W3G250-EC28-11

EC axial fan

with brushless DC motor

Automotive



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Nominal data

Type	**W3G250-EC28-11**
Motor	**M3G074-BA**

Nominal voltage	VDC	26
Nominal voltage range	VDC	16 .. 32
Frequency	Hz	DC
Method of obtaining data		fa
Speed (rpm)	min^{-1}	3000
Power consumption	W	110
Current draw	A	4.2
Max. back pressure	Pa	170
Max. back pressure	in. wg	0.68
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	70
-with power derating to	°C	85

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 (EN 17166)

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	49	28.2
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		60.8	40
05 Variable speed drive		Yes	

09 Power consumption P_e	kW	0.13
09 Air flow q_v	m^3/h	1205
09 Pressure increase p_{fs}	Pa	175
10 Speed (rpm) n	min^{-1}	2830
11 Specific ratio*		1.00

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-189573

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Technical description

Weight	1.1 kg
Size	250 mm
Motor size	74
Blade material	PP plastic
Fan housing material	Plastic, PA
Number of blades	7
Airflow direction	V
Balancing grade according to DIN ISO 21940-11	G 10
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	Motor IP24 KM, electronics IP6K9K (mating connector installed)
Insulation class	"B"
Moisture (F) / Environmental (H) protection class	H4
Ambient temperature note	Above +70 °C with temperature derating; External sources of heat above +85 °C can affect the service life; 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.
Max. permitted ambient temp. for motor (transport/storage)	+85 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	Any
Condensation drainage holes	None, open rotor
Mode	S1
Motor bearing	Ball bearing; (sealed)
Life expectancy	40,000 h (typical)
Technical features	- Tach output - Power limiter - Load dump (58 V) - Motor current limitation - Soft start - Control input 0-10 VDC / PWM - Temperature derating - Thermal overload protection for electronics - Reverse polarity protection
Electrical hookup	Plug; Standby current less than 350 µA
Motor protection	Locked-rotor protection
Approval	E1
Comment	Type approval number – 058960

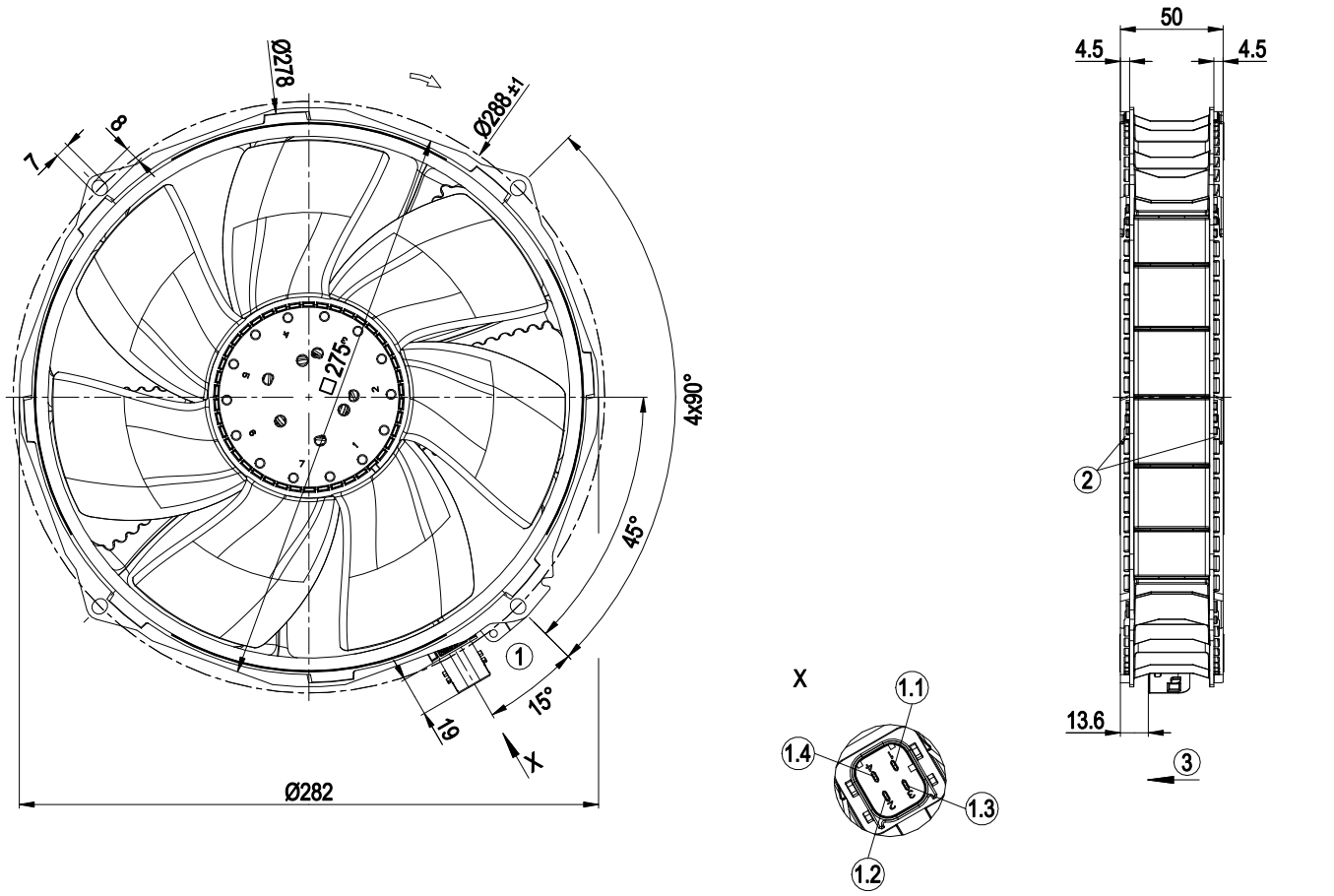
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Product drawing



1	4-pole plug, pluggable with cable from accessories
1.1	PWM/LIN
1.2	Tach
1.3	+ UB
1.4	GND
	Accessory part: Cable (460 mm) with mating connector, part no. 02025-4-1021 not included in scope of delivery 4-pole mating connector TE 1-1418390-1, 2x socket TE 968857-1, 2x socket TE 968855-1, 2x seal TE 828905-1, 2x seal TE 828904-1
	Accessory part: Guard grill (18605-2-4039) not included in scope of delivery
2	Bayonet attachment (both sides) for sheet metal or plastic 1.5, 2.0 or 2.5 mm thick
	Alternatively four fastening holes in each case (on both sides)
	A detailed drawing of the recess required for bayonet attachment can be obtained from ebm-papst.
3	Airflow direction "V"

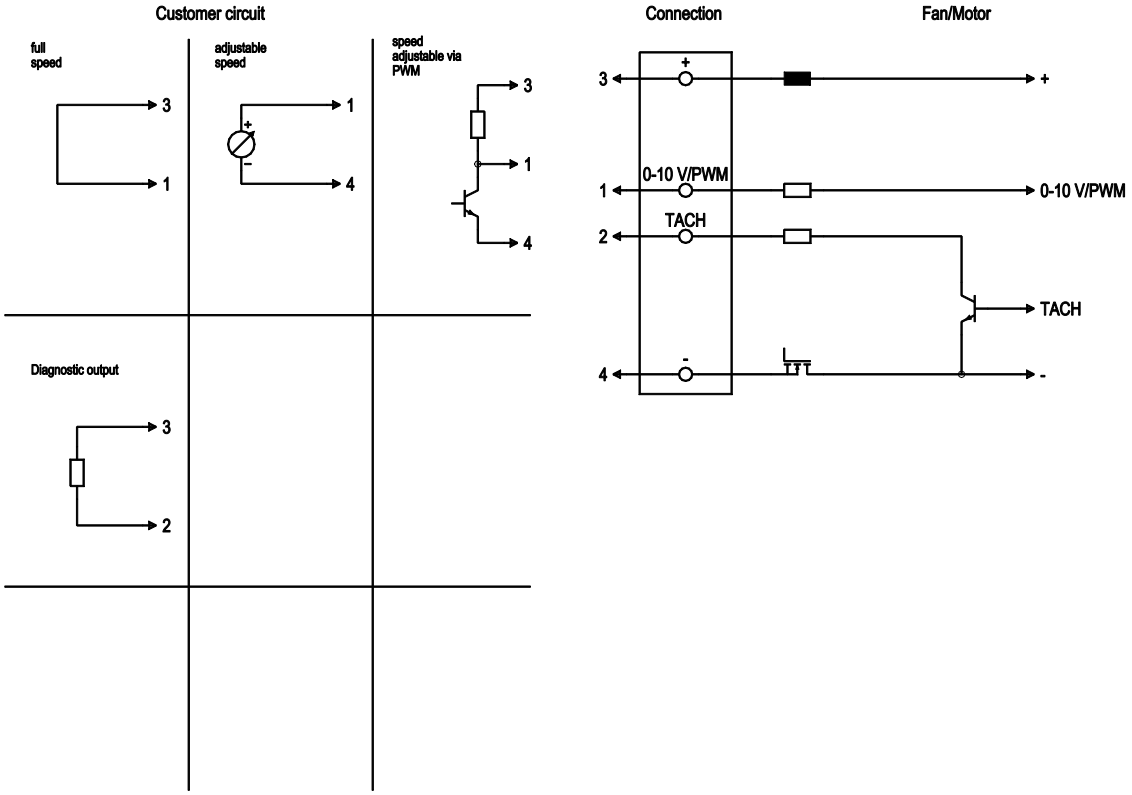
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Connection diagram



No.	Conn.	Designation	Function/assignment
	3	+	Power supply +
	1	0-10 V / PWM	Typical values Control input Ri > 36 kΩ 0-10 V: - < 1 V ⇒ n=0 - 1,5 V ⇒ n=min - > 9.5 V ⇒ n=max or PWM (> 10 V; 1-10 kHz): - < 4 % ⇒ n=0 - 10 % ⇒ n=min - > 95% ⇒ n=max
	2	Tacho	Tach output: open collector, 1 pulse per revolution, Isink max = 10 mA, Ri = 2.1 kΩ
	4	-	Power supply -

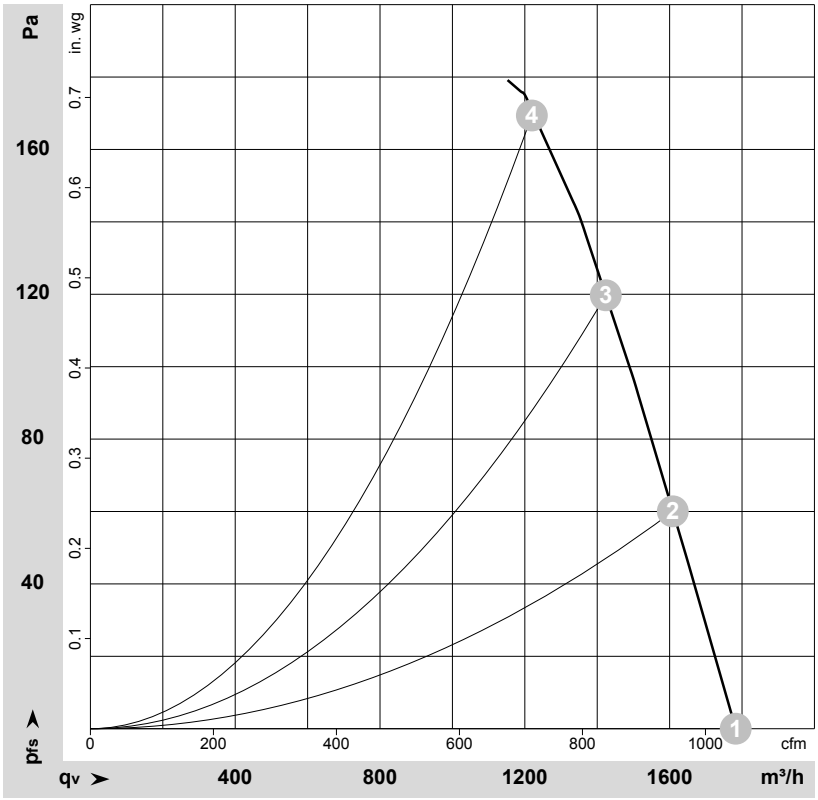
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Curves: Air performance



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-189573-1

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	LpA_{in}	LwA_{in}	q_V	p_{fs}	q_V	p_{fs}
	V	min^{-1}	W	A	dB(A)	dB(A)	m^3/h	Pa	cfm	in. wg
1	26	3000	110	4.20	69	77	1785	0	1050	0.00
2	26	2905	118	4.56	67	75	1610	60	945	0.24
3	26	2855	128	4.95	66	74	1425	120	840	0.48
4	26	2835	136	5.27	68	75	1220	170	715	0.68

U = Voltage · n = Speed (rpm) · P_{ed} = Power consumption · I = Current draw · LpA_{in} = Sound pressure level intake side · LwA_{in} = Sound power level intake side · q_V = Air flow
p_{fs} = Pressure increase

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