R3G280-RU65-89

EC centrifugal fan

backward curved, single inlet

for railway applications



ebm-papst Mulfingen GmbH & Co. KG
Bachmühle 2 · D-74673 Mulfingen
Phone +49 7938 81-0
Fax +49 7938 81-110
info1@de.ebmpapst.com
www.ebmpapst.com

Limited partnership · Headquarters Mulfingen
County court Stuttgart · HRA 590344

General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen
County court Stuttgart · HRB 590142

Nominal data

Type	**R3G280-RU65-89**	
Motor	**M3G084-CF**	
Nominal voltage	VDC	26
Nominal voltage range	VDC	16 .. 32
Type of data definition		fa
Speed (rpm)	min^{-1}	2830
Power input	W	460
Current draw	A	18.0
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	70

ml = Max. load · me = Max. efficiency · fa = Running at free air · cs = Customer specs · cu = Customer unit
Subject to alterations

EC centrifugal fan

backward curved, single inlet

for railway applications

Technical features

Mass	3 kg
Size	280 mm
Motor size	84
Surface of rotor	Coated in black
Material of electronics housing	Die-cast aluminium, coated in black
Material of impeller	PA UL94 V0 plastic
Direction of rotation	Clockwise, seen on rotor
Type of protection	Motor IP24 KM, electronics IP6K9K (mating connector fitted)
Insulation class	"B"
Humidity (F) / environmental protection class (H)	H3
Note ambient temperature	Occasional start-up between -40 °C and -25 °C is permissible. For continuous operation at ambient temperatures below -25 °C (e.g. refrigeration applications), a fan version with special low-temperature bearings must be used.
Max. permissible ambient motor temp. (transp./ storage)	+80 °C
Min. permissible ambient motor temp. (transp./storage)	-40 °C
Mounting position	Any
Cooling bore / aperture	Rotor-side
Operation mode	S1
Motor bearing	Ball bearing; (sealed)
Technical features	- Start at 85°C (2 min) permissible - Fault output (high-side switch max. 30 mA) - Load dump (58 V) - Motor current limit - Soft start - Control input 0-10 VDC/PWM - Stoppage on cable break - Temperature derating - Overvoltage detection - Excess temperature protection for electronics - Undervoltage detection - Reverse polarity protection
EMC directives	According to EN 50121-3-2
Electrical connection	Standby current less than 500 µA
Cable exit	Lateral
Protection class	III
Product conforming to standard	EN 15085-1, CPC3: 2013; EN 45545-2, HL3: 2013 + A1:2015; EN 50155: 2008; EN 61373, Cat. 1B: 2010; CE

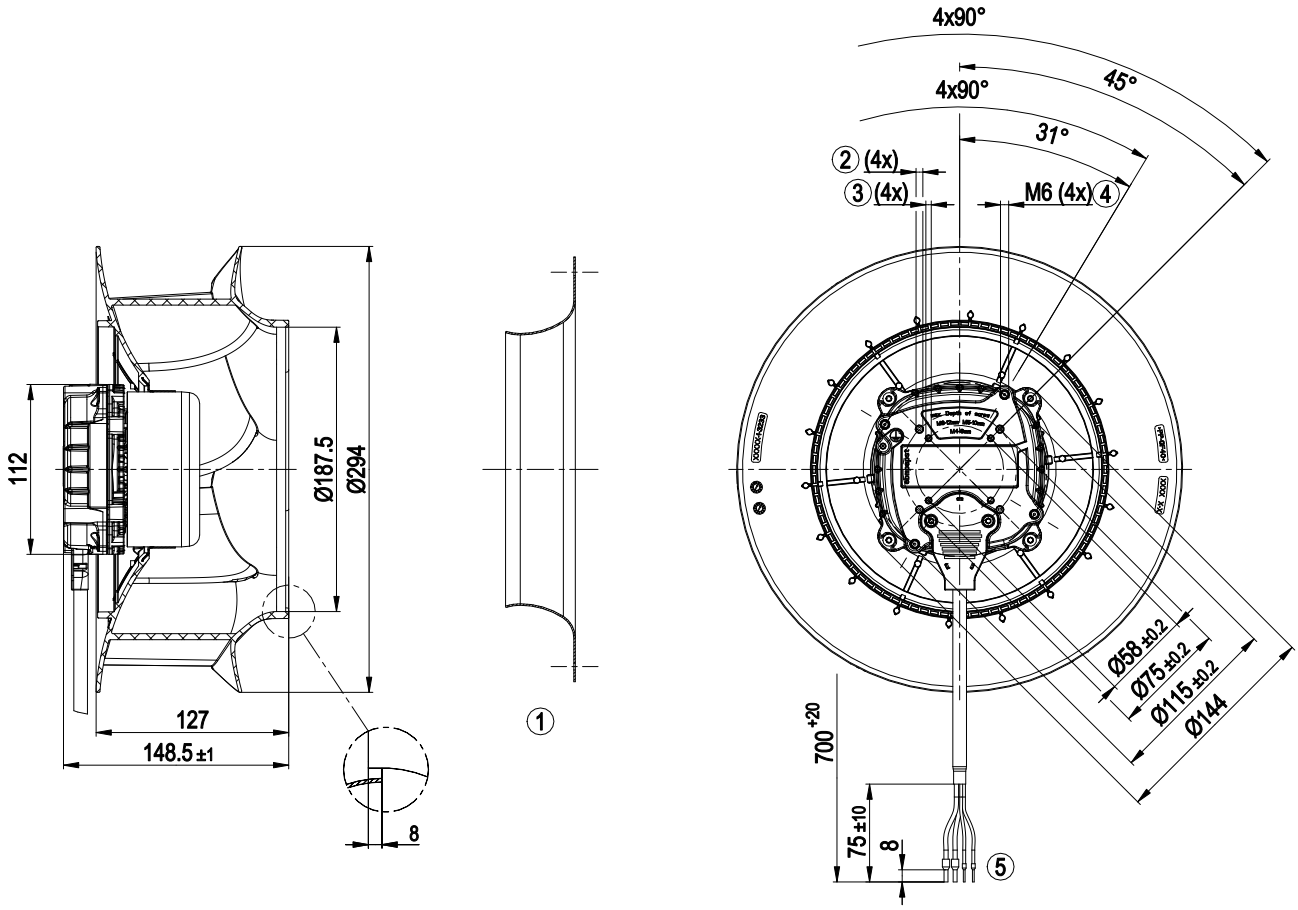
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

EC centrifugal fan

backward curved, single inlet

for railway applications

Product drawing



1	Accessory part: Inlet nozzle 28000-2-4013 not included in scope of delivery.
2	Pilot hole prepared for M5 self-tapping screw, thread reach max. 10 mm
3	Pilot hole prepared for M4 self-tapping screw, thread reach max. 8 mm
4	Thread reach max. 12 mm
5	Connection line BETAtrans® 3 GKW 2x 6.0 mm², 2x 1.0 mm²
	4x core-end sleeve

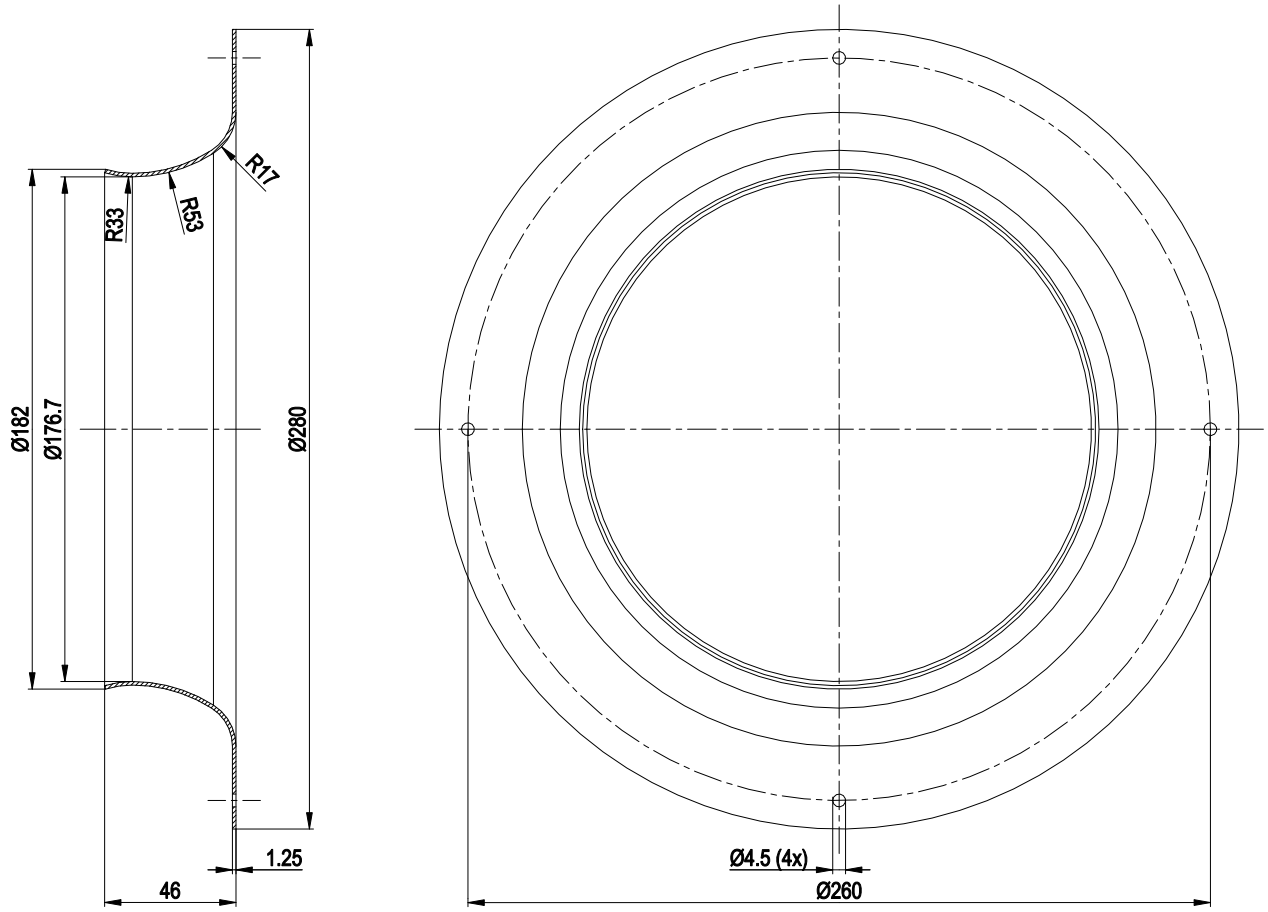
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

EC centrifugal fan

backward curved, single inlet

for railway applications

Accessory part



Accessory part: Inlet nozzle 28000-2-4013 not included in scope of delivery

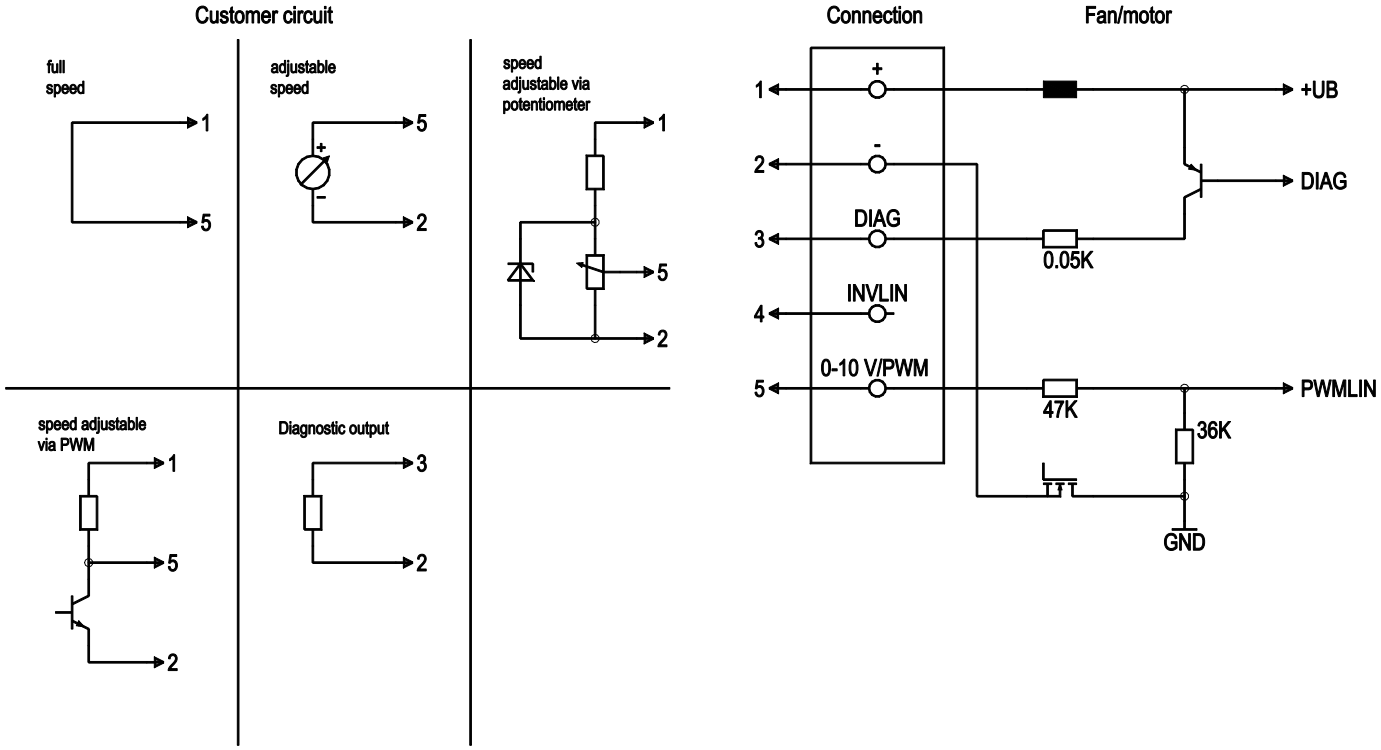
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

EC centrifugal fan

backward curved, single inlet

for railway applications

Connection screen



No.	Conn.	Designation	Colour	Function / assignment
1	1	+	black	Power supply, see type plate for voltage range
1	2	-	brown	Power supply, see type plate for voltage range
1	3	DIAG	white	Diagnostic output: open collector, Isource max = 20 mA, Fan OK -> low; fan error -> high
1	4	INVLIN		not used
1	5	0-10 V / PWM	yellow	Control input: Ri > 47 kΩ 0-10 V (typ. < 1 V -> n=0; 1.5 V -> n=min; >10 V -> n=max) PWM (amplitude 10 V; 1-50 kHz; typ. < 5 % -> n=0; 15% -> n=min; > 100% -> n=max)

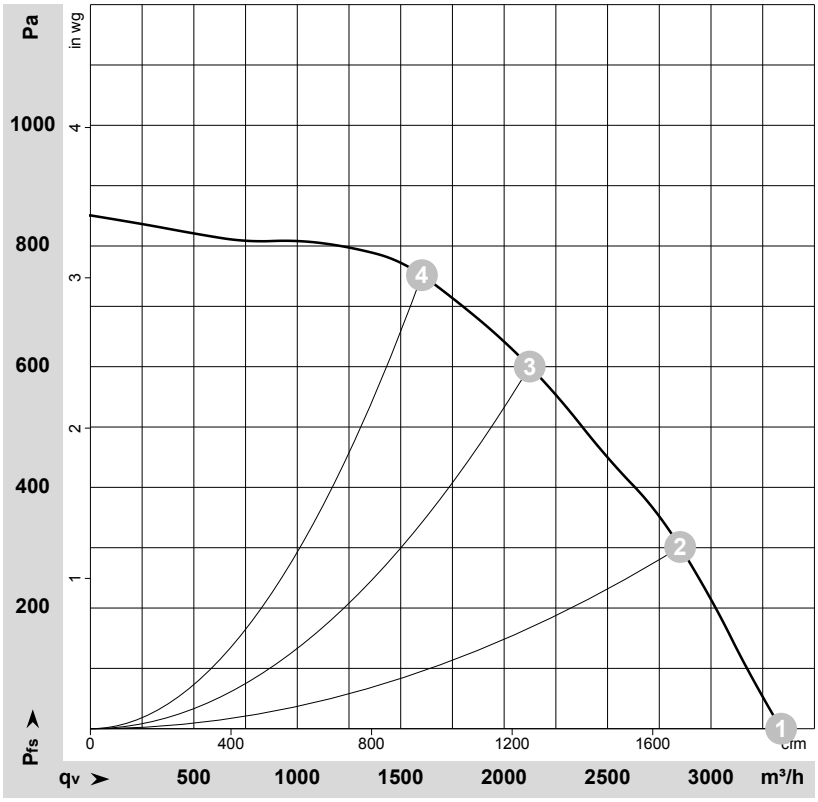
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

EC centrifugal fan

backward curved, single inlet

for railway applications

Charts: Air flow



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-175089-1

Air performance measured as per ISO 5801 Installation category A. For detailed information on the measuring set-up, please contact ebm-papst. Suction-side noise levels: LwA measured as per ISO 13347 / LpA measured with 1m distance to fan axis. The values given are valid under the measuring conditions mentioned above and may vary according to the actual installation situation. With any deviation from the standard set-up, the specific values have to be checked and reviewed with the unit installed.

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	2830	460	18.00	78	85	3340	0	1965	0.00
2	26	2810	584	22.41	74	81	2850	300	1680	1.20
3	26	2810	645	24.77	70	77	2125	600	1250	2.41
4	26	2835	623	23.89	70	77	1605	750	945	3.01

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

ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com