**EG1R240310A**

# RadiPac - Modular EC Plenum Fan

with support bracket

**ebm-papst Inc.**
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## Nominal Data

| | | |
|---|---|---|
| Model | EG1R240310A | |
| Motor | M3G112-GA | |
| Phase | | 3~ |
| Nominal voltage | VAC | 230 |
| Nominal voltage range | VAC | 200-240 |
| Frequency | Hz | 50/60 |
| Method of obtaining data | | ml |
| Speed | rpm | 3955 |
| Power consumption | W | 3159 |
| Current draw | A | 8.4 |
| Min. ambient temp | °F (°C) | -40 (-40) |
| Max. ambient temp | °F (°C) | 104 (40) |

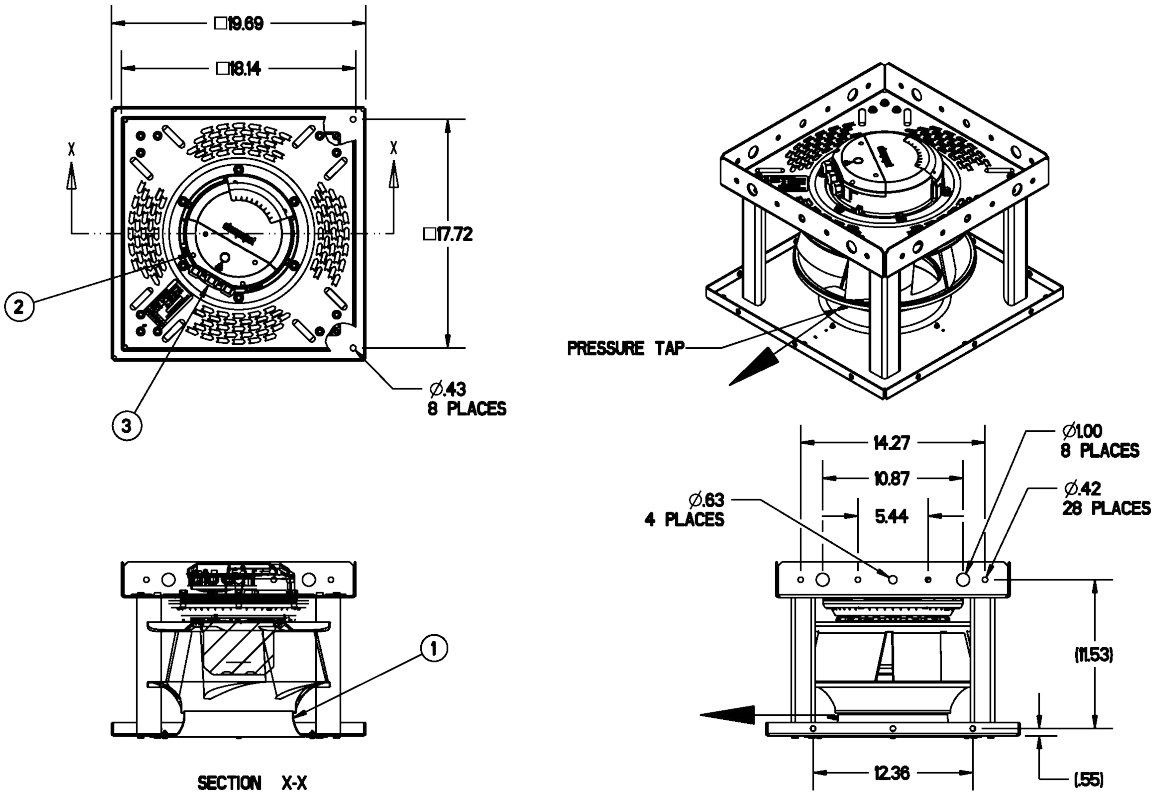
ml = Max. load (maximum fan input power over the range cataloged)
Subject to change

Speed (rpm) shown is nominal.
Performance is based on actual speed of test.

| Technical Description | |
|---|---|
| **Weight** | 61 lb (27.7 kg) |
| **Nominal Impeller Size** | 12.2 in (310 mm) |
| **Motor size** | 112 |
| **Rotor surface** | Painted black |
| **Impeller Material** | Sheet aluminum |
| **Support plate material** | Sheet steel, galvanized |
| **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** | - Operation and alarm display with LED<br>- External 15-50 VDC input (parameterization)<br>- Alarm relay<br>- Integrated PI controller<br>- Configurable inputs/outputs (I/O)<br>- MODBUS V6<br>- Motor current limitation<br>- RFID - ISO 15693 compatible<br>- RS-485 MODBUS-RTU<br>- Soft start<br>- Voltage output 3.3-24 VDC, Pmax = 800 mW<br>- Control interface with SELV potential safely disconnected from the mains<br>- Thermal overload protection for electronics/motor<br>- Line undervoltage / phase failure detection |
| **EMC immunity to interference** | According to EN 61000-6-2 (industrial environment) |
| **EMC interference emission** | According to EN 61000-6-3 (household 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 inches




| | |
|---|---|
| 1 | Inlet ring with pressure tap K-factor (m³/h & Pa): 116 (available on some variations) |
| 2 | Terminal cover tightening torque: 13.2± 1.7 in-lbs (1.5±0.2 Nm) |
| 3 | Cable diameter: 0.15-0.39 in (4-10 mm)<br>Cable gland tightening torque: 35.4±5.3 in-lbs (4±0.6 Nm)<br>Please contact ebm-papst if conduit is required |
| | In a shaft horizontal orientation, the cable glands need to be located at the bottom and the cables must always be routed downwards |
| | Accessory part: Inlet finger guard p/n 79310-2-4039 (available on some variations) |
| | Accessory part: FlowGrid p/n 25311-2-2957 (not included in scope of delivery) |



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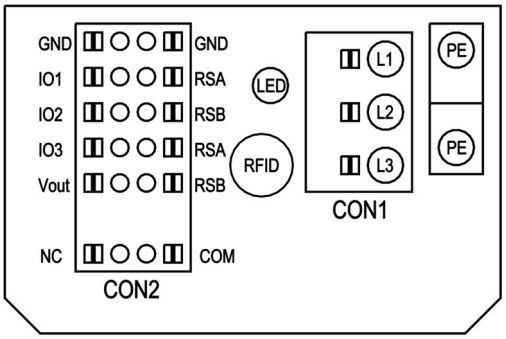
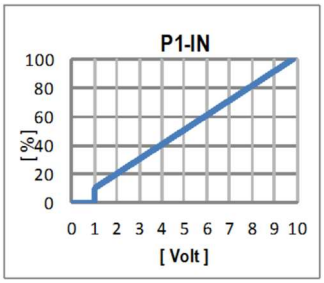
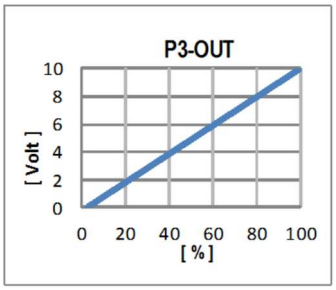
## Electrical Interface




| 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)<br>Factory setting:<br>Digital input - high active, function: Disable input, SELV<br>- inactive: Pin open or applied voltage < 1.5 VDC<br>- active: applied voltage 3.5-50 VDC<br>Reset function:Triggering of error reset on change of state from"enabled" to "disabled" |
| | CON2 | IO2 | Function parameterizable (see “Optional interface functions” table)<br>Factory setting:<br>Analog input 0-10 VDC / PWM, Ri=100 kΩ, function: Set value<br>Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV |
| | CON2 | IO3 | Function parameterizable (see “Optional interface functions” table)<br>Factory setting:<br>Analog output 0-10 VDC, max. 5 mA, function: Fan modulation level<br>Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV |
| | CON2 | Vout | Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable<br>Factory setting: 10 VDC<br>short-circuit-proof, supply for external devices, SELV<br>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,<br>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<br>orange: status = warning<br>red: status = failure |
| | | P1-IN | Input characteristic curve |
| | | P3-OUT | Output characteristic curve |



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## Terminal assignment

○ configurable option

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

| CON2 | configurable IO mode | electrical specification | MODBUS Register for IO mode configuration | configurable IO functions: normal / inverse | INPUT: source: set value D101 [...] | INPUT: source: sensor value D147 [...] | INPUT: switch: parameter set: #1 / #2 D104 [...] | INPUT: switch: control function: heating (pos.) / cooling (neg.) D12E [...] | INPUT: switch: direction of rotation: cw / ccw D148 [...] | INPUT: switch: set value source D16C [...] | INPUT: switch: fan enable / disable D16A [...] | OUTPUT: signal: tach out (selected directly via IO mode) | OUTPUT: signal: diagnostics out (selected directly via IO mode) | OUTPUT: signal: fan modulation level % D130 [0] | OUTPUT: signal: actual speed D130 [1] | OUTPUT: signal: system modulation level % D130 [2] | OUTPUT: signal: remote control output 0-10V D130 [5] | OUTPUT: pulse input for auto-adressing D00C [1] | OUTPUT: pulse output for auto-adressing D130 [4] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IO1 | ○ **Din1 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>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) | Umax = 50VDC, Imax = 20mA, SELV | D158 [5] | | | | | | | | | ○ | | | | | | | |
| | ○ **Diagnostics out** (open collector output) | Umax = 50VDC, Imax = 20mA, SELV | D158 [6] | | | | | | | | | | ○ | | | | | | |
| IO2 | ○ **Din2 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>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] | | | | | | | | | | | | | | | | |
| IO3 | ○ **Din3 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>not active: pin open or applied voltage < 1,5VDC | D15A [0] | | | | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| | ○ **Din3 (active low)**: digital input | active: applied voltage < 1,5VDC, SELV<br>not active: pin open or applied voltage 3,5-50VDC | D15A [1] | | | | | | | | | | | | | | | | |
| | ○ **PWMin3**: digital input idle level high | PWM = 40Hz - 10kHz, characteristics parameterizable<br>active: pin open or applied voltage 3,5-50VDC<br>not active: applied voltage < 1,5VDC, SELV | D15A [7] | | ○ | | | | | | | | | | | | | | |
| | ○ **PWMin3**: digital input idle level low | 40Hz - 10kHz, characteristics parameterizable<br>active: applied voltage 3,5-50VDC<br>not active: pin open or applied voltage < 1,5VDC, SELV | D15A [8] | | ○ | | | | | | | | | | | | | | |
| | ○ **Aout3 0-10V**: analog output | function parameterizable, 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] | | | | | | | | | ○ | | | | | | | |
| | ○ **Diagnostics out** (pulses) | 0-10V max. 5mA, max output frequency 300Hz, SELV | D15A [6] | | | | | | | | | | ○ | | | | | | |
| RSA<br>RSB | RS485 bus connection, | MODBUS RTU, specification V6.3, SELV | | | ○ | | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| Vout | voltage output | voltage parameterizable 3,3...24VDC +/- 5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV | D16E [...] | | | | | | | | | | | | | | | | |
| | alternatively: Input auxiliary power supply for parameterization via RS485/MODBUS RTU without line voltage | 15...50VDC | | | | | | | | | | | | | | | | | |



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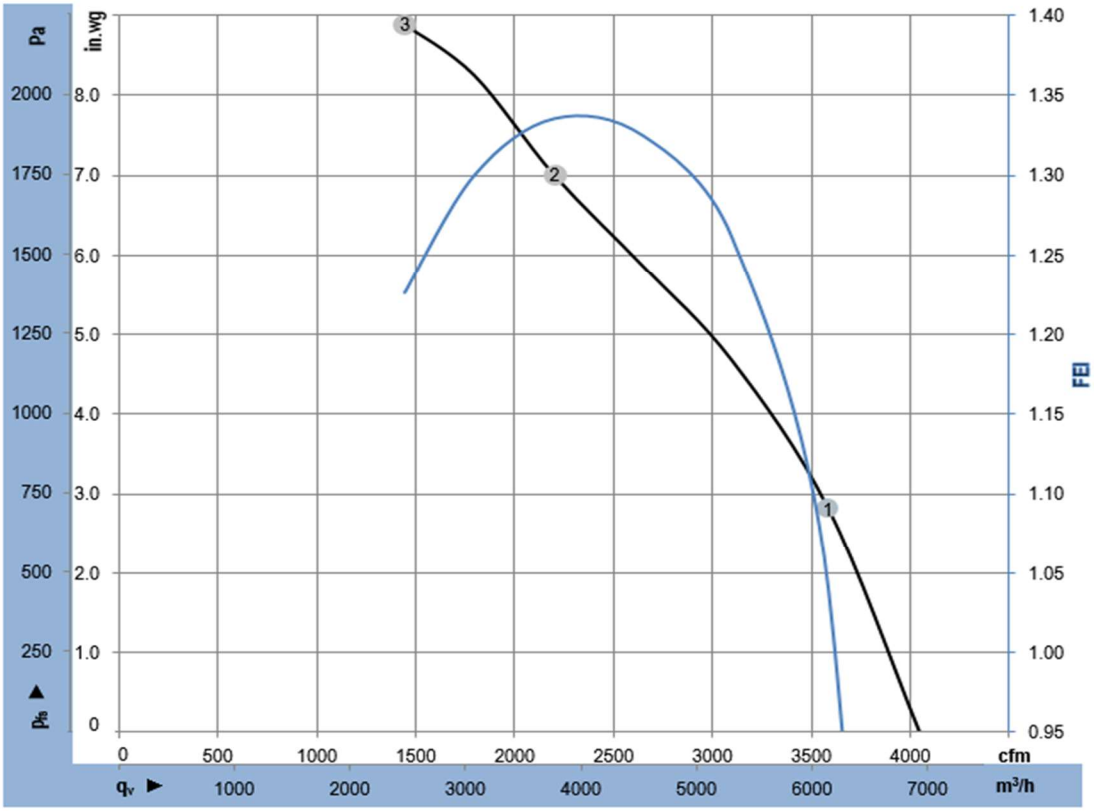


ρ = 0.075 lbm/ft³

Measurement: LU-1839

ebm-papst Inc. 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 | $q_v$ | $p_{fs}$ | FEI |
|---|---|---|---|---|---|---|---|---|---|
| | | V | Hz | rpm | W | A | cfm | in. wg | |
| 1 | 3~ | 230 | 60 | 4002 | 2786 | 7.4 | 3586 | 2.8 | 1.04 |
| 2 | 3~ | 230 | 60 | 3905 | 3132 | 8.4 | 2203 | 7.0 | 1.34 |
| 3 | 3~ | 230 | 60 | 4001 | 2981 | 7.9 | 1448 | 8.9 | 1.23 |

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

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



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**EG1R480310A**

# RadiPac - Modular EC Plenum Fan

with support bracket

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## Nominal Data

| | | |
|---|---|---|
| Model | EG1R480310A | |
| Motor | M3G112-GA | |
| Phase | | 3~ |
| Nominal voltage | VAC | 460 |
| Nominal voltage range | VAC | 400-480 |
| Frequency | Hz | 50/60 |
| Method of obtaining data | | ml |
| Speed | rpm | 3975 |
| Power consumption | W | 3132 |
| Current draw | A | 4.3 |
| Min. ambient temp | °F (°C) | -40 (-40) |
| Max. ambient temp | °F (°C) | 104 (40) |

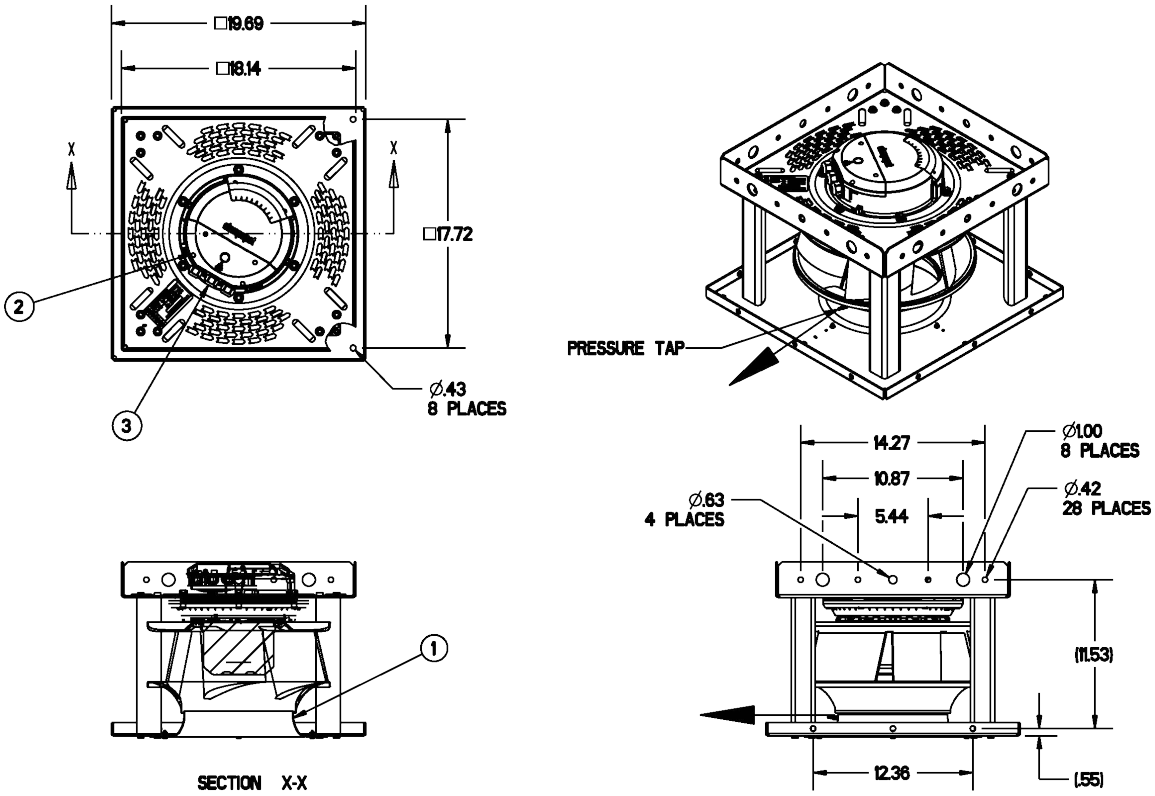
ml = Max. load (maximum fan input power over the range cataloged)
Subject to change

Speed (rpm) shown is nominal.
Performance is based on actual speed of test.

| Technical Description | |
|---|---|
| **Weight** | 61 lb (27.7 kg) |
| **Nominal Impeller Size** | 12.2 in (310 mm) |
| **Motor size** | 112 |
| **Rotor surface** | Painted black |
| **Impeller Material** | Sheet aluminum |
| **Support plate material** | Sheet steel, galvanized |
| **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** | - Operation and alarm display with LED<br>- External 15-50 VDC input (parameterization)<br>- Alarm relay<br>- Integrated PI controller<br>- Configurable inputs/outputs (I/O)<br>- MODBUS V6<br>- Motor current limitation<br>- RFID - ISO 15693 compatible<br>- RS-485 MODBUS-RTU<br>- Soft start<br>- Voltage output 3.3-24 VDC, Pmax = 800 mW<br>- Control interface with SELV potential safely disconnected from the mains<br>- Thermal overload protection for electronics/motor<br>- Line undervoltage / phase failure detection |
| **EMC immunity to interference** | According to EN 61000-6-2 (industrial environment) |
| **EMC interference emission** | According to EN 61000-6-3 (household 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 inches




| | |
|---|---|
| 1 | Inlet ring with pressure tap K-factor (m³/h & Pa): 116 (available on some variations) |
| 2 | Terminal cover tightening torque: 13.2± 1.7 in-lbs (1.5±0.2 Nm) |
| 3 | Cable diameter: 0.15-0.39 in (4-10 mm)<br>Cable gland tightening torque: 35.4±5.3 in-lbs (4±0.6 Nm)<br>Please contact ebm-papst if conduit is required |
| | In a shaft horizontal orientation, the cable glands need to be located at the bottom and the cables must always be routed downwards |
| | Accessory part: Inlet finger guard p/n 79310-2-4039 (available on some variations) |
| | Accessory part: FlowGrid p/n 25311-2-2957 (not included in scope of delivery) |



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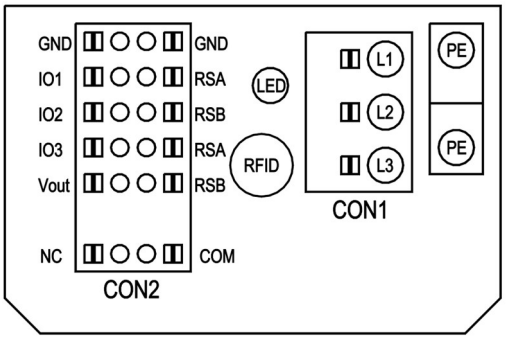
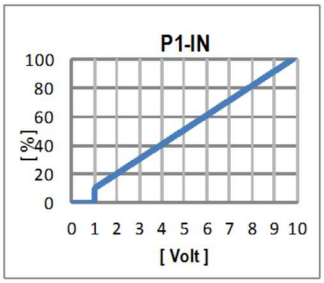
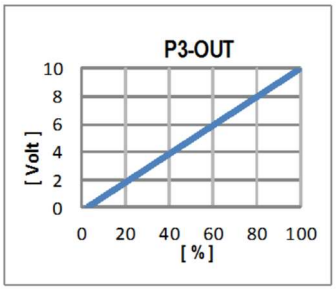
## Electrical Interface




| 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)<br>Factory setting:<br>Digital input - high active, function: Disable input, SELV<br>- inactive: Pin open or applied voltage < 1.5 VDC<br>- active: applied voltage 3.5-50 VDC<br>Reset function:Triggering of error reset on change of state from"enabled" to "disabled" |
| | CON2 | IO2 | Function parameterizable (see “Optional interface functions” table)<br>Factory setting:<br>Analog input 0-10 V / PWM, Ri=100 kΩ, function: Set value<br>Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV |
| | CON2 | IO3 | Function parameterizable (see “Optional interface functions” table)<br>Factory setting:<br>Analog output 0-10 VDC, max. 5 mA, function: Fan modulation level<br>Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV |
| | CON2 | Vout | Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable<br>Factory setting: 10 VDC<br>short-circuit-proof, supply for external devices, SELV<br>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<br>orange: status = warning<br>red: status = failure |
| | | P1-IN | Input characteristic curve |
| | | P3-OUT | Output characteristic curve |



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## Terminal assignment

○ configurable option

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

| CON2 | configurable IO mode | electrical specification | MODBUS Register for IO mode configuration | configurable IO functions: normal / inverse | INPUT | | | | | | | | | OUTPUT | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | D101 [...] | D147 [...] | D104 [...] | D12E [...] | D148 [...] | D16C [...] | D16A [...] | (selected directly via IO mode) | D130 [0] | D130 [1] | D130 [2] | D130 [5] | D130 [4] | | D00C [1] | D130 [4] | | | | |
| | | | | | source: set value | source: sensor value | switch: parameter set: #1 / #2 | switch: control function: heating (pos.) / cooling (neg.) | switch: direction of rotation: cw / ccw | switch: set value source | switch: fan enable / disable | signal: tach out | signal: diagnostics out | signal: fan modulation level % | signal: actual speed | signal: system modulation level % | signal: remote control output 0-10V | pulse output for auto-adressing | pulse input for auto-adressing | | | | | |
| IO1 | ○ **Din1 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>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) | Umax = 50VDC, Imax = 20mA, SELV | D158 [5] | | | | | | | | | ○ | | | | | | | | | | | | |
| | ○ **Diagnostics out** (open collector output) | Umax = 50VDC, Imax = 20mA, SELV | D158 [6] | | | | | | | | | | ○ | | | | | | | | | | | |
| IO2 | ○ **Din2 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>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] | | ○ | | | | | | | | | | | | | | | | | | | |
| IO3 | ○ **Din3 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>not active: pin open or applied voltage < 1,5VDC | D15A [0] | | | | | | | | | | | | | | | | | | | | | |
| | ○ **Din3 (active low)**: digital input | active: applied voltage < 1,5VDC, SELV<br>not active: pin open or applied voltage 3,5-50VDC | D15A [1] | | | | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | |
| | ○ **PWMin3**: digital input idle level high | PWM = 40Hz - 10kHz, characteristics parameterizable<br>active: pin open or applied voltage 3,5-50VDC<br>not active: applied voltage < 1,5VDC, SELV | D15A [7] | ○ | | | | | | | | | | | | | | | | | | | | |
| | ○ **PWMin3**: digital input idle level low | 40Hz - 10kHz, characteristics parameterizable<br>active: applied voltage 3,5-50VDC<br>not active: pin open or applied voltage < 1,5VDC, SELV | D15A [8] | ○ | | | | | | | | | | | | | | | | | | | | |
| | ○ **Aout3 0-10V**: analog output | function parameterizable, 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] | | | | | | | | | | ○ | | | | | | | | | | | |
| | ○ **Diagnostics out** (pulses) | 0-10V max. 5mA, max output frequency 300Hz, SELV | D15A [6] | | | | | | | | | | | ○ | | | | | | | | | | |
| RSA<br>RSB | RS485 bus connection, | MODBUS RTU, specification V6.3, SELV | | ○ | | | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | |
| Vout | voltage output | voltage parameterizable 3,3...24VDC +/- 5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV | D16E [...] | | | | | | | | | | | | | | | | | | | | | |
| | alternatively: Input auxiliary power supply for parameterization via RS485/MODBUS RTU without line voltage | 15...50VDC | | | | | | | | | | | | | | | | | | | | | | |



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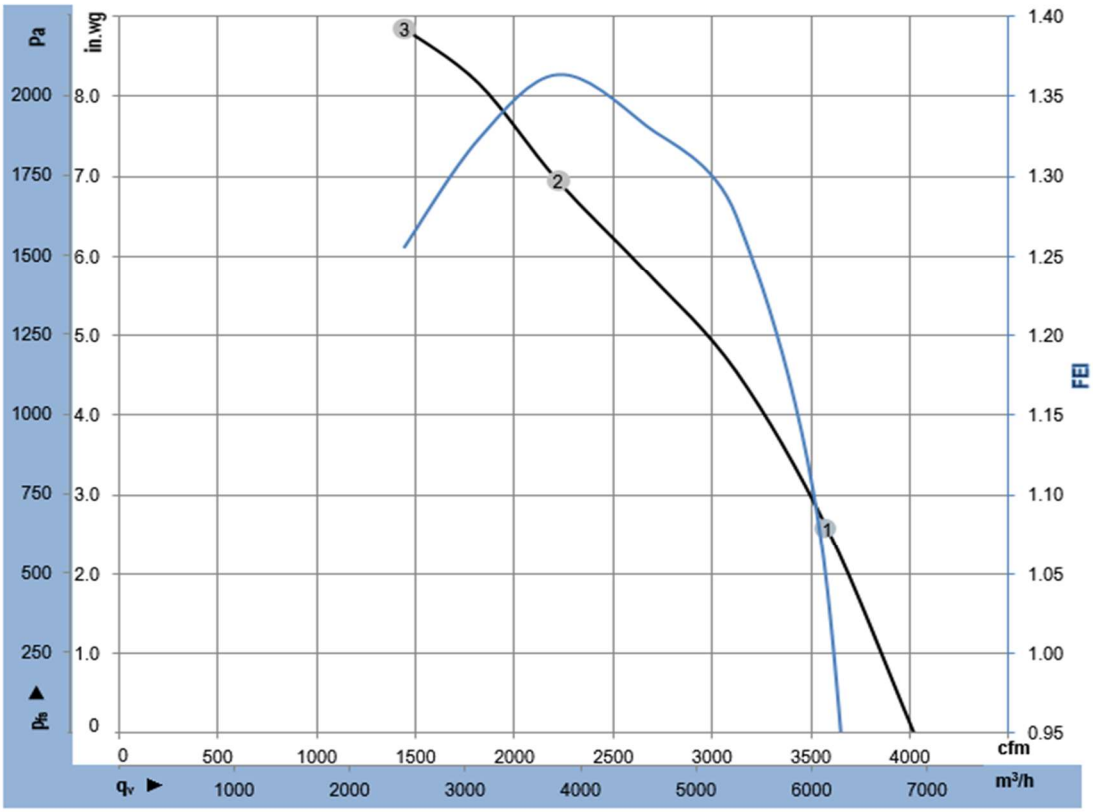
# RadiPac - Modular EC Plenum Fan

with support bracket




ρ = 0.075 lbm/ft³

Measurement: LU-1832

ebm-papst Inc. 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 | $q_v$ | $p_{fs}$ | FEI |
|---|---|---|---|---|---|---|---|---|---|
| | | V | Hz | rpm | W | A | cfm | in. wg | |
| 1 | 3~ | 460 | 60 | 4003 | 2588 | 3.6 | 3584 | 2.6 | 1.04 |
| 2 | 3~ | 460 | 60 | 3940 | 3066 | 4.2 | 2221 | 6.9 | 1.36 |
| 3 | 3~ | 460 | 60 | 4000 | 2895 | 3.9 | 1446 | 8.8 | 1.26 |

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

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



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**EG1R240355A**

# RadiPac - Modular EC Plenum Fan

with support bracket

**ebm-papst Inc.**
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Farmington, CT 06034
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www.ebmpapst.us

## Nominal Data

| | | |
|---|---|---|
| Model | EG1R240355A | |
| Motor | M3G112-GA | |
| Phase | | 3~ |
| Nominal voltage | VAC | 230 |
| Nominal voltage range | VAC | 200-240 |
| Frequency | Hz | 50/60 |
| Method of obtaining data | | ml |
| Speed | rpm | 3230 |
| Power consumption | W | 3012 |
| Current draw | A | 8.0 |
| 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.

# RadiPac - Modular EC Plenum Fan

with support bracket

| Technical Description | |
|---|---|
| **Weight** | 61.2 lb (27.8 kg) |
| **Nominal Impeller Size** | 14 in (355 mm) |
| **Motor size** | 112 |
| **Rotor surface** | Painted black |
| **Impeller Material** | Sheet aluminum |
| **Support plate material** | Sheet steel, galvanized |
| **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** | - Operation and alarm display with LED<br>- External 15-50 VDC input (parameterization)<br>- Alarm relay<br>- Integrated PI controller<br>- Configurable inputs/outputs (I/O)<br>- MODBUS V6<br>- Motor current limitation<br>- RFID - ISO 15693 compatible<br>- RS-485 MODBUS-RTU<br>- Soft start<br>- Voltage output 3.3-24 VDC, Pmax = 800 mW<br>- Control interface with SELV potential safely disconnected from the mains<br>- Thermal overload protection for electronics/motor<br>- Line undervoltage / phase failure detection |
| **EMC immunity to interference** | According to EN 61000-6-2 (industrial environment) |
| **EMC interference emission** | According to EN 61000-6-3 (household 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 |



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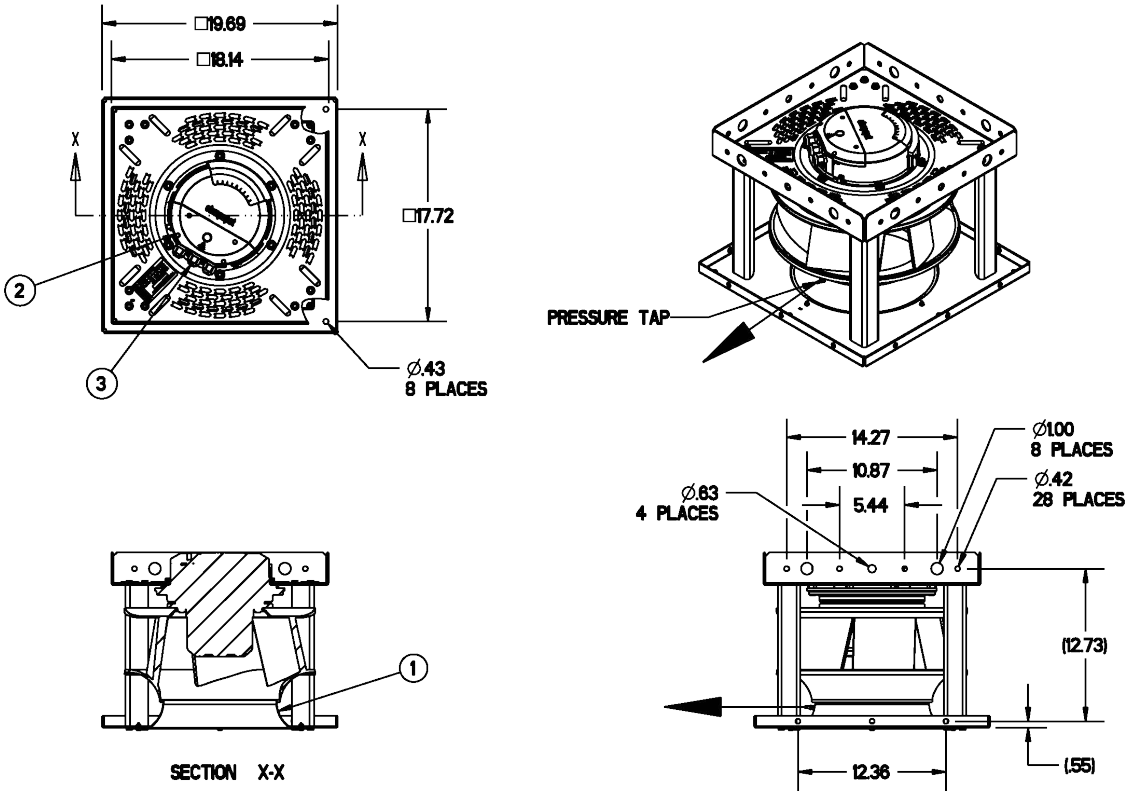
## Product drawing

Dimensions in inches




| | |
|---|---|
| 1 | Inlet ring with pressure tap K-factor (m³/h & Pa): 148 (available on some variations) |
| 2 | Terminal cover tightening torque: 13.2± 1.7 in-lbs (1.5±0.2 Nm) |
| 3 | Cable diameter: 0.15-0.39 in (4-10 mm)<br>Cable gland tightening torque: 35.4±5.3 in-lbs (4±0.6 Nm)<br>Please contact ebm-papst if conduit is required |
| | In a shaft horizontal orientation, the cable glands need to be located at the bottom and the cables must always be routed downwards |
| | Accessory part: Inlet finger guard p/n 79355-2-4039 (available on some variations) |
| | Accessory part: FlowGrid p/n 00401-2-2957 (not included in scope of delivery) |



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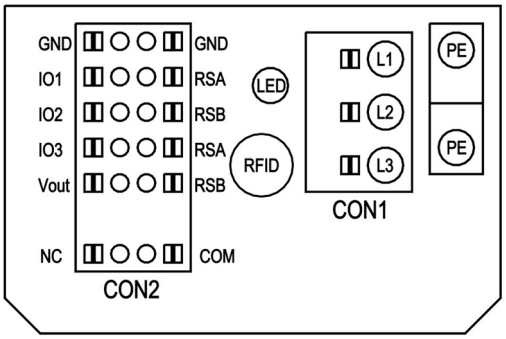
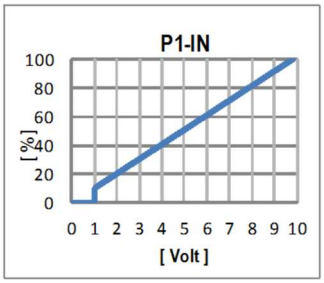
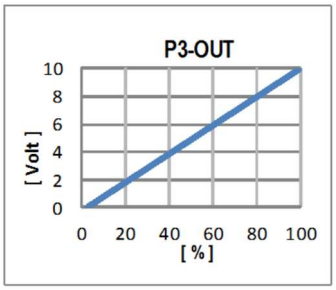
## Electrical Interface




| 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)<br>Factory setting:<br>Digital input - high active, function: Disable input, SELV<br>- inactive: Pin open or applied voltage < 1.5 VDC<br>- active: applied voltage 3.5-50 VDC<br>Reset function:Triggering of error reset on change of state from"enabled" to "disabled" |
| | CON2 | IO2 | Function parameterizable (see “Optional interface functions” table)<br>Factory setting:<br>Analog input 0-10 V / PWM, Ri=100 kΩ, function: Set value<br>Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV |
| | CON2 | IO3 | Function parameterizable (see “Optional interface functions” table)<br>Factory setting:<br>Analog output 0-10 V, max. 5 mA, function: Fan modulation level<br>Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV |
| | CON2 | Vout | Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable<br>Factory setting: 10 VDC<br>short-circuit-proof, supply for external devices, SELV<br>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,<br>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<br>orange: status = warning<br>red: status = failure |
| | | P1-IN | Input characteristic curve |
| | | P3-OUT | Output characteristic curve |



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## Terminal assignment

○ configurable option

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

| CON2 | configurable IO mode | electrical specification | MODBUS Register for IO mode configuration | configurable IO functions: normal / inverse | INPUT | | | | | | | | OUTPUT | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | D101 [...] | D147 [...] | D104 [...] | D12E [...] | D148 [...] | D16C [...] | D16A [...] | (selected directly via IO mode) | D130 [0] | D130 [1] | D130 [2] | D130 [5] | D00C [1] | D130 [4] | (selected directly via IO mode) | | | |
| | | | | | source: set value | source: sensor value | switch: parameter set: #1 / #2 | switch: control function: heating (pos.) / cooling (neg.) | switch: direction of rotation: cw / ccw | switch: set value source | switch: fan enable / disable | signal: tach out | signal: fan modulation level % | signal: actual speed | signal: system modulation level % | signal: remote control output 0-10V | pulse input for auto-adressing | pulse output for auto-adressing | signal: diagnostics out | | | |
| IO1 | ○ **Din1 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>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) | Umax = 50VDC, Imax = 20mA, SELV | D158 [5] | | | | | | | | | ○ | | | | | | | | | | |
| | ○ **Diagnostics out** (open collector output) | Umax = 50VDC, Imax = 20mA, SELV | D158 [6] | | | | | | | | | | | | | | | | ○ | | | |
| IO2 | ○ **Din2 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>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] | | | | | | | | | | | | | | | | | | | |
| IO3 | ○ **Din3 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>not active: pin open or applied voltage < 1,5VDC | D15A [0] | | | | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | |
| | ○ **Din3 (active low)**: digital input | active: applied voltage < 1,5VDC, SELV<br>not active: pin open or applied voltage 3,5-50VDC | D15A [1] | | | | | | | | | | | | | | | | | | | |
| | ○ **PWMin3**: digital input idle level high | PWM = 40Hz - 10kHz, characteristics parameterizable<br>active: pin open or applied voltage 3,5-50VDC<br>not active: applied voltage < 1,5VDC, SELV | D15A [7] | | ○ | | | | | | | | | | | | | | | | | |
| | ○ **PWMin3**: digital input idle level low | 40Hz - 10kHz, characteristics parameterizable<br>active: applied voltage 3,5-50VDC<br>not active: pin open or applied voltage < 1,5VDC, SELV | D15A [8] | | ○ | | | | | | | | | | | | | | | | | |
| | ○ **Aout3 0-10V** analog output | function parameterizable, 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] | | | | | | | | | ○ | | | | | | | | | | |
| | ○ **Diagnostics out** (pulses) | 0-10V max. 5mA, max output frequency 300Hz, SELV | D15A [6] | | | | | | | | | | | | | | | | ○ | | | |
| RSA<br>RSB | RS485 bus connection, | MODBUS RTU, specification V6.3, SELV | | | ○ | | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | |
| Vout | voltage output | voltage parameterizable 3,3...24VDC +/- 5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV | D16E [...] | | | | | | | | | | | | | | | | | | | |
| | alternatively: Input auxiliary power supply for parameterization via RS485/MODBUS RTU without line voltage | 15...50VDC | | | | | | | | | | | | | | | | | | | | |



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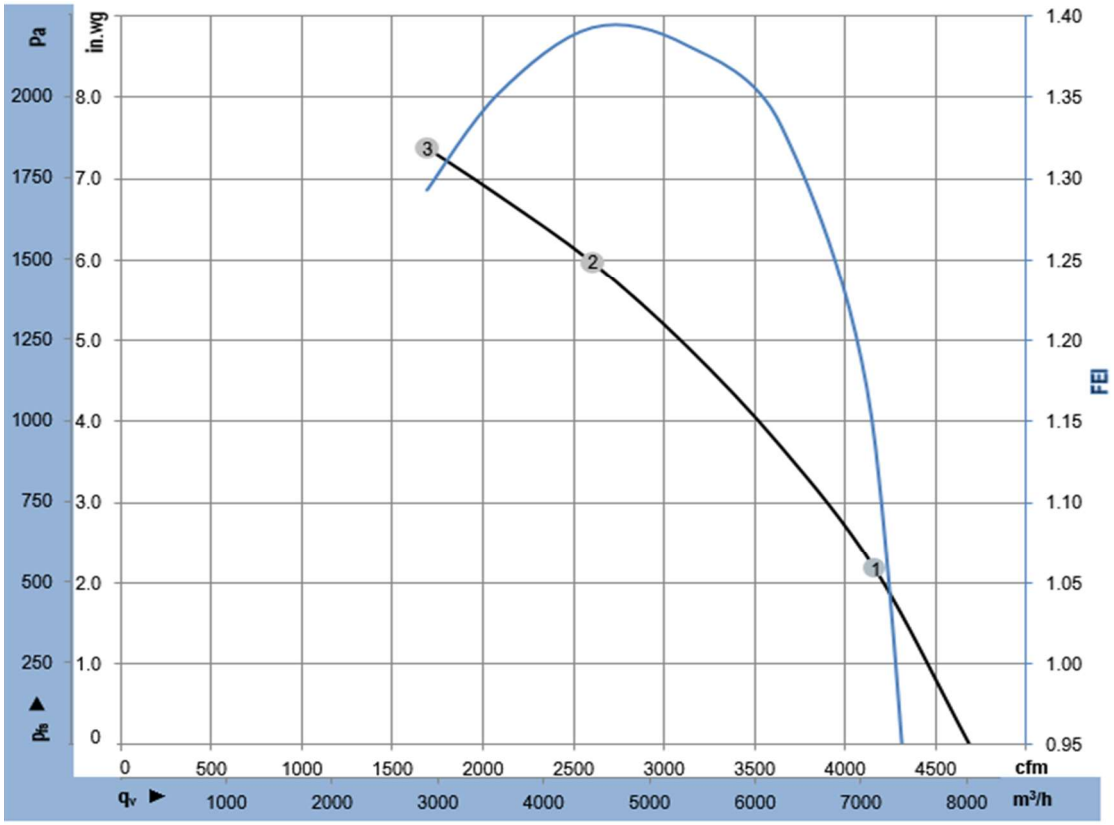
# RadiPac - Modular EC Plenum Fan

with support bracket




ρ = 0.075 lbm/ft³

Measurement: LU-2090

ebm-papst Inc. 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 | $q_v$ | $p_{fs}$ | FEI |
|---|---|---|---|---|---|---|---|---|---|
| | | V | Hz | rpm | W | A | cfm | in. wg | |
| 1 | 3~ | 230 | 60 | 3230 | 2361 | 6.4 | 4172 | 2.2 | 1.13 |
| 2 | 3~ | 230 | 60 | 3226 | 3012 | 8.0 | 2608 | 6.0 | 1.39 |
| 3 | 3~ | 230 | 60 | 3230 | 2721 | 7.3 | 1695 | 7.4 | 1.29 |

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

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



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**EG1R480355A**

# RadiPac - Modular EC Plenum Fan

with support bracket

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100 Hyde Road
Farmington, CT 06034
sales@us.ebmpapst.com
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## Nominal Data

| | | |
|---|---|---|
| Model | EG1R480355A | |
| Motor | M3G112-GA | |
| Phase | | 3~ |
| Nominal voltage | VAC | 460 |
| Nominal voltage range | VAC | 400-480 |
| Frequency | Hz | 50/60 |
| Method of obtaining data | | ml |
| Speed | rpm | 3230 |
| Power consumption | W | 3056 |
| Current draw | A | 4.2 |
| 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.

# RadiPac - Modular EC Plenum Fan

with support bracket

| Technical Description | |
|---|---|
| **Weight** | 61.2 lb (27.8 kg) |
| **Nominal Impeller Size** | 14 in (355 mm) |
| **Motor size** | 112 |
| **Rotor surface** | Painted black |
| **Impeller Material** | Sheet aluminum |
| **Support plate material** | Sheet steel, galvanized |
| **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** | - Operation and alarm display with LED<br>- External 15-50 VDC input (parameterization)<br>- Alarm relay<br>- Integrated PI controller<br>- Configurable inputs/outputs (I/O)<br>- MODBUS V6<br>- Motor current limitation<br>- RFID - ISO 15693 compatible<br>- RS-485 MODBUS-RTU<br>- Soft start<br>- Voltage output 3.3-24 VDC, Pmax = 800 mW<br>- Control interface with SELV potential safely disconnected from the mains<br>- Thermal overload protection for electronics/motor<br>- Line undervoltage / phase failure detection |
| **EMC immunity to interference** | According to EN 61000-6-2 (industrial environment) |
| **EMC interference emission** | According to EN 61000-6-3 (household 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 |



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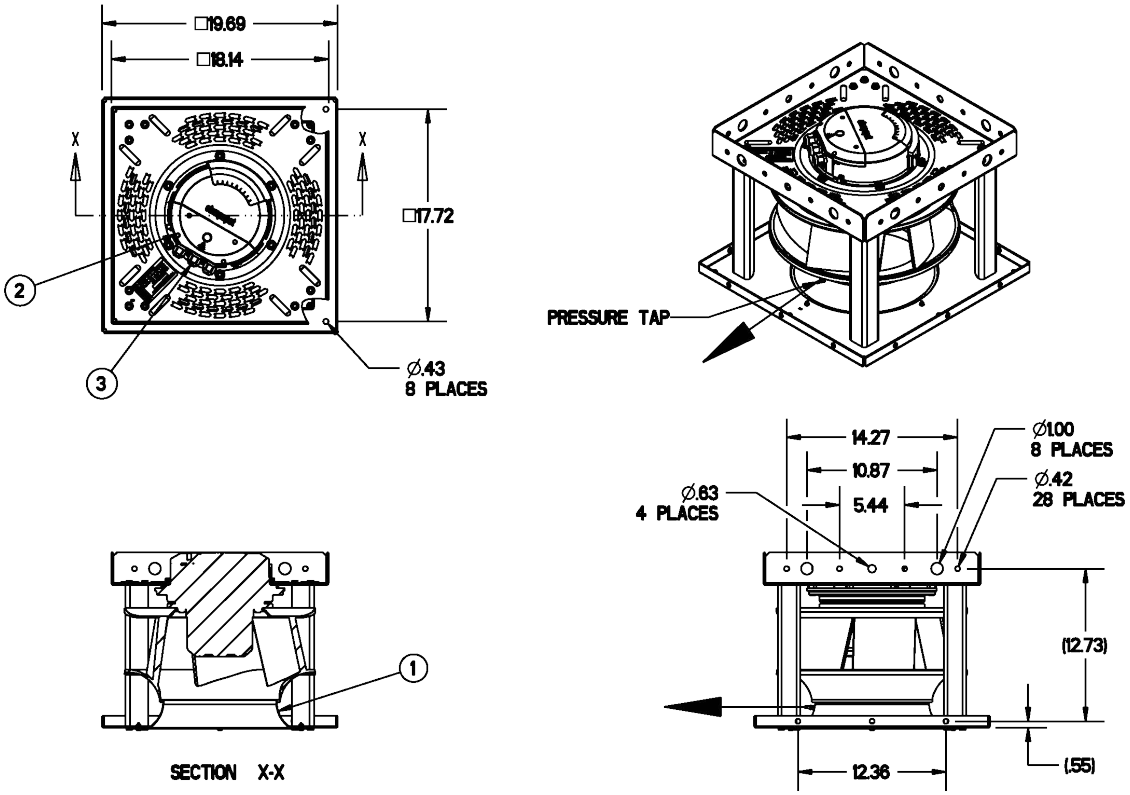
## Product drawing

Dimensions in inches




| | |
|---|---|
| 1 | Inlet ring with pressure tap K-factor (m³/h & Pa): 148 (available on some variations) |
| 2 | Terminal cover tightening torque: 13.2± 1.7 in-lbs (1.5±0.2 Nm) |
| 3 | Cable diameter: 0.15-0.39 in (4-10 mm)<br>Cable gland tightening torque: 35.4±5.3 in-lbs (4±0.6 Nm)<br>Please contact ebm-papst if conduit is required |
| | In a shaft horizontal orientation, the cable glands need to be located at the bottom and the cables must always be routed downwards |
| | Accessory part: Inlet finger guard p/n 79355-2-4039 (available on some variations) |
| | Accessory part: FlowGrid p/n 00401-2-2957 (not included in scope of delivery) |



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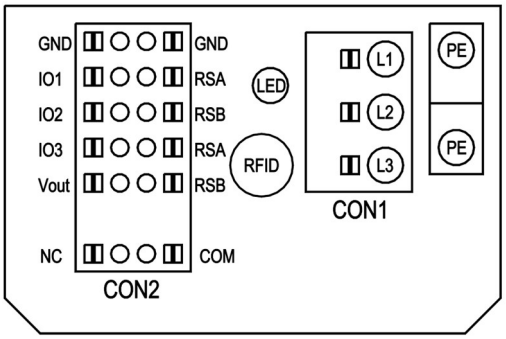
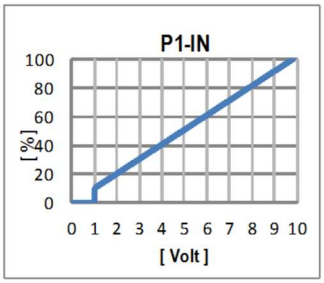
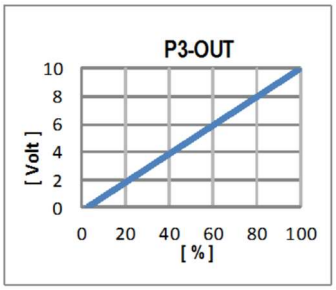
## Electrical Interface




| 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)<br>Factory setting:<br>Digital input - high active, function: Disable input, SELV<br>- inactive: Pin open or applied voltage < 1.5 VDC<br>- active: applied voltage 3.5-50 VDC<br>Reset function:Triggering of error reset on change of state from"enabled" to "disabled" |
| | CON2 | IO2 | Function parameterizable (see “Optional interface functions” table)<br>Factory setting:<br>Analog input 0-10 VDC / PWM, Ri=100 kΩ, function: Set value<br>Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV |
| | CON2 | IO3 | Function parameterizable (see “Optional interface functions” table)<br>Factory setting:<br>Analog output 0-10 VDC, max. 5 mA, function: Fan modulation level<br>Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV |
| | CON2 | Vout | Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable<br>Factory setting: 10 VDC<br>short-circuit-proof, supply for external devices, SELV<br>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,<br>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<br>orange: status = warning<br>red: status = failure |
| | | P1-IN | Input characteristic curve |
| | | P3-OUT | Output characteristic curve |



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## Terminal assignment

○ configurable option

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

| CON2 | configurable IO mode | electrical specification | MODBUS Register for IO mode configuration | configurable IO functions: normal / inverse | INPUT: source: set value D101 [...] | INPUT: source: sensor value D147 [...] | INPUT: switch: parameter set: #1 / #2 D104 [...] | INPUT: switch: control function: heating (pos.) / cooling (neg.) D12E [...] | INPUT: switch: direction of rotation: cw / ccw D148 [...] | INPUT: switch: set value source D16C [...] | INPUT: switch: fan enable / disable D16A [...] | OUTPUT: signal: tach out (selected directly via IO mode) | OUTPUT: signal: diagnostics out (selected directly via IO mode) | OUTPUT: signal: fan modulation level % D130 [0] | OUTPUT: signal: actual speed D130 [1] | OUTPUT: signal: system modulation level % D130 [2] | OUTPUT: signal: remote control output 0-10V D130 [5] | OUTPUT: pulse input for auto-adressing D00C [1] | OUTPUT: pulse output for auto-adressing D130 [4] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IO1 | ○ **Din1 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>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) | Umax = 50VDC, Imax = 20mA, SELV | D158 [5] | | | | | | | | | ○ | | | | | | | |
| | ○ **Diagnostics out** (open collector output) | Umax = 50VDC, Imax = 20mA, SELV | D158 [6] | | | | | | | | | | ○ | | | | | | |
| IO2 | ○ **Din2 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>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] | | | ○ | | | | | | | | | | | | | |
| IO3 | ○ **Din3 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>not active: pin open or applied voltage < 1,5VDC | D15A[0] | | | | | ○ | ○ | ○ | ○ | | | | | | | | |
| | ○ **Din3 (active low)**: digital input | active: applied voltage < 1,5VDC, SELV<br>not active: pin open or applied voltage 3,5-50VDC | D15A[1] | | | | ○ | | | | | | | | | | | | |
| | ○ **PWMin3**: digital input idle level high | PWM = 40Hz - 10kHz, characteristics parameterizable<br>active: pin open or applied voltage 3,5-50VDC<br>not active: applied voltage < 1,5VDC, SELV | D15A[7] | | ○ | | | | | | | | | | | | | | |
| | ○ **PWMin3**: digital input idle level low | 40Hz - 10kHz, characteristics parameterizable<br>active: applied voltage 3,5-50VDC<br>not active: pin open or applied voltage < 1,5VDC, SELV | D15A[8] | | ○ | | | | | | | | | | | | | | |
| | ○ **Aout3 0-10V**: analog output | function parameterizable, 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] | | | | | | | | | | ○ | | | | | | |
| | ○ **Diagnostics out** (pulses) | 0-10V max. 5mA, max output frequency 300Hz, SELV | D15A[6] | | | | | | | | | | | ○ | | | | | |
| RSA<br>RSB | RS485 bus connection, | MODBUS RTU, specification V6.3, SELV | | | ○ | | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| Vout | voltage output | voltage parameterizable 3,3...24VDC +/- 5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV | D16E [...] | | | | | | | | | | | | | | | | |
| | alternatively: Input auxiliary power supply for parameterization via RS485/MODBUS RTU without line voltage | 15...50VDC | | | | | | | | | | | | | | | | | |



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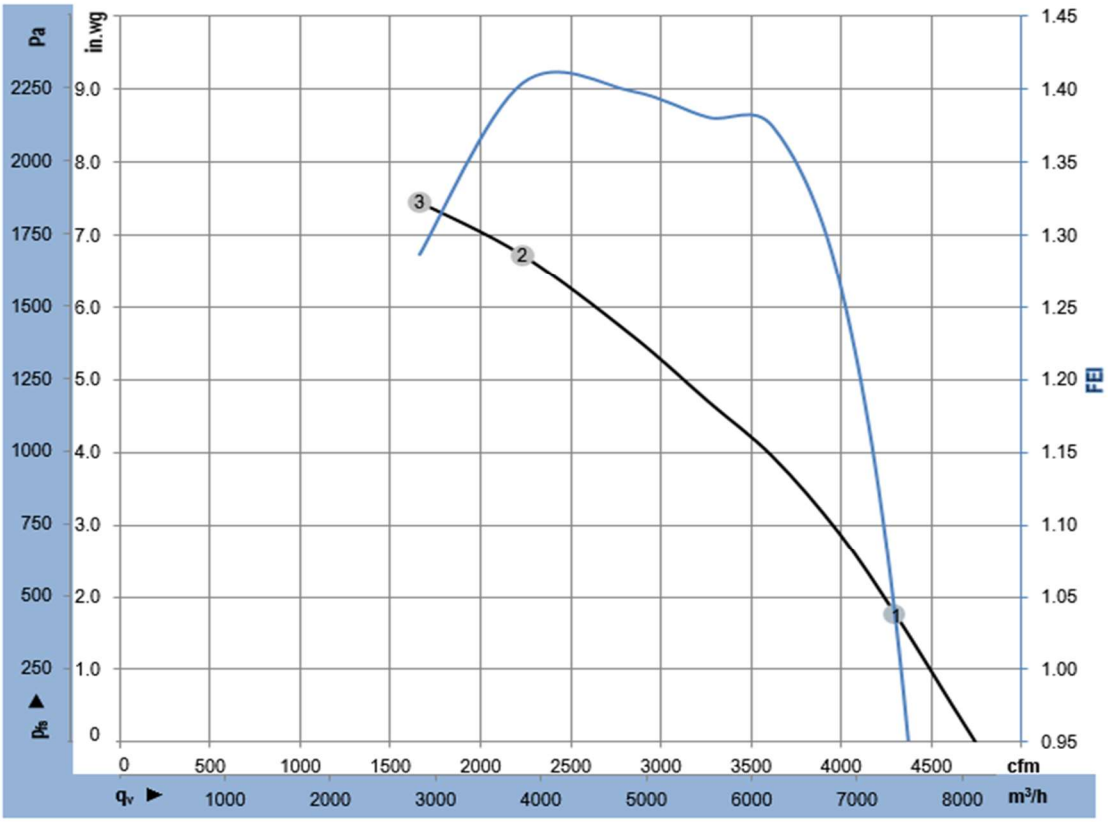
# RadiPac - Modular EC Plenum Fan

with support bracket




ρ = 0.075 lbm/ft³

Measurement: LU-1820

ebm-papst Inc. 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 | $q_v$ | $p_{fs}$ | FEI |
|---|---|---|---|---|---|---|---|---|---|
| | | V | Hz | rpm | W | A | cfm | in. wg | |
| 1 | 3~ | 460 | 60 | 3231 | 2254 | 3.2 | 4306 | 1.7 | 1.03 |
| 2 | 3~ | 460 | 60 | 3232 | 2906 | 4.0 | 2232 | 6.7 | 1.40 |
| 3 | 3~ | 460 | 60 | 3227 | 2715 | 3.7 | 1663 | 7.5 | 1.29 |

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

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



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**EG1R240400A**

# RadiPac - Modular EC Plenum Fan

with support bracket

**ebm-papst Inc.**
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Farmington, CT 06034
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www.ebmpapst.us

## Nominal Data

| | | |
|---|---|---|
| Model | EG1R240400A | |
| Motor | M3G150-FF | |
| Phase | | 3~ |
| Nominal voltage | VAC | 230 |
| Nominal voltage range | VAC | 200-240 |
| Frequency | Hz | 50/60 |
| Method of obtaining data | | ml |
| Speed | rpm | 2800 |
| Power consumption | W | 3869 |
| Current draw | A | 10.3 |
| Min. ambient temp | °F (°C) | -40 (-40) |
| Max. ambient temp | °F (°C) | 131 (55) |

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.

# RadiPac - Modular EC Plenum Fan

with support bracket

| Technical Description | |
|---|---|
| **Weight** | 72 lb (32.7 kg) |
| **Nominal Impeller Size** | 15.7 in (400 mm) |
| **Motor size** | 150 |
| **Rotor surface** | Painted black |
| **Impeller Material** | Sheet aluminum |
| **Support plate material** | Sheet steel, galvanized |
| **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** | - Operation and alarm display with LED<br>- External 15-50 VDC input (parameterization)<br>- Alarm relay<br>- Integrated PI controller<br>- Configurable inputs/outputs (I/O)<br>- MODBUS V6<br>- Motor current limitation<br>- RFID - ISO 15693 compatible<br>- RS-485 MODBUS-RTU<br>- Soft start<br>- Voltage output 3.3-24 VDC, Pmax = 800 mW<br>- Control interface with SELV potential safely disconnected from the mains<br>- Thermal overload protection for electronics/motor<br>- Line undervoltage / phase failure detection |
| **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 |



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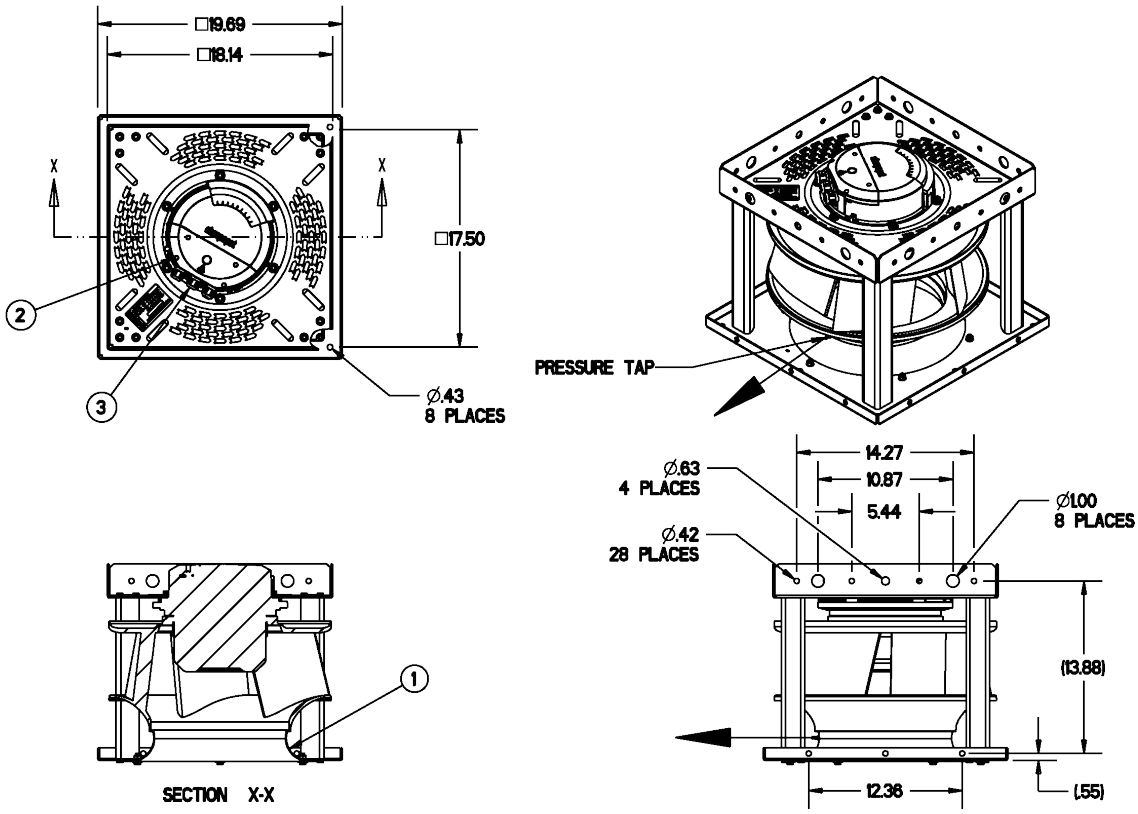
## Product drawing

Dimensions in inches




| | |
|---|---|
| 1 | Inlet ring with pressure tap K-factor (m³/h & Pa): 188 (available on some variations) |
| 2 | Terminal cover tightening torque: 13.2± 1.7 in-lbs (1.5±0.2 Nm) |
| 3 | Cable diameter: 0.15-0.39 in (4-10 mm)<br>Cable gland tightening torque: 35.4±5.3 in-lbs (4±0.6 Nm)<br>Please contact ebm-papst if conduit is required |
| | In a shaft horizontal orientation, the cable glands need to be located at the bottom and the cables must always be routed downwards |
| | Accessory part: Inlet finger guard p/n 79400-2-4039 (available on some variations) |
| | Accessory part: FlowGrid p/n 35506-2-2957 (not included in scope of delivery) |



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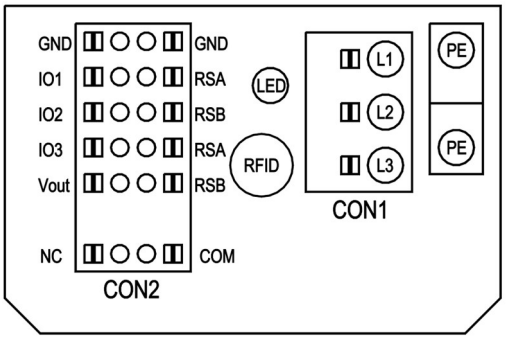
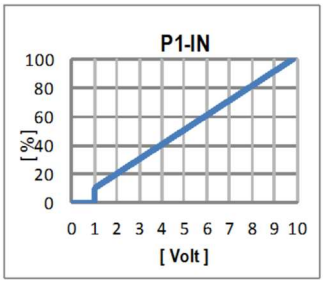
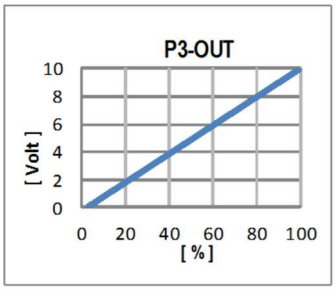
## Electrical Interface




| 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)<br>Factory setting:<br>Digital input - high active, function: Disable input, SELV<br>- inactive: Pin open or applied voltage < 1.5 VDC<br>- active: applied voltage 3.5-50 VDC<br>Reset function:Triggering of error reset on change of state from"enabled" to "disabled" |
| | CON2 | IO2 | Function parameterizable (see “Optional interface functions” table)<br>Factory setting:<br>Analog input 0-10 V / PWM, Ri=100 kΩ, function: Set value<br>Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV |
| | CON2 | IO3 | Function parameterizable (see “Optional interface functions” table)<br>Factory setting:<br>Analog output 0-10 V, max. 5 mA, function: Fan modulation level<br>Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV |
| | CON2 | Vout | Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable<br>Factory setting: 10 VDC<br>short-circuit-proof, supply for external devices, SELV<br>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. 10mA,<br>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<br>orange: status = warning<br>red: status = failure |
| | | P1-IN | Input characteristic curve |
| | | P3-OUT | Output characteristic curve |



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## Terminal assignment

○ configurable option

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

| CON2 | configurable IO mode | electrical specification | MODBUS Register for IO mode configuration | configurable IO functions: normal / inverse | INPUT: source: set value | INPUT: source: sensor value | INPUT: switch: parameter set: #1 / #2 | INPUT: switch: control function: heating (pos.) / cooling (neg.) | INPUT: switch: direction of rotation: cw / ccw | INPUT: switch: set value source | INPUT: switch: fan enable / disable | OUTPUT: signal: tach out | OUTPUT: signal: diagnostics out | OUTPUT: signal: fan modulation level % | OUTPUT: signal: actual speed | OUTPUT: signal: system modulation level % | OUTPUT: signal: remote control output 0-10V | OUTPUT: pulse input for auto-adressing | OUTPUT: pulse output for auto-adressing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | D101 [...] | | D147 [...] | D104 [...] | D12E [...] | D148 [...] | D16C [...] | D16A [...] | (selected directly via IO mode) | (selected directly via IO mode) | D130 [0] | D130 [1] | D130 [2] | D130 [5] | D00C [1] | D130 [4] |
| IO1 | ○ **Din1 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>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) | Umax = 50VDC, Imax = 20mA, SELV | D158 [5] | | | | | | | | | ○ | | | | | | |
| | ○ **Diagnostics out** (open collector output) | Umax = 50VDC, Imax = 20mA, SELV | D158 [6] | | | | | | | | | | ○ | | | | | |
| IO2 | ○ **Din2 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>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] | | ○ | | | | | | | | | | | | | |
| IO3 | ○ **Din3 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>not active: pin open or applied voltage < 1,5VDC | D15A [0] | | | | ○ | ○ | ○ | ○ | ○ | | | | | | | |
| | ○ **Din3 (active low)**: digital input | active: applied voltage < 1,5VDC, SELV<br>not active: pin open or applied voltage 3,5-50VDC | D15A [1] | | | | ○ | ○ | ○ | ○ | ○ | | | | | | | |
| | ○ **PWMin3**: digital input idle level high | PWM = 40Hz - 10kHz, characteristics parameterizable<br>active: pin open or applied voltage 3,5-50VDC<br>not active: applied voltage < 1,5VDC, SELV | D15A [7] | | ○ | | | | | | | | | | | | | |
| | ○ **PWMin3**: digital input idle level low | 40Hz - 10kHz, characteristics parameterizable<br>active: applied voltage 3,5-50VDC<br>not active: pin open or applied voltage < 1,5VDC, SELV | D15A [8] | | ○ | | | | | | | | | | | | | |
| | ○ **Aout3 0-10V** analog output | function parameterizable, 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] | | | | | | | | | ○ | | | | | | |
| | ○ **Diagnostics out** (pulses) | 0-10V max. 5mA, max output frequency 300Hz, SELV | D15A [6] | | | | | | | | | | ○ | | | | | |
| RSA<br>RSB | RS485 bus connection, | MODBUS RTU, specification V6.3, SELV | | | ○ | | ○ | ○ | ○ | ○ | ○ | | | | | | | |
| Vout | voltage output | voltage parameterizable 3,3...24VDC +/- 5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV | D16E [...] | | | | | | | | | | | | | | | |
| | alternatively: Input auxillary power supply for parameterization via RS485/MODBUS RTU without line voltage | 15...50VDC | | | | | | | | | | | | | | | | |



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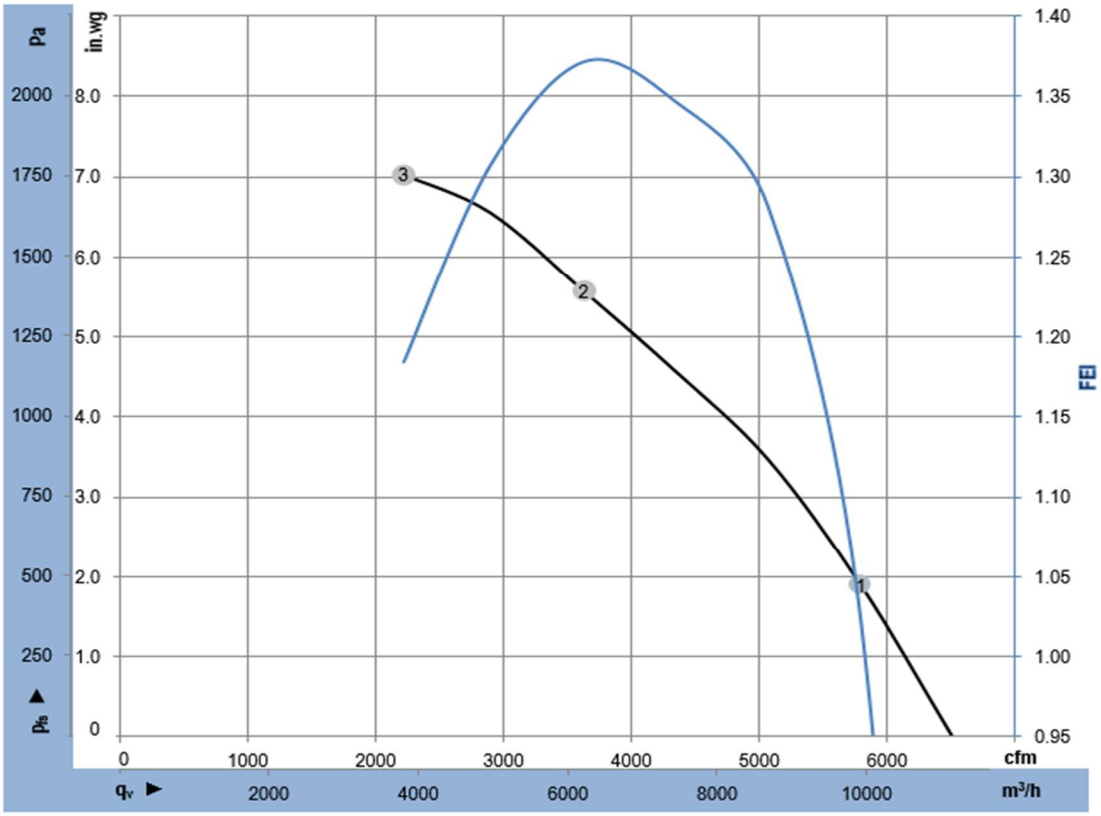
# RadiPac - Modular EC Plenum Fan

with support bracket




ρ = 0.075 lbm/ft³

Measurement: LU-2088

ebm-papst Inc. 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 | $q_v$ | $p_{fs}$ | FEI |
|---|---|---|---|---|---|---|---|---|---|
| | | V | Hz | rpm | W | A | cfm | in. wg | |
| 1 | 3~ | 230 | 60 | 2800 | 3168 | 8.5 | 5797 | 1.9 | 1.02 |
| 2 | 3~ | 230 | 60 | 2784 | 3850 | 10.2 | 3627 | 5.6 | 1.37 |
| 3 | 3~ | 230 | 60 | 2803 | 3565 | 9.5 | 2220 | 7.0 | 1.18 |

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

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



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**EG1R480400A**

# RadiPac - Modular EC Plenum Fan

with support bracket

**ebm-papst Inc.**
100 Hyde Road
Farmington, CT 06034
sales@us.ebmpapst.com
www.ebmpapst.us

## Nominal Data

| | | |
|---|---|---|
| Model | EG1R480400A | |
| Motor | M3G150-FF | |
| Phase | | 3~ |
| Nominal voltage | VAC | 460 |
| Nominal voltage range | VAC | 400-480 |
| Frequency | Hz | 50/60 |
| Method of obtaining data | | ml |
| Speed | rpm | 2800 |
| Power consumption | W | 3950 |
| Current draw | A | 5.3 |
| 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.

# RadiPac - Modular EC Plenum Fan

with support bracket

| Technical Description | |
|---|---|
| **Weight** | 77.4 lb (35.1 kg) |
| **Nominal Impeller Size** | 15.7 in (400 mm) |
| **Motor size** | 150 |
| **Rotor surface** | Painted black |
| **Impeller Material** | Sheet aluminum |
| **Support plate material** | Sheet steel, galvanized |
| **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** | - Operation and alarm display with LED<br>- External 15-50 VDC input (parameterization)<br>- Alarm relay<br>- Integrated PI controller<br>- Configurable inputs/outputs (I/O)<br>- MODBUS V6<br>- Motor current limitation<br>- RFID - ISO 15693 compatible<br>- RS-485 MODBUS-RTU<br>- Soft start<br>- Voltage output 3.3-24 VDC, Pmax = 800 mW<br>- Control interface with SELV potential safely disconnected from the mains<br>- Thermal overload protection for electronics/motor<br>- Line undervoltage / phase failure detection |
| **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 |



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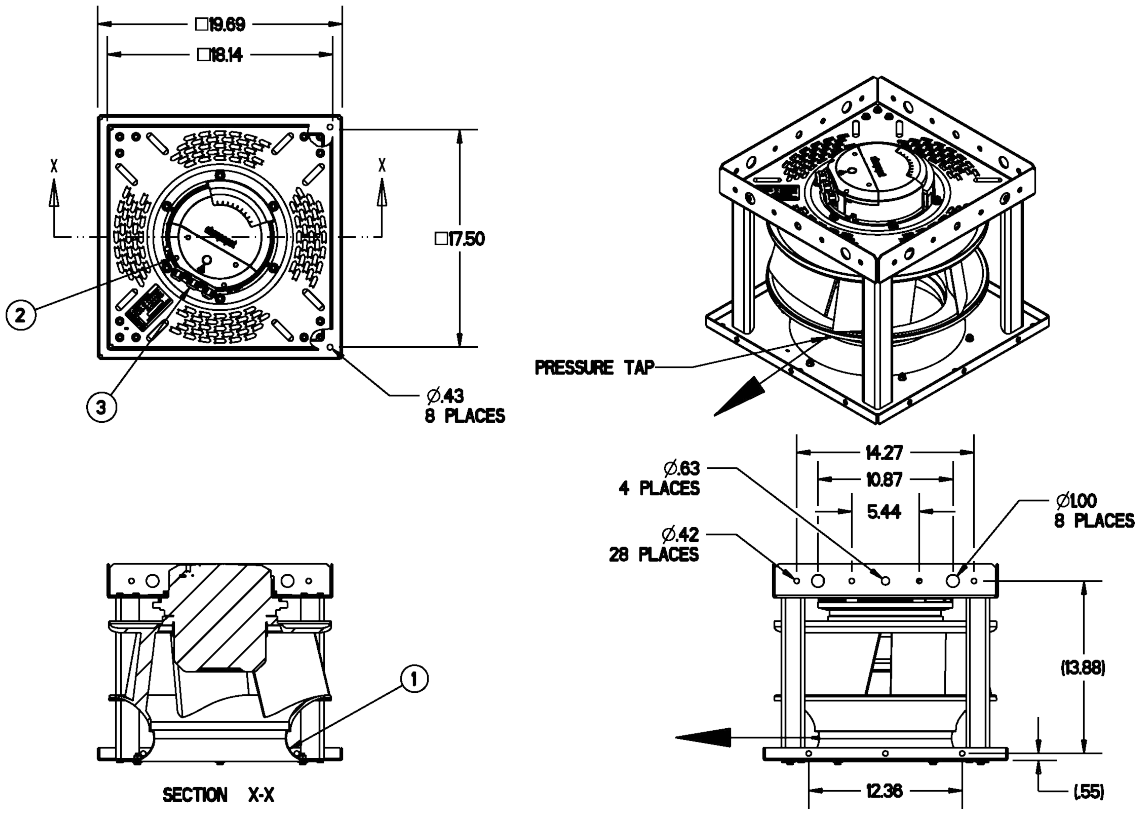
## Product drawing

Dimensions in inches




| | |
|---|---|
| 1 | Inlet ring with pressure tap K-factor (m³/h & Pa): 188 (available on some variations) |
| 2 | Terminal cover tightening torque: 13.2± 1.7 in-lbs (1.5±0.2 Nm) |
| 3 | Cable diameter: 0.15-0.39 in (4-10 mm)<br>Cable gland tightening torque: 35.4±5.3 in-lbs (4±0.6 Nm)<br>Please contact ebm-papst if conduit is required |
| | In a shaft horizontal orientation, the cable glands need to be located at the bottom and the cables must always be routed downwards |
| | Accessory part: Inlet finger guard p/n 79400-2-4039 (available on some variations) |
| | Accessory part: FlowGrid p/n 00401-2-2957 (not included in scope of delivery) |



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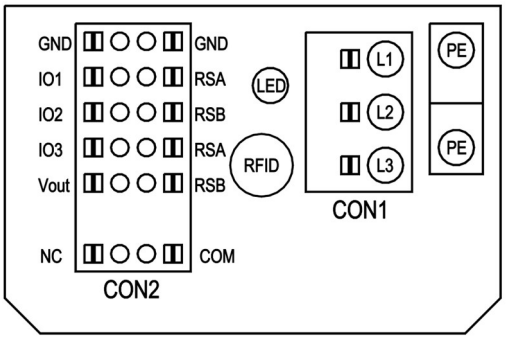
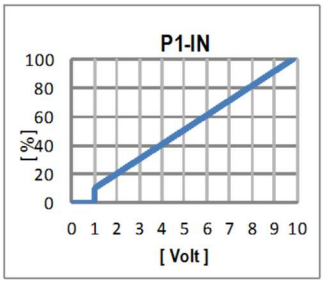
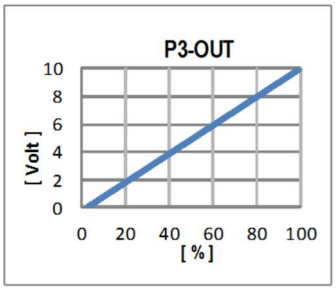
## Electrical Interface




| 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)<br>Factory setting:<br>Digital input - high active, function: Disable input, SELV<br>- inactive: Pin open or applied voltage < 1.5 VDC<br>- active: applied voltage 3.5-50 VDC<br>Reset function:Triggering of error reset on change of state from"enabled" to "disabled" |
| | CON2 | IO2 | Function parameterizable (see “Optional interface functions” table)<br>Factory setting:<br>Analog input 0-10 VDC / PWM, Ri=100 kΩ, function: Set value<br>Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV |
| | CON2 | IO3 | Function parameterizable (see “Optional interface functions” table)<br>Factory setting:<br>Analog output 0-10 VDC, max. 5 mA, function: Fan modulation level<br>Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV |
| | CON2 | Vout | Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable<br>Factory setting: 10 VDC<br>short-circuit-proof, supply for external devices, SELV<br>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. 10mA,<br>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<br>orange: status = warning<br>red: status = failure |
| | | P1-IN | Input characteristic curve |
| | | P3-OUT | Output characteristic curve |



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## Terminal assignment

○ configurable option

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

| CON2 | configurable IO mode | electrical specification | MODBUS Register for IO mode configuration | configurable IO functions: normal / inverse | INPUT: source: set value | INPUT: source: sensor value | INPUT: switch: parameter set: #1 / #2 | INPUT: switch: control function: heating (pos.) / cooling (neg.) | INPUT: switch: direction of rotation: cw / ccw | INPUT: switch: set value source | INPUT: switch: fan enable / disable | OUTPUT: signal: tach out (selected directly via IO mode) | OUTPUT: signal: diagnostics out (selected directly via IO mode) | OUTPUT: signal: fan modulation level % | OUTPUT: signal: actual speed | OUTPUT: signal: system modulation level % | OUTPUT: signal: remote control output 0-10V | OUTPUT: pulse input for auto-adressing | OUTPUT: pulse output for auto-adressing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | D101 [...] | D147 [...] | D104 [...] | D12E [...] | D148 [...] | D16C [...] | D16A [...] | | | D130 [0] | D130 [1] | D130 [2] | D130 [5] | DOOC [1] | D130 [4] |
| IO1 | ○ **Din1 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>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) | Umax = 50VDC, Imax = 20mA, SELV | D158 [5] | | | | | | | | | ○ | | | | | | | |
| | ○ **Diagnostics out** (open collector output) | Umax = 50VDC, Imax = 20mA, SELV | D158 [6] | | | | | | | | | | ○ | | | | | | |
| IO2 | ○ **Din2 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>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] | | | | | | | | | | | | | | | | |
| IO3 | ○ **Din3 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>not active: pin open or applied voltage < 1,5VDC | D15A [0] | | | | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| | ○ **Din3 (active low)**: digital input | active: applied voltage < 1,5VDC, SELV<br>not active: pin open or applied voltage 3,5-50VDC | D15A [1] | | | | | | | | | | | | | | | | |
| | ○ **PWMin3**: digital input idle level high | PWM = 40Hz - 10kHz, characteristics parameterizable<br>active: pin open or applied voltage 3,5-50VDC<br>not active: applied voltage < 1,5VDC, SELV | D15A [7] | | ○ | | | | | | | | | | | | | | |
| | ○ **PWMin3**: digital input idle level low | 40Hz - 10kHz, characteristics parameterizable<br>active: applied voltage 3,5-50VDC<br>not active: pin open or applied voltage < 1,5VDC, SELV | D15A [8] | | ○ | | | | | | | | | | | | | | |
| | ○ **Aout3 0-10V**: analog output | function parameterizable, 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] | | | | | | | | | ○ | | | | | | | |
| | ○ **Diagnostics out** (pulses) | 0-10V max. 5mA, max output frequency 300Hz, SELV | D15A [6] | | | | | | | | | | ○ | | | | | | |
| RSA<br>RSB | RS485 bus connection, | MODBUS RTU, specification V6.3, SELV | | | ○ | | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| Vout | voltage output | voltage parameterizable 3,3...24VDC +/- 5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV | D16E [...] | | | | | | | | | | | | | | | | |
| | alternatively: Input auxillary power supply for parameterization via RS485/MODBUS RTU without line voltage | 15...50VDC | | | | | | | | | | | | | | | | | |



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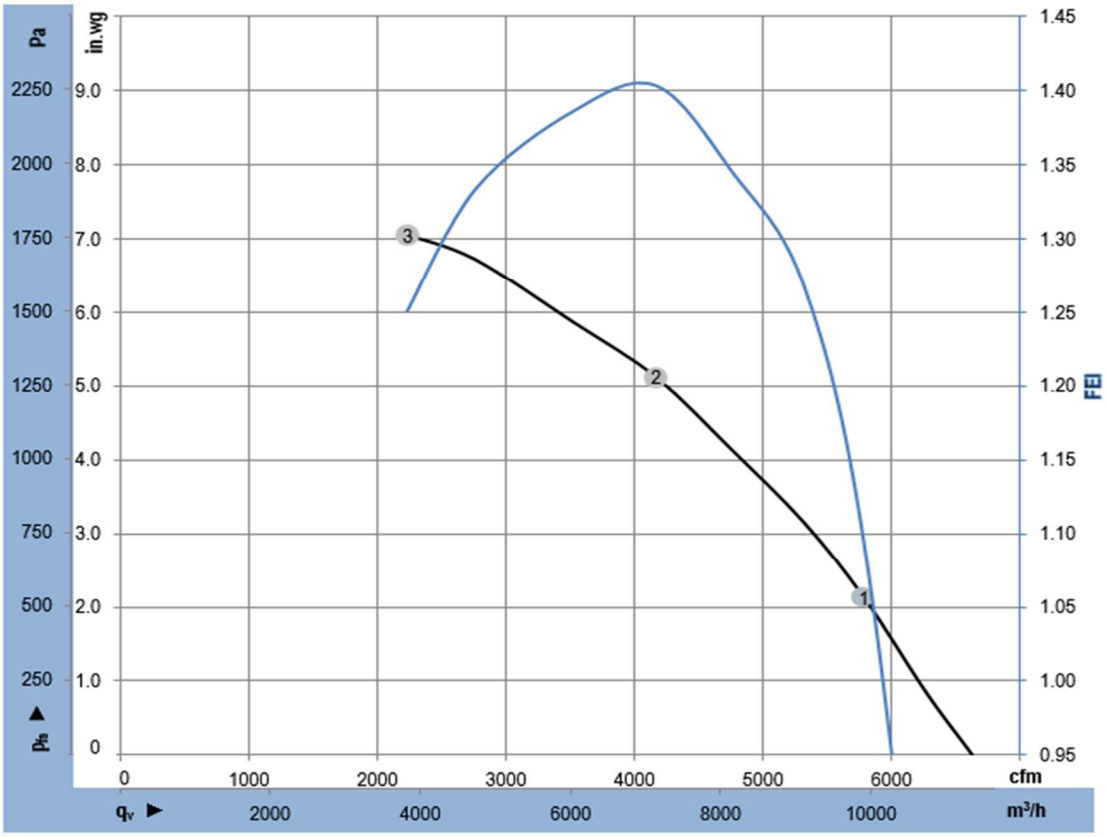
# RadiPac - Modular EC Plenum Fan

with support bracket




ρ = 0.075 lbm/ft³

Measurement: LU-1799

ebm-papst Inc. 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 | $q_v$ | $p_{fs}$ | FEI |
|---|---|---|---|---|---|---|---|---|---|
| | | V | Hz | rpm | W | A | cfm | in. wg | |
| 1 | 3~ | 460 | 60 | 2797 | 3231 | 4.4 | 5787 | 2.1 | 1.09 |
| 2 | 3~ | 460 | 60 | 2801 | 3950 | 5.3 | 4168 | 5.1 | 1.40 |
| 3 | 3~ | 460 | 60 | 2801 | 3408 | 4.6 | 2239 | 7.0 | 1.25 |

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

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



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**EG1R240450A**

# RadiPac - Modular EC Plenum Fan

with support bracket

**ebm-papst Inc.**
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Farmington, CT 06034
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## Nominal Data

| | | |
|---|---|---|
| Model | EG1R240450A | |
| Motor | M3G150-FF | |
| Phase | | 3~ |
| Nominal voltage | VAC | 230 |
| Nominal voltage range | VAC | 200-240 |
| Frequency | Hz | 50/60 |
| Method of obtaining data | | ml |
| Speed | rpm | 2290 |
| Power consumption | W | 3924 |
| Current draw | A | 10.4 |
| 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.

# RadiPac - Modular EC Plenum Fan

with support bracket

| Technical Description | |
|---|---|
| **Weight** | 97 lb (44 kg) |
| **Nominal Impeller Size** | 17.7 in (450 mm) |
| **Motor size** | 150 |
| **Rotor surface** | Painted black |
| **Impeller Material** | Sheet aluminum |
| **Support plate material** | Sheet steel, galvanized |
| **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** | - Operation and alarm display with LED<br>- External 15-50 VDC input (parameterization)<br>- Alarm relay<br>- Integrated PI controller<br>- Configurable inputs/outputs (I/O)<br>- MODBUS V6<br>- Motor current limitation<br>- RFID - ISO 15693 compatible<br>- RS-485 MODBUS-RTU<br>- Soft start<br>- Voltage output 3.3-24 VDC, Pmax = 800 mW<br>- Control interface with SELV potential safely disconnected from the mains<br>- Thermal overload protection for electronics/motor<br>- Line undervoltage / phase failure detection |
| **EMC immunity to interference** | According to EN 61000-6-2 (industrial environment) |
| **EMC interference emission** | According to EN 61000-6-3 (household 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 |



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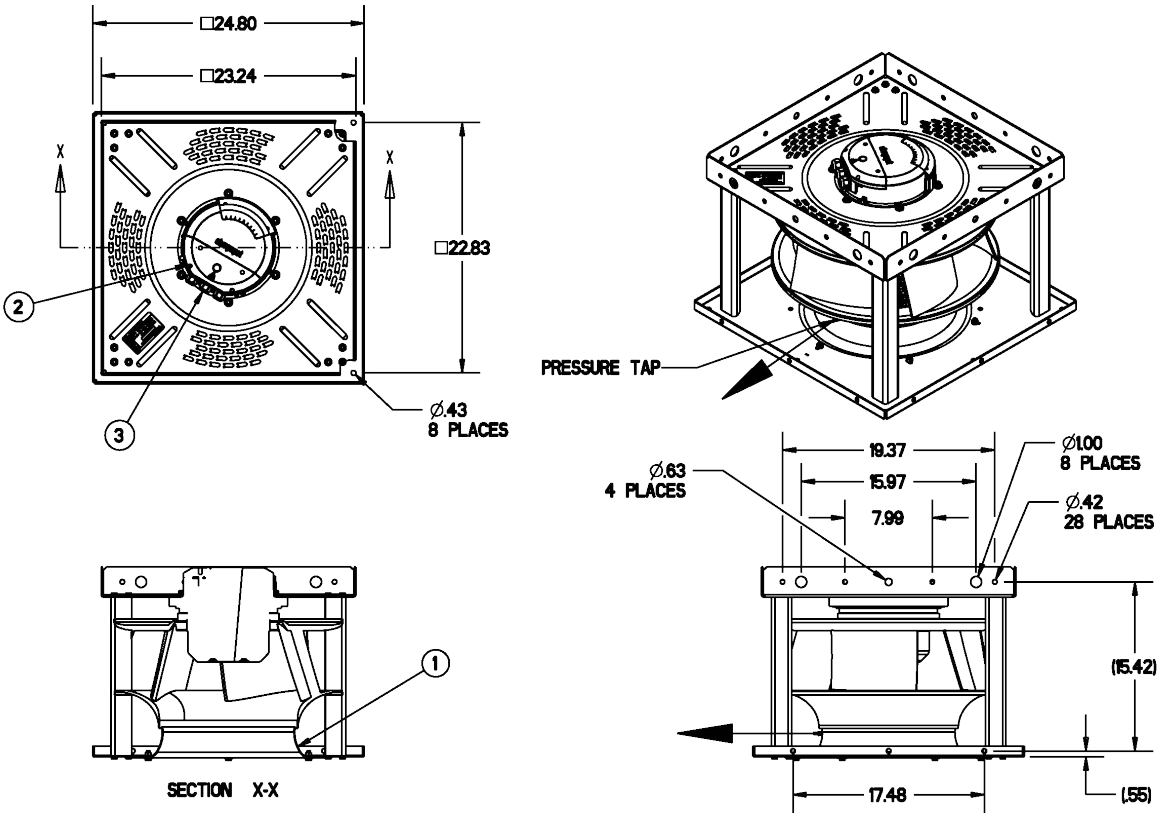
## Product drawing

Dimensions in inches




| | |
|---|---|
| 1 | Inlet ring with pressure tap K-factor (m³/h & Pa): 240 (available on some variations) |
| 2 | Terminal cover tightening torque: 13.2± 1.7 in-lbs (1.5±0.2 Nm) |
| 3 | Cable diameter: 0.15-0.39 in (4-10 mm)<br>Cable gland tightening torque: 35.4±5.3 in-lbs (4±0.6 Nm)<br>Please contact ebm-papst if conduit is required |
| | In a shaft horizontal orientation, the cable glands need to be located at the bottom and the cables must always be routed downwards |
| | Accessory part: Inlet finger guard p/n 79500-2-4039 (available on some variations) |
| | Accessory part: FlowGrid p/n 35506-2-2957 (not included in scope of delivery) |



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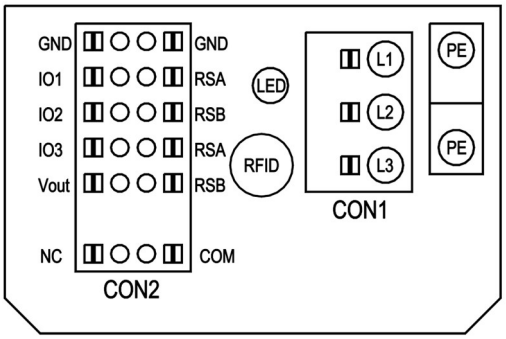
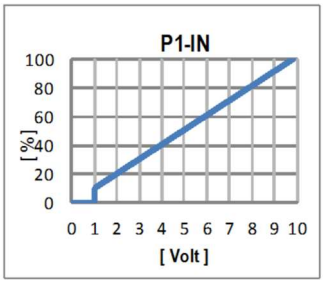
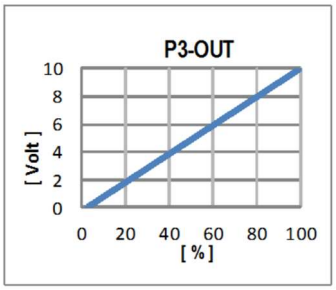
## Electrical Interface




| 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)<br>Factory setting:<br>Digital input - high active, function: Disable input, SELV<br>- inactive: Pin open or applied voltage < 1.5 VDC<br>- active: applied voltage 3.5-50 VDC<br>Reset function:Triggering of error reset on change of state from"enabled" to "disabled" |
| | CON2 | IO2 | Function parameterizable (see “Optional interface functions” table)<br>Factory setting:<br>Analog input 0-10 V / PWM, Ri=100 kΩ, function: Set value<br>Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV |
| | CON2 | IO3 | Function parameterizable (see “Optional interface functions” table)<br>Factory setting:<br>Analog output 0-10 V, max. 5 mA, function: Fan modulation level<br>Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV |
| | CON2 | Vout | Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable<br>Factory setting: 10 VDC<br>short-circuit-proof, supply for external devices, SELV<br>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. 10mA,<br>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<br>orange: status = warning<br>red: status = failure |
| | | P1-IN | Input characteristic curve |
| | | P3-OUT | Output characteristic curve |



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## Terminal assignment

○ configurable option

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

| CON2 | configurable IO mode | electrical specification | MODBUS Register for IO mode configuration | configurable IO functions: normal / inverse | INPUT: source: set value | INPUT: source: sensor value | INPUT: switch: parameter set: #1 / #2 | INPUT: switch: control function: heating (pos.) / cooling (neg.) | INPUT: switch: direction of rotation: cw / ccw | INPUT: switch: set value source | INPUT: switch: fan enable / disable | OUTPUT: signal: tach out (selected directly via IO mode) | OUTPUT: signal: diagnostics out (selected directly via IO mode) | OUTPUT: signal: fan modulation level % | OUTPUT: signal: actual speed | OUTPUT: signal: system modulation level % | OUTPUT: signal: remote control output 0-10V | OUTPUT: pulse input for auto-adressing | OUTPUT: pulse output for auto-adressing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | D101 [...] | D147 [...] | D104 [...] | D12E [...] | D148 [...] | D16C [...] | D16A [...] | | | D130 [0] | D130 [1] | D130 [2] | D130 [5] | DOOC [1] | D130 [4] |
| IO1 | ○ **Din1 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>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) | Umax = 50VDC, Imax = 20mA, SELV | D158 [5] | | | | | | | | | ○ | | | | | | | |
| | ○ **Diagnostics out** (open collector output) | Umax = 50VDC, Imax = 20mA, SELV | D158 [6] | | | | | | | | | | ○ | | | | | | |
| IO2 | ○ **Din2 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>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] | | ○ | | | | | | | | | | | | | | |
| IO3 | ○ **Din3 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>not active: pin open or applied voltage < 1,5VDC | D15A [0] | | | | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| | ○ **Din3 (active low)**: digital input | active: applied voltage < 1,5VDC, SELV<br>not active: pin open or applied voltage 3,5-50VDC | D15A [1] | | | | ○ | | | | | | | | | | | | |
| | ○ **PWMin3**: digital input idle level high | PWM = 40Hz - 10kHz, characteristics parameterizable<br>active: pin open or applied voltage 3,5-50VDC<br>not active: applied voltage < 1,5VDC, SELV | D15A [7] | | ○ | | | | | | | | | | | | | | |
| | ○ **PWMin3**: digital input idle level low | 40Hz - 10kHz, characteristics parameterizable<br>active: applied voltage 3,5-50VDC<br>not active: pin open or applied voltage < 1,5VDC, SELV | D15A [8] | | ○ | | | | | | | | | | | | | | |
| | ○ **Aout3 0-10V**: analog output | function parameterizable, 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] | | | | | | | | | ○ | | | | | | | |
| | ○ **Diagnostics out** (pulses) | 0-10V max. 5mA, max output frequency 300Hz, SELV | D15A [6] | | | | | | | | | | ○ | | | | | | |
| RSA<br>RSB | RS485 bus connection, | MODBUS RTU, specification V6.3, SELV | | | ○ | | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| Vout | voltage output | voltage parameterizable 3,3...24VDC +/- 5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV | D16E [...] | | | | | | | | | | | | | | | | |
| | alternatively: Input auxiliary power supply for parameterization via RS485/MODBUS RTU without line voltage | 15...50VDC | | | | | | | | | | | | | | | | | |



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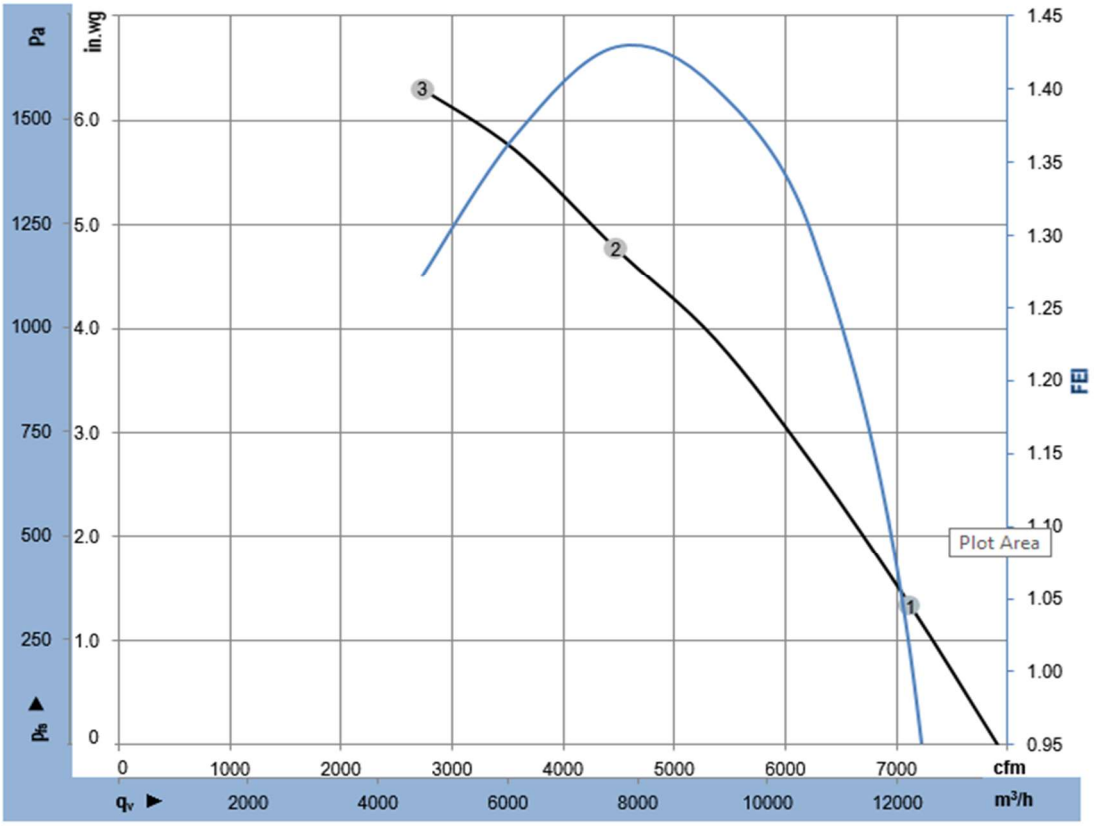


ρ = 0.075 lbm/ft³

Measurement: LU-1880

ebm-papst Inc. 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 | $q_v$ | $p_{fs}$ | FEI |
|---|---|---|---|---|---|---|---|---|---|
| | | V | Hz | rpm | W | A | cfm | in. wg | |
| 1 | 3~ | 230 | 60 | 2299 | 2965 | 7.9 | 7130 | 1.3 | 1.01 |
| 2 | 3~ | 230 | 60 | 2274 | 3893 | 10.3 | 4476 | 4.8 | 1.43 |
| 3 | 3~ | 230 | 60 | 2300 | 3604 | 9.6 | 2735 | 6.3 | 1.27 |

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

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



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**EG1R480450A**

# RadiPac - Modular EC Plenum Fan

with support bracket

**ebm-papst Inc.**
100 Hyde Road
Farmington, CT 06034
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www.ebmpapst.us

## Nominal Data

| | | |
|---|---|---|
| Model | EG1R480450A | |
| Motor | M3G150-FF | |
| Phase | | 3~ |
| Nominal voltage | VAC | 460 |
| Nominal voltage range | VAC | 400-480 |
| Frequency | Hz | 50/60 |
| Method of obtaining data | | ml |
| Speed | rpm | 2440 |
| Power consumption | W | 4607 |
| Current draw | A | 6.2 |
| Min. ambient temp | °F (°C) | -40 (-40) |
| Max. ambient temp | °F (°C) | 104 (40) |

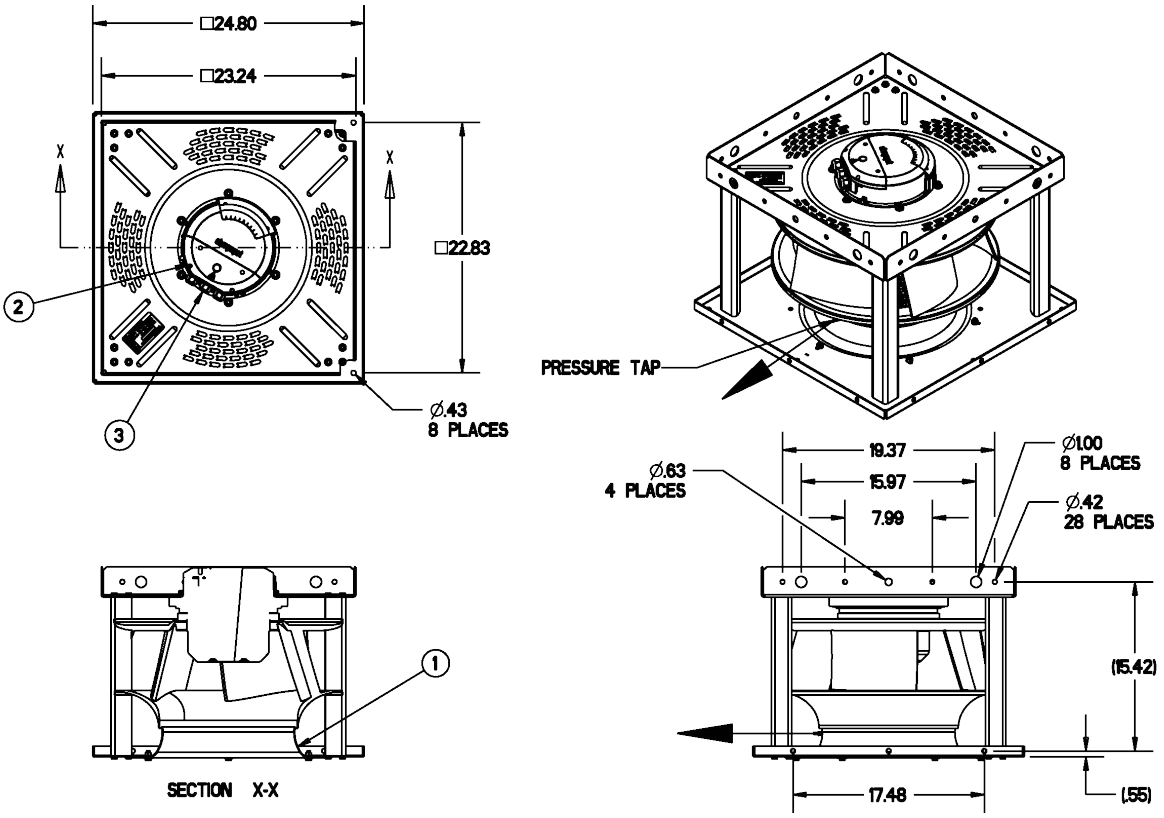
ml = Max. load (maximum fan input power over the range cataloged)
Subject to change

Speed (rpm) shown is nominal.
Performance is based on actual speed of test.

| Technical Description | |
|---|---|
| **Weight** | 99 lb (45 kg) |
| **Nominal Impeller Size** | 17.7 in (450 mm) |
| **Motor size** | 150 |
| **Rotor surface** | Painted black |
| **Impeller Material** | Sheet aluminum |
| **Support plate material** | Sheet steel, galvanized |
| **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** | - Operation and alarm display with LED<br>- External 15-50 VDC input (parameterization)<br>- Alarm relay<br>- Integrated PI controller<br>- Configurable inputs/outputs (I/O)<br>- MODBUS V6<br>- Motor current limitation<br>- RFID - ISO 15693 compatible<br>- RS-485 MODBUS-RTU<br>- Soft start<br>- Voltage output 3.3-24 VDC, Pmax = 800 mW<br>- Control interface with SELV potential safely disconnected from the mains<br>- Thermal overload protection for electronics/motor<br>- Line undervoltage / phase failure detection |
| **EMC immunity to interference** | According to EN 61000-6-2 (industrial environment) |
| **EMC interference emission** | According to EN 61000-6-3 (household 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 inches




| | |
|---|---|
| 1 | Inlet ring with pressure tap K-factor (m³/h & Pa): 240 (available on some variations) |
| 2 | Terminal cover tightening torque: 13.2± 1.7 in-lbs (1.5±0.2 Nm) |
| 3 | Cable diameter: 0.15-0.39 in (4-10 mm)<br>Cable gland tightening torque: 35.4±5.3 in-lbs (4±0.6 Nm)<br>Please contact ebm-papst if conduit is required |
| | In a shaft horizontal orientation, the cable glands need to be located at the bottom and the cables must always be routed downwards |
| | Accessory part: Inlet finger guard p/n 79500-2-4039 (available on some variations) |
| | Accessory part: FlowGrid p/n 35506-2-2957 (not included in scope of delivery) |



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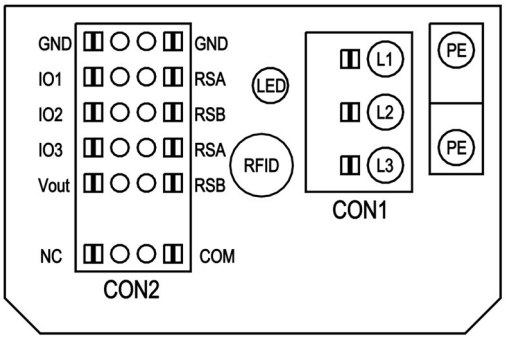
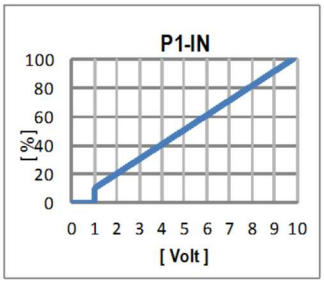
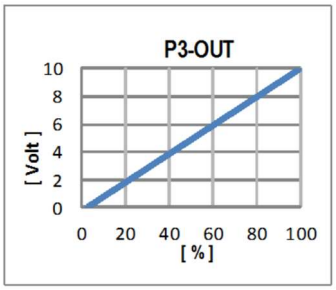
## Electrical Interface




| 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)<br>Factory setting:<br>Digital input - high active, function: Disable input, SELV<br>- inactive: Pin open or applied voltage < 1.5 VDC<br>- active: applied voltage 3.5-50 VDC<br>Reset function:Triggering of error reset on change of state from"enabled" to "disabled" |
| | CON2 | IO2 | Function parameterizable (see “Optional interface functions” table)<br>Factory setting:<br>Analog input 0-10 VDC / PWM, Ri=100 kΩ, function: Set value<br>Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV |
| | CON2 | IO3 | Function parameterizable (see “Optional interface functions” table)<br>Factory setting:<br>Analog output 0-10 VDC, max. 5 mA, function: Fan modulation level<br>Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV |
| | CON2 | Vout | Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable<br>Factory setting: 10 VDC<br>short-circuit-proof, supply for external devices, SELV<br>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,<br>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<br>orange: status = warning<br>red: status = failure |
| | | P1-IN | Input characteristic curve |
| | | P3-OUT | Output characteristic curve |



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## Terminal assignment

○ configurable option

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

| CON2 | configurable IO mode | electrical specification | MODBUS Register for IO mode configuration | configurable IO functions: normal / inverse | INPUT: source: set value | INPUT: source: sensor value | INPUT: switch: parameter set: #1 / #2 | INPUT: switch: control function: heating (pos.) / cooling (neg.) | INPUT: switch: direction of rotation: cw / ccw | INPUT: switch: set value source | INPUT: switch: fan enable / disable | OUTPUT: signal: tach out (selected directly via IO mode) | OUTPUT: signal: diagnostics out (selected directly via IO mode) | OUTPUT: signal: fan modulation level % | OUTPUT: signal: actual speed | OUTPUT: signal: system modulation level % | OUTPUT: signal: remote control output 0-10V | OUTPUT: pulse input for auto-adressing | OUTPUT: pulse output for auto-adressing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | D101 [...] | D147 [...] | D104 [...] | D12E [...] | D148 [...] | D16C [...] | D16A [...] | | | D130 [0] | D130 [1] | D130 [2] | D130 [5] | D00C [1] | D130 [4] |
| IO1 | ○ **Din1 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>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) | Umax = 50VDC, Imax = 20mA, SELV | D158 [5] | | | | | | | | | ○ | | | | | | | |
| | ○ **Diagnostics out** (open collector output) | Umax = 50VDC, Imax = 20mA, SELV | D158 [6] | | | | | | | | | | ○ | | | | | | |
| IO2 | ○ **Din2 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>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] | | | | | | | | | | | | | | | | |
| IO3 | ○ **Din3 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>not active: pin open or applied voltage < 1,5VDC | D15A [0] | | | | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| | ○ **Din3 (active low)**: digital input | active: applied voltage < 1,5VDC, SELV<br>not active: pin open or applied voltage 3,5-50VDC | D15A [1] | | | | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| | ○ **PWMin3**: digital input idle level high | PWM = 40Hz - 10kHz, characteristics parameterizable<br>active: pin open or applied voltage 3,5-50VDC<br>not active: applied voltage < 1,5VDC, SELV | D15A [7] | | ○ | | | | | | | | | | | | | | |
| | ○ **PWMin3**: digital input idle level low | 40Hz - 10kHz, characteristics parameterizable<br>active: applied voltage 3,5-50VDC<br>not active: pin open or applied voltage < 1,5VDC, SELV | D15A [8] | | ○ | | | | | | | | | | | | | | |
| | ○ **Aout3 0-10V**: analog output | function parameterizable, 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] | | | | | | | | | ○ | | | | | | | |
| | ○ **Diagnostics out** (pulses) | 0-10V max. 5mA, max output frequency 300Hz, SELV | D15A [6] | | | | | | | | | | ○ | | | | | | |
| RSA<br>RSB | RS485 bus connection, | MODBUS RTU, specification V6.3, SELV | | | ○ | | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| Vout | voltage output | voltage parameterizable 3,3...24VDC +/- 5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV | D16E [...] | | | | | | | | | | | | | | | | |
| | alternatively: Input auxillary power supply for parameterization via RS485/MODBUS RTU without line voltage | 15...50VDC | | | | | | | | | | | | | | | | | |



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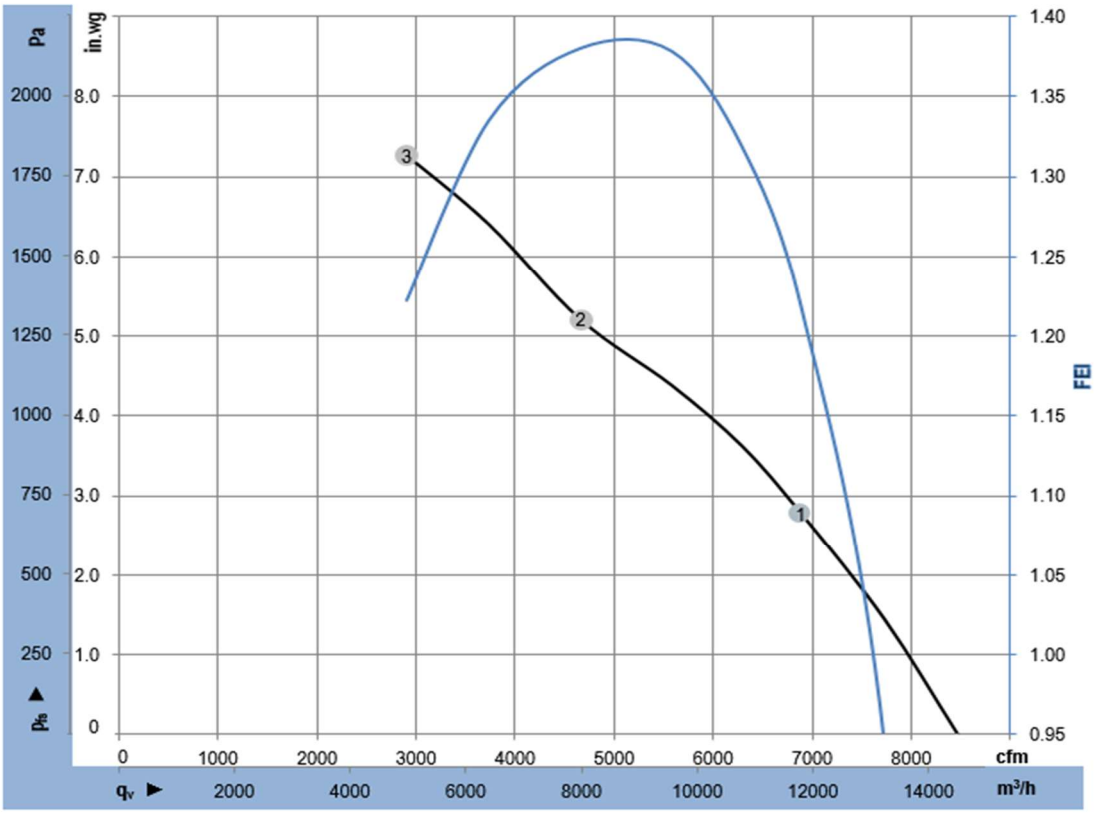


ρ = 0.075 lbm/ft³

Measurement: LU-1870

ebm-papst Inc. 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 | $q_v$ | $p_{fs}$ | FEI |
|---|---|---|---|---|---|---|---|---|---|
| | | V | Hz | rpm | W | A | cfm | in. wg | |
| 1 | 3~ | 460 | 60 | 2481 | 4250 | 5.7 | 6889 | 2.8 | 1.22 |
| 2 | 3~ | 460 | 60 | 2391 | 4521 | 6.2 | 4664 | 5.2 | 1.38 |
| 3 | 3~ | 460 | 60 | 2481 | 4509 | 6.0 | 2909 | 7.3 | 1.22 |

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

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



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**EG1R240450C**

# RadiPac - Modular EC Plenum Fan

with support bracket

**ebm-papst Inc.**
100 Hyde Road
Farmington, CT 06034
sales@us.ebmpapst.com
www.ebmpapst.us

## Nominal Data

| | | |
|---|---|---|
| Model | EG1R240450C | |
| Motor | M3G150-IF | |
| Phase | | 3~ |
| Nominal voltage | VAC | 230 |
| Nominal voltage range | VAC | 200-240 |
| Frequency | Hz | 50/60 |
| Method of obtaining data | | ml |
| Speed | rpm | 2600 |
| Power consumption | W | 5893 |
| Current draw | A | 15.6 |
| Min. ambient temp | °F (°C) | -13 (-25) |
| Max. ambient temp | °F (°C) | 104 (40) |

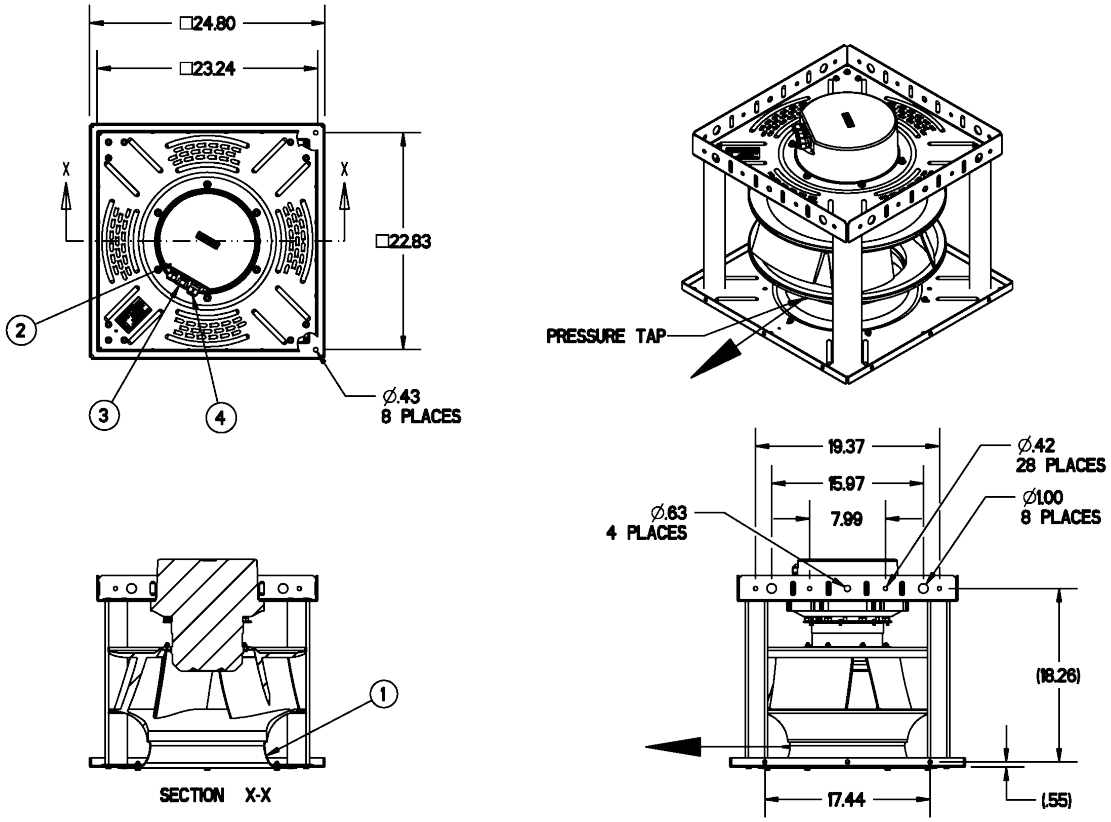
ml = Max. load (maximum fan input power over the range cataloged)
Subject to change

Speed (rpm) shown is nominal.
Performance is based on actual speed of test.

| Technical Description | |
|---|---|
| **Weight** | 126 lb (57.2 kg) |
| **Nominal Impeller Size** | 17.7 in (450 mm) |
| **Motor size** | 150 |
| **Rotor surface** | Painted black |
| **Impeller Material** | Sheet aluminum |
| **Support plate material** | Sheet steel, galvanized |
| **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 |
| **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** | - Output 10 VDC, max. 10 mA<br>- Output 20 VDC, max. 50 mA<br>- Output for slave 0-10 VDC<br>- Input for sensor 0-10 VDC or 4-20 mA<br>- External 24 VDC input (parameter setting)<br>- External release input<br>- Alarm relay<br>- Integrated PID controller<br>- Motor current limitation<br>- PFC, passive<br>- RS-485 MODBUS-RTU<br>- Soft start<br>- Control input 0-10 VDC / PWM<br>- Control interface with SELV potential safely disconnected from the mains<br>- Thermal overload protection for electronics/motor<br>- Line undervoltage / phase failure detection |
| **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** | Reverse polarity and locked-rotor 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 inches




| | |
|---|---|
| 1 | Inlet ring with pressure tap K-factor (m³/h & Pa): 240 (available on some variations) |
| 2 | Terminal cover tightening torque: 30.9± 4.4 in-lbs (3.5±0.5 Nm) |
| 3 | Cable diameter: 0.15-0.39 in (4-10 mm)<br>Cable gland tightening torque: 35.4±5.3 in-lbs (4±0.6 Nm) |
| 4 | Cable diameter: 0.35-0.62 in (9-16 mm)<br>Cable gland tightening torque: 53.1±7.9 in-lbs (6±0.9 Nm)<br>Please contact ebm-papst if conduit is required |
| | In a shaft horizontal orientation, the cable glands need to be located at the bottom and the cables must always be routed downwards |
| | Accessory part: Inlet finger guard p/n 79500-2-4039 (available on some variations) |
| | Accessory part: FlowGrid p/n 35506-2-2957 (not included in scope of delivery) |



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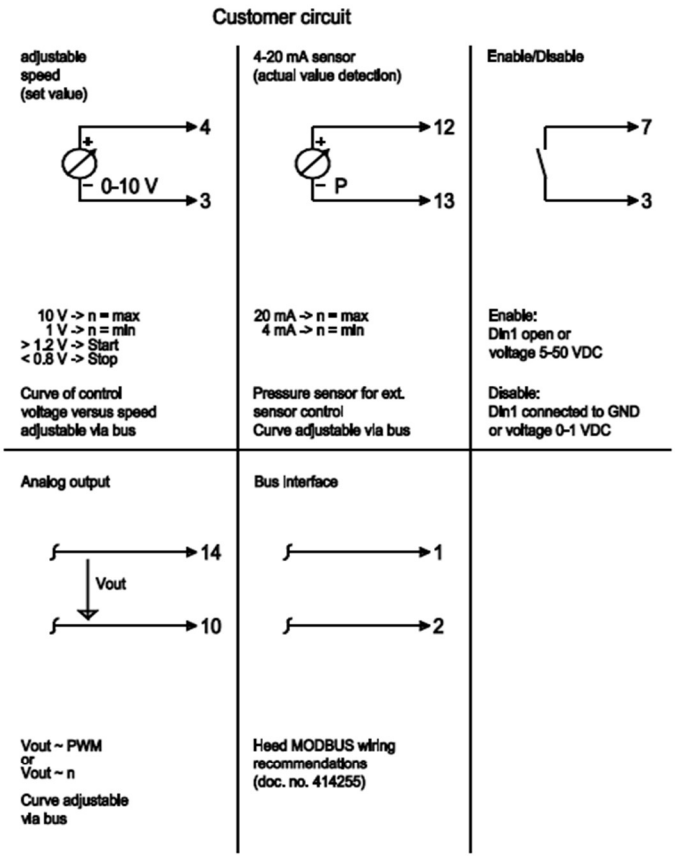
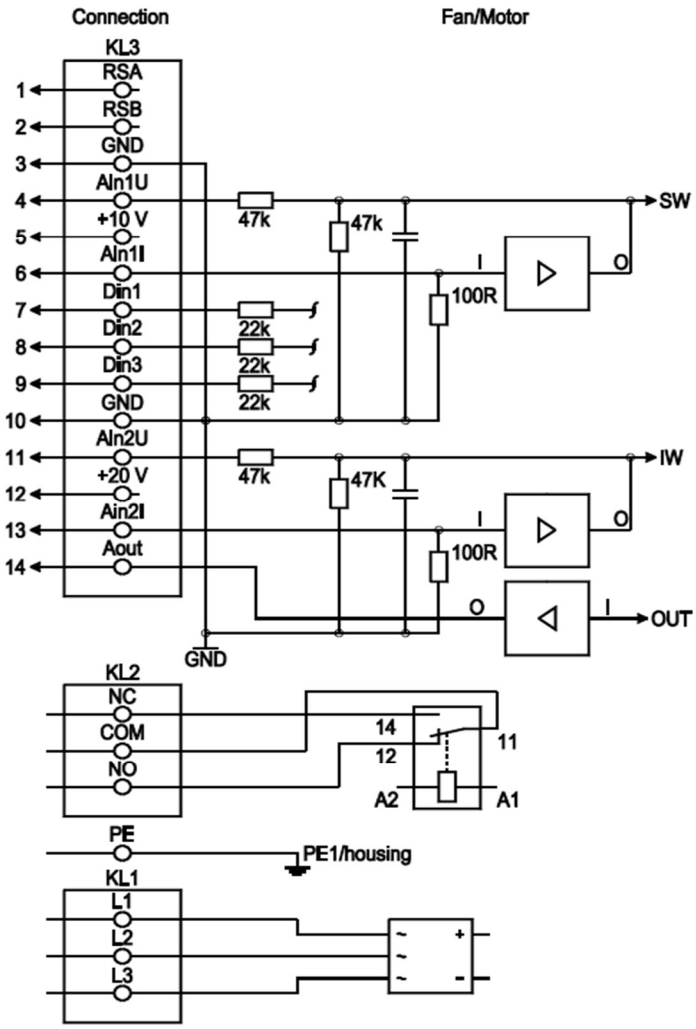
## Electrical Interface



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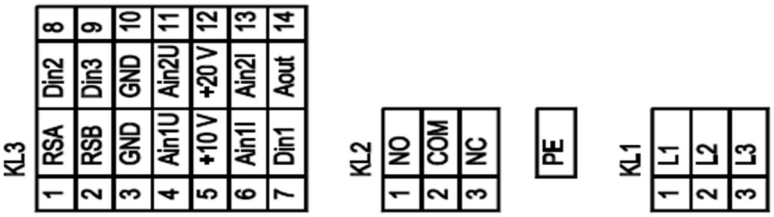
## Terminal assignment

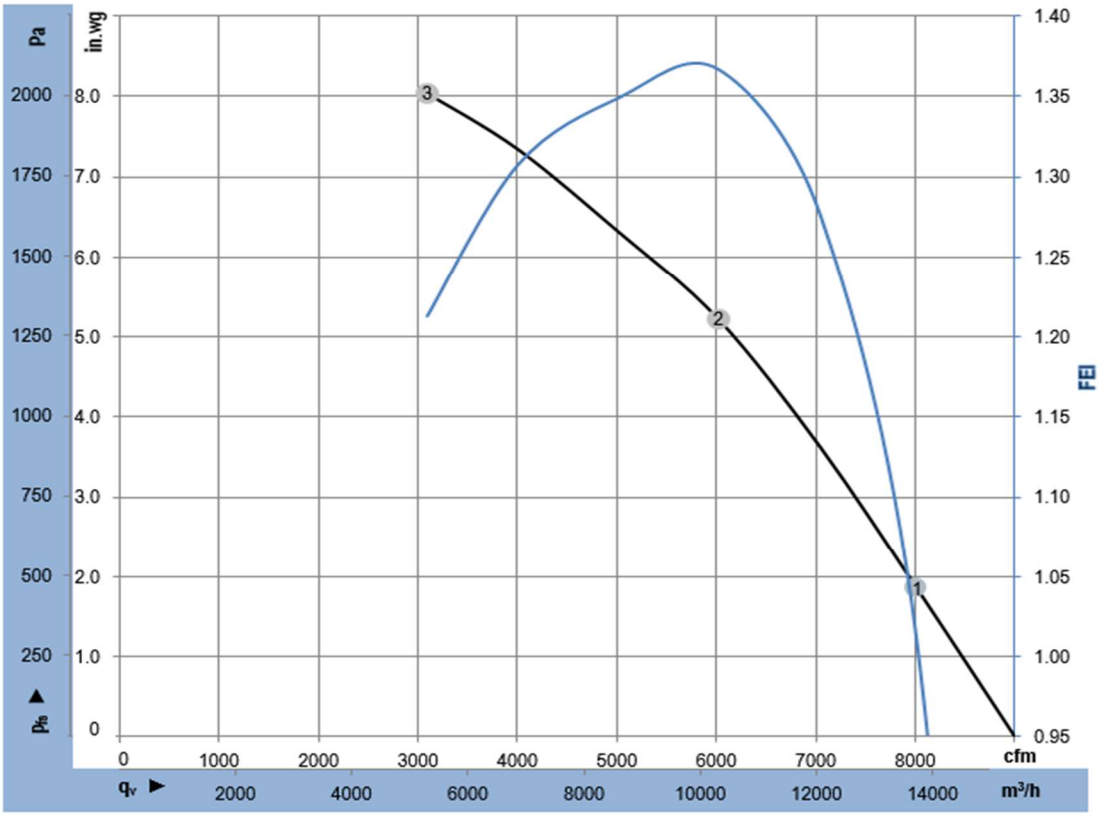
### Terminal box connection diagram




| No. | Conn. | Designation | Function/Assignment |
|---|---|---|---|
| KL1 | 1,2,3 | L1, L2, L3 | Power supply, phase, see nameplate for voltage range |
| PE | PE | PE | Protective earth |
| KL2 | 1 | NO | Status relay, floating status contact, make for failure |
| KL2 | 2 | COM | Status relay, floating status contact, changeover contact, common connection, contact rating, max. 250 VAC/2 A (AC1)/min. 10 mA |
| KL2 | 3 | NC | Status relay, floating status contact, break for failure |
| KL3 | 1 | RSA | Bus connection RS485, RSA, MODBUS RTU; SELV |
| KL3 | 2 | RSB | Bus connection RS485, RSB, MODBUS RTU; SELV |
| KL3 | 3/10 | GND | Reference ground for control interface; SELV |
| KL3 | 4 | Ain1 U | Analog input 1, set value: 0-10 V, Ri = 100 kΩ, adjustable curve, only usable as alternative to input Ain1 I; SELV |
| KL3 | 5 | + 10 V | Fixed voltage output 10 VDC, +10 V ± 3%, max. 10 mA, short-circuit-proof, power supply for external devices (e.g. pot); SELV |
| KL3<br>KL3 | 6 | Ain1 I | Analog input 1, set value: 4-20 mA, Ri = 100 Ω, adjustable curve, only usable as alternative to input Ain1 U; SELV |
| KL3 | 7 | Din1 | Digital input 1: enable electronics,<br>enable: pin open or applied voltage 5-50 VDC<br>disable: bridge to GND or applied voltage < 1 VDC<br>reset function: triggers software reset after a level change to < 1 VDC; SELV |
| KL3 | 8 | 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.<br>Parameter set 1: pin open or applied voltage 5-50 VDC<br>Parameter set 2: bridge to GND or applied voltage < 1 VDC; SELV |
| KL3 | 9 | 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<br>Normal: Pin open or applied voltage 5-50 VDC<br>Inverse: Bridge to GND or applied voltage < 1 VDC; SELV |
| KL3 | 11 | Ain2 U | Analog input 2, measured value: 0-10 V, Ri = 100 kΩ, adjustable curve, only usable as alternative to input Ain2 I; SELV |
| KL3 | 12 | + 20 V | Fixed voltage output 20 VDC, +20 V +25/-10%, max. 50 mA, short-circuit-proof, power supply for external devices (e.g. sensors); SELV<br>Alternatively: +24 VDC input for parameterization without line voltage |
| KL3 | 13 | Ain2 I | Analog input 2, measured value: 4-20 mA, Ri = 100 Ω, adjustable curve, only usable as alternative to input Ain2 U; SELV |
| KL3 | 14 | Aout | Analog output 0-10 VDC, max. 5 mA, output of current motor modulation level; adjustable curve; SELV |

# RadiPac - Modular EC Plenum Fan

with support bracket




ρ = 0.075 lbm/ft³

Measurement: LU-1890

ebm-papst Inc. 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 | $q_v$ | $p_{fs}$ | FEI |
|---|---|---|---|---|---|---|---|---|---|
| | | V | Hz | rpm | W | A | cfm | in. wg | |
| 1 | 3~ | 230 | 60 | 2599 | 4251 | 11.4 | 8025 | 1.8 | 1.01 |
| 2 | 3~ | 230 | 60 | 2601 | 5796 | 15.4 | 6023 | 5.2 | 1.37 |
| 3 | 3~ | 230 | 60 | 2601 | 5268 | 13.9 | 3097 | 8.0 | 1.21 |

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

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



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**EG1R480450C**

# RadiPac - Modular EC Plenum Fan

with support bracket

**ebm-papst Inc.**
100 Hyde Road
Farmington, CT 06034
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## Nominal Data

| | | |
|---|---|---|
| Model | EG1R480450C | |
| Motor | M3G150-IF | |
| Phase | | 3~ |
| Nominal voltage | VAC | 460 |
| Nominal voltage range | VAC | 400-480 |
| Frequency | Hz | 50/60 |
| Method of obtaining data | | ml |
| Speed | rpm | 2600 |
| Power consumption | W | 5851 |
| Current draw | A | 7.8 |
| 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** | 126 lb (57.2 kg) |
| **Nominal Impeller Size** | 17.7 in (450 mm) |
| **Motor size** | 150 |
| **Rotor surface** | Painted black |
| **Impeller Material** | Sheet aluminum |
| **Support plate material** | Sheet steel, galvanized |
| **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** | - Output 10 VDC, max. 10 mA<br>- Output for slave 0-10 VDC<br>- External 24 VDC input (parameter setting)<br>- External release input<br>- Alarm relay<br>- Integrated PID controller<br>- Power limiter<br>- Motor current limitation<br>- PFC, passive<br>- RS-485 MODBUS-RTU<br>- Soft start<br>- Control input 0-10 VDC<br>- Control interface with SELV potential safely disconnected from the mains<br>- Thermal overload protection for electronics/motor<br>- Line undervoltage / phase failure detection |
| **Touch current** | ≤ 3.5 mA (according to IEC60990; measuring circuit Fig.4, TN system) |
| **Motor protection** | Reverse polarity and locked-rotor protection |
| **Electrical hookup** | Terminal box |
| **Protection class** | I (with customer connection of protective earth) |
| **Conformity with standards** | EN 61800-5-1; CE |
| **Approvals** | UL1004-7 + 60730-1; EAC; CSA C22.2 No. 77 + CAN/CSA-E60730-1 |



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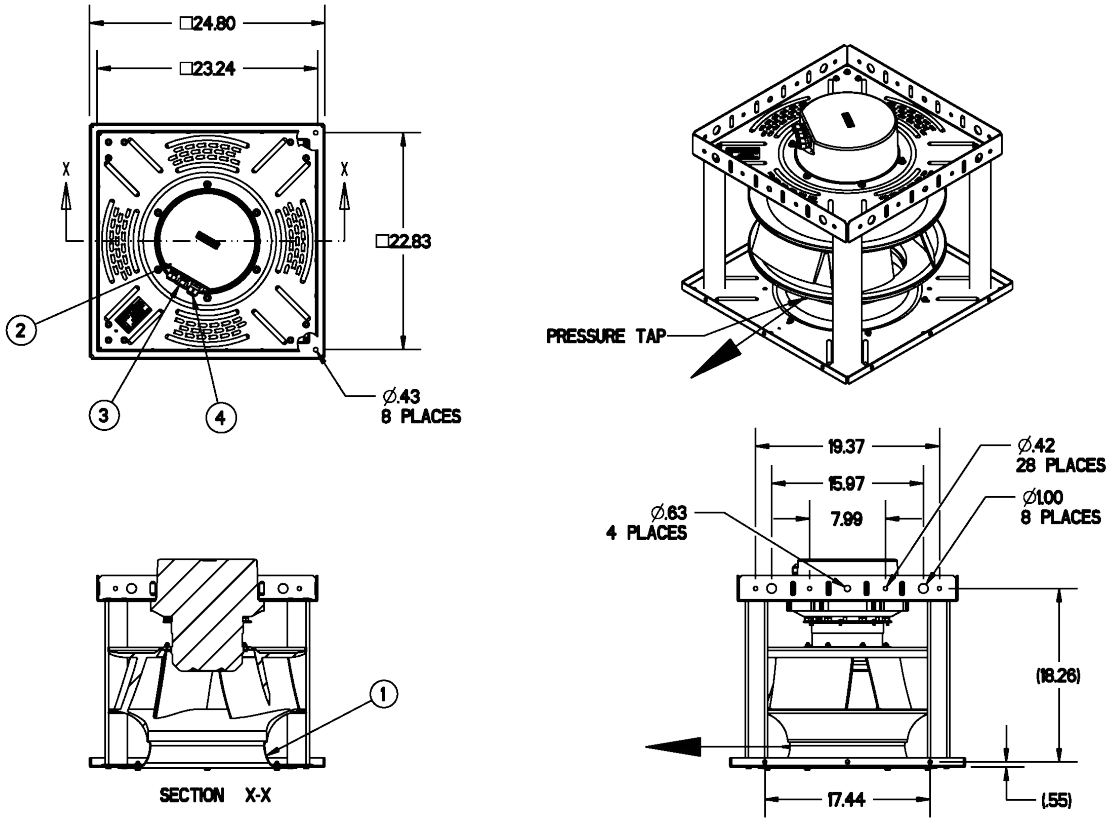
## Product drawing

Dimensions in inches




| | |
|---|---|
| 1 | Inlet ring with pressure tap K-factor (m³/h & Pa): 240 (available on some variations) |
| 2 | Terminal cover tightening torque: 30.9± 4.4 in-lbs (3.5±0.5 Nm) |
| 3 | Cable diameter: 0.15-0.39 in (4-10 mm)<br>Cable gland tightening torque: 35.4±5.3 in-lbs (4±0.6 Nm) |
| 4 | Cable diameter: 0.35-0.62 in (9-16 mm)<br>Cable gland tightening torque: 53.1±7.9 in-lbs (6±0.9 Nm)<br>Please contact ebm-papst if conduit is required |
| | In a shaft horizontal orientation, the cable glands need to be located at the bottom and the cables must always be routed downwards |
| | Accessory part: Inlet finger guard p/n 79500-2-4039 (available on some variations) |
| | Accessory part: FlowGrid p/n 35506-2-2957 (not included in scope of delivery) |



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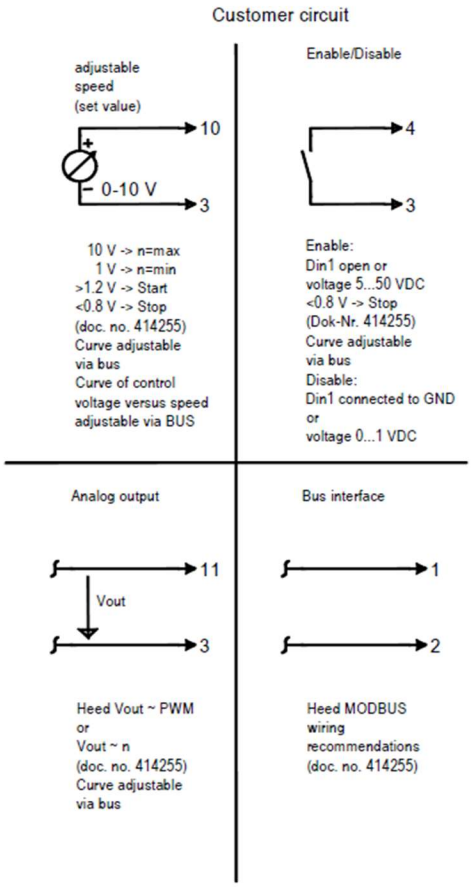
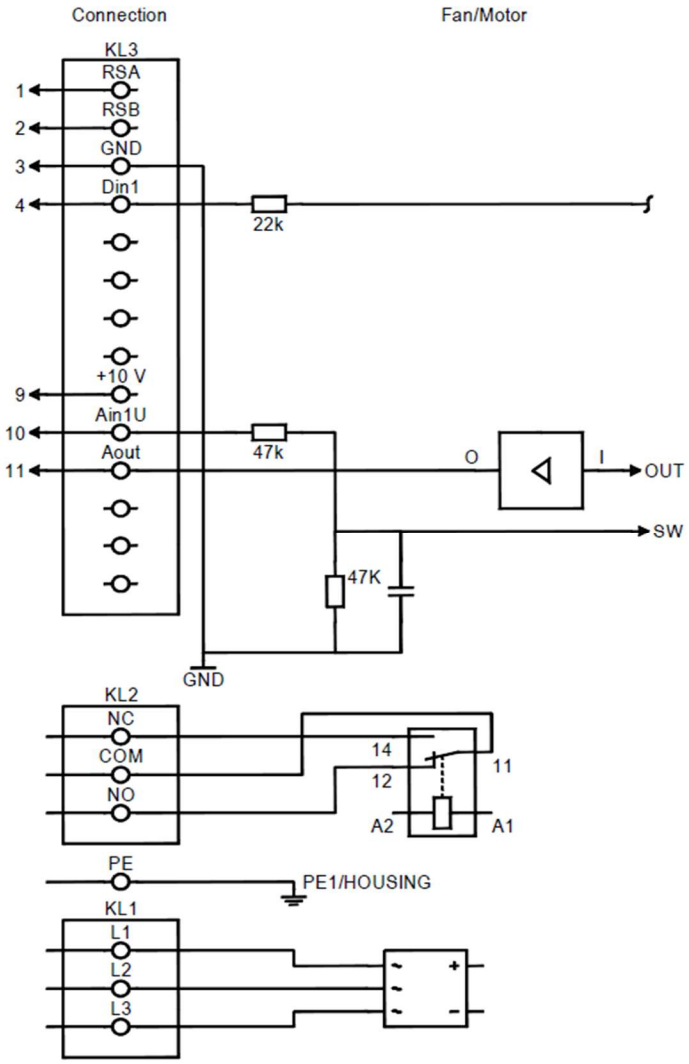
## Electrical Interface



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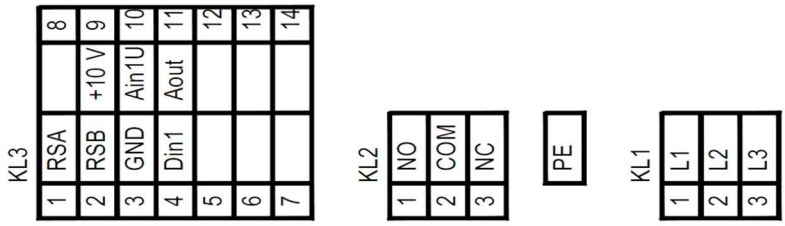
## Terminal assignment

Terminal box connection diagram




| No. | Conn. | Designation | Function/Assignment |
|---|---|---|---|
| KL1 | 1,2,3 | L1, L2, L3 | Power supply, phase, see nameplate for voltage range |
| PE | PE | PE | Protective earth |
| KL2 | 1 | NO | Status relay, floating status contact, option 1: make for failure, option 2: make for error for run monitor |
| KL2 | 2 | COM | Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA; basic insulation on supply side and reinforced insulation on control interface side |
| KL2 | 3 | NC | Status relay, floating status contact, option 1: break for failure, option 2: break for error message for run monitor |
| KL3 | 1 | RSA | RS485 interface for MODBUS, RSA; SELV |
| KL3 | 2 | RSB | RS485 interface for MODBUS, RSB; SELV |
| KL3 | 3 | GND | Reference ground for control interface; SELV |
| KL3 | 4 | Din1 | Digital input 1: enable electronics,<br>enable: pin open or applied voltage 5-50 VDC<br>disable: bridge to GND or applied voltage < 1 VDC<br>reset function: triggers software reset after a level change to < 1 VDC; SELV |
| KL3 | - | - | - |
| KL3 | - | - | - |
| KL3 | - | - | - |
| KL3 | - | - | - |
| KL3 | 9 | +10 V | Voltage output 10 V/max. 10 mA, power supply for external devices (e.g. potentiometers), SELV |
| KL3 | 10 | Ain1U | Analog input 1, set value: 0-10 VDC, Ri = 100 kΩ, adjustable curve; SELV |
| KL3 | 11 | Aout | Analog output 0-10 VDC, max. 5 mA, output of current motor modulation level / motor speed adjustable curve; SELV |
| KL3 | - | - | |
| KL3 | - | - | |
| KL3 | - | - | |



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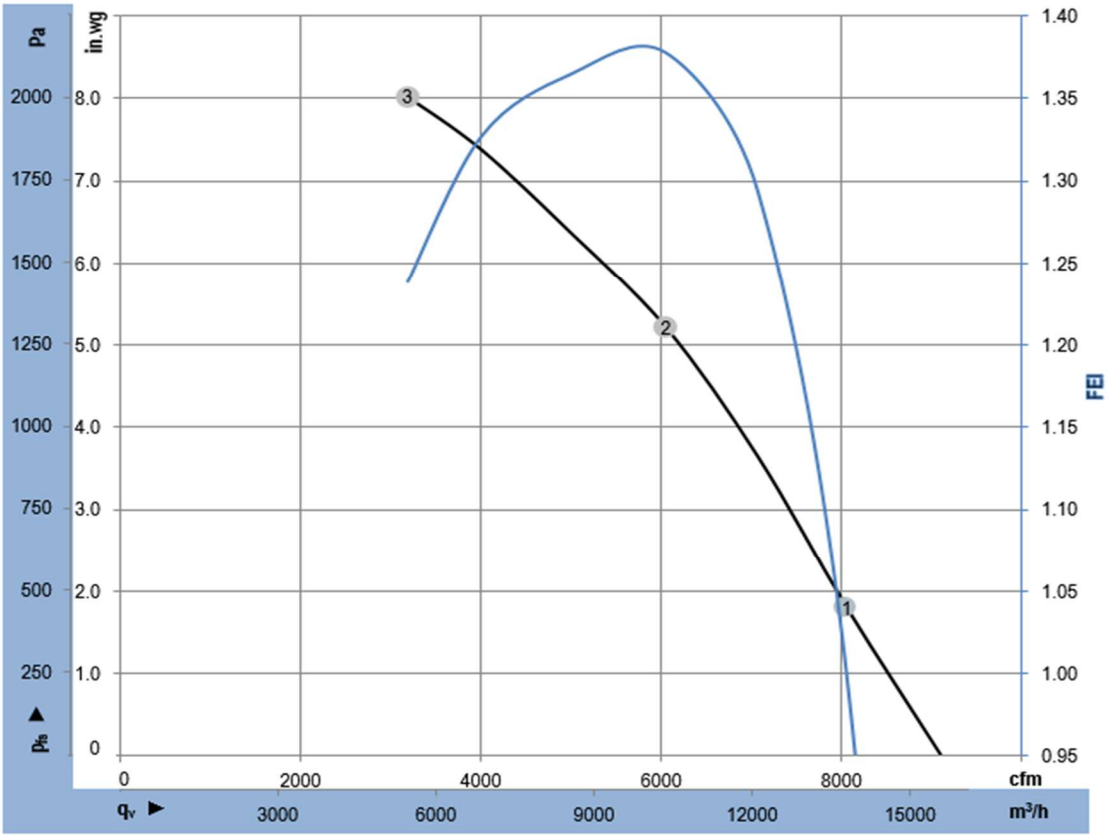
# RadiPac - Modular EC Plenum Fan

with support bracket




ρ = 0.075 lbm/ft³

Measurement: LU-1902

ebm-papst Inc. 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 | $q_v$ | $p_{fs}$ | FEI |
|---|---|---|---|---|---|---|---|---|---|
| | | V | Hz | rpm | W | A | cfm | in. wg | |
| 1 | 3~ | 460 | 60 | 2599 | 4218 | 5.7 | 8061 | 1.8 | 1.00 |
| 2 | 3~ | 460 | 60 | 2600 | 5772 | 7.7 | 6054 | 5.2 | 1.38 |
| 3 | 3~ | 460 | 60 | 2600 | 5287 | 7.1 | 3189 | 8.0 | 1.24 |

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

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



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**EG1R240500A**

# RadiPac - Modular EC Plenum Fan

with support bracket

**ebm-papst Inc.**
100 Hyde Road
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## Nominal Data

| | | |
|---|---|---|
| Model | EG1R240500A | |
| Motor | M3G150-FF | |
| Phase | | 3~ |
| Nominal voltage | VAC | 230 |
| Nominal voltage range | VAC | 200-240 |
| Frequency | Hz | 50/60 |
| Method of obtaining data | | ml |
| Speed | rpm | 1930 |
| Power consumption | W | 3911 |
| Current draw | A | 10.4 |
| 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.

# RadiPac - Modular EC Plenum Fan

with support bracket

| Technical Description | |
|---|---|
| **Weight** | 110 lb (49.9 kg) |
| **Nominal Impeller Size** | 19.7 in (500 mm) |
| **Motor size** | 150 |
| **Rotor surface** | Painted black |
| **Impeller Material** | Sheet aluminum |
| **Support plate material** | Sheet steel, galvanized |
| **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** | - Operation and alarm display with LED<br>- External 15-50 VDC input (parameterization)<br>- Alarm relay<br>- Integrated PI controller<br>- Configurable inputs/outputs (I/O)<br>- MODBUS V6<br>- Motor current limitation<br>- RFID - ISO 15693 compatible<br>- RS-485 MODBUS-RTU<br>- Soft start<br>- Voltage output 3.3-24 VDC, Pmax = 800 mW<br>- Control interface with SELV potential safely disconnected from the mains<br>- Thermal overload protection for electronics/motor<br>- Line undervoltage / phase failure detection |
| **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 |



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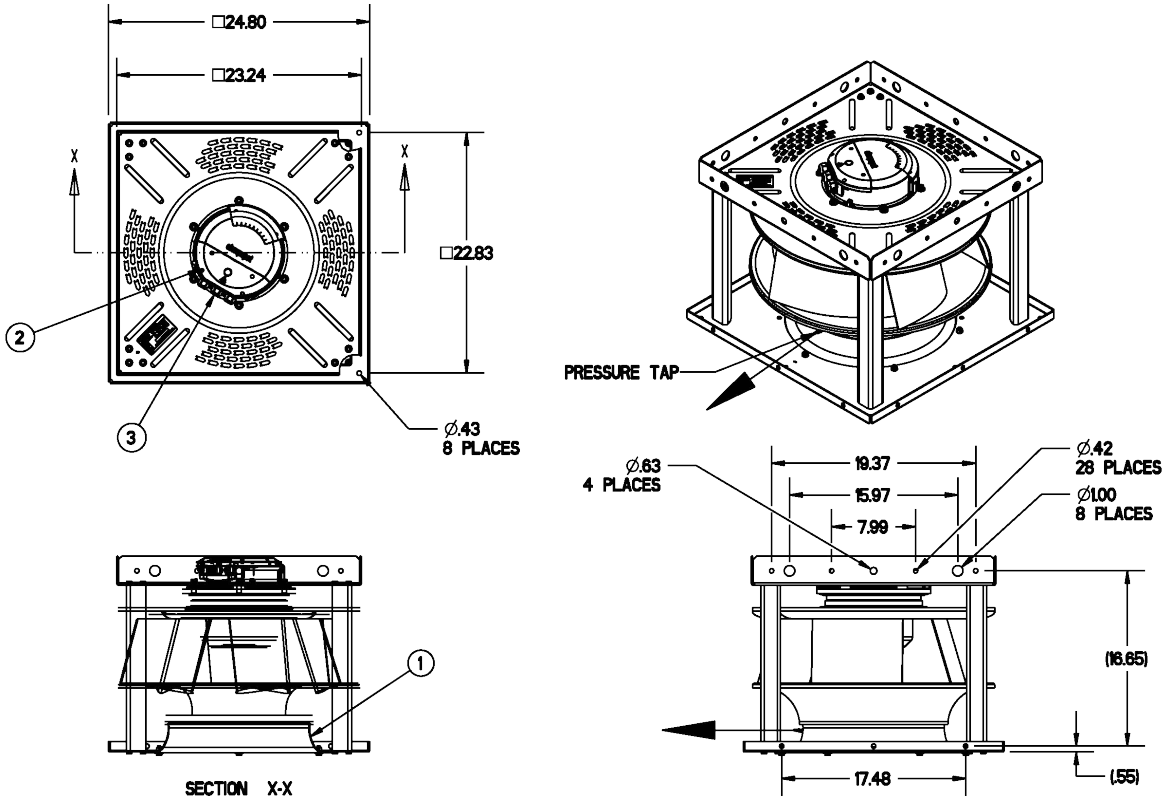
## Product drawing

Dimensions in inches




| | |
|---|---|
| 1 | Inlet ring with pressure tap K-factor (m³/h & Pa): 281 (available on some variations) |
| 2 | Terminal cover tightening torque: 13.2± 1.7 in-lbs (1.5±0.2 Nm) |
| 3 | Cable diameter: 0.15-0.39 in (4-10 mm)<br>Cable gland tightening torque: 35.4±5.3 in-lbs (4±0.6 Nm)<br>Please contact ebm-papst if conduit is required |
| | In a shaft horizontal orientation, the cable glands need to be located at the bottom and the cables must always be routed downwards |
| | Accessory part: Inlet finger guard p/n 79500-2-4039 (available on some variations) |
| | Accessory part: FlowGrid p/n 35506-2-2957 (not included in scope of delivery) |



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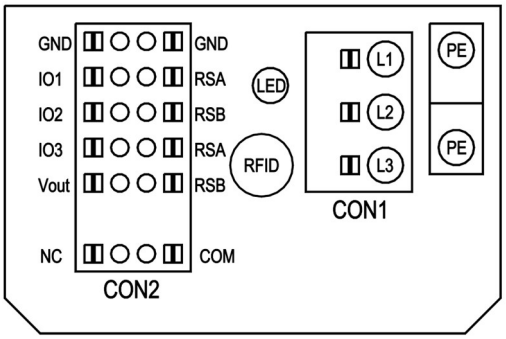
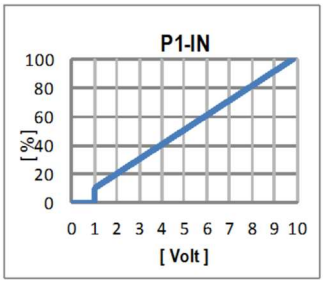
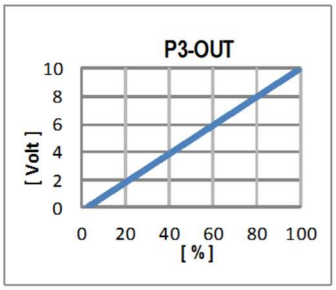
## Electrical Interface




| 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)<br>Factory setting:<br>Digital input - high active, function: Disable input, SELV<br>- inactive: Pin open or applied voltage < 1.5 VDC<br>- active: applied voltage 3.5-50 VDC<br>Reset function:Triggering of error reset on change of state from"enabled" to "disabled" |
| | CON2 | IO2 | Function parameterizable (see “Optional interface functions” table)<br>Factory setting:<br>Analog input 0-10 V / PWM, Ri=100 kΩ, function: Set value<br>Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV |
| | CON2 | IO3 | Function parameterizable (see “Optional interface functions” table)<br>Factory setting:<br>Analog output 0-10 V, max. 5 mA, function: Fan modulation level<br>Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV |
| | CON2 | Vout | Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable<br>Factory setting: 10 VDC<br>short-circuit-proof, supply for external devices, SELV<br>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,<br>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<br>orange: status = warning<br>red: status = failure |
| | | P1-IN | Input characteristic curve |
| | | P3-OUT | Output characteristic curve |



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## Terminal assignment

○ configurable option

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

| CON2 | configurable IO mode | electrical specification | MODBUS Register for IO mode configuration | configurable IO functions: normal / inverse | INPUT: source: set value | INPUT: source: sensor value | INPUT: switch: parameter set: #1 / #2 | INPUT: switch: control function: heating (pos.) / cooling (neg.) | INPUT: switch: direction of rotation: cw / ccw | INPUT: switch: set value source | INPUT: switch: fan enable / disable | OUTPUT: signal: tach out | OUTPUT: signal: diagnostics out | OUTPUT: signal: fan modulation level % | OUTPUT: signal: actual speed | OUTPUT: signal: system modulation level % | OUTPUT: signal: remote control output 0-10V | OUTPUT: pulse input for auto-adressing | OUTPUT: pulse output for auto-adressing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | D101 [...] | | D147 [...] | D104 [...] | D12E [...] | D148 [...] | D16C [...] | D16A [...] | (selected directly via IO mode) | (selected directly via IO mode) | D130 [0] | D130 [1] | D130 [2] | D130 [5] | D00C [1] | D130 [4] |
| IO1 | ○ **Din1 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>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) | Umax = 50VDC, Imax = 20mA, SELV | D158 [5] | | | | | | | | | ○ | | | | | | | |
| | ○ **Diagnostics out** (open collector output) | Umax = 50VDC, Imax = 20mA, SELV | D158 [6] | | | | | | | | | | ○ | | | | | | |
| IO2 | ○ **Din2 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>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] | | ○ | | | | | | | | | | | | | | |
| IO3 | ○ **Din3 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>not active: pin open or applied voltage < 1,5VDC | D15A [0] | | | | | ○ | ○ | ○ | ○ | | | | | | | | |
| | ○ **Din3 (active low)**: digital input | active: applied voltage < 1,5VDC, SELV<br>not active: pin open or applied voltage 3,5-50VDC | D15A [1] | | | | ○ | | | | | | | | | | | | |
| | ○ **PWMin3**: digital input idle level high | PWM = 40Hz - 10kHz, characteristics parameterizable<br>active: pin open or applied voltage 3,5-50VDC<br>not active: applied voltage < 1,5VDC, SELV | D15A [7] | | ○ | | | | | | | | | | | | | | |
| | ○ **PWMin3**: digital input idle level low | 40Hz - 10kHz, characteristics parameterizable<br>active: applied voltage 3,5-50VDC<br>not active: pin open or applied voltage < 1,5VDC, SELV | D15A [8] | | ○ | | | | | | | | | | | | | | |
| | ○ **Aout3 0-10V** analog output | function parameterizable, 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] | | | | | | | | | ○ | | | | | | | |
| | ○ **Diagnostics out** (pulses) | 0-10V max. 5mA, max output frequency 300Hz, SELV | D15A [6] | | | | | | | | | | ○ | | | | | | |
| RSA<br>RSB | RS485 bus connection, | MODBUS RTU, specification V6.3, SELV | | | ○ | | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| Vout | voltage output | voltage parameterizable 3,3...24VDC +/- 5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV | D16E [...] | | | | | | | | | | | | | | | | |
| | alternatively: Input auxiliary power supply for parameterization via RS485/MODBUS RTU without line voltage | 15...50VDC | | | | | | | | | | | | | | | | | |



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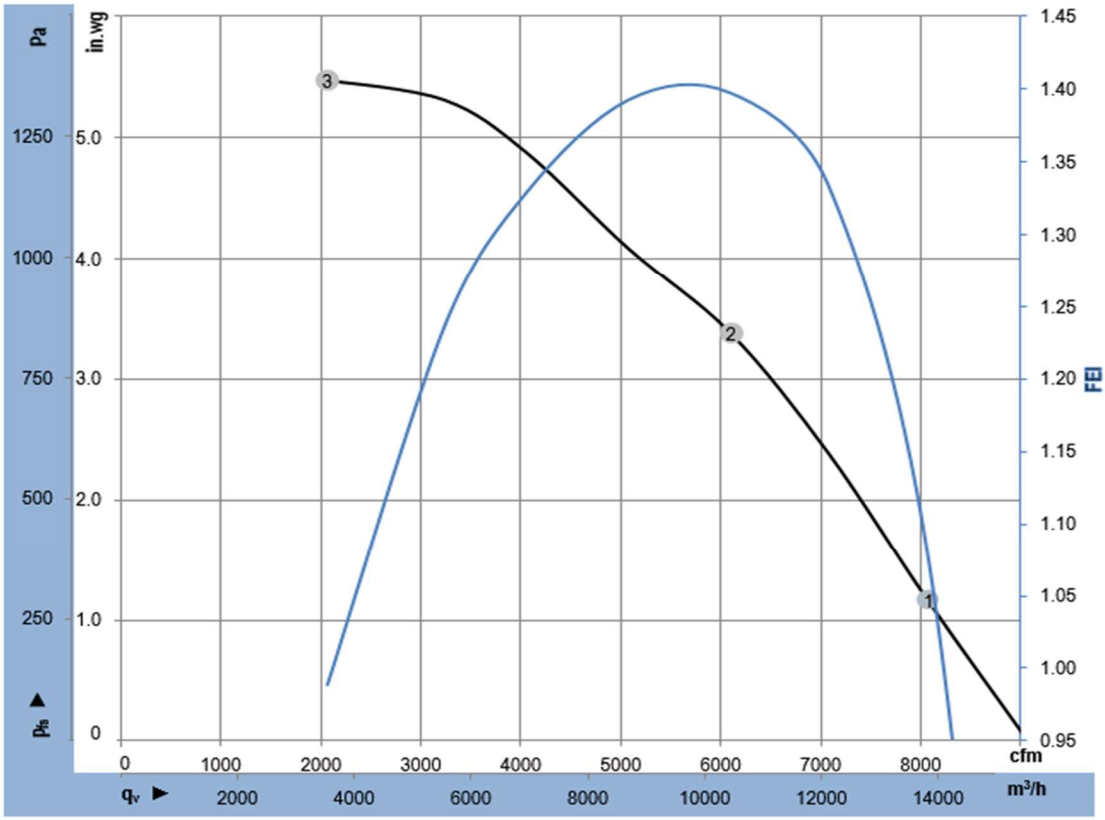


ρ = 0.075 lbm/ft³

Measurement: LU-1987

ebm-papst Inc. 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 | $q_v$ | $p_{fs}$ | FEI |
|---|---|---|---|---|---|---|---|---|---|
| | | V | Hz | rpm | W | A | cfm | in. wg | |
| 1 | 3~ | 230 | 60 | 1936 | 2825 | 7.6 | 8085 | 1.2 | 1.07 |
| 2 | 3~ | 230 | 60 | 1934 | 3911 | 10.4 | 6102 | 3.4 | 1.40 |
| 3 | 3~ | 230 | 60 | 1936 | 3215 | 8.6 | 2068 | 5.5 | 0.99 |

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

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



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**EG1R480500A**

# RadiPac - Modular EC Plenum Fan

with support bracket

**ebm-papst Inc.**
100 Hyde Road
Farmington, CT 06034
sales@us.ebmpapst.com
www.ebmpapst.us

## Nominal Data

| | | |
|---|---|---|
| Model | EG1R480500A | |
| Motor | M3G150-IF | |
| Phase | | 3~ |
| Nominal voltage | VAC | 460 |
| Nominal voltage range | VAC | 400-480 |
| Frequency | Hz | 50/60 |
| Method of obtaining data | | ml |
| Speed | rpm | 2000 |
| Power consumption | W | 4177 |
| Current draw | A | 5.6 |
| Min. ambient temp | °F (°C) | -40 (-40) |
| Max. ambient temp | °F (°C) | 113 (45) |

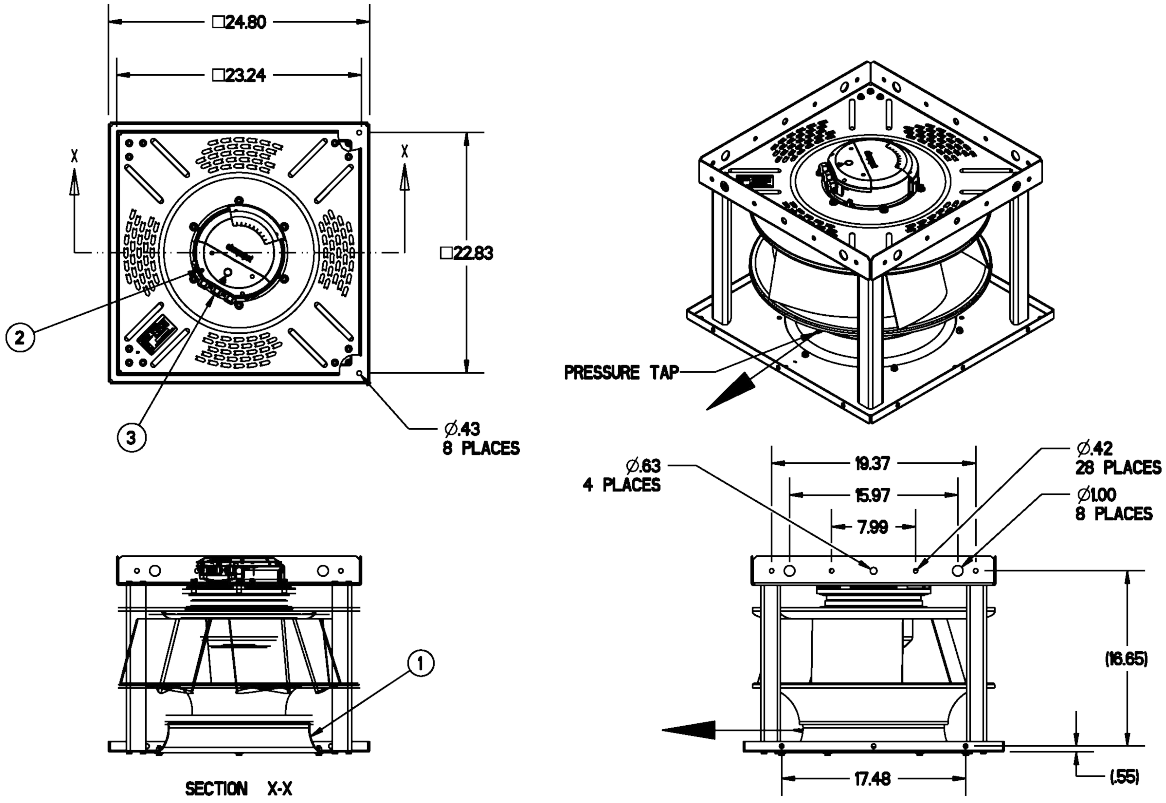
ml = Max. load (maximum fan input power over the range cataloged)
Subject to change

Speed (rpm) shown is nominal.
Performance is based on actual speed of test.

| Technical Description | |
|---|---|
| **Weight** | 110 lb (49.9 kg) |
| **Nominal Impeller Size** | 19.7 in (500 mm) |
| **Motor size** | 150 |
| **Rotor surface** | Painted black |
| **Impeller Material** | Sheet aluminum |
| **Support plate material** | Sheet steel, galvanized |
| **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** | - Operation and alarm display with LED<br>- External 15-50 VDC input (parameterization)<br>- Alarm relay<br>- Integrated PI controller<br>- Configurable inputs/outputs (I/O)<br>- MODBUS V6<br>- Motor current limitation<br>- RFID - ISO 15693 compatible<br>- RS-485 MODBUS-RTU<br>- Soft start<br>- Voltage output 3.3-24 VDC, Pmax = 800 mW<br>- Control interface with SELV potential safely disconnected from the mains<br>- Thermal overload protection for electronics/motor<br>- Line undervoltage / phase failure detection |
| **EMC immunity to interference** | According to EN 61000-6-2 (industrial environment) |
| **EMC interference emission** | According to EN 61000-6-3 (household 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 inches




| | |
|---|---|
| 1 | Inlet ring with pressure tap K-factor (m³/h & Pa): 281 (available on some variations) |
| 2 | Terminal cover tightening torque: 13.2± 1.7 in-lbs (1.5±0.2 Nm) |
| 3 | Cable diameter: 0.15-0.39 in (4-10 mm)<br>Cable gland tightening torque: 35.4±5.3 in-lbs (4±0.6 Nm)<br>Please contact ebm-papst if conduit is required |
| | In a shaft horizontal orientation, the cable glands need to be located at the bottom and the cables must always be routed downwards |
| | Accessory part: Inlet finger guard p/n 79500-2-4039 (available on some variations) |
| | Accessory part: FlowGrid p/n 35506-2-2957 (not included in scope of delivery) |



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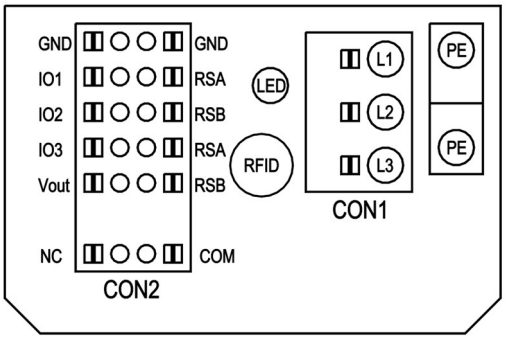
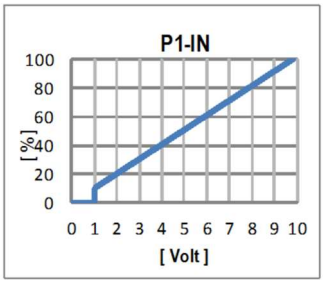
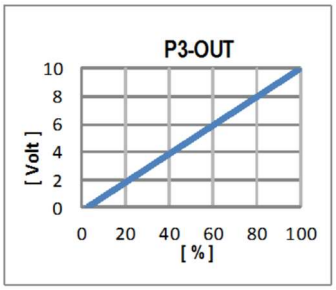
## Electrical Interface




| 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)<br>Factory setting:<br>Digital input - high active, function: Disable input, SELV<br>- inactive: Pin open or applied voltage < 1.5 VDC<br>- active: applied voltage 3.5-50 VDC<br>Reset function:Triggering of error reset on change of state from"enabled" to "disabled" |
| | CON2 | IO2 | Function parameterizable (see “Optional interface functions” table)<br>Factory setting:<br>Analog input 0-10 VDC / PWM, Ri=100 kΩ, function: Set value<br>Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV |
| | CON2 | IO3 | Function parameterizable (see “Optional interface functions” table)<br>Factory setting:<br>Analog output 0-10 VDC, max. 5 mA, function: Fan modulation level<br>Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV |
| | CON2 | Vout | Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable<br>Factory setting: 10 VDC<br>short-circuit-proof, supply for external devices, SELV<br>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,<br>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<br>orange: status = warning<br>red: status = failure |
| | | P1-IN | Input characteristic curve |
| | | P3-OUT | Output characteristic curve |



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## Terminal assignment

○ configurable option

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

| CON2 | configurable IO mode | electrical specification | MODBUS Register for IO mode configuration | configurable IO functions: normal / inverse | INPUT | | | | | | | | OUTPUT | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | D101 [...] | D147 [...] | D104 [...] | D12E [...] | D148 [...] | D16C [...] | D16A [...] | (selected directly via IO mode) | D130 [0] | D130 [1] | D130 [2] | D130 [5] | D00C [1] | D130 [4] | | |
| | | | | | source: set value | source: sensor value | switch: parameter set: #1 / #2 | switch: control function: heating (pos.) / cooling (neg.) | switch: direction of rotation: cw / ccw | switch: set value source | switch: fan enable / disable | signal: tach out | signal: fan modulation level % | signal: actual speed | signal: system modulation level % | signal: remote control output 0-10V | pulse input for auto-adressing | pulse output for auto-adressing | | |
| IO1 | ○ **Din1 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>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) | Umax = 50VDC, Imax = 20mA, SELV | D158 [5] | | | | | | | | | ○ | | | | | | | | |
| | ○ **Diagnostics out** (open collector output) | Umax = 50VDC, Imax = 20mA, SELV | D158 [6] | | | | | | | | | | | | | | | | ○ | |
| IO2 | ○ **Din2 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>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] | | | ○ | | | | | | | | | | | | | | |
| IO3 | ○ **Din3 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>not active: pin open or applied voltage < 1,5VDC | D15A [0] | | | | ○ | ○ | ○ | ○ | ○ | | | | | | | | | |
| | ○ **Din3 (active low)**: digital input | active: applied voltage < 1,5VDC, SELV<br>not active: pin open or applied voltage 3,5-50VDC | D15A [1] | | | | ○ | ○ | ○ | ○ | ○ | | | | | | | | | |
| | ○ **PWMin3**: digital input idle level high | PWM = 40Hz - 10kHz, characteristics parameterizable<br>active: pin open or applied voltage 3,5-50VDC<br>not active: applied voltage < 1,5VDC, SELV | D15A [7] | | ○ | | | | | | | | | | | | | | | |
| | ○ **PWMin3**: digital input idle level low | 40Hz - 10kHz, characteristics parameterizable<br>active: applied voltage 3,5-50VDC<br>not active: pin open or applied voltage < 1,5VDC, SELV | D15A [8] | | ○ | | | | | | | | | | | | | | | |
| | ○ **Aout3 0-10V**: analog output | function parameterizable, 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] | | | | | | | | | ○ | | | | | | | | |
| | ○ **Diagnostics out** (pulses) | 0-10V max. 5mA, max output frequency 300Hz, SELV | D15A [6] | | | | | | | | | | | | | | | | ○ | |
| RSA<br>RSB | RS485 bus connection, | MODBUS RTU, specification V6.3, SELV | | | ○ | | ○ | ○ | ○ | ○ | ○ | | | | | | | | | |
| Vout | voltage output | voltage parameterizable 3,3...24VDC +/- 5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV | D16E [...] | | | | | | | | | | | | | | | | | |
| | alternatively: Input auxiliary power supply for parameterization via RS485/MODBUS RTU without line voltage | 15...50VDC | | | | | | | | | | | | | | | | | | |



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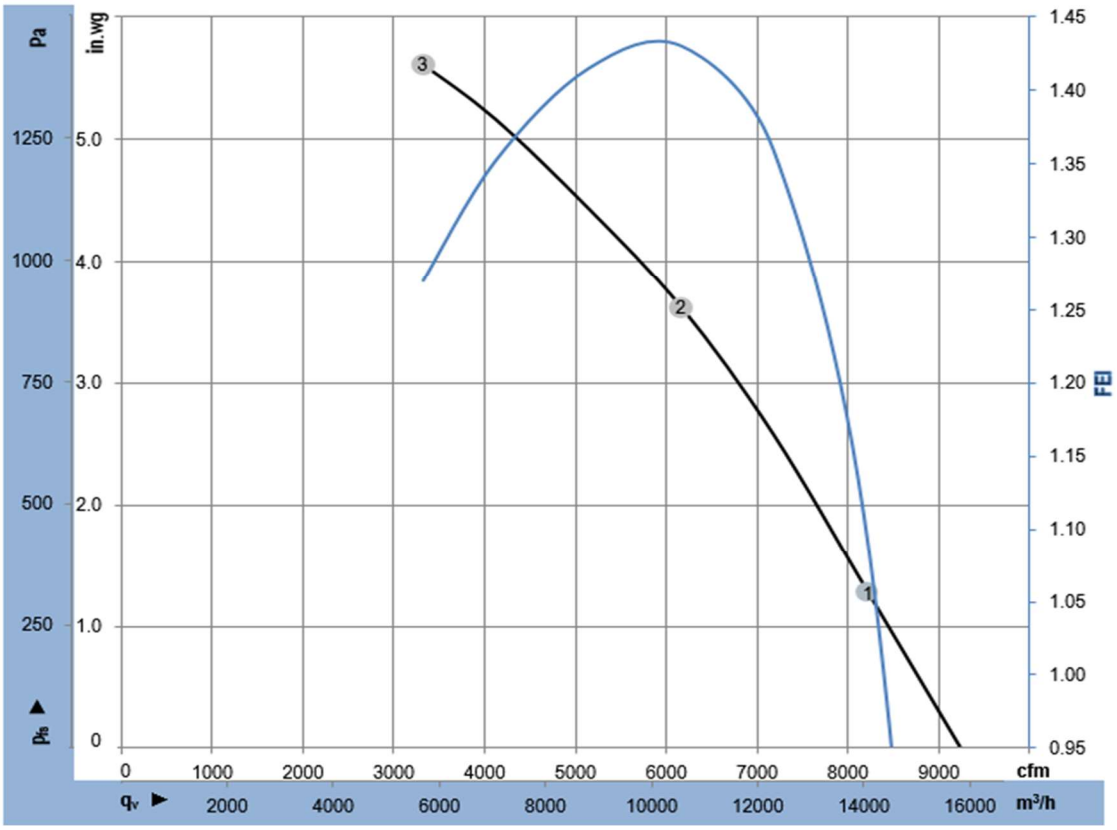
# RadiPac - Modular EC Plenum Fan

with support bracket




ρ = 0.075 lbm/ft³

Measurement: LU-2072

ebm-papst Inc. 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 | $q_v$ | $p_{fs}$ | FEI |
|---|---|---|---|---|---|---|---|---|---|
| | | V | Hz | rpm | W | A | cfm | in. wg | |
| 1 | 3~ | 460 | 60 | 1996 | 3033 | 4.1 | 8226 | 1.3 | 1.09 |
| 2 | 3~ | 460 | 60 | 1996 | 4091 | 5.5 | 6161 | 3.6 | 1.43 |
| 3 | 3~ | 460 | 60 | 2000 | 3860 | 5.2 | 3319 | 5.6 | 1.27 |

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

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



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**EG1R240500C**

# RadiPac - Modular EC Plenum Fan

with support bracket

**ebm-papst Inc.**
100 Hyde Road
Farmington, CT 06034
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www.ebmpapst.us

## Nominal Data

| | | |
|---|---|---|
| Model | EG1R240500C | |
| Motor | M3G150-IF | |
| Phase | | 3~ |
| Nominal voltage | VAC | 230 |
| Nominal voltage range | VAC | 200-240 |
| Frequency | Hz | 50/60 |
| Method of obtaining data | | ml |
| Speed | rpm | 2250 |
| Power consumption | W | 6297 |
| Current draw | A | 16.8 |
| Min. ambient temp | °F (°C) | -13 (-25) |
| Max. ambient temp | °F (°C) | 104 (40) |

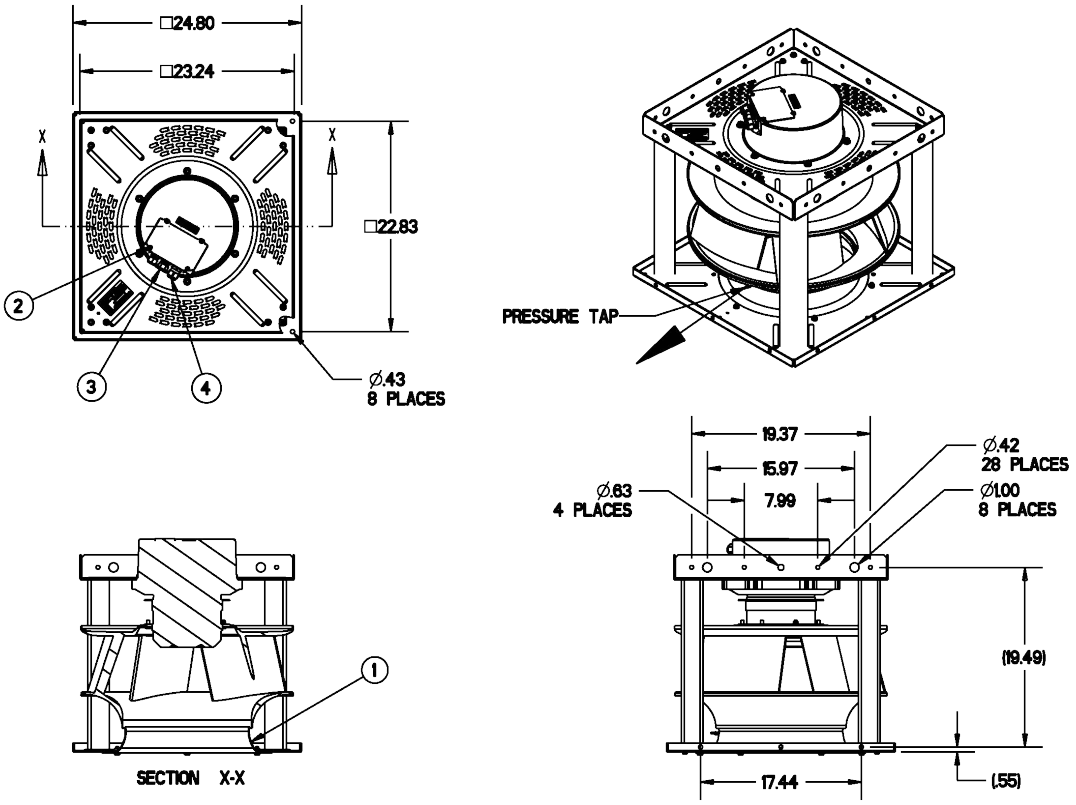
ml = Max. load (maximum fan input power over the range cataloged)
Subject to change

Speed (rpm) shown is nominal.
Performance is based on actual speed of test.

| Technical Description | |
|---|---|
| **Weight** | 132 lb (59.9 kg) |
| **Nominal Impeller Size** | 19.7 in (500 mm) |
| **Motor size** | 150 |
| **Rotor surface** | Painted black |
| **Impeller Material** | Sheet aluminum |
| **Support plate material** | Sheet steel, galvanized |
| **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 |
| **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** | - Output 10 VDC, max. 10 mA<br>- Output 20 VDC, max. 50 mA<br>- Output for slave 0-10 VDC<br>- Input for sensor 0-10 VDC or 4-20 mA<br>- External 24 VDC input (parameter setting)<br>- External release input<br>- Alarm relay<br>- Integrated PID controller<br>- Motor current limitation<br>- PFC, passive<br>- RS-485 MODBUS-RTU<br>- Soft start<br>- Control input 0-10 VDC / PWM<br>- Control interface with SELV potential safely disconnected from the mains<br>- Thermal overload protection for electronics/motor<br>- Line undervoltage / phase failure detection |
| **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** | Reverse polarity and locked-rotor 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 inches




| | |
|---|---|
| 1 | Inlet ring with pressure tap K-factor (m³/h & Pa): 281 (available on some variations) |
| 2 | Terminal cover tightening torque: 30.9± 4.4 in-lbs (3.5±0.5 Nm) |
| 3 | Cable diameter: 0.15-0.39 in (4-10 mm)<br>Cable gland tightening torque: 35.4±5.3 in-lbs (4±0.6 Nm) |
| 4 | Cable diameter: 0.35-0.62 in (9-16 mm)<br>Cable gland tightening torque: 53.1±7.9 in-lbs (6±0.9 Nm)<br>Please contact ebm-papst if conduit is required |
| | In a shaft horizontal orientation, the cable glands need to be located at the bottom and the cables must always be routed downwards |
| | Accessory part: Inlet finger guard p/n 79500-2-4039 (available on some variations) |
| | Accessory part: FlowGrid p/n 35506-2-2957 (not included in scope of delivery) |



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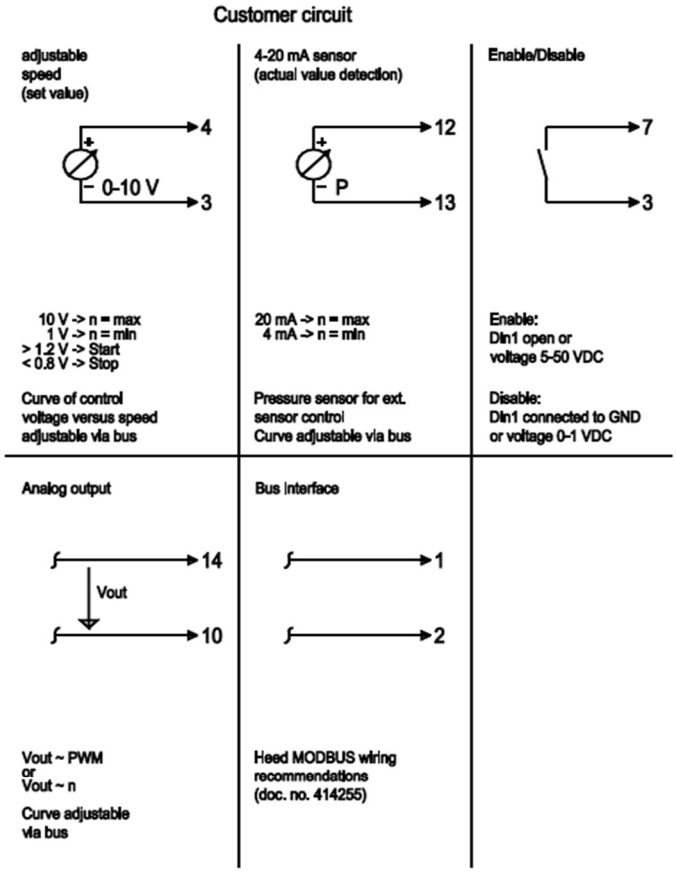
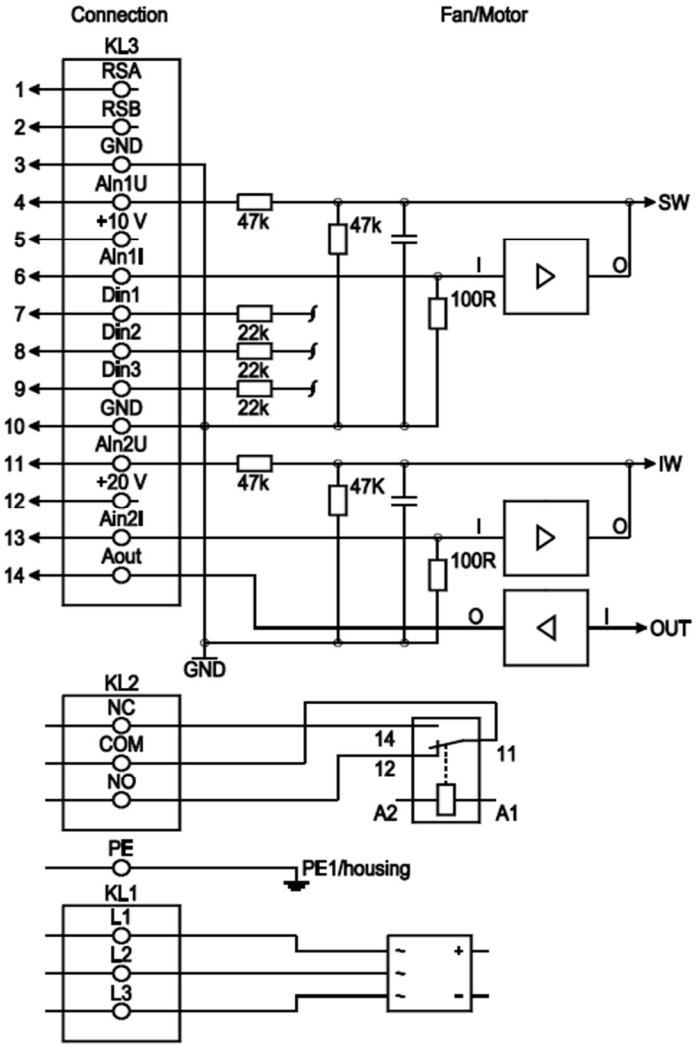
## Electrical Interface



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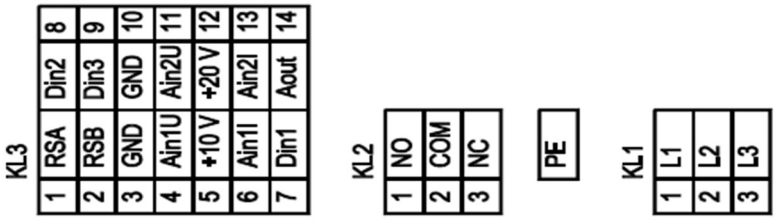
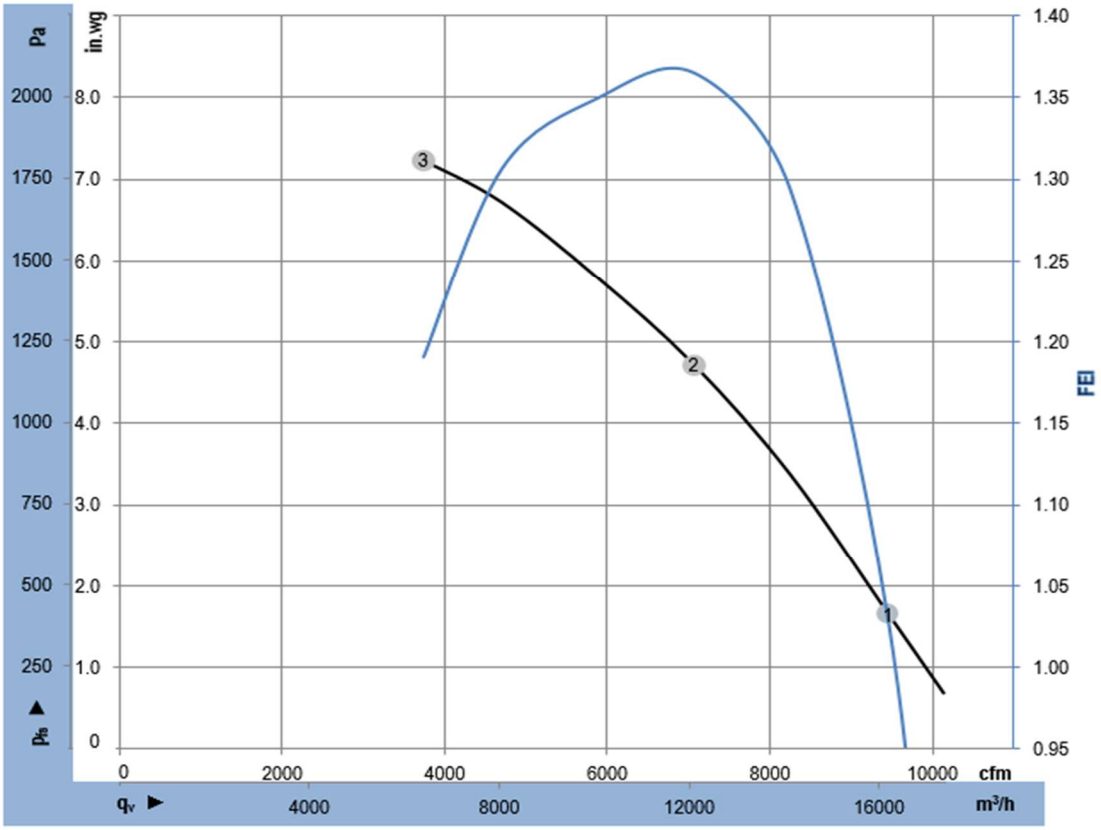
## Terminal assignment

### Terminal box connection diagram




| No. | Conn. | Designation | Function/Assignment |
|---|---|---|---|
| KL1 | 1,2,3 | L1, L2, L3 | Power supply, phase, see nameplate for voltage range |
| PE | PE | PE | Protective earth |
| KL2 | 1 | NO | Status relay, floating status contact, make for failure |
| KL2 | 2 | COM | Status relay, floating status contact, changeover contact, common connection, contact rating, max. 250 VAC/2 A (AC1)/min. 10 mA |
| KL2 | 3 | NC | Status relay, floating status contact, break for failure |
| KL3 | 1 | RSA | Bus connection RS485, RSA, MODBUS RTU; SELV |
| KL3 | 2 | RSB | Bus connection RS485, RSB, MODBUS RTU; SELV |
| KL3 | 3/10 | GND | Reference ground for control interface; SELV |
| KL3 | 4 | Ain1 U | Analog input 1, set value: 0-10 V, Ri = 100 kΩ, adjustable curve, only usable as alternative to input Ain1 I; SELV |
| KL3 | 5 | + 10 V | Fixed voltage output 10 VDC, +10 V ± 3%, max. 10 mA, short-circuit-proof, power supply for external devices (e.g. pot); SELV |
| KL3<br>KL3 | 6 | Ain1 I | Analog input 1, set value: 4-20 mA, Ri = 100 Ω, adjustable curve, only usable as alternative to input Ain1 U; SELV |
| KL3 | 7 | Din1 | Digital input 1: enable electronics,<br>enable: pin open or applied voltage 5-50 VDC<br>disable: bridge to GND or applied voltage < 1 VDC<br>reset function: triggers software reset after a level change to < 1 VDC; SELV |
| KL3 | 8 | 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.<br>Parameter set 1: pin open or applied voltage 5-50 VDC<br>Parameter set 2: bridge to GND or applied voltage < 1 VDC; SELV |
| KL3 | 9 | 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<br>Normal: Pin open or applied voltage 5-50 VDC<br>Inverse: Bridge to GND or applied voltage < 1 VDC; SELV |
| KL3 | 11 | Ain2 U | Analog input 2, measured value: 0-10 V, Ri = 100 kΩ, adjustable curve, only usable as alternative to input Ain2 I; SELV |
| KL3 | 12 | + 20 V | Fixed voltage output 20 VDC, +20 V +25/-10%, max. 50 mA, short-circuit-proof, power supply for external devices (e.g. sensors); SELV<br>Alternatively: +24 VDC input for parameterization without line voltage |
| KL3 | 13 | Ain2 I | Analog input 2, measured value: 4-20 mA, Ri = 100 Ω, adjustable curve, only usable as alternative to input Ain2 U; SELV |
| KL3 | 14 | Aout | Analog output 0-10 VDC, max. 5 mA, output of current motor modulation level; adjustable curve; SELV |




ρ = 0.075 lbm/ft³

Measurement: LU-2077

ebm-papst Inc. 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 | $q_v$ | $p_{fs}$ | FEI |
|---|---|---|---|---|---|---|---|---|---|
| | | V | Hz | rpm | W | A | cfm | in. wg | |
| 1 | 3~ | 230 | 60 | 2251 | 4439 | 11.8 | 9456 | 1.6 | 1.03 |
| 2 | 3~ | 230 | 60 | 2248 | 6147 | 16.3 | 7061 | 4.7 | 1.36 |
| 3 | 3~ | 230 | 60 | 2248 | 5765 | 15.3 | 3737 | 7.2 | 1.19 |

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

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



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**EG1R480500C**

# RadiPac - Modular EC Plenum Fan

with support bracket

**ebm-papst Inc.**
100 Hyde Road
Farmington, CT 06034
sales@us.ebmpapst.com
www.ebmpapst.us

## Nominal Data

| | | |
|---|---|---|
| Model | EG1R480500C | |
| Motor | M3G150-IF | |
| Phase | | 3~ |
| Nominal voltage | VAC | 460 |
| Nominal voltage range | VAC | 400-480 |
| Frequency | Hz | 50/60 |
| Method of obtaining data | | ml |
| Speed | rpm | 2255 |
| Power consumption | W | 6292 |
| Current draw | A | 8.4 |
| 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.

# RadiPac - Modular EC Plenum Fan

with support bracket

| Technical Description | |
|---|---|
| **Weight** | 132 lb (59.9 kg) |
| **Nominal Impeller Size** | 19.7 in (500 mm) |
| **Motor size** | 150 |
| **Rotor surface** | Painted black |
| **Impeller Material** | Sheet aluminum |
| **Support plate material** | Sheet steel, galvanized |
| **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** | - Output 10 VDC, max. 10 mA<br>- Output for slave 0-10 VDC<br>- External 24 VDC input (parameter setting)<br>- External release input<br>- Alarm relay<br>- Integrated PID controller<br>- Power limiter<br>- Motor current limitation<br>- PFC, passive<br>- RS-485 MODBUS-RTU<br>- Soft start<br>- Control input 0-10 VDC<br>- Control interface with SELV potential safely disconnected from the mains<br>- Thermal overload protection for electronics/motor<br>- Line undervoltage / phase failure detection |
| **Touch current** | ≤ 3.5 mA (according to IEC60990; measuring circuit Fig.4, TN system) |
| **Motor protection** | Reverse polarity and locked-rotor protection |
| **Electrical hookup** | Terminal box |
| **Protection class** | I (with customer connection of protective earth) |
| **Conformity with standards** | EN 61800-5-1; CE |
| **Approvals** | UL1004-7 + 60730-1; EAC; CSA C22.2 No. 77 + CAN/CSA-E60730-1 |



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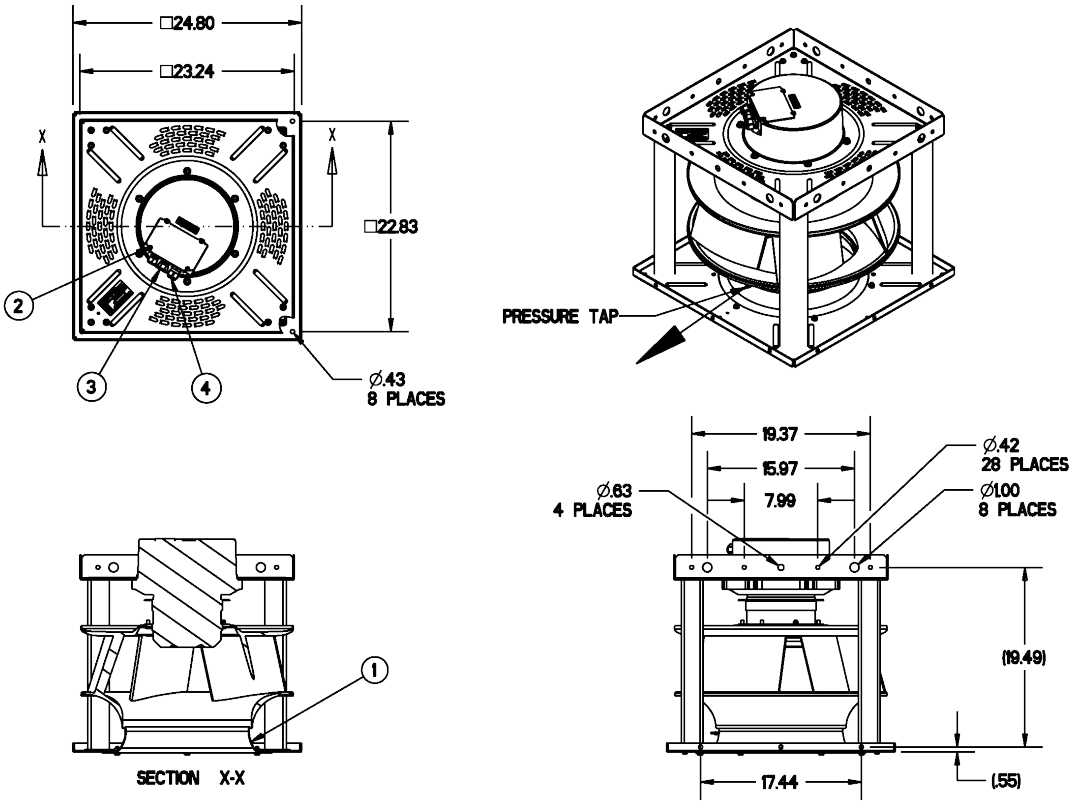
## Product drawing

Dimensions in inches




| | |
|---|---|
| 1 | Inlet ring with pressure tap K-factor (m³/h & Pa): 281 (available on some variations) |
| 2 | Terminal cover tightening torque: 30.9± 4.4 in-lbs (3.5±0.5 Nm) |
| 3 | Cable diameter: 0.15-0.39 in (4-10 mm)<br>Cable gland tightening torque: 35.4±5.3 in-lbs (4±0.6 Nm) |
| 4 | Cable diameter: 0.35-0.62 in (9-16 mm)<br>Cable gland tightening torque: 53.1±7.9 in-lbs (6±0.9 Nm)<br>Please contact ebm-papst if conduit is required |
| | In a shaft horizontal orientation, the cable glands need to be located at the bottom and the cables must always be routed downwards |
| | Accessory part: Inlet finger guard p/n 79500-2-4039 (available on some variations) |
| | Accessory part: FlowGrid p/n 35506-2-2957 (not included in scope of delivery) |



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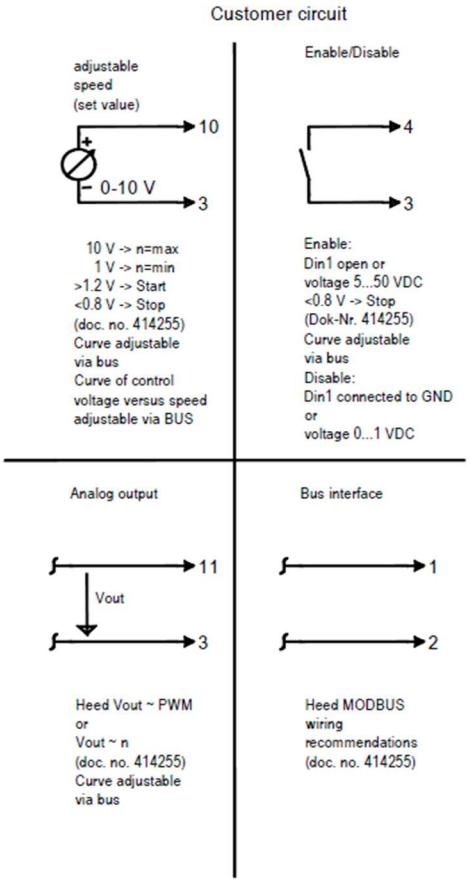
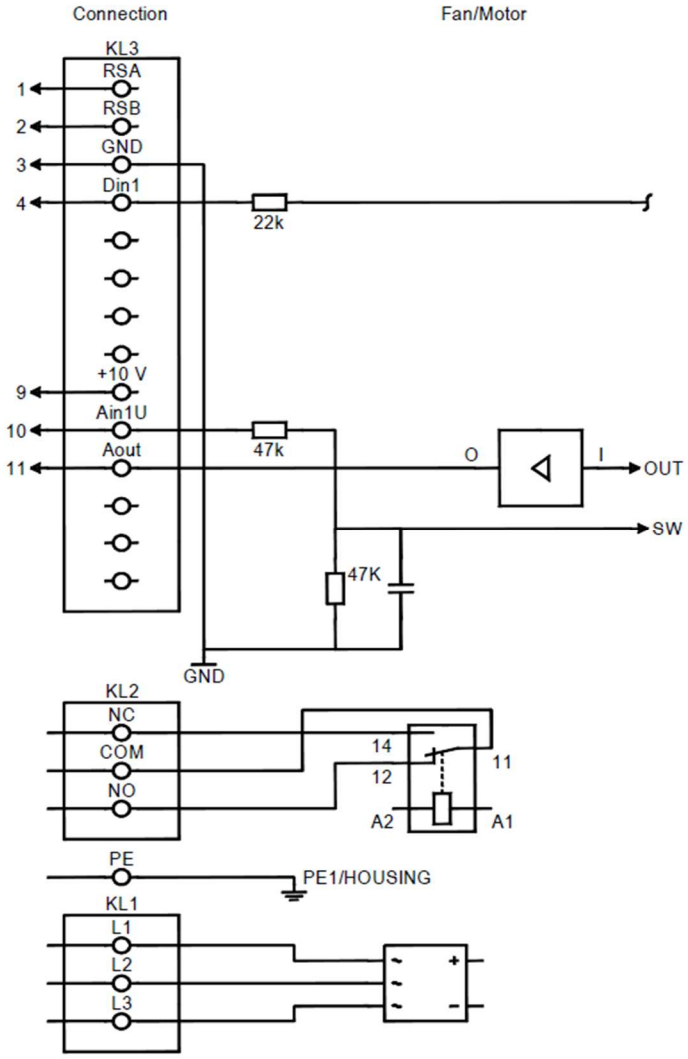
## Electrical Interface



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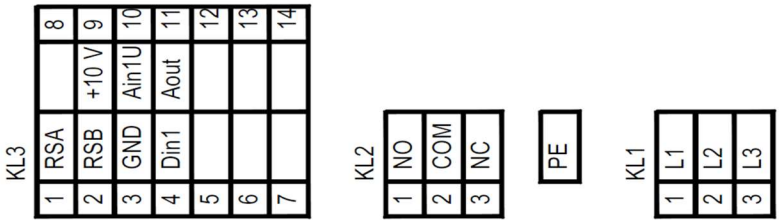
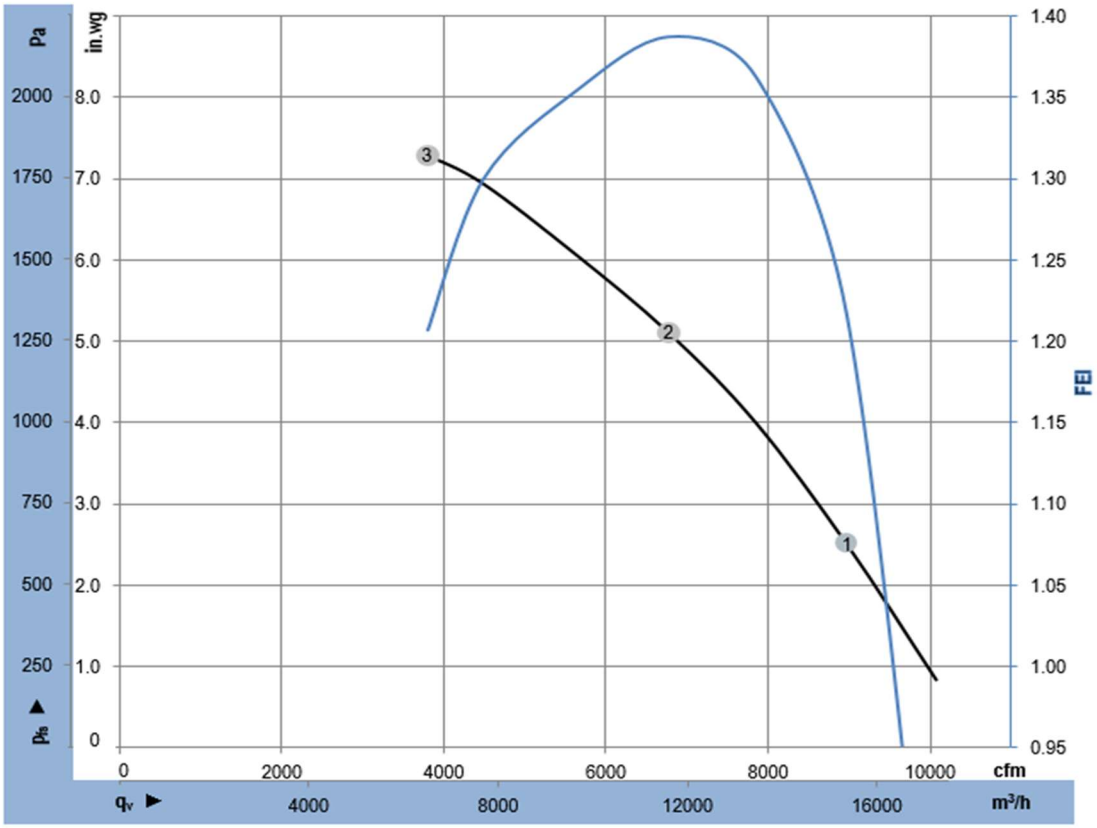
## Terminal assignment

Terminal box connection diagram




| No. | Conn. | Designation | Function/Assignment |
|---|---|---|---|
| KL1 | 1,2,3 | L1, L2, L3 | Power supply, phase, see nameplate for voltage range |
| PE | PE | PE | Protective earth |
| KL2 | 1 | NO | Status relay, floating status contact, option 1: make for failure, option 2: make for error for run monitor |
| KL2 | 2 | COM | Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA; basic insulation on supply side and reinforced insulation on control interface side |
| KL2 | 3 | NC | Status relay, floating status contact, option 1: break for failure, option 2: break for error message for run monitor |
| KL3 | 1 | RSA | RS485 interface for MODBUS, RSA; SELV |
| KL3 | 2 | RSB | RS485 interface for MODBUS, RSB; SELV |
| KL3 | 3 | GND | Reference ground for control interface; SELV |
| KL3 | 4 | Din1 | Digital input 1: enable electronics,<br>enable: pin open or applied voltage 5-50 VDC<br>disable: bridge to GND or applied voltage < 1 VDC<br>reset function: triggers software reset after a level change to < 1 VDC; SELV |
| KL3 | - | - | - |
| KL3 | - | - | - |
| KL3 | - | - | - |
| KL3 | - | - | - |
| KL3 | 9 | +10 V | Voltage output 10 V/max. 10 mA, power supply for external devices (e.g. potentiometers), SELV |
| KL3 | 10 | Ain1U | Analog input 1, set value: 0-10 VDC, Ri = 100 kΩ, adjustable curve; SELV |
| KL3 | 11 | Aout | Analog output 0-10 VDC, max. 5 mA, output of current motor modulation level / motor speed adjustable curve; SELV |
| KL3 | - | - | |
| KL3 | - | - | |
| KL3 | - | - | |




ρ = 0.075 lbm/ft³

Measurement: LU-1940

ebm-papst Inc. 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 | $q_v$ | $p_{fs}$ | FEI |
|---|---|---|---|---|---|---|---|---|---|
| | | V | Hz | rpm | W | A | cfm | in. wg | |
| 1 | 3~ | 460 | 60 | 2256 | 5006 | 6.7 | 8978 | 2.5 | 1.22 |
| 2 | 3~ | 460 | 60 | 2254 | 6246 | 8.3 | 6773 | 5.1 | 1.39 |
| 3 | 3~ | 460 | 60 | 2254 | 5809 | 7.7 | 3794 | 7.3 | 1.21 |

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

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



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**EG1R240560A**

# RadiPac - Modular EC Plenum Fan

with support bracket

**ebm-papst Inc.**
100 Hyde Road
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www.ebmpapst.us

## Nominal Data

| | | |
|---|---|---|
| Model | EG1R240560A | |
| Motor | M3G150-IF | |
| Phase | | 3~ |
| Nominal voltage | VAC | 230 |
| Nominal voltage range | VAC | 200-240 |
| Frequency | Hz | 50/60 |
| Method of obtaining data | | ml |
| Speed | rpm | 1585 |
| Power consumption | W | 3802 |
| Current draw | A | 10.1 |
| Min. ambient temp | °F (°C) | -40 (-40) |
| Max. ambient temp | °F (°C) | 104 (40) |

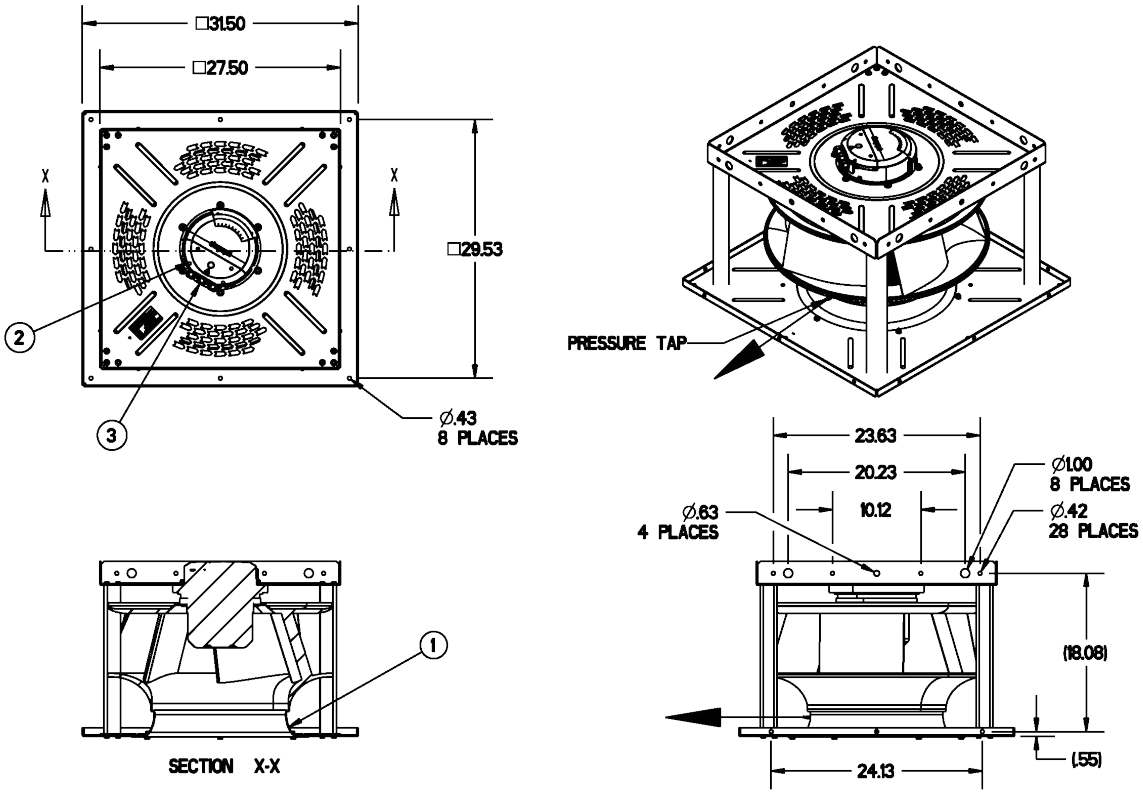
ml = Max. load (maximum fan input power over the range cataloged)
Subject to change

Speed (rpm) shown is nominal.
Performance is based on actual speed of test.

| Technical Description | |
|---|---|
| **Weight** | 140 lb (63.5 kg) |
| **Nominal Impeller Size** | 22 in (560 mm) |
| **Motor size** | 150 |
| **Rotor surface** | Painted black |
| **Impeller Material** | Sheet aluminum |
| **Support plate material** | Sheet steel, galvanized |
| **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** | - Operation and alarm display with LED<br>- External 15-50 VDC input (parameterization)<br>- Alarm relay<br>- Integrated PI controller<br>- Configurable inputs/outputs (I/O)<br>- MODBUS V6<br>- Motor current limitation<br>- RFID - ISO 15693 compatible<br>- RS-485 MODBUS-RTU<br>- Soft start<br>- Voltage output 3.3-24 VDC, Pmax = 800 mW<br>- Control interface with SELV potential safely disconnected from the mains<br>- Thermal overload protection for electronics/motor<br>- Line undervoltage / phase failure detection |
| **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 inches




| | |
|---|---|
| 1 | Inlet ring with pressure tap K-factor (m³/h & Pa): 348 (available on some variations) |
| 2 | Terminal cover tightening torque: 13.2± 1.7 in-lbs (1.5±0.2 Nm) |
| 3 | Cable diameter: 0.15-0.39 in (4-10 mm)<br>Cable gland tightening torque: 35.4±5.3 in-lbs (4±0.6 Nm)<br>Please contact ebm-papst if conduit is required |
| | In a shaft horizontal orientation, the cable glands need to be located at the bottom and the cables must always be routed downwards |
| | Accessory part: Inlet finger guard p/n 79560-2-4039 (available on some variations) |
| | Accessory part: FlowGrid p/n 00631-2-2957 (not included in scope of delivery) |



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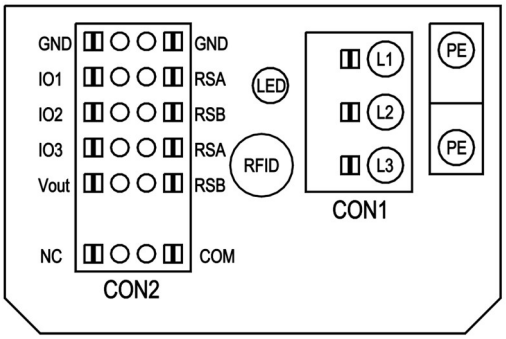
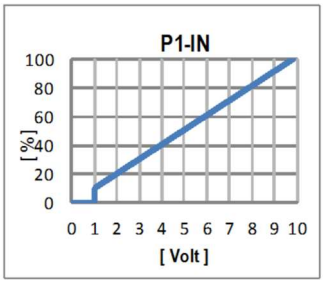
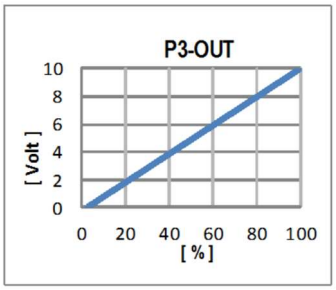
## Electrical Interface




| 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)<br>Factory setting:<br>Digital input - high active, function: Disable input, SELV<br>- inactive: Pin open or applied voltage < 1.5 VDC<br>- active: applied voltage 3.5-50 VDC<br>Reset function:Triggering of error reset on change of state from"enabled" to "disabled" |
| | CON2 | IO2 | Function parameterizable (see “Optional interface functions” table)<br>Factory setting:<br>Analog input 0-10 VDC / PWM, Ri=100 kΩ, function: Set value<br>Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV |
| | CON2 | IO3 | Function parameterizable (see “Optional interface functions” table)<br>Factory setting:<br>Analog output 0-10 VDC, max. 5 mA, function: Fan modulation level<br>Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV |
| | CON2 | Vout | Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable<br>Factory setting: 10 VDC<br>short-circuit-proof, supply for external devices, SELV<br>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,<br>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<br>orange: status = warning<br>red: status = failure |
| | | P1-IN | Input characteristic curve |
| | | P3-OUT | Output characteristic curve |



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## Terminal assignment

○ configurable option

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

| CON2 | configurable IO mode | electrical specification | MODBUS Register for IO mode configuration | configurable IO functions: normal / inverse | INPUT: source: set value D101 [...] | INPUT: source: sensor value D147 [...] | INPUT: switch: parameter set: #1 / #2 D104 [...] | INPUT: switch: control function: heating (pos.) / cooling (neg.) D12E [...] | INPUT: switch: direction of rotation: cw / ccw D148 [...] | INPUT: switch: set value source D16C [...] | INPUT: switch: fan enable / disable D16A [...] | OUTPUT: signal: tach out (selected directly via IO mode) | OUTPUT: signal: diagnostics out (selected directly via IO mode) | OUTPUT: signal: fan modulation level % D130 [0] | OUTPUT: signal: actual speed D130 [1] | OUTPUT: signal: system modulation level % D130 [2] | OUTPUT: signal: remote control output 0-10V D130 [5] | OUTPUT: pulse input for auto-adressing D00C [1] | OUTPUT: pulse output for auto-adressing D130 [4] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IO1 | ○ **Din1 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>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) | Umax = 50VDC, Imax = 20mA, SELV | D158 [5] | | | | | | | | | ○ | | | | | | | |
| | ○ **Diagnostics out** (open collector output) | Umax = 50VDC, Imax = 20mA, SELV | D158 [6] | | | | | | | | | | ○ | | | | | | |
| IO2 | ○ **Din2 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>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] | | ○ | ○ | | | | | | | | | | | | | |
| IO3 | ○ **Din3 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>not active: pin open or applied voltage < 1,5VDC | D15A [0] | | | | | ○ | ○ | ○ | ○ | | | | | | | | |
| | ○ **Din3 (active low)**: digital input | active: applied voltage < 1,5VDC, SELV<br>not active: pin open or applied voltage 3,5-50VDC | D15A [1] | | | | ○ | | | | | | | | | | | | |
| | ○ **PWMin3**: digital input idle level high | PWM = 40Hz - 10kHz, characteristics parameterizable<br>active: pin open or applied voltage 3,5-50VDC<br>not active: applied voltage < 1,5VDC, SELV | D15A [7] | | ○ | | | | | | | | | | | | | | |
| | ○ **PWMin3**: digital input idle level low | 40Hz - 10kHz, characteristics parameterizable<br>active: applied voltage 3,5-50VDC<br>not active: pin open or applied voltage < 1,5VDC, SELV | D15A [8] | | ○ | | | | | | | | | | | | | | |
| | ○ **Aout3 0-10V** analog output | function parameterizable, 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] | | | | | | | | | | ○ | | | | | | |
| | ○ **Diagnostics out** (pulses) | 0-10V max. 5mA, max output frequency 300Hz, SELV | D15A [6] | | | | | | | | | | | ○ | | | | | |
| RSA<br>RSB | RS485 bus connection, | MODBUS RTU, specification V6.3, SELV | | | ○ | | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| Vout | voltage output | voltage parameterizable 3,3...24VDC +/- 5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV | D16E [...] | | | | | | | | | | | | | | | | |
| | alternatively: Input auxillary power supply for parameterization via RS485/MODBUS RTU without line voltage | 15...50VDC | | | | | | | | | | | | | | | | | |



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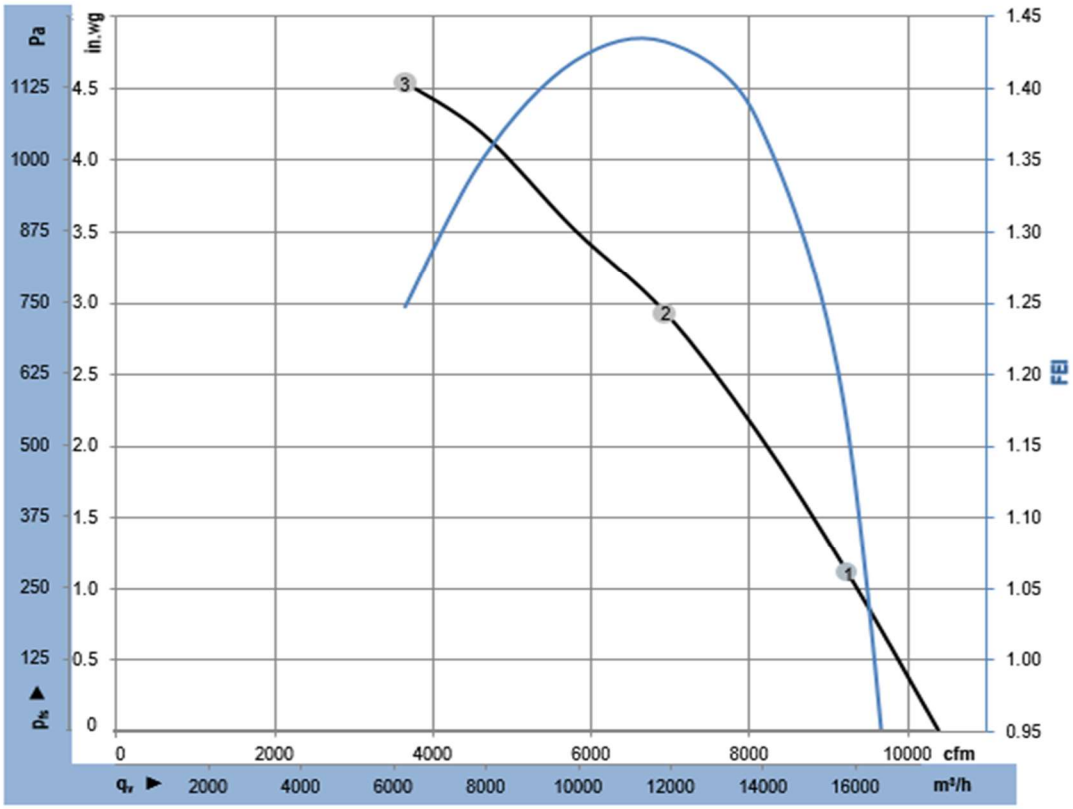


ρ = 0.075 lbm/ft³

Measurement: LU-2052

ebm-papst Inc. 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 | $q_v$ | $p_{fs}$ | FEI |
|---|---|---|---|---|---|---|---|---|---|
| | | V | Hz | rpm | W | A | cfm | in. wg | |
| 1 | 3~ | 230 | 60 | 1588 | 2870 | 7.7 | 9241 | 1.1 | 1.16 |
| 2 | 3~ | 230 | 60 | 1586 | 3802 | 10.1 | 6931 | 2.9 | 1.43 |
| 3 | 3~ | 230 | 60 | 1587 | 3535 | 9.4 | 3636 | 4.5 | 1.25 |

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

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



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**EG1R480560A**

# RadiPac - Modular EC Plenum Fan

with support bracket

**ebm-papst Inc.**
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## Nominal Data

| | | |
|---|---|---|
| Model | EG1R480560A | |
| Motor | M3G150-IF | |
| Phase | | 3~ |
| Nominal voltage | VAC | 460 |
| Nominal voltage range | VAC | 400-480 |
| Frequency | Hz | 50/60 |
| Method of obtaining data | | ml |
| Speed | rpm | 1675 |
| Power consumption | W | 4494 |
| Current draw | A | 6.0 |
| Min. ambient temp | °F (°C) | -40 (-40) |
| Max. ambient temp | °F (°C) | 104 (40) |

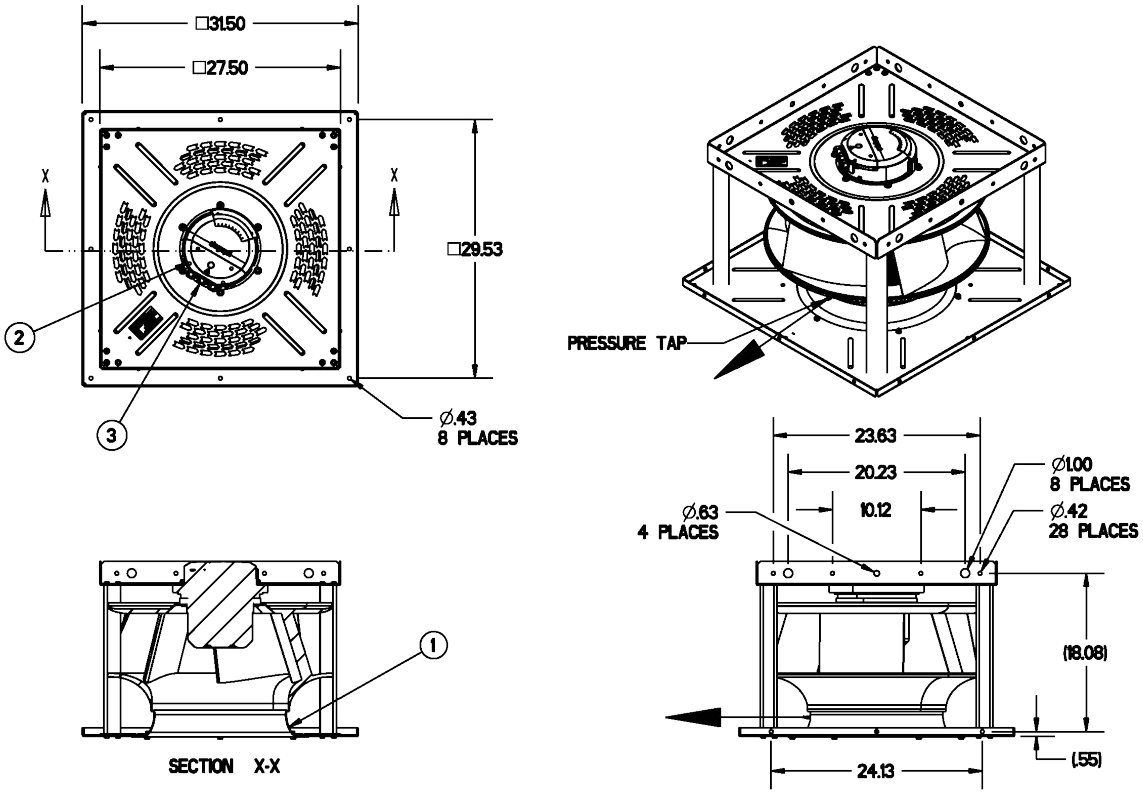
ml = Max. load (maximum fan input power over the range cataloged)
Subject to change

Speed (rpm) shown is nominal.
Performance is based on actual speed of test.

| Technical Description | |
|---|---|
| **Weight** | 140 lb (63.5 kg) |
| **Nominal Impeller Size** | 22 in (560 mm) |
| **Motor size** | 150 |
| **Rotor surface** | Painted black |
| **Impeller Material** | Sheet aluminum |
| **Support plate material** | Sheet steel, galvanized |
| **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** | - Operation and alarm display with LED<br>- External 15-50 VDC input (parameterization)<br>- Alarm relay<br>- Integrated PI controller<br>- Configurable inputs/outputs (I/O)<br>- MODBUS V6<br>- Motor current limitation<br>- RFID - ISO 15693 compatible<br>- RS-485 MODBUS-RTU<br>- Soft start<br>- Voltage output 3.3-24 VDC, Pmax = 800 mW<br>- Control interface with SELV potential safely disconnected from the mains<br>- Thermal overload protection for electronics/motor<br>- Line undervoltage / phase failure detection |
| **EMC immunity to interference** | According to EN 61000-6-2 (industrial environment) |
| **EMC interference emission** | According to EN 61000-6-3 (household 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 inches




| | |
|---|---|
| 1 | Inlet ring with pressure tap K-factor (m³/h & Pa): 348 (available on some variations) |
| 2 | Terminal cover tightening torque: 13.2± 1.7 in-lbs (1.5±0.2 Nm) |
| 3 | Cable diameter: 0.15-0.39 in (4-10 mm)<br>Cable gland tightening torque: 35.4±5.3 in-lbs (4±0.6 Nm)<br>Please contact ebm-papst if conduit is required |
| | In a shaft horizontal orientation, the cable glands need to be located at the bottom and the cables must always be routed downwards |
| | Accessory part: Inlet finger guard p/n 79560-2-4039 (available on some variations) |
| | Accessory part: FlowGrid p/n 00631-2-2957 (not included in scope of delivery) |



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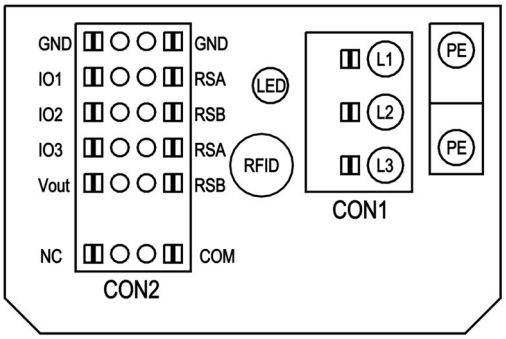
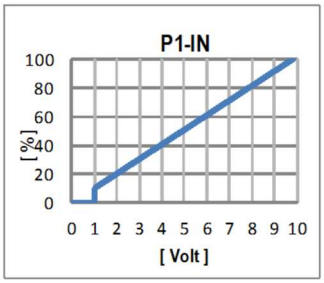
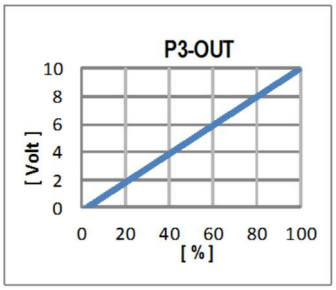
## Electrical Interface




| 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)<br>Factory setting:<br>Digital input - high active, function: Disable input, SELV<br>- inactive: Pin open or applied voltage < 1.5 VDC<br>- active: applied voltage 3.5-50 VDC<br>Reset function:Triggering of error reset on change of state from"enabled" to "disabled" |
| | CON2 | IO2 | Function parameterizable (see “Optional interface functions” table)<br>Factory setting:<br>Analog input 0-10 VDC / PWM, Ri=100 kΩ, function: Set value<br>Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV |
| | CON2 | IO3 | Function parameterizable (see “Optional interface functions” table)<br>Factory setting:<br>Analog output 0-10 VDC, max. 5 mA, function: Fan modulation level<br>Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV |
| | CON2 | Vout | Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable<br>Factory setting: 10 VDC<br>short-circuit-proof, supply for external devices, SELV<br>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,<br>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<br>orange: status = warning<br>red: status = failure |
| | | P1-IN | Input characteristic curve |
| | | P3-OUT | Output characteristic curve |



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## Terminal assignment

○ configurable option

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

| CON2 | configurable IO mode | electrical specification | MODBUS Register for IO mode configuration | configurable IO functions: normal / inverse | INPUT: source: set value | INPUT: source: sensor value | INPUT: switch: parameter set: #1 / #2 | INPUT: switch: control function: heating (pos.) / cooling (neg.) | INPUT: switch: direction of rotation: cw / ccw | INPUT: switch: set value source | INPUT: switch: fan enable / disable | OUTPUT: signal: tach out (selected directly via IO mode) | OUTPUT: signal: diagnostics out (selected directly via IO mode) | OUTPUT: signal: fan modulation level % | OUTPUT: signal: actual speed | OUTPUT: signal: system modulation level % | OUTPUT: signal: remote control output 0-10V | OUTPUT: pulse input for auto-adressing | OUTPUT: pulse output for auto-adressing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | D101 [...] | D147 [...] | D104 [...] | D12E [...] | D148 [...] | D16C [...] | D16A [...] | | | D130 [0] | D130 [1] | D130 [2] | D130 [5] | D00C [1] | D130 [4] |
| IO1 | ○ **Din1 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>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) | Umax = 50VDC, Imax = 20mA, SELV | D158 [5] | | | | | | | | | ○ | | | | | | | |
| | ○ **Diagnostics out** (open collector output) | Umax = 50VDC, Imax = 20mA, SELV | D158 [6] | | | | | | | | | | ○ | | | | | | |
| IO2 | ○ **Din2 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>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] | | ○ | ○ | | | | | | | | | | | | | |
| IO3 | ○ **Din3 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>not active: pin open or applied voltage < 1,5VDC | D15A [0] | | | | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| | ○ **Din3 (active low)**: digital input | active: applied voltage < 1,5VDC, SELV<br>not active: pin open or applied voltage 3,5-50VDC | D15A [1] | | | | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| | ○ **PWMin3**: digital input idle level high | PWM = 40Hz - 10kHz, characteristics parameterizable<br>active: pin open or applied voltage 3,5-50VDC<br>not active: applied voltage < 1,5VDC, SELV | D15A [7] | | ○ | | | | | | | | | | | | | | |
| | ○ **PWMin3**: digital input idle level low | 40Hz - 10kHz, characteristics parameterizable<br>active: applied voltage 3,5-50VDC<br>not active: pin open or applied voltage < 1,5VDC, SELV | D15A [8] | | ○ | | | | | | | | | | | | | | |
| | ○ **Aout3 0-10V** analog output | function parameterizable, 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] | | | | | | | | | ○ | | | ○ | | | | |
| | ○ **Diagnostics out** (pulses) | 0-10V max. 5mA, max output frequency 300Hz, SELV | D15A [6] | | | | | | | | | | ○ | | | | | | |
| RSA<br>RSB | RS485 bus connection, | MODBUS RTU, specification V6.3, SELV | | | ○ | | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| Vout | voltage output | voltage parameterizable 3,3...24VDC +/- 5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV | D16E [...] | | | | | | | | | | | | | | | | |
| | alternatively: Input auxillary power supply for parameterization via RS485/MODBUS RTU without line voltage | 15...50VDC | | | | | | | | | | | | | | | | | |



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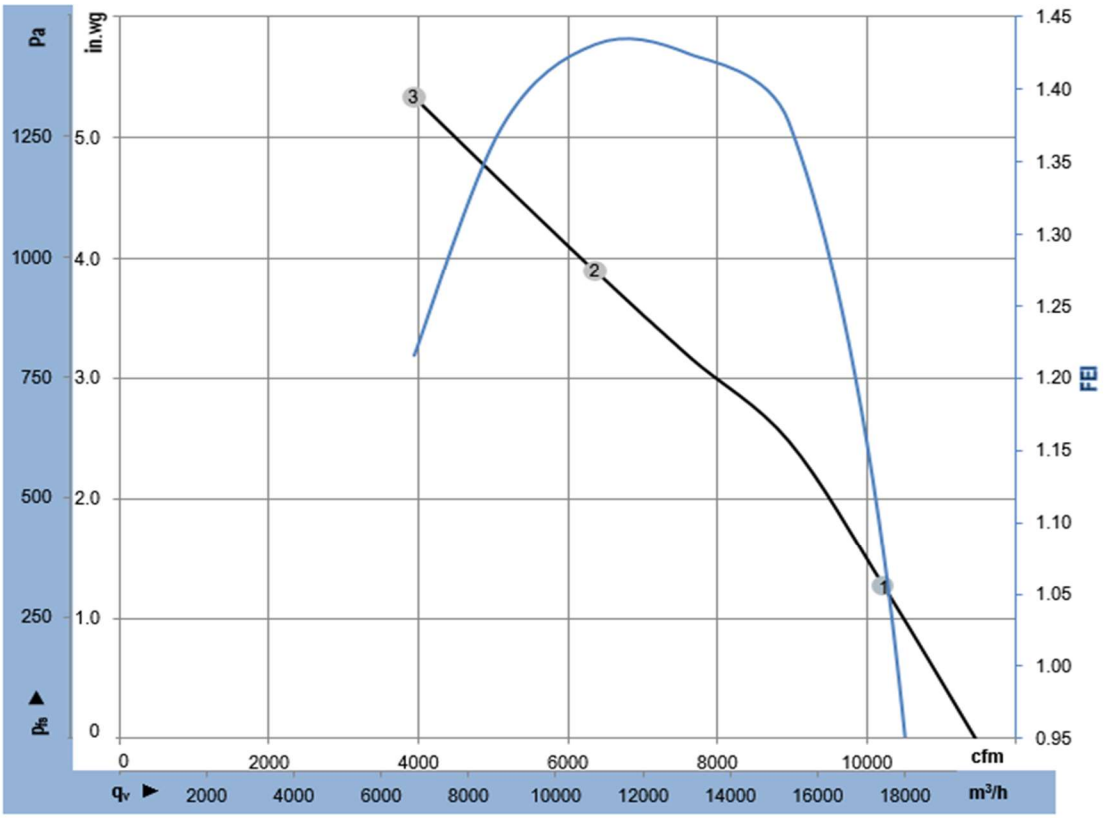
# RadiPac - Modular EC Plenum Fan

with support bracket




ρ = 0.075 lbm/ft³

Measurement: LU-2037

ebm-papst Inc. 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 | $q_v$ | $p_{fs}$ | FEI |
|---|---|---|---|---|---|---|---|---|---|
| | | V | Hz | rpm | W | A | cfm | in. wg | |
| 1 | 3~ | 460 | 60 | 1700 | 3730 | 5.0 | 10235 | 1.3 | 1.07 |
| 2 | 3~ | 460 | 60 | 1656 | 4485 | 6.0 | 6358 | 3.9 | 1.43 |
| 3 | 3~ | 460 | 60 | 1700 | 4494 | 6.0 | 3934 | 5.3 | 1.22 |

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

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



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**EG1R240560C**

# RadiPac - Modular EC Plenum Fan

with support bracket

**ebm-papst Inc.**
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www.ebmpapst.us

## Nominal Data

| | | |
|---|---|---|
| Model | EG1R240560C | |
| Motor | M3G150-NA | |
| Phase | | 3~ |
| Nominal voltage | VAC | 230 |
| Nominal voltage range | VAC | 200-240 |
| Frequency | Hz | 50/60 |
| Method of obtaining data | | ml |
| Speed | rpm | 1765 |
| Power consumption | W | 5483 |
| Current draw | A | 14.6 |
| Min ambient temp | °F (°C) | -13 (-25) |
| Max ambient temp | °F (°C) | 104 (40) |

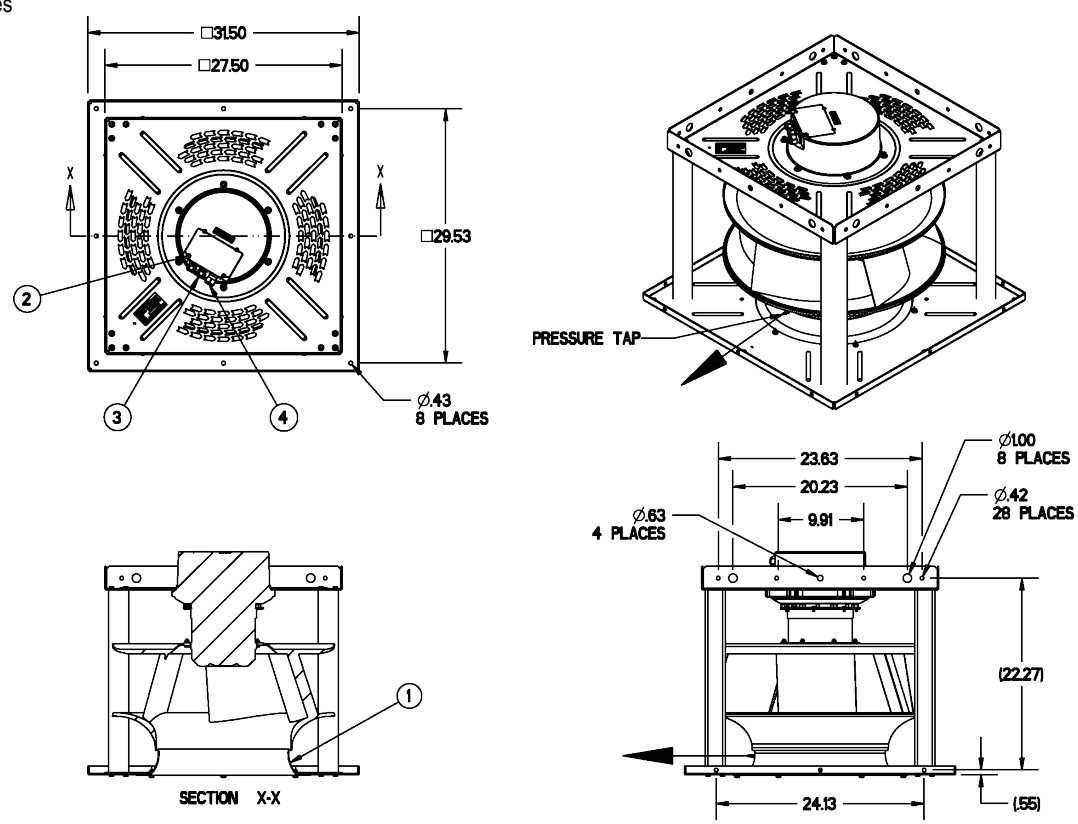
ml = Max. load (maximum fan input power over the range cataloged)
Subject to change

Speed (rpm) shown is nominal.
Performance is based on actual speed of test.

| Technical Description | |
|---|---|
| **Weight** | 169 lb (77 kg) |
| **Nominal Impeller Size** | 22 in (560 mm) |
| **Motor size** | 150 |
| **Rotor surface** | Painted black |
| **Impeller Material** | Sheet aluminum |
| **Support plate material** | Sheet steel, galvanized |
| **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 |
| **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** | - Output 10 VDC, max. 10 mA<br>- Output 20 VDC, max. 50 mA<br>- Output for slave 0-10 VDC<br>- Input for sensor 0-10 VDC or 4-20 mA<br>- External 24 VDC input (parameter setting)<br>- External release input<br>- Alarm relay<br>- Integrated PID controller<br>- Motor current limitation<br>- PFC, passive<br>- RS-485 MODBUS-RTU<br>- Soft start<br>- Control input 0-10 VDC / PWM<br>- Control interface with SELV potential safely disconnected from the mains<br>- Thermal overload protection for electronics/motor<br>- Line undervoltage / phase failure detection |
| **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) |
| **Motor protection** | Reverse polarity and locked-rotor protection |
| **Electrical hookup** | Terminal box |
| **Protection class** | I (with customer connection of protective earth) |
| **Approvals** | UL 1004-7 + 60730-1; EAC; CSA C22.2 No. 77 + CAN/CSA-E60730-1 |

## Product drawing

Dimensions in inches




| | |
|---|---|
| 1 | Inlet ring with pressure tap K-factor (m³/h & Pa): 348 (available on some variations) |
| 2 | Terminal cover tightening torque: 30.9± 4.4 in-lbs (3.5±0.5 Nm) |
| 3 | Cable diameter: 0.15-0.39 in (4-10 mm)<br>Cable gland tightening torque: 35.4±5.3 in-lbs (4±0.6 Nm) |
| 4 | Cable diameter: 0.35-0.62 in (9-16 mm)<br>Cable gland tightening torque: 53.1±7.9 in-lbs (6±0.9 Nm)<br>Please contact ebm-papst if conduit is required |
| | In a shaft horizontal orientation, the cable glands need to be located at the bottom and the cables must always be routed downwards |
| | Accessory part: Inlet finger guard p/n 79560-2-4039 (available on some variations) |
| | Accessory part: FlowGrid p/n 00631-2-2957 (not included in scope of delivery) |



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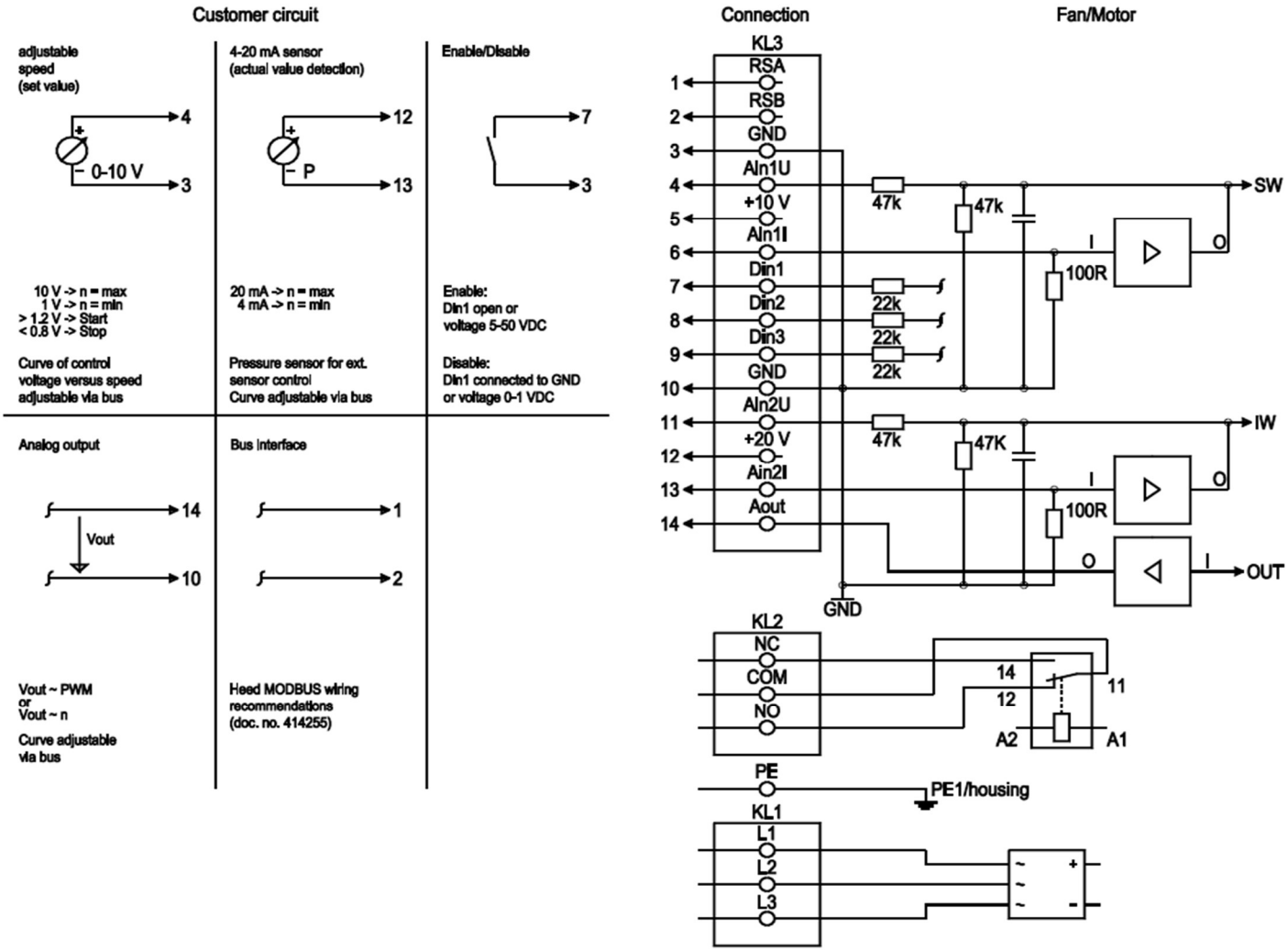
## Electrical Interface



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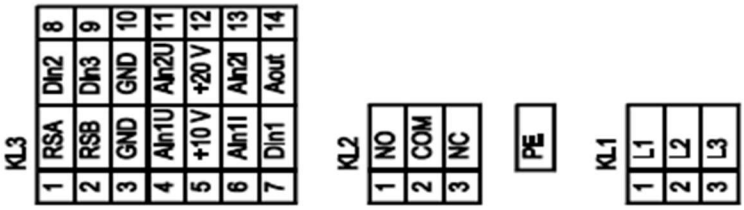
## Terminal assignment

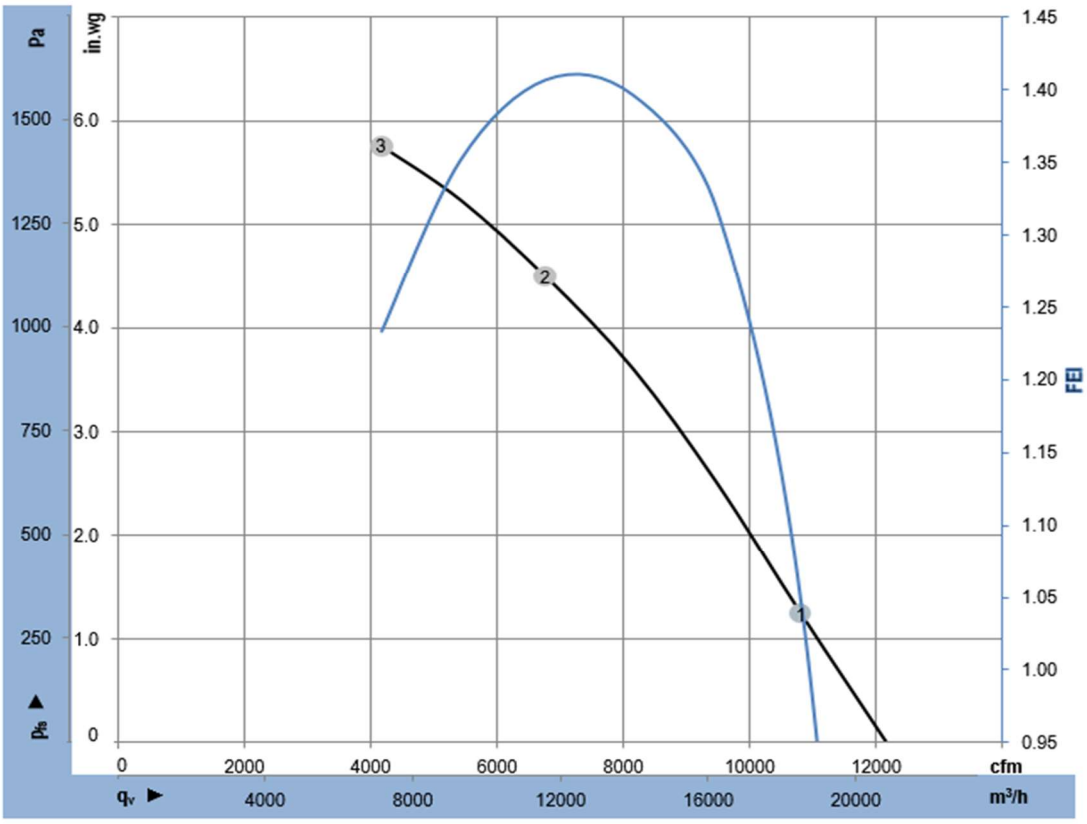
### Terminal box connection diagram




| No. | Conn. | Designation | Function/Assignment |
|---|---|---|---|
| KL1 | 1,2,3 | L1, L2, L3 | Power supply, phase, see nameplate for voltage range |
| PE | PE | PE | Protective earth |
| KL2 | 1 | NO | Status relay, floating status contact, make for failure |
| KL2 | 2 | COM | Status relay, floating status contact, changeover contact, common connection, contact rating, max. 250 VAC/2 A (AC1)/min. 10 mA |
| KL2 | 3 | NC | Status relay, floating status contact, break for failure |
| KL3 | 1 | RSA | Bus connection RS485, RSA, MODBUS RTU; SELV |
| KL3 | 2 | RSB | Bus connection RS485, RSB, MODBUS RTU; SELV |
| KL3 | 3/10 | GND | Reference ground for control interface; SELV |
| KL3 | 4 | Ain1 U | Analog input 1, set value: 0-10 V, Ri = 100 kΩ, adjustable curve, only usable as alternative to input Ain1 I; SELV |
| KL3 | 5 | + 10 V | Fixed voltage output 10 VDC, +10 V ± 3%, max. 10 mA, short-circuit-proof, power supply for external devices (e.g. pot); SELV |
| KL3 KL3 | 6 | Ain1 I | Analog input 1, set value: 4-20 mA, Ri = 100 Ω, adjustable curve, only usable as alternative to input Ain1 U; SELV |
| KL3 | 7 | Din1 | Digital input 1: enable electronics,<br>enable: pin open or applied voltage 5-50 VDC<br>disable: bridge to GND or applied voltage < 1 VDC<br>reset function: triggers software reset after a level change to < 1 VDC; SELV |
| KL3 | 8 | 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.<br>Parameter set 1: pin open or applied voltage 5-50 VDC<br>Parameter set 2: bridge to GND or applied voltage < 1 VDC; SELV |
| KL3 | 9 | 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<br>Normal: Pin open or applied voltage 5-50 VDC<br>Inverse: Bridge to GND or applied voltage < 1 VDC; SELV |
| KL3 | 11 | Ain2 U | Analog input 2, measured value: 0-10 V, Ri = 100 kΩ, adjustable curve, only usable as alternative to input Ain2 I; SELV |
| KL3 | 12 | + 20 V | Fixed voltage output 20 VDC, +20 V +25/-10%, max. 50 mA, short-circuit-proof, power supply for external devices (e.g. sensors); SELV<br>Alternatively: +24 VDC input for parameterization without line voltage |
| KL3 | 13 | Ain2 I | Analog input 2, measured value: 4-20 mA, Ri = 100 Ω, adjustable curve, only usable as alternative to input Ain2 U; SELV |
| KL3 | 14 | Aout | Analog output 0-10 VDC, max. 5 mA, output of current motor modulation level; adjustable curve; SELV |

# RadiPac - Modular EC Plenum Fan

with support bracket




ρ = 0.075 lbm/ft³

Measurement: LU-2089

ebm-papst Inc. 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 | $q_v$ | $p_{fs}$ | FEI |
|---|---|---|---|---|---|---|---|---|---|
| | | V | Hz | rpm | W | A | cfm | in. wg | |
| 1 | 3~ | 230 | 60 | 1769 | 3989 | 10.7 | 10815 | 1.2 | 1.04 |
| 2 | 3~ | 230 | 60 | 1767 | 5483 | 14.6 | 6761 | 4.5 | 1.41 |
| 3 | 3~ | 230 | 60 | 1765 | 4992 | 13.3 | 4163 | 5.8 | 1.23 |

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

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



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**EG1R480560C**

# RadiPac - Modular EC Plenum Fan

with support bracket

**ebm-papst Inc.**
100 Hyde Road
Farmington, CT 06034
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www.ebmpapst.us

## Nominal Data

| | | |
|---|---|---|
| Model | EG1R480560C | |
| Motor | M3G150-NA | |
| Phase | | 3~ |
| Nominal voltage | VAC | 460 |
| Nominal voltage range | VAC | 400-480 |
| Frequency | Hz | 50/60 |
| Method of obtaining data | | ml |
| Speed | rpm | 1765 |
| Power consumption | W | 5256 |
| Current draw | A | 7.0 |
| Min ambient temp | °F (°C) | -40 (-40) |
| Max ambient temp | °F (°C) | 104 (40) |

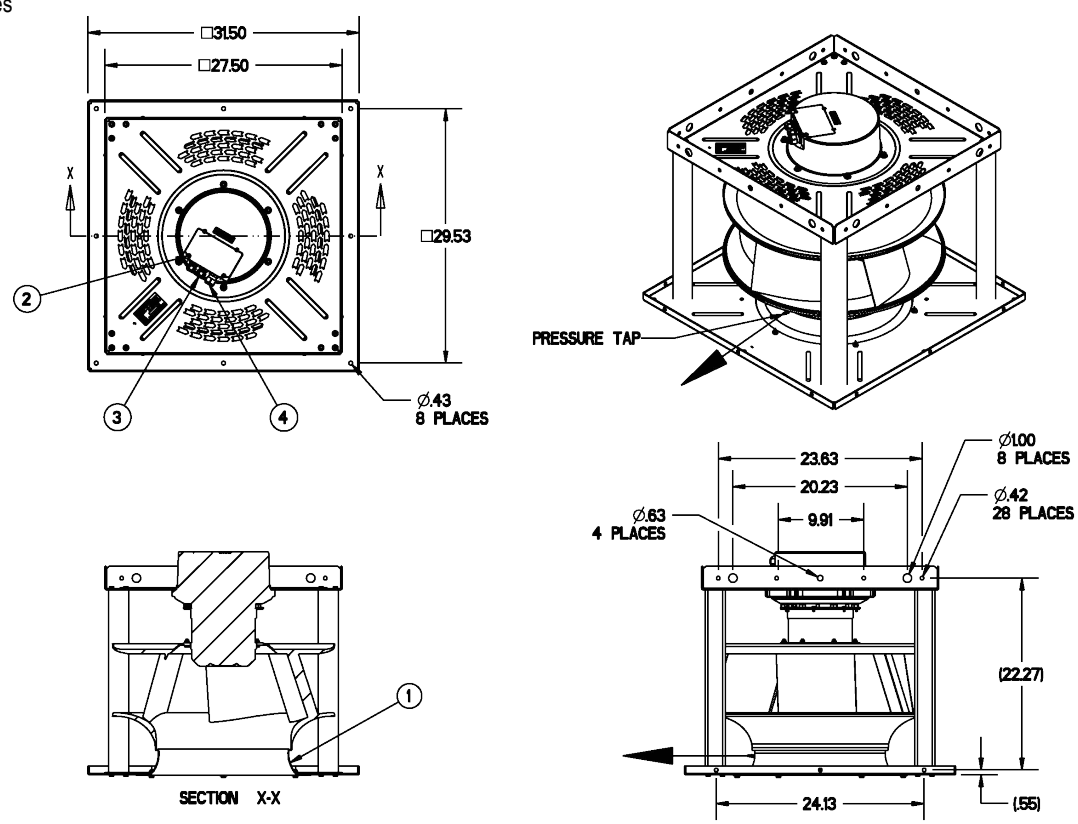
ml = Max. load (maximum fan input power over the range cataloged)
Subject to change

Speed (rpm) shown is nominal.
Performance is based on actual speed of test.

| Technical Description | |
|---|---|
| **Weight** | 169 lb (77 kg) |
| **Nominal Impeller Size** | 22 in (560 mm) |
| **Motor size** | 150 |
| **Rotor surface** | Painted black |
| **Impeller Material** | Sheet aluminum |
| **Support plate material** | Sheet steel, galvanized |
| **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** | - Output 10 VDC, max. 10 mA<br>- Output for slave 0-10 VDC<br>- External 24 VDC input (parameter setting)<br>- External release input<br>- Alarm relay<br>- Integrated PID controller<br>- Power limiter<br>- Motor current limitation<br>- PFC, passive<br>- RS-485 MODBUS-RTU<br>- Soft start<br>- Control input 0-10 VDC<br>- Control interface with SELV potential safely disconnected from the mains<br>- Thermal overload protection for electronics/motor<br>- Line undervoltage / phase failure detection |
| **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) |
| **Motor protection** | Reverse polarity and locked-rotor protection |
| **Electrical hookup** | Terminal box |
| **Protection class** | I (with customer connection of protective earth) |
| **Conformity with standards** | EN 61800-5-1; CE |
| **Approvals** | UL1004-7 + 60730-1; EAC; CSA C22.2 No. 77 + CAN/CSA-E60730-1 |

## Product drawing

Dimensions in inches




| | |
|---|---|
| 1 | Inlet ring with pressure tap K-factor (m³/h & Pa): 348 (available on some variations) |
| 2 | Terminal cover tightening torque: 30.9± 4.4 in-lbs (3.5±0.5 Nm) |
| 3 | Cable diameter: 0.15-0.39 in (4-10 mm)<br>Cable gland tightening torque: 35.4±5.3 in-lbs (4±0.6 Nm) |
| 4 | Cable diameter: 0.35-0.62 in (9-16 mm)<br>Cable gland tightening torque: 53.1±7.9 in-lbs (6±0.9 Nm)<br>Please contact ebm-papst if conduit is required |
| | In a shaft horizontal orientation, the cable glands need to be located at the bottom and the cables must always be routed downwards |
| | Accessory part: Inlet finger guard p/n 79560-2-4039 (available on some variations) |
| | Accessory part: FlowGrid p/n 00631-2-2957 (not included in scope of delivery) |



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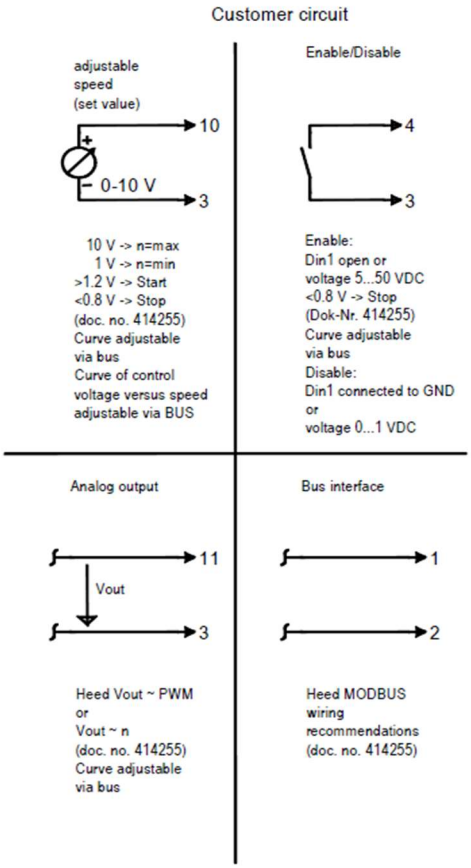
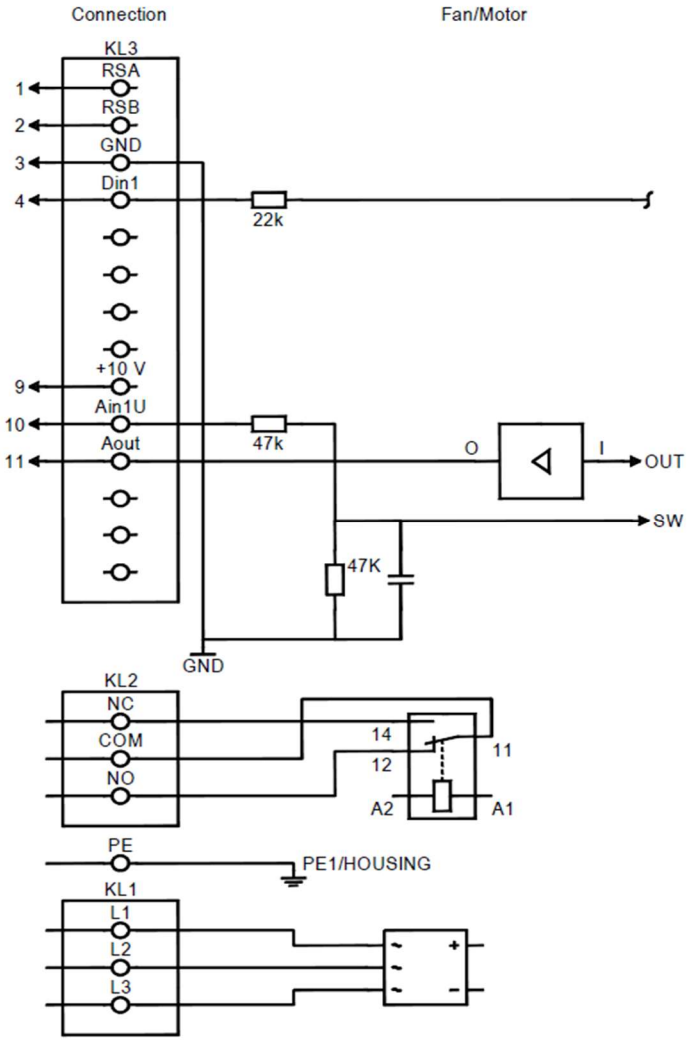
## Electrical Interface



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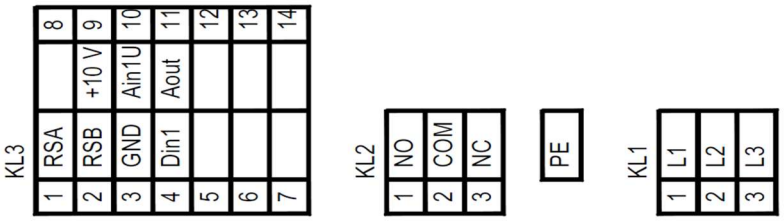
## Terminal assignment

Terminal box connection diagram




| No. | Conn. | Designation | Function/Assignment |
|---|---|---|---|
| KL1 | 1,2,3 | L1, L2, L3 | Power supply, phase, see nameplate for voltage range |
| PE | PE | PE | Protective earth |
| KL2 | 1 | NO | Status relay, floating status contact, option 1: make for failure, option 2: make for error for run monitor |
| KL2 | 2 | COM | Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA; basic insulation on supply side and reinforced insulation on control interface side |
| KL2 | 3 | NC | Status relay, floating status contact, option 1: break for failure, option 2: break for error message for run monitor |
| KL3 | 1 | RSA | RS485 interface for MODBUS, RSA; SELV |
| KL3 | 2 | RSB | RS485 interface for MODBUS, RSB; SELV |
| KL3 | 3 | GND | Reference ground for control interface; SELV |
| KL3 | 4 | Din1 | Digital input 1: enable electronics,<br>enable: pin open or applied voltage 5-50 VDC<br>disable: bridge to GND or applied voltage < 1 VDC<br>reset function: triggers software reset after a level change to < 1 VDC; SELV |
| KL3 | - | - | - |
| KL3 | - | - | - |
| KL3 | - | - | - |
| KL3 | - | - | - |
| KL3 | 9 | +10 V | Voltage output 10 V/max. 10 mA, power supply for external devices (e.g. potentiometers), SELV |
| KL3 | 10 | Ain1U | Analog input 1, set value: 0-10 VDC, Ri = 100 kΩ, adjustable curve; SELV |
| KL3 | 11 | Aout | Analog output 0-10 VDC, max. 5 mA, output of current motor modulation level / motor speed adjustable curve; SELV |
| KL3 | - | - | |
| KL3 | - | - | |
| KL3 | - | - | |



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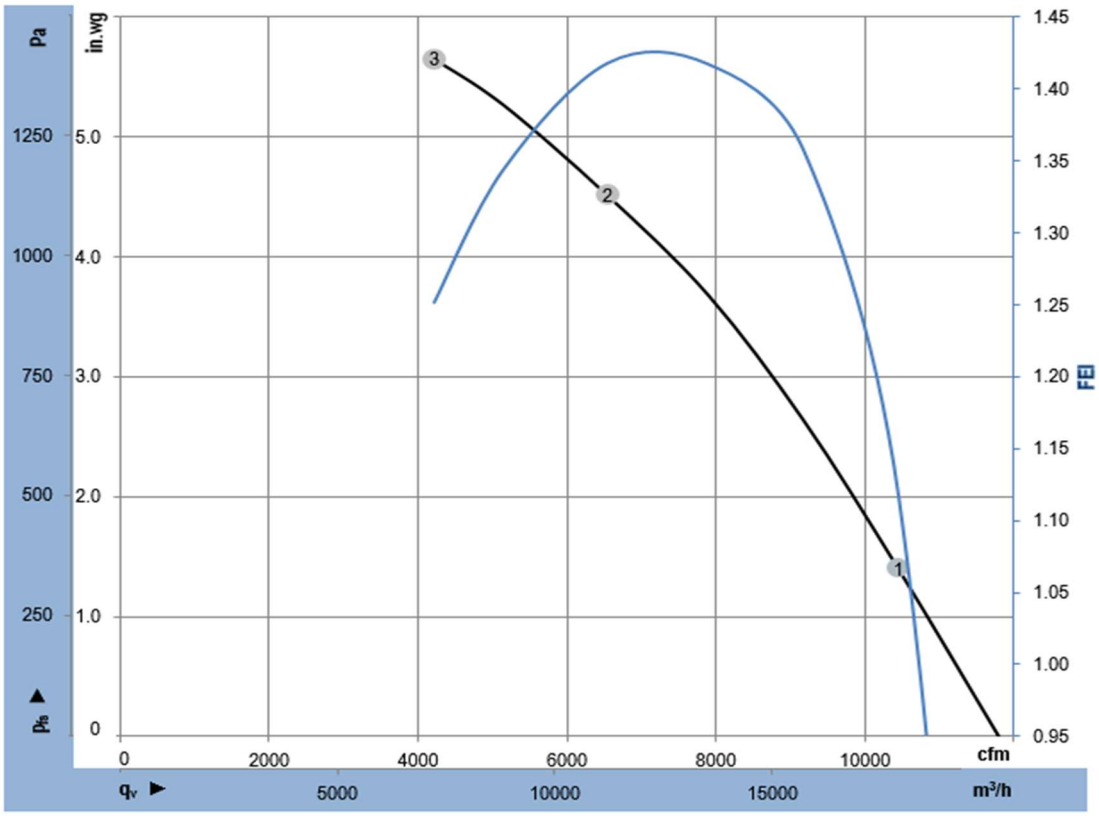


ρ = 0.075 lbm/ft³

Measurement: LU-2087

ebm-papst Inc. 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 | $q_v$ | $p_{fs}$ | FEI |
|---|---|---|---|---|---|---|---|---|---|
| | | V | Hz | rpm | W | A | cfm | in. wg | |
| 1 | 3~ | 460 | 60 | 1766 | 3957 | 5.3 | 10458 | 1.4 | 1.12 |
| 2 | 3~ | 460 | 60 | 1764 | 5301 | 7.1 | 6548 | 4.5 | 1.42 |
| 3 | 3~ | 460 | 60 | 1765 | 4901 | 6.6 | 4224 | 5.6 | 1.25 |

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

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



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**EG1R480630A**

# RadiPac - Modular EC Plenum Fan

with support bracket

**ebm-papst Inc.**
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www.ebmpapst.us

## Nominal Data

| | | |
|---|---|---|
| Model | EG1R480630A | |
| Motor | M3G150-NA | |
| Phase | | 3~ |
| Nominal voltage | VAC | 460 |
| Nominal voltage range | VAC | 400-480 |
| Frequency | Hz | 50/60 |
| Method of obtaining data | | ml |
| Speed | rpm | 1505 |
| Power consumption | W | 4540 |
| Current draw | A | 6.1 |
| Min. ambient temp | °F (°C) | -40 (-40) |
| Max. ambient temp | °F (°C) | 104 (40) |

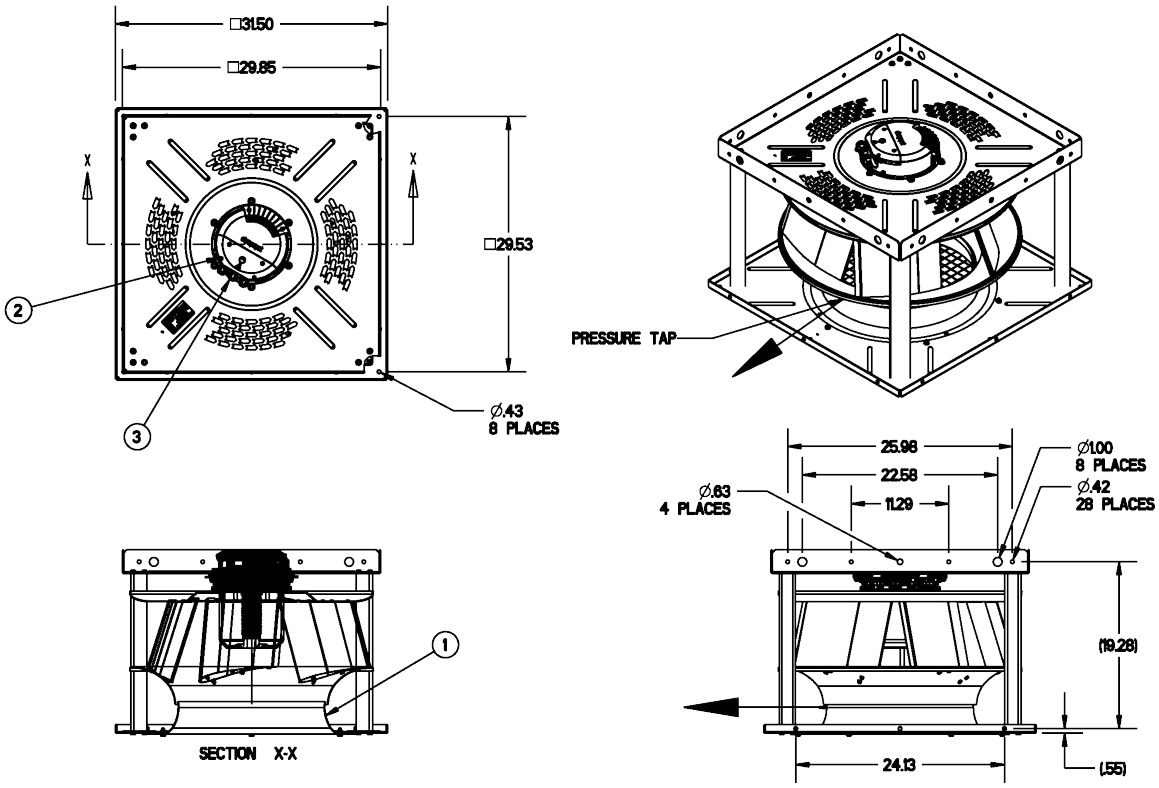
ml = Max. load (maximum fan input power over the range cataloged)
Subject to change

Speed (rpm) shown is nominal.
Performance is based on actual speed of test.

| Technical Description | |
|---|---|
| **Weight** | 160 lb (72.5 kg) |
| **Nominal Impeller Size** | 24.8 in (630 mm) |
| **Motor size** | 150 |
| **Rotor surface** | Painted black |
| **Impeller Material** | Sheet aluminum |
| **Support plate material** | Sheet steel, galvanized |
| **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** | - Operation and alarm display with LED<br>- External 15-50 VDC input (parameterization)<br>- Alarm relay<br>- Integrated PI controller<br>- Configurable inputs/outputs (I/O)<br>- MODBUS V6<br>- Motor current limitation<br>- RFID - ISO 15693 compatible<br>- RS-485 MODBUS-RTU<br>- Soft start<br>- Voltage output 3.3-24 VDC, Pmax = 800 mW<br>- Control interface with SELV potential safely disconnected from the mains<br>- Thermal overload protection for electronics/motor<br>- Line undervoltage / phase failure detection |
| **EMC immunity to interference** | According to EN 61000-6-2 (industrial environment) |
| **EMC interference emission** | According to EN 61000-6-3 (household 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 inches




| | |
|---|---|
| 1 | Inlet ring with pressure tap K-factor (m³/h & Pa): 438 (available on some variations) |
| 2 | Terminal cover tightening torque: 13.2± 1.7 in-lbs (1.5±0.2 Nm) |
| 3 | Cable diameter: 0.15-0.39 in (4-10 mm)<br>Cable gland tightening torque: 35.4±5.3 in-lbs (4±0.6 Nm)<br>Please contact ebm-papst if conduit is required |
| | In a shaft horizontal orientation, the cable glands need to be located at the bottom and the cables must always be routed downwards |
| | Accessory part: Inlet finger guard p/n 79630-2-4039 (available on some variations) |
| | Accessory part: FlowGrid p/n 00631-2-2957 (not included in scope of delivery) |



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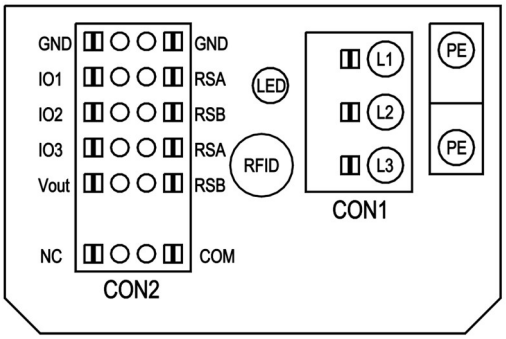
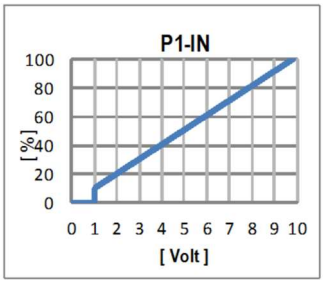
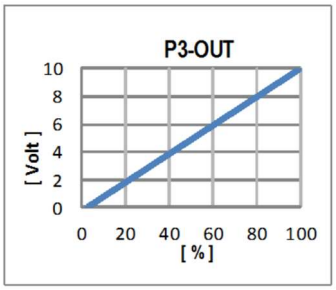
## Electrical Interface




| 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)<br>Factory setting:<br>Digital input - high active, function: Disable input, SELV<br>- inactive: Pin open or applied voltage < 1.5 VDC<br>- active: applied voltage 3.5-50 VDC<br>Reset function:Triggering of error reset on change of state from"enabled" to "disabled" |
| | CON2 | IO2 | Function parameterizable (see “Optional interface functions” table)<br>Factory setting:<br>Analog input 0-10 VDC / PWM, Ri=100 kΩ, function: Set value<br>Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV |
| | CON2 | IO3 | Function parameterizable (see “Optional interface functions” table)<br>Factory setting:<br>Analog output 0-10 VDC, max. 5 mA, function: Fan modulation level<br>Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV |
| | CON2 | Vout | Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable<br>Factory setting: 10 VDC<br>short-circuit-proof, supply for external devices, SELV<br>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,<br>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<br>orange: status = warning<br>red: status = failure |
| | | P1-IN | Input characteristic curve |
| | | P3-OUT | Output characteristic curve |



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## Terminal assignment

○ configurable option

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

| CON2 | configurable IO mode | electrical specification | MODBUS Register for IO mode configuration | configurable IO functions: normal / inverse | INPUT | | | | | | | | | OUTPUT | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | D101 [...] | D147 [...] | D104 [...] | D12E [...] | D148 [...] | D16C [...] | D16A [...] | (selected directly via IO mode) | D130 [0] | D130 [1] | D130 [2] | D130 [5] | D00C [1] | D130 [4] | (selected directly via IO mode) | | | | | |
| | | | | | source: set value | source: sensor value | switch: parameter set: #1 / #2 | switch: control function: heating (pos.) / cooling (neg.) | switch: direction of rotation: cw / ccw | switch: set value source | switch: fan enable / disable | signal: tach out | signal: fan modulation level % | signal: actual speed | signal: system modulation level % | signal: remote control output 0-10V | pulse input for auto-adressing | pulse output for auto-adressing | signal: diagnostics out | | | | | |
| IO1 | ○ **Din1 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>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) | Umax = 50VDC, Imax = 20mA, SELV | D158 [5] | | | | | | | | | ○ | | | | | | | | | | | |
| | ○ **Diagnostics out** (open collector output) | Umax = 50VDC, Imax = 20mA, SELV | D158 [6] | | | | | | | | | | | | | | | | ○ | | | | |
| IO2 | ○ **Din2 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>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] | | | ○ | | | | | | | | | | | | | | | | | |
| IO3 | ○ **Din3 (active high)**: digital input | active: applied voltage 3,5-50VDC, SELV<br>not active: pin open or applied voltage < 1,5VDC | D15A [0] | | | | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | |
| | ○ **Din3 (active low)**: digital input | active: applied voltage < 1,5VDC, SELV<br>not active: pin open or applied voltage 3,5-50VDC | D15A [1] | | | | ○ | | | | | | | | | | | | | | | | |
| | ○ **PWMin3**: digital input idle level high | PWM = 40Hz - 10kHz, characteristics parameterizable<br>active: pin open or applied voltage 3,5-50VDC<br>not active: applied voltage < 1,5VDC, SELV | D15A [7] | ○ | | | | | | | | | | | | | | | | | | | |
| | ○ **PWMin3**: digital input idle level low | 40Hz - 10kHz, characteristics parameterizable<br>active: applied voltage 3,5-50VDC<br>not active: pin open or applied voltage < 1,5VDC, SELV | D15A [8] | ○ | | | | | | | | | | | | | | | | | | | |
| | ○ **Aout3 0-10V**: analog output | function parameterizable, 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] | | | | | | | | | ○ | | | | | | | | | | | |
| | ○ **Diagnostics out** (pulses) | 0-10V max. 5mA, max output frequency 300Hz, SELV | D15A [6] | | | | | | | | | | | | | | | | ○ | | | | |
| RSA<br>RSB | RS485 bus connection, | MODBUS RTU, specification V6.3, SELV | | | ○ | | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | |
| Vout | voltage output | voltage parameterizable 3,3...24VDC +/- 5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV | D16E [...] | | | | | | | | | | | | | | | | | | | | |
| | alternatively: Input auxillary power supply for parameterization via RS485/MODBUS RTU without line voltage | 15...50VDC | | | | | | | | | | | | | | | | | | | | | |



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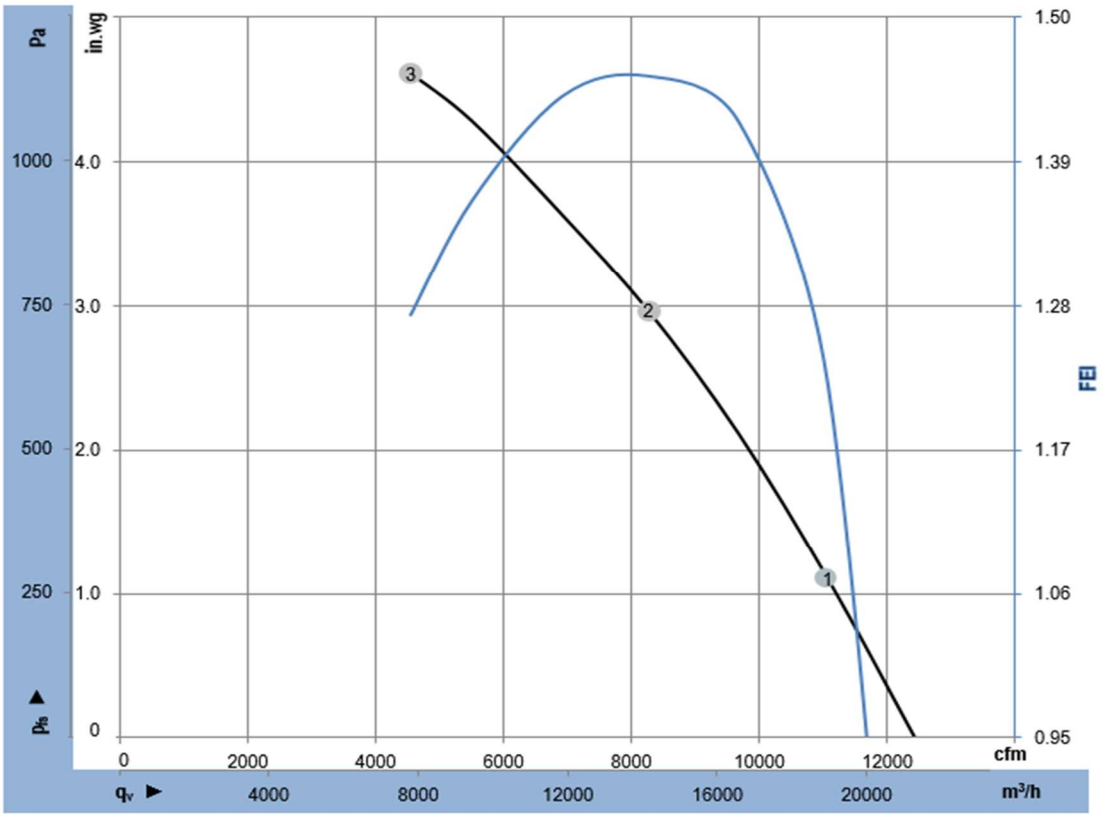
# RadiPac - Modular EC Plenum Fan

with support bracket




ρ = 0.075 lbm/ft³

Measurement: LU-2099

ebm-papst Inc. 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

## Performance Ratings

| | | U | f | n | $P_{ed}$ | I | $q_v$ | $p_{fs}$ | FEI |
|---|---|---|---|---|---|---|---|---|---|
| | | V | Hz | rpm | W | A | cfm | in. wg | |
| 1 | 3~ | 460 | 60 | 1505 | 3227 | 4.4 | 11074 | 1.1 | 1.22 |
| 2 | 3~ | 460 | 60 | 1503 | 4455 | 6.0 | 8266 | 3.0 | 1.46 |
| 3 | 3~ | 460 | 60 | 1503 | 4302 | 5.8 | 4554 | 4.6 | 1.27 |

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

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



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