

WARNING! Read all instructions before installing or using the heater. Please adhere to instructions published in this manual. Failure to do so may be dangerous and may void certain provisions of your warranty.



Electric Convection Air Heaters for Hazardous Locations

CF1 ProVector® Series

Installation, Operation, & Maintenance Instructions



Approved Locations

Electric convection air heaters have an EC-Type Examination Certificate Demko No. 02ATEX0152068X for Ex db IIB, IIC T2-T4 Gb -45°C (-49°F) ≤ Ta ≤ 40°C (104°F)

CE 0539 Ex II 2 G IECEX UL 11.0020X

For Product Temperature Codes refer to CF1 Technical Data Chart in this manual. Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC. Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0: 2018, EN 60079-1: 2014
IEC 60079-0: 2017, IEC 60079-1: 2014

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A. HEATER MAINTENANCE CHECKLIST



WARNING. Disconnect heater from the power supply before opening enclosures or servicing heater.
Lock the switch in the **"OFF"** (open) position and/or tag the switch to prevent unexpected power application.
For heaters marked "IIC", ensure to loosen the setscrew before removing the cover.
This heater should only be serviced by personnel with heating and hazardous location equipment experience.

Heater Model _____ Date of Maintenance _____

Serial Number _____ Maintenance Done By _____

Comments _____

A.1 Periodic

- Clean
 - Finned tubes
 - Cabinet top and below unit

NOTE: Remove dust using compressed air. Do not spray with water or solvents. Do not immerse in water or solvents.

- Check
 - All explosion-proof covers for tightness.

A.2 Annual

- Electrical
 - Check all terminal connections and conductors. Tighten loose connections. Conductors with damaged insulation must be replaced.
 - Check service supply conduits, unions, and plugs for damaged items, and replace with Ex certified components suitable for the appropriate hazardous atmospheres.
 - Check seater unions, conduits, and plugs for damage and replace with Ex certified factory replacement parts.
 - Check that threaded joints are wrench tight.
- Mechanical
 - Check all enclosures. Inside of enclosures must be clean, dry and free of foreign materials.

NOTE: Enclosure joints are metal to metal. Do not use gasket material or sealant in joints.

- Check the tightness of all hardware. All nuts and bolts must be tight.
- Turn heater on for a minimum of five minutes. Check for warm air exiting heater through top vents.



For assistance, please call
Toll Free: 1-800-661-8529
U.S. & Canada

B. IMPORTANT NOTICES



WARNING. Read and adhere to the following installation instructions. FAILURE TO DO SO MAY RESULT IN SEVERE OR FATAL INJURY AND/OR POSSIBLE VOIDING OF THE WARRANTY.

1. Read and comply with all instructions in this manual.
2. Heater is to be used only in atmospheres having an ignition temperature higher than the heater's maximum rated operating temperature, as shown on the heater data plate. Refer to applicable electrical codes for additional information.
3. To reduce the risk of fire or explosion, do not install where the marked operating temperature exceeds the ignition temperature of the hazardous atmosphere.
4. Heater to be used only in the hazardous locations indicated on the heater data plate.
5. Heater is for dry, indoor use only. Do not immerse in water. Do not store or use in areas exposed to rain or snow.
6. Use supply wires suitable for 90°C (194°F) service.
7. Maximum ambient operating temperature 40°C (104°F).
8. Heater is to be connected and serviced only by a qualified electrician experienced with hazardous location equipment.
9. Heater requires a minimum clearance of 9.5 mm (3/8") to all the vertical surfaces and must be mounted a minimum of 203 mm (8") off the floor. To ensure adequate airflow, a minimum clearance of 203 mm (8") below and 457 mm (18") above the heater cabinet must be maintained.
10. Ensure external field-installed thermostat is suitable for the application.
11. Installation and wiring of the heater must adhere to all applicable codes.
12. Before opening any enclosures, disconnect the heater from the power supply. Lock the switch in the "OFF" (open) position and/or tag the switch to prevent unexpected power application.
13. External surfaces get hot and can cause burns with prolonged contact.
14. Ensure unit is permanently mounted level on a vertical surface using factory mounting brackets.
15. Heater must be kept clean. When operating in a dirty environment, regularly clean the finned tubes, top vents, and keep bottom opening free of obstructions. Follow the recommended maintenance procedures. Refer to the Section A. Heater Maintenance Checklist, page 3 for details.
16. Do not operate the heater in atmosphere corrosive to steel or aluminum.
17. Use factory approved replacement parts only.
18. Heater should be repaired by qualified personnel only.
19. To reduce the risk of ignition of hazardous atmospheres, conduit runs must have a conduit seal connected within 152 mm (6") of the enclosure. Conduit seals are not required in factory-installed conduits.
20. A stopping box, Ex certified for the same potentially explosive atmospheres as the heater, is required to be fitted immediately adjacent to the field entry.
21. If there are any questions or concerns regarding the heater, contact the factory. Refer to the last page of this manual for details.
22. For heaters that are identified as "suitable for storage temperatures up to 150°C (302°F) the installer must ensure that the supply conductors are rated for 150°C (302°F) and stopping box sealants are rated for 150°C (302°F).
23. The heater must be allowed to cool down for a period of 2 minutes after operating before any enclosure covers can be removed.

C. INSTALLATION

The installation instructions provide a general guideline for the installation and wiring of the heater.

All applicable codes must be adhered to.

C.1 Mechanical

Heaters must be installed as follows:

1. Location
 - 1.1 The air discharge is not directed at a thermostat.
 - 1.2 The air discharge is across areas of heat loss, such as windows.
 - 1.3 If equipment freeze protection is of importance, locate heater as close to equipment as possible.
2. Mounting
 - 2.1 Heater must be mounted level on a vertical surface using the factory supplied mounting brackets such that there are no obstructions to impede air inlet or discharge (Figure 2, page 5 and Figure 5, page 7).
3. The mounting surface must be strong enough to:
 - Support the heater's weight, refer to Section E. Specifications, page 8,
 - Withstand abusive situations such as transportable installations of the heater.
4. Secure mounting brackets to vertical surface with the top mounting hole 38 mm (1.5") below the desired top surface height (Figure 1, page 5). Refer to Figure 3 and Figure 4, page 6 for physical dimensions and Figure 5, page 7 for required installation clearances. Mounting brackets are to be spaced to match the slots in the rear panel of heater cabinet.
5. After mounting brackets are secured, tilt the heater and lower it onto the top tabs of the mounting bracket such that the tabs go into the mounting slots on the rear panel of the heater cabinet (Figure 2, page 5).
6. Carefully swing the bottom of the heater into the mounting brackets so that it is resting on the bottom tab (Figure 2, page 5).
7. Insert the securing screw through the bottom mounting bracket tab and into the cabinet to keep the heater from dislodging from the mounting bracket (Figure 2, page 5).

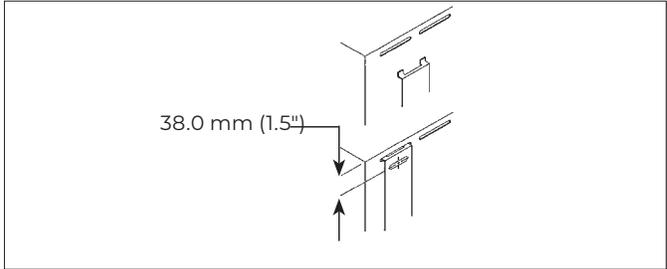


Figure 1

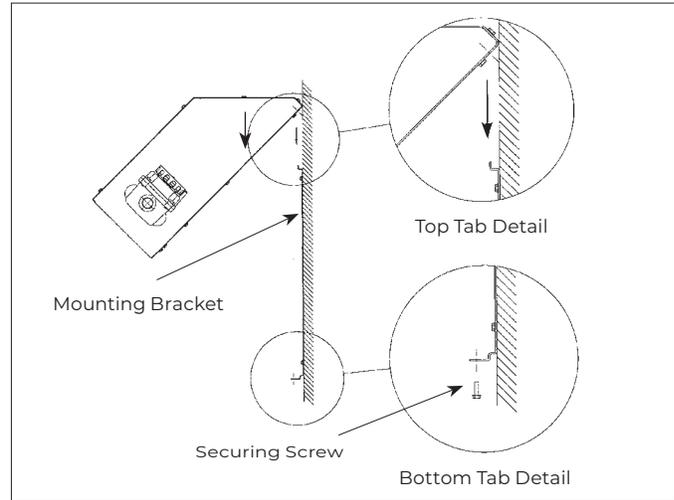


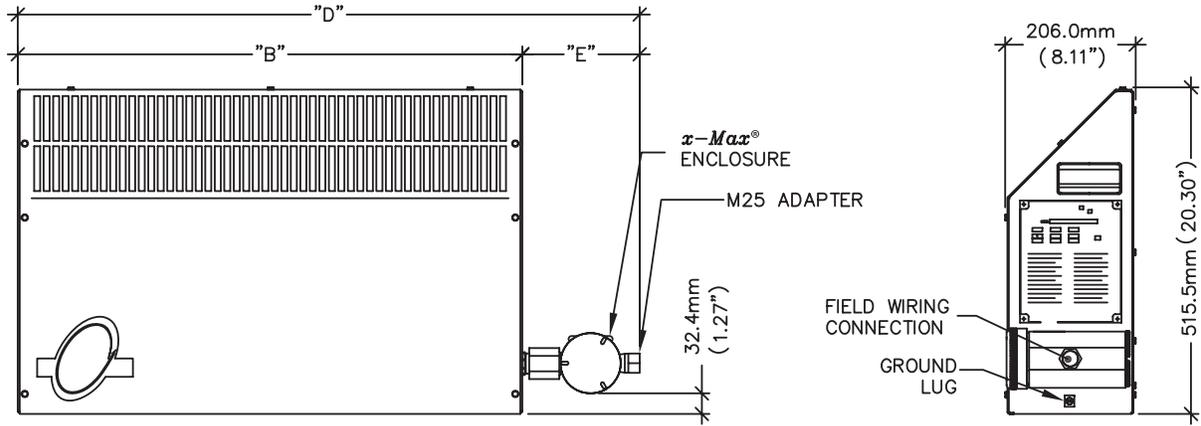
Figure 2



CAUTION. Use fasteners with yield stress greater than or equal to 58 ksi (400 MPa).

NOTE: Figure 2, page 5 through Figure 5, page 7 are shown with optional built-in room thermostat.

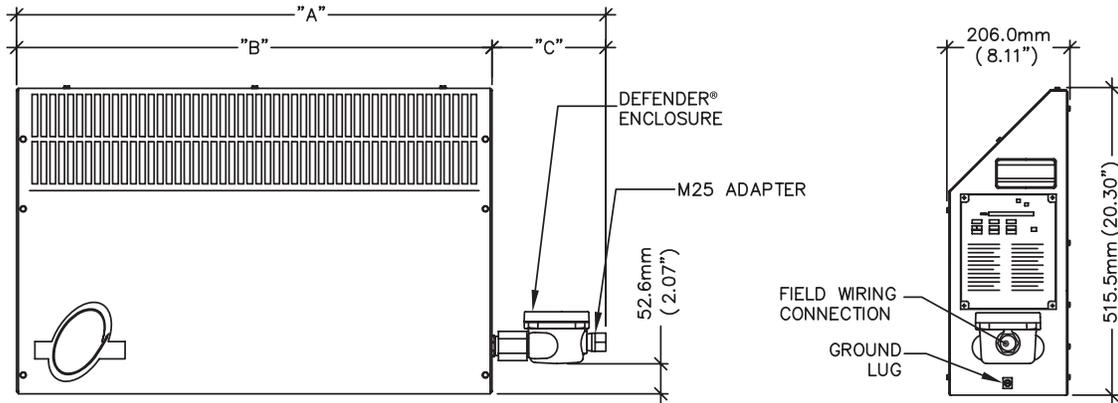
x-Max[®] Housing



Heater kW Rating	"D" Dimension				"B" Dimension		"E" Dimension			
	w/o Extension		w/ Extension				w/o Extension		w/ Extension	
	mm	in	mm	in	mm	in	mm	in	mm	in
0.75 to 3.00 (220V) & 3.30 (T2) to 3.60 (T2)	984	38.7	1037	40.8	796.0	31.34	188	7.4	241	9.5
3.00 to 4.40 & 4.80 (240V)	1444	56.9	1497	58.9	1256.0	49.45				
4.80 (380V) to 7.60	1699	66.9	1752	69.0	1511.0	59.49				

Figure 3 – Physical Dimensions (x-Max[®] Housing)

Defender[®] Housing



Heater kW Rating	"A" Dimension				"B" Dimension		"C" Dimension			
	w/o Extension		w/ Extension				w/o Extension		w/ Extension	
	mm	in	mm	in	mm	in	mm	in	mm	in
0.75 to 3.00 (220V) & 3.30 (T2) to 3.60 (T2)	973	38.3	1026	40.4	796.0	31.34	177	7.0	230	9.1
3.00 to 4.40 & 4.80 (240V)	1433	56.4	1486	58.5	1256.0	49.45				
4.80 (380V) to 7.60	1688	66.5	1741	68.5	1511.0	59.49				

Figure 4 – Physical Dimensions (Defender[®] Housing)

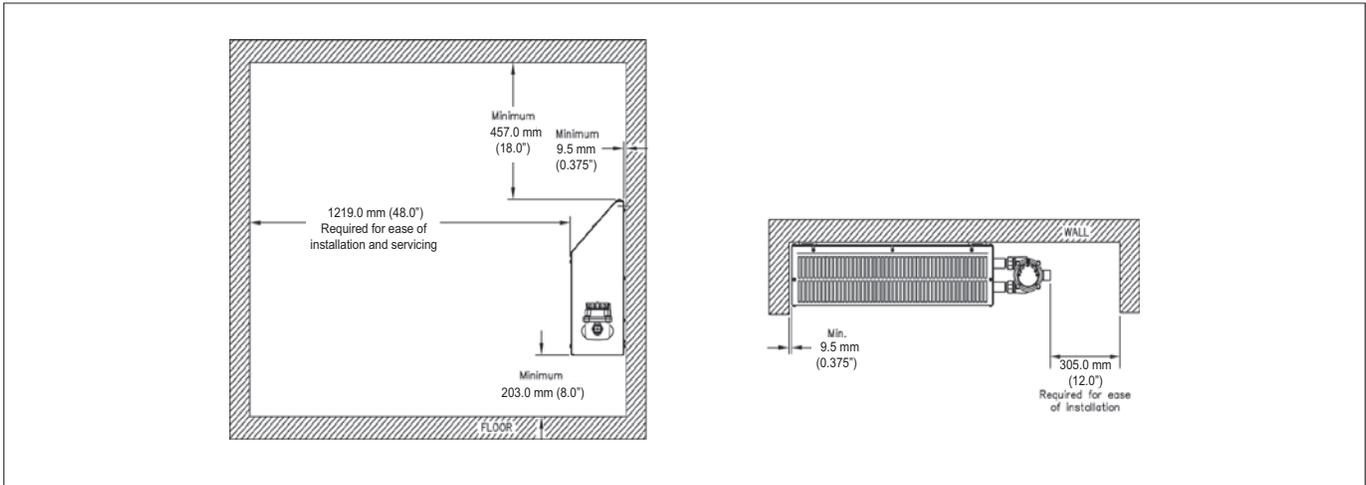


Figure 5 – Installation Clearances

C.2 Electrical

WARNING. Disconnect the power supply before installation of the heater. Lock the switch in the “OFF” (open) position and/or tag the switch to prevent unexpected power application. For heaters marked "IIC", ensure to loosen the setscrew before removing the cover. Installation and wiring of the heater must adhere to all applicable codes. Allow the heater to cool down for a period of 2 minutes after operating before removing any enclosure covers.

1. General
 - 1.1 Use only copper conductors and approved explosion-proof wiring methods during installation. Refer to Section F. CF1 Technical Data, page 9 or heater data plate for the voltage, amperage and wattage ratings when sizing for the appropriate conductors. All supply conductors should be rated for operating at temperatures up to 90°C (194°F).
 - 1.2 Supply voltage must be within 10% of the data plate rating. External over-current protection is required and must meet data plate ratings for voltage, amperage and frequency.
2. Field Wiring

Heater has been supplied with an enclosure that has a standard M25 adaptor or optional 3/4" NPT threaded opening or an M32 opening to accommodate the line conductors (see Figure 6, page 7 for connection details). Use wire connectors rated for minimum 90°C (194°F).

NOTE: If remote thermostats other than the factory supplied are used, ensure that they will not allow the room temperature to exceed ambient temperature limitations of the heater (40°C [104°F]) and are suitable for the area’s hazardous atmosphere classification. When using any control devices, ensure that the voltage and amperage ratings match the heater’s electrical ratings. If not, a contactor may be required.

NOTE: For heaters that are identified as "suitable for storage temperatures up to 150°C (302°F)" the installer must ensure that the supply conductors are rated for 150°C (302°F) and stopping box sealants are rated for 150°C (302°F).

3. Final Inspection
 - 3.1 Before application of electrical power:
 - Check that all connections are secured and comply with the wiring diagram (see Figure 6, page 7 and applicable code requirements,
 - Confirm that the supply voltage is compatible with the data plate specifications,
 - Remove any foreign objects from the heater, and
 - Ensure all external fittings and enclosure covers are secured.

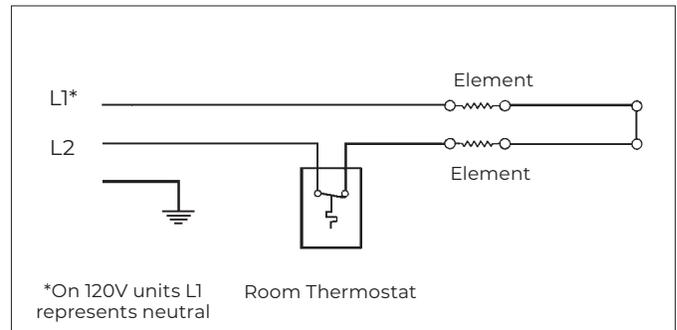
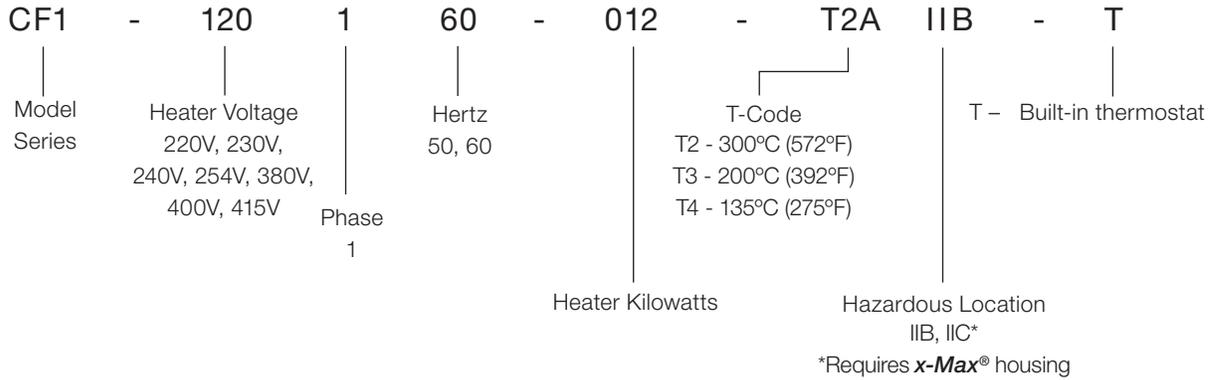


Figure 6 – Wiring diagram for remote mount and built-in thermostats

D. MODEL CODING



E. SPECIFICATIONS

		Nominal kW		
		0.75 to 3.00 (220V) & 3.30 (T2) to 3.6 (T2)	3.00 to 4.40 & 4.80 (240V)	4.80 (380V) to 7.60
Cabinet Length	in	31.3	49.4	59.5
	mm	796	1256	1511
Net Weight	lbs	58	86	43.6
	kg	27	39	96
Shipping Weight	lbs	65	95	47.6
	kg	30	44	105

Enclosures Defender® housing is cast aluminum with bolt on cover. Groups IIB only. **x-Max**® housing is extruded aluminum with two screwed on covers. Groups IIC only. For dry indoor use only. Do not immerse in water. Do not store or use in areas exposed to rain or snow.

Mounting Brackets Two 14 Ga. 0.075 in (1.90 mm) galvanized steel.

Heating Elements Two Incoloy® sheathed elements.

Cabinet Material 14 Ga. steel. Rear panel is galvanized. Front and side panels are baked green-grey epoxy powder coated with five-stage pretreatment, including iron phosphate.

Temperature Code Rating T2 - 300°C (572°F); T3 - 200°C (392°F); T4 - 135°C (275°F)

Hazardous Locations* Without Built-in Thermostat: Class I, Zones 1 & 2, Groups IIA, IIB & IIC
With Built-in Thermostat: Class I, Zones 1 & 2, Groups IIA, IIB & IIC

Temperature Limitations Operational: -45°C to 40°C (-49°F to 104°F)
Storage: -45°C to 80°C (-49°F to 176°F)

*Hazardous location ratings are dependant on the junction box used. Please consult a customer service representative or the unit data plate for actual location ratings.

F. CFI TECHNICAL DATA

All units are single phase. Units can be operated at 50 or 60 Hz

Model Number	kW (BTU/hr)	Unit Voltage	Basic Unit	Gas Group				Supply Wire Size***	Unit Current	Max. Circuit Fuse	Cabinet Length		Temperature Code
				IIB		IIC					mm	in	
				w/o T'stat	w/ T'stat	w/o T'stat	w/ T'stat						
CF1-220150-010-T4	1.0 (3412)	220	✓	✓	✓	✓	✓	12	4.6	15	796	31.3	T4
CF1-220150-015-T3	1.5 (5118)	220		✓	✓	✓	✓	12	6.9	15	796	31.3	T3
CF1-220150-030-T2	3.0 (10236)	220		✓	✓	-	-	12	13.8	15	796	31.3	T2
CF1-220150-040-T3	4.0 (13648)	220		✓	✓	-	-	10	18.3	20	1256	49.4	T3
CF1-220150-064-T2**	6.4 (21837)	220		✓	-	-	-	8	29.0	30	1511	59.5	T2
CF1-230150-011-T4	1.1 (3753)	230		✓	✓	✓	✓	12	4.8	15	796	31.3	T4
CF1-230150-017-T3	1.7 (5801)	230		✓	✓	✓	✓	12	7.2	15	796	31.3	T3
CF1-230150-030-T3	3.0 (10236)	230		✓	✓	✓	✓	12	13.0	15	1256	49.4	T3
CF1-230150-033-T2	3.3 (11260)	230		✓	✓	-	-	10	14.4	15	796	31.3	T2
CF1-230150-044-T2	4.4 (15013)	230		✓	✓	-	-	10	19.2	20	1256	49.4	T2
CF1-230150-070-T2**	7.0 (23885)	230		✓	-	-	-	8	30.3	35	1511	59.5	T2
CF1-240150-012-T4	1.2 (4095)	240		✓	✓	✓	✓	12	5.0	15	796	31.3	T4
CF1-240150-018-T3	1.8 (6142)	240		✓	✓	✓	✓	12	7.5	15	796	31.3	T3
CF1-240150-030-T3	3.0 (10236)	240		✓	✓	✓	✓	12	12.5	15	1256	49.4	T3
CF1-240150-036-T2	3.6 (12284)	240		✓	✓	-	-	10	15.0	20	796	31.3	T2
CF1-240150-048-T2	4.8 (16378)	240		✓	✓	-	-	10	20.0	25	1256	49.4	T2
CF1-240150-076-T2**	7.6 (25932)	240		✓	-	-	-	8	31.7	35	1511	59.5	T2
CF1-254150-030-T3	3.0 (10236)	254		✓	✓	✓	✓	12	11.8	15	1256	49.4	T3
CF1-380150-0075-T4	0.75 (2559)	380		✓	✓	✓	✓	12	2.0	15	796	31.3	T4
CF1-380150-011-T4	1.1 (3753)	380		✓	✓	✓	✓	12	3.0	15	796	31.3	T4
CF1-380150-023-T3	2.3 (7848)	380		✓	✓	-	-	12	5.9	15	796	31.3	T3
CF1-380150-030-T3	3.0 (10236)	380		✓	✓	✓	✓	12	7.9	15	1256	49.4	T3
CF1-380150-036-T3	3.6 (12284)	380		-	-	✓	✓	12	9.4	15	1256	49.4	T3
CF1-380150-048-T2	4.8 (16378)	380		✓	✓	-	-	12	12.5	15	1511	59.5	T2
CF1-400150-0083-T4	0.83 (2832)	400		✓	✓	✓	✓	12	2.1	15	796	31.3	T4
CF1-400150-013-T4	1.3 (4436)	400		✓	✓	✓	✓	12	3.1	15	796	31.3	T4
CF1-400150-025-T3	2.5 (8530)	400		✓	✓	-	-	12	6.3	15	796	31.3	T3
CF1-400150-033-T3	3.3 (11260)	400		✓	✓	✓	✓	12	8.3	15	1256	49.4	T3
CF1-400150-036-T3	3.6 (12284)	400		-	-	✓	✓	12	9.0	15	1256	49.4	T3
CF1-400150-053-T2	5.3 (18084)	400		✓	✓	-	-	12	13.2	15	1511	59.5	T2
CF1-415150-009-T4	0.90 (3071)	415		✓	✓	✓	✓	12	2.2	15	796	31.3	T4
CF1-415150-014-T4	1.4 (4777)	415		✓	✓	✓	✓	12	3.2	15	796	31.3	T4
CF1-415150-027-T2	2.7 (9213)	415		✓	✓	-	-	12	6.5	15	796	31.3	T2
CF1-415150-036-T3	3.6 (12284)	415		✓	✓	✓	✓	12	8.7	15	1256	49.4	T3
CF1-415150-057-T2	5.7 (19449)	415		✓	✓	-	-	12	13.7	15	1511	59.5	T2

* Or equivalent breaker as per local electrical inspection authority requirements

** Optional thermostats not available as it exceeds current rated capacity.

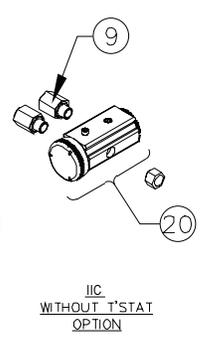
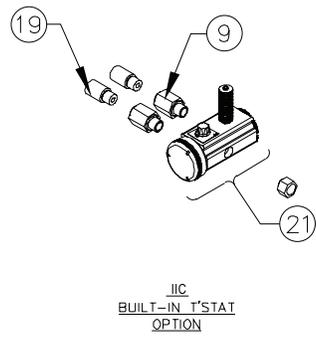
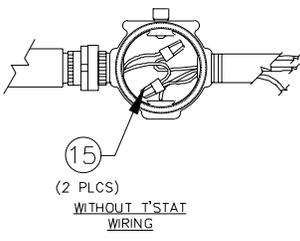
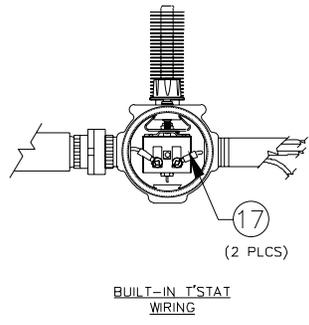
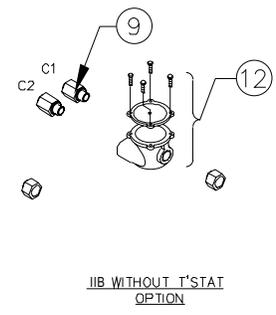
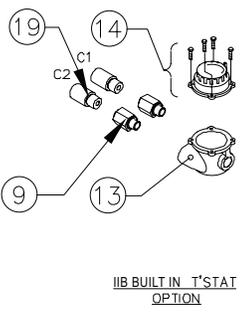
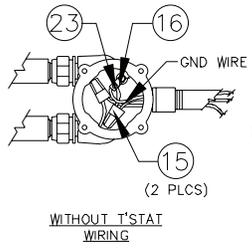
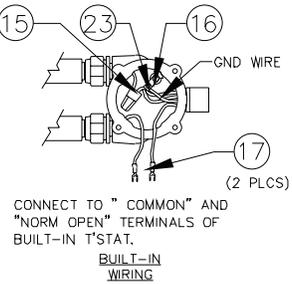
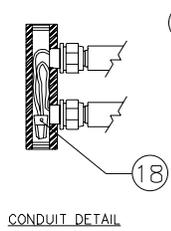
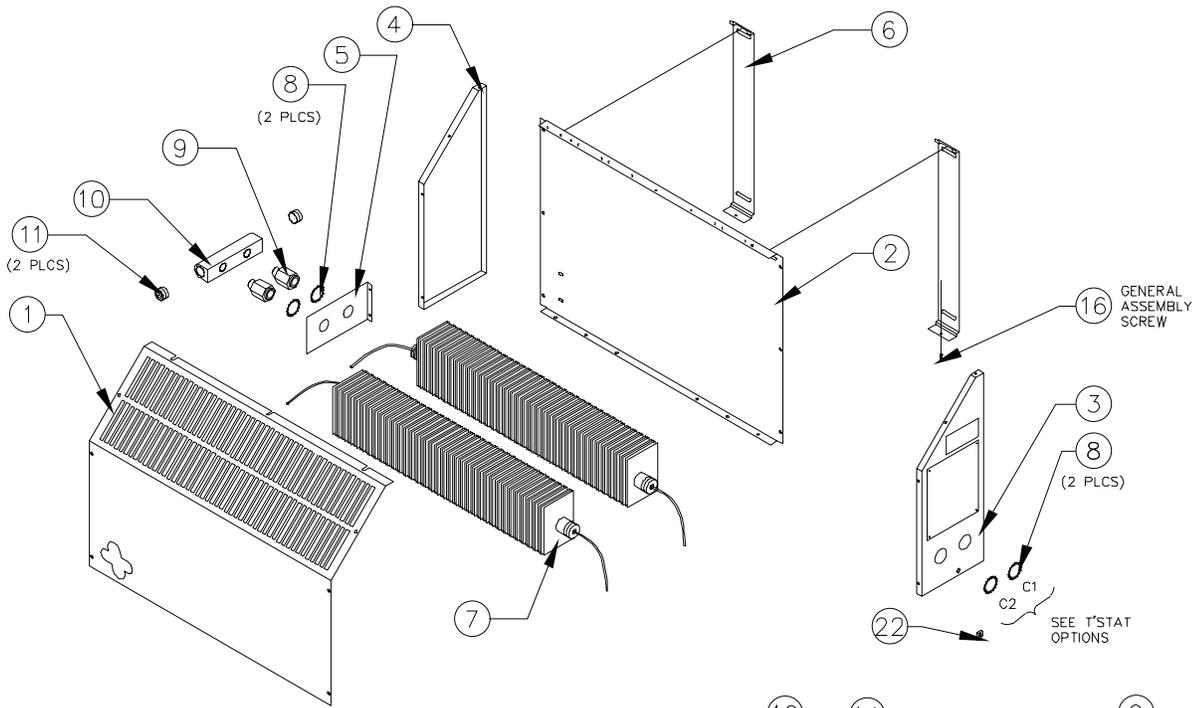
NOTE:

1. Heater is functioning normally if, at rated voltage, the current draw is within 10% of the value in this table.
2. Operation at lower voltages that rated will result in reduced output and current draw.
Actual Output (kW) = [(Supply Voltage)² ÷ (Rated Voltage)²] × Rated Unit Wattage (kW)
3. Add suffix "T" for optional built-in thermostat.
4. Add suffix "H" for high-temperature ambient storage option. High temperature storage option is not available with thermostat option. Not available on IIB models.

*** Ensure supply wire size adheres to applicable local and national electrical codes.

5. For IIB model with XCT built-in thermostat - Zones 1 & 2, Groups IIA and IIB
6. For IIC model with XTWA built-in thermostat - Zones 1 & 2, Groups IIA, IIB, IIC
7. IIC Grouping units come with **x-Max**® housing
8. Remote mounted, Defender, explosion-proof room thermostats are not suitable for IIC applications
9. Temperature code ratings: T2 - 300°C (572°F), T3 - 200°C (392°F), T4 - 135°C (275°F)

G. PARTS DIAGRAM



H. PARTS DIAGRAM

Item No.	Description	796 mm (31.3") Cabinet Length		1256 mm (49.4") Cabinet Length		1511 mm (59.5") Cabinet Length	
		Part #	Qty	Part #	Qty	Part #	Qty
1	Panel, Front	6488	1	6493	1	6490	1
2	Panel, Back	6487	1	6494	1	6489	1
3	Panel, Right	6491	1	6491	1	6491	1
4	Panel, Left	6492	1	6492	1	9492	1
5	Bracket, Finned Tube	6485	1	6485	1	6485	1
6	Kit, Wall Mounting	6602	1	6602	1	6602	1
7	Finned Tube Assy c/w Element	*	2	*	2	*	2
8	Nut, 3/4" Aluminum Lock	6449	4	6449	4	6449	4
9	Union, 3/4" NPT Male/Female CE IIC	9627	4	9627	4	9627	4
10	Conduit, Element	6497	1	6497	1	6497	1
11	Plug, 3/4" Ex-proof CE	7994	2	7994	2	7994	2
12	Kit, Group B, (IIB) CE Enclosure	8024	1	8024	1	8024	1
13	Enclosure, Convectur CE	7992	1	7992	1	7992	1
14	Kit, Built-in XCT T'stat CE	8503	1	8503	1	8503	1
15	Wire Connector, 150°C (302°F)	**	**	**	**	**	**
16	Screw, 10-24 x 1/2 in Thd Ct	4972	20	4972	21	4972	22
17	Fork Connector, 12-10GA #10	2088	2	2088	2	2088	2
18	Wire Connector, 300°C (572°F)	6529	1	6529	1	6529	1
19	Tube, Convectur Extension	7202	2	7202	2	7202	7202
20	Kit, Group A, B, C & D (IIC) <i>x-Max</i> [®] Encl.	9251	1	9251	1	9251	9251
21	Kit, Built-in XT T'stat	9252	1	9252	1	9252	9252
22	Ground Lug CE	7995	1	7995	1	7995	1
23	Ground Lug 14-6 gauge wire	2793	1	2793	1	2793	1

NOTE:

* Contact factory for replacement finned tube kit.

** Customer supplied. Quantity varies: 1 for built-in t'stat option; 2 for remote t'stat option.

Dimensions of flameproof joints other than the relevant minimum or maximum specified in EN/IEC 60079-1 Table 2 for IIB marked equipment and Table 3 for IIC marked equipment, contact manufacturer for information regarding the dimensions of the flameproof joints.

I. REPAIR & REPLACEMENT



WARNING. Disconnect heater from the power supply before opening enclosures or servicing heater.

Lock the switch in the “**OFF**” (open) position and/or tag the switch to prevent unexpected power application. Heater surfaces may be hot.

Allow the heater to cool down for a period of 2 minutes after operating before removing any enclosure covers.

I.1 Finned Tube/Element Assembly

A complete finned tube assembly is available from the factory. Contact factory for replacement finned tube kit.

1. Remove the front cabinet panel (Item #1).
2. Remove convector electrical enclosure's cover and disconnect wires.
3. De-couple two unions (Item #9) connecting convector enclosure and finned tube extension (Item #7).
4. Remove 3/4" NPT plug (Item #11) from element conduit (Item #10) and then pull out wire connector and disconnect the wires.
5. De-couple remaining two unions and remove element conduit.
6. Remove union halves and lock-nut (Item #8) from ends of each finned tube requiring replacement and set aside for re-use on new factory supplied finned/element assemblies.
7. Remove bolts from lower tabs of wall mount brackets (Item #6), remove heater from wall mount brackets, and loosen the bolts from the finned tube bracket (Item #5).
8. Remove the damaged finned tube/element assemblies and install replacements.
9. Re-assemble heater using the reverse order of the preceding instructions.

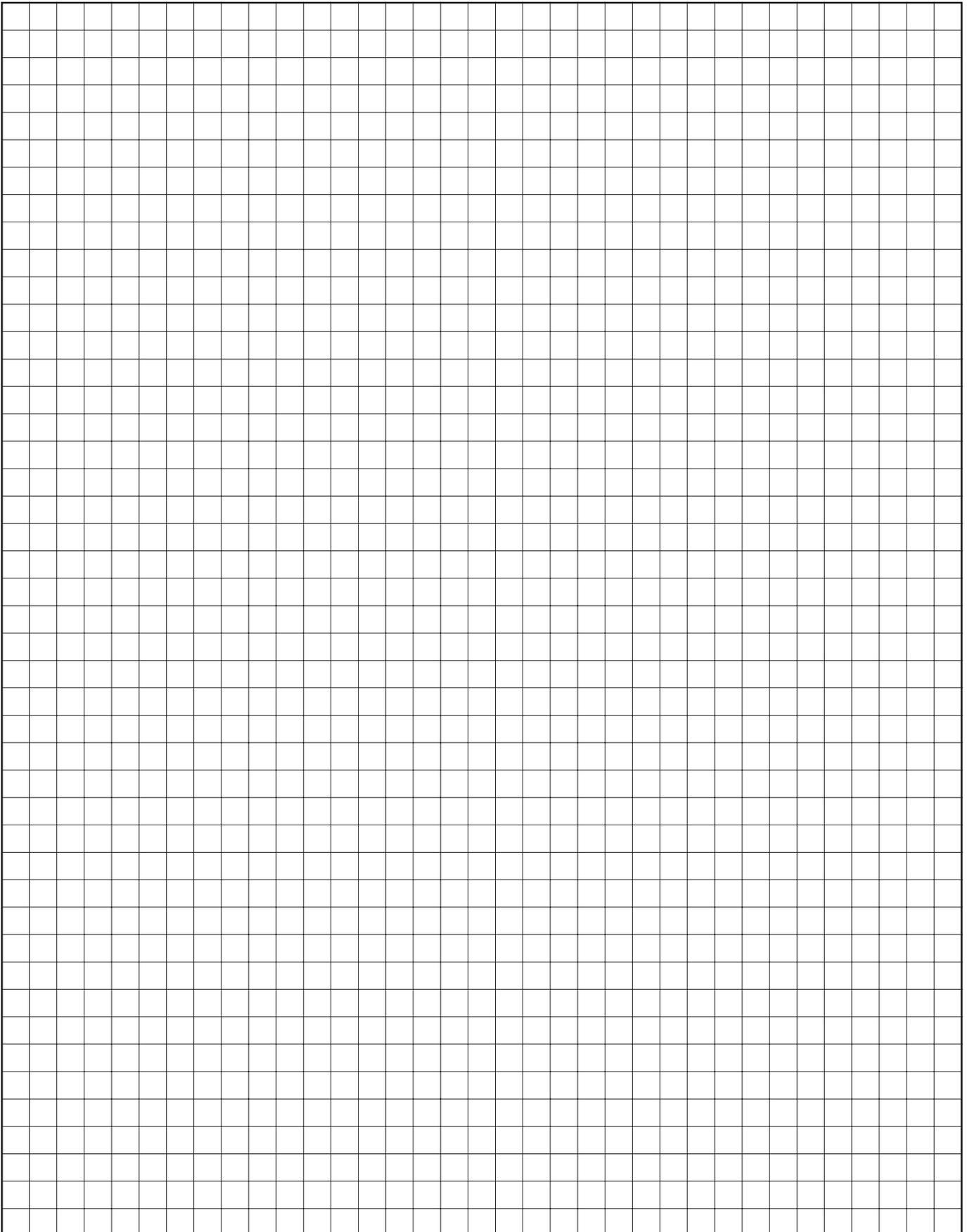
IMPORTANT: All threaded connections must be wrench tight with minimum of 5 turns engagement.

I.2 Cabinet Panels & Brackets

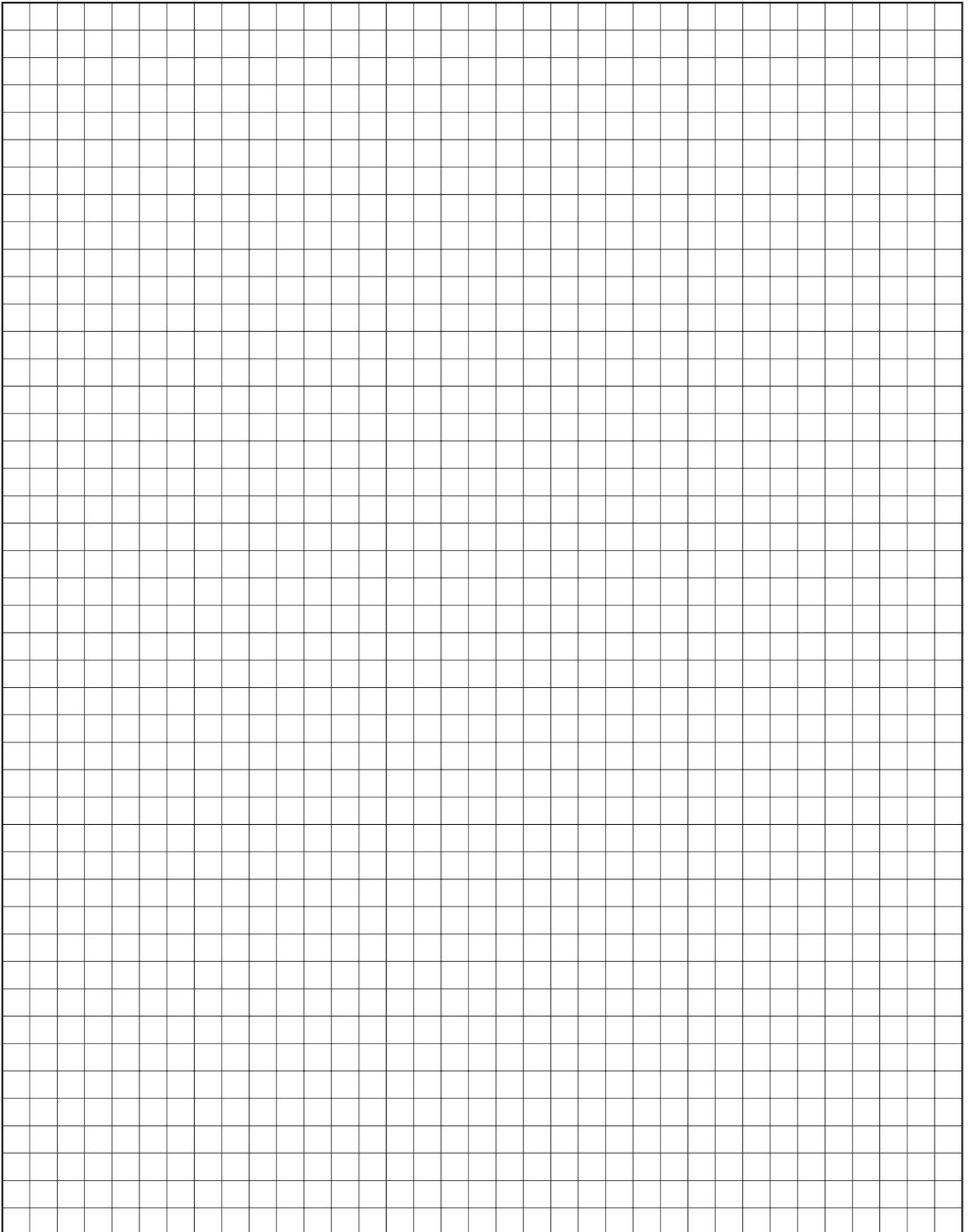
Replacement cabinet panels and brackets are available from the factory.

NOTE: For purposes of safety and convenience, all repairs and maintenance must be done with factory authorized parts and materials.

NOTES



NOTES





Directive 2003/108/EC amendment to the Directive 2002/96/EC of the European Parliament and of the Council on Waste Electrical and Electronic Equipment (WEEE).

1. The equipment that you bought is WEEE marked and has required the extraction and use of natural resources for its production. It may contain substances that could impact health and the environment. As such it is a requirement not to dispose of WEEE marked equipment as unsorted municipal waste and to collect such WEEE marked equipment separately.
2. In order to avoid the dissemination of those substances in our environment and to diminish the pressure on natural resources, we encourage you to use the appropriate take-back systems in your area. Those systems will reuse or recycle most if not all of the materials of your equipment in a sound way.
3. The crossed-out wheeled bin symbol on this equipment invites you to use those systems.
4. If you need more information on collection, reuse and recycling systems in your area, please contact your local or regional waste management administration.



For further assistance, please call 24hr hotline: 1-800-661-8529 (U.S.A. and Canada)
Please have model and serial numbers available before calling.

WARRANTY: Under normal use the Company warrants to the purchaser that defects in material or workmanship will be repaired or replaced without charge for a period of 18 months from date of shipment, or 12 months from the start date of operation, whichever expires first. Any claim for warranty must be reported to the sales office where the product was purchased for authorized repair or replacement within the terms of this warranty.

Subject to State or Provincial law to the contrary, the Company will not be responsible for any expense for installation, removal from service, transportation, or damages of any type whatsoever, including damages arising from lack of use, business interruptions, or incidental or consequential damages.

The Company cannot anticipate or control the conditions of product usage and therefore accepts no responsibility for the safe application and suitability of its products when used alone or in combination with other products. Tests for the safe application and suitability of the products are the sole responsibility of the user.

This warranty will be void if, in the judgment of the Company, the damage, failure or defect is the result of:

- Vibration, radiation, erosion, corrosion, process contamination, abnormal process conditions, temperature and pressures, unusual surges or pulsation, fouling, ordinary wear and tear, lack of maintenance, incorrectly applied utilities such as voltage, air, gas, water, and others or any combination of the aforementioned causes not specifically allowed for in the design conditions or,
- Any act or omission by the Purchaser, its agents, servants or independent contractors which for greater certainty, but not so as to limit the generality of the foregoing, includes physical, chemical or mechanical abuse, accident, improper installation of the product, improper storage and handling of the product, improper application or the misalignment of parts.

No warranty applies to paint finishes except for manufacturing defects apparent within 30 days from the date of installation.

The Company neither assumes nor authorizes any person to assume for it any other obligation or liability in connection with the product(s).

The Purchaser agrees that all warranty work required after the initial commissioning of the product will be provided only if the Company has been paid by the Purchaser in full accordance with the terms and conditions of the contract.

The Purchaser agrees that the Company makes no warranty or guarantee, express, implied or statutory, (including any warranty of merchantability or warranty of fitness for a particular purpose) written or oral, of the Article or incidental labour, except as is expressed or contained in the agreement herein.

LIABILITY: Technical data contained in the catalog or on the website is subject to change without notice. The Company reserves the right to make dimensional and other design changes as required. The Purchaser acknowledges the Company shall not be obligated to modify those articles manufactured before the formulation of the changes in design or improvements of the products by the Company.

The Company shall not be liable to compensate or indemnify the Purchaser, end user or any other party against any actions, claims, liabilities, injury, loss, loss of use, loss of business, damages, indirect or consequential damages, demands, penalties, fines, expenses (including legal expenses), costs, obligations and causes of action of any kind arising wholly or partly from negligence or omission of the user or the misuse, incorrect application, unsafe application, incorrect storage and handling, incorrect installation, lack of maintenance, improper maintenance or improper operation of products furnished by the Company.

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