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**Nominal data**

<b>Type</b>	<b>K3G450-PB29-N1</b>	
<b>Motor</b>	<b>M3G150-IF</b>	
Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	50/60
Method of obtaining data		ml
Speed (rpm)	min <sup>-1</sup>	2800
Power consumption	W	6800
Current draw	A	10.3
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	40

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 (prEN 17166)**

		Actual	Req. 2015			
01 Overall efficiency $\eta_{es}$	%	68.8	60.1	09 Power consumption $P_{ed}$	kW	6.57
02 Measurement category		A		09 Air flow $q_v$	m <sup>3</sup> /h	9035
03 Efficiency category		Static		09 Pressure increase $p_{fs}$	Pa	1749
04 Efficiency grade N		70.7	62	10 Speed (rpm) n	min <sup>-1</sup>	2795
05 Variable speed drive		Yes		11 Specific ratio <sup>*</sup>		1.02

Data obtained at optimum efficiency level.

<sup>\*</sup> Specific ratio =  $1 + p_g / 100\,000\text{ Pa}$ 

LU-210501

The efficiency values displayed for achieving conformity with the Ecodesign Regulation EU 327/2011 has been reached with defined air duct components (e.g. inlet rings). The dimensions must be requested from ebm-papst. If other air conduction geometries are used on the installation side, the ebm-papst evaluation loses its validity/the conformity must be confirmed again. The product does not fall within the scope of Regulation (EU) 2019/1781 due to the exception specified in Article 2 (2a) (motors completely integrated into a product).



## Technical description

<b>Weight</b>	45.2 kg
<b>Size</b>	450 mm
<b>Motor size</b>	150
<b>Rotor surface</b>	Painted black
<b>Electronics housing material</b>	Die-cast aluminum
<b>Impeller material</b>	Sheet aluminum
<b>Support plate material</b>	Sheet steel, galvanized
<b>Support bracket material</b>	Steel, painted black
<b>Inlet nozzle material</b>	Sheet steel, galvanized
<b>Number of blades</b>	5
<b>Direction of rotation</b>	Clockwise, viewed toward rotor
<b>Degree of protection</b>	IP55
<b>Insulation class</b>	"F"
<b>Moisture (F) / Environmental (H) protection class</b>	H1
<b>Ambient temperature note</b>	Occasional start-up at temperatures between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), use must be made of a fan design with special low-temperature bearings.
<b>Max. permitted ambient temp. for motor (transport/storage)</b>	+80 °C
<b>Min. permitted ambient temp. for motor (transport/storage)</b>	-40 °C
<b>Installation position</b>	See legend on product drawing
<b>Condensation drainage holes</b>	On rotor side
<b>Mode</b>	S1
<b>Motor bearing</b>	Ball bearing
<b>Technical features</b>	<ul style="list-style-type: none"> <li>- Operation and alarm display with LED</li> <li>- External 15-50 VDC input (parameterization)</li> <li>- Alarm relay</li> <li>- Integrated PI controller</li> <li>- Configurable inputs/outputs (I/O)</li> <li>- MODBUS V6.4</li> <li>- Motor current limitation</li> <li>- RS-485 MODBUS-RTU</li> <li>- Soft start</li> <li>- Voltage output 3.3-24 VDC, Pmax = 800 mW</li> <li>- Control interface with SELV potential safely disconnected from the mains</li> <li>- Thermal overload protection for electronics/motor</li> <li>- Line undervoltage / phase failure detection</li> <li>- Vibration sensor</li> </ul>
<b>EMC immunity to interference</b>	According to EN 61000-6-2 (industrial environment)
<b>EMC interference emission</b>	According to EN 61000-6-4 (industrial environment)
<b>Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)</b>	<= 3.5 mA
<b>Electrical hookup</b>	Terminal box
<b>Motor protection</b>	Electronic motor protection

# EC centrifugal module - RadiPac

backward-curved, single-intake

with support bracket

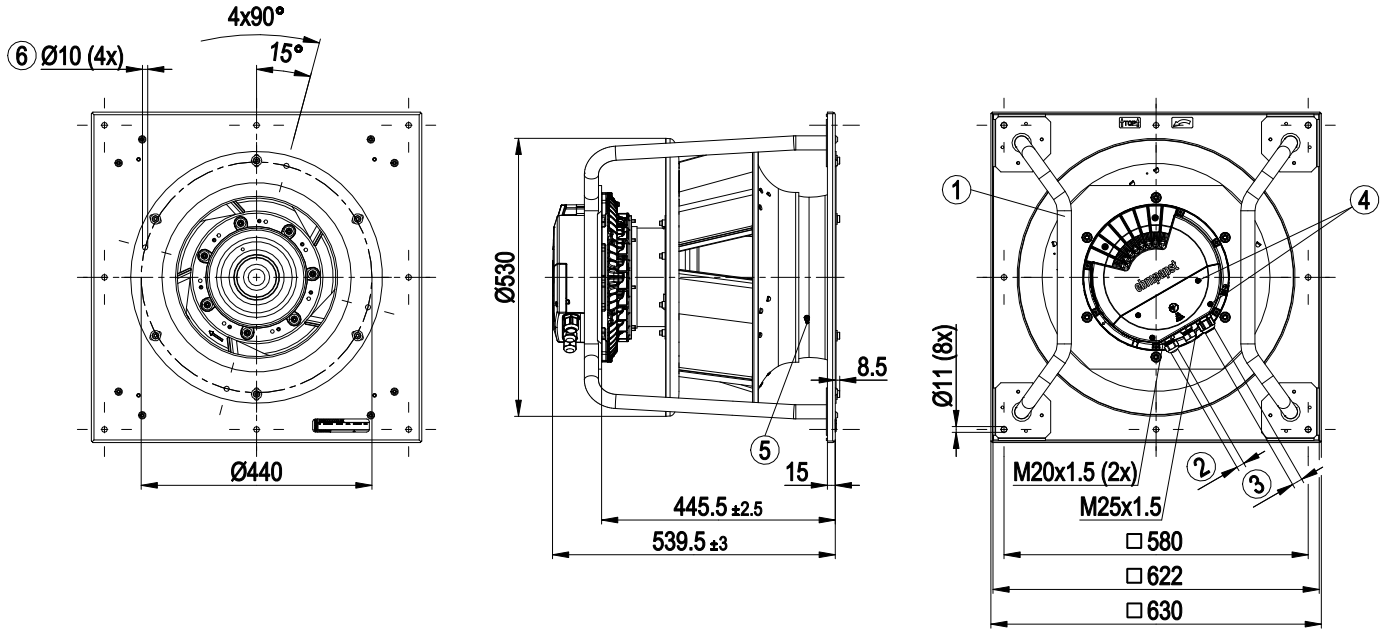
<b>Protection class assignment</b>	I; If a protective earth is connected by the customer This component for installation may have several local protection classes. This information relates to this component's basic design. The final protection class is based on the component's intended installation and connection.
<b>Conformity with standards</b>	EN 61800-5-1; CE
<b>Approval</b>	CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730-1



# EC centrifugal module - RadiPac

backward-curved, single-intake  
with support bracket

## Product drawing

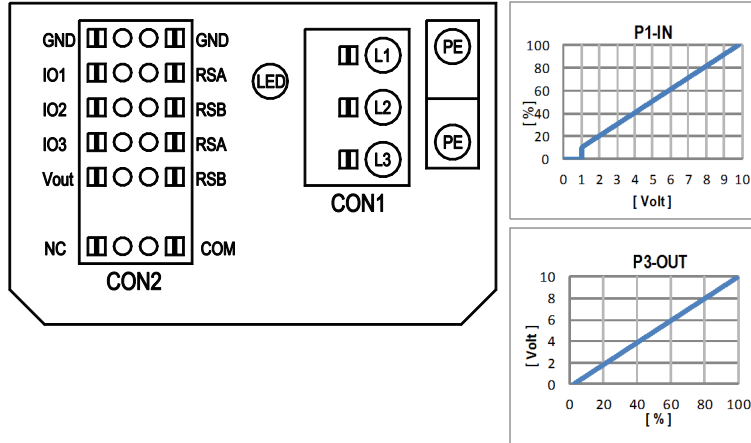


1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque $4 \pm 0.6$ Nm
3	Cable diameter min. 5 mm, max. 14 mm, tightening torque $6 \pm 0.9$ Nm
	(The tightening torque is designed for PVC cables. If the cable materials are different, the tightening torque may have to be adjusted)
4	Tightening torque $3 \pm 0.3$ Nm
5	Inlet ring with pressure tap (k-factor: 240)
6	Attachment holes for FlowGrid 35505-2-2957 (not included in scope of delivery)

# EC centrifugal module - RadiPac

backward-curved, single-intake  
with support bracket

## Connection diagram



No.	Conn.	Designation	Function/assignment
	CON1	L1, L2, L3	Power supply, phase, see nameplate for voltage range
	PE	PE	Protective earth
	CON2	RSA	RS485 interface for MODBUS, RSA; SELV
	CON2	RSB	RS485 interface for MODBUS, RSB; SELV
	CON2	GND	Reference ground for control interface, SELV
	CON2	IO1	Function parameterizable (see "Optional interface functions" table) Factory setting: Digital input - high active, function: Disable input, SELV - inactive: Pin open or applied voltage < 1.5 VDC - active: applied voltage 3.5-50 VDC Reset function: Triggering of error reset on change of state from "enabled" to "disabled"
	CON2	IO2	Function parameterizable (see "Optional interface functions" table) Factory setting: Analog input 0-10 V / PWM, Ri=100 kΩ, function: Set value Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV
	CON2	IO3	Function parameterizable (see "Optional interface functions" table) Factory setting: Analog output 0-10 V, max. 5 mA, function: Fan modulation level Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV
	CON2	Vout	Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable Factory setting: 10 VDC short-circuit-proof, supply for external devices, SELV alternatively: 15-50 VDC input for parameterization via MODBUS without line voltage
	CON2	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and on control interface side
	CON2	NC	Status relay, floating status contact, break for failure
		LED	green: status = good, ready for operation orange: status = warning red: status = failure
		P1-IN	Input characteristic curve
		P3-OUT	Output characteristic curve

## Terminal/plug assignment

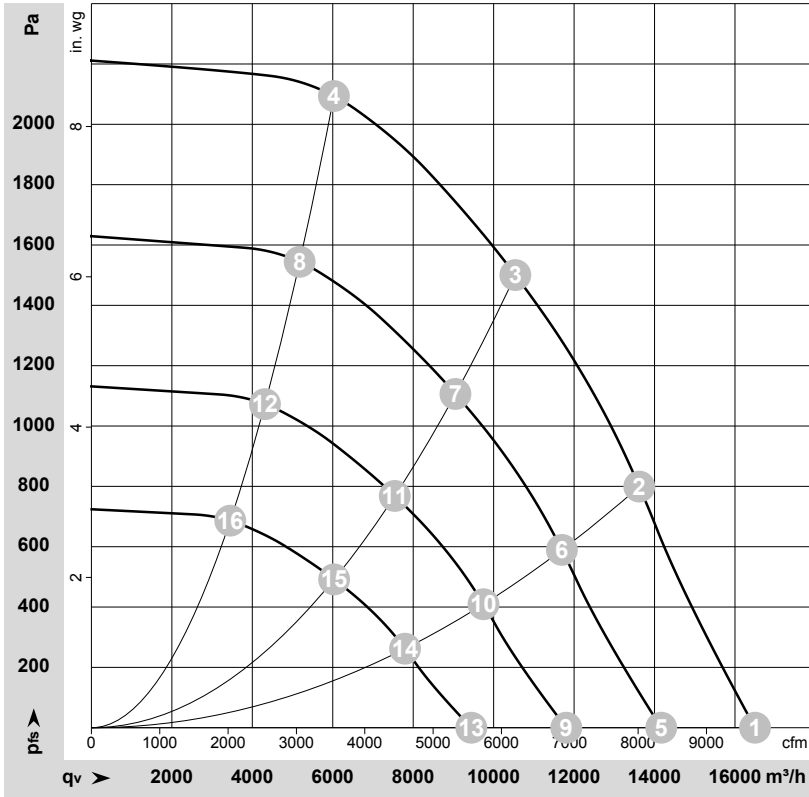
CON2	configurable IO mode	electrical specification	configurable IO functions: normal / inverse	MODBUS Register for IO mode configuration	
				MODBUS Register for IO mode configuration	MODBUS Register for IO mode configuration
IO1	○ Din1 (active high), digital input	active: applied voltage 3.5-50VDC, SELV not active: pin open or applied voltage < 1.5VDC		D158 [0]	
	○ Ain1 0-10V/PWM: analog input	RI = 100k, characteristic curve parameterizable, $f_{PWM} = 1k..10kHz$ , SELV		D158 [2]	
	○ Tach out (open collector output)	Umax = 50VDC, Imax = 20mA, SELV		D158 [5]	
	○ Diagnostics out (open collector output)	Umax = 50VDC, Imax = 20mA, SELV		D158 [6]	
IO2	○ Din2 (active high), digital input	active: applied voltage 3.5-50VDC, SELV not active: pin open or applied voltage < 1.5VDC		D159 [0]	
	○ Ain2 0-10V/PWM: analog input	RI = 100k, characteristic curve parameterizable, $f_{PWM} = 1k..10kHz$ , SELV		D159 [2]	
	○ Ain2-4-20mA: analog input	RI = 125R, characteristic curve parameterizable, SELV		D159 [3]	
	○ Din3 (active high), digital input	active: applied voltage 3.5-50VDC, SELV not active: pin open or applied voltage < 1.5VDC		D15A [0]	
IO3	○ Din3 (active low), digital input	active: applied voltage < 1.5VDC, SELV not active: pin open or applied voltage 3.5-50VDC		D15A [1]	
	○ PWMIn3: digital input idle level high	PWM = 40Hz - 10kHz, characteristics parameterizable		D15A [7]	
	○ PWMIn3: digital input idle level low	active: pin open or applied voltage 3.5-50VDC not active: applied voltage < 1.5VDC, SELV		D15A [8]	
	○ Aout3 0-10V: analog output	function parameterizable, max. 5mA, max output frequency 300Hz, SELV		D15A [4]	
RSA	○ Tacho out (pulses), analog output	0-10V/max. 5mA, max output frequency 300Hz, SELV		D15A [5]	
	○ Diagnostics out (pulses)	0-10V/max. 5mA, max output frequency 300Hz, SELV		D15A [6]	
	○ RSA485 bus connection,	MODBUS RTU, specification V6.4, SELV			
RSB	voltage output	voltage parameterizable 3.3...24VDC +/- 5%, Pmax=600mW, short-circuit-proof, supply for external devices, SELV		D16E [..]	
Vout	alternatively: Input auxiliary power supply for parameterization via RS485/MODBUS RTU without line voltage	15...50VDC			

○ configurable option

For further information and additional functions see EC Control Software, Fan-Set-App, or MODBUS Parameter Specification V6.4



## Curves: Air performance 50 Hz



$\rho = 1.15 \text{ kg/m}^3 \pm 2 \%$

Measurement: LU-210501-1

Air performance measured according to ISO 5801 installation category A. For detailed information on the measurement setup, contact ebmpapst. 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 <sub>ed</sub>	I	LpA <sub>in</sub>	LwA <sub>in</sub>	LwA <sub>out</sub>	q <sub>v</sub>	P <sub>fs</sub>	q <sub>v</sub>	P <sub>fs</sub>
		V	Hz	min <sup>-1</sup>	W	A	dB(A)	dB(A)	dB(A)	m <sup>3</sup> /h	Pa	cfm	in. wg
1	3~	400	50	2800	3947	6.06	96	102	103	16500	0	9710	0.00
2	3~	400	50	2800	5683	8.65	88	95	97	13620	800	8015	3.21
3	3~	400	50	2800	6800	10.30	82	88	93	10540	1500	6205	6.02
4	3~	400	50	2800	6129	9.32	87	93	98	6030	2100	3550	8.43
5	3~	400	50	2400	2499	3.83	92	99	99	14165	0	8340	0.00
6	3~	400	50	2400	3599	5.48	84	91	93	11695	594	6885	2.38
7	3~	400	50	2400	4296	6.53	78	84	89	9050	1109	5325	4.45
8	3~	400	50	2400	3884	5.91	83	89	94	5180	1550	3050	6.22
9	3~	400	50	2000	1446	2.22	88	94	95	11805	0	6950	0.00
10	3~	400	50	2000	2083	3.17	79	86	89	9745	412	5735	1.65
11	3~	400	50	2000	2486	3.78	73	80	85	7540	770	4440	3.09
12	3~	400	50	2000	2247	3.42	78	85	89	4315	1077	2540	4.32
13	3~	400	50	1600	740	1.14	82	88	89	9445	0	5560	0.00
14	3~	400	50	1600	1066	1.62	74	81	83	7800	264	4590	1.06
15	3~	400	50	1600	1273	1.93	68	74	79	6035	493	3550	1.98
16	3~	400	50	1600	1151	1.75	73	79	84	3450	689	2030	2.77

Wired = Wiring · U = Voltage · f = Frequency · n = Speed (rpm) · P<sub>ed</sub> = Power consumption · I = Current draw · LpA<sub>in</sub> = Sound pressure level intake side · LwA<sub>in</sub> = Sound power level intake side  
 LwA<sub>out</sub> = Sound power level outlet side · q<sub>v</sub> = Air flow · P<sub>fs</sub> = Pressure increase

