

Installation Instruction

Transport | Installation | Operation | Maintenance



Product line:	Commercial Air Coolers
Series description:	Cubic Compact Medium-Profile Coolers
Series:	G_M

guntner.com/us

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1. Warranty Statement

The supplier warrants the product to be free from defects in workmanship and materials under normal usage for the period outlined below. The supplier further warrants against defects in workmanship and materials of the product for a period of 24 months from the date of purchase (the "Warranty Period"), provided that the product is correctly installed and operated within the recommended limits of the manufacturer's technical documentation.

The supplier at its option shall repair or replace, free of charge to the purchaser, all components of the product which are or become defective during the Warranty Period as a result of defects in design, workmanship or materials, ordinary wear and tear excluded, provided, however, that:

- The product is applied correctly
- All operating and installation instructions for the product are complied with
- System component and piping design is in accordance with good refrigeration practice
- Nitrogen or an inert gas is introduced into the piping during the brazing of the piping installation

This warranty shall not include ordinary maintenance or cleaning of the product, or defects in the installation of the product. This warranty also does not cover physical damage to the product during transit, after purchase of the product but before installation.

The purchaser must request repair or replacement of the defective component through a written notice to the supplier, and must provide the purchaser with the time and opportunity to make such repair or replacement. Otherwise, the supplier will be freed from liability for the defect.

Any transport and exchange costs for the repair or replacement shall be borne by the purchaser. The supplier shall also not be liable for costs incurred in dismantling or fitting replacement parts or for any independent inspection undertaken by the purchaser. The purchaser shall return any allegedly defective goods, postage or freight paid, to the supplier at the address below. Upon receipt of the goods and inspection thereof the supplier shall repair or replace, at the supplier's discretion, the defective components and shall return the same to the purchaser, return postage and freight paid. This shall constitute full compliance of the supplier's warranty obligations hereunder.

The seller accepts no liability for the direct or indirect consequences of any modifications of or repairs to the product made out by the purchaser or by a third party without the prior consent of the supplier.

This warranty applies only to the repair or replacement of components of the product and expressly excludes responsibility for damage and consequential damages not occurring to the product itself.

This warranty is the purchaser's exclusive remedy. The supplier expressly acknowledges that it shall not be liable to the purchaser or any client of the purchaser for any direct or indirect damages, injury to persons or property or any consequential damage or loss of profits arising from defective goods or workmanship or from any other cause whatsoever.

To obtain warranty service or to ask any questions regarding the foregoing, please contact our office:

Güntner US LLC
3601 Algonquin Road Suite 925
Rolling Meadows, Illinois 60008
847- 781-0900 Tel
847-781-0901 Fax
dg-us-service@guntner.com or sales.us@Guntner.com
Online support: <https://www.guntner-solutions.us/contact>

2. General safety information

WARNING

All installation and maintenance procedures must be performed by qualified personnel already familiarized with the equipment.

WARNING

All field wiring should match the requirements of the equipment, as well as any local or national codes.

WARNING

Coil edges and other sharp objects should be met with caution, as they can cause serious injury. Fan blades are especially sharp, and therefore should be handled only while wearing protective gloves.

WARNING

All power sources should be disconnected before any type of service work is performed on the equipment. For cleaning the equipment, reinstall the drain pan after every cleaning session. Failure to follow these steps can result in damaged equipment or personal injury.

WARNING

Inhalation of certain refrigerants can be harmful, or even fatal. Failure to implement proper detection devices, ventilation, and procedures can result in serious injury or death. Ventilation of all refrigerants should follow all related regulations, as certain refrigerants are harmful to the environment. For more information, refer to any local or national codes that may apply.

WARNING

High temperatures can cause damage to the equipment. The expansion valve must be covered in heat absorbent material and the suction line sensor removed while brazing the refrigerant connections.

NOTICE

Never use the refrigerant compressor to evacuate the equipment. Never start the refrigerant compressor if it is in vacuum.

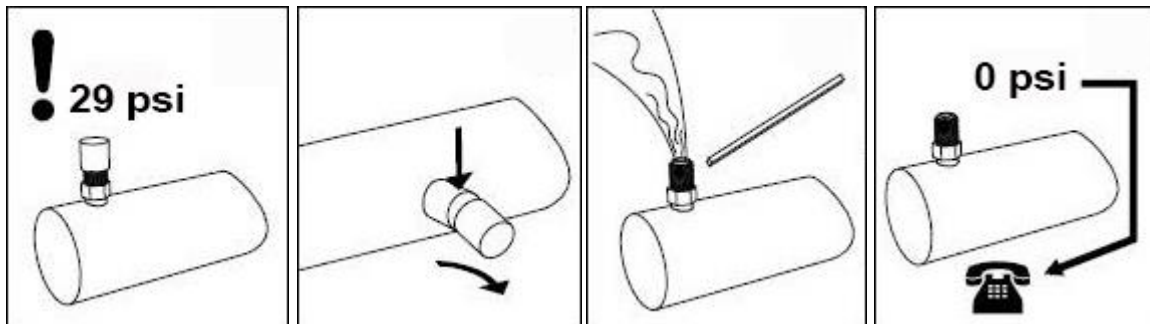
NOTICE

Fan motors are sealed and do not require lubrication.

3. Inspection

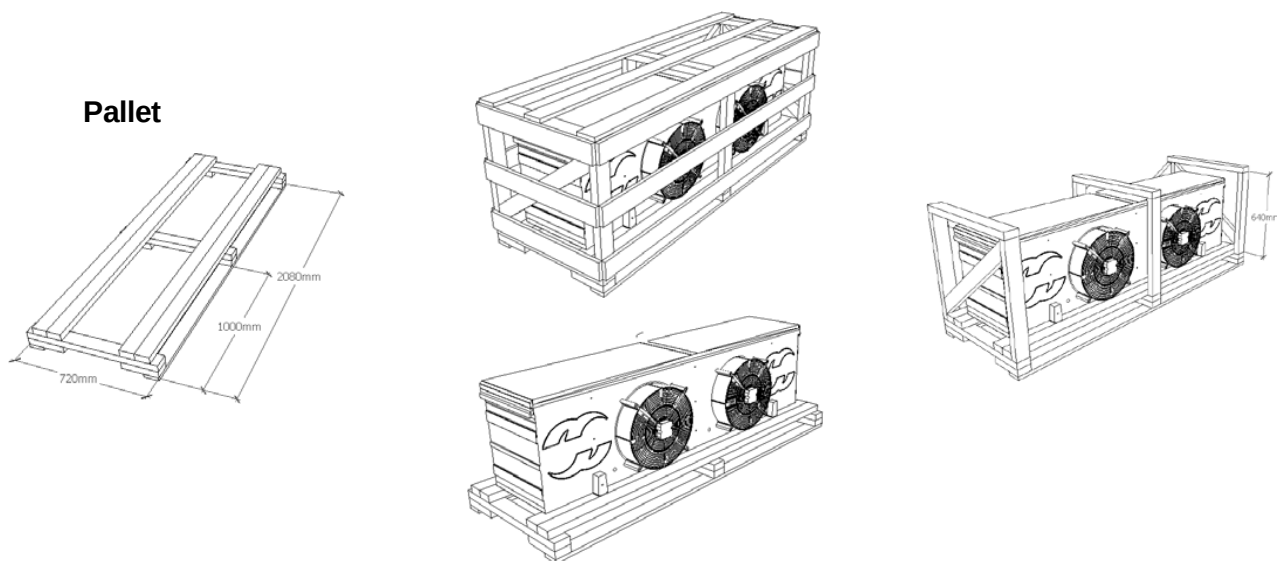
Every shipment must be thoroughly verified against the bill of lading at the time of receipt. The shipment receipt should not be signed until all items listed in the bill of lading have been recorded. Inspect thoroughly for any damage. Any shortage or damage must be reported to the carrier. If the equipment has sustained damage during transportation, the transportation carrier shall be held responsible. Equipment should not be returned unless previous authorization has been issued. The equipment is pressurized at 29 psi (2 Bar) with dry air during manufacture. If pressure loss occurs during transportation, contact our warranties department: warranties.mx@guentner.com

For special requirements, please contact our factory.



4. Unloading

Special care should be taken during unpacking or uncrating of equipment so as to prevent any damage or injury. The equipment should remain on its pallet until ready for final installation. When using lifting straps, make sure to use a spreader bar and make sure the straps do not compress the equipment's metal construction. When using lifting straps, be sure to use a spreader bar and make sure that the straps do not compress the sheet metal construction. When using a forklift, make sure the unit is positioned as shown in the following image.

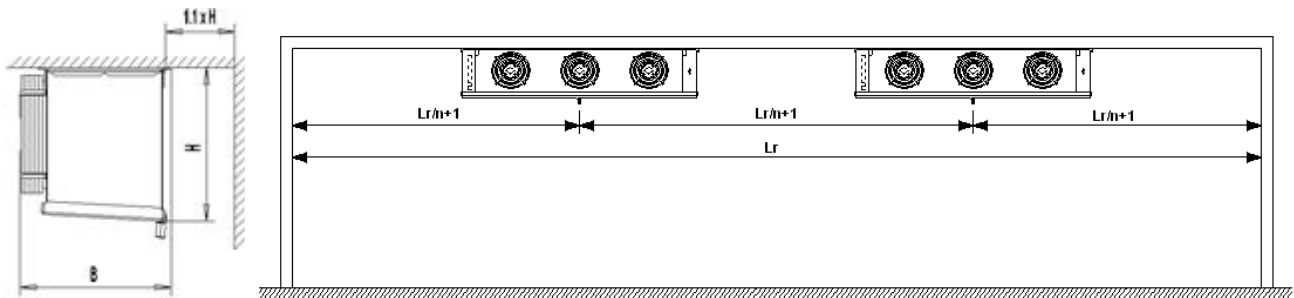


5. Mounting

The equipment may be mounted using iron rod supports, sheet metal screws or bolts. Units should be hung with no inclination, so condensate drainage works properly. An appropriate flow of air through the unit is essential for efficient operation and to maintain warehouse design temperatures. Never install an evaporator above a door.

Model	Connections		Approximate Weight		Dimensions (inches-mm)							
	Coil inlet (OD)	Suction (OD)	lbs	kgs	A	B	C	D	E	F	G	H
Physical information GAM (Air Defrost) 6 FPI												
GAM 0135.1	5/8	3/4	73	33	51 7/16" 1307	22 15/16" 583	21 1/2" 546	26 3/4" 680	11 5/16" 288	1 1/4" N PT	17 11/16" 449	1 5/8" 41
GAM 0150.1	5/8	3/4	75	34	51 7/16" 1307	22 15/16" 583	21 1/2" 546	26 3/4" 680	11 5/16" 288	1 1/4" N PT	17 11/16" 449	1 5/8" 41
GAM 0240.1	5/8	7/8	116	53	78" 1980	22 15/16" 583	21 1/2" 546	53 9/16" 1360	11 5/16" 288	1 1/4" N PT	17 11/16" 449	1 5/8" 41
GAM 0310.1	5/8	1 1/8	127	58	78" 1980	22 15/16" 583	21 1/2" 546	53 9/16" 1360	11 5/16" 288	1 1/4" N PT	17 11/16" 449	1 5/8" 41
GAM 0370.1	5/8	1 1/8	161	73	104 3/8" 2652	22 15/16" 583	21 1/2" 546	80 5/16" 2040	11 5/16" 288	1 1/4" N PT	17 11/16" 449	1 5/8" 41
GAM 0450.1	5/8	1 3/8	178	81	104 3/8" 2652	22 15/16" 583	21 1/2" 546	80 5/16" 2040	11 5/16" 288	1 1/4" N PT	17 11/16" 449	1 5/8" 41
GAM 0530.1	5/8	1 5/8	214	97	131 3/16" 3332	22 15/16" 583	21 1/2" 546	53 9/16" 1360	11 5/16" 288	1 1/4" N PT	17 11/16" 449	1 5/8" 41
GAM 0610.1	7/8	1 5/8	221	100	131 3/16" 3332	22 15/16" 583	21 1/2" 546	53 9/16" 1360	11 5/16" 288	1 1/4" N PT	17 11/16" 449	1 5/8" 41
GAM 0715.1	5/8	1 5/8	234	106	131 3/16" 3332	22 15/16" 583	21 1/2" 546	53 9/16" 1360	11 5/16" 288	1 1/4" N PT	17 11/16" 449	1 5/8" 41
GAM 0135.1	5/8	3/4	73	33	51 7/16" 1307	22 15/16" 583	21 1/2" 546	26 3/4" 680	11 5/16" 288	1 1/4" N PT	17 11/16" 449	1 5/8" 41
Physical information GEM / GGM (Electric / Hot gas Defrost) 6.5 FPI												
GEM/GGM 0115.1	5/8	7/8	82	37	51 7/16" 1307	22 15/16" 583	21 1/2" 546	26 3/4" 680	11 5/16" 288	1 1/4" N PT	17 11/16" 449	1 5/8" 41
GEM/GGM 0145.1	5/8	7/8	91	42	51 7/16" 1307	22 15/16" 583	21 1/2" 546	26 3/4" 680	11 5/16" 288	1 1/4" N PT	17 11/16" 449	1 5/8" 41
GEM/GGM 0190.1	5/8	1 1/8	129	58	78" 1980	22 15/16" 583	21 1/2" 546	53 9/16" 1360	11 5/16" 288	1 1/4" N PT	17 11/16" 449	1 5/8" 41
GEM/GGM 0270.1	5/8	1 3/8	145	66	78" 1980	22 15/16" 583	21 1/2" 546	53 9/16" 1360	11 5/16" 288	1 1/4" N PT	17 11/16" 449	1 5/8" 41
GEM/GGM 0325.1	5/8	1 3/8	193	88	104 3/8" 2652	22 15/16" 583	21 1/2" 546	80 5/16" 2040	11 5/16" 288	1 1/4" N PT	17 11/16" 449	1 5/8" 41
GEM/GGM 0390.1	5/8	1 5/8	198	90	104 3/8" 2652	22 15/16" 583	21 1/2" 546	80 5/16" 2040	11 5/16" 288	1 1/4" N PT	17 11/16" 449	1 5/8" 41
GEM/GGM 0440.1	7/8	1 3/8	251	114	131 3/16" 3332	22 15/16" 583	21 1/2" 546	53 9/16" 1360	11 5/16" 288	1 1/4" N PT	17 11/16" 449	1 5/8" 41
GEM/GGM 0520.1	7/8	1 5/8	258	117	131 3/16" 3332	22 15/16" 583	21 1/2" 546	53 9/16" 1360	11 5/16" 288	1 1/4" N PT	17 11/16" 449	1 5/8" 41
GEM/GGM 0620.1	7/8	1 5/8	277	125	131 3/16" 3332	22 15/16" 583	21 1/2" 546	53 9/16" 1360	11 5/16" 288	1 1/4" N PT	17 11/16" 449	1 5/8" 41
Physical information GDM / GKM (Electric / Hot gas Defrost) 4 FPI												
GDM/GKM 0110.1	5/8	7/8	100	46	55 7/8" 1420	22 9/16" 573	25 7/16" 646	31 1/2" 800	11 5/16" 288	1 1/4" N PT	17 11/16" 449	1 5/8" 41
GDM/GKM 0170.1	5/8	1 1/8	166	75	87 3/8" 2220	22 9/16" 573	25 7/16" 646	63" 1600	11 5/16" 288	1 1/4" N PT	17 11/16" 449	1 5/8" 41
GDM/GKM 0235.1	5/8	1 3/8	176	80	87 3/8" 2220	22 9/16" 573	25 7/16" 646	63" 1600	11 5/16" 288	1 1/4" N PT	17 11/16" 449	1 5/8" 41
GDM/GKM 0265.1	5/8	1 3/8	231	105	118 7/8" 3020	22 9/16" 573	25 7/16" 646	94 1/2" 2400	11 5/16" 288	1 1/4" N PT	17 11/16" 449	1 5/8" 41
GDM/GKM 0340.1	7/8	1 5/8	252	114	118 7/8" 3020	22 9/16" 573	25 7/16" 646	94 1/2" 2400	11 5/16" 288	1 1/4" N PT	17 11/16" 449	1 5/8" 41
GDM/GKM 0370.1	5/8	1 3/8	303	138	150 3/8" 3820	22 9/16" 573	25 7/16" 646	63" 1600	11 5/16" 288	1 1/4" N PT	17 11/16" 449	1 5/8" 41
GDM/GKM 0470.1	7/8	1 5/8	331	150	150 3/8" 3820	22 9/16" 573	25 7/16" 646	63" 1600	11 5/16" 288	1 1/4" N PT	17 11/16" 449	1 5/8" 41
GDM/GKM 0540.1	7/8	1 5/8	342	155	150 3/8" 3820	22 9/16" 573	25 7/16" 646	63" 1600	11 5/16" 288	1 1/4" N PT	17 11/16" 449	1 5/8" 41

Mounting reference GAM – GEM – GDM – GGM – GKM



n = number of units install
Lr = room length

Notes

- Do not place the cooler above or next to a door.
- Do not place product right in front of the cooler.
- Do not place coolers one in front of each other at a distance less that the air throw stated in the technical specifications sheet.
- In case there are any units with electric defrost, make sure to leave a minimum clearance equal to the length of the unit on the electrical connection side to remove the electrical heaters in case of failure.
- Minimum distance between units must be 1 meter for hot gas and air defrost units.
- If there is no adequate space or the room is of a special construction, please contact our local sales office for assistance on unit mounting.
- The air cooler should have an air discharge clearance for air throw.

6. Refrigerant piping

The type, size and installation of piping must be according to the recommended and accepted practices for refrigeration applications. All low temperature piping must also be insulated to ASHRAE standards. Traps must be used at suction in case the suction line is routed above the cooling unit.

7. Expansion valve

For direct expansion units, choose an expansion valve based on capacity information and on the requirements of the valve manufacturer. Expansion valves with external equalizer should be used. When temperature has reached design conditions, adjust the expansion valve in order to get 8 to 10 °F of superheat at the suction line. Expansion valve must be installed according to the manufacturer's specific recommendations. Units requiring an expansion valve with external equalizer must have that line connected. Properly locating the bulb is extremely important for proper coil operation. Good thermal contact with the suction line is also essential. On soldered on valves, wrap a wet cloth around the valve during installation to protect it from overheating and damage. On multiple evaporator systems, the piping must be placed so that the flow of any valve does not affect another valve's bulb.

8. Drain line

All drain lines exposed to freezing temperatures must be fitted with heaters and be insulated. Drain line traps must also be heated to prevent freezing of both the drain line and the trap.

9. Wiring

All wiring must be performed in strict compliance with local and national electrical codes. Fans, local insulation, electrical heaters and controllers must be wired in accordance to the electrical wiring diagrams provided. Only properly sized copper conductors should be used. All electrical installation work must be performed by qualified and authorized personnel.

⚠ WARNING

For thermal protection of the motor, the thermal contacts installed must be used and wired in accordance to the circuit diagram affixed to the unit.

10. Installation

Installation and maintenance of this equipment must be conducted only by qualified personnel familiar with this type of machinery. The equipment is pressurized with dry air. All equipment must be evacuated prior to charging the system with refrigerant. All field wiring must be verified and be made according to equipment requirements and in compliance with all local and national codes. Use the electrical information in the name plate to determine the size of conductors and fuses. Avoid contact with sharp edges or any sharp coil surfaces because they represent potential for injury. Make sure all power sources have been disconnected prior to performing any service work in the equipment.

⚠ WARNING

Before starting up the unit, make sure all accessible electrical parts are secured.

11. Vacuum

Proper vacuum is essential prior to charging refrigerant into the system. This prevents many problems that might arise due to lack of care in this step. The system must be verified in all cycles to ensure proper operation.

12. Start up

- When starting up, the next steps should be taken:
- Verify all threaded connections.
- Verify electrical connections to motors and heaters and additional components if applicable.
- Run the fans and verify rotation direction. Make sure there is no transport damage.
- During the test, observe the equipment and pay attention to the following:
 - Verify silent operation of fans (bearings, contacts, balance)
 - Check electrical motor power requirements
 - Verify the absence of leaks.
 - Adjust the expansion valve for proper overheating
- After 24 hours of operation, verify equipment again, especially the rotating parts.

13. Maintenance and service

⚠ WARNING

Disconnect all power sources prior to servicing!

13.1 Fans and heaters

The only electrical components that are prone to malfunctioning are fans, motors and electrical heaters. In case of motor or heater failure, the affected part should be removed from the unit and tested separately. If the motor and/or heaters still do not work, they must be replaced.

13.2 Drain pan

Periodic inspection of the drain pan is recommended. Build-up of dirt and dust must be cleaned using hot water. If there are any apparent signs of improper drainage, the slope of the drain line, the heater of the drain line (if applicable) and the drain trap must be checked for proper operation. The unit may be cleaned using hot water. Special care must be given to the unit's electrical areas including the motor, wiring and junction box. Water may damage the electrical motor.

13.3 Inspection and maintenance

Verify the following items when conducting a visual inspection of the equipment:

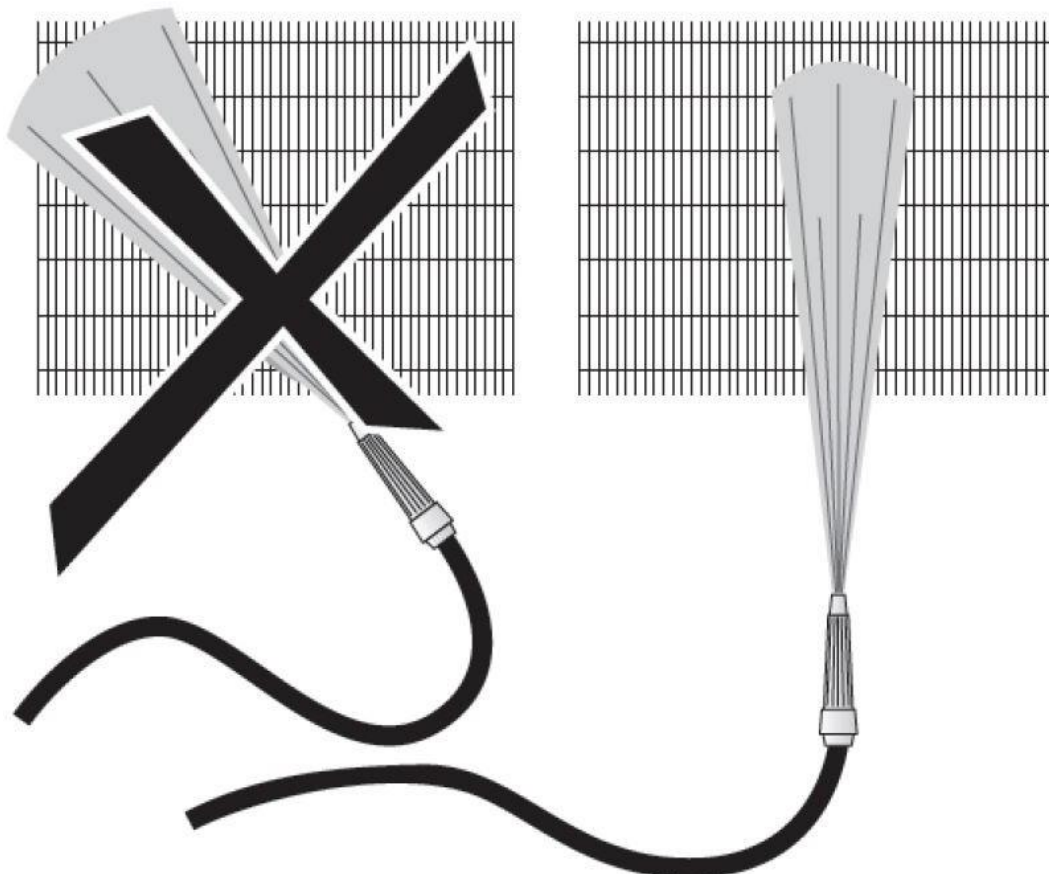
- Secure threaded connections.
- Leaks.
- Silent fan operation.
- General unit condition, such as cleanliness and corrosion.

Finned heat exchanger cleaning is extremely important to ensure proper equipment operation and long service life.

- There is no rule of thumb on how often cleaning must be performed. Cleaning frequency and method depend on the client and must be determined by client's operating personnel. If necessary, the ice must be defrosted with water at 15° - 20° Celsius degrees temperature.
- The equipment is always delivered clean. If, during installation and/or during the first hours of operations dirt builds up to such an extent that it might affect equipment capacity, the unit must be cleaned before starting operation.
- In order to clean the unit, **it must be turned off and all power sources must be disconnected.**

Hydraulic cleaning of heat exchanger

- When using chemicals, make sure they do not damage heat exchanger materials or housing. Rinse the heat exchanger and the housing after treatment.
- When cleaning with liquid or compressed air, fans must be turned off. Do not spray directly.
- Clean the coil from top to bottom so dirt flows downwards. Cleaning must continue until all dirt has been removed.
- **Always clean / spray towards the fins.**
- **Never clean at 90° to the fins!**
- Maximum allowed vapor pressure: 6 bar. Maximum allowed water pressure before the outlet: 80 to 100 bar.

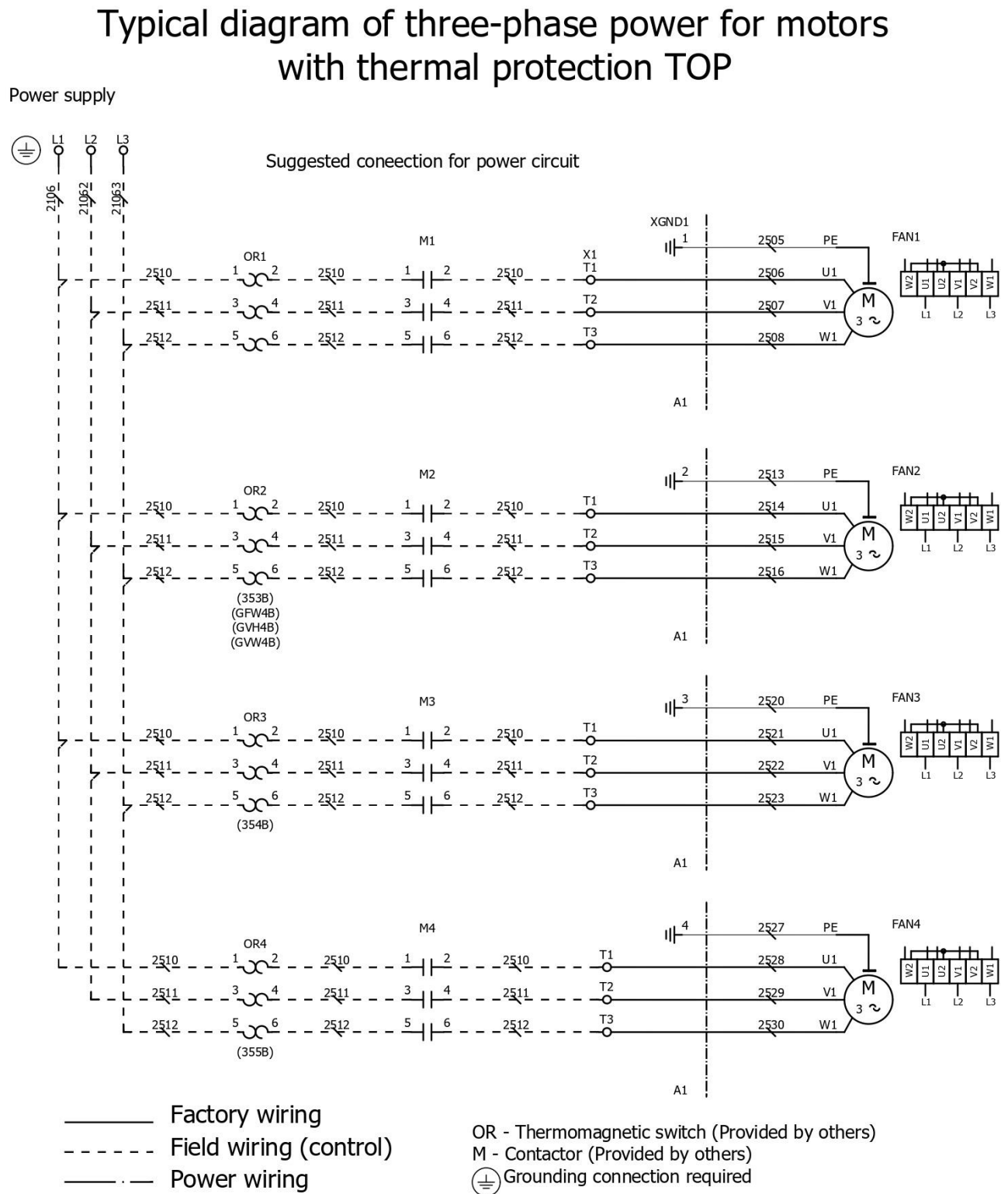


Preventive maintenance for commercial evaporators	As Required	Every Month	Every 3 Months	Every 6 Months	Every Year
CLEAN using a brush, pressurized water or mild detergent. Make sure the product being used is appropriate for this application. NEVER USE ACID-BASED CLEANER.	X				
CHECK that fans rotate freely and quietly.		X			
REPLACE any motor if it vibrates or makes unusual noise.	X				
INSPECT the unit for unusual vibrations in fans or housing. Identify the fan that is causing vibration.		X			
INSPECT the drain pan to make sure the drain is free from obstructions, including ice buildup.		X			
INSPECT for ice buildup on the coil.		X			
CHECK defrost controller calibration.	X		X		
CHECK that heaters are working properly during defrost, Including the heater of drain piping.			X		
VERIFY heater power consumption by comparing it to the data in the electrical diagram				X	
CHECK that the drain line is working properly.		X			
CHECK that all fan screws are tight. Tighten them if necessary.				X	
CHECK that there is no corrosion in fins, pan, housing, soldered joints or copper pipes.					X
CHECK that there are no grease stains in coil headers, return bends or fins.					X
VERIFY there are no possible leaks.					X
CHECK that wiring is in good conditions and protected. Replace protection if necessary.					X
CHECK that all ground connections are tight.					X

14. Electrical data

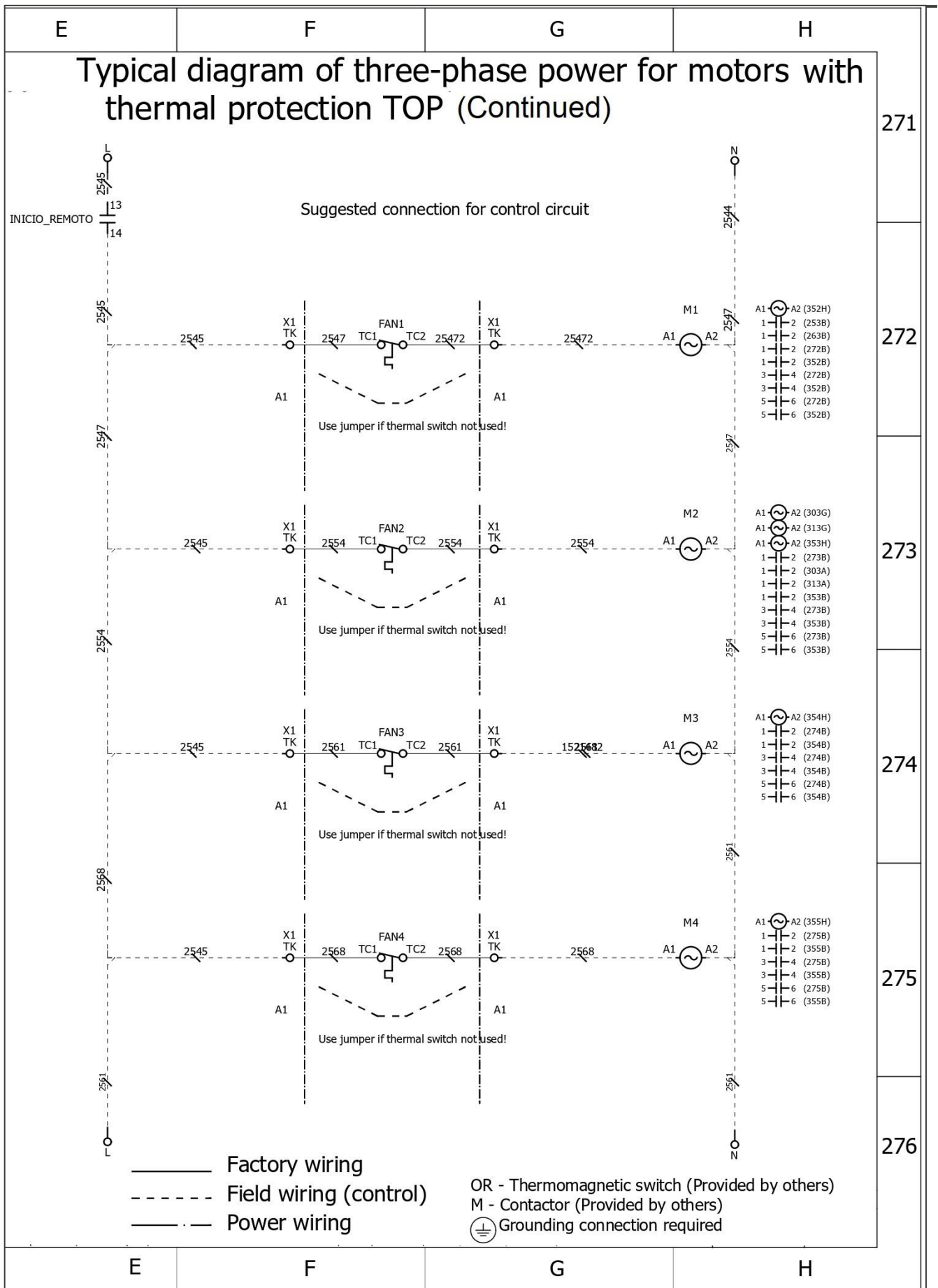
Model	Fans	Electrical data																				
		230 V / 1Ph / 60 Hz			Heaters 230 V 1 Ph		230 V / 3Ph / 60 Hz			Heaters 230 V 3 Ph		400 V / 3ph / 60 Hz			Heaters 400 V 3 Ph			460 V / 3Ph / 60 Hz			Heaters 460 V 3 Ph	
Watt S	Amp S	Total Amp S	Watt S	Amp S	Watt S	Amp S	Total Amp S	Watt S	Amp S	Watt S	Amp S	Total Amp S	Watt S	Amp S	Watt S	Amp S	Total Amp S	Watt S	Amp S			
GEM / GGM (Electric defrost / Hot gas) 6.5 FPI capacity																						
GEM/GG M 0115.1	1	260	1.14	1.14	2500	10.8 7	205	0.62	0.62	2500	6.61	205	0.36	0.36	2500	6.61	230	0.33	0.33	2500	3.31	
GEM/GG M 0145.1	1	260	1.14	1.14	3250	14.1 3	205	0.62	0.62	3250	8.49	205	0.36	0.36	3250	8.49	230	0.33	0.33	3250	4.24	
GEM/GG M 0190.1	2	260	1.14	2.28	4500	19.5 7	205	0.62	1.24	4500	11.9	205	0.36	0.72	4500	11.9	230	0.33	0.66	4500	5.95	
GEM/GG M 0270.1	2	260	1.14	2.28	5850	25.4 3	205	0.62	1.24	5850	15.2 8	205	0.36	0.72	5850	15.2 8	230	0.33	0.66	5850	7.64	
GEM/GG M 0325.1	3	260	1.14	3.42	7800	33.9 1	205	0.62	1.86	7800	20.3 7	205	0.36	1.08	7800	20.3 7	230	0.33	0.99	7800	10.1 9	
GEM/GG M 0390.1	3	260	1.14	3.42	7800	33.9 1	205	0.62	1.86	7800	20.3 7	205	0.36	1.08	7800	20.3 7	230	0.33	0.99	7800	10.6 9	
GEM/GG M 0440.1	4	260	1.14	4.56	1040 0	45.2 2	205	0.62	2.48	1040 0	27.1 7	205	0.36	1.44	1040 0	27.1 7	230	0.33	1.32	1040 0	13.5 8	
GEM/GG M 0520.1	4	260	1.14	4.56	1040 0	45.2 2	205	0.62	2.48	1040 0	27.1 7	205	0.36	1.44	1040 0	27.1 7	230	0.33	1.32	1040 0	13.5 8	
GEM/GG M 0620.1	4	260	1.14	4.56	1120 0	48.7	205	0.62	2.48	1120 0	30.1 2	205	0.36	1.44	1120 0	30.1 2	230	0.33	1.32	1120 0	15.6	
GDM / GKM (Electric defrost / Hot gas) 4 FPI capacity																						
GDM/GK M 0110.1	1	600	2.76	2.76	3000	13.4 0	530	1.6	1.6	3000	7.93	640	0.86	0.86	3000	7.93	640	0.86	0.86	3000	3.97	
GDM/GK M 0170.1	2	600	2.76	5.52	5500	23.9 1	530	1.6	3.2	5500	15.0 6	640	0.86	1.72	5500	15.0 6	640	0.86	1.72	5500	7.53	
GDM/GK M 0235.1	2	600	2.76	5.52	6500	28.2 6	530	1.6	3.2	6500	16.9 8	640	0.86	1.72	6500	16.9 8	640	0.86	1.72	6500	8.49	
GDM/GK M 0265.1	3	600	2.76	8.28	7700	33.4 8	530	1.6	4.8	7700	21.0 9	640	0.86	2.58	7700	21.0 9	640	0.86	2.58	7700	10.5 4	
GDM/GK M 0340.1	3	600	2.76	8.28	9100	39.5 7	530	1.6	4.8	9100	23.7 7	640	0.86	2.58	9100	23.7 7	640	0.86	2.58	9100	11.8 9	
GDM/GK M 0370.1	4	600	2.76	11.0 4	9900	43.0 4	530	1.6	6.4	9900	27.1 1	640	0.86	3.44	9900	27.1 1	640	0.86	3.44	9900	13.5 6	
GDM/GK M 0470.1	4	600	2.76	11.0 4	1170 0	50.8 7	530	1.6	6.4	1170 0	30.5 6	640	0.86	3.44	1170 0	30.5 6	640	0.86	3.44	1170 0	15.2 8	
GDM/GK M 0540.1	4	600	2.76	11.0 4	1260 0	54.7 8	530	1.6	6.4	1260 0	33.8 9	640	0.86	3.44	1260 0	33.8 9	640	0.86	3.44	1260 0	16.9 4	

Model	Fans	Motor											
		230 V / 1 Ph / 60 Hz			230 V / 3 Ph / 60 Hz			400 V / 3ph / 60 Hz			460 V / 3 Ph / 60 Hz		
		Watts	Amps	Total Amps	Watts	Amps	Total Amps	Watts	Amps	Total Amps	Watts	Amps	Total Amps
GAM (Air defrost) 6 LPP Capacity													
GAM 0135.1	1	260	1.14	1.14	205	0.62	0.62	205	0.36	0.36	230	0.33	0.33
GAM 0150.1	1	260	1.14	1.14	205	0.62	0.62	205	0.36	0.36	230	0.33	0.33
GAM 0240.1	2	260	1.14	2.28	205	0.62	1.24	205	0.36	0.72	230	0.33	0.66
GAM 0310.1	2	260	1.14	2.28	205	0.62	1.24	205	0.36	0.72	230	0.33	0.66
GAM 0370.1	3	260	1.14	3.42	205	0.62	1.86	205	0.36	1.08	230	0.33	0.99
GAM 0450.1	3	260	1.14	3.42	205	0.62	1.86	205	0.36	1.08	230	0.33	0.99
GAM 0530.1	4	260	1.14	4.56	205	0.62	2.48	205	0.36	1.44	230	0.33	1.32
GAM 0610.1	4	260	1.14	4.56	205	0.62	2.48	205	0.36	1.44	230	0.33	1.32
GAM 0715.1	4	260	1.14	4.56	205	0.62	2.48	205	0.36	1.44	230	0.33	1.32



Drawing #: GENERIC_WIRING_DIAGRAM2

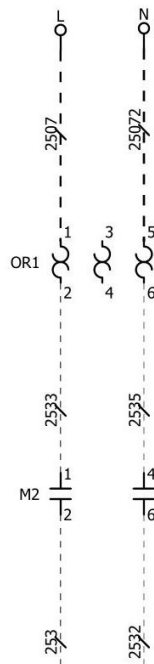
Rev.	Description	Name:	Date:
00	Created		



Typical diagram of single-phase power for electrical resistors

Power Supply

Suggested connection for power circuit



_____ Factory Wiring
 - - - - - Field Wiring (control)
 — — — — — Power Wiring

OR = Thermomagnetic switch (Provide by others)

M = Contactor (Provide by others)

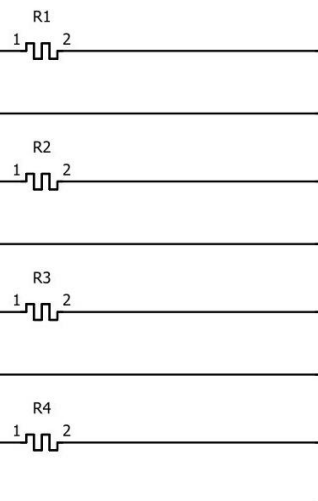
 = Grounding connection required

X2

H1

H2

X2 = Terminal board



Electrical resistors

Drawing #:

GENERIC_WIRING_DIAGRAM

Rev.	Description	Name:
00	Created	

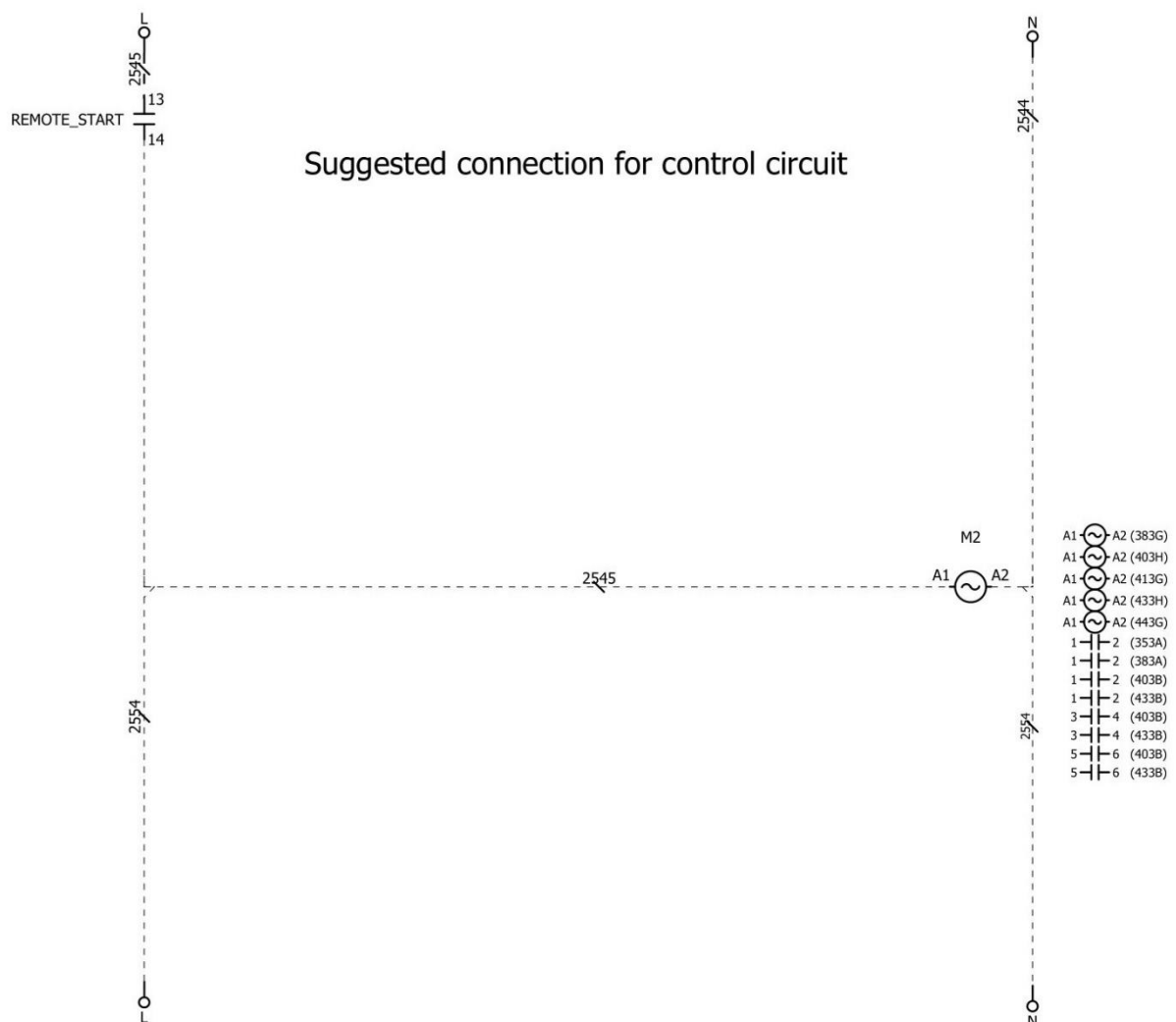
A

B

C

D

Typical diagram of single-phase power for electrical resistors (Continued)

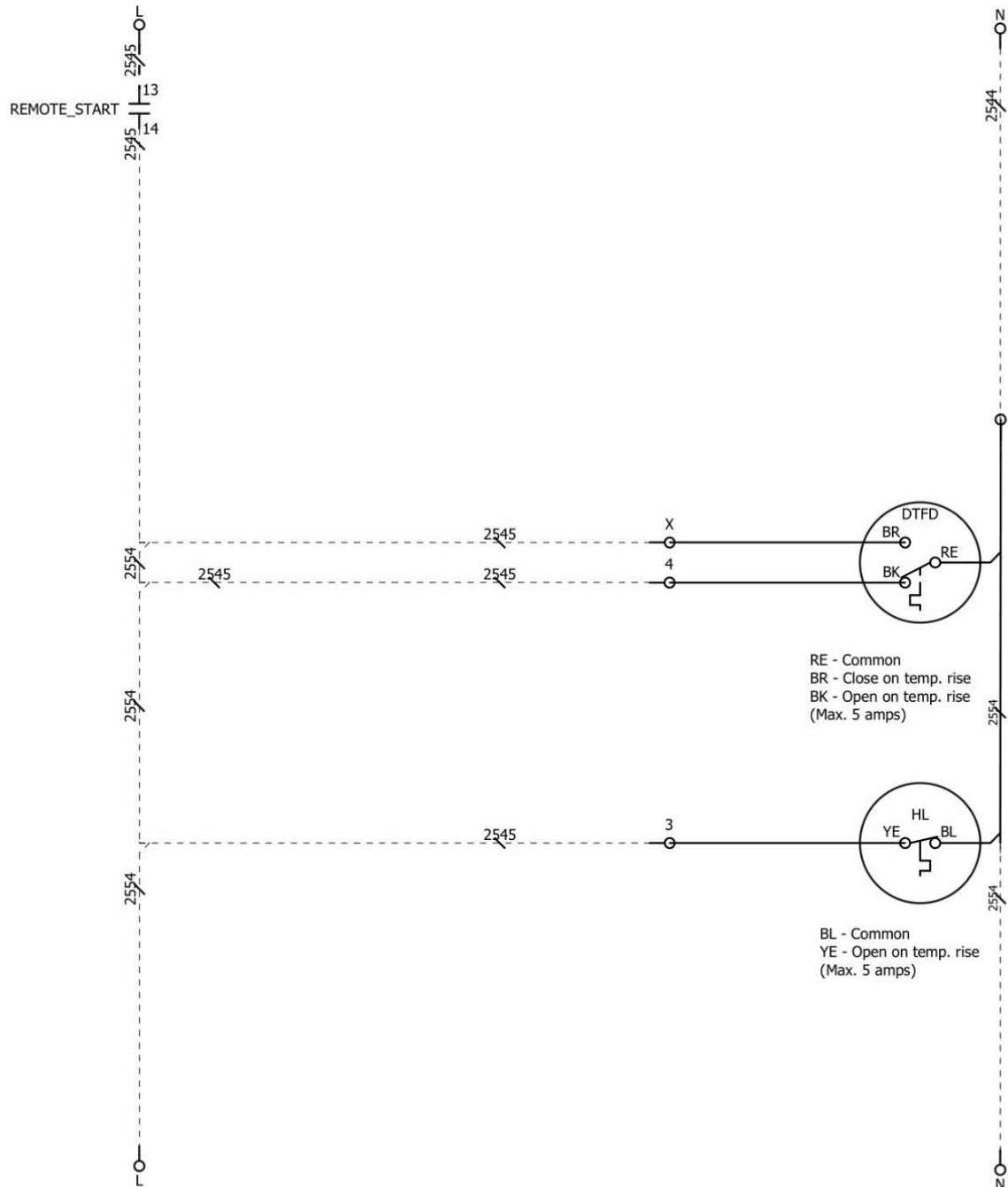


_____ Factory Wiring
 - - - - - Field Wiring (control)
 _____ Power Wiring

OR = Thermomagnetic switch (Provide by others)
M = Contactor (Provide by others)
 = Grounding connection required

Date	Stored:	Checked:	Date:	Rev.	Description	Name:	Date	Stored:	Checked:	Date:	Loads	Previous page:	34	Page: 35	
													Next page:		36
												Doc-Nr.:	Total Pages:		12
											Index:				

Suggested connection for Thermostats



_____ Factory Wiring
 - - - - - Field Wiring (control)
 _____ . - - Power Wiring

M.1 = Contactor per fan (Provide by others)
M.2 = Contactor per electrical heating circuit (Provide by others)
C1 = Other electric devices provided by tohers (e.g.. electronic valve, compresor)
HL = Heat Limit
DTFD =Defrost termination fan delay

15. Spare parts

Model	Fan SPM			Main Junction Box			Defrost Sheet	Drain Sheet
	No. V.T.							
	230V- 1Ph	230V-3Ph	400V/460V-3Ph	230V-1Ph/60	230V-3Ph/60	460V-3Ph/60		
GAM 0135.1	VT0399U	VT0351U	VT0357U	5800	N/A	5802	AY010.292G	AZ157.2NG
GAM 0150.1	VT0399U	VT0351U	VT0357U	5800	N/A	5802	AY010.292G	AZ157.2NG
GAM 0240.1	VT0399U	VT0351U	VT0357U	5800	N/A	5802	AY010.290G	AZ157.2NG
GAM 0310.1	VT0399U	VT0351U	VT0357U	5800	N/A	5802	AY010.290G	AZ157.2NG
GAM 0370.1	VT0399U	VT0351U	VT0357U	5800	N/A	5802	AY010.295G	AZ157.2NG
GAM 0450.1	VT0399U	VT0351U	VT0357U	5800	N/A	5802	AY010.295G	AZ157.2NG
GAM 0530.1	VT0399U	VT0351U	VT0357U	5800	N/A	5802	AY010.298G	AZ157.2NG
GAM 0610.1	VT0399U	VT0351U	VT0357U	5800	N/A	5802	AY010.298G	AZ157.2NG
GAM 0715.1	VT0399U	VT0351U	VT0357U	5800	N/A	5802	AY010.298G	AZ157.2NG

Model	Fan SPM			Main Junction Box			Defrost Sheet	Drain Sheet	Coil Heaters	Tray Heaters
	No. V.T.									
	230V- 1Ph	230V-3Ph	400V/460V-3Ph	230V- 1Ph	230V-3Ph	460V-3Ph				
GEM 0115.1	VT0399U	VT0351U	VT0357U	57752	5811	5803	AY010.292G	AZ157.2NG	U20GD10000250230	U20GD10000250230
GEM 0145.1	VT0399U	VT0351U	VT0357U	57752	5811	5803	AY010.292G	AZ157.2NG	U20GD10000250230	U20GD10000250230
GEM 0190.1	VT0399U	VT0351U	VT0357U	57752	5811	5803	AY010.290G	AZ157.2NG	U20GD16800450230	U20GD16800450230
GEM 0270.1	VT0399U	VT0351U	VT0357U	57752	5811	5803	AY010.290G	AZ157.2NG	U20GD16800450230	U20GD16800450230
GEM 0325.1	VT0399U	VT0351U	VT0357U	57752	5811	5803	AY010.295G	AZ157.2NG	U20GD23600600230	U20GD23600600230
GEM 0390.1	VT0399U	VT0351U	VT0357U	57752	5811	5803	AY010.295G	AZ157.2NG	U20GD23600600230	U20GD23600600230
GEM 0440.1	VT0399U	VT0351U	VT0357U	57752	5811	5803	AY010.298G	AZ157.2NG	U20GD30400800230	U20GD30400800230
GEM 0520.1	VT0399U	VT0351U	VT0357U	57752	5811	5803	AY010.298G	AZ157.2NG	U20GD30400800230	U20GD30400800230
GEM 0620.1	VT0399U	VT0351U	VT0357U	57752	5811	5803	AY010.298G	AZ157.2NG	U20GD30400800230	U20GD30400800230

Model	Fan SPM			Main Junction Box			Defrost Sheet	Drain Sheet	Coil Heaters	Tray Heaters
	No. V.T.									
	230V- 1Ph	230V-3Ph	400V/460V-3Ph	230V- 1Ph	230V- 3Ph	460V- 3Ph				
GDM 0110.1	VT0340U	VT0352U	VT0358U	57752	5811	5803	AY010.311G	AZ157.2NG	U20GD11200300230	U20GD11200300230
GDM 0170.1	VT0340U	VT0352U	VT0357U	57752	5811	5803	AY010.310G	AZ157.2NG	U20GD19200500230	U20GD19200500230
GDM 0235.1	VT0340U	VT0352U	VT0358U	57752	5811	5803	AY010.310G	AZ157.2NG	U20GD19200500230	U20GD19200500230
GDM 0265.1	VT0340U	VT0352U	VT0358U	57752	5811	5803	AY010.281G	AZ157.2NG	U20GD27200700230	U20GD27200700230
GDM 0340.1	VT0340U	VT0352U	VT0358U	57752	5811	5803	AY010.281G	AZ157.2NG	U20GD27200700230	U20GD27200700230
GDM 0370.1	VT0340U	VT0352U	VT0357U	57752	5811	5803	AY010.281G	AZ157.2NG	U20GD35200900230	U20GD35200900230
GDM 0470.1	VT0340U	VT0352U	VT0358U	57752	5811	5803	AY010.309G	AZ157.2NG	U20GD35200900230	U20GD35200900230
GDM 0540.1	VT0340U	VT0352U	VT0358U	57752	5811	5803	AY010.309G	AZ157.2NG	U20GD35200900230	U20GD35200900230

Model	Fan SPM			Main Junction Box			Valve Check			Defrost Sheet	Drain Sheet	Tray Heater
	No. V.T.											
	230V-1Ph	230V-3Ph	400V/460V-3Ph	230V-3Ph	400V/460V-3Ph	400V/460V-3Ph	Valve Check 1	Valve Check 2	Valve Check 3			
GKM 0110.1	VT0340U	VT0352U	VT0358U	3640	1294	4512	60600	5494	5873	AY010.333G	AZ157.2NG	U20GD11200300230
GKM 0170.1	VT0340U	VT0352U	VT0357U	3640	1294	4512	60600	5494	5496	AY010.341G	AZ157.2NG	U20GD19200500230
GKM 0235.1	VT0340U	VT0352U	VT0358U	3640	1294	4512	60600	5494	5874	AY010.341G	AZ157.2NG	U20GD19200500230
GKM 0265.1	VT0340U	VT0352U	VT0358U	2027	1294	4512	60600	5494	5874	AY010.334G	AZ157.2NG	U20GD27200700230
GKM 0340.1	VT0340U	VT0352U	VT0358U	2027	1294	4512	60600	5494	5875	AY010.334G	AZ157.2NG	U20GD27200700230
GKM 0370.1	VT0340U	VT0352U	VT0357U	2028	1294	4512	60600	5494	5874	AY010.335G	AZ157.2NG	U20GD35200900230
GKM 0470.1	VT0340U	VT0352U	VT0358U	2028	1294	4512	60600	5494	5875	AY010.335G	AZ157.2NG	U20GD35200900230
GKM 0540.1	VT0340U	VT0352U	VT0358U	2028	1294	4512	60600	5494	5875	AY010.335G	AZ157.2NG	U20GD35200900230

Model	Fan SPM			Main Junction Box			Valve Check			Defrost Sheet	Drain Sheet	Tray Heater
	No. V.T.											
	230V-1Ph	230V-3Ph	400V/460V-3Ph	230V-3Ph	400V/460V-3Ph	400V/460V-3Ph	Valve Check 1	Valve Check 2	Valve Check 3			
GGM 0115.1	VT0399U	VT0351U	VT0357U	3640	1294	4512	60600	5494	5873	AY010.336G	AZ157.2NG	U20GD10000250230
GGM 0145.1	VT0399U	VT0351U	VT0357U	3640	1294	4512	60600	5494	5873	AY010.336G	AZ157.2NG	U20GD10000250230
GGM 0190.1	VT0399U	VT0351U	VT0357U	3640	1294	4512	60600	5494	5496	AY010.337G	AZ157.2NG	U20GD16800450230
GGM 0270.1	VT0399U	VT0351U	VT0357U	3640	1294	4512	60600	5494	5874	AY010.337G	AZ157.2NG	U20GD16800450230
GGM 0325.1	VT0399U	VT0351U	VT0357U	2027	1294	4512	60600	5494	5874	AY010.338G	AZ157.2NG	U20GD23600600230
GGM 0390.1	VT0399U	VT0351U	VT0357U	2027	1294	4512	60600	5494	5875	AY010.338G	AZ157.2NG	U20GD23600600230
GGM 0440.1	VT0399U	VT0351U	VT0357U	2028	1294	4512	60600	5494	5874	AY010.339G	AZ157.2NG	U20GD30400800230
GGM 0520.1	VT0399U	VT0351U	VT0357U	2028	1294	4512	60600	5494	5875	AY010.339G	AZ157.2NG	U20GD30400800230
GGM 0620.1	VT0399U	VT0351U	VT0357U	2028	1294	4512	60600	5494	5875	AY010.339G	AZ157.2NG	U20GD30400800230

16. Troubleshooting

Symptom	Possible causes	Possible corrective actions
1. Fan does not work.	1.1 Main switch open.	1.1.1 Close switch.
	1.2 Fuses blown.	1.2.1 Check for short circuit or overloads. Replace damaged fuses.
	1.3 Damaged timer or thermostat.	1.3.1 Replace controller.
	1.4 Unit is in defrost cycle.	1.4.1 Wait for end of a cycle.
	1.5 Coil does not cool down enough to reset thermostat.	1.5.1 Increase fan waiting time after defrost cycle.
	1.6 Motor is burnt.	1.6.1 Verify there is no over-voltage and replace motor.
	1.7 Fan does not start.	1.7.1 Check for obstructions (ice, waste, etc.) and remove them. 1.7.2 Check for short circuits exist in fan junction box and repair.
2. Room temperature is too high.	2.1 Room thermostat setting is too high.	2.1.1 Lower thermostat setting.
	2.2 Overheating is too high.	2.2.1 Verify whether expansion valve is feeding properly and clean strainer mesh. 2.2.2 Verify that bulb is located at right position and adjust if necessary. 2.2.3 Adjust overheating at expansion valve. 2.2.4 Verify that refrigerant charge is not too low.
	2.3 Low refrigerant in the system.	2.3.1 Check for leaks and charge system with additional refrigerant.
	2.4 Ice formation on coil.	2.4.1 Perform manual defrost of coil. Check defrost system.
	2.5 Cooling unit is too close to a door.	2.5.1 Relocate unit or add strip/air curtains on door.
	2.6 Excess air infiltration due to open doors.	2.6.1 Check doors seals and replace if necessary.
	2.7 Product has just been added to cold room.	2.7.1 Wait for product temperature to come down.
	2.8 The system is off.	2.8.1 Turn on the refrigeration system.
	2.9 Power surge in system fails.	2.9.1 Restore power surge.
	2.10 Air flow in room is difficult.	2.10.1 Verify that all fans spinning in the right direction. 2.10.2 See possible cause 1.7 2.10.3 See symptom 4. 2.10.4 Go over unit location recommendations.
	2.11 Pressure drop across evaporator is too high.	2.11.1 Replace expansion valve with valve, maintain external pressure equalization, adjust superheat on valve.

Symptom	Possible causes	Possible corrective actions
2. Room temperature is too high.	2.12 Lack of subcooling in the system	2.12.1 Establish subcooling in the system.
	2.13 Pressure drop in the valve is higher than valve's design pressure.	2.13.1 Select a new valve with the desired pressure drop.
	2.14 The expansion valve becomes blocked with ice due to moisture in the system.	2.14.1 Change the dryer filter and clean the ice from the valve.
	2.15 Expansion valve is blocked with wax or other impurities.	2.15.1 Clean valve port and strainer. 2.15.2 Clean solenoid valve and its filter. 2.15.3 Replace the oil in the refrigeration system.
	2.16 The expansion valve is too small.	2.16.1 Select and replace the valve one of greater capacity or port.
	2.17 Expansion valve bulb charge was lost.	2.17.1 Replace the valve (or the powerhead if possible).
	2.18 Wrong selection of expansion valve powerhead.	2.18.1 Select powerhead according to application.
	2.19 Expansion valve bulb does not make good contact with suction line.	2.19.1 Fasten bulb to suction line adequately.
	2.20 Expansion valve bulb is not insulated.	2.20.1 Place insulation all over the bulb.
	2.21 Expansion valve bulb is too close to large valves, flanges, headers or riser pipe.	2.21.1 Replace expansion valve with a valve with external pressure equalization, adjust superheat at valve.
3. Ice buildup in ceiling around evaporator and / or in orifices or fan nozzles, blades or grid.	3.1 Defrost cycle is too long.	3.1.1 Shorten defrost cycle.
	3.2 Fan delay does not work after defrost cycle.	3.2.1 Adjust defrost thermostat properly, or see 3.3.
	3.3 Defective defrost thermostat or timer.	3.3.1 Replace defective component.
	3.4 Too many defrost cycles.	3.4.1 Reduce the number of defrost cycles per day.
4. Coil is not cleared of ice after the defrost cycle.	4.1 Heater does not work.	4.1.1 Make sure all heaters are working.
	4.2 Hot gas supply is not enough.	4.2.1 Make sure there is enough volume of hot gas to defrost the unit.
	4.3 There are not enough defrost cycles per day.	4.3.1 Increase the number of defrost cycles per day.
	4.4 Defrost cycle is too short.	4.4.1 Increase time in the defrost thermostat or timer for longer cycle.
	4.5 Defrost thermostat or timer does not work.	4.5.1 Replace the component.
5. Uneven coil freezing during refrigeration cycle.	5.1 Distributor is in horizontal position.	5.1.1 Change distributor to vertical position.
	5.2 Distributor or capillaries are blocked.	5.2.1 Replace distributor with capillaries.
	5.3 After defrost, dripping time is too short.	5.3.1 Increase dripping time.
	5.4 Incorrect or missing distributor nozzle.	5.4.1 Add or substitute the nozzle with an adequately sized orifice for conditions.
	5.5 Located too close to a door opening.	5.5.1 Relocate the evaporator.

Symptom	Possible causes	Possible corrective actions
6. Ice buildup in drain pan.	6.1 Drain line heater does not work.	6.1.1 Check heater power supply. 6.1.2 Change drain line heater.
	6.2 Tray heater does not work.	6.2.1 Check heater power supply. 6.2.2 Change tray heater.
	6.3 Unit is improperly tilted.	6.3.1 Level unit to horizontal position.
	6.4 Drain line is clogged.	6.4.1 Clean drain line. 6.4.2 Insulate drain line properly (if clogged with ice).
	6.5 Thermostat is not working.	6.5.1 Replace defective component.
	6.6 Drain line has no water trap.	6.6.1 Install a water trap in the drain line outside the cold room.
	6.7 Drain pan was not correctly replaced on unit after maintenance.	6.7.1 Verify that drain pan is close to heaters or to the hot gas coil.
7. Water buildup in drain pan or water distributed outside unit.	7.1 The drain line clogged.	7.1.1 Clean drain line.
	7.2 Drain pan was not correctly replaced on unit after maintenance.	7.2.1 Make sure the drainage pan is levelled backwards.
	7.3 The unit is improperly tilted.	7.3.1 Level unit back to horizontal position.



17. Reference Data

Service record GAM – GEM – GDM – GGM – GKM

One data sheet must be completed for each installation and each cooler, with a copy for the owner, a copy for the installer and the original for **Güntner**. If another company is to provide the service and maintenance, additional copies should be prepared as necessary.

Güntner

System reference data

The refrigeration installation contractor must complete and sign the information below:

Date of installation of system _____
Installer name and address _____

Evaporator(s) _____

Evaporator Model No. _____

Evaporator serial number _____

Electrical system _____ Volts _____ Phases _____

Expansion valve brand and model _____

Environment at startup _____ °F

Box design temperature _____ °F

Box operating temperature _____ °F

Thermostat setting _____ °F

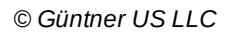
Defrost setting _____ / day _____ minutes fail proof _____ / day _____ minutes fail proof.

Evaporator suction line temperature _____ °F

Superheat at evaporator _____ °F

Discharge _____ No. of times _____ Final microns _____ No. of times _____ Final microns _____

Evaporator drain line with trap external to box Yes ☐ No ☐



This image shows a single page of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.