



## DEFROST TIMERS



## WHY CHOOSE PARAGON® DEFROST TIMERS?

### Quality – Selection – Dependability

Installers prefer a vast selection of quality solutions for commercial refrigeration applications while requiring intuitive installation set-up and dependable performance. Paragon® is trusted in commercial refrigeration for ease-of-use, performance, reliability and innovation.

Paragon® Defrost Controls lead the pack as the preferred defrost control brand in the industry. Contractors trust:

- The original 8000 Series Electromechanical Defrost Timers for dependable performance.
- The 9000 Series Universal Defrost Timer for operating 16 years longer than competitive models and for delivering the only multi-voltage timer engineered to refrigeration standards.
- The Paragon® All-in-One Auto Voltage Defrost Timer for replacing over 40 competitive voltage-specific mechanical defrost timers, eliminating the need for a separate short cycle timer and single-phase voltage monitor.
- The Paragon® Residential and Light Commercial Defrost Timer Series for its compact size and durability.

**For Quality, Selection, and Dependability - Choose *Paragon*.**

### Table of Contents

8000 Series - Auto Voltage.....	3
8000 Series - Electromechanical .....	4
9000 Series - Universal Electronic.....	6
632 Series - Electromechanical .....	8
RM Series - Defrost Modules .....	9
Residential and Light Commercial Defrost Timers .....	10

## 8000 Series - Auto Voltage

The Paragon® 8000 Series Auto Voltage Defrost Timer is designed for commercial freezers and refrigerators. Paragon Defrost Controls have provided reliable automatic defrost capability for decades. They accommodate various types of defrost systems including electric defrost heaters, hot gas, and compressor off cycle.

This all-in-one auto voltage defrost timer replaces over 40 competitive voltage-specific mechanical defrost timers, eliminating the need for a separate short cycle timer and single-phase voltage monitor. The 8145-AV is a mainstay for any contractor's truck. The 8145-AV reduces installation time and minimizes the number of SKUs to stock.

### Features and Benefits

- Replaces over 40 competitive models
- Available in 50 Hz and 60 Hz models
- Auto voltage automatically adjusts for 120-240V AC
- Compressor contacts 3HP
- Heater/fan contacts 2HP
- LED indicators for defrost and refrigeration cycles
- Built-in permanent housing protects components from damage
- Mechanism only mounts into existing Paragon enclosures, no tools required
- Real-time clock face for easy accurate settings
- Defrost times programmable in 15-minute intervals with captive trippers
- Heavy-duty steel enclosure with knockouts (on the bottom, back and side) and hasp
- Mechanism only models also available 8145-AV-M (60 Hz model) and 8145-AV50M (50 Hz model)



8145-AV



8145-AV-M

## Specifications

Part Numbers	Description	Normally Open Contact Terminal 3 and 5				Normally Closed Contact Terminal F and 2			
8145-AV	Auto Voltage Defrost Timer in Metal Casing, 60 Hz	40 Amps	Resistive	120-240V AC		30 Amps	Resistive	120-240V AC	
		3 HP	Motor	240V AC		2 HP	Motor	240V AC	
8145-AV-M	Auto Voltage Defrost Timer Mechanism Only, 60 Hz	1.5 HP	Motor	120V AC		1/4 HP	Motor	120V AC	
		720 VA	Pilot Duty	120-240V AC		290 VA	Pilot Duty	120-240V AC	
8145-AV50	Auto Voltage Defrost Timer in Metal Casing, 50 Hz	40 Amps	Resistive	120-240V AC		30 Amps	Resistive	120-240V AC	
		3 HP	Motor	240V AC		2 HP	Motor	240V AC	
8145-AV50M	Auto Voltage Defrost Timer Mechanism Only, 50 Hz	1.5 HP	Motor	120V AC		1/4 HP	Motor	120V AC	
		720 VA	Pilot Duty	120-240V AC		290 VA	Pilot Duty	120-240V AC	





8045-00



8245-20

## 8000 Series - Electromechanical

The Paragon® 8000 Series Commercial Defrost Controls are designed for commercial freezers and refrigerators to provide automatic defrost capability. They accommodate various types of defrost systems including electric defrost heaters, hot gas, and compressor off cycle.

### Features and Benefits

- Time initiated; temperature, pressure or time terminated models available
- High-amp switch contacts: 40 Amps, 2 HP
- Positive slider bar switch design assures positive electrical contact and wipes the contact surface of contaminants
- Temperature or pressure terminated models are designed for defrost termination using an external temperature or pressure device
- Safety back-up – mechanical time-driven defrost termination
- Heavy-duty synchronous design drive motor
- Choice of three contact arrangements
- Adjustable frequency of defrost initiation from 1 to 6 cycles per day with a minimum of 4 hours between successive operations
- Adjustable back-up defrost termination from 4 to 110 minutes in 2 minute increments
- Heavy-duty steel enclosure with knockouts (on the bottom, back and sides) and hasp and staple padlock
- All 8240 models have an adjustable cut-in pressure dial calibrated from 36-110 pounds for R12, R22, R502

## Specifications

Part Numbers	Description	Switch Arrangement Contacts 2-4	Switch Arrangement Contacts 1-3	Switch Arrangement Contacts 3-N	Termination Type	Electrical Rating
8025-00	Adjustable Cycle, Time Initiated, Time Terminated	NA	NA	NA	Time	120V AC, 60 Hz, 2 HP
8025-20	Adjustable Cycle, Time Initiated, Time Terminated	NA	NA	NA	Time	208-240V AC, 60 Hz, 2 HP
8041-00	Electric Heat	Closed	Open	Closed	Time	120V AC, 60 Hz
8041-20	Electric Heat Defrosting	Closed	Open	Closed	Time	208-240V AC, 60 Hz 208-240V AC, 50 Hz
8045-00	Electric Heat, Hot Gas or Compressor Shutdown	Closed	Open	None	Time	120V AC, 60 Hz
8045-20	Electric Heat, Hot Gas or Compressor Shutdown	Closed	Open	None	Time	208-240V AC, 60 Hz
8045-21	Electric Heat, Hot Gas or Compressor Shutdown	Closed	Open	None	Time	208-240V AC, 50 Hz
8047-00	Electric Heat Defrosting	Open	Open	Closed	Time	120V AC, 60 Hz
8047-20	Electric Heat Defrosting	Open	Open	Closed	Time	208-240V AC, 60 Hz 208-240V AC, 50 Hz
8141-00	Electric Heat, Hot Gas or Compressor Shutdown	Closed	Open	Closed	Temperature or Pressure	120V AC, 60 Hz
8141-20	Electric Heat, Hot Gas or Compressor Shutdown	Closed	Open	Closed	Temperature or Pressure	208-240V AC, 60 Hz
8143-00	Electric Heat, Hot Gas or Compressor Shutdown	Open	Closed	Open	Temperature or Pressure	120V AC, 60 Hz
8143-20	Electric Heat, Hot Gas or Compressor Shutdown	Open	Closed	Open	Temperature or Pressure	208-240V AC, 60 Hz
8145-00	Electric Heat, Hot Gas or Compressor Shutdown	Closed	Open	None	Temperature or Pressure	120V AC, 60 Hz
8145-20	Electric Heat, Hot Gas or Compressor Shutdown	Closed	Open	None	Temperature or Pressure	208-240V AC, 60 Hz
8145-20B	Electric Heat, Hot Gas or Compressor Shutdown	Closed	Open	None	Temperature or Pressure	208-240V AC, 60 Hz
8145-20M	Mechanism only, Electric Heat, Hot Gas or Compressor Shutdown	Closed	Open	None	Temperature or Pressure	208-240V AC, 60 Hz
8145-21	Electric Heat, Hot Gas or Compressor Shutdown	Closed	Open	None	Temperature or Pressure	208-240V AC, 50 Hz
8245-20	Electric Heat, Hot Gas or Compressor Shutdown	Closed	Open	None	Pressure	208-240V AC, 60 Hz
8245-21	Electric Heat, Hot Gas or Compressor Shutdown	Closed	Open	None	Pressure	208-240V AC, 50 Hz
8247-20	Electric Heat, Hot Gas or Compressor Shutdown	Open	Open	Closed	Temperature or Pressure	208-240V AC, 60 Hz
E357-00	Electric Heat, Hot Gas or Compressor Shutdown	Closed	Open	None	Temperature or Pressure	120V AC, 60 Hz



9045-00



9045-00M

## 9000 Series - Universal Electronic

The Paragon® 9045-00 and 9145-00 Universal Defrost Timers (UDT) are the only multi-voltage defrost timers engineered to industry refrigeration standards.

Designed to withstand the most rigorous refrigeration applications, this control offers a real-time clock and 100 hours of power loss protection for both time and defrost schedules. Mechanism-only models also are available to fit in standard defrost timer enclosures.

### Features and Benefits

- Certified to UL873 standard for temperature-indicating and regulating equipment
- Wires directly to 120V AC, 208V AC or 240V AC power sources without jumpers or switches
- Rated to 30,000 cycles for refrigeration controllers with switches
- Easy programming, easy set-up, set time, set defrost start and defrost end
- Initiate 15 minute manual defrost
- 100 hours of power loss protection for both time and defrost schedule
- Real-time clock
- Lighted display shows defrost start time and duration
- System status indicators

## Specifications

Part Numbers	Description	Relay Switch	Initiation Type	Termination Type	Voltage
9045-00	Universal Defrost Timer	SPST	Time	Time	120-208-240V AC
9045-00M	Mechanism Only	SPST	Time	Time	120-208-240V AC
9145-00	Universal Defrost Timer	SPDT	Time	Time, Temp or Pressure	120-208-240V AC
9145-00M	Mechanism Only	SPDT	Time	Time, Temp or Pressure	120-208-240V AC

9045 Terminal Data	A	B	C	D	E	F	G
Relay Contact	SPST #1 NC Contact	SPST #1 Common Contact	L1 Power in to Timer	SPST #2 No Contact	SPST #2 Common Contact	L2/N Power in to timer	No Connection
Relay Rating	30 A resistive @ 120 to 240V AC 1 HP @ 120V AC, 2 HP @ 208 to 240V AC			30 A resistive @ 120 to 240V AC 1 HP @ 120V AC, 2 HP @ 208 to 240V AC			
Device Connections	Compressor (Typical)				Defrost Device (Typical)		Defrost Termination Switch

9145 Terminal Data	A	B	C	D	E	F	G
Relay Contact	SPDT NC Contact	SPDT NO Contact	SPDT Common Contact	SPST NO Contact	SPST Common Contact	L2/N Power in to timer	Defrost Termination Device Input L2/N side
Relay Rating	15 A resistive @ 120 to 240V AC 1/4 HP @ 120V AC, 1/2 HP @ 208 to 240V AC		30 A resistive @ 120 to 240V AC 1 HP @ 120V AC 2 HP @ 208 to 240V AC		30 A resistive @ 120 to 240V AC 1 HP @ 120V AC, 2 HP @ 208 to 240V AC		
Device Connections	Fan (Typical) Compressor (Optional)	Defrost Device (Typical)	L1 Power to Timer and to Defrost Termination Device		Compressor (Typical) Fan (Optional)	Defrost Termination Switch	



632-20

## 632 Series - Electromechanical

The Paragon® 632 Series Defrost Timers provide an adjustable cycle, time initiated, with one to eight On/Off operations daily with a minimum of three hours between operations.

### Features and Benefits

- Adjustable delay or pump down cycle
- Drain or fan delay cycle adjustable
- Defrost initiation and length adjustable

## Specifications

Part Numbers	Description	Switch Rating	Enclosure	Adjustable Defrost Initiation	Adjustable Delay or Pump Down Cycle	Adjustable Drain or Fan Delay Cycle	Adjustable Length of Defrost	Sequence Switching	High Pressure (Open High) Cut-Out	Electrical Rating
632-00	Defrost Timer	120-240V AC, 10 Amps, 245 VA Switches 2-4 and 3-4 carry 1/2 HP rating	Heavy-Duty Steel	1-8 cycles per day; minimum 3 hours between successive cycles	0-30 minutes; 3 minute graduation: for stopping fans, reducing refrigerant pressure, or hot gas pump down cycle	3-15 minutes; 3 minute graduation	3-45 minutes; 3 minute graduation	2 NO 2 NC	4.75 (2.2)	120V AC
632-20	Defrost Timer	120-240V AC, 10 Amps, 245 VA Switches 2-4 and 3-4 carry 1/2 HP rating	Heavy-Duty Steel	1-8 cycles per day; minimum 3 hours between successive cycles	0-30 minutes; 3 minute graduation: for stopping fans, reducing refrigerant pressure, or hot gas pump down cycle	3-15 minutes; 3 minute graduation	3-45 minutes; 3 minute graduation	2 NO 2 NC	4.75 (2.2)	240V AC



## RM Series - Defrost Modules

The Paragon® RM Series Defrost Modules include program and motor modules for either electric or hot gas defrosting of refrigeration units. The RM Series heavy-duty synchronous industrial type motor is sealed permanently with a lubricated gear train. Up to 24 program modules can be driven with one motor. This product is available with even or odd, hour or half hour terminations. Solenoid termination is available on some models, and delivers an instantaneous transfer if the solenoid is energized when the defrost cycle is initiated.



RM Series

### Features and Benefits

- Defrost initiation is adjustable from 1-12 operations per circuit, per day; minimum 2 hours required between successive operations
- Mechanical defrost termination is adjustable from 6-106 minutes in one-minute increments
- Two SPDT snap switches per module. 3/16" male push-on switch terminals.
- Program Modules switch rating: 10 Amps, 1/3 HP, 120-240V AC; 345 VA pilot duty
- Extra trippers, part number X-7248 (12 per bag)
- UL Recognized Component and CSA Approved

### Specifications

Part Numbers	Description	Circuit	Hour	High Pressure (Open High) Cut-Out	Electrical Rating Motor Module
A876-99	RM Series Defrost Modules Without Solenoid	Circuit Module	Even Hour	0.75 (0.3)	NA
A877-00	RM Series Program Modules With Solenoid	Circuit Module	Even Hour	1 (0.5)	120V AC, 60 Hz
A877-20	RM Series Program Modules With Solenoid	Circuit Module	Even Hour	1 (0.5)	208-240V AC, 60 Hz
A878-00	RM Series Defrost Modules	NA	Drive Module	1 (0.5)	120V AC, 60 Hz
A878-20	RM Series Motor Modules	NA	Drive Module	1 (0.5)	208-240V AC, 60 Hz
A879-99	RM Series Defrost Modules	NA	4-Circuit Frame	1.5 (0.7)	120V AC, 60 Hz
A880-99	RM Series Defrost Modules	NA	8-Circuit Frame	1.75 (0.8)	NA
B876-99	RM Series Defrost Modules Without Solenoid	Circuit Module	Even Half Hour	0.75 (0.3)	NA
B877-00	RM Series Defrost Modules With Solenoid	Circuit Module	Even Half Hour	1 (0.5)	120V AC, 60 Hz
B877-20	RM Series Defrost Modules With Solenoid	Circuit Module	Even Half Hour	1 (0.5)	208-240V AC, 60 Hz
D876-99	RM Series Defrost Modules Without Solenoid	Circuit Module	Odd Hour	0.75 (0.3)	NA
D877-00	RM Series Defrost Modules Without Solenoid	Circuit Module	Odd Hour	1 (0.5)	120V AC, 60 Hz
D877-20	RM Series Defrost Modules With Solenoid	Circuit Module	Odd Hour	1 (0.5)	208-240V AC, 60 Hz
E876-99	RM Series Defrost Modules Without Solenoid	Circuit Module	Odd Half Hour	0.75 (0.3)	
E877-00	RM Series Defrost Modules With Solenoid	Circuit Module	Odd Half Hour	1 (0.5)	120V AC, 60 Hz
E877-20	RM Series Defrost Modules With Solenoid	Circuit Module	Odd Half Hour	1 (0.5)	208-240V AC, 60 Hz



A1401-00

## Residential and Light Commercial Defrost Timers Series

The Paragon® Residential and Light Commercial Defrost Timer Series is a synchronous motor control that activates an internal SPDT switch to actuate a defrost heater in a refrigerator. These heavy-duty 15 Amp Paragon timers are used by OEM manufacturers to replace both the older classic designs and the newer designs installed for residential as well as light commercial applications.

### Features and Benefits

- Quiet - synchronous design provides extremely quiet operation
- Position freedom - timer can be mounted in various locations
- Interchangeability - standard mounting allows use in all applications
- Double insulated - requires no earth grounding
- Brass contacts for better corrosion protection
- Approved for use in propane based systems

### Specifications

Part Numbers	Description	Bulk Quantity	Timing	Electrical Rating
A1400-00	Defrost Timer	12	6 hours 21 minutes	120V AC, 60 Hz, 15 Amps, 1/2 HP
B1400-00	Defrost Timer	12	8 hours 20 minutes	120V AC, 60 Hz, 15 Amps, 1/2 HP
A1401-00	Defrost Timer	12	6 hours 21 minutes	120V AC, 60 Hz, 15 Amps, 1/2 HP
B1401-00	Defrost Timer	12	8 hours 20 minutes	120V AC, 60 Hz, 15 Amps, 1/2 HP
G1401-00	Defrost Timer	12	6 hours 25 minutes	120V AC, 60 Hz, 15 Amps, 1/2 HP
A1401-20	Defrost Timer	12	6 hours 21 minutes	240V AC, 60 Hz, 8 Amps, 1/2 HP
B1401-20	Defrost Timer	12	8 hours 20 minutes	240V AC, 60 Hz, 8 Amps, 1/2 HP
A1401-21	Defrost Timer	12	6 hours 21 minutes	240V AC, 50 Hz, 8 Amps, 1/2 HP
B1401-21	Defrost Timer	12	8 hours 20 minutes	240V AC, 50 Hz, 8 Amps, 1/2 HP
A1402-00	Defrost Timer	12	8 hours 21 minutes	120V AC, 60 Hz, 15 Amps, 1/2 HP
DJ2000-00	Defrost Timer	12	4 hours 20 minutes	120V AC, 60 Hz, 10 Amps, 1/3 HP
DJ2001-00	Defrost Timer	NA	4 hours 20 minutes	120V AC, 60 Hz, 10 Amps, 1/3 HP
G1400-00	Defrost Timer	12	6 hours 25 minutes	120V AC, 60 Hz, 15 Amps, 1/2 HP
G1401-21	Defrost Timer	12	6 hours 25 minutes	240V AC, 50 Hz, 8 Amps, 1/2 HP
GV3001-00	Defrost Timer	12	12 hours 21 minutes	120V AC, 60 Hz, 9 Amps, 1/2 HP
GX3001-00	Defrost Timer	12	10 hours 21 minutes	120V AC, 60 Hz, 15 Amps, 1/2 HP
GY3001-00	Defrost Timer	12	10 hours 25 minutes	120V AC, 60 Hz, 15 Amps, 1/2 HP
NK2001-21	Defrost Timer	12	8 hours 7 minutes	208-240V AC, 50 Hz, 8 Amps, 1/2 HP
AF2001-00	Defrost Timer	NA	12 hours 21 minutes	127V AC, 60 Hz, 15 Amps
AF2001-20	Defrost Timer	NA	12 hours 21 minutes	240V AC, 60 Hz, 5 Amps, 1/3 HP
AF2001-21	Defrost Timer	NA	12 hours 21 minutes	240V AC, 50 Hz, 15 Amps
DL2001-21	Defrost Timer	NA	12 hours 30 minutes	240V AC, 50 Hz,

## Specifications

Part Numbers	Description	Bulk Quantity	Timing	Electrical Rating
EB2001-21	Defrost Timer	NA	12 hours 30 minutes	240V AC, 50 Hz,
K1400-00	Defrost Timer	12	10 hours 25 minutes	120V AC, 60 Hz, 10 Amps, 1/3 HP
LJ2001-21	Defrost Timer	NA	8 hours 7 minutes	240V AC, 50 Hz
OA1401-00	Defrost Timer	12	6 hours 21 minutes	120V AC, 60 Hz, 15 Amps, 1/2 HP
OE1401-00	Defrost Timer	12	8 hours 20 minutes	120V AC, 60 Hz, 15 Amps, 1/2 HP
OA1400-21	Defrost Timer	NA	6 hours 21 minutes	230V AC, 50 Hz, 15 Amps
OA1401-21	Defrost Timer	NA	6 hours 21 minutes	208-240V AC, 50 Hz, 15 Amps
PF2001-00	Defrost Timer	NA	8 hours 21 minutes	127V AC, 60 Hz, 15 Amps
PF2001-20	Defrost Timer	NA	8 hours 21 minutes	220V AC, 60 Hz, 15 Amps
PF2001-21	Defrost Timer	NA	8 hours 21 minutes	240V AC, 50 Hz, 15 Amps
QE2001-21	Defrost Timer	NA	6 hours 15 minutes	240V AC, 50 Hz, 15 Amps
RZ2001-21	Defrost Timer	NA	4 hours 15 minutes	240V AC, 50 Hz
SJ2001-20	Defrost Timer	NA	8 hours 21 minutes	240V AC, 50 Hz, 8 Amps, 1/2 HP
TX2001-00	Defrost Timer	NA	12 hours 21 minutes	127V AC, 60 Hz, 15 Amps
TX2001-20	Defrost Timer	NA	12 hours 25 minutes	127V AC, 60 Hz, 15 Amps
WB2001-00	Defrost Timer	NA	8 hours 8 minutes	127V AC, 60 Hz, 15 Amps
WB2001-20	Defrost Timer	NA	8 hours 8 minutes	220V AC, 60 Hz, 15 Amps
WV2001-59	Defrost Timer	NA	6 hours 21 minutes	240V AC, 50/60 Hz
XC2001-21	Defrost Timer	NA	8 hours 20 minutes	240V AC, 50 Hz
XH2001-21	Defrost Timer	NA	12 hours 45 minutes	240V AC, 50 Hz



Customer Service (Americas) +1.800.304.6563  
HVACCustomerService@robertshaw.com

For Technical Service  
Telephone +1.800.445.8299  
TechnicalService@robertshaw.com

Robertshaw® is a trademark of Robertshaw, its subsidiaries  
and/or affiliated companies. All other brands mentioned  
may be the trademarks of their respective owners.

[www.robertshaw.com](http://www.robertshaw.com)  
©2018 Robertshaw  
7/18 – 150-2677