

HUSSmann®

INSTALLATION & SERVICE INSTRUCTIONS FOR

ISF Island Spot Low or Medium Temperature Remote and Self Contained Merchandisers

HUSSmann®

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**P/N OII – ISF Merchandiser
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SECTION 1

GENERAL INFORMATION

MODEL DESCRIPTION

The ISCGG, ISFGG and ISM(R)GG models are island, spot display merchandisers. They are available as either remote type, which require a separate condensing unit connection, or self-contained. Each self-contained model will have it's own condensing unit, factory installed beneath the display area of the case completely ready for operation when electrical service is connected.

The ISFGG models are designed for dual-temperature operation; either Low temperature (frozen food) or Medium temperature (fresh meat, dairy, and delicatessen models). The ISFGG will have upper glass on 4 sides. The ISMGG model has been designed for medium temperature operation and it will have the upper glass installed on all four sides. The ISFRGG will have curved glass on all sides. The ISMRGG will have curved plexiglass on all sides. The ISCGG models are designed for ice cream merchandizing.

The following table lists the standard models with a brief description of each, including the electrical requirements of the self-contained model. Unless otherwise specified, the electrical requirements for all remote models will be 120 volt, 60 hertz (Hz).

MODEL ELECTRICAL DESCRIPTION

MODEL	DESCRIPTION	ELECTRICAL SERVICE
ISCGG-R	Remote Type, Ice Cream	
ISMGG – R	Remote Type, Medium Temperature	
ISFGG – R	Remote Type, Dual Temperature, straight glass (1)	
ISFRGG – R	Remote Type, Dual Temperature, curved glass (2)	
ISMRGG-R	Remote Type, Medium Temperature, curved plexiglass	
ISMGG – B	Self-Contained, Medium Temperature, straight glass	120 / 60 Hz / 1Ø
ISFGG – B	Self-Contained, Dual Temperature, straight glass (1)	120 / 60 Hz / 1Ø
ISFRGG – B	Self-Contained, Dual Temperature, straight glass (2)	120 / 60 Hz / 1Ø
ISMRGG-B	Self-Contained, Medium Temperature, curved plexiglass	120 / 60 Hz / 1Ø
ISCGG-D/G	Self-Contained, Ice Cream	208v / 230v / 60 Hz / 1Ø
ISFGG – D/G	Self-Contained, Dual Temperature (1)	208v / 230v / 60 Hz / 1Ø
ISFRGG – D/G	Self-Contained, Dual Temperature (2)	208v / 230v / 60 Hz / 1Ø

APPLICATION

These models are designed for use only in air-conditioned stores where temperature is 75°F or less and relative humidity does not exceed 55%.

SECTION 2

INSTALLATION

SHIPPING DAMAGE

All equipment should be thoroughly examined for shipping damage before and during unloading.

This equipment has been carefully inspected at our factory and the carrier has assumed responsibility for safe arrival. If damaged, either apparent or concealed, a claim must be made to the carrier.

If there is any damage, the carrier should be notified immediately and an inspection requested. The delivery receipt must be noted that equipment was received damaged. If damage is of a concealed nature, we suggest the carrier be contacted immediately, or no later than (3) days following delivery. The claim must be filed with the carrier, by the consignee, for all damage.

SHIPPING BRACES

Move the fixture as close as possible to its permanent location, then remove all packaging and shipping braces. Remove all separately packed accessories such as kits, shelves, etc.

EXTERIOR LOADING

These cases are not structurally designed to support excessive external loading, loading such as the weight of a person. Therefore, do not walk on the top of these refrigerators or damage to the refrigerator as serious personal injury could occur.

LOCATION

These refrigerators, like other open refrigerators, are sensitive to air disturbances. Air currents passing around them will seriously impair their operation. Do not allow air-conditioning, electric fans, open doors or windows, etc. to create air currents around these cases.

Located in the lower front and rear of the base are vented panels. These panels allow air circulation to the condensing unit. Blocking or restricting air circulation through these panels can cause poor performance and damage the refrigeration system.

INSTALL THE REFRIGERATOR NO CLOSER THAN (4) FOUR INCHES FROM A WALL OR OTHER STORE FIXTURES.

LEVELING

The refrigerator must be level to insure proper operation of the refrigeration system and to insure proper drainage of defrost water. Use the leveling shims provided to level the case with the aid of a carpenter's level. Leveling must be performed from front-to-back and from side-to-side.

WASTE OUTLET and WATER SEAL

The waste outlet, for all models, is located in the centre of the case. The outlet has a factory installed, external water seal.

- On self-contained models.....This water seal is formed by a moulded trap that drains into the condensate evaporation pan located beneath the case.
- On remote models..... This water seal is formed by a moulded trap that requires drip piping to connect with floor drain. The case is equipped with a 1.5" female N.P.T. for field installation.

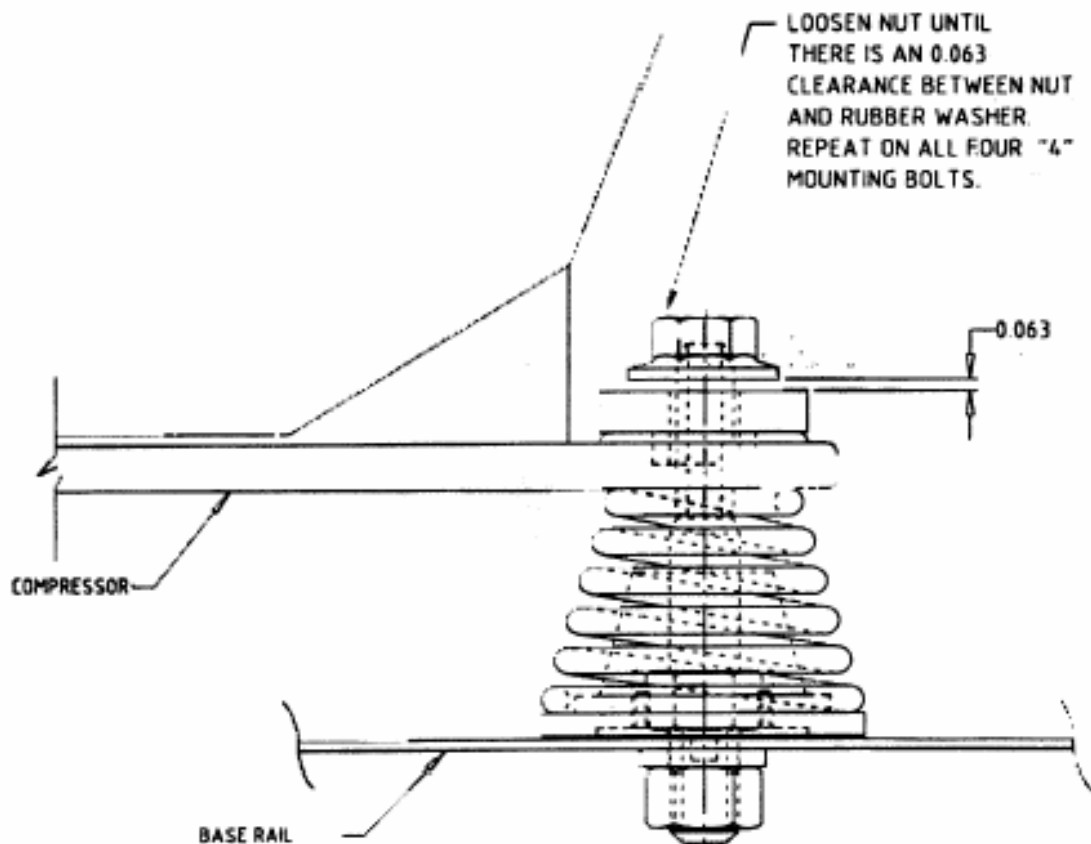
SEALING CASE TO FLOOR

If required by local sanitary codes or if customer desires, case may be sealed to the floor using a vinyl cove base trim. The size needed will depend on how much variation there is in the floor, from one end of the case to the other. Sealing of the lower front and rear panels on self-contained models may hamper their removal for servicing or maintenance of the condensing unit.

CAUTION: DO NOT ALLOW SEALING TRIM TO COVER ANY INTAKE OR DISCHARGE GRILLS LOCATED IN THE LOWER FRONT PANEL.

IMPORTANT NOTE

BEFORE OPERATING THIS REFRIGERATION UNIT
FOLLOW INSTRUCTIONS for COMPRESSOR BELOW.



OPERATING POSITION.

NOTES: TO PREVENT DAMAGE DURING SHIPPING, THE COMPRESSOR HAS BEEN TIGHTLY SECURED TO THE UNIT BASE RAIL. PLEASE FOLLOW THE ABOVE PROCEDURE FOR PROPER UNIT OPERATION.

SECTION 3

REFRIGERATION - SELF CONTAINED MODELS

Each self-contained model will be equipped with its own condensing unit located beneath the display area. The unit will be charged with refrigerant and shipped from the factory with all service valves open, completely ready for operation when electrical power has been connected.

The ISF and ISFG compressors are mounted on vibration springs, which have been torqued down prior to shipment, to prevent damage.

ALL LOWER BASE PANELS MUST BE IN PLACE WHEN THE REFRIGERATOR IS OPERATING. IF NOT, AIRFLOW FROM THE CONDENSER WILL BE DIRECTED OVER THE EVAPORATOR PAN AND DEFROST WATER IN THE PAN MAY OVERFLOW.

REFRIGERANT CHARGE

MODEL	REFRIGERANT	OUNCES
ISFGG/RGG-5	R - 22	80
ISMGG/RGG-5	R - 22	79
ISMGG/RGG-10	R - 22	79 ea unit
ISFGG/RGG-10	R - 22	80 ea unit
ISCGG-5	R-404	56

CONTROLS and ADJUSTMENTS

MODEL	REFRIGERATION CONTROLS ①		DEFROST CONTROLS ②			
	PRODUCT APPLICATION	DISCHARGE AIR TEMPERATURE	DEFROST FREQUENCY (HOURS)	TYPE OF DEFROST	PRESSURE TERMINATION	FAILSAFE③ TIME (MINUTES)
All ISFGG/ RGG And DUALTEMP ISCGG	LOW TEMP (FROZEN FOOD)	- 10° F	12	ELECTRIC	80 psig for R-22	30
	MEDIUM TEMP (DAIRY, DELI)	+ 24° F	12	ELECTRIC	104 psig for R507 or R-404a	
	LOW TEMP (ICE CREAM)	- 20° F	12	ELECTRIC	104 psig for	30
ISMGG/ RGG	MEDIUM TEMP (DAIRY, DELI)	+ 24°F	12	OFF TIME	80 psig for R-22 54 psig for R-134a	70

- ① A refrigeration thermostat controls refrigeration temperature. This is factory installed in the control panel. Adjust this thermostat to maintain the discharge air temperature shown. Measure discharge air temperatures at the centre of the discharge honeycomb.
- ② On self contained models, defrosts are time-initiated and pressure terminated. The defrost timer is factory set as shown. All that is required is to set the timer to the correct time of day.
- ③ To insure a thorough defrost, defrost must be terminated by pressure termination setting, not by time. It may be necessary to increase this failsafe time in some instances.

SECTION 4

REFRIGERATION - REMOTE MODELS

REFRIGERANT TYPES

These refrigerators are equipped for operation using the refrigerant listed in the following table unless otherwise specified on the factory order. The correct type of refrigerant will be stamped on the refrigerators serial plate located in the display area.

MODEL	REFRIGERANT
All Models – ISF / GG / RGG	R-22 or R(404a), R507
ISMGG / RGG	R-22, R134a

REFRIGERANT PIPING

Refrigerant line connection sizes: All models

LIQUID LINE	3/8" OD
SUCTION LINE	5/8" OD

OUTLET LOCATION

The refrigerant line outlet is located at the right hand end of the refrigerator beneath the display pans. After connections have been made, seal this outlet thoroughly both on the inside and the outside. An aerosol dispensed urethane type of insulation is recommended.

LINE SIZING

Refrigerant lines should be sized as shown on the refrigeration legend prepared for the store and as (furnished by the owner). If a legend has not been furnished, refer to Section 12 of the Hussmann Application Engineering Manual for guidance.

OIL TRAPS

P-traps (oil traps) must be installed at the base of all suction line vertical risers.

PRESSURE DROP

Pressure drop reduces capacity of the refrigeration system. To minimize pressure drop, use proper size tubing, keep the refrigerant line runs as short as possible and use a minimum number of elbows. Where elbows are needed, use long radius elbows only.

PIPING INSULATION

For refrigerators with other than KOOLGAS defrost, the suction and liquid lines should be clamped and/or taped together and insulated for a minimum of 30 feet from the refrigerator.

Refrigerators with KOOLGAS defrost should not have their liquid and suction lines in contact with each other but are to be separately insulated for a minimum of 30 feet from the refrigerator.

Additional insulation for the balance of the refrigerant lines is recommended and required wherever condensation and dripping would be objectionable.

EXPANSION VALVE ADJUSTMENT

Expansion valves must be adjusted to fully feed the evaporator. Before attempting to adjust valves, make sure the evaporator is either clear of / or only lightly covered with frost, and that the fixture is within 10° F of it's expected operating temperature.

Adjust the valve as follows:

Attach two sensing probes (either thermocouple or thermistor type) to the evaporator. One under the clamp holding the expansion valve bulb and the other securely taped to an evaporator coil return bend about ½ way through the coil.

OR

- A) Attach a probe to the suction line near the expansion valve
- B) Obtain a pressure reading from the factory Schraeder valve
Convert the pressure reading to a saturated temperature for the appropriate refrigerant.

$$\text{Temperature B minus Temperature A} = \text{Super Heat}$$

Some “hunting” of the expansion valve is normal. The valve should be adjusted so that during the hunting **the greatest difference between the two temperatures is 3° F to 5° F.**

With this adjustment, during a portion of the hunting the temperature difference between the probes will be less than 3° F (at times as low as 0° F).

Make adjustments of no more than (1/2) turn of the valve stem at a time and wait for at least fifteen minutes before checking the probe temperature again and making further adjustments.

CONTROLS & ADJUSTMENTS FOR CONVENTIONAL OPERATION (Single Compressor System)

Refrigeration temperature may be controlled by either the condensing unit's low-pressure control or by an (optional) refrigeration thermostat, (one per condensing unit). Thermostatic control is preferred since it will provide a more constant year-round control of temperature. The thermostat may be field or factory installed, must have a differential of 3° F to 6° F and have its sensing bulb located to monitor the air leaving the evaporator. One thermostat per condensing unit is required and should be wired into the compressor motor contactor control circuit.

A pump down system is recommended for outdoor condensing units.

DEFROST:

ISFGG / RGG, models have electrical defrost and are time initiated with pressure termination.

For Koolgas application, a Klixon sensor is mounted on the coil to provide a temperature termination control signal.

ISMGG / RGG model is off-time defrost.

MODEL	REFRIGERATION						DEFROST CONTROLS ⑤			
	Discharge ① Air Temperature	Application	② Low Pressure Control Settings				Defrost Timer			
			③ Used to Control Temperature		④ If Thermostat Controls Temperature		Defrost Type	Defrost Frequency	Failsafe⑥ Time (Minutes)	Saturated Suction Temperature
		(Cut-out)②	(Cut-in) ②	(Cut-out)	(Cut-in)					
ISCGG	- 20° F	Low Temp (Ice Cream)	-35° F	-16° F	1-4 psig	-10° F	ELECTRIC	Every 12 Hours	30	50° F
	+24° F	MedTemp (Dairy Deli)	5° F	25° F	10° F	30° F	ELECTRIC		30	50° F
	+24° F	MedTemp (Dairy Deli)	5° F	25° F	10° F	30° F	OFF TIME		70	50° F

- ① Discharge air temperature is to be measured by attaching a service thermometer to the discharge honeycomb at the centre of the case.
- ② Low-pressure control setting values are given as temperature. Convert this temperature to the corresponding refrigerant pressure.
- ③ When the low-pressure control is used to control refrigeration temperature, set the cutout of the control to stop the compressor at the discharge air temperature shown above.
- ④ When a refrigeration thermostat is used to control temperature, set the pressure control as shown then adjust the thermostat to stop the compressor at the discharge air temperature shown above. For outdoor condensing units, a refrigeration thermostat must control refrigeration temperature.
- ⑤ If these spot display refrigerators are to be multiplexed with a different type refrigerator, compare these defrost settings with those specified for the other refrigerator. If the settings are not compatible, refer to page 17.
- ⑥ The defrost timer of outdoor condensing units must control a liquid line solenoid for pump-down prior to defrost only. The failsafe setting for outdoor units must be increased 4 minutes to compensate for the pump-down period.

CONTROLS & ADJUSTMENTS – MIXED MULTIPLEXING

Refrigeration temperature may be controlled by a refrigeration thermostat sensing discharge air temperature. The thermostat controls a liquid line solenoid (optional) or a suction line solenoid (optional).

Electric defrost is time initiated and temperature terminated. Termination is initiated by a “close-on-rise” Klixon sensor mounted on an evaporator tube.

“Off-time” defrost is time initiated and time terminated.

MODEL	REFRIGERATION CONTROLS		DEFROST CONTROLS ③			
	APPLICATION	DISCHARGE AIR TEMP ①	DEFROST Frequency (Hours)	Length of Defrost		
				Electric (Minutes)	OFF TIME	KOOL GAS
ISFGG-R	Low Temp (Frozen Food)	- 10° F	Every 12 Hours	30	-	16
	Medium Temp (Dairy, Deli)	+ 24° F		30	-	16
ISMGG-R	Medium Temp (Dairy, Deli)	+ 24° F		-	70	12

- ① Discharge air temperature is to be measured by attaching a service thermometer to the discharge honeycomb at the centre of the case. Adjust the refrigeration control to maintain the discharge air temperature shown above.
- ③ If these spot display refrigerators are to be multiplexed with a different type refrigerator, compare these defrost settings with those specified for the other refrigerator. If these settings are not compatible, refer to the previous page.
- ④ KOOLGAS defrost is time initiated and time terminated. The defrost lengths listed **above** are based upon laboratory testing but operation under actual store conditions may require that they be lengthened to accomplish a thorough defrost. Some of the store conditions that can contribute to a longer defrost are: low head pressure, long runs of refrigerant lines, store ambient, fixture temperature operating lower than that recommended, seasonal ambient changes etc.

Each system shown on the “store legend” must have staggered defrosts to maintain stable compressor loading and a sufficient supply of defrost gas.

REMOTE CONTROL KIT (Optional)

The control settings listed in the preceding tables are those that will provide proper case performance. If these spot display refrigerators are to be multiplexed with different types of refrigerator models, we suggest that each spot display refrigerator be equipped with a “REMOTE CONTROL KIT”.

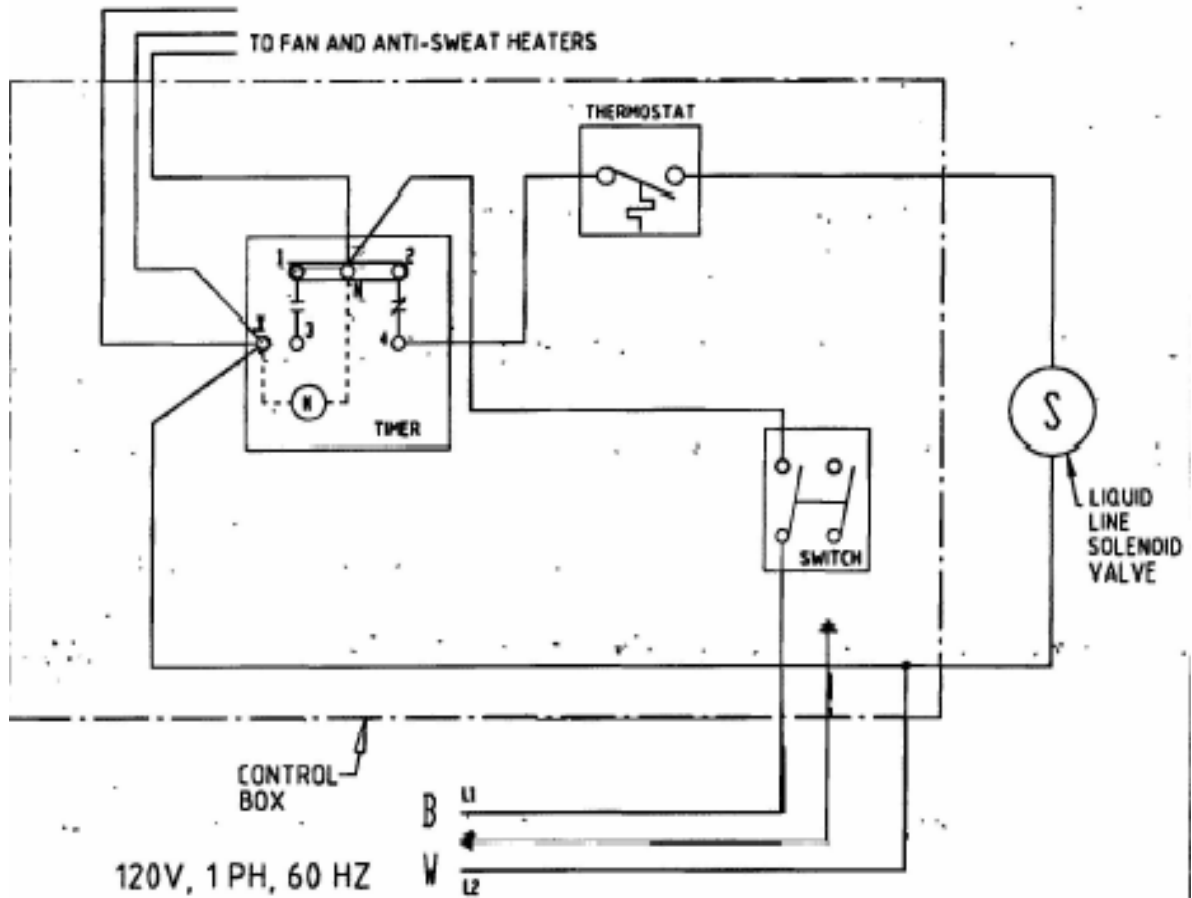
The remote control kit will insure better control of refrigeration temperature and provide additional defrost controls that maybe needed since most other refrigerators do not have similar defrost frequencies and terminations (fail safeguards) with these spot display refrigerators.

The remote-control kit will be factory installed below the display area of the spot display refrigerator. A liquid line solenoid valve will also be installed.

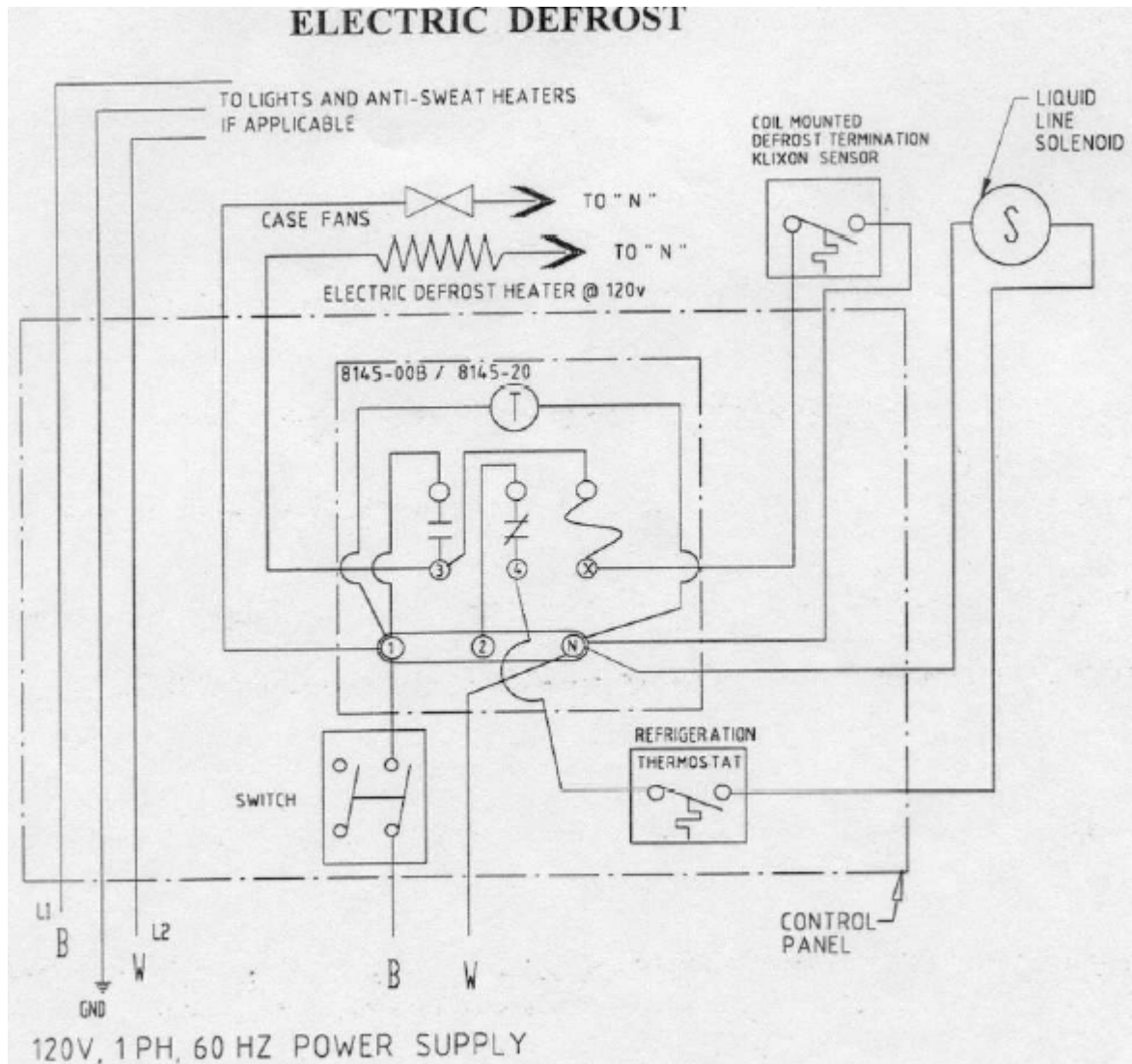
The liquid line solenoid valve will open when energized. During refrigeration, the valve is controlled by the refrigeration thermostat (close-on-rise of temperature) providing better and more specific control of refrigeration temperature. The defrost timer controls the valve for defrost; closing the valve for initiation; opening the valve at termination.

The remote control kit timer must be synchronized with the timer of the unit.

OFF TIME DEFROST



DESCRIPTION	HUSSMANN PART #	MANUFACT. PART #
Liquid Line Solenoid Valve		Sporlan A351 or B651
Refrigeration Thermostat	04-S-067	White Rogers 1710-4
On / Off Switch	03-S-286	Cutler Hammer 7599K1
Defrost Timer	03-S-269	Paragon 8045-0B



DESCRIPTION	HUSSMANN PART. #	MANUFACT. PART #
Liquid Line Solenoid Valve		Sporlan A351 or B651
Refrigeration Thermostat	04-S-067	White Rogers 1710-4
Disconnect Switch	03-S-286	Various "2PST"
Defrost Timer	03-S-269	Paragon 8045-0B

SECTION 5

ELECTRICAL

CONNECTIONS

Electrical power connections are made at the left-hand end of the case, behind the removable base panel. The left-hand end of the case is determined when facing the discharge honeycomb.

REMOTE MODELS

All electrical connections for remote models will be made in the junction box located behind the removable base panel, at the left-hand end of the case.

SELF CONTAINED MODELS

All electrical connections for self-contained models will be made in the control panel of the case. All electrical circuits have been terminated inside the control panel and “pig-tailed” wiring provided for ease of connecting field wiring. See appropriate wiring diagram in this section.

**CAUTION: THE FIXTURE MUST BE ELECTRICALLY GROUNDED.
ALL WIRING AND CONNECTIONS MUST COMPLY
WITH N.E.C., C.S.A. AND LOCAL CODES.**

SERIAL PLATE AMPERAGES

Serial plate amperes are the amperage figures that are stamped on the fixture's Serial Plate. Although all field-installed wiring must be sized to the Serial Plate amperages, the actual current or amps may be less than specified. (Serial Plate is located on panel of the product display area.)

SELF CONTAINED MODELS (Standard Configuration)		
MODEL	CIRCUIT REQUIREMENTS	
	Power Supply	MCA Minimum Circuit Ampacity Of Serial Plate
ISM / G / G – 5B	120V, 60Hz, 1Ø	12.2 amps
ISF / G / G – 5B	120V, 60Hz, 1Ø	18.3 amps
ISM / G / G – 8B	120V, 60Hz, 1Ø	-
ISF / G / G – 8B	120V, 60Hz, 1Ø	16.2 amps
ISM / G / G – 10B	120V, 60Hz, 1Ø	-
ISF / G / G – 10B	120V, 60Hz, 1Ø	-
ISM / G / G - 5 D / G	208 - 230v, 60 Hz, 1Ø	-
ISF / G / G - 5 D / G	208 - 230v, 60 Hz, 1Ø	11.1 amps
ISM / G / G - 8 D / G	208 - 230v, 60 Hz, 1Ø	-
ISF / G / G - 8 D / G	208 - 230v, 60 Hz, 1Ø	16.5 amps
ISM / G / G - 10D / G	208 - 230v, 60 Hz, 1Ø	-
ISF / G / G - 10 D / G	208 - 230v, 60 Hz, 1Ø	-
ISM / G / G - 5K	208 - 230v, 60 Hz, 3Ø	11.1 amps
ISF / G / G - 5K	208 - 230v, 60 Hz, 3Ø	-
ISM / G / G - 8K	208 - 230v, 60 Hz, 3Ø	-
ISF / G / G - 8K	208 - 230v, 60 Hz, 3Ø	-
ISM / G / G - 10K	208 - 230v, 60 Hz, 3Ø	-
ISF / G / G - 10K	208 - 230v, 60 Hz, 3Ø	-

Circuit Ampacity

Circuit ampacity is calculated by the summation of the following connected items; which may include but is not limited to.

Anti-short heaters, electric fans, electric defrost heaters, condensing unit, condensate heater, electric defrost heaters, canopy and shelf lighting.

SECTION 6

REPLACEMENT PARTS LIST: ISF MODELS		
ITEM #	HUSSMANN PART #	DESCRIPTION
1	380057 21-S-139	Fan Motor, Evaporator 6w, CW, 120v - Morrill Motors # SPBE 6ABGV 101 - GE # 5KSP51CL227H
2	136260 21-S-133	Fan Blade, Evaporator Morrill # FV 700 CW 20s
3	375026	Anti-Sweat Heater, Front Glass (ISFG only) 120v 1.24 amps, 148.68 watts
4	920057 19-S-758	Anti-Sweat Heater, Top Nosing Discharge 120v 0.23 amps, 28.6 watts
5	302720 19-S-751	Defrost Heater – 120v, 12.5 amps, 1500 watts
6	380064	Expansion Valve – Sporlan # EGV-1/2-Z
7	261933 04-S-067	Refrigeration Thermostat - White Rogers # 1710-4
8	294226 03-S-286	Disconnect Switch
9	047449 03-S-559	Defrost Timer - Paragon # 8245-0B
10	059995	Contactactor Furnas 42BE35AF106 3P-115v-30amp
11	297179 21-S-141	Fan Motor, Condenser 120v, 25w CW E.M. & S. # ESP-L25EMV16
12	118395 21-S-140	Fan Blade, Condenser – Torin # OU-1031-5
13	380061 17-S-533	Drier - Sporlan C-083-SHH
14	380062	Sight Glass – Sporlan # SA-135
15	035774 17-S-186	Crankcase Pressure Limit Valve Sporlan # CRP-4 20
16	380063 17-S-551	Receiver – Sporlan # M-30E9

SECTION 6

REPLACEMENT PARTS LIST: ISF MODELS		
ITEM #	HUSSMANN PART #	DESCRIPTION
<p>Continued: ISF- R, ISF- B ISFG- R, ISFG-B ISFGG-R, ISFGG-B</p>		
17	380024 2-S-628	Compressor - Copeland # KAMB – 0075 – CAA - 299
18	112033 25-S-114	Condenser – HeatCraft Inc. 0271099B00J
19	314580	High Pressure Control TI # 26PSXXX WC400 K32-K
20	314573	Heater, Condensate
<p>NOTE: Items 1 through 6 are standard parts for both the remote and Self-contained models</p> <p>Items 7 through 20 are standard parts for only the Self-contained models</p>		

SECTION 6

REPLACEMENT PARTS LIST: ISMG – 5R & ISMG - 5B		
ITEM #	HUSSMANN PART #	DESCRIPTION
1	380057 21-S-139	Fan Motor, Evaporator 6w, CW, 120V - Morrill Motors # SPBE 6ABGV 101 - GE # 5KSP51CL227H
2	136260 21-S-133	Fan Blade, Evaporator Morrill # FV 700 CW 20s
3	315799 19-S-752	Anti-Sweat Heater, Top Nosing Discharge 120v 0.30 amps, 36.0 watts
4	381652 17-S-390	Expansion Valve – Sporlan # EGV-1/2-C – R22
5	261933 04-S-067	Refrigeration Thermostat - White Rogers # 1710-4
6	294226 03-S-286	Disconnect Switch
7	047449 03-S-559	Defrost Timer - Paragon # 8242-0B
8	059995	Contactactor Furnas 42BE35AF106 3P-115v-30amp
9	205238	Drier - Sporlan C-082-SHH
10	379522	Sight Glass – Sporlan # SA-125
11	380099 02-S-629	Condensing Unit Copeland # MCFHI-0049-CAA-212
12	314580	High Pressure Control TI # 26PSXXX WC400 K32-K
20	314573	Heater, Condensate
21	838506	Expansion Valve Alco # HF-1/2-MC R 134a
22	838947	Low Pressure Control R 134a Alco FF115-S1BAK
23	209097	Valve-Solenoid N/C 0.375 ODS 120v Sporlan B6S1 c/w Coil R 134a

SECTION 6

REPLACEMENT PARTS LIST: ISF – K & ISFG – K		
ITEM #	HUSSMANN PART #	DESCRIPTION
1	380057 21-S-139	Fan Motor, Evaporator 6w, CW, 120v - Morrill Motors # SPBE 6ABGV 101 - GE # 5KSP51CL227H
2	136260 21-S-133	Fan Blade, Evaporator Morrill # FV 700 CW 20s
3	375026	Anti-Sweat Heater, Front Glass (ISFG only) 120v 1.24 amps, 148.68 watts
4	920057 19-S-758	Anti-Sweat Heater, Top Nosing Discharge 120v 0.23 amps, 28.6 watts
5	322013	Defrost Heater – 230v, 2.0 amps, 200/460 watts
6	380064	Expansion Valve – Sporlan # EGV-1/2-Z
7	261933 04-S-067	Refrigeration Thermostat - White Rogers # 1710-4
8	000582	Disconnect Switch
9	106236 03-S-560	Defrost Timer - Paragon # 8245-20B
10	205534	Contactactor Furnas 42BE35AG106 3P-240v-30amp
11	297179 21-S-144	Fan Motor, Condenser 120v, 25w CW E.M. & S. # ESP-L25EMV16
12	118395 21-S-140	Fan Blade, Condenser – Torin # OU-1031-5
13	380061 17-S-533	Drier - Sporlan C-083-SHH
14	380062	Sight Glass – Sporlan # SA-135
15	035774 17-S-186	Crankcase Pressure Limit Valve Sporlan # CRP-4 20
16	380063 17-S-51	Receiver – Sporlan # M-30E9

SECTION 6

REPLACEMENT PARTS LIST: ISF – K & ISFG – K		
ITEM #	HUSSMANN PART #	DESCRIPTION
Continued: ISF- D, ISFG- K ISF- K, ISFGG-D ISFG-D, ISFGG-K		
17	381616 02-S-638	Compressor - Copeland # KAMA – 0075 – TAC - 299
18	112033 25-S-114	Condenser – HeatCraft Inc. 0271099B00J
19	314580	High Pressure Control TI # 26PSXXX WC400 K32-K
20	322013	Heater, Condensate

ANTI-SWEAT HEATER PART NUMBERS

CASE	HEATER LOCATION		
	NOSING	SIDE GLASS	FRONT/REAR GLASS
ISMG - 5	315799 19-S-752	-	-
ISMG - 8	-	-	-
ISMG - 10	920057 19-S-758	-	-
ISMGG - 5	315799	-	-
ISMGG - 8	-	-	-
ISMGG - 10	920057	-	-
ISFG - 5	920057	375030 19-S-767	820442 19-S-754
ISFG - 8	857853 19-S-773	375030	857854 19-S-774
ISFG - 10	920057 (x2)	375030	820442 (x2)
ISFGG - 5	920057	375030	820442
ISFGG - 8	857853	375030	857854
ISFGG - 10	920057 (x2)	375030	820442 (x2)

SECTION 7

USER'S INSTRUCTIONS

STOCKING

Merchandise should not be placed in the refrigerator until it is at the designed operating temperature, approximately 2-3 hours. When stocking, never allow product to extend beyond the "Load Limit" decals affixed to the exterior of the refrigerator.

AIR DISCHARGE AND RETURN AIR FLUES MUST BE UNOBSTRUCTED AT ALL TIMES TO PROVIDE PROPER REFRIGERATION AND AIR CURTAIN PERFORMANCE.

Since all food items are perishable, packages should be periodically rotated to maintain freshness.

CARE AND CLEANING

Long life and satisfactory performance of any equipment is dependent upon the care given to it. To ensure long life, proper sanitation and minimum maintenance, the fixture should be thoroughly cleaned, debris removed and the interior washed down monthly

CAUTION:

- DO NOT USE STEAM OR EXTREMELY HOT WATER TO WASH THE INTERIOR BOTTOM OF THE CASE.
- WHEN CLEANING, DO NOT USE A HIGH PRESSURE HOSE, AND NEVER INTRODUCE WATER INTO THE FIXTURE FASTER THAN THE WASTE OUTLET CAN CARRY IT AWAY.
- THE WASTE OUTLET OF THE OF THE SELF-CONTAINED MODEL DOES NOT EMPTY INTO A FLOOR DRAIN BUT INTO A LIMITED CAPACITY EVAPORATOR PAN WHICH WILL OVERFLOW IF EXCESS WATER IS USED IN CLEANING.
- THIS PAN IS EQUIPPED WITH A SIDE OUTLET DRAIN TUBE.

CARE AND CLEANING CONTINUED

CAUTION:

WHEN CLEANING: STORE PERSONNEL SHOULD

- CONNECT THIS TUBE TO A REMOTE HOSE TO CARRY WATER AWAY.
- BE SURE TO CRIMP AND RE-INSERT THE TUBE BACK INTO ITS HOLDING CLIP ON THE EVAPORATOR PAN, OR PLACE DRAIN TUBE BACK INTO THE EVAPORATOR PAN AFTER CLEANING.

The interior bottom of this case is an easy to clean, corrosion resistant material designed for maximum sanitation. All domestic detergents, even ammonia-based cleaners are recommended. Sanitizing solutions will not harm the case interior bottom, however, these sanitizers should be used in accordance with manufacturer's directions.

To preserve the exterior finish of the fixture, use warm water and a mild detergent.

DO NOT USE ABRASIVE CLEANERS OR STEEL WOOL SCOURING PADS TO CLEAN THE FIXTURE, AS THESE WILL MARR THE FINISH.

To maintain good refrigeration performance, a refrigeration service person should be called periodically (at least twice a year) to clean the discharge honeycomb and remove any accumulated dirt from the condenser coil and condensate evaporator pan on self-contained models.

POOR CIRCULATION OF AIR THROUGH THE CONDENSER COIL WILL RESULT IN POOR REFRIGERATION PERFORMANCE.

Dirt accumulation inside the condensate evaporator pan will reduce the pan's capacity and affect the efficiency of the heater causing a burned out heater and an overflow of defrost water onto the store floor.

SECTION 8

SERVICE TIPS

WARNING

ALWAYS DISCONNECT THE ELECTRICAL POWER AT THE MAIN DISCONNECT AND OBSERVE ALL ELECTRICAL LOCKOUT PROCEDURES, WHEN SERVICING OR REPLACING ANY ELECTRICAL COMPONENT OF THIS REFRIGERATOR. THIS INCLUDES, BUT IS NOT LIMITED TO SUCH ITEMS AS FANS AND THERMOSTATS.

FAN BLADE REPLACEMENT

The evaporator fan is located at the centre of the case directly beneath the display pan. Should the fan blade ever need servicing, **ALWAYS REPLACE THE FAN BLADE WITH THE RAISED EMBOSSED SIDE OF THE BLADE INSTALLED TOWARD THE MOTOR.**

HONEYCOMB REMOVAL & CLEANING

CAUTION: DO NOT TEAR THE HONEYCOMB

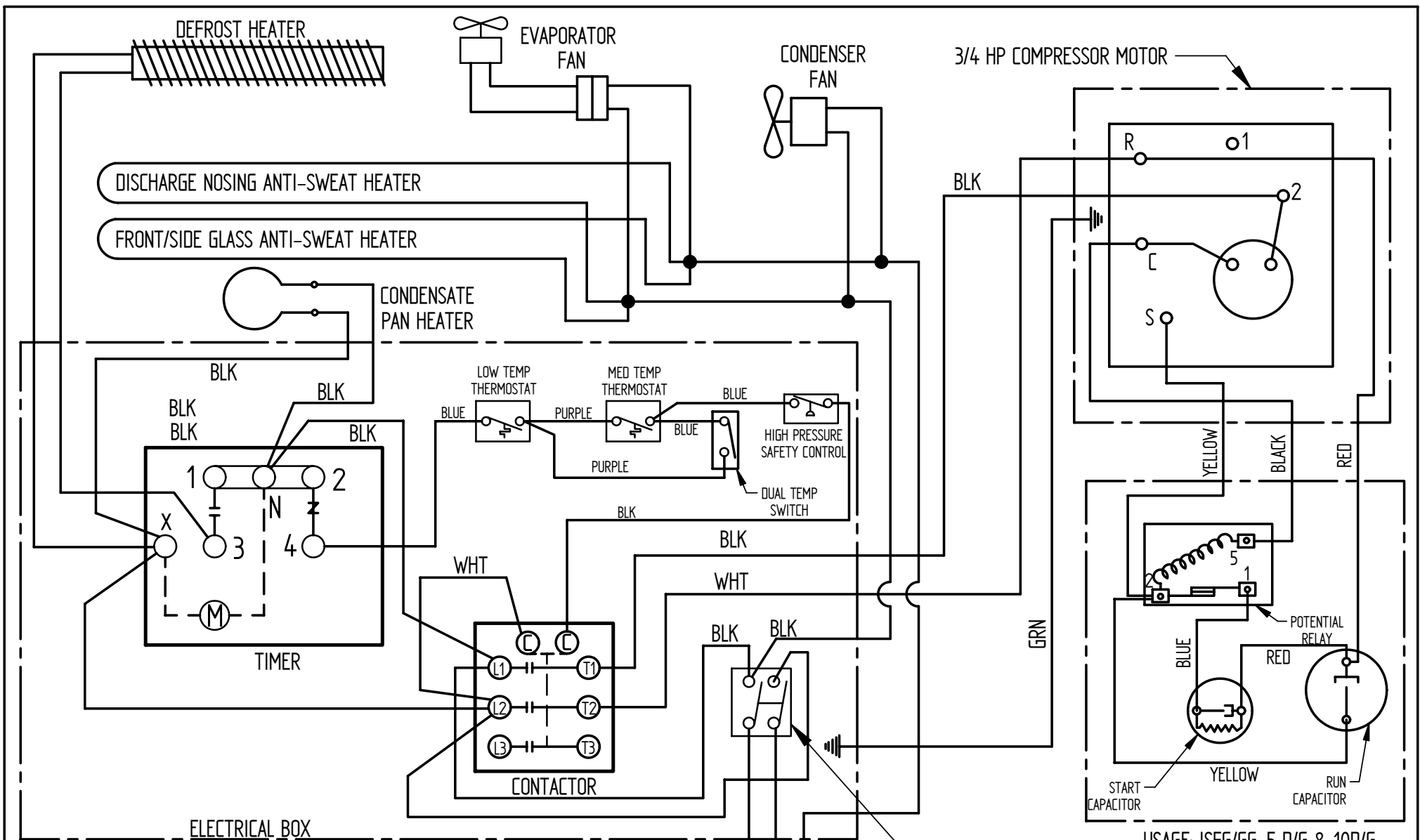
- 1) Remove the honeycomb assembly as follows:
Insert a small Phillips screwdriver into one of the lower cells of the honeycomb on the left-hand end and lift it up gently. The bottom of the honeycomb will begin to show. Twist screw driver upwards, away from the front of the case to slip the honeycomb out of the track. With fingers only, continue down the length of case, lifting the honeycomb out.
- 2) To clean honeycomb:
 - Mix powdered detergent, in warm water. (5 to 7 Tablespoons per gallon)
 - Immerse or spot clean the honeycomb. Use care not to damage the cell structure of the honeycomb.
 - Rinse thoroughly in clean water. Shake excess water from the honeycomb and dry. (if heat is used, do not exceed 140° F dry heat)
- 3) Install honeycomb by inserting the bottom edge in first. Now beginning at one edge compress honeycomb and insert into the top edge. Continue for the length of the honeycomb. Be careful not to damage the cells or cut yourself on the edges of the honeycomb. Honeycomb should fit tight.

(See diagram on next page)

ANTI-SWEAT HEATERS

The anti-sweat heaters are located along the lower glass perimeter and inside the nose discharge panel. Servicing the anti-sweat heaters requires removal of the corner caps, then the glass or nose discharge panel. To remove corner caps simply hold part and pull upwards. Corner caps naturally fit tight to prevent undesirable removal. To remove glass, just pull upwards. The nosing panel is a snap fit, therefore a tool might be required to assist removal.

Remove nosing by lifting upwards near the exterior of the refrigerator, then slide part toward interior of refrigerator. Caution should be taken at all times to prevent personal injury or damage to parts.



NOTE: USE COPPER, COPPER CLAD, OR ALUMINUM CONDUCTORS ONLY.

208/230/125 V
60 Hz
1 Ph

SPECIAL FOR ISFGG-5D/G & 10D/G W/DUAL TEMP KIT

BLACK LINE1
 BLACK LINE2
 WHITE NETURAL

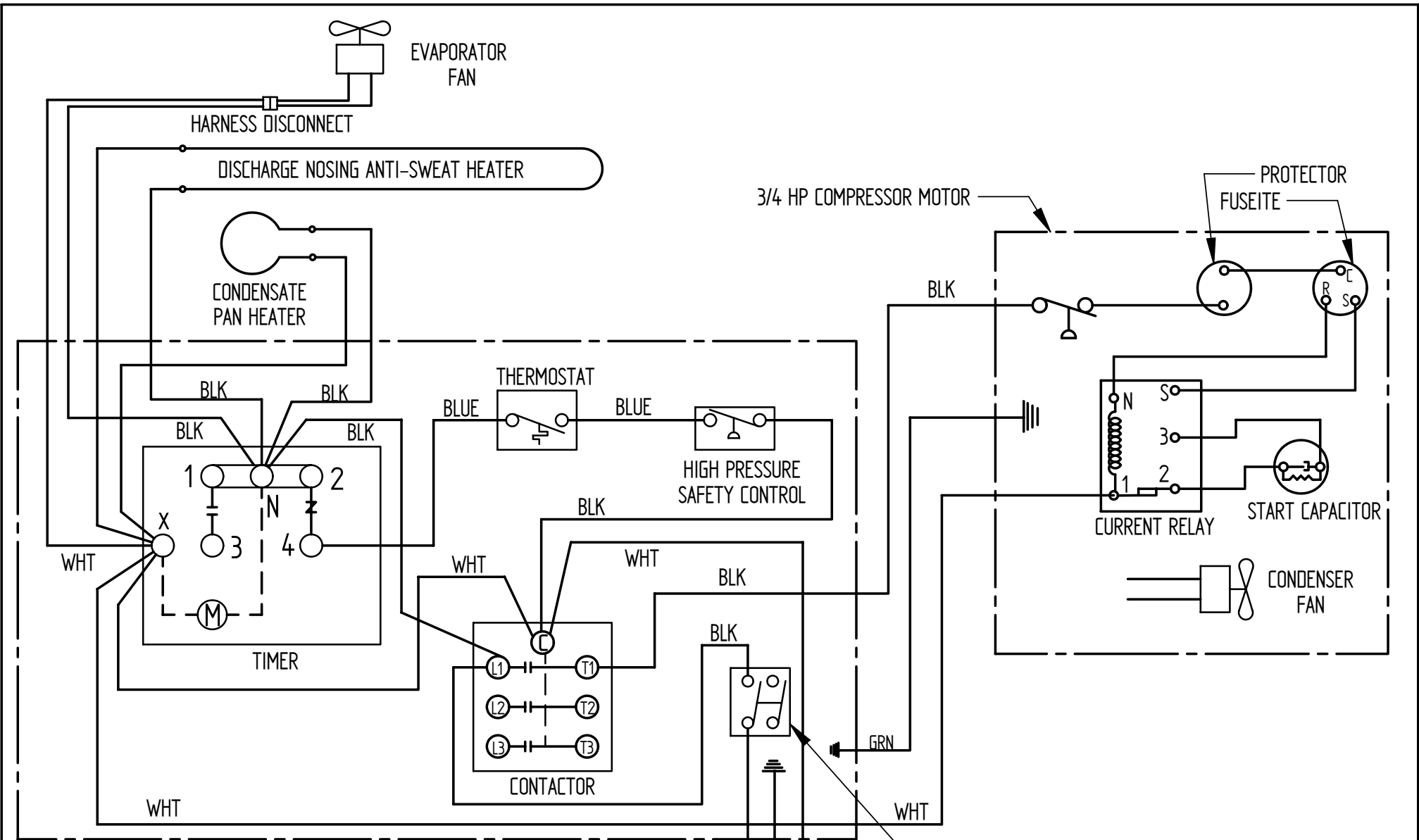
REV E/O #	REV DATE	REV BY	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL 1/32" DECIMAL 0.031" ANGULAR 1" HOLE LOCATION & SPACING 1/64"
-	-	-	
APPROVED BY:		E/O NUMBER	
DRAWN BY: J/JH		SCALE: INCHES	
DATE DRAWN: XXXXX/2001		SHEET # 1 OF 1	
APPROVED BY:			

USAGE: ISFGG-5 D/G & 10D/G
 ISCG-GG-5 D/G

HUSSMANN
 GLOVERSVILLE, NY 12078

WIRING DIAGRAM-ISFGG-5 & 10 D/G

M100-2279



NOTE: USE COPPER, COPPER CLAD,
OR ALUMINUM
CONDUCTORS ONLY.

ELECTRICAL BOX

120 V
60 Hz
1 Ph

BLACK

GROUND

WHITE

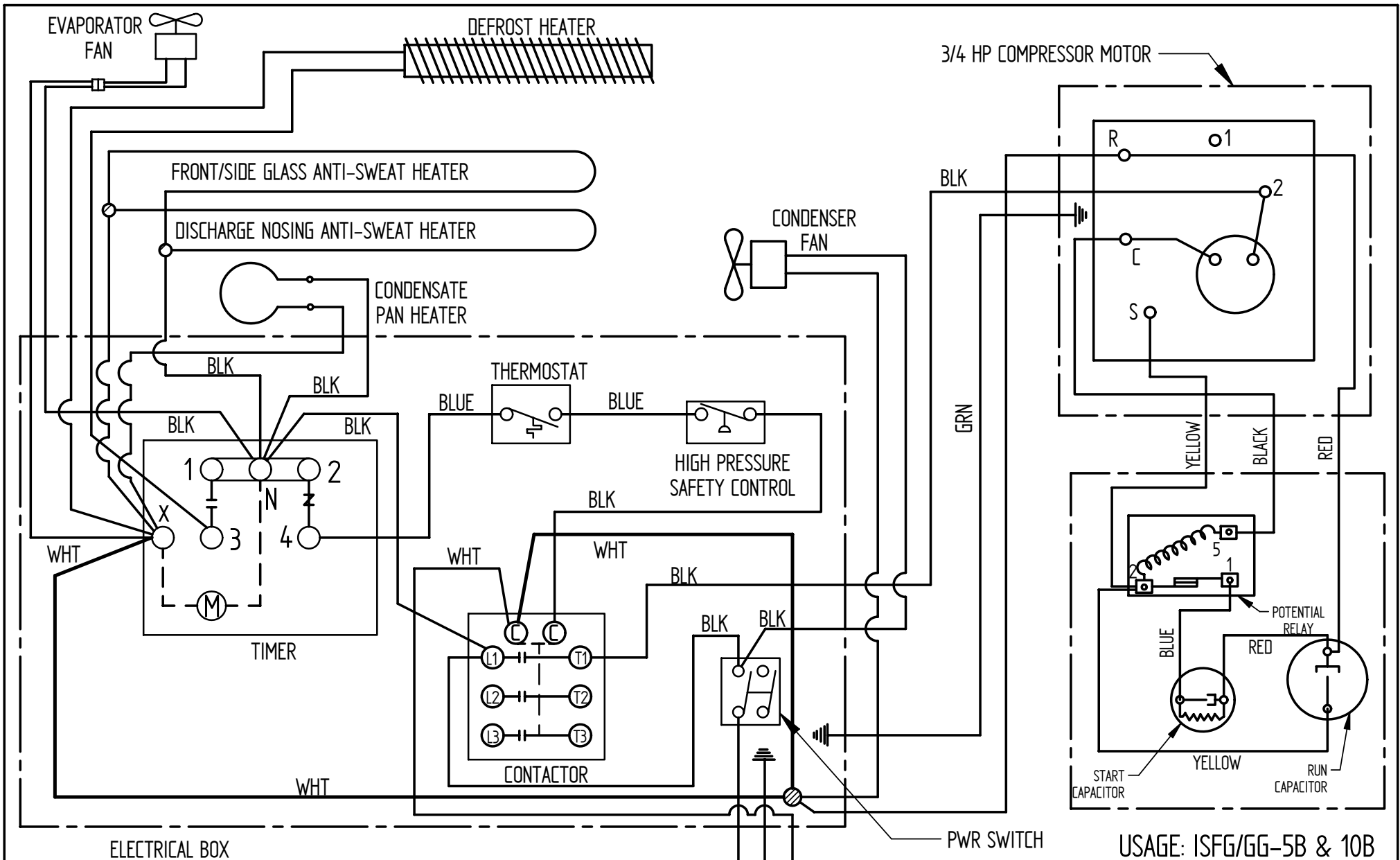
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-	-	-	
APPROVED BY:		E/O NUMBER	
DRAWN BY: J.J.H.		SCALE: INCHES	
DATE DRAWN: 03/19/02		SHEET # 1 OF 1	
APPROVED BY:			

USAGE: ISMG/GG-5B & 10B

HUSMANN
GLOVERSVILLE, NY 12078

WIRING DIAGRAM-ISMGG-5 & 10B

M100-2276



NOTE: USE COPPER, COPPER CLAD, OR ALUMINUM CONDUCTORS ONLY.

120 V
60 Hz
1 Ph

BLACK
GROUND
WHITE

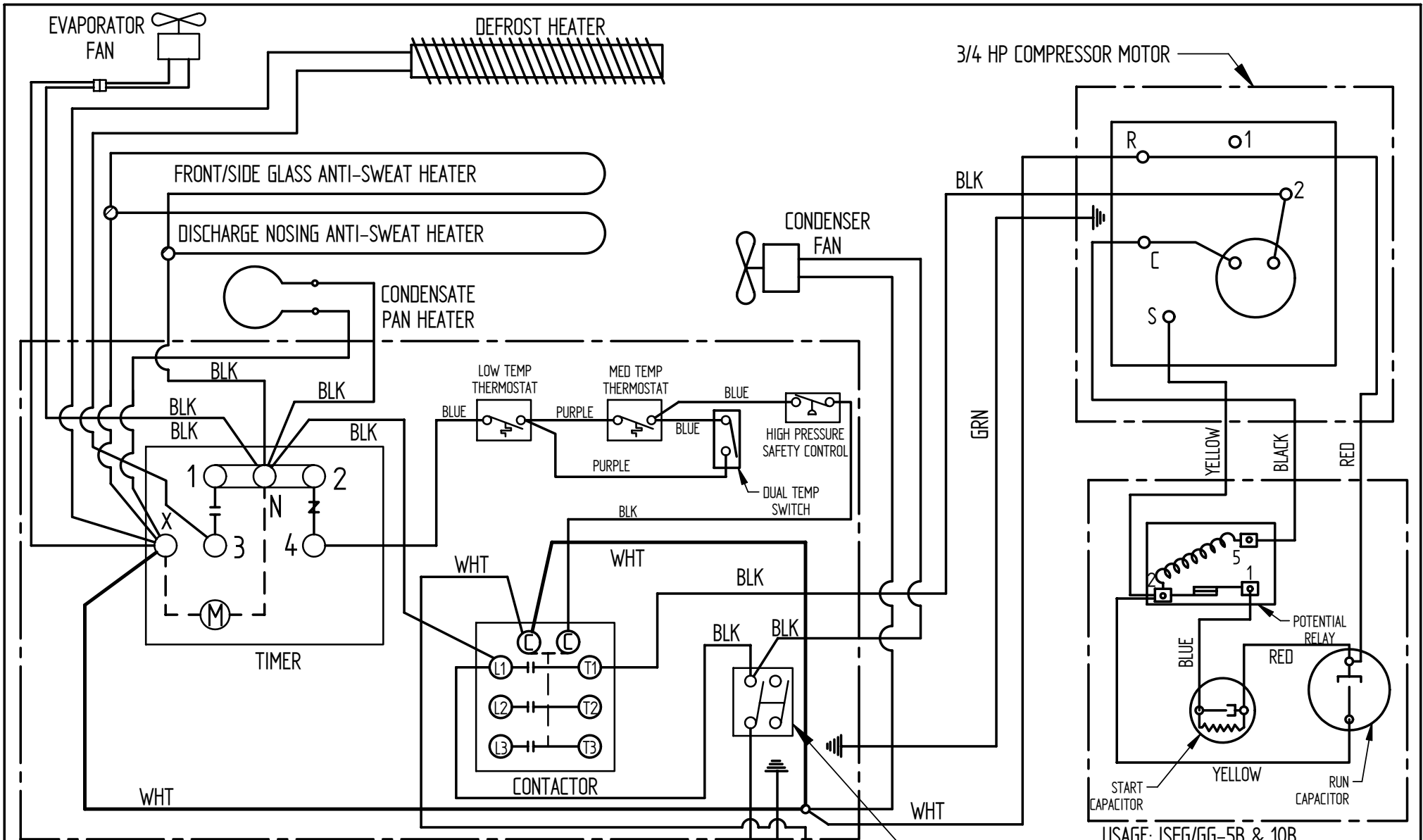
REV E.O. #	REV DATE	REV BY	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL 1/32" DECIMAL 0.031" ANGULAR 1° HOLE LOCATION & SPACING 1/64"
5291-rev a	11-18-03	JJH	
APPROVED BY			E.O. NUMBER
-REV A REROUTED WIRES TO CORRESPOND W/ SUB-ASSY			5291-REV A
DRAWN BY: JJH		SCALE: INCHES	
DATE DRAWN: XXXXX/2001		SHEET # 1 OF 1	
APPROVED BY:			

HUSMANN
GLOVERSVILLE, NY 12078

USAGE: ISFG/GG-5B & 10B

WIRING DIAGRAM-ISFGG-5B

M100-2277 A



NOTE: USE COPPER, COPPER CLAD, OR ALUMINUM CONDUCTORS ONLY.

ELECTRICAL BOX

120 V

60 Hz

1 Ph

BLACK

GROUND

WHITE

SPECIAL FOR ISFGG-5B & 10B W/DUAL TEMP KIT

REV E.O. #	REV DATE	REV BY	TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONAL 1/32" DECIMAL 0.031" ANGULAR 1" HOLE LOCATION & SPACING 1/64"
5291-REV A	11-18-03	JJH	
APPROVED BY:			E.O. NUMBER
-REV A REROUTED WIRES TO CORRESPOND W/ SUB-ASSY			5291-REV A
DRAWN BY: JJH		SCALE: INCHES	
DATE DRAWN: XXXXX/2001		SHEET # 1 OF 1	
APPROVED BY:			

HUSMANN
GLOVERSVILLE, NY 12078

WIRING DIAGRAM-ISFGG-5B

M100-2278 A

USAGE: ISFGG-5B & 10B
DUAL TEMP

