R3G710-AQ01-05

EC centrifugal fan

backward-curved, single-intake

Limited partnership · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRA 590344

General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRB 590142

ErP2015 EXCEEDS THE NORM

Nominal data

Type	**R3G710-AQ01-05**
Motor	**M3G200-LA**

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}	1200
Power consumption	W	6000
Current draw	A	9.4
Min. ambient temperature	°C	-25
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 ErP Directive

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	65.3	59.8
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		67.5	62
05 Variable speed drive		Yes	

09 Power consumption P_{ed}	kW	6.23
09 Air flow q_v	m^3/h	17050
09 Pressure increase p_{fs}	Pa	828
10 Speed (rpm) n	min^{-1}	1200
11 Specific ratio*		1.01

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-133077

ebmpapst

EC centrifugal fan

backward-curved, single-intake

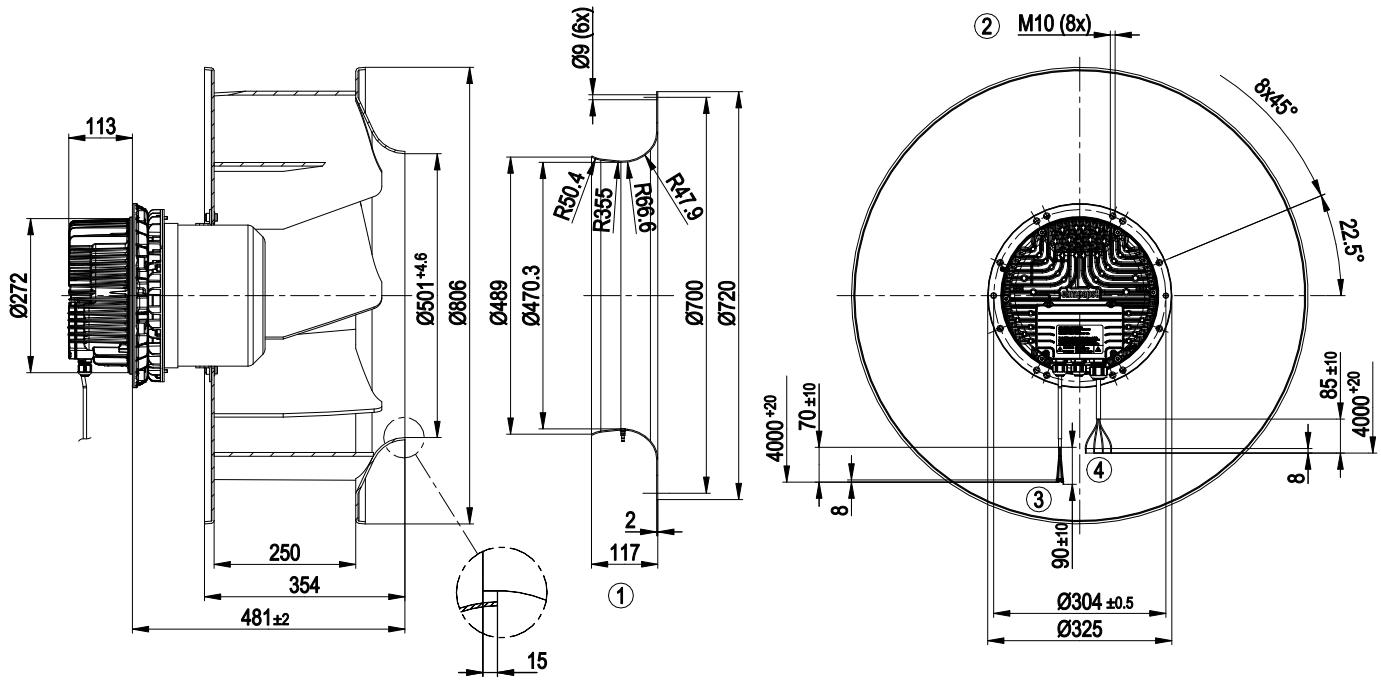
Technical description

Weight	71 kg
Fan size	710 mm
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Number of blades	7
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP54
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	F4-1
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 45° upward
Condensation drainage holes	None
Mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Output 20 VDC, max. 50 mA - Output for slave 0-10 V - Operation and alarm display - Input for sensor 0-10 V or 4-20 mA - External 24 V input (parameter setting) - External release input - Alarm relay - Integrated PID controller - Motor current limitation - PFC, passive - RS-485 MODBUS-RTU - Soft start - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Motor protection	Reverse polarity and locked-rotor protection
With cable	Lateral
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 61800-5-1; CE
Approval	C22.2 No.77 + CAN/CSA-E60730-1; UL 1004-7 + 60730

EC centrifugal fan

backward-curved, single-intake

Product drawing

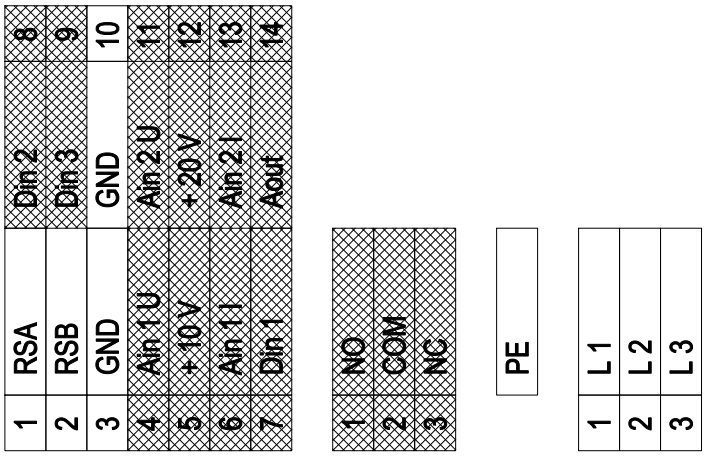


1	Accessory part: Inlet ring 71075-2-4013 with pressure tap not included in scope of delivery
2	Max. clearance for screw 25 mm
3	Cable FEP AWG20, 4x crimped ferrules, PE (green/yellow) 90 mm stripped
4	Cable silicone 4x1.5 mm², 4x crimped ferrules

EC centrifugal fan

backward-curved, single-intake

Connection diagram



shaded gray => not brought out via leads

No.	Conn.	Designation	Color	Function/assignment
1	KL1	L1	blue	Supply connection, power supply 3-phase 380-480 VAC, 50/60 Hz
1	KL1	L2	brown	Supply connection, power supply 3-phase 380-480 VAC, 50/60 Hz
1	KL1	L3	black	Supply connection, power supply 3-phase 380-480 VAC, 50/60 Hz
1	PE	PE	green/yellow	Ground connection, PE connection
	KL2	NO		Status relay, floating status contact, make for failure
	KL2	COM		Status relay, floating status contact, changeover contact, common connection, contact rating 250 VAC / max. 2 A (AC1) / min. 10 mA
	KL2	NC		Status relay, floating status contact, break for failure
2	KL3	RSA	white	Bus connection RS485; RSA; MODBUS RTU
2	KL3	RSB	brown	Bus connection RS485; RSB; MODBUS RTU
2	KL3	GND	green/yellow	Reference ground for control interface
	KL3	Ain1 U		Analog input 1 (set value), 0-10 V, Ri = 100 kΩ, adjustable curves, only usable as alternative to input Ain1I
	KL3	+ 10 V		Fixed voltage output 10 VDC, +10 V ±3%; max. 10 mA; short-circuit-proof; power supply for external devices (e.g. pot)
	KL3	Ain1 I		Analog input 1 (set value), 4-20 mA, Ri = 100 Ω, adjustable curves, only usable as alternative to input Ain1U
	KL3	Din1		Digital input 1: enable electronics; Enable: pin open or applied voltage 5-50 VDC; Disable: bridge to GND or applied voltage < 1 VDC; Reset function: triggers software reset after a level change to < 1 V
	KL3	Din2		Digital input 2: Switching parameter sets 1/2; according to EEPROM setting, the valid or used parameter set can be selected via bus or via digital input DIN2. Parameter set 1: Pin open or applied voltage 5-50 VDC; Parameter set 2: Bridge to GND or applied voltage < 1 VDC
	KL3	Din3		Digital input 3: Direction of action of integrated controller; According to EEPROM setting, the direction of action of the integrated controller can be selected as normal/inverse via bus or digital input; Normal: Pin open or applied voltage 5-50 VDC; Inverse: Bridge to GND or applied voltage < 1 VDC
	KL3	Ain2 U		Analog input 2, measured value 0-10 V, Ri = 100 kΩ, adjustable curve, only usable as alternative to input Ain2I
	KL3	+ 20 V		Fixed voltage output 20 VDC; +20 V +25/-10%; max. 50 mA; short-circuit-proof power supply for ext. devices (e.g. sensors)

EC centrifugal fan

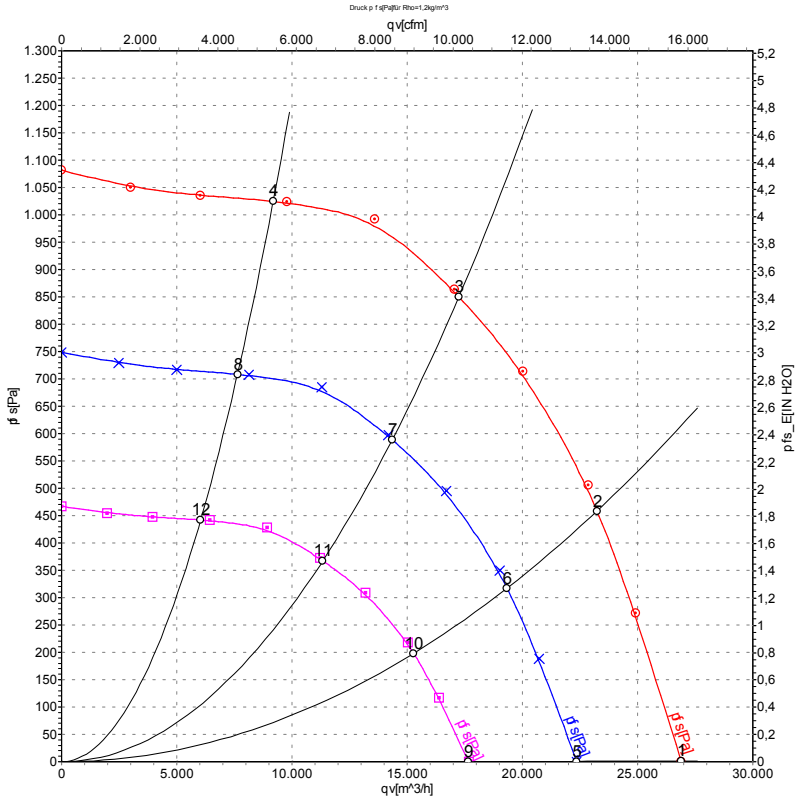
backward-curved, single-intake

No.	Conn.	Designation	Color	Function/assignment
	KL3	Ain2 I		Analog input 2, measured value: 4-20 mA, Ri = 100 Ω, adjustable curve, only usable as alternative to input Ain2U
	KL3	Aout		Analog output 0-10 V, max. 5 mA, output of current motor modulation level / of the current motor speed. Adjustable curve.

EC centrifugal fan

backward-curved, single-intake

Curves: Air performance 50 Hz



Measurement: LU-133077-1

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}	qv	p_{fs}	qv	p_{fs}
	V	Hz	min^{-1}	W	A	dB(A)	dB(A)	dB(A)	m^3/h	Pa	CFM	inH2O
1	400	50	1200	4060	6.70	88	96	99	26890	0	15825	0.00
2	400	50	1200	5561	8.94	81	89	93	23230	460	13675	1.85
3	400	50	1200	6000	9.40	75	83	88	17050	850	10035	3.41
4	400	50	1200	4999	8.12	77	85	92	9185	1025	5405	4.11
5	400	50	1000	2332	3.85	84	92	95	22350	0	13155	0.00
6	400	50	1000	3202	5.15	77	85	89	19330	321	11375	1.29
7	400	50	1000	3590	5.73	71	79	84	14350	591	8445	2.37
8	400	50	1000	2872	4.67	73	81	88	7635	709	4495	2.85
9	400	50	790	1150	1.90	79	87	90	17660	0	10395	0.00
10	400	50	790	1579	2.54	72	80	84	15270	200	8990	0.80
11	400	50	790	1770	2.83	66	74	79	11330	369	6670	1.48
12	400	50	790	1416	2.30	68	76	82	6030	442	3550	1.77

U = Power supply · 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 · qv = Air flow · p_{fs} = Pressure increase