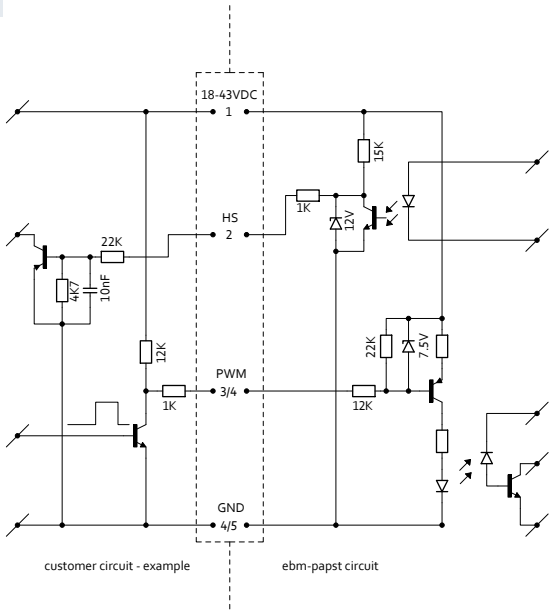


1. Power supply - (GND)
2. PWM Input
3. Input 0-10V DC Control
4. Hall Sensor OUT
5. Voltage Output

Electrical interfaces

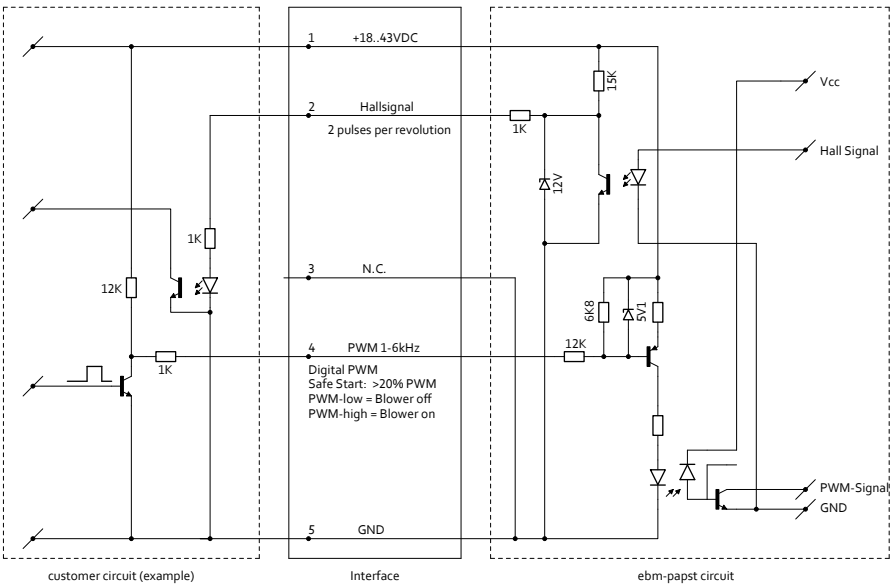
Further types available on request.

Interface 31 120/230 VAC, 50/60 Hz

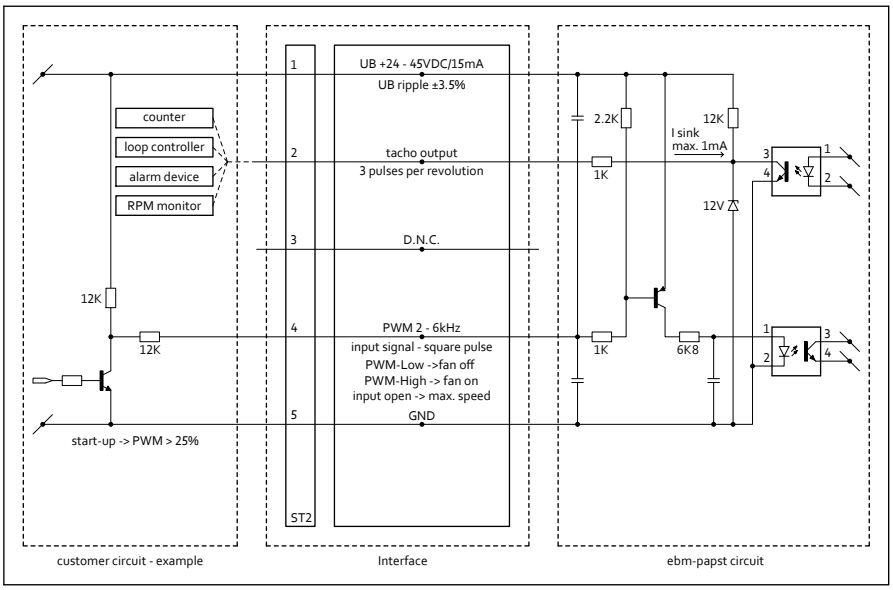


- Safe start PWM >20%
- Hallsignal: 2 pulses per revolution
- PWM "HIGH" = blower ON
- PWM "LOW" = blower OFF

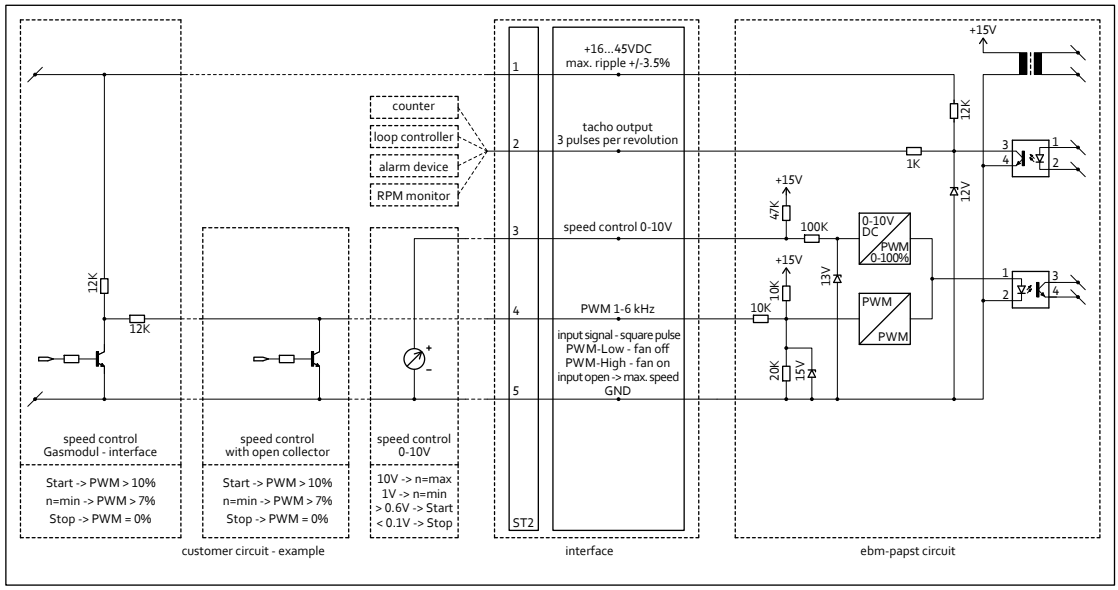
Interface 04 120/230 VAC, 50/60 Hz



Interface 38 115/230 VAC



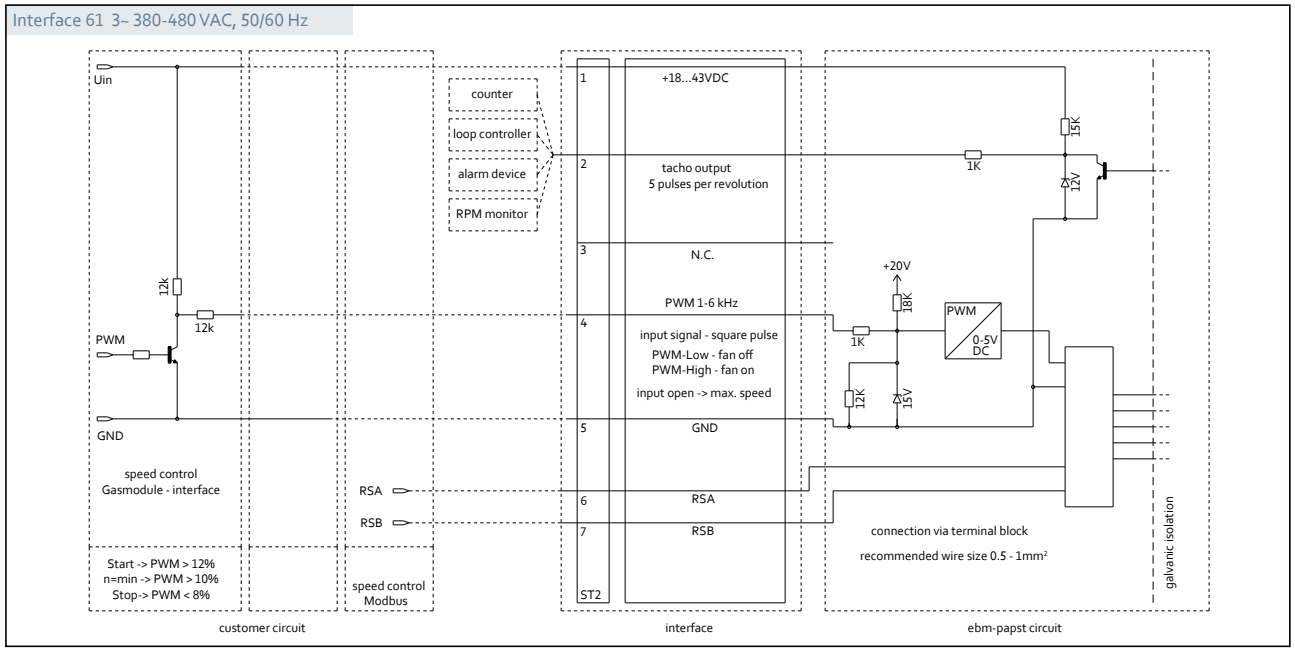
Interface 39 115/230 VAC



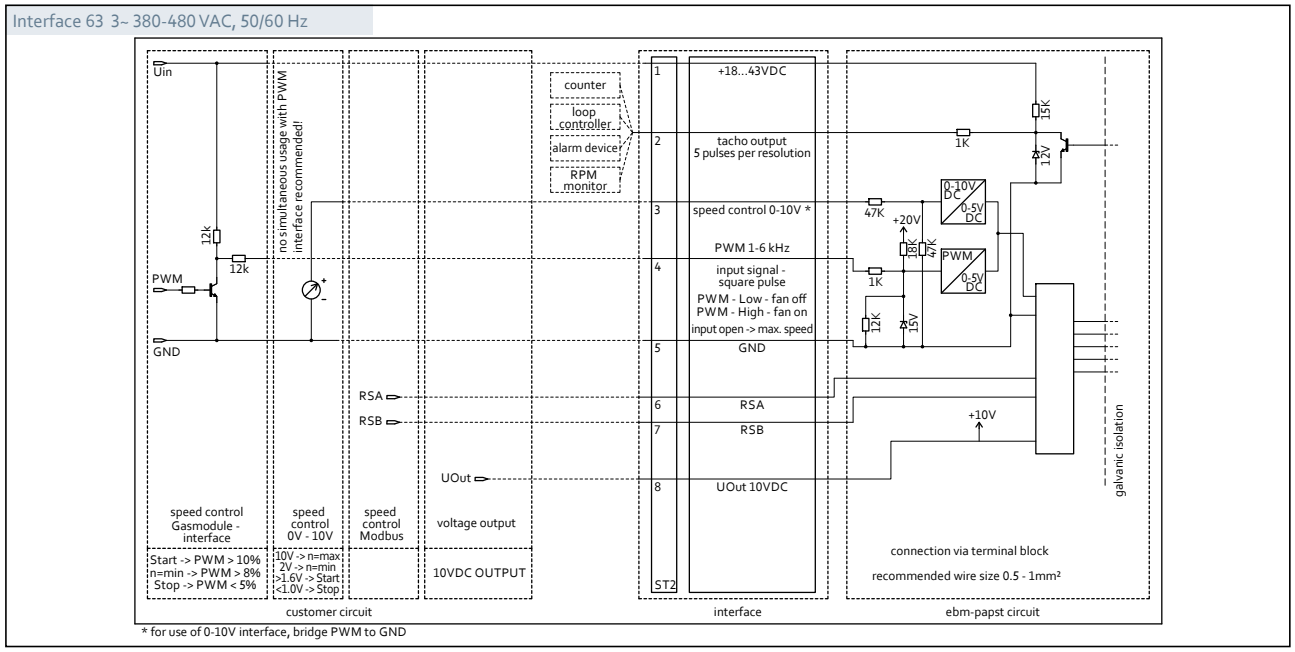
Electrical interfaces

Further types available on request.

Interface 61 3~ 380-480 VAC, 50/60 Hz

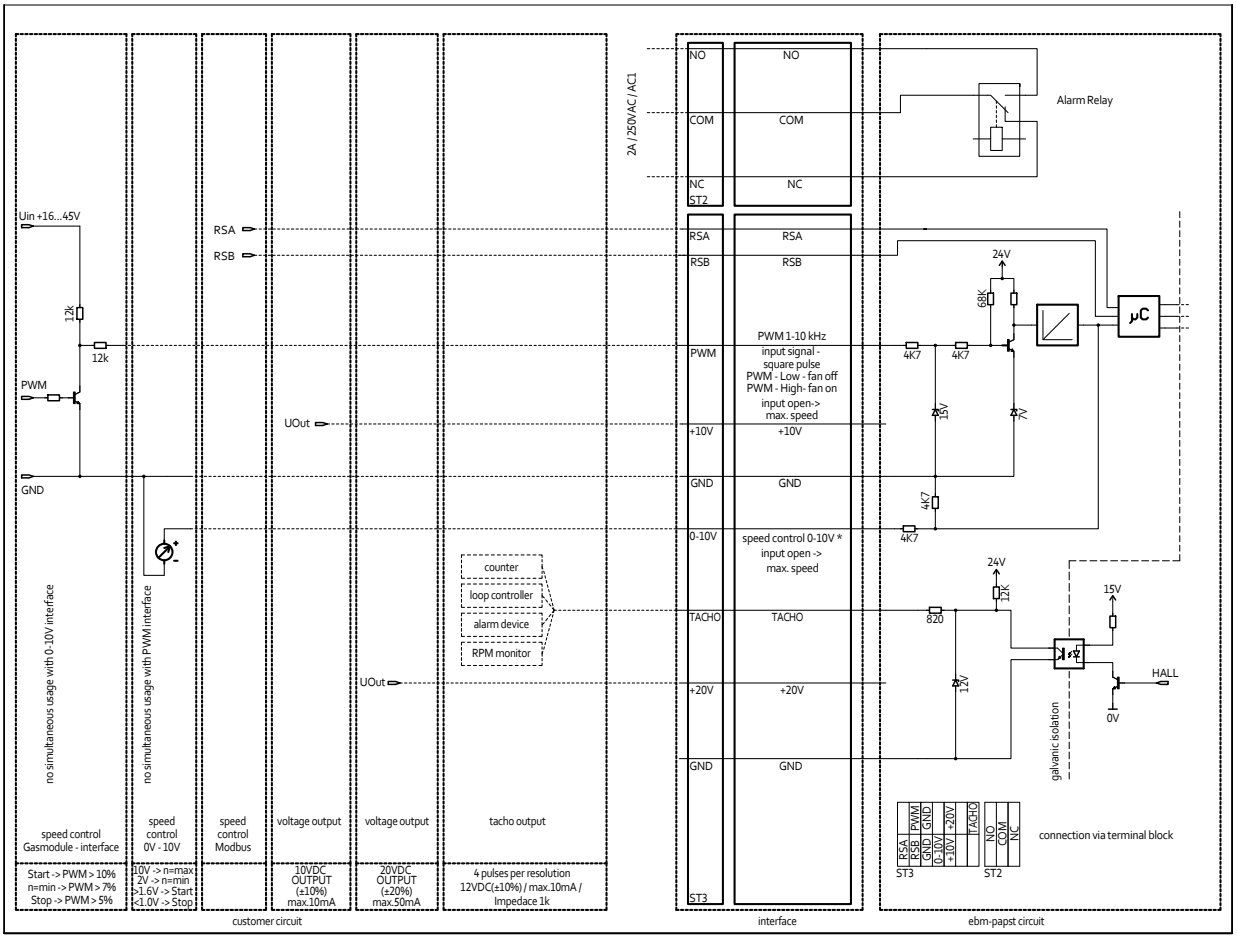


Interface 63 3~ 380-480 VAC, 50/60 Hz



* for use of 0-10V interface, bridge PWM to GND

Interface 64 3~ 380-480 VAC, 50/60 Hz



* for use of 0-10V interface, bridge PWM to GND

Gas valves

Our gas valves are mainly used in condensing unit applications for domestic heating technology in the low-to-medium output range. They ensure precise air-gas ratio adjustment.

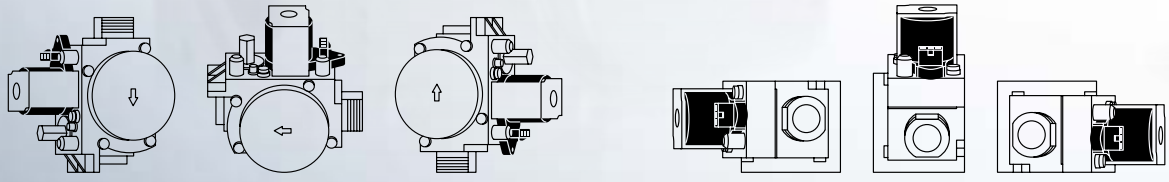
The G20 D01 and G15/G20 E01 gas valves are suitable for condensing units with pneumatic composite controls. Regardless of the suction pressure generated by the premix blower, these gas valves always keep the offset pressure at zero and compensate for pressure fluctuations in the supply network as well.

The offset (zero point shift) can be configured at the servo controller. At the same time, the desired gas quantity is adjusted using an integrated flow control element. Depending on the design, reference pressure can be connected to the servo controller if required.

The G15/G20 F01,G32 F01 and G40 F01 gas valves are suitable for condensing units with electronic composite controls. Regardless of gas quality and any pressure fluctuations in the supply network, these gas valves regulate the constant air-gas ratio without relying on mechanical gas valve settings.

Mounting position

Solenoid at any position between vertical and horizontal
– **but not upside down**



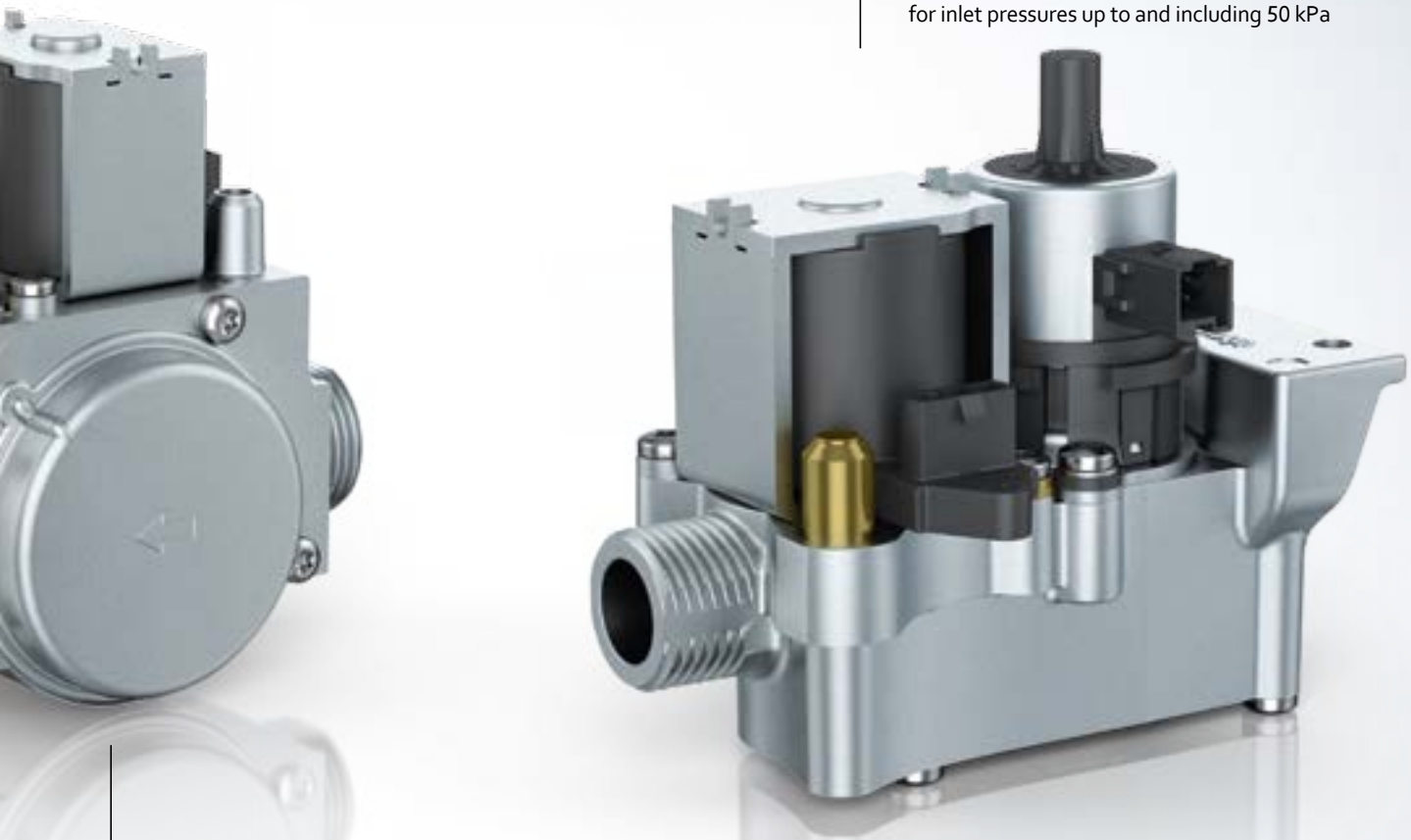
Type examination certificate for North America (USA and Canada): Master Contract No. 172723

Applicable standards
ANSI Z21.78 2010 / CSA 6.20 2010:
Combination Gas Controls for gas appliances

Approvals exist for the chief gas consuming countries.

Type examination certificate in accordance with EC Gas Appliances Directive: CE 0085CM0036 (product ID number)

Applicable standards:
- **EN126:2012 06:** Multifunctional controls for gas burning appliances
- **EN13611:2007 + A2:2011:** Safety and control devices for gas burners and gas burning appliances – General requirements
- **EN161:2012 08:** Automatic shut-off valves for gas burners and gas appliances
- **EN88-1:2011:** Pressure regulators and associated safety devices for gas appliances – Part 1: Pressure regulators for inlet pressures up to and including 50 kPa



Additional notes

- Work on the gas valve may be performed by authorised specialists only.
- Please be sure to observe the corresponding installation instructions.
- Corresponding documents with safety instructions are available upon request or on the Internet.

Gas valves pneumatic gas air ratio control system

G15/G20 E01

More at www.ebmpapst.com

Material/surface

- Housing: Aluminium

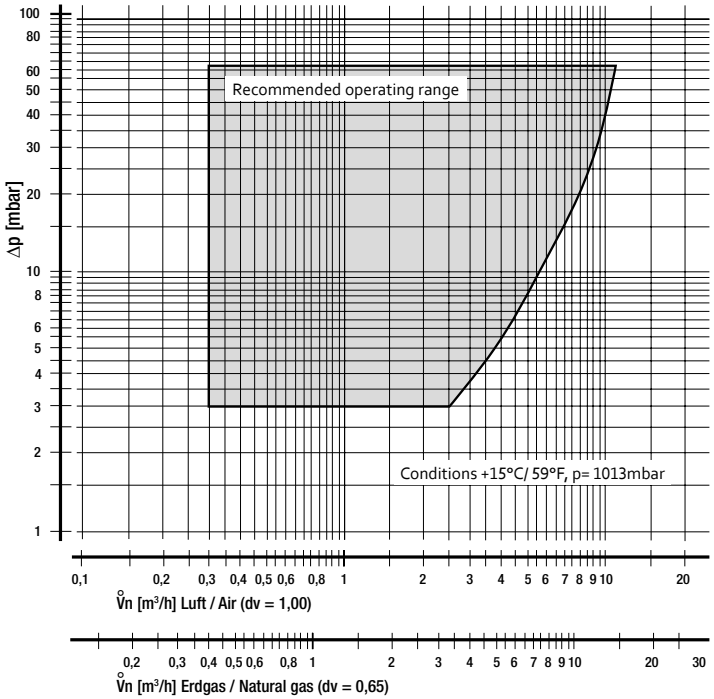
Mechanical data

- Degree of protection:
  IP40 in combination with a suitable plug
- Permitted gas families:
  II + III (in accordance with EN 437)
- Maximum inlet pressure:
  65 mbar (CE), 0.5 psi (CSA)
- Permitted ambient temperature: 0°C to 60°C
- Permitted storage temperature: -25°C to 70°C
- Offset correction: +/- 20 Pa
- Input (gas connection):
  External thread G3/4 or G1/2 (EN ISO 228) or
  4 x M4-mounting holes (optional)
- Output:
  ebm-papst proprietary quick release
- Safety valve:
  Coaxial design: Valve class B/C as per EN161

Electrical data

- Designed for protection class I
- Electrical connection:
  Connector shell with 4.20mm grid

Capacity curve – GXXE01-BCXCS



Type	Rated voltage	Max. input power	Nominal diameter	Maximum inlet pressure	Flow rate (at Δp = 5mbar)	Automatic shutoff valves (EN161)	Minimum signal pressure	Opening and closing time
	V	VA		mbar	m³/h		Pa	s
Nominal data								
GXXE01-BCXCS	230 RAC	9.8	DN15/20	65	3.4	Class B/C	-40	< 1
	120 RAC	9.8	DN15/20	65	3.4	Class B/C	-40	< 1
	24 RAC	9.8	DN15/20	65	3.4	Class B/C	-40	< 1
	24 DC	9.8	DN15/20	65	3.4	Class B/C	-40	< 1
	22 DC	11.9	DN15/20	65	3.4	Class B/C	-40	< 1

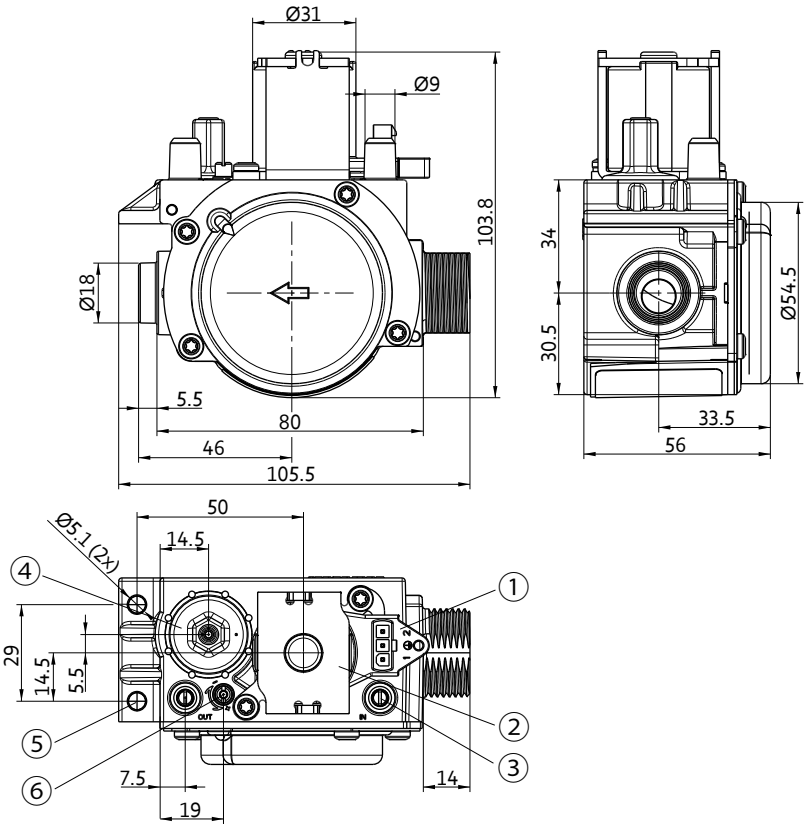
Subject to change.

Gas valve

Type	Weight
	kg
GXXE01-BCXCS	0.57

Technical drawing

Dimensions in mm



1. Electrical connection
2. Solenoid coil
3. Pressure test nipple P_1
4. Pressure regulator offset adjustment
5. Pressure test nipple P_2
6. Main flow throttle

Gas valves pneumatic gas air ratio control system

G20 D01

More at www.ebmpapst.com

Material/surface

- Housing: Aluminium

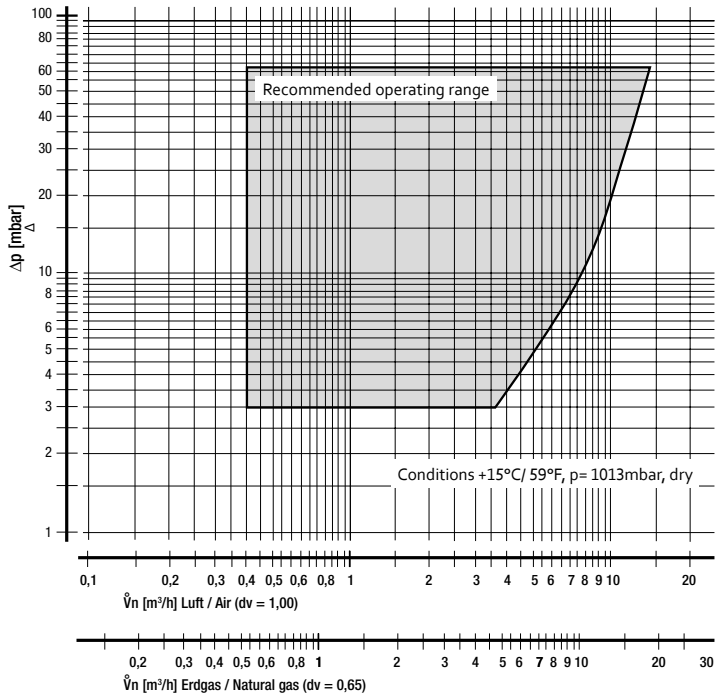
Mechanical data

- Degree of protection:
  IP40 in combination with a suitable plug
- Permitted gas families:
  II + III (in accordance with EN 437)
- Maximum inlet pressure:
  65 mbar (CE), 0.5 psi (CSA)
- Permitted ambient temperature: 0°C to 60°C
- Permitted storage temperature: -25°C to 70°C
- Offset correction: +/- 20 Pa
- Input (gas connection):
  4 x M5-mounting holes
  (hole spacing 36 mm)
- Output:
  4 x M5-mounting holes
  (hole spacing 36 mm)
- Safety valve: Valve class B/B as per EN161

Electrical data

- Designed for protection class I
- Electrical connection:
  Connector shell with 5.08 mm grid

Capacity curve – G20D01-BBXCS



Type	Rated voltage	Max. input power	Nominal diameter	Maximum inlet pressure	Flow rate (at Δp = 5mbar)	Automatic shutoff valves (EN161)	Minimum signal pressure	Opening and closing time
	V	VA		mbar	m³/h		Pa	s
Nominal data								
G20D01-BBXCS	230 RAC	2 x 12.5	DN20	65	5.3	Class B/B	-40	< 1
	120 RAC	2 x 12.5	DN20	65	5.3	Class B/B	-40	< 1
	24 RAC	2 x 12.5	DN20	65	5.3	Class B/B	-40	< 1
	24 DC	2 x 12.5	DN20	65	5.3	Class B/B	-40	< 1

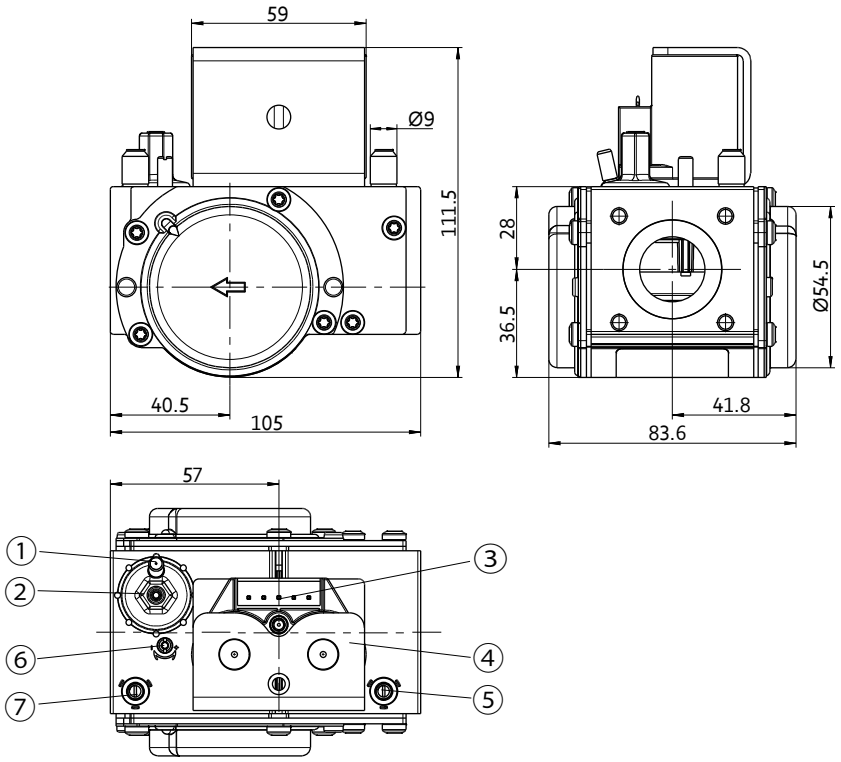
Subject to change.

Gas valve

Type	Weight
	kg
G20D01-BBXCS	1.3

Technical drawing

Dimensions in mm



1. Pressure regulator offset adjustment
2. Servo regulator
3. Electrical connection
4. Solenoid coil
5. Pressure test nipple P_1
6. Main flow throttle
7. Pressure test nipple P_2

Gas valves electronic gas air ratio control system

G15/G20 F01

More at www.ebmpapst.com

Material/surface

- Housing: Aluminium

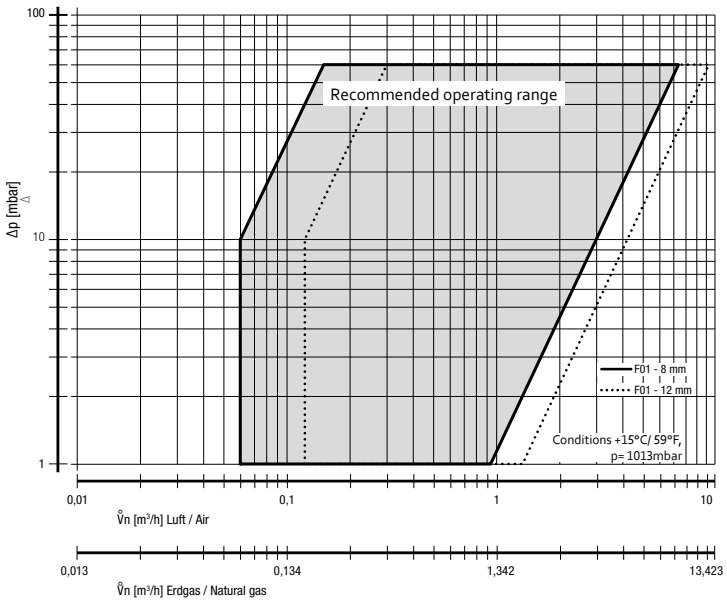
Mechanical data

- Degree of protection:
  IP40 in combination with a suitable plug
- Permitted gas families:
  II + III (in accordance with EN 437)
- Maximum inlet pressure:
  60 mbar (CE), 0.5 psi (CSA)
- Permitted ambient temperature:
  -15°C to 70°C
- Permitted storage temperature:
  -25°C to 70°C
- Input (gas connection):
  External thread G3/4 oder G1/2 (EN ISO 228)
- Output:
  ebm-papst proprietary quick release
- Safety valves:
  Coaxial design: Valve class B/C as per EN161

Electrical data

- Designed for protection class I
- Electrical connection:
  Connector shell with 4.20mm grid

Capacity curve – GXXF01-BCXCS



Type	Rated voltage	Max. input power	Nominal diameter	Maximum inlet pressure	Flow rate (at Δp = 5mbar) Stepper motor module with nominal diameter 8 mm	Flow rate (at Δp = 5mbar) Stepper motor module with nominal diameter 12 mm	Automatic shutoff valves (EN161)	Opening and closing time
	V	VA		mbar	m³/h	m³/h		s
Nominal data								
GXXF01-BCXCS	230 RAC	9.8	DN15/20	60	2.1	2.9	Class B/C	< 1
	120 RAC	9.8	DN15/20	60	2.1	2.9	Class B/C	< 1
	24 RAC	9.8	DN15/20	60	2.1	2.9	Class B/C	< 1
	24 DC	9.8	DN15/20	60	2.1	2.9	Class B/C	< 1
	22 DC	11.9	DN15/20	60	2.1	2.9	Class B/C	< 1

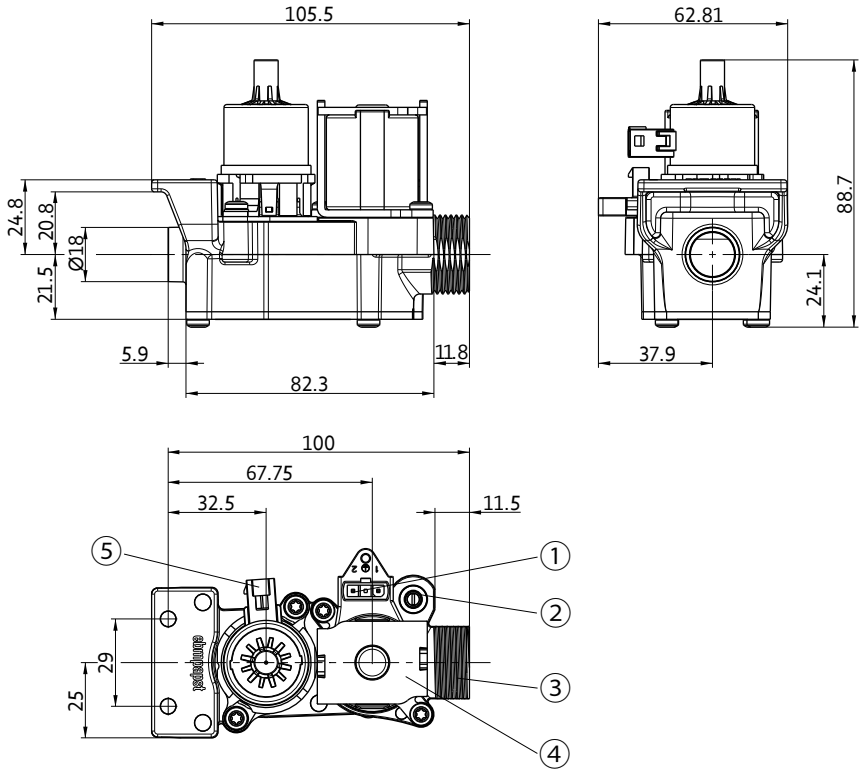
Subject to change.

Gas valve

Type	Weight
	kg
GXXF01-BCXCS	0.47

Technical drawing

Dimensions in mm



1. Electrical connection safety valve
2. Pressure test nipple
3. G 3/4" or G1/2" ISO 228-1
4. Solenoid coil
5. Electrical connection stepper motor

Gas valves electronic gas air ratio control system

G32 F01

More at www.ebmpapst.com

Material/surface

- Housing: Aluminium

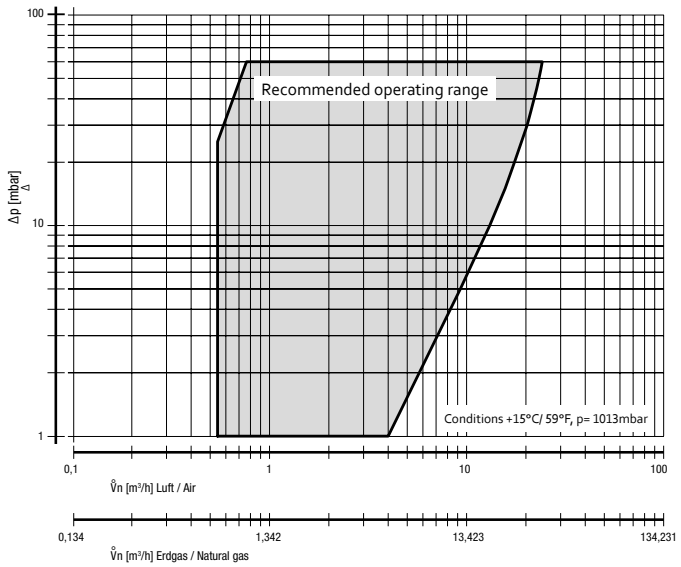
Mechanical data

- Degree of protection:
  IP40 in combination with a suitable plug
- Permitted gas families:
  I + II + III (in accordance with EN 437)
- Maximum inlet pressure:
  60 mbar (CE), 0.5 psi (CSA)
- Permitted ambient temperature:
  -15°C to 60°C
- Permitted storage temperature:
  -25°C to 70°C
- Input (gas connection):
  external thread G 1 1/4 (EN ISO 228)
- Output: Flange connection 4 x mounting holes for self-tapping screw (nominal diameter 5 mm); hole spacing □52.33 mm
- Safety valves:
  Coaxial design: Valve class B/C in accordance with EN161
- Interface to mechanical pressure monitor port:
  Inlet pressure; central chamber pressure
- Pressure test nipple: Inlet and outlet pressure

Electrical data

- Designed for protection class I
- Electrical connection:
  Safety module: suitable for connector housing with pitch 4.20mm (e.g., Stocko STO-FIT System, EH 705-103; Würth series WR-MPC4, item no. 649 003 013 322)
- Stepper motor module:
  Connector housing Stocko-Grid MH790-06-001

Capacity curve – G32F01-CBXCS



Type	Rated voltage	Max. input power	Nominal diameter	Maximum inlet pressure	Flow rate (at Δp = 5mbar)	Automatic shutoff valves (EN161)	Opening and closing time
	V	VA		mbar	m³/h		s
Nominal data							
	230 RAC	17	DN32	60	9.2	Class C/B	< 1
G32F01-CBXCS	120 RAC	17	DN32	60	9.2	Class C/B	< 1
	24 DC	17	DN32	60	9.2	Class C/B	< 1

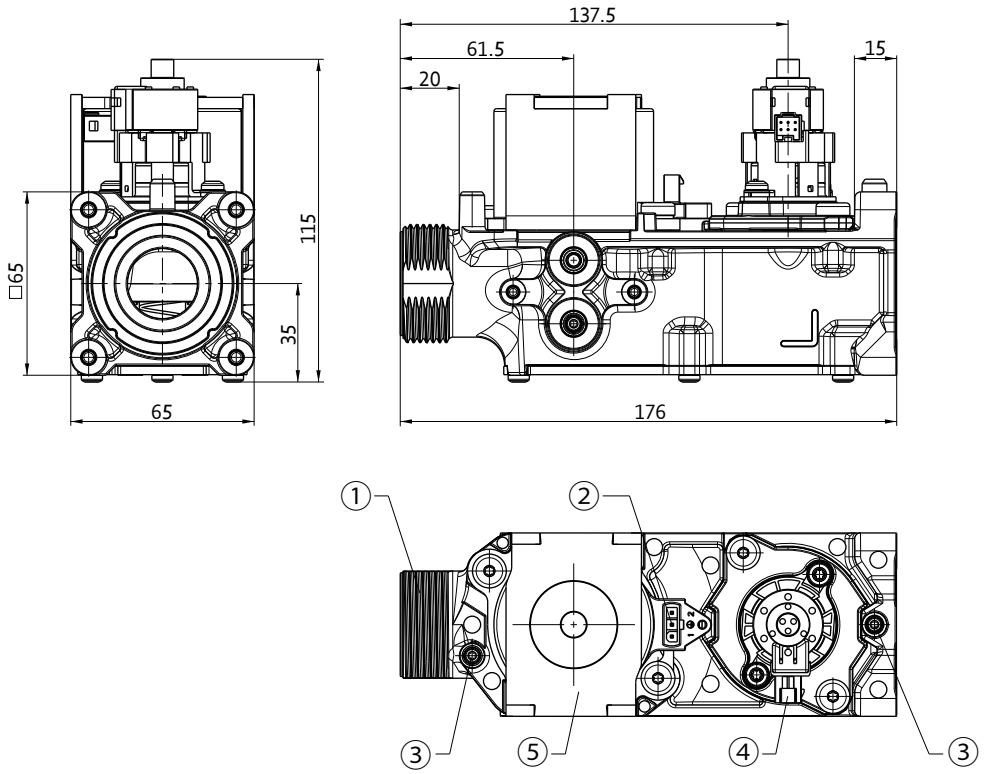
Subject to change.

Gas valve

Type	Weight
	kg
G32F01-CBXCS	1.55

Technical drawing

Dimensions in mm



(1) 1 1/4" B ISO 228-1
(2) Electrical connection safety valve
(3) Pressure test nipple
(4) Electrical connection control valve
(5) Solenoid coil

Gas valves electronic gas air ratio control system

G40 F01

More at www.ebmpapst.com

Material/surface

- Housing: Aluminium

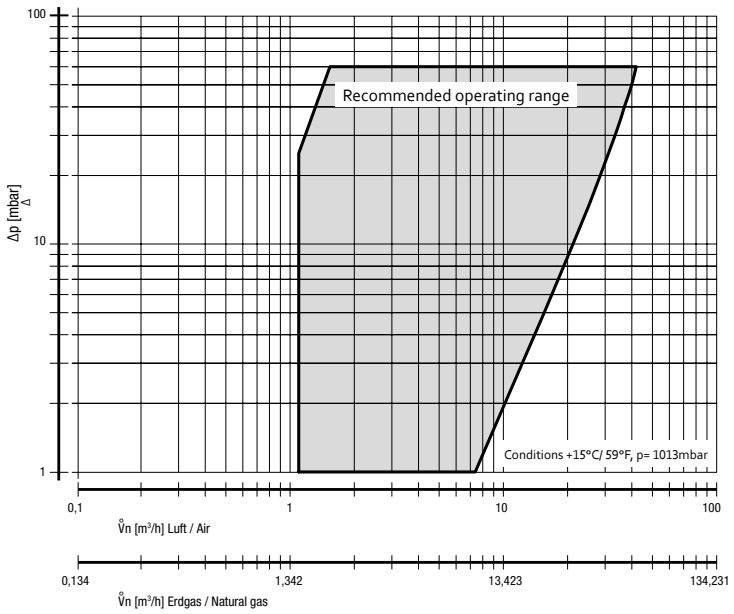
Mechanical data

- Degree of protection:
  IP40 in combination with a suitable plug
- Permitted gas families:
  I + II + III (in accordance with EN 437)
- Maximum inlet pressure:
  60 mbar (CE), 0.5 psi (CSA)
- Permitted ambient temperature:
  -15°C to 60°C
- Permitted storage temperature:
  -25°C to 70°C
- Input (gas connection):
  Flange connection 4 x mounting holes for self-tapping screw (nominal diameter 6 mm); hole spacing □52.33 mm. Input flange 1 ½" optional
- Output: Flange connection 4 x mounting holes for self-tapping screw (nominal diameter 6 mm); hole spacing □52.33 mm
- Safety valve:
  Coaxial design: External thread B/B as per EN161
- Interface to mechanical pressure monitor port:
  Inlet pressure; central chamber pressure for VPS (optional)
- Pressure test nipple:
  Inlet and outlet pressure

Electrical data

- Designed for protection class I
- Electrical connection:
  Suitable for connector housing with pitch 4.20mm (e.g., Stocko STO-FIT System, EH 705-103; Würth WR-MPC4 series, item no. 649 003 013 322)
- Stepper motor module:
  Connector housing Stocko-Grid MH790-06-001

Capacity curve – G40F01-BBXCS



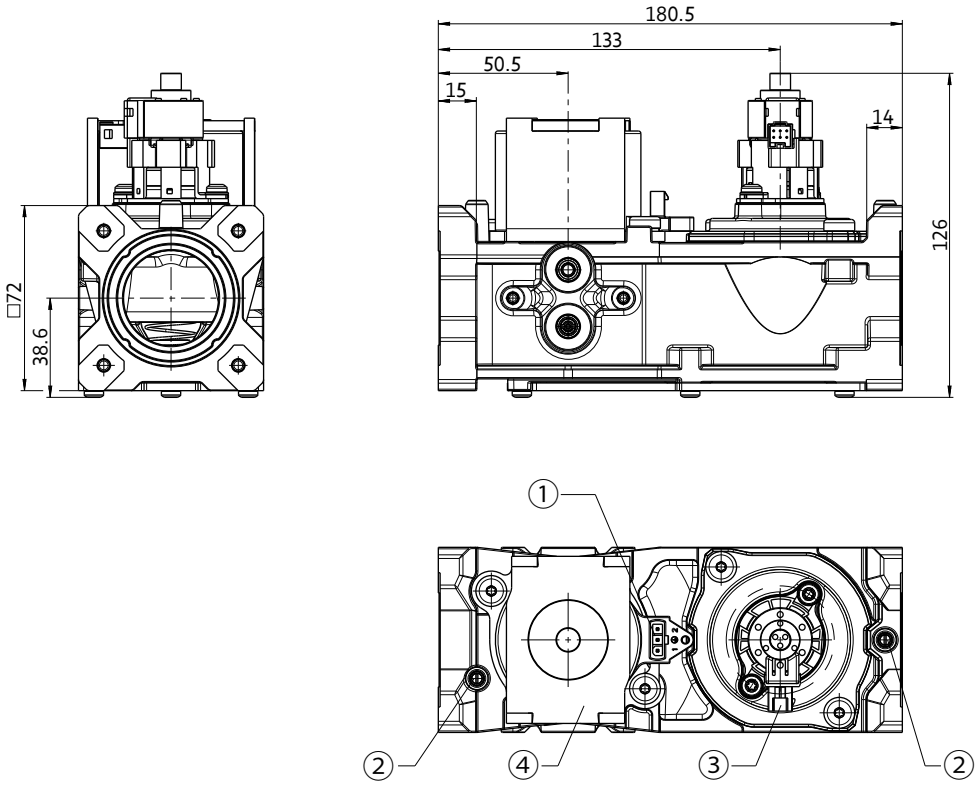
Type	Rated voltage	Max. input power	Nominal diameter	Maximum inlet pressure	Flow rate (at Δp = 5mbar)	Automatic shutoff valves (EN161)	Opening and closing time
	V	VA		mbar	m³/h		s
Nominal data							
G40F01-BBXCS	230 RAC	22	DN40	60	15.5	Class B/B	< 1
	120 RAC	22	DN40	60	15.5	Class B/B	< 1
	24 DC	22	DN40	60	15.5	Class B/B	< 1

Subject to change.

Gas valve	
Type	Weight
	kg
G40F01-BBXCS	1.97

Technical drawing

Dimensions in mm



1. Electrical connection safety valve
2. Pressure test nipple
3. Electrical connection control valve
4. Solenoid coil

Burner control units

We supply the right electronics for controlling ignition, performance regulation and monitoring the function of the condensing boiler as well as user interfaces needed for conveniently controlling central heating and hot water. The burner control can also be combined with other modules and provide control for system regulation, for example cascade operation.

Our product range, consisting of tried-and-tested hardware and software, enables reliable operating performance and short development cycles. The versatile software architecture enables easy interface integration. In addition, as with our blowers, we value having the lowest possible energy consumption.

For Commercial Applications

– For commercial boilers up to 2MW
– Integrated cascade control
– Flexibility to configure many systems: preset appliance types
– Configurable inputs and outputs
– Integrated low water cutoff
– Many modes for CH and DHW

User Interface

– Touch screen: communication with boiler control via Modbus
– Ethernet connection to web server
– Graphical LCD interface for boiler status, operation and configuration
– Password-protected user levels
– Includes diagnostics software and a smart app for remote control

For Residential Applications

– Smart control for various appliances up to 50kW:
  water heaters (with/without tank) and residential combi boilers
– Also applicable as general burner control
– Optional Modbus communication
– Available as all-in-one kit

User Interface

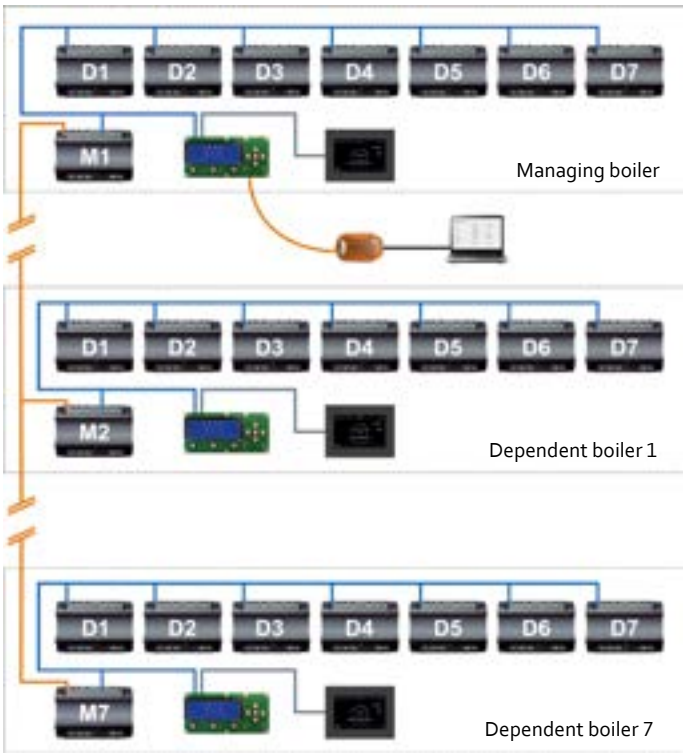
– On-board HMI: Reset button and status LED
– Advanced external display option

Commercial range
Packages

- Applicable for commercial boilers up to 2 MW
- Configurable input/output functions
- Multiple heat demand options (on/off, OpenTherm, 0-10V)
- Internal/external spark igniter or hot-surface igniter
- Primary safeguard functions
- Extra safety- and smart control functions

	Power supply	Dimensions control	Cascade operation	Touch screen	User interface	AL-BUS	Modbus	Ethernet	Diagnostics software	Smart app
	V AC	mm								
Packages										
Commercial Plus	120/230	212×152×49	8 boilers × 8 modules	Y	900PB Display	Y	Y	Y	Y	Y
Commercial	120/230	212×152×49	max. 16 boilers	N	900PB Display	Y	Y	optional	Y	Y
Residential Plus	120/230	212×152×49	settings only	N	900LB Display	Y	N	N	Y	Y

Commercial Plus with integrated cascade control:
Up to 8 boilers x 8 modules (1 managing boiler and max. 7 dependent boilers).



Managing boiler: M1, M2, etc.
Dependent boiler: D1, D7, etc.

900PB Display

900TS Touchscreen

Residential range
Packages

(Tankless) Water Heater

Residential Combi Boiler

Smart Burner

- Smart control for various appliances: water heaters (with/without tank) and residential combi boilers
- Also applicable as general burner control
- Flexible mounting options
- On-board user interface or advanced external display
- Optional Modbus communication

	Power supply	Dimensions control	On-board HMI	User interface	AL-BUS	Modbus	Diagnostics software	Smart app
	V AC	mm						
Packages								
Tankless Water Heater	120/230	203×114×50	N	900LB Display	Y	N	Y	Y
Water Heater	120/230	203×114×50	N	900LB Display	Y	N	Y	Y
Residential Combi Boiler	120/230	203×114×50	N	900LB Display	Y	N	Y	Y
Smart Burner	120/230	203×114×50	Y		Y	Y	Y	Y

900LB Display

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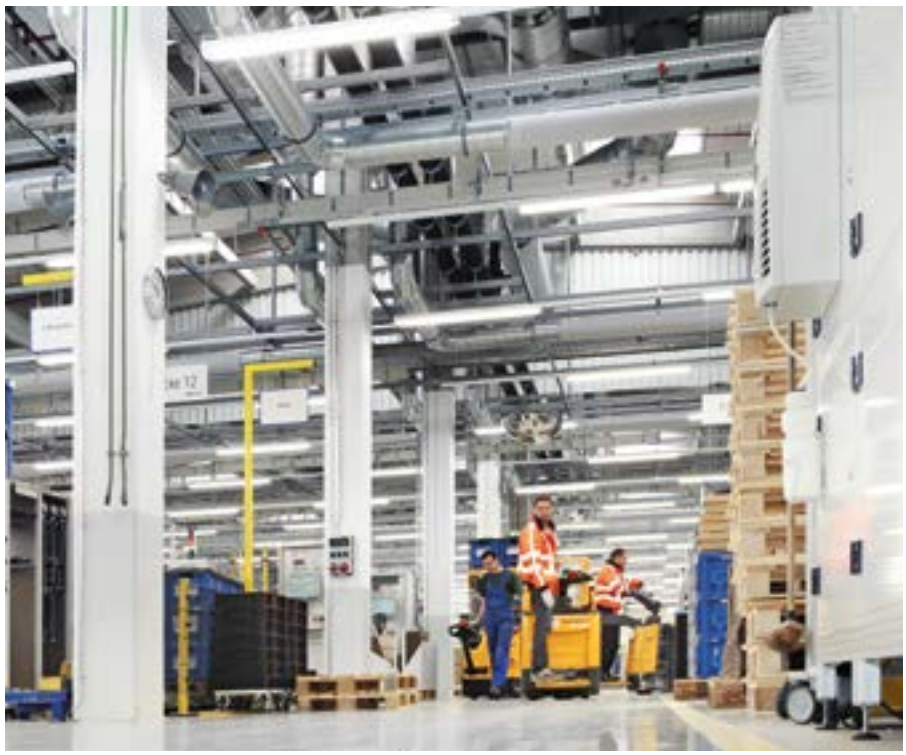

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