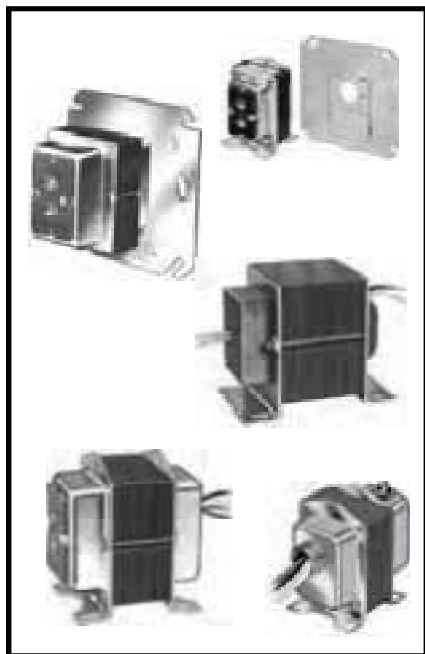


# CONTROLS

## CONTENTS OF SECTION

<b>Furnas</b>	<b>235</b>
<b>Intermatic-Grasslin</b>	<b>229</b>
<b>Honeywell</b>	<b>198 - 208</b>
<b>Jard Magnetics</b>	<b>236</b>
<b>Johnson Controls</b>	<b>209 - 216</b>
<b>Mars</b>	<b>230 - 234</b>
<b>Paragon</b>	<b>228 - 229</b>
<b>Ranco</b>	<b>225 - 227</b>
<b>Robertshaw</b>	<b>223 - 225</b>
<b>White Rodgers</b>	<b>217 - 222</b>

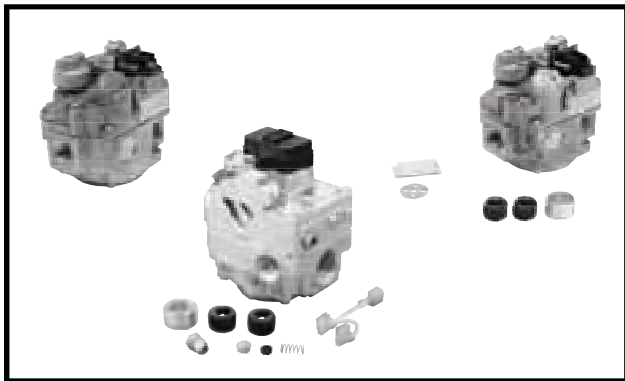




**Honeywell**

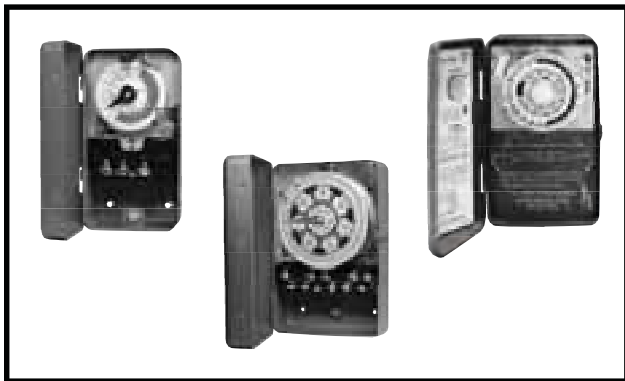
JOHNSON  
CONTROLS

*Robertshaw.*



**PARAGON**

**MARS**



**JARD**  
MAGNETICS

**RANCO**



**GRÄSSLIN**  
INTERMATIC



**Wholesaler  
Distributors**



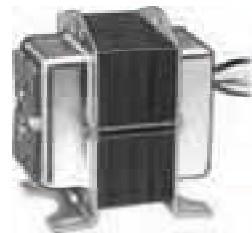
**AURORA**  
**COUNTRYSIDE**  
**ELK GROVE**  
**WAUKEGAN**  
**JOLIET**  
**HAMMOND**  
**MILWAUKEE**  
**PEORIA**



## AT72 NEMA STANDARD TRANSFORMERS

The AT72D is a multimounting, stepdown transformer for use in 24 VAC control systems. It is listed by Underwriters Laboratories Inc. and Canadian Standards Association, and meets NEC Class 2 not wet, Class 3 wet requirements. It also complies with 24 V NEMA Type D requirements as specified by NEMA standard ST2-1979. One of these transformers will directly replace one of the Honeywell AT72D, E transformers with 120, 208, or 240 Vac primaries, except those with 32 in. leads and 1/2 in. conduit hub on secondary.

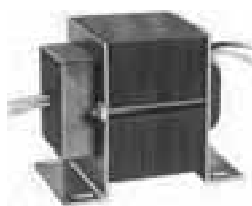
ILLCO #	HONEYWELL #	OUTPUT	PRIMARY VOLTAGE	SECONDARY VOLTAGE	PRIMARY CONNECTIONS	SECONDARY CONNECTIONS
5500345	AT72D1683	40 VA	120	26.5	9 in. Leadwires	2 Screw Terminals
5500351	AT72D1691	40 VA	208/240	26.5	9 in. Leadwires	2 Screw Terminals



## AT87 NEMA STANDARD TRANSFORMERS

The AT87 Transformer is a stepdown transformer primarily used for powering 24 VAC air conditioning circuits. It can be used in other applications that do not exceed the transformer's 50 volt-ampere (VA) rating. The transformer can be foot-mounted or plate-mounted. A mounting plate is shipped with the transformer.

ILLCO #	HONEYWELL #	OUTPUT	PRIMARY VOLTAGE	SECONDARY VOLTAGE	PRIMARY CONNECTIONS	SECONDARY CONNECTIONS
5500460	AT87A1106	50 VA	120/208/240	26.5	13 in. Leadwires	2 Screw Terminals
5500465	AT87A1155	48 VA	480	26.5	12 in. Leadwires	12 in. Leadwires



## AT88 TRANSFORMERS

The AT88 Transformer is a stepdown transformer primarily used for powering 24 VAC air conditioning circuits. It can be used in other applications that do not exceed the transformer's 75 volt-ampere (VA) rating. The transformer includes brackets for foot mounting. The brackets may be removed for panel mounting.

ILLCO #	HONEYWELL #	OUTPUT	PRIMARY VOLTAGE	SECONDARY VOLTAGE	PRIMARY CONNECTIONS	SECONDARY CONNECTIONS
5500470	AT88A1021	75 VA	208/240	26.5	12 in. Leadwires	12 in. Leadwires
5500480	AT88A1047	75 VA	480	26.5	12 in. Leadwires	12 in. Leadwires



## AT140 GENERAL PURPOSE TRANSFORMERS

These general purpose transformers provide power to 24 VAC circuits. They are typically used in heating/cooling control systems, but can be used in any application that doesn't exceed the load ratings.

ILLCO #	HONEYWELL #	OUTPUT	PRIMARY VOLTAGE	SECONDARY VOLTAGE	PRIMARY CONNECTIONS	SECONDARY CONNECTIONS
5500490	AT140A1000	40 VA	120	27	9 in. Leadwires	Screw Terminals
5500495	AT140A1018	40 VA	120/208/240	27	9 in. Leadwires	Screw Terminals



## AT150 AND AT175 GENERAL PURPOSE TRANSFORMERS

These general purpose transformers provide power to 24 VAC circuits. They are typically used in heating/cooling control systems, but can be used in any application that doesn't exceed the load ratings.

ILLCO #	HONEYWELL #	OUTPUT	PRIMARY VOLTAGE	SECONDARY VOLTAGE	PRIMARY CONNECTIONS	SECONDARY CONNECTIONS
5500510	AT150B1237	50 VA	120/208/240	27.5	9 in. Leadwires	9 in. Leadwires
5500520	AT175A1008	75 VA	120/208/240	27.5	9 in. Leadwires	Screw Terminals



## H600 HUMIDITY CONTROLLERS

The H600A humidity controller has SPDT switching to operate humidification equipment on RH fall or dehumidification equipment on RH rise (or for mildew control with air conditioning systems). All models have a locking cover; the setting knob acts as cover removal tool.

ILLCO #	HONEYWELL #	HUMIDITY RATINGS, OPERATING	HUMIDITY RATINGS, DIFFERENTIAL	COLOR
5501500	H600A1014	20 to 80% RH	5% RH Fixed	Beige



## H205 ENTHALPY CONTROLLERS

Responds to the "total" heat or enthalpy of the outdoor air. Provides optimum control of outdoor air damper. Combines both temperature and humidity sensors in a single device. Dustproof snap switch provides long, trouble-free operation. May be mounted in any position inside of an outdoor air duct.

ILLCO #	HONEYWELL #	APPLICATION	ELECTRICAL RATINGS	INCLUDES
5501470	H205A1012	Electromechanical Systems	Y(1), R(2): 50VA at 24VAC. R(2), B(3): 100mA min. to 250mA max.	Case and Cover, Mounting Plate, Knob, Scale



## L91 PROPORTIONAL PRESSURETROL CONTROLLERS

L91 Proportioning Pressuretrol® Controllers are Series 90 Modulating Pressure Controllers that provide direct control of modulating motors or valves used on automatic burners or steam heating systems.

ILLCO #	HONEYWELL #	CONTROL RANGE (PSI)	CONTROL RANGE (kPa)	MAX. PRESS. SURGE (PSI)	MAX. PRESS. SURGE (kPa)	DIFFERENTIAL (PSI)	DIFFERENTIAL (kPa)	ADJ.
5501570	L91A1037	0-15	0-103	20	138	7 oz.	3	No
5501575	L91B1035	0-15	0-103	20	138	1-12	7-83	Yes
5501580	L91B1050	5-150	34-1034	225	1151	5-23	34-159	Yes



## L480 REFRIGERATION CONTROLLER

The L480B,G Temperature Controllers operate electric dampers, valves, and compressor or fan motors to provide temperature or limit control of air conditioning systems and refrigeration units.

ILLCO #	HONEYWELL #	APPLICATION	RESET TYPE	TEMP. RATINGS (°F)	TEMP. RATINGS (°C)	CAPILLARY LENGTH (FT.)	SWITCHING ACTION
5501680	L480G1044	For Temperature or Limit Control of A/C	Manual	20-60	7-16	20	Breaks on Temp. Fall



## L4006 AQUASTAT CONTROLLERS

Aquastat® Controllers are immersion type devices for limiting or regulating the temperature of liquids in boilers, storage tanks, and other applications where temperature control is required.

ILLCO #	HONEYWELL #	APPLICATION	SWITCHING ACTION	OPERATING RANGE (°F)	OPERATING RANGE (°C)	DIFFERENTIAL TEMP. RATINGS (°F)	DIFFERENTIAL TEMP. RATINGS (°C)
5501740	L4006E1067	High Limit	Break on Temp. Rise	130-270	54-132		Manual Reset

## L4064 FAN AND LIMIT CONTROLLERS

Combination warm air fan and limit controllers are suitable for all types of forced air heating systems.



ILLCO #	HONEYWELL #	APPLICATION	ELEMENT INSERTION LENGTH	MOUNTING	INCLUDES
5501860	L4064B1451	Turns fan on and off according to plenum temperature	11-1/2"	Rigid Bracket	2 5in. Leadwires; 4 Screw Terminals; 2 Jumpers; Mounting Bracket
5501900	L4064B1469	Turns fan on and off according to plenum temperature	5"	Rigid Bracket	2 5in. Leadwires; 4 Screw Terminals; 2 Jumpers; Mounting Bracket
5501905	L4064B2210	Turns fan on and off according to plenum temperature	11-1/2"	Surface	2 Leadwires; 4 Screw Terminals; 2 Jumpers
5501910	L4064B2236	Turns fan on and off according to plenum temperature	8"	Surface	2 Leadwires; 4 Screw Terminals; 2 Jumpers
5501915	L4064W1080	Turns fan on approx. 20 to 90 sec. after t-stat calls for heat	5"	Surface or Rigid	2 Leadwires; 2 Quick Connect Term.; 4 Screw Terminals; 2 Jumpers
5501920	L4064W1098	Turns fan on approx. 20 to 90 sec. after t-stat calls for heat	8"	Surface or Rigid	2 Leadwires; 2 Quick Connect Term.; 4 Screw Terminals; 2 Jumpers
5501925	L4064W1106	Turns fan on approx. 20 to 90 sec. after t-stat calls for heat	11-1/2"	Surface or Rigid	2 Leadwires; 2 Quick Connect Term.; 4 Screw Terminals; 2 Jumpers



## L4008 AND L6008 REMOTE BULB CONTROLLERS

Aquastat® Controllers are immersion type devices for limiting or regulating the temperature of liquids in boilers, storage tanks, and other applications where temperature control is required.

ILLCO #	HONEYWELL #	APPLICATION	SWITCHING ACTION	TEMP. RANGE (°F)	TEMP. RANGE (°C)	MAX. TEMP. (°F)	MAX. TEMP. (°C)	DIFFERENTIAL TEMP. RATINGS (°F)	DIFFERENTIAL TEMP. RATINGS (°C)
5501747	L4008A1015	High or Low Limit	Break on Temp. Rise	100-240	38-116	265	129	5-30, Adj.	3-17, Adj.
5501776	L4008E1156	High Limit	Break on Temp. Rise	130-270	54-132	345	174	Manual Reset	
5502191	L6008A1093	Circulator and Low Limit	SPDT	-30-70	-34-21	125	52	5-30, Adj.	3-17, Adj.
5502196	L6008A1192	Circulator and Low Limit	SPDT	100-240	38-116	265	129	5-30, Adj.	3-17, Adj.



## L6006 AQUASTAT CONTROLLERS

Aquastat® Controllers are immersion type devices for limiting or regulating the temperature of liquids in boilers, storage tanks, and other applications where temperature control is required.

ILLCO #	HONEYWELL #	APPLICATION	SWITCHING ACTION	DIFFERENTIAL TEMP. RATINGS (°F)	DIFFERENTIAL TEMP. RATINGS (°C)	TEMP. RANGE (°F)	TEMP. RANGE (°C)
5502180	L6006A1145	Circulator and high or low limit	SPDT	5-30 Adj.	3-17, Adj.	100-240	38-116
5502185	L6006C1018	Circulator and high or low limit	SPDT	5-30 Adj.	3-17, Adj.	65-200	18-93



## L8148 AQUASTAT RELAYS

The L8148 Aquastat® Relays are immersion type hydronic controllers that combine high limit protection with switching relay control of burner and circulator motors.

ILLCO #	HONEYWELL #	DIFFERENTIAL (°F)	OPERATING RANGE, HIGH LIMIT (°F)	INCLUDES
5502312	L8148E1299	15, Fixed	180 to 240	50 VA Transformer and Heat Conductive Compound
5502321	L8148J1009	8, Fixed	140 to 240	Heat Conductive Compound and Range Stops



## Q314 PILOT BURNERS

These pilot burners provide main burner ignition for natural and LP gas-fired equipment. Used with a 30 mV thermopile and/or thermocouple (depending on model) to provide automatic pilot safety control.

ILLCO #	HONEYWELL #	TYPE OF GAS	MOUNTING BRACKET	DIRECTION OF FRONT TIP	INCLUDES
5503205	Q314A4586	LP; Natural	B	Front	1/4" in. CC inlet fitting; Special mounting bracket with screws for converting "B" bracket to "A" bracket; and LP orifice



## Q327 PILOT BURNERS

These pilot burners provide main burner ignition for natural and LP gas-fired equipment. Used with a 30 mV thermopile and/or thermocouple (depending on model) to provide automatic pilot safety control.

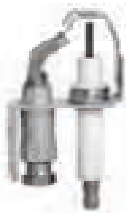
ILLCO #	HONEYWELL #	DESCRIPTION
5503211	Q327A1626	Pilot Burner



## Q340 UNIVERSAL 30 mV THERMOCOUPLES

Some competitive thermocouples may look bigger than the Q340. But let's cut through appearances to the inside story. As you probably know, the single most important factor determining the life expectancy of the thermocouple is the thickness of the inner copel element. The fact is, no matter how big the competition might look on the outside, no thermocouple has a copel element thicker than the Honeywell Long-Life Q340 — not even the competition's higher priced model. In performance, no thermocouple outshines the Long-Life Q340. What's more, in an independent survey installers chose Honeywell Long-Life Thermocouples by a margin of nearly two to one. Why? Because they are by far the easiest and quickest thermocouples to install. The facts show Honeywell Long-Life Thermocouples are clearly superior from top to bottom, inside and out.

ILLCO #	HONEYWELL #	LEAD LENGTH	RESISTANCE
5503215	Q340A1066	18 in.	0.02 ohm
5503220	Q340A1074	24 in.	0.02 ohm
5503260	Q340A1082	30 in.	0.02 ohm
5503300	Q340A1090	36 in.	0.02 ohm
5503311	Q340A1108	48 in.	0.03 ohm



## Q345 INTERMITTENT IGNITION PILOT BURNER

These Intermittent Pilot Burner/Igniter-Sensors consist of low output conventional target type pilot burners and either a combination spark igniter and flame sensor or a separate spark igniter and flame sensor (two rod) mounted in place of the thermocouple.

ILLCO #	HONEYWELL #	TYPE OF GAS	MOUNTING BRACKET	DIRECTION OF FRONT TIP
5503316	Q345A1305	Natural	B	Front
5503317	Q345A1313	Natural	B	Left
5503318	Q345A1321	Natural	B	Right



## Q390 THERMOCOUPLES

Q309, Q340, and Q390 Thermocouples generate a thermoelectric current that senses a pilot flame on gas-fired heating systems. The pilot flame heats the tip of the thermocouple, producing a temperature differential between it and the base. This temperature difference generates a small amount of DC power, measured in millivolts.

ILLCO #	HONEYWELL #	LEAD LENGTH	RESISTANCE
5503324	Q390A1061	36 in.	0.02 ohm



## R4222 GENERAL PURPOSE SWITCHING RELAY

The R4222 is a general purpose relay for use in refrigeration and air conditioning equipment, appliances, vending machines, and other applications requiring general purpose switching.

ILLCO #	HONEYWELL #	COIL RATINGS VOLTAGE	SWITCHING	APPROVALS
5504500	R8222D1014	24V	DPDT	UL Component Recognized; CSA & CE Approved
5504145	R4222D1013	120 V	DPDT	UL Component Recognized; CSA & CE Approved
5504147	R4222D1021	208 V; 240 V	DPDT	UL Component Recognized; CSA & CE Approved



## R8184 PROTECTORELAY OIL BURNER CONTROL

The intermittent ignition R4184D and R8184G,M,N,P Oil Primary Controls operate the oil burner, oil valve (if desired) and the ignition transformer in response to a call for heat from the thermostat.

ILLCO #	HONEYWELL #	SAFETY SWITCH TIMING
5504345	R8184G4009	45 sec.



**R8225 FAN RELAY**

The R8225 fan relays provide low voltage (24V) control of line voltage fan motors and auxilliary circuits in heating, cooling, and heating-cooling systems.

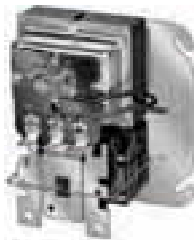
ILLCO #	HONEYWELL #	SWITCHING	COIL RATINGS
5504540	R8225A1017	SPDT	24 VAC



**R8239 FAN CENTERS**

These R8239 fan centers provide low voltage control of line voltage fan motors and auxilliary circuits in heating, cooling or heating-cooling systems.

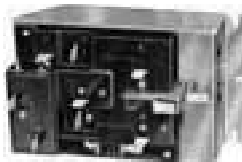
ILLCO #	HONEYWELL #	APPLICATIONS	POWER SUPPLY	PRIMARY POWER SUPPLY	SECONDARY POWER SUPPLY	SWITCHING ACTION	INCLUDES
5504580	R8239A1052	Single or Two Speed Fan	40 VA	120 VAC	26.5 V	SPDT	R8222B
5504591	R8239B1043	System w/ F50 Air Cleaner	40 VA	120 VAC	26.5 V	DPDT	R8222D



**R8285 CONTROL CENTERS**

R8285 Control Center provides low voltage control of line voltage fan motors and auxiliary circuits in heating, cooling, or air-conditioning systems.

ILLCO #	HONEYWELL #	APPLICATIONS	POWER SUPPLY	PRIMARY POWER SUPPLY	SECONDARY POWER SUPPLY	SWITCHING ACTION	INCLUDES
5504624	R8285A1048	Single or two speed fan	40 VA	120 VAC	26.5 V	SPDT	R8222B
5504628	R8285D5001	Use w/ SV9600 Smartvalve	50 VA	120 VAC	26.5 V	DPST	R8222U



**R8330 ELECTRIC FURNACE SEQUENCER**

The R8330D provides a recontrol replacement for most single or multiple element electric furnace sequencers. Each R8330D sequencer switches a fan and up to 3 heating elements. Two or 3 sequencers may be connected in series using the auxiliary switch. Two sequencers will control from 4 to 6 heating elements, 3 sequencers will control from 7 to 9 heating elements. The R8330D Electric Furnace Sequencer can be used for straight 240 volt isolated fan, combined 240 and 120 volt isolated fan, and 240 volt combination rated furnace system circuits. It may also be used in pilot duty limit systems when wired as shown in Figs. 15 and 16. Timing is 10 seconds minimum between stages. All stages of a single control sequence will come on within 2 minutes and go off within 4 minutes at nominal voltage and ambient temperature. The sequencer may be mounted in any position in the furnace.

ILLCO #	HONEYWELL #	DESCRIPTION
5504631	R8330D1039	Sequencer



**RA89 HYDRONIC SWITCHING RELAY**

These relays provide intermediate or heavy duty service in a wide variety of switching configurations.

ILLCO #	HONEYWELL #	APPLICATIONS	ELECTRICAL RATINGS
5504660	RA89A1074	Switching one line voltage load	120 V, 50/60 Hz



**RA117 PROTECTORELAY CONTROL**

These one-piece, stack-mounted oil burner primary controls cycle the burner on thermostat demand and shut down the burner on flame loss or system malfunction.

ILLCO #	HONEYWELL #	IGNITION TYPE
5504740	RA117A1047	Intermittent



## RA832 HYDRONIC SWITCHING RELAY

These relays provide intermediate or heavy duty service in a wide variety of switching configurations.

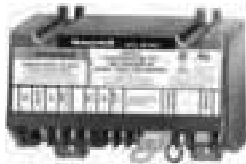
ILLCO #	HONEYWELL #	APPLICATION	ELECTRICAL RATINGS
5504940	RA832A1066	Switching Two Line Loads w/ Common Power	120 V, 50/60 Hz



## RA890 PROTECTORELAY PRIMARY CONTROL

The RA890F Protectorelay™ Primary Control is a nonprogramming, amplifying relay that provides solid state electronic flame safeguard protection for industrial and commercial gas, oil, or combination gas-oil burners.

ILLCO #	HONEYWELL #	DESCRIPTION	ELECTRICAL RATINGS	FLAME FAILURE RESPONSE TIME
5504990	RA890F1270	Rectification, w/ Alarm Contacts	120 VAC	0.8 sec
5505000	RA890F1288	Rectification, w/ Alarm Contacts	120 VAC	3.0 sec
5505012	RA890F1338	Rectification, w/ Alarm Contacts	120 VAC	0.8 sec



## S8610U UNIVERSAL INTERMITTENT PILOT MODULE

The S8610U Universal Replacement Ignition Module is designed to provide easy field replacement of a wide range of intermittent pilot ignition modules manufactured by Honeywell, Robertshaw, Johnson and others. The S8610U Module provides ignition sequence, flame monitoring, and safety shutoff for intermittent pilot central furnaces, residential boilers and other heating appliances.

ILLCO #	HONEYWELL #	DESCRIPTION	IGNITION TIME TRIAL	LOCKOUT TIMING	IGNITION TRIALS TO LOCKOUT	TYPICAL IGNITION HARDWARE
5505104	S8610U3009	Intermittent Pilot Control	Continuous Retry	90 sec. max.	Continuous Retry	Q345, Q3451, Q3452



## S637 SAIL SWITCH

Sail switches respond to the air velocity in heating or warm air ducts, such as used in farm crop dryers. The switch completes a 24V or line voltage burner control circuit only when the blower or fan has produced a predetermined air velocity.

ILLCO #	HONEYWELL #	SWITCHING	INSERTION LENGTH	SAIL DIMENSIONS
5505183	S637A1004	1 SPDT	3-1/2 in.	1 in. X 3 in.



## S688 SAIL SWITCH

The Sail Switch activates an electronic air cleaner, a humidifier, or other equipment in response to airflow from the system fan. The S688A is mounted in the return air duct where the sail will be in the direct path of an unrestricted air stream.

ILLCO #	HONEYWELL #	DESCRIPTION
5505187	S688A1007	Air Flow Switch



## S8910U UNIVERSAL HOT SURFACE IGNITION MODULE

The SUPER TRADELINE® S8910U Universal Hot Surface Ignition Module is designed to provide easy field replacement of a wide range of hot surface ignition modules manufactured by Honeywell, Robertshaw and White-Rodgers. The S8910U Module provides operating control of a direct ignition system using a 120 Vac hot surface igniter.

ILLCO #	HONEYWELL #	DESCRIPTION
5505205	S8910U1000	Hot Surface Ignition Control



## SV9501 SMARTVALVE SYSTEM CONTROLS

The SV9401/SV9402/SV9403, SV9501/SV9502/SV9503, and SV9601/SV9602 SmartValve System Controls combine gas flow control and electronic intermittent pilot sequencing functions into a single unit. This product family offers several different intermittent pilot sequences for a wide range of applications. The Q3450 or Q3480 Intermittent Pilot hardware provides the low voltage ignition, flame sensor, and pilot burner. This system is suitable for application in a wide range of gas-fired appliances including furnaces, rooftop furnaces, boilers, unit heaters, infrared heaters, space heaters, water heaters, decorative appliances, and commercial cooking units. The specific application of the SmartValve System is the responsibility of the appliance manufacturer.

ILLCO #	HONEYWELL #	TEMPERATURE RATINGS	PRESSURE REGULATOR SETTING	PREPURGE	OPENING CHARACTERISTICS
5505251	SV9501M2528	-40-175	3.5 in. w.c.	None	Standard Opening



## DIGITAL ROUND THERMOSTATS

The T8775A Thermostat provides 24V control of heating only systems. The T8775C Thermostat provides single-stage temperature control for 24V heating-cooling systems with manual changeover from heat to cool. Attractive styling complements any decor. Large easy-to-read display. Backlit display. No batteries required. The temperature setting is held permanently in memory in the event of a power failure. Powered through heating-cooling system controls. Manual changeover from heat to cool on T8775C model. Easy installation, set up and 5-minute compressor bypass saves time and increases installer productivity. Easily configurable by the use of DIP switches. F or C temperature display. Selectable heating cycle rates (1, 3, 6, 9 cph) for a variety of applications. Cooling cycle rate is fixed at 3 cph. Minimum off-time for compressors in the cooling mode.

ILLCO #	HONEYWELL #	TEMP. RANGE (°F)	TEMP. RANGE (°C)	TERMINALS	FINISH	INCLUDES	COMMENTS
5506579F	T8775C1005	40-90	4-32	R, Rc, W, Y, G, O, B	White	Wallplate, resistor assembly, mounting hardware	Round digital heat cool stat



## T451, T651 LIGHT DUTY LINE VOLTAGE THERMOSTATS

Finding the perfect balance between comfort and energy efficiency has never been easier than with Honeywell's T451/T651 3000 Series Line Voltage Thermostats. Our 3000 Series Line Voltage Thermostats now feature superior dual diaphragm sensor technology that rapidly responds to temperature changes while reducing overshoot—providing performance previously available only with low voltage thermostats. They're easy to use, easy to install and feature attractive styling to complement any architectural design. Plus, they offer a wide range of application flexibility.

ILLCO #	HONEYWELL #	APPLICATION	TEMP. RANGE (°F)	SWITCHING ACTION	INCLUDES
5505357	T451A3005	Heating	44-86	SPST - breaks on temp. rise	Locking cover and setpoint; thermometer; and adjustable range stops.
5505548	T651A3018	Heating	44-86	SPDT - breaks on temp. rise and makes cooling on temp. rise	Locking cover and setpoint; thermometer; and adjustable range stops.



## T475 OUTDOOR RESET CONTROL

ILLCO #	HONEYWELL #	RESET RATIO	BULB LENGTH (IN.)	INCLUDES
5505415	T475A1032	1.0 to 1.0	3-9/16	34886A Outdoor Bulb Guard
5505420	T475A1057	1.0 to 1.5	5-5/16	34886A Outdoor Bulb Guard; 121371P Immersion Well Assembly



## T498 ELECTRIC HEAT THERMOSTATS

Classic beige styling is excellent for replacement applications. Long life, industrial-grade Micro Switch™ mechanism. Rugged, plastic mounting base. Easy to install; color-coded leads.

ILLCO #	HONEYWELL #	TEMP. RANGE (°F)	TEMP. RANGE (°C)	SWITCHING ACTION	INCLUDES
5505430	T498A1778	40-80	5-27	SPST	Range stops, locking cover and extra knob decal for recalibration.
5505435	T498B1512	40-80	5-27	DPST	Thermometer, range stops, locking cover and extra knob decal for recalibration.

## T631 FARM-O-STAT AIRSWITCH CONTROLLERS

T631 controllers provide line voltage control of heating, cooling, and ventilation systems in farm buildings or storage areas.



ILLCO #	HONEYWELL #	TEMP. RANGE (°F)	TEMP. RANGE (°C)	FIXED DIFFERENTIAL PER SWITCH (°F)	FIXED DIFFERENTIAL PER SWITCH (°C)	AMBIENT RANGE (°F)	AMBIENT RANGE (°C)	SWITCH TYPE
5505438	T631B1005	35-100	2-38	2.0	1.1	120	49	2 SPDT snap switch
5505500	T631C1103	-30-100	-34-38	5.0	2.8	125	52	1 HP, SPDT snap switch



## T675, T678 REMOTE TEMPERATURE CONTROLLERS

The T675 and T678 temperature controllers regulate the temperature of air or liquids in ducts, pipes, tanks, and boilers. Typical uses include control of dampers and valves in heating, cooling, or heating-cooling systems.

ILLCO #	HONEYWELL #	TEMP. RANGE (°F)	TEMP. RANGE (°C)	CAPILLARY LENGTH (FT.)	MATERIAL	MAX. TEMP (°F)	MAX. TEMP (°C)	DIFFERENTIAL TEMP. RATINGS (°F)	SWITCHING ACTION
5505560	T675A1136	0-100	-18-38	20	Copper	125	52	1, Fixed	SPDT switch breaks R-B, makes R-W on temp. rise
5505580	T675A1508	0-100	-18-38	5	Copper	125	52	3 to 10, Adj.	SPDT switch breaks R-B, makes R-W on temp. rise
5505590	T675A1516	0-100	-18-38	5	Copper	125	52	1, Fixed	SPDT switch breaks R-B, makes R-W on temp. rise
5505620	T675A1532	160-260	71-127	5	Copper	280	138	3 to 10, Adj.	SPDT switch breaks R-B, makes R-W on temp. rise
5505626	T675A1540	55-175	13-79	5	Copper	200	93	3.6 to 12, Adj.	SPDT switch breaks R-B, makes R-W on temp. rise
5505632	T675A1565	0-100	-18-38	20	Copper	125	52	3 to 10, Adj.	SPDT switch breaks R-B, makes R-W on temp. rise
5505640	T678A1437	0-100	-18-38	5	Copper	125	52	Fixed @ 3; Adj. Between 3-10	Two SPDT switches operating in sequence.
5505645	T678A1445	55-175	13-79	5	Copper	200	93	Fixed @ 3.6; Adj. Between 3.6-10	Two SPDT switches operating in sequence.
5505650	T678A1478	0-100	-18-38	5	Copper	125	52	Fixed @ 3; Adj. Between 3-10	Two SPDT switches operating in sequence.



## T834 HEATING-COOLING THERMOSTAT

The T834 thermostats provide 24 to 30 volt control of heating, cooling, or heating-cooling systems. They make the heating circuit on a temperature fall and the cooling circuit on temperature rise. (SPDT switching)

ILLCO #	HONEYWELL #	APPLICATION	FAN SWITCH POSITIONS	SYSTEM SWITCH POSITIONS	TERMINAL DESIGNATIONS	MOUNTING	FINISH
5505781	T834N1002	Standard Heat and Cool	On-Auto	Heat-Off-Cool	R, G, W, Y	Vertical	Beige

## VISIONPRO AND FOCUSPRO THERMOSTATS



Both series of thermostats are Energy Star compliant and offer precise comfort of one degree above or below the set point. These thermostats also have a backlit digital display. They all come with a 5 year limited warranty. The VisionPRO Thermostat is effortless to use. Its intuitive logic and menu-driven programming respond to your choices and schedule for optimal comfort and energy savings. VisionPro offers you top-of-the-line features like touchscreen interaction, a real-time clock and a large easy-to-read backlit display. The FocusPRO Thermostat offers the perfect blend of features, performance and value that delivers the highest degree of temperature control accuracy.

ILLCO #	HONEYWELL #	TEMP. RANGE (°F)	STAGES	TERMINAL DESIGNATIONS	FINISH	INCLUDES	COMMENTS
5506586	TH4110D1007	40-90	1 HEAT 1 COOL	R(5), W(4), Y(6)	White	Programmable	Replaces heat, cool, and heat-cool models.
5506589	TH5110D1022	40-90	1 HEAT 1 COOL	R(5), W(4), Y(6)	White	Large display	Replaces heat, cool, and heat-cool models.
5506589A	TH5220D1003	40-90	2 HEAT 1 COOL	R(5), W(4), Y(6)	White	Programmable	Replaces heat, cool, and heat-cool models.
5506590	TH6110D1005	40-90	1 HEAT 1 COOL	R(5), W(4), Y(6)	White	Programmable	Replaces heat, cool, and heat-cool models.
5506591	TH6220D1002	40-90	2 HEAT 2 COOL	R(5), W(4), Y(6)	White	Programmable	Replaces heat, cool, and heat-cool models.
5506592	TH8110U1003	40-90	1 HEAT 1 COOL	R(5), W(4), Y(6)	White	Touchscreen, Programmable	Replaces heat, cool, and heat-cool models.
5506593	TH8320U1008	40-90	3 HEAT 2COOL	R(5), W(4), Y(6)	White	Touchscreen, Programmable	Replaces heat, cool, and heat-cool models.
5506579H	TB8220U1003	40-90	2 HEAT 2COOL	R(5), W(4), Y(6)	White	Commercial, Touchscreen, Programmable	Replaces heat, cool, and heat-cool models.

## T921 PROPORTIONAL THERMOSTATS



T921 Thermostats provide 3-wire, low voltage proportional control for Series 90 (135 ohm) valve motors, damper motors, and balancing relays in heating or cooling system applications.

ILLCO #	HONEYWELL #	APPLICATION	TEMP. RANGE (°F)	TEMP. RANGE (°C)	THROTTLING RANGE (FIXED) (°F)	REMARKS
5506180	T921A1191	Heat and Cool	56-84	13-29	2.5	Includes slotted sides and an add-on face plate to allow horizontal mounting.
5506196	T921G1005	Heat and Cool	56-84	13-29	5	Includes slotted sides and an add-on face plate to allow horizontal mounting.



## T991 PROPORTIONAL TEMPERATURE CONTROLLERS

Modulating control of water or air temperature in ducts, tanks, and similar applications. Fast response models (for duct mounting) have coiled sensing element that give at least four times faster response than standard models.

ILLCO #	HONEYWELL #	TEMPERATURE RANGES				CAPILLARY LENGTH (FT.)	BULB SIZE (IN.)	POTENTIOMETER RESISTANCE	INCLUDES
		SCALE (°F)	SCALE (°C)	THROTTLING (°F)	THROTTLING (°C)				
5506220	T991A1012	0-100	-18-38	3-30	1.7-16.7	20	1/2 X 4-3/16	135	-
5506229	T991A1244	55-175	13-79	3.5-36	1.9-20	5	1/2 X 3-9/16	135	Duct Bulb Holder
5506265	T991A1426	0-100	-18-38	3-30	1.7-16.7	5	1/2 X 4-3/16	135	Duct Bulb Holder



## T6031 REFRIGERATION TEMPERATURE CONTROLLERS

T6031 Thermostats control heating or cooling systems, or act as changeover thermostats.

ILLCO #	HONEYWELL #	TEMP. RANGE (°F)	TEMP. RANGE (°C)	MAX. TEMP (°F)	MAX. TEMP (°C)	DIFFERENTIAL (°F)	DIFFERENTIAL (°C)	SWITCHING ACTION	CAPILLARY LENGTH (FT.)
5506340	T6031A1029	-30-90	-34-32	130	54	3.5-16	2-8	1 SPDT	8
5506380	T6031A1060	-30-90	-34-32	130	54	3.5-16	2-8	1 SPDT	20

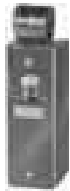


## T6051, T6052 HEAVY-DUTY LINE VOLTAGE THERMOSTATS

The T6051 and T6052 are heavy-duty, line voltage thermostats used to control fan coils, fans, motor starters, valves, contactors, and circulator motors in heating and/or cooling systems.

ILLCO #	HONEYWELL #	APPLICATION	SWITCH TYPE	MOUNTING	TEMP. RANGE (°F)	TEMP. RANGE (°C)	DIFFERENTIAL (°F)	DIFFERENTIAL (°C)
5506420	T6051A1016	Heat/Cool	SPDT	Vertical or horizontal on standard outlet box.	50-80	10-27	1.0	0.6
5506480	T6052A1015	2-Stage Heat/Cool	2 SPDT	Vertical or horizontal on standard outlet box.	46-84	8-29	See Footnote <sup>a</sup>	See Footnote <sup>a</sup>

<sup>a</sup>Differential: Stage 1 Heat, Stage 2 Cool: 2.5 F (1.4 C) nominal; Stage 2 Heat, Stage 1 Cool: 3.2 F (1.8 C) nominal.



## T6054 UTILITY LINE VOLTAGE THERMOSTAT

The T6054 industrial/agricultural line voltage thermostats provide either SPST or SPDT line voltage control in ventilation, heating, or cooling applications.

ILLCO #	HONEYWELL #	SWITCHING ACTION	TEMP. RANGE (°F)	TEMP. RANGE (°C)	DIFFERENTIAL (°F)	DIFFERENTIAL (°C)	CONTROL MODES
5506500	T6054A1005	SPDT	-30-100	-34-38	3.5, Fixed	1.9, Fixed	Heating-Cooling



## V800 COMBINATION GAS CONTROLS

V400 and V800 are used on gas fired standing pilot appliances with 30 mV thermocouple. These gas controls include a manual gas valve, safety shutoff, single millivoltage automatic operator, and pressure regulator, pilot gas filter and flow adjustment, pressure tapping, and thermocouple connector.

ILLCO #	HONEYWELL #	GAS	PIPE SIZE
5506680	V800A1070	Nat. or LP	1/2" X 3/4"
5506720	V800A1088	Nat. or LP	3/4" X 3/4"
5506725	V800A1476	Nat. or LP	1/2" X 3/4"



## V48, V88 DIAPHRAGM GAS VALVES

The V48 and V88 are solenoid-operated diaphragm valves suitable for LP (Liquefied Petroleum), natural, and manufactured gases. They are normally used on atmospheric boilers, commercial water heaters, and rooftop heaters.

ILLCO #	HONEYWELL #	PIPE SIZE	CAPACITY (CFH)	CAPACITY (M <sup>3</sup> /HR)	ELECTRICAL RATINGS, POWER SUPPLY	MAX PRESSURE (PSI)	MAX PRESSURE (kPa)
5506610	V48A2151	3/4"	668	18.9	120V, 60 Hz	1/2	3.4
5506614	V48A2169	1"	1021	28.9	120V, 60 Hz	1/2	3.4
5506618	V48A2243	2"	4178	118.3	120V, 60 Hz	1	6.9
5506622	V48A2276	1-1/2"	2400	67.9	120V, 60 Hz	1	6.9
5506626	V48A2342	1-1/4"	2100	59.5	120V, 60 Hz	1	6.9
5506630	V88A1667	3/4"	668	18.9	24V, 50/60Hz	1	6.9
5506634	V88A1675	1"	1021	28.9	24V, 50/60Hz	1	6.9
5506637	V88A1683	1-1/4"	2100	59.5	24V, 50/60Hz	1	6.9
5506640	V88A1691	1-1/2"	2400	67.9	24V, 50/60Hz	1	6.9
5506642	V88A1709	2"	4178	118.3	24V, 50/60Hz	1	6.9



## V8043 TWO-POSITION NORMALLY CLOSED ZONE VALVES

These valves consist of an actuator motor and valve assembly for controlling the flow of hot or cold water, or steam.

ILLCO #	HONEYWELL #	PIPE SIZE	TYPE	MAXIMUM CLOSE-OFF PRESSURE	ELECTRICAL CONNECTIONS
5507470	V8043A1011	1/2"	Sweat	20 psi	18 in. Leadwires
5507490	V8043E1004	1/2"	Sweat	20 psi	18 in. Leadwires
5507500	V8043E5012	3/4"	Sweat	20 psi	18 in. Leadwires
5507510	V8043E1020	1"	Sweat	20 psi	18 in. Leadwires



## VR4300 CONTINUOUS PILOT DUAL AUTOMATIC VALVE COMBINATION GAS CONTROL

These continuous pilot gas controls are used in gas-fired appliances with capacities up to 300 ft<sup>3</sup>/h at one inch w.c. pressure drop [5.7 m<sup>3</sup>/h at 0.25 kPa] on natural gas. They include a manual valve, safety shutoff, two automatic operators, a pressure regulator, pilot adjustment, and a conduit cover.

ILLCO #	HONEYWELL #	DESCRIPTION
5507890	VR4300A4502	120V Dual Direct Ignition Gas Valve, 200 cfm capacity (.64 sg)



## VR8200 CONTINUOUS PILOT DUAL AUTOMATIC VALVE COMBINATION GAS CONTROLS

The VR8200 Continuous Pilot Dual Automatic Valve Combination Gas Controls are used in gasfired, standing pilot appliances. They include safety shutoff, a manual valve, two automatic operators, a pressure regulator, a pilot adjustment, and a conduit cover (VR4200 only).

ILLCO #	HONEYWELL #		GAS	PIPE SIZE
5507912	VR8200A2124	Standard	Natural/LP	1/2" X 3/4"
5507915	VR8200A2132	Standard	Natural/LP	1/2" X 1/2"
5507920	VR8200H1251	Slow open	Natural/LP	1/2" X 1/2"
5507923	VR8205H1003	Slow open	Natural/LP	1/2" X 1/2"



## VR8300 CONTINUOUS PILOT DUAL AUTOMATIC VALVE COMBINATION GAS CONTROL

These continuous pilot gas controls are used in gas-fired appliances with capacities up to 200 cu ft/hour at 1 in. w.c. pressure drop [5.7 cu m/hour at 0.25 kPa] on natural gas. They include a manual valve, safety shutoff, single automatic operators, and a pressure regulator.

ILLCO #	HONEYWELL #		GAS	PIPE SIZE
5507925	VR8300A3500	Standard	Natural/LP	1/2" X 3/4"
5507930	VR8300A4508	Standard	Natural/LP	3/4" X 3/4"
5507936	VR8300C4506	Step Opening	Natural/LP	3/4" X 3/4"
5507940	VR8304M4507	Standard	Natural/LP	3/4" X 3/4"
5507950	VR8345M4302	Standard	Natural/LP	3/4" X 3/4"

## Y8610U UNIVERSAL RETROFIT INTERMITTANT PILOT GAS BURNER IGNITION SYSTEMS

Complete kits converting conventional standing pilot system to intermittent pilot system. For use with 24 Vac gas-fired atmospheric furnaces, boiler and heating appliances. Y8610U kits are for use with natural or LP gas: provides 100 percent pilot gas shutoff if pilot fails to light; after 6-minute delay, trial for ignition is repeated. Ignition trail/delay sequence is repeated until the appliance lights or call for heat is removed.

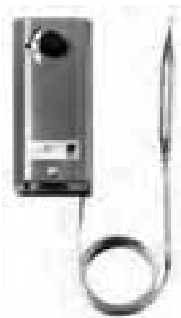
ILLCO #	HONEYWELL #	GAS	PIPE SIZE
5508026	Y8610U6006	Natural/LP	1/2" X 3/4"



### A11 LOW TEMPERATURE CUTOUT CONTROL

The A11 Series low temperature cutout controls incorporate a 20 foot long, vapor charged, sensing element. The A11 reacts to the coldest 18 inch section of the controls sensing element. The A11 is suitable for monitoring the face temperature of hot water coils for freeze protection.

ILLCO #	JOHNSON #	SWITCH ACTION	RANGE (°F)	DIFF (°F)	BULB AND CAPILLARY	RANGE ADJUSTER
7261000	A11A-1C	SPST Open Low	35-45	Manual Reset	20' of 1/8" O.D. tubing, 4' Capillary	Screwdriver slot



### A19 REMOTE BULB CONTROL

Johnson Controls hot water immersion controls provide various control functions for hydronic heating systems. These include high temperature cutout, operating, circulator or low temperature cutout.

ILLCO #	JOHNSON #	SWITCH ACTION	RANGE (°F)	DIFF (°F)	BULB AND CAPILLARY	RANGE ADJUSTER	MAX BULB TEMP. (°F)
7261103	A19AAD-5C	SPST Open Low	30-50	2.5	3/8" X 2-5/8", 6' Capillary	Screwdriver Slot	190
7261132	A19AAF-20C	SPDT	-30-100	2.5	3/8" X 4", 6' Capillary	Screwdriver Slot	140
7261154	A19ABC-4C	SPDT	50-130	3.5-14	3/8" X 5", 8' Capillary	Knob	170
7261203	A19ABC-24C	SPDT	-30-100	3-12	3/8" X 4", 8' Capillary	Convertible	140
7261205	A19ABC-36C	SPDT	-30-100	3-12	3/8" X 4", 20' Capillary	Convertible	140



### A19 HOT WATER WELL IMMERSION TEMPERATURE CONTROL

Universal replacement control for open high or SPDT applications. Control is furnished with well assembly for 1/2" tapping.

ILLCO #	JOHNSON #	APPLICATION	SWITCH ACTION	RANGE (°F)	DIFF (°F)	WELL CONN. SIZE-NPT	RANGE ADJUSTER
7261160	A19ABC-12C	Open High (R-B) Open Low (R-Y)	SPDT	100-240	6-24	1/2", 8' Cap.	Convertible



### A19 COILED BULB SPACE THERMOSTAT

Wide range temperature control with air coil sensing element.

ILLCO #	JOHNSON #	SWITCH ACTION	RANGE (°F)	DIFF (°F)	BULB AND CAPILLARY	RANGE ADJUSTER	MAX BULB TEMP. (°F)
7261256	A19BBC-2C	SPDT	-30-100	3-12	1-3/8" X 2-1/4" Coiled	Convertible	140



### A19 AUTOMATIC CHANGEOVER WITH STRAP-ON MOUNTING

Changeover control for use with combination heating and cooling thermostats. Recommended for convectors, fan coils, and blast coil units, etc.

ILLCO #	JOHNSON #	SWITCH ACTION	RANGE (°F)	DIFF (°F)	MOUNTING
7261307	A19CAC-1C	SPDT	60-90	10	42" Cap.



### A19 HOT WATER TEMPERATURE CONTROL WITH STRAP-ON MOUNTING

Changeover control for use with combination heating and cooling thermostats. Recommended for convectors, fan coils, and blast coil units, etc.

ILLCO #	JOHNSON #	SWITCH ACTION	RANGE (°F)	DIFF (°F)	MOUNTING
7261358	A19DAC-1C	SPDT	100-240	10	Clamp-on Strap



## A19 DEFROST DURATION AND FAN DELAY CONTROL

Remote bulb control with adjustable defrost termination temperature and preset fan delay temperature.

ILLCO #	JOHNSON #	SWITCH ACTION	DEFROST TERMINATION	BULB AND CAPILLARY	RANGE ADJUSTER
7261469	A19ZBC-2C	SPDT	45-85	19/64" X 3-1/8", 6' Cap.	Knob



## A28 TWO STAGE TEMPERATURE CONTROL

The A28 series are two stage temperature controls that incorporate a liquid filled sensing element.

ILLCO #	JOHNSON #	SWITCH ACTION	RANGE (°F)	DIFF (°F)	BULB AND CAPILLARY	RANGE ADJUSTER
7261529	A28AA-29C	2-SPDT	-30-100	5 Ea. Stage, 2-7 Btwn. Stgs.	3/8" X 4", 8' Capillary	Convertible



## A350R ELECTRONIC TEMPERATURE RESET CONTROL WITH RELAY

The A350R reset controller is designed to raise or lower the setpoint of supply water temperature based upon a proportionate drop or rise in temperature at the master (outdoor) sensor. The control output is a single-pole, single-throw (SPST) relay with light-emitting diode (LED) indication.

ILLCO #	JOHNSON #	ITEM	DESCRIPTION
7261798	A350RS-1C	A350R Temperature Reset Control	Dual Scale. Includes 2 sensors.



## A419 ELECTRONIC TEMPERATURE CONTROL

The A419 series control is a line voltage, single-stage, electronic temperature control with a single-pole, double-throw (SPDT) output relay. It has heating or cooling modes of operation with adjustable setpoint and differential, a lockable keypad, adjustable anti-short cycle delay, and binary input for temperature offset. The A419 combines remote sensing capability and interchangeable sensors with electronic accuracy, all in a NEMA 1 high-impact plastic enclosure suitable for surface or DIN rail mounting.

ILLCO #	JOHNSON #	SETPOINT RANGE (°F)	DIFF (°F)
7261800	A419ABC-1C	-30-212	1-30



## F59 SUMP PUMP SWITCH

The F59 series controls are designed to start an electric motor on liquid level rise and stop the motor on liquid level drop. The control cuts in when upper weight is submerged approximately halfway, and cuts out when lower weight is approximately half-exposed. Each switch includes 36 in. cable and (2) two weights.

ILLCO #	JOHNSON #	CONTACT ACTION	MOUNTING	RANGE ADJUSTER
7262001	F59A-2C	DPST	External Mounting	Drop Cord

New items are being added to our inventory daily. Please give us a call if you can't find what you are looking for.



### H91 BASOTROL AUTOMATIC GAS VALVES

The H91 series are 2-wire, electrically operated shutoff valves that automatically open and close on a demand signal from a thermostat or other controlling device. These valves can be used for all gas-fired appliances with a maximum operating pressure of 1/2 psi.

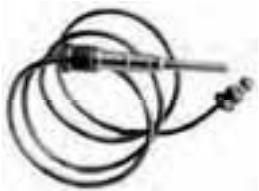
ILLCO #	JOHNSON #	INLET AND OUTLET	CAPACITY BTU/HR AT 1 IN. P.D.	VAC 60 HZ	ELECTRICAL CONNECTIONS
7263175	H91MA-4C	1" NPT	505,000	120	30 in. leads
7263180	H91MG-8C	1" NPT	505,000	25	1/4" male spades
7263185	H91RA-4C	3/4" NPT	325,000	120	30 in. leads
7263190	H91RG-1C	3/4" NPT	325,000	25	1/4" male spades



### J999 MULTI-MOUNT UNIVERSAL PILOT BURNER

The J series BASO universal replacement pilot burners are supplied in three models. Mounting brackets on all four sides of each burner permit adaptation to almost any application. The pilot burners are individually packed in a plastic bag.

ILLCO #	JOHNSON #	TYPE OF PILOT	NATURAL GAS ORIFICE	LP GAS ORIFICE
7263570	J999MHA-2H	"L" Channel	Y90AA-7223	Y90AA-4211
7263573	J999MKA-2H	Shell	Y90AA-7221	Y90AA-4210
7263592	J999MYA-2H	"Y" Channel	Y90AA-6221	Y90AA-4211



### K16 "HUSKY" HIGH PERFORMANCE THERMOCOUPLE

The K16 series are heavy-duty, high performance thermocouples that provide high output for residential, commercial, and industrial applications. The "husky" is a replacement for BASO 17D, 50, 58D, 87D, 88D, 97D, 107D, and K15DA thermocouples. The K16 is packed with adapters to allow the necessary replacement.

ILLCO #	JOHNSON #	LENGTH
7263859	K16BT-24H	24"
7263901	K16BT-30H	30"
7263952	K16BT-36H	36"
7264001	K16FA-36C	36"
7264103	K16WT-48H	48"
7264154	K16WT-60H	60"
7264205	K16WT-72H	72"



### K19 "SUPER SLIM JIM" UNIVERSAL REPLACEMENT THERMOCOUPLES

The K19AT thermocouples are designed for use with all series "G" and "H" BASO valves, basoids, and basotrols with automatic pilot valves. The K19 is also interchangeable with thermocouples used with automatic pilot valves made by other control manufacturers whose power unit connector is similar to the BASO series.

ILLCO #	JOHNSON #	LENGTH
7264256	K19AT-36H	36"
7264307	K19AT-48H	48"



### L62 BASO PILOT SWITCHES

The L62 series BASO pilot switches are for use on all gas-fired, standing pilot, equipment that requires main burner shutoff when the pilot is extinguished. Typical applications include domestic central heating and commercial space heating appliances, as well as industrial processing equipment (e.g., die-casting machines, degreasers).

ILLCO #	JOHNSON #	RESET	100% SHUT- OFF	SWITCH ACTION	THERMOCOUPLE LEAD
7264830	L61LL-1C	Automatic	No	SPDT	K15, K16, or K19
7264865	L62AA-5C	Manual	No	SPST	K15, K16, or K19
7264880	L62GB-3C	Manual	Yes	SPST	K15, K16, or K19



## P20 AIR CONDITIONING/PRESSURE CUTOFF CONTROL

The P20 series are field replacement high and low pressure controls for non-corrosive refrigerants. They include a dust-tight contact unit with quick connect connectors, and a 36" capillary with 1/4" sweat section. The set point is screwdriver adjustable.

ILLCO #	JOHNSON #	MAX. TEMP. (°F)	SWITCH ACTION	RANGE (PSIG)	DIFF. (PSI)	OPENS (PSIG)	CLOSES (PSIG)	MAX BELLOWS PRESSURE (PSIG)
7265120	P20DB-1C	140	Open on Rise	100-425	Manual Reset	400	Manual Reset	450
7265154	P20EB-1C	140	SPDT	7-150	30 Fixed	40	70	250
7265205	P20EB-2C	140	SPDT	100-425	75 Fixed	400	325	450



## P28 LUBE OIL PRESSURE CUTOFF CONTROL WITH TIME DELAY

The P28 series provides dependable shutdown on pressure of lubricated refrigeration compressors by sensing low lube oil pressure. A built-in time delay switch accurately compensated for ambient temperature, allows for pressure pick up on start and avoids nuisance shutdowns on pressure drops of short duration during the running cycle.

ILLCO #	JOHNSON #	TIME DELAY	HEATER CIRCUIT VAC	TYPE OF RESET	RANGE (PSIG)	REFRIGERANT	PRESSURE CONNECTION
7265256	P28AA-1C	90 sec.	120/240	Manual	8-70	Non-Corrosive	36" Cap. With 1/4" Flare Nut
7265300	P28AA-17C	120 sec.	120/240	Manual	8-70	Non-Corrosive	36" Cap. With 1/4" Flare Nut
7265330	P28AN-1C	90 sec.	120/240	Manual	8-70	Ammonia	1/4" Female NPT



## P45 LUBE OIL PRESSURE CUTOFF CONTROL WITH TIME DELAY

The P45 control provides dependable, low lube oil cut-out for pressure for lubricated refrigeration compressors. The factory set pressure setting provides operation to the compressor manufacturer's specification. A built-in time delay relay, compensated for ambient temperature, allows for pressure pick-up on start and avoids nuisance shutdowns on short duration pressure losses during the running cycle.

ILLCO #	JOHNSON #	TIME DELAY	HEATER CIRCUIT VAC	TYPE OF RESET	RANGE (PSIG)	MAX BELLOWS PRESSURE (PSIG)	PRESSURE CONNECTION
7265460	P45NCA-12C	120 sec.	120/240	Manual	7	425	36" Cap. With 1/4" Flare Nut
7265465	P45NCA-82C	45 sec.	120/240	Manual	7	425	36" Cap. With 1/4" Flare Nut



## P66 ELECTRONIC FAN SPEED CONTROL

The P66 is a pressure actuated electronic motor speed controller. By directly sensing pressure, this device electronically varies the speed of a fan motor. This control can be used with single phase permanent split capacitor and shaded pole motors that are approved by the motor and equipment manufacturer for speed control applications. To prevent overheating, use a ball bearing motor with a service factor of at least 1.25.

ILLCO #	JOHNSON #	OPERATING RANGE	PRESSURE RANGE (PSIG)	CONTROL VOLTAGE	START VOLTAGE % OF LINE	CAPILLARY LENGTH
7265525	P66AAB-14C	220-280	140-350	24 VAC	40	120"



## P70 SINGLE POLE LOW PRESSURE CONTROL

The P70 series of controls employs a set of switch contacts that are opened and closed by the movement of pressure actuated bellows. The load-carrying contacts provide direct control of AC motors within the control rating.

ILLCO #	JOHNSON #	SWITCH ACTION	RANGE (PSIG)	DIFF. (PSI)	PRESSURE CONNECTOR	LIMITED KNOB ADJUSTMENT	MAX. BELLOWS OVERRUN PRESSURE (PSIG)
7265654	P70AB-1C	Close High Open Low	20"-100	6-50	1/4" Male Flared Conn.	Cut-Out	325
7265673	P70AB-2C	Close High Open Low	20"-100	6-50	36" Cap. With 1/4" Flare Nut	Cut-Out	325
7265711	P70CA-1C	Close High Open Low	20"-100	6-50	36" Cap. With 1/4" Flare Nut	None	325



## P70 SINGLE POLE HIGH PRESSURE CONTROL

This P70 series of controls employs a set of switch contacts that are opened and closed by the movement of pressure actuated bellows. The load-carrying contacts provide direct control of AC motors within the control rating. These controls are available with either close high-open low, open high-close low, or SPDT contact action.

ILLCO #	JOHNSON #	SWITCH ACTION	RANGE (PSIG)	DIFF. (PSI)	PRESSURE CONNECTOR	LIMITED KNOB ADJUSTMENT	MAX. BELLOWS OVERRUN PRESSURE (PSIG)
7265632	P70AA-118C	Close High Open Low	100-400	35-200	36" Cap. With 1/4" Flare Nut	None	475
7265552	P70AA-2C	Close High Open Low	0-150	12-40	36" Cap. With 1/4" Flare Nut	None	525
7265713	P70CA-3C	Close High Open Low	50-450	60-150	36" Cap. With 1/4" Flare Nut	None	525
7265716	P70DA-1C	Close High Open Low	50-450	Lockout	36" Cap. With 1/4" Flare Nut	None	525

## P70 SINGLE POLE DUAL PRESSURE CONTROL

This P70 series of dual pressure controls employs an SPST switch, that is opened when either high pressure or low pressure beyond the control settings is sensed at the control's two bellows sensing elements. The load-carrying contacts provide direct control of AC motors within the control's rating. These controls provide close high-open low (low pressure) or open high - close low (high pressure) contact action.



ILLCO #	JOHNSON #	SWITCH ACTION	RANGE (PSIG)	DIFF. (PSI)	PRESSURE CONNECTOR	LIMITED KNOB ADJUSTMENT	MAX. BELLOWS OVERRUN PRESSURE (PSIG)
7265728	P70LB-6C	SPST	12"-80	5-35	36" Cap. With 1/4" Flare Nut	Cut-Out	525 Low, 525 High
7265724	P70LB-1C	SPST	20"-100	7-50	36" Cap. With 1/4" Flare Nut	Cut-Out	325 Low, 525 High
7265733	P70MA-1C	SPST	20"-100	7-50	36" Cap. With 1/4" Flare Nut	None	325 Low, 525 High
7265756	P70NA-1C	SPST	20"-100	Lockout	36" Cap. With 1/4" Flare Nut	None	325 Low, 525 High

## P72 TWO POLE LOW PRESSURE CONTROL

The P72 series of controls employs a set of DPST contacts that are opened and closed by the pressure actuated bellows. The heavy duty load-carrying contacts provide direct control of motors having integral line-interrupting overload protectors up to three horsepower, 240 volt, single phase. Starter is unnecessary. Primarily used on air-conditioning and refrigeration applications but also used to control air, water, and lube oil pressure.



ILLCO #	JOHNSON #	SWITCH ACTION	RANGE (PSIG)	DIFF. (PSI)	PRESSURE CONNECTOR	KNOB ADJUSTMENT	MAX. BELLOWS OVERRUN PRESSURE (PSIG)
7265807	P72AA-1C	DPST	20"-100	7-50	36" Cap. With 1/4" Flare Nut	None	325

## P72 TWO POLE DUAL PRESSURE CONTROL

The P72 series of controls employs a DPST switch, which is opened when either the high or low pressure beyond the control settings is sensed at the control's two bellows sensing elements. The heavy duty load-carrying contacts provide direct control of motors having integral line-interrupting overload protectors up to three horsepower. Starter is unnecessary. Primarily used on air-conditioning and refrigeration applications but also used to control air, water, glycol, and lube oil pressure.

ILLCO #	JOHNSON #	SWITCH ACTION	RANGE (PSIG)	DIFF. (PSI)	PRESSURE CONNECTOR	KNOB ADJUSTMENT	MAX. BELLOWS OVERRUN PRESSURE (PSIG)
7265836	P72LB-1C	DPST	20"-100	6-50	36" Cap. With 1/4" Flare Nut	Yes	525 Low, 3620 High
7265880	P72MA-1C	DPST	20"-100	6-50	36" Cap. With 1/4" Flare Nut	None	525 Low, 3620 High



## P100 ENCAPSULATED PRESSURE SWITCHES

P100 switches are encapsulated, nonadjustable, SPST, direct mount switches for use with noncorrosive refrigerants. The switches are available with automatic reset in both low and open high configurations and manual reset with open high action.

ILLCO #	JOHNSON #	SWITCH ACTION	APPLICATION	OPENS (PSIG)	CLOSES (PSIG)
7265881	P100AP-201C	Open On Fall	Low Cutout	10	32
7265882	P100AP-2C	Open On Fall	Low Cutout	35	60
7265883	P100AA-3C	Open On Fall	Fan Cycling	150	225
7265884	P100AP-4C	Open On Fall	Fan Cycling	170	250
7265885	P100AC-1C	Open On Fall	Low Cutout	5	20
7265886	P100AC-2C	Open On Fall	Low Cutout	15	30
7265887	P100CA-1C	Open on Rise	High Cutout	400	300
7265889	P100CC-9C	Open On Rise	High Cutout	275	175
7265890	P100CP-2C	Open On Rise	High Cutout	425	325
7265891	P100DA-1C	Open On Rise	High Limit	410	Lockout
7265894	P100DA-35C	Open On Rise	High Limit	350	Lockout



## P128 AND P145 LUBE OIL PRESSURE CONTROL

The P128 and P145 series controls provide dependable low pressure lube oil cut-out for pressure lubricated refrigeration compressors. The P128 series offer adjustable range settings.

ILLCO #	JOHNSON #	TIME DELAY	HEATER CIRCUIT VAC	TYPE OF RESET	RANGE (PSI)	REFRIGERANT	PRESSURE CONNECTION
7265896	P128AA-17C	120 sec.	120/240	Manual	8-70	Non-Corrosive	1/4" Male Flare
7265900	P145NCA-12C	120 sec.	120/240	Manual	9	Non-Corrosive	1/4" Male Flare
7265903	P145NCB-12C	120 sec.	120/240	Manual	9	Non-Corrosive	1/4" Male Flare
7265910	P145NCB-82C	45 sec.	120/240	Manual	6.5	Non-Corrosive	1/4" Male Flare



## P170 SINGLE POLE HIGH PRESSURE CONTROLLER

The P170 series of controls employ an SPST switch that opens and closes from the movement of pressure actuated bellows. The load-carrying contacts provide direct control of an AC motor within the control's electrical rating.

ILLCO #	JOHNSON #	SWITCH ACTION	RANGE (PSIG)	DIFF. (PSI)	PRESSURE CONNECTOR	LIMITED KNOB ADJUSTMENT	MAX. BELLOWS OVERRUN PRESSURE (PSIG)
7265920	P170AA-118C	Close High Open Low	100-400	35-200	1/4" Male Flare	None	475
7265927	P170CA-3C	Close High Open Low	50-450	60-150	1/4" Male Flare	None	525

## P170 SINGLE POLE LOW PRESSURE CONTROLLER

The P170 series of controls employ a set of SPST contacts that are opened and closed from the movement of pressure actuated bellows. The load-carrying contacts provide direct control of the AC motor within the control's electrical rating.

ILLCO #	JOHNSON #	SWITCH ACTION	RANGE (PSIG)	DIFF. (PSI)	PRESSURE CONNECTOR	LIMITED KNOB ADJUSTMENT	MAX. BELLOWS OVERRUN PRESSURE (PSIG)
7265925	P170AB-12C	Close High Open Low	12-80	5-35	1/4" Male Flare	Cutout	525



### P170 HIGH PRESSURE CUTOUT CONTROL (WITH ALARM CIRCUIT)

This control has two sets of contacts. The main set of contacts controls the main load, and the auxiliary contact simultaneously actuates a signal or auxiliary circuit. The main contacts (Line-M2) open-high/close-low. The electrical contacts operate from a pressure sensing element. The load-carrying contacts provide direct control of the AC motor within the control's electrical rating.

ILLCO #	JOHNSON #	SWITCH ACTION	RANGE (PSIG)	DIFF. (PSI)	PRESSURE CONNECTOR	MAX. BELLOWS OVERRUN PRESSURE (PSIG)
7265930	P170KA-1C	Close High Open Low	50-450	Lockout	1/4" Male Flare	525



### P170 SINGLE POLE DUAL PRESSURE CONTROL

The P170 series controls employ a set of SPST or SPDT contacts that are opened and closed from pressure actuated bellows. The load-carrying contacts provide direct control of an AC motor within the control's electrical rating.

ILLCO #	JOHNSON #	SWITCH ACTION	RANGE (PSIG)	DIFF. (PSI)	PRESSURE CONNECTOR	LIMITED KNOB ADJUSTMENT	MAX. BELLOWS OVERRUN PRESSURE (PSIG)
7265940	P170LB-1C	SPST	20"-100	7-50	1/4" Male Flare	Cutout	325 Low, 525 High
7265945	P170LB-6C	SPST	12"-80	5-35	1/4" Male Flare	Cutout	525 Low, 525 High
7265955	P170MA-1C	SPST	20"-100	7-50	1/4" Male Flare	None	325 Low, 525 High



### P399 ELECTRONIC PRESSURE TRANSDUCER

The P399 series electronic pressure transducer is compact, economical, rugged, direct-mount pressure transducer designed to produce a low voltage analog signal (0.5 to 4.5 VDC nominal) based on the sensed pressure. They are designed for use in commercial refrigeration and air-conditioning applications.

ILLCO #	JOHNSON #	RANGE (PSIS)	CONNECTION
7266013	P399BAA-1C	0-500	1/8" NPTM
7266014	P399BAC-1C	0-500	1/4" SAE Fem. Flare



### P470 ELECTRONIC PRESSURE CONTROL WITH DISPLAY

The P470 electronic pressure control with display is a single-stage, On/Off, electronic pressure control with an SPDT (Single-Pole, Double-Throw) output relay. The control may be field set to operate one of three pressure ranges (0-100 psi, 0-500 psi, or 50-750 psi), as either an open-high or open-low control.

ILLCO #	JOHNSON #	PRESSURE RANGES (PSI)	MINIMUM DIFFERENTIAL (PSI)
7266024	P470EB-1C	0-100, 0-500, 50-750	5, 20, 20



### V46 PRESSURE ACTUATED WATER REGULATING VALVE

The V46 is a pressure actuated, modulating valve that is suitable for use either on closed or open systems. Direct acting valves open on pressure increase. This type of valve is primarily used to regulate the flow of water or glycol to a water cooled condenser on a refrigeration system. Reverse acting valves open on pressure decrease and are generally used in parallel with a direct-acting valve or for bypass operation.

ILLCO #	JOHNSON #	PIPE SIZE	INLET AND OUTLET	OPENING RANGE (PSIG)	PRESSURE ELEMENT STYLE
7266052	V46AA-1C	3/8"	Threaded	70-260	30" Cap. With 1/4" Flare Nut
7266103	V46AB-1C	1/2"	Threaded	70-260	30" Cap. With 1/4" Flare Nut
7266154	V46AC-1C	3/4"	Threaded	70-260	30" Cap. With 1/4" Flare Nut
7266205	V46AD-1C	1"	Threaded	70-260	30" Cap. With 1/4" Flare Nut
7266256	V46AE-1C	1-1/4"	Threaded	70-260	30" Cap. With 1/4" Flare Nut
7266270	V46AR-1C	1-1/2"	4 Hole Flange	70-260	30" Cap. With 1/4" Flare Nut
7266358	V46AS-1C	2"	4 Hole Flange	70-170	1/4" Male Flare
7266409	V46AS-2C	2"	4 Hole Flange	160-260	1/4" Male Flare



## V47 TEMPERATURE ACTUATED MODULATING VALVE

The V47 is a temperature actuated modulating valve that regulates the flow of water or glycol to maintain a desired temperature. Three temperature ranges for each valve size are available.

ILLCO #	JOHNSON #	PIPE SIZE	RANGE (°F)	BULB SIZE
7266552	V47AC-6C	3/4"	75-135	11/16" X 10"
7266603	V47AD-1C	1"	75-135	11/16" X 10"
7266654	V47AD-2C	1"	115-180	11/16" X 6"



## Y75 REPLACEMENT FLAME SENSOR

ILLCO #	JOHNSON #	DESCRIPTION
7267005	Y75AS-1H	90° Terminal Connector
7267010	Y75BS-1H	Straight Terminal Connector



## Y90 BASO INLET FITTINGS

The Y90 inlet fitting controls the flow of gas to a pilot burner. The orifice hole size and counterbore, along with the applied gas pressure, determine flame size and characteristics. Pilot burner inlet fittings consist of an inlet tip (containing the orifice holes) and a threaded inlet body allowing connection of the pilot line. The orifice holes are used to direct and control the flow of gas to a pilot burner. The inlet fitting positions the orifice holes in relation to the pilot burner's aeration opening and pilot tip.

ILLCO #	JOHNSON #	ORIFICE SIZE	GAS TYPE
7267015	Y90AA-3215C	0.015"	But.-Air, LP, Natural
7267020	Y90AA-3218C	0.018"	Natural
7267035	Y90AA-4212C	0.012"	But.-Air, LP, Natural
7267040	Y90AA-7218C	0.018"	Natural
7267045	Y90AA-7221C	0.021"	Natural



## ILLCO Delivers!

**ILLCO** has a fleet of over 25 company owned trucks ready to serve your delivery needs, including 10 crane trucks.

**ILLCO's** trucks make it easy to get the materials you need, when and where you need it.





## SINGLE STAGE LOW VOLTAGE VERTICAL THERMOSTATS WITH NON-MERCURY MECHANICALS

- Replacement for Hundreds of White-Rodgers and Competitive Models Installed During the Past 50 Years
- Enclosed Contacts for Increased Reliability and Accuracy
- Horizontal and Vertical Models for 24V, 3-Wire Zone Single Stage and Millivolt Applications

ILLCO #	WR #	TYPICAL APPLICATION	SYSTEM SWITCH	FAN SWITCH	ANTICIPATION HEAT/COOL	RANGE (°F)	TERMINALS
9741028	1E56N-444	3 Wire, Zone Valve, Heat Only	None	None	Fixed	50-90	R/4, W/5, Y/6

Order S21-11 Subbase to add system switch with Cool-Off-Heat and Cool position and No Fan Switch.



## SINGLE STAGE LOW VOLTAGE HORIZONTAL THERMOSTATS WITH MERCURY CELL SWITCH

- Sealed mercury cells provide long life by protecting against dirt and moisture.
- Heating and/or cooling anticipators provide narrow differential control of room temperature.
- Beige or Classic White color.

ILLCO #	WR #	TYPICAL APPLICATION	SYSTEM SWITCH	FAN SWITCH	ANTICIPATION HEAT/COOL	RANGE (°F)	TERMINALS
9741015	1F35-910	3-Wire Zone <sup>a</sup>	None	None	Fixed	50-90	R5, Y6, 4

<sup>a</sup>Use S21-11 Subbase to convert to heating and cooling. System Switch: Heat-Off-Cool, Fan Switch: None.

## COMFORT-SET 80 THERMOSTATS

- Choice of battery powered or hardwired models.
- Fossil fuel or electric heat compatible.
- 60% larger LCD with backlight.
- Permanent program retention during power loss.
- Configuration menu allows keypad selection of options.
- Selectable Celsius or Fahrenheit temperature display.
- Selectable Energy Management Recovery (1F80-240/1F80-241/1F81-261).
- Meets Energy Star specifications (1F80-240/1F80-241/1F81-261).
- Classic White color.



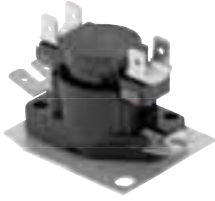
ILLCO #	WR #	TYPICAL APPLICATION	PROGRAMMING	SYSTEM SWITCH	FAN SWITCH	VOLTAGE	POWER METHOD	TERMINALS
9741041	1F80-361	Gas, Oil, Electric 1H/1C	5+2 Day Program	Heat-Off-Cool	Auto-On	24 Volts or Millivolt	Dual Power	RC, C, RH, W, Y, G, O, B
9741042	1F81-261	Gas, Oil, Electric 2H/2C	5+1+1 Day Program	Heat-Off-Cool	Auto-On	24 Volts or Millivolt	Dual Power	R, C, W, W2, G, Y, Y2
9741042A	1F85-275	Gas, Oil, Electric 3H/2C	5+1+1 Day Program or Non	Heat-Off-Cool	Auto-On	24 Volts or Millivolt	Battery Powered	R, C, E/W1, W2, G, Y1, Y2, O, B, L
9741043	1F86-344	Gas, Oil, Electric 1H/1C	Non-Programmable	Heat-Off-Cool	Auto-On	24 Volts or Millivolt	Battery Powered	RC, RH, C, W, Y, G, O, B

## COMFORT-SET 90 THERMOSTATS

- Selectable automatic heat/cool system changeover.
- Fossil fuel or electric heat compatible.
- Large Comfort-View™ luminescent display.
- Permanent program retention during power loss.
- Configuration menu allows keypad selection of options.
- Selectable Celsius or Fahrenheit temperature display.
- Programmable blower control and blower delay timings.
- Selectable Energy Management Recovery.
- Built-in system and thermostat diagnostics.
- Digital-signal remote sense capable.
- Meets Energy Star specifications – All Programmable Models.
- Classic White color.



ILLCO #	WR #	TYPICAL APPLICATION	PROGRAMMING	SYSTEM SWITCH	FAN SWITCH	VOLTAGE	TERMINALS
9741101	1F95-1277	Multi-Stage	5+2/7 Day Program, Non	Heat-Off-Cool-Auto	Auto-On	24 Volts or Millivolt	RC, RH, C, W, Y, G, MV, O, B, 6, +, S, -
9741113	1F97-1277	Gas, Oil, Electric, 3-Wire Zone	5+2/7 Day Program, Non	Heat-Off-Cool-Auto	Auto-On	24 Volts or Millivolt	RC, RH, C, W/E, W2, Y, Y2, G, MV, O, B, 6, +, S, -



## MODEL 24A34 ELECTRIC HEAT SEQUENCERS

- Replaces Honeywell, MARS, TOD, GEMLINE, Klixon (Texas Instruments).
- 24V input control.
- Multi-position mounting.
- Any contacts (except M1 & M2) can be used as auxiliary contacts.
- Double quick-connect terminals for combination loads.

ILLCO #	WR #	TIMINGS	SWITCHES	TIMINGS - ON	TIMINGS - OFF
9741230	24A34-1	1	1	1-20 Min.	40-110 Min.



## HEAVY DUTY SPACE THERMOSTATS FOR HEATING AND COOLING

- Dust, moisture and vermin resistant heavy metal case.
- No leveling required – Mounts in any position.
- Quick response to temperature changes.
- Nickel plated element.
- Extra rugged switch mechanism with pure silver contacts.

ILLCO #	WR #	RANGE (°F)	DIFFERENTIAL (°F)	SWITCH ACTION
9741398	201-8	20-90	Adj. 3-20	Open on Rise



## ADJUSTABLE SNAP DISC FAN AND LIMIT CONTROLS

- 1/4" quick connect terminals are standard.
- Reduces inventory while providing coverage for a wide range of temperature applications.
- Reduces the majority of fixed disc thermostats now on heating equipment and various appliances.

ILLCO #	WR #	RANGE (°F)	DIFFERENTIAL (°F)	SWITCH ACTION	FUNCTION	INCLUDES
9742429	3F05-3	90-130	20	SPST	Fan Controls (Close on Rise)	Thermostat, Tab-to-Screw Terminals, adapter bracket and mounting screws.
9742434	3F05-4	140-180	20	SPST	Fan Controls (Close on Rise)	
9743141	3L05-4	135-175	40	SPST	Limit Controls (Open on Rise)	
9743146	3L05-5	175-215	40	SPST	Limit Controls (Open on Rise)	
9743151	3L05-6	210-250	40	SPST	Limit Controls (Open on Rise)	

## UNIVERSAL REPLACEMENTS FOR ELECTRIC WATER HEATER THERMOSTATS AND LIMITS

High electrical capacity. Snap-Action contact. Long life-proven reliability. Adjustable control or manual reset styles.



ILLCO #	WR #	DESCRIPTION	SWITCH ACTION	RANGE (°F)	A.C. ELECTRICAL RATINGS NON-INDUCTIVE		
					120/240 VAC	277 VAC	480 VAC
9743809	754-1	DPST Limit (Manual Rest)	Open on Rise	170 Fixed	-	40.0A	25.0A
9743909	755-1	SPST Thermostat	Open on Rise	90-150	30.0A	25.0A	12.5A
9744009	756-1	SPDT Thermostat	Open 1-2 on Rise	90-150	30.0A	25.0A	12.5A

Can't find what you're looking for? Give us a call and one of our knowledgeable employees will be happy to help you.



## FLUSH MOUNT FAN OR LIMIT CONTROL/ATTIC FAN CONTROL

- For use where space is limited.
- Small bimetal sensing element.
- Snap-Action switch.
- Fan control has adjustable range with direct reading temperature dial.

ILLCO #	WR #	DESCRIPTION	RANGE (°F)	DIFFERENTIAL (°F)	SWITCH ACTION
9744109	757-1	Fan	70-160	25 Fixed	Close on Rise
9744209	758-1	Limit	110-200	25 Fixed	Open on Rise



## FLAME SENSOR FOR HOT SURFACE IGNITION (H.S.I.) SYSTEMS

- High quality Alumina ceramic insulator.
- High temperature Kanthal flame rod material that can withstand 1800°F.
- Teflon insulated (250°C rating) lead wire.
- Single screw, plated steel mounting bracket.

ILLCO #	WR #	LEAD LENGTH	ELECTRICAL CONNECTION
9744260	760-401	30"	1/4" Female spade terminal



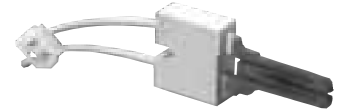
## FLAME DETECTOR

Solid state electronic flame detector which utilizes light intensity to sense the presence of a flame in oil burning heating equipment.

ILLCO #	WR #	DESCRIPTION
9745309	956-1	Standard flame detector with straight bracket. 48-1/2" leads.

## SILICON CARBIDE HOT SURFACE IGNITOR

- Multiple mounting styles.
- Works with 15, 17 or 45 second HSI systems.



ILLCO #	WR #	REPLACES OEM TYPE NUMBER	O.E.M. TYPE		BOTH O.E.M. & REPLACEMENT	
			LEAD LENGTH	LEAD INSULATION TEMP. RATING (°C)	ELECTRICAL CONNECTION	CERAMIC INSULATOR MOUNTING LOCATOR
9744267	767A-361	767A-301	4-1/2"	200	Two (2) terminal receptacle with .093 male pins	Tab on right side
		767A-306	6"	250		
		767A-350	4-1/2"	250		
		767A-354, 767A-361	9"	250		



## DUAL PURPOSE AIR SWITCH

- Design eliminates "fluttering" or malfunction due to shock or vibration normally encountered with "sail switches."
- Wide operating range.
- Furnished with one 6" piece 1/4" O.D. flexible tubing, nuts and ferrules.
- Can be mounted in any position except upside down.
- Enclosed diaphragm.

ILLCO #	WR #	RANGE (W.C.)	SWITCH ACTION	ELECTRICAL RATINGS			
				RESISTIVE (NON-INDUCTIVE)			125-277 VAC
				120 VAC	240 VAC	277 VAC	
9744350	770-1	0.07-12.0	SPDT	15.0A	15.0A	15.0A	300 VAC



## ADJUSTABLE INDOOR-OUTDOOR HYDRONIC CONTROL

- Fully adjustable reset ratio covers all climate conditions and eliminates stocking controls with different reset ratios.
- Well-insertion bulb monitors boiler water temperature, outdoor bulb monitors outdoor temperature. Control modulates water temperature based on reset ratio selected.
- Hydraulic action element — unaffected by vibration or moisture.
- Mounting clamp for outdoor bulb included.
- F89-0148 well included with control.

ILLCO #	WR #	DIFFERENTIAL (°F)	SWITCH ACTION	MOTOR RATING (FULL LOAD)	
				120 VAC	240 VAC
				9745340	1050-1



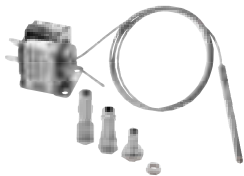
## HYDRONIC ZONE CONTROLS

- Quiet operation.
- Valve stem made of stainless steel.
- Automatic recycling manual operator shows valve position at all times.
- Built-in auxiliary contacts to control burner or circulator relay.
- Motor can be removed from valve assembly without draining system.



ILLCO #	WR #	TUBING SIZE (I.D.)	24VAC THERMOSTAT CIRCUIT RATING	TIME CYCLE	MAX. DIFFERENTIAL ACROSS VALVE	MAX. WATER TEMP.	MAX. SYSTEM PRESSURE
9745809	1311-102	3/4"	0.4A <sup>a</sup>	Open: 45 sec. Close: 45 sec.	15 PSI	240	50
9745819	1311-103	1"	0.4A <sup>a</sup>	Open: 45 sec. Close: 45 sec.	15 PSI	240	50
9745829	1311-104	1-1/4"	0.4A <sup>a</sup>	Open: 45 sec. Close: 45 sec.	15 PSI	240	50

<sup>a</sup>Valve current is 0.4A only during opening or closing. For proper anticipation, select thermostat designed for use with a 3-wire zone valve.



## MERCURY FLAME SENSORS

- Bulb styles are designed to fit with various OEM applications.

ILLCO #	WR #	ELEMENT LENGTH	PANEL TYPE	BULB STYLE	DESCRIPTION
9747743	3049-18	33"	D	#7	-
9747773	3098-134	48"	E	#19	Replaces Bulb Styles #9 Or #13

## REFRIGERATION TEMPERATURE CONTROL

- Hydraulic action element.
- Dustproof steel case with top and bottom knockouts.
- Temperature dial graduated in °F and °C and can be adjusted through cover.
- High electrical ratings allow operation of most equipment without use of relays or motor starters.



ILLCO #	WR #	RANGE (°F)	DIFFERENTIAL (°F)	CAPILLARY LENGTH	BULB SIZE	SWITCH ACTION	MOTOR RATING (FULL LOAD)	
							120 VAC	240 VAC
9746209	1609-101	-30-90	Adj. 3.5-40	5 ft.	7-1/4" x 3/8"	Close on Rise	16.0A	8.0A

## MANUAL RESET FREEZE PROTECTION CONTROL

- Temperature dial graduated in °F and °C scales.
- Adjustable dial stop to limit minimum setting — Shipped at 36°F (2°C).
- Dustproof steel case with top and bottom knockouts.
- Hydraulic action element — Unaffected by vibration — No leveling required.
- Equipped with special 1/2" packing nut assembly.



ILLCO #	WR #	RANGE (°F)	DIFFERENTIAL (°F)	CAPILLARY LENGTH	BULB SIZE	SWITCH ACTION	MOTOR RATING (FULL LOAD)	
							120 VAC	240 VAC
9746709	16A60-9	-20-50	Manual	10 ft.	5-1/2" x 3/8"	Open on Fall	7.4A	3.7A



## HOT SURFACE IGNITOR NITRIDE UPGRADE KIT

- No need to replace existing module.
- Replaces most silicon carbide ignitors.
- Includes universal ignitor mounting bracket.
- Super tough nitride ignitor construction.
- Easy ignitor replacement.

ILLCO #	WR #	DESCRIPTION
9747165	21D64-2	Kit includes nitride ignitor, power supply module, universal mounting bracket, connection harness and furnace label.



## MERCURY FLAME SENSORS



- These sensors combine a rugged Snap-Action switch and powerful mercury actuated thermal element.
- May be used with natural, manufactured or mixed gases and with LP gases where means are provided for obtaining automatic pilot gas shut-off.
- Switch may be conveniently mounted in any position.
- Cover is easily removed, making switch terminals readily accessible.
- No button to depress – Sensors are recycling type which require relighting or possible restoration of proper gas pressure to return to operation.

ILLCO #	WR #	ELEMENT LENGTH	ELECTRICAL RATING		
			120 VAC	240 VAC	30 VAC
9747570	3046-5	48"	125 VA	125 VA	90 VA

## PILOT RELITE CONTROL



- Generates spark pulse until flame is sensed through spark electrode.
- Begins sparking immediately if flame extinguishes.
- Rugged solid state module design.
- Available in 24 and 120 volt input.
- Spark plug or spike output configurations available.

ILLCO #	WR #	INPUT VOLTAGE	ELECTRICAL RATING	DESCRIPTION
9748134	5059-134	24 VAC	0.03A	Spike connector

## UNIVERSAL SILICON CARBIDE INTEGRATED IGNITION MODULE



The 50A55-843 Universal Silicon Carbide Integrated Ignition module employs a microprocessor which continually monitors, analyzes and controls the proper operation of the gas burner, inducer and fan. This one module will replace most of the 50A5X-XXX integrated ignition carbide modules that have been manufactured by White-Rodgers and most competitive models. The Universal Module includes an extensive cross-reference, additional jumper wires, additional wiring harness and a jumper for Trane applications. The module also has terminals for powering a humidifier and electronic air cleaner.

ILLCO #	WR #	DESCRIPTION
9748060	50A55-843	Universal Silicon Carbide integrated HSI control

## UNIVERSAL NON-INTEGRATED SPARK IGNITION MODULE



The 50D50 Electronic Spark module was developed to replace Intermittent Pilot single and dual rod systems. The 50D50 Universal Spark Module will replace virtually all competitive spark non-integrated modules. This Universal Spark Module is designed to give dealers and service technicians reduced inventory providing a complete diagnostic system, thus making installations easier with fewer callbacks. Each 50D50-843 Universal Kit has everything needed for a fast and accurate replacement, including a complete cross-reference and programming keys to quickly customize the modules to the specific application.

ILLCO #	WR #	DESCRIPTION
9748070	50D50-843	Universal Proven Pilot Spark Ignition Control

## UNIVERSAL SILICON CARBIDE NON-INTEGRATED HSI MODULE



The 50E47-843 Universal Replacement for silicon carbide, non-integrated HSI modules. The 50E47-843 Universal replaces ALL White-Rodgers 50E47-xxx modules and virtually all competitive silicon carbide, non-integrated modules. The 50E47-843 Universal Kit has everything needed for a fast and accurate replacement, including a complete module cross-reference and program keys to quickly customize the module to the furnace application. Now you can carry one Universal Kit... and carry the best!

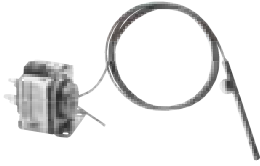
ILLCO #	WR #	DESCRIPTION
9748080	50E47-843	Universal carbide non-integrated HSI module

## 36C STANDING PILOT GAS VALVE



The 36C03 complete gas control combines into a single compact package the functions of 3-position gas cock, pressure regulator, 100% shut-off automatic pilot, and main operator. Available for use on 24 VAC systems. This control can be mounted in any orientation except upside down.

ILLCO #	WR #	APPLICATION	COIL VOLTAGE	GAS	PIPE SIZE
9747850	36C03-300	Standing pilot Fast Open	24VAC	Natural or LP	1/2"x3/4"



## PLUG-IN TYPE MERCURY FLAME SENSORS

- Plug-in feature requires no additional electrical connections or mounting devices.
- Sensor combines a rugged Snap-Action SPDT switch and powerful mercury actuated thermal element.
- May be used with natural, manufactured or mixed gases and with LP gases where means are provided for obtaining automatic pilot gas shut-off.
- No button to depress – Sensors are recycling type which require relighting or possible restoration of proper gas pressure to return to operation.
- The SPDT switch can energize ignitor circuit to relight pilot (as with roof top units).

ILLCO #	WR #	ELEMENT LENGTH	ELECTRICAL RATING			COMMENTS
			120 VAC	240 VAC	30 VAC	
9747809	30A46-5	48"	125 VA	125 VA	90 VA	Stud mount element



## PARTS AND ACCESSORIES

ILLCO #	WR #	DESCRIPTION
<b>MOTOR ASSEMBLIES</b>		
9741171	F19-0097	For 1311-102, -103, -104
9741177	F19-0104	For 1311-102, -103, -104
<b>VALVE ASSEMBLIES</b>		
9748400	F84-0433	For 1311-102 and 1361-102 (3/4")
9748405	F84-0434	For 1311-103 and 1361-103 (1")
9748410	F84-0435	For 1311-104 and 1361-104 (1-1/4")



## CAST IRON SHEAVES - VARIABLE PITCH

- All sheaves are fitted with hollow head set screws.
- Any standard single groove sheave can be used as a companion sheave.
- Made of close grain cast iron with a lacquer finish and is individually packaged.
- Accurately machined and balanced.

ILLCO #	WR #	BORE SIZE	OUTSIDE DIAMETER	CROSS REFERENCE			
				BROWNING	MAUREY	CONGRESS	LAU
9749001	M25V-08	1/2	2.5"	IVL25-1/2	8250	-	-
9749006	M30V-08	1/2	2.87"	IVL30-1/2	-	-	-
9749010	M30V-10	5/8	2.87"	IVL30-5/8	-	-	-
9749015	M34V-08	1/2	3.15"	IVL34-1/2	8325	VP325	270-069-01
9749021	M34V-10	5/8	3.15"	IVL34-5/8	8325	VP325	270-072-01
9749027	M34V-12	3/4	3.15"	IVL34-3/4	8325	VP325	-
9749034	M40V-08	1/2	3.75"	IVL40-1/2	8350	VP350	-
9749039	M40V-10	5/8	3.75"	IVL40-5/8	8350	VP350	-
9749046	M40V-12	3/4	3.75"	IVL40-3/4	8350	VP350	-
9749057	M40V-14	7/8	3.75"	IVL40-7/8	8350	-	-
9749060	M44V-08	1/2	4.15"	IVL44-1/2	8400	VP400	270-089-17
9749062	M44V-10	5/8	4.15"	IVL44-5/8	8400	VP400	270-089-12
9749068	M44V-12	3/4	4.15"	IVL44-3/4	8400	VP400	-
9749072	M44V-14	7/8	4.15"	IVL44-7/8	8400	-	-
9749076	M50W-10	5/8	4.75"	IVL50-5/8	8450	VP450	-
9749084	M50W-12	3/4	4.75"	IVL50-3/4	8450	VP450	-
9749089	M50W-14	7/8	4.75"	IVL50-7/8	8450	VP450	-

Can't find what you're looking for? Give us a call and one of our knowledgeable employees will be happy to help you.

### 1950 AND 1951 THERMOPILES



The 1950 and 1951 thermopiles (pilot generators) are designed for use on self-powered gas control systems. They can be used to replace all Robertshaw and similar competitive devices. Models are available for two lead or coaxial type connection. All models include mounting nuts.

ILLCO #	ROBERTSHAW #	LENGTH	CONNECTION TYPE
8227501	1950-001	36"	Two lead
8227503	1950-003	60"	Two lead
8227511	1951-001	36"	Coaxial

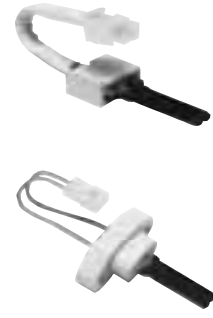
### 41-600 SERIES HOT SURFACE FURNACE MINI-IGNITORS



Robertshaw's 41-600 series Norton hot surface mini-ignitors deliver dependable ignition in heating systems of everyday description. All Norton ignitors are engineered for easy handling, simple installation and trouble-free operation.

ILLCO #	ROBERTSHAW #	FACTORY MODEL	HOUSING LENGTH	COMMENTS
8229226	41-605	601XBM + Harness and Brackets	2.5"	York replacement conversion kit #473-20937-001

### 41-400 SERIES HOT SURFACE FURNACE IGNITORS



Robertshaw's 41-400 series Norton hot surface ignitors deliver dependable ignition in heating systems of every description. From furnaces and boilers to rooftop heaters, infrared burners, unit heaters, water heaters and many other types of HVAC equipment. The 41-400 series hot surface ignitors are made of high-purity recrystallized silicon carbide which combines physical and thermal strength with stable electrical properties. The 41-400 series are designed to reach ignition temperatures within 17 seconds. They have 18-gauge nickel chrome lead wires embedded and metalized in place for maximum holding strength and electrical conductivity. The lead wires are also enclosed with a special high-temperature fiberglass insulation providing total electrical protection.

ILLCO #	ROBERTSHAW #	FACTORY MODEL	CERAMIC BLOCK STYLE	TERMINAL CONNECTION TYPE	LEAD WIRE LENGTH
8229236	41-401	271A	A	A	4-1/2"
8229237	41-402	271W	B	NONE	19"
8229238	41-403	271M	C	NONE	5-1/2"
8229239	41-404	271M	C	D	4-1/2"
8229240	41-405	271D	D	NONE	5-1/2"
8229242	41-407	271	C	B	4-1/2"
8229246	41-406	271Y	E	NONE	10-1/2"
8229248	41-408	271N	B	C	4-1/2"
8229249	41-409	271	C	D	4-1/2"
8229250	41-410	271N	B	B	4-1/2"
8229251	41-411	271N	C	B	4-1/2"
8229252	41-412	271NM	F	D	5-1/4"

### 450/455 SERIES HEATING AND COOLING THERMOSTATS



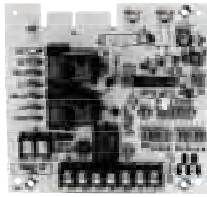
450/455 series thermostats are mercury free and environmentally safe. Their unique hermetically sealed-in-glass switch design requires no leveling and provides optimum protection from contamination. The basic 450/400 thermostat can be used as a heating only, cooling only, or zone system thermostat, depending upon how the subbase is wired. The 450/400 series thermostats, when used with the 490/495 series universal switching subbase, will replace most heating/cooling applications. Decorative wall plate is included with all models. It can be used to cover old thermostat mounting marks.

ILLCO #	ROBERTSHAW #	FACTORY NUMBER	DIAL TEMP. RANGE (°F)	SWITCH ACTION	APPLICATION	COMMENTS
8229345	450-400	34-074-150	48-86	SPDT	24 Volt Heat/Cool	No subbase included

### 490/495 SERIES UNIVERSAL SWITCHING SUBBASES



ILLCO #	ROBERTSHAW #	FACTORY NUMBER	SYSTEM SWITCH FUNCTIONS	FAN SWITCH FUNCTIONS	APPLICATION	COMMENTS
8229390	490-400	SB-4A-5AJ	Heat-Off-Cool	Auto-On	Universal	Field adaptable wiring allows conversion to most applications



## 695 SERIES ELECTRONIC BLOWER CONTROLS

The Robertshaw 695 series electronic blower motor controls were designed for use on heating and cooling equipment. The 695 controls the operation of the induced draft blower and the circulating blower in all thermostat modes. On a call for heat, the induced draft blower is energized. A pressure switch then proves the induction blower is functioning and brings in the gas valve. Operation of the gas valve starts the "on" delay timing. At the end of a pre-selected (and fixed) delay, the circulating blower is energized and it runs continuously until the call for heat is satisfied. At this time, the "off" delay (adjustable) is initiated and the circulation blower operates until the "off" delay times out.

ILLCO #	ROBERTSHAW #	O.E.M.	REPLACES	BLOWER HEATING	
				"ON" TIME	"OFF" TIME
8229393	695-003	Rheem	47-22827-01	20	*
			47-22827-81		
			47-22827-82		
			47-22828-01		
			47-22828-02		

\*Optional settings (adjustable) 90, 120, 150, and 180 seconds.



## 700 SERIES 24 VOLT COMBINATION VALVES

For reliability, performance, flexibility and ease of installation and service in one compact control, Robertshaw's 24 volt combination gas valves are the answer. These valves feature a manual valve (gas cock), an automatic pilot safety valve, inlet/outlet screens, pilot outlet, pilot gas filter and pilot adjustment key. Models that have a safety magnet have a "notched or slotted" magnet for applications requiring the use of an ECO (Energy Cut-Off) switch. The automatic pilot safety valve is separate from the gas cock and provides gas shutoff in case of pilot outage. Valves can be mounted in any position except upside down.

ILLCO #	ROBERTSHAW #	FACTORY MODEL	INLET SIZE (FPT)	3 POSITION OUTLET		PRESSURE REGULATOR SETTING	CAPACITY	REDUCER BUSHINGS INCLUDED		
				STRAIGHT THRU (FPT)	SIDE (FPT) WITH PLUGS			3/4" x 1/2"	1/2" x 3/8"	
8229401	700-400	7000BER	1/2"	3/4"	Straight Thru	Uni-Kit	240,000	1	-	-
8229402	700-402	7000BER	1/2"	3/4"	1/2"	Uni-Kit	240,000	1	-	-
8229406	700-406	7000BER	3/4"	3/4"	Straight Thru	Uni-Kit	300,000	2	-	-
8229426	700-426	7000BER-S7A	3/4"	3/4"	Straight Thru	3.5" w.c. NG	300,000	2	-	-
8229429	700-442	7000ERHC-S7C	1"	3/4"	Straight Thru	3.5" w.c. NG	720,000	-	-	-



## 700 SERIES DIAPHRAGM/SOLENOID VALVES

For reliability, performance, flexibility and ease of installation and service in one compact control, Robertshaw's diaphragm/solenoid gas valves are the answer. These controls are single function, diaphragm types and are excellent replacements for solenoid gas valves. Models are available with or without a gas cock, and regulated and nonregulated models are available. Standard features include: pilot outlet, pilot gas filter and pilot adjustment key. Valves can be mounted in any position except upside down.

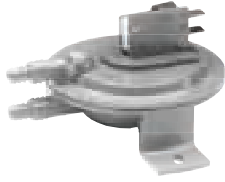
ILLCO #	ROBERTSHAW #	FACTORY MODEL	INLET SIZE (FPT)	3 POSITION OUTLET		PRESSURE REGULATOR SETTING	CAPACITY	REDUCER BUSHINGS INCLUDED		
				STRAIGHT THRU (FPT)	SIDE (FPT) WITH PLUGS			3/4" x 1/2"	1/2" x 3/8"	
8229423	700-423	7000BGVE	3/4"	3/4"	Straight Thru	None	300,000	2	-	-



## 720 SERIES PILOT IGNITION GAS VALVES

The 720 series valves are designed for intermittent pilot ignition applications. The 720 IPER series valve incorporates a manual valve, pilot valve, dual automatic valves (2), and a main gas pressure regulator. Uni-Kits are factory-set at the 3.5" W.C. for natural gas, but can be converted to L.P. by installing the regulator conversion kit included. The 720 series valves are designed for many residential applications such as central heating units, space heaters, wall heaters, boilers, and mobile home furnaces. The 720 series valve has a compact swing radius of only 3-9/16" to enable it to fit a wide range of OEM replacement applications. It also has all the wiring connections, manual selector, and adjustments readily available on top of the control. To prevent unsafe attempts at repair, special screws are used and replacement parts are not available.

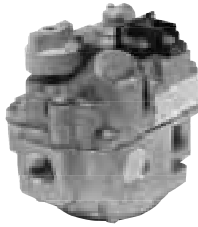
ILLCO #	ROBERTSHAW #	FACTORY MODEL	INLET SIZE (FPT)	OUTLET SIZE (FPT)	PRESSURE REGULATOR SETTING	CAPACITY
8229430	720-079	7200IPER	1/2"	3/4"	Uni-Kit	150,000



### 2374 SERIES ADJUSTABLE AIR SENSING SWITCHES

The new 2374 series adjustable air sensing switches are designed to replace a wide variety of air-sensing switches found in residential and light commercial applications including - furnaces, electronic air cleaners and humidifiers. Two models are currently available with an adjustable range of .2" W.C. to 1.0" W.C. or 1.0" W.C. to 4.0" W.C. Both models are provided with an SPDT switch that can be actuated by positive or negative pressure, or by pressure differential.

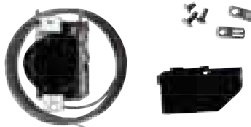
ILLCO #	ROBERTSHAW #	SET POINT	SWITCH
8229495	2374-495	.25 to 1.0" w.c.	SPDT
8229498	2374-498	1.0 to 4.0" w.c.	SPDT



### 720 SERIES DUAL VALVE GAS CONTROLS

The 720 series dual valve gas controls are designed for a wide variety of heating applications and can be used to replace most constant pilot valves, including dual valve (six function) model. The 720 series constant pilot gas valve is a six function valve incorporating a manual valve, safety shutoff magnet, dual automatic valves (hence the term "dual valves"), main gas regulator, and pilot adjustment. Models are available with and without a pressure regulator. Uni-Kits are factory-set at 3.5" W.C. for natural gas, but can be converted to L.P. by installing the regulator conversion kit included. The 720 series feature an integral manual selector used to select from the 4 gas flow positions - off, on, pilot and "set". The "set" position provides pilot only gas flow during magnet energizing and lock up. Built-in stops serve to prevent accidental setting to the off position. The wiring connections, manual selector and adjustments are easily accessible on top of the valve. With a 3-9/16" swing radius, the 720 series lends itself well to replacing many O.E.M. valves. Controls are multiposition and can be mounted in any position except upside down.

ILLCO #	ROBERTSHAW #	FACTORY MODEL	INLET SIZE (FPT)	OUTLET SIZE (FPT)	STRAIGHT THRU	PRESSURE REGULATOR SETTING	CAPACITY	REDUCER BUSHINGS INCLUDED		
								3/4" x 1/2"	1/2" x 3/8"	3/4" x 3/8"
8229540	720-400	7200ER	1/2"	3/4"	X	Uni-Kit	150,000	1	1	1
8229546	720-406	7200ER	3/4"	3/4"	X	Uni-Kit	150,000	2	-	-



### A12 SERIES DIRECT REPLACEMENT CONSTANT CUT-IN CONTROLS

One-for-one replacements for vending machines, automatic beverage dispensers, and reach-in coolers. Reliable off-cycle defrost. SPST switch with "Off" position.

ILLCO #	RANCO #	NORMAL OFF (°F)	WARM OFF (°F)	COLD OFF (°F)	CUT-IN OFF (°F)	CAPILLARY LENGTH
7921660	A12-700	18	26	11.5	37	84"
7921661	A12-701	23.5	31	15	41	84"
7921691	A12-1560	24	29	19	38	72"

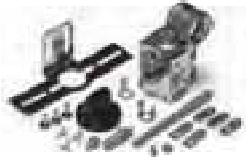
### A20/A30 ADAPTABLE REPLACEMENT CONSTANT DIFFERENTIAL CONTROLS

These compact controls are readily adaptable to nearly all commercial refrigerators and freezers. A wide selection 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.



ILLCO #	RANCO #	SWITCH	DIFF.	NORMAL		WARM ON (°F)	COLD OFF (°F)	CAPILLARY LENGTH
				OFF (°F)	ON (°F)			
7921956	A30-180	SPST	13	9	22	38	-4	42"
7921961	A30-181	SPST	13	9	22	41	-4	84"
7921971	A30-182	SPST	17	3	20	44	-6	42"
7921976	A30-183	SPST	17	3	20	44	-6	84"
7921981	A30-184	SPST	19	6	25	40	-7	42"
7921986	A30-185	SPST	15.5	5.5	21	36	-15	42"
7922131	A30-260	SPST	6	16	22	30	0.5	72"
7922161	A30-261	SPST	6	-	-	61	32	84"
7922191	A30-262	SPST	12	20	32	43	3	84"
7922221	A30-263	SPST	22.5	11	33.5	47	0.5	84"
7922250	A30-301*	SPST	8.5	-3	5.5	20.5	-24	84"
7922265	A30-304*	SPST	15.5	-6	9.5	19.5	21.5	84"
7922341	A30-307*	SPST	23	0	23	43	-23	78"
7921712	A22-1112	SPDT	5	34	39	44	25	72"

\*Does not have "OFF" position



**A30 CONTROLS FOR ROOM AIR CONDITIONERS**

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

ILLCO #	RANCO #	SWITCH	DIAL RANGE (°F)	DIFF. (°F)	SENSING ELEMENT CAPILLARY	
					LENGTH	TYPE AND BULB SIZE
7922632	A30-X450	SPST	58-86	5	-	Air coil
7922662	A30-X451	SPST	58-86	5	36"	Straight
7922692	A30-X452	SPST	53-85	5	39"	3/8" x 4" Cross ambient



**C17-100 TWO STAGE CONTROL**

This control replaces many OEM controls on two-stage cooling and heat/cool units. The two SPDT switches are staged 3.5°F apart.

ILLCO #	RANCO #	SWITCH	TEMPERATURE RANGE	TEMPERATURE RANGE	DIFF. (°F)	SENSING ELEMENT
			COOLING (°F)	HEATING (°F)		
7923370	C17-100	2 SPDT	71-101	64-94	3.5	26" cap. with 3/8" x 8-9/16" bulb



**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, air conditioning and 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.

ILLCO #	RANCO #	STAGES	ENCLOSURE	INPUT VOLTAGE	0 - 10 VOLT OUTPUT
7923420	ETC-111000	ONE	NEMA 1	120/208/240 VAC	NO
7923425	ETC-112000	ONE	NEMA 1	24 VAC	NO
7923430	ETC-211000	TWO	NEMA 1	120/208/240 VAC	NO
7923435	ETC-212000	TWO	NEMA 1	24 VAC	NO



**F25-107 DEFROST TERMINATION FAN DELAY CONTROL**

The F25 control terminates defrost and delays the evaporator fan operation on electric heat, hot gas and reverse cycle commercial refrigeration systems. Prevents warm, moist air from being circulated into the refrigerated space. Remote bulb sensing. Factory-fixed low event for fan delay.

ILLCO #	RANCO #	SWITCH	FAN "ON"	DEFROST TERMINATION	SENSING ELEMENT
			TEMPERATURE (°F)	RANGE (°F)	
7923476	F25-107	SPDT	20 Fixed	40-75	60" Cap. with 3/8" x 4" cross ambient bulb



**G20/G23 SERIES PRESSURE CONTROLS**

These controls provide extra protection to refrigeration compressors. The G20 protects against loss of charge or evaporator freeze-up. The G23 provides high head pressure protection.

ILLCO #	RANCO #	RESET	CUT-OUT RANGE (PSIG)	DIFF. (PSI)	SETTING (PSI)		HIGH LIMIT	CAPILLARY LENGTH
					OPEN	CLOSE		
7923501	G20-4412	Manual*	7-70	17 Fixed	7	24	70	60"
7923523	G23-5253	Manual*	150-450	105 Fixed	425	320	450	60"

\*Locks on pressure increase



**O SERIES SINGLE FUNCTION LOW PRESSURE CONTROLS**

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

ILLCO #	RANCO #	RESET		RANGE PSI	DIFF. PSI	SWITCH	PRESSURE CONNECTION	CAPILLARY LENGTH
		AUTO	MANUAL					
7923831	O10-1401	Y	N	12"-50	5-35	SPST Opens Low	1/4" SAE Male	-
7923861	O10-1402	Y	N	12"-50	5-35	SPST Opens Low	1/4" SAE Fl. Nut	36"
7924191	O10-1483	Y	N	10"-100	10-40	SPST Opens Low	1/4" SAE Fl. Nut	36"
7924500	O11-3099	Y	N	10"-100	10-40	SPST Opens High	1/4" SAE Fl. Nut	36"
7924791	O16-107	Y	N	10"-100	10-40	SPDT	1/4" SAE Male	36"
7924948	O16-166	Y	N	50-150	10-40	SPDT	1/4" SAE Fl. Nut	36"
7925041	O16-527	Y	N	10"-100	10-40	SPDT	1/4" SAE Fl. Nut	36"
7925057	O16-624	Y	N	12"-80	4-30	SPST Opens High	1/4" SAE Fl. Nut	36"



## O SERIES CUSTOM AND WIDE RANGE 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.

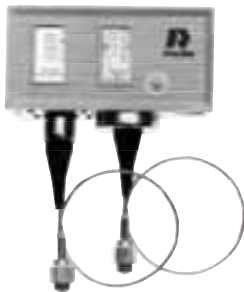
ILLCO #	RANCO #	RANGE (°F)	DIFF. (°F)	SWITCH	CAPILLARY LENGTH
7923891	O10-1408	-55	3-20	SPST Opens Low	72" w/ Remote Bulb
7923921	O10-1409	0-55	3-20	SPST Opens Low	72" w/ Remote Bulb
7923951	O10-1410	0-55	3-20	SPST Opens Low	72" w/ Remote Bulb
7924026	O10-1416	0-55	3-20	SPST Opens Low	72"
7924041	O10-1418	0-55	3-20	SPST Opens Low	Air Coil
7924052	O10-1419	-35-15	3-20	SPST Opens Low	72"
7924071	O10-1433	-35-15	3-20	SPST Opens Low	72" w/ Remote Bulb
7924781	O16-104	0-55	3-20	SPDT	72" w/ Remote Bulb
7924881	O16-111	0-55	3-20	SPDT	72"
7925190	O20-7041	0-100	6-200	DPST Opens Low	96" w/ 3/8" x 6" Cross ambient bulb
7925280	060-100	-35-95	4-50	SPDT	96" w/ 3/8" x 6" Cross ambient bulb
7925281	060-101	-35-95	4-50	SPDT	Air Coil
7925289	060-109	-20-70	3.5-35	SPST Opens Low	96" w/ 3/8" x 6" Cross ambient bulb



## O SERIES SINGLE FUNCTION HIGH PRESSURE CONTROLS

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

ILLCO #	RANCO #	RESET		RANGE PSI	DIFF. PSI	SWITCH	PRESSURE CONNECTION	CAPILLARY LENGTH
		AUTO	MANUAL					
7924281	O10-1894	Y	N	100-400	40-150	SPST Opens Low	1/4" SAE Male	-
7924371	O10-2054	Y	N	100-400	40-150	SPST Opens Low	1/4" SAE Fl. Nut	36"
7924431	O11-1711	Y	N	150-450	40-150	SPST Opens High	1/4" SAE Male	-
7924821	O16-108	Y	N	100-400	40-150	SPDT	1/4" SAE Fl. Nut	36"
7924971	O16-200	Y	Y	-	40	SPDT	1/4" SAE Fl. Nut	48"
7925151	O20-7006	Y	N	100-400	40-150	DPST Opens Low	1/4" SAE Male	36"

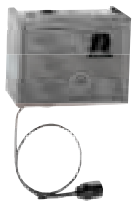


## O SERIES DUAL FUNCTION PRESSURE CONTROLS

These controls offer a tailored variety of ranges and options for R-12, R-22, and R-502 refrigerations. Low and high pressure functions are combined into a single control with one switch.

ILLCO #	RANCO #	LOW PRESSURE (OPENS LOW)			HIGH PRESSURE (OPENS HIGH)			CAPILLARY LENGTH
		RESET	CUT-IN RANGE PSI	DIFF. PSI	RESET	CUT-OUT RANGE PSI	DIFF. PSI	
7924515	O12-1502	Auto	12"-50	5-35	Auto	150-450	70-Fixed	36"
7924519	O12-1505	Auto	12"-50	5-35	Auto	100-250	50-Fixed	*
7924521	O12-1506	Auto	12"-50	5-35	Auto	100-250	50-Fixed	36"
7924581	O12-1549	Auto	10"-100	10-40	Auto	150-450	70-Fixed	36"
7924585	O12-1550	Auto	10"-100	10-40	Auto	150-450	70-Fixed	*
7924671	O12-1594	Manual	10"-100	10-Fixed	Manual	150-450	70-Fixed	36"
7924720	O12-4833	Auto	12"-50	5-35	Convert.	150-450	70-Fixed	48"
7924721	O12-4834	Auto	10"-100	10-40	Convert.	150-450	70-Fixed	48"
7924726	O12-4846	Auto	10"-100	10-40	Convert.	150-450	70-Fixed	*
7925241	O22-7706	Auto	10"-100	10-40	Convert.	150-450	70-Fixed	36"

\*Has 1/4" SAE male flare



## O18 ICE BANK CONTROL

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.

ILLCO #	RANCO #	APPLICATION	RANGE (°F)	DIFF. (°F)	SWITCH	SENSING ELEMENT
7925061	O18-1100	Ice Bank Control	Fixed	Approx. 1/8" ice thickness	SPST Opens Low	76" Capillary with bulb



## P30 SERIES LUBE OIL PROTECTION CONTROLS

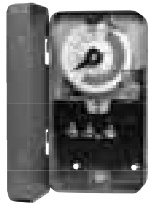
These lube oil protection controls guard pressure-lubricated refrigeration compressors against major damage due to loss of oil pressure. If adequate oil pressure is lost, the built-in S30 time delay switch starts timing. If the oil pressure does not recover within the set period, the control circuit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

ILLCO #	RANCO #	PRESSURE RANGE P.S.I.D.	TIME DELAY (SEC.)	REPL. MODULE	PRESS CONNECTION
7925326	P30-5826	9	120	S30-1302	36" Cap w/ nut
7925327	P30-5827	-	120	S30-1302	1/4" Male Flare



## 600 SERIES DEFROST CONTROLS

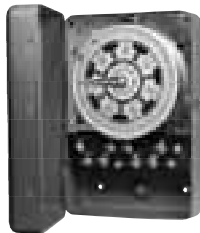
ILLCO #	PARAGON #	VOLTAGE @ 60HZ	SWITCH RATING			SWITCH TYPE
			AMP	VA	HP	
6932001	632-00	120	10 Amps, 345 VA pilot duty 120-240Vac.			2-NO 2-NC
6932022	632-20	208/240	10 Amps, 345 VA pilot duty 120-240Vac.			2-NO 2-NC



## 4000 SERIES 24-HOUR TIMERS

24-Hour timers are designed for uses that repeat the same ON/OFF schedule everyday.

ILLCO #	PARAGON #	VOLTAGE @ 60HZ	SWITCH RATING PER POLE				SWITCH TYPE	
			AMP	VA	HP	VA		
6932040	4001-00	120	40	690	1	690	1	SPST
6932043	4002-71	208/240	40	690	1	690	1	SPST
6932064	4003-00	120	40	690	1	690	1	DPST
6932085	4004-71	208/240	40	690	1	690	1	DPST



## 7000 SERIES DOUBLE DUTY CLOCKS

Double duty clocks offer 2 scheduling options or time switch controls in a single unit. They track time in 24-hour and 7-day increments. You can set an independent schedule for each day of the week and establish a chain of 24-hour programs.

ILLCO #	PARAGON #	VOLTAGE @ 60HZ	SWITCH RATING PER POLE			SWITCH TYPE
			AMP	VA	HP	
6932148	7007-00	120	40	690	-	4PST-4 NO
6932169	7007-71	208/240	40	690	-	4PST-4 NO
6932181	7008-00	120	-	690	1	2 NO-2 NC
6932202	7008-71	208/240	-	690	1	2 NO-2 NC



## 8040 SERIES DEFROST CONTROLS

Time initiated, time terminated.

ILLCO #	PARAGON #	VOLTAGE @ 60HZ	SWITCH ARRANGEMENTS CONTACTS			ADJ. LENGTH OF DEFROST
			2-4	1-3	3-N	
			2-4	1-3	3-N	
6932223	8041-00	120	Closed	Open	Closed	4-110 Min.
6932244	8041-20	208/240	Closed	Open	Closed	4-110 Min.
6932307	8045-00	120	Closed	Open	None	4-110 Min.
6932328	8045-20	208/240	Closed	Open	None	4-110 Min.
6932382	8047-00	120	Open	Open	Closed	4-110 Min.
6932395	8047-20	208/240	Open	Open	Closed	4-110 Min.



## 8140 SERIES DEFROST CONTROLS

Time initiated, temperature or pressure terminated.

ILLCO #	PARAGON #	VOLTAGE @ 60HZ	NORMAL POSITION OF CONTACTS DURING REF. CYCLE		
			3-N	1-3	2-4
			3-N	1-3	2-4
6932403	8141-00	120	Closed	Open	Closed
6932424	8141-20	208/240	Closed	Open	Closed
6932487	8145-00	120	None	Open	Closed
6932508	8145-20	208/240	None	Open	Closed

## 8240 SERIES DEFROST CONTROLS

ILLCO #	PARAGON #	VOLTAGE @ 60HZ	NORMAL POSITION OF CONTACTS DURING REF. CYCLE		
			2-4	1-3	3-N
			2-4	1-3	3-N
6932541	8245-00	120	Closed	Open	None
6932562	8245-20	208/240	Closed	Open	None
6932625	8247-20	208/240	Open	Open	Closed

## PARAGON 8408 SERIES DEFROST CONTROLS

ILLCO #	PARAGON #	VOLTAGE @ 60HZ	INITIATION/TERMINATION	CONTACT CAPACITY			
				HEATER		COMPRESSOR	
				N.O.	N.O.	N.O.	N.C.
6932667	8408-20B	208/240	Time/Temperature or Pressure	55A	55A	55A	2 HP, 690 VA



## INTERMATIC-GRASSLIN

### MULTI-VOLTAGE DEFROST TIMER TIME INITIATED

#### TIME/TEMPERATURE/PRESSURE TERMINATED

The DTMV is applicable to air defrost (compressor shutdown) and in electric or hot gas defrost systems where the defrost is terminated by the timer or when the coil is frost free, as sensed by a temperature or pressure switch, even though the programmed defrost termination time has not been reached. The time termination functions as a fail-safe and will terminate the defrost if the temperature or pressure switch fails to do so.

#### SPECIFICATIONS

##### Switch Rating:

- 30A Resistive @ 208-250 VAC
- 2HP @ 208-250 VAC; 1HP @ 125 VAC
- 690VA pilot duty @ 125-250 VAC
- "F" Terminal: 10A Resistive @ 208-250 VAC
- 1HP @ 208-250 VAC
- 1/2 HP @ 125 VAC

(Terminal 1-3 rating reduced to 20 A when "F" terminal used)

##### Wiring Connections:

Screw clamp terminals accommodate up to two #8 AWG wires.

##### Environmental Ratings:

- Operating Temperature Range: -40F to 131F
- Operating Humidity: 0 to 95% non-condensing

##### Dimensions:

10" x 6.5" x 3.75" deep

##### Shipping Weight:

2 lbs.

### UNIVERSAL REPLACEMENT

INTERMATIC GRASSLIN DTMV	PARAGON #	PRECISION #
	8141-00	6141-00
	8143-00	6143-00
	8145-00	6145-00
	8041-00	6041-00
	8043-00	6043-00
	8045-00	6045-00
	8046-00	
	8047-00	6047-00
	8141-20	6141-20
	8143-20	6143-20
	8145-20	6145-20
	8041-20	6041-20
	8043-20	6043-20
	8045-20	6045-20
	8046-20	
	8047-20	6047-20
	8245-20	6245-20
	8243-20	6243-20
	8247-20	6247-20



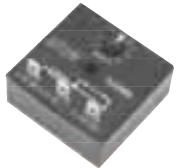
ILLCO #	INTERMATIC GRASSLIN #	VOLTAGE	TIMER	BATTERY BACKUP	DEFROST FREQ./DAY	DEFROST DURATION	MIN. DURATION INTERVAL
69390105	DTMV40	120V, 208/240V, 60 Hz	Synchronous	No	1 to 24	15-180 min.	15 min.



**325 SERIES SOLID STATE TIMERS DELAY ON MAKE**

The Mars 32391 is the top-selling timer in the industry. Its reliability has been proven in the field by knowledgeable contractors.

ILLCO #	MARS #	TYPE DELAY	TIME DELAY RANGE	TYPE OF ADJUSTMENT	INPUT VOLTAGE	HZ	MAX. AMPS.	VOLTAGE DROP
6694431	32391	On Make	6 sec. - 8 min.	Dial	19-240 VAC	50/60	1	2.5 @ 1A



**325 SERIES SOLID STATE BYPASS TIMER**

Mars 32395 is an adjustable, multi-voltage bypass timer that allows the temporary bypass of a control or device during start-up. At the end of the delay period the control is returned to the circuit.

ILLCO #	MARS #	TYPE DELAY	TIME DELAY RANGE	TYPE OF ADJUSTMENT	INPUT VOLTAGE	HZ	MAX. AMPS.	VOLTAGE DROP
6694435	32395	Bypass	6 sec. - 8 min.	Dial	19-240 VAC	50/60	1	2 @ 1A



**330 SERIES DEFROST THERMOSTATS FOR DEFROST TERMINATION**

Mars series 300 defrost controls are designed to replace many defrost thermostats. The leads are of sufficient length for the connection to be made at the same location as was the control removed. The connection should be insulated in a manner similar to that on the original equipment.

ILLCO #	MARS #	TEMPERATURE CODE	OPENING TEMP (°F)	CLOSING TEMP (°F)
6681891	33008	L45	45	15
6681897	33009	L50	50	20
6681903	33010	L55	55	25
6681911	33011	L60	60	30
6681923	33012	L70	70	40



**333 SERIES KLIXON FIXED SETTING HIGH PRESSURE CUT-OUTS**

Mars offers the most complete line of high pressure cut-outs.

ILLCO #	MARS #	KLIXON NO.	OPENING PRESSURE	RESET PRESSURE
6694534	33325	PS80-K1-0360-425-300	425	300



**333 SERIES KLIXON FIXED SETTING LOW PRESSURE CONTROLS**

Low pressure controls.

ILLCO #	MARS #	KLIXON NO.	OPENING PRESSURE	RESET PRESSURE	SWITCH ACTION (OPEN ON PRESSURE)
6694545	33330	PS80-K2-F0307-025-005	10	25	Fall
6694556	33336	PS80-K2-F0323-065-005	25	65	Fall
6694567	33339	PS80-K2-F0238-090-005	50	90	Fall



**330 SERIES KLIXON REFRIGERATION THERMOSTATS**

Mars has selected the most popular Klixon disc-type thermostats found in commercial refrigeration. These controls cover a wide assortment of applications including supermarket cases and walk-in, reach-in, and beverage coolers.

ILLCO #	MARS #	KLIXON NO.	O.E.M.	O.E.M. PART NUMBER	SWITCH	OPERATING TEMP. (°F)	
						OPEN	CLOSE
6694580	33415	20420D24-399-350	Bally	-	SPDT	65	20
6694584	33425	20420L15-913-302	-	794-824-00	SPST	40	25
6694586	33430	20420D1-166-336	-	-	SPDT	50	35
6694594	33460	20420L19-202-274	-	C10872-6	SPST	35	5
6694596	33470	20420L15-376-218	-	125211	SPST	50	30



**390 SERIES LIMIT SWITCHES - OPEN ON TEMPERATURE RISE**

ILLCO #	MARS #	KLIXON TEMP. CODE	TEMPERATURE (°F)	
			CLOSE	OPEN
6697533	39033	L350-4	310	350

## 110 SERIES MOTOR START CAPACITORS ELECTROLYTIC CAPACITORS FOR MOTOR STARTING APPLICATIONS

CASE SIZE	DIAMETER IN.	LENGTH IN.
1	1.44	2.75
2	1.44	3.38
4	1.81	3.38
5	1.81	4.38
6	2.06	3.38
7	2.06	4.38
8	2.56	4.38

### 110/125 DUAL VOLTAGE AC

ILLCO #	MARS #	MICROFARAD (MIN.-MAX)	CASE SIZE
6131001	11003	25-30	1
6131022	11004	30-36	1
6131043	11005	36-43	1
6131095	11006	43-56	1
6131106	11007	56-72	1
6131148	11908	72-88	1
6131169	11909	88-108	1
6131181	11910	108-130	1
6131202	11912	124-156	1
6131223	11913	145-175	1
6131244	11914	161-193	1
6131265	11915	189-227	1
6131286	11918	233-292	2
6131307	11919	270-324	2
6131328	11920	300-360	4
6131349	11921	324-388	4
6131370	11922	340-408	4
6131381	11923	378-440	4
6131385	11924	400-480	4
6131402	11925	460-552	4
6131423	11926	540-648	5
6131444	11927	590-708	5
6131465	11928	708-850	7



### 220/250 DUAL VOLTAGE AC

ILLCO #	MARS #	MICROFARAD MIN.-MAX	CASE SIZE
6131586	11039	25-30	1
6131590	11040	30-36	1
6131595	11041	36-43	2
6131607	11042	43-56	2
6131628	11943	56-72	2
6131649	11944	72-88	4
6131661	11945	88-108	4
6131682	11946	108-130	4
6131703	11948	124-156	4
6131745	11949	145-175	6
6131766	11950	161-193	5
6131787	11951	189-227	7
6131808	11952	216-259	7
6131829	11953	233-292	7
6131841	11954	270-324	7

### 330 VOLTS AC

ILLCO #	MARS #	MICROFARAD MIN.-MAX	CASE SIZE
6131862	11955	21-25	2
6131883	11056	25-30	2
6131904	11057	30-36	4
6131925	11058	36-43	4
6131946	11059	43-56	4
6131967	11060	56-72	4
6131985	11961	72-88	5
6131988	11962	88-108	6
6132021	11963	108-130	7
6132042	11965	124-156	7
6132063	11966	145-175	8
6132084	11967	161-193	8
6132105	11968	189-227	8

### 165 VOLTS AC

ILLCO #	MARS #	MICROFARAD MIN.-MAX	CASE SIZE
6131470	11932	145-175	2
6131472	11933	161-193	4
6131476	11935	233-292	4
6131478	11936	270-324	4

## 120 SERIES MOTOR RUN CAPACITORS SINGLE SECTION RUN CAPACITORS

### 370 VOLT - OVAL

ILLCO #	MARS #	MICROFARAD	BASE	HEIGHT (IN.)
6132210	12903	3	A	2.12
6132221	12904	4	A	2.12
6132226	12905	5	A	2.12
6132242	12906	6	A	2.12
6132247	12907	7.5	A	2.88
6132263	12908	10	A	2.88
6132265	12909	12.5	A	2.88
6132268	12910	15	A	3.88
6132284	12914	20	C	2.88
6132289	12915	25	C	2.88
6132305	12917	30	C	2.88
6132326	12918	35	C	3.88
6132347	12921	40	C	3.88



### 440 VOLT - OVAL

ILLCO #	MARS #	MICROFARAD	BASE	HEIGHT (IN.)
6132368	12927	3	A	2.12
6132389	12928	4	A	2.88
6132410	12929	5	A	2.88
6132421	12930	6	A	2.88
6132442	12931	7.5	A	3.88
6132463	12932	10	A	3.88
6132470	12933	12.5	A	3.88
6132484	12934	15	C	2.88
6132495	12936	17.5	C	2.88
6132505	12937	20	C	2.88
6132526	12940	25	C	2.88
6132547	12941	30	C	3.88
6132568	12943	35	C	3.88
6132589	12945	40	C	3.88
6132610	12948	45	C	4.75
6132615	12949	50	D	4.75
6132617	12950	55	D	4.75



**120 SERIES MOTOR RUN CAPACITORS  
DUAL SECTION MOTOR RUN CAPACITORS**

**370 VOLT - ROUND**

ILLCO #	MARS #	MICROFARAD	BASE	HEIGHT (IN.)
6132621	12960	17.5/5	S	2.88
6132626	12962	20/4	C	2.88
6132642	12963	20/5	C	3.88
6132648	12762	25/7.5	C	2.88
6132649	12867	25/10	C	2.88
6132684	12969	30/5	C	3.88
6132685	12846	30/7.5	C	3.88
6132687	12849	35/7.5	C	4.25
6132689	12768	40/7.5	C	3.88
6132690	12769	45/5	C	3.75
6132691	12853	45/7.5	C	3.88
6132692	12192	50/7.5	S	4.75
6132693	12894	55/7.5	C	4.25
6132694	12896	60/7.5	C	4.25
6132695	12198	80/7.5	T	4.75

**440 VOLT**

ILLCO #	MARS #	MICROFARAD	BASE	HEIGHT (IN.)
6132780	12983	20/15	D	3.88
6132795	12985	35/3	C	5.75
6132801	12885	35/5	C	4.75
6132802	12888	35/7.5	C	4.75
6132803	12986	40/5	P	4.75
6132805	12787	40/7.5	P	4.75
6132806	12890	45/5	D	4.75
6132807	12789	45/7.5	C	4.75
6132810	12790	50/5	T	4.75
6132815	12775	55/5	D	4.75
6132820	12794	60/5	T	4.75
6132821	12795	60/7.5	T	4.75
6132830	12255	70/5	T	4.75
6132840	12297	80/5	D	5.75
6132841	12298	80/7.5	D	5.75



**350 SERIES UNIVERSAL MOTOR PROTECTORS FOR ROOM A/C**

ILLCO #	MARS #	ILLCO #	MARS #
6696102	35101	6696157	35106
6696113	35102	6696168	35107
6696124	35103	6696201	35110
6696146	35105		



**350 SERIES UNIVERSAL MOTOR PROTECTORS FOR REFRIGERATION**

30 Mars motor protectors solve the serviceman's most annoying problem - finding suitable replacements for motor overload protectors.

ILLCO #	MARS #	110/115V										208/240V						
		HORSEPOWER																
		1/20	1/12	1/8	1/6	1/5	1/4	1/3	1/2	1/12	1/8	1/6	1/5	1/4	1/3	1/2	1	
6695501	35001	X	-	-	-	-	-	-	-	-	X	X	X	-	-	-	-	
6695523	35003	X	X	-	-	-	-	-	-	-	-	-	X	X	-	-	-	
6695534	35004	-	X	-	-	-	-	-	-	-	-	-	X	X	X	-	-	
6695545	35005	-	X	X	-	-	-	-	-	-	-	-	-	X	X	-	-	
6695556	35006	-	X	X	-	-	-	-	-	-	-	-	-	X	X	-	-	
6695589	35009	-	-	X	X	X	-	-	-	-	-	-	-	-	X	X	-	
6695600	35010	-	-	X	X	X	X	-	-	-	-	-	-	-	X	X	-	
6695611	35011	-	-	-	X	X	X	-	-	-	-	-	-	-	X	X	-	
6695622	35012	-	-	-	X	X	X	-	-	-	-	-	-	-	X	X	-	
6695644	35014	-	-	-	-	X	X	-	-	-	-	-	-	-	-	X	-	
6695650	35015	-	-	-	-	X	X	X	-	-	-	-	-	-	-	X	-	
6695655	35016	-	-	-	-	X	X	X	-	-	-	-	-	-	-	X	-	
6695666	35017	-	-	-	-	-	X	X	-	-	-	-	-	-	-	-	X	
6695677	35018	-	-	-	-	-	X	X	X	-	-	-	-	-	-	-	X	
6695688	35019	-	-	-	-	-	-	-	X	X	-	-	-	-	-	-	-	
6695699	35020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

**MOTOR-RUN DIRECT UNIVERSAL CAPACITOR**



Universal permanent motor run capacitor manufactured to OEM performance and reliability requirements. Every capacitor fully inspected including overrun testing at 700VAC voltage 60HZ for 1 minute, guaranteeing that it can be used in any potential condition. Advanced epoxy resin insulating material (UL file number E204979), minimum flammability class V-0. Tested and certified by Underwriters Laboratories to UL810 CZDS2. Internal modular construction ensures cooler running and more efficient heat dissipation. Single post failure does not render unit unusable, unlike single wound, multi-tapped capacitors. Constructed to latest International environmental standards. Best quality materials used throughout.

Reduces inventory by replacing many single value capacitors used in air-conditioning units and all other motors using these types of capacitor. Service Technicians only need to keep one onboard their truck. Easily fitted, simply follow instructions supplied in every kit. Huge time saver. Plug and play to make up the capacitance you need. Compact design. Guaranteed. No Quibble Warranty. Voltage rating of 370vac or 440vac.

ILLCO #	MOTOR-RUN DIRECT #	MICROFARAD
6136230	mminicap20 Mini Motor Mate	2.5-12.5
6136220	municap200 Motor Mate	2.5-67.5



### 190 SERIES UNIVERSAL POTENTIAL RELAYS

The Mars potential relay service kit has become an industry standard since its introduction twenty years ago. Its long-term reliability and easy replacement have been the key to its success. The wide calibration ranges and the universal bracket make the MARS potential relay service kit a must on every service truck.

ILLCO #	MARS #	MARS MODEL NUMBER	CONTINUOUS COIL	PICK-UP		DROP-OUT MAX.
				MIN.	MAX.	
6692352	19202	63	170	139	153	55
6692356	19203	64	395	260	275	120
6692361	19204	65	332	168	182	90
6692367	19205	66	395	215	225	120
6692372	19206	67	420	295	315	125
6692378	19207	68	502	325	345	135
6692383	19208	69	336	180	195	105
6692388	19209	70	253	285	305	77
6692394	19210	71	420	212	232	121



### 270 SERIES UNIVERSAL CURRENT RELAYS

12 Mars current relays manufactured by General Electric can replace almost any current relay found on refrigerators, freezers, water coolers, pumps and vending machines.

ILLCO #	MARS #	MAX. PICK-UP	MIN. DROP-OUT	APPLICATION SURVEY BY HORSEPOWER	
6692639	27001	3.8	3.2	1/12	
6692645	27002	5.2	4.4	1/8	
6692650	27003	6.8	5.8	1/8-1/5	
6692656	27004	8.3	7.1	1/6-1/4	
6692661	27005	10.5	8.7	1/5-1/4	
6692665	27006	11.8	9.8	1/5-1/3	
6692671	27007	13.8	11.5	1/4-1/3	
6692682	27008	15.1	12.6	1/4-1/2	
6692693	27009	16.8	14.0	1/3-1/2	
6692704	27010	22.5	18.0	1/3-1/2	
6692715	27011	25.4	20.3	1/3-3/4	
6692726	27012	31.0	25.0	1/2-3/4	



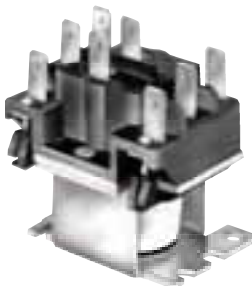
### 903 SERIES SPST AND SPDT FAN RELAYS

The MARS Series 903 relays are among the most popular relays used in air conditioning today. They will replace the WR/Essex/RBM Type 84 (90-290 thru 90-295) quick-connect and screw terminal versions.

**Features:**

- 0.25 inch quick-connect terminals • Packaged with instructions and cross reference • Replace 90-290 thru 90-295 and 90-290Q thru 90-295Q • Dimensions: 2.38 x 1.63 x 1.50 in. • Made in the U.S.A. • New universal mounting bracket • UL and CSA listings available

ILLCO #	MARS #	VOLTAGE	SWITCH
7813621	92290	24	SPST
7813661	92291	110/120	SPST
7813701	92292	208/240	SPST
7813741	92293	24	SPDT
7813781	92294	110/120	SPDT
7813821	92295	208/240	SPDT



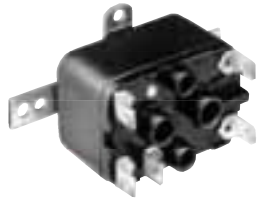
### 903 SERIES 2-POLE AIR CONDITIONING RELAYS

The MARS Series 903 switching relays are intended for many applications in air conditioning, refrigeration, and heating. Other uses include general purpose switching in appliances, fan controls, and vending machines. Our relays are available in 24, 110/120, and 208/240 coil voltages with various combinations of power and pilot duty contacts.

**Features:**

- Replaces Honeywell and White-Rodgers/RBM - cross reference on package • Double quick-connect terminals on coil • 2.13 x 1.88 x 2.25 in. • Base is designed for easy replacement of competitive relays • Molded terminal numbers and circuit diagram on top of relay • UL and CSA listings available • Made in the U.S.A.

ILLCO #	MARS #	VOLTAGE	TERMINALS	
			1-2-3	4-5-6
7814061	92340	24	Power	Power
7814081	92341	110/120	Power	Power
7814101	92342	208/240	Power	Power
7814121	90343	24	Power	Pilot
7814221	90348	208/240	Pilot	Pilot



## 903 SERIES HEAVY DUTY FAN RELAYS

MARS Heavy Duty Fan Relays are used on heating and air conditioning equipment to provide switching of heavier loads with a compact size relay.

ILLCO #	MARS #	VOLTAGE	SWITCH
7815380	92380	24	SPNO-SPNC

## THERMOSTAT GUARDS

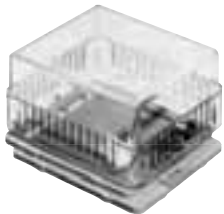
ILLCO offers a broad selection of Mars thermostat guards. Popular models available include metal, clear plastic, and opaque plastic designs. Mars thermostat guards are ideal for protecting thermostats in schools, industrial plants, institutions, public facilities and other areas where unauthorized tampering could be a problem. These attractive units feature a rugged, light weight and compact design. All units supplied with key. Extra keys are available.



### ELITE SERIES - PLASTIC BASE

ILLCO #	MARS #	DESCRIPTION	BASE
2061003	70201	BTG-EK clear plastic cover	Solid
2061055	70203	BTG-EO bronze plastic cover	Solid

BASE	INSIDE DIMENSIONS (IN.)		
	HEIGHT	WIDTH	DEPTH
Solid	3.88	3.5	2.5



### CLASSIC SERIES - PLASTIC BASE

ILLCO #	MARS #	DESCRIPTION	BASE
2061104	70205	BTG-K clear plastic cover	Dual
2061166	70207	BTG-O opaque plastic cover	Dual

BASE	INSIDE DIMENSIONS (IN.)		
	HEIGHT	WIDTH	DEPTH
Solid	5.25	4.63	3.00
Ring	5.25	4.63	3.25



### REGAL SERIES - PLASTIC BASE

ILLCO #	MARS #	DESCRIPTION	BASE
2061205	70210	BTG-RK clear plastic cover	Dual
2061306	70212	BTG-RO opaque plastic cover	Dual

BASE	INSIDE DIMENSIONS (IN.)		
	HEIGHT	WIDTH	DEPTH
Solid	6.38	3.5	3.0
Ring	6.38	3.5	3.25



### UNIVERSAL SERIES

ILLCO #	MARS #	DESCRIPTION	BASE
2061334	70220	BTG-UK2 clear plastic cover	Dual
2061353	70224	BTG-UWM metal cover	Solid

BASE	INSIDE DIMENSIONS (IN.)		
	HEIGHT	WIDTH	DEPTH
Solid	8.25	5.38	3.25
Ring	8.13	4.63	3.63



### SENTINEL SERIES - METAL COVER AND BASE

ILLCO #	MARS #	DESCRIPTION	BASE
2061508	70215	BTG-54VL metal hinged cover	Solid
2061520	70216	BTG-54VLW metal hinged cover	Ring

BASE	INSIDE DIMENSIONS (IN.)		
	HEIGHT	WIDTH	DEPTH
Solid	6.25	4.75	3.00
Ring	6.00	3.82	3.13

## DEFINITE PURPOSE CONTACTORS



ILLCO #	FURNAS #	FULL LOAD AMPS	COIL VOLTS	POLES
1702210	45CG20AJ	20	24	2
1702220	45CG20AF	20	120	2
1702316	42AF15AJ	25	24	2
1702317	42AF15AF	25	120	2
1702317	42AF15AG	25	240	2
1702310	42AF35AJ	25	24	3
1702320	42AF35AF	25	120	3
1702330	42AF35AG	25	208/240	3
1702334	42AF35AH	25	480	3
1703110	45EG10AJ	30	24	1
1703120	45EG10AFA	30	120	1
1703215	45EG20AJ	30	24	2
1703220	45EG20AF	30	120	2
1703230	45EG20AG	30	208/240	2
1703310	42BF35AJ	30	24	3
1703320	42BF35AF	30	120	3
1703330	42BF35AG	30	208/240	3
1703410	42BF25AJ	30	24	4
1703420	42BF25AF	30	120	4
1703430	42BF25AG	30	208/240	4
1704210	45GG20AJL1	40	24	2
1704220	45GG20AFL1	40	120	2
1704230	45GG20AGL1	40	240	2
1704310	42CF35AJ	40	24	3
1704320	42CF35AF	40	120	3
1704330	42CF35AG	40	208/240	3
1704410	42CF25AJ	40	24	4
1704420	42CF25AF	40	120	4
1704430	42CF25AG	40	208/240	4
1705310	42DF35AJ	50	24	3
1705320	42DF35AF	50	120	3
1705330	42DF35AG	50	208/240	3
1706310	42EF35AJ	60	24	3
1706320	42EF35AF	60	120	3
1706330	42EF35AG	60	208/240	3
1707310	42FE35AJ106	75	24	3
1707320	42FE35AF106	75	120	3
1707330	42FE35AG106	75	208/240	3
1709310	42GE35AJ106	90	24	3
1709320	42GE35AF106	90	120	3
1709330	42GE35AG106	90	208/240	3

## REPLACEMENT COILS



ILLCO #	FURNAS #	FULL LOAD AMPS	COIL VOLTS
1700321	75D70233J	25-60	24
1700322	75D70233F	25-60	120
1700323	75D70233G	25-60	240
1700324	75D70233L	25-60	277
1700331	75D54772J	75-90	24
1700332	75D54772F	75-90	120
1700333	75D54772G	75-90	240

## SIDE MOUNT AUXILIARY SWITCHES



ILLCO #	FURNAS #	CLASS	FULL LOAD AMPS	INTERLOCK CONTACTS
1700200	49ACRO	42	25-60	N.O.
1700210	49ACR6	42	25-60	N.O. & N.C.
1700230	49D36098003	42	25-60	2 SPDT
1700235	49CE42SPDT	-	75-90	SPDT



## FOOT MOUNT TRANSFORMERS OPEN CONSTRUCTION, WIRE LEADS

- Safety agency approved.
- Inherently limited design provides protection from short circuiting.

ILLCO #	JARD #	VA	PRIMARY VAC	SECONDARY VAC
1700141	4031F	40	120/280/240	24



## CLOSED CONSTRUCTION WITH CIRCUIT BREAKER

- All models feature a UL recognized manual reset circuit breaker.
- Safety agency approved.

ILLCO #	JARD #	VA	PRIMARY VAC	SECONDARY VAC
1700156	5041C	50	120/208/240/480	24
1700171	7541C	75	120/208/240/480	24
1700174	10041C	100	120/208/240/480	24



## MULTI-MOUNT TRANSFORMERS CLOSED CONSTRUCTION, 4" X 4" PLATE

- Optional 3-way mounting for maximum flexibility.
- Safety agency approved.
- Welded laminations for quiet operation.

ILLCO #	JARD #	VA	PRIMARY VAC	SECONDARY VAC
1700142	4031M	40	120/208/240	24
1700151	5031M	50	120/208/240	24
1700172	7541M	75	120/208/240/480	24



## ILLCO Delivers!



**ILLCO** has a fleet of over 25 company owned trucks ready to serve your delivery needs, including 10 crane trucks.

**ILLCO's** trucks make it easy to get the materials you need, when and where you need it.



# ILLCO *Jobsite Trailers*

ILLCO has jobsite trailers available for storage of pipe and other supplies during large, long-term projects. Ask your ILLCO sales representative for details.



ILLCO Jobsite Trailers Feature:

- Internal Lighting
  - Pipe Racks
  - Storage Shelves
  - Blueprint Table
- Safe and Secure Locking System

