

**TEMPERATURE & PRESSURE CONTROLS**

**LUBE OIL CONTROLS**

**P30 SERIES LUBE OIL PROTECTION CONTROLS**



These lube oil protection controls guard pressure-lubricated refrigeration compressors against major damage due to loss of oil pressure. If adequate oil pressure is lost, the built-in S30 Time Delay Switch starts timing. If the oil pressure does not recover within the set period, the control circuit is opened, stopping the compressor. These controls also feature time replaceable delay modules, SUPER CAP capillary protection system, front-located captive cover screw & adjustable pressure range (P30-3000 models only).

**ELECTRICAL RATING**

PILOT DUTY ONLY      720VA      120/240 VAC

PART NO	PRESSURE RANGE PSID	TIME DELAY (SEC)	REPL MODULE	PRESS CONNECTION			REPLACES	
				36"CAP W/NUT	MALE FLARE	MALE FLARE W/24" REFRIGERATION HOSE		
RAN-P30-5826	9 FIXED	120	S30-1302	•			PENN:P45NCA-12,P45NCA-35,81,86	
RAN-P30-5827	9 FIXED	120	S30-1302		•		P45NCB-8	
RAN-P30-5629	5 FIXED	60	S30-1307	•				
RAN-P30-3801	8 TO 60 ADJUSTABLE	120	S30-1302	•			PENN:2D5,2D15,275A,P10 7176,P45NCA-6,12 ,23,29,32,34,35,37,38,42,47,48,49	
RAN-P30-3701		90	S30-1200	•			PENN:828AA-1,P28AA-14,P28AA-35,P28DA-1,	
								P45NCA-7,19,22,39,40
RAN-P30-3601		60	S30-1307	•				PENN:P28AA-2,P28AA-46,2D14
RAN-P30-3803H		120	S30-1302				•	
RAN-P30-5827H	9 FIXED	120	S30-1302				•	
RAN-P30-5628H	5 FIXED	60	S30-1307				•	

**REFRIGERANT HOSE**



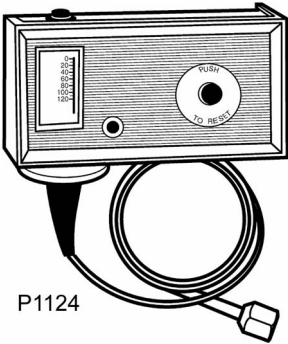
Refrigerant hose is a heavy duty hose designed for critical applications like commercial refrigeration. It is designed to resist breakage from compressor vibration. The refrigerant hose is made of teflon tubing surrounded by a braided 304 stainless steel wire.

**FEATURES**

- HOSE I.D. - 3/16"
- HOSE O.D. - 5/16"
- Maximum operation pressure – 3000 P.S.I
- Minimum burst pressure – 12000 P.S.I.
- Minimum bend radius – 2.00"
- Vacuum 28 in./Hg.

PART NO	HOSE LENGTH	FITTINGS (184 SAE)
RAN-1290132-A18	18	STRAIGHT 7/16 - 20 FEMALE FLARE CONNECTOR
RAN-1290132-A24	24	STRAIGHT 7/16 - 20 FEMALE FLARE CONNECTOR
RAN-1290132-A36	36	STRAIGHT 7/16 - 20 FEMALE FLARE CONNECTOR
RAN-1290132-A48	48	STRAIGHT 7/16 - 20 FEMALE FLARE CONNECTOR
RAN-1290132-B18	18	ONE STRAIGHT AND ONE 90 ELBOW 7/16 - 20 FEMALE FLARE CONNECTOR
RAN-1290132-B24	24	ONE STRAIGHT AND ONE 90 ELBOW 7/16 - 20 FEMALE FLARE CONNECTOR
RAN-1290132-B36	36	ONE STRAIGHT AND ONE 90 ELBOW 7/16 - 20 FEMALE FLARE CONNECTOR
RAN-1290132-B48	48	ONE STRAIGHT AND ONE 90 ELBOW 7/16 - 20 FEMALE FLARE CONNECTOR

**TYPE P32 LOW PRESSURE LIMIT CONTROL**



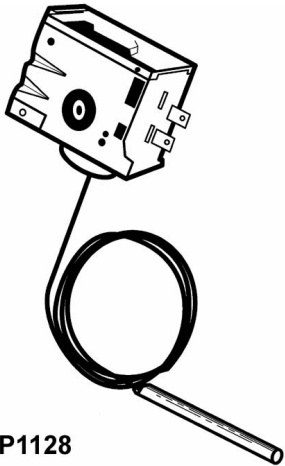
P1124

The Ranco P32 low pressure control provides freeze protection or low refrigerant protection on chillers and other refrigeration systems by sensing suction pressure. It is suitable for R-12, R-22, and R-502 refrigerants. A time delay is provided to allow for start-up in low ambient and momentary low pressure conditions during the run period. The timer is of the heated bimetal (warp) switch design with an ambient temperature compensator. Once the time delay period (standard is 120 seconds) has elapsed, the manual reset button must be depressed to restart the compressor. A five minute cool-down is required before resetting.

PART NO	VOLTAGE, AC	TIME DELAY	CAPILLARY with FLARE NUT (in)	CUT-OUT RANGE (psig)
RAN-P32-1201	120 or 240	120 seconds	72	0 to 100

**HIGH-LOW PRESSURE CONTROLS**

**G20/G23**



These controls provide extra protection to refrigeration compressors. Type RANG20 protects against loss of charge or evaporator freeze-up. Type RANG23 provides high head pressure protection.

- SPDT switch
- 60" pressure connection
- Automatic or manual reset
- Field-adjustable settings
- Variety of differentials
- Operates in any position
- Pressure-operated snap action switch

P1128

PART NO	CUT-OUT RANGE (psig)	DIFFERENTIAL (psi)	SETTING (psig)			
			OPEN	CLOSE	HIGH LIMIT	RESET
RAN-G20-4050	7 to 27	12 Fixed	7	19	34	Automatic
RAN-G20-4051	7 to 77	19 to 70	7	26	100	Automatic
RAN-G20-4412	7 to 70	17 Fixed	7	24	70	Manual
RAN-G23-5052	150 to 450	50 to 125	375	290	450	Automatic
RAN-G23-5253	150 to 450	105 Fixed	425	320	450	Manual

**O SERIES CUSTOM AND WIDE RANGE TEMPERATURE CONTROLS**

**O10 SERIES TEMPERATURE CONTROLS**



Recognizing the need for flexibility in design of refrigeration equipment, these controls offer a wide selection for such products as self-contained refrigerators, freezers, coolers, walk-in units, and refrigeration display cases.

**SPECIFICATIONS:**

- Maximum adjustment accuracy with 7 revolution range adjustment screws
- NEMA 1 enclosure with non-conductive cover
- Front-located captive cover screw
- Large easy-to read scale plate
- Universal mounting and compact design
- Laser-welded bellows for extended life

The O60, which uses the industry's most advanced sensing element technology, has these additional features:

- Virtually unaffected by ambient temperature
- 10 times the setting sensitivity of most other wide range controls
- Gas-filled, non position-sensitive bulb
- Adjustable differential

**ELECTRICAL RATING**

RATING	O10/O11				O16/O60				O20		
	24V	120V	240V	241-600V	24V	120V	240V	241-600V	120V	208/240V	480V
FULL LOAD AMPS	-	24	24	-	-	17	17	-	20	12	7.5
LOCKED ROTOR AMPS	-	144	144	-	-	102	102	-	120	72	45
PILOT DUTY (VA)	144	720	720	125	144	720	720	125	125	125	125
RESISTIVE LOADS AMPS	-	-	-	-	-	24	24	-	-	-	-

**EXTRA LOW**

PART NO	RANGE (°F)	DIFFERENTIAL (°F)	SWITCH	CAPILLARY LENGTH (in)	COMMENTS	REPLACES
RAN-O10-1000	-55 TO 0	3 to 20	SPST-OPENS LOW	72	DIFFERENTIAL AT LOW END OF RANGE IS 6 TO 25	--
RAN-O10-1419	-35 to 15	3 to 20	SPST-OPENS LOW	72	DIFFERENTIAL AT LOW END OF RANGE IS 6 TO 25	--
RAN-O10-1433	-35 to 15	3 to 20	SPST-OPENS LOW	72 W/REMOTE BULB	DIFFERENTIAL AT LOW END OF RANGE IS 6 TO 25	HONEYWELL : L4808

**LOW**

PART NO	RANGE (°F)	DIFFERENTIAL (°F)	SWITCH	CAPILLARY LENGTH (in)	COMMENTS
RAN-O10-1072	-15 to 40	3 to 20	SPST-OPENS LOW	AIR COIL	DIFFERENTIAL AT LOW END OF RANGE IS 6 TO 25
RAN-O10-1408	-15 to 40	3 to 20	SPST-OPENS LOW	72 W/REMOTE BULB	DIFFERENTIAL AT LOW END OF RANGE IS 6 TO 25

**O SERIES CUSTOM AND WIDE RANGE TEMPERATURE CONTROLS**

**O10 SERIES TEMPERATURE CONTROLS**

**MEDIUM**

PART NO	RANGE (°F)	DIFFERENTIAL (°F)	SWITCH	CAPILLARY LENGTH (in)	COMMENTS
RAN-O10-1416	0 to 55	3 to 20	SPST-OPENS LOW	72	DIFFERENTIAL AT LOW END OF RANGE IS 6 TO 25
RAN-O10-1418	0 to 55	3 to 20	SPST-OPENS LOW	AIR COIL	DIFFERENTIAL AT LOW END OF RANGE IS 6 TO 25
RAN-O10-1409	0 to 55	3 to 20	SPST-OPENS LOW	72 W/REMOTE BULB	DIFFERENTIAL AT LOW END OF RANGE IS 6 TO 25
RAN-O10-1010	0 to 55	7 to 55	SPST-OPENS LOW	48	--
RAN-O10-1473	0 to 55	7 to 55	SPST-OPENS LOW	72 W/REMOTE BULB	--
RAN-O10-1490	0 to 55	2 FIXED	SPST-OPENS LOW	72 W/REMOTE BULB	--

**HIGH**

PART NO	RANGE (°F)	DIFFERENTIAL (°F)	SWITCH	CAPILLARY LENGTH (in)	COMMENTS	REPLACES
RAN-O10-1802	25 to 75	3 to 20	SPST-OPENS LOW	AIR COIL	DIFFERENTIAL AT LOW END OF RANGE IS 6 TO 25	--
RAN-O10-1410	25 to 75	3 to 20	SPST-OPENS LOW	72 W/REMOTE BULB	DIFFERENTIAL AT LOW END OF RANGE IS 6 TO 25	--
RAN-O10-1491	25 to 75	2 FIXED	SPST-OPENS LOW	72 W/REMOTE BULB	--	JOHNSON 5T13 5T1A19AAF-21 572

**O16 SERIES TEMPERATURE CONTROLS**

**LOW**

PART NO	RANGE (°F)	DIFFERENTIAL (°F)	SWITCH	CAPILLARY LENGTH (in)	COMMENTS
RAN-O16-588	-15 TO 40	1.5 FIXED	SPDT	72	SOFT ICE CREAM MACHINE CONTROL

**MEDIUM**

PART NO	RANGE (°F)	DIFFERENTIAL (°F)	SWITCH	CAPILLARY LENGTH (in)	COMMENTS
RAN-O16-601	22.5 TO 47.5	2.5 FIXED	SPDT	36 W/ 3/8 X 6 REMOTE BULB	BULK MILK COOLER CONTROL
RAN-O16-111	0 TO 55	3 TO 20	SPDT	72	DIFFERENTIAL AT LOW END OF RANGE IS 6 TO 25
RAN-O16-104	0 TO 55	3 TO 20	SPDT	72 W / REMOTE BULB	DIFFERENTIAL AT LOW END OF RANGE IS 6 TO 25
RAN-O16-264	0 TO 55	MANUAL RESET	SPDT	96	MANUAL RESET
RAN-O16-263	0 TO 55	MANUAL RESET	SPDT	72 W / REMOTE BULB	MANUAL RESET

**O20 SERIES TEMPERATURE CONTROLS**

**MEDIUM / HIGH**

PART NO	RANGE (°F)	DIFFERENTIAL (°F)	SWITCH	CAPILLARY LENGTH (in)	COMMENTS
RAN-O20-7041	0 TO 100	6 TO 20	DPST-OPENS LOW	96 W/ 3/8 X 6 CROSS AMBIENT BULB	JOHNSON A72AA-3 A72AA-7

**O60 SERIES TEMPERATURE CONTROLS**

**EXTRA LOW- WIDE RANGE**

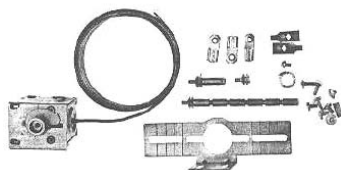
PART NO	RANGE (°F)	DIFFERENTIAL (°F)	SWITCH	CAPILLARY LENGTH (in)	COMMENTS	REPLACES
RAN-O60-100	.35 to 95	4 to 5	SPDT	96 W/ 3/8 X 6 CROSS AMBIENT BULB	10 TIMES THE SETTING SENSITIVITY OF OTHER WIDE RANGE CONTROLS	HONEYWELL-L6008C1008 T6031A1029 7675AA1508. JOHNSON:A19AAB-4 A19AAC-1 A19AAC-1 A19AAC-4 A70AQ-1.WHITE-RODGERS 1609-105 1639-6 1701-63 1609-103 1609-101
RAN-O60-101	.35 to 95	4 to 5	SPDT	AIR COIL	10 TIMES THE SETTING SENSITIVITY OF OTHER WIDE RANGE CONTROLS	HONEYWELL:T4054A1000 T4054B1008 T605441005.JOHNSON:A19BAC-2 A19BBC-2 WHITE-RODGERS:201-20 201-16 201-8.
RAN-O60-109	-20 TO 70	3.5 TC 35	SPST OPENS LOW	96 W/ 3/8 X 6 CROSS AMBIENT BULB	10 TIMES THE SETTING SENSITIVITY OF OTHER WIDE RANGE CONTROLS	PENN:A19ABA-40/40C HONEYWELL:T4031A-10073,T6031A-1029 WHITE-RODGERS:1609-101,102,105

**HIGH**

PART NO	RANGE (°F)	DIFFERENTIAL (°F)	SWITCH	CAPILLARY LENGTH (in)	COMMENTS	REPLACES
RAN-O60-200	95 TO 240	6 TO 50	SPDT	96 W/ 3/8 X 6 CROSS AMBIENT BULB	DIFFERENTIAL AT LOW END OF RANGE IS 6 TO 25	HONEYWELL:L4008C1037 L4008D1043 JOHNSON:A19AAC-9 A19ABC-4. WHITE-RODGERS:230-22.

**ICE MACHINE CONTROLS**

**A22/A30 ADAPTABLE REPLACEMENT CONSTANT DIFFERENTIAL CONTROLS**



These compact controls are readily adaptable to nearly all commercial refrigerators and freezers. A wide section of temperature ranges, differentials, and capillary lengths are available. Break-off shafts are included with installation instructions for easy, fast installation. Controls have "Off" position except as noted.

**ELECTRICAL RATING**

RATING	A22			A30			
	120V	240V	277V	24V	120V	240V	277V
AC FULL LOAD AMPS	20	20	16	-	20	20	16
AC LOCKED ROTOR AMPS	80	50	60	-	80	80	60
PILOT DUTY (VAC)	500	500	500	240	240	240	240
RESISTIVE LOADS AMPS	25	25	-	-	-	-	16

**A30 SERIES**

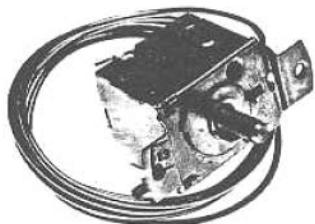
PART NO	DIFFERENTIAL (°F)	SWITCH	NORMAL				CAPILLARY LENGTH (in)
			OFF (°F)	ON (°F)	WARM ON (°F)	COLD OFF (°F)	
RAN-A30-180	13	SPST	9	22	38	-4	42
RAN-A30-181	13	SPST	9	22	41	-4	84
RAN-A30-182	17	SPST	3	20	44	-6	42
RAN-A30-183	17	SPST	3	20	44	-6	84
RAN-A30-184	19	SPST	6	25	40	-7	42
RAN-A30-185	15.5	SPST	5.5	21	36	-15	42
RAN-A30-260	6	SPST	16	22	30	.5	72
RAN-A30-261	6	SPST	-	-	61	32	84
RAN-A30-262	12	SPST	20	32	43	3	84
RAN-A30-263	22.5	SPST	11	33.5	47	.5	84
RAN-A30-301	8.5	SPST	-3	5.5	20.5	-24	84
RAN-A30-304	15.5	SPST	-6	9.5	19.5	21.5	84
RAN-A30-307	23	SPST	0	23	43	-23	78
RAN-A30-308	11	SPST	-12	-1	12.5	-30.5	84
RAN-A30-310	20	SPST	-14	6	23	-24	36
RAN-A30-311	14	SPST	-14	0	23	-22	42
RAN-A30-313	8	SPST	-10	-2	21	-20	42
RAN-A30-314	8	SPST	-10	-2	23	-23	54

**A22 SERIES**

PART NO	DIFFERENTIAL (°F)	SWITCH	NORMAL				CAPILLARY LENGTH (in)
			OFF (°F)	ON (°F)	WARM ON (°F)	COLD OFF (°F)	
RAN-A22-391	8	SPDT	27	35	51	11	66
RAN-A22-392	23.5	SPDT	31	54.5	61.5	14	48
RAN-A22-1112	5	SPDT	34	39	44	25	72

**ICE MACHINE CONTROLS**

**A30 SERIES DIRECT REPLACEMENT, CONSTANT DIFFERENTIAL AND CONSTANT CUT-IN CONTROLS**



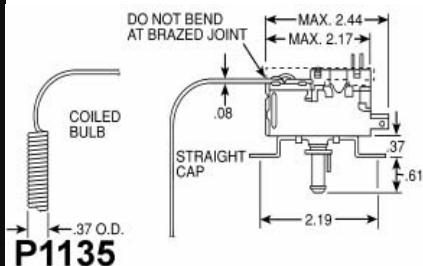
Direct replacement constant differential or constant cut-in cold controls. Used on commercial refrigerators, freezers, ice machines, vending machines, beverage coolers, and water coolers. Controls have SPST switching with "Off" position unless noted.

**ELECTRICAL RATING**

RATING	24V	120V	240V	277V
AC FULL LOAD AMPS	-	20	20	16
AC LOCKED ROTOR AMPS	-	80	80	60
PILOT DUTY (VA)	240	240	240	240
RESISTIVE LOADS AMPS	-	-	-	16

PART NO	TYPE OF ADJUST	WARM/COLD							OEM	OEM P/N
		DIFF	OFF	ON	-ON	-OFF	CAP	BULB		
RAN-A30-323	DIAL	10	-5	5	10.5	-11	48	--	--	--
RAN-A30-542	DIAL	15	10	25	41.5	1	27	--	--	--
RAN-A30-543	DIAL	12	15	27	55	7	27	--	--	--
RAN-A30-544	DIAL	15	10	25	43	1	72	--	--	--
RAN-A30-1769	DIAL	7	-7	0	10	-19	36	--	TRAULSEN	12769
RAN-A30-1819	DIAL	7	18	25	37	12	24	--	MATTHIESEN	--
RAN-A30-1977	SCREWDRIVER	10	14	24	30	5	24	--	STAR COOLER (HUSSMANN)	0308352
RAN-A30-2209	DIAL	8	36.5	44.5	46	35	48	--	--	--
RAN-A30-2210	DIAL	8	32	40	42	30	48	--	--	--
RAN-A30-2211	DIAL	10	0	10	17.5	-10.5	48	--	--	--
RAN-A30-2212	SCREWDRIVER	6	47	53	57	42.5	48	--	--	--
RAN-A30-2282	DIAL	5	43	48	58	32	48	--	TRAULSEN	36989-00
RAN-A30-3618	DIAL	17	23	40	45	17	30	--	BEV AIR	502-014A
RAN-A30-3620	DIAL	24	16	40	43	12	30	--	BEV AIR	P502-48AB
RAN-A30-3723	SCREWDRIVER	14	26	40	44	21	18	--	--	--
RAN-A30-3725	SCREWDRIVER	19	24	43	50	16	60	3/8D	GLENCO/STAR	SP-64-35B
RAN-A30-3734	DIAL	11	-18	-7	17	-32	72	--	HUSSMANN SELF CONTAINED	4-S-28
RAN-A30-3737	DIAL	9	-8	1	12	-22	36	3/8D	HUSSMANN/VICTORY	50616101
RAN-A30-3755	SCREWDRIVER	13	28	41	47	20	24	--	TAYLOR	27505
RAN-A30-3769	SCREWDRIVER	16	32	48	55.5	22	18	--	--	--

**A12 SERIES CONSTANT CUT-IN CONTROL**



The Ranco A12 Controls provide a constant Cut-In feature. The constant Cut-In design is generally used to provide an Off-Cycle defrost function. Each time the control cycles off, the control contacts will remain "open" until the evaporator is cleared of any frost that may have accumulated from the previous "On" Cycle. The A12 constant Cut-In setting will be between 35° and 41° F. (See Control Chart.)

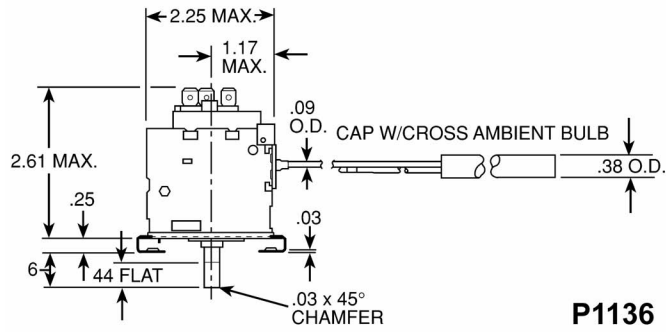
Generally, medium refrigeration units without hot gas or electric defrost systems will use a Constant Cut-In Control (A12 Series).

Rotating the Knob/Dial changes only the Cutout setting. The Cut-In setting remains the same regardless of the Knob/Dial position.

PART NO	NORMAL OFF (°F)	WARM OFF (°F)	COLD OFF (°F)	CUT-IN CONSTANT (°F)	CAPILLARY LENGTH (in)
RAN-A12-1506	15	22	9	38	39 x 3/8 x 1-3/8
RAN-A12-700	18	26	11.5	37	84
RAN-A12-710	23	27	19	36.5	21 x 3/8 x 1-3/8
RAN-A12-701	23.5	31	15	41	84
RAN-A12-1560	24	29	19	38	72
RAN-A12-711	18.5	23	14	37	31 x 3/8 x 1-3/8
RAN-A12-712	15.5	23	8	35	79

**DEFROST TERMINATION/FAN DELAY CONTROLS**

The F25 control terminates defrost and delays the evaporator fan operation on electric heat, hot gas, and reverse cycle commercial refrigeration systems.



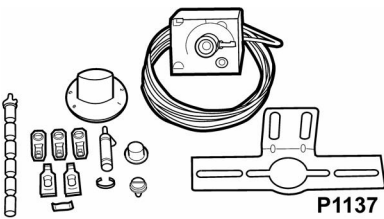
**P1136**

**MODEL SELECTION CHART**

PART NO	SWITCH	FAN "ON" TEMPERATURE (°F)	DEFROST TERMINATION (°F)	SENSING ELEMENT STYLE
RAN-F25-107	SPDT	20 Fixed	40 to 75 Adjustable	60" Capillary with 3/8" x 4" Cross Ambient Bulb
RAN-F25-114	SPDT	24 Fixed	44 to 79 Adjustable	60" Capillary with 3/8" x 4" Cross Ambient Bulb

**ADAPTABLE REPLACEMENT CYCLING CONTROLS FOR ROOM AIR CONDITIONERS**

Adaptable control to replace OEM controls which govern the ON/OFF compressor function. Includes break-off shaft, dial knob, and mounting bracket.

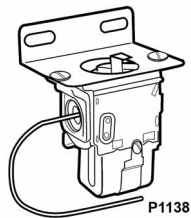


**P1137**

PART NO	DIAL RANGE (°F)	DIFFERENTIAL (°F)	SWITCH	SENSING ELEMENT Capillary		POPULAR APPLICATIONS
				Length (in)	Type & Bulb Size	
RAN-A30 x 450	58 to 89	5	SPST	--	Air Coil	--
RAN-A30 x 451	58 to 86	5	SPST	36	Straight	GE WJ28 x 500 GE WJ28 x 512
RAN-A30 x 452	58 to 89	5	SPST	39	3/8" x 4" Cross Ambient	GE WJ28 x 502
RAN-A30 x 453	58 to 85	5	SPST	18	Straight	Whirlpool 485760 Frigidare 8006445
RAN-A22-2451	45 to 81	5	SPDT	27	Straight	GE WJ28 x 504
RAN-A22-2453	59 to 90	6	SPDT	39	3/8" x 4" Cross Ambient	GE WJ28 x 505
RAN-A30-2311	Fixed Setting Closes @ 60°F Opens @ 30°F	30	SPST	30	Straight	Evaporator De-Ice Control

"X" Version rated at 30 FLA at 120/240V.

**AIR CONDITIONER LOW AMBIENT THERMOSTAT**

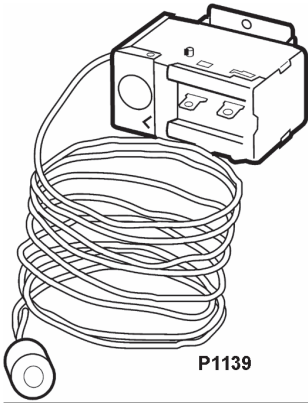


**P1138**

The A30-X204 Low Ambient Temperature Cutout Control has an adjustable range from 50° to 60°F. It is designed for field installation on central and unitary air conditioning systems that are not factory equipped to operate at low ambient temperatures. The A30 Control opens the compressor contactor circuit to prevent possible flood-back damage during cold weather operation when temperatures fall to or below the control set-point. When the outdoor ambient temperature rises 5°F above the control set point, the low ambient control switch closes, completing the circuit to allow normal compressor operation.

PART NO	CUTOUT RANGE (°F)	DIFFERENTIAL (°F)	SWITCH	SENSING ELEMENT STYLE
RAN-A30-X-204	50 to 65	6	SPST	24" Capillary

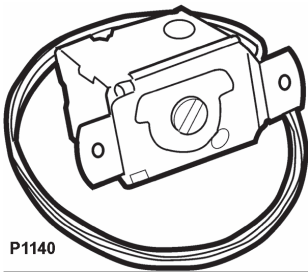
**ICE BANK CONTROLS**



Suitable for soft drink dispensers, drink vending machines, and ice builders for thermal storage. Uses a special water-filled bulb and transmission fluid to control ice thickness in applications utilizing a refrigerated water bath with ice bank reserve capacity.

PART NO	RANGE (°F)	DIFFERENTIAL (°F)	SWITCH	SENSING ELEMENT STYLE
RAN-O18-100	Fixed	Approximately 1/8" Ice Thickness	SPST	76" Capillary with Bulb

**ICE BIN LEVEL CONTROL**

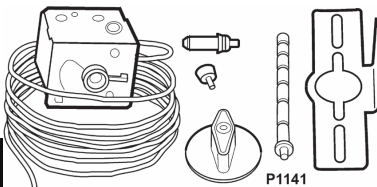


Direct replacement control for ice machine applications. Provides narrow differential for accurate control of bin level.

P1140

PART NO	RANGE (°F)	DIFFERENTIAL (°F)	SWITCH	SENSING ELEMENT STYLE
RAN-A22-1129	35 to 51	6	SPDT	48" Capillary
RAN-A30-3815	27 to 49	5.5	SPST	60" with Bulb
RAN-A30-3842	27 to 49	5.5	SPST	122" with Bulb

**ICE HARVEST CONTROL**



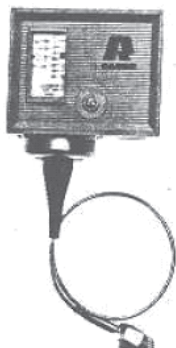
Adaptable replacement for ice machine applications. Parts and instructions included for easy installation.

P1141

PART NO	RANGE (°F)	DIFFERENTIAL (°F)	SWITCH	SENSING ELEMENT STYLE
RAN-A22-4506	-19 to 22	8	SPDT	72" Capillary



**O SERIES FUNCTION LOW PRESSURE CONTROLS**



These controls offer a variety of pressure ranges and switch action to provide maximum application flexibility.

**FEATURES**

- NEMA 1 enclosure with non-conductive cover
- Front-located captive cover screw
- Large, easy-to read scale plate
- SUPER CAP capillary protection system
- Universal mounting and compact design
- Screw terminations are raised & fully accessible for easy wiring
- Laser-welded bellows for extended life
- Heavy-duty plated steel frame

**ELECTRICAL RATING**

RATING	O10 / O11- SPST				O16-SPDT				O20-DPDT			
	24V	120V	240V	241-600V	24V	120V	240V	241-600V	120V	208/240V	480V	600V
VOLTAGE	24V	120V	240V	241-600V	24V	120V	240V	241-600V	120V	240V	480V	600V
FULL LOAD AMPS		24	24			17	17		20	12	7.5	6
LOCKED ROTOR AMPS		144	144			102	102		120	72	45	36
PLOT DUTY (VA)	144	720	720	125	144	720	720	125	125	125	125	125

**O10 SERIES - LOW PRESSURE CONTROLS**

PART NO	RESET AUTO	SWITCH	CAPILLARY LENGTH (in)	PRESSURE CONNECTION	REPLACES	RANGE (psig)	DIFFERENTIAL (psi)
RAN-O10-1401	Y	SPST-OPENS LOW	--	*	HONEYWELL:L414A, JOHNSON:P70AN-8, P70AA-157, P70AN-9, P70AA-64	12 TO 50	5 TO 35
RAN-O10-1402	Y	SPST-OPENS LOW	36	†	HONEYWELL:P420B, JOHNSON:970AB-29, P70AA-123, P70AC-9, P70AB-12, P70AB-40, P70AA-47, P70AB-44	12 TO 50	5 TO 35
RAN-O10-1483	Y	SPST-OPENS LOW	36	†	JOHNSON:P70AA-25 4P5 P70AB-2, P70AA-114, P70AA-130,2P7 1260P3, P70AB16,P70AB-21 2P1	10 TO 100	10 TO 40
RAN-O10-1831	Y	SPST-OPENS LOW	--	*	JOHNSON:4P1 P70AB-42, P70AA-41, P70AA-106, P70AB-1, 4P4 P70AB-9, P70AA-55, P70AA-86	10 TO 100	10 TO 40
RAN-O10-1842	Y	SPST-OPENS LOW	48	†	HONEYWELL: L480B, JOHNSON:P70AN-3, P70AA-37, P70AB-32	12 TO 50	5 TO 35

**O10 SERIES - LOW PRESSURE CONTROLS WITH 36 REFRIGERANT HOSE**

PART NO	RESET AUTO	SWITCH	PRESSURE CONNECTION	RANGE (psig)	DIFFERENTIAL (psi)
RAN-O10-1401H	Y	SPST-OPENS LOW	**	12 TO 50	5 TO 35
RAN-O10-1831H	Y	SPST-OPENS LOW	**	10 TO 100	10 TO 40

**O11 SERIES - LOW PRESSURE CONTROLS**

PART NO	RESET AUTO	SWITCH	CAPILLARY LENGTH (in)	PRESSURE CONNECTION	REPLACES	RANGE (psig)	DIFFERENTIAL (psi)
RAN-O11-1799 ■	.	SPST-OPENS HIGH		*	JOHNSON:P70CA-56, P70CA-92, P70CA-39, P70CA-97	10" TO 100	10 TO 40
RAN-O11-3099	.	SPST-OPENS HIGH	36"	†	JOHNSON: P70CC-4, P70CA-1, 4P3 262AP01, P70CA-66 4P6A 2P5 4P6 P70CA-65, P70CA-9	10" TO 100	10 TO 40
RAN-O11-3173	.	SPST-OPENS HIGH	36"	†		12" TO 50	5 TO 35

**O16 SERIES - LOW PRESSURE CONTROLS**

PART NO	RESET AUTO	MANUAL	SWITCH	CAPILLARY LENGTH (in)	PRESSURE CONNECTION	REPLACES	RANGE (psig)	DIFFERENTIAL (psi)
RAN-O16-107	Y	--	SPDT	--	--	JOHNSON: P70AB-1	10 TO 100	10 TO 40
RAN-O16-120	Y	--	SPDT	--	*	HONEYWELL: L414A, JOHNSON: P70AA-157, P70AA-64, P70AN-8, PAN-9, P70EA-7, P70EA-8	12 TO 50	5 TO 35
RAN-O16-166	Y	--	SPDT	36	†	JOHNSON: P70AA-2	50 TO 150	10 TO 40
RAN-O16-261	--	Y	SPDT	48	†	JOHNSON: P70DA-19, P70DA-21, P70DA-34, P70DA-35	10 TO 100	10
RAN-O16-527	Y	--	SPDT	36	†	JOHNSON: P70AB-2	10 TO 100	10 TO 40
RAN-O16-557	Y	--	SPDT	--	*	HONYWELL: P420B, JOHNSON: P70AB-2	12 TO 50	5 TO 35
RAN-O16-585	--	Y	SPDT	--	--	JOHNSON: P70DA-9, P70DA-21, P70DA-34, P70DA-35	10 TO 100	10
RAN-O16-624 tt	Y	--	SPDT	36	†	--	12 TO 80	4 TO 30

**O20 SERIES - LOW PRESSURE CONTROLS**

PART NO	RESET AUTO	SWITCH	CAPILLARY LENGTH (in)	PRESSURE CONNECTION	REPLACES	RANGE (psig)	DIFFERENTIAL (psi)
RAN-O20-7002	Y	DPST	36	†	JOHNSON: P72AQ-1	12 TO 50	5 TO 35

\*1/4" SAE male flare.  
 \*\*36" refrigerant hose.  
 † 1/4" SAE flare nut  
 †† Compatible with new refrigerants 134A, 401A, 401E, 402A, 402B, 4C3A, 403B and 404A  
 ■ Obsolete – Use O16-107

## O SERIES DUAL FUNCTION PRESSURE CONTROLS



These controls offer a tailored variety of ranges and options for R12, R22 and R502 refrigerants. Low and high pressure functions are combined into a single control switch.

### Features

- Exclusive “convertible” reset for manual or automatic high pressure reset on some models.
- NEMA 1 enclosure with non-conductive cover.
- Front-located captive cover screw.
- Large, easy-to-read scale plate.
- SUPER CAP capillary protection system.
- Universal mounting and compact design.
- Color coded flare nuts.

### ELECTRICAL RATING

RATING	O12- SPST				O22-DPST			
	24V	120V	240V	241-600V	120V	240V	480V	600V
FULL LOAD AMPS	-	24	24	-	20	72	7.5	6
LOCKED ROTOR AMPS	-	144	144	-	120	72	45	36
PLOT DUTY (VA)	144	720	720	125	125	125	125	12.5

### ORDERING INFORMATION

PART NO.	LOW PRESSURE (OPENS LOW)				HIGH PRESSURE (OPENS HIGH)				CAPILLARY LENGTH	REPLACES
	RESET		CUT-IN RANGE (PSI)	DIFFERENTIAL PSI	RESET		CUT-OUT RANGE PSI	DIFFERENTIAL PSI		
	AUTO	MAN			AUTO	MAN				

#### O12 SERIES – SPST SWITCH

RAN-O12-1505	•		12" TO 50	5 TO 35	•		100 TO 250	50-FIXED	*	HONEYWELL: L413A
RAN-O12-1506	•				•				36"†	HONEYWELL: P421B, JOHNSON: P70LA-88
RAN-O12-1439	•				•				*	
RAN-O12-1502	•				•				36"†	JOHNSON: P70LA-87, P70LA-96
RAN-O12-4842	•		10" TO 100	10 TO 40	•	•	150 TO 450	70 - FIXED	*	
RAN-O12-4833	•				CONVERTIBLE				48"†	HONEYWELL: P421B, JOHNSON: P70LA-50 P70LA-81, P70LB-6, P70LN-8, P70LN-9, P70MA-48, P70MN-2
RAN-O12-1550	•				•				*	JOHNSON: P70LA-42 P70LA-43, P70LA-44, P70LA-52, P70LA-86 P70LB-20, P70LB-23, P70LB-5
RAN-O12-1549	•				•				36"†	HONEYWELL: 107555, JOHNSON: P70LA-1, P70LA-14, P70LA-20, P70LA-24, P70LA-28, P70LB-1, P70LB-19
RAN-O12-4120**	•				•				*	
RAN-O12-4840**	•				•				36"†	
RAN-O12-4846	•				•	•			*	
RAN-O12-4834	•				CONVERTIBLE				48"†	HONEYWELL: 107555, 107556, 110198 JOHNSON: P70LA-1, P70LB-1, P70MA-1
RAN-O12-1594		•			10-FIXED				36"†	HONEYWELL: 107295 107710, 107554, JOHNSON: P70NA-1, P70NA-13, P70NA-7
RAN-O12-4147		•			10 TO 40				*	

#### O22 SERIES – DPST SWITCH

RAN-O22-7702	•		12" TO 50	5 TO 35	•	•	100 TO 250	50-FIXED	36"†	JOHNSON: P72LA-1, P72LB-1, P72MA-1
RAN-O22-7706	•		10" TO 100	10 TO 40	CONVERTIBLE		150 TO 450	70-FIXED		

\*Has 1/4" SAE male flare

†Has 1/4" SAE flare nut

\*\*Has 350 PSI limit stop

\*†36" refrigerant hose

**O SERIES SINGLE FUNCTION HIGH PRESSURE CONTROLS**



These controls offer a variety of pressure ranges and switch action to provide maximum application flexibility.

**FEATURES**

- NEMA 1 enclosure with non-conductive cover
- Front-located captive cover screw
- Large, easy-to-read scale plate
- SUPER CAP capillary protection system
- Universal mounting and compact design
- Screw terminals are raised and fully accessible for easy wiring
- Laser-welded bellow for extended life
- Heavy-duty plated steel frame
- Suitable for R12, R22, and R502 applications

**O10 SERIES- HIGH PRESSURE CONTROLS**

PART NO	RESET AUTO	SWITCH	CAPILLARY LENGTH (in)	PRESSURE CONNECTION	REPLACES	RANGE (psig)	DIFFERENTIAL (psi)
RAN-O10-1807	Y	SPST-OP ENS LOW	--	Y	JOHNSON: P70AA-151	100 TO 250	20 TO 100
RAN-O10-1894	Y	SPST-OP ENS LOW	--	Y	JOHNSON: P70AC-2, P70AA-70, P70AA-122, P70AA-58, P70AA-17	100 TO 400	40 TO 150
RAN-O10-2000	Y	SPST-OP ENS LOW	48	†	JOHNSON: P70AA-152, P70AA-142, P70AA-162, P70AA-135, P70AA-159	100 TO 250	20 TO 100
RAN-O10-2054	Y	SPST-OP ENS LOW	36	†	JOHNSON: P70AA-144, P70AA-143, P70AC-1, P70AC-8, P70AA-158, 2P6 P70AA-91, P70AA-66, P70AA-78	100 TO 400	40 TO 150

**O10 SERIES- HIGH PRESSURE CONTROLS WITH REFRIGERANT HOSE**

PART NO	RESET AUTO	SWITCH	PRESSURE CONNECTION	RANGE (psig)	DIFFERENTIAL (psi)
RAN-O10-1894H	Y	SPST-OPENS LOW	**	100 TO 400	40 TO 150

**O11 SERIES- HIGH PRESSURE CONTROLS**

PART NO	RESET AUTO	SWITCH	CAPILLARY LENGTH (in)	PRESSURE CONNECTION	REPLACES	RANGE (psig)	DIFFERENTIAL (psi)
RAN-O11-1711	•	SPST-OPENS HIGH		*	JOHNSON: P70CA-95, P70CA-99, P70CA-100 4P10, P70CA-14, P70CA-2, 4P10A	150 TO 450	40 TO 150
RAN-O11-1713 ■	•	SPST-OPENS HIGH	36"	†	HONEYWELL: P422A, JOHNSON: 2P3, P70CA-33, P70CA-77, 4P8, P70CA-70-96, P70CA-76	150 TO 450	10 TO 40

**O16 SERIES- HIGH PRESSURE CONTROLS**

PART NO	RESET AUTO	MANUAL	SWITCH	CAPILLARY LENGTH (in)	PRESSURE CONNECTION	REPLACES	RANGE (psig)	DIFFERENTIAL (psi)
RAN-O16-108	Y	--	SPDT	36	†	JOHNSON: P70CA-17, P70CA-46, P70CA-50, P70CA-76, P70CA-77, P70EA-6	100 TO 400	40 TO 150
RAN-O16-142	Y	--	SPDT	--	†	JOHNSON: P70CA-13	--	17-FIXED
RAN-O16-200	--	Y	SPDT	48	†	HONEYWELL: P422B, JOHNSON: P700A-1	--	40
RAN-O16-209	--	Y	SPDT	--	*	JOHNSON: P70DA-47, P70DA-56, P70DA-57, P70DA-58	150 TO 450	40
RAN-O16-503	Y	--	SPDT	--	*	JOHNSON: P70DA-47, P70DA-56, P70AA-130, P70AA-137, P70CA-100, P70CA-14, P70CA-95, JOHNSON: P70-CA-32	150 TO 450	40 TO 150
RAN-O16-570	Y	--	SPDT	--	*	--	100 TO 400	40 TO 150

**O20 SERIES- HIGH PRESSURE CONTROLS**

PART NO	RESET AUTO	SWITCH	CAPILLARY LENGTH (in)	PRESSURE CONNECTION	REPLACES	RANGE (psig)	DIFFERENTIAL (psi)
RAN-O20-7006	Y	DPST-OPENS LOW	36	†	JOHNSON: P72AA-27	100 TO 400	40 TO 150

\* 1/4" SAE Male Flare  
 \*\* 36" refrigerant hose  
 † 1/4" SAE flare nut  
 ■ Obsolete - use O16-503.

**ETC COMMERCIAL TEMPERATURE CONTROLS**



The Ranco ETC is a microprocessor-based family of temperature controls designed to provide on/off control for commercial heating, cooling, A/C & Refrigeration applications. With its wide temperature range, one and two stage capability, selectable heating/cooling modes and multi-voltage input, the ETC is one of the most versatile temperature controls available.

**DIGITAL DISPLAY**

Unlike many electronic controls, the ETC is simple to install and set up. One finger is all you need to program it. The standard digital display and keypad allow the user to adjust the temperature setting with 1 resolution. Setpoint temperature, differential and mode of operation (heating or cooling) can all be selected using the keypad and display. When not in the programming mode, the display gives a constant readout of the sensor temperature. Annunciators on the liquid crystal display also indicate when the relay is energized.

**CHOICE OF ONE OR TWO STAGE MODELS**

The ETC line includes both one and two stage models. On two stage control, each stage can be set independently thus eliminating the bothersome task of calculating interstage temperatures. And two stage models can be set up with overlapping heating or cooling stages.

**REMOTE TEMPERATURE SENSING**

The ETC is capable of remote temperature sensing up to 400 feet away from the control when using standard 22 gauge Sensor wire.

**BUILT-IN SAFETY**

Every ETC is capable of remote temperature sensing up to 400 feet away from the control when using standard 22 gauge sensor wire.

**OPTIONAL ANALOG OUTPUT**

ETC models are available with a 0 to 10 volt analog output that can be used for remote temperature indication or as input to central monitoring system. This signal is a linear representation of the sensor temperature with 0 volt = -30°F and 10 volts = 220°F.

**SPECIFICATIONS**

- Temperature setpoint range: -30°F to 220°F
- Differential range: 1°F to 30°F
- Input power requirements: 120 or 208/240 VAC (24 VAC optional)
- Sensor Thermister: 2" long x 1/4" dia. with 8' cable
- Control Ambient Temperatures:
  - Operating -20°F to 140°F
  - Storage -40°F to 176°F
  - Ambient humidity 0 to 95% RH, non-condensing
  - Enclosure Dimensions NEMA 1, plastic (NEMA 4X optional)
  - NEMA 1 models, 6.52" high x 2.7" wide x 2.48" deep
  - NEMA 4X models, 7.84" high x 2.7" wide x 2.48" deep
- 0 to 10 V output impedance: 1 K ohms
- Agency Approvals: UL listed, file E94419, Guide XAPX  
CSA certified, file LR68340. Class 4813 02
- Switch action SPDT

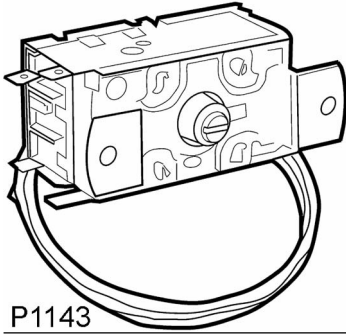
RELAY OUTPUT RATINGS - NO (NC):	ONE STAGE		TWO STAGE	
	120V	208/240V	120V	208/240V
Full load amps	16 (5.8) A	8 (2.9) A	9.8 (5.8) A	4.0 (2.9) A
Locked rotor amps	96 (34.8) A	48 (17.4) A	58.8 (34.8) A	29.4 (17.4) A
Resistive amps	15 (5.8) A	8 (2.9) A	9.8 (5.8) A	4.9 (2.9) A
Horsepower	1 (1/4) HP	1 (1/4) HP	1/2 (1/4) HP	1/2 (1/4) HP
Pilot duty	125VA at 120/208/240 VAC			

PART NO	NUMBER OF STAGES	ENCLOSURE	INPUT VOLTAGE	0 TO 10 VOLT OUTPUT
RAN-ETC-111000	ONE	NEMA 1	120/208/240 VAC	NO
RAN-ETC-111100	ONE	NEMA 1	24 VAC	YES
RAN-ETC-112000	ONE	NEMA 1	24 VAC	NO
RAN-ETC-112100	ONE	NEMA 1	24 VAC	YES
RAN-ETC-141000	ONE	NEMA 4	120/208/240 VAC	NO
RAN-ETC-211000	TWO	NEMA 1	120/208/240 VAC	NO
RAN-ETC-211100	TWO	NEMA 1	120/208/240 VAC	YES
RAN-ETC-212000	TWO	NEMA 1	24 VAC	NO
RAN-ETC-212100	TWO	NEMA 1	24 VAC	YES
RAN-ETC-241000	TWO	NEMA 4	120/208/240 VAC	NO

RANCO®

**DIRECT REPLACEMENT WATER COOLER CONTROLS**

**WATER COOLER**



Ranco's Water Cooler Controls will replace about 80% of your control needs for equipment from such manufacturers as Ebco, Elkay, Sunroc, Halsey-Taylor, Kelvinator, and General Electric.

- Small contact design
- Computer calibrated
- Laser-welded bellows for reliability
- Patented switch for high performance

P1143

PART NO	DIFFERENTIAL (°F)	NORMAL OFF (°F)	NORMAL ON (°F)	WARM OFF (°F)	COLD OFF (°F)	CAPILLARY LENGTH (in)
RAN-K-3001	7	46	53	61	37	48
RAN-K-3002	27	23	50	66	7	36