R1G175-RA47-10

EC centrifugal fan

backward-curved, single-intake

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Nominal data

Type	**R1G175-RA47-10**	
Motor	**M1G055-CF**	
Nominal voltage	VDC	48
Nominal voltage range	VDC	36 .. 60
Method of obtaining data		fa
Status		prelim.
Speed (rpm)	min^{-1}	5120
Power consumption	W	160
Current draw	A	4.8
Min. back pressure	Pa	150
Min. back pressure	in. wg	0.6
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	75

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}	%	54	44
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		72	62
05 Variable speed drive		Yes	

09 Power consumption P_e	kW	0.19
09 Air flow q_v	m^3/h	565
09 Pressure increase p_{fs}	Pa	598
10 Speed (rpm) n	min^{-1}	5105
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-190804

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Technical description

Weight	1.2 kg
Size	175 mm
Motor size	55
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum, painted black
Impeller material	PA plastic, sheet-metal plate painted black
Number of blades	7
Balancing grade according to DIN ISO 1940-1	G 6.3
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP24; Electronics IP 54
Insulation class	"B"
Moisture (F) / Environmental (H) protection class	H2+
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 bottom; rotor on top on request
Condensation drainage holes	None
Cooling hole/opening	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Tach output - Cable break detection with control line - Motor current limitation - Soft start - PWM control input
Electrical hookup	Connector with cable
Motor protection	Reverse polarity and locked-rotor protection
With cable	Variable
Approval	VDE; UL 507

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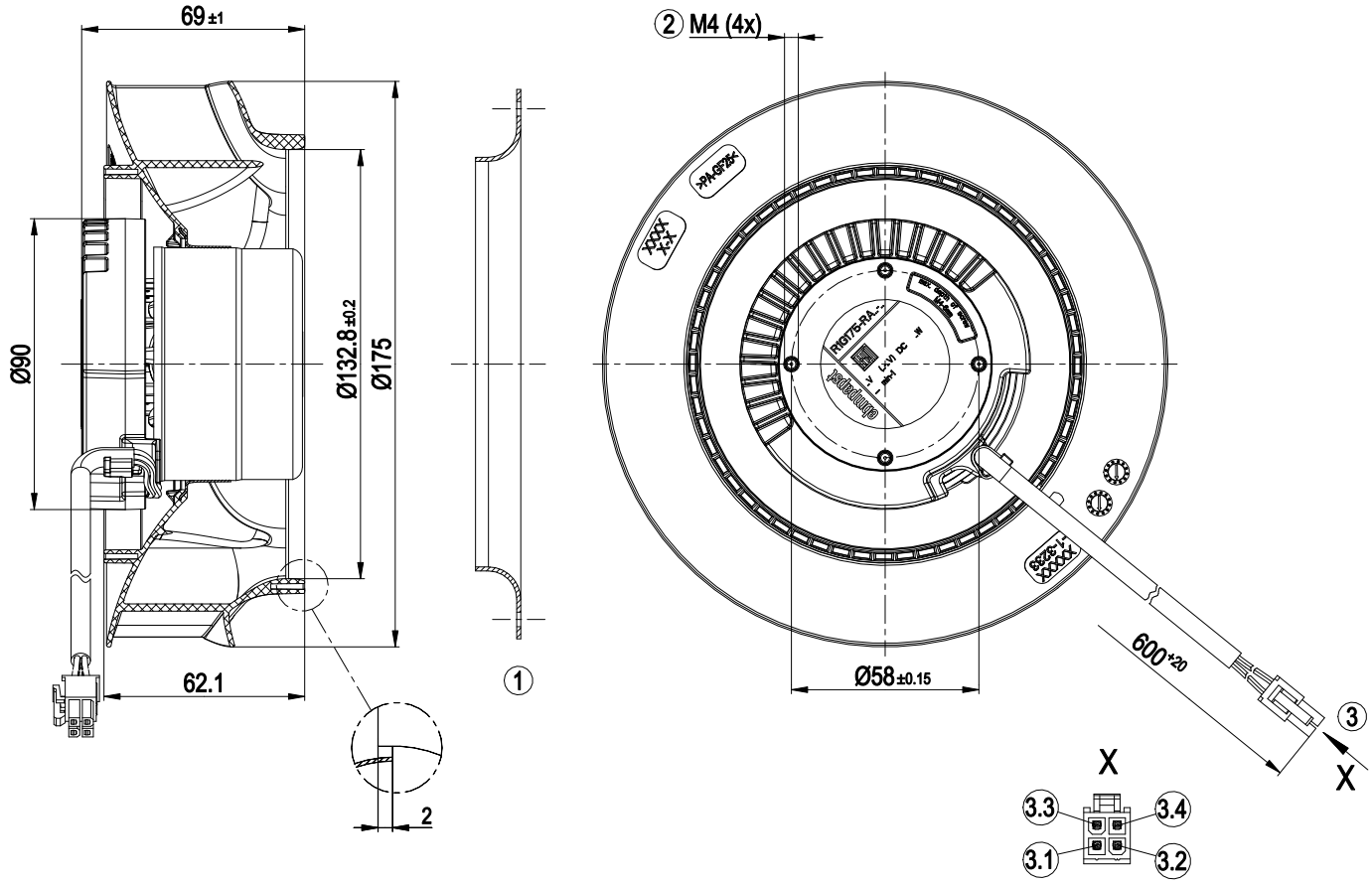
Product drawing



1	Accessory part: inlet ring 09576-2-4013 not included in scope of delivery
2	Clearance for screw 4-6 mm
3	Cable PVC AWG18, 4-pole connector housing Molex 39-01-2045, 4x socket Molex 39-00-0059
	UN +48 VDC (red)
	PWM (yellow)
	Tach (white)
	GND (blue)

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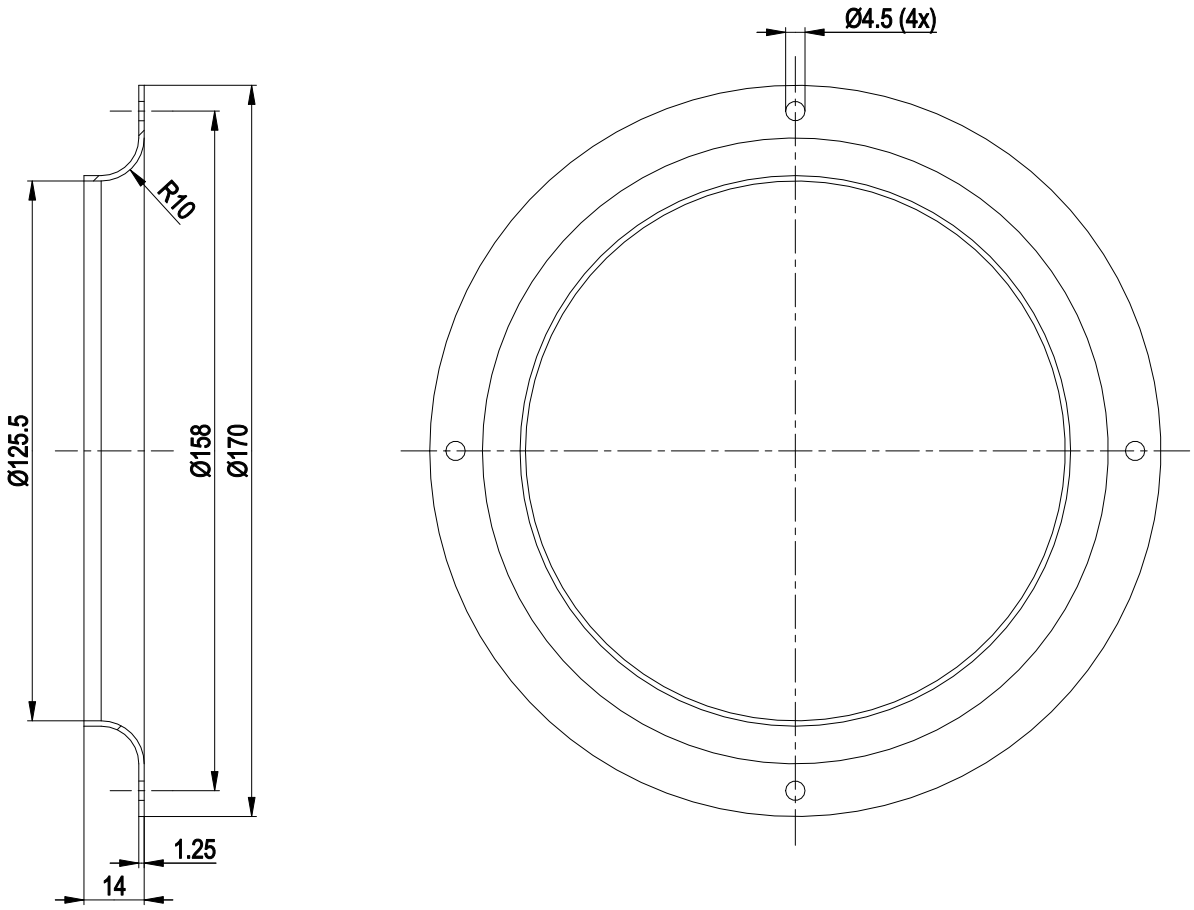
Accessory part



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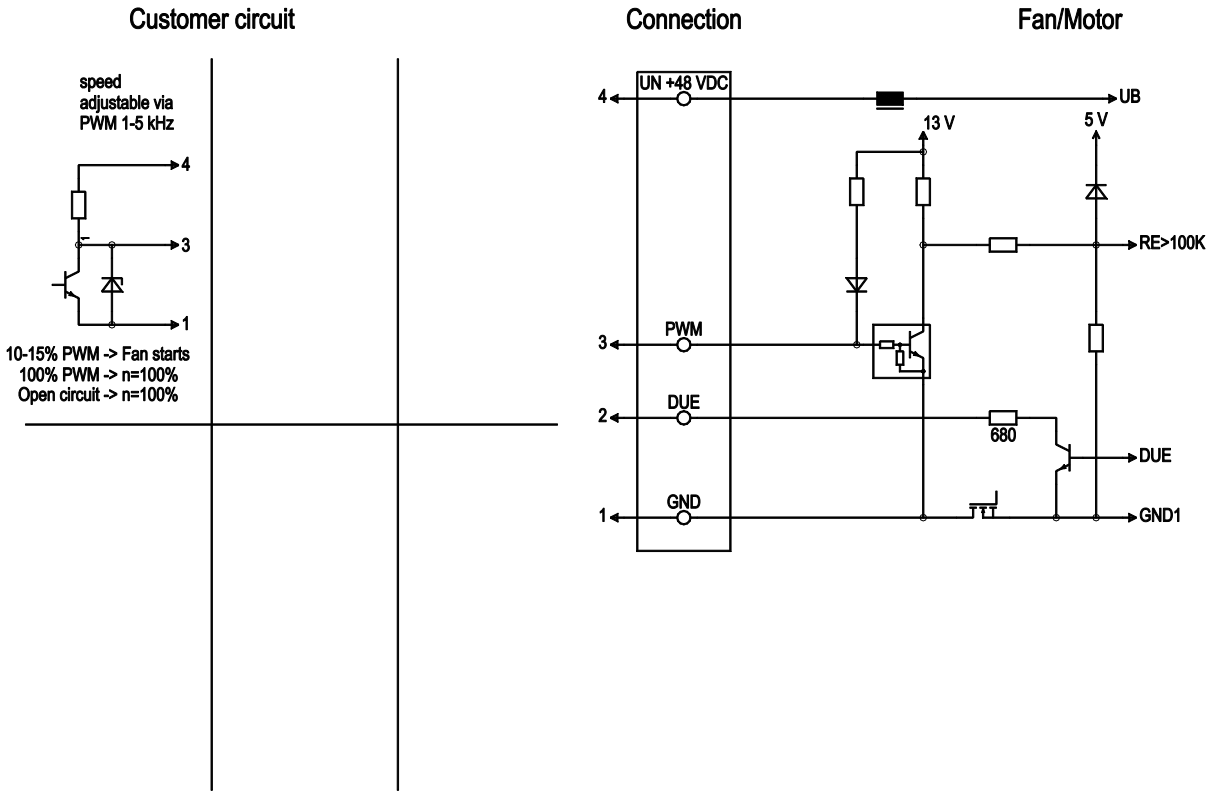
Connection diagram



No.	Conn.	Designation	Color	Function/assignment
	4	UN +48 VDC	red	Power supply 48 VDC, see nameplate for voltage range, maximum ripple 3.5 %
	3	PWM	yellow	Control input PWM, 1-5 kHz; 2.8-20 V
	2	DUE	white	Speed monitoring, 2 pulses per revolution, Isink max=10 mA, V CEsat ≤0.5 V (internal DUE transistor), voltage drop @ 1 mA typically ≤1.2 V
	1	GND	blue	Reference ground

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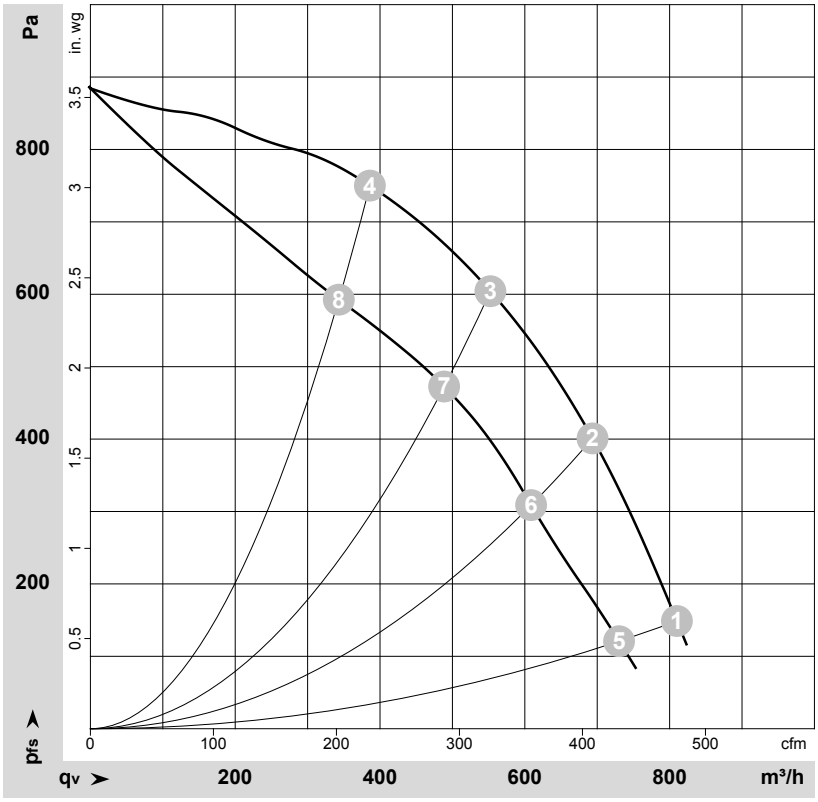
Curves: Air performance



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-190804-1
Measurement: LU-190839-1

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

	U	n	P_{ed}	I	q_V	p_{fs}	q_V	p_{fs}
	V	min^{-1}	W	A	m^3/h	Pa	cfm	in. wg
1	48-60	5120	179	5.30*	810	150	475	0.60
2	48-60	5120	196	5.70*	695	400	410	1.61
3	48-60	5120	195	5.70*	550	600	325	2.41
4	48-60	5120	189	5.60*	385	750	225	3.01
5	36	4615	130	4.86	730	123	430	0.49
6	36	4525	134	5.00	610	309	360	1.24
7	36	4500	135	5.05	490	475	290	1.91
8	36	4545	133	4.97	345	592	200	2.38

U = Voltage · n = Speed (rpm) · P_{ed} = Power consumption · I = Current draw · * = Current measured at nominal voltage · q_V = Air flow · p_{fs} = Pressure increase

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