8317082306
VWA0910BTTLS

EC centrifugal fan - RadiCal

backward-curved, single-intake

ebm-papst Ventilator (Shanghai) Co.,Ltd.
No.418, Hua Jing Road, Pilot Free Trade Zone, Pudong District,
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Nominal data

Part number	8317082306
Type	**VWA0910BTTLS**

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}	850
Power consumption	W	1770
Current draw	A	2.8
Max. back pressure	Pa	185
Max. back pressure	in. wg	0.74
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	60

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

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), a fan design with special low-temperature bearings must be used.

Data according to Commission Regulation (EU) 327/2011 (EN 17166)

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	52.3	34.9
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		57.4	40
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	1.55
09 Air flow q_v	m^3/h	21000
09 Pressure increase p_{fs}	Pa	130
10 Speed (rpm) n	min^{-1}	850
11 Specific ratio*		1.00

Data obtained at optimum efficiency level.

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

LU-184390

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).

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Technical description

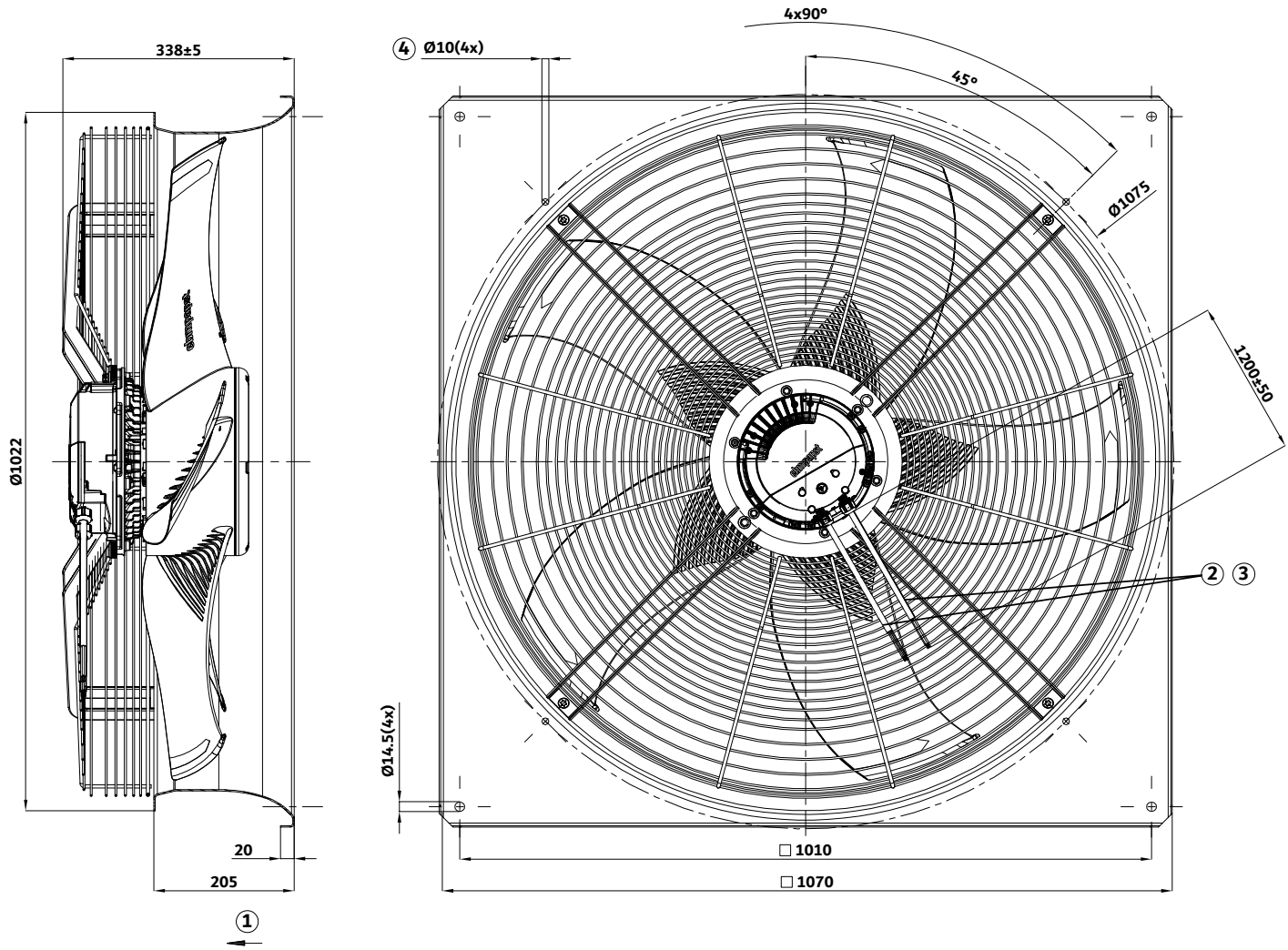
Weight	49 kg
Size	910 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum, painted gray
Impeller material	PP plastic
Fan housing material	Sheet steel, galvanized and coated with black plastic (RAL 9005)
Guard grille material	Steel, coated with black plastic (RAL 9005)
Number of blades	5
Blade pitch	0°
Airflow direction	V
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H2
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
Technical features	- External 15-50 VDC input (parameterization) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.3 - Motor current limitation - RS-485 MODBUS-RTU - Soft start - Voltage output 10VDC+/-3%, Imax=10mA - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
EMC immunity to interference	According to EN 61000-6-2 (industrial environment)
EMC interference emission	According to EN 61000-6-3 (household environment), except EN 61000-3-2 for professionally used equipment with a total rated power greater than 1 kW
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	Cable w/o connector
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 61800-5-1; CE

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Product drawing



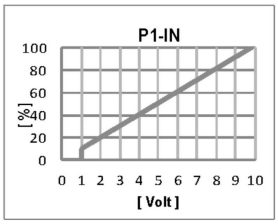
1	Airflow direction "V"
2	Cable length and customer connector (both power and signal) can be adjusted according to customer request
3	Cable wire diameter: power: AWG 15(4x); signal: AWG 22(8x)
4	Attachment holes for FlowGrid (91000-2-2957 not included in scope of delivery)

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Connection diagram



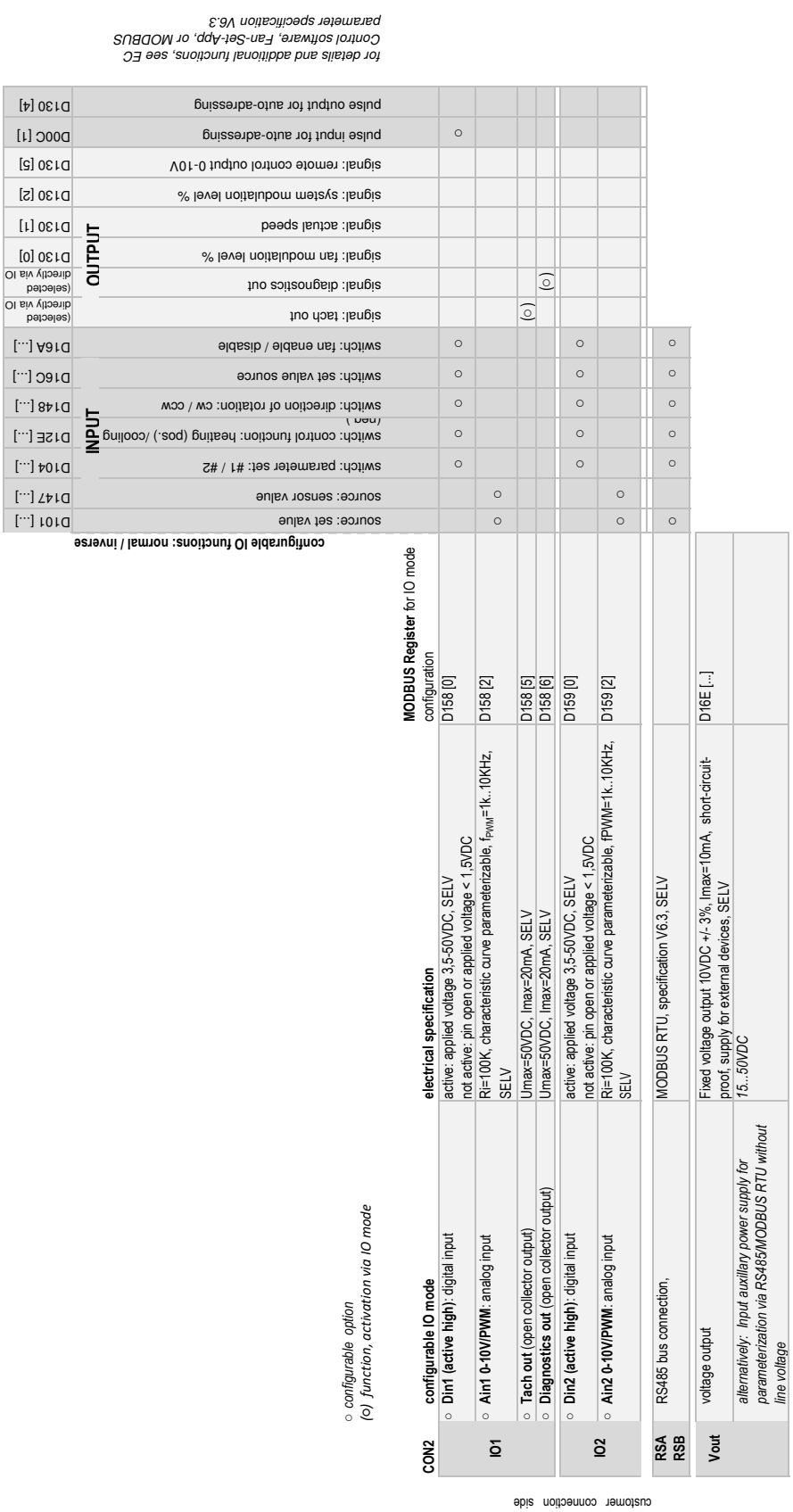
Wire color		Designation	Function/assignment
black		L1	Power supply, phase, see nameplate for voltage range
black		L2	Power supply, phase, see nameplate for voltage range
black		L3	Power supply, phase, see nameplate for voltage range
green/yellow		PE	Protective earth
grey		RSA	RS485 interface for MODBUS, RSA; SELV
brown		RSB	RS485 interface for MODBUS, RSB; SELV
blue		GND	Reference ground for control interface, SELV
white		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"
yellow		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
red		Vout	Voltage output 10VDC+/-3%, Imax=10mA supply for external devices, SELV alternatively: 15-50 VDC input for parameterization via MODBUS without line voltage
orange (1)		COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10mA, reinforced insulation on supply side and on control interface side
orange (2)		NC	Status relay, floating status contact, break for failure
		P1-IN	Input characteristic curve

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Terminal/plug assignment



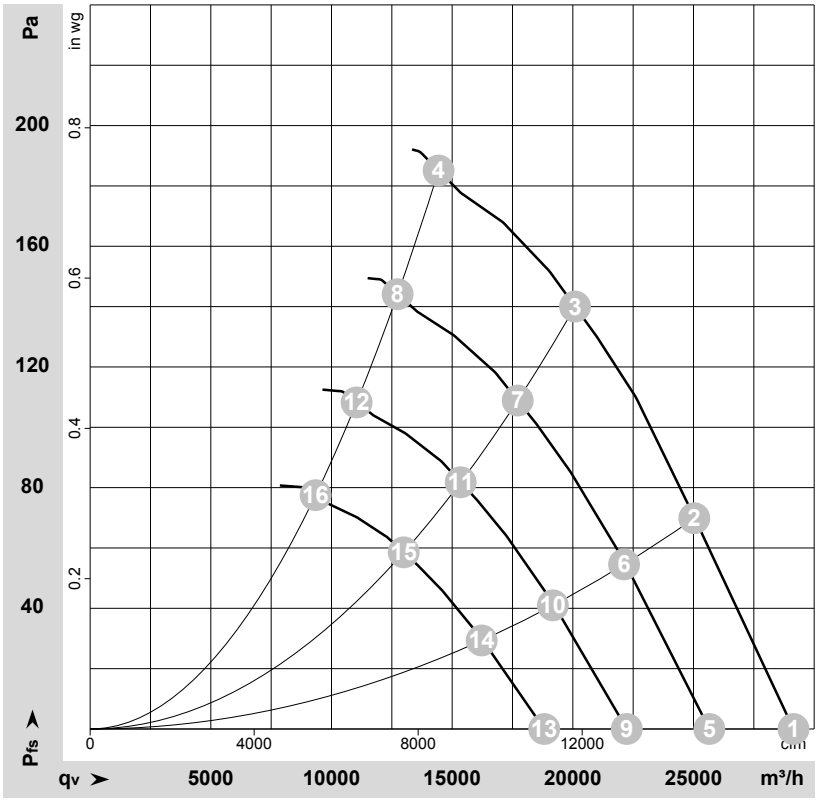
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Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-184390-1

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	f	n	P_{ed}	I	LpA_{in}	LwA_{in}	LwA_{out}	q_V	p_{fs}	q_V	p_{fs}
	V	Hz	min^{-1}	W	A	dB(A)	dB(A)	dB(A)	m^3/h	Pa	cfm	in. wg
1	400	50	850	1019	1.72	68	75	75	29145	0	17155	0.00
2	400	50	850	1307	2.13	65	72	73	25035	70	14735	0.28
3	400	50	850	1600	2.55	69	75	75	20090	140	11825	0.56
4	400	50	850	1770	2.80	79	86	87	14440	185	8500	0.74
5	400	50	750	695	1.18	65	72	72	25655	0	15100	0.00
6	400	50	750	909	1.48	62	69	70	22125	56	13020	0.22
7	400	50	750	1097	1.75	65	72	72	17715	109	10425	0.44
8	400	50	750	1223	1.93	76	83	84	12740	144	7500	0.58
9	400	50	650	453	0.77	61	68	68	22235	0	13090	0.00
10	400	50	650	592	0.96	58	65	66	19175	42	11285	0.17
11	400	50	650	714	1.14	62	68	68	15355	82	9035	0.33
12	400	50	650	796	1.26	72	79	80	11040	108	6500	0.43
13	400	50	550	274	0.46	57	64	64	18815	0	11075	0.00
14	400	50	550	359	0.58	54	61	62	16225	30	9550	0.12
15	400	50	550	433	0.69	58	64	64	12990	59	7645	0.24
16	400	50	550	482	0.76	68	75	76	9345	78	5500	0.31

U = Voltage · f = Frequency · n = Speed (rpm) · P_{ed} = 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

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