

# **Class I, Division 2 Class I, Zone 2 Hazardous Location Air Conditioners**

## **Operation and Installation Manual**

**Units are suitable for use in Class I, Division 2, Groups B, C and D Hazardous Locations, Class I, Zone 2 IIB + H2 Hazardous Locations or Nonhazardous Locations Only.**

**\*\*\* IMPORTANT \*\*\***

For safe and satisfactory operation, please read this manual and follow the instructions for installation and operation of this system. Keep this manual for future reference. Some information may not apply to your system.

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## Introduction

Ice Qube computer and electronics enclosure cooling systems have been designed to provide a safe environment for your equipment by cooling and dehumidifying the enclosure which houses your equipment in an efficient, modern, aesthetically pleasing package requiring minimal maintenance. Our closed-loop circulation design also protects your equipment from air-borne dust and contaminants, which may hinder your equipment operations and cause unnecessary downtime. Ice Qube offers models of hazardous duty cooling systems ranging in cooling capacity from 2,000 to 27,000 BTU per hour to provide air conditioning systems for many of your environmental needs. Ice Qube also offers select models in enclosure top and side mount packages.

## Basic Unit Operation

The Ice Qube Thermal Management System, TMS, is a combination of many systems, which function simultaneously to maintain environmentally friendly conditions for your equipment within the enclosure. The major thermal related systems are the closed-loop cold air supply stream, the heat rejection air stream, and the vapor-compression refrigeration system.

The closed-loop cold air supply stream circulates cold air from the Ice Qube TMS to the electronics enclosure. This air returns to the Ice Qube TMS bringing with it unwanted heat and humidity from inside the enclosure. Heat and humidity is then removed by a heat exchanger located within the Ice Qube TMS. This heat exchanger is part of the vapor-compression refrigeration system.

At the heart of the vapor-compression refrigeration system is a quiet, energy efficient rotary compressor, which circulates environmentally friendly NON-CFC refrigerant to transfer heat from the heat exchanger (evaporator) located within the closed-loop air stream to a heat exchanger (condenser) located in the heat rejection air system. In the heat rejection air stream, air is circulated from the ambient surrounding the enclosure, through a filter, and across the warm heat exchanger. Here, heat from the enclosure is transferred from the warm heat exchanger to the heat rejection air stream and dissipated to the ambient.

## Unpacking Inspection

### What to look for:

- 1. Shipping container is banded to the pallet and arrows on the shipping container are pointing in the proper (upward) direction.** The Ice Qube system is position sensitive. Ice Qube recommends the unit to remain in the proper upright position, as indicated on the shipping container, for a minimum of 24 hours before initial operation to ensure the oil has returned to the compressor. Operation before the 24-hour time may cause compressor damage and shorten the life of the system. Operation before this 24-hour period will *void all warranties*.
- 2. Damage to the shipping container.** If the shipping container has been damaged or marred in any way, carefully inspect the Ice Qube system for damage, which may have occurred during shipping. Check for scratches, dents, or rattles indicating loose components, presence of oil, or any other irregularities. Any evidence of damage should be recorded on the freight bill. The freight carrier's claim procedure should be followed. **Ice Qube Inc. cannot accept responsibility for damages which occur during shipping.**

## Pre-Installation Test

Before installing the Ice Qube system on your enclosure, it is a good idea to operate the unit for a few minutes to ensure it is functioning properly. Although the Ice Qube system has been fully tested at the factory, internal damage may have occurred during shipping which may have not been apparent during the unpacking inspection. This procedure will also help to familiarize you with the Ice Qube system.

1. Place the system on a solid base such as a workbench or table. Be sure to allow for adequate space for airflow. There are two air streams, which must not be restricted, the cold air stream and the warm air stream. Top mount units must be elevated to provide adequate airflow for the cold air stream located on bottom of system. Check the Model # to determine whether it is a Top or Side mount air conditioner. **Model numbers containing the letter 'V' should only be mounted on flat vertical surfaces. Model numbers containing the letter 'T' should only be mounted on flat horizontal surfaces.**
2. Check that the warm air system filter is in place. (Location varies with model type)  
*\*Models with the optional rain or wash down hood do not have this filter and require regular condenser maintenance*
3. Check the data tag for proper electrical requirements. The data tag will give the voltage and amperage requirements of the system. The data tag will also provide the Minimum Circuit Ampacity and the Maximum Overcurrent Protection required. Be sure the electrical supply where the system will be connected has the proper capacity. The data tag will also designate the Class, Division and Groups for which the cooling system is approved. (See Serial number). Serial numbers which include XP2 have been manufactured for safe operation in Class I, Division 2, Group B, C and D classified areas and Class I, Zone 2 IIB + H2 Hazardous Locations.

**\*\*\* WARNING: EXPLOSION HAZARD! \*\*\***

**DO NOT CONNECT WHILE CIRCUIT IS LIVE OR UNLESS THE AREA IS KNOWN TO BE FREE OF IGNITABLE CONCENTRATIONS!**

**\*\*\* AVERTISSEMENT: RISQUE D'EXPLOSION! \*\*\***

**NE PAS SE CONNECTER TANT QUE LE CIRCUIT EST EN DIRECT OU SAUF SI LA ZONE EST CONNU LIBRE DE INFLAMMABLES CONCENTRATION!**

**If any unusual noise or vibration is present during the testing procedure, immediately disconnect power and inspect the unit for the cause of the noise or vibration and contact Ice Qube immediately.**

4. Ice Qube hazardous location cooling systems are not supplied with a power cord. On the rear of the air conditioner, you will find a terminal block for 'hard wiring' of your cooling system. This terminal block is located under a protective cover which is approximately 3" x 4" x 1.375 deep. See unit specifications for location.

**Field wiring should be made to this terminal block by a qualified technician. Provision is provided for wiring. Refer to applicable codes for suitable wiring.**

Also, on the cooling system, you will notice an explosion proof housing. This housing is intended to provide protection for components which may produce sparks or electrical arcing. **This cover should only be removed by a technician experienced with hazardous location equipment.**

**\*\*Note\*\***

For fuse replacement, a switch must be provided at the installation of the equipment to remove power from the fuse before the fuse is replaced. Check local codes for fuse requirements.

5. On the rear or bottom of the cooling system is the thermostat. When power is supplied to the system, the cooling system will begin to operate when the temperature is at or above the set point of the thermostat. At this temperature, the cold and warm air blowers along with the compressor will begin operation. (For more information see the section on the cooling thermostat). When the temperature is at or above the thermostat set point, the compressor and both blowers will begin to operate. Allow the unit to operate for 20 to 30 minutes. This will provide sufficient time for the vapor compression system to achieve operating balance. Measure the cold air outlet temperature with an accurate thermometer. This temperature should be at least 10 deg. F colder than the inlet air temperature if the room temperature is warmer than 70° F. In areas where the humidity is high, the temperature difference may be less than 10 deg. F.
6. After completing these few simple checks, you are ready to prepare the electrical enclosure for installation of the Ice Qube system.

## Preparing the Enclosure and Mechanical Installation

Ice Qube air conditioning systems have been designed to be lighter in weight for easy installation. Wall mount units have been designed with a simple “two stud” alignment feature to make initial fastening to the enclosure quick and easy. A few modifications must be made to your enclosure to provide proper air flow, maintain enclosure integrity, and assure secure installation. Required modifications will vary with air conditioner model.

1. Determine the location of the Ice Qube system on your enclosure.

### **\*\*\*Caution\*\*\***

*Larger air conditioners are shipped with lifting lugs for use with mobile lifting equipment. Use lifting equipment with sufficient load rating. If lifting lugs are removed, they must be replaced by the factory provided packaged hardware to maintain air conditioner integrity. Verify the weight of the air conditioning system will not cause the enclosure to become unbalanced. Equipment instability may cause bodily harm or equipment damage. For units mounted on enclosure doors, be sure the hinges will support the weight of the Ice Qube system. Refer to system specifications for model weights.*

2. Upon deciding the location of the Ice Qube system on the enclosure, use the cut-out drawing to modify the enclosure surface to accommodate mounting of the air conditioner. Be sure that the Ice Qube system will be mounted level and that the inlet and outlet of the cold air stream will not be restricted by equipment or shelving within the enclosure. Also check that the air flow of the warm air stream will not be affected or restricted by surroundings. Be sure to protect any equipment located within the enclosure from debris produced during the installation process.
3. Slide the mounting studs through the matching holes in the enclosure and check to see that all openings are aligned. (Top mount units do not have mounting studs.)
4. After checking that all opening and bolt holes are in alignment, mount the Ice Qube system onto the enclosure and fasten it using the nuts and bolts provided with your system. Check to be sure all fasteners have been tightened securely and the gasket material is in place to maintain enclosure integrity. You are now ready to operate your Ice Qube system.

### **\*\*\*Note\*\*\***

Near the bottom or on the side of the Ice Qube system cabinet, you will find a nipple which is for condensate overflow. Although all side mounted Ice Qube systems have a built-in condensate management system, you may find it necessary to attach a hose to this nipple on enclosures which are in extremely humid conditions, when enclosure doors are left open, or the door seals are leaking. Top mount models *do not* have a built-in condensate evaporation system. For the drainage system to operate properly, the factory supplied drain kit with the “Tee” must be installed per factory instructions. Ice Qube cannot be held responsible for improper installation.

## Operating Your System

After installing the Ice Qube cooling system onto your enclosure and supplying power from a properly grounded electrical supply with adequate voltage and current supply, you are ready to begin operation of the system. As soon as electrical power is supplied to the Ice Qube cooling system and the temperature is above the thermostat cooling on temperature setting, you should notice the cold air stream blower, the condenser air blower and the compressor begin operation. After a few minutes of operation, you should notice warm air being exhausted at the condenser air outlet and cold air being delivered to the enclosure. When the temperature inside of the enclosure reaches the thermostat cooling off temperature setting, the cold air stream blower, condenser air blower and compressor should stop operation.

## Operating the Thermostat

The purpose of the thermostat is to cycle the cooling system as required by the heat producing equipment within your enclosure thus preventing overheating and extending the life of your electronic equipment.

On the face of the controller, you will see an adjustment knob within a temperature range. To adjust the operating temperature of the thermostat, turn the knob until the pointer is aligned with the desired temperature of the enclosure. This is the temperature at which the cooling system will begin cooling. *21°C is the minimum recommended set temperature to prevent the coil from freezing.* The thermostat set points can vary between the different models.

The thermostat has a factory set differential of 2.8 deg. C (5 deg. F). The unit will stop cooling when the enclosure temperature is 2.8 deg. C (5 deg. F) below the cooling on setting, indicated by the pointer. The unit will automatically begin to cool again when the internal temperature of the enclosure reaches the cooling on set point.

Ex: Set Point	25 °C (77 °F)	Cooling on temperature
	22.2 °C (72 °F)	Cooling off temperature

## Maintenance

**\*\*\* WARNING: EXPLOSION HAZARD! \*\*\***

**DO NOT DISCONNECT WHILE CIRCUIT IS LIVE OR UNLESS THE AREA IS KNOWN TO BE FREE OF IGNITABLE CONCENTRATIONS!**

**\*\*\* AVERTISSEMENT: RISQUE D'EXPLOSION! \*\*\***

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The Ice Qube air conditioning system should provide many years of trouble-free operation with a minimal amount of maintenance. Primary maintenance consists of checking the condition of the ambient air filter and condensate management system.

1. Ambient Air Filter - It is recommended that the ambient air filter be checked and cleaned regularly, at least every 30 days, or more frequently depending on ambient conditions. In order to check the condition of the air filter, it is recommended to first remove electrical power from the Ice Qube cooling system. Next, locate the filter cover and filter. (Location varies with model) Next, remove the filter by grasping the pull tab and sliding from the filter rack. Clean the filter by soaking it in warm soapy water and then rinsing in clean water. Use a shop-vac to remove excess water from the filter before returning it to the system. Replace the filter if it is showing signs of deterioration.

It is recommended to have a spare clean filter in stock in order to prevent prolonged cooling system downtime. The dirty filter may be cleaned at a more convenient time.

**\*\*\*Note\*\*\***

If rain or wash down hoods are installed on your system, no filter is supplied with your system and no filter maintenance is required. Systems equipped with rain or wash down hoods will require regular condensing section maintenance.

2. Condensate Management System: The condensate management system should be checked periodically for scale, sludge and debris that may cause the system to fail. The type of environment will determine the frequency of required maintenance. Locate the condensate drainage nipple. The nipple is typically 3/8-inch OD and approximately 1 inch in length. Location is typically at the bottom of the left or right side of the air conditioner. Visually inspect for blockage. Nipples may be cleaned using a 1/4 inch tubing brush.

Another part of the system which may need cleaned occasionally is the cooling system cabinet. To clean the system cabinet, simply wipe it with a damp, lint free cloth. A mild soap solution may be used if necessary.

**WARNING: REMOVAL OF COVER WILL IMMEDIATELY VOID YOUR WARRANTY! SUBSTITUTION OR REPLACEMENT OF ANY COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS 1, DIVISION 2 or CLASS I, ZONE 2 HAZARDOUS LOCATION.**

**MISE EN GARDE: RETRAIT DE LA COUVERTURE IMMEDIATEMENT ANNULER LA GARANTIE! LA SUBSTITUTION OU LE REMPLACEMENT DE TOUT COMPOSANT PEUT IMPARTER LA CONDUITE POUR LA CLASSE 1, LA SECTION 2 OU LA CLASSE I, ZONE 2 DANGEREUSE.**

## Troubleshooting

If your Ice Qube air conditioning system should fail to operate satisfactorily during the first year of operation, do not remove the cover without first notifying the factory. Removal of the cover will immediately void your warranty. If an operating problem should occur, please make the following simple checks before contacting Ice Qube Inc.



### TROUBLE SHOOTING CHECK LIST

<b>Model No:</b>		<b>S/N Number:</b>		
Voltage Rating:	Amps:	Phase:	Hz:	
Is electrical power available at the outlet?			YES <input type="checkbox"/>	NO <input type="checkbox"/>
Is there sufficient power available to the unit?			YES <input type="checkbox"/>	NO <input type="checkbox"/>
Is the controller set point temperature above the enclosure temperature?			YES <input type="checkbox"/>	NO <input type="checkbox"/>
Is the evaporator (cold air stream) blower operating?			YES <input type="checkbox"/>	NO <input type="checkbox"/>
Is the compressor and condenser (warm air stream) blower operating?			YES <input type="checkbox"/>	NO <input type="checkbox"/>
Is the enclosure door closed tightly?			YES <input type="checkbox"/>	NO <input type="checkbox"/>
Are all of the gaskets in place?			YES <input type="checkbox"/>	NO <input type="checkbox"/>
Has the warm air filter been cleaned or changed recently?			YES <input type="checkbox"/>	NO <input type="checkbox"/>
Is the system mounted level on the enclosure?			YES <input type="checkbox"/>	NO <input type="checkbox"/>
Is there adequate space within the enclosure for air flow?			YES <input type="checkbox"/>	NO <input type="checkbox"/>
Is there adequate space around the enclosure for air flow?			YES <input type="checkbox"/>	NO <input type="checkbox"/>
Have you recently added electronic equipment to the enclosure?			YES <input type="checkbox"/>	NO <input type="checkbox"/>
Are there any unusual ambient conditions?			YES <input type="checkbox"/>	NO <input type="checkbox"/>

Still experiencing Problems? Call Ice Qube at 1-888-867-8234  
Be sure to have your serial number ready before you call.

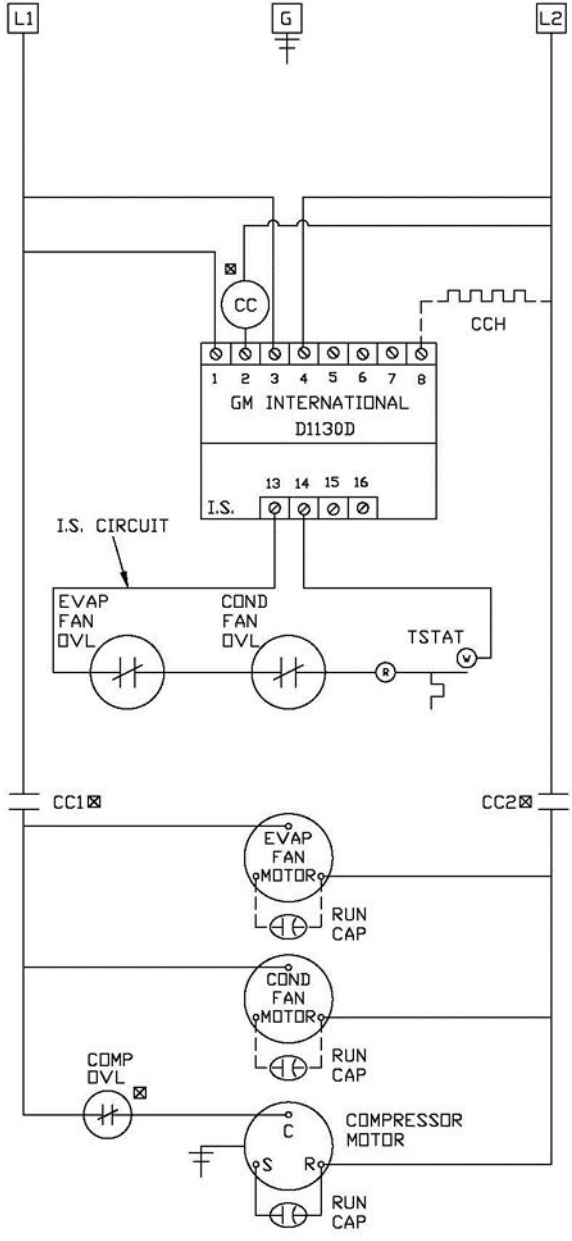


# Schematic Wiring Diagram

PROPRIETARY DRAWING  
THIS DRAWING IS THE PROPERTY OF ICE  
QUBE, INC. AND IS NOT TO BE REPLICATED  
OR ALTERED WITHOUT AUTHORIZATION OF  
ICE QUBE, INC.

REVISIONS			
REV	DESCRIPTION	DATE	CHECKED
1	ADDED NOTE	7-22-13	JGG
2	ADDED 220 VAC TO NOMENCLATURE & PART NAME	9-27-13	JMH
3	ADD I.S. NOTE	7-31-14	SJP
4	REMOVED HEATING, CHANGED T'STAT	3-3-21	JJH

## COOLING SCHEMATIC GM RELAY 120 / 220-230 VAC

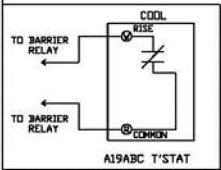


**NOTES**

☒ INDICATES COMPONENTS INSIDE OF EXPLOSION PROOF HOUSING  
IQ8000V16, IQ10/12000V, IQ14/17/20000V HAVE INTERNAL COMP. OVERLOAD.

**LEGEND**

- CONTACTOR (CC)
- COOLING COIL (CC)
- OVERLOAD (⊕)
- NORMALLY OPEN CONTACT (⊥)
- CLOSE ON RISE THERMOSTAT (⊕)
- CRANKCASE HEATER (⊕)
- RUN CAPACITOR (⊕)
- WIRE GROUND (⊥)
- CHASSIS GROUND (⊕)
- --- INDICATES OPTIONAL CONSTRUCTION



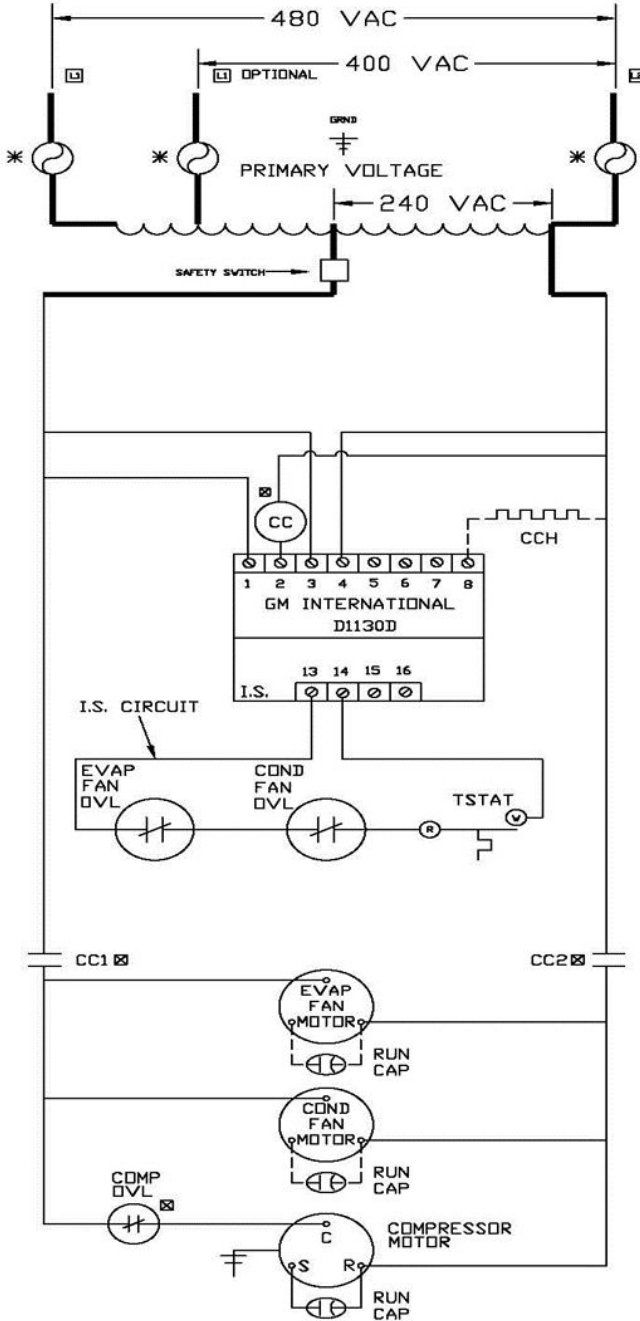
UNLESS OTHERWISE SPECIFIED TOLERANCES: X ± .060"    XX ± .030" XXX ± .015"		<b>ICEqube</b> INDUSTRIAL COOLING EQUIPMENT 141 WILSON AVENUE ORENGBURG, PA 15661 TEL: 724-837-2204 • 1-800-867-8234 FAX: 724-837-3286
PROJECTION: 1st ANGLE 1/2"	PART NAME: GM SCHEM 120/220-230	
DATE: 6-3-2010	SCALE: NONE	REV: 4
SHEET 1 OF 1		DWG NO: IQ2304

# Schematic Wiring Drawing

PROPRIETARY DRAWING  
THIS DRAWING IS THE PROPERTY OF ICE  
EQUIPMENT, INC. AND NOT TO BE REPRODUCED  
OR ALTERED WITHOUT AUTHORIZATION OF  
ICEQUIPMENT, INC.

REVISIONS			
REV	DESCRIPTION	DATE	CHECKED
1	ADDED NOTE	7-22-13	JGG
2	ADDED I.S. NOTE	7-31-14	SJP
3	REMOVED HEATING, CHANGED T'STAT	3-3-21	JJH

## COOLING SCHEMATIC GM RELAY 480 / 400 VAC

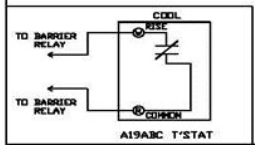


**NOTES**

- FOR - 1 KVA MODELS ONLY
- ⊠ INDICATES COMPONENTS INSIDE OF EXPLOSION PROOF HOUSING IQ8000V16, IQ10/12000V, IQ14/17/20000V HAVE INTERNAL COMP. OVERLOAD.

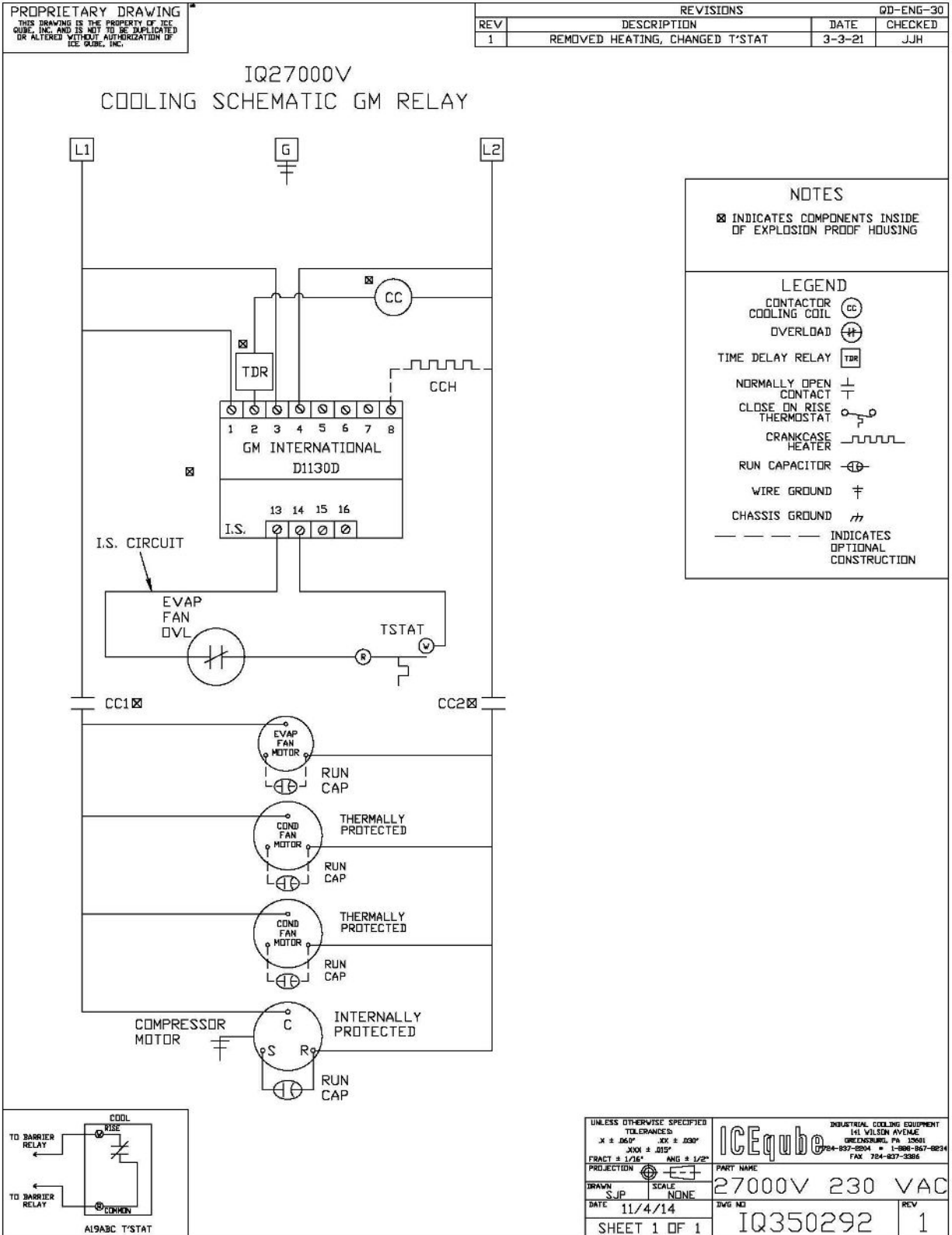
**LEGEND**

- FUSE
- CONTACTOR
- COOLING COIL
- OVERLOAD
- NORMALLY OPEN CONTACT
- CLOSE ON RISE THERMOSTAT
- CRANKCASE HEATER
- RUN CAPACITOR
- WIRE GROUND
- CHASSIS GROUND
- INDICATES OPTIONAL CONSTRUCTION



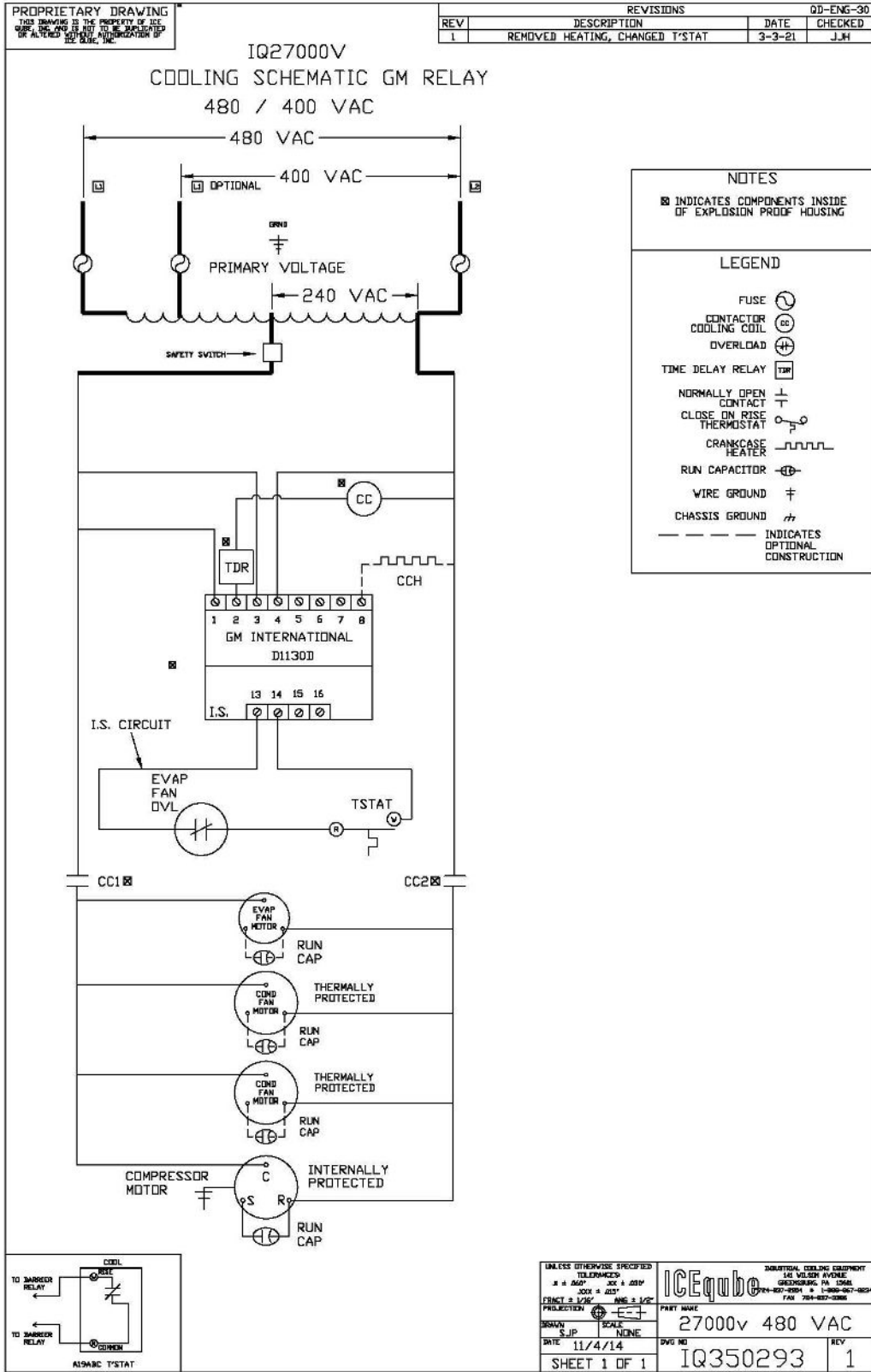
UNLESS OTHERWISE SPECIFIED		<b>ICEcube</b> INDUSTRIAL COOLING EQUIPMENT	
TOLERANCES		141 VALLEY AVENUE GREENSBURG, PA 15601 724-837-2834 • 1-800-667-0834 FAX 724-837-3366	
X ± .001"	XX ± .005"	<b>GM Schem 400/480</b>	
FRACT ± 1/16"	ANG ± 1/2°		
PROJECTION	SCALE NONE	PART NAME DWG NO: IQ2304 REV: 3	
DRAWN SJP	DATE 6-3-2010		
SHEET 1 OF 1			

# Schematic Wiring Drawing



<p>UNLESS OTHERWISE SPECIFIED TOLERANCES:  X ± .060"    .XX ± .030"  XXX ± .015"    ANG ± 1/2°</p> <p>PROJECTION </p> <p>DRAWN SJP    SCALE NONE</p> <p>DATE 11/4/14</p> <p>SHEET 1 OF 1</p>	<p style="text-align: right;"><b>ICEqube</b> INDUSTRIAL COOLING EQUIPMENT 141 WILSON AVENUE DREXELBURG, PA 19021 724-937-2204 • 1-800-957-2224 FAX 724-937-3286</p> <p>PART NAME <b>27000V 230 VAC</b></p> <p>DWG NO <b>IQ350292</b></p> <p>REV <b>1</b></p>
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# Schematic Wiring Drawing



### Standard Warranty Policy

Ice Qube, Inc. ("**Ice Qube**") warrants that the products manufactured by Ice Qube (the "**Products**") are free of defects in material and workmanship which impair the operation of the Products, under normal and proper use and service, for a period of one (1) year from the date of shipment FCA from Ice Qube's facility located in Greensburg, Pennsylvania (the "**Standard Warranty**").

In order for this Standard Warranty to apply, the Product(s) must be installed and operated according to and consistent with the following conditions:

- Voltage variation no greater than +/- 10% from the rated voltage on the label of the Product;
- Frequency variation no greater than +/- 3 HZ from rated frequency on the label of the Product;
- Ambient temperature must not exceed maximum operating temperature on the label of the Product;
- Maximum cooling capacity not to exceed rating (BTU/HR) as rated on the label of the Product; and
- The Product must be installed, maintained and operated consistent with the terms and conditions set forth in the operation manual.

#### THIS STANDARD WARRANTY DOES NOT COVER THE FOLLOWING:

- Ice Qube assumes no liability beyond the repair or replacement of its own Products. In no event shall Ice Qube be liable for any incidental, special, indirect, consequential or similar damages incurred by any purchaser, owner, possessor, assignee or successor in interest or any other third party having any interest in any Product as the result of any breach of this Standard Warranty, including but not limited to loss of profit or revenues, damages for loss of use of the Products, damage to property, both real and personal, claims of third parties, including personal injury or death on account of use of the Products or failure of Ice Qube to warn against or instruct on or adequately warn against or instruct on, the dangers of the Products or the safe and proper use of the Products, whether or not customer has been advised of the potential for such damages.
- Ice Qube's total liability for customer's claims from any cause whatsoever, whether arising under contract, warranty, tort (including negligence), strict liability, products liability or any other theory of liability, will be limited to the lesser of customer's actual damages or the price paid by customer to Ice Qube for the Products (not including applicable taxes, duties and freight charges) that are the subject of customer's claim.

THE WARRANTY SET FORTH HEREIN IS STRICTLY LIMITED TO ITS TERMS AND IS IN LIEU OF ALL OTHER WARRANTIES, GUARANTEES, EXPRESS OR IMPLIED, ARISING BY OPERATION OF LAW, COURSE OF DEALING, CUSTOM, USAGE OF TRADE OR OTHERWISE, SPECIFICALLY EXCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE.

1. The warranty and remedies for breach of warranty provided for in this Standard Warranty extend only to the original installation and do not cover, and Ice Qube will neither assume responsibility, nor be liable, for the following:
  - misapplication of its Products or the erroneous selection of an inappropriate Product by a non-authorized Ice Qube representative;
  - use of the Product for other than its designed purpose or operating conditions;
  - operation or storage in harsh, oily, corrosive or other abnormal environments without the proper filtration, sealing, protective coatings and/or weather protection;
  - damage to the hermetic system resulting from continuous operation with dirty or clogged air filters or improper or negligent maintenance;
  - use of refrigerant other than designated on the label of the Product;
  - customer modification or abuse;
  - shipping damage or other accidental damage (It is Ice Qube's standard policy that freight claims are the responsibility of the customer if the Product is not refused at delivery);
  - repair, damage or service of the Product caused by anyone except personnel authorized by Ice Qube;
  - cracked or broken hermetic tubing, brazed joints or other internal damage caused by shipping or mishandling;
  - damage caused by shipping units attached to an enclosure;
  - any and all damage, breakage, malfunction or other like conditions or defects resulting from noncompliance with the standard operation, care, installation, maintenance and use of the Product as set forth in the operation manual for such Product;
  - any cause beyond the control of Ice Qube, including without limitation conditions caused by movement, settlement or structural defects of the environment in which the Products are installed;
  - fire, wind, hail, flood, lightning or other acts of God;
  - any damage to the finish of the Products after they leave Ice Qube's facility;
  - any discoloration or spotty appearance of the Products;
  - return freight and shipping charges, along with applicable duties and other like fees and charges, for the return of the Product to Ice Qube (such amounts are the sole responsibility of the customer);
  - failure to process or inaccurate processing of time-sensitive information and/or mechanisms; or
  - exposure to harmful chemicals, pollutants or other foreign matter or energy.
2. All returns must have a RMA number and must be marked with the RMA number on the bill of lading and on the packaging.

3. Upon resale, customer agrees to extend to its customers no greater warranties, and limit its liability and remedies to the same extent, as those set forth herein.
4. All Product literature is for illustrative purposes only and does not contain a warranty of any kind.
5. Ice Qube's advice relating to the technical usage of the Products or the intellectual property rights of others, whether provided orally or in writing or through the provision of test results, is given in accordance with Ice Qube's best knowledge at that time, but shall at all times be deemed to be non-binding. Such advice does not relieve customer from the obligation, and customer accepts full responsibility, to confirm for itself the suitability of the Products for their intended purpose(s).

#### **Remedies**

Customer's sole and exclusive remedy, and Ice Qube's only obligation for breach of warranty hereunder shall be, at Ice Qube's option, in its sole discretion, to (i) repair or replace the defective Product which fails within the one (1) year warranty period, free of charge, provided that customer promptly notifies Ice Qube of such failure and, after receipt of prior written authorization and return authorization number from Ice Qube, which will be given or withheld at Ice Qube's sole discretion, returns such Product to Ice Qube, Inc., 141 Wilson Avenue, Greensburg, PA 15601, or such other place as requested by Ice Qube, freight prepaid, and thereupon Ice Qube finds such to be defective or (ii) issue a credit equal to the price of the defective Product which fails within the one (1) year warranty period. Customer must pay all related costs of repair or replacement, including removal, installation or reinstallation costs. Ice Qube's personnel must be granted access to inspect the Products claimed to be defective at the site of their installation or use. Products repaired or replaced and designs corrected under this Standard Warranty are warranted only for the remainder of the original warranty period.

#### **In-Field Service for Continental United States<sup>1</sup>**

All standard duty air conditioners manufactured by Ice Qube are eligible for in-field service, where available, at no charge to customer, for a period of one (1) year from the date of shipment FCA from Ice Qube's facility in Greensburg, Pennsylvania. However, such in-field service is only available at the sole discretion of Ice Qube. In-field service may not be available in all service areas and the provision of in-field service is subject to change at any time by Ice Qube without notice. The location of the Product otherwise eligible for in-field service must be within One Hundred (100) miles of the service center selected by Ice Qube in its sole discretion. In-field service is only available in the Continental United States.

All in-field services must be initiated by Ice Qube. Customers must call Ice Qube support service at (724) 837-7600 and work with the Ice Qube support personnel so that Ice Qube can determine the necessity of in-field service for such Product in its sole discretion.

Ice Qube will not assume any liability for any in-field service not initiated by Ice Qube. In no event shall Ice Qube be liable for any incidental, special, indirect, consequential or similar damages incurred by any purchaser, owner, possessor, assignee or successor in interest or any third party having any interest in any Product as the result of the provision of any in-field services to such Product, including but not limited to loss of profit or revenues, damages for loss of use of the Products, damage to property, both real and personal, claims of third parties, including personal injury or death on account of use of the Products or failure of Ice Qube to warn against or instruct on or adequately warn against or instruct on, the dangers of the Products or the safe and proper use of the Products, whether or not customer has been advised of the potential for such damages.

Ice Qube's total liability in connection with in-field services from any cause whatsoever, whether arising under contract, warranty, tort (including negligence), strict liability, products liability or any other theory of liability, will be limited to the lesser of customer's actual damages or the price paid to Ice Qube for the Products (not including applicable taxes, duties and freight charges) for which in-field services are sought.

ALL HAZARDOUS DUTY AIR CONDITIONERS ARE EXCLUDED FROM IN-FIELD SERVICE DUE TO CERTIFICATION. TO THE EXTENT APPLICABLE, SPECIFICALLY EXCLUDED FROM IN-FIELD SERVICES INITIATED BY ICE QUBE ARE ANY AND ALL OTHER WARRANTIES, GUARANTEES, EXPRESS OR IMPLIED, ARISING BY OPERATION OF LAW, COURSE OF DEALING, CUSTOM, USAGE OF TRADE OR OTHERWISE, SPECIFICALLY EXCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE.

ALL QUBE AND BLADE SERIES UNITS ARE EXCLUDED FROM IN-FIELD SERVICE. THESE UNITS WILL EITHER BE RETURNED TO THE FACTORY FOR REPAIR OR MAY BE ELIGIBLE FOR A REPLACEMENT UNIT. THIS WILL BE AT THE SOLE DISCRETION OF ICE QUBE, INC.

#### **Extended Warranty Options**

Ice Qube offers extended warranty options on a per Product basis. Please contact Ice Qube at (724) 837-7600 for further information. All extended warranties must comply with all applicable provisions of the Standard Warranty listed above.

All Products with extended warranties must be registered with Ice Qube and must be installed and maintained according to the operation manual and according to the terms and conditions set forth in the Extended Warranty for such Product.

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<sup>1</sup> In-field service outside the Continental United States is only offered on a case by case basis in Ice Qube's sole discretion. Customers outside the Continental United States must call Ice Qube support service at (724) 837-7600 and consult with the Ice Qube support personnel so that Ice Qube can determine the availability of in-field service at such location.