

ebm-papst Motor (Shanghai) Co., Ltd.

No. 196, Yuntong Road, Pudong District,

Shanghai, China, 201299

sales@cn.ebmpapst.com

www.ebmpapst.com

Nominal Data

| | | |
|--------------------------|-----------|-----------|
| Model | 2244 | |
| Motor | M3G112-IA | |
| Phase | | 3~ |
| Nominal voltage | VAC | 400 |
| Nominal voltage range | VAC | 400-480 |
| Frequency | Hz | 50/60 |
| Method of obtaining data | | ml |
| Speed | rpm | 2705 |
| Power consumption | W | 3655 |
| Current draw | A | 5.58 |
| Min. ambient temp | °F (°C) | -40 (-40) |
| Max. ambient temp | °F (°C) | 104 (40) |

ml = Max. load (maximum fan input power over the range cataloged)

Subject to change

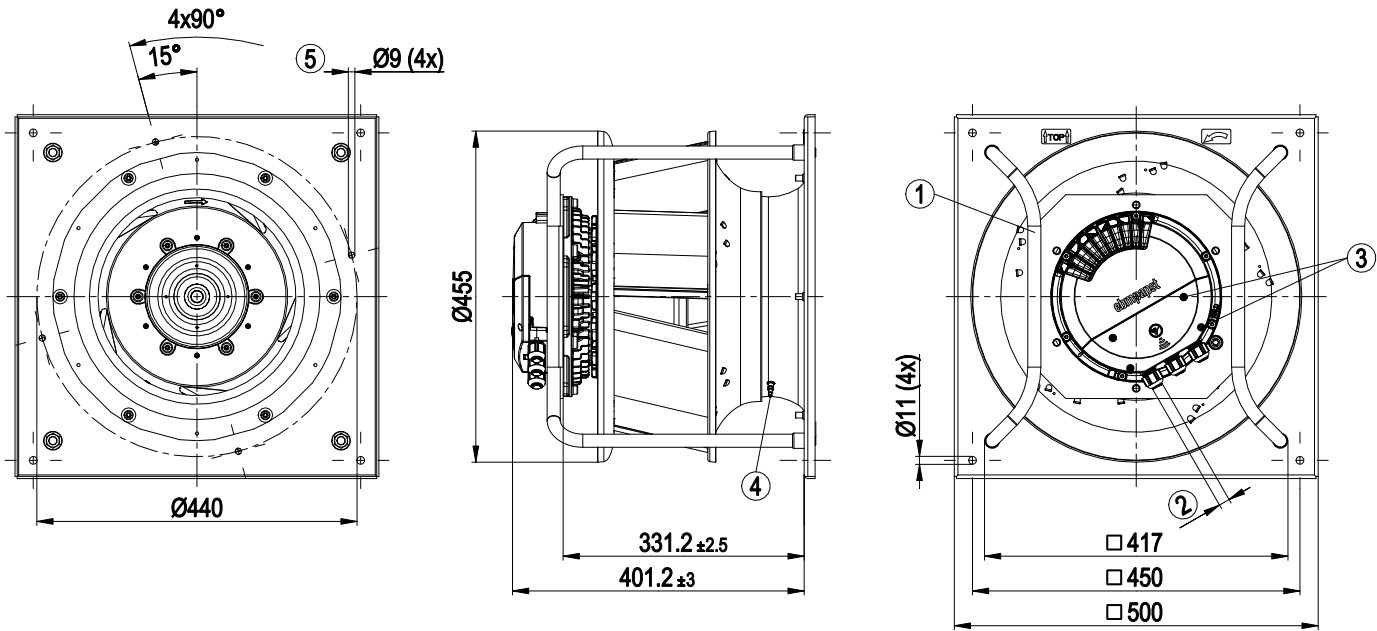
Speed (rpm) shown is nominal.

Performance is based on actual speed of test.

| Technical Description | |
|------------------------------|---|
| Weight | 55 lb (25.1 kg) |
| Nominal Impeller Size | 15.7 in (400 mm) |
| Motor size | 112 |
| Rotor surface | Painted black |
| Impeller Material | Sheet aluminum |
| Support bracket material | Steel, painted black |
| Inlet plate material | Sheet steel, galvanized |
| Inlet nozzle material | Sheet steel, galvanized |
| Number of blades | 5 |
| Direction of rotation | Clockwise, viewed toward rotor |
| Degree of protection | IP55 |
| Insulation class | F |
| Environmental class | H1 |
| Ambient temp. note | Occasional startup between -40 °F & -13 °F (-40 °C & -25 °C) is permitted. For continuous operation below -13 °F (-25 °C), use a fan design with special low-temp bearings. |
| Max. ambient temp. | 176 °F (+80 °C) (for motor transport/storage) |
| Min. ambient temp. | -40 °F (-40 °C) (for motor transport/storage) |
| Installation position | Shaft horizontal or rotor on bottom; rotor on top on request |
| Condensation drain holes | On rotor side |
| Mode | S1 |
| Motor bearing | Ball bearings |
| Technical features | <ul style="list-style-type: none"> - Operation and alarm display with LED - External 15-50 VDC input (parameterization) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.3/V6.4 - Motor current limitation - RS-485 MODBUS-RTU - Soft start - Voltage output 3.3-24 VDC, Pmax = 800 mW - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection - Vibration Sensor (option) |
| EMC immunity to interference | According to EN 61000-6-2 (industrial environment) |
| EMC interference emission | According to EN 61000-6-4 (industrial environment) |
| Touch current | ≤ 3.5 mA (according to IEC60990; measuring circuit Fig.4, TN system) |
| Electrical hookup | Terminal box |
| Motor protection | Electronic motor protection |
| Protection class | I (with customer connection of protective earth) |
| Conformity with standards | EN 61800-5-1; CE |
| Approvals | UL 1004-7 + 60730-1; EAC; CSA C22.2 No. 77 + CAN/CSA-E60730-1 |

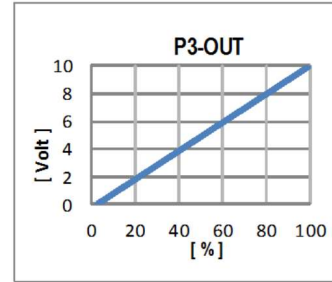
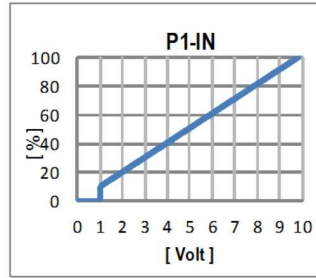
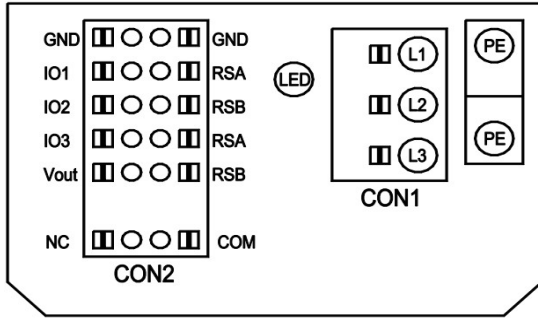
Product drawing

Dimensions in millimeters



| | |
|---|---|
| 1 | Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request |
| 2 | Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm (The tightening torque is designed for PVC cables. If the cable materials are different, the tightening torque may have to be adjusted) |
| 3 | Tightening torque 1.5 ± 0.2 Nm |
| 4 | Inlet ring with pressure tap (k-factor: 188) |
| 5 | Attachment holes for FlowGrid 35505-2-2957 (not included in scope of delivery) |
| Note: Please contact ebm-papst if conduit is required | |

Electrical Interface



| No. | Conn. | Desig. | Function/ Assignment |
|-----|-------|----------|---|
| | CON1 | L1,L2,L3 | Power supply, phase, see nameplate for voltage range |
| | PE | PE | Protective earth |
| | CON2 | RSA | RS485 interface for MODBUS, RSA; SELV |
| | CON2 | RSB | RS485 interface for MODBUS, RSB; SELV |
| | CON2 | GND | Reference ground for control interface, SELV |
| | CON2 | 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" |
| | CON2 | IO2 | Function parameterizable (see "Optional interface functions" table) Factory setting: Analog input 0-10 VDC / PWM, Ri=100 kΩ, function: Set value Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV |
| | CON2 | IO3 | Function parameterizable (see "Optional interface functions" table) Factory setting: Analog output 0-10 VDC, max. 5 mA, function: Fan modulation level Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV |
| | CON2 | Vout | Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable Factory setting: 10 VDC short-circuit-proof, supply for external devices, SELV alternatively: 15-50 VDC input for parameterization via MODBUS without line voltage |
| | CON2 | COM | Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and on control interface side |
| | CON2 | NC | Status relay, floating status contact, break for failure |
| | | LED | green: status = good, ready for operation orange: status = warning red: status = failure |
| | | P1-IN | Input characteristic curve |
| | | P3-OUT | Output characteristic curve |

Terminal assignment

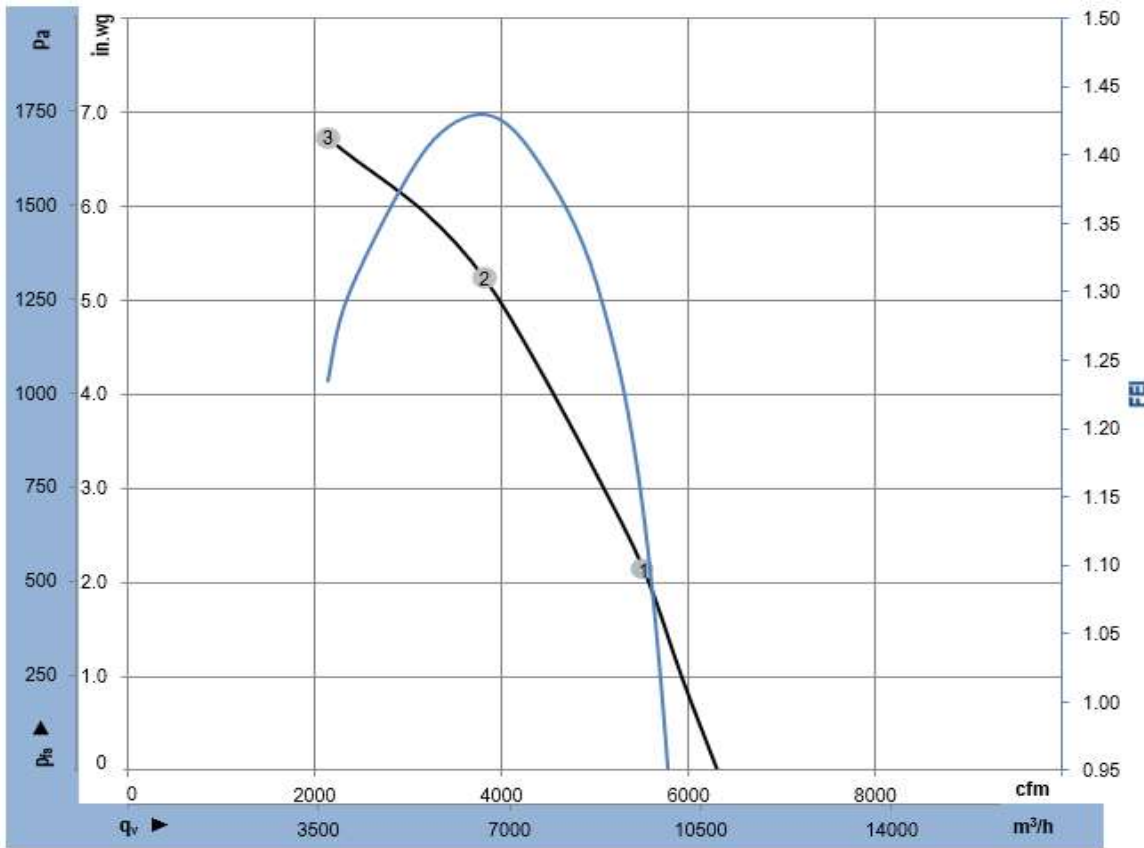
| Terminal | Function | Notes |
|---------------------------------|---|-------|
| D101 [..] | source: set value | |
| D147 [..] | source: sensor value | |
| D104 [..] | switch: parameter set: #1 / #2 | |
| D12E [..] | switch: control function: heating (pos.) / cooling (neg.) | |
| D148 [..] | switch: direction of rotation: cw / ccw | |
| D16C [..] | switch: set value source | |
| D16A [..] | switch: fan enable / disable | |
| (selected directly via IO mode) | signal: tach out | |
| (selected directly via IO mode) | signal: diagnostics out | |
| D130 [0] | signal: fan modulation level % | |
| D130 [1] | signal: actual speed | |
| D130 [2] | signal: system modulation level % | |
| D130 [5] | signal: remote control output 0-10V | |
| D00C [1] | pulse input for auto-addressing | |
| D130 [4] | pulse output for auto-addressing | |

configurable IO functions: normal / Inverse

MODBUS Register for IO mode configuration

| Terminal | Function | Electrical Specification | MODBUS Register |
|----------|--|--|-----------------|
| CON2 | configurable IO mode | | |
| | Din1 (active high): digital input | active: applied voltage 3,5-50VDC, SELV not active: pin open or applied voltage < 1,5VDC | D158 [0] |
| | Ain1 0-10V/PWM: analog input | Ri = 100K, characteristic curve parameterizable, f _{PWM} = 1k..10KHz SELV | D158 [2] |
| | Tach out (open collector output) | U _{max} = 50VDC, I _{max} = 20mA, SELV | D158 [5] |
| IO1 | Diagnosics out (open collector output) | U _{max} = 50VDC, I _{max} = 20mA, SELV | D158 [6] |
| | Din2 (active high): digital input | active: applied voltage 3,5-50VDC, SELV not active: pin open or applied voltage < 1,5VDC | D159 [0] |
| | Ain2 0-10V/PWM: analog input | Ri = 100K, characteristic curve parameterizable, f _{PWM} = 1k..10KHz SELV | D159 [2] |
| | Ain2 4-20mA: analog input | Ri = 125R, characteristic curve parameterizable, SELV | D159 [3] |
| IO2 | Din3 (active high): digital input | active: applied voltage 3,5-50VDC, SELV not active: pin open or applied voltage < 1,5VDC | D15A [0] |
| | Din3 (active low): digital input | active: applied voltage < 1,5VDC, SELV not active: pin open or applied voltage 3,5-50VDC | D15A [1] |
| | PWMIn3: digital input idle level high | PWM = 40Hz - 10KHz, characteristics parameterizable active: pin open or applied voltage 3,5-50VDC not active: applied voltage < 1,5VDC, SELV | D15A [7] |
| | PWMIn3: digital input idle level low | 40Hz - 10KHz, characteristics parameterizable active: applied voltage 3,5-50VDC not active: pin open or applied voltage < 1,5VDC, SELV | D15A [8] |
| IO3 | Aout3 0-10V: analog output | function parameterizable, I _{max} = 5mA, max output frequency 300Hz SELV | D15A [4] |
| | Tacho out (pulses), analog output | 0-10V max, 5mA, max output frequency 300Hz SELV | D15A [5] |
| | Diagnosics out (pulses) | 0-10V max, 5mA, max output frequency 300Hz SELV | D15A [6] |
| | RS485 bus connection, | MODBUS RTU, specification V6.3, SELV | |
| RSA | | | |
| RSB | | | |
| Vout | voltage output | voltage parameterizable 3...24VDC +/- 5%, P _{max} =800mW, short-circuit-proof, | D16E [..] |
| | alternatively: input auxiliary power supply for parameterization via RS485/MODBUS RTU without line voltage | supply for external devices, SELV 15...50VDC | |

o configurable option
For further information and additional functions see EC Control Software, Fan-Set-App, or MODBUS Parameter Specification V6.3



$\rho = 0.075 \text{ lbm/ft}^3$

Measurement: LU-2244

ebm-papst Motor (Shanghai) Co., Ltd. certifies that the RadiPac - Modular EC Plenum Fan shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and comply with the requirements of the AMCA Certified Ratings Program.



Performance Ratings

| | | U | f | n | P _{ed} | I | q _v | p _{is} | FEI |
|---|----|-----|----|------|-----------------|-----|----------------|-----------------|------|
| | | V | Hz | rpm | W | A | cfm | in. wg | |
| 1 | 3~ | 400 | 50 | 2708 | 2993 | 4.6 | 5523 | 2.1 | 1.13 |
| 2 | 3~ | 400 | 50 | 2718 | 3655 | 5.6 | 3816 | 5.2 | 1.43 |
| 3 | 3~ | 400 | 50 | 2716 | 3192 | 4.9 | 2143 | 6.7 | 1.23 |

U = Supply voltage · f = Frequency · n = Speed · P_{ed} = Electrical power · I = Current draw · q_v = Air flow · p_{is} = Pressure increase

Performance certified is for installation type A - Free inlet, Free outlet with partition.
Rating Method "E" (Direct Drive, As Run Speed)
Performance ratings include the effects of support brackets.