Qmark ICG - Explosion Proof Convectors User Manual [en, es, fr]

manualmachine.com/qmark/icgexplosionproofconvectors/1639783-user-manual



Units with built-in controls can be supplied for Groups C required, must have the same explosion-proof rating as and heater. D or B, C and D. Refer to classification stamped on heater nameplate. 3. Do not install one unit above the other. WARNING: To prevent ignition of hazardous atmospheres, 4. Units must be mounted a minimum of 8" above the floor. this heater should not be installed in areas where vapors 5. Heaters must be mounted on wall in a horizontal position or gases having an ignition temperature less than 280°C with terminal end at right only. Never recess heater into (536°F)(T2A) at 1.8kW, 3.6kW, 4.5kW, 7.2kW, 9.0kW or wall. 180°C (356°F)(T3A) at 1.6kW, 3.2kW, 4.0kW are present. 6. All unit electrical installation fittings, conduit, wiring, and WARNING: These heaters must not be operated in ambient seals must meet NEC and local codes for hazardous locatemperatures exceeding 40°C (104°F). tions. External line fusing or circuit breaker protection is NOTE: Article 500 of the National Electric Code (NEC) required. out-7. Hazard of Shock. Heater must be effectively grounded in lines requirements for installation of electrical equipment in hazardous (Classified) locations. accordance with the National Electrical Code. Failure to understand and follow these installation 8. instruc-

tions and the "WARNING" notes contained therein may

result in severe personal injury, death, or substantial property damage.

SAVE THESE INSTRUCTIONS

INSTALLATION

WARNING: Hazard of electric shock. Disconnect all power before installing heater.

NOTE: Heaters can be mounted individually end to end. Heaters can be mounted directly on any type of surface (masonry, concrete, block, plastered walls, metal framework, etc.) using appropriate hardware

1.Remove front panel by removing threaded bolts.

2.Locate desired heater position on wall.

3.Locate mounting holes for rear panel. Rear panel must be a minimum of 8" from the floor.

4.Refer to Figure 1A, 1B, or 1C for mounting hole layout for each cabinet size.

5.Drill a pilot hole in wall mounting surface at each mounting hole location. Use a convenient small size drill.

6.Drill the mounting holes in accordance with size in Table 1. Insert anchors where applicable.

7.Fasten rear panel to wall with screws noted in Table 1. WARNING: Never operate heater with front panel off. Air flow across heating elements requires the front panel in place. Injury from hot heating element possible with front cover removed.

1





INSTALLATION

G SERIES MODELS WITHOUT CONTROLS – GROUPS B, C AND D

3/4" Conduit Entrance

		В				
D	С	С	D	See Detail "A"	8-15/16	
				19	20-1/16	
					2-3/8	3-3/8
		A			5-1/16	
Figu	ıre 1	A				

Dimensions (In.)

kW A B C D 1.6 N/A 1.8 34 20 7 3.6 3.2 58 32 16 13 ____7.6 _____ 4.0 4.5 70 48 24 11 9.0

G SERIES MODELS WITH BUILT-IN CONTROLS – GROUPS B, C AND D

			1" Conduit Entran	се
			8-7/8	
		В		
D	С	С	D	8-15/16
			See Detail "A"	_

19 20-1/16

A Feet are Optional

Primarily Used to Protect Thermowell During Shipping and Installation

Figure 1B

Dimensions (In.)

kW	A	В	С	D
1.0			N1/A	
1.0			N/A	
1.8	34	20	-	7
3.6				
3.2	58	32	16	13
	-			
7.6				
4.0				
4.5	72	48	24	11
9.0				

G SERIES MODELS WITH THERMOSTAT ONLY – GROUPS C AND D

3/4" Conduit Entrance

7

D C C D 8-15/16

See Detai "A"

19 20-1/16

2-3/8 3-3/8

_

5-1/16

А

Figure 1C

Dimensions (In.)

kW	/Α	В	С	D
1.6	5		N/A	
1.8	3 34	20	-	7
3.6	;			
3.2	2 58	32	16	13
7.6	;			
4.0)			
4.5	5 70	48	24	11
9.0)			

Table 1- Suggested Heater Mounting Screws - Types and Sizes

Type of Mounting	** Accessory			Screw Size to Fit		
Surface	Hardware	Screw Type	Drill Size and Type	Mtg Hole Size		5/16
Concrete Block	Ackerman	Rd. Hd. Mach. Steel	1/2" Masonry	† 1/4" x 20 x	lg	
Masonry	Lead Anchor	Rd. Hd. Mach Steel or Pan Hd.	5/16" Masonry	† # 1/4" x	lg	
	_	Metal (Self – Tapping)				
Wood Studs		Wood or Metal (Self Tapping)		† # 1/4" x	lg	7/8
Plaster wall Hollow or		Toggle Bolt	#7 Twist	† # 1/4" x	lg	
Similar Type	_					

* Metal Beam,	Nuts	Rd. Hd. Mach. Steel	#7 Twist	† 1/4" x 20 x	lg _		
Channel, etc.	Washers		_			1/2	Mounting ——— Hole
*If clearance per to these lengths	rmits use wash , add thickness	ner, lock washer and s of beam, washers	d nut; otherwis , nut, etc.	e drill and tap			Detail — "A"
**If mounting str anchors can be	ucture permits used. Suggest	. Except plastered l ted size noted in Ta	hollow walls ex ble and/or	plosive type			
sketches should determine size c	be used to of anchors.						
+Soloct overall l	ongth of scrow	, to provide a					

†Select overall length of screw to provide a minimum penetration of 1 inch into base wall material.



WIRING

WARNING: Hazard of Shock. Any installation involving electric heaters must be effectively grounded in accordance with the National Electrical Code.

1.All wiring must be done in accordance with local codes and the National Electrical Code by a qualified person as defined in the NEC.

WARNING: Use copper conductors only.

2.Rough-in-line-wiring to unit in manner approved for hazardous locations. (See warning below.)

3.Wire per diagrams 1 through 6 based on the rating and control options listed in table 2. Refer to table 3 for amperage specifications.

4.Remove cover of conduit box for connections. Use either opening and plug the other with the plug provided.

5.In single phase units (except 480 V) the heaters must be wired in parallel, combining L1 to L1, L2 to L2 and for 3 phase unit, L3 to L3. On 480V single phase units the elements must be wired in series.

6.Re-assemble cover with a minimum of 7 turns.

WARNING: (Group B atmospheres) To prevent ignition of Group B atmospheres, conduit runs must not exceed 3/4" in size and all conduit runs 1/2" size and larger must have a sealing fitting connected within 2", 6" or 18" of the terminal enclosure depending on the exact model. For correct placement, refer to data located on the enclosure label.

Single Phase — No Controls, 7	Single Phase — No Controls, Volts > 277V					
& Heater Amps < 22A	& 120–277V When Heater Amps > 22A					
	Elements		External			
			Contactor	Element	s L2	
L2 or N			_ L2			
_			N			480V _ 1PH
			_ Or N			Double
			_ L1		L1	
						Element
						Heaters
L1		Control			Optional TI	nermostat
	— Optional Thermostat					4
		voltage			Supplied	=xt.
Diagram 1	Built-In or Ext. Supplied	Diagram 2				
Three Phase – No Controls		Single or Thr	ee Phase			
		_ With Controls	s — Contactor	& Transfor	mer	
External			Contactor			
Contactor	Elements			L3 Ele	ement Wiring	
L3				_ L2 1 PH	or 3 PH	
L2				L1 Sir	ngle or Double	
				Ele	ement	
L1						

Optional Thermostat

Voltage					
	Built-In or Ext. Supplied				
					_ Optional Thermostat
Diagram 3		Diagram 4	Transformer		
		_			_ Built-In or Ext.
					Supplied
Single or Three Phase		Single or Th	ree Phase With Cont	rols —	-
With Controls — Contactor & Lir	ne Voltage Control	 Contactor & 	External Supplied Co	ontrol	Voltage
Contactor			Contactor		Element Wiring
L3	B Element Wiring			L3	_
	5				
	_			L2	1 PH or 3
					PH
L2	21 PH OF 3 PH				
				_ L1	Single or Double
	Single or Double			_	
L1	 			_	Element
	Element				
Line		External			
Voltage	Optional Thermostat	Supplied			
-					
Control		Control			
	Built-In or Ext. Supplied				Optional Thermostat
Voltago	_	Voltago	Torminal		-
					Built-In or Ext.
Diagram 5		Diagram 6	Block		ouppriou
		_			
	OPERATION				
CAUTION: Users should install a	adequate controls and	1. Do not op	erate heater at voltag	jes in	excess of that stamped
Salety					
devices with their electric heatin	a equipment. Where the	on the heate	r since excess voltar	o will	shorten heater life
conse-	g equipment. Where the	on the neate	i since excess voltag		Shorten neater nie
quences of failure may be sever	e, back-up controls are	and cause h	igh element temperat	tures v	which may exceed
essen-					
tial. The safety of the installation	is the responsibility of the	allowable ter	mperatures of operation	ion in a	a hazardous



MAINTENANCE

WARNING: Hazard of Shock. Disconnect all power to heater before servicing or replacing heaters.

1.Before activating for next heating season, vacuum or use compressed air to remove accumulated dust or lint, which otherwise may restrict proper air flow.

2.Periodically check all electrical connections and retighten to avoid electrical wiring difficulties.

3. Check to ensure terminal cover is tightly closed before energizing.

Sealed, Heavy duty Finned

Element assembly.

Explosion Proof Junction Box for Field wiring

Mounting Holes

4



MODEL NUMBER BREAKDOWN

Model

G-Series

Explosion Proof Convection Heater

			Temperature	e Rating		
G	Code	kW	ID Number	°F	°C	(BTU)
	160	1.6	T3A	356	180	5,500
	180	1.8	T2A	536	280	6,150
	320	3.2	T3A	356	180	11,000
	360	3.6	T2A	536	280	12,300
	400	4.0	T3A	356	180	13,600
	450	4.5	T2A	536	280	15,350
	760	7.6	T2A	536	280	25,930
	900	9.0	T2A	536	280	30,700

Code Voltage Maximum kW Allowable

0	120	1.8	
4	240	9.0	
38	380	9.0	
48	480	9.0	
6	600	9.0	
7	277	9.0	
8	208	9.0	

Code Phase

	1	1Ø				
--	---	----	--	--	--	--

3 3Ø (Not available in 120, 277V)

Control Combination

Code Contactor Transformer

		Coil	Secondary
		None	None
	СХ	24 Volt	24 Volt
	CX*	120 Volt	120 Volt
Co	de Tempera	ature Control	
	None		_
TB	Thermo	stat 40 - 90°F	_
	Group E	8, C & D	
Т	Thermo	stat Group C & D	_
	50 - 90°	F	_
			_
G 760	48 3 C	ХТ	

Note: Letter "B" will appear after phase code to indicate engineering version.

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TABLE 2 — TEMPERATURE SPECIFICATIONS

DIMENSIONS REPLACEMENTS ELEMENTS REQUIREMENTS

Temperature Rating T3A 356°F (180°C)

Common To Units W & W/O Suffix B

kW	BTU	Volts	Phase	Amps	Model	Width A	Height B	Depth C	Wt. (Lbs.)	Element P/N	Qty.
1.6	5,500	208	1	7.7	G16081CVEP-C-16- 81	34"	20"	9"	58	003-304650- 002	2
1.6	5,500	208	3	4.4	G16083CVEP-C-16- 83	34"	20"	9"	58	003-304650- 005	2

1.6	5,500	240	1	6.7	G16041CVEP-C-16- 21	34"	20"	9"	58	003-304650- 096	2
1.6	5,500	240	3	3.8	G16043CVEP-C-16- 23	34"	20"	9"	58	003-304650- 006	2
1.6	5,500	277	1	5.8	G16071CVEP-C-16- 71	34"	20"	9"	58	003-304650- 004	2
1.6	5,500	480	1	3.3	G160481CVEP-C- 16-41	34"	20"	9"	58	003-304650- 003	2
1.6	5,500	480	3	1.9	G160483CVEP-C- 16-43	34"	20"	9"	58	003-304650- 009	2
1.6	5,500	575	3	1.6	G16063CVEP-C-16- 63	34"	20"	9"	58	003-304650- 010	2
3.2	11,000	208	1	15.4	G32081CVEP-C-32- 81	58"	20"	9"	94	003-304650- 023	2
3.2	11,000	208	3	8.9	G32083CVEP-C-32- 83	58"	20"	9"	94	003-304650- 026	2
3.2	11,000	240	1	13.3	G32041CVEP-C-32- 21	58"	20"	9"	94	003-304650- 093	2
3.2	11,000	240	3	7.7	G32043CVEP-C-32- 23	58"	20"	9"	94	003-304650- 027	2
3.2	11,000	277	1	11.6	G32071CVEP-C-32- 71	58"	20"	9"	94	003-304650- 025	2
3.2	11,000	480	1	6.7	G320481CVEP-C- 32-41	58"	20"	9"	94	003-304650- 093	2
3.2	11,000	480	3	3.8	G320483CVEP-C- 32-43	58"	20"	9"	94	003-304650- 030	2
3.2	11,000	575	3	3.2	G32063CVEP-C-32- 63	58"	20"	9"	94	003-304650- 031	2
4.0	13,600	208	1	19.2	G40081CVEP-C-40- 81	70"	20"	9"	112	003-304650- 045	2
4.0	13,600	208	3	11.1	G40083CVEP-C-40- 83	70"	20"	9"	112	003-304650- 048	2
4.0	13,600	240	1	16.7	G40041CVEP-C-40- 21	70"	20"	9"	112	003-304650- 046	2

4.0	13,600	240	3	g	9.6	G40043CVE 23	P-C-40-	70"	20"	9"	1	12	003-30 049	4650- 2	
4.0	13,600	277	1	1	4.4	G40071CVE 71	P-C-40-	70"	20"	9"	1	12	003-30 047	4650- 2	
4.0	13,600	480	1	8	3.3	G400481CV 40-41	EP-C-	70"	20"	9"	1	12	003-30 046	4650- 2	
4.0	13,600	480	3	4	1.8	G400483CV 40-43	EP-C-	70"	20"	9"	1	12	003-30 052	4650- 2	
4.0	13,600	575	3	7	7.0	G40063CVE 63	P-C-40-	70"	20"	9"	1	12	003-30 053	4650- 2	
Temp	erature F	Rating 1	Г2А	536°F ([280°C])									
kW	BTU	I		Volts	Phase	e Amps	Model			Width A	Height B	Depth C	Wt. (Lbs.)	Element P/N	Qty.
1.8/3	8.6 6,15	0/12,30	00	208	1	8.7/17.3	CVEP0 C-18/30	6(180)36 6-81	081-	34"	20"	9"	46/58	003- 304650- 034	1 or 2
1.8/3	8.6 6,15	0/12,30	00	208	3	5.0/10.0	CVEP0 C-18/36	6(180)36 6-83	083-	34"	20"	9"	46/58	003- 304650- 038	1 or 2
1.8/3	8.6 6,15	0/12,30	00	240	1	7.5/15.0	CVEP0 C-18/30	G(180)36 6-21	041-	34"	20"	9"	46/58	003- 304650- 098	1 or 2
1.8/3	8.6 6,15	0/12,30	00	240	3	4.3/8.7	CVEPO C-18/30	6(180)36 6-23	043-	34"	20"	9"	46/58	003- 304650- 039	1 or 2
1.8/3	8.6 6,15	0/12,30	00	277	1	6.5/13.0	CVEPO C-18/30	G(180)36 6-71	071-	34"	20"	9"	46/58	003- 304650- 036	1 or 2
1.8/3	8.6 6,15	0/12,30	00	480	1	3.8/7.5	CVEPO C-18/30	G(180)36 6-41	0481-	34"	20"	9"	46/58	003- 304650- 037/-098	1 or 2
1.8/3	8.6 6,15	0/12,30	00	480	3	2.2/4.3	CVEP0 C-18/36	6(180)36 6-43	0483-	34"	20"	9"	46/58	003- 304650- 042	1 or 2
1.8/3	8.6 6,15	0/12,30	00	575	3	1.8/3.6	CVEP0 18/363	6(180)36 -63	0-C-	34"	20"	9"	46/58	003- 304650- 043	1 or 2

7.6	25,930	208	1	36.5	G76081	58"	20"	9"	94	003- 304650- 055	2

7.6	25,930	208	3	21.1	CVEPG76083-C-76- 83	58"	20"	9"	94	003- 304650- 058	2
7.6	25,930	240	1	31.7	CVEPG76041-C-76- 21	58"	20"	9"	94	003- 304650- 099	2
7.6	25,930	240	3	18.3	CVEPG76043-C-76- 23	58"	20"	9"	94	003- 304650- 059	2
7.6	25,930	277	1	27.4	CVEPG76071-C-76- 71	58"	20"	9"	94	003- 304650- 057	2
7.6	25,930	480	1	15.8	CVEPG760481-C- 76-41	58"	20"	9"	94	003- 304650- 056	2
7.6	25,930	480	3	9.1	CVEPG760483-C- 76-43	58"	20"	9"	94	003- 304650- 062	2
7.6	25,930	575	3	7.6	CVEPG76063-C-76- 63	58"	20"	9"	94	003- 304650- 063	2
4.5/9.0	15,350/30,700	208	1	21.6/43.3	CVEPG(450)90081- C-45/90-81	70"	20"	9"	87/112	003- 304650- 065	1 or 2
4.5/9.0	15,350/30,700	208	3	12.5/25.0	CVEPG(450)90083- C-45/90-83	70"	20"	9"	87/112	003- 304650- 069	1 or 2
4.5/9.0	15,350/30,700	240	1	18.8/37.5	CVEPG(450)90041- C-45/90-21	70"	20"	9"	87/112	003- 304650- 100	1 or 2
4.5/9.0	15,350/30,700	240	3	10.8/21.7	CVEPG(450)90043- C-45/90-23	70"	20"	9"	87/112	003- 304650- 070	1 or 2
4.5/9.0	15,350/30,700	277	1	16.2/32.5	CVEPG(450)90071- C-45/90-71	70"	20"	9"	87/112	003- 304650- 067	1 or 2
4.5/9.0	15,350/30,700	480	1	9.4/18.8	CVEPG(450)900481- C-45/90-41	70"	20"	9"	87/112	003- 304650- 068/-070	1 or 2

4.5/9.0	15,350)/30,70	0 480	3	5.4/10.8	CVEF C-45/	PG(450)900483- /90-43	70"	20" §)"	87/112	003- 304650- 073	1 or 2
4.5/9.0	15,350)/30,70	0 575	3	4.5/9.0	CVEF C-45/	PG(450)90063- '90-63	70"	20" 9)"	87/112	003- 304650- 074	1 or 2
6												-	
							1		_				
		Ĩ								5			
				Ĩ					ľ				
									52 52				
REPLAC	EMENT	PART	S]						
Model		ł	Front		Rear		Right	Left		Elen	nent		
Any Vol	tage	(Cover Ass	embly	Cover Assen	nbly	Side Panel	Side	Panel	Sup	port Brac	ket	
1.6, 1.8	, 3.6	KW 2	207-30464	4-101	207-304644-	001	207-304644-201	304-3	804644-301	027-	304646-0	001	
3.2, 7.	.6 KW	2	207-30464	4-102	207-304644-	002	207-304644-201	304-3	804644-301	027-	304646-0	001	
4.0, 4.	5, 9.0	KW 2	207-30464	4-103	207-304644-	-003	207-304644-201	304-3	804644-301	027-	304646-0	001	

18/21

	kW	Volts Phase	Control		Stat	
G			В			
	Control Corr	hination	Code	Phase	Code	Thermostat
		Iomation	Couc	THASE	Couc	mermostat
Code	Contactor	Transformer				
			1	1Ø		None
	Coil	Secondary				
			3	3Ø	ТВ	300-049197-003
	None _	_ None _			T	300-113075-002
СХ	24 Volt	24 Volt				
CX*	120 Volt	120 Volt				

Contactor

Coil Voltage	30 Amp	50 Amp
24V	072-304551-001	072-303180-002
120V	072-303180-007	072-304551-008

Primary	Secondary	Transformer
Voltage	Voltage	
208/240/480	24	315-304252-002
208/240/480	120	315-304252-001
277	24	315-304252-004
575	24	315-304252-005
277/575	120	315-304252-003





LIMITED WARRANTY

All products manufactured by Marley Engineered Products are warranted against defects in workmanship and materials for one year from date of installation, except heating elements which are warranted against defects in workmanship and materials for five years from date of installation. This warranty does not apply to damage from accident, misuse, or alteration; nor where the connected voltage is more than 5% above the nameplate voltage; nor to equipment improperly installed or wired or maintained in violation of the product's installation instructions. All claims for warranty work must be accompanied by proof of the date of installation.

The customer shall be responsible for all costs incurred in the removal or reinstallation of products, including labor costs, and shipping costs incurred to return products to Marley Engineered Products Service Center.Within the limitations of this warranty, inoperative units should be returned to the nearest Marley authorized service center or the Marley Engineered Products Service Center, and we will repair or replace, at our option, at no charge to you with return freight paid by Marley. It is agreed that such repair or replacement is the exclusive remedy available from Marley Engineered Products.

THE ABOVE WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED. AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH EXCEED THE AFORESAID EXPRESSED WARRANTIES ARE HEREBY DISCLAIMED AND EXCLUDED FROM THIS AGREEMENT. MARLEY ENGINEERED PRODUCTS SHALL NOT BE LIABLE FOR CONSEQUENTIAL DAMAGES ARISING WITH RESPECT TO THE PRODUCT, WHETHER BASED UPON NEGLIGENCE, TORT, STRICT LIABILITY, OR CONTRACT.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion or limitation may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

For the address of your nearest authorized service center, contact Marley Engineered Products in Bennettsville, SC, at 1-800-642-4328. Merchandise returned to the factory must be accompanied by a return authorization and service identification tag, both available from Marley Engineered Products. When requesting return authorization, include all catalog numbers shown on the products.

HOW TO OBTAIN WARRANTY SERVICE AND

WARRANTY PARTS PLUS GENERAL INFORMATION

- 1. Warranty Service or Parts 1-800-642-4328
- 2. Purchase Replacement Parts 1-800-654-3545
- 3. General Product Information www.marleymep.com

Note: When obtaining service always have the following:

- 1.Model number of the product
- 2.Date of manufacture
- 3.Part number or description
- 5200-2472-002
- 470 Beauty Spot Rd. East
- Bennettsville, SC 29512 USA
- 8 ECR 39003

02/11