R3G710-AP02-05

EC centrifugal fan

backward curved, single inlet

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ErP2015 EXCEEDS THE NORM

Nominal data

Type	**R3G710-AP02-05**
Motor	**M3G150-NA**

Phase		3~
Nominal voltage	VAC	400
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	50/60
Type of data definition		ml
State		prelim.
Speed	min^{-1}	920
Power input	W	2800
Current draw	A	4.3
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	+40

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

Data according to ErP directive

Installation category	A
Efficiency category	Static
Variable speed drive	Yes
Specific ratio*	1.00

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

		Actual	Request 2013	Request 2015
Overall efficiency η_{es}		64.4	52.2	56.2
Efficiency grade N		70.2	58	62
Power input P_{ed}	kW	2.8		
Air flow q_v	m^3/h	13745		
Pressure increase p_{fs}	Pa	448		
Speed n	min^{-1}	925		

Data definition with optimum efficiency.
The ErP data is determined using a motor-impeller combination in a standardised measurement configuration.

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Technical features

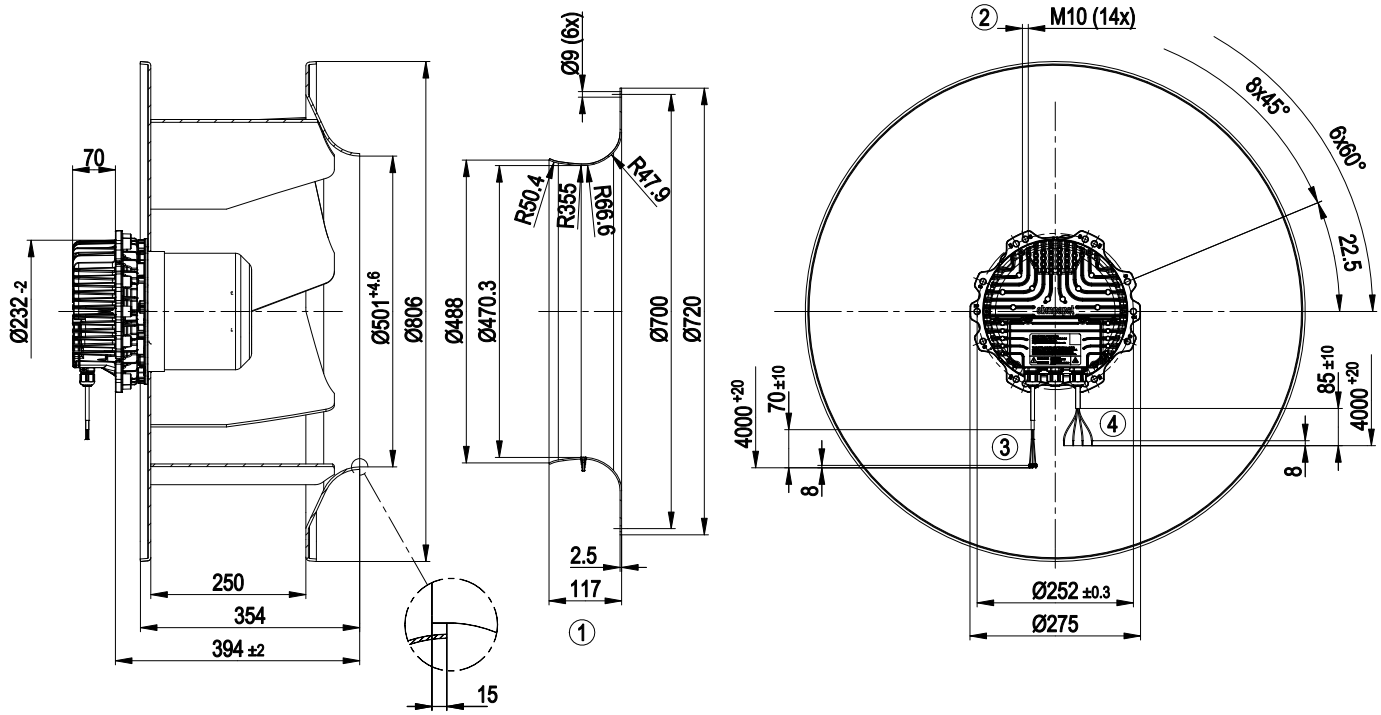
Mass	45.4 kg
Size	710 mm
Surface of rotor	Coated in black
Material of electronics housing	Die-cast aluminium
Material of impeller	Aluminium sheet
Number of blades	7
Direction of rotation	Clockwise, seen on rotor
Type of protection	IP 54
Insulation class	"F"
Humidity class	F4-1
Max. permissible ambient motor temp. (transp./ storage)	+80 °C
Min. permissible ambient motor temp. (transp./storage)	-40 °C
Mounting position	Shaft horizontal or rotor 45° on top
Condensate discharge holes	None
Operation 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 (programming) - External release input - Alarm relay - Integrated PID controller - Motor current limit - PFC, passive - RS485 MODBUS RTU - Soft start - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Over-temperature protected electronics / motor - Line undervoltage / phase failure detection
EMC interference immunity	Acc. to EN 61000-6-2 (industrial environment)
EMC interference emission	Acc. to EN 61000-6-3 (household environment)
Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)	<= 3.5 mA
Motor protection	Reverse polarity and locked-rotor protection
Cable exit	Lateral
Protection class	I (if protective earth is connected by customer)
Product conforming to standard	EN 61800-5-1; CE
Approval	UL 1004-7 + 60730; C22.2 Nr.77 + CAN/CSA-E60730-1

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Product drawing



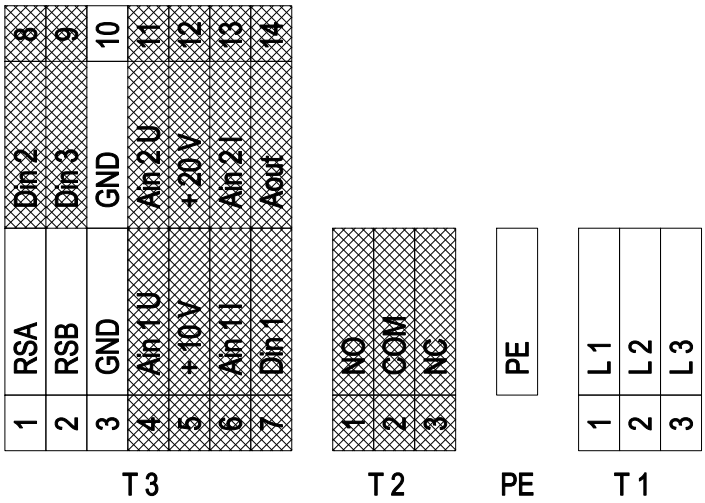
1	Accessory part: Inlet nozzle 71075-2-4013 with bleeder connection for pressure relief not included in the standard scope of delivery
2	Depth of screw max. 25 mm
3	Connection line FEP AWG20, 4x crimped core-end sleeves
4	Connection line silicone, 4x1.5 mm², 4x crimped core-end sleeves

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Connection screen



grey shaded => not brought out via leads

Line	No.	Signal	Colour	Function / assignment
1	KL1	L1	Blue	Mains supply connection, supply voltage 3-phase 380-480 VAC; 50/60 Hz
1	KL1	L2	brown	Mains supply connection, supply voltage 3-phase 380-480 VAC; 50/60 Hz
1	KL1	L3	black	Mains supply connection, supply voltage 3-phase 380-480 VAC; 50/60 Hz
1	PE	PE	green/yellow	Earth connection, PE connection
	KL2	NO		Status relay, floating status contact; normally open; 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 + yell	Reference ground for control interface
	KL3	Ain1 U		Analogue input 1 (set value); 0-10 V; Ri= 100 kΩ; parametrisable curves; only usable as alternative to input Ain1 I
	KL3	+ 10 V		Fixed voltage output 10 VDC; + 10 V +/-3%; max. 10 mA; short circuit proof; power supply for ext. devices (e.g. potentiometer)
	KL3	Ain1 I		Analogue input 1 (set value); 4-20 mA; Ri= 100 Ω; parametrisable curves; only usable as alternative to input Ain1 U
	KL3	Din1		Digital input 1: enabling of electronics; enabling: open pin or applied voltage 5 to 50 VDC; disabling: 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: parameter set switch 1/2; according to EEPROM setting, the valid/used parameter set is selectable per BUS or per digital input DIN2. Parameter set 1: open pin or applied voltage 5 to 50 VDC; parameter set 2: bridge to GND or applied voltage < 1 VDC
	KL3	Din3		Digital input 3: Control characteristic of the integrated controller; according to EEPROM setting, the control characteristic of the integrated controller is normally/inversely selectable per BUS or per digital input; normal: open pin or applied voltage 5 to 50 VDC (control deviation = actual sensor value - set value) inverse: bridge to GND or applied voltage < 1 VDC (control deviation = set value - actual sensor value)
	KL3	Ain2 U		Analogue input 2; actual sensor value 0-10 V; Ri= 100 kΩ; parametrisable curve; only usable as alternative to input Ain2 I
	KL3	+ 20 V		Fixed voltage output 20 VDC; + 20V +25/-10%; max. 50 mA; short circuit proof; supply voltage for ext. devices (e.g. sensors)

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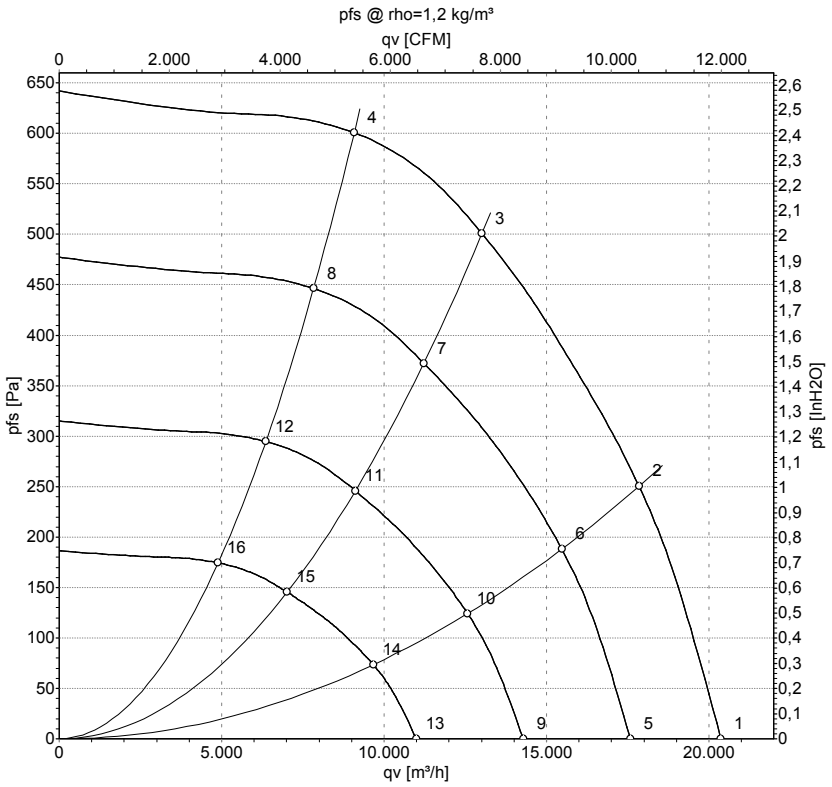
Line	No.	Signal	Colour	Function / assignment
	KL3	Ain2 I		Analogue input 2; actual sensor value 4-20 mA; Ri= 100 Ω; parametrisable curve; only usable as alternative to input Ain2 U
	KL3	Aout		Analogue output 0-10 V; max. 5 mA; output of the actual motor control factor (output voltage of electronics)/ of the actual motor speed. Parametrisable curve.

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Charts: Air flow 50 Hz



Measurement: LU-147873

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

	Conn.	U	f	n	P_{ed}	I	LpA_{in}	LwA_{in}	LwA_{out}	qv	p_{fs}
		V	Hz	min^{-1}	W	A	dB(A)	dB(A)	dB(A)	m^3/h	Pa
1	Y	400	50	920	1824	2.72	75	84	89	20380	0
2	Y	400	50	920	2522	3.77	71	80	85	17855	250
3	Y	400	50	920	2800	4.30	69	78	84	13020	500
4	Y	400	50	920	2566	3.82	70	78	85	9085	600
5	Y	400	50	800	1172	1.75	71	80	86	17585	0
6	Y	400	50	800	1642	2.45	67	76	82	15475	191
7	Y	400	50	800	1825	2.70	65	74	80	11225	372
8	Y	400	50	800	1644	2.45	66	74	81	7830	447
9	Y	400	50	650	629	0.94	66	75	80	14290	0
10	Y	400	50	650	881	1.32	62	71	77	12575	126
11	Y	400	50	650	979	1.45	60	69	75	9120	246
12	Y	400	50	650	882	1.31	61	69	76	6365	295
13	Y	400	50	500	286	0.43	59	68	74	10990	0
14	Y	400	50	500	401	0.60	55	64	70	9670	74
15	Y	400	50	500	446	0.66	54	62	68	7015	145
16	Y	400	50	500	401	0.60	54	63	69	4895	174

Conn. = Connection · U = Supply voltage · f = Frequency · n = Speed · P_{ed} = Power input · I = Current draw · LpA_{in} = Sound pressure level inlet side · LwA_{in} = Sound power level inlet side
LwA_{out} = Sound power level outlet side · qv = Air flow · p_{fs} = Pressure increase

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