R3G310-BJ05-H6

EC centrifugal fan

backward-curved, single-intake

ebm-papst Mulfingen GmbH & Co. KG
Bachmühle 2 · D-74673 Mulfingen
Phone +49 7938 81-0
Fax +49 7938 81-110
info1@de.ebmpapst.com
www.ebmpapst.com

Limited partnership · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRA 590344

General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRB 590142

Nominal data

Type	**R3G310-BJ05-H6**
Motor	**M3G084-DF**

Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 277
Frequency	Hz	50/60
Method of obtaining data		ml
Status		prelim.
Speed (rpm)	min^{-1}	2450
Power consumption	W	470
Current draw	A	2.0
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	60

ml = Max. load · me = Max. efficiency · fa = Free air · cs = Customer specification · ce = Customer equipment
Subject to change

Data according to Commission Regulation (EU) 327/2011

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	64.1	48
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		78.1	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	0.46
09 Air flow q_v	m^3/h	1805
09 Pressure increase p_{fs}	Pa	540
10 Speed (rpm) n	min^{-1}	2450
11 Specific ratio*		1.01

Data obtained at optimum efficiency level.
The ErP data is determined using a motor-impeller combination in a standardized measurement setup.

* Specific ratio = 1 + p_{fs} / 100 000 Pa

LU-188462

EC centrifugal fan

backward-curved, single-intake

Technical description

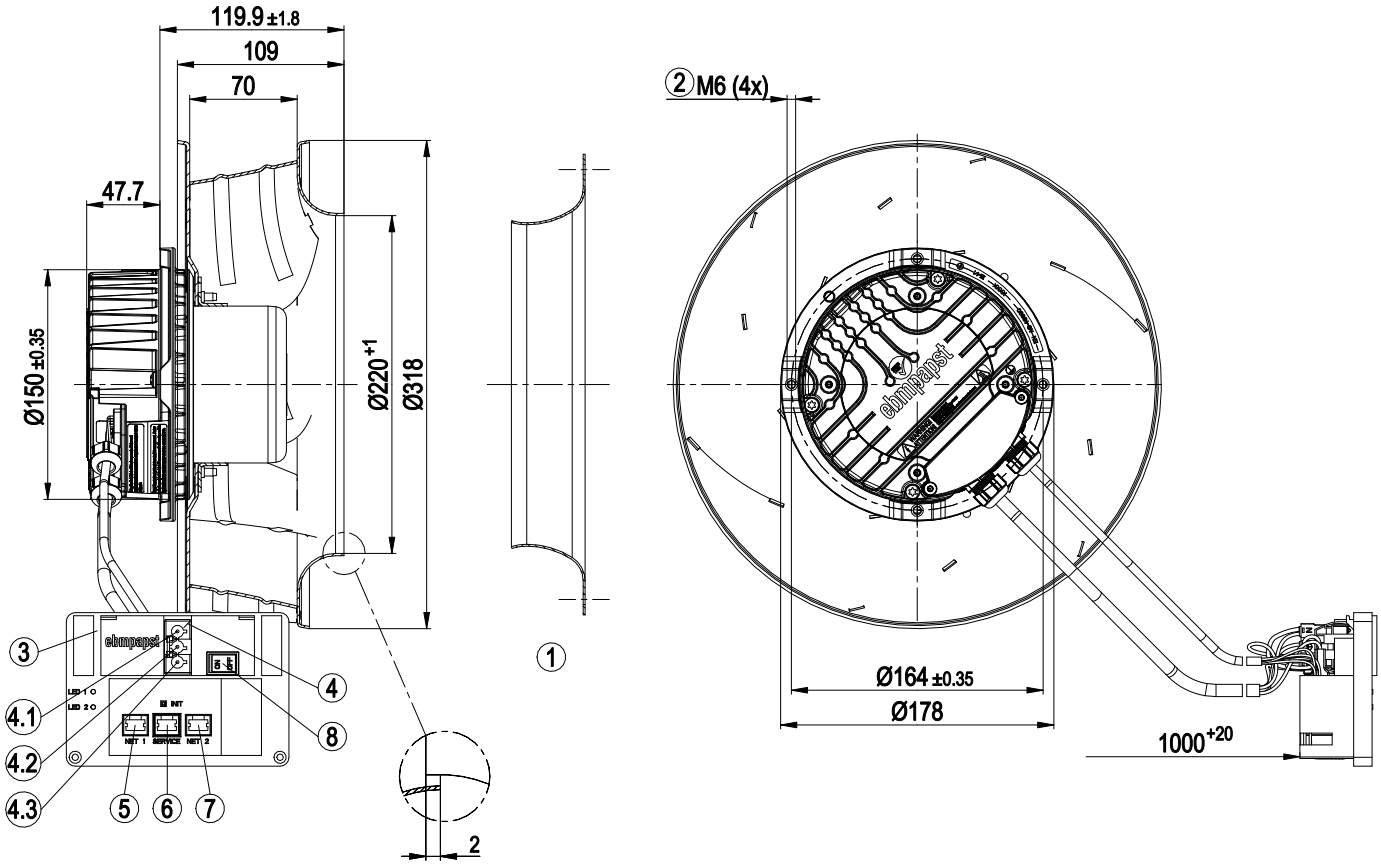
Weight	4.8 kg
Size	310 mm
Motor size	84
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Number of blades	6
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	Motor IP55, electronics IP20
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H0 - dry environment
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	Shaft horizontal or rotor on top; rotor on bottom on request
Condensation drainage holes	None
Mode	S1
Motor mounting	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Operation and alarm display with LED - Alarm relay - Integrated PID controller - Power limiter - Motor current limitation - PFC, active - RS-485 MODBUS-RTU - Soft start - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	Plug
Motor protection	Thermal overload protector (TOP) internally connected
With cable	Variable
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 61800-5-1; CE
Approval	EAC

ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

EC centrifugal fan

backward-curved, single-intake

Product drawing



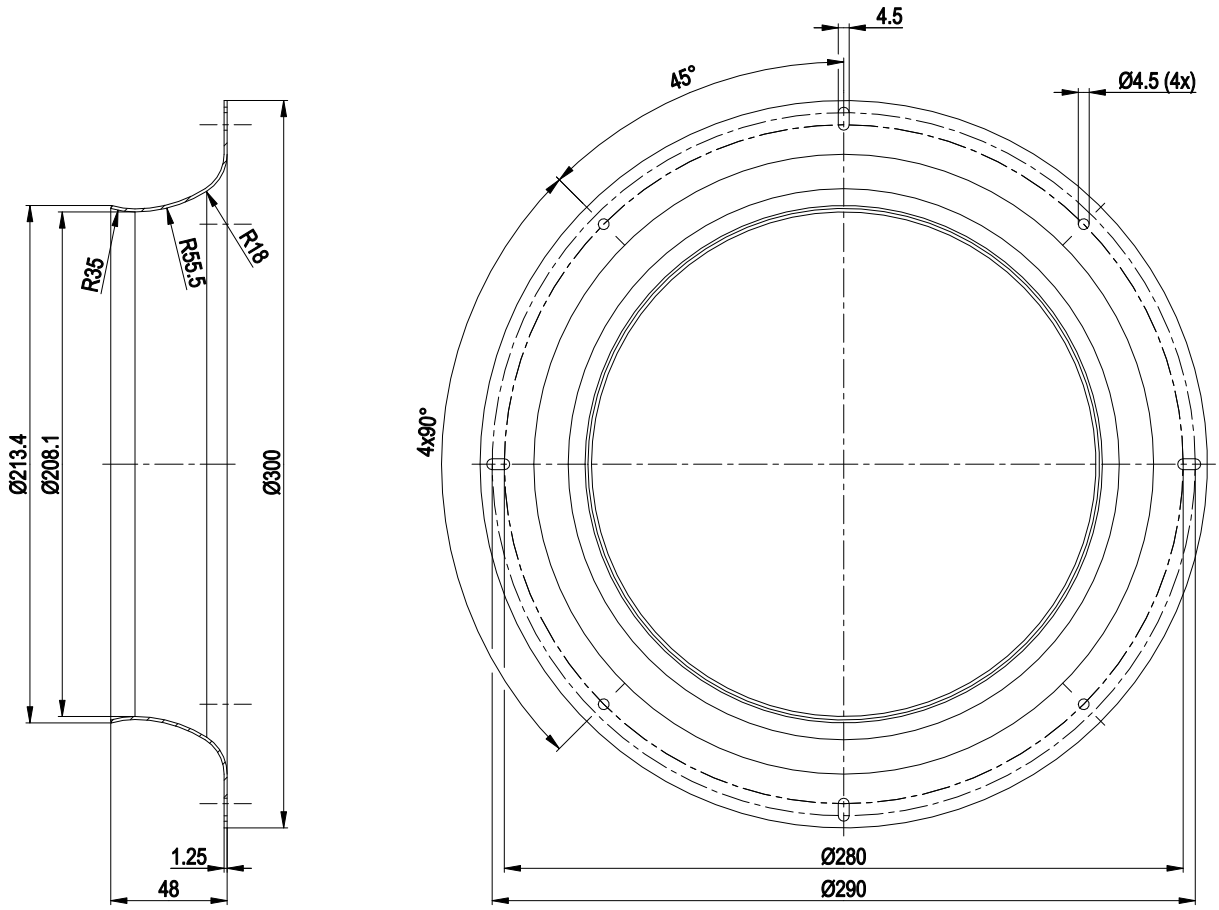
1	inlet ring 31050-2-4013 not included in scope of delivery
2	Max. clearance for screw 16 mm
3	Terminal box
4	Connector housing 3-pole GST18/3 Wieland 92.032.9058.1
4.1	N
4.2	PE
4.3	L
5	8-pole connector housing TE 100616-2
6	8-pole connector housing TE 100616-2
7	8-pole connector housing TE 100616-2
8	Switch, ARCOLECTRIC SWITCHES P L C (no. H8550VBACF) As-delivered condition end customer switch set to "OFF"

ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

EC centrifugal fan

backward-curved, single-intake

Accessory part



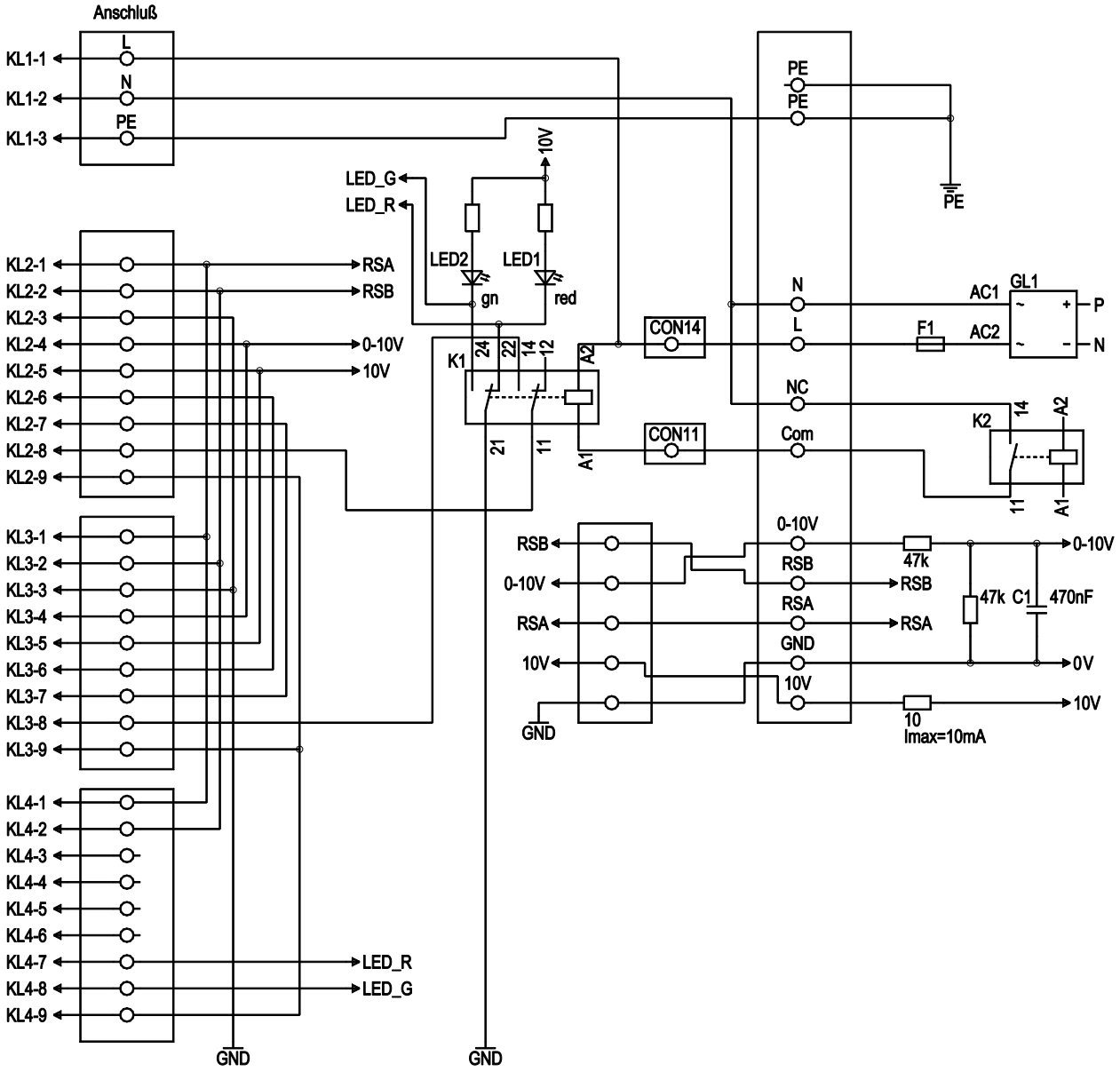
inlet ring 31050-2-4013 not included in scope of delivery

ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

EC centrifugal fan

backward-curved, single-intake

Connection diagram



No.	Conn.	Designation	Color	Function/assignment
1	1	L	black	Power supply, phase
1	2	N	blue	Power supply, neutral conductor
1	3	PE	green/yellow	Protective earth
2	1	RSA	-	RS485 interface for MODBUS, RSA; SELV
2	2	RSB	-	RS485 interface for MODBUS, RSB; SELV
2	3	GND	-	Reference ground for control interface, SELV
2	4	0-10 V / PWM	-	Analog input (set value) SELV, 0-10 V, Ri = 100 kΩ, adjustable curve
2	5	+10 V	-	Fixed voltage output 10 VDC, SELV, +10 V +/-3%, max. 10 mA, short-circuit-proof, power supply for external devices (e.g. potentiometers)
2	6	RES	-	Reserve
2	7	COM*	-	Alarm COM*
2	8	NC	-	NC KL2 UMAX 24 V

ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

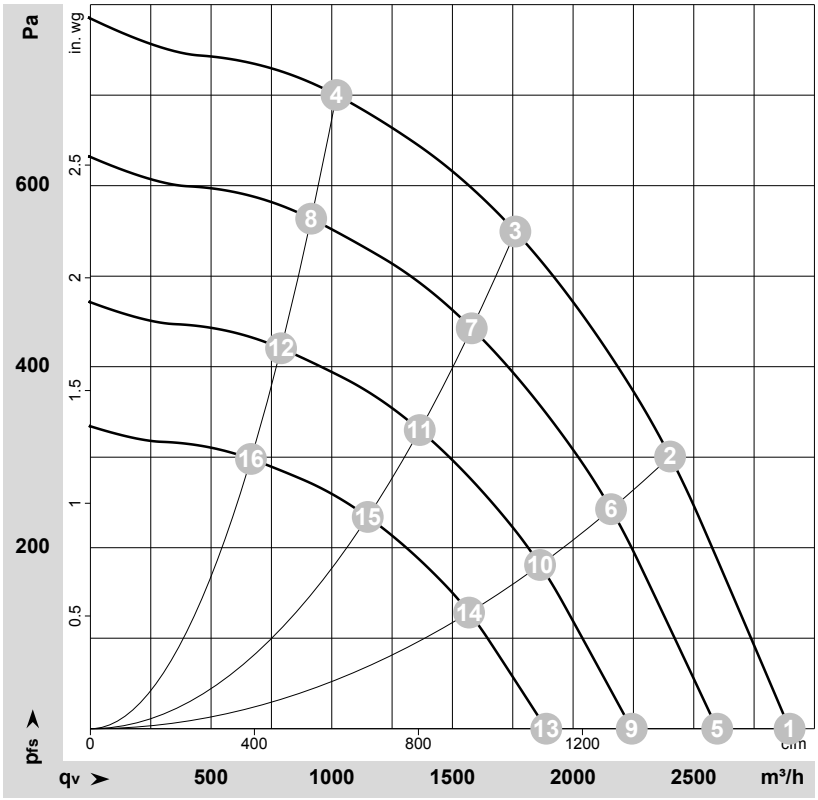
No.	Conn.	Designation	Color	Function/assignment
2	9	Schirm	-	Shield
3	1	RSA	-	RS485 interface for MODBUS, RSA; SELV
3	2	RSB	-	RS485 interface for MODBUS, RSB; SELV
3	3	GND	-	Reference ground for control interface, SELV
3	4	0-10 V / PWM	-	Analog input (set value) SELV, 0-10 V, Ri = 100 kΩ, adjustable curve
3	5	+10 V	-	Fixed voltage output 10 VDC, SELV, +10 V +/-3%, max. 10 mA, short-circuit-proof, power supply for external devices (e.g. potentiometers)
3	6	RES	-	Reserve
3	7	COM*	-	Alarm COM*
3	8	NC*	-	NC* KL3 UMAX 24 V
3	9	Schirm	-	Shield
4	1	RSA	-	RS485 interface for MODBUS, RSA; SELV
4	2	RSB	-	RS485 interface for MODBUS, RSB; SELV
4	7	LED R	-	External LED Red
4	8	LED G	-	External LED Green
4	9	Schirm	-	Shield

ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

EC centrifugal fan

backward-curved, single-intake

Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-188462-1

Air performance measured according to ISO 5801 installation category A. For detailed information on the measurement setup, contact ebm-papst. Intake sound level: Sound power level according to ISO 13347 / sound pressure level measured at 1 m distance from fan axis. The values given are valid under the specified measuring conditions and may vary due to conditions of installation. For deviations from the standard configuration, the parameters have to be checked on the installed unit.

Measured values

	Wired	U	f	n	P_{ed}	I	q_V	p_{fs}	q_V	p_{fs}
		V	Hz	min^{-1}	W	A	m^3/h	Pa	cfm	in. wg
1	1~	230	50	2450	330	1.46	2895	0	1705	0.00
2	1~	230	50	2450	419	1.84	2400	300	1415	1.20
3	1~	230	50	2450	470	2.00	1760	550	1035	2.21
4	1~	230	50	2450	421	1.85	1020	700	600	2.81
5	1~	230	50	2200	238	1.05	2595	0	1530	0.00
6	1~	230	50	2200	304	1.33	2155	248	1270	1.00
7	1~	230	50	2200	338	1.48	1580	444	930	1.78
8	1~	230	50	2200	304	1.33	915	564	540	2.26
9	1~	230	50	1900	153	0.68	2245	0	1320	0.00
10	1~	230	50	1900	196	0.86	1865	185	1095	0.74
11	1~	230	50	1900	218	0.95	1365	331	805	1.33
12	1~	230	50	1900	196	0.86	790	420	465	1.69
13	1~	230	50	1600	91	0.40	1890	0	1110	0.00
14	1~	230	50	1600	117	0.51	1570	131	925	0.53
15	1~	230	50	1600	130	0.57	1150	235	675	0.94
16	1~	230	50	1600	117	0.51	665	298	390	1.20

Wired = Wiring · U = Power supply · f = Frequency · n = Speed (rpm) · P_{ed} = Power consumption · I = Current draw · q_V = Air flow · p_{fs} = Pressure increase

ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com