VBH0310PTRLA-PV68

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

ebm-papst Inc.
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Nominal data

Type	**VBH0310PTRLA-PV68**
Motor	**M3G112-GA**

Phase		3~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 240
Frequency	Hz	60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	3990
Power consumption	W	3115
Current draw	A	8.31
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	40

ml = Max. load
Subject to change

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

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Technical description

Weight	21 kg
Size	310 mm
Motor size	112
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Support plate material	Sheet steel, galvanized
Support bracket material	Steel, painted black
Inlet nozzle material	Sheet steel, galvanized
Number of blades	5
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1
Ambient temperature note	Occasional start-up at temperatures between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), use must be made of a fan design with special low-temperature bearings.
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	See product drawing
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Operation and alarm display with LED - External 15-50 VDC input (parameterization) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.0 - Motor current limitation - RFID - ISO 15693 compatible - RS-485 MODBUS-RTU - Soft start - Voltage output 3.3-24 VDC, Pmax = 800 mW - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
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
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730-1

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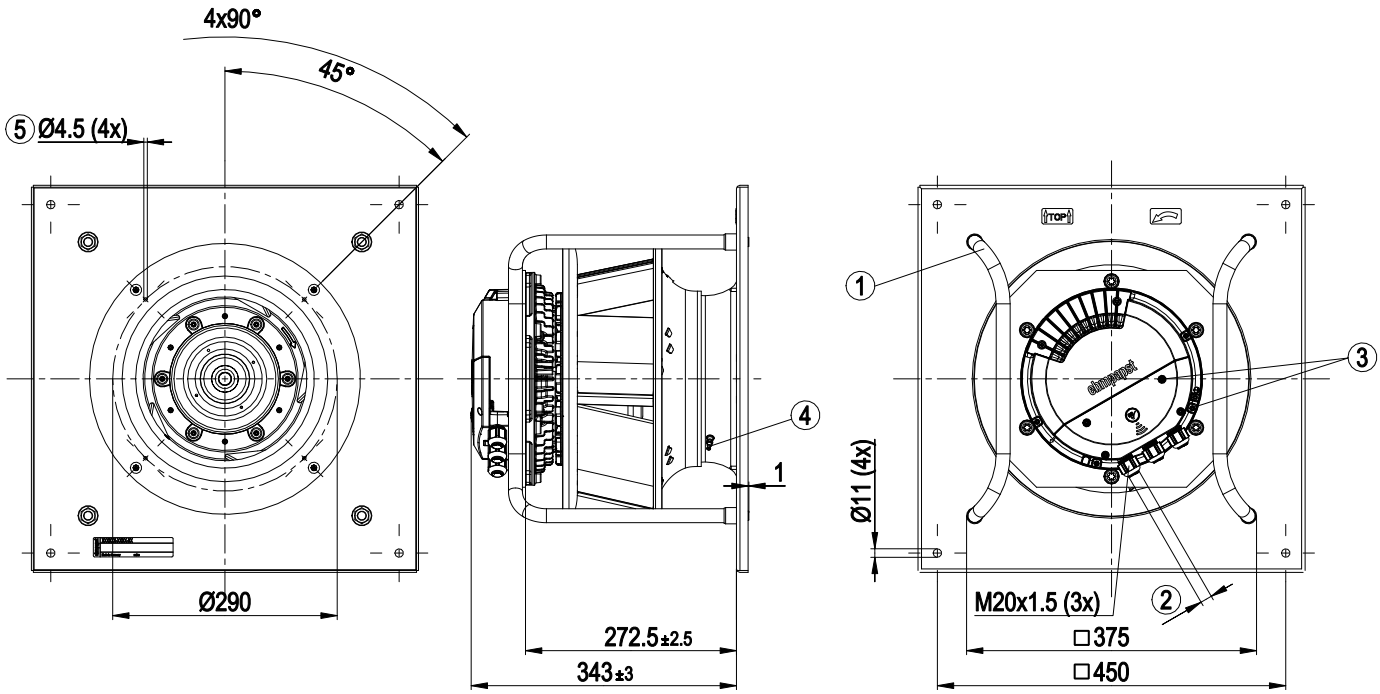

1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm
3	Tightening torque 1.5 ± 0.2 Nm
4	Inlet ring with pressure tap (k-factor: 116)
5	Attachment holes for FlowGrid (25310-2-2957 not included in scope of delivery)

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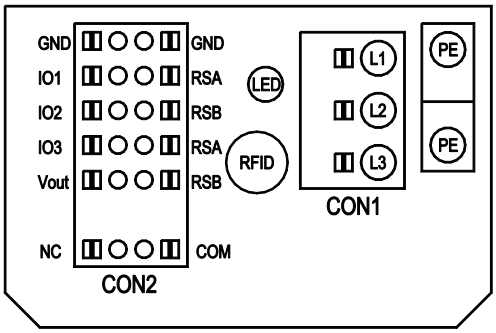
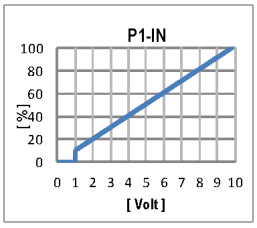
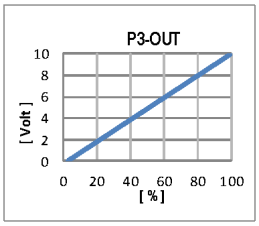
Electrical Interface







No.	Conn.	Designation	Function/assignment
	CON1	L1, L2, L3	Power supply, phase, see nameplate for voltage range
	PE	PE	Protective earth
	CON2	RSA	RS485 interface for MODBUS, RSA; SELV
	CON2	RSB	RS485 interface for MODBUS, RSB; SELV
	CON2	GND	Reference ground for control interface, SELV
	CON2	IO1	Function parameterizable (see “Optional interface functions” table) Factory setting: Digital input - high active, function: Disable input, SELV - inactive: Pin open or applied voltage < 1.5 VDC - active: applied voltage 3.5-50 VDC Reset function: Triggering of error reset on change of state from "enabled" to "disabled"
	CON2	IO2	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog input 0-10 V / PWM, Ri=100 kΩ, function: Set value Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV
	CON2	IO3	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog output 0-10 V, max. 5 mA, function: Fan modulation level Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV
	CON2	Vout	Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable Factory setting: 10 VDC short-circuit-proof, supply for external devices, SELV alternatively: 15-50 VDC input for parameterization via MODBUS without line voltage
	CON2	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and on control interface side
	CON2	NC	Status relay, floating status contact, break for failure
		LED	green: status = good, ready for operation orange: status = warning red: status = failure
		P1-IN	Input characteristic curve
		P3-OUT	Output characteristic curve

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with support bracket

Terminal/plug assignment

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	INPUT: 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	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D158 [0]		D101 [...]	D147 [...]	D104 [...]	D12E [...]	D148 [...]	D16C [...]	D16A [...]								
	○ **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	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D159 [0]				○	○	○	○	○								
	○ **Ain2 0-10V/PWM**: analog input	Ri=100K, characteristic curve parameterizable, fPWM=1k..10KHz, SELV	D159 [2]			○													
	○ **Ain2 4-20mA**: analog input	Ri=125R, characteristic curve parameterizable, SELV	D159 [3]			○													
IO3	○ **Din3 (active high)**: digital input	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D15A [0]				○	○	○	○	○								
	○ **Din3 (active low)**: digital input	active: pin open or applied voltage 3,5-50VDC not active: applied voltage < 1,5VDC, SELV	D15A [1]																
	○ **PWMin3**: digital input	40Hz - 10kHz, characteristics parameterizable not active: pin open or applied voltage 3,5-50VDC active: applied voltage < 1,5VDC, SELV	D15A [7]			○													
	○ **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 RSB	RS485 bus connection,	MODBUS RTU, specification V6.0, SELV			○		○	○	○	○	○								
Vout	voltage output	voltage parameterizable 3,3...24VDC +/- 5,5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV	D16E [...]																
	alternatively: Input auxiliary power supply for parameter-ization via RS485/MODBUS RTU without line voltage	15...50VDC																	

○ configurable option

For further information and additional functions see EC Control Software, Fan-Set-App, or MODBUS Parameter Specification V6.0

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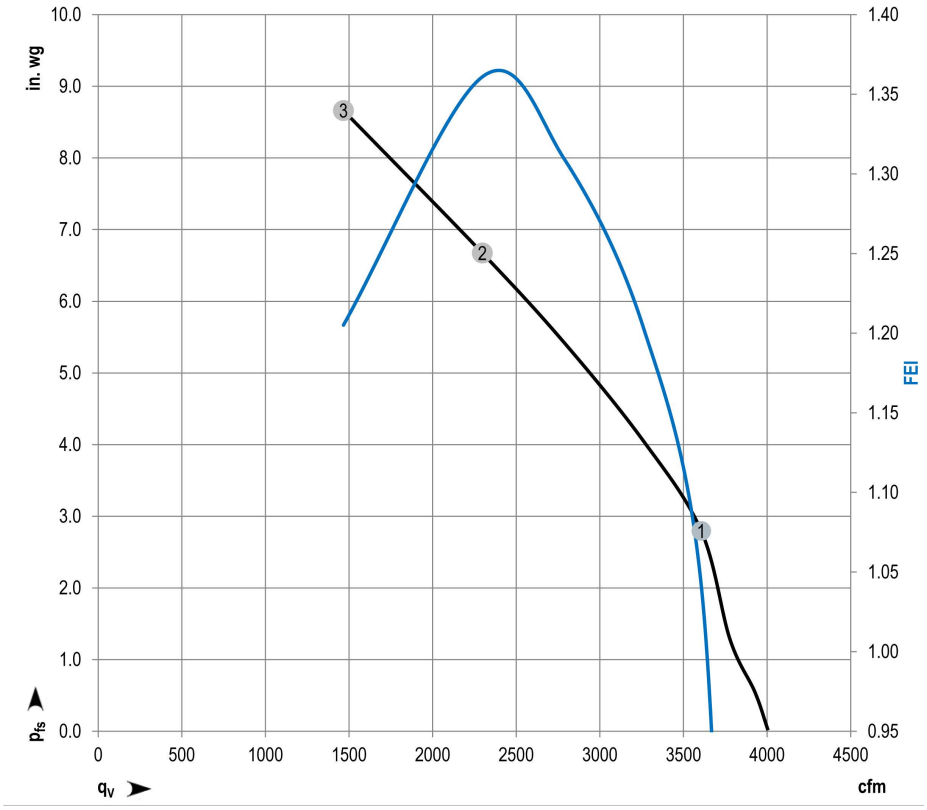

ρ = 0.075 lbm/ft³

Measurement: LU-1731

ebm-papst Inc. certifies that the RadiPac 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	230	60	3990	2781	7.46	3606	2.80	1.04
2	230	60	3918	3052	8.14	2297	6.67	1.36
3	230	60	4061	2997	8.00	1467	8.66	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 "F" (Direct Drive, As Run Speed)
Performance ratings include the effects of support brackets.

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VBH0310PTRLA-PV69

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Nominal data

Type	**VBH0310PTRLA-PV69**
Motor	**M3G112-GA**

Phase		3~
Nominal voltage	VAC	460
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	3980
Power consumption	W	3083
Current draw	A	4.19
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	40

ml = Max. load
Subject to change

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

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Technical description

Weight	21 kg
Size	310 mm
Motor size	112
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Support plate material	Sheet steel, galvanized
Support bracket material	Steel, painted black
Inlet nozzle material	Sheet steel, galvanized
Number of blades	5
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1
Ambient temperature note	Occasional start-up at temperatures between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), use must be made of a fan design with special low-temperature bearings.
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	See product drawing
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Operation and alarm display with LED - External 15-50 VDC input (parameterization) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.0 - Motor current limitation - RFID - ISO 15693 compatible - RS-485 MODBUS-RTU - Soft start - Voltage output 3.3-24 VDC, Pmax = 800 mW - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
EMC immunity to interference	According to EN 61000-6-2 (industrial environment)
EMC interference emission	According to EN 61000-6-3 (household environment), except EN 61000-3-2 for professionally used equipment with a total rated power greater than 1 kW
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
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
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730-1

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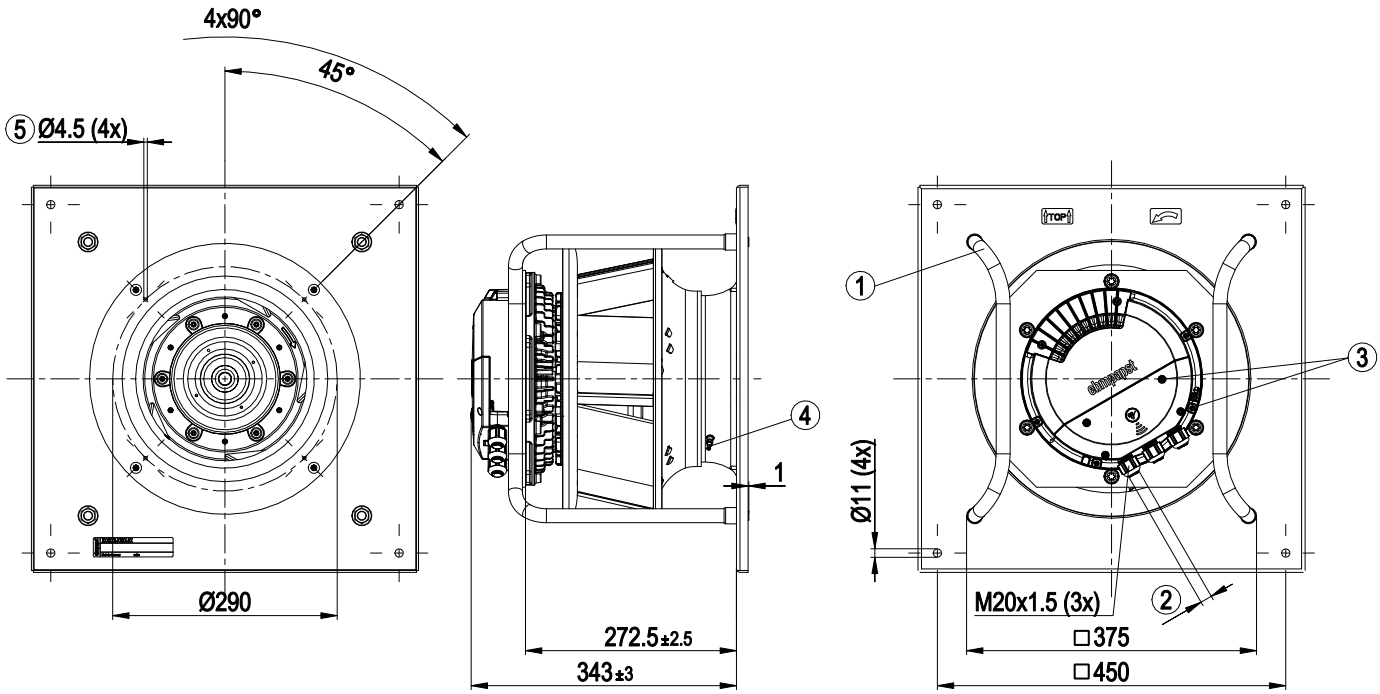

1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm
3	Tightening torque 1.5 ± 0.2 Nm
4	Inlet ring with pressure tap (k-factor: 116)
5	Attachment holes for FlowGrid (25310-2-2957 not included in scope of delivery)

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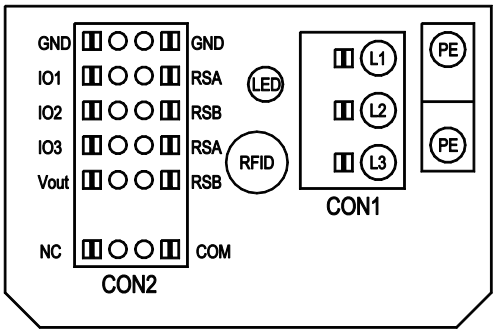
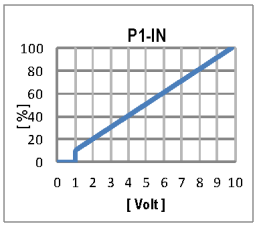
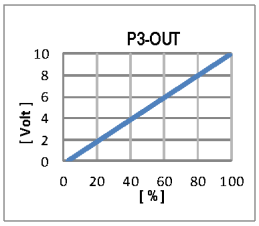
Electrical interface







No.	Conn.	Designation	Function/assignment
	CON1	L1, L2, L3	Power supply, phase, see nameplate for voltage range
	PE	PE	Protective earth
	CON2	RSA	RS485 interface for MODBUS, RSA; SELV
	CON2	RSB	RS485 interface for MODBUS, RSB; SELV
	CON2	GND	Reference ground for control interface, SELV
	CON2	IO1	Function parameterizable (see “Optional interface functions” table) Factory setting: Digital input - high active, function: Disable input, SELV - inactive: Pin open or applied voltage < 1.5 VDC - active: applied voltage 3.5-50 VDC Reset function: Triggering of error reset on change of state from "enabled" to "disabled"
	CON2	IO2	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog input 0-10 V / PWM, Ri=100 kΩ, function: Set value Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV
	CON2	IO3	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog output 0-10 V, max. 5 mA, function: Fan modulation level Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV
	CON2	Vout	Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable Factory setting: 10 VDC short-circuit-proof, supply for external devices, SELV alternatively: 15-50 VDC input for parameterization via MODBUS without line voltage
	CON2	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and on control interface side
	CON2	NC	Status relay, floating status contact, break for failure
		LED	green: status = good, ready for operation orange: status = warning red: status = failure
		P1-IN	Input characteristic curve
		P3-OUT	Output characteristic curve

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with support bracket

Terminal/plug assignment

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	INPUT: 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	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	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	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D159 [0]		○			○	○	○	○			○						
	○ **Ain2 0-10V/PWM**: analog input	Ri=100K, characteristic curve parameterizable, fPWM=1k..10KHz, SELV	D159 [2]	○																
	○ **Ain2 4-20mA**: analog input	Ri=125R, characteristic curve parameterizable, SELV	D159 [3]																	
IO3	○ **Din3 (active high)**: digital input	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D15A [0]		○			○	○	○	○			○						
	○ **Din3 (active low)**: digital input	active: pin open or applied voltage 3,5-50VDC not active: applied voltage < 1,5VDC, SELV	D15A [1]																	
	○ **PWMin3**: digital input	40Hz - 10kHz, characteristics parameterizable not active: pin open or applied voltage 3,5-50VDC active: applied voltage < 1,5VDC, SELV	D15A [7]	○																
	○ **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 RSB	RS485 bus connection,	MODBUS RTU, specification V6.0, SELV		○						○										
Vout	voltage output	voltage parameterizable 3,3...24VDC +/- 5,5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV	D16E [...]																	
	alternatively: Input auxiliary power supply for parameter-ization via RS485/MODBUS RTU without line voltage	15...50VDC																		

○ configurable option

For further information and additional functions see EC Control Software, Fan-Set-App, or MODBUS Parameter Specification V6.0

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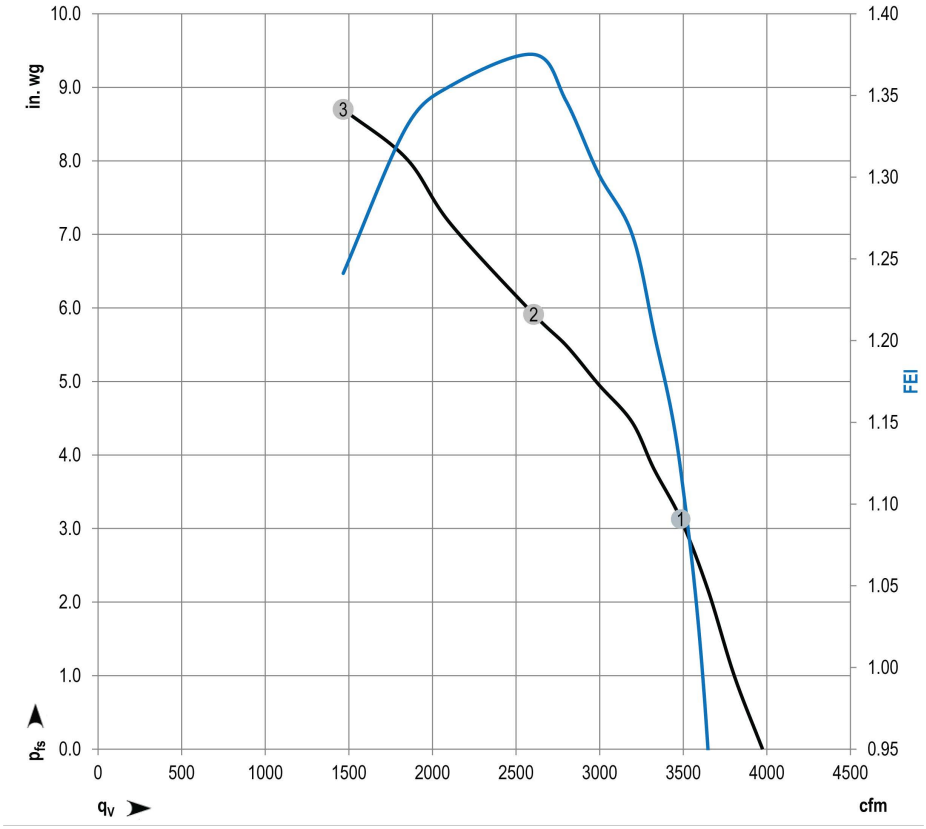

ρ = 0.075 lbm/ft³

Measurement: LU-1718

ebm-papst Inc. certifies that the RadiPac 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	460	60	4017	2755	3.77	3485	3.13	1.12
2	460	60	3935	3022	4.11	2606	5.91	1.38
3	460	60	4018	2921	3.98	1467	8.70	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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VBH0355PTRLA-PV71

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Nominal data

Type	**VBH0355PTRLA-PV71**
Motor	**M3G112-GA**

Phase		3~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 240
Frequency	Hz	60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	3245
Power consumption	W	3025
Current draw	A	8.1
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	40

ml = Max. load
Subject to change

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

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Technical description

Size	355 mm
Motor size	112
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Support plate material	Sheet steel, galvanized
Support bracket material	Steel, painted black
Inlet nozzle material	Sheet steel, galvanized
Number of blades	5
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1
Ambient temperature note	Occasional start-up at temperatures between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), use must be made of a fan design with special low-temperature bearings.
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	See legend on product drawing
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Operation and alarm display with LED - External 15-50 VDC input (parameterization) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.0 - Motor current limitation - RFID - ISO 15693 compatible - RS-485 MODBUS-RTU - Soft start - Voltage output 3.3-24 VDC, Pmax = 800 mW - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	Terminal box
Motor protection	Thermal overload protector (TOP) internally connected
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 61800-5-1; CE
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730-1

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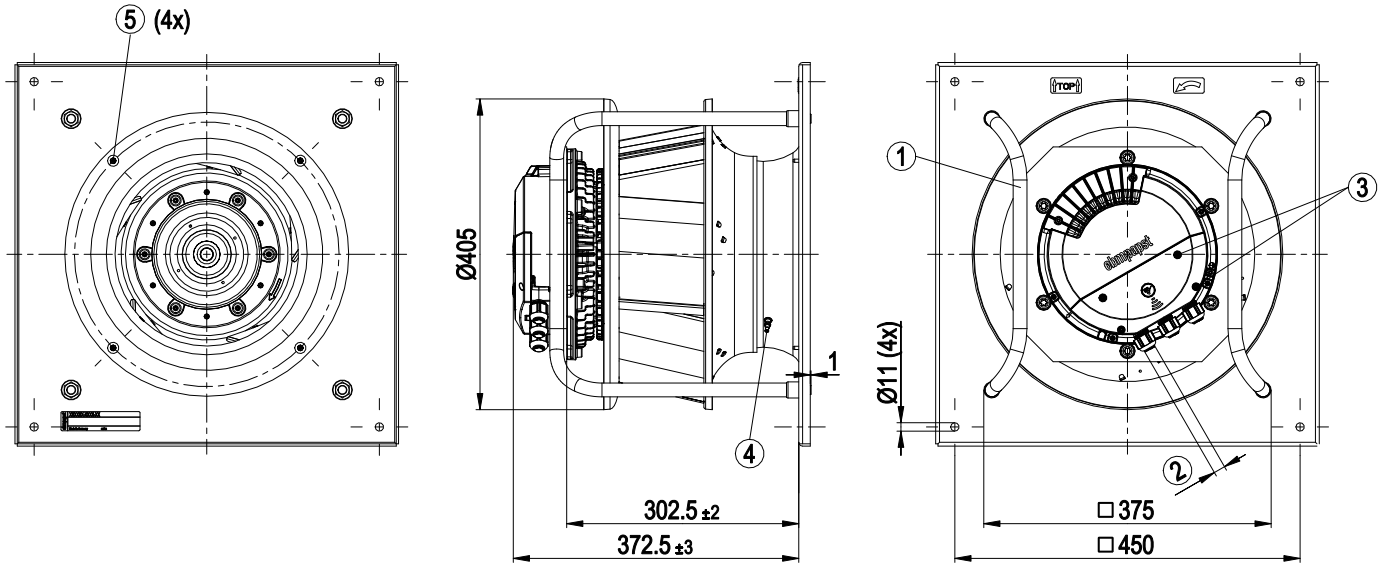
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm
3	Tightening torque 1.5 ± 0.2 Nm
4	Inlet ring with pressure tap (k-factor: 148)
5	Attachment for inlet ring and FlowGrid (00400-2-2957 not included in scope of delivery)

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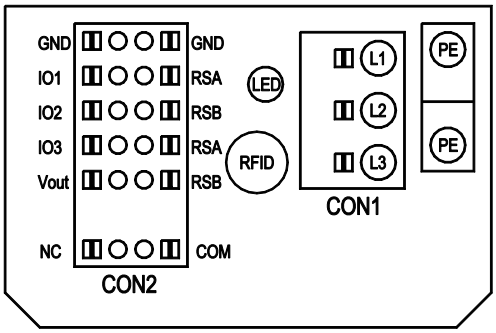
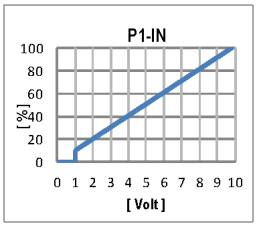
RadiPac Plenum Fan

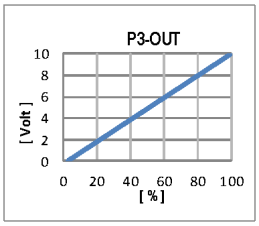
backward curved, single inlet

with support bracket

Electrical interface







No.	Conn.	Designation	Function/assignment
	CON1	L1, L2, L3	Power supply, phase, see nameplate for voltage range
	PE	PE	Protective earth
	CON2	RSA	RS485 interface for MODBUS, RSA; SELV
	CON2	RSB	RS485 interface for MODBUS, RSB; SELV
	CON2	GND	Reference ground for control interface, SELV
	CON2	IO1	Function parameterizable (see “Optional interface functions” table) Factory setting: Digital input - high active, function: Disable input, SELV - inactive: Pin open or applied voltage < 1.5 VDC - active: applied voltage 3.5-50 VDC Reset function: Triggering of error reset on change of state from "enabled" to "disabled"
	CON2	IO2	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog input 0-10 V / PWM, Ri=100 kΩ, function: Set value Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV
	CON2	IO3	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog output 0-10 V, max. 5 mA, function: Fan modulation level Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV
	CON2	Vout	Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable Factory setting: 10 VDC short-circuit-proof, supply for external devices, SELV alternatively: 15-50 VDC input for parameterization via MODBUS without line voltage
	CON2	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and on control interface side
	CON2	NC	Status relay, floating status contact, break for failure
		LED	green: status = good, ready for operation orange: status = warning red: status = failure
		P1-IN	Input characteristic curve
		P3-OUT	Output characteristic curve

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RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Terminal/plug assignment

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	INPUT: 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	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	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	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D159 [0]				○	○	○	○	○								
	○ **Ain2 0-10V/PWM**: analog input	Ri=100K, characteristic curve parameterizable, fPWM=1k..10KHz, SELV	D159 [2]			○													
	○ **Ain2 4-20mA**: analog input	Ri=125R, characteristic curve parameterizable, SELV	D159 [3]			○													
IO3	○ **Din3 (active high)**: digital input	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D15A [0]				○	○	○	○	○								
	○ **Din3 (active low)**: digital input	active: pin open or applied voltage 3,5-50VDC not active: applied voltage < 1,5VDC, SELV	D15A [1]				○	○	○	○	○								
	○ **PWMin3**: digital input	40Hz - 10kHz, characteristics parameterizable not active: pin open or applied voltage 3,5-50VDC active: applied voltage < 1,5VDC, SELV	D15A [7]		○														
	○ **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 RSB	RS485 bus connection,	MODBUS RTU, specification V6.0, SELV			○						○								
Vout	voltage output	voltage parameterizable 3,3...24VDC +/- 5,5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV	D16E [...]																
	alternatively: Input auxiliary power supply for parameter-ization via RS485/MODBUS RTU without line voltage	15...50VDC																	

○ configurable option

For further information and additional functions see EC Control Software, Fan-Set-App, or MODBUS Parameter Specification V6.0

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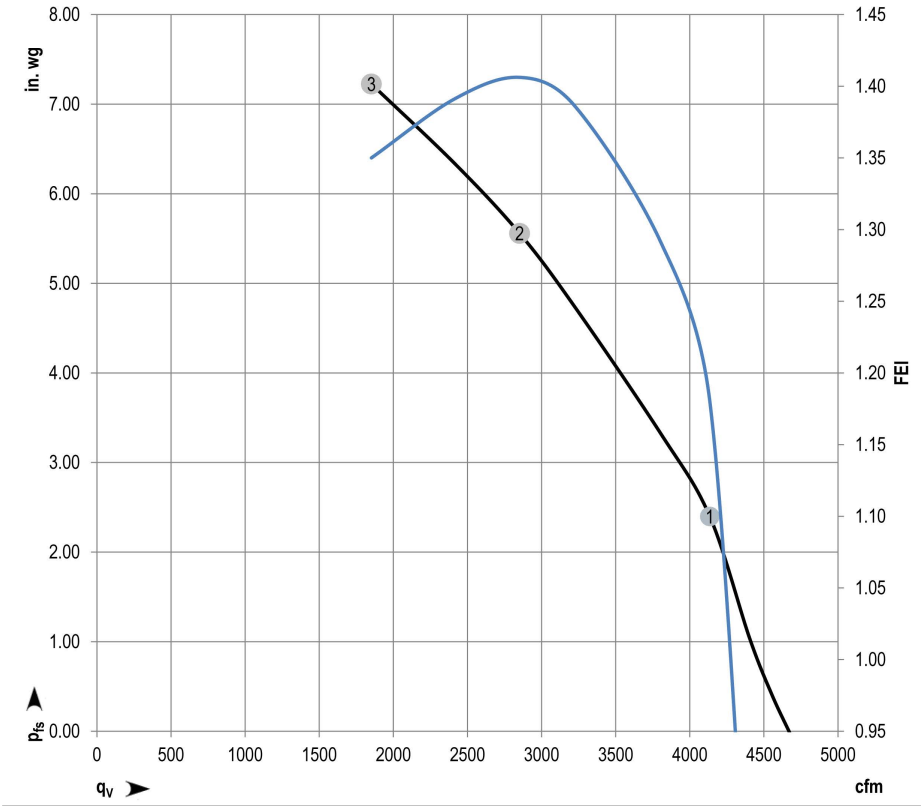
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



ρ = 0.075 lbm/ft³

Measurement: LU-1713

ebm-papst Inc. certifies that the RadiPac 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	Pe_d	I	q_v	P_{fs}	FEI
	V	Hz	rpm	W	A	cfm	in. wg	
1	230	60	3236	2444	6.58	4135	2.40	1.18
2	230	60	3249	3025	8.09	2852	5.56	1.41
3	230	60	3252	2752	7.40	1852	7.22	1.35

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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VBH0355PTRLA-PV70

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

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Nominal data

Type	**VBH0355PTRLA-PV70**
Motor	**M3G112-GA**

Phase		3~
Nominal voltage	VAC	460
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	3245
Power consumption	W	2978
Current draw	A	4.07
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	40

ml = Max. load
Subject to change

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

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Technical description

Size	355 mm
Motor size	112
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Support plate material	Sheet steel, galvanized
Support bracket material	Steel, painted black
Inlet nozzle material	Sheet steel, galvanized
Number of blades	5
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1
Ambient temperature note	Occasional start-up at temperatures between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), use must be made of a fan design with special low-temperature bearings.
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	See legend on product drawing
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Operation and alarm display with LED - External 15-50 VDC input (parameterization) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.0 - Motor current limitation - RFID - ISO 15693 compatible - RS-485 MODBUS-RTU - Soft start - Voltage output 3.3-24 VDC, Pmax = 800 mW - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	Terminal box
Motor protection	Thermal overload protector (TOP) internally connected
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 61800-5-1; CE
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730-1

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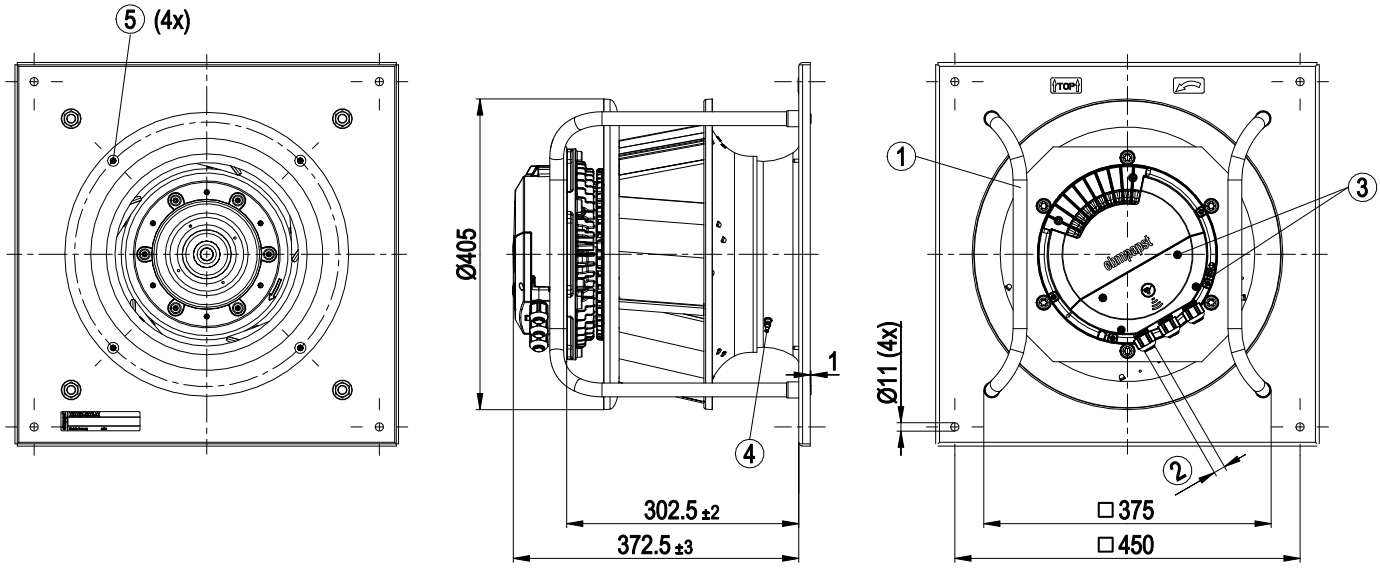
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm
3	Tightening torque 1.5 ± 0.2 Nm
4	Inlet ring with pressure tap (k-factor: 148)
5	Attachment for inlet ring and FlowGrid (00400-2-2957 not included in scope of delivery)

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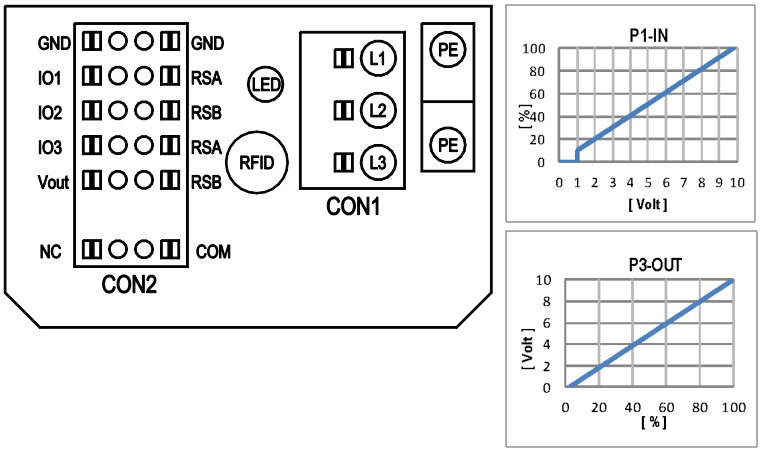
RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Electrical interface



No.	Conn.	Designation	Function/assignment
	CON1	L1, L2, L3	Power supply, phase, see nameplate for voltage range
	PE	PE	Protective earth
	CON2	RSA	RS485 interface for MODBUS, RSA; SELV
	CON2	RSB	RS485 interface for MODBUS, RSB; SELV
	CON2	GND	Reference ground for control interface, SELV
	CON2	IO1	Function parameterizable (see “Optional interface functions” table) Factory setting: Digital input - high active, function: Disable input, SELV - inactive: Pin open or applied voltage < 1.5 VDC - active: applied voltage 3.5-50 VDC Reset function: Triggering of error reset on change of state from "enabled" to "disabled"
	CON2	IO2	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog input 0-10 V / PWM, Ri=100 kΩ, function: Set value Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV
	CON2	IO3	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog output 0-10 V, max. 5 mA, function: Fan modulation level Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV
	CON2	Vout	Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable Factory setting: 10 VDC short-circuit-proof, supply for external devices, SELV alternatively: 15-50 VDC input for parameterization via MODBUS without line voltage
	CON2	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and on control interface side
	CON2	NC	Status relay, floating status contact, break for failure
		LED	green: status = good, ready for operation orange: status = warning red: status = failure
		P1-IN	Input characteristic curve
		P3-OUT	Output characteristic curve

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RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Terminal/plug assignment

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 % 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	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	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	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D159 [0]				○	○	○	○	○								
	○ **Ain2 0-10V/PWM**: analog input	Ri=100K, characteristic curve parameterizable, fPWM=1k..10KHz, SELV	D159 [2]			○													
	○ **Ain2 4-20mA**: analog input	Ri=125R, characteristic curve parameterizable, SELV	D159 [3]			○													
IO3	○ **Din3 (active high)**: digital input	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D15A [0]				○	○	○	○	○								
	○ **Din3 (active low)**: digital input	active: pin open or applied voltage 3,5-50VDC not active: applied voltage < 1,5VDC, SELV	D15A [1]																
	○ **PWMin3**: digital input	40Hz - 10kHz, characteristics parameterizable not active: pin open or applied voltage 3,5-50VDC active: applied voltage < 1,5VDC, SELV	D15A [7]			○													
	○ **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 RSB	RS485 bus connection,	MODBUS RTU, specification V6.0, SELV			○		○	○	○	○	○								
Vout	voltage output	voltage parameterizable 3,3...24VDC +/- 5,5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV	D16E [...]																
	alternatively: Input auxiliary power supply for parameter-ization via RS485/MODBUS RTU without line voltage	15...50VDC																	

○ configurable option

For further information and additional functions see EC Control Software, Fan-Set-App, or MODBUS Parameter Specification V6.0

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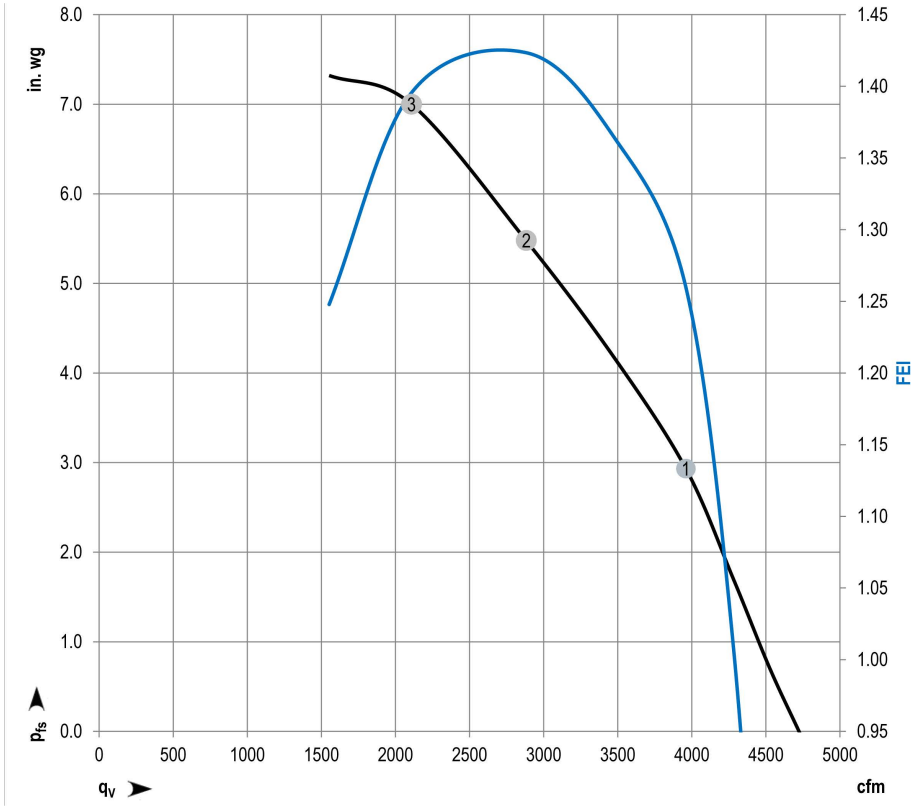
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



ρ = 0.075 lbm/ft³

Measurement: LU-1706

ebm-papst Inc. certifies that the RadiPac 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	460	60	3230	2599	3.59	3959	2.93	1.26
2	460	60	3240	2978	4.07	2883	5.48	1.42
3	460	60	3257	2886	3.96	2108	7.00	1.40

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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VBH0400PTTLA-PA41

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

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Farmington, CT 06032
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www.ebmpapst.us

Nominal data

Model	**VBH0400PTTLA-PA41**
Motor	**M3G150-FF**

Phase		3~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 240
Frequency	Hz	60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	2810
Power consumption	W	3902
Current draw	A	10.52
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	40

ml = Max. load
Subject to change

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

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Technical description

Weight	19.2 kg
Size	400 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Number of blades	5
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1
Ambient temperature note	Occasional start-up at temperatures between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), use must be made of a fan design with special low-temperature bearings.
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	Shaft horizontal or rotor on bottom; rotor on top on request
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Operation and alarm display with LED - External 15-50 VDC input (parameterization) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.0 - Motor current limitation - RFID - ISO 15693 compatible - RS-485 MODBUS-RTU - Soft start - Voltage output 3.3-24 VDC, Pmax = 800 mW - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	Terminal box
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 61800-5-1; CE
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730-1

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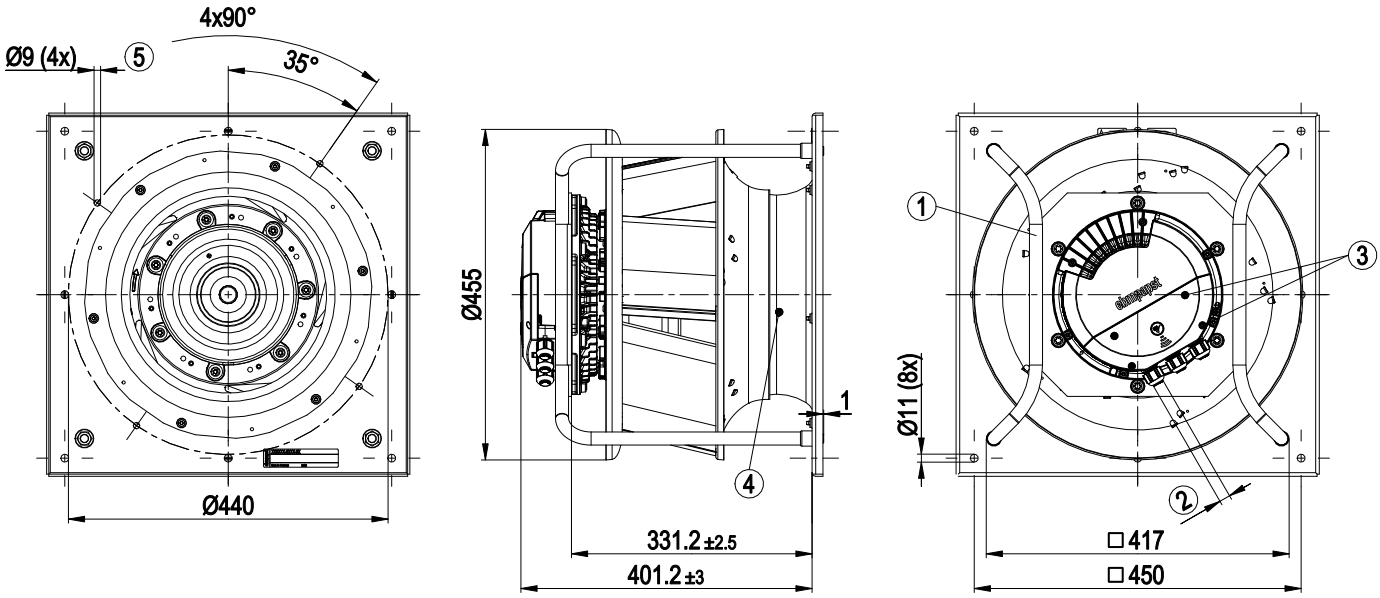
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm
3	Tightening torque 1.5 ± 0.2 Nm
4	Inlet ring with pressure tap (k-factor: 188)
5	Attachment holes for FlowGrid (35505-2-2957 not included in scope of delivery)

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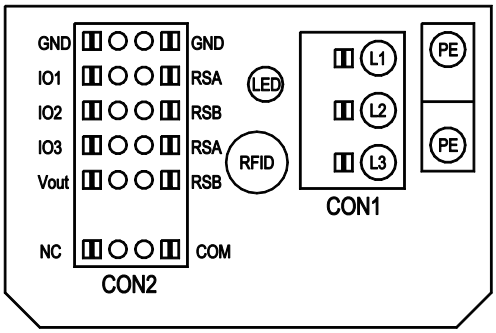
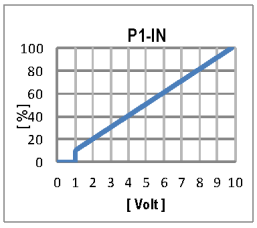
RadiPac Plenum Fan

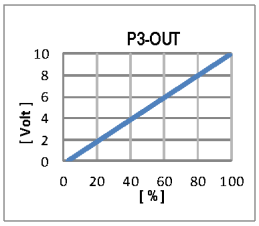
backward curved, single inlet

with support bracket

Electrical Interface







No.	Conn.	Designation	Function/assignment
	CON1	L1, L2, L3	Power supply, phase, see nameplate for voltage range
	PE	PE	Protective earth
	CON2	RSA	RS485 interface for MODBUS, RSA; SELV
	CON2	RSB	RS485 interface for MODBUS, RSB; SELV
	CON2	GND	Reference ground for control interface, SELV
	CON2	IO1	Function parameterizable (see “Optional interface functions” table) Factory setting: Digital input - high active, function: Disable input, SELV - inactive: Pin open or applied voltage < 1.5 VDC - active: applied voltage 3.5-50 VDC Reset function: Triggering of error reset on change of state from "enabled" to "disabled"
	CON2	IO2	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog input 0-10 V / PWM, Ri=100 kΩ, function: Set value Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV
	CON2	IO3	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog output 0-10 V, max. 5 mA, function: Fan modulation level Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV
	CON2	Vout	Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable Factory setting: 10 VDC short-circuit-proof, supply for external devices, SELV alternatively: 15-50 VDC input for parameterization via MODBUS without line voltage
	CON2	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and on control interface side
	CON2	NC	Status relay, floating status contact, break for failure
		LED	green: status = good, ready for operation orange: status = warning red: status = failure
		P1-IN	Input characteristic curve
		P3-OUT	Output characteristic curve

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RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Terminal/plug assignment

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 % 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	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	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	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D159 [0]		○		○	○	○	○	○								
	○ **Ain2 0-10V/PWM**: analog input	Ri=100K, characteristic curve parameterizable, fPWM=1k..10KHz, SELV	D159 [2]		○	○													
	○ **Ain2 4-20mA**: analog input	Ri=125R, characteristic curve parameterizable, SELV	D159 [3]		○	○													
IO3	○ **Din3 (active high)**: digital input	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D15A [0]		○		○	○	○	○	○								
	○ **Din3 (active low)**: digital input	active: pin open or applied voltage 3,5-50VDC not active: applied voltage < 1,5VDC, SELV	D15A [1]		○		○	○	○	○	○								
	○ **PWMin3**: digital input	40Hz - 10kHz, characteristics parameterizable not active: pin open or applied voltage 3,5-50VDC active: applied voltage < 1,5VDC, SELV	D15A [7]		○														
	○ **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 RSB	RS485 bus connection,	MODBUS RTU, specification V6.0, SELV			○		○	○	○	○	○								
Vout	voltage output	voltage parameterizable 3,3...24VDC +/- 5,5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV	D16E [...]																
	alternatively: Input auxiliary power supply for parameter-ization via RS485/MODBUS RTU without line voltage	15...50VDC																	

○ configurable option

For further information and additional functions see EC Control Software, Fan-Set-App, or MODBUS Parameter Specification V6.0

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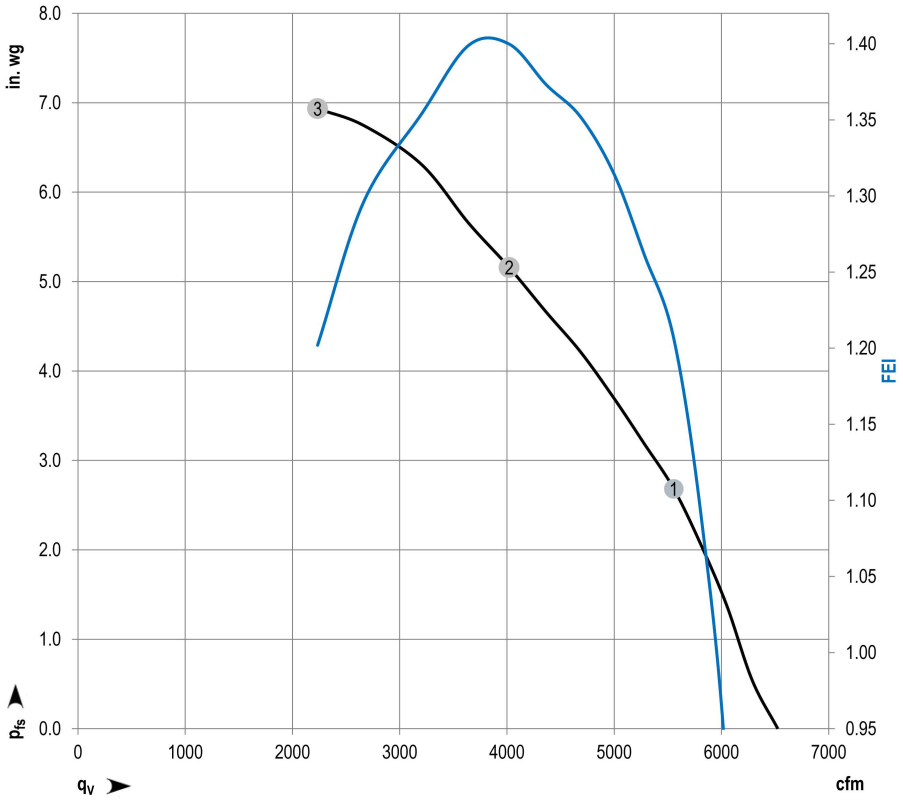
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



ρ = 0.075 lbm/ft³

Measurement: LU-1752

ebm-papst Inc. certifies that the RadiPac 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	230	60	2814	3420	9.25	5556	2.68	1.21
2	230	60	2791	3863	10.42	4021	5.16	1.40
3	230	60	2815	3492	9.42	2234	6.93	1.20

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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VBH0400PTTLA-PA27

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

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Farmington, CT 06032
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Nominal data

Model	**VBH0400PTTLA-PA27**
Motor	**M3G150-FF**

Phase		3~
Nominal voltage	VAC	460
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	2815
Power consumption	W	3880
Current draw	A	5.23
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	40

ml = Max. load
Subject to change

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

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Technical description

Weight	30 kg
Size	400 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Support plate material	Sheet steel, galvanized
Support bracket material	Steel, painted black
Inlet nozzle material	Sheet steel, galvanized
Number of blades	5
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1
Ambient temperature note	Occasional start-up at temperatures between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), use must be made of a fan design with special low-temperature bearings.
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	See legend on product drawing
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Operation and alarm display with LED - External 15-50 VDC input (parameterization) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.0 - Motor current limitation - RFID - ISO 15693 compatible - RS-485 MODBUS-RTU - Soft start - Voltage output 3.3-24 VDC, Pmax = 800 mW - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	Terminal box
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 61800-5-1; CE
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730-1

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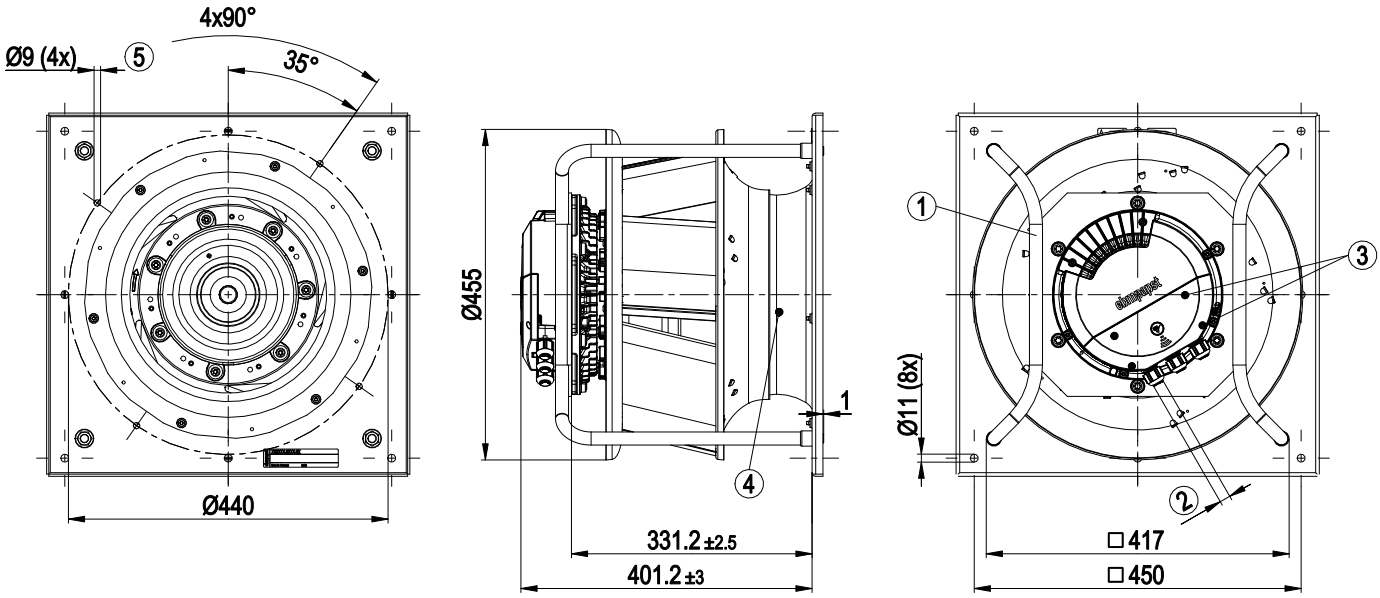
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm
3	Tightening torque 1.5 ± 0.2 Nm
4	Inlet ring with pressure tap (k-factor: 188)
5	Attachment holes for FlowGrid (35505-2-2957 not included in scope of delivery)

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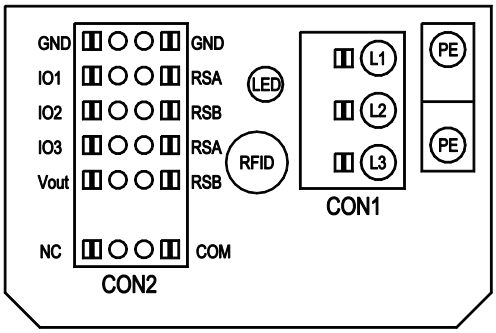
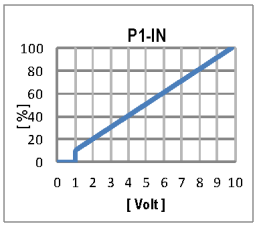
RadiPac Plenum Fan

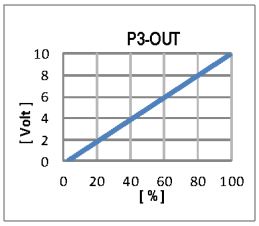
backward curved, single inlet

with support bracket

Electrical Interface







No.	Conn.	Designation	Function/assignment
	CON1	L1, L2, L3	Power supply, phase, see nameplate for voltage range
	PE	PE	Protective earth
	CON2	RSA	RS485 interface for MODBUS, RSA; SELV
	CON2	RSB	RS485 interface for MODBUS, RSB; SELV
	CON2	GND	Reference ground for control interface, SELV
	CON2	IO1	Function parameterizable (see “Optional interface functions” table) Factory setting: Digital input - high active, function: Disable input, SELV - inactive: Pin open or applied voltage < 1.5 VDC - active: applied voltage 3.5-50 VDC Reset function: Triggering of error reset on change of state from "enabled" to "disabled"
	CON2	IO2	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog input 0-10 V / PWM, Ri=100 kΩ, function: Set value Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV
	CON2	IO3	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog output 0-10 V, max. 5 mA, function: Fan modulation level Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV
	CON2	Vout	Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable Factory setting: 10 VDC short-circuit-proof, supply for external devices, SELV alternatively: 15-50 VDC input for parameterization via MODBUS without line voltage
	CON2	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and on control interface side
	CON2	NC	Status relay, floating status contact, break for failure
		LED	green: status = good, ready for operation orange: status = warning red: status = failure
		P1-IN	Input characteristic curve
		P3-OUT	Output characteristic curve

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RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Terminal/plug assignment

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 % 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	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	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	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D159 [0]		○		○	○	○	○	○								
	○ **Ain2 0-10V/PWM**: analog input	Ri=100K, characteristic curve parameterizable, fPWM=1k..10KHz, SELV	D159 [2]		○	○													
	○ **Ain2 4-20mA**: analog input	Ri=125R, characteristic curve parameterizable, SELV	D159 [3]		○	○													
IO3	○ **Din3 (active high)**: digital input	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D15A [0]		○		○	○	○	○	○								
	○ **Din3 (active low)**: digital input	active: pin open or applied voltage 3,5-50VDC not active: applied voltage < 1,5VDC, SELV	D15A [1]		○		○	○	○	○	○								
	○ **PWMin3**: digital input	40Hz - 10kHz, characteristics parameterizable not active: pin open or applied voltage 3,5-50VDC active: applied voltage < 1,5VDC, SELV	D15A [7]		○														
	○ **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 RSB	RS485 bus connection,	MODBUS RTU, specification V6.0, SELV			○		○	○	○	○	○								
Vout	voltage output	voltage parameterizable 3,3...24VDC +/- 5,5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV	D16E [...]																
	alternatively: Input auxiliary power supply for parameter-ization via RS485/MODBUS RTU without line voltage	15...50VDC																	

○ configurable option

For further information and additional functions see EC Control Software, Fan-Set-App, or MODBUS Parameter Specification V6.0

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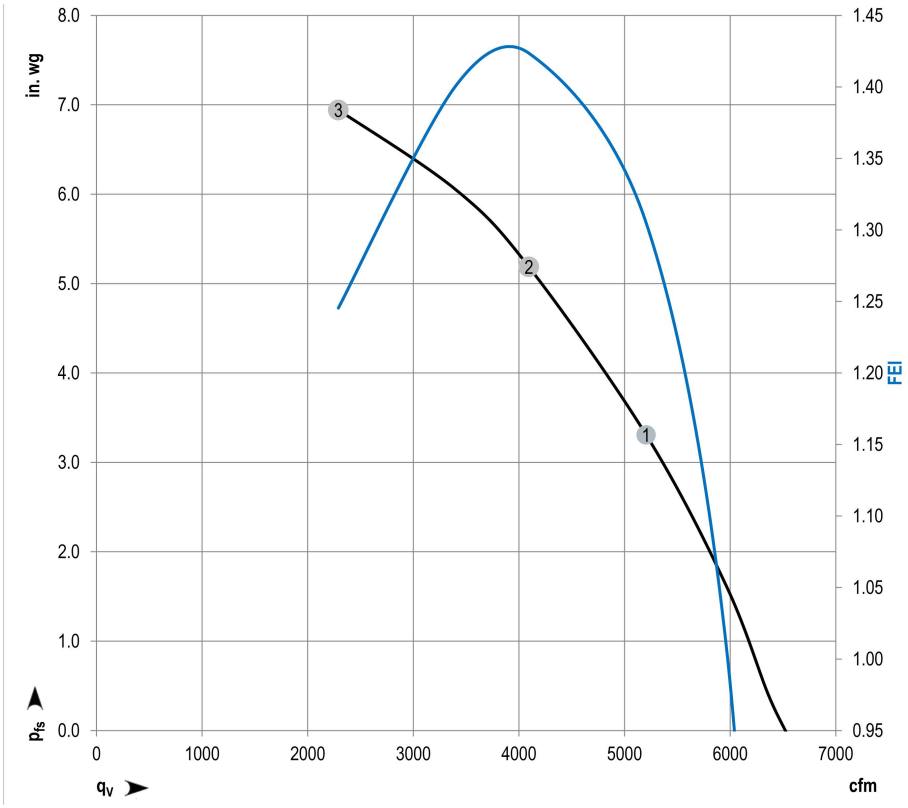
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



ρ = 0.075 lbm/ft³

Measurement: LU-1755

ebm-papst Inc. certifies that the RadiPac 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	460	60	2805	3554	4.79	5204	3.31	1.30
2	460	60	2811	3880	5.23	4094	5.19	1.42
3	460	60	2813	3446	4.68	2290	6.94	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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VBH0450PTTLA-PA29

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

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Farmington, CT 06032
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Nominal data

Type	**VBH0450PTTLA-PA29**
Motor	**M3G150-FF**

Phase		3~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 240
Frequency	Hz	60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	2301
Power consumption	W	3903
Current draw	A	10.6
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	40

ml = Max. load
Subject to change

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

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Technical description

Weight	37 kg
Size	450 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Support plate material	Sheet steel, galvanized
Support bracket material	Steel, painted black
Inlet nozzle material	Sheet steel, galvanized
Number of blades	5
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1
Ambient temperature note	Occasional start-up at temperatures between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), use must be made of a fan design with special low-temperature bearings.
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	See legend on product drawing
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Operation and alarm display with LED - External 15-50 VDC input (parameterization) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.0 - Motor current limitation - RFID - ISO 15693 compatible - RS-485 MODBUS-RTU - Soft start - Voltage output 3.3-24 VDC, Pmax = 800 mW - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
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 according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
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
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730-1

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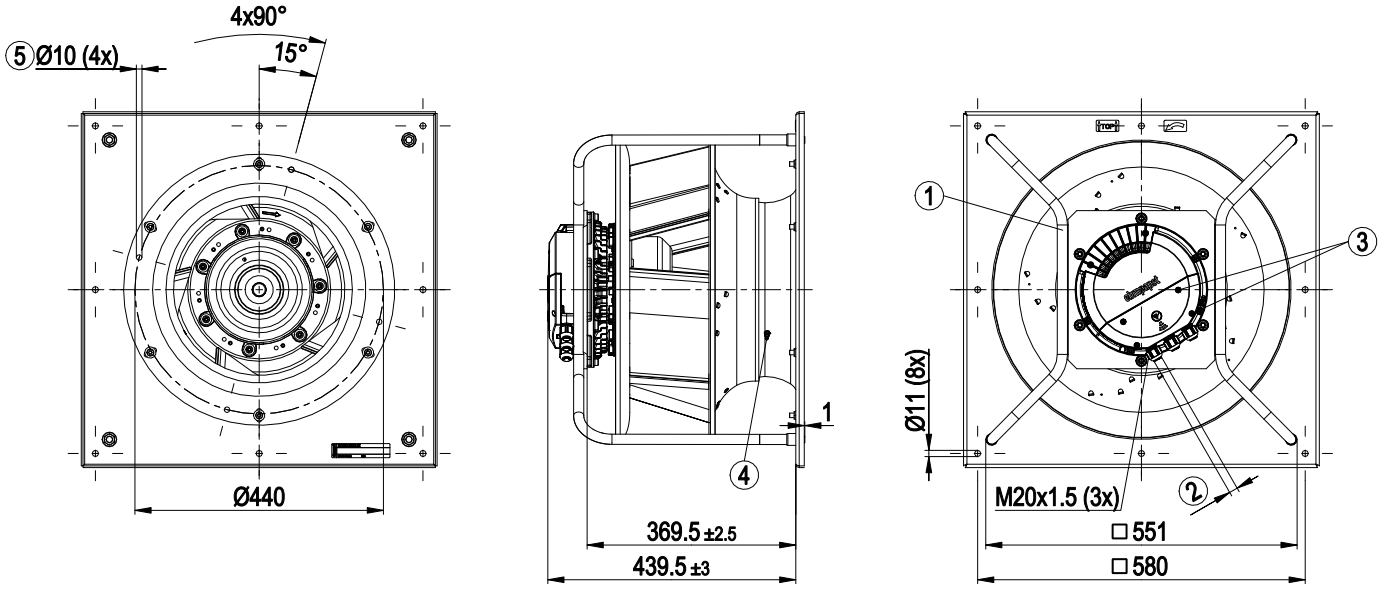
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm
3	Tightening torque 1.5 ± 0.2 Nm
4	Inlet ring with pressure tap (k-factor: 240)
5	Attachment holes for FlowGrid (35505-2-2957 not included in scope of delivery)

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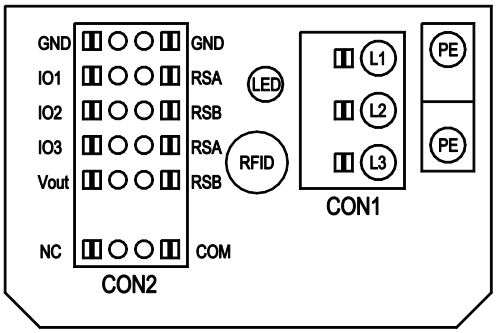
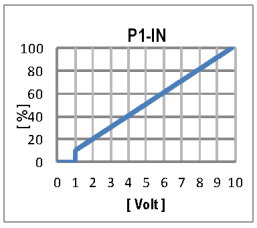
RadiPac Plenum Fan

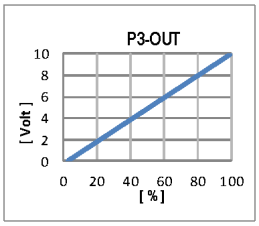
backward curved, single inlet

with support bracket

Electrical interface







No.	Conn.	Designation	Function/assignment
	CON1	L1, L2, L3	Power supply, phase, see nameplate for voltage range
	PE	PE	Protective earth
	CON2	RSA	RS485 interface for MODBUS, RSA; SELV
	CON2	RSB	RS485 interface for MODBUS, RSB; SELV
	CON2	GND	Reference ground for control interface, SELV
	CON2	IO1	Function parameterizable (see “Optional interface functions” table) Factory setting: Digital input - high active, function: Disable input, SELV - inactive: Pin open or applied voltage < 1.5 VDC - active: applied voltage 3.5-50 VDC Reset function: Triggering of error reset on change of state from "enabled" to "disabled"
	CON2	IO2	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog input 0-10 V / PWM, Ri=100 kΩ, function: Set value Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV
	CON2	IO3	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog output 0-10 V, max. 5 mA, function: Fan modulation level Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV
	CON2	Vout	Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable Factory setting: 10 VDC short-circuit-proof, supply for external devices, SELV alternatively: 15-50 VDC input for parameterization via MODBUS without line voltage
	CON2	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and on control interface side
	CON2	NC	Status relay, floating status contact, break for failure
		LED	green: status = good, ready for operation orange: status = warning red: status = failure
		P1-IN	Input characteristic curve
		P3-OUT	Output characteristic curve

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RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Terminal/plug assignment

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	INPUT: 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
			D158 [0]	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	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	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	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D159 [0]				○	○	○	○	○								
	○ **Ain2 0-10V/PWM**: analog input	Ri=100K, characteristic curve parameterizable, fPWM=1k..10KHz, SELV	D159 [2]		○														
	○ **Ain2 4-20mA**: analog input	Ri=125R, characteristic curve parameterizable, SELV	D159 [3]		○														
IO3	○ **Din3 (active high)**: digital input	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D15A [0]				○	○	○	○	○								
	○ **Din3 (active low)**: digital input	active: pin open or applied voltage 3,5-50VDC not active: applied voltage < 1,5VDC, SELV	D15A [1]				○	○	○	○	○								
	○ **PWMin3**: digital input	40Hz - 10kHz, characteristics parameterizable not active: pin open or applied voltage 3,5-50VDC active: applied voltage < 1,5VDC, SELV	D15A [7]	○															
	○ **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 RSB	RS485 bus connection,	MODBUS RTU, specification V6.0, SELV		○			○	○	○	○	○								
Vout	voltage output	voltage parameterizable 3,3...24VDC +/- 5,5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV	D16E [...]																
	alternatively: Input auxiliary power supply for parameter-ization via RS485/MODBUS RTU without line voltage	15...50VDC																	

○ configurable option

For further information and additional functions see EC Control Software, Fan-Set-App, or MODBUS Parameter Specification V6.0

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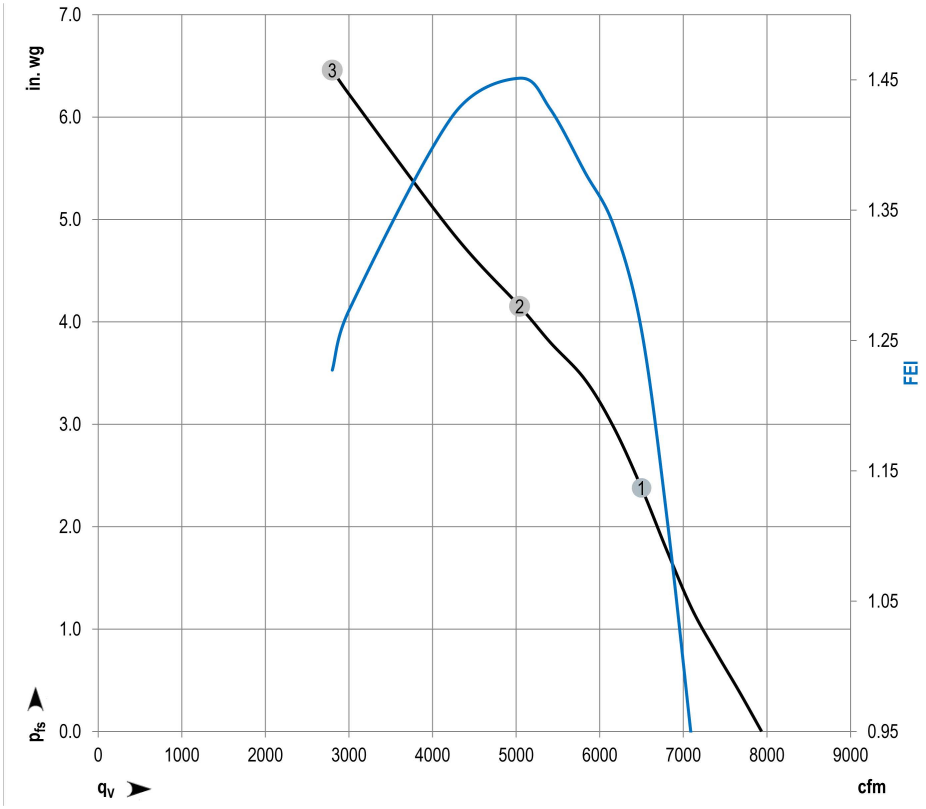
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



ρ = 0.075 lbm/ft³

Measurement: LU-1734

ebm-papst Inc. certifies that the RadiPac 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	230	60	2306	3431	9.28	6500	2.38	1.26
2	230	60	2259	3778	10.18	5041	4.15	1.45
3	230	60	2342	3903	10.55	2801	6.46	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 "F" (Direct Drive, As Run Speed)
Performance ratings include the effects of support brackets.

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VBH0450PTTLA-PA31

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

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Nominal data

Type	**VBH0450PTTLA-PA31**
Motor	**M3G150-FF**

Phase		3~
Nominal voltage	VAC	460
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	2438
Power consumption	W	4627
Current draw	A	6.19
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	40

ml = Max. load
Subject to change

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

Occasional start-up between -40 °C and -25 °C is permissible. For continuous operation at ambient temperatures below -25 °C (such as refrigeration applications), a fan design with special low-temperature bearings must be used.

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Technical description

Weight	37 kg
Size	450 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Support plate material	Sheet steel, galvanized
Support bracket material	Steel, painted black
Inlet nozzle material	Sheet steel, galvanized
Number of blades	5
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1
Ambient temperature note	Occasional start-up at temperatures between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), use must be made of a fan design with special low-temperature bearings.
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	See legend on product drawing
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Operation and alarm display with LED - External 15-50 VDC input (parameterization) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.0 - Motor current limitation - RFID - ISO 15693 compatible - RS-485 MODBUS-RTU - Soft start - Voltage output 3.3-24 VDC, Pmax = 800 mW - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
EMC immunity to interference	According to EN 61000-6-2 (industrial environment)
EMC interference emission	According to EN 61000-6-3 (household environment), except EN 61000-3-2 for professionally used equipment with a total rated power greater than 1 kW
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
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
Approval	EAC; CSA C22.2 No. 77 + CAN/CSA-E60730-1; UL 1004-7 + 60730-1

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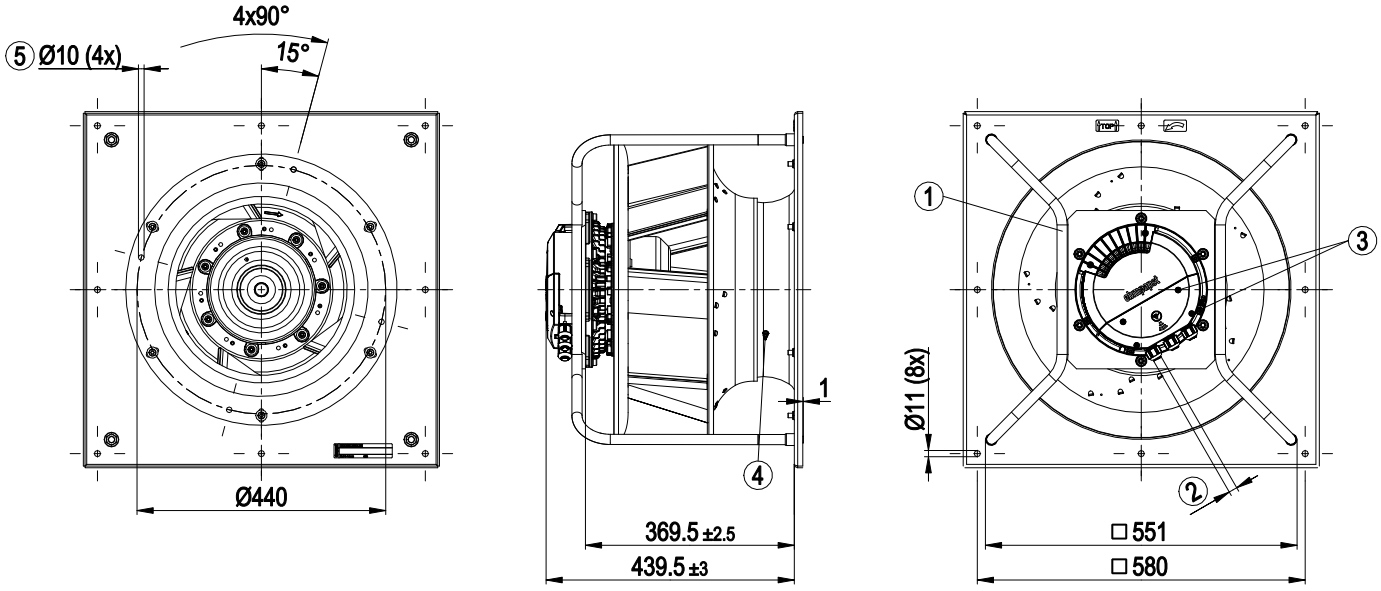
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm
3	Tightening torque 1.5 ± 0.2 Nm
4	Inlet ring with pressure tap (k-factor: 240)
5	Attachment holes for FlowGrid (35505-2-2957 not included in scope of delivery)

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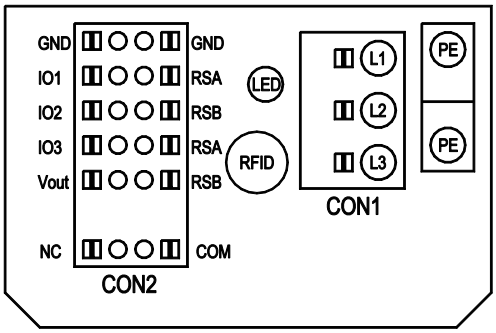
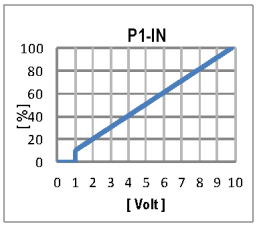
RadiPac Plenum Fan

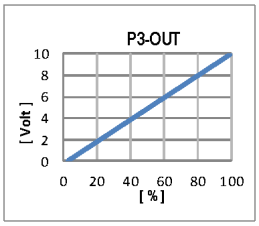
backward curved, single inlet

with support bracket

Electrical interface







No.	Conn.	Designation	Function/assignment
	CON1	L1, L2, L3	Power supply, phase, see nameplate for voltage range
	PE	PE	Protective earth
	CON2	RSA	RS485 interface for MODBUS, RSA; SELV
	CON2	RSB	RS485 interface for MODBUS, RSB; SELV
	CON2	GND	Reference ground for control interface, SELV
	CON2	IO1	Function parameterizable (see “Optional interface functions” table) Factory setting: Digital input - high active, function: Disable input, SELV - inactive: Pin open or applied voltage < 1.5 VDC - active: applied voltage 3.5-50 VDC Reset function: Triggering of error reset on change of state from "enabled" to "disabled"
	CON2	IO2	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog input 0-10 V / PWM, Ri=100 kΩ, function: Set value Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV
	CON2	IO3	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog output 0-10 V, max. 5 mA, function: Fan modulation level Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV
	CON2	Vout	Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable Factory setting: 10 VDC short-circuit-proof, supply for external devices, SELV alternatively: 15-50 VDC input for parameterization via MODBUS without line voltage
	CON2	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and on control interface side
	CON2	NC	Status relay, floating status contact, break for failure
		LED	green: status = good, ready for operation orange: status = warning red: status = failure
		P1-IN	Input characteristic curve
		P3-OUT	Output characteristic curve

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RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Terminal/plug assignment

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 % 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	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	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	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D159 [0]				○	○	○	○	○								
	○ **Ain2 0-10V/PWM**: analog input	Ri=100K, characteristic curve parameterizable, fPWM=1k..10KHz, SELV	D159 [2]			○													
	○ **Ain2 4-20mA**: analog input	Ri=125R, characteristic curve parameterizable, SELV	D159 [3]			○													
IO3	○ **Din3 (active high)**: digital input	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D15A [0]				○	○	○	○	○								
	○ **Din3 (active low)**: digital input	active: pin open or applied voltage 3,5-50VDC not active: applied voltage < 1,5VDC, SELV	D15A [1]																
	○ **PWMin3**: digital input	40Hz - 10kHz, characteristics parameterizable not active: pin open or applied voltage 3,5-50VDC active: applied voltage < 1,5VDC, SELV	D15A [7]			○													
	○ **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 RSB	RS485 bus connection,	MODBUS RTU, specification V6.0, SELV			○														
Vout	voltage output	voltage parameterizable 3,3...24VDC +/- 5,5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV	D16E [...]																
	alternatively: Input auxiliary power supply for parameter-ization via RS485/MODBUS RTU without line voltage	15...50VDC																	

○ configurable option

For further information and additional functions see EC Control Software, Fan-Set-App, or MODBUS Parameter Specification V6.0

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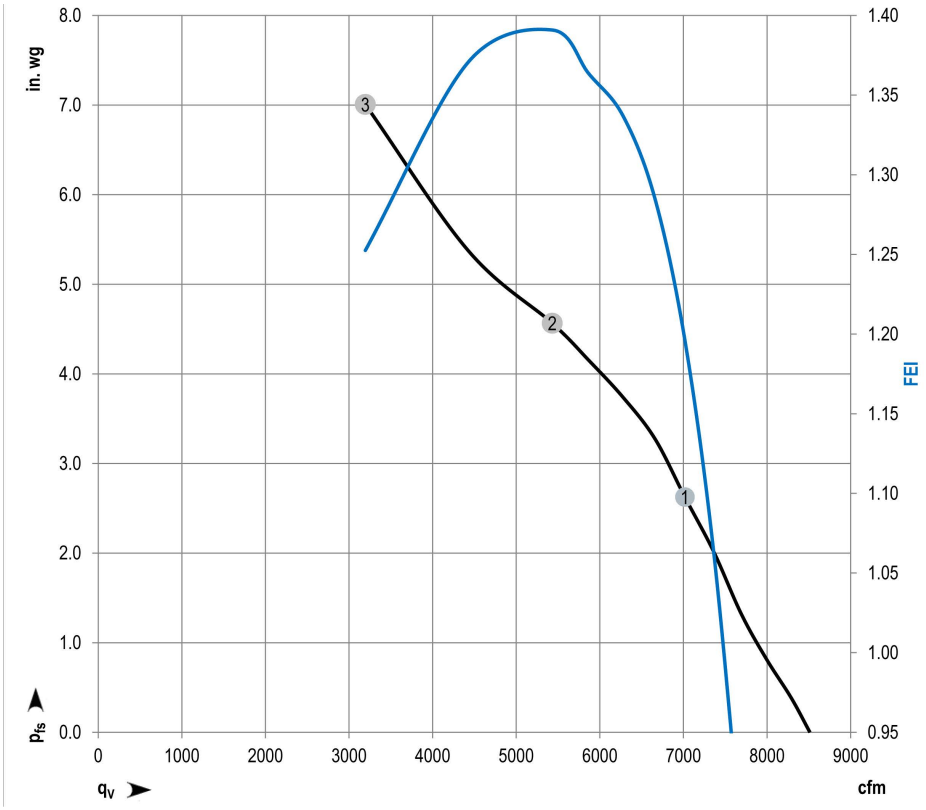
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



ρ = 0.075 lbm/ft³

Measurement: LU-1729

ebm-papst Inc. certifies that the RadiPac 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	460	60	2473	4199	5.62	7018	2.63	1.20
2	460	60	2406	4589	6.13	5431	4.56	1.39
3	460	60	2464	4627	6.19	3195	7.01	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 "F" (Direct Drive, As Run Speed)
Performance ratings include the effects of support brackets.

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VBH0450PTTPA-PB35

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

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Nominal data

Model	**VBH0450PTTPA-PB35**
Motor	**M3G150-IF**

Phase		3~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 240
Frequency	Hz	60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	2610
Power consumption	W	5742
Current draw	A	15.56
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	40

ml = Max. load
Subject to change

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

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Technical description

Weight	47 kg
Size	450 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Support plate material	Sheet steel, galvanized
Support bracket material	Steel, painted black
Inlet nozzle material	Sheet steel, galvanized
Number of blades	5
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	See product drawing
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Output 20 VDC, max. 50 mA - Output for slave 0-10 V - Input for sensor 0-10 V or 4-20 mA - External 24 V input (parameter setting) - External release input - Alarm relay - Integrated PID controller - Motor current limitation - PFC, passive - RS-485 MODBUS-RTU - Soft start - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
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 according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
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
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730-1

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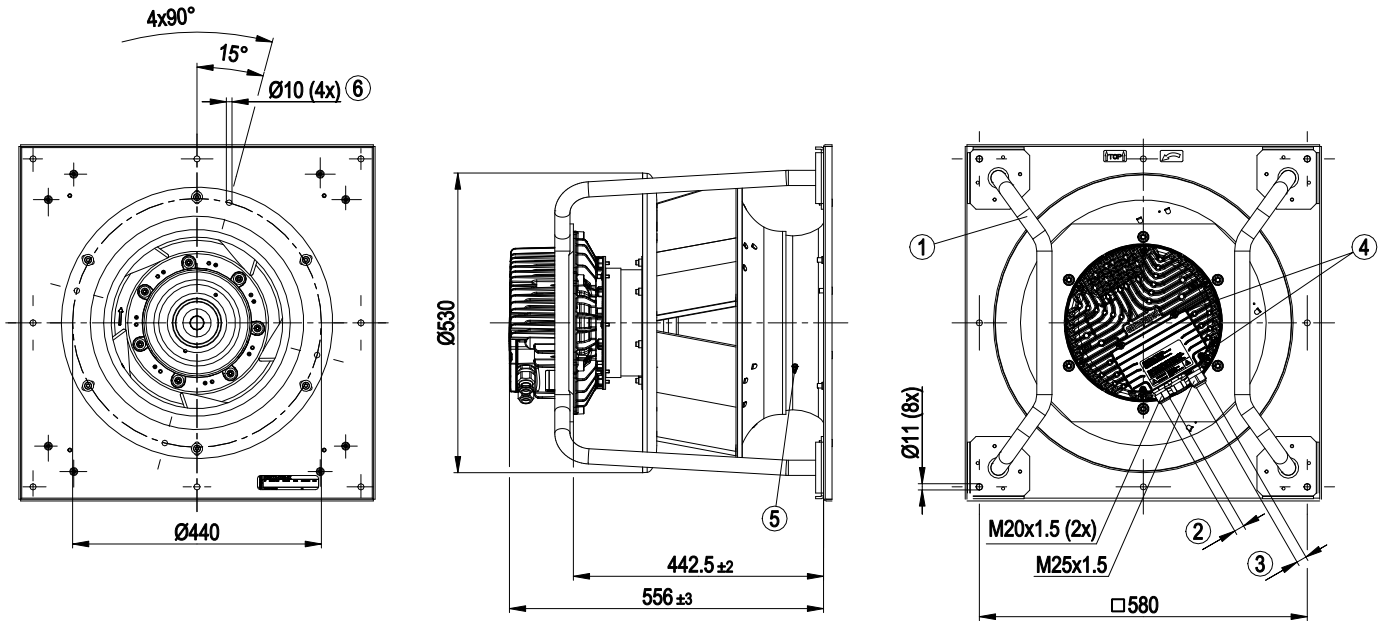
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm
3	Cable diameter min. 9 mm, max. 16 mm, tightening torque 6 ± 0.9 Nm
4	Tightening torque 3.5 ± 0.5 Nm
5	Inlet ring with pressure tap (k-factor: 240)
6	Mounting holes for FlowGrid

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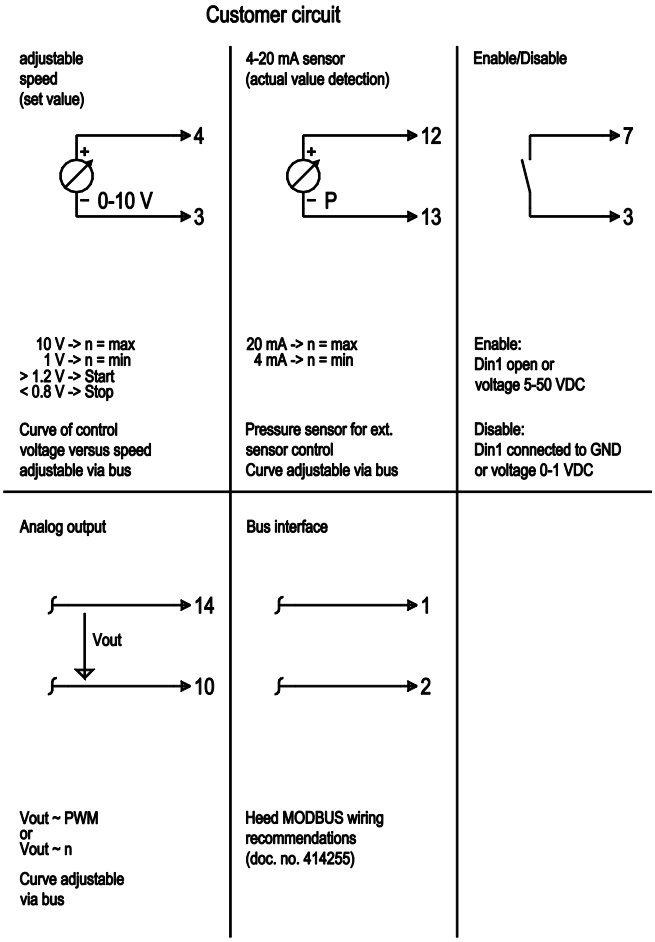
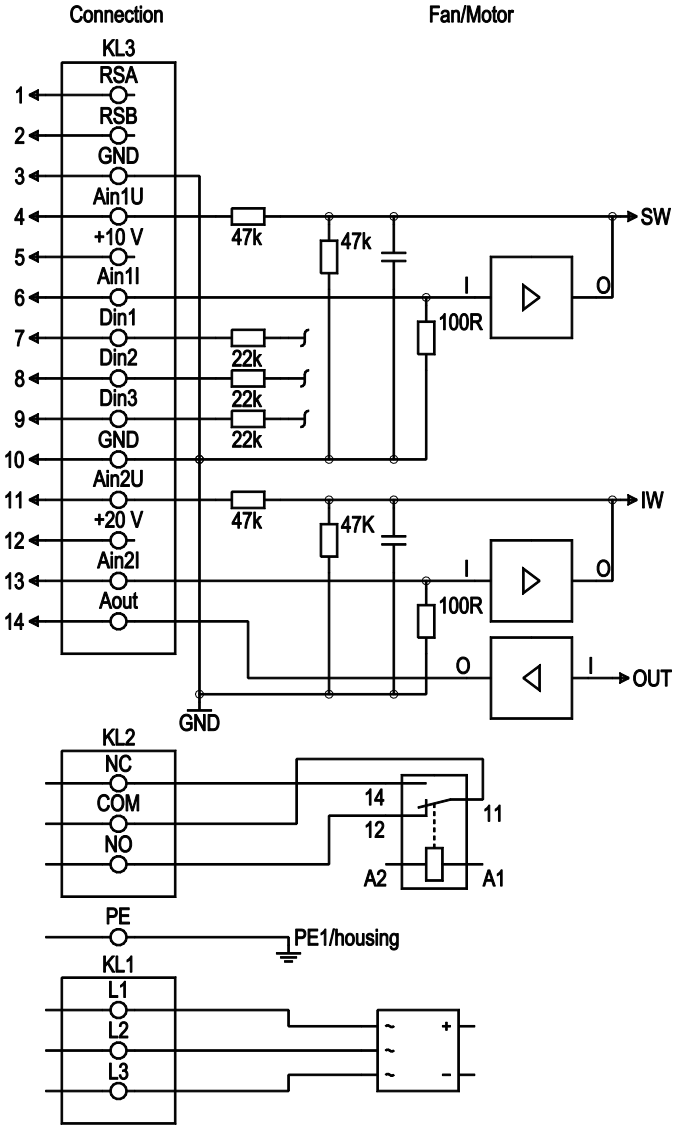
RadiPac Plenum Fan

backward curved, single inlet

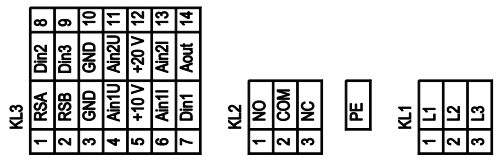
with support bracket

Electrical Interface





Terminal box connection diagram



No.	Conn.	Designation	Function/assignment
KL 1	1	L1	Supply connection, power supply, phase, see nameplate for voltage range
KL 1	2	L2	Supply connection, power supply, phase, see nameplate for voltage range
KL 1	3	L3	Supply connection, power supply, phase, see nameplate for voltage range
PE		PE	Ground connection, PE connection
KL 2	1	NO	Status relay, floating status contact, make for failure
KL 2	2	COM	Status relay, floating status contact, changeover contact, common connection, contact rating, max. 250 VAC/2 A (AC1)/min. 10 mA
KL 2	3	NC	Status relay, floating status contact, break for failure
KL 3	1	RSA	Bus connection RS485, RSA, MODBUS RTU; SELV
KL 3	2	RSB	Bus connection RS485, RSB, MODBUS RTU; SELV
KL 3	3 / 10	GND	Reference ground for control interface, SELV
KL 3	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

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RadiPac Plenum Fan

backward curved, single inlet

with support bracket

No.	Conn.	Designation	Function/assignment
KL 3	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
KL 3	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
KL 3	7	Din1	Digital input 1: enable electronics, enable: pin open or applied voltage 5-50 VDC disable: bridge to GND or applied voltage < 1 VDC reset function: triggers software reset after a level change to < 1 VDC; SELV
KL 3	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. Parameter set 1: pin open or applied voltage 5-50 VDC Parameter set 2: bridge to GND or applied voltage < 1 VDC; SELV
KL 3	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 Normal: Pin open or applied voltage 5-50 VDC Inverse: Bridge to GND or applied voltage < 1 VDC; SELV
KL 3	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
KL 3	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 Alternatively: +24 VDC input for parameterization without line voltage
KL 3	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
KL 3	14	Aout	Analog output 0-10 V, max. 5 mA, output of current motor modulation level; adjustable curve; SELV

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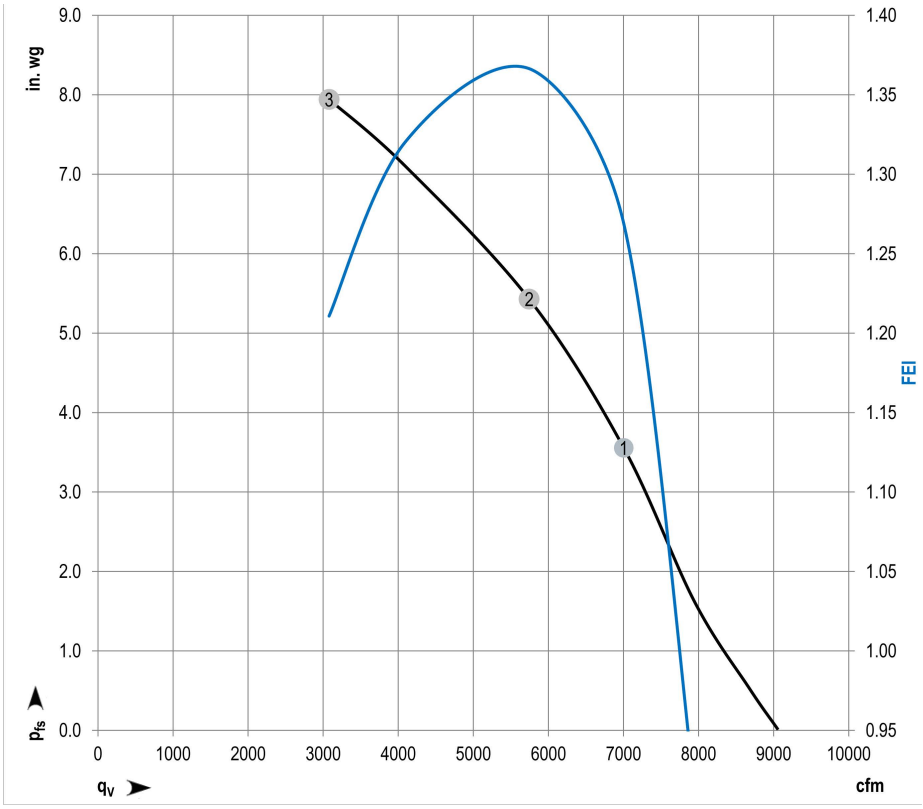
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



ρ = 0.075 lbm/ft³

Measurement: LU-1744

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Performance ratings

	U	f	n	P_{ed}	I	q_v	P_{fs}	FEI
	V	Hz	rpm	W	A	cfm	in. wg	
1	230	60	2600	5114	13.81	7003	3.56	1.27
2	230	60	2601	5742	15.56	5743	5.43	1.37
3	230	60	2605	5191	13.81	3078	7.94	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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VBH0450PTTPA-PB30

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

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Nominal data

Model	**VBH0450PTTPA-PB30**
Motor	**M3G150-IF**

Phase		3~
Nominal voltage	VAC	460
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	2615
Power consumption	W	5750
Current draw	A	7.64
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	40

ml = Max. load

Subject to change

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

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Technical description

Weight	47 kg
Size	450 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Support plate material	Sheet steel, galvanized
Support bracket material	Steel, painted black
Inlet nozzle material	Sheet steel, galvanized
Number of blades	5
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1
Ambient temperature note	Occasional start-up between -40°C and -25°C is permissible. For continuous operation at temperatures below -25°C (e.g. refrigeration applications) we recommend our fan design with special low-temperature bearings.
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	See product drawing
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Output for slave 0-10 V - External 24 V input (parameter setting) - External release input - Alarm relay - Integrated PID controller - Power limiter - Motor current limitation - PFC, passive - RS-485 MODBUS-RTU - Soft start - Control input 0-10 VDC - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
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
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730-1

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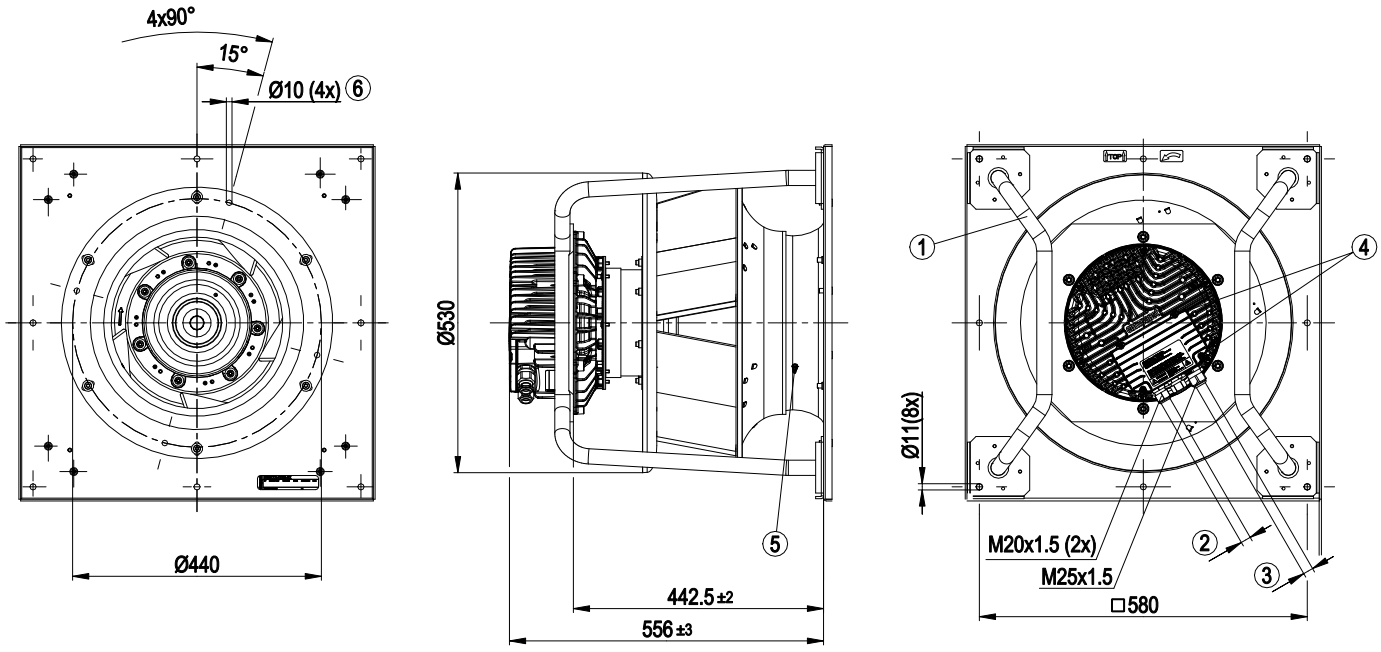
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm
3	Cable diameter min. 9 mm, max. 16 mm, tightening torque 6 ± 0.9 Nm
4	Tightening torque 3.5 ± 0.5 Nm
5	Inlet ring with pressure tap (k-factor: 240)
6	Mounting holes for FlowGrid

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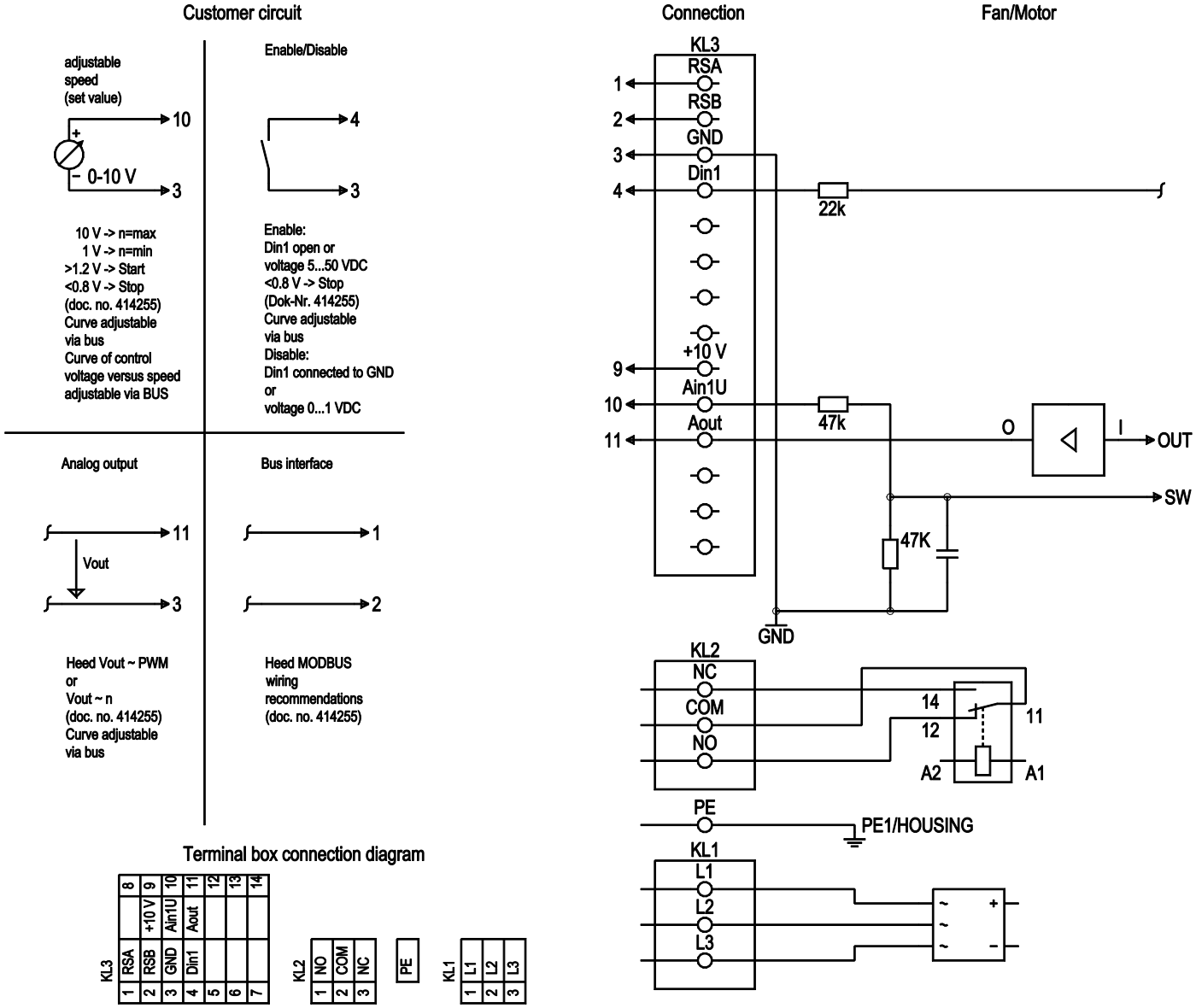
RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Electrical Interface



No.	Conn.	Designation	Function/assignment
KL 1	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
KL 3	1	RSA	RS485 interface for MODBUS, RSA; SELV
KL 3	2	RSB	RS485 interface for MODBUS, RSB; SELV
KL 3	3	GND	Reference ground for control interface; SELV
KL 3	4	Din1	Digital input 1: enable electronics, enable: pin open or applied voltage 5-50 VDC disable: bridge to GND or applied voltage < 1 VDC reset after a level change to < 1 VDC; SELV

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RadiPac Plenum Fan

backward curved, single inlet

with support bracket

No.	Conn.	Designation	Function/assignment
KL 3	-	-	-
KL 3	-	-	-
KL3	-	-	-
KL3	-	-	-
KL 3	9	10 V / max. 10 mA	Voltage output, power supply for external devices (e.g. potentiometers), SELV
KL 3	10	Ain1 U	Analog input 1, set value: 0-10 V, Ri = 100 kΩ, adjustable curve; SELV
KL 3	11	Aout	Analog output 0-10 VDC, max. 5 mA, output of current motor modulation level / motor speed adjustable curve; SELV
KL 3	-	-	-
KL 3	-	-	-
KL 3	-	-	-

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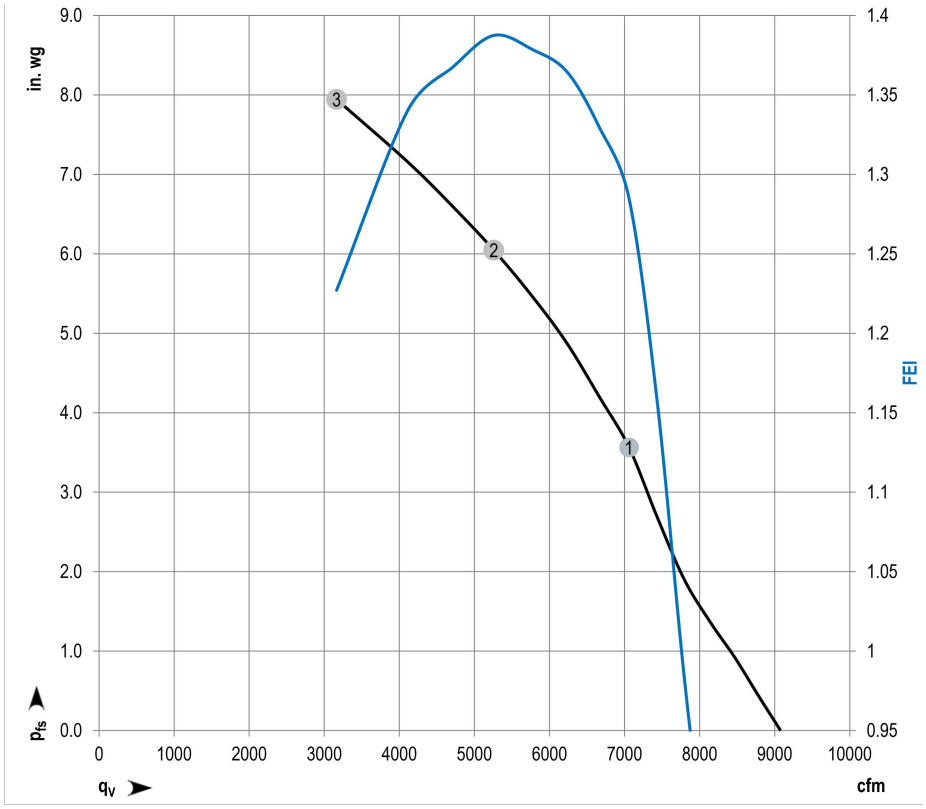
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



ρ = 0.075 lbm/ft³

Measurement: LU-1748

ebm-papst Inc. certifies that the RadiPac 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	460	60	2609	5097	6.80	7060	3.56	1.28
2	460	60	2611	5745	7.63	5258	6.05	1.39
3	460	60	2625	5252	7.02	3165	7.94	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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VBH0500PTTLA-PA33

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

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Nominal data

Model	**VBH0500PTTLA-PA33**
Motor	**M3G150-FF**

Phase		3~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 240
Frequency	Hz	60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	1940
Power consumption	W	3846
Current draw	A	10.48
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	40

ml = Max. load
Subject to change

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

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Technical description

Weight	36.3 kg
Size	500 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Support plate material	Sheet steel, galvanized
Support bracket material	Steel, painted black
Inlet nozzle material	Sheet steel, galvanized
Number of blades	5
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1
Ambient temperature note	Occasional start-up at temperatures between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), use must be made of a fan design with special low-temperature bearings.
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	See legend on product drawing
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Operation and alarm display with LED - External 15-50 VDC input (parameterization) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.0 - Motor current limitation - RFID - ISO 15693 compatible - RS-485 MODBUS-RTU - Soft start - Voltage output 3.3-24 VDC, Pmax = 800 mW - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
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
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730-1

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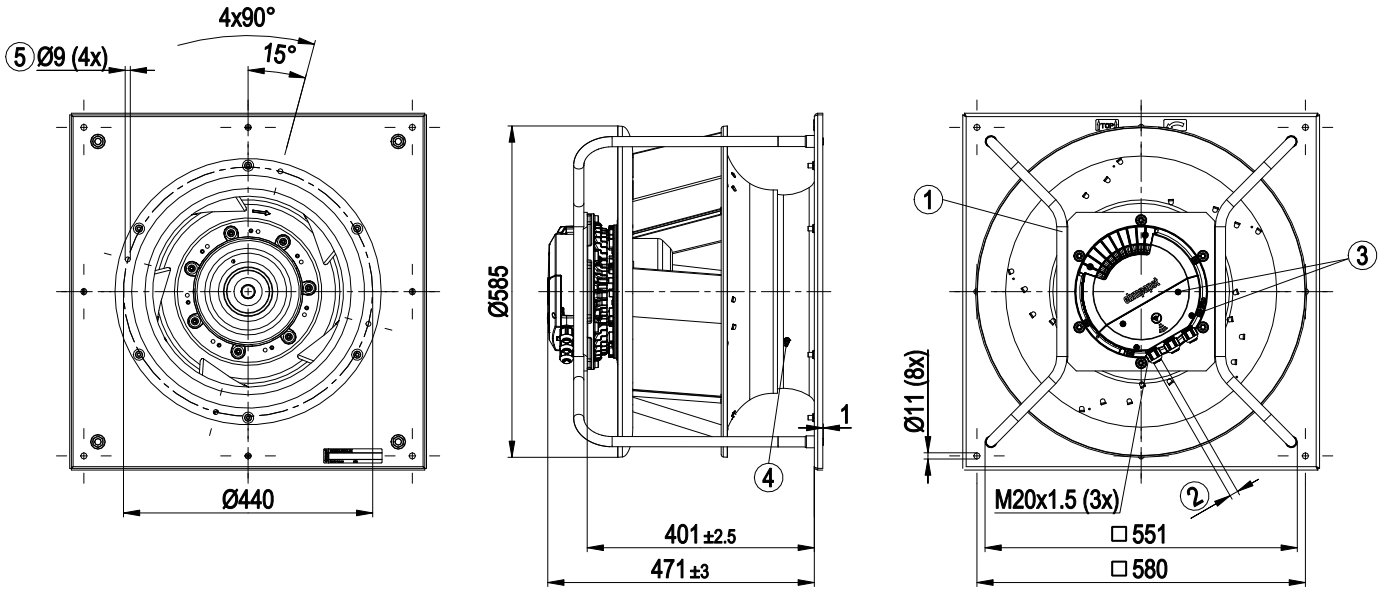
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm
3	Tightening torque 1.5 ± 0.2 Nm
4	Inlet ring with pressure tap (k-factor: 281)
5	Attachment holes for FlowGrid (35505-2-2957 not included in scope of delivery)

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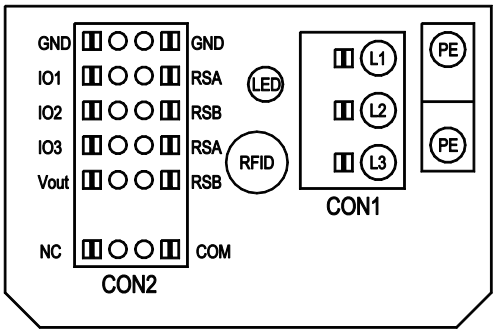
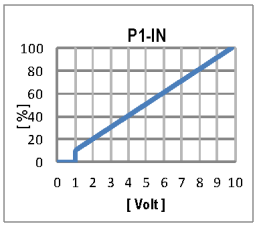
RadiPac Plenum Fan

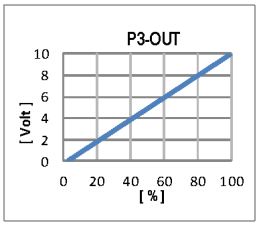
backward curved, single inlet

with support bracket

Electrical Interface







No.	Conn.	Designation	Function/assignment
	CON1	L1, L2, L3	Power supply, phase, see nameplate for voltage range
	PE	PE	Protective earth
	CON2	RSA	RS485 interface for MODBUS, RSA; SELV
	CON2	RSB	RS485 interface for MODBUS, RSB; SELV
	CON2	GND	Reference ground for control interface, SELV
	CON2	IO1	Function parameterizable (see “Optional interface functions” table) Factory setting: Digital input - high active, function: Disable input, SELV - inactive: Pin open or applied voltage < 1.5 VDC - active: applied voltage 3.5-50 VDC Reset function: Triggering of error reset on change of state from "enabled" to "disabled"
	CON2	IO2	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog input 0-10 V / PWM, Ri=100 kΩ, function: Set value Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV
	CON2	IO3	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog output 0-10 V, max. 5 mA, function: Fan modulation level Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV
	CON2	Vout	Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable Factory setting: 10 VDC short-circuit-proof, supply for external devices, SELV alternatively: 15-50 VDC input for parameterization via MODBUS without line voltage
	CON2	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and on control interface side
	CON2	NC	Status relay, floating status contact, break for failure
		LED	green: status = good, ready for operation orange: status = warning red: status = failure
		P1-IN	Input characteristic curve
		P3-OUT	Output characteristic curve

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RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Terminal/plug assignment

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 % 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	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	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	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D159 [0]		○		○	○	○	○	○								
	○ **Ain2 0-10V/PWM**: analog input	Ri=100K, characteristic curve parameterizable, fPWM=1k..10KHz, SELV	D159 [2]		○	○													
	○ **Ain2 4-20mA**: analog input	Ri=125R, characteristic curve parameterizable, SELV	D159 [3]		○	○													
IO3	○ **Din3 (active high)**: digital input	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D15A [0]				○	○	○	○	○								
	○ **Din3 (active low)**: digital input	active: pin open or applied voltage 3,5-50VDC not active: applied voltage < 1,5VDC, SELV	D15A [1]				○	○	○	○	○								
	○ **PWMin3**: digital input	40Hz - 10kHz, characteristics parameterizable not active: pin open or applied voltage 3,5-50VDC active: applied voltage < 1,5VDC, SELV	D15A [7]			○													
	○ **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 RSB	RS485 bus connection,	MODBUS RTU, specification V6.0, SELV			○		○	○	○	○	○								
Vout	voltage output	voltage parameterizable 3,3...24VDC +/- 5,5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV	D16E [...]																
	alternatively: Input auxiliary power supply for parameter-ization via RS485/MODBUS RTU without line voltage	15...50VDC																	

○ configurable option

For further information and additional functions see EC Control Software, Fan-Set-App, or MODBUS Parameter Specification V6.0

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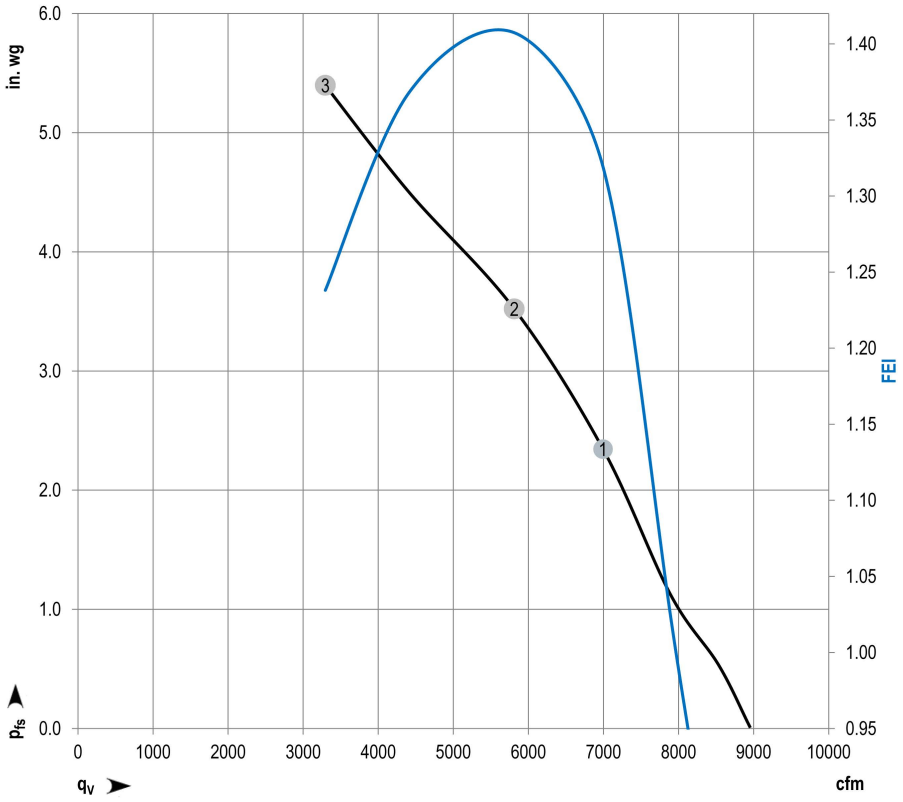
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



ρ = 0.075 lbm/ft³

Measurement: LU-1741

ebm-papst Inc. certifies that the RadiPac 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	230	60	1938	3459	9.44	6994	2.35	1.32
2	230	60	1929	3846	10.48	5811	3.52	1.41
3	230	60	1964	3803	10.21	3295	5.40	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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VBH0500PTTPA-PB2403

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

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Nominal data

Type	**K3G500-PB24-03**
Motor	**M3G150-IF**

Phase		3~
Nominal voltage	VAC	460
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	2005
Power consumption	W	4225
Current draw	A	5.68
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	45

ml = Max. load
Subject to change

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

Occasional start-up between -40 °C and -25 °C is permissible. For continuous operation at ambient temperatures below -25 °C (such as refrigeration applications), a fan design with special low-temperature bearings must be used.

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Technical description

Weight	42.2 kg
Size	500 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Support plate material	Sheet steel, galvanized
Support bracket material	Steel, painted black
Inlet nozzle material	Sheet steel, galvanized
Number of blades	5
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1
Ambient temperature note	Occasional start-up at temperatures between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), use must be made of a fan design with special low-temperature bearings.
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	See legend on product drawing
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Operation and alarm display with LED - External 15-50 VDC input (parameterization) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.0 - Motor current limitation - RFID - ISO 15693 compatible - RS-485 MODBUS-RTU - Soft start - Voltage output 3.3-24 VDC, Pmax = 800 mW - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
EMC immunity to interference	According to EN 61000-6-2 (industrial environment)
EMC interference emission	According to EN 61000-6-3 (household environment), except EN 61000-3-2 for professionally used equipment with a total rated power greater than 1 kW
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
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
Approval	EAC; CSA C22.2 No. 77 + CAN/CSA-E60730-1; UL 1004-7 + 60730-1

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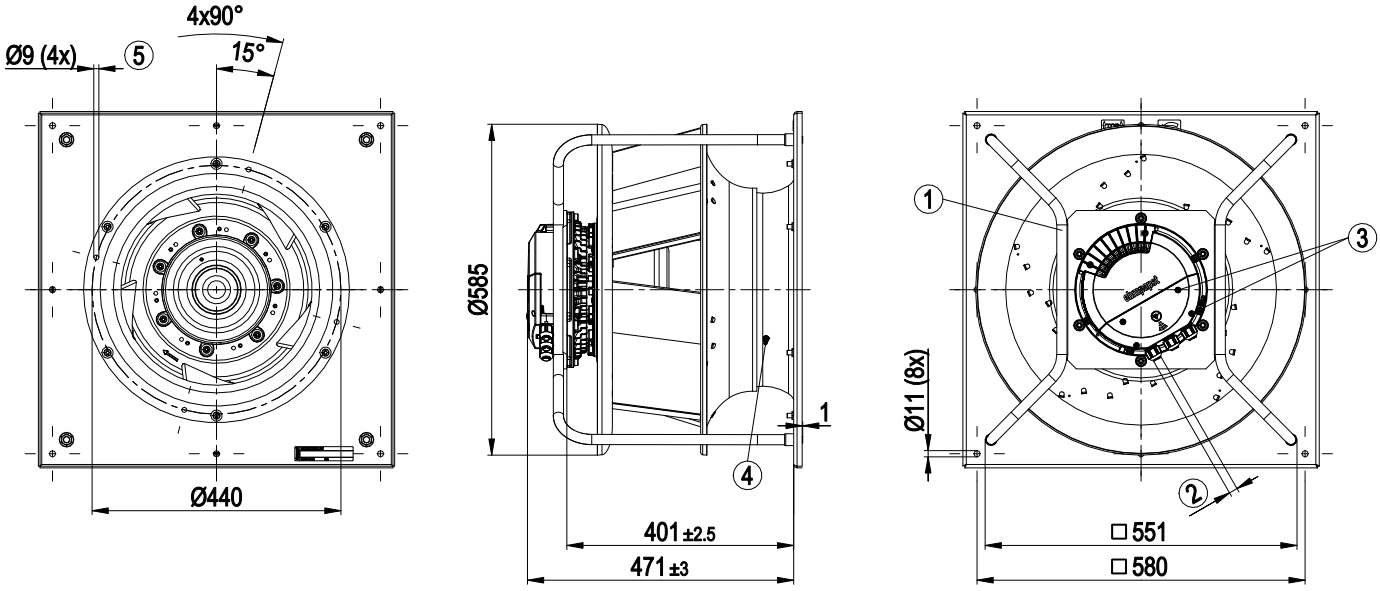
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Cable diameter min. 6 mm, max. 12 mm, tightening torque 4 ± 0.6 Nm
3	Tightening torque 1.5 ± 0.2 Nm
4	Inlet ring with pressure tap (k-factor: 281)
5	Attachment holes for FlowGrid (35505-2-2957 not included in scope of delivery)

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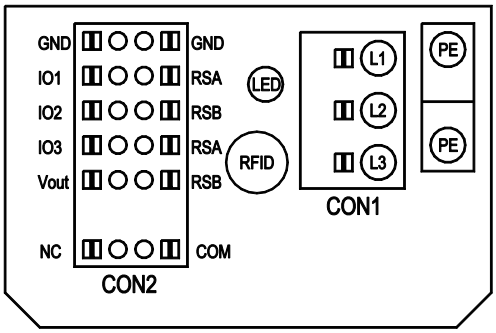
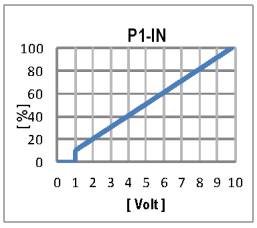
RadiPac Plenum Fan

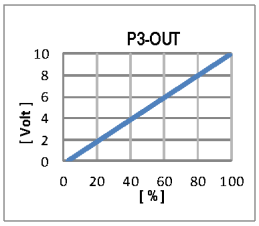
backward curved, single inlet

with support bracket

Electrical Interface







No.	Conn.	Designation	Function/assignment
	CON1	L1, L2, L3	Power supply, phase, see nameplate for voltage range
	PE	PE	Protective earth
	CON2	RSA	RS485 interface for MODBUS, RSA; SELV
	CON2	RSB	RS485 interface for MODBUS, RSB; SELV
	CON2	GND	Reference ground for control interface, SELV
	CON2	IO1	Function parameterizable (see “Optional interface functions” table) Factory setting: Digital input - high active, function: Disable input, SELV - inactive: Pin open or applied voltage < 1.5 VDC - active: applied voltage 3.5-50 VDC Reset function: Triggering of error reset on change of state from "enabled" to "disabled"
	CON2	IO2	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog input 0-10 V / PWM, Ri=100 kΩ, function: Set value Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV
	CON2	IO3	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog output 0-10 V, max. 5 mA, function: Fan modulation level Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV
	CON2	Vout	Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable Factory setting: 10 VDC short-circuit-proof, supply for external devices, SELV alternatively: 15-50 VDC input for parameterization via MODBUS without line voltage
	CON2	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and on control interface side
	CON2	NC	Status relay, floating status contact, break for failure
		LED	green: status = good, ready for operation orange: status = warning red: status = failure
		P1-IN	Input characteristic curve
		P3-OUT	Output characteristic curve

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RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Terminal/plug assignment

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	INPUT: 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	pulse input for auto-adressing	pulse output for auto-adressing
					D101 [...]	D147 [...]	D104 [...]	D12E [...]	D148 [...]	D16C [...]	D16A [...]	D130 [1]	D130 [2]	D130 [0]	D130 [1]	D130 [2]	D130 [5]	D00C [1]	D130 [4]
IO1	○ **Din1 (active high)**: digital input	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	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	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D159 [0]				○	○	○	○	○								
	○ **Ain2 0-10V/PWM**: analog input	Ri=100K, characteristic curve parameterizable, fPWM=1k..10KHz, SELV	D159 [2]			○													
	○ **Ain2 4-20mA**: analog input	Ri=125R, characteristic curve parameterizable, SELV	D159 [3]			○													
IO3	○ **Din3 (active high)**: digital input	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D15A [0]				○	○	○	○	○								
	○ **Din3 (active low)**: digital input	active: pin open or applied voltage 3,5-50VDC not active: applied voltage < 1,5VDC, SELV	D15A [1]				○	○	○	○	○								
	○ **PWMin3**: digital input	40Hz - 10kHz, characteristics parameterizable not active: pin open or applied voltage 3,5-50VDC active: applied voltage < 1,5VDC, SELV	D15A [7]		○														
	○ **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 RSB	RS485 bus connection,	MODBUS RTU, specification V6.0, SELV			○		○	○	○	○	○								
Vout	voltage output	voltage parameterizable 3,3...24VDC +/- 5,5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV	D16E [...]																
	alternatively: Input auxiliary power supply for parameter-ization via RS485/MODBUS RTU without line voltage	15...50VDC																	

○ configurable option

For further information and additional functions see EC Control Software, Fan-Set-App, or MODBUS Parameter Specification V6.0

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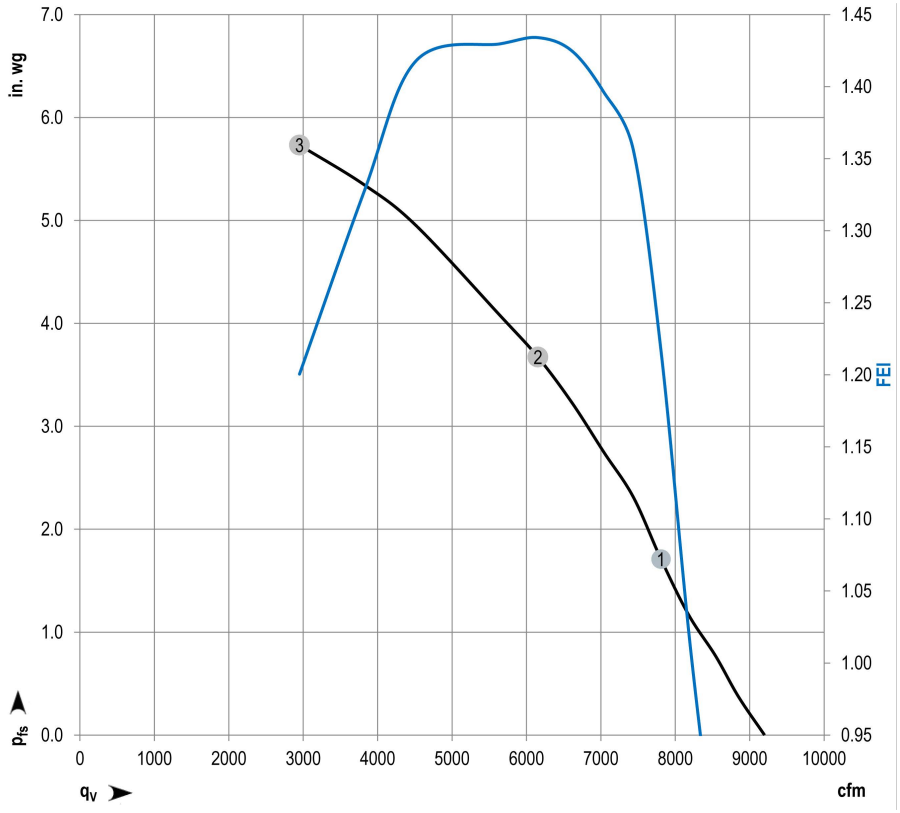
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



ρ = 0.075 lbm/ft³

Measurement: LU-1563

ebm-papst Inc. certifies that the RadiPac 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	460	60	1994	3229	4.38	7808	1.71	1.22
2	460	60	2010	4127	5.55	6154	3.67	1.43
3	460	60	2007	3753	5.06	2950	5.73	1..20

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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VBH0500PTTPA-PB38

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

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Nominal data

Model	VBH0500PTTPA-PB38
Motor	M3G150-IF

Phase		3~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 240
Frequency	Hz	60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	2260
Power consumption	W	6129
Current draw	A	16.33
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	40

ml = Max. load
Subject to change

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

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Technical description

Weight	49.4 kg
Size	500 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Support plate material	Sheet steel, galvanized
Support bracket material	Steel, painted black
Inlet nozzle material	Sheet steel, galvanized
Number of blades	5
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	See product drawing
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Output 20 VDC, max. 50 mA - Output for slave 0-10 V - Input for sensor 0-10 V or 4-20 mA - External 24 V input (parameter setting) - External release input - Alarm relay - Integrated PID controller - Motor current limitation - PFC, passive - RS-485 MODBUS-RTU - Soft start - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
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 according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
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
Approval	UL 1004-7 + 60730-1; EAC; CSA C22.2 No. 77 + CAN/CSA-E60730-1

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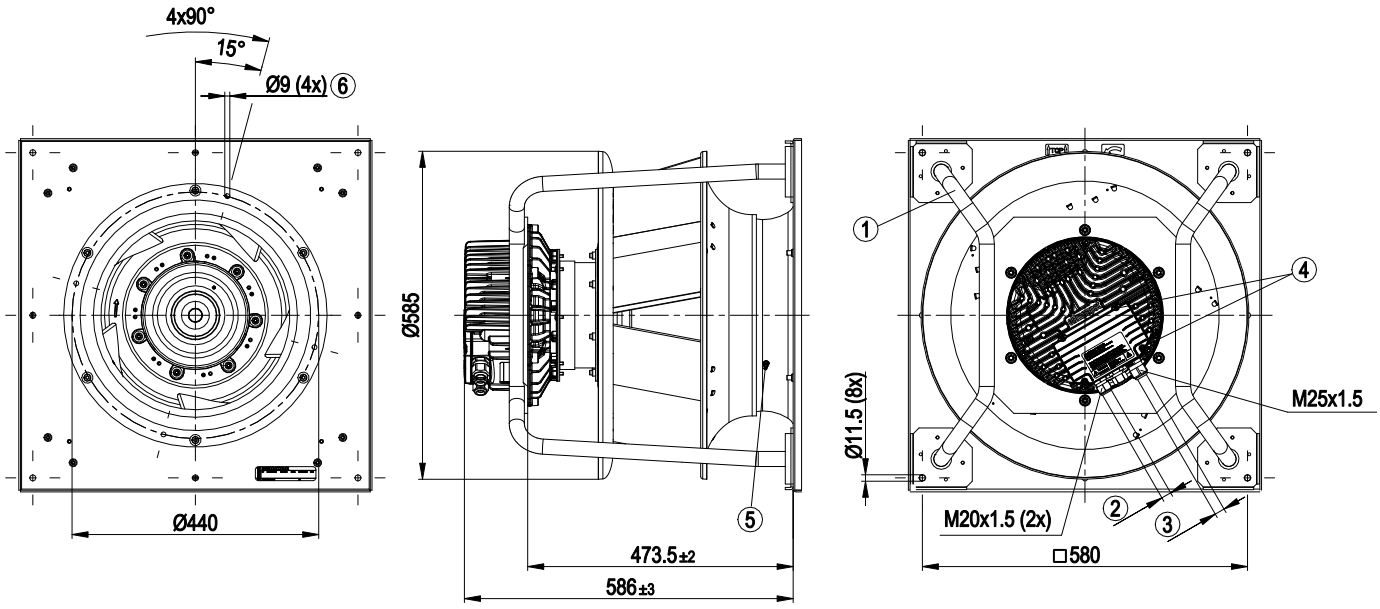
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm
3	Cable diameter min. 9 mm, max. 16 mm, tightening torque 6 ± 0.9 Nm
4	Tightening torque 3.5 ± 0.5 Nm
5	Inlet ring with pressure tap (k-factor: 281)
6	Mounting holes for FlowGrid

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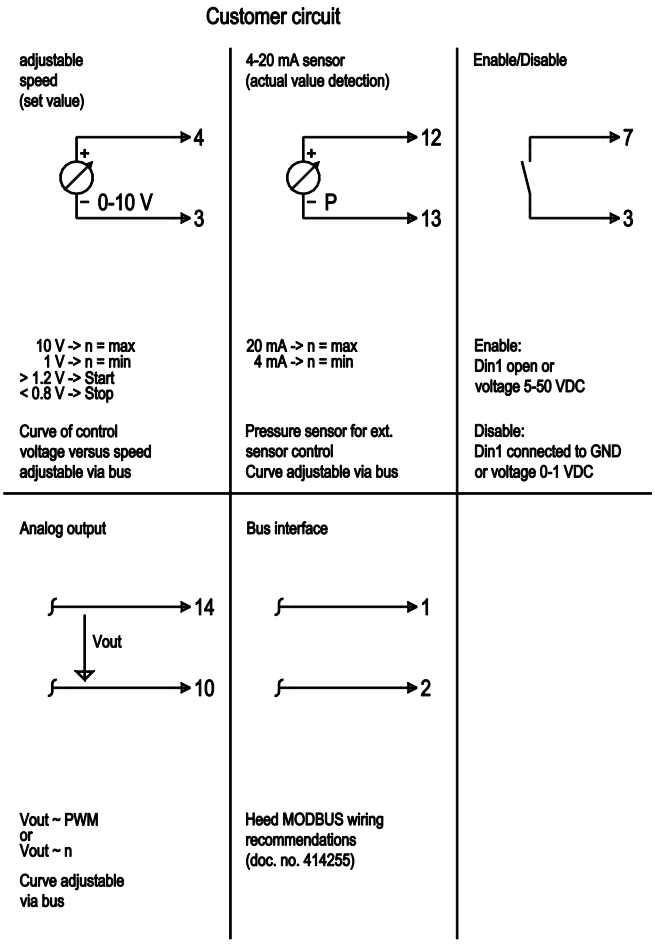
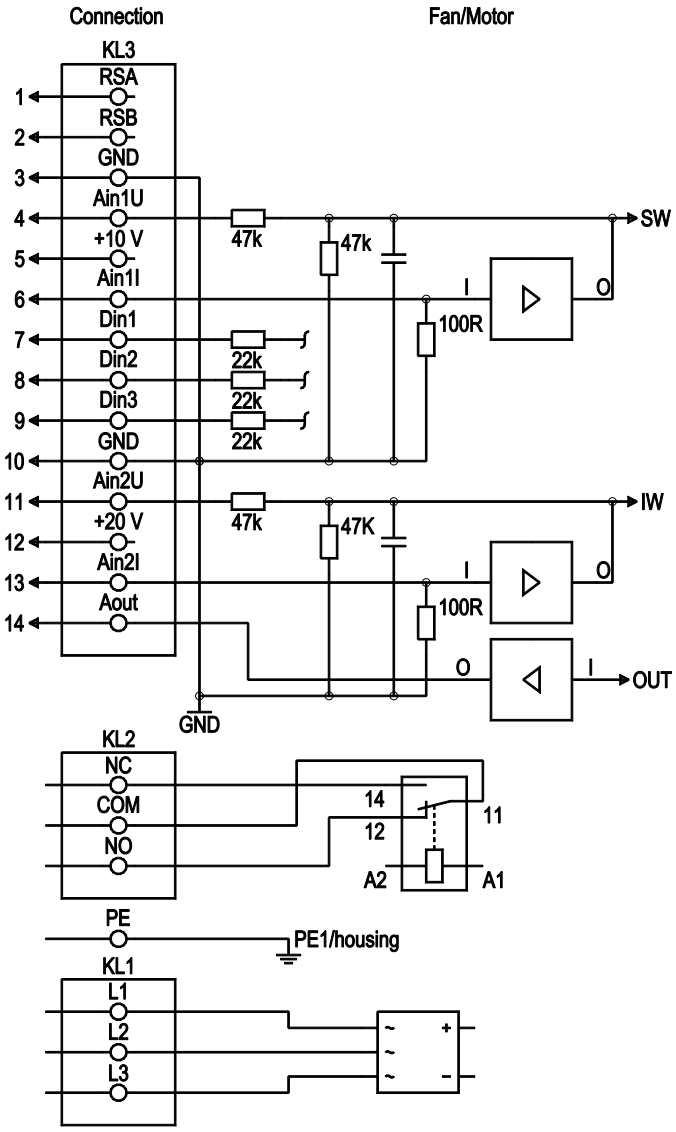
RadiPac Plenum Fan

backward curved, single inlet

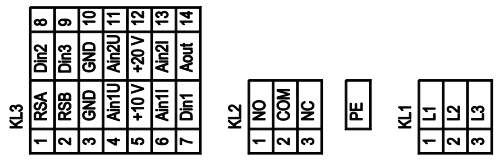
with support bracket

Electrical Interface





Terminal box connection diagram



No.	Conn.	Designation	Function/assignment
KL 1	1	L1	Supply connection, power supply, phase, see nameplate for voltage range
KL 1	2	L2	Supply connection, power supply, phase, see nameplate for voltage range
KL 1	3	L3	Supply connection, power supply, phase, see nameplate for voltage range
PE		PE	Ground connection, PE connection
KL 2	1	NO	Status relay, floating status contact, make for failure
KL 2	2	COM	Status relay, floating status contact, changeover contact, common connection, contact rating, max. 250 VAC/2 A (AC1)/min. 10 mA
KL 2	3	NC	Status relay, floating status contact, break for failure
KL 3	1	RSA	Bus connection RS485, RSA, MODBUS RTU; SELV
KL 3	2	RSB	Bus connection RS485, RSB, MODBUS RTU; SELV
KL 3	3 / 10	GND	Reference ground for control interface, SELV
KL 3	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

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RadiPac Plenum Fan

backward curved, single inlet

with support bracket

No.	Conn.	Designation	Function/assignment
KL 3	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
KL 3	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
KL 3	7	Din1	Digital input 1: enable electronics, enable: pin open or applied voltage 5-50 VDC disable: bridge to GND or applied voltage < 1 VDC reset function: triggers software reset after a level change to < 1 VDC; SELV
KL 3	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. Parameter set 1: pin open or applied voltage 5-50 VDC Parameter set 2: bridge to GND or applied voltage < 1 VDC; SELV
KL 3	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 Normal: Pin open or applied voltage 5-50 VDC Inverse: Bridge to GND or applied voltage < 1 VDC; SELV
KL 3	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
KL 3	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 Alternatively: +24 VDC input for parameterization without line voltage
KL 3	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
KL 3	14	Aout	Analog output 0-10 V, max. 5 mA, output of current motor modulation level; adjustable curve; SELV

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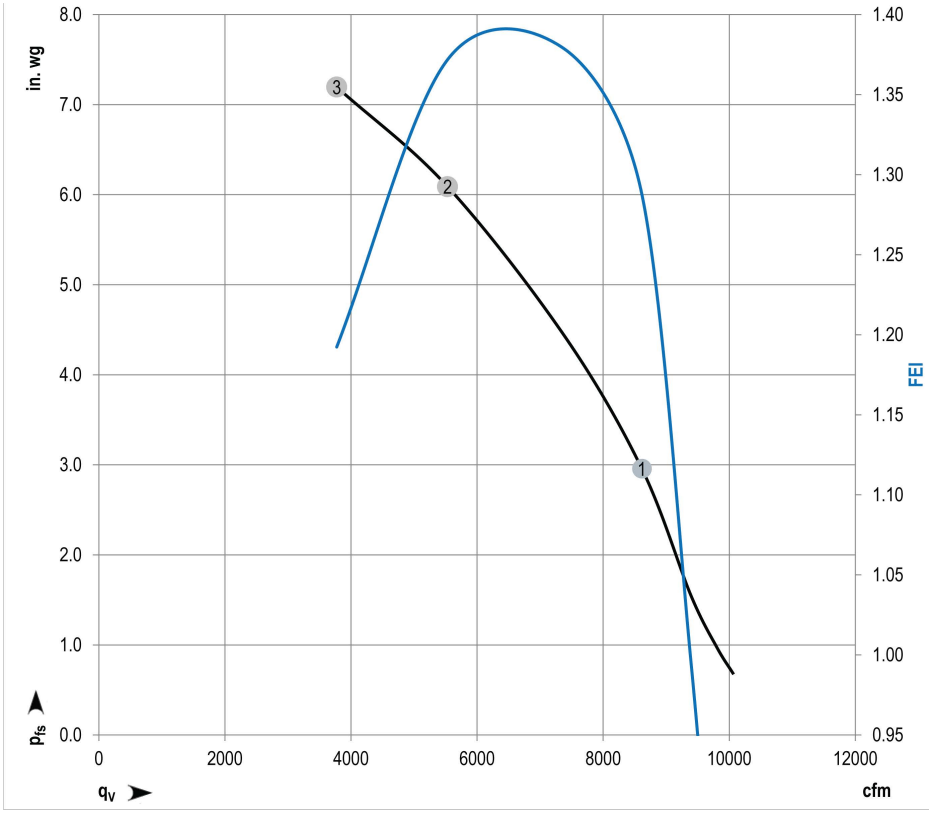
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



ρ = 0.075 lbm/ft³

Measurement: LU-1735

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Performance ratings

	U	f	n	P_{ed}	I	q_v	P_{fs}	FEI
	V	Hz	rpm	W	A	cfm	in. wg	
1	230	60	2252	5218	14.08	8615	2.96	1.29
2	230	60	2258	6129	16.33	5532	6.09	1.37
3	230	60	2267	5783	15.31	3774	7.19	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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VBH0500PTTPA-PB2409

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

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Nominal data

Model	**VBH0500PTTPA-PB2409**
Motor	**M3G150-IF**

Phase		3~
Nominal voltage	VAC	460
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	60
Type of data definition		ml
Speed (rpm)	min^{-1}	2260
Electrical power	W	6121
Current draw	A	8.15
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	40

ml = Max. load

Subject to change

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

Occasional start-up between -40 °C and -25 °C is permissible. For continuous operation at ambient temperatures below -25 °C (such as refrigeration applications), a fan design with special low-temperature bearings must be used.

RadiPac Plenum Fan

backward curved, single inlet
with support bracket

Technical features

Mass	50.5 kg
Size	500 mm
Motor size	150
Surface of rotor	Coated in black
Material of electronics housing	Die-cast aluminium
Material of impeller	Aluminium sheet
Material of mounting plate	Sheet steel, galvanised
Material of support bracket	Steel, coated in black
Material of inlet nozzle	Sheet steel, galvanised
Number of blades	5
Direction of rotation	Clockwise, seen on rotor
Type of protection	IP55
Insulation class	"F"
Humidity (F) / environmental protection class (H)	H1
Note ambient temperature	Occasional start-up between -40°C and -25°C is permissible. For continuous operation at ambient temperatures below -25°C (e.g. refrigeration applications) we recommend our fan version with special low-temperature bearings.
Max. permissible ambient motor temp. (transp./ storage)	+80 °C
Min. permissible ambient motor temp. (transp./storage)	-40 °C
Mounting position	Refer to product drawing
Condensation drainage holes	Rotor-side
Operation mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Output for slave 0-10 V - External 24 V input (programming) - External release input - Alarm relay - Integrated PID controller - Output limit - Motor current limit - PFC, passive - RS485 MODBUS RTU - Soft start - Control input 0-10 VDC - Control interface with SELV potential safely disconnected from the mains - Over-temperature protected electronics / motor - Line undervoltage / phase failure detection
Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)	<= 3.5 mA
Electrical connection	Terminal box
Motor protection	Reverse polarity and locked-rotor protection
Protection class	I (if protective earth is connected by customer)
Product conforming to standard	EN 61800-5-1; CE
Approval	CSA C22.2 no. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730-1

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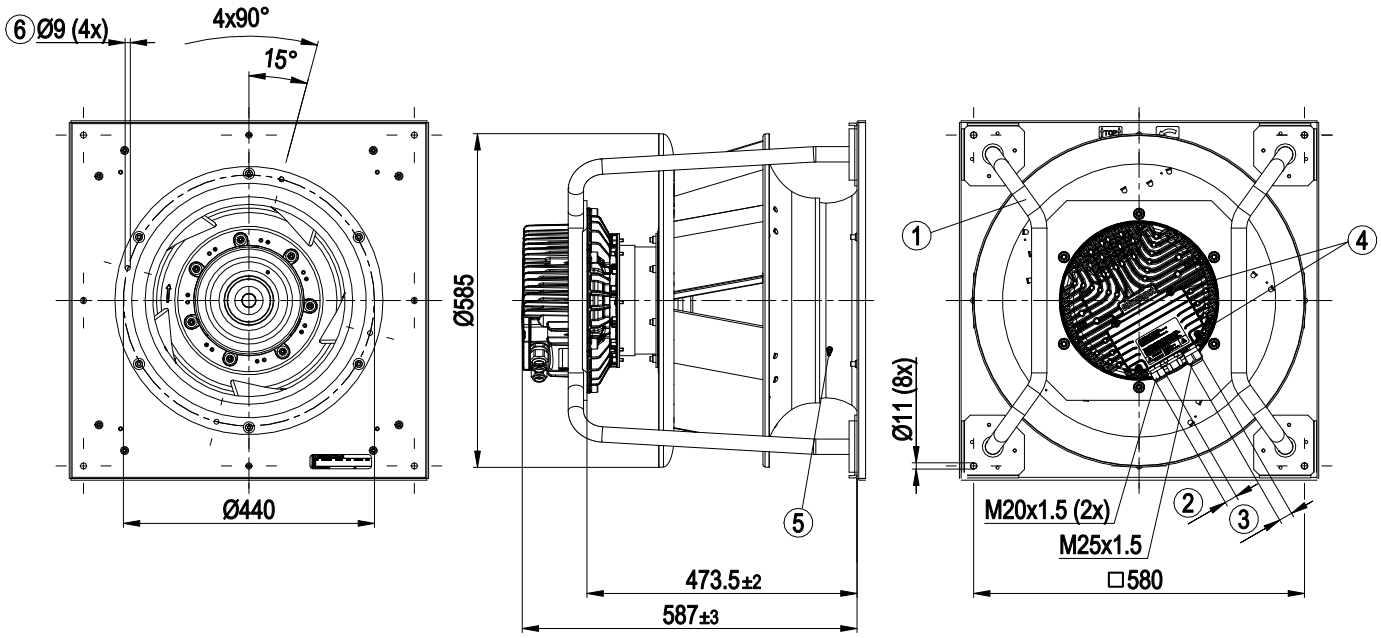
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



1	Installation position: Shaft horizontal (install the support struts only vertically as shown in the illustration!) or rotor on bottom; rotor on top on request
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4±0.6 Nm
3	Cable diameter min. 9 mm, max. 16 mm, tightening torque 6±0.9 Nm
4	Tightening torque 3.5±0.5 Nm
5	Inlet nozzle with pressure tap (k-factor: 281)
6	Mounting holes for FlowGrid

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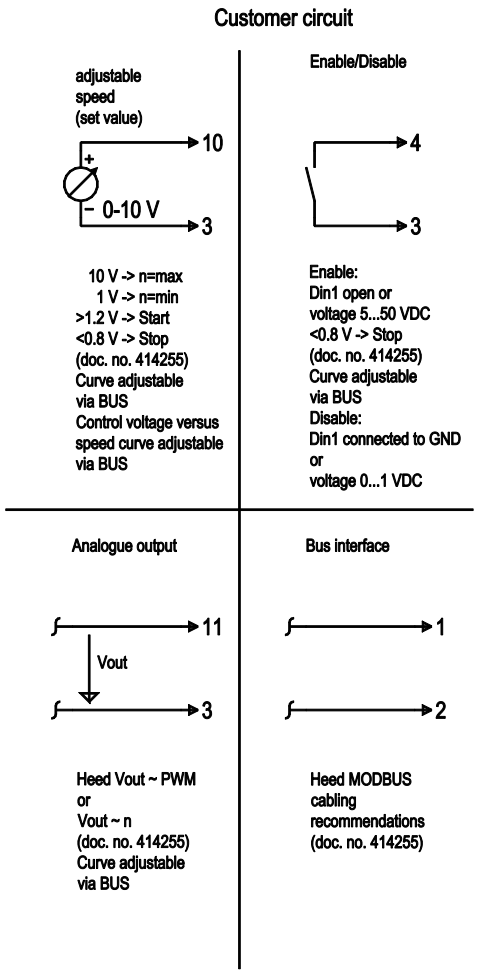
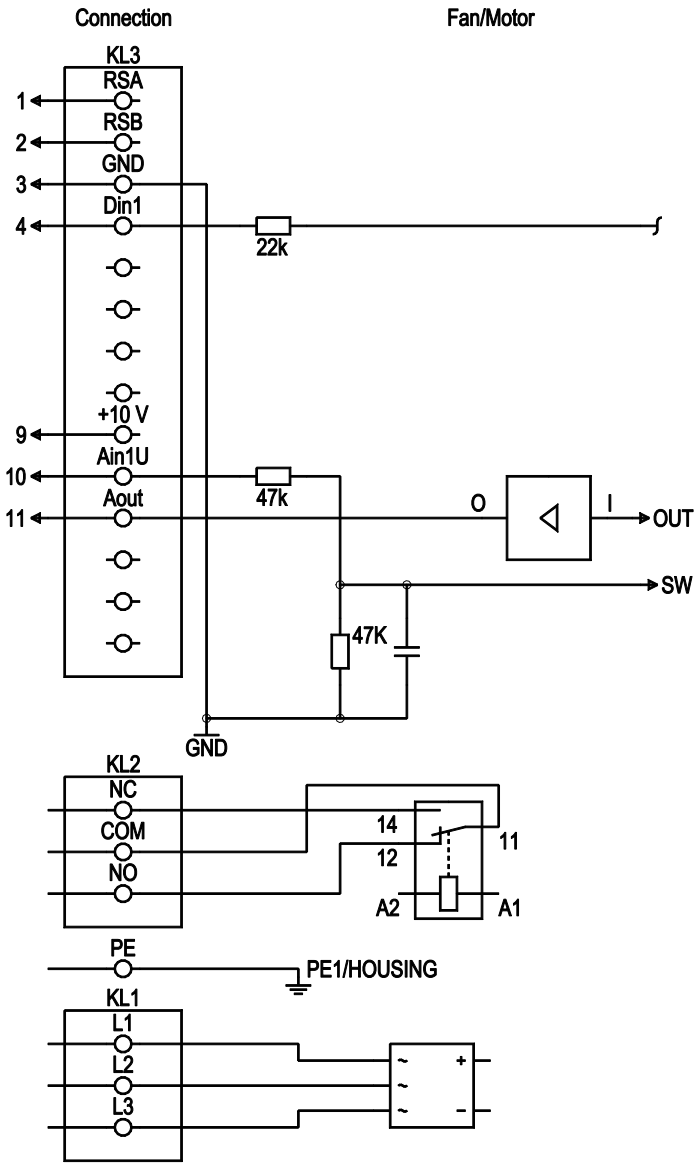
RadiPac Plenum Fan

backward curved, single inlet

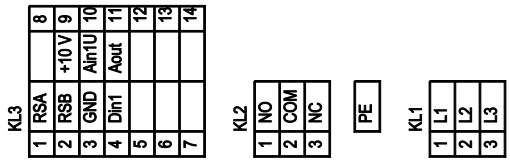
with support bracket

Electrical interface





Terminal box connection diagram



No.	Conn.	Designation	Function / assignment
KL 1	1, 2, 3	L1, L2, L3	Power supply, phase, see type plate 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 message from running monitor
KL2	2	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, basic insulation on mains 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 from running monitor
KL 3	1	RSA	RS-485 interface for MODBUS, RSA; SELV
KL 3	2	RSB	RS-485 interface for MODBUS, RSB; SELV
KL 3	3	GND	Reference earth for control interface; SELV

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RadiPac Plenum Fan

backward curved, single inlet

with support bracket

No.	Conn.	Designation	Function / assignment
KL 3	4	Din1	Digital input 1: Enabling of electronics, Enabling: Pin open or applied voltage 5-50 VDC Disabling: Bridge to GND or applied voltage <1 VDC Reset function: Triggers software reset after a level change to <1 VDC; SELV
KL 3	-	-	-
KL 3	-	-	-
KL3	-	-	-
KL3	-	-	-
KL 3	9	10 V / max. 10 mA	Voltage output, power supply for external devices (e.g. potentiometers), SELV
KL 3	10	Ain1 U	Analogue input 1, set value: 0-10 V, Ri = 100 kΩ, parametrizable curve; SELV
KL 3	11	Aout	Analogue output 0-10 VDC, max. 5 mA, output of the current motor level control coefficient / motor speed parametrisable curve; SELV
KL 3	-	-	-
KL 3	-	-	-
KL 3	-	-	-

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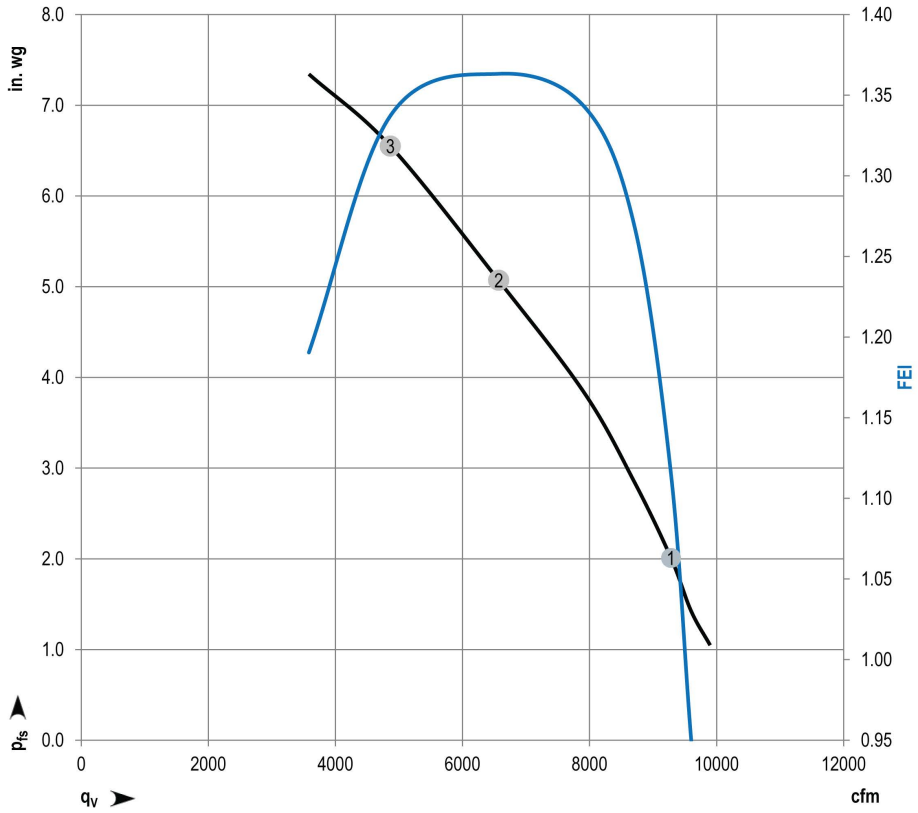
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



ρ = 0.075 lbm/ft³

Measurement: LU-1696

ebm-papst Inc. certifies that the RadiPac 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	460	60	2251	4690	6.27	9282	2.01	1.12
2	460	60	2256	6121	8.14	6571	5.07	1.36
3	460	60	2263	5958	7.93	4867	6.55	1.34

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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VBH0560PTTPA-PB37

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

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Nominal data

Model	**VBH0560PTTPA-PB37**
Motor	**M3G150-IF**

Phase		3~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 240
Frequency	Hz	60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	1605
Power consumption	W	3924
Current draw	A	10.52
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	40

ml = Max. load
Subject to change

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

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Technical description

Weight	51.3 kg
Size	560 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Support plate material	Sheet steel, galvanized
Support bracket material	Steel, painted black
Inlet nozzle material	Sheet steel, galvanized
Number of blades	5
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1
Ambient temperature note	Occasional start-up at temperatures between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), use must be made of a fan design with special low-temperature bearings.
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	See legend on product drawing
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Operation and alarm display with LED - External 15-50 VDC input (parameterization) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.0 - Motor current limitation - RFID - ISO 15693 compatible - RS-485 MODBUS-RTU - Soft start - Voltage output 3.3-24 VDC, Pmax = 800 mW - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
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
Approval	UL 1004-7 + 60730-1; CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC

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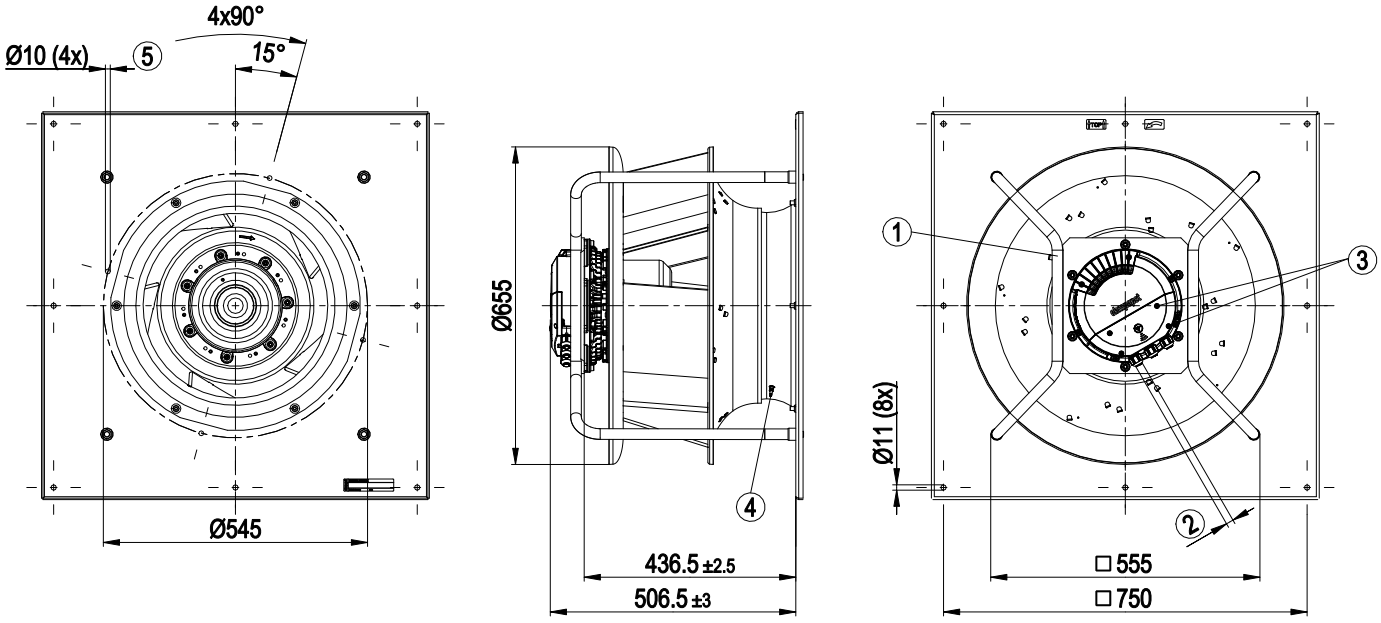
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm
3	Tightening torque 1.5 ± 0.2 Nm
4	Inlet ring with pressure tap (k-factor: 348)
5	Attachment holes for FlowGrid (00630-2-2957 not included in scope of delivery)

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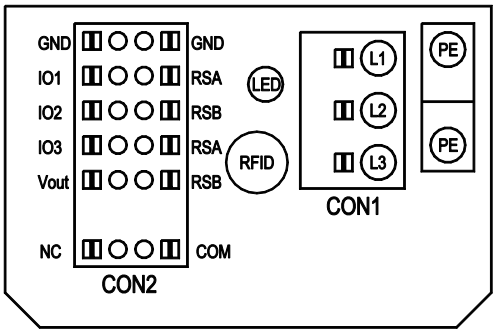
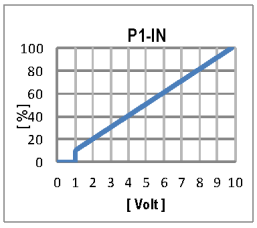
RadiPac Plenum Fan

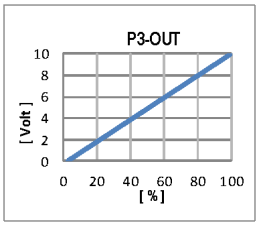
backward curved, single inlet

with support bracket

Electrical Interface







No.	Conn.	Designation	Function/assignment
	CON1	L1, L2, L3	Power supply, phase, see nameplate for voltage range
	PE	PE	Protective earth
	CON2	RSA	RS485 interface for MODBUS, RSA; SELV
	CON2	RSB	RS485 interface for MODBUS, RSB; SELV
	CON2	GND	Reference ground for control interface, SELV
	CON2	IO1	Function parameterizable (see “Optional interface functions” table) Factory setting: Digital input - high active, function: Disable input, SELV - inactive: Pin open or applied voltage < 1.5 VDC - active: applied voltage 3.5-50 VDC Reset function: Triggering of error reset on change of state from "enabled" to "disabled"
	CON2	IO2	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog input 0-10 V / PWM, Ri=100 kΩ, function: Set value Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV
	CON2	IO3	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog output 0-10 V, max. 5 mA, function: Fan modulation level Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV
	CON2	Vout	Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable Factory setting: 10 VDC short-circuit-proof, supply for external devices, SELV alternatively: 15-50 VDC input for parameterization via MODBUS without line voltage
	CON2	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and on control interface side
	CON2	NC	Status relay, floating status contact, break for failure
		LED	green: status = good, ready for operation orange: status = warning red: status = failure
		P1-IN	Input characteristic curve
		P3-OUT	Output characteristic curve

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RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Terminal/plug assignment

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 % 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	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	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	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D159 [0]		○		○	○	○	○	○								
	○ **Ain2 0-10V/PWM**: analog input	Ri=100K, characteristic curve parameterizable, fPWM=1k..10KHz, SELV	D159 [2]		○	○													
	○ **Ain2 4-20mA**: analog input	Ri=125R, characteristic curve parameterizable, SELV	D159 [3]		○	○													
IO3	○ **Din3 (active high)**: digital input	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D15A [0]		○		○	○	○	○	○								
	○ **Din3 (active low)**: digital input	active: pin open or applied voltage 3,5-50VDC not active: applied voltage < 1,5VDC, SELV	D15A [1]		○		○	○	○	○	○								
	○ **PWMin3**: digital input	40Hz - 10kHz, characteristics parameterizable not active: pin open or applied voltage 3,5-50VDC active: applied voltage < 1,5VDC, SELV	D15A [7]		○														
	○ **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 RSB	RS485 bus connection,	MODBUS RTU, specification V6.0, SELV			○		○	○	○	○	○								
Vout	voltage output	voltage parameterizable 3,3...24VDC +/- 5,5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV	D16E [...]																
	alternatively: Input auxiliary power supply for parameter-ization via RS485/MODBUS RTU without line voltage	15...50VDC																	

○ configurable option

For further information and additional functions see EC Control Software, Fan-Set-App, or MODBUS Parameter Specification V6.0

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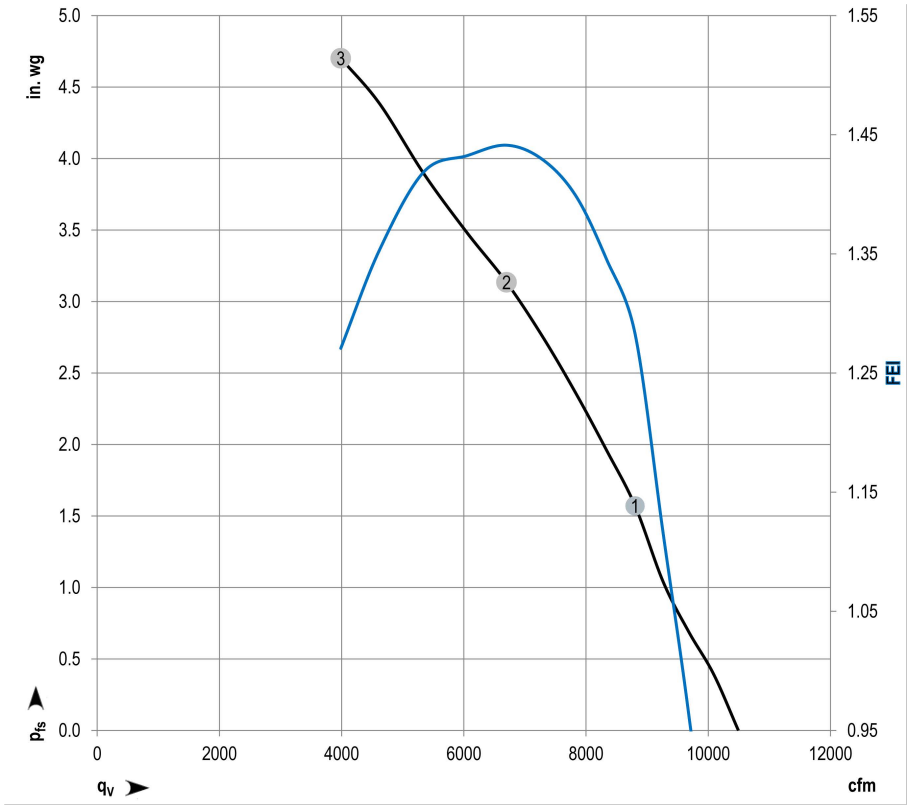
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



ρ = 0.075 lbm/ft³

Measurement: LU-1704

ebm-papst Inc. certifies that the RadiPac 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	230	60	1588	3207	8.75	8802	1.57	1.28
2	230	60	1591	3876	10.52	6698	3.13	1.44
3	230	60	1626	3888	10.42	3986	4.70	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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VBH0560PTTPA-PB31

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

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Nominal data

Type	**VBH0560PTTPA-PB31**
Motor	**M3G150-IF**

Phase		3~
Nominal voltage	VAC	460
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	1685
Power consumption	W	4532
Current draw	A	6.05
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	40

ml = Max. load
Subject to change

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

Occasional start-up between -40 °C and -25 °C is permissible. For continuous operation at ambient temperatures below -25 °C (such as refrigeration applications), a fan design with special low-temperature bearings must be used.

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Technical description

Weight	51.8 kg
Size	560 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Support plate material	Sheet steel, galvanized
Support bracket material	Steel, painted black
Inlet nozzle material	Sheet steel, galvanized
Number of blades	5
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1
Ambient temperature note	Occasional start-up at temperatures between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), use must be made of a fan design with special low-temperature bearings.
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	See legend on product drawing
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Operation and alarm display with LED - External 15-50 VDC input (parameterization) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.0 - Motor current limitation - RFID - ISO 15693 compatible - RS-485 MODBUS-RTU - Soft start - Voltage output 3.3-24 VDC, Pmax = 800 mW - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
EMC immunity to interference	According to EN 61000-6-2 (industrial environment)
EMC interference emission	According to EN 61000-6-3 (household environment), except EN 61000-3-2 for professionally used equipment with a total rated power greater than 1 kW
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
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
Approval	EAC; CSA C22.2 No. 77 + CAN/CSA-E60730-1; UL 1004-7 + 60730-1

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RadiPac Plenum Fan

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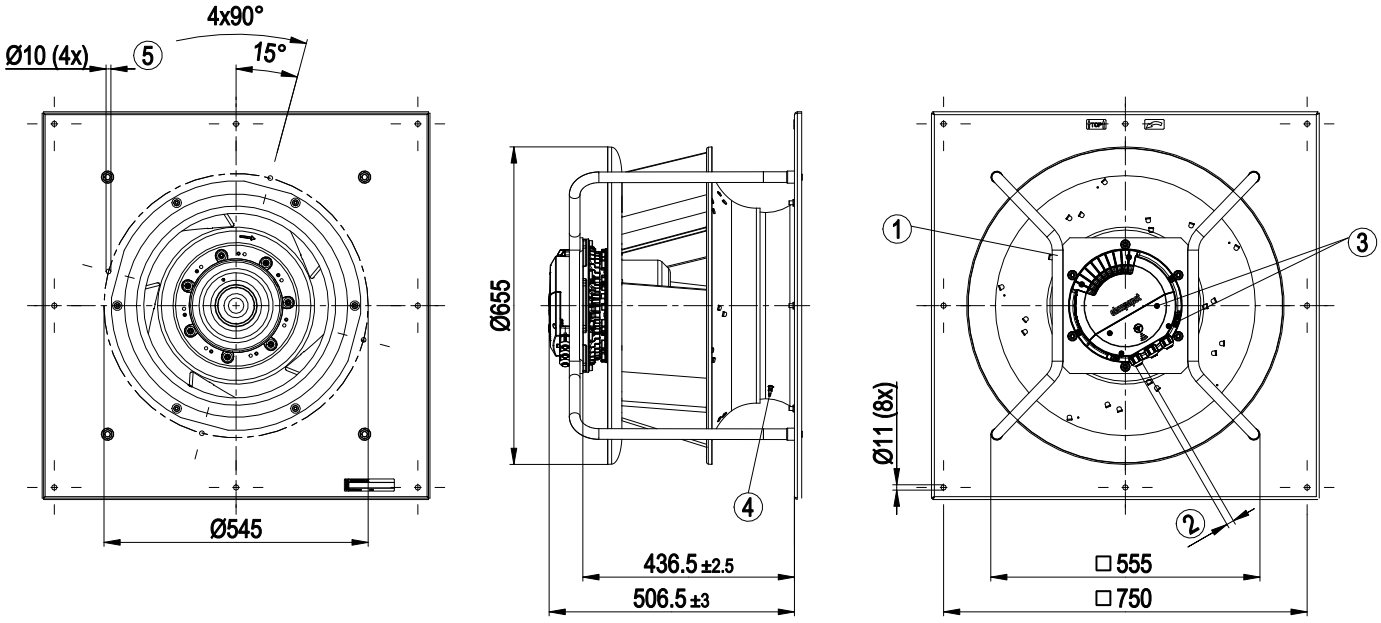
with support bracket



1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm
3	Tightening torque 1.5 ± 0.2 Nm
4	Inlet ring with pressure tap (k-factor: 348)
5	Attachment holes for FlowGrid (00630-2-2957 not included in scope of delivery)

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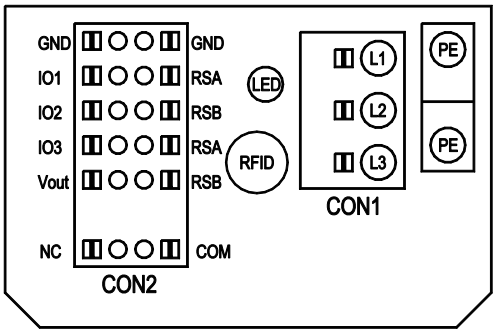
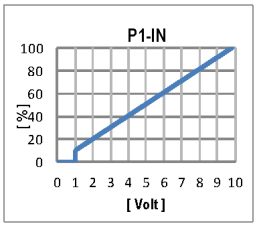
RadiPac Plenum Fan

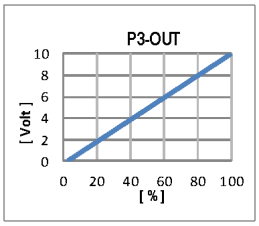
backward curved, single inlet

with support bracket

Electrical interface







No.	Conn.	Designation	Function/assignment
	CON1	L1, L2, L3	Power supply, phase, see nameplate for voltage range
	PE	PE	Protective earth
	CON2	RSA	RS485 interface for MODBUS, RSA; SELV
	CON2	RSB	RS485 interface for MODBUS, RSB; SELV
	CON2	GND	Reference ground for control interface, SELV
	CON2	IO1	Function parameterizable (see “Optional interface functions” table) Factory setting: Digital input - high active, function: Disable input, SELV - inactive: Pin open or applied voltage < 1.5 VDC - active: applied voltage 3.5-50 VDC Reset function: Triggering of error reset on change of state from "enabled" to "disabled"
	CON2	IO2	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog input 0-10 V / PWM, Ri=100 kΩ, function: Set value Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV
	CON2	IO3	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog output 0-10 V, max. 5 mA, function: Fan modulation level Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV
	CON2	Vout	Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable Factory setting: 10 VDC short-circuit-proof, supply for external devices, SELV alternatively: 15-50 VDC input for parameterization via MODBUS without line voltage
	CON2	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and on control interface side
	CON2	NC	Status relay, floating status contact, break for failure
		LED	green: status = good, ready for operation orange: status = warning red: status = failure
		P1-IN	Input characteristic curve
		P3-OUT	Output characteristic curve

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RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Terminal/plug assignment

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
			D158 [0]	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	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV					○	○	○	○	○				○				
	○ **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	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D159 [0]				○	○	○	○	○				○				
	○ **Ain2 0-10V/PWM**: analog input	Ri=100K, characteristic curve parameterizable, fPWM=1k..10KHz, SELV	D159 [2]	○															
	○ **Ain2 4-20mA**: analog input	Ri=125R, characteristic curve parameterizable, SELV	D159 [3]																
IO3	○ **Din3 (active high)**: digital input	not active: pin open or applied voltage < 1,5VDC active: applied voltage 3,5-50VDC, SELV	D15A [0]				○	○	○	○	○				○				
	○ **Din3 (active low)**: digital input	active: pin open or applied voltage 3,5-50VDC not active: applied voltage < 1,5VDC, SELV	D15A [1]																
	○ **PWMin3**: digital input	40Hz - 10kHz, characteristics parameterizable not active: pin open or applied voltage 3,5-50VDC active: applied voltage < 1,5VDC, SELV	D15A [7]	○															
	○ **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 RSB	RS485 bus connection,	MODBUS RTU, specification V6.0, SELV		○			○	○	○	○	○								
Vout	voltage output	voltage parameterizable 3,3...24VDC +/- 5,5%, Pmax=800mW, short-circuit-proof, supply for external devices, SELV	D16E [...]																
	alternatively: Input auxiliary power supply for parameter-ization via RS485/MODBUS RTU without line voltage	15...50VDC																	

○ configurable option

For further information and additional functions see EC Control Software, Fan-Set-App, or MODBUS Parameter Specification V6.0

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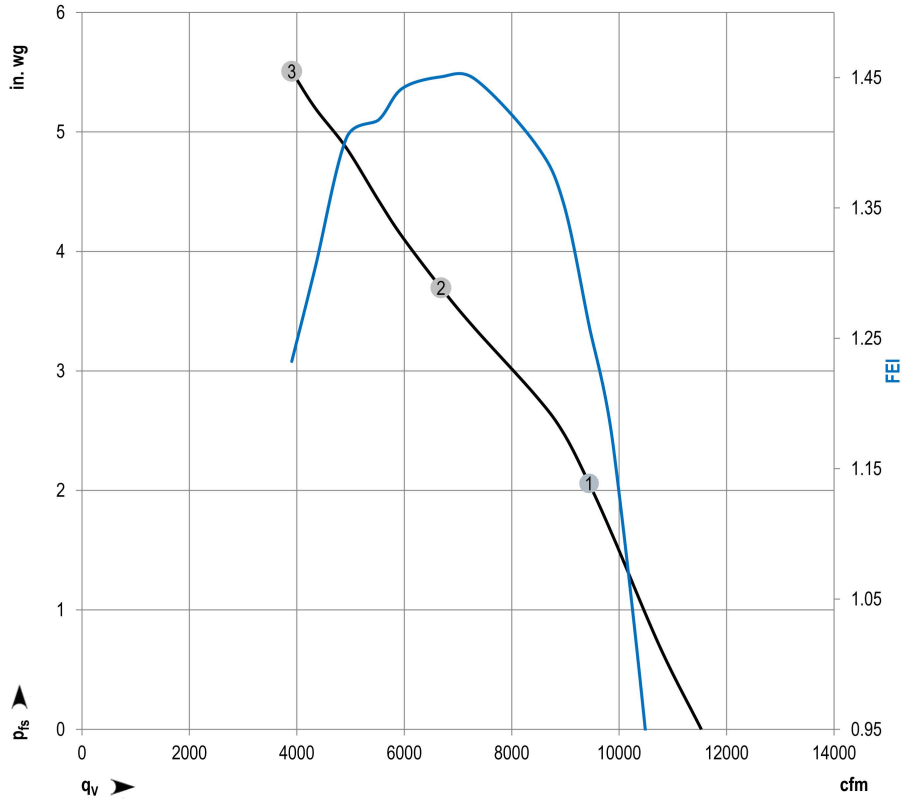
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



ρ = 0.075 lbm/ft³

Measurement: LU-1712

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Performance ratings

	U	f	n	P_{ed}	I	q_v	p_{fs}	FEI
	V	Hz	rpm	W	A	cfm	in. wg	
1	460	60	1701	4307	5.77	9440	2.06	1.26
2	460	60	1648	4429	5.93	6684	3.70	1.45
3	460	60	1722	4532	6.05	3906	5.51	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 "F" (Direct Drive, As Run Speed)
Performance ratings include the effects of support brackets.

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VBH0560PTTRA-PC11

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

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Nominal data

Model	**VBH0560PTTRA-PC11**	
Motor	**M3G150-NA**	
Phase		3~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 240
Frequency	Hz	60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	1775
Power consumption	W	5421
Current draw	A	14.49
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	40

ml = Max. load
Subject to change

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

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Technical description

Weight	64.7 kg
Size	560 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Support plate material	Sheet steel, galvanized
Support bracket material	Steel, painted black
Inlet nozzle material	Sheet steel, galvanized
Number of blades	5
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	See product drawing
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Output 20 VDC, max. 50 mA - Output for slave 0-10 V - Input for sensor 0-10 V or 4-20 mA - External 24 V input (parameter setting) - External release input - Alarm relay - Integrated PID controller - Motor current limitation - PFC, passive - RS-485 MODBUS-RTU - Soft start - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
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 according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
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
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730-1

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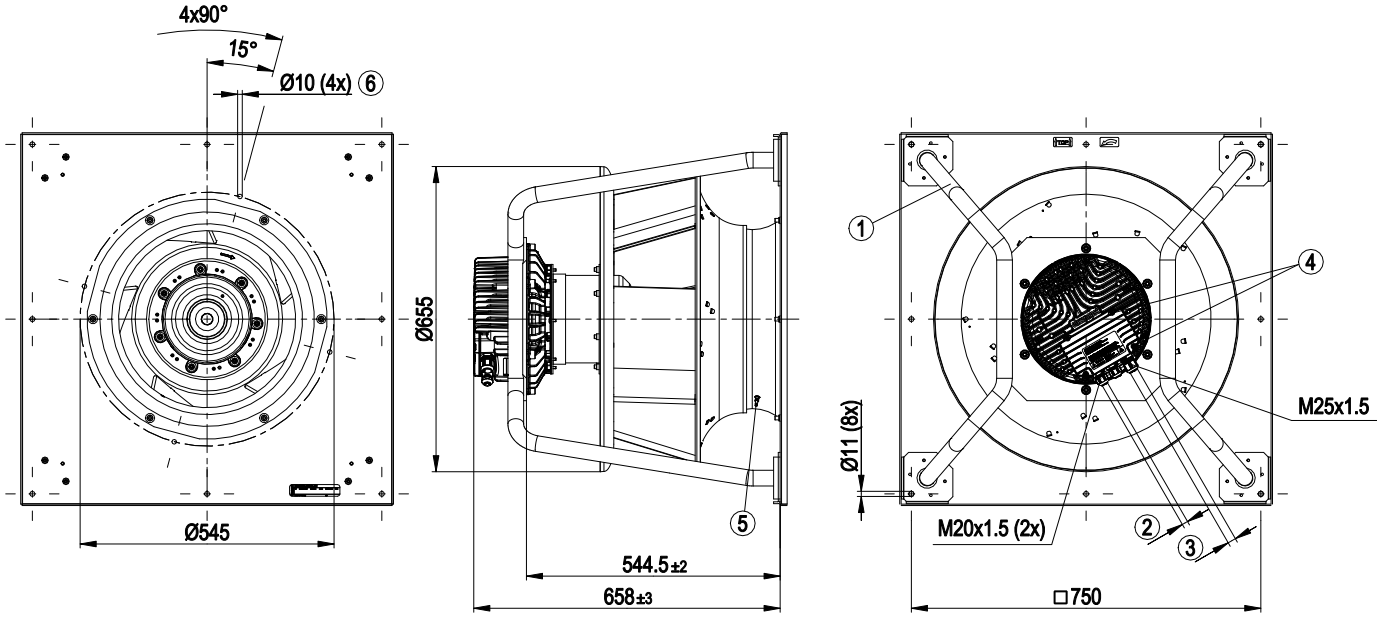
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm
3	Cable diameter min. 9 mm, max. 16 mm, tightening torque 6 ± 0.9 Nm
4	Tightening torque 3.5 ± 0.5 Nm
5	Inlet ring with pressure tap (k-factor: 348)
6	Mounting holes for FlowGrid

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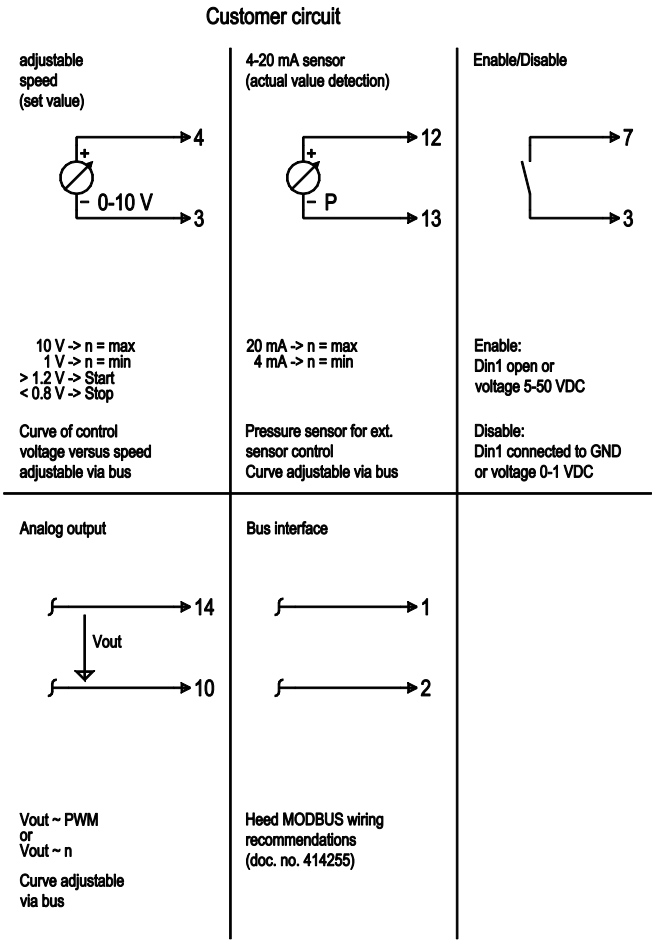
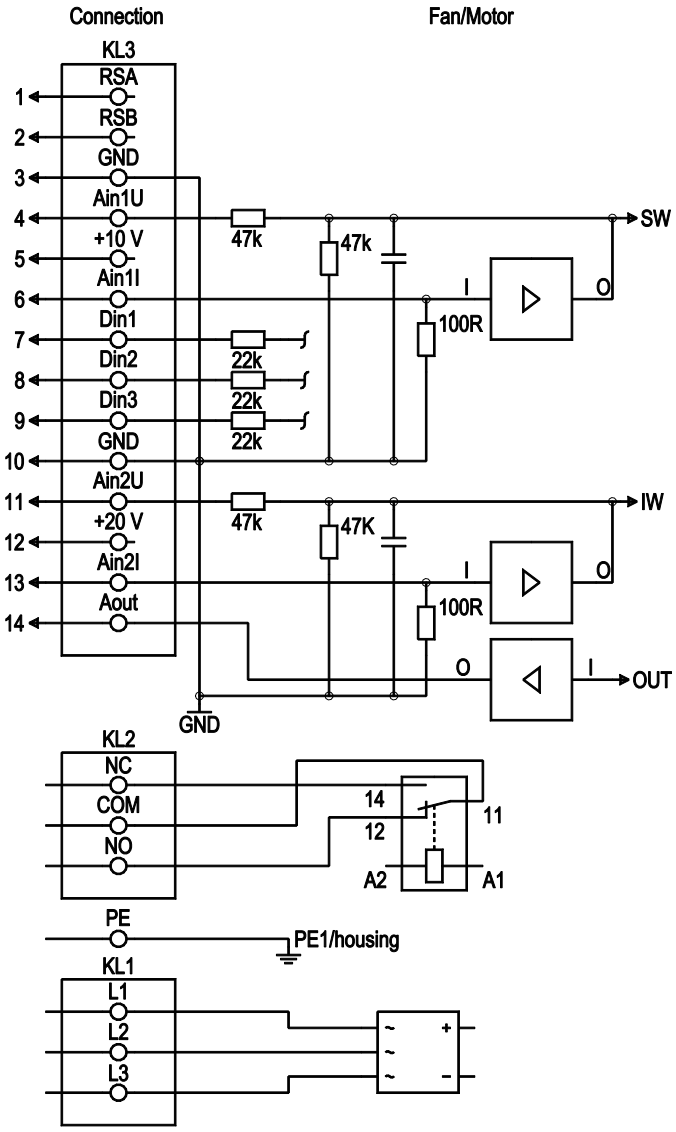
RadiPac Plenum Fan

backward curved, single inlet

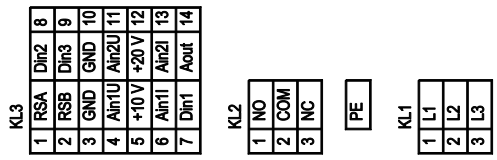
with support bracket

Electrical Interface





Terminal box connection diagram



No.	Conn.	Designation	Function/assignment
KL 1	1	L1	Supply connection, power supply, phase, see nameplate for voltage range
KL 1	2	L2	Supply connection, power supply, phase, see nameplate for voltage range
KL 1	3	L3	Supply connection, power supply, phase, see nameplate for voltage range
PE		PE	Ground connection, PE connection
KL 2	1	NO	Status relay, floating status contact, make for failure
KL 2	2	COM	Status relay, floating status contact, changeover contact, common connection, contact rating, max. 250 VAC/2 A (AC1)/min. 10 mA
KL 2	3	NC	Status relay, floating status contact, break for failure
KL 3	1	RSA	Bus connection RS485, RSA, MODBUS RTU; SELV
KL 3	2	RSB	Bus connection RS485, RSB, MODBUS RTU; SELV
KL 3	3 / 10	GND	Reference ground for control interface, SELV
KL 3	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

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RadiPac Plenum Fan

backward curved, single inlet

with support bracket

No.	Conn.	Designation	Function/assignment
KL 3	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
KL 3	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
KL 3	7	Din1	Digital input 1: enable electronics, enable: pin open or applied voltage 5-50 VDC disable: bridge to GND or applied voltage < 1 VDC reset function: triggers software reset after a level change to < 1 VDC; SELV
KL 3	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. Parameter set 1: pin open or applied voltage 5-50 VDC Parameter set 2: bridge to GND or applied voltage < 1 VDC; SELV
KL 3	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 Normal: Pin open or applied voltage 5-50 VDC Inverse: Bridge to GND or applied voltage < 1 VDC; SELV
KL 3	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
KL 3	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 Alternatively: +24 VDC input for parameterization without line voltage
KL 3	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
KL 3	14	Aout	Analog output 0-10 V, max. 5 mA, output of current motor modulation level; adjustable curve; SELV

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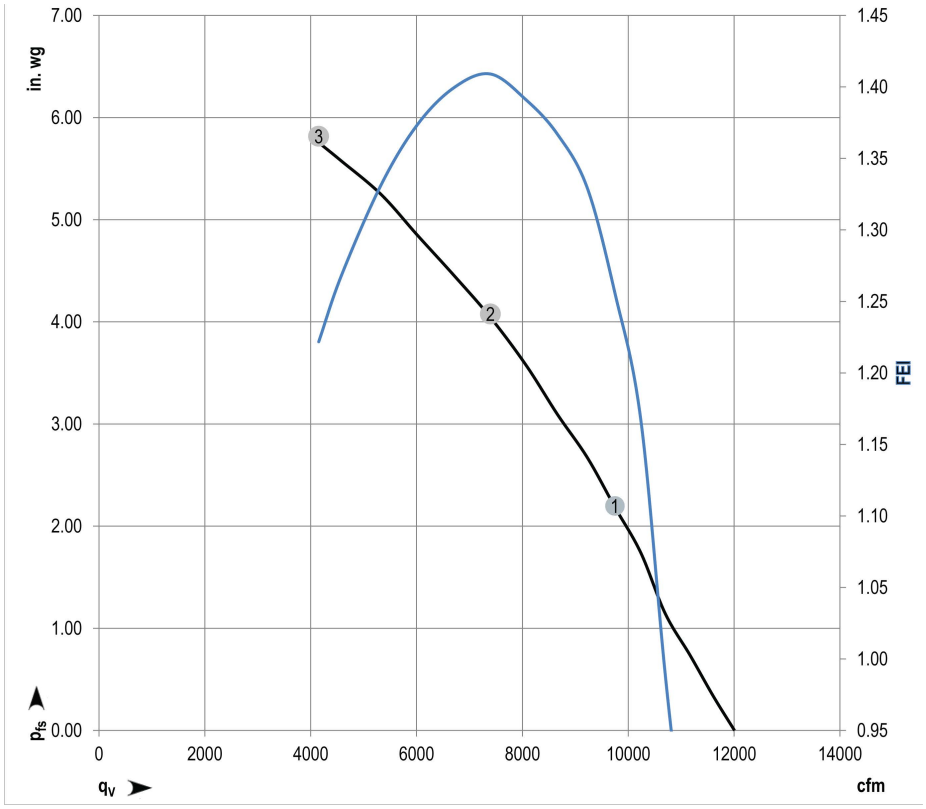
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



ρ = 0.075 lbm/ft³

Measurement: LU-1717

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Performance ratings

	U	f	n	P_{ed}	I	q_v	P_{fs}	FEI
	V	Hz	rpm	W	A	cfm	in. wg	
1	230	60	1768	4673	12.51	9747	2.20	1.26
2	230	60	1767	5421	14.49	7395	4.08	1.41
3	230	60	1779	5334	14.21	4151	5.82	1.33

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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VBH0560PTTRA-PC04

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

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Nominal data

Model	**VBH0560PTTRA-PC04**
Motor	**M3G150-NA**

Phase		3~
Nominal voltage	VAC	460
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	1785
Power consumption	W	5453
Current draw	A	7.28
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	40

ml = Max. load
Subject to change

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

Occasional start-up between -40 °C and -25 °C is permissible. For continuous operation at ambient temperatures below -25 °C (such as refrigeration applications), a fan design with special low-temperature bearings must be used.

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Technical description

Weight	64.3 kg
Size	560 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Support plate material	Sheet steel, galvanized
Support bracket material	Steel, painted black
Inlet nozzle material	Sheet steel, galvanized
Number of blades	5
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1
Ambient temperature note	Occasional start-up at temperatures between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), use must be made of a fan design with special low-temperature bearings.
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	See product drawing
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Output for slave 0-10 V - External 24 V input (parameter setting) - External release input - Alarm relay - Integrated PID controller - Power limiter - Motor current limitation - PFC, passive - RS-485 MODBUS-RTU - Soft start - Control input 0-10 VDC - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - 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 according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
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
Approval	UL 1004-7 + 60730-1; CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC

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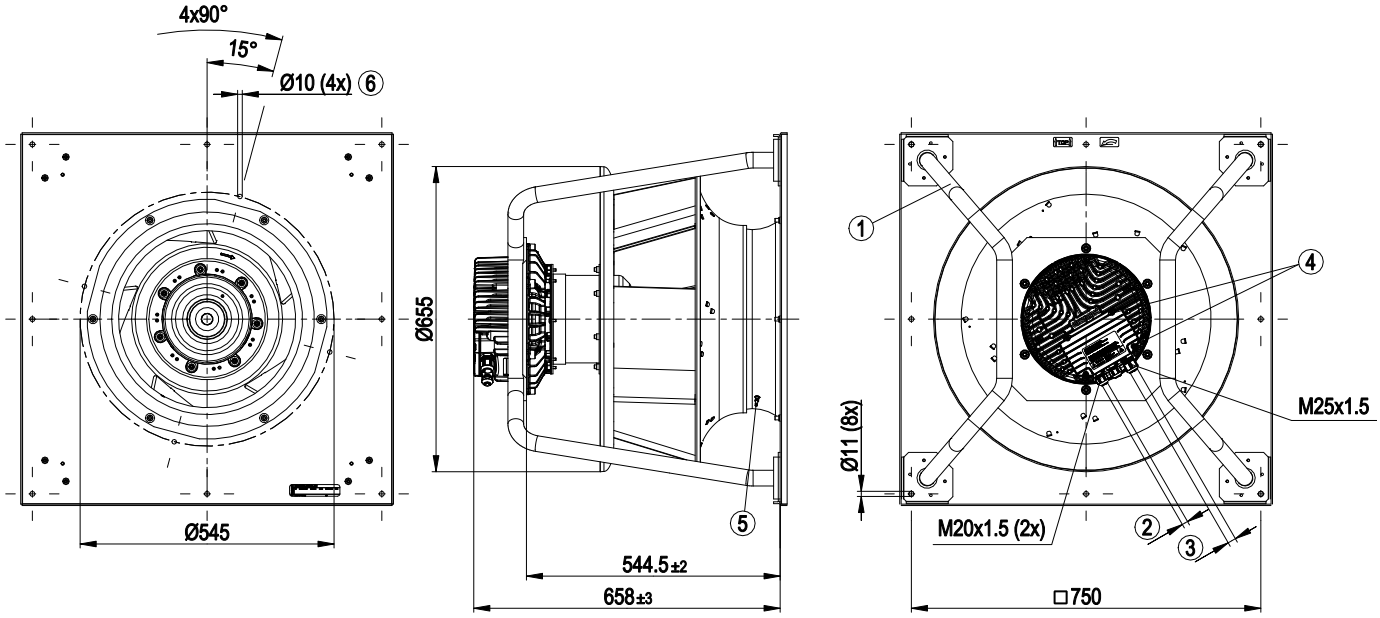
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm
3	Cable diameter min. 9 mm, max. 16 mm, tightening torque 6 ± 0.9 Nm
4	Tightening torque 3.5 ± 0.5 Nm
5	Inlet ring with pressure tap (k-factor: 348)
6	Mounting holes for FlowGrid

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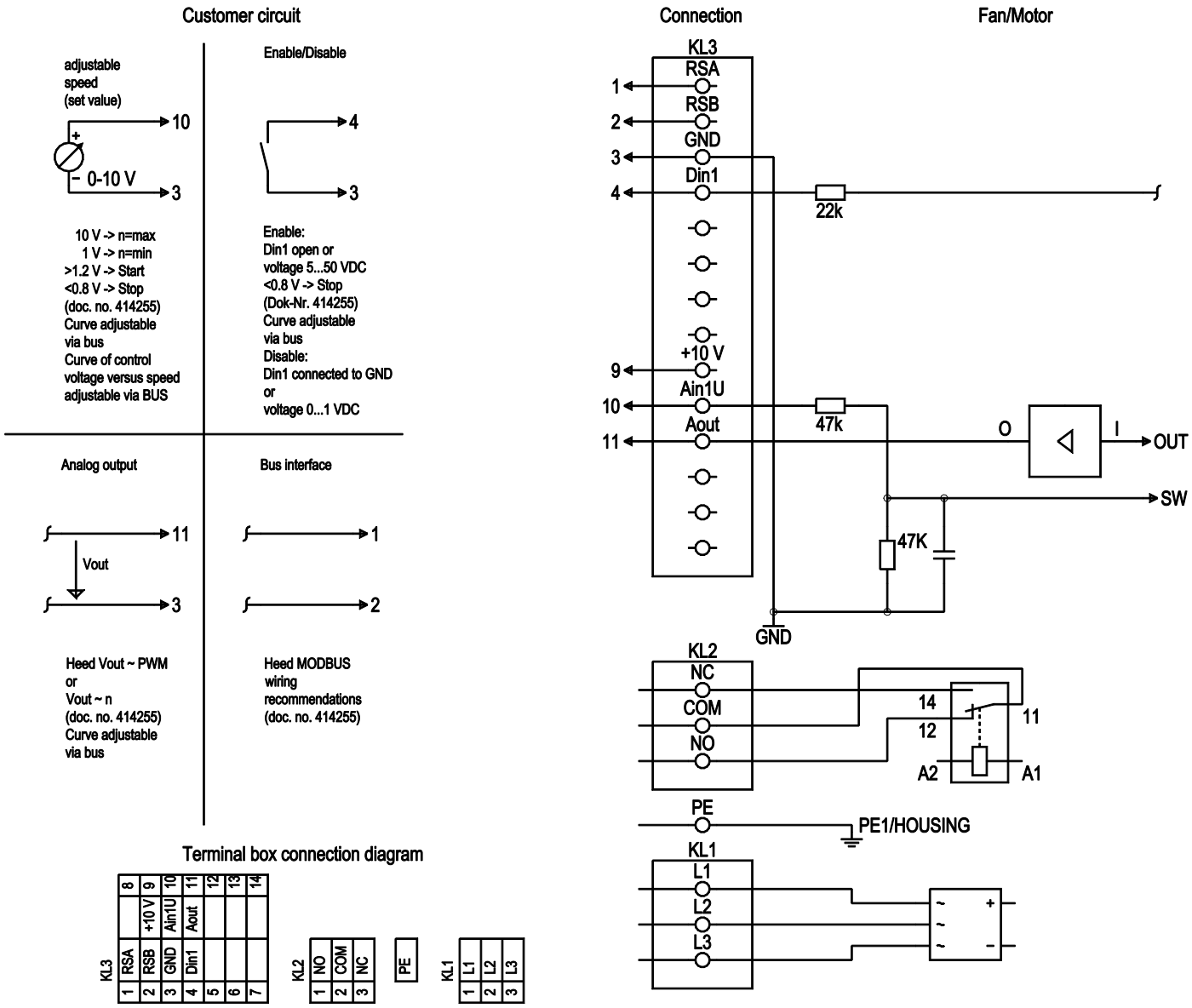
RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Electrical Interface



No.	Conn.	Designation	Function/assignment
KL 1	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
KL 3	1	RSA	RS485 interface for MODBUS, RSA; SELV
KL 3	2	RSB	RS485 interface for MODBUS, RSB; SELV
KL 3	3	GND	Reference ground for control interface; SELV
KL 3	4	Din1	Digital input 1: enable electronics, enable: pin open or applied voltage 5-50 VDC disable: bridge to GND or applied voltage < 1 VDC reset after a level change to < 1 VDC; SELV

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RadiPac Plenum Fan

backward curved, single inlet

with support bracket

No.	Conn.	Designation	Function/assignment
KL 3	-	-	-
KL 3	-	-	-
KL3	-	-	-
KL3	-	-	-
KL 3	9	10 V / max. 10 mA	Voltage output, power supply for external devices (e.g. potentiometers), SELV
KL 3	10	Ain1 U	Analog input 1, set value: 0-10 V, Ri = 100 kΩ, adjustable curve; SELV
KL 3	11	Aout	Analog output 0-10 VDC, max. 5 mA, output of current motor modulation level / motor speed adjustable curve; SELV
KL 3	-	-	-
KL 3	-	-	-
KL 3	-	-	-

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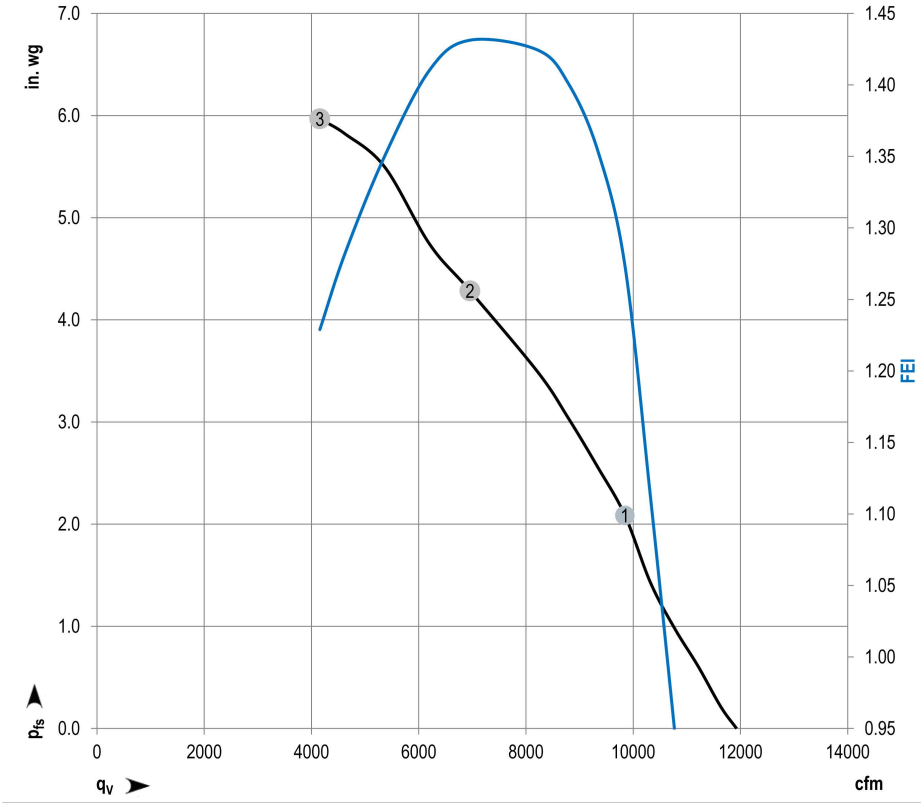
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



ρ = 0.075 lbm/ft³

Measurement: LU-1699

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Performance ratings

	U	f	n	P_{ed}	I	q_v	P_{fs}	FEI
	V	Hz	rpm	W	A	cfm	in. wg	
1	460	60	1765	4460	5.97	9846	2.09	1.27
2	460	60	1765	5260	7.02	6956	4.28	1.43
3	460	60	1793	5115	6.83	4157	5.97	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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VBH0400NTTPA-HB41

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

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Nominal data

Model	**VBH0400NTTPA-HB41**
Motor	**M3G150-IF**

Phase		3~
Nominal voltage	VAC	460
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	3725
Power consumption	W	6511
Current draw	A	8.68
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	40

ml = Max. load
Subject to change

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

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Technical description

Weight	42 kg
Size	400 mm
Motor size	150
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum
Impeller material	Sheet aluminum
Support plate material	Sheet steel, galvanized
Support bracket material	Steel, painted black
Inlet nozzle material	Sheet steel, galvanized
Number of blades	5
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP55
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H1
Ambient temperature note	Occasional start-up at temperatures between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), use must be made of a fan design with special low-temperature bearings.
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	See product drawing
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Output for slave 0-10 V - External 24 V input (parameter setting) - External release input - Alarm relay - Integrated PID controller - Power limiter - Motor current limitation - PFC, passive - RS-485 MODBUS-RTU - Soft start - Control input 0-10 VDC - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
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
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730-1

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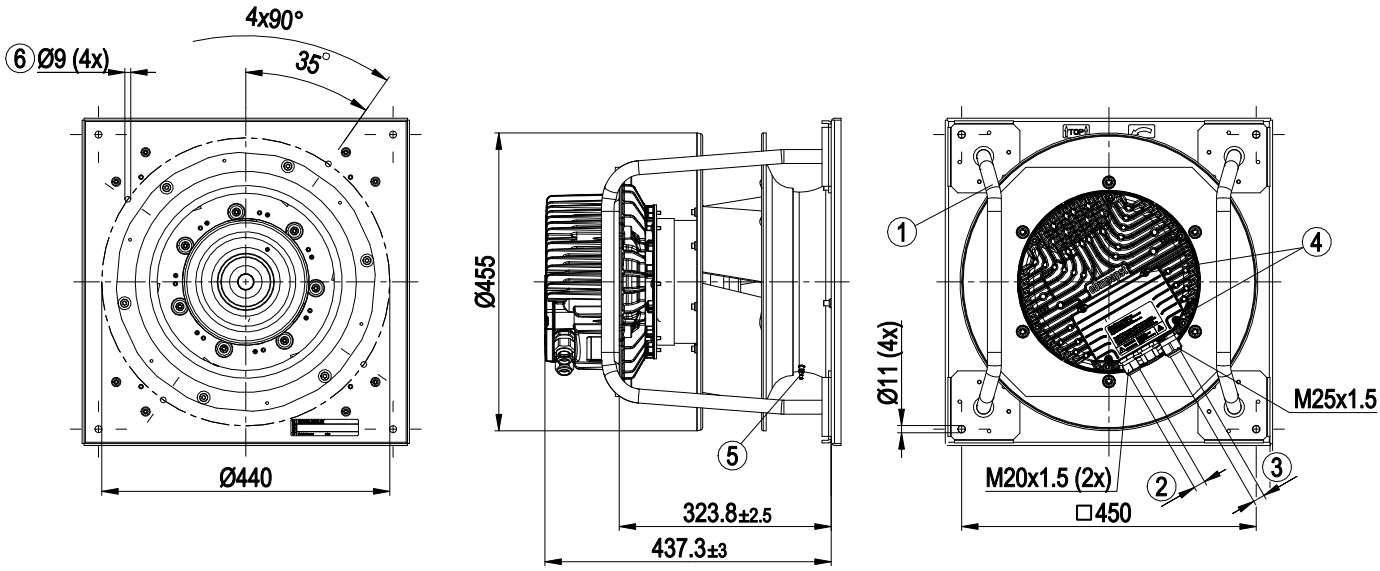
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm
3	Cable diameter min. 9 mm, max. 16 mm, tightening torque 6 ± 0.9 Nm
4	Tightening torque 3.5 ± 0.5 Nm
5	Inlet ring with pressure tap (k-factor: 188)
6	Mounting holes for FlowGrid

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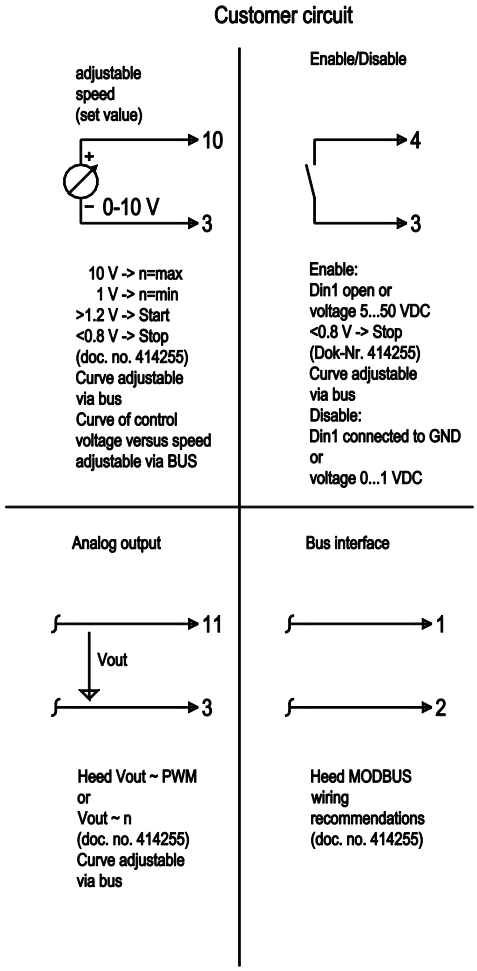
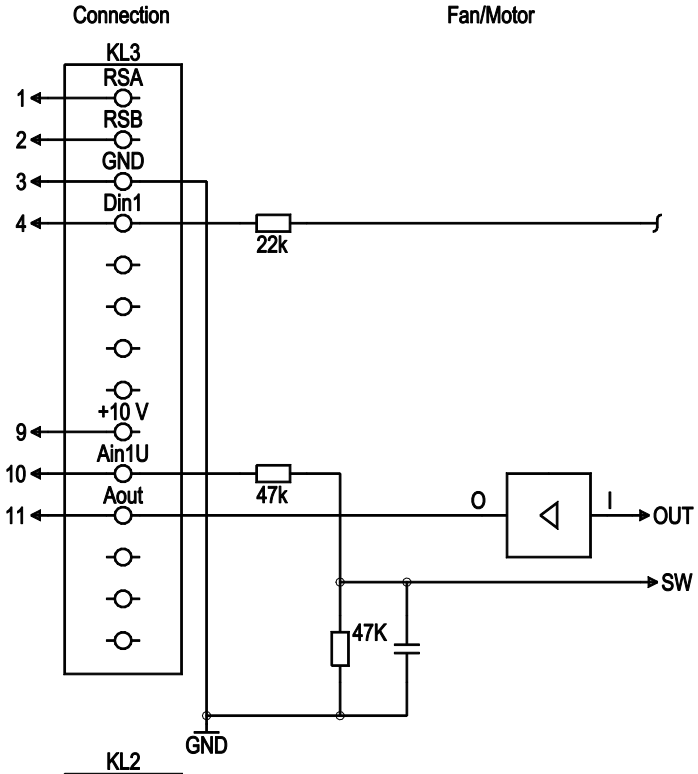
RadiPac Plenum Fan

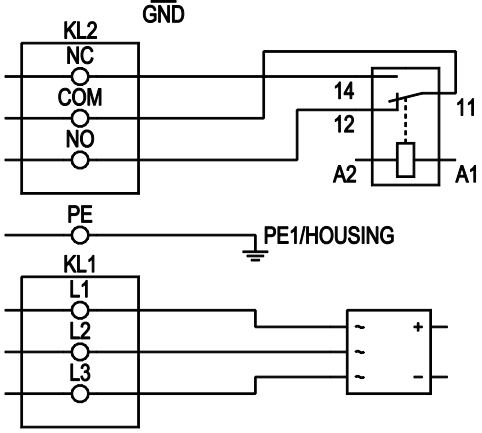
backward curved, single inlet

with support bracket

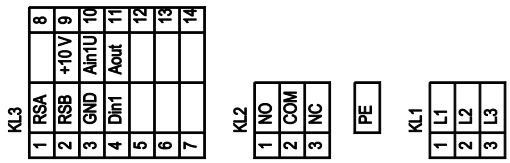
Electrical Interface







Terminal box connection diagram



No.	Conn.	Designation	Function/assignment
KL 1	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
KL 3	1	RSA	RS485 interface for MODBUS, RSA; SELV
KL 3	2	RSB	RS485 interface for MODBUS, RSB; SELV
KL 3	3	GND	Reference ground for control interface; SELV
KL 3	4	Din1	Digital input 1: enable electronics, enable: pin open or applied voltage 5-50 VDC disable: bridge to GND or applied voltage < 1 VDC set after a level change to < 1 VDC; SELV

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RadiPac Plenum Fan

backward curved, single inlet

with support bracket

No.	Conn.	Designation	Function/assignment
KL 3	-	-	-
KL 3	-	-	-
KL3	-	-	-
KL3	-	-	-
KL 3	9	10 V / max. 10 mA	Voltage output, power supply for external devices (e.g. potentiometers), SELV
KL 3	10	Ain1 U	Analog input 1, set value: 0-10 V, Ri = 100 kΩ, adjustable curve; SELV
KL 3	11	Aout	Analog output 0-10 VDC, max. 5 mA, output of current motor modulation level / motor speed adjustable curve; SELV
KL 3	-	-	-
KL 3	-	-	-
KL 3	-	-	-

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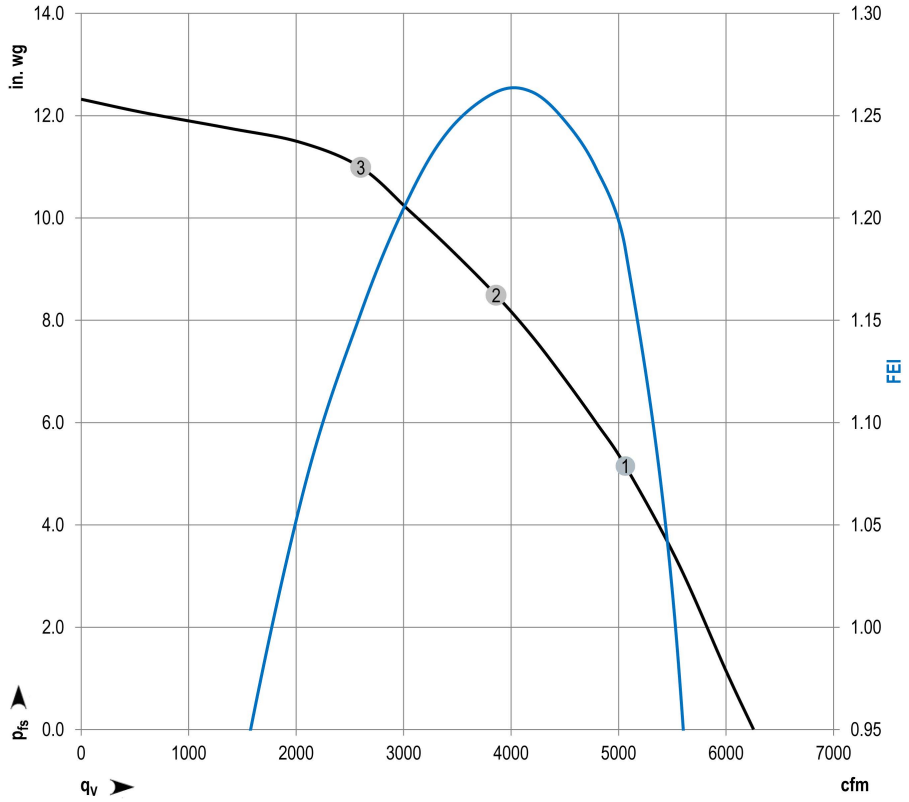
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



ρ = 0.075 lbm/ft³

Measurement: LU-1761

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Performance ratings

	U	f	n	P_{ed}	I	q_v	P_{fs}	FEI
	V	Hz	rpm	W	A	cfm	in. wg	
1	460	60	3720	5626	7.51	5064	5.15	1.18
2	460	60	3713	6498	8.68	3861	8.49	1.26
3	460	60	3741	6339	8.45	2602	10.99	1.15

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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VBF0560NTVQA-HE07

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

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Nominal data

Model	**VBF0560NTVQA-HE07**
Motor	**M3G200-LA**

Phase		3~
Nominal voltage	VAC	460
Nominal voltage range	VAC	380 .. 480
Frequency	Hz	60
Method of obtaining data		ml
Speed (rpm)	min^{-1}	2615
Power consumption	W	12941
Current draw	A	17.54
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	45

ml = Max. load
Subject to change

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

RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Technical description

Weight	115.7 kg
Size	560 mm
Motor size	200
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum, painted black
Impeller material	Sheet aluminum
Inlet nozzle material	Sheet steel, galvanized
Support structure material	Sheet steel, galvanized
Number of blades	6
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection Insulation	IP20
class	"F"
Moisture (F) / Environmental (H) protection class	H1
Ambient temperature note	Occasional start-up at temperatures between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), use must be made of a fan design with special low-temperature bearings.
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	Shaft horizontal (base mounting only) or rotor on bottom; rotor on top on request
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Output 20 VDC, max. 50 mA - Output for slave 0-10 V - Operation and alarm display - Input for sensor 0-10 V or 4-20 mA - External 24 V input (parameter setting) - External release input - Alarm relay - Integrated PID controller - Power limiter - Motor current limitation - PFC, passive - RS-485 MODBUS-RTU - Soft start - EEPROM write cycles: 100,000 maximum - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Temperature derating - Thermal overload protection for electronics/motor - 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)

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RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
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
Approval	CSA C22.2 No. 77 + CAN/CSA-E60730-1; EAC; UL 1004-7 + 60730-1

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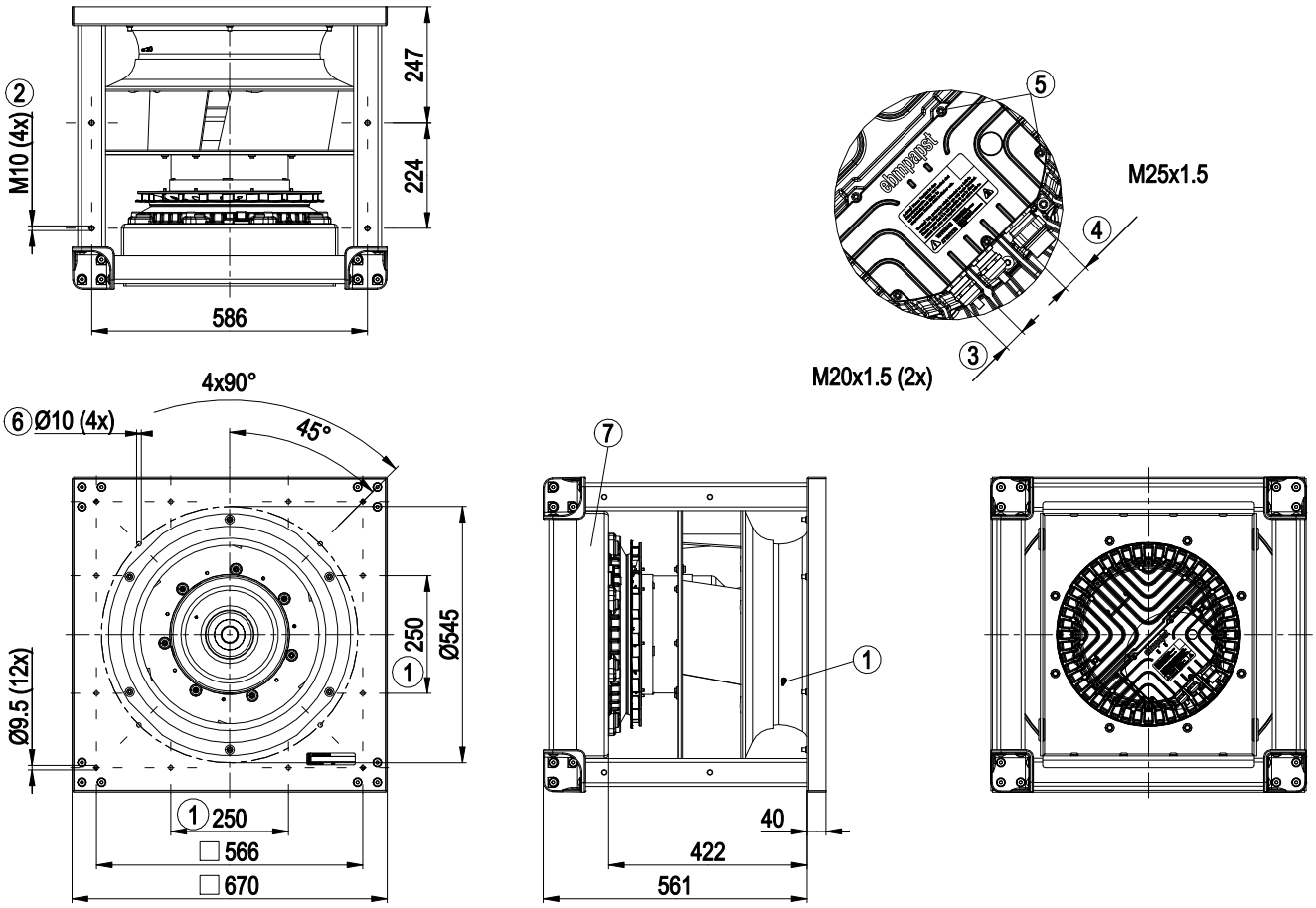
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



1	Inlet ring with pressure tap (k-factor: 348)
2	Mounting position for vibration-absorbing elements, tightening torque max. 40 Nm
3	Cable diameter min. 5 mm, max. 13 mm, tightening torque 6 ±0.9 Nm
4	Cable diameter min. 16 mm, max. 20.5 mm, tightening torque 6 ± 0.9 Nm
5	Tightening torque 3.5 ± 0.5 Nm
6	Mounting holes for FlowGrid
7	Installation position: shaft horizontal (motor support plate must stand upright) or rotor on bottom; rotor on top on request

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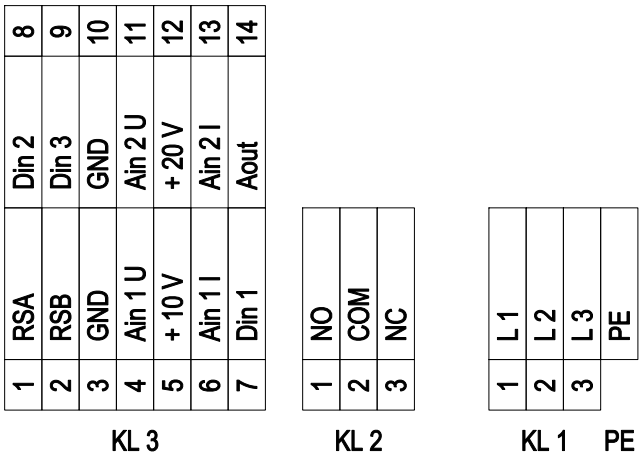
RadiPac Plenum Fan

backward curved, single inlet

with support bracket

Electrical Interface



No.	Conn.	Designation	Function/assignment
KL 1	1	L1	Supply connection, power supply 3-phase 380-480 VAC, 50/60 Hz
KL 1	2	L2	Supply connection, power supply 3-phase 380-480 VAC, 50/60 Hz
KL 1	3	L3	Supply connection, power supply 3-phase 380-480 VAC, 50/60 Hz
PE		PE	Ground connection, PE connection
KL 2	1	NO	Status relay, floating status contact, make for failure
KL2	2	COM	Status relay, floating status contact; changeover contact; common connection; contact rating 250 VAC / max. 2 A (AC1) / min. 10 mA
KL2	3	NC	Status relay, floating status contact, break for failure
KL 3	1	RSA	Bus connection RS485, RSA, MODBUS RTU
KL 3	2	RSB	Bus connection RS485, RSB, MODBUS RTU
KL 3	3 / 10	GND	Reference ground for control interface
KL 3	4	Ain1 U	Analog input 1 (set value), 0-10 V, Ri = 100 kΩ, adjustable curves, only usable as alternative to input Ain1I
KL 3	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)
KL 3	6	Ain1 I	Analog input 1 (set value), 4-20 mA, Ri = 100 Ω, adjustable curves, only usable as alternative to input Ain1U
KL 3	7	Din1	Digital input 1: enable electronics, enable: pin open or applied voltage 5...50 VDC: disable: bridge to GND or applied voltage < 1 VDC; reset function: triggers software reset after a level change to < 1 V
KL 3	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. Parameter set 1: pin open or applied voltage 5-50 VDC; parameter set 2: bridge to GND or applied voltage < 1 VDC
KL 3	9	Din3	Digital input 3: according to EEPROM setting, the integrated controller's direction of action can be selected as normal/inverse via bus or digital input; normal: pin open or applied voltage 5-50 VDC inverse: bridge to GND or applied voltage < 1 VDC
KL 3	11	Ain2 U	Analog input 2, measured value 0-10 V, Ri = 100 kΩ, adjustable curve, only usable as alternative to input Ain2I
KL 3	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)
KL 3	13	Ain2 I	Analog input 2, measured value: 4-20 mA, Ri = 100 Ω, adjustable curve, only usable as alternative to input Ain2U
KL 3	14	Aout	Analog output 0-10 V, max. 5 mA, output of current motor modulation level / of the current motor speed. Adjustable curve.

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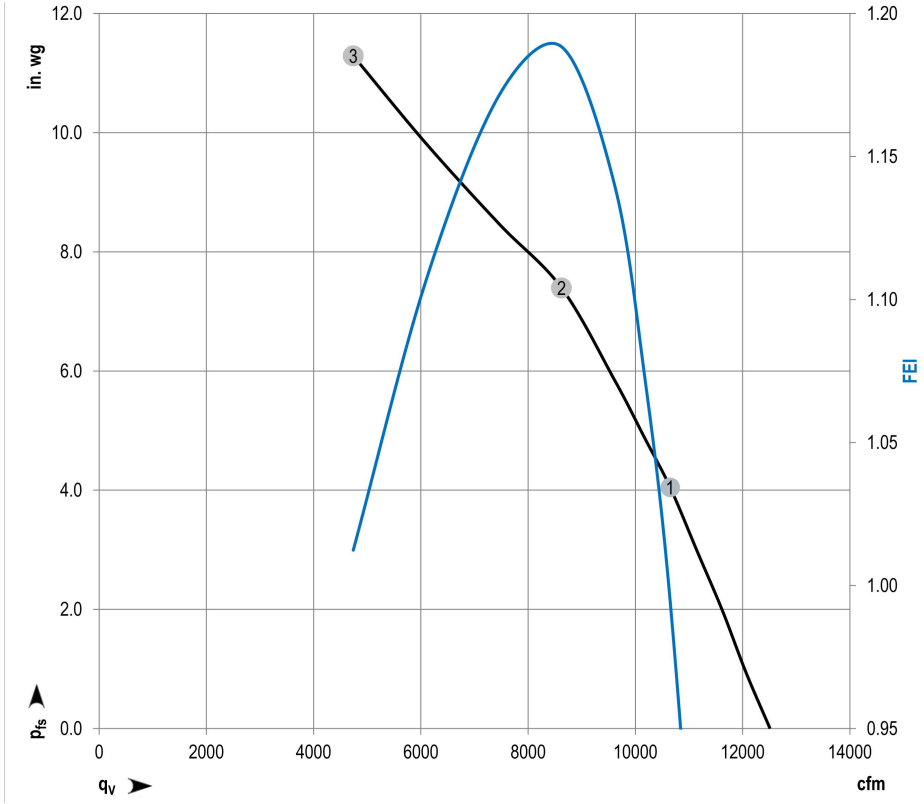
RadiPac Plenum Fan

backward curved, single inlet

with support bracket



ρ = 0.075 lbm/ft³

Measurement: LU-1722

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Performance ratings

	U	f	n	P_{ed}	I	q_v	P_{fs}	FEI
	V	Hz	rpm	W	A	cfm	in. wg	
1	460	60	2598	10843	14.89	10649	4.05	0.99
2	460	60	2608	12832	17.49	8623	7.40	1.19
3	460	60	2654	12756	17.25	4740	11.29	1.01

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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4087

RadiPac Plenum Fan

backward curved, single inlet with support bracket

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Nominal Data

Model	4087	
Motor	E15038-55	
Phase		3
Nominal voltage	VAC	575
Frequency	Hz	60
Method of obtaining data		ml
Speed	rpm	2474
Power consumption	W	4596
Current draw	A	5.16
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 Plenum Fan

backward curved, single inlet with support bracket

Technical Description	
Weight	81.3 lb (36.9 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	See legend on product drawing
Condensation drain holes	On rotor side
Mode	S1
Motor bearing	Ball bearings
Technical features	- Operation and alarm display with LED - External 15-50 VDC input (parameterization) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.3 - Motor current limitation - RS-485 MODBUS-RTU - Soft start - Voltage output 3.3-24 VDC, Pmax = 800 mW - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection - Power Factor Correction (PFC): Passive, through low-capacitance DC link
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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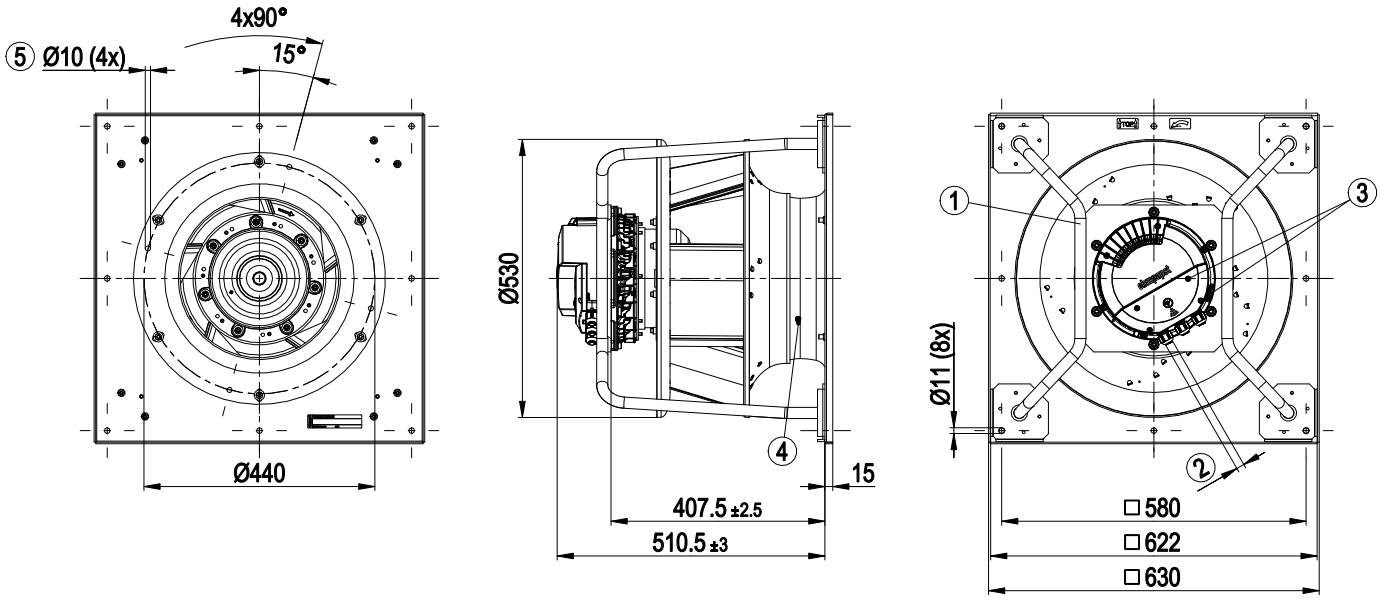
RadiPac Plenum Fan

backward curved, single inlet with support bracket

Product drawing

Dimensions in millimeters



1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Cable diameter: 0.16-0.39 in (4-10 mm)
	Cable gland tightening torque: 35.4±5.3 in-lbs (4±0.6 Nm)
	(The tightening torque is designed for PVC cables. If the cable materials are different, the tightening torque may have to be adjusted)
3	Terminal cover tightening torque: 13.3± 1.8 in-lbs (1.5±0.2 Nm)
4	Inlet ring with pressure tap K-factor (m³/h & Pa): 240
5	Attachment holes for FlowGrid 35505-2-2957 (not included in scope of delivery)

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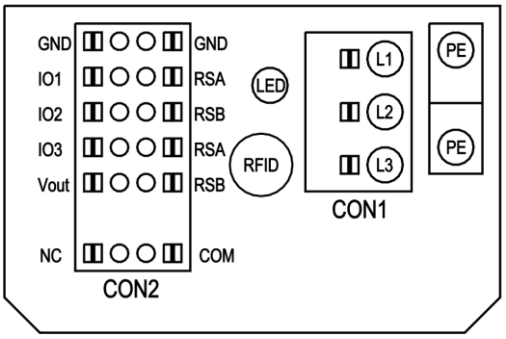
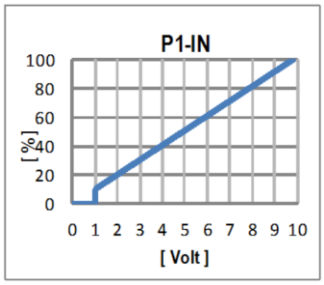
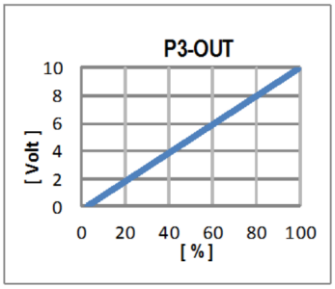
RadiPac Plenum Fan

backward curved, single inlet with support bracket

Electrical Interface







No.	Conn.	Desig.	Function/ Assignment
	CON1	L1,L2,L3	Power supply, phase, see nameplate for voltage range
	PE	PE	Protective earth
	CON2	RSA	RS485 interface for MODBUS, RSA; SELV
	CON2	RSB	RS485 interface for MODBUS, RSB; SELV
	CON2	GND	Reference ground for control interface, SELV
	CON2	IO1	Function parameterizable (see “Optional interface functions” table) Factory setting: Digital input - high active, function: Disable input, SELV - inactive: Pin open or applied voltage < 1.5 VDC - active: applied voltage 3.5-50 VDC Reset function:Triggering of error reset on change of state from"enabled" to "disabled"
	CON2	IO2	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog input 0-10 VDC / PWM, Ri=100 kΩ, function: Set value Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV
	CON2	IO3	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog output 0-10 VDC, max. 5 mA, function: Fan modulation level Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV
	CON2	Vout	Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable Factory setting: 10 VDC short-circuit-proof, supply for external devices, SELV alternatively: 15-50 VDC input for parameterization via MODBUS without line voltage
	CON2	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and on control interface side
	CON2	NC	Status relay, floating status contact, break for failure
		LED	green: status = good, ready for operation orange: status = warning red: status = failure
		P1-IN	Input characteristic curve
		P3-OUT	Output characteristic curve

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RadiPac Plenum Fan

backward curved, single inlet with support bracket

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	INPUT: configurable IO functions: normal / inverse: 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	OUTPUT: signal: tach out (selected directly via IO mode)	signal: diagnostics out (selected directly via IO mode)	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
				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 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 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 not active: pin open or applied voltage < 1,5VDC	D15A [0]			○	○	○	○	○								
	○ **Din3 (active low)**: digital input	active: applied voltage < 1,5VDC, SELV not active: pin open or applied voltage 3,5-50VDC	D15A [1]			○	○	○	○	○								
	○ **PWMin3**: digital input idle level high	PWM = 40Hz - 10kHz, characteristics parameterizable active: pin open or applied voltage 3,5-50VDC not active: applied voltage < 1,5VDC, SELV	D15A [7]	○														
	○ **PWMin3**: digital input idle level low	40Hz - 10kHz, characteristics parameterizable active: applied voltage 3,5-50VDC not active: pin open or applied voltage < 1,5VDC, SELV	D15A [8]	○														
	○ **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 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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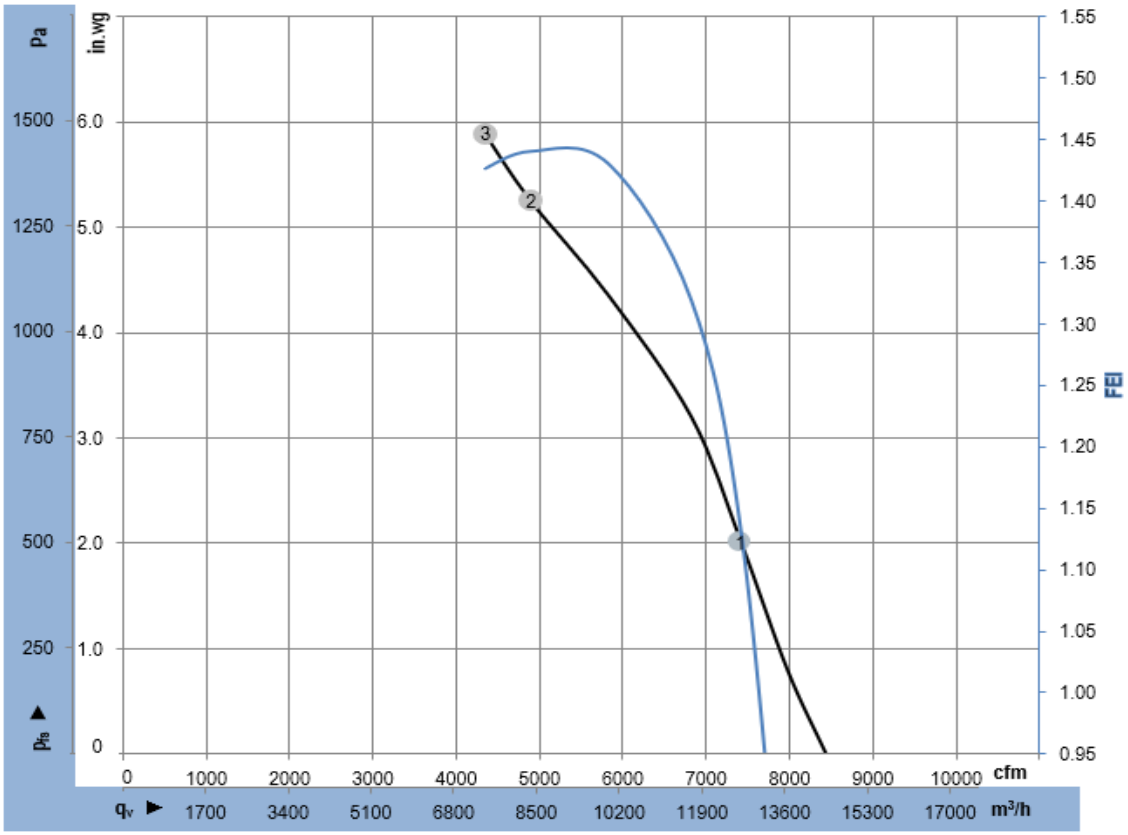
RadiPac Plenum Fan

backward curved, single inlet with support bracket



ρ = 0.075 lbm/ft³

Measurement: LU-4087

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~	575	60	2507	3760	4.3	7414	2.0	1.13
2	3~	575	60	2434	4564	5.1	4896	5.3	1.44
3	3~	575	60	2444	4586	5.2	4351	5.9	1.43

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 "F" (Direct Drive, As Run Speed)
Performance ratings include the effects of support brackets.

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4092

RadiPac EC Plenum Fan

with support bracket

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100 Hyde Road
Farmington, CT 06034
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Nominal Data

Model	4092	
Motor	M3G150-NA	
Phase		3
Nominal voltage	VAC	575
Frequency	Hz	60
Method of obtaining data		ml
Speed	rpm	1880
Power consumption	W	6245
Current draw	A	7.22
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 EC Plenum Fan

with support bracket

Technical Description	
Weight	78.5 lb (35.6 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	IP20
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 - External 15-50 VDC input (parameterization) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.4 - Motor current limitation - RS-485 MODBUS-RTU - Soft start - Voltage output 3.3-24 VDC, Pmax = 800 mW - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
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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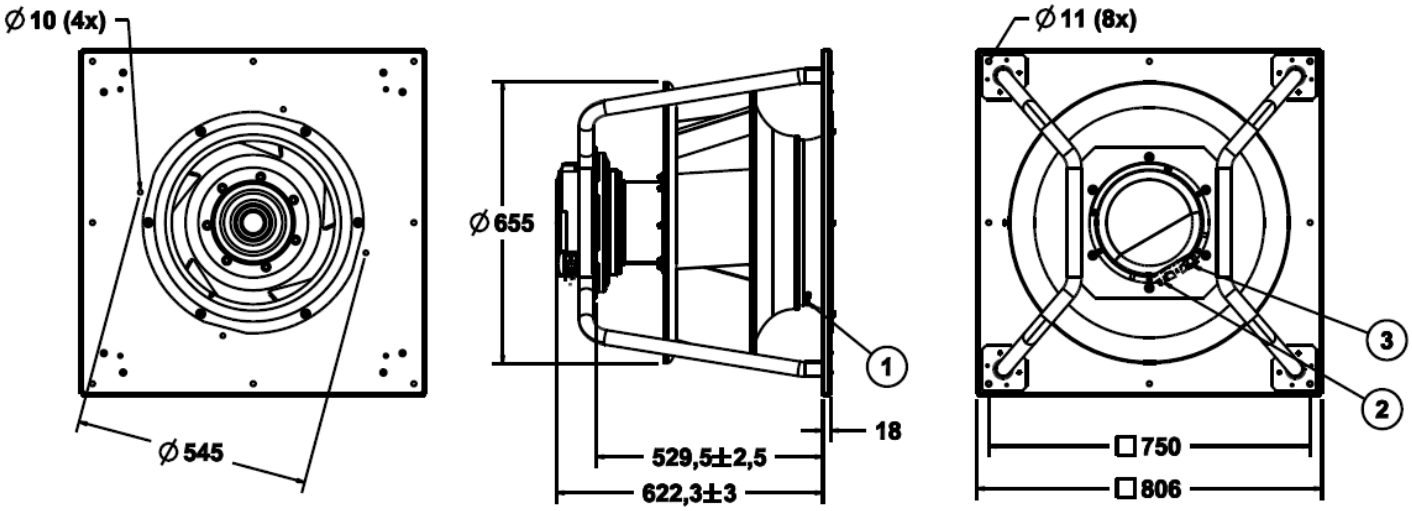
RadiPac - Modular EC Plenum Fan

with support bracket

Product drawing

Dimensions in millimeters



1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Cable diameter: 0.16-0.39 in (4-10 mm)
	Cable gland tightening torque: 35.4±5.3 in-lbs (4±0.6 Nm)
	(The tightening torque is designed for PVC cables. If the cable materials are different, the tightening torque may have to be adjusted)
3	Terminal cover tightening torque: 26.6± 2.7 in-lbs (3±0.3 Nm)
4	Inlet ring with pressure tap K-factor (m³/h & Pa): 348
5	Attachment for inlet ring and FlowGrid (00400-2-2957 not included in scope of delivery)

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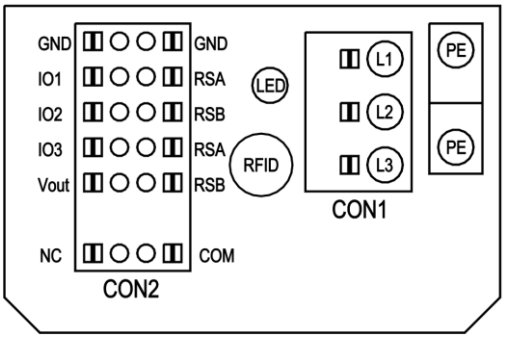
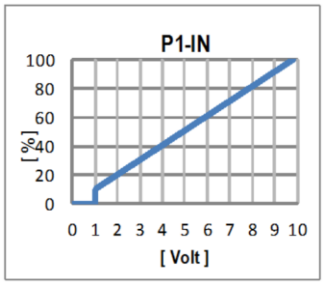
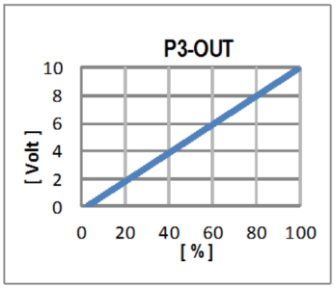
RadiPac EC Plenum Fan

with support bracket

Electrical Interface







No.	Conn.	Desig.	Function/ Assignment
	CON1	L1,L2,L3	Power supply, phase, see nameplate for voltage range
	PE	PE	Protective earth
	CON2	RSA	RS485 interface for MODBUS, RSA; SELV
	CON2	RSB	RS485 interface for MODBUS, RSB; SELV
	CON2	GND	Reference ground for control interface, SELV
	CON2	IO1	Function parameterizable (see “Optional interface functions” table) Factory setting: Digital input - high active, function: Disable input, SELV - inactive: Pin open or applied voltage < 1.5 VDC - active: applied voltage 3.5-50 VDC Reset function:Triggering of error reset on change of state from"enabled" to "disabled"
	CON2	IO2	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog input 0-10 VDC / PWM, Ri=100 kΩ, function: Set value Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV
	CON2	IO3	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog output 0-10 VDC, max. 5 mA, function: Fan modulation level Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV
	CON2	Vout	Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable Factory setting: 10 VDC short-circuit-proof, supply for external devices, SELV alternatively: 15-50 VDC input for parameterization via MODBUS without line voltage
	CON2	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and on control interface side
	CON2	NC	Status relay, floating status contact, break for failure
		LED	green: status = good, ready for operation orange: status = warning red: status = failure
		P1-IN	Input characteristic curve
		P3-OUT	Output characteristic curve

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RadiPac EC Plenum Fan

with support bracket

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 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 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 not active: pin open or applied voltage < 1,5VDC	D15A [0]				○	○	○	○								
	○ **Din3 (active low)**: digital input	active: applied voltage < 1,5VDC, SELV not active: pin open or applied voltage 3,5-50VDC	D15A [1]			○												
	○ **PWMin3**: digital input idle level high	PWM = 40Hz - 10kHz, characteristics parameterizable active: pin open or applied voltage 3,5-50VDC not active: applied voltage < 1,5VDC, SELV	D15A [7]	○														
	○ **PWMin3**: digital input idle level low	40Hz - 10kHz, characteristics parameterizable active: applied voltage 3,5-50VDC not active: pin open or applied voltage < 1,5VDC, SELV	D15A [8]	○														
	○ **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 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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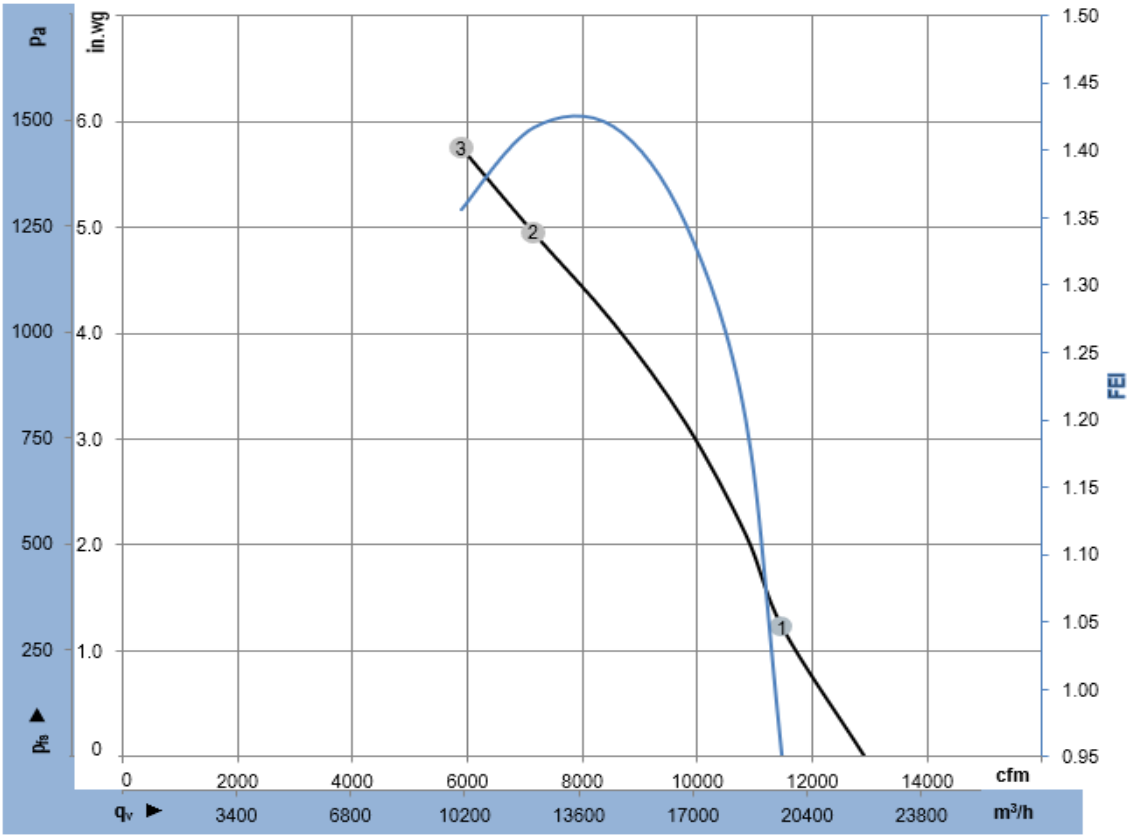
RadiPac EC Plenum Fan

with support bracket



ρ = 0.075 lbm/ft³

Measurement: LU-4092

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~	575	60	1886	4602	5.5	11475	1.2	0.95
2	3~	575	60	1865	6245	7.2	7140	5.0	1.42
3	3~	575	60	1878	6244	7.2	5890	5.8	1.36

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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4103

RadiPac Plenum Fan

backward curved, single inlet with support bracket

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

Model	4103	
Motor	M3G150-IF	
Phase		3
Nominal voltage	VAC	575
Frequency	Hz	60
Method of obtaining data		ml
Speed	rpm	2180
Power consumption	W	5430
Current draw	A	6.37
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 Plenum Fan

backward curved, single inlet with support bracket

Technical Description	
Weight	104.5 lb (47.4 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 - External 15-50 VDC input (parameterization) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.4 - Motor current limitation - RS-485 MODBUS-RTU - Soft start - Voltage output 3.3-24 VDC, Pmax = 800 mW - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection - Vibration Sensor
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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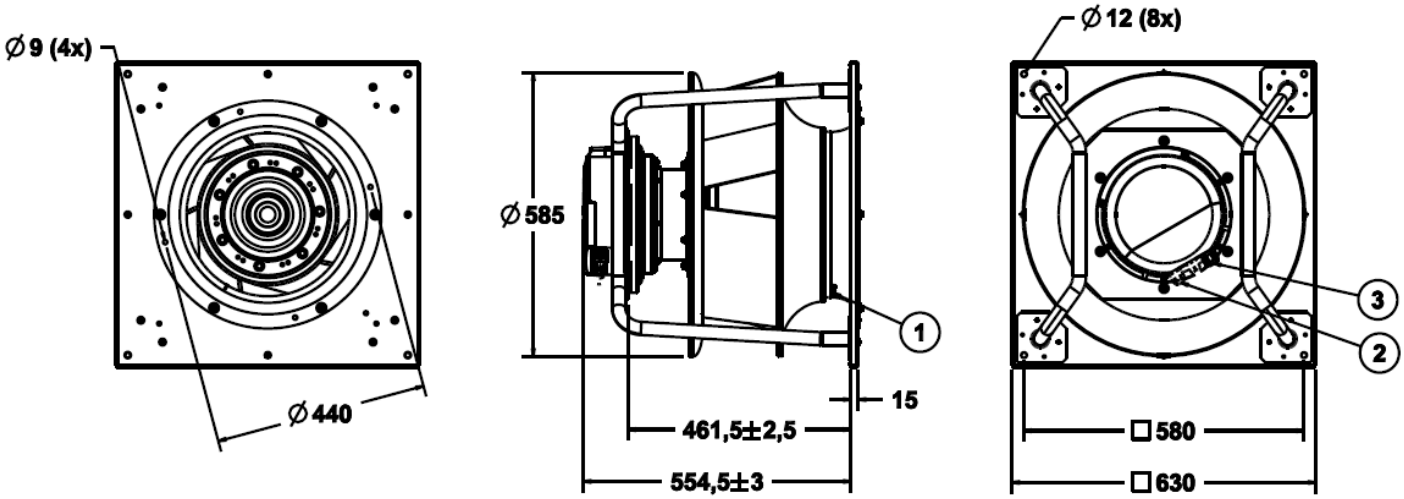
RadiPac Plenum Fan

backward curved, single inlet with support bracket

Product drawing

Dimensions in millimeters



1	Accessory part: Inlet ring 64025-2-4013 with pressure tap (k-factor: 281) not included in scope of delivery
2	Cable diameter min. 4 mm, max. 10 mm, tightening torque 4 ± 0.6 Nm
3	Cable diameter min. 9 mm, max. 16 mm, tightening torque 6 ± 0.9 Nm
	(The tightening torque is designed for PVC cables. If the cable materials are different, the tightening torque may have to be adjusted)
	Terminal cover tightening torque: 26.6± 2.7 in-lbs (3±0.3 Nm)
	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request

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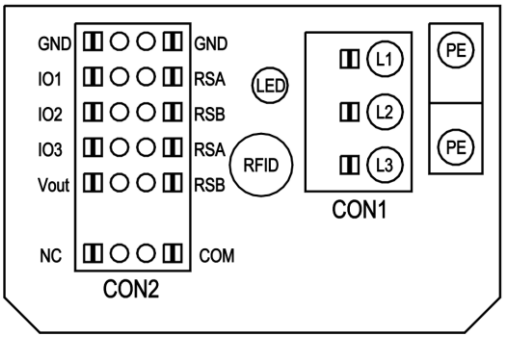
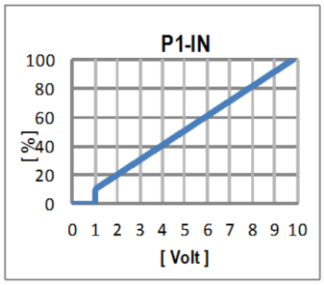
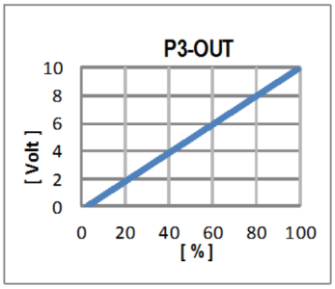
RadiPac Plenum Fan

backward curved, single inlet with support bracket

Electrical Interface







No.	Conn.	Desig.	Function/ Assignment
	CON1	L1,L2,L3	Power supply, phase, see nameplate for voltage range
	PE	PE	Protective earth
	CON2	RSA	RS485 interface for MODBUS, RSA; SELV
	CON2	RSB	RS485 interface for MODBUS, RSB; SELV
	CON2	GND	Reference ground for control interface, SELV
	CON2	IO1	Function parameterizable (see “Optional interface functions” table) Factory setting: Digital input - high active, function: Disable input, SELV - inactive: Pin open or applied voltage < 1.5 VDC - active: applied voltage 3.5-50 VDC Reset function:Triggering of error reset on change of state from"enabled" to "disabled"
	CON2	IO2	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog input 0-10 VDC / PWM, Ri=100 kΩ, function: Set value Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV
	CON2	IO3	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog output 0-10 VDC, max. 5 mA, function: Fan modulation level Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV
	CON2	Vout	Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable Factory setting: 10 VDC short-circuit-proof, supply for external devices, SELV alternatively: 15-50 VDC input for parameterization via MODBUS without line voltage
	CON2	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and on control interface side
	CON2	NC	Status relay, floating status contact, break for failure
		LED	green: status = good, ready for operation orange: status = warning red: status = failure
		P1-IN	Input characteristic curve
		P3-OUT	Output characteristic curve

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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 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 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 not active: pin open or applied voltage < 1,5VDC	D15A [0]			○	○	○	○	○								
	○ **Din3 (active low)**: digital input	active: applied voltage < 1,5VDC, SELV not active: pin open or applied voltage 3,5-50VDC	D15A [1]			○	○	○	○	○								
	○ **PWMin3**: digital input idle level high	PWM = 40Hz - 10kHz, characteristics parameterizable active: pin open or applied voltage 3,5-50VDC not active: applied voltage < 1,5VDC, SELV	D15A [7]	○														
	○ **PWMin3**: digital input idle level low	40Hz - 10kHz, characteristics parameterizable active: applied voltage 3,5-50VDC not active: pin open or applied voltage < 1,5VDC, SELV	D15A [8]	○														
	○ **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 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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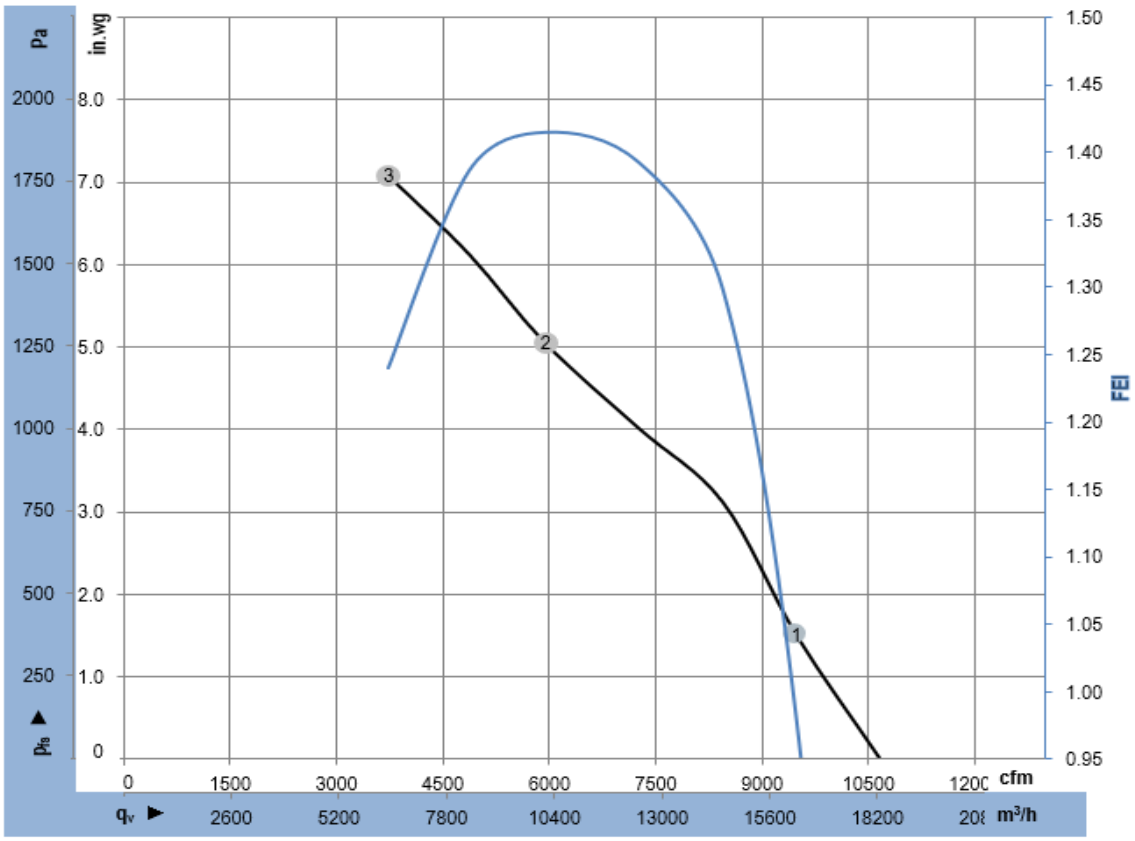
RadiPac Plenum Fan

backward curved, single inlet with support bracket



ρ = 0.075 lbm/ft³

Measurement: LU-4103

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~	575	60	2214	4354	5.3	9487	1.5	0.98
2	3~	575	60	2141	5369	6.3	5948	5.1	1.41
3	3~	575	60	2207	5430	6.4	3735	7.1	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 "F" (Direct Drive, As Run Speed)
Performance ratings include the effects of support brackets.

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4107

RadiPac Plenum Fan

backward curved, single inlet with support bracket

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Nominal Data

Model	4107	
Motor	E11240-60	
Phase		3~
Nominal voltage	VAC	575
Frequency	Hz	50/60
Method of obtaining data		ml
Speed	rpm	3555
Power consumption	W	3858
Current draw	A	4.42
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 Plenum Fan

backward curved, single inlet with support bracket

Technical Description	
Weight	50 lb (22.6 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 - External 15-50 VDC input (parameterization) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.3 - Motor current limitation - RS-485 MODBUS-RTU - Soft start - Voltage output 3.3-24 VDC, Pmax = 800 mW - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
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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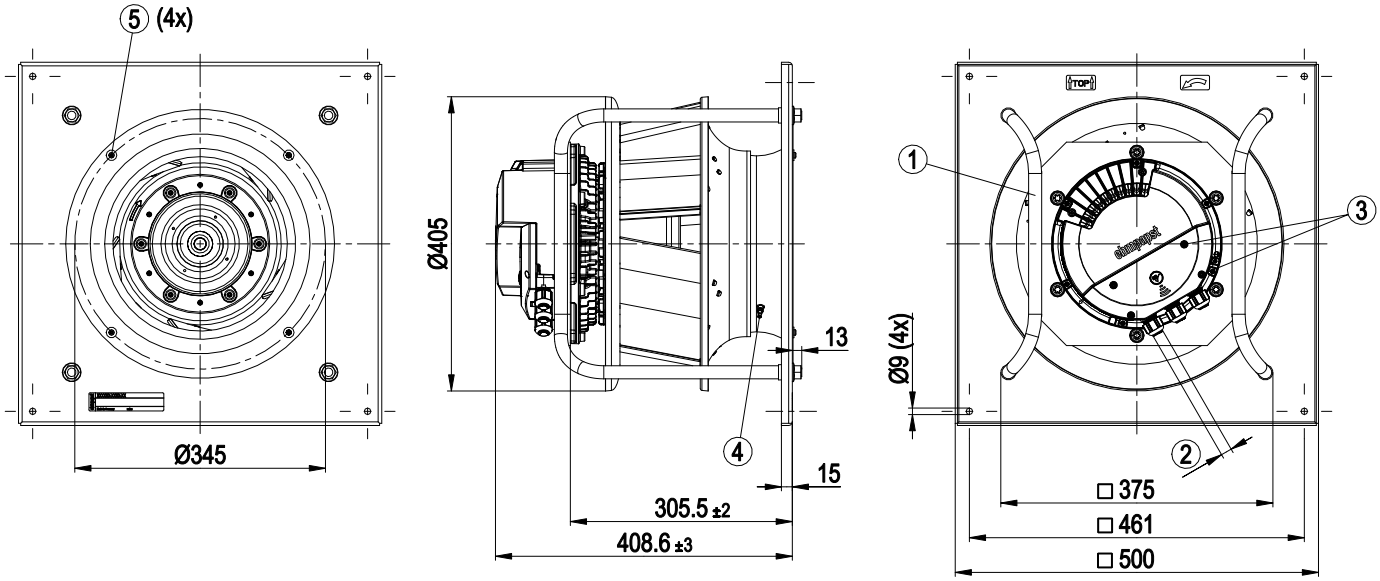
RadiPac Plenum Fan

backward curved, single inlet with support bracket

Product drawing

Dimensions in millimeters



1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Cable diameter: 0.16-0.39 in (4-10 mm)
	Cable gland tightening torque: 35.4±5.3 in-lbs (4±0.6 Nm)
	(The tightening torque is designed for PVC cables. If the cable materials are different, the tightening torque may have to be adjusted)
3	Terminal cover tightening torque: 13.3± 1.8 in-lbs (1.5±0.2 Nm)
4	Inlet ring with pressure tap K-factor (m³/h & Pa): 148
5	Attachment for inlet ring and FlowGrid (00400-2-2957 not included in scope of delivery)

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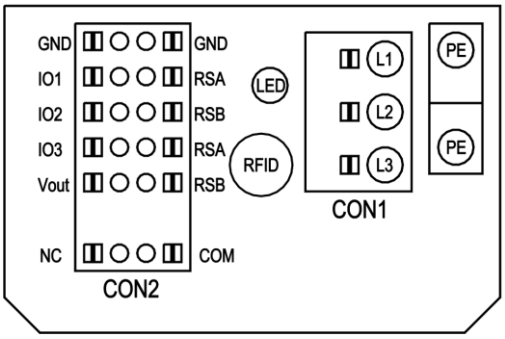
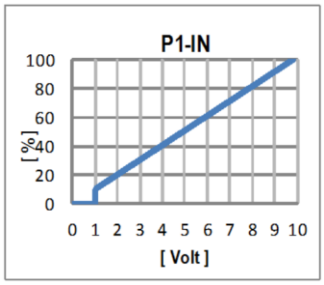
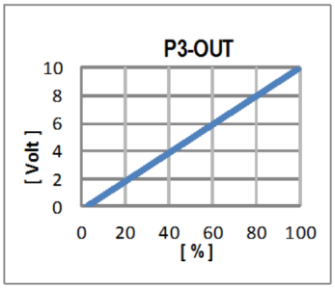
RadiPac Plenum Fan

backward curved, single inlet with support bracket

Electrical Interface







No.	Conn.	Desig.	Function/ Assignment
	CON1	L1,L2,L3	Power supply, phase, see nameplate for voltage range
	PE	PE	Protective earth
	CON2	RSA	RS485 interface for MODBUS, RSA; SELV
	CON2	RSB	RS485 interface for MODBUS, RSB; SELV
	CON2	GND	Reference ground for control interface, SELV
	CON2	IO1	Function parameterizable (see “Optional interface functions” table) Factory setting: Digital input - high active, function: Disable input, SELV - inactive: Pin open or applied voltage < 1.5 VDC - active: applied voltage 3.5-50 VDC Reset function:Triggering of error reset on change of state from"enabled" to "disabled"
	CON2	IO2	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog input 0-10 VDC / PWM, Ri=100 kΩ, function: Set value Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV
	CON2	IO3	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog output 0-10 VDC, max. 5 mA, function: Fan modulation level Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV
	CON2	Vout	Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable Factory setting: 10 VDC short-circuit-proof, supply for external devices, SELV alternatively: 15-50 VDC input for parameterization via MODBUS without line voltage
	CON2	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and on control interface side
	CON2	NC	Status relay, floating status contact, break for failure
		LED	green: status = good, ready for operation orange: status = warning red: status = failure
		P1-IN	Input characteristic curve
		P3-OUT	Output characteristic curve

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RadiPac Plenum Fan

backward curved, single inlet with support bracket

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 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 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 not active: pin open or applied voltage < 1,5VDC	D15A [0]				○	○	○	○	○								
	○ **Din3 (active low)**: digital input	active: applied voltage < 1,5VDC, SELV not active: pin open or applied voltage 3,5-50VDC	D15A [1]				○	○	○	○	○								
	○ **PWMin3**: digital input idle level high	PWM = 40Hz - 10kHz, characteristics parameterizable active: pin open or applied voltage 3,5-50VDC not active: applied voltage < 1,5VDC, SELV	D15A [7]		○														
	○ **PWMin3**: digital input idle level low	40Hz - 10kHz, characteristics parameterizable active: applied voltage 3,5-50VDC not active: pin open or applied voltage < 1,5VDC, SELV	D15A [8]		○														
	○ **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 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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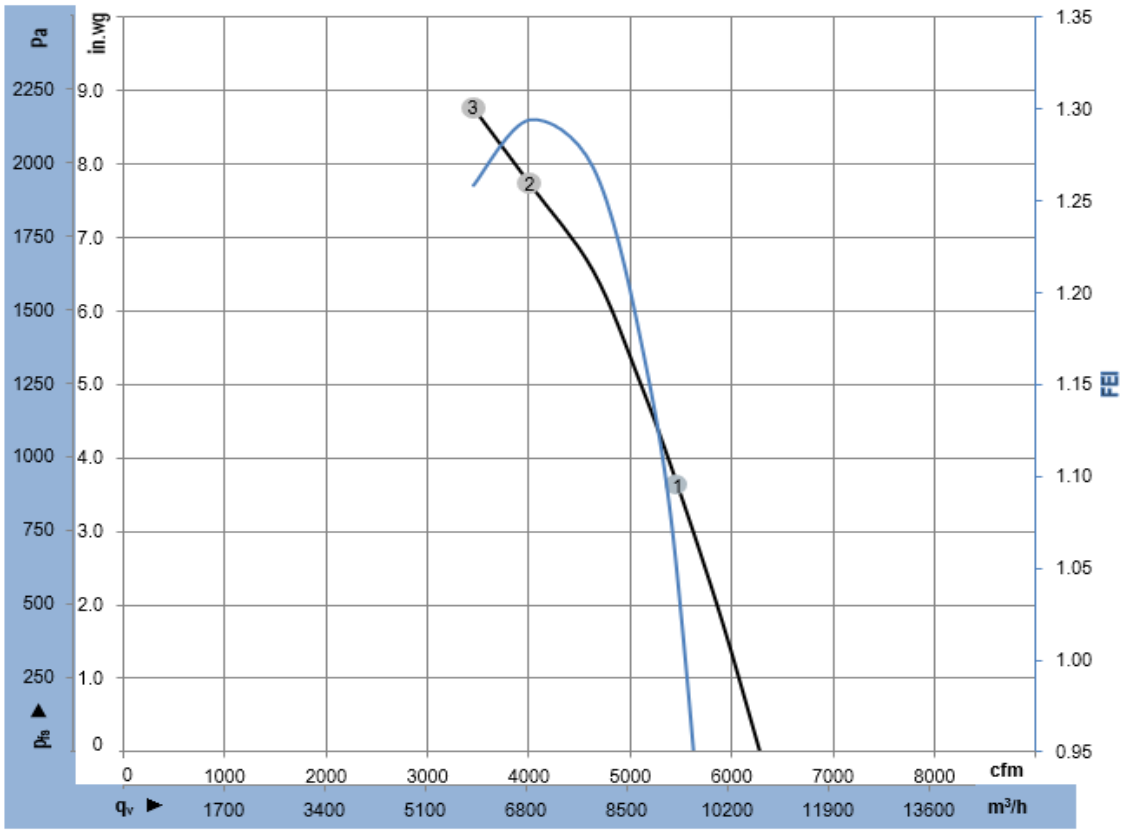
RadiPac Plenum Fan

backward curved, single inlet with support bracket



ρ = 0.075 lbm/ft³

Measurement: LU-4107

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Performance Ratings

		U	f	n	P_{ed}	I	q_v	p_{fs}	FEI
		V	Hz	rpm	W	A	cfm	in. wg	
1	3~	575	60	3710	5025	5.9	5467	3.6	1.04
2	3~	575	60	3622	6007	6.9	4006	7.7	1.29
3	3~	575	60	3601	6056	7.0	3448	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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4109

RadiPac Plenum Fan

backward curved, single inlet with support bracket

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Nominal Data

Model	4109	
Motor	E11240-60	
Phase		3
Nominal voltage	VAC	575
Frequency	Hz	60
Method of obtaining data		ml
Speed	rpm	4220
Power consumption	W	3620
Current draw	A	4.15
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 Plenum Fan

backward curved, single inlet with support bracket

Technical Description	
Weight	47.2 lb (21.42 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 - External 15-50 VDC input (parameterization) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.3 - Motor current limitation - RS-485 MODBUS-RTU - Soft start - Voltage output 3.3-24 VDC, Pmax = 800 mW - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
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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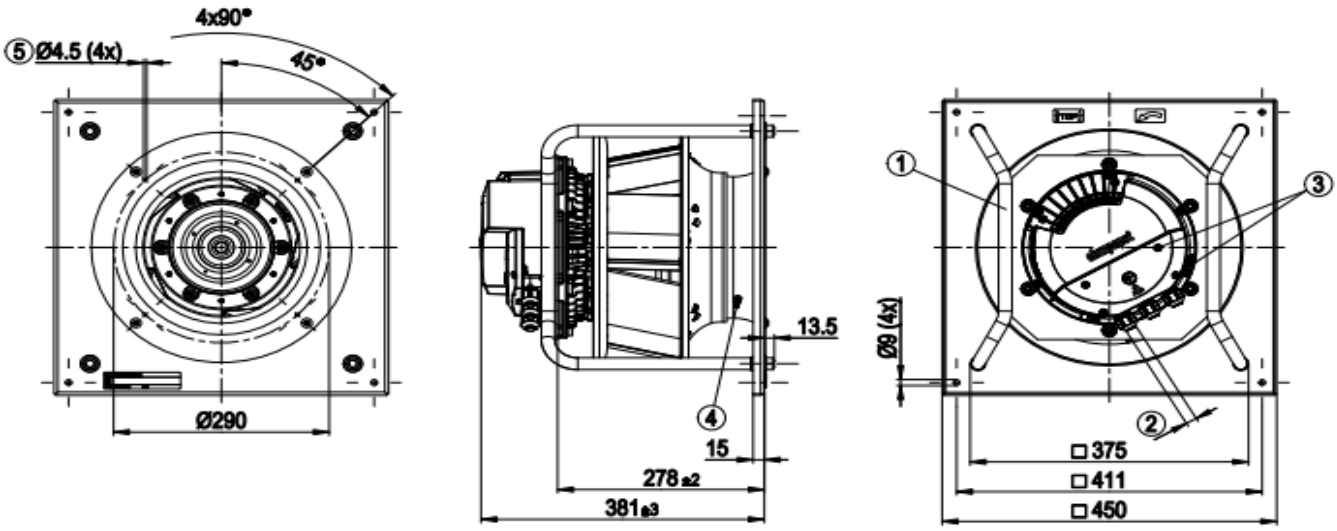
RadiPac Plenum Fan

backward curved, single inlet with support bracket

Product drawing

Dimensions in millimeters



1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Cable diameter: 0.16-0.39 in (4-10 mm)
	Cable gland tightening torque: 35.4±5.3 in-lbs (4±0.6 Nm)
	(The tightening torque is designed for PVC cables. If the cable materials are different, the tightening torque may have to be adjusted)
3	Terminal cover tightening torque: 13.3± 1.8 in-lbs (1.5±0.2 Nm)
4	Inlet ring with pressure tap K-factor (m³/h & Pa): 116
5	Attachment holes for FlowGrid (25310-2-2957 not included in scope of delivery)

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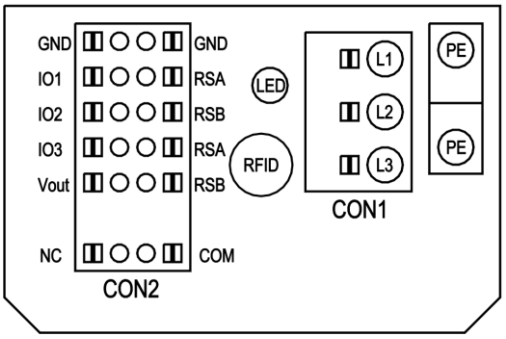
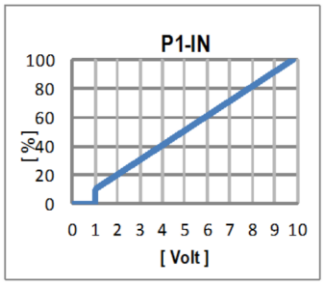
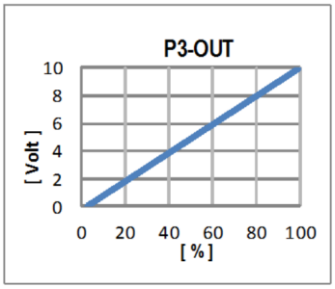
RadiPac Plenum Fan

backward curved, single inlet with support bracket

Electrical Interface







No.	Conn.	Desig.	Function/ Assignment
	CON1	L1,L2,L3	Power supply, phase, see nameplate for voltage range
	PE	PE	Protective earth
	CON2	RSA	RS485 interface for MODBUS, RSA; SELV
	CON2	RSB	RS485 interface for MODBUS, RSB; SELV
	CON2	GND	Reference ground for control interface, SELV
	CON2	IO1	Function parameterizable (see “Optional interface functions” table) Factory setting: Digital input - high active, function: Disable input, SELV - inactive: Pin open or applied voltage < 1.5 VDC - active: applied voltage 3.5-50 VDC Reset function:Triggering of error reset on change of state from"enabled" to "disabled"
	CON2	IO2	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog input 0-10 VDC / PWM, Ri=100 kΩ, function: Set value Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV
	CON2	IO3	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog output 0-10 VDC, max. 5 mA, function: Fan modulation level Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV
	CON2	Vout	Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable Factory setting: 10 VDC short-circuit-proof, supply for external devices, SELV alternatively: 15-50 VDC input for parameterization via MODBUS without line voltage
	CON2	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and on control interface side
	CON2	NC	Status relay, floating status contact, break for failure
		LED	green: status = good, ready for operation orange: status = warning red: status = failure
		P1-IN	Input characteristic curve
		P3-OUT	Output characteristic curve

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RadiPac Plenum Fan

backward curved, single inlet with support bracket

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 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 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 not active: pin open or applied voltage < 1,5VDC	D15A [0]			○	○	○	○	○								
	○ **Din3 (active low)**: digital input	active: applied voltage < 1,5VDC, SELV not active: pin open or applied voltage 3,5-50VDC	D15A [1]			○	○	○	○	○								
	○ **PWMin3**: digital input idle level high	PWM = 40Hz - 10kHz, characteristics parameterizable active: pin open or applied voltage 3,5-50VDC not active: applied voltage < 1,5VDC, SELV	D15A [7]	○														
	○ **PWMin3**: digital input idle level low	40Hz - 10kHz, characteristics parameterizable active: applied voltage 3,5-50VDC not active: pin open or applied voltage < 1,5VDC, SELV	D15A [8]	○														
	○ **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 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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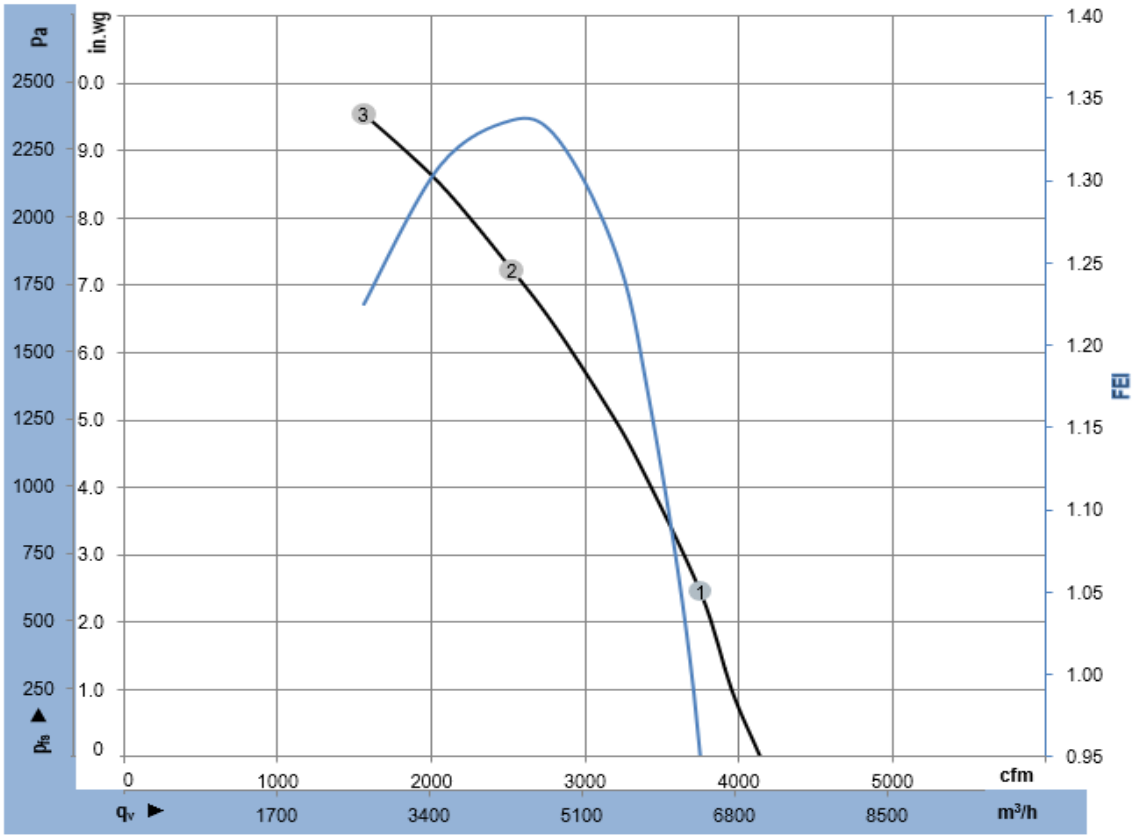
RadiPac Plenum Fan

backward curved, single inlet with support bracket



ρ = 0.075 lbm/ft³

Measurement: LU-4109

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Performance Ratings

		U	f	n	P_{ed}	I	q_v	p_{fs}	FEI
		V	Hz	rpm	W	A	cfm	in. wg	
1	3~	575	60	4217	2830	3.4	3753	2.4	0.95
2	3~	575	60	4203	3620	4.1	2523	7.2	1.34
3	3~	575	60	4220	3380	3.9	1557	9.5	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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4114

RadiPac Plenum Fan

backward curved, single inlet with support bracket

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100 Hyde Road
Farmington, CT 06034
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Nominal Data

Model	4114	
Motor	M3G150-FF	
Phase		3
Nominal voltage	VAC	575
Frequency	Hz	60
Method of obtaining data		ml
Speed	rpm	3663
Power consumption	W	6104
Current draw	A	7.05
Min. ambient temp	°F (°C)	-40 (-40)
Max. ambient temp	°F (°C)	122 (50)

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 Plenum Fan

backward curved, single inlet with support bracket

Technical Description	
Weight	81.5 lb (37 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	IP20
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 - External 15-50 VDC input (parameterization) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.4 - Motor current limitation - RS-485 MODBUS-RTU - Soft start - Voltage output 3.3-24 VDC, Pmax = 800 mW - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection - Vibration Sensor
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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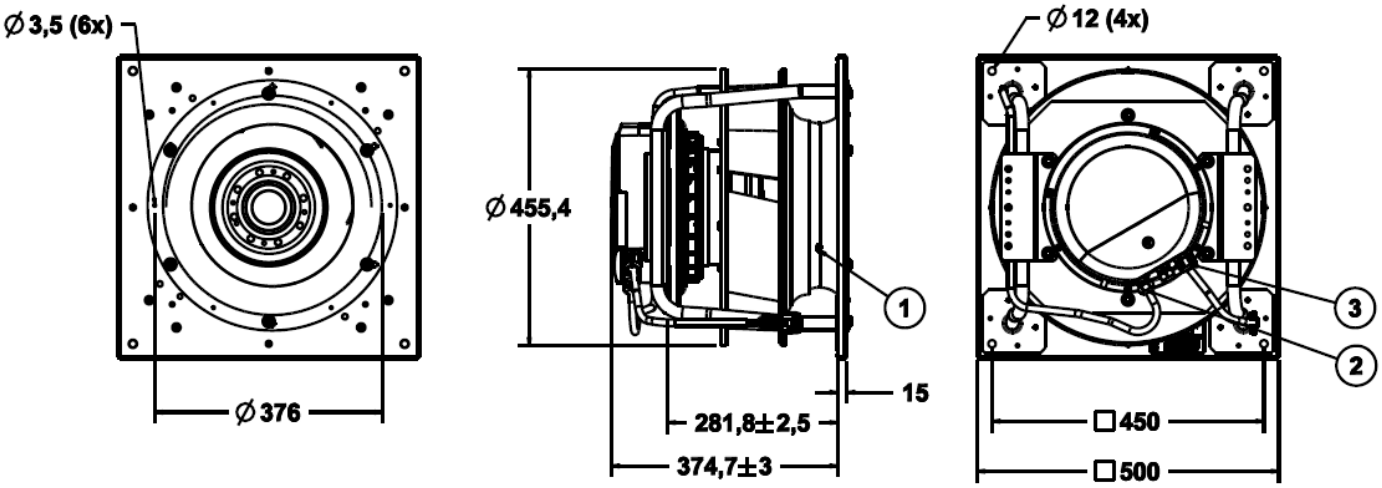
RadiPac Plenum Fan

backward curved, single inlet with support bracket

Product drawing

Dimensions in millimeters



1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Cable diameter: 0.16-0.39 in (4-10 mm)
	Cable gland tightening torque: 35.4±5.3 in-lbs (4±0.6 Nm)
	(The tightening torque is designed for PVC cables. If the cable materials are different, the tightening torque may have to be adjusted)
3	Terminal cover tightening torque: 26.6± 2.7 in-lbs (3±0.3 Nm)
4	Inlet ring with pressure tap K-factor (m³/h & Pa): 188
5	Attachment for inlet ring and FlowGrid (00400-2-2957 not included in scope of delivery)

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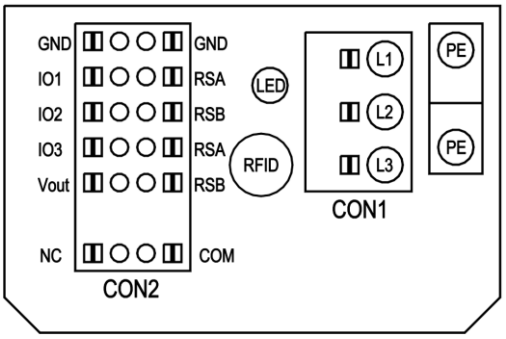
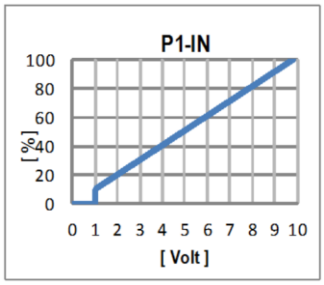
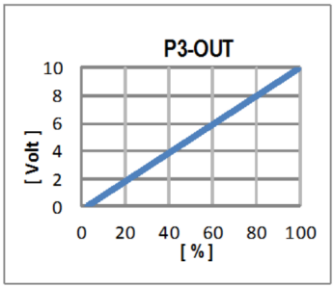
RadiPac Plenum Fan

backward curved, single inlet with support bracket

Electrical Interface







No.	Conn.	Desig.	Function/ Assignment
	CON1	L1,L2,L3	Power supply, phase, see nameplate for voltage range
	PE	PE	Protective earth
	CON2	RSA	RS485 interface for MODBUS, RSA; SELV
	CON2	RSB	RS485 interface for MODBUS, RSB; SELV
	CON2	GND	Reference ground for control interface, SELV
	CON2	IO1	Function parameterizable (see “Optional interface functions” table) Factory setting: Digital input - high active, function: Disable input, SELV - inactive: Pin open or applied voltage < 1.5 VDC - active: applied voltage 3.5-50 VDC Reset function:Triggering of error reset on change of state from"enabled" to "disabled"
	CON2	IO2	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog input 0-10 VDC / PWM, Ri=100 kΩ, function: Set value Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV
	CON2	IO3	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog output 0-10 VDC, max. 5 mA, function: Fan modulation level Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV
	CON2	Vout	Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable Factory setting: 10 VDC short-circuit-proof, supply for external devices, SELV alternatively: 15-50 VDC input for parameterization via MODBUS without line voltage
	CON2	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and on control interface side
	CON2	NC	Status relay, floating status contact, break for failure
		LED	green: status = good, ready for operation orange: status = warning red: status = failure
		P1-IN	Input characteristic curve
		P3-OUT	Output characteristic curve

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RadiPac Plenum Fan

backward curved, single inlet with support bracket

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 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 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 not active: pin open or applied voltage < 1,5VDC	D15A [0]			○	○	○	○	○								
	○ **Din3 (active low)**: digital input	active: applied voltage < 1,5VDC, SELV not active: pin open or applied voltage 3,5-50VDC	D15A [1]			○	○	○	○	○								
	○ **PWMin3**: digital input idle level high	PWM = 40Hz - 10kHz, characteristics parameterizable active: pin open or applied voltage 3,5-50VDC not active: applied voltage < 1,5VDC, SELV	D15A [7]	○														
	○ **PWMin3**: digital input idle level low	40Hz - 10kHz, characteristics parameterizable active: applied voltage 3,5-50VDC not active: pin open or applied voltage < 1,5VDC, SELV	D15A [8]	○														
	○ **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 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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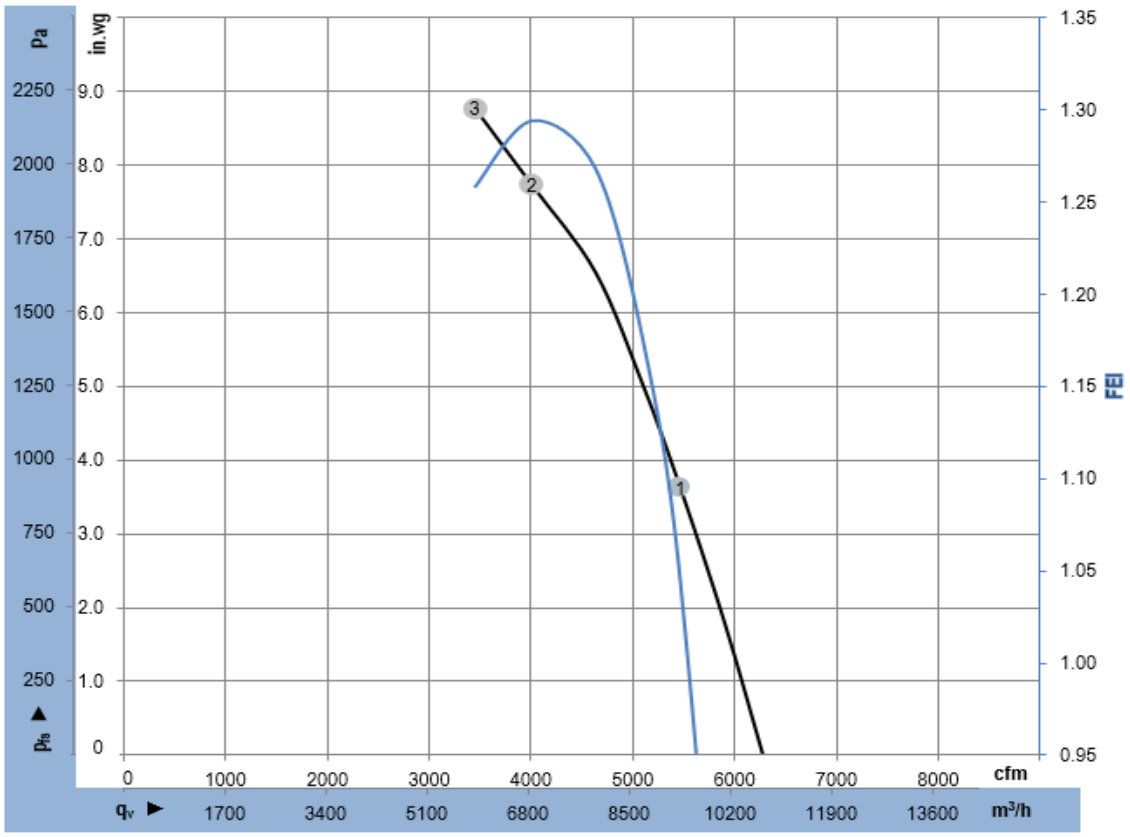
RadiPac Plenum Fan

backward curved, single inlet with support bracket



ρ = 0.075 lbm/ft³

Measurement: LU-4114

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~	575	60	3710	5025	5.9	5467	3.6	1.04
2	3~	575	60	3622	6007	6.9	4006	7.7	1.29
3	3~	575	60	3601	6056	7.0	3448	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 "F" (Direct Drive, As Run Speed)
Performance ratings include the effects of support brackets.

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4118

RadiPac Plenum Fan

backward curved, single inlet with support bracket

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

Model	4118	
Motor	M3G150-IF	
Phase		3
Nominal voltage	VAC	575
Frequency	Hz	60
Method of obtaining data		ml
Speed	rpm	1690
Power consumption	W	4579
Current draw	A	5.17
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 Plenum Fan

backward curved, single inlet with support bracket

Technical Description	
Weight	100.7 lb (45.7 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 - External 15-50 VDC input (parameterization) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.3 - Motor current limitation - RS-485 MODBUS-RTU - Soft start - Voltage output 3.3-24 VDC, Pmax = 800 mW - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection
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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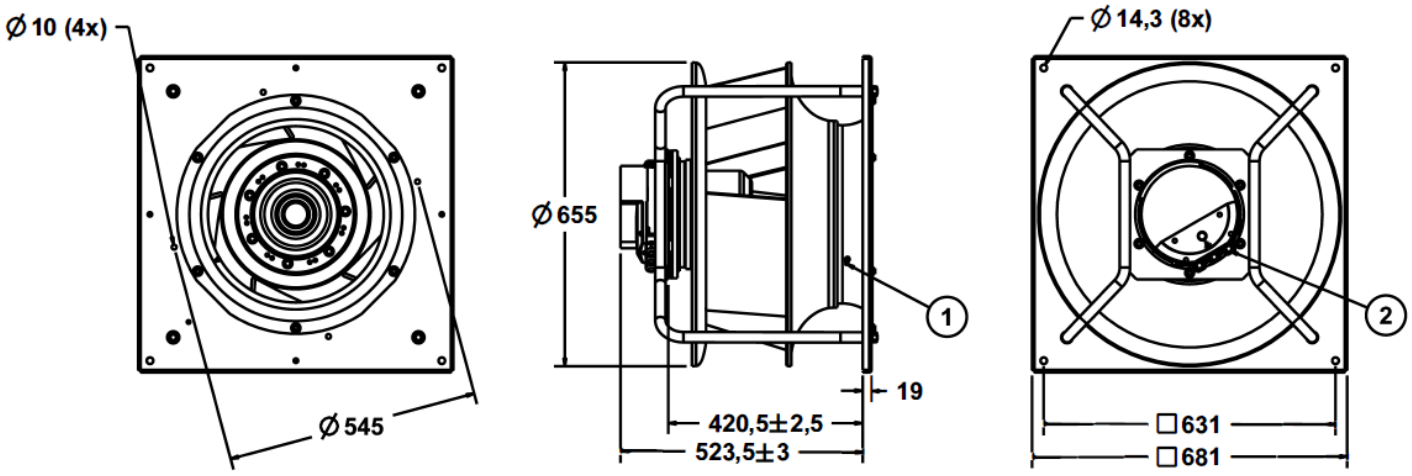
RadiPac Plenum Fan

backward curved, single inlet with support bracket

Product drawing

Dimensions in millimeters



1	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request
2	Cable diameter: 0.16-0.39 in (4-10 mm)
	Cable gland tightening torque: 35.4±5.3 in-lbs (4±0.6 Nm)
	(The tightening torque is designed for PVC cables. If the cable materials are different, the tightening torque may have to be adjusted)
3	Terminal cover tightening torque: 13.3± 1.8 in-lbs (1.5±0.2 Nm)
4	Inlet ring with pressure tap K-factor (m³/h & Pa): 348
5	Attachment for inlet ring and FlowGrid (00400-2-2957 not included in scope of delivery)

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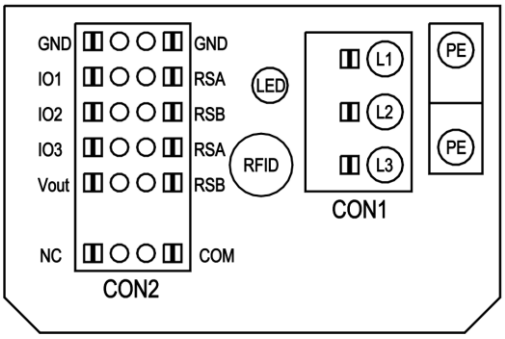
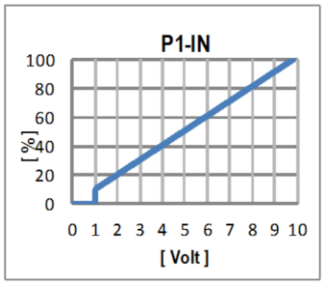
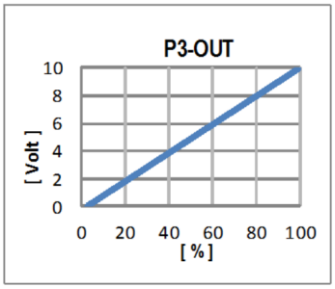
RadiPac Plenum Fan

backward curved, single inlet with support bracket

Electrical Interface







No.	Conn.	Desig.	Function/ Assignment
	CON1	L1,L2,L3	Power supply, phase, see nameplate for voltage range
	PE	PE	Protective earth
	CON2	RSA	RS485 interface for MODBUS, RSA; SELV
	CON2	RSB	RS485 interface for MODBUS, RSB; SELV
	CON2	GND	Reference ground for control interface, SELV
	CON2	IO1	Function parameterizable (see “Optional interface functions” table) Factory setting: Digital input - high active, function: Disable input, SELV - inactive: Pin open or applied voltage < 1.5 VDC - active: applied voltage 3.5-50 VDC Reset function:Triggering of error reset on change of state from"enabled" to "disabled"
	CON2	IO2	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog input 0-10 VDC / PWM, Ri=100 kΩ, function: Set value Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV
	CON2	IO3	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog output 0-10 VDC, max. 5 mA, function: Fan modulation level Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV
	CON2	Vout	Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable Factory setting: 10 VDC short-circuit-proof, supply for external devices, SELV alternatively: 15-50 VDC input for parameterization via MODBUS without line voltage
	CON2	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and on control interface side
	CON2	NC	Status relay, floating status contact, break for failure
		LED	green: status = good, ready for operation orange: status = warning red: status = failure
		P1-IN	Input characteristic curve
		P3-OUT	Output characteristic curve

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RadiPac Plenum Fan

backward curved, single inlet with support bracket

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 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 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 not active: pin open or applied voltage < 1,5VDC	D15A [0]			○	○	○	○	○								
	○ **Din3 (active low)**: digital input	active: applied voltage < 1,5VDC, SELV not active: pin open or applied voltage 3,5-50VDC	D15A [1]															
	○ **PWMin3**: digital input idle level high	PWM = 40Hz - 10kHz, characteristics parameterizable active: pin open or applied voltage 3,5-50VDC not active: applied voltage < 1,5VDC, SELV	D15A [7]	○														
	○ **PWMin3**: digital input idle level low	40Hz - 10kHz, characteristics parameterizable active: applied voltage 3,5-50VDC not active: pin open or applied voltage < 1,5VDC, SELV	D15A [8]	○														
	○ **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 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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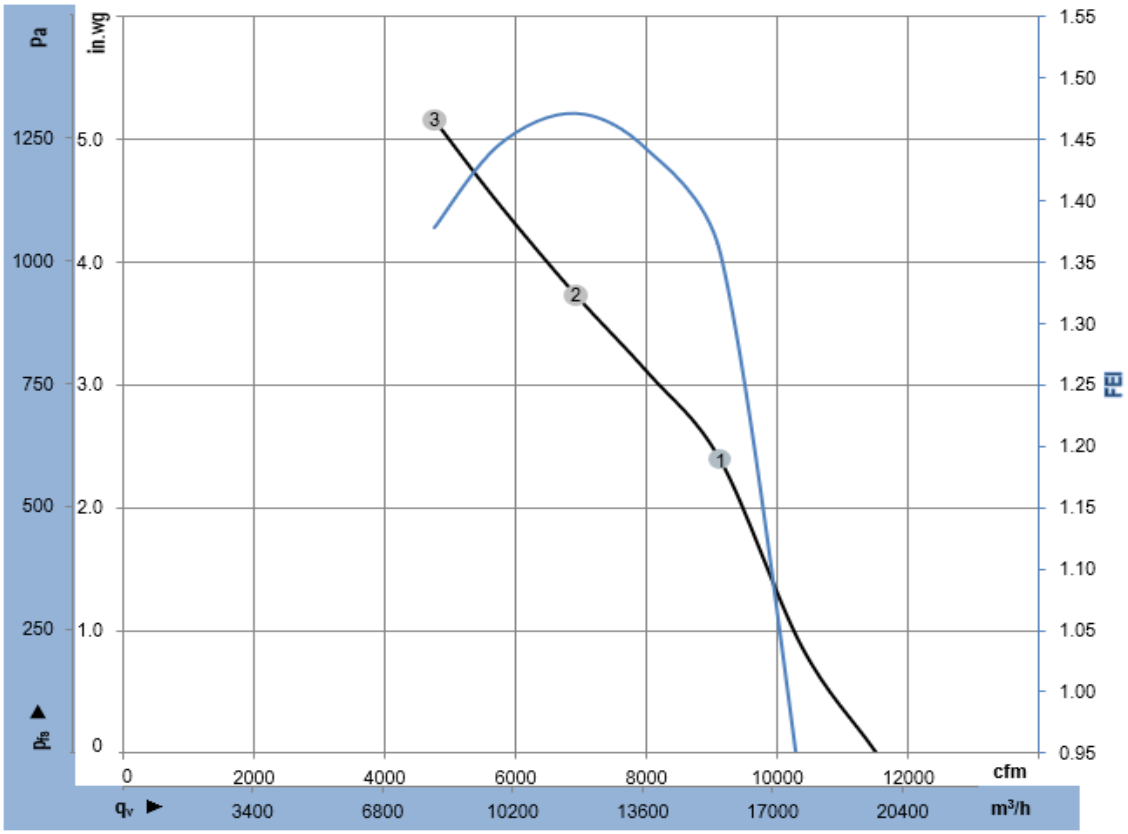
RadiPac Plenum Fan

backward curved, single inlet with support bracket



ρ = 0.075 lbm/ft³

Measurement: LU-4118

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~	576	60	1701	4373	5.0	9135	2.4	1.36
2	3~	575	60	1669	4552	5.1	6918	3.7	1.47
3	3~	576	60	1711	4579	5.2	4762	5.2	1.38

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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4155

RadiPac Plenum Fan

backward curved, single inlet with support bracket

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Nominal Data

Model	4155	
Motor	M3G150-IF	
Phase		3
Nominal voltage	VAC	575
Frequency	Hz	60
Method of obtaining data		ml
Speed	rpm	2690
Power consumption	W	6064
Current draw	A	7.02
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 Plenum Fan

backward curved, single inlet with support bracket

Technical Description	
Weight	102.3 lb (46.4 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 - External 15-50 VDC input (parameterization) - Alarm relay - Integrated PI controller - Configurable inputs/outputs (I/O) - MODBUS V6.4 - Motor current limitation - RS-485 MODBUS-RTU - Soft start - Voltage output 3.3-24 VDC, Pmax = 800 mW - Control interface with SELV potential safely disconnected from the mains - Thermal overload protection for electronics/motor - Line undervoltage / phase failure detection - Vibration sensor
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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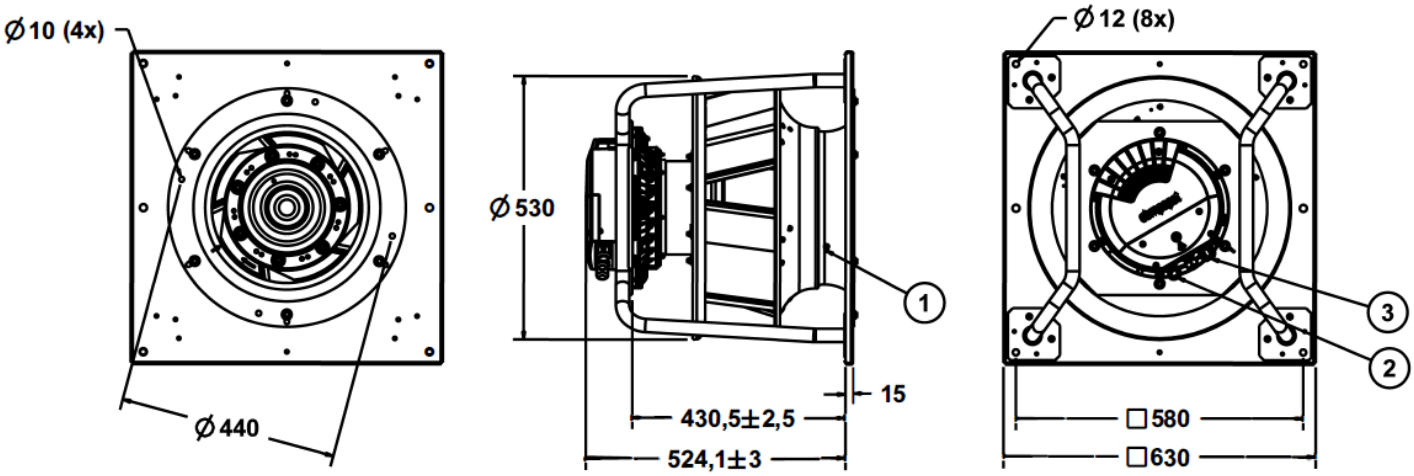
RadiPac Plenum Fan

backward curved, single inlet with support bracket

Product drawing

Dimensions in millimeters



1	Inlet ring with pressure tap K-factor (m³/h & Pa): 240
2	Cable diameter: 0.16-0.39 in (4-10 mm)
	Cable gland tightening torque: 35.4±5.3 in-lbs (4±0.6 Nm)
3	Cable diameter: 0.2-0.55 in (5-14 mm)
	Cable gland tightening torque: 53.1±8 in-lbs (6±0.9 Nm)
	Terminal cover tightening torque: 26.6± 2.7 in-lbs (3±0.3 Nm)
	Installed position: shaft horizontal (install support struts only vertically as illustrated) or rotor on bottom; rotor on top on request

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RadiPac Plenum Fan

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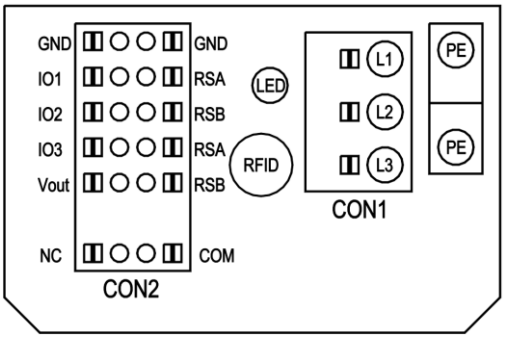
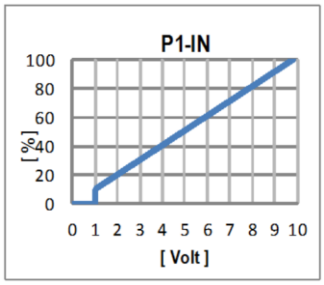
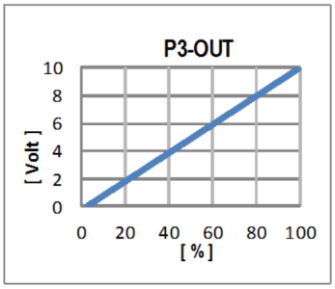
Electrical Interface







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) Factory setting: Digital input - high active, function: Disable input, SELV - inactive: Pin open or applied voltage < 1.5 VDC - active: applied voltage 3.5-50 VDC Reset function:Triggering of error reset on change of state from"enabled" to "disabled"
	CON2	IO2	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog input 0-10 VDC / PWM, Ri=100 kΩ, function: Set value Characteristic curve parameterizable (see input characteristic curve P1-IN), SELV
	CON2	IO3	Function parameterizable (see “Optional interface functions” table) Factory setting: Analog output 0-10 VDC, max. 5 mA, function: Fan modulation level Characteristic curve parameterizable (see output characteristic curve P3-OUT), SELV
	CON2	Vout	Voltage output 3.3-24 VDC ±5%, Pmax=800 mW, voltage parameterizable Factory setting: 10 VDC short-circuit-proof, supply for external devices, SELV alternatively: 15-50 VDC input for parameterization via MODBUS without line voltage
	CON2	COM	Status relay, floating status contact, common connection, contact rating 250 VAC / 2 A (AC1) / min. 10 mA, reinforced insulation on supply side and on control interface side
	CON2	NC	Status relay, floating status contact, break for failure
		LED	green: status = good, ready for operation orange: status = warning red: status = failure
		P1-IN	Input characteristic curve
		P3-OUT	Output characteristic curve

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RadiPac Plenum Fan

backward curved, single inlet with support bracket

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 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 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 not active: pin open or applied voltage < 1,5VDC	D15A [0]				○	○	○	○								
	○ **Din3 (active low)**: digital input	active: applied voltage < 1,5VDC, SELV not active: pin open or applied voltage 3,5-50VDC	D15A [1]			○												
	○ **PWMin3**: digital input idle level high	PWM = 40Hz - 10kHz, characteristics parameterizable active: pin open or applied voltage 3,5-50VDC not active: applied voltage < 1,5VDC, SELV	D15A [7]	○														
	○ **PWMin3**: digital input idle level low	40Hz - 10kHz, characteristics parameterizable active: applied voltage 3,5-50VDC not active: pin open or applied voltage < 1,5VDC, SELV	D15A [8]	○														
	○ **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 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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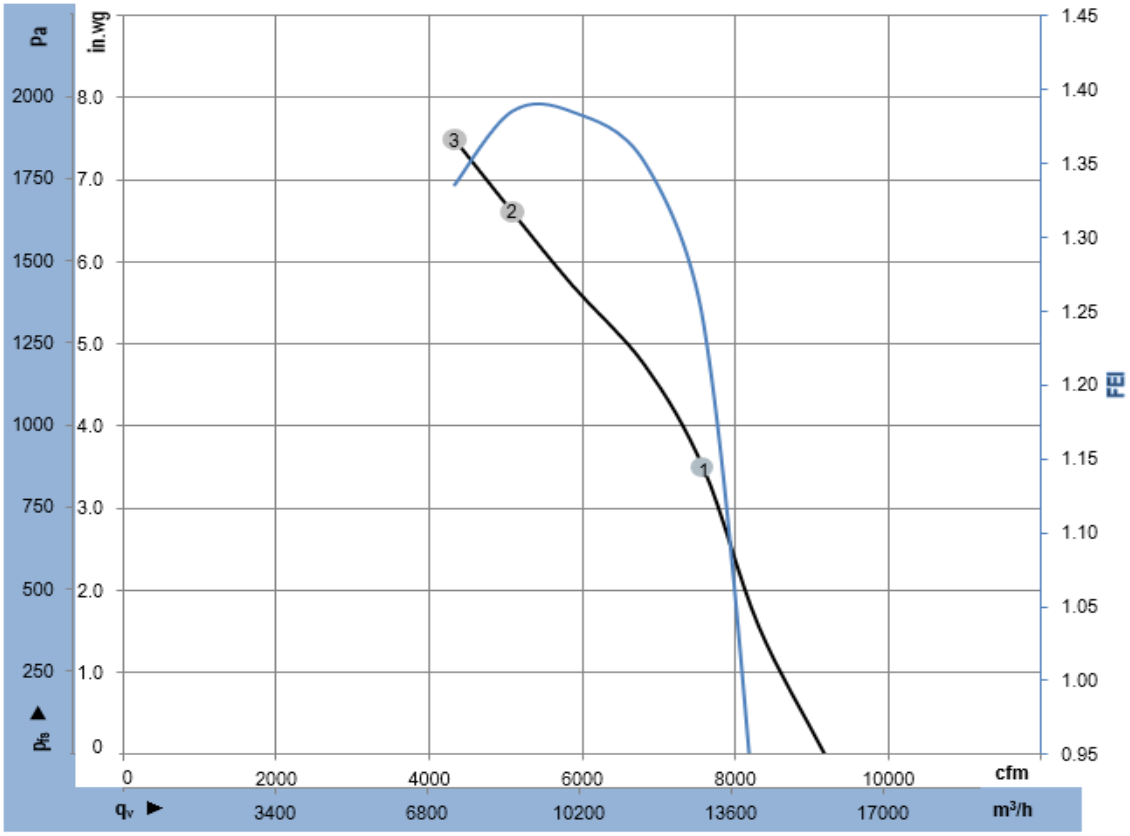
RadiPac Plenum Fan

backward curved, single inlet with support bracket



ρ = 0.075 lbm/ft³

Measurement: LU-4155

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~	575	60	2708	5525	6.5	7590	3.5	1.24
2	3~	575	60	2663	6042	7.0	5077	6.6	1.39
3	3~	575	60	2679	6064	7.0	4326	7.5	1.34

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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