

Humidistats

The J10 controls are designed to regulate the relative humidity of confined spaces by cycling humidifying or dehumidifying equipment. They are designed for use as internal components for portable humidifiers and dehumidifiers, and as wall mounted humidity controls for central systems. The J10 is a relative humidity control, consisting of a humidity sensing element, adjustable setpoint cam and an electrical switch. The sensing element changes length in response to the exposed RH to move the switch mechanisms at the appropriate switch points.

APPLICATIONS

- Dehumidifiers.
- Space and Product Humidifiers.
- Ventilation fans for confined spaces.
- Materials processing.
- Central HVAC units.



FEATURES

- Strong plastic frame with integral switch.
- Improved woven nylon sensing element provides 12 times faster speed of response than film nylon elements.
- Greater stability of setpoints over dramatic changes in relative humidity.
- Improved differential allowing 5%RH.
- Switch grade plastic frame eliminates the need for grounding the control.
- Choice of 5% or 15%RH differentials.
- Choice of (2) SPST and (2) SPDT switches to better match applications.
- Choice of fixed or adjustable setpoints.
- Choice of dial shaft flat orientation.
- Gold-plated contacts available for microprocessor load applications.
- Available with case and cover for wall/duct mounting.
- Electronic controls available contact Ranco Marketing.

SPECIFICATIONS

Humidity Ranges

10 to 60%RH.
20 to 80%RH.
30 to 90%RH.

Differentials

5%RH or 15%RH.

Switch

SPDT or SPST.
6.3 X 0.8 mm Terminals.

Function of Terminals (when present)

- 1 Close on %RH increase
- 2 Common.
- 3 Close on %RH decrease.

Switch/Frame Insulation Material

Thermoplastic, Flame Class 94V-0.
Comparative Tracking Index 600.

Approvals

The controls meet IEC 60730 - 1 & 2 - 13, UL 873 and CSA C22.2, No. 24.

Control Cycle Ratings

Automatic switch cycles @60° C 50000.
Manual dial shaft cycles 6000.

Ambient Temperature Limitations

Switch Head 0° C to 60° C.
Shipping -30° C to 65.6° C.

Enclosure Protection

IP00.

Electrical Shock Protection

Class 1.

Method of Attachment

Screw; Optional user defined snap-in.

TYPICAL SPECIFICATIONS

(No case/cover)				Approved ratings at 125/250 VAC		
Code Series	Typical Application	Switch	Terminal Numbers	Inductive, FLA, amps	Inductive, LRA, amps	Resistive, NIA, amps
J10 - 1000	Dehumidification	SPST	2 - 1	12.0/3.7	50/22.2	12.0/3.7
J10 - 2000	Humidification	SPST	2 - 3	12.0/3.7	50/22.2	12.0/3.7
J10 - 7000 & J10 - 7300	Dehumidification & Humidification	SPDT	2 - 1 2 - 3	12.0/3.7 2.0/1.0	50/22.2 12.0/6.0	12.0/3.7 2.0/1.0
J10 - 7100	Humidification & Dehumidification	SPDT	2 - 3 2 - 1	12.0/3.7 2.0/1.0	50/22.2 12.0/6.0	12.0/3.7 2.0/1.0

UL/CSA approved to 6000 cycles.

EN approved ratings are at 250 VAC only, 50000 cycles.

(With case/cover)				UL/CSA Ratings				Special Features
Code Series	Function	RH Range	Switch	VAC	FLA	LRA	PD,VA	
J10 - 808	Humidistat	10% - 60%	SPST	< 30	N/A	N/A	N/A	Wall / Duct Mount (Not Shown)
J10 - 809 W J10 - 809 V	Dehumidistat	20% - 80%	SPST	< 30	N/A	N/A	N/A	Wall Mount
J10 - 810*	Dehumidistat	20% - 80%	SPST	125	7.5	4.5	250	Wall Mount (Verticle)
J10 - 821*	Humidistat	20% - 80%	SPST	125 250 24	7.5 3.3	4.5 20	250 250 72	Wall Mount (Horizontal)

*Ratings are CSA, NRTL only File LR 18321.

Note: J10 - 809 W = White Cover, J10 - 809 V = Verticle Mount.

TYPICAL DRAWINGS

Case

(Click on the above description to view the drawing)

Dial Layout

(Click on the above description to view the drawing)

Mechanism

(Click on the above description to view the drawing)

Contact Ranco North America marketing for further information or application assistance.

Ranco V1-V12 4-Way Reversing Valves



APPLICATIONS

The RANCO 4-Way Reversing Valve, when installed in a heat pump system, reverses the direction of refrigerant flow through the heat exchanger coils to provide heating or cooling from the system and to provide for defrosting of the outdoor coil in air source units. It is designed for residential and commercial heat pumps (unitary and split systems), including air and water heat sources.

SPECIAL FEATURES

- Designed for minimal pressure drop to allow higher system efficiencies.
- 4-way pilot valve uses high and low side refrigerant pressure to push and pull the main valve slide for positive reversals at low pressure differentials.
- Hermetic construction using high quality materials (brass, copper, stainless steel) to eliminate external leakage for longer system life
- Teflon® lubricated sliding surfaces provide reduced internal friction and high contaminant resistance to provide longer valve durability and reliability (V4–V12).
- Low solenoid power consumption provides a Class B UL thermal rating for AC coils.
- Solenoid coils have 1/4 male quick connects and are color coded by voltage.
- Solenoid coils can be removed within the length of the valve body and can be shipped attached to the valve in a choice of 4 positions.
- Available W29 wiring harnesses are shipped separately.
- Wiring harnesses can be specified at various lengths, terminations, and identification.

Valve Specifications

Minimum/Maximum P to reverse	15/440 psi (V12 - 15/400 psi)
Maximum normal working pressure	680 psi (V12 - 500 psi)
Maximum abnormal pressure (fatigue)	833 psi (V1 - V10 only)
Minimum burst pressure	2500 psi
Maximum operating temperature	250° F
Maximum brazing temperature ¹	250° F
Maximum sound level ²	50dB
Maximum external leakage ³	0.1 ounce per year
Known compatible refrigerants	R12, R22, R134a, R500, R502, R410a, R407c, R404a
Minimum life	165,000 cycles
Mounting position	Any

¹ Measured on valve body at connection tube interface.

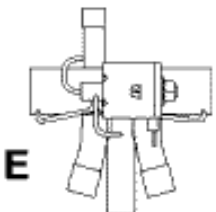
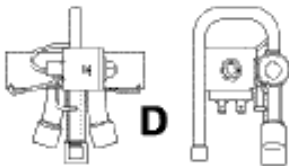
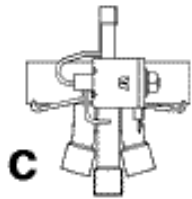
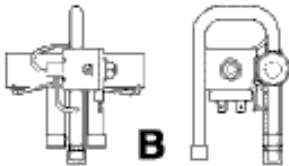
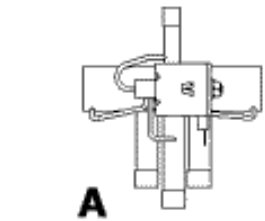
² A-scale, 0.0002 Dyne/cm² reference, 12" from valve, 40 dB or less background.

³ Leakage measured at 400 psig internal pressure.

- A - Straight
- B - Candycane
- C - Flare
- D - Candycane w/ Flare
- E - Offset w/Flare
- F - Offset Straight

Valve Selection Guide

Valve Type	Capacity, Tons Minimum to Nominal R22	Internal Leakage, cc/min	Tube Style	Standard Connections Tube Sizes Female I.D., Inches	
				Discharge	Suction, L,R
V1	0.4 to 1	400 to 2000	A, B	1/4", 5/16", 3/8"	3/8", 1/2"
V2	0.75 to 2	400 to 2000	A, B	1/4", 5/16", 3/8"	3/8", 1/2"
V2	1 to 2.5	400 to 2000	C, D	3/8", 1/2"	5/8"
V3	1 to 2.8 (3 on 3/4)	500 to 2000	E	3/8", 1/2"	5/8", 3/4"
V4	1 to 4	500 to 4000	A	1/2", 5/8", 3/4"	3/4", 7/8"
V6	1/ 5.5	500 to 4000	A	3/8", 1/2", 5/8", 3/4"	3/4", 7/8"
V10	3 to 8.5 (9.5 on 1/8)	800 to 6000	A	1/2", 5/8", 3/4", 7/8"	7/8", 1 1/8"
V12	5 to 12	1500 to 15000	F	1 1/8"	1 3/8"



Minimum capacities shown are recommendations based on standard ARI conditions (45° F Evap. 130° F Cond., 10° F SH, 10° F SC, 64.8 Btu/lb. H) and reciprocating compressors. System manufacturers are encouraged to conduct their own application testing to assure positive valve reversals under all anticipated operating conditions.

Nominal Capacity shown at 2 psig suction pressure drop. Maximum capacity not shown; Suction pressure drop vs. valve type used must be rationalized.

Valves for systems using alternate compressor styles and/or high efficiency, large volume coils should be evaluated for proper sizing to ensure minimum valve pressure drop and capacity for reliable reversals.

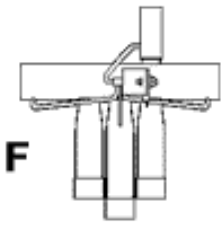
Male O.D. tube sizes are also available.



Typical Valve Drawing (V2)

Front View Top View Side View

(Click on the above descriptions to view the drawing)



Suction Pressure Drop Chart (R22)

(Click on the above description to view the drawing)

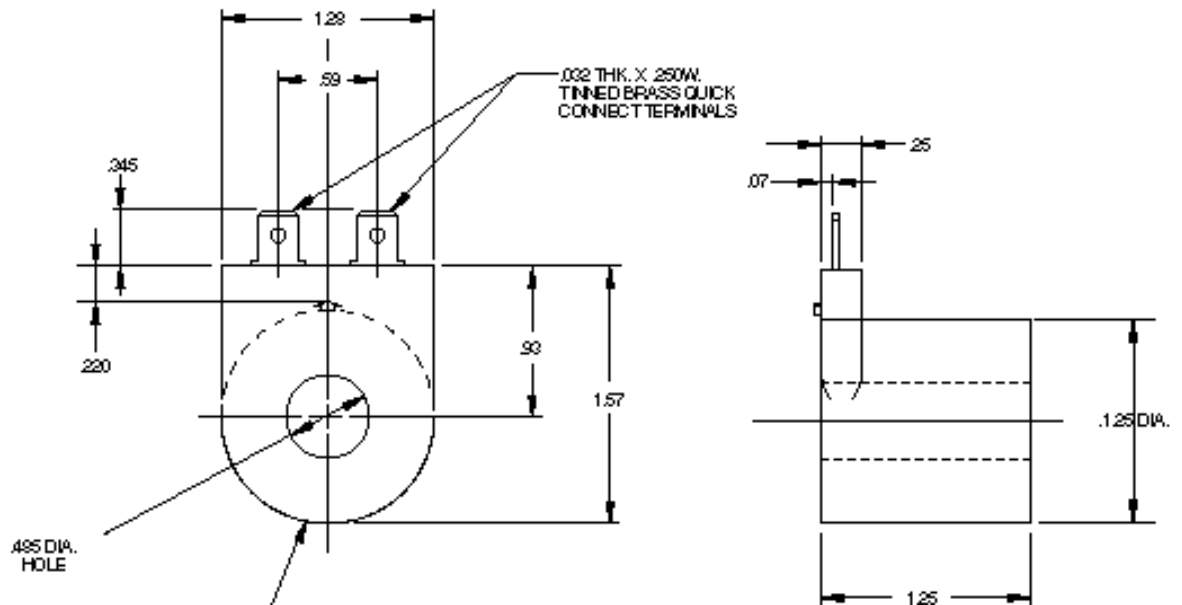
L30 Solenoid Coil Specifications

Coil Type	Color	Voltage	Frequency	Wattage 50/60 Hz	VA 50/60 HZ	UL Thermal Class
L30 - 12	Red	24 VAC	50/60 Hz	6/4 W	11/8	B
L30 - 32	Black	120 VAC	50/60 Hz	6/4 W	10/8	B
L30 - 42	Green	208/240 VAC	50/60 Hz	6/4 W @240	12/9 @240	B
L30 - 52	Blue	277 VAC	50/60 Hz	5/4 W	10/8	B
L30 - 62	Black	480 VAC	50/60 Hz	5/4 W	10/8	B
L30 - H2	Orange	600 VAC	50/60 Hz	5/4 W	11/9	B
L30 - 73	Yellow	12 VDC	DC	8.5 W	9	F
L30 - 83	Orange	24 VDC	DC	8.5 W	9	F

Minimum / Maximum operating voltage are 85%/110% of rated voltage.

TYPICAL COIL DRAWING

(Dimensions in inches)

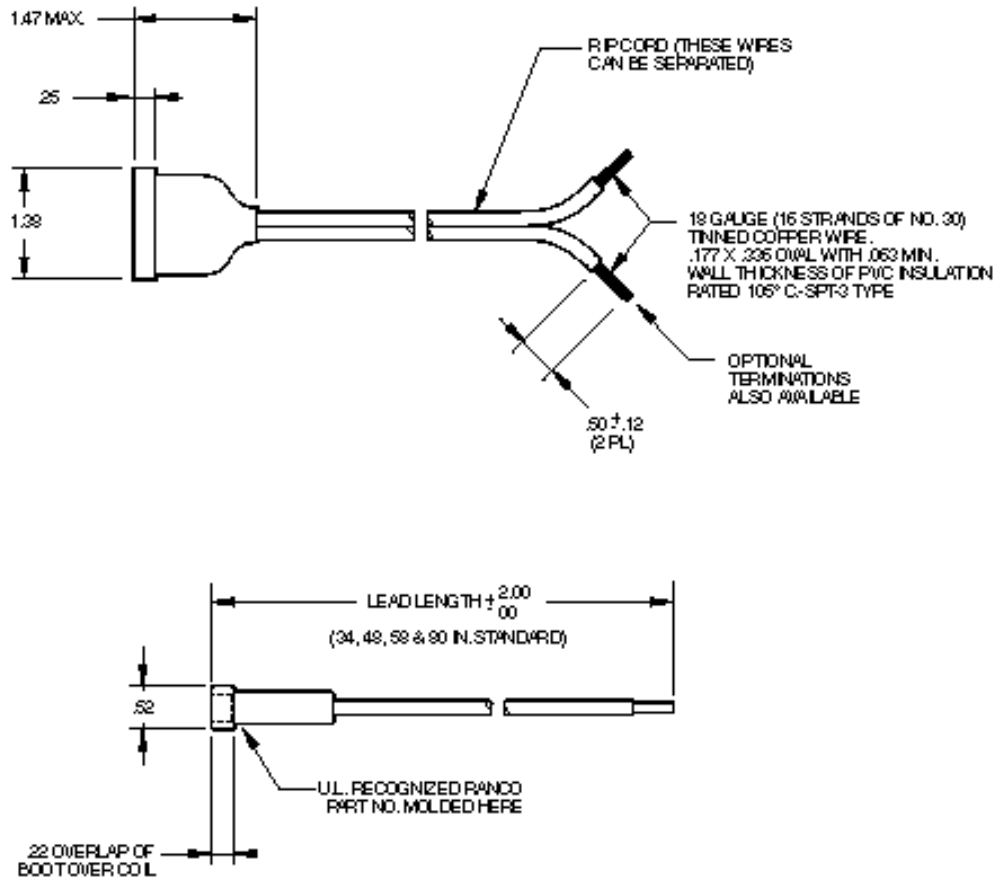


W29 Wiring Harness Features

- Two 18 GA wires insulated with 105°C rated PVC, rip cord style.
- Wires are terminated on coil end with 1/4" female terminals which are over molded with PVC to form a moisture/dust sealing boot for the coil/harness connection
- Custom wire lengths, terminations and markings are available to meet system needs.

TYPICAL WIRING HARNESS DRAWING

(Dimensions in inches)



All components herein are recognized under UL File MH 5961 and CSA File FR 1942

Contact Ranco North America marketing for further information or application assistance.

HVAC Electronic Controls

Ranco North America produces a wide range of electronic controls for a broad array of OEM (Original Equipment Manufacturer) HVAC applications. These range in complexity from very simple devices to comprehensive multifunction equipment controls.



APPLICATIONS

- The possibilities are almost limitless, but Ranco has designed and produced electronic controls for a number of different applications already, including:
 - Room Air Conditioners.
 - Packaged Terminal Air Conditioners (PTAC).
 - Humidifiers/Dehumidifiers.
 - Electronic Air Cleaners.
 - Heat Pump Defrost Controls.
 - Thermostats for a broad range of applications.

FEATURES / CAPABILITIES

- Modern state of the art manufacturing practices and techniques.
 - ISO and QS quality certification.
 - Just-In-Time, one piece flow production.
 - Continuous improvement of safety, efficiency, cost, quality, and valued products via Kaizen.
- Modern state-of-the-art manufacturing equipment.

- Broad range of design competencies.
 - Microprocessor - based controls.
 - Discrete component - based controls.
 - Packaging/Plastics when appropriate.
 - Remote communication when appropriate.
 - Displays and user interfaces.
 - An appreciation for cost effective designs.
 - Design and application of sensors.
- Partnership responsibilities and services.
 - Specification development and collaborative efforts to enhance both functionally and total cost.
 - Software - based development tools that can be used by customers to iron out specification issues without having to build and wait for additional samples.

- Surface mount, one piece flow, assembly lines.

- Radial and axial automatic insertion equipment.

- In-Line test equipment.

- Strict confidentiality regarding customer's proprietary concepts and information is always maintained.

How to take the next step

Whether you have very straightforward or quite complex electronic control needs, contact your local Ranco sales representative or the Ranco marketing department in Plain City, OH.

It is always helpful to have an idea of the product specification, annual unit volume, and target cost in mind as we engage in the process of determining our ability to satisfy your electronic control requirements. We look forward to working with you on your next project.

TYPICAL PRODUCTS

Room Air Conditioner Control



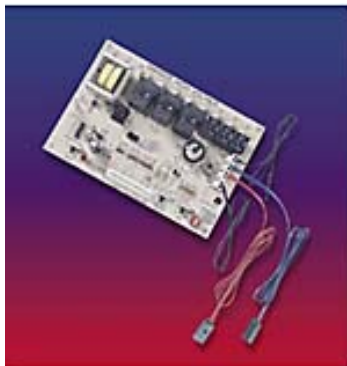
Complete electronic control of a room air conditioner is provided. Incorporates a display and user interface.

Electronic Humidity Control



Provides electronic control of humidity levels.

Packaged Terminal Air Conditioner Control



Complete electronic control of a PTAC unit, incorporating a number of value - added features specific by the customer.

Electronic Air Cleaner Filter Maintenance Interval Control

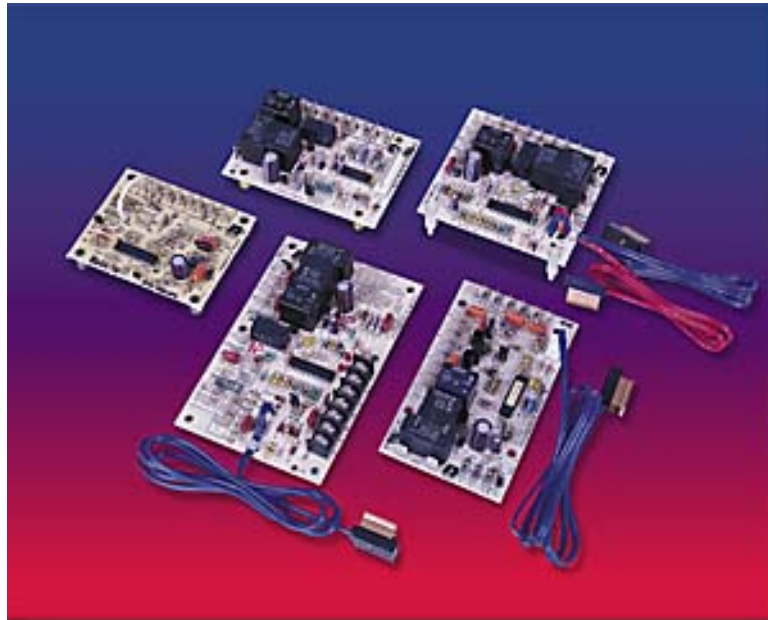


Provides indication that filters should be cleaned or replaced based on elapsed run time.

Contact Ranco North America marketing for further information or application assistance.

Electronic Defrost Controls

Ranco electronic defrost controls are designed to control the removal of frost and ice from the outdoor coil of an air - source heat pump (unitary and split systems).



SPECIAL FEATURES

- Microprocessor - based control, providing:
 - Fewer parts for greater reliability and quality.
 - Lowest cost factory programming of new features.
 - Superior nuisance electrical noise filtration.
 - Accurate timing, based on line frequency; immune to aging effects of traditional RC timers.
- Demand Defrost algorithm available
 - D.O.E. approved for energy credit.
 - Defrost occur only when needed.

OPTIONAL FEATURES

Both the basic Time / Temperature and advanced Demand Defrost controls are available with additional features and functions integrated on the control itself that allow the manufacturer to enjoy both enhanced performance and reduced total cost benefits. These available optional features include:

- Anti-short cycle protection for the compressor that allows elimination of a separate relay and associated wiring.
- Integral relays for the control of components such as the compressor, indoor air blower, outdoor fan, reversing valve, and auxiliary heat eliminate the need for separate relays and their associated wiring.
- Timer reset for elimination of unwanted defrost initiations.
- Integral coil temperature sensor that allows more accurate temperature measurement as well as the elimination of a separate thermostat.
- On-board or integral outdoor air temperature sensor which allows elimination of a separate thermostat and associated wiring and allows the integrated control of the compressor, indoor air blower, and auxiliary heat.
- Reversing valve control (valve switching logic).

- Fast test mode for systems diagnostics.
- On-board diagnostics assist service personnel in troubleshooting during service calls.

TYPE SELECTION

DT Series - Basic Time / Temperature defrost function - only control. Defrost is initiated when the system run time exceeds a predetermined value selectable by the user or when the outdoor coil enable temperature and elapsed time values are reached. The defrost cycle is terminated based on either a fixed factory selected time interval or upon temperature as determined by the external coil thermostat or integral coil temperature sensor.

DTL Series - Time / Temperature defrost function as described above with additional integrated functions incorporated on the board.

DD Series - Demand Defrost function - only control. Using a patented demand defrost algorithm, the control's microprocessor looks at the relationships between compressor run time, ambient air temperature, and outdoor coil temperature which define conditions under which defrost should occur. Defrost is initiated when the control determines that the system heat transfer has degraded to a point where it becomes less efficient to continue to operate the heat pump with accumulated ice than to spend the energy to defrost. Defrost is terminated after a fixed factory selected time interval or based upon temperature as determined by the coil temperature sensor.

DDL Series - Demand Defrost function as described above with additional integrated functions incorporated on the board.

TYPICAL SPECIFICATIONS

Temperature

40C to 85C (Storage).
-40C to 60C (Operating).

Humidity

0 to 100%RH, non-condensing.

Connectors

1/4" male quick connect terminals or terminal block.

Mounting

Metal eyelet stand-offs or plastic stand-offs.

Power Input

24 VAC nominal, 50/60 Hz.

Hold Input

10 mA max @24 VAC.

Output Devices

Normally open triacs -
400 mA @ 60C, 24 VAC.
Relays - various ratings available.

Hold Time (T1/T2/T3)**

As specified:
30/60/90 minutes.
30/45/90 minutes.

Defrost ON Time**

10 or 14 minutes or as specified.

Short Cycle Delay***

3 or 5 minutes or as specified.

Time accuracy

± 1%

Enable temperature***

Determined by external stat or 28° F to 40° F + 1.8° F

Termination temperature***

Determined by external stat or 45° F to 85° F + 1.8° F.

*Applicable only when compressor anti-short cycle protection is installed.

**Timing based on 60 Hz AC voltage; should 50 Hz power be utilized, all timing values will be extended by 20%; T1, T2, and T3 are changeable by jumpers and applicable to the DT and DTL series controls only. Other times are factory set.

***The temperature values shown are those for controls which incorporate an integral temperature sensor. Enable

50/70/90 minutes.

temperatures are factory set; termination temperature can be field selectable.

UL/CSA Approvals

DT, DTL, DD, and DDL control series pass all tests in UL873 and are UL recognized components. UL file number E78518, Volume 1, section 4 (DT), sections 5 and 6 (DTL), section 8 (DD), section 12 (DDL). CSA file number LR 59494.

Contact Ranco North America marketing for further information or application assistance.

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Ranco O Series and G Series Pressure Controls

Ranco O and G series pressure controls are designed to switch electrical loads such as contactors, relays, fans and motors in HVAC and Commercial applications in response to changes in sensed refrigerant pressure.



APPLICATIONS

- Control of suction pressure in either an operating or limit control role.
- Control of high side pressure in either an operating or limit control role.
- Condenser fan cycling.
- Compressor Lube Oil Protection.

G20 / G23

- Medium-duty rated pressure switch for mounting in an electrical panel.
- Bellows-operated control with fixed setpoints.
- Low (G20) and high (G23) pressure versions; automatic or manual reset (factory set).

010 / 011 / 016 / 020

- Heavy duty controller with NEMA 1 enclosure provides variety of mounting location options.
- Laser welded stainless steel bellows for extended life and accurate, precise settings.
- Super Cap[®] capillary protection system provides ten times more protection from vibration-induced breakage than controls with traditional capillary designs.
- Setpoints are adjustable within several available ranges with fixed and adjustable differentials.

070 / 071

- Compact size and lightweight control for fixed setting pressure sensing.
- Hermetically welded/brazed stainless steel snap discs/pressure fittings for long term leak protection.
- Available in close on pressure rise (O70) and open on pressure rise (O71) versions.
- SPST switch is watertight and environmentally sealed with epoxy resin.
- Wire leads or quick-connect terminal electrical connections.

012

- Same features as above except low pressure suction and high pressure discharge functions are combined in one control.
- High pressure reset can be "field converted" between manual and automatic.

SPECIFICATIONS

Reset	Switch	Control Type	Operating Range and Differential (See table)	Connection Style (See table)	Typical UL / CSA Ratings ¹				
					VAC (60 Hz)	FLA	LRA	NIA	PD, VA
Auto	SPST	O10	A,B,C,D,E	1,2,3	24 120 240	24 24	144 144		144 720 720
		O11	A,B,F						
		O12	Low (A) High (G or H)						
Manual	Low (J) High (H)								
Auto	SPDT	O16	A,B,C,D,E,N		120 240 240 ²	17 17 20	102 102 80	24 24	720 720
Manual			F						
Auto	DPST	O20	A,B,C,D,E	120 240	24 24	144 144	24 24	125 125	
Auto / Manual	SPST or SPDT	G20	K	1,2	120 / 240 ³ 120 / 208 ⁴	20 20	78 78		
		G23	L		240 277	8.3 7	39 42		
Auto	SPST	O70	L,M	3,4,5	24 120 - 277	10 5	40 20		48 375
		O71							

TYPICAL DRAWINGS

070	G20	010
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OPERATING RANGE AND DIFFERENTIAL TABLE

	Operating Range	Differential
A	12" Hg to 50 PSI	5 to 35 PSI
B	10" Hg to 100 PSI	10 to 40 PSI
C	50 to 150 PSI	10 to 40 PSI
D	100 to 250 PSI	20 to 100 PSI
E	100 to 400 PSI	40 to 150 PSI
F	150 to 450 PSI	40 to 150 PSI
G	100 to 250 PSI	50 PSI Fixed
H	150 to 450 PSI	70 PSI Fixed

CONNECTION STYLE

1. Capillary with 1/4" sweat tube (depth stop, optional)
2. Capillary with female flare nut (core depressor, optional)
3. Male flare
4. Female flare nut (core depressor, optional)
5. 1/4" sweat tube (depth stop, optional)

¹ O10 / O11 / O12 / O16 / O20 are UL Listed Devices (UL File SA 512) and CSA Recognized under LR 32079. G20 / G23 / O70 / O71 are recognized under UL SA512 and CSA LR 1942. Confirm ratings with factory as they vary within

J	10" Hg to 100 PSI	Fixed
K	5" Hg to 100 PSI Fixed	Fixed
L	100 to 450 PSI Fixed	Fixed
M	5 to 100 PSI Fixed	Fixed
N	12" Hg to 80 PSI	5 to 38 PSI

control type.

² Hermetic units only.

³ Three-wire power supply, 120 V ac to ground.

⁴ Four-wire power supply, 120 V ac to ground.

Contact Ranco North America marketing for further information or application assistance.

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Commercial Refrigeration Defrost Controls

Ranco North America's Paragon brand commercial refrigeration defrost controls are designed to meet a wide range of customer requirements for this important function on equipment such as reach-in's, walk-in's, condensing units, and refrigerated cases. Both electro-mechanical and electronic controls are available.



APPLICATIONS

- Defrost control, based upon time initiation and time termination.
- Defrost control, based upon time initiation and temperature termination.
- Defrost control, based upon time initiation and pressure termination.
- Complete refrigeration equipment control (ERC-2).



8000 Series Electromechanical Defrost Control

- Adjustable defrost initiation frequency (from one to six times per day).
- Adjustable defrost cycle duration (from four to 110 minutes in two minute increments).
- Contact arrangements for electric heat, hot gas, or off-cycle defrost available.
- 40 amp switch rating.
- Heavy duty steel case with electrical knockouts in the sides, back, and bottom.
- Heavy duty synchronous motor.
- Operating voltages 120 or 208/240 VAC.



Metal case and integrated display.



Metal case and remote display.



Mechanism only with remote display.

ERC-2 Electronic Refrigeration Control

- Offers complete control functionality, replacing a defrost control, temperature control, defrost termination switch, thermometer, and fan delay switch.
- Usable with electric heat, hot gas, or off-cycle defrost.
- Electronic control offers more reliable and accurate operation while allowing control parameters to be customized for each application.
- The control incorporates a digital display module that provides readout of time, temperature, and diagnostics. The digital display module also has a touch keypad for simple programming of desired control parameters.
- The digital display module can be remotely mounted and connected to the ERC-2 with a simple telephone jack cable or mounted directly on the ERC-2 case.
- Incorporates a real time clock.
- Case incorporates the same size and mounting footprint as the industry standard 8000 series Paragon defrost controls.
- Includes two temperature sensors (space and coil temperature)
- UL component recognition, CSA listed, NSF approved.
- 120 or 208/240VAC 50/ 60 Hz operation.

High output relays for equipment control

Compressor - 1 HP @ 120 VAC; 1.5 HP @ 208VAC; 2 HP @ 240 VAC 96 LRA/16 FLA @ 120 VAC; 72 LRA / 12 FLA @ 240 VAC.

Defrost Means - 16 amps resistive @ 120-208/240 VAC Pilot duty 470 VA @ 120-208/240 VAC.

Evaporator Fan - 1/2 HP @120 VAC; 3/4 HP @208VAC; 1 HP @240VAC.

Alarm - 5 amps resistive at 120-208/240 VAC.

- Wide ambient condition operating range -40F to 122F; 0-95% RH.
 - Operating parameters can be pre-programmed by Ranco.
 - The ERC-2 incorporates a capacitor that retains the time of day for up to 100 hours after a power failure.
 - All other program parameters and settings are maintained in an EEPROM processor which means that these are permanently saved, regardless of the duration of any power outage.
 - If there is a sensor failure, the ERC-2 can detect this and revert to a backup operating mode until the sensor can be replaced.
-



ERC-248 Electronic Defrost Control

- Compact design.
- Simple selectable settings:
 - Defrost interval (from 2 to 48 hours).
- Defrost duration (from 1 to 63 minutes).
 - 50 or 60 Hz operation.
- Two defrost types:
 - Timed interval:
 - Compressor run time.
- Three types of defrost termination:
 - Temperature (requires external thermostat).
 - Pressure (requires external pressure switch).
 - Time duration only.
- Time backup feature terminates the defrost cycle based on time should the external termination device fail to function.
- Manual Defrost can be accomplished by means of a push button if desired.
- Microprocessor-based design assures high reliability and accuracy.
- Cost effective solution.

Contact Ranco North America marketing for further information or application assistance.

Commercial Refrigeration Electronic Controls

Ranco North America has been a leader in electromechanical controls for commercial refrigeration for over fifty years. In addition to these time-proven products, Ranco also manufactures and markets a growing family of electronic controls that provide enhanced functionality and reliability in response to the needs of today's marketplace. These electronic controls presently range from basic thermostats to full equipment controls. Shown here are several typical controls that are in production either now or in the near future. With comprehensive design and manufacturing capabilities, we encourage you to contact us regarding your electronic control needs. Requests for further information or assistance may be made to Ranco North America marketing.



TYPICAL ELECTRONIC CONTROLS

ERC-248 Electronic Defrost Control

The ERC-248 electronic defrost control is designed to control the timing of defrost cycles in commercial refrigeration equipment such as reach-in's, walk-in's, and refrigerated fixtures.



- Time backup feature terminates the defrost cycle based on time should the external termination device fail to function.
- Manual Defrost can be accomplished by means of a push button if desired.
- Microprocessor-based design assures high reliability and accuracy.
- Cost effective solution.

- Compact design.
- Simple selectable settings:
 - Defrost interval (from 2 to 48 hours).
 - Defrost duration (from 1 to 63 minutes).
 - 50 or 60 Hz operation.
- Two defrost types:
 - Timed interval.
 - Accumulated Compressor run time.
- Three types of defrost termination:
 - Temperature (requires external thermostat).
 - Pressure (requires external pressure switch).
 - Time duration only

ERC-2 Electronic Refrigeration Control

The ERC-2 series control provides complete refrigeration control for many types of commercial refrigeration equipment such as reach-in's, walk-in's, condensing units, and other refrigerated fixtures.



- Offers complete control functionality, replacing a defrost control, temperature control, defrost termination switch, thermometer, and fan delay switch.
- Usable with electric heat, hot gas, or off-cycle defrost.
- Electronic control offers more reliable and accurate operation while allowing control parameters to be customized for each application.
- The control incorporates a digital display module that provides readout of time, temperature, and diagnostics. The digital display module also has a touch keypad for simple programming of desired control parameters.
- The digital display module can be remotely mounted and connected to the ERC-2 with a simple telephone jack cable or mounted directly on the ERC-2 case.
- Incorporates a real time clock.
- Case incorporates the same size and mounting footprint as the industry standard 8000 series Paragon defrost controls.

High output relays for equipment control

Compressor - 1 HP @ 120 VAC; 1.5 @ 208 VAC; 2 HP @ 240 VAC
96 LRA/16 FLA @ 120 VAC; 72 LRA/12 FLA @ 240 VAC.

Defrost Means - 16 amps resistive @ 120 - 208/240 VAC Pilot duty
470 VA @ 120 - 208/240 VAC.

Evaporator Fan - 1/2 HP @ 120 VAC; 3/4 HP @ 208 VAC; 1 HP @ 240 VAC.

Alarm - 5 amps resistive at 120 - 208/240 VAC.

- Wide ambient condition operating range -40F to 122F; 0 - 95% RH.

- Includes two temperature sensors (space and coil temperature).
- UL component recognition, CSA listed, NSF approved.
- 120 or 208/240 VAC 50/60 Hz operation.
- Operating parameters can be pre-programmed by Ranco.
- The ERC-2 incorporates a capacitor that retains the time of day for up to 100 hours after a power failure.
- All other program parameters and settings are maintained in an EEPROM processor which means that these are permanently saved, regardless of the duration of any power outage.
- If there is a sensor failure, the ERC-2 can detect this and revert to a backup operating mode until the sensor can be replaced.

ETC Electronic Thermostat

The ETC electronic thermostat, like its ET85 counterpart, utilizes microprocessor technology to provide a very user-friendly programmable one or two stage thermostat that offers unparalleled flexibility of use.

Applications are numerous; including refrigerated fixtures of all types as well as many HVAC applications that incorporate one or two stages of heating and/or cooling.

- Wide temperature range (-30° F to 220° F).
- Adjustable differential range (1° F to 30° F).
- LCD Digital Display shows
 - Temperature at the sensor.
 - Control settings.
 - Relay status.
 - Onboard diagnostics.
- Simple Key Pad settings.
- Remote temperature sensing up to 400 feet.
- Selectable Heat or Cool modes.
- Selectable Fahrenheit or Celsius modes.
- One Horsepower output relay.
- Concealed lockout switch to prevent tampering.
- Both one and two stage models available.
- 0-10 VDC analog output available.
- Settings retained in the event of a power failure.
- Sensor included with control.



Contact Ranco North America marketing for further information or application assistance.