

REFRIGERATION COMPONENTS
Fan Speed Controllers

1-phase Condenser Fan Speed Control

P215PR

Direct-Mount Single Phase Controller

These Direct Mount pressure actuated condenser fan speed controllers are designed for speed variation of single-phase motors.

Head pressure control of a refrigeration system, through speed variation of the fan on an air-cooled condenser, results in optimum performance throughout the year.

A pressure actuated device, gives the most direct and fastest response to pressure variations in the refrigerant system. The controller varies the supply voltage to the motor from 30% to at least 95% over the proportional band using the phase cutting principle.

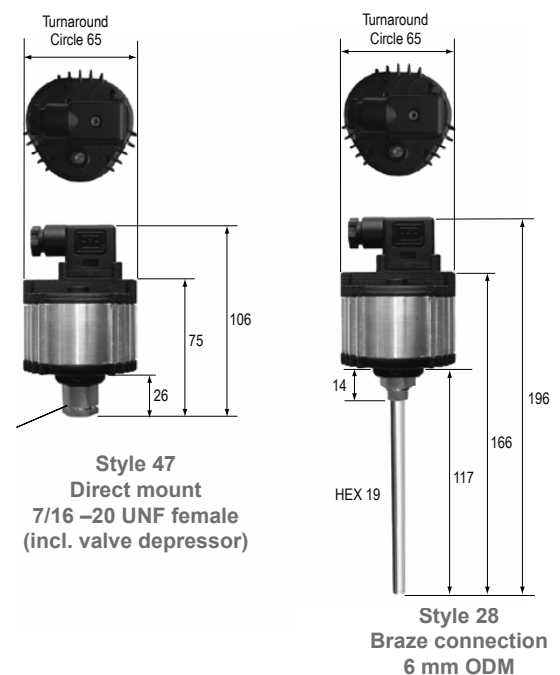
This provides speed variation of permanent split capacitor or shaded pole motors that do not draw more than 4 A (rms) full load current.

Cut-off models (fan stops at low pressure) as well as minimum speed models (fan keeps running at 30%) are available.

The controllers can be used in non-corrosive refrigerant systems.

Features

- Condenser pressure control by fan speed variation
- Pressure input
- Direct mount
- Setpoint screw on top
- Built-in suppression filter
- IP65
- Compact design
- Attractive styling
- Quick connector plug included
- CE
- New range 5-15 bar for R134a



Dimensions in mm

Ordering Codes	Range (bar)	Element Style	Setpoint (bar)	Prop. band (bar)	Supply Voltage 50/60 Hz	Rating	Controller Mode	Extra Features
P215PR-9200	10 to 25	47	19	4.5	230 VAC	4 Amp	Cut-off	---
P215PR-9202	22 to 42		26	5.5				
P215PR-9203	5 to 15		9	2.5				
P215PR-9800	10 to 25	28	19	4.5				Bulk Pack
P215PR-9230			47	26				
P215PR-9232	9	2.5						
P215PR-9233	19	4.5						
P215PR-9250	10 to 25							

Note

For a 4 Amp rating and UL approval please contact your sales representative.

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P215RM*Remote-Mount Single Phase Controller*

The new P215RM (Remote Mount) is an addition model to our very successful P215PR Direct Mount FSC which is in program since 2004.

We have designed the P215RM for situations where mounting space is limited or if the refrigeration line is too thin so it cannot carry the weight of the P215PR. Also new on this product is the all-in bracket design which is part of the complete Aluminium housing.

The P215RM can be screwed to a side panel and connected to the refrigeration line by using a flexible hose or a copper capillary.

Features

- Quick and easy to install due to integral mounting bracket
- Easy mounting with style 5 pressure connection
- No need to use a male / male adaptor between P215RM and Flex Hose
- Three ranges available 5 - 15 bar, 10 - 25 bar, 22 - 42 bar
- Output current maximum 4A at 55 °C Operating ambient temperature
- Global design CE approval



Dimensions in mm

Ordering Codes	Range (bar)	Element Style	Setpoint (bar)	Prop. band (bar)	Supply Voltage 50/60 Hz	Rating	Controller Mode	Extra Features
P215RM-9700	10 to 25	5	19	4.5	230 VAC	4 Amp	Cut-off	---
P215RM-9702	22 to 42		26	5.5				
P215RM-9703	5 to 15		9	2.5				

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P215

Pressure Actuated Single Phase Controller

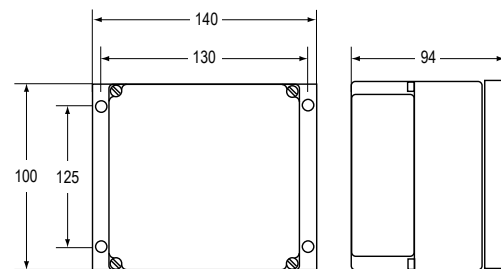
These controllers are designed for speed variation of single phase motors, especially for fan speed control on air cooled condensers. Head pressure control of a refrigeration system, through speed variation of the fan on an air-cooled condenser, results in optimum performance throughout the year. Using a pressure transducer as the input device to the fan speed controller, gives the most direct and fastest response to pressure variations in the refrigerant system. The controller varies the supply voltage to the motor from 45% to at least 95% over the proportional band using the phase cutting principle. It is recommended to confirm with the electric motor manufacturer if a controller using the phase cutting principle for speed variation can be used. The controller used for dual pressure input varies the fan speed by directly sensing the pressure changes of two separate refrigerant circuits. The setpoint of each pressure transducer can be separately adjusted. The controller selects the input with the greatest cooling demand to control the fan speed. The transducers can be used in non-corrosive refrigerant systems.

Features

- Condenser pressure control by fan speed variation
- Pressure input
- Transducers with proven reliability
- Easy accessible setpoint screw
- Adjustable minimum speed or cut-off selection
- Dual input possibility (P215DP only)
- Heatpump input available (P215SH)
- IP54 enclosure



P215DP/SH/ST



Dimensions in mm

Ordering Codes	Range (bar)	Prop. band (bar)	Setpoint (bar)	Pressure Connection	Supply Voltage 50/60 Hz	Rating	Additional Features <i>Note: Style 50 is allowed on the Dutch market!</i>				
P215DP-9100	14 to 24	4	16	90 cm cap. st. 50	230 VAC	8 Amp	Single/dual input. For dual input a second separate transducer has to be ordered!				
P215DP-9101	8 to 14	2.5	10								
P215DP-9600	14 to 24	4	16	90 cm cap. st. 51				4 Amp	For use on R410A applications		
P215DP-9601	8 to 14	2.5	10								
P215DP-9800	14 to 24	4	16	Braze con. st. 28						Single input	Single input
P215DP-9102	22 to 42	6	30	90 cm cap. st. 50							
P215SH-9100	14 to 24	4	16								
P215SH-9101	8 to 14	2.5	10	90 cm cap. st. 50		Single input	For use on R410A applications				
P215SH-9102	22 to 42	6	30								
P215SH-9800	14 to 24	4	16	Braze con. st. 28				Single input	Single input		
P215ST-9100	14 to 24	4	16	90 cm cap. st. 50						6 Amp	Single input
P215ST-9101	8 to 14	2.5	10								
P215ST-9600	14 to 24	4	16	90 cm cap. st. 51	For use on R410A applications						
P215ST-9102	22 to 42	6	30	90 cm cap. st. 50							

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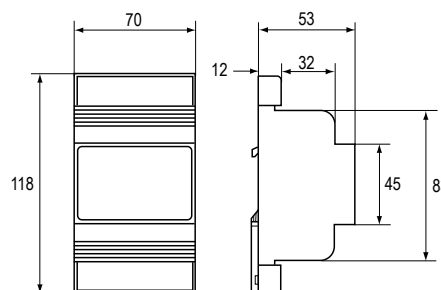
P215

The P215LR is a single pressure input fan speed controller for air cooled condensers with respectively single, dual and triple refrigerant circuits. The controller varies the fan speed by directly sensing the pressure changes of one, two or three separate refrigerant circuits. The setpoint of each pressure transducer can be separately adjusted. The controller selects the input with the greatest cooling demand to control the fan speed.

The controllers can be used in non corrosive refrigerant systems and vary the supply voltage to the motor from 45% to $\geq 95\%$ of the supplied voltage using the phase cutting principle. It is recommended to confirm with the electric motor manufacturer if a controller using the phase cutting principle for speed variation can be used. If the pressure drops below the adjusted setpoint minus the proportional band, the output to the motor is zero volt or the adjusted min. speed setting.

Features

- Condenser pressure control by fan speed variation
- Pressure input
- Model with heatpump input available
- Transducers with proven reliability
- Easy accessible setpoint screw
- Adjustable minimum speed or cut-off selection (only on LR)
- Motor speed action can be reversed by interchanging only two wires
- Small dimensions
- DIN rail mounted



Dimensions in mm

Ordering Codes	Range (bar)	Prop. band (bar)	Setpoint (bar)	Pressure Connection	Supply Voltage 50/60 Hz	Rating	Additional Features Note: Style 50 is allowed on the Dutch market!
P215LR -9110	14 to 24	4	16	90 cm cap. / 50	230 VAC	3 Amp	Minimum speed adjustable Single pressure input
P215LR -9111	8 to 14	2.5	10				
P215LR -9130*	Bulk pack version of type P215LR-9110 (15 pcs)						
P215LR -9210	14 to 24	4	16	direct mount / 47			
P215LR -9610				direct mount / 51			
P215LR -9611	8 to 14	2.5	10				
P215LR -9114	22 to 42	6	30				
P215LR -9140	14 to 24	4	16	90 cm cap. / 50			
P215LR -9120							

REFRIGERATION COMPONENTS
Fan Speed Controllers

1-phase Condenser Fan Speed Control

P216

Condenser Fan Speed Controller

These controllers are designed for speed variation of single phase motors, especially for fan speed control on air cooled condensers. Head pressure control of a refrigeration system, through speed variation of the fan on an air-cooled condenser, results in optimum performance throughout the year.

Using a pressure transducer as the input device to the fan speed controller, gives the most direct and fastest response to pressure variations in the refrigerant system. The controller varies the supply voltage to the motor from 45% to at least 95% over the proportional band using the phase cutting principle.

If the pressure drops below the adjusted setpoint minus the proportional band, the output to the motor is zero volt or the adjusted min. speed setting. This provides speed variation of permanent split capacitor or shaded pole motors which do not draw more than 12 A (rms) full load current.

The controller used for dual pressure input varies the fan speed by directly sensing the pressure changes of two separate refrigerant circuits. The setpoint of each pressure transducer can be separately adjusted. The controller selects the input with the greatest cooling demand to control the fan speed.

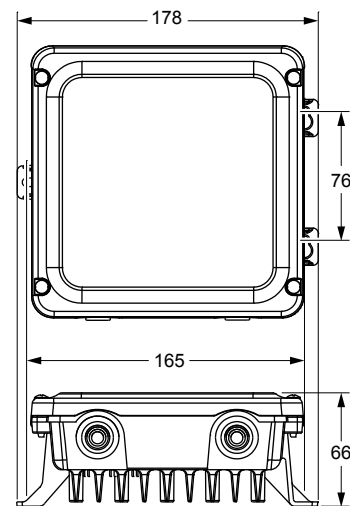
The transducers can be used in non-corrosive refrigerant systems.

The motor manufacturer should have approved his product for this speed control principle. It is recommended to confirm with the electric motor manufacturer, that the motor can be used with a controller, using the phase cutting principle for speed variation.

You can also provide a copy of this P216 product data sheet to the motor manufacturer/supplier for review.

Features

- The new benchmark in standard FSC
- Easy to Install and Easy to operate
- Output Range: 0,5 to 12 Amp (1 phase)
- Input 0-10 Vdc
- Including 0-50 bar pressure transducer P499VCS-405C
- Heatpump mode
- Reverse operation mode
- Master / Slave mode
- Fixed pressure ranges for direct replacement (P215)
- Setpoint and Min speed potmeters



Dimensions in mm

Ordering Codes

Product Codes	Description
P216EEA-1K	Wall Mount FSC P216EEA-100C + P499VCS-405C pressure transducer
P216EEA-100C	Wall Mounted FSC
P499VCS-405C	Pressure Transmitter with range 0-50 bar, Output 0-10V. 2 meter fixed cable. Pressure connection 7/16-20UNF female thread

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P266

Pressure Actuated Single Phase Digital Controller

The P266 Pressure Actuated Single Phase Digital Controller is a cost-effective, weather-resistant, durable motor speed control. The P266 control is designed for approved single-phase, Permanent Split-Capacitor (PSC) motors commonly used in a wide variety of refrigeration and air conditioning condenser fan applications.

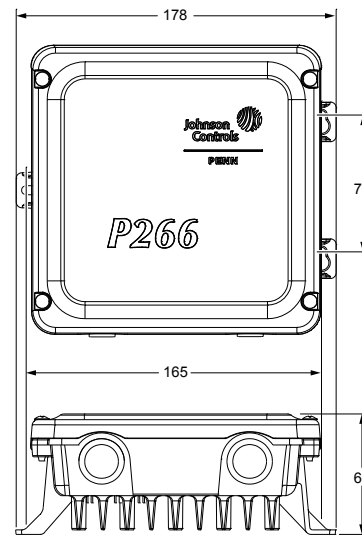
The P266 Series controls are designed to replace the Johnson Controls® P66 Series and P215 Series fan speed controls, providing additional features and flexibility, greater energy efficiency, and longer motor life in a compact, rugged, weather-resistant package.

P266 models are available for 208 to 240 VAC and 440 to 575 VAC range applications. P266 controls have current ratings from 4 to 12 A depending on the voltage and model.

Some P266 models provide optional control of up to three auxiliary (fixed-speed) fans or fan stages. Also, some models provide two additional high-voltage triacs, which allow you to split the source power to the main and auxiliary windings, and connect a low-speed capacitor to increase efficiency at low speed operation.

Features

- Global design CE / UL / CSA / C-tick
- Microprocessor based
- Field Programmable, Digital setting
- One or two Electronic Pressure Transducers (P266SNR)
- Pressure range 0 - 35 bar or 0 - 52 bar
- Patented design
- Output 8 or 12 Amp at 60°C ambient temperature
- Robust aluminium IP54 enclosure with integral heatsink
- Multi triac control providing energy savings up to 25%
- Optional auxiliary (vernier) control
- Auto selection 50 / 60 Hz



Dimensions in mm

REFRIGERATION COMPONENTS

Fan Speed Controllers

1-phase Condenser Fan Speed Control

P266

Ordering Codes	Description	Transducer Model Included in Kit	Voltage Range (in VAC)	Maximum Output (Ampères)	High VAC Triacs	Available Auxiliary Fan Control Circuits
P266EAA-1K*	P266 Fan Speed Control with Internal Transformer and one P266 Pressure Transducer and one 2 m cable	P266SNR-1C 0-35 bar (0-508 psi)	208 to 240	8	3	---
P266EAA-3K*		P266SNR-2C 0-52 bar (0-754 psi)				---
P266EBA-1K*		P266SNR-1C 0-35 bar (0-508 psi)				3
P266EBA-3K*		P266SNR-2C 0-52 bar (0-754 psi)				3
P266ECA-1K*		P266SNR-1C 0-35 bar (0-508 psi)				---
P266ECA-3K		P266SNR-2C 0-52 bar (0-754 psi)				---
P266EDA-1K*		P266SNR-1C 0-35 bar (0-508 psi)		1	3	
P266EDA-3K*		P266SNR-2C 0-52 bar (0-754 psi)			3	
P266EEA-1K*		P266SNR-1C 0-35 bar (0-508 psi)		12	---	
P266EFA-3K*		P266SNR-2C 0-52 bar (0-754 psi)			3	

Note

Factory default settings: Start Voltage is set to 40% of the supply line-voltage. End Voltage is set to 95% of the supply line-voltage. Start Pressure is set to 44% of the P266 transducer's total pressure range. End Pressure is set to 51% of the P266 transducer's total pressure range.

P266SNR Electronic Pressure Transducers

Ordering Codes	Description
P266SNR-1C	Electronic Pressure Transducer: 0 to 35 bar total range with a 1/4 in. SAE Female Flare connection and a 2 meter cable.
P266SNR-2C	Electronic Pressure Transducer: 0 to 52 bar total range with a 1/4 in. SAE Female Flare connection and a 2 meter cable.
P266PRM-1K	P266 Utility Com. Tool Kit. Communication Software Package to program and monitor P266 Control parameters.

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1-phase Condenser Fan Speed Control

P315PR

Direct-Mount Pressure Actuated for EC Motors

The direct mount pressure actuated condenser fan speed controllers are designed for speed variation of electronically commutated (EC) motors. Head pressure control of a refrigeration system, through speed variation of the fan on an air-cooled condenser, results in optimum performance throughout the year.

The controllers can be used in non-corrosive refrigerant systems.

A pressure actuated device provides the most direct and fastest response to pressure variations in the refrigerant system.

The controller varies the supply voltage to the motor from 5% to at least 95% over the proportional band.

Features

- Fan Speed Variation Condenser Pressure Control
- Pressure input
- Direct Mount Option
- Setpoint Screw Location on Top of Device
- IP65 Enclosure
- Compact Design
- Attractive Styling
- Quick Connector Plug Included
- Suitable to control 1 or 3 phase EC motor

**Ordering Codes**

Ordering Codes	Range (bar)*	Element Style	Setting (bar)	Prop. Band (bar)	Controller Mode**	Minimum Shipping Qty	Additional Features
P315PR-9200C	8 to 25	47	16	4	N/A	1	---
P315PR-9200D						25	Bulk Pack

Note

* 1 bar = 100 kPa ≈ 14.5 psi

** Minimum speed.