

SPRING COOLING SPECIAL EDITION

# ALLTEMP

2014

REFRIGERATION

AIR CONDITIONING

SERVICE TOOLS

ELECTRICAL

HEATING

# BEAT the HEAT

Hundreds of A/C and refrigeration solutions for all your residential or commercial cooling needs!



SERVING THE NORTH AMERICAN HVAC/R INDUSTRY FOR OVER 40 YEARS

[www.alltemp.ca](http://www.alltemp.ca)

## R12 Compressors

Performance Specifications				Capacity BTU/H - ASHRAE			Replacement Guide	
Part #	Nominal HP	Volts	Application	L/MBP	HBP32	HBP46	Tecumseh	Copeland
<b>30-FFC60BK</b>	1/5+	115	L/M/HBP	756	2,790	-	AEA3425AXA	ARE25C3-IAA
<b>30-FF8.5BK</b>	1/4	115	L/M/HBP	850	3,080	-	AEA1380AXA	AFF1-0025-SAA
<b>30-FF10BK1</b>	1/4+	115	L/M/HBP	915	3,240	-	AEA1410AXA, AEA3430AXA	AFG2-0026-SAA, JFC1-0025-SAA
<b>30-FF10BX</b>	1/4+	115	L/M/HBP	915	3,200	-	AEA2410AXA, AEA4430AXA	ARE27C3-IAA, AFG2-0026-IAA
<b>30-FF11.5BK1</b>	1/3	115	L/M/HBP	1,130	4,000	-	AEA1411AXA	-
<b>30-FF112BKW</b>	1/3+	115	L/M/HBP	1,350	4,600	-	AEA1413AXA, AEA3440AXA	AFH2-0033-SAA, JFB1-0033-SAA
<b>30-FF112BX</b>	1/3+	115	L/M/HBP	1,350	5,000	-	AEA440AXA, AEA4448AXA	ARE37C3-IAA, AFH2-0033-IAA, JFB1-0033-IAA

## R134a Compressors

Performance Specifications				Capacity BTU/H - ASHRAE			Replacement Guide	
Part #	Nominal HP	Volts	Application	L/MBP	HBP32	HBP46	Tecumseh	Copeland
<b>30-FF7.5HBK</b>	1/5+	115	L/M/HBP	630	2,760	-	AEA1360YXA, AEA3425YXA	ARE25C3E-IAA
<b>30-FF8.5HBK</b>	1/4	115	L/M/HBP	740	3,135	-	AEA1370YXA, AEA3430YXA	ARE29C4E-IAA, ARE27C3E-IAA
<b>30-FF10HBX</b>	1/4+	115	L/M/HBP	840	3,650	-	-	ARE37C3E-IAA
<b>30-FF110HBX</b>	1/3	115	L/M/HBP	1,065	4,400	-	AEA4440YXA, AEA3440YXA	-
<b>59-NEK6212Z1</b>	1/2	115	HBP	-	-	5,178	AEA4448YXA	ARE46C4E-IAA, ARE41C3E-IAA
<b>59-NEK6214Z1</b>	1/2+	115	HBP	-	-	5,960	AKA4460YXA	ART51C1E-IAA, ART51C4E-IAA
<b>59-NT6215Z2</b>	1/2+	208-230	HBP	-	-	6,400	AKA4460YXD	ART51CE-IAV
<b>59-NT6215Z1</b>	1/2+	115	HBP	-	-	6,626	-	ART62C1E-IAA, RRT62C1E-IAA



NE/NEK Style

FF/FFC/FFI Style

**embraco**  
30 Month Warranty

## R404A Compressors

Performance Specifications				Capacity BTU/H - ASHRAE			Replacement Guide	
Part #	Nominal HP	Volts	Application	L/MBP	HBP32	HBP46	Tecumseh	Copeland
<b>59-NEK2134GK1</b>	1/2	115	LBP	1,948	-	-	AJA2419ZXA	AFE13C4E-IAA, AFE13C3E-IAA
<b>59-NEK2150GK1</b>	1/2+	115	LBP	2,493	-	-	AJA2425ZXA	AFE17C4E-IAA
<b>59-NT2168GKV1</b>	3/4	115	LBP	2,628	-	-	AJA2431ZXA	AFT22C1E-IAA, RFT22C1E-IAA, AFJ23C1E-IAA
<b>59-NT2180GKV2</b>	1	208-230	LBP	3,892	-	-	AWA2440ZXD	AFT29C1E-CFV, RFT29C1E-IAV
<b>59-NT6220GKV2</b>	1	208-230	M/HBP	-	-	8,464	-	AST45C1E-CAV
<b>59-NT6220GK1</b>	1	115	M/HBP	-	-	8,464	-	-
<b>59-NT6222GKV2</b>	1	208-230	M/HBP	-	-	9,992	AJA7494ZXD	AST54C1E-CAV, RST55C1E-CAV

## Applications

### LBP

(Low Back Pressure)  
Evaporating  
temperatures between  
-31°F and 14°F

#### Applications:

Refrigerators, frozen food  
cabinets, frozen food display  
cases, display windows, etc.

### L/M/HBP

(Low/Medium/High Back  
Pressure)  
Evaporating  
temperatures between  
-31°F and 59°F

#### Applications:

Ice makers, etc.

### L/MBP

(Low/Medium Back Pressure)  
Evaporating  
temperatures between  
-31°F and 23°F

#### Applications:

Commercial display counters,  
and drinking fountains

### MPB

(Medium Back Pressure)  
Evaporating  
temperatures between  
14°F and 32°F

#### Applications:

Fresh food cabinets, drink  
coolers,  
ice makers, walk-in coolers  
and freezers.

### HBP

(High Back Pressure)  
Evaporating  
temperatures between  
32°F and 59°F

#### Applications:

Fresh food cabinets,  
icemakers, dehumidifiers,  
dryers, etc.

# embraco

**30 Month Warranty**

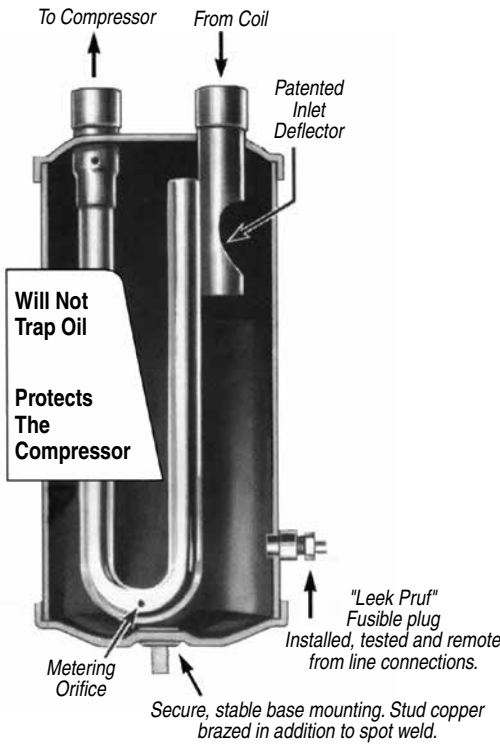


NE/NEK Style



NT Style

# Suction Accumulators



## The Complete Line For Exact Selection!

Air conditioning, heat pump and many other applications require intermittent operation of the refrigeration compressor. Especially in remote applications, the suction line may trap or hold large quantities of liquid which are suddenly dumped into the compressor upon start-up. This is frequently the cause of broken valves, pistons, snapped or bent connecting rods, blown gaskets and bearing washout.

Installation of a Suction Accumulator in the suction line just before the compressor eliminates damage from a sudden surge of refrigerant and/or oil during the start-up process.

## Features

- Inlet deflector permits tangential entry of fluid.
- Inlet marked with metal plate to prevent error in hook-up.
- 4" to 6" diameters are complete with fusible plug and installed to comply with UL & cUL.
- Copper nipples are standard on vertical UL and cUL models
- Controlled hydrogen copper brazing process provides ultimate in cleanliness and uniform strength.

Part #	Dia. (")	Len. (")	Wt. (lbs)	Maximum Refrigerant Holding Capacity (LBS.)				UL Code Ident	Suction Inlet/Outlet I.D. Size			Evap Temp (°F)	Recommended Tons of Refrigeration							
				R410A	R134a	R22	R404A						Refrigerant							
													R410A		R134a		R22		R404A	
													Max	Min	Max	Min	Max	Min	Max	Min
48-3816	4.0	7.1	3.0	1.9	2.2	2.1	1.9	KN	}	1/2	{	+20	0.65	0.15	0.31	0.09	0.62	0.14	0.58	0.10
48-3817	4.0	11.1	4.6	3.7	4.2	4.2	3.7	KN				0	0.47	0.11	0.22	0.08	0.45	0.11	0.40	0.08
48-3701	4.0	7.1	3.0	1.9	2.2	2.1	1.9	KN	}	5/8	{	+40	2.10	0.19	0.90	0.13	2.00	0.18	1.55	0.15
48-3702	4.0	11.1	4.6	3.6	4.2	4.1	3.6	KN				-20	0.58	0.11	0.22	0.08	0.55	0.11	0.45	0.08
48-3703	4.0	11.4	5.2	3.5	4.1	4.0	3.7	KN	}	3/4	{	+20	2.21	0.19	1.03	0.11	2.10	0.18	2.00	0.18
48-3738	5.0	13.2	7.7	7.0	8.0	7.9	6.9	DN	}	7/8	{	+20	3.15	0.47	1.62	0.30	3.00	0.45	3.00	0.45
48-3700	6.0	15.0	13.0	11.5	13.1	12.9	11.4	MN	}	1 1/8	{	0	4.51	0.59	1.83	0.36	4.30	0.56	4.00	0.39
48-3706	6.0	20.3	17.0	15.6	17.8	17.5	15.4	MN	}	1 3/8	{	0	8.08	1.68	3.42	0.97	7.70	1.60	7.00	0.56
48-3704	6.0	24.8	20.5	20.1	22.9	22.6	19.9	MN	}	1 5/8	{	+20	19.9	2.00	8.10	1.16	11.0	19.0	10.0	1.90



**Refrigeration Research, Inc.**



# Receivers

Refrigeration Research Receivers have been made continuously for over 50 years. Standard catalog models are shown below, however, hundreds of special models are made as well. They are used widely by original equipment manufacturers throughout the industry. They are backed by a reputation for quality and service. Contact engineering department for special designs.

Available in a broad range of types and sizes, these receivers with valves and fittings attached are hydrogen brazed for cleanliness and pressure tested for reliability. A 430°F Fusible plug is installed on all receivers except #2030, #2038, #2039, and #9028. All valves are supplied with steel stem caps with copper gaskets and brass flare nuts and caps. All receivers are powder coated for excellent corrosion resistance.

Pressure tested for 500 p.s.i. maximum working pressure.



Part #	Pump Down Capacity	Diameter & Length Over End Caps	Inlet	Outlet	WT. LBS.	UL Code Ident.
48-1920	2	3 1/2 x 7 1/2	1/4 SAE Fitting	1/4 SAE Valve	2.9	PN
48-1917	3 Lb.	3 1/2 x 10	1/4 SAE Fitting	1/4 SAE Valve	3.5	PN
48-1921	4 Lb.	4 x 10	1/4 SAE Fitting	1/4 SAE Valve	4.5	KN
48-1918	6 Lb.	5 x 10	1/4 SAE Fitting	1/4 SAE Valve	7.2	EN
48-1911	10 Lb.	6 x 12	3/8 SAE Fitting	3/8 SAE Valve	10.9	MN
48-3212	16 Lb.	6 x 18	1/2 SAE Fitting	1/2 SAE Valve	15.6	MN



**Refrigeration  
Research, Inc.**

### HIGHER PRESSURE BULLDOG DISCHARGE MUFFLERS

These "Green Label" discharge mufflers are uniquely designed for the higher pressure requirements for systems using R-410A. The tough requirements needed for these special models are made to the approved Underwriters Laboratory requirements necessary to meet the 675 p.s.i.g. working pressure. The chart below shows the models available.



Part #	Tons	Fitting Size (inches)	O.D. (Inches)	Overall Length (Inches)	UL Code
48-MH-2	2	3/8	2	7-7/16	MRN
48-MH-3	3	1/2	2	7-7/16	MRN
48-MH-5	5	5/8	2	7-7/16	MRN
48-MH-10	7-1/2 to 10	7/8	3	9	MSN
48-MH-15	10 to 15	1-1/8	3	9-1/4	MSN
48-MH-20	15 to 25	1-3/8	3	13-3/4	MSN
48-MH-60	50 to 75	2-1/8	6	26-1/2	MVN

48-MH-60 is rated for 472 PSI for CE

### Coaxial Condensers

Coaxial water cooled condensers of various configurations are available as shown below. These counterflow condensers provide good performance at a minimum cost. Catalogued or special receivers up through 6" diameter can be provided for use with these condensers as a package for convenient hook-up. Inquiries for special runs are welcomed. All coaxial condensers come complete with brackets.



Part #	TONS	Refrigerant Connections		Water Connections		Overall Dimensions			Weight (lbs)	UL Code
		IN	OUT	IN	OUT	H	L	W		
47-5027-S	1/3	3/8" I.D.	3/8" I.D.	1/2" I.D.	1/2" I.D.	3"	9-1/4"	6-1/2"	3	CC033
47-5028-S	1/2	3/8" I.D.	3/8" I.D.	1/2" I.D.	1/2" I.D.	3-7/8"	9-1/4"	6-1/2"	5	CC050
47-5022-S	3/4	3/8" I.D.	3/8" I.D.	1/2" I.D.	1/2" I.D.	4-3/4"	9-1/4"	6-1/2"	10	CC075
47-5023-S	1	3/8" I.D.	3/8" I.D.	1/2" I.D.	1/2" I.D.	5"	11"	8-1/2"	12	CC100
47-5024-S	1-1/2	3/8" I.D.	3/8" I.D.	5/8" I.D.	5/8" I.D.	4-1/4"	11-3/4"	10"	14	CC150
47-5025-S	2	1/2" I.D.	1/2" I.D.	5/8" I.D.	5/8" I.D.	5-1/4"	11-3/4"	10"	17	CC200
47-5026-S	3	1/2" I.D.	1/2" I.D.	5/8" I.D.	5/8" I.D.	6-1/2"	12-7/8"	12"	27	CC300
47-8267-S	1	1/4" S.A.E Flare	1/4" S.A.E Flare	1/2" I.D.	3/8" I.D.	8"	11"	7-3/4"	11	ATCC100
47-8268-S	2	1/4" S.A.E Flare	1/4" S.A.E Flare	1/2" I.D.	3/8" I.D.	9-3/4"	11"	7-3/4"	16	ATCC200

S-steel outer tube with copper inner tube

# enviro REFRIGERANTS



From the makers of R414B comes a NEW economic replacement for R12. Like all Enviro drop-in replacement refrigerants, R417C has ZERO potential for ozone depletion and requires no oil change or major system modifications.

[www.alltemp.ca](http://www.alltemp.ca)







UL & cUL listed

### 1 Piece Non-Metal Connectors

- Installation - no disassembly required, simply screw the connector onto the conduit.
- Design allows superior liquid tight seal and optimum pull strength.
- PVC construction.
- Produced from UV rated material for long outdoor life.
- Time and cost saving benefits over other brands.
- Reusable design.
- Ideal for conduit assemblies and installers.
- Resists salt water, weak acids, gasoline, alcohol, oil, grease & most common solvents.

#### Applications:

- Indoor or outdoor use
- OEM equipment
- Field installations

### 1/2" One Piece Connectors

Part #	Size	Description	Package
11-88503	1/2"	Straight Connector	25
11-88518	1/2"	90° Connector	10

### 3/4" One Piece Connectors

Part #	Size	Description	Package
11-88505	3/4"	Straight Connector	25
11-88520	3/4"	90° Connector	10

## Liquid Tight Connectors - Two Piece



UL listed  
CSA certified

### 2 Piece Non-Metal Connectors

- Installation - simply push conduit onto ferrule, then tighten the domed sealing nut. The completed assembly is then secured to the chassis using the locknut.
- Produced from UV rated material for long outdoor life.
- Conduit & connector system is completely reusable.
- Nylon construction
- Standard colour - Gray
- Resists salt water, weak acids, gasoline, alcohol, oil, grease & most common solvents.

#### Applications:

- Indoor or outdoor use
- OEM equipment
- Field installations

### 1/2" Two Piece Connectors

Part #	Size	Description	Package
11-88403	1/2"	Straight Connector	25
11-88418	1/2"	90° Connector	10

### 3/4" Two Piece Connectors

Part #	Size	Description	Package
11-88405	3/4"	Straight Connector	25
11-88420	3/4"	90° Connector	10

## Conduit

### Flexible Conduit

- Rigid coils combined with flexible PVC construction provide superior wire protection in a variety of extreme environmental & application conditions.
- Resilient to abuse, pulling or crushing.
- Smooth inside for easier wire feeding & pulling.
- Use with nylon or PVC straight or 90° Liquid Tight connectors.
- Metallic connectors can be used for Liquid Tight conduit.
- Temperature range: -18°C to 75°C.
- UL listed, CSA certified.



### Conduit

Part #	Size	Length
11-8431	1/2"	100'
11-8432	3/4"	100'

#### Applications:

- HVAC Equipment
- Refrigeration Units
- Pumps
- Machine Tools
- Marine Equipment
- Motors & Controls
- Printing Equipment

## Whips

### Installation Whips

- Pre-Assembled Whips Include:
- Non-Metallic Liquid Tight conduit (cUL listed).
  - 2 One-piece non-metal PVC fittings applied (cUL listed).
    - 1 straight Liquid Tight fitting.
    - 1 90° Liquid Tight fitting.
  - 2 reducing washers on 1/2" whips.
  - 11" wire exposure each end.



### Whips

Part #	Size	Length	Max Amp Rating	Gauge
11-4500	1/2"	4'	60	10
11-6500	1/2"	6'	60	10
11-6524	1/2"	6'	60	10
11-6750	3/4"	6'	100	8**

\* 11-6524 24" exposed wire each end - Rheem Ruud Special  
\*\* 11-6750 Ground wire = 10 Gauge.



## Metallic-Non Fusible A/C Disconnects

- Lift-Up Door (Switch & Pull-Out)
- Straight-in, straight-out wiring saves time & money.
- Lift-up removable door for easy wiring access.
- 12.7 × 18.4 × 6.9cm (5.0" × 7.25" × 2.75") - compact NEMA 3R enclosure.
- Keyhole mounting slot for easy installation.
- Six (1/2" × 3/4" × 1") knockouts reduce installation time.
- Heavy zinc coated steel with high quality electro-deposition paint finish for a maximum, corrosion resistant enclosure.
- Terminals approved for 60°C & 75°C (140°F & 167°F) wire.
- Padlock provisions to prevent unauthorized access.
- UL & cUL approved.

## Features

- Easy to install
- Easy wiring access
- Lightweight, compact



## Non Automatic Switch

- On/Off switch... No more pull-outs to lose.

## Pull-Out

- Pull-out & pocket! Now that's service security!

Switch	Pull-Out	HP	Volts	Amps	Phase	AIC Rating
11-U065NA1	11-U065P	10	240	60	1	10,000
-	11-DS60PNF	10	240	60	1	10,000

## Drain Tubing

08-2501-100  
Illustrated



## Features

- Soft shell.
- Does not kink!
- Colour - clear.
- Individually boxed (c/w knock-out hole).

## Drain Tubing (Poly-Vinyl)

Part #	ID	OD	Wall	Length	Max. PSI 70°F
08-2500-100	1/4"	3/8"	1/16"	100'	54
08-2501-100	3/8"	1/2"	1/16"		45
08-2502-100	1/2"	5/8"	1/16"		30
08-2503-100	5/8"	3/4"	1/16"	50'	30
08-2504-50	3/4"	29/32"	5/64"		20
08-2505-50	7/8"	1 1/16"	3/32"		20

Operating Temperatures 70°F (Ideal) to 150°F (Max)  
Larger rolls or other wall thicknesses available upon request.

### Features

- Quiet - Less than 21dBA\*
- Compact Size: One of the smallest pumps on the market
  - Pump Unit: 3.36" x 1.08" x 1.92"
  - Level Sensor Unit: 3" x 1.44" x 1.44"
- Reliable and secure
  - Flowrate up to: 3.96 GPH (15L/h)
  - Easy to maintain
  - Alarm options: Stops air conditioner to avoid overflow
  - Minimal mobile parts for reduced maintenance
- Easy to install
  - Reversible plate for left or right side installation
  - Quick push fit electrical connections
  - Pre-assembled and connected
  - Illustrated step by step installation guide
  - Clean looking finishing duct with ample room for 3/8" & 5/8" lines
- IP64 - Waterproof and dust proof. Prevents connections from oxidization.
- Small to mid-sized A/C units up to 2.8 tons (34,000 Btu)



\*Average level pressure at 3.3 ft, calculated on acoustic power level LwAd = 32.8 dBA (ref. 1pW) NF EN ISO 3744 and 4871 standards.

Description	FLOWATCH Design Pre-assembled mini condensate pump kit	mini FLOWATCH 2 Pump Only
115 V 60Hz 19W	<b>WP-DE05LUA660</b>	<b>WP-DE05LUA520</b>
230 V 60Hz 19W	<b>WP-DE05LUB130</b>	<b>WP-DE05LUB110</b>
Vibration belt, Pump stand & level sensor stand	<b>INCLUDED</b>	<b>WP-GC1KFX2010</b>

#### FLOWATCH Design Kit Includes:

- mini FLOWATCH 2 condensate pump w/ detection unit
- 3.15" x 31.5" x 2.16" (8cm x 80cm x 5.5cm) duct
- Reversible (left or right) fixing plate and elbow cover
- Ceiling plate • Complete fixing accessories



Standex flood prevention switches use a magnetic reed switch to safeguard against condensate overflow buildup. With tee, elbow and bracket models to suit any installation – these low voltage switches are ideal for commercial and residential HVAC applications. Each model of the FPS family is simple to install, easy to service and extremely reliable. As water level in the main or auxiliary drain pipe rises (due to a clogged air conditioning condensate drains) the FPS shuts off the system – thus preventing water from overflowing which could cause damage to floors, walls and ceilings. Compliant with UL508, and manufactured of materials that will not rust or stick, the FPS operates smoothly every time.

AIR CONDITIONING PRODUCTS



### Features

- Designed to be installed on the primary or auxiliary drain line
- Tee fitting mount
- Designed to fit in any 1” Schedule 40 pipe fitting
- O-ring to ensure proper fitment and liquid seal
- Vent hole to prevent vacuum failure
- Easy to install
- Removable sensor for cleaning, inspection and drain line flush



### Features

- Designed to be installed on the auxiliary drain line
- Elbow fitting mount
- Designed to fit in any 1” Schedule 40 pipe fitting
- O-ring to ensure proper fitment and liquid seal
- Vent hole to prevent vacuum failure
- Easy to install
- Removable sensor for cleaning, inspection and drain line flush



### Features

- Stainless Steel
- ‘Easy Clip’
- Can adjust to fit most metal and plastic drain pans
- Custom trip heights can be achieved to work with different drain pan depths
- Standex has a Low-Rise float that will operate in as little as 0.200” of water height

Part #	Cross Reference
<b>WP-FPS-T</b>	Rector Seal: SS1, Madison: M8000-C
<b>WP-FPS-L</b>	Rector Seal: SS2, Madison: M8000-C
<b>WP-FPS-B</b>	Rector Seal: SS3, Madison: M8000

## Installation Options

- Standard 24 volt AC transformer
  - This is norm, our sensors tie in on the RED or YELLOW wires on the transformer
  - This is NORMALLY CLOSED: the sensor will open the circuit and shut down the HVAC unit
- Intelligent Thermostats
  - This can be either a NORMALLY CLOSED or NORMALLY OPEN sensor
  - Logic level voltage
  - Sensor is tied into the thermostat signal wire and if the sensor trips, the thermostat shuts down the HVAC unit

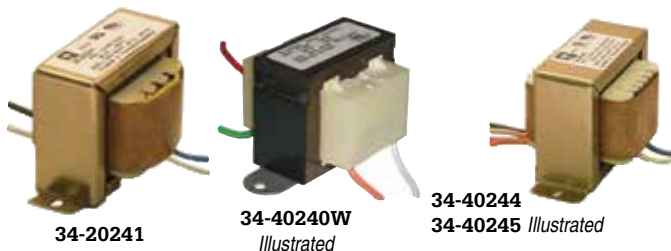
### Features

- Compact superior design.
- Individually boxed with instructions.
- Includes necessary mounting hardware.
- Complete cross-reference.

### Control Transformers

Control transformers are designed for use in 2.5, 12 or 24 volt alternating current (AC) control systems, including air conditioning circuits, thermostats, gas valves, relays and or other applications that do not exceed the listed ratings. These transformers can be used to replace any transformers of the same primary voltage and equal or smaller VA ratings.

### SPECIALLY DESIGNED FOR LOW VOLTAGE CONTROL APPLICATIONS IN THE INDUSTRIAL HEATING & COOLING INDUSTRY!



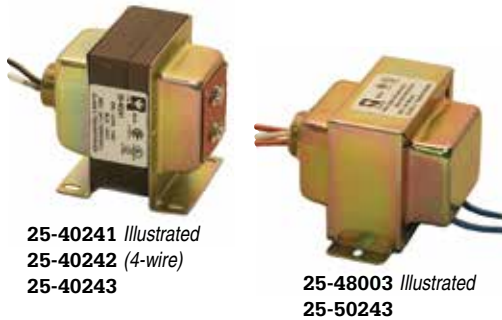
34-20241

34-40240W  
Illustrated

34-40244  
34-40245 Illustrated

### Foot Mount

Part #	VA	Primary Voltage	Secondary	
			Voltage	Connections
34-20241	20	120	24	Wire
34-40244	40	120	24	Wire
34-40245	40	120/ 208/ 240	24	Wire
34-50254	50	575	24	QC



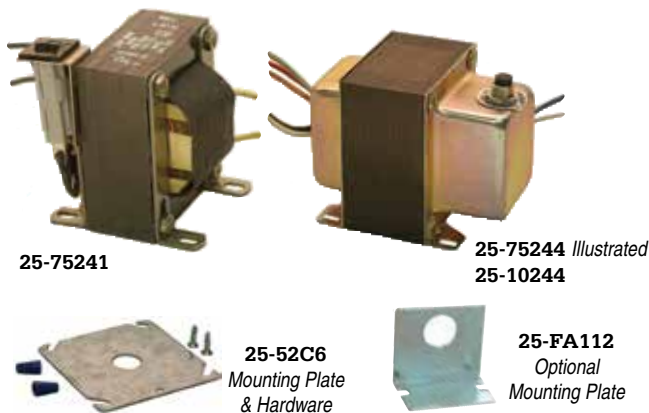
25-40241 Illustrated  
25-40242 (4-wire)  
25-40243

25-48003 Illustrated  
25-50243

### Multi Mount (Foot, Plate, Conduit)

- 34-52C6 mounting plate, (2) screws & (2) wire connectors included.

Part #	VA	Primary Voltage	Secondary	
			Voltage	Connections
34-40241	40	120	24	Screw
34-40242	40	208/ 240 / 277	24	Screw
34-40243	40	120/ 208/ 240	24	Screw
34-48003	48	120/ 208/ 240	2.5 / 12 / 24	Wire
34-50243	50	120/ 208/ 240	24	Wire



25-75241

25-75244 Illustrated  
25-10244

### Foot Mount

Heavy Duty (c/w Circuit Breaker)

Part #	VA	Primary Voltage	Secondary	
			Voltage	Connections
34-75241	75	120	24	Wire
34-75244	75	120/ 208/ 240/ 480	24	Wire
34-10244	96	120/ 240/ 277/ 480	24	Wire



25-52C6  
Mounting Plate  
& Hardware



25-FA112  
Optional  
Mounting Plate

## Features:

- Automatic & manual reset\*
- Corrosion resistant.
- Environmentally sealed (water tight switched).
- Non-position-sensitive.
- Low/high pressure cycling.
- Condenser fan cycling.
- Variety of fixed pressure settings.
- Complete with 1/4 inch SAE female flare fitting with valve core depressor.
- 18 inch leads (longer lead lengths available).

\*Note: Automatic reset controls may be used to replace manual reset controls.

## Automatic Reset Pressure Controls

Miniature pressure controls are fixed setting controls used on refrigeration, air conditioning, or heat pump systems using R12, R22, R410A or R502 refrigerants. Both low (suction) and high (discharge or head pressure) sensing controls are available. These single function controls, single pole, single throw (SPST) switches may be used in a variety of applications: direct control of single speed fan motors or compressors; in conjunction with a contactor for pilot duty; or to control electronic management systems.

The RMF Miniature Pressure control will cycle a single speed condenser fan when the predetermined head pressure (cut in) is reached. When the head pressure is reduced to a predetermined pressure (cut out), the fan will shut off. (Normally open switch). CSA & UL approved.

## Pressure Control Switches

Part #	Application	Setting (psig)		Cross Reference
		Cut Out	Cut In	
41-RML-520	Low Pressure Cut Out	5	20	33329, PS-LP05-20, PC002.
41-RML-1025		10	25	33330, PS-LP10-25, 3100-050.
41-RML-1535		15	35	33333.
41-RML-1555L		15	55	Long Lead (30").
41-RML-2045		20	45	
41-RML-2580		25	80	33362, 33363, 33336, PS-LP25-80, 3100-051.
41-RML-3560		35	60	PC001.
41-RML-4080		40	80	33364, PS-LP40-80, 3100-052.
41-RML-4560		45	60	33339.
41-RML-90120F		90	120	
41-RMF-75120	Condenser Fan Cycling	75	120	Suitable for R410A
41-RMF-110170		110	170	
41-RMF-150225		150	225	
41-RMF-190275		190	275	33341.
41-RMF-300400		300	400	
41-RMH-250180	High Pressure Cut Out	250	180	33350.
41-RMH-300200		300	200	33310, 33355, PS-HP300-200.
41-RMH-325225		325	225	33313.
41-RMH-350250		350	250	33316, 33356, PS-HP350-250, 3100-150, PC150.
41-RMH-375275		375	275	33319.
41-RMH-400200		400	200	
41-RMH-400300		400	300	33322, 33357, 33358, PS-HP400-300, 3100-151, PC151.
41-RMH-425325		425	325	33325, 33359, PC100.
41-RMH-600475		600	475	Suitable for R410A
41-RMM-350	Mini Pressure Manual	-	350	
41-RMM-410		-	410	33365
41-RMM-430		-	430	33352
41-RMM-440		-	440	33350
41-RMM-600		-	600	

The miniature pressure controls are supplied with 12 inch, 18 AWG stranded leads, stripped 1/2 inch. RML and RMF are blue – RMH are black.

1/4 inch, SAE female flare fitting with valve core depressor.

All RML, RMF and RMH controls are individually packaged and equipped with a 1/4" SAE female flare fitting. For application requiring a pressure connector other than 1/4" female flare, use an appropriate adapter or connector.

*Example: 02-C31004 – 1/4" SAE male flare to 1/4" tube adapter  
02-C31482 – 1/4" SAE male flare to 1/8" MPT connector*

All RML, RMF and RMH controls will have pressures stamped on the control. Normally, the OEM's pressure is stamped on the control.

Automatic reset controls may be used to replace manual resets.

Electrical ratings must not be exceeded and all electrical connections must comply with local approval authorities.

Operating Ambient -20° to 150°F (-28° to 65°C).  
Refrigerant -35° to 275°F (-37° to 135°C).

VAC	FLA	LRA	PD VA
24	-	-	48
120	10	40	375
240	5	20	375
277	-	-	37



41-RML-2045  
Illustrated



### Rotom Definite Purpose Magnetic Contactors

Contactors are designed to establish or interrupt a power circuit. Definite purpose contactors unlike general purpose contactors are non-rebuildable electronic controls designed for specific application with clearly defined operating conditions.

#### FEATURES:

- Compact size.
- Quieter than traditional designs.
- Far more efficient operation.
- Universal electrical connections.
- Quick connect terminals.
- Universal galvanized mounting plates.
- Protective contact cover.
- Snap on auxiliary contacts.
- Individually labelled & packaged.
- Easy to understand part numbers.
- Complete cross reference.
- cURus, UL, CSA & CE approved.
- Price competitive.

#### Contactor Terminal Types

- **30 Amp.** = #10-32 Combination Screw Terminals.
  - **40 Amp.** = # 14-4 Aluminum Compression Lug Terminals With 1/4"-20 Screws.
  - **50 - 60 Amp.** = # 14-2 Aluminum Compression Lug Terminals With 1/4"-20 Screws.
  - **75 - 90 Amp.** = # 14-1 Aluminum Compression Lug Terminals With 1/4"-20 Screws.
- Custom Terminal Type Models Available Upon Request!**



**HC-13024**  
1 Pole Contactor With Shunt Illustrated

#### One Pole Contactors

- One pole contactor with shunt
- UL, CSA, CE Approved
- 4 - 1/4" Brass Spade Terminals Per Power Connection
- #10-32 Combination Screw Terminals
- 50/ 60 Hz

Part #	Full Load Amps.	Coil Voltage 50/60	Resistive Amps.	Locked Rotor Amps. @240V	Height	Width	Depth
HC-13024	30	24	40	150	2.39"	2.00"	3.29"
HC-130120	30	120	40	150	2.39"	2.00"	3.29"
HC-130240	30	208/240	40	150	2.39"	2.00"	3.29"



**HC-23024**  
2 Pole Contactor Illustrated

#### Two Pole Contactors

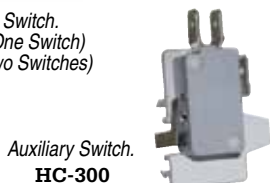
- UL, CSA, CE Approved
- 30 Amp.= 4 - 1/4" Brass Spade Terminals Per Power Connection
- 40 Amp.= 4 - 1/4" Copper Spade Terminals Per Power Connection
- 50/ 60 Hz
- Contact Cover Over Contacts (40 Amp Models & Up)

Part #	Full Load Amps.	Coil Voltage 50/60	Resistive Amps.	Locked Rotor Amps. @240V	Height	Width	Depth
HC-23024	30	24	40	150	2.45"	2.00"	3.29"
HC-230120	30	120	40	150	2.45"	2.00"	3.29"
HC-230240	30	208/240	40	150	2.45"	2.00"	3.29"
HC-24024	40	24	50	200	2.63"	2.00"	3.29"
HC-240120	40	120	50	200	2.63"	2.00"	3.29"
HC-240240	40	208/240	50	200	2.63"	2.00"	3.29"



Auxiliary Switch.  
**HC-600**

Auxiliary Switch.  
**HC-250** (One Switch)  
**HC-500** (Two Switches)



Auxiliary Switch.  
**HC-300**

#### Auxiliary Contact Switches

- Clips Directly Onto Either End Of Any Rotom Contactor
- 1/4" Quick Connect Terminals
- Snap Fast Action Switch
- UL & CSA Approved When Used With UL & CSA Approved Rotom Contactors

Part #	Contactors FLA	Continuous Amps.	Voltage Rating	Description	Height	Width	Depth
HC-250	30 & 40	10	300	1 x SPDT, N.O. & N.C.	2.81"	2.61"	0.67"
HC-500	30 & 40	10	300	2 x SPDT, N.O. & N.C.	2.81"	2.61"	0.67"
HC-600*	30 & 40	10	600	2 Contacts x 1 Pole, N.O (make) or N.C. (break)	2.77"	3.13"	0.70"
HC-300	50 & 60	10	300	1 x SPDT, N.O. & N.C.	2.00"	1.34"	0.79"

\* 6-32 Screw Terminal Model Available - Order Part # **HC-600S**

## Contactor Nomenclature

**HC - 1 30 24**

HC = Product Code

1 = Poles (1, 2, 3 or 4)

30 = Full Load Amps. (30A, 40A...)

24 = Coil Voltage (24, 120 or 240)



**HC-33024**  
3 Pole, 30-40 Amp  
Illustrated



**HC-360120**  
3 Pole, 50-90 Amp  
Illustrated

### Typical Applications

- Heating
- Ventilation
- Air Conditioning
- Refrigeration
  - Compressors
  - Motors
- Agriculture
- Pool & Spa Controls
- Food Service Equipment
- Welding Equipment
- Business Machines



**HC-44024**  
4 Pole Contactor Illustrated

## Three Pole Contactors

- UL, CSA, (CE 30 - 60 Amp)
- 30 Amp.= 2 - 1/4" Brass Spade Terminals Per Power Connection
- 40 Amp.= 2 - 1/4" Copper Spade Terminals Per Power Connection
- 50 - 90 Amp.= 2 - 1/4" Copper Spade Terminals & Aluminum Lug Per Power Connection
- 50/ 60 Hz
- Contact Cover Over Contacts (30 - 40 Amp Feature Built-In Test Button)

Part #	Full Load Amps.	Coil Voltage 50/60	Resistive Amps.	Locked Rotor Amps.@240V	Height	Width	Depth
HC-33024	30	24	40	180	2.99"	2.37"	3.75"
HC-330120	30	120	40	180	2.99"	2.37"	3.75"
HC-330240	30	208/240	40	180	2.99"	2.37"	3.75"
HC-34024	40	24	50	240	2.99"	2.37"	3.75"
HC-340120	40	120	50	240	2.99"	2.37"	3.75"
HC-340240	40	208/240	50	240	2.99"	2.37"	3.75"
HC-35024	50	24	65	300	3.62"	2.75"	4.00"
HC-350120	50	120	65	300	3.62"	2.75"	4.00"
HC-350240	50	208/240	65	300	3.62"	2.75"	4.00"
HC-36024	60	24	75	360	3.62"	2.75"	4.00"
HC-360120	60	120	75	360	3.62"	2.75"	4.00"
HC-360240	60	208/240	75	360	3.62"	2.75"	4.00"
HC-37524	75	24	90	450	4.05"	3.75"	5.18"
HC-375120	75	120	90	450	4.05"	3.75"	5.18"
HC-375240	75	208/240	90	450	4.05"	3.75"	5.18"
HC-39024	90	24	120	540	4.05"	3.75"	5.18"
HC-390120	90	120	120	540	4.05"	3.75"	5.18"
HC-390240	90	208/240	120	540	4.05"	3.75"	5.18"

## Four Pole Contactors

- UL, CSA, CE Approved
- 30 Amp.= 2 - 1/4" Brass Spade Terminals Per Power Connection
- 40 Amp.= 2 - 1/4" Copper Spade Terminals Per Power Connection
- 50/ 60 Hz
- Contact Cover Over Contacts With Built-In Test Button

Part #	Full Load Amps.	Coil Voltage 50/60	Resistive Amps.	Locked Rotor Amps.@240V	Height	Width	Depth
HC-43024	30	24	40	180	2.99"	2.75"	3.75"
HC-430120	30	120	40	180	2.99"	2.75"	3.75"
HC-430240	30	208/240	40	180	2.99"	2.75"	3.75"
HC-44024	40	24	50	240	2.99"	2.75"	3.75"
HC-440120	40	120	50	240	2.99"	2.75"	3.75"
HC-440240	40	208/240	50	240	2.99"	2.75"	3.75"



## Features

- 1.5 pole (1 pole with shunt) 30 & 40 amp to 2 pole 20, 25, 30 & 40 amp.
- Features lug, spade terminals and protective covers
- Compact size
- Universal galvanized mounting plates
- ARI 780/790 standards
- Brass/copper terminals
- Quick connect and screw terminals on coil.
- Snap on auxiliary contacts available
- cURus approved



### 1 Pole with Shunt and 2 Pole Models

Part #	Poles	Full Load Amps.	Coil Voltage 50/60	Locked Rotor Amps			Resistive Amps.	Termination	Furnas #
				240V	480V	600V			
DP-1P30A24	1.5	30	24	180	150	120	40	Screw Type	45EG10AJA
DP-1P30A120	1.5	30	120	180	150	120	40		45EG10AFA
DP-1P30A240	1.5	30	208/240	180	150	120	40		45EG10AGA
DP-1P40A24	1.5	40	24	240	200	160	50	Box Lug	45GG10AJAL, 45FG10AJA, 45GG10AJA
DP-1P40A120	1.5	40	120	240	200	160	50		45GG10AFAL, 45FG10AFA, 45GG10AFA
DP-1P40A240	1.5	40	208/240	240	200	160	50		45GG10AGAL, 45FG10AGA, 45GG10AGA
DP-2P20A24	2	20	24	120	100	80	30	Box Lug	45CG20AJ
DP-2P20A120	2	20	120	120	100	80	30		45CG20AF
DP-2P20A240	2	20	208/240	120	100	80	30		45CG20AG
DP-2P25A24	2	25	24	150	125	100	35	Box Lug	45DG20AJ
DP-2P25A120	2	25	120	150	125	100	35		45DG20AF
DP-2P25A240	2	25	208/240	150	125	100	35		45DG20AG
DP-2P30A24	2	30	24	180	150	120	40	Screw Type	45EG20AJ
DP-2P30A120	2	30	120	180	150	120	40		45EG20AF
DP-2P30A240	2	30	208/240	180	150	120	40		45EG20AG
DP-2P40A24	2	40	24	240	200	160	50	Box Lug	45GG20AJL
DP-2P40A120	2	40	120	240	200	160	50		45GG20AFL
DP-2P40A240	2	40	208/240	240	200	160	50		45GG20AGL

## Economy

### Features

- 3 pole 20, 25, 30, 40, 50 & 60 amp
- Totally enclosed
- Features lug, spade terminals and protective covers
- Compact size
- Universal galvanized mounting plates
- ARI 780/790 standards
- Push to test button
- Brass/copper terminals
- Quick connect and screw terminals on coil.
- Snap on auxiliary contacts available
- cURus approved



### 3 Pole Models

Part #	Poles	Full Load Amps.	Coil Voltage 50/60	Locked Rotor Amps			Resistive Amps.	Termination	Furnas #
				240V	480V	600V			
DP-3P20A24	3	20	24	120	100	80	30	Box Lug	-
DP-3P20A120	3	20	120	120	100	80	30		-
DP-3P20A240	3	20	208/240	120	100	80	30		-
DP-3P25A24	3	25	24	150	125	100	35	Box Lug	-
DP-3P25A120	3	25	120	150	125	100	35		-
DP-3P25A240	3	25	208/240	150	125	100	35		-
DP-3P30A24	3	30	24	180	150	120	40	Screw Type	42BF35AJ
DP-3P30A120	3	30	120	180	150	120	40		42BF35AF
DP-3P30A240	3	30	208/240	180	150	120	40		42BF35AG
DP-3P40A24	3	40	24	240	200	160	50	Box Lug	42CF35AJ
DP-3P40A120	3	40	120	240	200	160	50		42CF35AF
DP-3P40A240	3	40	208/240	240	200	160	50		42CF35AG
DP-3P50A24	3	50	24	300	250	200	65	Box Lug	42DF35AJ
DP-3P50A120	3	50	120	300	250	200	65		42DF35AF
DP-3P50A240	3	50	208/240	300	250	200	65		42DF35AG
DP-3P60A24	3	60	24	360	300	240	75	Box Lug	42EF35AJ
DP-3P60A120	3	60	120	360	300	240	75		42EF35AF
DP-3P60A240	3	60	208/240	360	300	240	75		42EF35AG
DP-3P75A24	3	75	24	450	375	300	90	Box Lug	42FE35AJ106
DP-3P75A120	3	75	120	450	375	300	90		42FE35AF106
DP-3P75A240	3	75	208/240	450	375	300	90		42FE35AG106
DP-3P90A24	3	90	24	540	450	360	120	Box Lug	42GE35AJ106
DP-3P90A120	3	90	120	540	450	360	120		42GE35AF106
DP-3P90A240	3	90	208/240	540	450	360	120		42GE35AG106

## Features

- 4 pole 20, 25, 30 & 40 amp
- Features lug, spade terminals and protective covers
- Totally enclosed
- Compact size
- Universal galvanized mounting plates
- ARI 780/790 standards
- Push to test button
- Brass/copper terminals
- Quick connect and screw terminals on coil.
- Snap on auxiliary contacts available
- cURus approved



## 4 Pole Models

Part #	Poles	Full Load Amps.	Coil Voltage 50/60	Locked Rotor Amps			Resistive Amps.	Termination	Furnas #
				240V	480V	600V			
<b>DP-4P20A24</b>	4	20	24	120	100	80	30	Box Lug	-
<b>DP-4P20A120</b>	4	20	120	120	100	80	30		-
<b>DP-4P20A240</b>	4	20	208/240	120	100	80	30		-
<b>DP-4P25A24</b>	4	25	24	150	125	100	35	Box Lug	-
<b>DP-4P25A120</b>	4	25	120	150	125	100	35		-
<b>DP-4P25A240</b>	4	25	208/240	150	125	100	35		-
<b>DP-4P30A24</b>	4	30	24	180	150	120	40	Screw Type	42BF25AJ
<b>DP-4P30A120</b>	4	30	120	180	150	120	40		42BF25AF
<b>DP-4P30A240</b>	4	30	208/240	180	150	120	40		42BF25AG
<b>DP-4P40A24</b>	4	40	24	240	200	160	50	Box Lug	42CF25AJ
<b>DP-4P40A120</b>	4	40	120	240	200	160	50		42CF25AF
<b>DP-4P40A240</b>	4	40	208/240	240	200	160	50		42CF25AG

### Features

- Auxillary switches for 3 & 4 pole 30 - 90 amp "DP" series contactors
- Compact size
- cURus approved



### Auxiliary Switches

Switch Size	Part #	Cont. Amps	Voltage Rating	Description	Connection
3 Pole, 20-60 Amp 4 Pole 30-60 Amp	DP-AS3	10	600	2 x SPST, N.O. & N.C.	Quick
	DP-AS6	10	600	2 x SPST, N.O. & N.C.	Screw
	DP-AS7	10	300	SPDT, N.O. & N.C.	Quick
	DP-AS8	10	300	2 x SPDT, N.O. & N.C.	Quick
	DP-AS1	10	600	SPST, N.O.	Quick
	DP-AS4	10	600	SPST, N.O.	Screw
	DP-AS2	10	600	SPST, N.C.	Quick
	DP-AS5	10	600	SPST, N.C.	Screw
3 Pole, 50-60 Amp	DP-AS10	10	300	SPDT, N.O. & N.C.	Quick
3 Pole, 75-90 Amp	DP-AS9	10	300	SPDT, N.O. & N.C.	Quick



**25-90290**  
Illustrated

### Specifications

- Temperature Range: -20°C (-4°F) to 40°C (104°F).
- Mechanical Life: 1,000,000 operations.
- Electrical Life: 100,000 operations (@ 16amp 240VAC Res.)
- Operate Time (typical): 25 ms at nominal coil voltage.
- Release Time (typical): 25 ms at nominal coil voltage.
- Dielectric Strength (at sea level for 1 min.):
  - 2500 Vrms coil to contact.
  - 1000 Vrms between open contacts.
- Coil Frequency: 50/60 Hz.
- Coil Insulation: Class A (105°C / 221°F).
- Coil Duty Cycle: Continuous.
- Terminals: ¼" quick-connects.
- Contact Material: Silver cerium
- Enclosure: Phenolic.

### Features

- Designed for switching single or two speed fan motor, relays, solenoids, resistive loads in cooling, heating or general purpose switching applications.
- Replace WR/ Essex/ RBM & Mars type 84 models
- Totally enclosed compact design.
- Quiet & reliable operations.
- UL & cUR (file E44211)
- Universal mounting bracket.

### Contact Rating

- 125/250 VAC

FLA	LRA	Inductive Amps	Resistive Amps
8	18	8 Amp Continuous	16 Amp Continuous

### 2-Pole HVAC Standard Duty Relays

Coil Voltage	Part # SPST	Part # SPDT	Coil Resistance DC OHMS ±10%	Nominal Current MA	Nominal VA Sealed	Inrush VA
24	<b>25-90290</b>	<b>25-90293</b>	90	146	3.5	4
120	<b>25-90291</b>	<b>25-90294</b>	2,000	29		
240	<b>25-90292</b>	<b>25-90295</b>	7,200	15		

## Totally Enclosed Fan Relays - Heavy Duty



**25-90380**  
Illustrated

### Specifications

- Temperature Range: -20°C (-4°F) to 40°C (104°F).
- Mechanical Life: 1,000,000 operations.
- Electrical Life: 100,000 operations (@ 25amp 277VAC Res.)
- Operate Time (typical): 25 ms at nominal coil voltage.
- Release Time (typical): 25 ms at nominal coil voltage.
- Dielectric Strength (at sea level for 1 min.):
  - 2500 Vrms coil to contact.
  - 1000 Vrms between open contacts.
- Coil Frequency: 50/60 Hz.
- Coil Insulation: Class A (105°C / 221°F).
- Coil Duty Cycle: Continuous.
- Terminals: ¼" quick-connects.
- Contact Material: Silver cadmium oxide.
- Enclosure: Phenolic.

### Features

- Designed for cooling, heating or general purpose switching equipment operating heavier loads.
- Replace WR/ Essex/ RBM & Mars type 184 models
- Totally enclosed compact design.
- Quiet & reliable operations.
- Universal mounting bracket
- UL & cUR (file E44211)
- SPST, SPDT & SPNO/SPNC models.

### Heavy Duty Relays

### Contact Rating

Coil Voltage	SPST Part #	SPDT Part #	SPNO-SPNC* Part #	Coil Resistance DC OHMS ±10%	Nominal Current MA	Nominal VA Sealed	Inrush VA	VAC	Amps	FLA	LRA	Inductive Amps	Resistive Amps
24	<b>25-90360</b>	<b>25-90370</b>	<b>25-90380</b>	77	167	4	4	125VAC	25	14	84	14 Amp Continuous	25 Amp Continuous @ 277 VAC
120	<b>25-90362</b>	<b>25-90372</b>	<b>25-90382</b>	2,000	33			250VAC		8	48	8 Amp Continuous	
240	<b>25-90364</b>	<b>25-90374</b>	<b>25-90384</b>	7,200	17			277VAC		7	42	7 Amp Continuous	

\*Isolated Contacts

## Totally Enclosed Relay - 2 Pole HVAC Switching Relays



**25-90340**  
Illustrated

### Specifications

- Temperature Range: -40°C (-40°F) to 54°C (130°F).
- Mechanical Life: 750,000 operations.
- Electrical Life: 100,000 operations.
- Coil Frequency: 50/60 Hz.
- Coil Insulation: Class B.
- Coil Duty Cycle: Continuous.
- Terminals: ¼" quick-connects.
- Contact Material: Silver cadmium oxide.
- Enclosure: Phenolic.
- Dimensions 2.13" x 1.88" x 2.25".

### Features

- Intended for many applications in air conditioning, refrigeration, heating and general purpose switching.
- Replaces Honeywell, White-Rodgers/RBM & Mars (cross reference in packaging)
- Semi-enclosed compact design.
- Quiet & reliable operations.
- Universal mounting bracket
- Molded terminal numbers and circuit diagram on top of relay.
- UL & cUR (file E44211).
- 2 Pole DT mode


### Heavy Duty Relays

### Contact Rating

Coil Voltage	DPDT Part #	Terminals 1,2,3.	Terminals 4,5,6.	Resistance DC OHMS ±10%	Nominal Current MA	Nominal VA Sealed Max.	Inrush VA Max.	Cross Reference			VAC	Amps General Use	HP	LRA	FLA
								WR/RBM	Honeywell	Mars					
24	<b>25-90340</b>	Power	Power	15	334	8	21.5	90-340	R4222B1082	90340	125V	15	3/4	82.8	13.8
120	<b>25-90341</b>			90-341	R4222B1090			90341	208V	45.6	7.6				
240	<b>25-90342</b>			90-342	R4222D1013			90342	250V	41.4	6.9				
											277V	-	36.0	6.0	


## Universal Relay

### Universal Motor Starting Relay

Part #	Features & Applications	Specifications	Cross Reference
 <b>24-UMSR50</b>	<ul style="list-style-type: none"> <li>Patented differential voltage sensing</li> <li>No user-adjustments required</li> <li>Non-positional mounting configuration</li> <li>50A Switching capabilities</li> <li>Universal mounting bracket for easy installation</li> <li>.250" quick connect termination</li> <li>Safety timer</li> <li>Ideal for A/C, commercial refrigeration, heat pump, or any single-phase motor application up to 10HP</li> </ul>	<p>Input:</p> <ul style="list-style-type: none"> <li>Voltage Rating: 110-270 VAC, Single Phase</li> <li>Maximum Voltage Contact Rating: 502 VAC (absolute)</li> </ul> <p>Motor Power Rating: Up to 10 HP</p> <p>Operating Position: Non-positional</p> <p>Safety Time Out: Approximately 1-second per 100 microfares</p> <p>Consumption: 5VA max.</p> <p>Insulation: Class B (130°C); Conforms to IEC 1000-standards(6kV impulse / 6kV contact)</p> <p>Life Expectancy (minimum operations):</p> <ul style="list-style-type: none"> <li>Mechanical:                             <ul style="list-style-type: none"> <li>1 x 10(6)</li> </ul> </li> <li>Electrical:                             <ul style="list-style-type: none"> <li>1 x 10(6) at 16A 400 VAC</li> <li>5 x 10(5) at 35A 400 VAC (break only)</li> <li>5 x 10(5) at 50A 400 VAC (break only)</li> </ul> </li> </ul> <p>Contact Rating: 50A (break only), 400 VAC cos <math>\phi</math> = 0.7 to 0.8</p>	<p>Supco: APR5, SUPR</p> <p>All standard potential relays</p>


## Lockout Relay

### Lockout Protection Relay


Part #	Features & Applications	Specifications	Cross Reference
 <b>24-ICM220</b>	<ul style="list-style-type: none"> <li>Low cost lockout relay</li> <li>Ideal for use with safety/interlock switches</li> <li>Replaces impedance relay Series 84 and 93</li> <li>UL 873 recognition as a compressor controller</li> </ul>	<ul style="list-style-type: none"> <li>Voltage: 18 to 30 VAC</li> <li>Frequency: 50 to 60 Hz</li> <li>Relay: 1 form C</li> <li>Relay Contacts: 2 amps maximum @ 30 VAC resistive</li> <li>Power Consumption: 2 watts maximum during lockout</li> </ul>	<p>Essex: Impedance relays series 84 and 93</p>

## Delay On Make Timers

### Ideal For Compressor Staging


Part #	Features & Applications	Specifications	Cross Reference		
 <b>24-ICM102</b>	<ul style="list-style-type: none"> <li>Universal voltage operation.</li> <li>Higher 1.5 amp power rating.</li> <li>Knob-adjustable time delays.</li> <li>Works with anticipator-type thermostats.</li> <li>One model replaces many in field.</li> <li>Ideal for compressor staging.</li> <li>Simple 2-wire hook-up.</li> <li>"F" suffix denotes 6" wire leads.</li> <li>Compact 2" x 2" cube.</li> </ul>	<ul style="list-style-type: none"> <li>Control: 18-240 VAC.</li> <li>1.5 amps.</li> <li>15 amp inrush.</li> <li>40 mA holding current.</li> <li>Adjustable delays 0.03 to 10 min. (1.8-600 sec.).</li> <li>Voltage drop: 2.5V @ 1.5 amps.</li> </ul>	<table border="0"> <tr> <td> <b>Diversified</b>                      • AC-800                      • ASC-600, 601  <b>Gemline</b>                      • 1C310, 1C213  <b>Mars</b>                      • 32391, 32367                 </td> <td> <b>Robertshaw</b>                      • 3310-068  <b>Supco</b>                      • TD-68, TD-69  <b>Watsco</b>                      • EAC-701-ADJ                      • EAC-700-A                 </td> </tr> </table>	<b>Diversified</b> • AC-800 • ASC-600, 601 <b>Gemline</b> • 1C310, 1C213 <b>Mars</b> • 32391, 32367	<b>Robertshaw</b> • 3310-068 <b>Supco</b> • TD-68, TD-69 <b>Watsco</b> • EAC-701-ADJ • EAC-700-A
<b>Diversified</b> • AC-800 • ASC-600, 601 <b>Gemline</b> • 1C310, 1C213 <b>Mars</b> • 32391, 32367	<b>Robertshaw</b> • 3310-068 <b>Supco</b> • TD-68, TD-69 <b>Watsco</b> • EAC-701-ADJ • EAC-700-A				

### Anti-Short Cycle Protection

Part #	Features & Applications	Specifications	Cross Reference		
 <b>24-ICM203</b>	<ul style="list-style-type: none"> <li>Universal voltage operation.</li> <li>Higher 1.5 amp power rating.</li> <li>Compressor lockout/ anti-short cycle timer.</li> <li>Helps to protect compressors from damage caused by rapid short cycling.</li> <li>Simple, 2-wire hook-up.</li> <li>24-ICM203: (ATB)</li> <li>Compact 2" x 2" package.</li> </ul>	<ul style="list-style-type: none"> <li>Control: 18-240 VAC.</li> <li>1.5 amps.</li> <li>15 amp inrush.</li> <li>Knob-adjustable delays 0.03 to 10 min. (1.8 to 600 Seconds).</li> <li>Voltage Drop:                             <ul style="list-style-type: none"> <li>3.5V typical.</li> <li>4.5V max.</li> </ul> </li> <li>40 mA holding current.</li> </ul>	<table border="0"> <tr> <td> <b>Diversified</b>                      • ASC-500                      • ASC-501                      • ASC-502                      • ASC-503                      • ASC-505-5  <b>Gemline</b>                      • 1C320                 </td> <td> <b>Mars</b> 32392  <b>Robertshaw</b>                      • 3310-072  <b>Supco</b>                      • TD-73  <b>Watsco</b>                      • EAC-501-ADJ                      • EAC-501-ADJ-X                 </td> </tr> </table>	<b>Diversified</b> • ASC-500 • ASC-501 • ASC-502 • ASC-503 • ASC-505-5 <b>Gemline</b> • 1C320	<b>Mars</b> 32392 <b>Robertshaw</b> • 3310-072 <b>Supco</b> • TD-73 <b>Watsco</b> • EAC-501-ADJ • EAC-501-ADJ-X
<b>Diversified</b> • ASC-500 • ASC-501 • ASC-502 • ASC-503 • ASC-505-5 <b>Gemline</b> • 1C320	<b>Mars</b> 32392 <b>Robertshaw</b> • 3310-072 <b>Supco</b> • TD-73 <b>Watsco</b> • EAC-501-ADJ • EAC-501-ADJ-X				



## Bypass Timer

### To Bypass A Switch Or Device During Startup


Part #	Features & Applications	Specifications	Cross Reference
 <p><b>24-ICM175</b></p>	<ul style="list-style-type: none"> <li>• Designed to bypass a low pressure switch or other device during start-up.</li> <li>• Ideal for low ambient start-ups.</li> <li>• Key component for "winter start" kits.</li> <li>• Helps to reduce nuisance lockouts.</li> <li>• Universal AC voltage operation.</li> <li>• Knob-adjustable time delays.</li> <li>• Epoxy-encapsulated circuitry.</li> <li>• Compact 2" x 2" package.</li> </ul>	<ul style="list-style-type: none"> <li>• Control: 18-240 VAC.</li> <li>• Frequency: 50/ 60 Hz.</li> <li>• 1 amp maximum.</li> <li>• 40 mA minimum.</li> <li>• 10 amp inrush.</li> <li>• Knob-adjustable time delays: 10 to 1,000 sec.</li> </ul>	<p>Mars</p> <ul style="list-style-type: none"> <li>• 32395</li> </ul> <p>Supco</p> <ul style="list-style-type: none"> <li>• TDP68</li> </ul>

## Motor Protection Controls

### 3-Phase Line Voltage Monitors - Full Performance

Part #	Features & Applications	Specifications	Cross Reference
 <p><b>24-ICM450</b></p>	<ul style="list-style-type: none"> <li>• Fully Programmable - with LCD diagnostic display.</li> <li>• Easy to configure - simple 7-step push-button setup.</li> <li>• Easy to customize - set points, variables and features are fully adjustable and may be defined by the user while in control SETUP mode.</li> <li>• 25 - fault memory storage, non-volatile.</li> <li>• Independent high and low voltage settings - ideal for dual voltage compressor applications.</li> <li>• Monitors/ identifies front &amp; back side faults.</li> <li>• Reset mode: choice of auto or manual.</li> <li>• Protects against: voltage unbalance, high/ low voltage, phase loss, reversal, faulty power, incorrect sequencing and rapid short cycling.</li> <li>• Reliable, high temperature LCD to 167°F.</li> <li>• Simultaneous voltage display - no scrolling.</li> <li>• Line voltage programmable.</li> <li>• Universal Voltage Operation: 190-630 VAC.</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 190-630 VAC.</li> <li>• Frequency: 50/ 60 Hz.</li> <li>• Voltage Unbalance: adjustable: 2-25%.</li> <li>• Control: 18-240 VAC.</li> <li>• Delay on break timer: (0.1-10 min.).</li> <li>• Output: relay, SPDT</li> <li>• N.O.: 10 amps.</li> <li>• N.C.: 6 amps.</li> </ul>	<p>Diversified</p> <ul style="list-style-type: none"> <li>• AC-2020</li> <li>• AC-301</li> <li>• AC-302</li> </ul> <p>Motorsaver</p> <ul style="list-style-type: none"> <li>• 455</li> <li>• SSAC</li> <li>• QLM/ QLV</li> </ul> <p>Mark</p> <ul style="list-style-type: none"> <li>• 265</li> </ul> <p>Wagner</p> <ul style="list-style-type: none"> <li>• WPC-800</li> </ul> <p>Watsco</p> <ul style="list-style-type: none"> <li>• EAC-800</li> <li>• EAC-8000</li> </ul>
 <p><b>24-ICM400</b></p>	<p>Three-phase line voltage monitor offering full line AND load side protection, fully adjustable, 190-630 VAC (18-240 control VAC)</p> <ul style="list-style-type: none"> <li>• Monitors "front" and "back" sides of system</li> <li>• Universal voltage operation: 190-630 VAC</li> <li>• Knob-adjustable features and system set points</li> <li>• Protects against voltage unbalance, high/low voltage, phase loss, phase reversal, faulty power, incorrect sequencing and rapid short cycling</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 190-630 VAC</li> <li>• Frequency: 50/60 Hz</li> <li>• Voltage Unbalance: Adjustable: 2-25%</li> <li>• Control: 18-240 VAC</li> <li>• Delay on Break Timer: 1-5 minutes</li> <li>• Output: <ul style="list-style-type: none"> <li>- Relay, SPDT</li> <li>- N.O.: 10 amps</li> <li>- N.C.: 6 amps</li> </ul> </li> </ul>	<p>A-1:</p> <p>EAC-800, EAC-8000, EAC-8002</p> <p>Diversified:</p> <p>AC-2020, AC-301, AC-302</p> <p>MARS:</p> <p>32512, 32515, 32516, 32517</p> <p>Motorsaver:</p> <p>455</p> <p>SSAC:</p> <p>QLM/QLV</p> <p>Time Mark:</p> <p>265</p> <p>Wagner/ DiversiTech:</p> <p>DTP-3, WPC-800</p>


### Phase Loss & Reversal Protection - Ultra Low Cost

Part #	Features & Applications	Specifications	Cross Reference
 <p><b>24-ICM401</b></p>	<ul style="list-style-type: none"> <li>• Low cost 3-phase protection for single side.</li> <li>• Monitors for phase reversal, phase loss, unbalance % as a function of input voltage.</li> <li>• Bright LED indicators for ON and FAULT.</li> <li>• Universal 3-phase input: 190-600 VAC.</li> <li>• Highly reliable passive electronics.</li> <li>• IEEE587 transient-tested.</li> <li>• Epoxy coated for added protection.</li> <li>• Patented: U.S. Patent No. 5,337,206.</li> <li>• 24-ICM401 enclosed model (Open 24-ICM403).</li> <li>• 3.25" x 3" x 1.25"</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 190-600 VAC.</li> <li>• Frequency: 50/ 60 Hz.</li> <li>• Control: 18-30 VAC.</li> <li>• Output: relay, SPDT</li> <li>• N.O.: 10 amps.</li> </ul>	<p>N/A</p>

ELECTRICAL PRODUCTS



## Single Phase Monitor

### Single-phase line voltage monitor with ASC protection

Part #	Features & Applications	Specifications	Cross Reference
 <p><b>24-ICM491</b></p>	<ul style="list-style-type: none"> <li>• Low cost single phase motor protection</li> <li>• Built in anti-short cycle protection</li> <li>• Detects high/low voltage conditions</li> <li>• Helps prevent rapid short cycling</li> <li>• LED indicators: -Green for normal conditions -Red for fault</li> <li>• Heavy duty SPDT, isolated relay output</li> </ul>	<p>Voltage: 95-270 VAC</p> <p>Output:</p> <ul style="list-style-type: none"> <li>- Relay, SPDT</li> <li>- N.C./N.O.: 5 amps</li> </ul> <p>Time Delay Range: Adjustable 6-600 seconds</p>	<p>A-1: EAC-401, EAC-402, EAC-403, EAC-404</p> <p>Diversified: CV-100-RS, CV-200-RS15, CV-200-RS20</p> <p>Wagner/DiversiTech: DSP-1</p>

## Surge Protection



### Surge Protection

Part #	Features & Applications	Specifications	Cross Reference
 <p><b>24-ICM515</b></p>	<p>Easy installation</p> <ul style="list-style-type: none"> <li>• Low cost, high performance surge protection</li> <li>• Weatherproof housing</li> <li>• Rugged, reliable</li> <li>• Protects against: -Lightning power surges -Voltage surges from air conditioners, generators, motors</li> </ul>	<ul style="list-style-type: none"> <li>• Service Voltage: 120/240 volt, single phase</li> <li>• Maximum Surge Current: 6,000 amps</li> <li>• Maximum Energy Dissipation: 200 joules</li> <li>• Installation Point:                             <ul style="list-style-type: none"> <li>- Electrical panel</li> <li>- Electrical disconnect</li> </ul> </li> <li>• AC Protection Modes: Line-line, line-ground</li> </ul>	<p>Ditek: DTK-120-240CM</p> <p>Supco: SCM</p>
 <p><b>24-ICM516</b></p>	<ul style="list-style-type: none"> <li>• Easy installation</li> <li>• Low cost, high performance</li> <li>• Rugged, reliable</li> <li>• UL Listed, Type 2 device</li> <li>• Refrigeration systems</li> <li>• Motors</li> <li>• Air conditioners</li> <li>• Appliances</li> <li>• Electronics</li> </ul>	<ul style="list-style-type: none"> <li>• Service Voltage: 120/240 volt, single phase</li> <li>• Maximum Surge Current: 100,000 Amps</li> <li>• Maximum Energy Dissipation: 1,020 Joules</li> <li>• Installation Point: Electrical panel, inside electrical disconnect</li> <li>• Diagnostics: Green light indicates surge suppression present</li> <li>• AC Protection Modes: L-L, L-G</li> <li>• Conduit Connection: 3/4"</li> <li>• Weight: 0.55 lbs.</li> </ul>	<p>Supco: SCM150, SCM60, SCM Plus</p>




## Head Pressure Controls

### Dual ON/ OFF Delays Control Fan

Part #	Features & Applications	Specifications	Cross Reference
 <p><b>24-ICM325HNVC-LF</b> 120-600VAC</p>	<ul style="list-style-type: none"> <li>• Integral heat pump bypass circuitry allows electronic bypass of speed control.</li> <li>• Eliminates overshoots common to on/off and pressure switch controls.</li> <li>• Helps prevent evaporator freeze-ups, low pressure cut-outs and liquid-slugged compressors in low ambient conditions.</li> <li>• One model covers 120 to 480 VAC.</li> <li>• Features hard start (adj. 1 to 5 sec.), low speed cut-off (adj.), high temperature bypass, isolated 24 VAC supply.</li> <li>• Controls up to 3 refrigerant circuits.</li> <li>• Typical application: heat pumps.</li> <li>• 4.5" x 3" x 1.75".</li> </ul>	<p>Input</p> <ul style="list-style-type: none"> <li>• Control: 18-30 VAC.</li> <li>• Frequency: 50/ 60 Hz. 1.8 VA max.</li> <li>• Line input: 120-600 VAC.</li> </ul> <p>Output</p> <ul style="list-style-type: none"> <li>• Max: 10 amps.</li> <li>• Min: 100 mA.</li> </ul>	<p>One ICM model replaces:</p> <p><b>Ranco</b></p> <ul style="list-style-type: none"> <li>• E31 Series</li> </ul> <p><b>Johnson Controls</b></p> <ul style="list-style-type: none"> <li>• P66</li> </ul> <p><b>ACT</b></p> <ul style="list-style-type: none"> <li>• FM2000</li> </ul> <p><b>Hoffman</b></p> <ul style="list-style-type: none"> <li>• 800</li> <li>• 800A</li> <li>• 800AA</li> <li>• 814-50</li> <li>• 816-10</li> </ul>
 <p><b>24-ICM326HN</b> 120 or 208/ 240 VAC</p>	<ul style="list-style-type: none"> <li>• Built-in transformer eliminates cost, reduces installation time and simplifies wiring.</li> <li>• Helps prevent evaporator freeze-ups, low pressure cut-outs and liquid-slugged compressors in low ambient conditions.</li> <li>• Features hard start, low temperature cut-off, high temperature bypass.</li> <li>• 4.5" x 3" x 2".</li> <li>• Typical application: ideal for heat pumps, line voltage air conditioning and refrigeration.</li> </ul>	<p>24-ICM326H</p> <ul style="list-style-type: none"> <li>• Control: 120 or 208/ 240 VAC.</li> </ul> <p>24-ICM327H</p> <ul style="list-style-type: none"> <li>• Control: 480 VAC.</li> <li>• Frequency: 50/ 60 Hz.</li> </ul> <p>Output current:</p> <ul style="list-style-type: none"> <li>• Max: 10 amps.</li> <li>• Min: 100 mA.</li> </ul>	<p><b>Ranco</b></p> <ul style="list-style-type: none"> <li>• E31 Series</li> </ul> <p><b>Johnson Controls</b></p> <ul style="list-style-type: none"> <li>• P66</li> </ul> <p><b>Hoffman</b></p> <ul style="list-style-type: none"> <li>• 800</li> <li>• 800A</li> <li>• 800AA</li> <li>• 814-50</li> <li>• 816-10</li> </ul>

## Condensation Control System

The 24-ICM340 condensate control is used to detect and prevent the overflowing of an evaporator condensation pan. Overflow problems can occur from a slow or blocked condensate drain or condensate pump failure.

Part #	Description	Specifications
 <p><b>24-ICM340</b> Condensate Control</p>	<ul style="list-style-type: none"> <li>• Adjustable delay before break time to prevent nuisance trips.</li> <li>• 24-ICM340 includes: (2) sensors, (2) mounting clips, (2) self-stick adhesive clips, and detailed instructions with diagrams for installation and troubleshooting.</li> <li>• Optional overflow LED (24-ACH55) &amp; LED/ Audible (24-ICM345) accessory kits also available.</li> </ul>	<p><b>Input</b></p> <ul style="list-style-type: none"> <li>• Voltage: 18 to 30 VAC.</li> </ul> <p><b>Output</b></p> <ul style="list-style-type: none"> <li>• 24 VAC to thermostat/ cooling control.</li> <li>• 24 VAC to optional overflow LED.</li> <li>• Rating: 2 amps.</li> </ul> <p><b>Delay Before Trip</b></p> <ul style="list-style-type: none"> <li>• 1-3 minutes.</li> </ul> <p><b>Operating Frequency</b></p> <ul style="list-style-type: none"> <li>• 50 to 60 Hz.</li> </ul> <p><b>Maximum Operating/Storage Relative Humidity</b></p> <ul style="list-style-type: none"> <li>• 95% non-condensing.</li> </ul> <p><b>Storage Temperature</b></p> <ul style="list-style-type: none"> <li>• -40°C to +85°C.</li> </ul> <p><b>Connection Terminals</b></p> <ul style="list-style-type: none"> <li>• ¼" Quick connects to provide easy hookup.</li> </ul> <p><b>Epoxy Encapsulated Circuit</b></p> <ul style="list-style-type: none"> <li>• Provides maximum protection against moisture and allows use in extreme environmental conditions.</li> </ul>

## Standard Hard Start Kits

### Applications:

- Low voltage situations.
- Tight or hard starting compressors.
- Use on any single phase A/C & refrigeration unit.

**Wiring Diagram**

**NOTE: Install only on PSC units equipped with run capacitor.**

- Connect the two wires from the ICM855/856 in parallel with the run capacitor (one wire each side) without removing any original wires.
- Use special "Piggy Back" terminal of the ICM855/856 if all of the run capacitor terminals are being used.



Part #	Features & Applications	Specifications	X-Ref
<b>24-ICM855</b>	<ul style="list-style-type: none"> <li>• PTC - Positive Temperature Coefficient technology.</li> <li>• For PSC units with existing run capacitor only!</li> <li>• OEM approved.</li> <li>• Quick recycling.</li> </ul>	<ul style="list-style-type: none"> <li>• Self-adjusting to voltage fluctuations.</li> <li>• Easy to install, 2 wires (clips or screws).</li> <li>• Boosts starting torque.</li> <li>• Most economical.</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 115 to 288 VAC.</li> <li>• Range: 1/2 to 10 HP</li> <li>• Recommended 1.5HP</li> </ul> <p>A-1: WXS-5 MARS: 32701, 35701 Supco: SPP-5 Wagner/DiversiTech: DST-5</p>
<b>24-ICM856</b>	<ul style="list-style-type: none"> <li>• OEM approved.</li> <li>• Quick recycling.</li> </ul>	<ul style="list-style-type: none"> <li>• Self-adjusting to voltage fluctuations.</li> <li>• Easy to install, 2 wires (clips or screws).</li> <li>• Boosts starting torque.</li> <li>• Most economical.</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 115 to 288 VAC.</li> <li>• Range: 1/2 to 10 HP</li> <li>• Recommended 2.5HP</li> </ul> <p>A-1: WXS-6 MARS: 32702, 35702 Supco: SPP-6 Wagner/DiversiTech: DST-6</p>
<b>24-ICM857</b>	<ul style="list-style-type: none"> <li>• For single-phase commercial and domestic capillary refrigeration systems and freezers</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-wired for fast installation</li> <li>• Overload: 12A</li> <li>• 145-175 mfd</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 120 to 180VAC.</li> <li>• Range: 1/12HP to 1/5HP</li> </ul> <p>MARS: 32481 Supco: RCO810</p>
<b>24-ICM858</b>	<ul style="list-style-type: none"> <li>• For single-phase commercial and domestic capillary refrigeration systems and freezers</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-wired for fast installation</li> <li>• Overload: 22A</li> <li>• 243-292 mfd</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 120 to 180VAC.</li> <li>• Range: 1/4HP to 1/3HP</li> </ul> <p>MARS: 32741 Supco: RCO410</p>
<b>24-ICM859</b>	<ul style="list-style-type: none"> <li>• For single-phase commercial and domestic capillary refrigeration systems and freezers</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-wired for fast installation</li> <li>• Overload: 30A</li> <li>• 243-292 mfd</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 120 to 180VAC.</li> <li>• Range: 1/3HP to 1/2HP</li> </ul> <p>Supco: RCO210</p>

## Current Sensing Hard Start Kits

By monitoring the compressor "current" upon start-up, RapidStart® is able to engage the hard start capacitor for precisely the correct amount of time, ensuring maximum starting torque without the risk of supplying too much current into the start winding. A timed safety circuit is provided in the event the motor fails to start within 2 seconds. Current sensing hard start precisely increases starting torque.



Part #	Features & Applications	Specifications	X-Ref.
<b>24-ICM803</b>	<ul style="list-style-type: none"> <li>• Operates from 95 to 288 VAC.</li> <li>• Max input voltage: 502 VAC.</li> <li>• Patented current sensing circuitry.</li> <li>• Self-adjusting to voltage fluctuation.</li> </ul>	<ul style="list-style-type: none"> <li>• Easy to install, 2 wires.</li> <li>• OEM approved.</li> <li>• Solid-state circuitry.</li> <li>• Boosts starting torque.</li> <li>• Disengages upon start.</li> </ul>	<ul style="list-style-type: none"> <li>• Ideally suited for 1/2 thru 3 Hp.</li> <li>• 88 to 106 Mfd. capacitor.</li> </ul> <p>Supco: SPP-8 Kickstart: TO5, TO-5</p>
<b>24-ICM805</b>	<ul style="list-style-type: none"> <li>• Patented current sensing circuitry.</li> <li>• Self-adjusting to voltage fluctuation.</li> </ul>	<ul style="list-style-type: none"> <li>• Solid-state circuitry.</li> <li>• Boosts starting torque.</li> <li>• Disengages upon start.</li> </ul>	<ul style="list-style-type: none"> <li>• Ideally suited for 2 thru 5 Hp.</li> <li>• 145 to 175 Mfd. capacitor.</li> </ul> <p>Kickstart: KS1</p>
<b>24-ICM810</b>	<ul style="list-style-type: none"> <li>• Self-adjusting to voltage fluctuation.</li> </ul>	<ul style="list-style-type: none"> <li>• Disengages upon start.</li> </ul>	<ul style="list-style-type: none"> <li>• Ideally suited for 3 1/2 thru 10 Hp.</li> <li>• 243 to 292 Mfd. capacitor.</li> </ul> <p>N/A</p>

## Voltage Sensing Hard Start Kits

ICM's differential voltage sensing products employ patented circuitry which monitors differential compressor auxiliary voltage, determines the state of the motor and precisely engages and disengages the start capacitor. A timed safety circuit is provided in the event the motor fails to start within 2 seconds.



Part #	Features & Applications	Specifications	X-Ref.
<b>24-ICM850</b>	<ul style="list-style-type: none"> <li>• Increases starting torque up to 500%.</li> <li>• Ensures precise starts.</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 90 to 277 VAC.</li> <li>• Max input voltage: 390 VAC.</li> <li>• Recommended range: Up to 1 1/2 Hp applications.</li> </ul>	<ul style="list-style-type: none"> <li>• Oper. Temp. Range: -40°C to +65°C</li> <li>• 43 to 52 Mfd 330 V Capacitor.</li> </ul> <p>Supco: SPP-5 Mars: 32701 A-1: WXS-5</p>
<b>24-ICM860</b>	<ul style="list-style-type: none"> <li>• Reduces inventory.</li> <li>• Not affected by ambient temperature.</li> <li>• Recycles instantly (less than one sec.).</li> </ul>	<ul style="list-style-type: none"> <li>• Voltage: 90 to 277 VAC.</li> <li>• Max input voltage: 390 VAC.</li> <li>• Recommended range: 2 to 5 Hp.</li> </ul>	<ul style="list-style-type: none"> <li>• Oper. Temp. Range: -40°C to +65°C</li> <li>• 88 to 106 Mfd 330 V Capacitor.</li> </ul> <p>Supco: SPP-6 Mars: 32702 A-1: WXS-6</p>
<b>24-ICM866U</b>	<ul style="list-style-type: none"> <li>• Multi-voltage operation... either 115 or 240 VAC motors.</li> <li>• Fuse protection.</li> <li>• Not effected by voltage or current fluctuations.</li> </ul>	<ul style="list-style-type: none"> <li>• Multi-voltage operation – 115 or 230 VAC motors</li> <li>• 145-175 µF @ 330V</li> </ul>	<ul style="list-style-type: none"> <li>• Recommended Range: 1/12 to 5HP application</li> <li>• UL Recognized</li> </ul> <p>Supco: SPP5, SPP6, SPP5E, SPP6E, SPP7E, SPP8E, SPP9E, SPP10E Kickstart: KS1, TO-5, KS8 5-2-1: CSR-U1, CSR-U2, CSR-U3 Watsco: WSX1 MARS: 32708, SS1, SS5, 32703, 32704, 32701, 32702 Diversitech: DST-5, DST-6</p>

### Features :

- NSF Approved • 100% Silicone • 100% RTV

### 302 (GP) General Purpose

- Available in multiple colours
- The ideal multiple purpose silicone sealant for all weather applications



Part #	Colour	Size (ml/oz)	Cs. Qty
83-30281	White	83/2.8(squeeze tube)	24
83-30280	Clear	83/2.8(squeeze tube)	24
83-30283	Black	83/2.8(squeeze tube)	24
83-30201	White	300/10.15	12
83-30200	Clear	300/10.15	12
83-30202	Aluminium	300/10.15	12
83-30203	Black	300/10.15	12
83-30205	Almond	300/10.15	12

### 302 (HT) High Temperature

- Withstands temperatures of 260°C(500°F) constant and 316°C(600°F) intermittent
- An ideal silicone for extreme temperature applications



Part #	Colour	Size (ml/oz)	Cs. Qty
83-30289	Red- HT	83/2.8 (Squeeze Tube)	24
83-30293	Black-HT	83/2.8 (Squeeze Tube)	24
83-30209	Red-HT	300/10.15	12
83-30213	Black-HT	300/10.15	12

### Caulking Guns

#### 113 Series

- Economy grade
- 310ml/10.15oz
- Clean out tool on barrel



15-CG000113

#### 138 Series

- Professional grade
- 310ml/10.15oz
- Clean out tool on handle



15-CG000138

## Rubberized Cork Insulation Tape



84-PT-30  
Illustrated

### Wraptite Rubberized Cork Insulation Tape

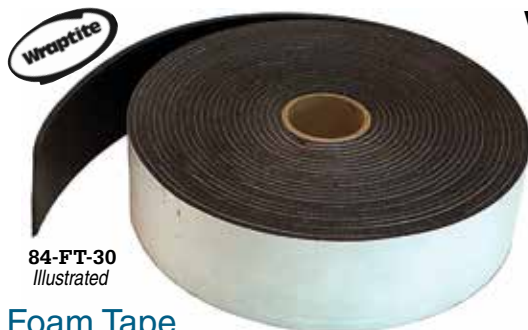
Formulated to provide insulation and to prevent condensation on hot or cool pipes, fittings and tubing used in heating, air conditioning, refrigeration and plumbing applications. Cork Insulation Tape adheres well to most clean, dry surfaces and to itself, making it possible to apply more than one layer without adding fasteners or adhesives.

It is sufficiently soft and pliable enabling it to be molded around most fitting or connections. The material retains its flexibility and adhesion after prolonged exposure to UV and over a service temperature range of -29°C to 88°C (-20°F to 190°F). Cork Insulation Tape is black in colour and has a grainy, rubber-like consistency which is non-toxic and non-asbestos.

### Cork Tape

Part #	Description
84-PT-30	1/8" x 2" x 30' Roll

## Foam Insulation Tape



84-FT-30  
Illustrated

### Wraptite Foam Insulation Tape

Foam Insulation Tape is designed to seal, insulate and isolate vibration in air conditioning and refrigeration applications. The soft, flexible, closed cell sponge tape with paper covered self-adhesive backing seals out air and moisture while reducing heat loss or transfer. Cold water pipes, valves, chilled water and refrigeration lines can be wrapped to prevent sweating or condensation while hot water pipes and pipe heaters can be wrapped to insulate against heat loss.

Easily applied by hand, Wraptite Foam Insulation Tape adheres well to most clean, dry surfaces and to itself, making it possible to apply more than one layer. The formulated operating temperature of Wraptite Foam Insulation Tape is between -34°C to 82°C (-30°F to 180°F) with the ability to intermittently tolerate temperature of 98°C (210°F).

### Foam Tape

Part #	Description
84-FT-30	1/8" x 2" x 30' Roll

## Slugs & Cords



84-PC-30  
Illustrated

84-PS-30  
Illustrated

### Wraptite Slugs & Cords

Sealing slugs & cord are soft, permanently pliable, water-resistant sealants having a wide variety of applications. The product has the unique quality of retaining the same consistency throughout its application range of -7°C to 60°C (20°F to 140°F). Non-asbestos and non-hardening, remains flexible to -7°C (-20°F).

Sealing slugs & cords are used widely in the air conditioning and refrigeration industries to seal around outer cases, behind hinges and under breaker strips. They can be used to seal out air or moisture around utility panels, cables, ducts, window frames and metal joints. This product adheres to metal, wood, glass, plastic and most clean surfaces to provide an effective barrier against water, moisture, dirt and dust. It is non-staining, non-bleeding, odorless and can be painted.

### Slugs & Cords

Part #	Description
84-PC-30	3/8" x 25' Cord
84-PS-30	2 lb. Slug
84-PS30-B	50 lb. Bulk Slug



The D440 leak detector features a long life heated sensor technology that is designed to detect the more current and difficult HFC refrigerants such as R-134a in addition to all HCFC and CFC refrigerants including SNAP approved hydrocarbon blends. The D440's unique digital leak size indicator rates a leak on a numeric scale of 1 to 9 determining the severity. The digital display is independent from the audio alarm and sensitivity level, allowing the precise pinpointing of the leak source.

## Features

- Long life, stable sensor
- Unique numeric leak size indicator & alarm
- Automatic calibration and reset to ambient levels
- 3 adjustable sensitivity levels
- Visual LED leak alarm located near sensor
- True mechanical pump
- Low battery indicator
- Audio mute function
- Comfortable Sanoprene grip
- SAE J1627 Certifiable
- CE Certified
- Bright 3 LED detachable UV light (optional)
- Made in USA
- 2 Year Warranty (includes sensor)



Part #	53-D-440
<b>Description</b>	Refrigerant Leak Detector
<b>Sensitivity</b>	.05 oz/yr R134a
<b>Sensor Life</b>	> 300 hours
<b>Response Time</b>	Instantaneous
<b>Power Supply</b>	4 AA Alkaline batteries (included)
<b>Battery Life</b>	8 hours continuous
<b>Warm up time</b>	< 20 seconds
<b>Probe length</b>	43cm (17")
<b>Numerical Display</b>	7 segment digital display (1 to 9)
<b>Weight, lbs</b>	0.58 kg (1.5 lbs)
<b>Warranty</b>	2 years (includes sensor)

## Refrigerant Recovery Tanks

- All tanks meet ARI guidelines and government specifications for CFC, HCFC & HFC recovered refrigerants, including R11, R12, R22, R500, R502, R134a and R414b.
- Tough yellow & grey (blue for Automotive R134a) polyurethane finish protects against rust and corrosion.
- Atmospherically controlled heat treat oven assures clean cylinder interior.
- Rugged steel withstands the rigours of grueling work-a-day use.
- All tanks meet Transport Canada specifications.



**54-RC30**  
30 lb



**54-RC60F**  
60 lb with tank switch



**54-RC100**  
100 lb

## Recovery Tanks

Part #	Description
<b>54-RC30</b>	30 lb tank equipped with liquid/ vapour Y valve.
<b>54-RC30F</b>	54-RC30 with 54-EN1285 float switch installed.
<b>54-RC60</b>	60 lb tank equipped with liquid/vapour Y valve.
<b>54-RC60F</b>	54-RC60 with 54-EN1285 float switch installed.
<b>54-RC100</b>	100 lb tank equipped with liquid/ vapour Y valve.
<b>54-RC100F</b>	54-RC100 with 54-EN1285 float switch installed.
<b>54-RC200</b>	200 lb tank with separate liquid & vapour valves and safety relief.
<b>54-RC200F</b>	54-RC200 with 54-EN1285 float switch installed.
<b>54-RC1000</b>	1000 lb tank with separate liquid & vapour valves and safety relief. Has 3/4" plugged opening in bottom of tank. Also has 4 way entry for forklift rails.

350 psi working pressure (54-RC30, RC60 & RC100 series).  
260 psi working pressure (54-RC200 & RC1000 series).

### Solder Paste Flux

**MILL-ROSE**

#### Solder Paste Flux

Clean fit solder paste flux is used in all industries and is a non-aggressive formula used to sweat copper and brass fittings. Not for electronic use unless so stated. The all purpose formula stays stiff in hot weather and stays soft and sticky, even in cold weather.

#### Solder Paste Flux

Part #	Description
61-70705	1 lb. tub.
61-70700	2 oz. (std. 12/pk POP display)
61-71030	2 oz. (carded)
61-71031	Solder paste flux kit: includes 2 oz. flux, abrasive cloth, acid brush.



Solder Paste Flux

61-71030 Illustrated

### Cool Gel Spray

Heat dissipating spray helps prevent heat damage to components and surrounding materials during soldering, brazing, and welding. It protects painted and finished surfaces from discoloration due to adjacent torch operations. This product also reduces the danger of fire to surrounding surfaces such as studs, drywall, and insulation. The unique non-staining gelled formula sticks to surfaces without dripping or running off and leaves no residue. Safe, nontoxic, and odorless spray liberally on adjacent surfaces needing protection. The spray pattern is adjustable from stream to mist. One quart spray bottles sold in cases of 12.



Part #	Description
15-11509	Cool Gel Spray 12/cs

### Bloc-It Paste

Heavy paste effectively absorbs surface heat and protects adjoining surfaces that may be damaged by excessive heat. Typically used to protect rubber, plastic, distortion, painted and finished surfaces during soldering, brazing or welding. Safe to use, Bloc-It is nontoxic, harmless to skin, odorless, and does not contain asbestos. Wipe off with cloth or wash with water, Bloc-It will not leave stains. 10 oz. tubes sold in cases of 24.



Part #	Description
15-11511	Bloc-It Heat Absorbing Paste - 10oz 12/cs

### Heat Shields

#### Torch-Guard Solder Heat Shield

Torch-Guard's high strength (asbestos free) silica-based woven fibre stands up to and blocks intense heat to ensure flame resistance and liability protection. Flexible and easy to work with, Torch Guard provides heat resistance up to 2000°F or 1500°F continuous use. Soak Torch Guard in water and it may be used for higher temperatures particularly when folded over.

#### Applications

- Shield studs, walls, floors and other surfaces from flames, sparks or molten splash during soldering and brazing installations.

**Heat Resistant to 2000°F & Flexible**



#### The Insurance Pad™

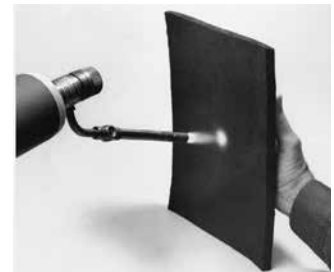
The Insurance Pad is the ultimate heat shield. Use wet or dry where ever higher temperature protection is required, up to 2500°F. The Insurance Pad is a fibrous felt heat shield with the safest specs in the industry. Repeated use of the product actually increases its heat resistance.

Part #	Description
61-71036	6" x 9"
61-71038	9" x 12"

#### Applications

- Ideal for use with propane, MAPP gas, acetylene/ air and higher temperature torches.

**Heat Resistant to 2500°F**



## Service & Shop Wipers

Reclaimed rags are sold by net weight for maximum value. Buttons and zippers have been removed. Service & shop wipers use a highly specialized packaging system, which compresses wiping rags into small, compact, clear plastic packages. These packages hold numerous benefits over corrugated boxes.

### Package Features

- Compact: 50% space savings.
- Save money on storage.
- Save money on transport.
- Waterproof.
- Stackable.
- Easy-to-handle.
- Extremely attractive for resale purposes.
- Hassle-free dispensing design.

## Heavy Duty Service & Shop Rags

Coloured rags equivalent to soft, thick, fleece like sweatshirt material.

Part #	Description	Weight
13-546-5	5 lbs. service size pack.	5 (lbs.)
13-546-10	10 lbs. service size pack.	4.5 kg (10 lbs)
13-546-25	25 lbs. shop size pack.	11.3 kg (25 lbs)

### Heavy Duty

- Soft, general purpose wiping cloths are an ideal medium weight rag for absorbing or cleaning liquids, oils and grease. Perfect for auto shops and HVAC/R contractors.

## Medium Duty Service & Shop Rags

Coloured rags, similar to balbriggan or Polo cotton T-shirt material.

Part #	Description	Weight
13-536-10	10 lbs. service size pack.	4.5 kg (10 lbs)
13-536-25	25 lbs. shop size pack.	11.3 kg (25 lbs)

### Medium Duty

- Low cost, no lint, light weight general purpose shop rags. A good general purpose, medium quality wiper at a relatively low cost.

## Light/ Medium Duty Service & Shop Rags

Lightly coloured, near white cotton blend rags, similar to dress shirts or linen sheet material.

Part #	Description	Weight
13-538-10	10 lbs. service size pack.	4.5 kg (10 lbs)
13-538-25	25 lbs. shop size pack.	11.3 kg (25 lbs)

### Light/ Medium Duty

- Low cost, no lint, light weight general purpose shop rags. A good general purpose wiper at a relatively low cost.

### Sizes

#### Service Package

13-536-10  
10 lbs. Package



#### Shop Package

13-536-25  
25 lbs. Package





### Spray Nine - Premium Multi-Purpose Cleaner/ Degreaser/ Disinfectant

#### Spray Nine - The First & Still The Best!

Spray Nine cleans hard surfaces such as stainless steel, plastic, tile, rubber, vinyl, fiberglass, porcelain and formica with "spray on, wipe off" ease.

#### Digs Out Tough Soils Fast!

Enriched with a powerful germicidal, Spray Nine can be used to disinfect and deodorize hospitals, nursing homes, schools, and other institutions where housekeeping is of prime importance. Also controls mold and mildew while destroying bacterial odors.

#### 30 second disinfecting time\*!

When used as directed, Spray Nine will disinfect hard non-porous surfaces such as walls, floors, tables, chairs and countertops. Spray Nine kills many bacteria and destroys powerful odors. Used as a hospital grade disinfectant, Spray Nine has been registered by Health and Welfare Canada to kill HIV-1 virus (associated with AIDS), Salmonella, Staphylococci, and Pseudomonas on inanimate surfaces in just 30 seconds. Used regularly, Spray Nine greatly reduces the risk of cross infection.

\* Most disinfectant products require a 10 minute contact time to kill germs.



15-26824  
700 ml Pump



15-26825  
739 ml Spray



15-26832  
946 ml Spray



15-26804  
4 L Jug

### Spray Nine

Part #	Description	Package
15-26822	700 ml pump bottle	12/ctn
15-26825	739 ml spray bottle	12/ctn
15-26832	946 ml spray bottle	12/ctn
15-26804	4 L jug	4/ctn

## Degreasers / Multi Purpose

### Spray Nine - Industrial Multi-Purpose Cleaner/ Degreaser

#### Spray Nine Industrial - The In-process Cleaning & Degreasing Solution!

No other product removes really tough industrial soils as quickly and effectively from manufacturing equipment, engines and machinery to countertops, floors and even washrooms as Spray Nine Industrial. The ready to use formula saves time, labour and money by effectively serving as a all in one cleaner.

### Spray Nine - Industrial

Part #	Description	Package
15-13532	946 ml spray bottle	12/ctn



15-13532  
Illustrated

## Penetrating Oil & Lubricants

### Break•Away

#### Fast Penetrating Oil

Brake•Away is a pure oil-based product that penetrates faster and lubricates longer. It leaves a thicker, longer lasting film vs. light duty solvent-based water displacement formulas. Brake•Away is famous for completing the cycle of lubrication and reducing the coefficient of friction on hot or cold moving parts. Whether it be freeing frozen parts, lubricating moving components or protecting tools and equipment from rust or corrosion, Brake•Away's fast penetrating oil is your anywhere, anytime solution. Contains no ozone depleting CFC's. (pin point applicator straw included).

Part #	Description	Package
15-C10	369g aerosol can style	12/ctn

15-C10  
Illustrated



### Silicone Spray

#### Synthetic Polymer Lube - The Heavy Duty, Industrial Grade Lubricant!

Silicone Spray's industrial grade formula is an extra heavy-duty concentrate of high quality silicone for maximum performance. Silicone Spray lubricates mechanical parts, conditions rubber, waterproofs and protects against rust or corrosion. Silicone is a stain-free synthetic polymer lubricant that virtually dries to the touch. It reduces friction and lubricates without petroleum oil or grease. Contains no ozone depleting CFC's. (pin point applicator straw included).

Part #	Description	Package
15-C33	450 ml aerosol can style	12/ctn

15-C33  
Illustrated



### White Grease

#### Heavy Duty Lithium Plus Teflon®

White Grease is a uniquely blended grease that sprays on as a liquid, penetrates and then sets up as a lubricating grease to reduce wear, stop squeaks and repel moisture. Once set-up White Grease remains soft and pliable without drying out. Excellent for applications with close tolerances where metal to metal or metal to plastic lubrication and lasting protection are desired. White Grease works well in both high or low temperatures and in all types of weather. Contains no ozone depleting CFC's. (pin point applicator straw included).

Part #	Description	Package
15-C34	443.5 ml aerosol can style	12/ctn

15-C34  
Illustrated



## Lubricants & Protectants

### EZ Telescopic Oiler

#### The Finest All-Purpose Industrial Oil

The telescoping Spout That Reaches Everywhere! Telescopic Oiler's are specially formulated to reduce wear on moving parts. The oil contains superior additives with anti-rust properties preventing corrosion. The convenient retractable spout makes it easy to get to those hard to reach places.

Part #	Description	Package
10-ZS75	118 ml telescopic bottle	12/ctn

10-ZS75  
Illustrated



### EZ Rust Breaker

#### The Finest All-Purpose Industrial Oil

Alltemp's Rust Breaker is specially formulated to quickly loosen rust and frozen parts. Rust Breaker's demoisturizing agents act as a penetrating oil and superior rust inhibitor. The telescoping spout reaches everywhere! The convenient retractable spout makes it easy to get to those hard to reach places.

Part #	Description	Package
10-RB75	118 ml telescopic bottle	12/ctn

10-RB75  
Illustrated



### Features

- Hi-impact plastic guards.
- Horizontal and vertical mounting.
- Heavy duty lock and key.
- Comes with complete mounting hardware.
- Each model includes a ring & solid base.
- Colour - clear cover with off white base.



### Reduce Inventory!

Our thermostat guards come complete with hardware, ring and solid bases.

**Mounting Base Types**  
All mounting bases are plastic.



### Plastic Thermostat Guards

Part #	Base	Inside Dimensions			Cross Reference	
		L	W	D		
<b>77-PG3</b>	Ring	3.75"	3.50"	2.62"	BTG-EK	F29-0252
	Solid	4.00"	4.00"	2.50"	ECST	029-0178 029-0179
<b>77-PG6</b>	Ring	5.25"	4.62"	3.12"	BTG-K	F29-0251
	Solid	5.75"	5.00"	2.81"	KCBT	F29-0257
<b>77-PG9</b>	Ring	6.31"	3.62"	3.06"	BTG-RK	F29-0253
	Solid	6.62"	4.12"	2.75"	RCBT	029-0143
<b>77-PG12</b>	Ring	8.18"	4.62"	3.56"	BTG-UK	F29-0254
	Solid	8.50"	5.00"	3.87"	UCBT	029-0198

## Metal Thermostat Guards

### Features

- Durable metal guards.
- Horizontal and vertical mounting.
- Heavy duty lock and key.
- Comes with complete mounting hardware.
- Each model includes a ring & solid base.\*
- Colour - off white cover with off white base.

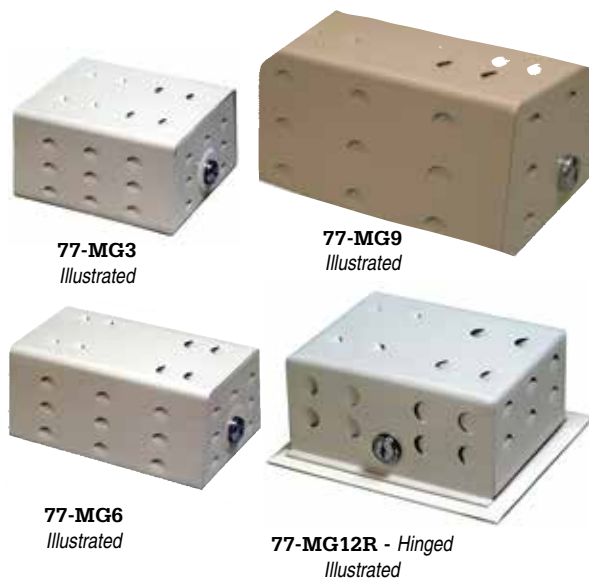


### Reduce Inventory!

Our thermostat guards come complete with hardware, ring and solid bases.

### Mounting Base Types

- 77-MG3** Plastic
- 77-MG6** Plastic
- 77-MG9** Metal
- 77-MG12R** Metal
- 77-MG12S** Metal



### Metal Thermostat Guards

Part #	Base	Inside Dimensions			Cross Reference	
		L	W	D		
<b>77-MG3</b>	Ring	5.31"	4.31"	3.00"	BTG-KWM	KMRT
	Solid	5.62"	5.12"	2.87"	BTG-KM	KMST
<b>77-MG6</b>	Ring	6.31"	3.62"	3.18"	BTG-EM	EMST
	Solid	6.62"	4.12"	3.75"	BTG-RM BTG-RWM	RMRT
<b>77-MG9</b>	Ring	6.75"	4.50"	3.43"	BTG-UWM	UMRT
	Solid	7.18"	5.25"	3.43"	BTG-UM	UMST
<b>77-MG12R*</b>	Ring	6.12"	3.81"	3.12"	BTG-54VLW	F29-0256
<b>77-MG12S*</b>	Solid	6.37"	4.25"	3.00"	BTG-54VL	F29-0255

\* Hinged metal guards do not come with both bases.

# ULTIMATE

