



Oil Pressure Controls

- 120/240VAC
- Manual reset
- Built-in time delay relay

JOHNSON CONTROLS

For use with noncorrosive refrigerants.

P45 and P145 Series—Units are nonadjustable and provide dependable low-lube oil pressure; factory set per manufacturer's specs. P145 models require armored capillary tubes (see Grainger.com).

P28 and P128 Series—Provide dependable cut-out for pressure-lubricated refrigeration compressors. Field-adjustable pressure differential per manufacturer's specs. P128 models require armored capillary tubes (see Grainger.com).

P545 Series—Electronic controls lock out compressor if lube oil pressure falls below manufacturer's recommended net pressure. For use on refrigeration compressors equipped with oil pumps that accept single-point differential pressure switch. P400 sensor and wire harness included with controller.

RANCO Replaceable time-delay modules, and adjustable pressure range.

For R-22, R-124, R-134A, R-408, R-502, and R-507.

12Y971



1CXH3



Description	Pressure Range (psi)	Time Delay (sec.)	Pressure Connc.	Capillary Length (in.)	Brand	Mr. Model	Item No.
Electromechanical	9	120 sec	1/4 in Flare Nut	36 in	Johnson Controls	P45NAA-5C	20RF58
Electromechanical	Fixed 6.5	45 sec	1/4 in Male Flare	—	Johnson Controls	P145NCA-82C	40G334
Electromechanical	9	10 sec	1/4 in Male Flare	—	Johnson Controls	P145NCB-12C	20RF56
Electromechanical	Fixed 6.5	45 sec	1/4 in Male Flare	—	Johnson Controls	P145NCB-82C	40G335 *
Electromechanical	8 to 70	90 sec	1/4 in Flare Nut	36 in	Johnson Controls	P28AA-1C	40G358
Electromechanical	8 to 70	120 sec	1/4 in Flare Nut	36 in	Johnson Controls	P28AA-17C	40G357
Electromechanical	8 to 70	90 sec	1/4 in Female NPT	36 in	Johnson Controls	P28AN-1C	40G359 **
Electromechanical	8 to 70	90 sec	1/4 in Male Flare	—	Johnson Controls	P128AA-1C	20RF55
Electromechanical	8 to 70	120 sec	1/4 in Male Flare	—	Johnson Controls	P128AA-17C	20RF54
Electronic, For Copeland	Fixed 12.75	120 sec	Single Point P400	40 in	Johnson Controls	P545NCB-22C	12Y971
Electronic, For Bitzer	Fixed 10	90 sec	Single Point P400	48 in	Johnson Controls	P545NCB-25C	12Y972
Electronic, For Carlyle	Fixed 7	120 sec	Single Point P400	40 in	Johnson Controls	P545NCB-82C	12Y973
Electromechanical	8 to 60	90 sec	1/4 in Male Flare Nut	36 in	Ranco	P30-3701	1CXH3

Replacement P545 Electronic Lube Oil Sensors

For Use With Carlyle P545NCB-82C and CST29A	Johnson Controls	P400AD-1C	12Y974
For Use With Copeland P545NCB-22C	Johnson Controls	P400AD-2C	12Y975
For Use With Bitzer P545NCB-25C	Johnson Controls	P400BD-1C	12Y976

* Carlyle model with wire alarm. ** For use with ammonia.



Residential Defrost Timers

Direct replacements for defrost timers in household refrigerators and freezers. 120VAC.



Replaces O.E.M.	Max. On/Off Cycles	Defrost Time (Minutes)	Mr. Model	Item No.
Admiral	4 Per Day	21	A1400-00	11Z778
Frigidaire	8 Per Day	21	B1400-00	11Z779
General Electric	6 Per Day	25	G1400-00	11Z781
Whirlpool	8 Per Day	21	A1402-00	11Z780

Refrigeration Defrost Thermostats



Moisture-resistant thermostats can be used as exact OEM replacements for most refrigerators and icemakers. SPDT switch opens on rise. 120/240V.

Switch Type	Switch Amp Rating	Temp. Range (F)	Differential Opens @ (°F)	Switch Closes @ (°F)	Mr. Model	Item No.
SPDT	25	55 to 35	20	55°F	SL5709	2FBY5
SPST	10	80 to 30	30 +/-4°F	80°F	ML80	3CHK2



Refrigeration/Defrost Controls

Versatile controls are micro-processor-based, multifunction, and programmable.

Defrost Controls

Timers for Water Spray with Pump-Down Drain or Fan Delay Cycles—Defrost initiation: 1 to 8 cycles per day, at least 3 hr. between cycles. Delay or pump-down cycles: 0 to 30 min. in 3-min. increments; for stopping fans, reducing refrigerant pressure, or hot gas pump-down cycle. Defrost or fan cycles: 3 to 45 min. in 3-min. increments.

Time-Initiated and Time-Terminated—For electric heat, hot gas, or compressor shutdown defrost. Defrost/initiation cycles: 1 to 6 per day. Defrost cycles: 4 to 110 min. in 2-min. increments.

Time-Initiated, Remote-Temperature, or Pressure-Terminated—Work with external temperature or pressure sensor. Has 3 contact arrangements for electric heat, compressor shutdown, or hot gas defrost. Defrost cycles: 1 to 6 per day. Dial overlay changes defrost time from even- to odd-numbered hours. Backup defrost termination: 4 to 110 min. in 2-min. increments.

Time-Initiated, Pressure-Terminated—Modular pressure bellows. 3 contact arrangements for hot gas, electric heat, or compressor shutdown defrost.

Description	Switch Type	Control Range (°F)	Brand	Mr. Model	Item No.
Defrost Control, Panel Mount	SPST	14° to 140°	Johnson Controls	MR4PM24-12C	20XJ66
Defrost Timer Control, DIN Rail	SPST	14° to 140°	Johnson Controls	MR4PMUHV-12C	20XJ67
Refrigeration/Defrost Control, Temp. Diff.: High 25°F/Low 1°F ^o	4 SPDT	-40 to 60	Paragon	ERC2-212111-370	1TGD4
Multi-Stage Electronic Temperature Control	SPST	14° to 140°	Johnson Controls	MS4DR24T-11C	20XJ68



Defrost cycles: 1 to 6 per day, at least 4 hr. between cycles. Dial overlay changes defrost time from even- to odd-numbered hours. Backup defrost termination: 4 to 110 min. in 2-min. increments. Adjustable cut-in pressure-setting dial calibrated from 36 to 100 lb.

Time Initiated, and Time-, Pressure- and Temp.-Terminated, Auto Voltage—For commercial freezers and refrigerators. Defrost initiation in 15 min. cycles, up to 48 cycles per day. Compressor contacts 3HP, heater/fan contacts 2HP.

Universal Defrost Timers—Manual defrost can be initiated in 15-min. intervals. Provides 100 hr. of power loss protection.

Voltage	Contact Type*	Amps	Mr. Model	Item No.
Timers for Water Spray with Pump-Down Drain or Fan Delay Cycles				
120V AC	2 NO/2 NC	10 A	632-00	5X450
208/240V AC	2 NO/2 NC	10 A	632-20	5X451
Time-Initiated and Time-Terminated				
120V AC	1 NO/2 NC	40 A	8041-00	12Z385
208/240V AC	1 NO/2 NC	40 A	8041-20	12Z388
120V AC	SPDT	40 A	8045-00	5X454
208/240V AC	SPDT	40 A	8045-20	5X455
120V AC	1 NC, 2 NO	40 A	8025-00	6X758
120V AC	2 NO/1 NC	40 A	8047-00	12Z386
208/240V AC	2 NO/1 NC	40 A	8047-20	5X456
Time-Initiated, Remote-Temperature, or Pressure-Terminated				
120V AC	1 NO/2 NC	40 A	8141-00	5X457
208/240V AC	1 NO/2 NC	40 A	8141-20	12Z389
120V AC	2 NO/1 NC	40 A	8143-00	12Z387
208/240V AC	2 NO/1 NC	40 A	8143-20	12Z390
120V AC	SPDT	40 A	8145-00	5X458
208/240V AC	SPDT	40 A	8145-20	5X459
Time-Initiated, Pressure-Terminated				
208/240V AC	SPDT	40 A	8245-20	5X460
Time Initiated, and Time-, Pressure- and Temp.-Terminated, Auto Voltage				
120/208/240/277 V AC	1 NO/1 NC	40 A	8145-AV	48TJ23
120/208/240/277 V AC	1 NO/1 NC	40 A	8145-AV-M	48TJ24
Universal Defrost Timers				
120/208/240V AC	1 NO/1 NC	30 A	9045-00	12Z384
120/208/240V AC	1 SPDT	30 A	9145-00	1TGD6
120/208/240V AC	1 SPST	30 A	9145-00	1TGD6

* NO=Normally Open, NC=Normally Closed.