

P66 Series

# Electronic Fan Speed Controls

## Description

The P66 Series Electronic Fan Speed Controls are refrigerant pressure actuated, electronic motor-speed controllers. The P66 controls are designed for use with single-phase permanent split-capacitor motors that are approved by the motor manufacturer for speed control applications.

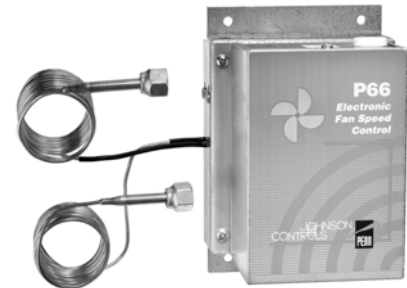
The P66 controls provide condenser pressure control by directly sensing condenser refrigerant pressure and automatically adjusting the condenser fan motor speed according to the sensed pressure.

The P66 provides an alternative to fan cycling control in many small and medium size refrigeration and Heating, Ventilating, and Air Conditioning (HVAC) applications.

## Features

- exclusive Johnson Controls/PENN® pressure transducer — responds quickly to condenser pressure changes and condenser air delivery requirements

- soft start capability — provides a smooth fan startup, which reduces motor-starting noise and abrupt changes in motor speed
- 208-240/277/480 VAC, 60 Hz motor control — suitable for a wide range of condenser fan motor applications
- one or two pressure transducers — applicable to single- and multi-circuit condensers. The dual-sensor P66 control models select the higher pressure input to control the fan speeds.
- two Effective Throttling Ranges (ETRs) — provide either a 30 or 60 psi (207 or 414 kPa) ETR
- NEMA 1 or NEMA 3R (Rainproof) enclosures — allows indoor and panel mounting or outdoor mounting
- built-in voltage surge protection, Radio Frequency Interference (RFI) suppression, and ground terminal screw



**P66 Dual Sensor Fan Speed Control**

## Selection Charts

### P66 Series Control Model Information<sup>1</sup>

Product Code Number	Operating Range (psig)	Start Voltage (% of Supply Voltage)	Capillary Length (in.)
<b>Single Input Sensor Mode</b>			
P66AAB-1C	190-250	10	60
P66AAB-4C	135-165	10	60
P66AAB-6C	170-230	16	60
P66AAB-9C	170-230	40	60
P66AAB-10C	190-250	16	120
P66AAB-11C	140-200	16	60
P66AAB-13C	60-90	16	60
P66AAB-14C	220-280	40	120
P66AAB-15C	190-250	40	60
P66AAB-19C	115-145	40	60
P66AAB-25C	180-240	10	120
P66AAB-26C	220-280	40	60
P66AAB-34C	320-410	40	60
P66AAD-1C*	160-220	25	60
<b>Dual Input Sensor Models</b>			
P66BAB-1C	190-250	10	60
P66BAB-3C	170-230	16	60
P66BAB-4C	190-250	16	120
P66BAB-5C	190-250	40	60
P66BAB-9C	320-410	40	60
P66BAD-1C*	160-220	25	60
<b>NEMA 3R Models</b>			
P66ABB-21C	220-280	16	120
P66ABB-24C	190-250	16	60
P66ABB-27C	170-230	40	60

1. All models are rated for 208-240/277/480 volt; 60 Hz except those with Product Code Numbers followed by an asterisk, indicating 50 Hz Models.

## Replacement Guide<sup>1</sup>

Original Control Model Number	Replacement P66 Product Code Number
P15AJ-39	P66AAB-4C
P15AK-11	P66AAB-6C
P15AK-12	P66ABB-21C
P15AK-13	P66AAB-6C
P15AK-14	P66AAB-1C
P15DJ-5	P66AAB-6C
P15JJ-2 (Liebert® models)	P66AAB-1C
P15JJ-2 (Non Liebert models)	P66AAB-9C
P15JJ-7	P66ABB-21C
P15JJ-8	P66AAB-1C
P65AAB-1	P66AAB-1C
P65AAB-2	P66AAB-1C
P65AAB-4	P66AAB-4C
P65AAB-6	P66AAB-6C
P65AAB-9	P66AAB-9C
P65AAB-10	P66AAB-10C
P65BAB-1	P66BAB-1C
P65BAB-2	P66BAB-1C
P65BAB-5	P66BAB-5C
P65AAB-2	P66AAB-1C
P66AAB-18	P66AAB-25C
P66AAB-21	P66ABB-21C
P66BAB-2	P66BAB-1C
P66BAB-4	P66BAB-1C

1. When two P15s are used in parallel with one motor, replace both P15s with one P66BAB. Select the P66BAB with an operating range similar to that of the P15s being replaced. When replacing a P15 or P65 with a P66, 24 VAC must be provided. It is recommended that the P66 be used only with low heat rise ball bearing motors that are approved by the motor manufacturer for fan speed control operation. Start voltage for P15 models = 40%.

## Electronic Fan Speed Control (Continued)

### Technical Specifications

P66 Series Electronic Fan Speed Control	
Pressure Ratings: Low Pressure Models	<b>Control Range:</b> 80 to 200 psig (552 to 1,379 kPa) <b>Effective Throttling Range:</b> 30 psig (207 kPa) <b>Maximum Working Pressure:</b> 200 psig (1,379 kPa) <b>Maximum Overpressure:</b> 250 psig (1,724 kPa)
Pressure Ratings: Medium Pressure Models	<b>Control Range:</b> 140 to 350 psig (965 to 2,413 kPa) <b>Effective Throttling Range:</b> 60 psig (414 kPa) <b>Maximum Working Pressure:</b> 350 psig (2,413 kPa) <b>Maximum Overpressure:</b> 400 psig (2,758 kPa)
Pressure Rating: High Pressure Models	<b>Control Range:</b> 300 to 500 psig (2,068 to 3,447 kPa) <b>Effective Throttling Range:</b> 90 psig (621 kPa) <b>Maximum Working Pressure:</b> 500 psig (3,447 kPa) <b>Maximum Overpressure:</b> 610 psig (4,206 kPa)
Control Voltage	24 VAC, Class 2, 1 A
Line Voltage Range	208 to 480 VAC
Start Voltage	10% to 40% of line (OEM specified - model specific)
Electrical Ratings: 208 VAC	<b>Full Load Amperes:</b> 8.0 <b>Locked Rotor Amperes:</b> 16.5 <b>Ambient Temperature Maximum:</b> 130°F/54°C
Electrical Ratings: 240 VAC	<b>Full Load Amperes:</b> 8.0 <b>Locked Rotor Amperes:</b> 16.5 <b>Ambient Temperature Maximum:</b> 130°F/54°C
Electrical Ratings: 277 VAC	<b>Full Load Amperes:</b> 6.9 <b>Locked Rotor Amperes:</b> 14.3 <b>Ambient Temperature Maximum:</b> 130°F/54°C
Electrical Ratings: 480 VAC	<b>Full Load Amperes:</b> 4.0 <b>Locked Rotor Amperes:</b> 10.5 <b>Ambient Temperature Maximum:</b> 150°F/66°C
Ambient Temperature Minimum	-40°F/-40°C (at all voltages)
Ambient Storage Temperature	-40°F/-40°C to 185°F/85°C
Construction	<b>Control Case:</b> Galvanized steel case and cover <b>Base and Sensors:</b> Galvanized steel <b>Plastic Enclosure:</b> UV stabilized polycarbonate with closed cell foam gasket (NEMA 3R models only)
Enclosure	NEMA 1 or NEMA 3R (Rainproof)
Wiring Connections	<b>Low Voltage:</b> 1/4 in. quick connects (NEMA 1); Two 6 in. 22 AWG Wire Leads (NEMA 3R) <b>Line Voltage:</b> 10-32 Screw Terminals
Pressure Connections	60 in./1.5 m or 120 in./3.0 m copper capillary with 1/4 in./6 mm flare nut and Schrader® valve depressor
Mounting	Vertical only; two holes for No. 10 screws at the top and bottom
Compliance	<b>UL Recognized (U.S.):</b> File SA516, Guide SDFY2 <b>UL Recognized (Canada):</b> File SA516, Guide SDFY8