



# TYPE MUH UNIT HEATER



FILE #E21609

- Unit mounts either horizontally or vertically. Totally versatile. For factories, warehouses, garages, stores, shipping rooms, power stations, aircraft hangers. Can be used for primary, supplementary, spot, or dual-system heating.
- Wide range of optional control kits are field installable, increasing the MUH adaptability to the specification market.
- Forced air unit heater with 10 power ratings; from 3KW to 50 KW heating output; 208, 240, 277 and 480V, 10,230 to 170,500 BTU/hr.
- 32 compatible models (no need to try to assemble a heating system from 70 or 80 models!)
- Heavy gauge die-formed steel housing. Two-toned, smartly styled.
- Advanced pull-through air flow design draws air across heating element for more even air distribution and cooler element operation.
- Specially designed venturi outlet to meet that added throw as required in vertical position.
- Branch circuit fusing (when required).
- Completely enclosed fan motor.
- 1- or 3-phase wiring on 5 through 10 KW 208/240V and 15 KW 208V units (field interchangeable).
- Aluminum-finned, copper clad steel sheath heating element has longer useful life, because of cooler sheath temperature and faster heat dissipation.
- 24V control transformer standard on most models, providing a safer and more accurate means of temperature control. 3KW and 5KW, 208-277V, have line voltage controls as standard (24V control available on made-to-order basis).
- Automatic reset linear thermal cut-out, capillary type, provides protection over entire length of element areas (Manual reset protection available on made-to-order basis).
- 2-speed fan selector switch (25 to 50 KW models).
- Fan delay feature eliminates cold drafts. Element heats up before fan cuts in, then fan continues to distribute heat after element shuts off.
- Ruggedly built, yet lighter weight for easier installation. No piping flues, valves, or traps.
- Individually adjustable discharge louvers to control air flow.
- Choice of optional diffusers for variety of air patterns, maximizing heat concentration and coverage in the vertical position.
- Meets all UL, NEC, and OSHA requirements.



## SELECTION CHART

CAT. NO.	VOLTS	ELECTRICAL DATA				CONTROL VOLT (1)	2 STAGE ELEMENT CONTROL	AIR DELIVERY DATA			FAN MOTOR DATA			MAXIMUM EFFECTIVE MOUNTING HEIGHT		HORI. AIR THROW	WIRE SIZE	INSTALLED WEIGHT (LBS.) W/BRACK.
		PHASE	KW	BTU/HR. 100'	AMPS (3)			CFM(2)	FPM(2)	ΔT(°F)	VOLTS	RPM(2)	HP	HORIZ.	VERT.			
MUH0381	208	1Ø	3.0	10.2	14.5	208	N/A	350	800	27°	208	1600	1/100	8	9	12	AWG 12	27
MUH0321	208/240	1Ø	2.2/3.0	7.5/10.2	11.0/12.5	208/240	N/A	350	800	27°	208/240	1600	1/100	8	9	12	AWG 12	27
MUH0371	277	1Ø	3.0	10.2	11.0	277	N/A	350	800	27°	277	1600	1/100	8	9	12	AWG 14	27
MUH0331	347	1Ø	3.0	10.2	8.6	24	N/A	350	800	27°	347	1600	1/100	8	9	12	AWG 14	27
MUH0341	480	3Ø	3.0	10.2	3.6	24	N/A	350	800	27°	480	1600	1/100	8	9	12	AWG 14	27
MUH0361	600	3Ø	3.0	10.2	2.9	24	N/A	350	800	27°	600	1600	1/100	8	9	12	AWG 14	27
MUH0581	208	1-3Ø	5.0	17.0	24.0	208	5A	350	800	45°	208	1600	1/100	8	9	12	AWG 10	27
MUH0521	208/240	1-3Ø	3.75/5.0	12.6/17.0	18.0/21.0	208/240	5A	350	800	45°	208/240	1600	1/100	8	9	12	AWG 10	27
MUH0571	277	1Ø	5.0	17.0	18.0	277	N/A	350	800	45°	277	1600	1/100	8	9	12	AWG 10	27
MUH0531	347	1Ø	5.0	17.0	14.4	24	N/A	350	800	45°	347	1600	1/100	8	9	12	AWG 10	27
MUH0541	480	3Ø	5.0	17.0	6.0	24	N/A	350	800	45°	480	1600	1/100	8	9	12	AWG 14	27
MUH0561	600	3Ø	5.0	17.0	4.8	24	N/A	350	800	45°	600	1600	1/100	8	9	12	AWG 10	27
MUH078	208	1-3Ø	7.5	25.6	36.0	24	5B	650	970	37°	208	1600	1/30	9	14	18	AWG 6	38
MUH072	208/240	1-3Ø	5.6/7.5	19.1/25.6	27.0/31.3	24	5B	650	970	37°	208/240	1600	1/30	9	14	18	AWG 8	38
MUH077	277	1Ø	7.5	25.6	27.0	24	5B	650	970	37°	277	1600	1/30	9	14	18	AWG 8	38
MUH073	347	1Ø	7.5	25.6	21.6	24	5B	650	970	37°	347	1600	1/30	9	14	18	AWG 14	38
MUH074	480	3Ø	7.5	25.6	9.0	24	5B	650	970	37°	480	1600	1/30	9	14	18	AWG 14	38
MUH076	600	3Ø	7.5	25.6	7.3	24	5B	650	970	37°	600	1600	1/30	9	14	18	AWG 14	38
MUH108	208	1-3Ø	10.0	34.1	48.0	24	5B	650	970	49°	208	1600	1/30	9	14	18	AWG 4	38
MUH102	208/240	1-3Ø	7.5/10.0	25.6/34.1	36.0/42.0	24	5B	650	970	49°	208/240	1600	1/30	9	14	18	AWG 6	38
MUH107	277	1Ø	10.0	34.1	36.0	24	5B	650	970	49°	277	1600	1/30	9	14	18	AWG 6	38
MUH103	347	1Ø	10.0	34.1	28.8	24	5B	650	970	49°	347	1600	1/30	9	14	18	AWG 14	38
MUH104	480	3Ø	10.0	34.1	12.0	24	5B	650	970	49°	480	1600	1/30	9	14	18	AWG 14	38
MUH106	600	3Ø	10.0	34.1	9.7	24	5B	650	970	49°	600	1600	1/30	9	14	18	AWG 14	38
MUH158	208	1-3Ø	15.0	51.2	72.0	24	5A	910	1640	52°	208	1530	1/20	11	20	35	AWG 2	53
MUH152	208/240	3Ø	11.2/15.0	38.2/51.2	31.3/36.1	24	5C	910	1640	52°	208/240	1530	1/20	11	20	35	AWG 6	53
MUH154	480	3Ø	15.0	51.2	18.0	24	5C	910	1640	52°	480	1530	1/20	11	20	35	AWG 10	53
MUH156	600	3Ø	15.0	51.2	14.5	24	5C	910	1640	52°	600	1530	1/20	11	20	35	AWG 12	53
MUH208	208	3Ø	20.0	68.2	56.0	24	5A	1320	2060	48°	208	1500	1/10	12	23	41	AWG 4	60
MUH202	208/240	3Ø	15.0/20.0	51.2/68.2	41.2/48.0	24	5C	1320	2060	48°	208/240	1500	1/10	12	23	41	AWG 4	60
MUH204	480	3Ø	20.0	68.2	24.0	24	5C	1320	2060	48°	480	1500	1/10	12	23	41	AWG 10	60
MUH206	600	3Ø	20.0	68.2	19.3	24	5C	1320	2060	48°	600	1500	1/10	12	23	41	AWG 12	60
MUH252	208/240	3Ø	18.7/25.0	63.8/85.2	52.0/60.0	24	5A	2100/1800	2100/2030	38°/44°	208/240	1600/1375	1/4	13	23	50	AWG 3	93
MUH254	480	3Ø	25.0	85.2	30.0	24	5C	2100/1800	2100/2030	38°/44°	480	1600/1375	1/4	13	23	50	AWG 8	93
MUH256	600	3Ø	25.0	85.2	24.2	24	5C	2100/1800	2100/2030	38°/44°	600	1600/1375	1/4	13	23	50	AWG 10	93
MUH308	208	3Ø	30.0	102.3	84.0	24	5A	2100/1800	2100/2030	45°/53°	208	1600/1375	1/4	12	20	50	AWG 1	93
MUH302	208/240	3Ø	22.5/30.0	76.7/102.3	63.0/72.3	24	5A	2100/1800	2100/2030	45°/53°	208/240	1600/1375	1/4	12	20	50	AWG 2	93
MUH304	480	3Ø	30.0	102.3	36.0	24	5C	2100/1800	2100/2030	45°/53°	480	1600/1375	1/4	12	20	50	AWG 6	93
MUH306	600	3Ø	30.0	102.3	29.0	24	5C	2100/1800	2100/2030	45°/53°	600	1600/1375	1/4	12	20	50	AWG 8	93
MUH402	208/240	3Ø	30.0/40.0	102.3/136.4	83.4/96.4	24	5A	3000/2600	3260/2900	42°/49°	208/240	1525/1420	1/2	15	28	60	AWG 1/0	114
MUH404	480	3Ø	40.0	136.4	48.0	24	5A	3000/2600	3260/2900	42°/49°	480	1525/1420	1/2	15	28	60	AWG 4	114
MUH406	600	3Ø	40.0	136.4	38.7	24	5A	3000/2600	3260/2900	42°/49°	600	1525/1420	1/2	15	28	60	AWG 6	114
MUH508	208	3Ø	50.0	170.5	139.0	24	5A	3000/2600	3260/2900	53°/61°	208	1525/1420	1/2	15	25	60	AWG 4/0	114
MUH502	208/240	3Ø	37.5/50.0	127.3/170.5	104.2/120.4	24	5A	3000/2600	3260/2900	53°/61°	208/240	1525/1420	1/2	15	25	60	AWG 3/0	114
MUH504	480	3Ø	50.0	170.5	60.2	24	5A	3000/2600	3260/2900	53°/61°	480	1525/1420	1/2	15	25	60	AWG 4	114
MUH506	600	3Ø	50.0	170.5	48.3	24	5A	3000/2600	3260/2900	53°/61°	600	1525/1420	1/2	15	25	60	AWG 3	114

### Note:

1. All standard units are supplied with a low voltage control transformer and contactor (24V) except MUH03 & 05, 208, 240 & 277 volt models. Low voltage control on these units are available on made to order. All units are also available on special order for 120 volt control; internal and transformer or external without transformer.
  2. On dual voltage units; CFM, FPM, and RPM are shown at higher voltage.
  3. On dual phase units, maximum amp draw is listed for respective voltage.
  4. 25 thru 50 KW models have two speed motors and dual CFM ratings.
- 5A. Standard.  
5B. Optional - made to order - amp load unbalanced on 3 Phase.  
5C. Optional - made to order - amp load balanced on 3 Phase.

# ACCESSORIES

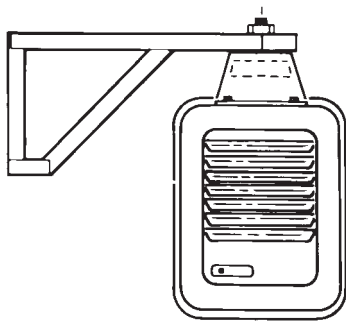
CATALOG #	DESCRIPTION	ELECTRICAL RATING	USE WITH HEATER NO.
UHMT1	Single Pole Internal Thermostat Temp. Range: 40°F - 85°F	25A; 120, 240V. A.C. Res. 22A; 277V.A.C. Res.	All MUH Series Heaters (except MUH05-21 3Ø and mUH025-81 3Ø, which use MT-2).
UHMT2	Two Stage Internal Thermostat Temp. Range: 40°F - 85°F	25A; 120, 240V. A.C. Res. 22A; 277V.A.C. Res. 125V.A; Pilot Duty	MUH05-21 3Ø, MUH05-81 3Ø, MUH-15-8, MUH-20-8, MUH-25-2, MUH-30-2, MUH-30-8, MUH-40-2, MUH-50-2, MUH-50-4, MUH-50-8
MCFS	Internal Summer Fan Switch	6A; 600V.A.C. Res. 2 HP; 250, 480, 600V.A.C. 1, 2, or 3Ø	All MUH Series Heaters
MRFS1	Remote Summer Fan Switch (Line Voltage)	2 HP; 250-480V.A.C.	All MUH Series Heaters
MRFS2	Remote Summer Fan Switch with Relay (24V Coil-Single Pole Normally Open)	6 AFL, 35 ALR, 250V.A.C. 60 Hz 3 AFL, 18 ALR, 480V.A.C. 60 Hz	All MUH Series Heaters (except MUH03-21, MUH03-71, MUH03-81, MUH05-21, MUH05-71, MUH05-81 Units, unless optional control transformer is supplied.
HRTA	Heater Recovery Thermostat with Relay (24V Coil-Single Pole Normally Open) Hi — 120°F; Low — 60°F	6 AFL, 35 ALR, 250V.A.C. 60 Hz 3 AFL, 18 ALR, 480V.A.C. 60 Hz	All MUH Series Heaters (except MUH03-21, MUH03-71, MUH03-81, MUH05-21, MUH05-71, MUH05-81 Units, unless optional control transformer is supplied.
MPDS25	Power Disconnect Switch (3 Pole)	25A, 600V.A.C. Res.	MUH03-21, MUH03-41, MUH03-71, MUH03-81, MUH05-21, MUH05-41, MUH05-71, MUH05-81, MUH-07-4, MUH-10-4, MUH-15-4, MUH-20-4
MPDS60	Power Disconnect Switch (3 Pole)	63A, 600V.A.C. Res.	MUH-07-02, MUH-07-7, MUH-07-8, MUH-10-2, MUH-10-7, MUH-10-8, MUH-15-2 MUH-15-8 3Ø only, MUH-20-2, MUH-20-8, MUH-25-2, MUH-25-4, MUH-30-4 MUH-40-4, MUH-50-4

## UNIVERSAL WALL & CEILING BRACKET

CATALOG NO.	USED ON
B10	MUH-03, 05, 07 & 10
B20	MUH-15 & 20
B30	MUH-25 & 30
B50	MUH-40 & 50

## CEILING BRACKET

CATALOG NO.	USED ON
CMB10	MUH-03, 05, 07 & 10
CMB20	MUH-15 & 20
CMB30	MUH-25 & 30
CMB50	MUH-40 & 50

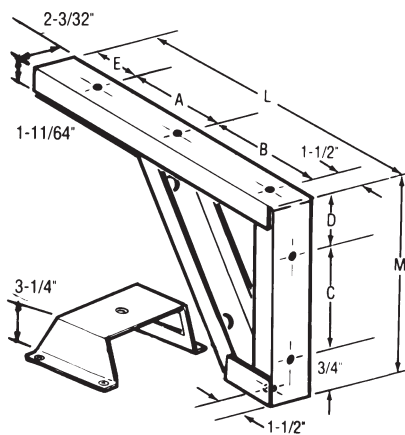


## BRACKET SIZE

DIMENSION	3 - 20Kw	25 - 50Kw
A	7 1/4"	9 7/16"
B	9 1/2"	14 3/8"
C	7 1/4"	12 1/8"
D	1 15/16"	2 1/16"
E	2 1/4"	3"
L	20 1/2"	28 15/16"
M	9 15/16"	14 15/16"
N	3 1/4"	4 1/2"

## OPTIONAL VERTICAL CEILING MOUNTING BRACKET

CATALOG NUMBER	USED ON	STANDARD CARTON QTY.	WT. LBS.
VDMB5	MUH03-05	1	5
VDMB20	MUH07-20	1	7
VDMB50	MUH25-50	1	9



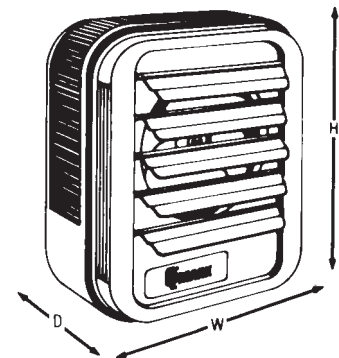
## OPTIONAL BUILT-IN CONTROLS AND ACCESSORIES ON MUH HEATERS

FACTORY INSTALLED ONLY††	DESCRIPTION
	MUH-03 & 05 (208, 208/240, 277V Supply) 24 or 120V Control Transformer and Power Contactor 24 or 120V H.C. Power Contactor
	MUH-03 & 05 (480V Supply) & MUH-07 thru MUH-50, Optional 120V Control
	2-Stage Control of Elements (See Note 5)
	Manual Reset.
	Outlet Mesh (Bird Screen) For all MUH Heaters

††Optional built-in controls and accessories factory installed only - Not to be field installed

## DIMENSIONS

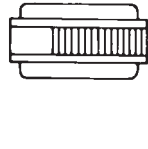
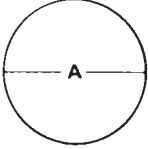
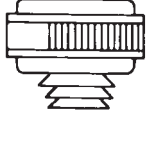
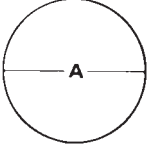
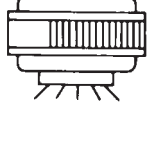
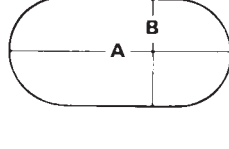
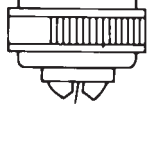
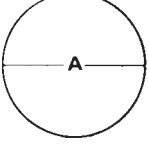
CAT. NO.	HEIGHT	WIDTH	DEPTH
MUH03 & 05	16"	14"	7 1/2"
MUH07 & 10	21 3/4"	19"	7 1/2"
MUH15 & 20	21 3/4"	19"	12 3/4"
MUH25 & 30	30"	26 5/8"	11 3/4"
MUH40 & 50	30"	26 5/8"	17 1/8"



## MOUNTING LIMITATIONS

Unit heaters should not be used in potentially explosive atmospheres. The finish is not intended for direct salt spray exposure in marine applications or the highly corrosive atmospheres of swimming pools, chemical storage bins, etc. Do not install unit heaters above recommended maximum mounting height. Obstructions must not block unit heater air inlet or discharge. Heaters must be mounted at least 7' above the floor to prevent accidental contact with the heating element or fan blade which could cause injury.

## DIFFUSER SELECTOR TABLES FOR VERTICAL MOUNTING

CATALOG NO.	DESCRIPTION	CATALOG NO.	MAX. MNT. HT.	A DIMENSION	DIFFUSER PATTERN AND AREA
NONE NONE	WITHOUT DIFFUSER	MUH03 & MUH05 MUH07 & MUH10	9 14	18 26	 
NONE NONE	No diffuser needed where a straight downflow air pattern is required. For maximum air throw, remove louvers. Any of three diffusers can be added to basic heater.	MUH15	20	35	
NONE NONE		MUH20	23	40	
NONE NONE		MUH25	23	63	
NONE NONE		MUH30	20	55	
NONE NONE		MUH40 MUH50	28 25	70 63	
MADS MADM	ANEMOSTAT DIFFUSER	MUH03 & MUH05 MUH07 & MUH10	8 12	18 28	 
MADM MADM	The "comfort" diffuser. Produces draft-free air movement at low mounting heights. Floor coverage shown in table.	MUH15	15	35	
MADM MADM		MUH20	17	40	
MADL MADL		MUH25	19	60	
MADL MADL		MUH30	17	55	
MADL MADL		MUH40 MUH50	22 20	77 70	
MLDS MLDM	LOUVER DIFFUSER	MUH03 & MUH05 MUH07 & MUH10	9 14	25(A) 12(B) 39 (A) 19(B)	 
MLDM MLDM	Permits directional (straight line) air flow as in air curtain application over doorways. Rectangular coverage, Louvers can be turned in either direction.	MUH15	18	50(A) 25(B)	
MLDM MLDM		MUH20	20	56(A) 28(B)	
MLDL MLDL		MUH25	23	72(A) 36(B)	
MLDL MLDL		MUH30	20	80(A) 40(B)	
MLDL MLDL		MUH40 MUH50	24 22	88(A) 44(B) 80(A) 40(B)	
MRDS MRDM	RADIAL DIFFUSER	MUH03 & MUH05 MUH07 & MUH10	9 14	20 31	 
MRDM MRDM	Increases floor coverage. Adjustable fins, in vertical mode, direct downward in a tight pattern. Conversely, when fins are tilted to 45° angle, floor coverage is up to 25% greater at relatively low mounting heights.	MUH15	18	40	
MRDM MRDM		MUH20	20	45	
MRDL MRDL		MUH25	23	69	
MRDL MRDL		MUH30	20	60	
MRDL MRDL		MUH40 MUH50	24 22	75 68	

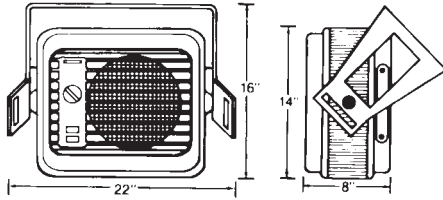
## TYPE MUH35 UNIT HEATER



FILE #E21609

- Mounts either on the wall or from the ceiling can be used for primary or spot heating. For factories, garages, schools, etc.
- Airflow can be directed horizontally, vertically or any position between for precise control.
- Multiple wattage heat selector switch. Either 5KW or 3.3KW @ 240V (3.7KW or 2.5KW @ 208V) for just the right amount of heat.
- Fan only switch allows fan to cycle automatically with elements or run continuously for air movement when no heat is required.
- Built-in bi-metal thermostat. Range 40° to 90°F.
- Heater is shipped with ceiling/wall bracket.
- Heavy gauge die-formed steel housing.
- Advanced pull-through air flow design draws air across heating element for more even air distribution and cooler element operation.
- Specially designed venturi outlet to meet that added throw as required in vertical position.
- Completely enclosed fan motor.
- Aluminum-finned, copper clad steel sheath heating element has longer useful life, because of cooler sheath temperature and faster heat dissipation.
- Automatic reset linear thermal cut-out capillary type, provides protection over entire length of element area.
- Ruggedly built, yet lighter weight for easier installation. No piping flues, valves, or traps.
- Meets all UL, NEC, and OSHA requirements.





## SELECTION CHART

CATALOG NUMBER	ELECTRICAL DATA						2 STAGE ELEMENT CONTROL	AIR DELIVERY DATA			FAN MOTOR DATA			MAXIMUM EFFECTIVE MOUNTING HEIGHT		HORIZ. AIR THROW	WIRE SIZE	INSTALLED WEIGHT (lbs) W/ BRACKET
	VOLTS	PHASE	KW	BTU/HR (000)	AMPS	CONTROL VOLTAGE		CFM	FPM	$\Delta T(^{\circ}F)$	VOLTS	RPM	HP	HORIZ.	VERT.			
MUH35	240/208	1	5.0/3.7	17.0/12.6	21.0/18.0	17.0/12.6	MUH-35	210	550	71°	240/208	1600	1/100	8	51	24	AWG 10	22

## ARCHITECT'S AND ENGINEER'S SPECIFICATIONS\*

- Unit mounts either horizontally or vertically. Totally versatile. For factories, warehouses, garages, stores, shipping rooms, power stations, aircraft hangers. Can be used for primary, supplementary, spot, or dual-system heating.
- Wide range of optional control kits are field installable, increasing the MUH adaptability to the specification market.
- Forced air unit heater with 10 power ratings; from 3KW to 50 KW heating output; 208, 240, 277 and 480V, 10,230 to 170,500 BTU/hr.
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- Advanced pull-through air flow design draws air across heating element for more even air distribution and cooler element operation.
- Specially designed venturi outlet to meet that added throw as required in vertical position.
- Branch circuit fusing (when required).
- Completely enclosed fan motor.
- 1- or 3-phase wiring on 5 through 10 KW 208/240V and 15 KW 208V units (field interchangeable).
- Aluminum-finned, copper clad steel sheath heating element has longer useful life, because of cooler sheath temperature and faster heat dissipation.
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- Fan delay feature eliminates cold drafts. Element heats up before fan cuts in, then fan continues to distribute heat after element shuts off.
- Ruggedly built, yet lighter weight for easier installation. No piping flues, valves, or traps.
- Individually adjustable discharge louvers to control air flow.
- Choice of optional diffusers for variety of air patterns, maximizing heat concentration and coverage in the vertical position.
- Meets all UL, NEC, and OSHA requirements.

\*QMark reserves the right to make changes without prior notice.