ServiceFirst™

HVACR Controls by ICM

Specifically designed for Heating, Ventilation, Air Conditioning and Refrigeration Applications

- Motor protection
- Defrost Controls
- Duty cycle timers
- Delay on make timers
- Delay on break timers
- RapidStart® motor starters
- Fan blower controls
- Head pressure controls
- Lead-lag controls
- Multi-mode digital timers
- Random start and bypass timers

ICM CORPORATION

February 2004

RSP-PRC024-EN

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Contents

Motor Protection Controls

3-Phase Line Voltage Monitors - Full Performance

ICM's line voltage monitors were specifically designed to protect compressor motors and other 3-phase loads from premature failure or damage due to common voltage faults. They offer complete system protection by monitoring both the source (front) and load (back) side of the system including the power, motor and contactor lines. In addition, an integral "delay on break timer" guards against rapid short cycling at both the control circuit and the 3-phase lines. Compact and easy to install, the ICM400 and ICM450 provide highly reliable protection for your valuable equipment.

MOD00756
ICM400C

Features and Applications
- Lower cost, full performance version featuring bright LED indicators to display system faults
- Monitors "front" and "back" sides of system
- Universal voltage operation: 190-630 VAC
- Knob-adjustable features and system set points
- Reset mode: choice of auto or manual (lockout)
- Built-in anti-short cycle protection
- Protects against voltage unbalance, high/low voltage, phase loss, reversal, faulty power, incorrect sequencing and rapid short cycling
- 6.5" x 4.25" x 1.5"

Specifications
- Voltage: 190-630 VAC
- Frequency: 50/60 Hz
- Voltage Unbalance: adjustable: 2-25%
- Control: 18-240 VAC
- Delay on Break timer: .1-5 minutes
- Output: Relay, SPDT
  N.O.: 10 amps
  N.C.: 6 amps

Replaces
- Diversified: AC-2020, AC-301, AC 302
- Motorsaver: 455
- SSAC: QLM/QLV
- Time Mark: 265
- Wagner: WPC-800
- Watsco: EAC-800, EAC-8000

MOD00757
ICM450C

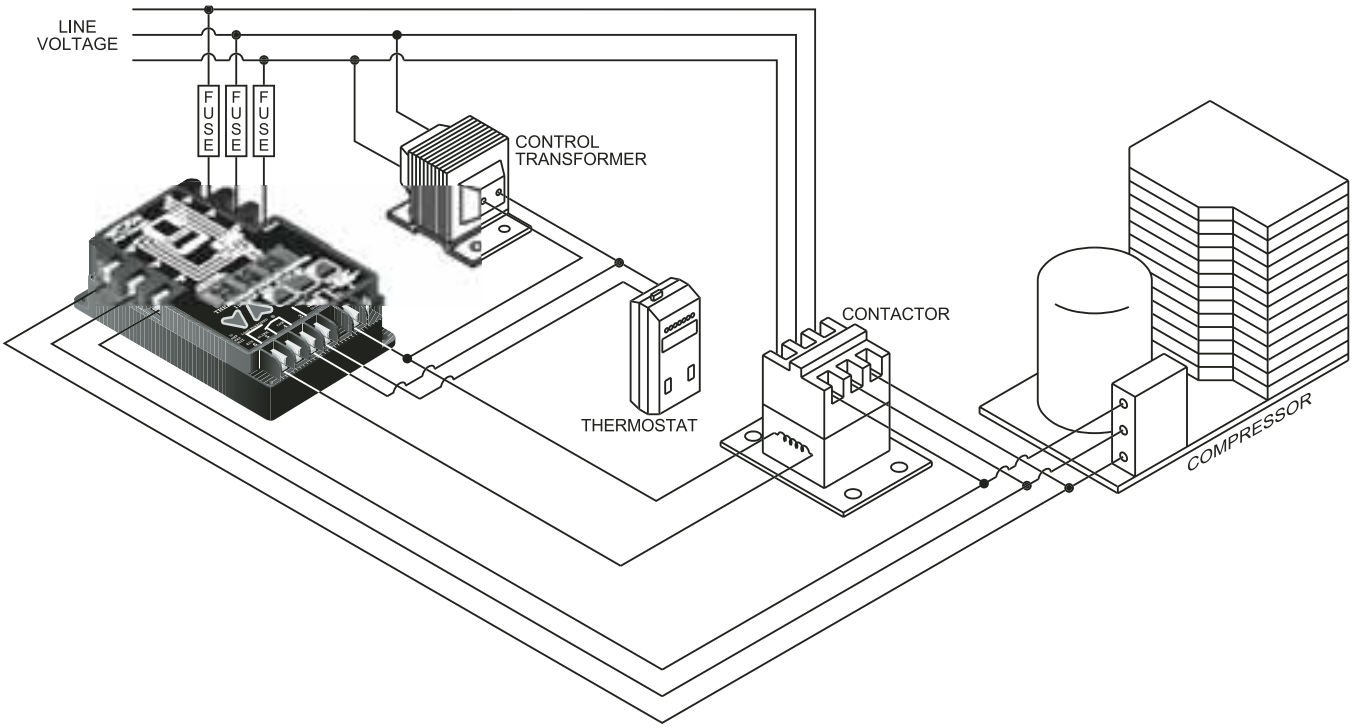
Features and Applications
- Fully programmable with LCD diagnostic display
- Easy to configure - simple push button setup
- Easy to customize - set points, variables and features are fully adjustable and may be defined by the user while in control SETUP mode
- 25-fault memory storage, non-volatile
- Independent high and low voltage settings ideal for dual voltage compressor applications
- Identifies front and back side faults
- Reset mode: choice of auto or manual
- Protects against: voltage unbalance, high/low voltage, phase loss, reversal, faulty power, incorrect sequencing and rapid short cycling
- Reliable, high temperature LCD to 167°F
- Simultaneous voltage display, no scrolling
- Line voltage programmable
- Universal voltage operation: 190-630 VAC
- 6.5" x 4.25" x 1.5"

Specifications
- Voltage: 190-630 VAC
- Frequency: 50/60 Hz
- Voltage Unbalance: adjustable: 2-25%
- Control: 18-240 VAC
- Delay on Break timer: .1-5 minutes
- Output: Relay, SPDT
  N.O.: 10 amps
  N.C.: 6 amps

Replaces
- Diversified: AC-2020, AC 301, AC 302
- Motorsaver: 455
- SSAC: QLM/QLV
- Time Mark: 265
- Wagner: WPC-800
- Watsco: EAC-800, EAC-8000

Motor Protection Controls

Typical System Diagram for ICM450



Motor Protection Controls

Phase Loss & Reversal Protection - Ultra Low Cost

MON00004
ICM401C

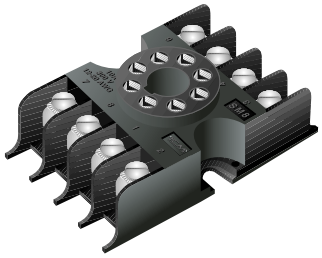
Features and Applications
- Low cost 3-phase protection for single side
- Monitors for phase reversal, phase loss, unbalance % as a function of input voltage
- Bright LED indicators for ON and FAULT
- Universal 3-phase input: 190-600 VAC
- Control voltage: 18-30 VAC
- Highly reliable passive electronics
- Epoxy coated for added protection
- Patented: U.S. Patent No. 5,337,206
- ICM401 enclosed model shown
- For open-board model order ICM403
- 3.25″ x 3″ x 1.25″

Specifications
- Voltage: 190-600 VAC
- Frequency: 50/60 Hz
- Control: 18-30 VAC
- Output: Relay, SPDT
  N.O.: 10 amps

MON00012
ICM402C

Features and Applications
- Low cost 3-phase protection for single side
- Monitors for phase reversal, phase loss, unbalance % as a function of input voltage
- Bright LED indicators for ON and FAULT
- Universal 3-phase input: 190-600 VAC
- Control voltage input:115, 208, 240 VAC
- Highly reliable passive electronics
- Epoxy coated for added protection
- Patented: U.S. Patent No. 5,337,206
- ICM402 enclosed model shown at left
- For open board model order ICM404
- 3.25″ x 3″ x 1.25″

Specifications
- Voltage: 190-600 VAC
- Frequency: 50/60 Hz
- Control: 115 or 208/240 VAC
- Output: Relay, SPDT
  N.O.: 30 amps



TMR00187
ACS-8

Features and Applications
- Relay socket
- 8-pin octal plug-in base
- Locating key ensures proper orientation
- For use with ICM408, ICM410-427, ICM500-505
- Rated for 480 VAC

Specifications
- 10 amps up to 480 VAC

Replaces
- Diversified: RB-08

Motor Protection Controls

Single Phase Motor Protection

Three Phase Line Monitor

MON00019
ICM409

The ICM 409 is a low cost three-phase voltage monitor with fault indicator.

Specifications

User Selectable Universal Voltage
• 190VAC - 480VAC

User Selectable Unbalance Voltage
• 2-8%

User Selectable Delay on Make (staggered start) Timer
• .1 - 5 Minutes

User Selectable Anti-Short Cycle (ASC)/ Delay on Break Timer
• .1 - 5 Minutes

High/Low Voltage Cut-out
• High Voltage Cut-out setpoint + 12%
• Low Voltage Cut-out sepoint - 12%

Power/Phase Loss Detection
• Within 100mS

Power Reversal Detection
• Detects Phase Reversal condition on Power Up

Relay Contact Ratings
• N.C. Contacts: 10A Resistive @ 250VAC
• N.O. Contacts: 10A Resistive @ 250VAC

Operating Frequency
• 50/60 Hz

Maximum Operating/Storage Relative Humidity
• 95% Non-Condensing

Storage Temperature Range
• -40°C to 85°C

Connection Terminals
• Screw down terminals provide easy hookup for both Line voltage and Control circuit wires.

Conformal Coated Circuit
• Conformal coated circuit provides use in Extreme Environment Conditions.

Protects against
• Low voltage
• High voltage
• Power interruptions
• Phase loss
• Unbalanced voltage
• Phase reversal

Features
• Adjustable Delay-On-Make timer for staggered starting.
• Adjustable Delay-On-Break for Anti-short Cycle prevention.
• Adjustable Universal Voltage from 190VAC to 480VAC.
• Adjustable Voltage Unbalance from 2-8% of the line voltage.

Mode of Operation
Designed in a small, easy-to-mount, surface mount or Din-Rail style case, the ICM409 continuously monitors the incoming line voltage for errors. When the line voltage is appropriate, the ICM409 closes a set of N.O. contacts and lights a green led. When the incoming voltage is outside the user' set parameters, the N.O. contacts open up and the red light will flash a code for the particular fault present. The control will also interrogate the line voltage during the fault condition to avoid short cycling and nuisance trips due to noise.

LED Indicators
• **Green Led** + Load ON
• **Red Led**
• Solid = Phase reversal
• 1 flash = DOM time
• 2 flash = Low voltage
• 3 flash = High voltage
• 4 flash = Unbalance voltage

MOD00862
ICM491C

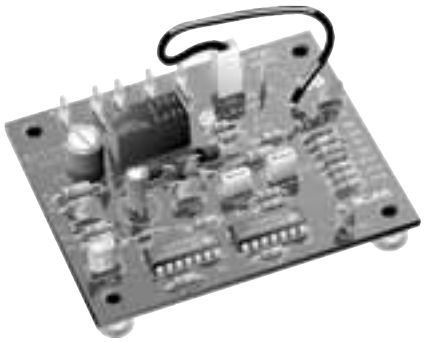
Features and Applications
• Low cost single phase motor protection
• Built in anti-short cycle protection
• Detects high/low voltage conditions
• Helps prevent rapid system recycling
• LED indicators: – green for normal conditions – red for fault
• Heavy duty SPDT, isolated relay output
• Interrogation delay prevents nuisance trips: 5 seconds
• 3.25" x 3" x 1.25"

Specifications
• Voltage: 95-270 VAC
• Output: relay, SPDT
N.C./N.O.: 5 amps
• Time delay Range: adj. 6-600 seconds

Replaces
• Diversified: CV-100-RS, CV-200-RS15, CV-200-RS20
• Watsco: EAC-401, EAC-402, EAC-403, EAC-404

Defrost Controls

Defrost Controls - OEM and Replacement Parts



CNT02896
ICM300C

Features and Applications
- Direct replacement for OEM Type 621
- Low cost, time and temperature defrost
- HOLD input tracks compressor run times
- Time and temperature terminate
- 10-minute fixed defrost time
- Pin-selectable intervals: 30/60/90 minutes
- Test pins reduce test time by 256x
- Stable pin post construction

Specifications
- 18-30 VAC
- 50/60 Hz
- Relay output
- Form: SPST
  N.O.: 1 amp
- Defrost time: 10-minute fixed
- Interval times: pin-selectable 30/60/90 minutes

Replaces
- Amana: C64301-1, C6431001
- Artesian: 10321-00
- Arcoaire: 32312-00
- Carrier: 621
- Coleman: 3030A374
- Goodman: B12260-06
- Heil Quaker: HQ1052757
- ICP: 1052757
- ICM: DFOS24A2
- Intertherm: 6208800
- Lennox: 33G9501
- Rheem: 47-21776-01
- Snyder Gen.: 1395-329
- Honeywell: ST74A1004, 1020, 1038
- White Rodgers: 90-621
- Therm-o-Disc: 26E-10
- Robertshaw: TD-10

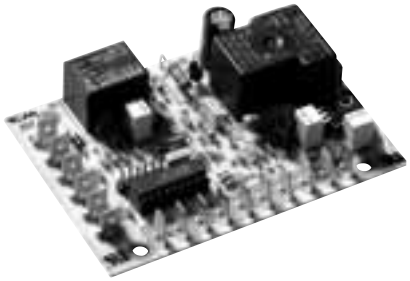
Defrost Controls

CNT02900
ICM303C

Features and Applications
- Direct replacement for York 03101251000
- Time and temperature terminate
- Integral short cycle protection
- Pin-selectable intervals: 30/60/90 minutes
- High/low pressure switch monitoring
- High power, condenser relay output
- Strip heat, reversing valve outputs

Specifications
- 18-30 VAC
- Relay output: 1 hp fan @ 240 VAC
- Strip heat, reversing valve outputs: 24 VAC, 2 amps
- Defrost time: 10-minute fixed
- Interval times: pin-selectable 30/60/90 minutes

Replaces
- York: 9218-3741, 03101251000
- Evcon: 9218-374
- ICM: DFORF



CNT03510
ICM304

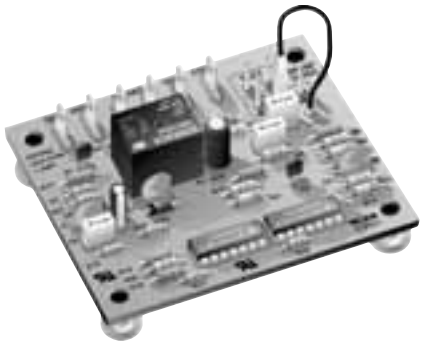
Features and Applications
- Direct replacement for ICP 1069364
- Sensor input for defrost terminate
- Time and temperature terminate
- 10-minute fixed defrost time
- Pin-selectable intervals: 30/60/90 minutes
- HOLD input tracks compressor run times
- Integral short cycle protection

Specifications
- 18-30 VAC
- Strip heat, reversing valve outputs: 24 VAC, 1 amp
- Defrost: 10-minute fixed
- Interval times: pin-selectable 30/60/90 minutes

Replaces
- ICP: 1069364

Defrost Controls

Defrost Controls - OEM and Replacement Parts



CNT03721
ICM307C

Features and Applications
- 3-minute anti-short cycle protection
- Low cost, time/temperature defrost
- Time and temperature terminate
- 10-minute fixed defrost time
- HOLD input tracks compressor run times
- Pin-selectable intervals: 30/60/90 minutes
- Test pins reduce test time by 256x
- Integral short cycle protection: 3 minutes

Specifications
- 18-30 VAC
- 50/60 Hz
- Relay output
- Form: SPST
  N.O.: 1 amp
- Defrost time: 10 min fixed
- Interval times: pin-selectable 30/60/90 minutes

Replaces
- Lennox: 86G16
- Ranco: DT-2
- Fast: 1093410

CNT02897
ICM315C

Features and Applications
- Solid state replacement for Ranco E-15
- Reliable thermistor-type sensor is less susceptible to breakage, easier to mount
- Replaces faulty bulb-type sensors
- 10-minute fixed defrost time
- Pin-selectable interval times (30/45/90)
- Test pins reduce test time by 256x
- Stable pin post construction
- Time and temperature terminate

Specifications
- 24, 120, 240 VAC
- Form: SPST
  N.O.: 20 amps
  N.C.: 10 amps
- Defrost time: 10-minute fixed
- Interval times: pin-selectable 30/45/90 minutes

Replaces
- Ranco: E-15
- Avion: DFT100

CNT03264
ICM316C

Features and Applications
- Direct replacement for Trane 21C142827G01
- Low cost time/temperature defrost
- Time and temperature terminate
- Pin-selectable intervals: 50/70/90 minutes
- Test pins reduce test time by 256x
- High power output (1/2 horsepower fan @ 240 VAC)
- Strip heat, reversing valve outputs (24 VAC, 1 amp)

Specifications
- 18-30 VAC
- Relay output: 1/2 hp fan @ 240 VAC
- Strip heat, reversing valve outputs: 24 VAC, 1 amp
- Defrost time: 10-minute fixed
- Interval times: pin-selectable 50/70/90 minutes

Defrost Controls

CNT02901
ICM318C

Features and Applications
- Direct replacement for Goodman B1226008
- Low cost, time/temperature defrost
- Time and temperature terminate
- Pin-selectable intervals: 30/60/80 minutes
- Test pins reduce test time by 256x
- HOLD input tracks compressor run times
- High power output (1/2 horsepower fan @ 240 VAC)
- Strip heat, reversing valve outputs (24 VAC, 1 amp)

Specifications
- 18-30 VAC
- Outdoor fan relay output: 1/2 hp fan @ 240 VAC
- Strip heat, reversing valve outputs: 24 VAC, 1 amp
- Defrost time: 10-minute fixed
- Interval times: pin-selectable 30/60/80 minutes

Replaces
- Goodman: B1226008
- ICM: W1001-4

CNT02902
ICM319C

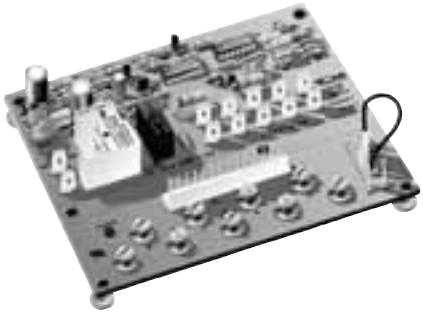
Features and Applications
- Direct replacement for Nordyne: 624519A
- Low cost, time/temperature defrost
- Time and temperature terminate
- 10-minute fixed defrost time
- Pin-selectable intervals: 30/60/90 minutes
- Test pins reduce test time by 256x
- Recycle function melts frost on coils
- Integral short cycle protection: 5 minutes

Specifications
- 18-30 VAC
- Outdoor fan relay output: 1/2 hp fan @ 240 VAC
- Strip heat, reversing valve outputs: 24 VAC, 1 amp
- Defrost time: 10-minute fixed
- Interval times: pin-selectable 30/60/90 minutes

Replaces
- Nordyne 624519A
- ICM: DFORB24A2I300

Defrost Controls

Defrost Controls - OEM and Replacement Parts



CNT02898
ICM320C

Features and Applications
- Direct replacement for Carrier HK32FA006
- Low cost, time/temperature defrost
- Time and temperature terminate
- 10-minute fixed defrost time
- Pin-selectable intervals: 30/50/90 minutes
- Test pins reduce test time by 256x
- Stable pin post construction

Specifications
- 18-30 VAC
- Outdoor fan relay output: 10 amps @ 240 VAC
- Form: SPST
  N.O.: 2 amps
- Defrost time: 10-minute fixed
- Interval times: pin-selectable 30/50/90 minutes

Replaces
- Carrier HK32FA006

CNT02903
ICM321C

Features and Applications
- Low cost, time/temperature defrost
- Time and temperature terminate
- 10-minute fixed defrost time
- Pin-selectable intervals: 30/50/90 minutes
- Test pins reduce test test time by 256x
- High power output, outdoor fan (1/2 horsepower fan @ 240 VAC)
- Strip heat, reversing valve outputs (24 VAC, 1 amp)
- Integral short cycle protection: 5 minutes

Specifications
- 18-30 VAC
- Outdoor fan relay output:
  N.O.: 20 amps
  N.C.: 10 amps
- Form: SPDT
- Defrost time: 10-minute fixed
- Interval times: pin-selectable 30/50/90 minutes

Replaces
- Carrier CES01130063-00, CES01130063-01

CNT02904
ICM322C

Features and Applications
- Low cost, time/temperature defrost
- Time and temperature terminate
- 10-minute fixed defrost time
- Pin-selectable intervals: 30/50/90 minutes
- Test pins reduce test time by 256x
- High power output, outdoor fan (1/2 horsepower fan @ 240 VAC)
- Strip heat, reversing valve outputs (24 VAC, 1 amp)

Specifications
- 18-30 VAC
- Relay output
- Form: SPDT
  N.O.: 20 amps
  N.C.: 10 amps
- Defrost time: 10-minute fixed
- Interval times: pin-selectable 30/50/90 minutes

Replaces
- Carrier CES0130024-00

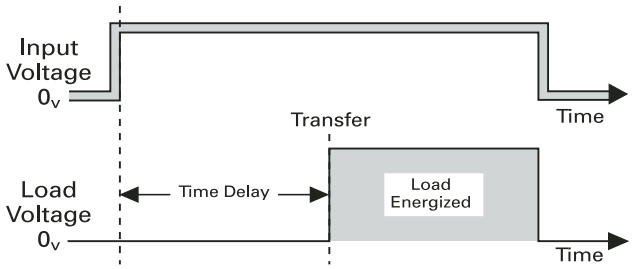
Delay on Make Timers

Delay On Make Timers - Ideal for Compressor Staging

Applications
Ideal for compressor staging and stagger starting multiple motors and other equipment. Helps to reduce power surges.

Mode of Operation
When power is applied to the input, the time delay begins. After the time delay is complete, the load energizes.

Timing Diagram



TMR00157
ICM102B

Features and Applications
- Universal voltage operation
- Higher 1.5 amp power rating
- Knob-adjustable time delays
- Works with anticipator-type thermostats
- One model replaces many in field
- Ideal for compressor staging
- Simple 2-wire hookup
- Compact 2″ x 2″ package

Specifications
- 18-240 VAC
- 1.5 amps
- 15 amp inrush
- 40 mA holding current
- Adjustable delay: .03-10-minutes (1.8-600 seconds)
- Voltage drop: 2.5 V @ 1.5 amps

Replaces
- Diversified: AC-800, ASC-600/601
- Gemline: 1C310/1C213
- Mars: 32391/32367
- Robertshaw: 3310-068
- Supco: TD-68, TD-69
- Watsco: EAC-701-adj., -X, EAC-700-A

TMR00158
ICM103B

Features and Applications
- Highly precise digital timing
- Switch-settable time delays
- Ideal for ice machine applications
- Universal voltage operation
- Repeat accuracy .5% over voltage and temperature range
- Compact 2″ x 2″ package

Specifications
- 18-240 VAC
- 1 amp
- 10 amp inrush
- 40 mA holding current
- Switch-settable delays range from 1-1,023 seconds
- Voltage drop: 2.5 V @ 1 amp

Replaces
- Gemline:1C213
- Mars: 32394/32396
- Robertshaw: 3310-068
- Supco: TMF-19, TMF-80
- Watsco: 7061

TMR00166
ICM104B

Features and Applications
- Highly precise digital circuitry
- High power, SPDT relay output
- Input to output isolation
- Works with anticipator-type thermostats
- .5% repeat accuracy over voltage and temperature range
- Rugged, compact package
- 115 and 240 VAC models available
- 2″ x 3″ package

Specifications
- 18-30 VAC
- Output:
  N.O.: 20 amps @ 240 VAC
  N.C.: 10 amps @ 240 VAC
  SPDT, 1 form c
  Knob-adjustable time delay:
  10-1,000 seconds
  40 mA holding current

Replaces
- Mars: 32394/32398

Delay on Break Timers

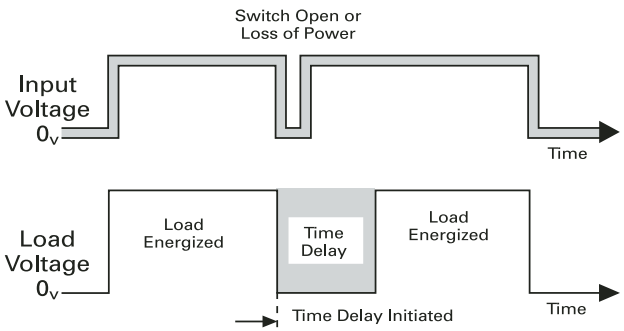
Delay On Break Timers - Anti-Short Cycle Protection

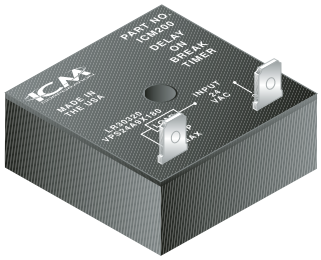
Applications
"Anti-short cycle"
"ON delay on break"

Helps to protect air conditioning, refrigeration and heat pump equipment from damage which may be caused by the rapid short cycling of compressors.

Mode of Operation
Upon application of power, the load is energized. When the thermostat, or other switch opens or there is a loss of power, the load is de-energized and the delay period begins. The compressor will not start again during the delay period. Restart occurs after the delay period.

Timing Diagram





TMR00167
ICM200B

TMR00178
ICM200FB

TMR00160
ICM201B

TMR00161
ICM201FB

Features and Applications
- Higher 1.5 amp power rating
- Compressor lockout/anti-short cycle timer
- Helps to protect compressors from damage caused by rapid short cycling
- Simple, 2-wire hookup
- Compact 2" x 2" package
- ICM200, 200F: 3-minute delay
- ICM201, 201F: 5-minute delay
- "F" suffix denotes 6" wire leads

Specifications
- 18-30 VAC
- 1.5 amps
- 15 amp inrush
- 3 or 5-minute fixed time delays
- Voltage drop: 3.5 V typical 4.5 V maximum @ 1.5 amps
- 40 mA holding current minimum

Replaces
- Diversified: ASC-500, 501, ASC-502, ASC-505-5
- Gemline:IC321, IC322
- Watsco: EAC-500, EAC-501-180-W, EAC-501-300-W

TMR00162
ICM203B

TMR00168
ICM203FB

Features and Applications
- Universal voltage operation
- Higher 1.5 amp power rating
- Compressor lockout/anti-short cycle timer
- Helps to protect compressors from damage caused by rapid short cycling
- Simple, 2-wire hookup
- Compact 2" x 2" package
- "F" suffix denotes 6" wire leads

Specifications
- 18-240 VAC
- 1.5 amps
- 15 amp inrush
- Knob-adjustable delays .03-10 minutes (1.8-600 seconds)
- Voltage drop: 3.5 V typical 4.5 V maximum @ 1.5 amps
- 40 mA holding current minimum

Replaces
- Diversified: ASC-500, 501, ASC-502, 503, ASC-505-5
- Gemline: 1C320
- Mars: 32392
- Robertshaw: 3310-072
- Supco: TD-73
- Watsco: EAC-501-ADJ., EAC-501-ADJ-X

Delay on Break Timers

TMR00169
ICM204B

TMR00170
ICM206B

TMR00163
ICM205B

Features and Applications
- Brownout protection
- UL 873 recognition as compressor controller
- Helps prevent scroll compressor reversal
- Fast response time: 16 ms
- Compressor lockout/anti-short cycle timer
- Prevents low voltage starts
- Eliminates relay chatter due to thermostat bounce or tampering
- Works with anticipator-type thermostats
- Patented: U.S. Patent No. 4,991,049
- Compact 2″ x 2″ package
- ICM204B: 3-minute delay
- ICM205B: 5-minute delay
- ICM206B: 3-10 minute delay

Specifications
- 18-30 VAC
- 1.5 amps
- 15 amp inrush
- 3 or 5 minute fixed or 10 minute adjustable time delays
- 40 mA holding current minimum

Replaces
- Gemline: 1C243
- Mars: 32381/32382
- Supco: TL243, TL245
- Robertshaw: 3310-183, 3310-305
- Watsco: EAC-511, EAC-426-180, EAC-426-300, EAC-426-ADJ

TRM00211
ICM208B

Features and Applications
- Universal voltage operation
- Helps prevent scroll compressor reversal
- Fast response time: 16 ms
- Compressor lockout/anti-short cycle timer
- Eliminates relay chatter due to thermostat bounce or tampering
- Works with anticipator-type thermostats
- Compact, epoxy-encapsulated package
- ICM208B: 5-minute delay

Specifications
- 18-240 VAC
- 1 amp
- 10 amp inrush
- 5-minute fixed time delays
- 40 mA holding current minimum

Bypass Timer and Fan Blower Control

Bypass Timer - To Bypass a Switch or Device During Startup

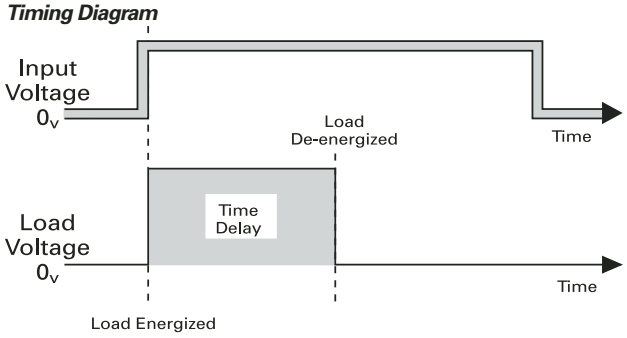
Applications
"ON delay interval timer"
"Normally closed delay on make"

Designed to bypass a control or device during startup. Typically used to bypass a low pressure switch during compressor heat pump startup or to bypass an oil pressure switch upon startup. Helps to eliminate nuisance lockouts.

Mode of Operation
With power applied to the input, the load energizes immediately and remains energized for the length of the time delay, regardless of the state of the switch being bypassed.

At the end of the time delay, the condition of the load is determined by the state of the switch.

Timing Diagram



TMR00159
ICM175B

Features and Applications
- Designed to bypass a low pressure switch or other device during startup
- Ideal for low ambient startups
- Key component for "winter start" kits
- Helps to reduce nuisance lockouts
- Universal AC voltage operation
- Knob-adjustable time delays
- Epoxy-encapsulated circuitry
- Compact 2" x 2" package

Specifications
- 18-240 VAC
- 50/60 Hz
- 1 amp maximum
- 40 mA minimum
- 10 amp inrush
- Knob-adjustable time delay: 10-1,000 seconds

Replaces
- Mars: 32395
- Supco: TDP68

Bypass Timer and Fan Blower Control

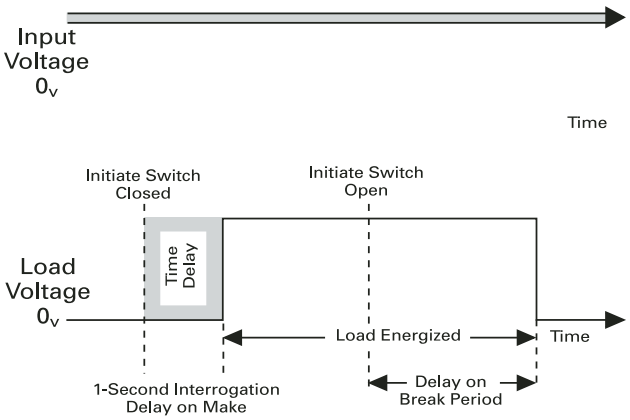
Fan Blower Control - OFF Delay Timing Purges Residual Air

Applications
"OFF delay on break"

Controls the circulating fan in heat pump, air conditioning and forced air systems. OFF delay timing function continues to run the fan at the end of the heating/cooling cycle, thereby purging ducts of residual air and increasing system efficiency.

Mode of Operation
Power must be applied before and during the time delay period. When the initiate contact closes, the load energizes and remains energized as long as the initiate contact is closed. The time delay begins when the initiate contact opens. At the end of the time delay period, the load is turned off. If the initiate contact recloses during the time delay period the load remains energized and the time delay is reset to zero. Removal of input power during the delay turns off the load and resets the time delay to zero. A 1-second interrogation delay is provided to avoid nuisance trips due to thermostat bounce or tampering.

Timing Diagram



TMR00172
ICM253B

Features and Applications
- UL 873 recognition for compressor applications
- Post-purge fan delay timer
- OFF delay purges ducts of residual air at the end of the heating/cooling cycle
- Interrogation delay eliminates nuisance trips due to thermostat bounce/ tampering

Specifications
- 18-30 VAC
- 1 amp maximum
- 40 mA minimum
- 10 amp inrush
- Adjustable time delay: 12-390 seconds

Replaces
- Mars: 32393
- Gemline: IC216

Fan Blower Controls

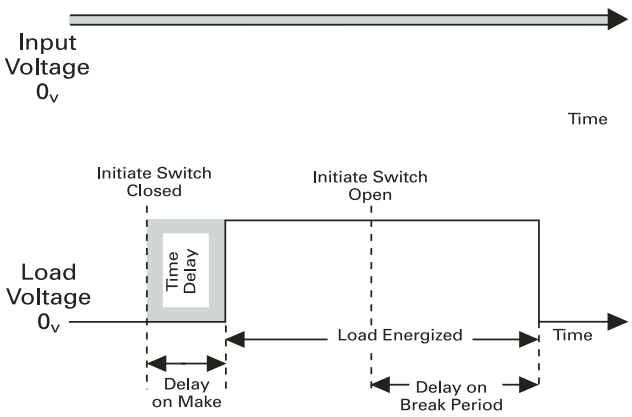
Fan Blower Controls - Dual ON/OFF Delays Control Fan

Applications
"ON delay on break" and
"OFF delay on break"

Controls the circulating fan in heat pump, air conditioning and forced air systems. ON delay on make lets air reach proper level prior to turning on the fan. OFF delay timing function continues to run the fan at the end of the heating/cooling cycle, thereby purging ducts of residual air and increasing system efficiency.

Mode of Operation
Power must be applied before and during the time delay period. When the initiate contact closes, the delay on make period begins. The load then energizes and remains energized as long as the initiate contact is closed. The delay on break period begins when the initiate contact opens. At the end of the time delay, the load is turned off. If the initiate contact recloses during the time delay, the load remains energized and the time delay is reset to zero. Removal of input power during the delay turns off the load and resets the time delay to zero.

Timing Diagram



TMR00171
ICM251B

Features and Applications
- Drives fan directly
- High power, relay output
- Dual function fan delay timer
- Controls the circulating fan in heat pump, A/C and forced air systems
- OFF delay controls fan relay to purge ducts of residual air at the end of the heating/cooling cycle
- ON delay allows air to reach the proper comfort level prior to energizing the fan
- 115 and 230 VAC are also available, please consult factory

Specifications
- 18-30 VAC
- Output: N.O.: 20 amps @ 240 VAC
  N.C.: 10 amps @ 240 VAC
- Time delays adjustable:
  ON: 1-180 seconds
  OFF: 12-390 seconds

Replaces
- Mars: 32377, 32378, 32379

Fan Blower Controls

TMR00164
ICM254B

Features and Applications
- Dual function fan delay timer
- Controls the circulating fan in heat pump, A/C and forced air systems
- OFF delay controls fan relay to purge ducts of residual air at the end of the heating/cooling cycle
- ON delay allows air to reach the proper comfort level prior to energizing the fan

Specifications
- 18-30 VAC
- 1 amp maximum
- 40 mA minimum
- 10 amp inrush
- Time delays adjustable:
  ON: 1-180 seconds
  OFF: 12-390 seconds

Replaces
- Honeywell: S876A1016
- Watsco: PSTD-000-060W, PSTD-000-005W

TMR00165
ICM255C

Features and Applications
- Low cost open board design
- High power, relay output
- Dual function fan delay timer
- Controls the circulating fan in heat pump, A/C and forced air systems
- OFF delay purges ducts of residual air
- ON delay allows air to reach the proper comfort level prior to energizing the fan

Specifications
- 18-30 VAC
- N.O.: 20 amps @ 240 VAC
  N.C.: 20 amps @ 240 VAC
- Time delays fixed: ON: 1 second
  OFF: 60 seconds

Replaces
- Bard: 8201-056
- Mars: 32393
- Snyder-General: 1395336
- Watsco: 5893
- Rheem: 42-22515-01, 42-22515-02, 42-22515-03

Fan Blower Controls

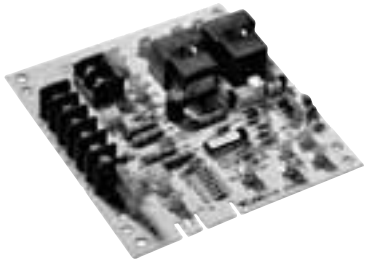
Fan Blower Controls - Direct OEM Replacement Parts

CNT03261
ICM270C

Features and Applications
- Dual function fan delay timer
- Controls the circulating fan in heat pump, A/C and forced air systems
- OFF delay purges ducts of residual air
- ON delay allows air to reach the proper comfort level prior to energizing the fan

Specifications
- 18-30 VAC
- Contact ratings: Heat/Cool Speed
  N.O.: 20 amps @ 240 VAC
  N.C.: 10 amps @ 240 VAC
- Time delays blower off time adjustable: 90, 120, 150, 180 seconds

Replaces
- Robertshaw: 695-003
- Evcon: 2702-300
- Rheem: 47-22827-01, 47-22827-81, 47-22827-82, 47-22828-01, 47-22828-02
- Honeywell: ST9120A1006, ST9120A12004



CNT03262
ICM271C

Features and Applications
- Reliable solid state fan blower control
- Specifically designed to replace popular gas furnace centers
- Pin selectable blower delays
- High power, relay output
- Dual function fan delay timer
- Controls the circulating fan in heat pump, A/C and forced air systems
- OFF delay purges ducts of residual air
- ON delay allows air to reach the proper comfort level prior to energizing the fan

Specifications
- 18-30 VAC
- Contact ratings:
  N.O.: 20 amps
  N.C.: 10 amps
- Fixed time delays

Replaces
- Robertshaw: 695-100

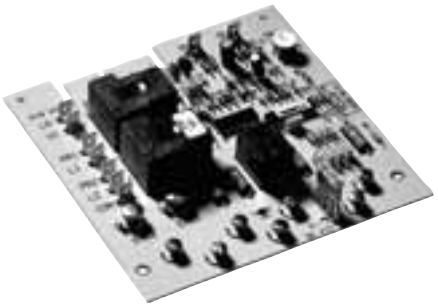
Fan Blower Controls

CNT03277
ICM272C

Features and Applications
- Cooling control module with fan delay
- Integral low voltage terminal board with field thermostat wiring
- Electronic air cleaner output
- High power, relay output
- DC output for fan relays and 1st stage of electric heater control
- Interlock circuitry prevents 2nd and 3rd stage electric heat energization without proper fan operation

Specifications
- 18-30 VAC
- Contact ratings:
  N.O.: 20 amps
  N.C.: 10 amps
- Time delay: factory fixed at 60 seconds

Replaces
- Texas Instruments: 2FD-1



CNT03263
ICM275C

Features and Applications
- Microprocessor-based fan blower control
- Built in humidity relay
- Manually adjustable post-purge off delay from 60-240 seconds
- Electronic air cleaner output

Specifications
- 18-30 VAC
- Contact ratings:
  20 amps @ 240 VAC on high
  10 amps @ 240 VAC on low

Replaces
- Robertshaw: 695-101

Head Pressure Controls

Head Pressure Controls - Low Ambient Fan Control

CNT02905
ICM325HC

Features and Applications
- Integral heat pump bypass circuitry allows electronic bypass of speed control
- Eliminates overshoots common to on/off and pressure switch controls
- Helps prevent evaporator freeze-ups, low pressure cut-outs and liquid-slugged compressors in low ambient conditions
- One model covers 120-480 VAC
- Features: hard start, low temperature bypass, isolated 24 VAC supply
- Controls up to 3 refrigerant circuits
- Typical application: A/C & heat pumps
- 4.5" x 3" x 1.75"

Specifications
- Input
  - Control:18-30 VAC, 50/60 Hz 1.8 VA maximum
  - Line Input: 120-480 VAC
- Output
  - Maximum: 10 amps
  - Minimum: 100 mA

Replaces
- Hoffman: 800/800A/800AA/814-50, 816-10
- Ranco: E31Series
- Johnson Controls: P66
- ACT: FM2000

CNT03679
ICM325K2
Canada Only

Features and Applications
- One model covers 120 to 600 VAC
- Features: hard start, low temperature bypass, isolated 24 VAC supply
- Eliminates overshoots common to on/off and pressure switch controls
- Controls one refrigerant circuit
- Typical application: refrigeration and A/C
- ICM325K2: with ICM376 probe, 70-100
- 4.5" x 3" x 1.75"

Specifications
- Input
  - Control:18-30 VAC
  - Line Input: 120-600 VAC
  - Frequency: 50/60 Hz
- Output
  - Maximum: 10 amps
  - Minimum: 100 mA

CNT02906
ICM326HC

CNT02907
ICM327HC

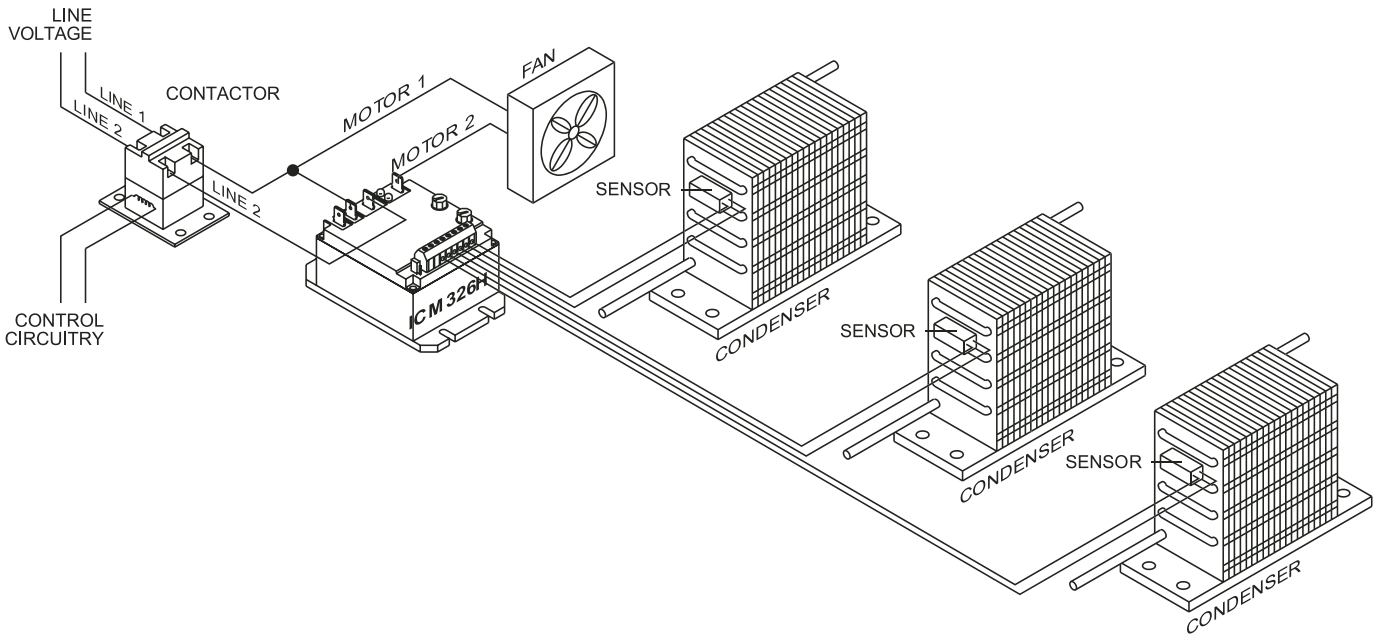
Features and Applications
- Built in transformer eliminates cost, reduces installation time and simplifies wiring
- Helps prevent evaporator freeze-ups, low pressure cut-outs and liquid-slugged compressors in low ambient conditions
- Features: hard start, low temperature cutoff, high temperature bypass
- Ideal for line voltage air conditioning and refrigeration
- 4.5" x 3" x 2"

Specifications
- ICM326H: 120 or 208/240 VAC
- ICM327H: 480 VAC
- Frequency: 50/60 Hz
- Output
  - Maximum: 10 amps
  - Minimum: 100 mA

Replaces
- Hoffman: 800/800A/800AA/814-50, 816-10
- Ranco: E31Series
- Johnson Controls: P66

Head Pressure Controls

Typical System Diagram for ICM326H Head Pressure Control



Head Pressure Controls

3-Phase Head Pressure Controls - With LCD Diagnostics

CNT03525
ICM336

CNT03524
ICM337

Features and Applications
- Temperature, pressure, milliamp or DC voltage input
- True sine wave output
- Modulates voltage and frequency
- LCD display for easy setup and monitoring
- No need to change existing fan motor
- 8.25″ x 12.5″ x 14″

Specifications
ICM336: 208-240 VAC
1-3 HP

ICM337: 460 VAC
1-5 HP

Replaces
- Motor Master III
- Hoffmann

Head Pressure Controls

Head Pressure Control Accessories

CBT00804
ACC-OE-01

Outdoor Enclosure

Features and Applications
- Rugged steel construction
- Easy to mount
- Helps to protect controls from harsh environmental conditions such as temperature, shock, humidity and vibration
- Ideal for use with ICM head pressure controls
- 4.25" x 6.25" x 6.25"

TDR00312
ICM380

Features and Applications
- Optional pressure transducer for ICM336/ICM337 3-phase head pressure controls

SEN00864
ICM379

Features and Applications
- Probe for use with ICM325H, ICM326H and ICM327H head pressure controls with optional heat pump bypass feature

Lead-Lag Controls

Lead-Lag Controls - Reliable Long Life Switching

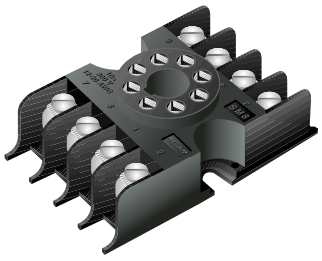
CNT03266
ICM600

Features and Applications
- True dual stage control
- Built in thermostat
  - adjustable set point
  - adjustable deadband
  - adjustable sequencer
- Regulates 1 or 2 heating/cooling systems
- Compact housing
- Safety system halon contacts
- Memory on power loss
- Accelerated test mode
- Isolated inputs
- Isolated solid state outputs
- Built in anti-short cycle delays
- Status LEDs
- Advance state switch
- Ideal for refrigeration applications, communication substations, water treatment plants anywhere redundant systems are used
- 4.25″ x 8.5″ x 2″

Specifications
- 18-30 VAC
- 2 amps maximum
- Frequency: 50/60 Hz
- Power consumption: 2 watts maximum/lockout
- Adjustable thermostat features:
  - Set point: 55-90°
  - Deadband: 2-20°
  - Sequencer: 1-28 days

Multi-Mode Timer

Multi-Mode Digital Timer - Versatile, Simple, Accurate



TMR00187
ACS-8

Features and Applications
- Relay socket
- 8-pin octal plug-in base
- Locating key ensures proper orientation
- For use with ICM408, ICM410-427, ICM500-505

Specifications
- 10 amps up to 480 VAC

Replaces
- Diversified: RB-08

Motor Starters

RapidStart® Motor Starters - Current Sensing

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.

KIT07685
ICM803

Features and Applications
- Operates from 95-288 VAC
- Patented current sensing circuitry
- Easy to install, 2 wires
- OEM approved
- Solid-state circuitry
- Boosts starting torque
- Disengages upon start
- Recycles instantly (less than 1 second)
- Fuse protection
- Not effected by voltage or current fluctuations
- Not effected by ambient temperatures

Specifications
- Voltage: 95-288 VAC
- Max Input Voltage: 502 VAC
- Oper. Temp. Range: -40°C to +65°C
- 88-106 Mfd. 330 V capacitor
- For 1/2 to 3 HP applications

Replaces
- Supco: SPP-8
- Kickstart: TO5, TO-5

KIT07686
ICM805

Features and Applications
- Operates from 95-288 VAC
- Patented current sensing circuitry
- Easy to install, 2 wires
- OEM approved
- Solid-state circuitry
- Boosts starting torque
- Disengages upon start
- Recycles instantly (less than 1 second)
- Fuse protection
- Not effected by voltage or current fluctuations
- Not effected by ambient temperatures

Specifications
- Voltage: 95-288 VAC
- Max Input Voltage: 502 VAC
- Oper. Temp. Range: -40°C to +65°C
- 145-175 Mfd. 330 V capacitor
- For 2 to 5 HP applications

Replaces
- Kickstart: KS1

KIT07687
ICM810

Features and Applications
- Operates from 95-288 VAC
- Patented current sensing circuitry
- Easy to install, 2 wires
- OEM approved
- Solid-state circuitry
- Boosts starting torque
- Disengages upon start
- Recycles instantly (less than 1 second)
- Fuse protection
- Not effected by voltage or current fluctuations
- Not effected by ambient temperatures

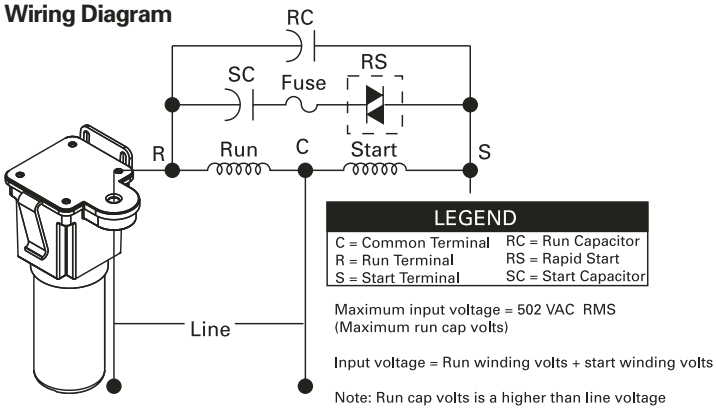
Specifications
- Voltage: 95-288 VAC
- Max Input Voltage: 502 VAC
- Oper. Temp. Range: -40°C to +65°C
- 243-292 Mfd. 330 V capacitor
- For 3 ½ to 10 HP applications

Motor Starters

RapidStart® Series 803/805/810 - The Current Advantage

Wiring And System Diagrams

Wiring Diagram



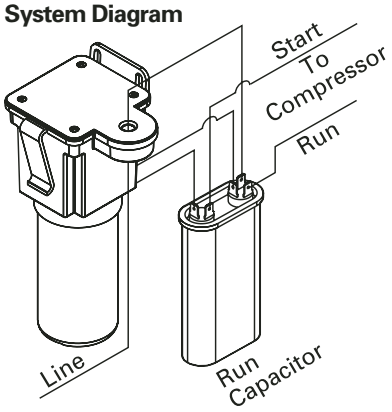
LEGEND	
C = Common Terminal	RC = Run Capacitor
R = Run Terminal	RS = Rapid Start
S = Start Terminal	SC = Start Capacitor

Maximum input voltage = 502 VAC RMS
(Maximum run cap volts)

Input voltage = Run winding volts + start winding volts

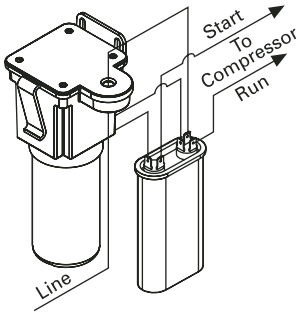
Note: Run cap volts is a higher than line voltage

System Diagram

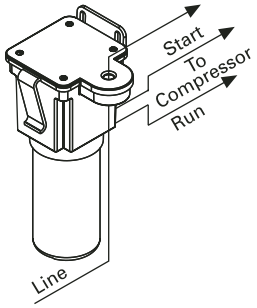


Alternate Wiring Configurations

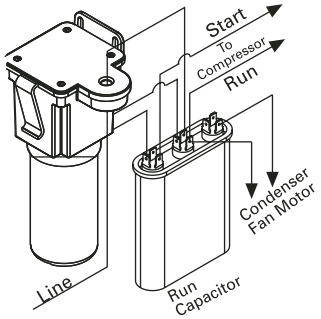
PSC Units



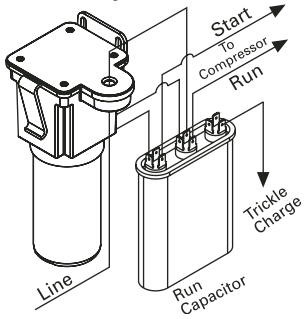
Capacitor Start Induction Run



Double Capacitor

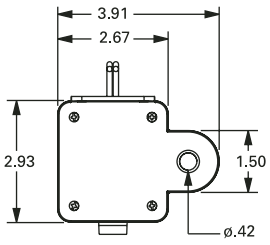


OFF Cycle Heat

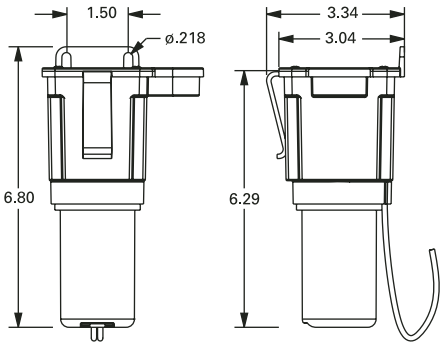


Dimensions

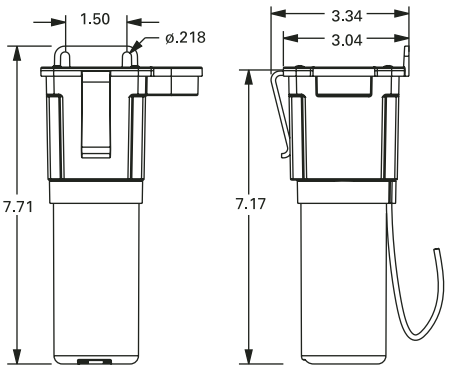
803/805/810 (Universal view)



803



805/810



Motor Starters

RapidStart® Motor Starters - Voltage Sensing

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.

KIT07688
ICM850

Features and Applications
- Increases starting torque up to 500%
- Ensures precise starts
- Reduces inventory
- Not affected by ambient temperature
- Recycles instantly (less than one second)
- Dual voltage operation: either 115 or 240 VAC motors
- Fuse protection
- Not effected by voltage or current fluctuations

Specifications
- Voltage: 90-277 VAC
- Max Input Voltage: 390 VAC
- Oper. Temp. Range: -40°C to +65°C
  43-52 Mfd. 330 V capacitor
- For up to 1½ HP applications

Replaces
- Supco: SPP-5
- Mars: 32701
- A-1: WXS-5

KIT07689
ICM860

Features and Applications
- Increases starting torque up to 500%
- Ensures precise starts
- Reduces inventory
- Not affected by ambient temperature
- Recycles instantly (less than one second)
- Dual voltage operation: either 115 or 240 VAC motors
- Fuse protection
- Not effected by voltage or current fluctuations

Specifications
- Voltage: 90-277 VAC
- Max Input Voltage: 390 VAC
- Oper. Temp. Range: -40°C to +65°C
  88-106 Mfd. 330 V capacitor
- For 2 to 5 HP applications

Replaces
- Supco: SPP-6
- Mars: 32702
- A-1: WXS-6

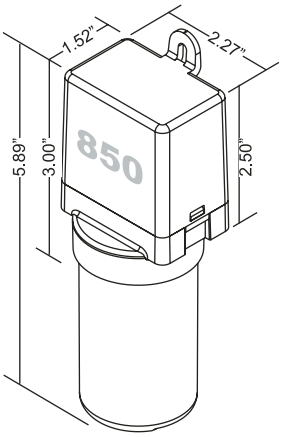
Motor Starters

RapidStart® Series 850/860 - The Differential Potential

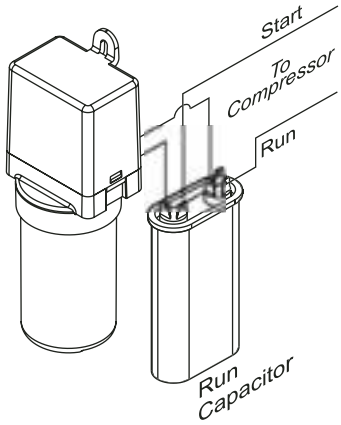
Applications
Water coolers
Vending Machines
Household refrigerators (115 or 230 VAC)
Commercial refrigeration
(115 or 230 VAC)
Air conditioners and heat pumps

Dimension, System, and Wiring Diagrams

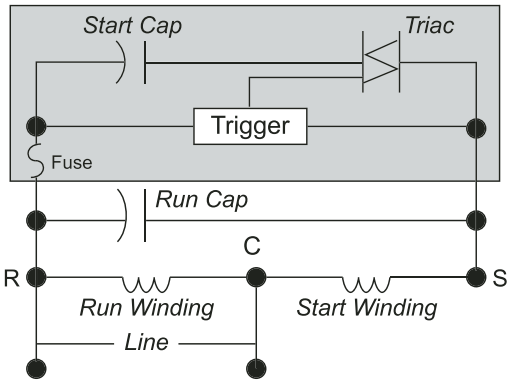
Dimensions



System Diagram



Wiring Diagram



Maximum input voltage = 390 VAC RMS
(Maximum run cap volts)
Input voltage = Run winding volts + start winding volts
Note: Run cap volts is higher than line voltage

RapidStart® Comparison

	Hard Start			Soft Start	
	Differential Current Relay	Potential Relay		PTCR Devices	Timing Devices
	ICM RAPIDSTART®	KICKSTART	Conventional 3-Wire Relay Capacitor Kit	Gemline HS600 and HS650 MARS 32701 and 32702 ROBERTSHAW 600-052 and 600-057 SUPCO SPP5, SPP6, and SPP7 WATSCO WSX-5 and WSX-6	SUPCO SPP8 WATSCO WSX-1
Self Adjusting	Yes	No	No	No	No
Uses Current Differential Technology	Yes	No	No	No	No
Uses Potential Motor Start Relay	No	Yes	Yes	No	No
Two Wires, Non-Polarized	Yes	Yes	No	Yes	Yes
Recycles Instantly	Yes	Yes	Yes	No	No
Senses Whether Motor Started or Not	Yes	Yes	Yes	No	No
Replaces 3-Wire Relay and Capacitor Kit	Yes	Yes	N/A	No	No
UL Recognized #E11867	Yes	Yes	No	No	No
Approved by Compressor Manufacturers	Yes	Yes	Yes	No	No
Approved by Equipment Manufacturers	Yes	Yes	Yes	No	No
Used by OEM Manufacturers	Yes	No	No	No	No
Safety Cut-off	Yes	No	No	No	No
True Power Factor Starting	Not Required	Yes	Yes	Yes	Yes
Factory Calibration	No	Yes	Yes	Yes	Yes
Voltage Sensitive	No	No	No	Yes	No
PTCR Device	No	No	No	No	Yes
Timing Circuit Device	No	No	No	Yes	Yes
Affected by Ambient Temperature	No	No	No	Yes	Yes

Thermostat

	Programmable				
ServiceFirst Item No.	THT02403	THT02404	THT02405	THT02406	THT02407
Mfg. No.	SC3000	SC3001	SC3006	SC3201	SC3801
Features					
Single Stage	✓	✓	✓		✓
2 Stage				✓	✓
Heat Pump	✓	✓	✓	✓	✓
Heat	✓	✓	✓	✓	✓
Cool	✓	✓	✓	✓	✓
Status LEDs			✓	✓	✓
Backlit		✓	✓	✓	✓
Auto Changeover		✓		✓	
7-Day Programmable	✓	✓	✓	✓	✓
Programmable Fan					✓
Non-Programmable	✓	✓	✓	✓	✓
Battery	✓				
Hardwired		✓	✓	✓	✓
Millivolt Compatible	✓				
4 or 5 Wire Compatible	✓	✓	✓		✓
Freeze Protection	✓				
Keypad Lockout			✓		✓

	Non-Programmable										
ServiceFirst Item No.	THT02394	THT02412	THT02395	THT02413	THT02396	THT02397	THT02398	THT02399	THT02400	THT02401	THT02402
Mfg. No.	SC1600	SC1601	SC1800	SC1801	SC1900	SC1901	SC2000	SC2001	SC2200	SC2201	SC2300
Features											
Single Stage	✓	✓	✓	✓	✓	✓	✓	✓			
2 Stage									✓	✓	✓
Heat Pump							✓	✓	✓	✓	
Heat	✓	✓	✓	✓			✓	✓	✓	✓	✓
Cool					✓	✓	✓	✓	✓	✓	✓
Status LEDs									✓	✓	✓
Non-Programmable	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Battery	✓		✓		✓		✓		✓		✓
Hardwired		✓		✓		✓		✓		✓	
Millivolt Compatible	✓		✓				✓				
4 or 5 Wire Compatible							✓	✓			
Freeze Protection	✓	✓	✓	✓			✓	✓			

Programmable Thermostat

Series SC3000

Battery

THT02403 (SC3000)
7-Day Programmable, Single Stage Heat / Single Stage Cool or Single Stage Heat Pump, Manual Changeover
Terminations: RC, RH, W, Y, O, B, G

Features
- Elegant Design
- 7-Day Programmable
- Large Backlit LCD Display*
- Precise Temperature Sensing
- Non-Volatile Program Memory
- Easy Access Terminal Block
- Zoning System Compatible
- Compatible with Standard 24-volt AC Heating/Cooling Systems
- Integral Four-Minute Anti-Short Cycle Protection
- Temporary and Vacation Hold
- Mercury-free, Environmentally Safe

* ICM Series SC3000 is not backlit

Simpleset™ 7-Day Programming
- Simple programming with an ICM exclusive "step back" feature
- Simple and versatile programming options:
  - 7-Day Programming - Individually program each day or program one day and copy it for the entire week
  Battery

Specifications
- Electrical Rating: 24 VAC (18 to 30 VAC)
  1 amp maximum per terminal
  4 amp maximum total load
- Temperature Control Range: 45°F to 90°F Accuracy: (± 1 °F)

Programmable Thermostat

Series SC3001 / SC3006 / SC3201 / SC3801

Hardwired

THT02404 (SC3001)
7-Day Programmable, Single Stage Heat / Single Stage Cool or Single Stage Heat Pump, Manual Changeover
Terminations: RC, RH, C, W, Y, O, B, G

THT02406 (SC3201)
7-Day Programmable, 2 Stage Heat Pump, Manual Changeover
Terminations: R, C, Y1, Y2, W2, O, B, G, E, L

THT02405 (SC3006)
7-Day Programmable, Single Stage Heat / Single Stage Cool or Single Stage Heat Pump, Auto Changeover
Terminations: RC, RH, C, W, Y, O, B, G

THT02407 (SC3801)
7-Day Programmable, 2 Stage Heat / 2 Stage Cool or 2 Stage Heat Pump, Auto Changeover
Terminations: R, C, W 1 /O/B, Y1 , W2, Y2, G, S 1 , S2

Remote sensor unit for SC3801

SEN01226 (ACC-RT104)
Optional for use with SC3801 for remote temperature sensor mounting
Terminations: S1, S2

Non-Programmable Thermostat

Series SC1600 / SC1800 / SC1900 / SC2000 / SC2200 / SC2300

Battery

Features
- Elegant Design
- Zoning System Compatible
- Adjustable Differential
- Large LCD Temperature Display
- Precise Temperature Sensing
- Easy Access Terminal Block
- Selectable Fahrenheit or Celsius
- Compatible with Standard 24-volt AC Heating/Cooling Systems
- Integral Five-Minute Anti-Short Cycle Protection
- Mercury-free, Environmentally Safe
- Manual Changeover

Specifications
- Electrical Rating: 24 VAC (18 to 30 VAC) 1 amp maximum per terminal 4 amp maximum total load
- Temperature Control Range: 45°F to 90°F Accuracy: <± 1 °F)

Applications
- Residential New construction/ replacement
- Light Commercial

THT02394 (SC1600)
Heat Only, Single Stage Heat
No Fan
Terminations: R, W

THT02395 (SC1800)
Heat Only, Single Stage Heat
Terminations: R, W, G

THT02396 (SC1900)
Cool Only, Single Stage Cool
Terminations: R, Y, G

THT02398 (SC2000)
Single Stage Heat / Single Stage Cool or
Single Stage Heat Pump
Terminations: RC, RH, W, Y, O, B, G

THT02400 (SC2200)
2 Stage Heat Pump
Terminations: R, C, Y1, Y2, W2, O, B, G, E, L

THT02402 (SC2300)
2 Stage Heat / 2 Stage Cool
Terminations: RC, RH, C, W1, W2, Y1, Y2, G

Non-Programmable Thermostat

Series SC1601 / SC1801 / SC1901 / SC2001 / SC2201 / SC2211

Hardwired

THT02412 (SC1601)
Heat Only, Single Stage Heat
No Fan
Terminations: R, C, W

THT02397 (SC1901)
Cool Only, Single Stage Cool
Terminations: R, C, Y, G

THT02401 (SC2201)
2 Stage Heat Pump
Terminations: R, C, Y1, Y2, W2, O, B, G, E, L

THT02413 (SC1801)
Heat Only, Single Stage Heat
Terminations: R, C, W, G

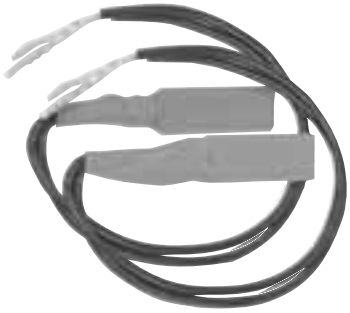
THT02399 (SC2001)
Single Stage Heat / Single Stage Cool or
Single Stage Heat Pump
Terminations: R, C, W, Y, O, B, G

New Construction

Series SC055 to SC075
Series SC605 to SC075S

Applications
The SC055 to SC075S series thermostats are low cost, single set point thermostats intended for use as temporary devices to provide heating or cooling to allow drywall to dry during construction. Also can be used for low ambient cutoff switch.

Specifications
- Electrical Rating: 24 VAC (18 to 30 VAC) amp maximum
- Temperature Control Range: 55°F to 75°F Accuracy: (± 5°F)



THT02385 (SC055) to THT02392 (SC075)
- Two-wire installation
- Five fixed set point models to choose from: 55°F to 75°F in five-degree increments

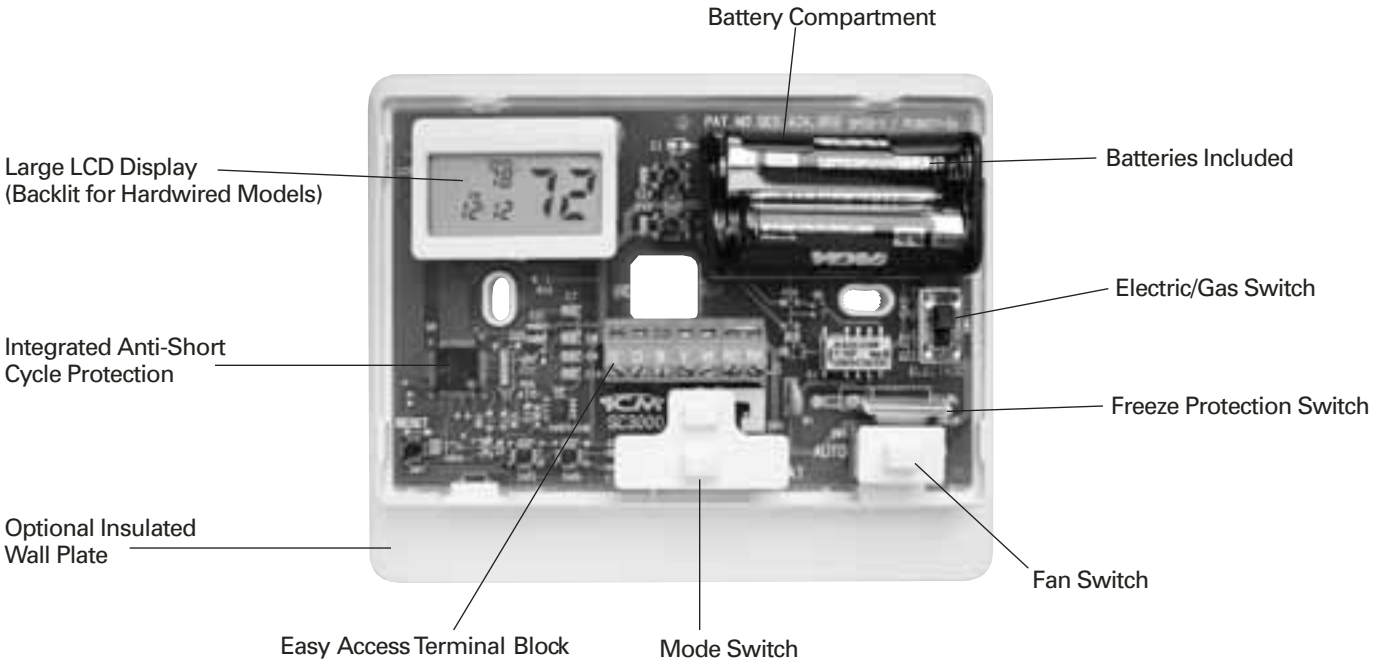
THT02387 (SC060S) to THT02393 (SC075S)
- Three-wire installation
- Switched fan, 3 modes
  - Fan only
  - Off
  - Heat or Cool
- Four fixed set point models to choose from: 60°F to 75°F in five-degree increments

Hardwired

Dryout Thermostats

ServiceFirst Item No.	THT02385	THT02386	THT02387	THT02388	THT02389	THT02390	THT02391	THT02392	THT02393
Mfg. No.	SC055	SC060	SC060S	SC065	SC065S	SC070	SC070S	SC075	SC075S
Temperature Range	55°F ±5°	60°F ±5°	60°F ±5°	65°F ±5°	70°F ±5°	70°F ±5°	70°F ±5°	75°F ±5°	75°F ±5°
2-Wire	✓	✓		✓		✓		✓	
3-Wire			✓		✓		✓		✓
Heat		✓	✓	✓	✓	✓	✓		
Cool	✓							✓	✓
Switched Fan			✓		✓		✓		✓

Diagrams


Battery Compartment
Large LCD Display
(Backlit for Hardwired Models)
Batteries Included
Electric/Gas Switch
Integrated Anti-Short
Cycle Protection
Freeze Protection Switch
Optional Insulated
Wall Plate
Fan Switch
Easy Access Terminal Block
Mode Switch

Accessories

Wallplates

PLT03837 (ACC-WP01)
PLT03838 (ACC-WP02)

Need more wall coverage? Choose an ICM insulated wall plate.

The fast, easy solution for hiding wall problems.
- Rugged, flexible construction
- Foam gasket prevents drafts through wall opening
- Hidden mounting screws (included) for a sleek appearance

Choose from two convenient sizes:
- ACC-WPO1 - $4^{27}/_{32}$" x $5^{15}/_{16}$"
- ACC-WP02 - $5^{19}/_{32}$" x $7^{1}/_{2}$"

Remote Sensor for SC3801

SEN01226 (ACC-RT104)

Need to monitor the temperature away from the thermostat? Choose an ICM remote sensor.

The fast, easy solution for temperature sensing problems.
- For tamper-prone areas
- Poor air flow areas
- Troubled applications
- Foam gasket prevents drafts through wall opening

Mounts to standard 2" x 4" outlet box
- ACC-RT 104 - $2^{3}/_{4}$" x $4^{1}/_{2}$"

SERVICEFIRST™

Literature Order Number	RSP-PRC024-EN
Filing Hierarchy	Service Products / Controls
Date	February 2004
Supersedes	RSP-D-107 0399
Stocking Location	Inland

Trane has a policy of continuous product and product data improvement and reserves the right to change design and specifications without notice.