

8300100544
VBS0630CTTPS

EC centrifugal fan - RadiPac

backward-curved, single-intake

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Nominal data

Item	8300100544	
Motor	E15037-85	
Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	50/60
Method of obtaining data		ml
Speed (rpm)	min ⁻¹	1650
Power consumption	W	4000
Current draw	A	5.8
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 η_{es}	%	75.1	57.7	09 Power consumption P_{ed}	kW	3.92
02 Measurement category		A		09 Air flow q_v	m³/h	13990
03 Efficiency category		Static		09 Pressure increase p_{fs}	Pa	728
04 Efficiency grade N		79.4	62	10 Speed (rpm) n	min ⁻¹	1655
05 Variable speed drive		Yes		11 Specific ratio*		1.01

Data obtained at optimum efficiency level.

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).

* Specific ratio = $1 + p_b / 100\,000\text{ Pa}$ LU-232060

Technical description

Weight	31.6 kg
Size	630 mm
Motor size	150
Rotor surface	Painted black
Terminal box material	Die-cast aluminum
Impeller material	PP plastic
Number of blades	5
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1 = Moist – occasional or constantly high level of humidity
Ambient temperature note	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.
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	On rotor side
Mode	S1
Motor bearing	Ball bearing; (sealed)
Technical features	- Operation and alarm display with LED - External 15-50 VDC input (parameterization) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.4 - Motor current limitation - PFC, active - RS-485 MODBUS-RTU - Soft start - Voltage output 3.3-24 VDC, Pmax = 800 mW - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection - Vibration sensor
Power Factor Correction (PFC)	Active
EMC immunity to interference	According to EN 61000-6-2 (industrial environment)
EMC circuit feedback	According to EN 61000-3-2/3
EMC interference emission	According to EN 61000-6-4 (industrial environment)
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	Terminal box
Motor protection	Electronic motor protection

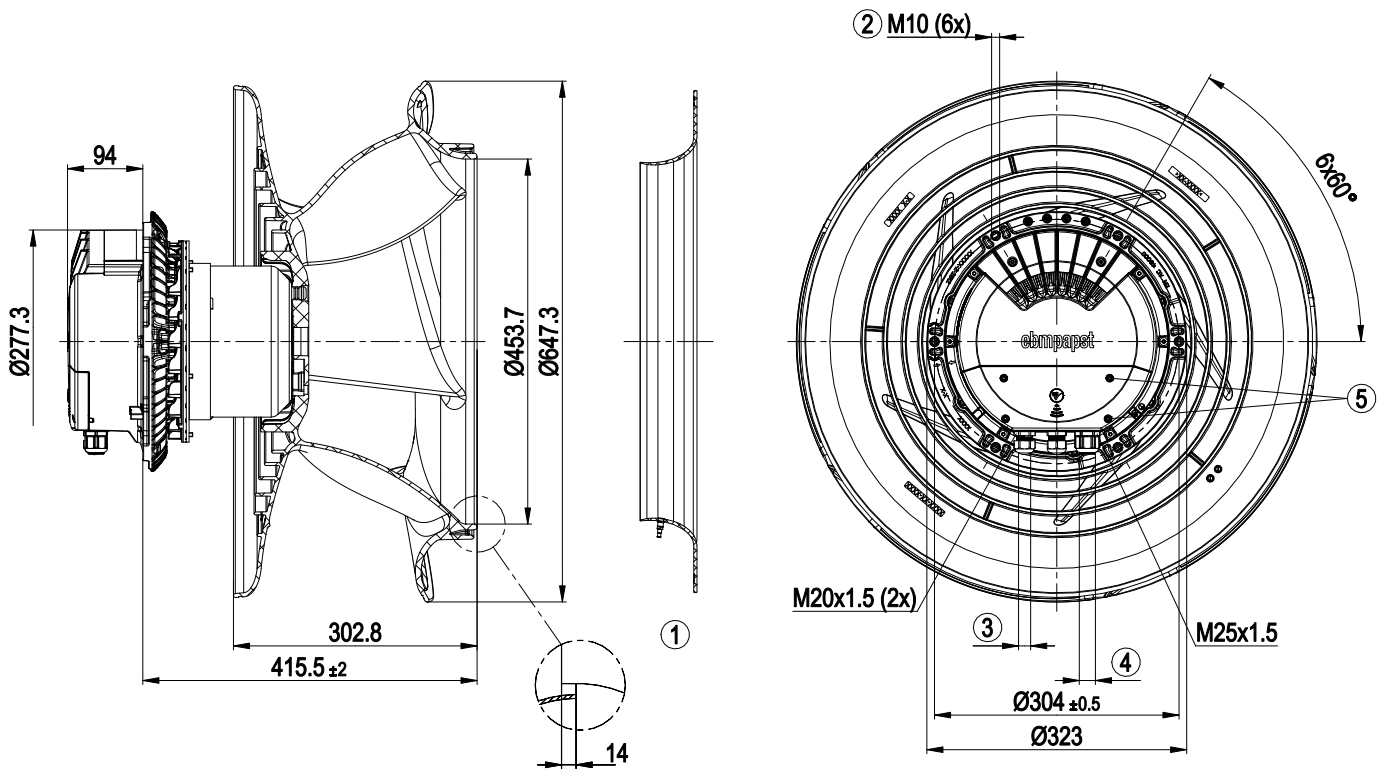
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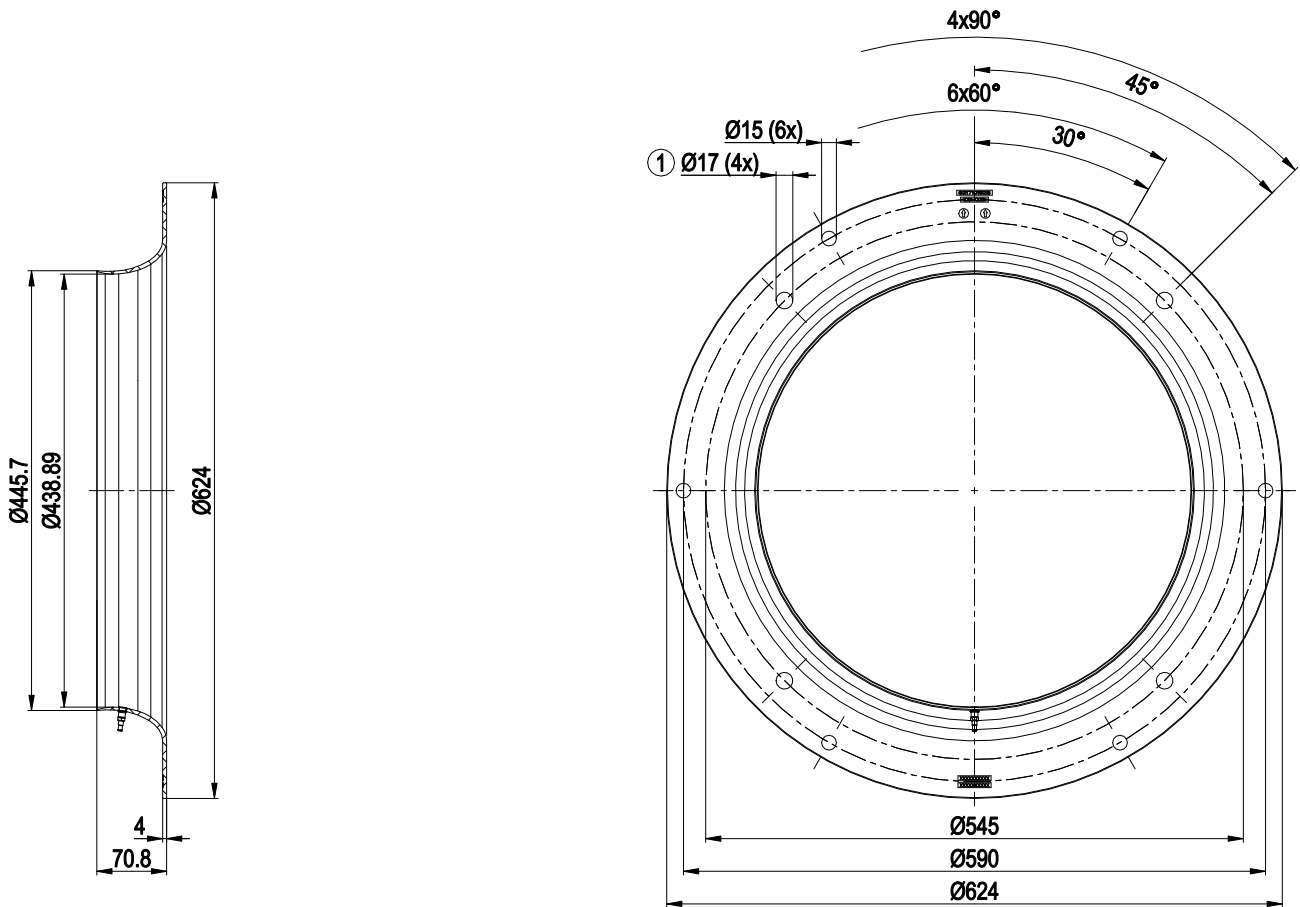
Protection class assignment	I; If a protective earth is connected. The built-in component has several local protection class assignments. The final protection class is determined by the intended installation.
Conformity with standards	EN 61800-5-1; UKCA; CE
Approval	EAC; CSA C22.2 No. 77 + CAN/CSA-E60730-1; UL 1004-7 + 60730-1

Product drawing



1	Accessory part: Inlet ring 8217102236 with pressure tap (k-factor: 463) (not included in scope of delivery)
2	Max. clearance for screw 20 mm
3	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm
4	Cable diameter min. 5 mm, max. 14 mm, tightening torque 6 ± 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)
5	Tightening torque 3 ± 0.3 Nm

Accessory part



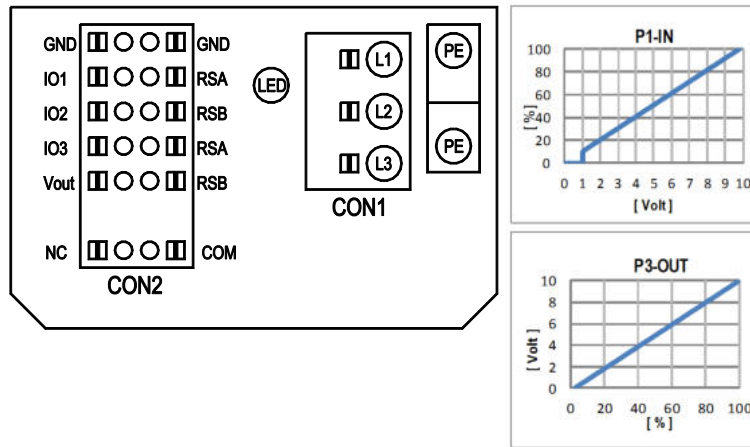
Inlet ring 8217102236 with pressure tap (k-factor: 463)

- | | |
|---|--|
| 1 | Fastening holes for FlowGrid 00630-2-2957 (not included in scope of delivery) are provided and must be subsequently opened as required |
|---|--|

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Connection diagram

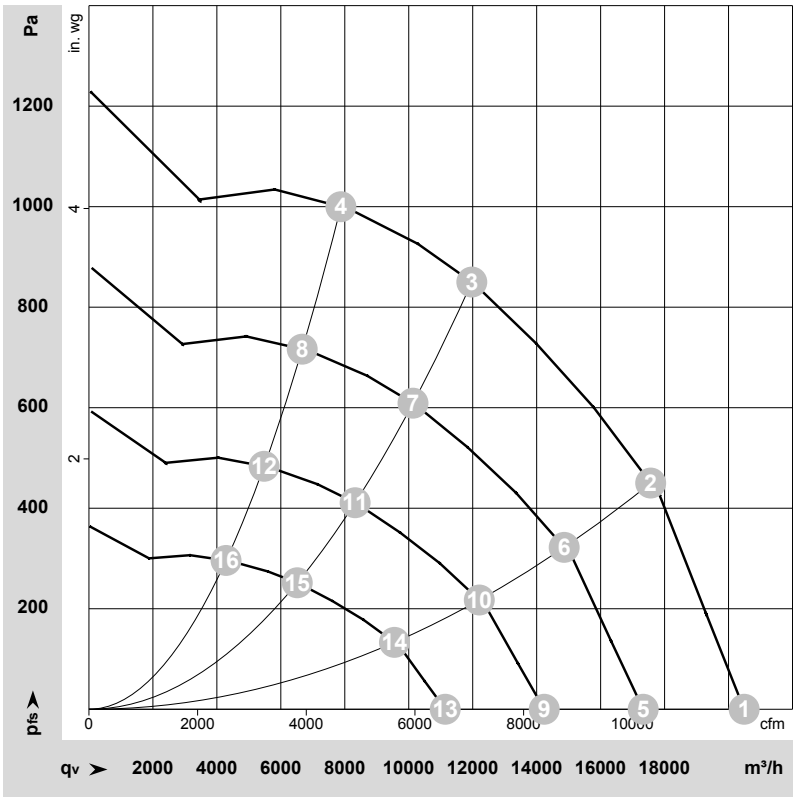


No.	Conn.	Designation	Function/assignment
	CON1	L1, L2, L3	Power supply, phase, see nameplate for voltage range
	PE	PE	Protective earth
	CON2	RSA	RS485 interface for MODBUS, RSA; SELV
	CON2	RSB	RS485 interface for MODBUS, RSB; SELV
	CON2	GND	Reference ground for control interface, SELV
	CON2	IO1	Function 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: Actual speed Characteristic curve parametrizable (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

configurable option		For further information and additional functions see EC Control Software, Fan-Set-App, or MODBUS Parameter Specification V6.4		configurable IO functions: normal / inverse		MODBUS Register for IO mode configuration											
						electrical specification											
CON2	configurable IO mode		digital input		active: applied voltage 3.5-50VDC, SELV not active: pin open or applied voltage < 1,5VDC												
	IO1	Ain1 0-10V/PWM: analog input		Ri = 100K, characteristic curve parameterizable, f _{PWM} = 1k..10KHz SELV													
		Tach out (open collector output)		Umax = 50VDC, Imax = 20mA SELV													
		Diagnostics out (open collector output)		Umax = 50VDC, Imax = 20mA SELV													
IO2	Din2 (active high): digital input		active: applied voltage 3.5-50VDC, SELV not active: pin open or applied voltage < 1,5VDC														
	IO2	Ain2 0-10V/PWM: analog input		Ri = 100K, characteristic curve parameterizable, f _{PWM} = 1k..10KHz SELV													
		Ain2 4-20mA: analog input		Ri = 125R, characteristic curve parameterizable, SELV													
	Din3 (active high): digital input		active: applied voltage 3.5-50VDC, SELV not active: pin open or applied voltage < 1,5VDC														
IO3	Din3 (active low): digital input		active: applied voltage < 1,5VDC, SELV not active: pin open or applied voltage 3.5-50VDC														
	IO3	PWMIn3: digital input idle level high		PWM = 40Hz - 10KHz, characteristics parameterizable active: pin open or applied voltage 3,5-50VDC not active: applied voltage < 1,5VDC, SELV													
		PWMIn3: digital input idle level low		40Hz - 10KHz, characteristics parameterizable active: applied voltage 3,5-50VDC not active: pin open or applied voltage < 1,5VDC, SELV													
		Aou3 0-10V: analog output		function parameterizable, max. 5mA, max output frequency 300Hz, SELV													
Vout	Tacho out (pulses): analog output		0-10V max. 5mA, max output frequency 300Hz, SELV														
	Diagnostics out (pulses)		0-10V max. 5mA, max output frequency 300Hz, SELV														
RSA	RS485 bus connection,		MODBUS RTU, specification V6.4, SELV														
RSB	voltage output		voltage parameterizable 3,3..24VDC +/- 5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV														
	alternatively: Input auxiliary power supply for parameterization via RS485/MODBUS RTU without line voltage		15...50VDC														

Curves: Air performance 50 Hz



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

Measurement: LU-232060-1
Date: 2024-05-16
Nozzle: 8217101925

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 _e	I	LpA _{in}	LwA _{in}	LwA _{out}	LwA	q _v	P _{fs}	q _v	P _{fs}
		V	Hz	min ⁻¹	W	A	dB(A)	dB(A)	dB(A)	dB	m ³ /h	Pa	cfm	in. wg
1	3~	400	50	1655	2434	3.51	82	90	94	95	20490	0	12060	0.00
2	3~	400	50	1655	3540	5.11	75	83	88	89	17565	450	10340	1.81
3	3~	400	50	1655	3966	5.72	69	77	82	83	11970	850	7045	3.41
4	3~	400	50	1655	3666	5.29	73	81	86	87	7880	1000	4635	4.01
5	3~	400	50	1400	1473	2.13	78	86	89	91	17330	0	10200	0.00
6	3~	400	50	1400	2144	3.09	71	79	84	85	14860	322	8745	1.29
7	3~	400	50	1400	2405	3.47	65	72	78	79	10135	609	5965	2.44
8	3~	400	50	1400	2224	3.21	69	77	81	83	6670	716	3925	2.87
9	3~	400	50	1150	817	1.18	73	81	84	86	14235	0	8380	0.00
10	3~	400	50	1150	1188	1.71	66	74	79	80	12205	217	7185	0.87
11	3~	400	50	1150	1333	1.92	60	67	73	74	8325	411	4900	1.65
12	3~	400	50	1150	1232	1.78	64	72	76	78	5480	483	3225	1.94
13	3~	400	50	900	391	0.57	66	74	78	80	11140	0	6560	0.00
14	3~	400	50	900	570	0.82	60	68	73	74	9555	133	5625	0.53
15	3~	400	50	900	639	0.92	54	61	67	68	6515	252	3835	1.01
16	3~	400	50	900	591	0.85	58	65	70	71	4285	296	2525	1.19

Wired = Wiring · U = Voltage · f = Frequency · n = Speed (rpm) · P_e = Power consumption · I = Current draw · LpA_{in} = Sound pressure level intake side · LwA_{in} = Sound power level intake side
LwA_{out} = Sound power level outlet side · q_v = Air flow · P_{fs} = Pressure increase