



Submittal Data Information

M-Flex™ Enclosed Drive

301-1894

EFFECTIVE: APRIL 1, 2011

SUPERSEDES: AUGUST 15, 2010

JOB _____ ENGINEER _____

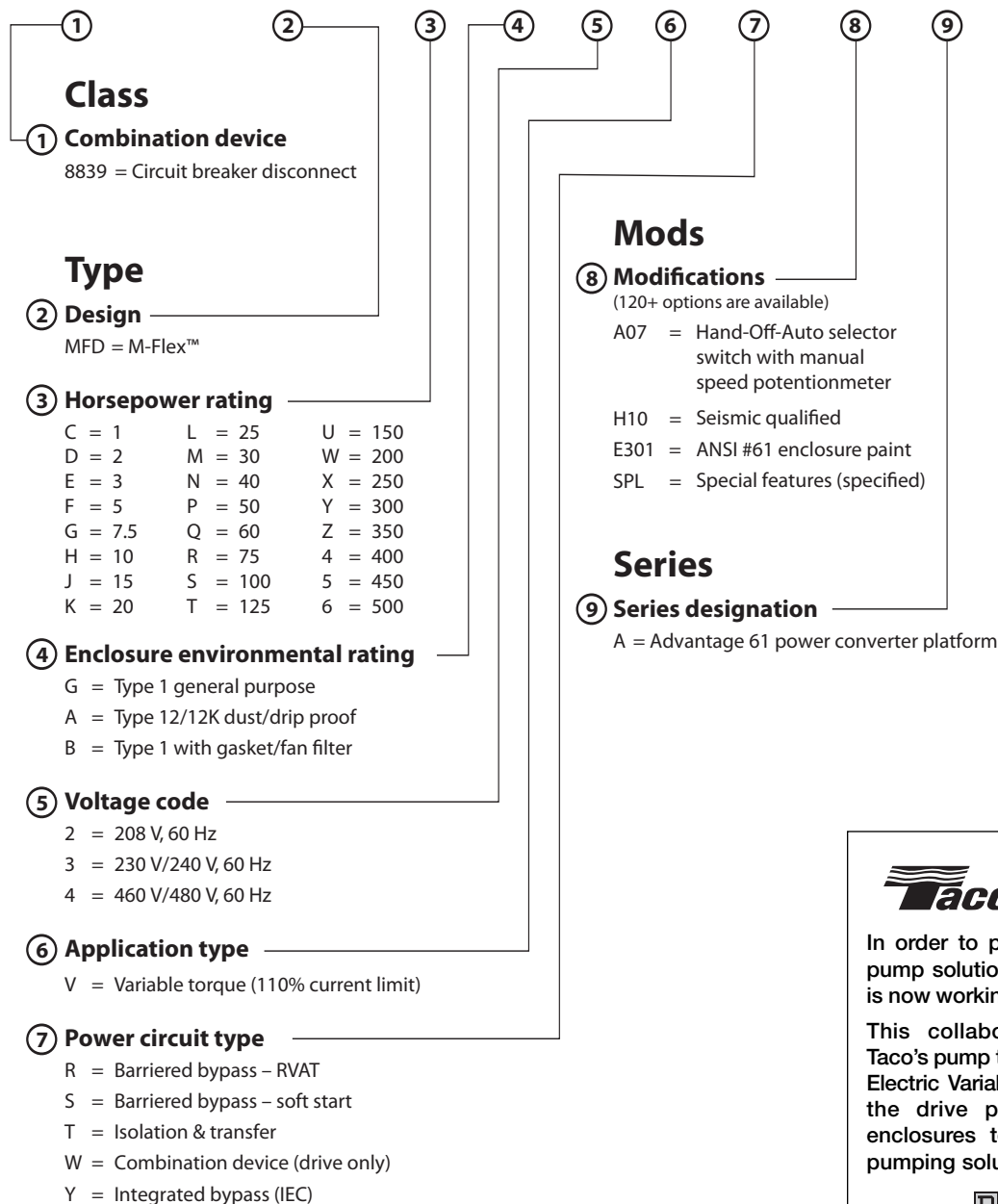
CONTRACTOR _____ REP. _____

ITEM NO.	MODEL NO.	HP/KW.	SUPPLY VOLTAGE	WEIGHT	
	OPTION	OPTION	OPTION	OPTION	

SELECTION GUIDE:

The controller catalog number, located on the inside of the door, is coded to describe the configuration and options present. Use the following illustration to translate the catalog number into a description of the controller.

8839	MFD	N	G	4	V	W	A07	A
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In order to provide the most efficient pump solution to our customers, Taco is now working with Schneider Electric.

This collaboration brings together Taco's pump technology with Schneider Electric Variable Frequency Drives and the drive packaging of Square D enclosures to offer the best overall pumping solution for our customers.



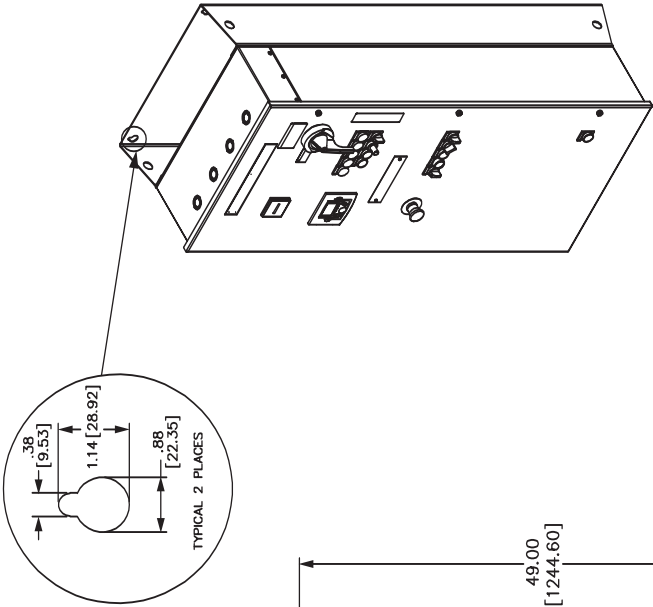
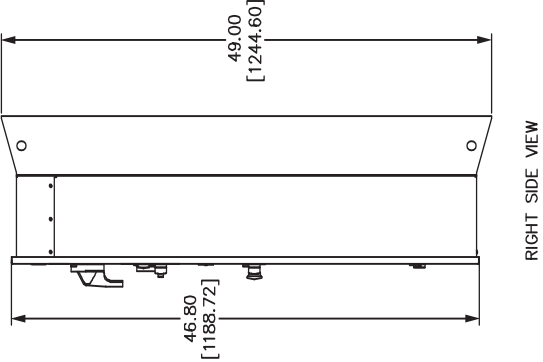
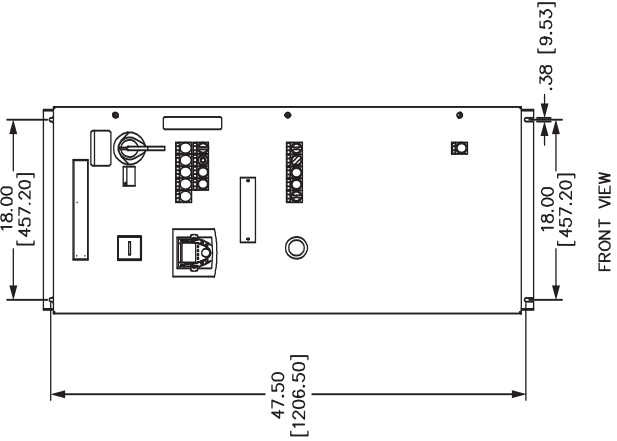
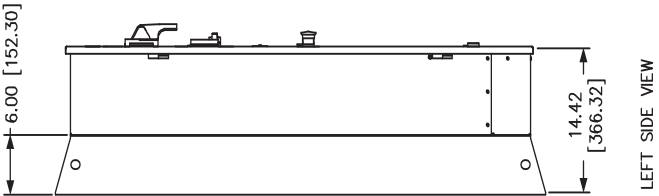
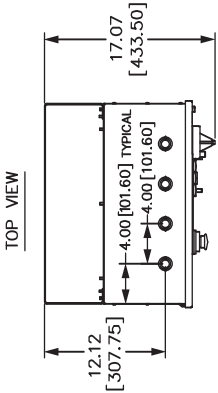
SPECIFICATIONS:

Input voltage	460 V $\pm$ 10%, 230 V $\pm$ 10%, 208 V $\pm$ 10%
Displacement power factor	98% through speed range
Input frequency	60 Hz $\pm$ 5%
Output voltage	Three-phase output Maximum voltage equal to input voltage
Galvanic isolation	Galvanic isolation between power and control (input, output, and power supplies)
Frequency range of power converter	0.1 Hz to 500 Hz (factory setting of 60 Hz)
Torque/overtorque	VT: 110% of nominal motor torque for 60 s CT: 150% of nominal motor torque for 60 s
Current (transient)	VT: 110% of controller rated current for 60 s CT: 150% of controller rated current for 60 s
Switching frequency	Selectable from 0.5 kHz to 16 kHz [1] Factory setting: VT: 8 kHz for 208 V, 203 V, and 1 hp to 100 hp @ 460 V 2 kHz for 125 hp to 500 hp @ 460 V CT: 4 kHz (2 kHz for 100 hp to 450 hp @ 460 V) The drive reduces the switching frequency automatically in the event of excessive heatsink temperature
Speed reference	AI1: 0 V to +10 V, Impedance = 30 k Ω . Can be used for speed potentiometer, 1 k Ω to 10 k Ω AI2: Factory setting: 4 mA to 20 mA. Impedance = 242 Ω (reassignable, x-y range with graphic display terminal). Factory modification J10 allows a 0 Vdc to 10 Vdc reference signal to AI2, Z = 30 k Ω
Frequency resolution in analog reference	0.1 for 100 Hz (11 bits)
Speed regulation	V/f control: equal to the motor's rated slip SFVC: 10% of the motor's rate slip from 20% to 100% of nominal motor torque
Efficiency	97% at full load typical
Reference sample time	2 ms $\pm$ 0.5 ms
Acceleration and deceleration ramps	0.1 s to 999.9 s (definition in 0.1 s increments)
Drive controller protection	• Thermal protection of power converter • Phase loss of AC mains • Circuit breaker rated at 100 kAIC • Conforming to ANSI/IEEE C62.41 Category A and B
Motor protection	Class 10 electronic overload protection Class 20 electromechanical overload protection with bypass [2]
Graphic display terminal	8 lines, 240 pixels by 160 pixels. Supports display of bar charts. Save and download up to 4 configuration files. Display is rated up to 140° F (60°C) maximum operating temperature with IP54 protection.
Temperature	Storage for all enclosures: -13° F to +149° F (-25° C to +65° C). Operation: +14° F to +104° F (-10° C to 40° C). For 1 hp to 100 hp drives (208 V, 230 V & 460 V) operating between 40° C and 50° C, derate the current 2% per °C above 40° C. For 125 hp to 500 hp (460 V) operating between 40° C and 50° C, derate the current 3.3% per °C above 40° C
Humidity	95% with no condensation or dripping water, conforming to IEC60068-2-78
Altitude	3,300 ft (1000 m) maximum without derating Derating of the current by 1% for each additional 330 ft (100 m)
Enclosure	Type 1: all controllers Type 1G: 125 hp to 500 hp VT or 100 hp to 450 hp CT @ 460 V only Type 12/12K: all except 125 hp to 500 hp VT and 100 hp to 450 hp CT @ 460 V
Pollution degree	Type 1, 1G: Pollution degree 2 per NEMA ICS-1 Annex A and IEC 60664-1 Type 12/12K: Pollution degree 3 per NEMA ICS-1 and IEC 60664-1
Operational test vibration	Conforming to IEC 60721-3-3-3M3 amplitude 1.5 mm peak to peak from 3 Hz to 13 Hz 1 g from 13 Hz to 200 Hz
Transit test to shock	Conforming to National Safe Transit Association and International Safe Transit Association test for packages
Operational shock	15 g, 11 ms
Seismic qualification	IBC, ASCE 7 ICC ES AC 156 shaker table acceptance protocol, ground and roof top applications with an importance factor of 1.5
Codes and standards	UL listed per UL 508C under category NMMS (Power Conversion Equipment) Conforms to applicable NEMA ICS, NFPA, and IEC standards Manufactured under ISO 9001 standards Factory modification G10 provides Canadian cUL certification

[1] On 1 hp to 75 hp CT and 1 hp to 100 hp VT controllers, above 4 kHz CT/8 kHz VT, select the next largest size drive controller.
If the duty cycle does not exceed 60% (36 s maximum for a 60 s cycle), this is not necessary.

[2] Class 10 electromechanical for 1 hp @ 460 V.

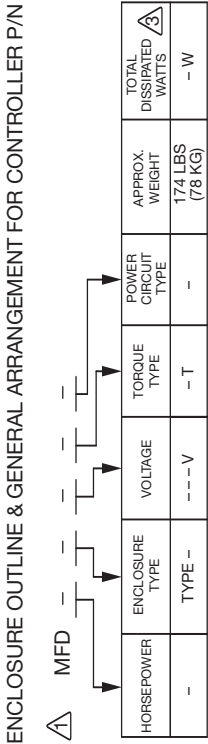
8839-MFD SIZE C CONTROLLER



NOTES:

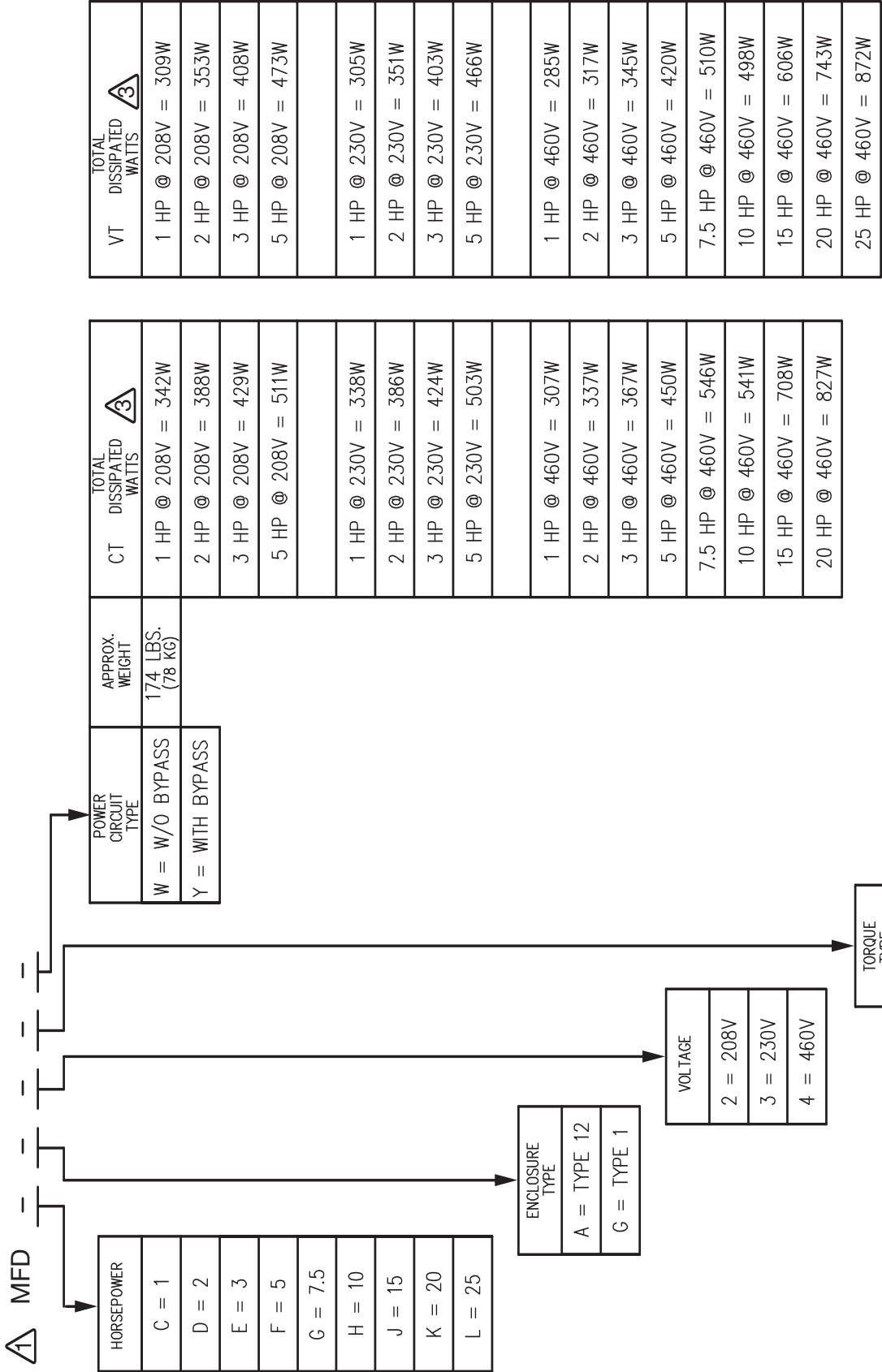
- 1 Refer to controller nameplate to complete P/N.
- 2 2.27" maximum projection of door-mounted devices.
- 3 Use for estimating cooling requirements only.
- 4 A minimum of 6 inches (152.4 mm) clearance is required above and below the enclosure and at least 3 inches (76.2 mm) clearance on each side of the enclosure to maintain proper cooling. During operation, the temperature of the air surrounding the enclosure should be maintained between 0°C and 4°C.

DIMENSIONS IN INCHES [MM]



8839-MFD SIZE C CONTROLLER

ENCLOSURE OUTLINE & GENERAL ARRANGEMENT FOR CONTROLLER P/N



NOTES: **1** Refer to controller nameplate to complete P/N.
3 Use for estimating cooling requirements only.

[illegible]

SEE
F-ELEVATION SIZE C&D BB-02
FOR TABLE VARIATIONS

$$\triangle \quad \text{MFD} \quad - \quad - \quad - \quad - \quad - \quad - \quad Z$$

HORSEPOWER	ENCLOSURE TYPE	VOLTAGE	TORQUE TYPE	POWER CIRCUIT TYPE	APPROX. WEIGHT	TOTAL DISSIPATED WATTS
-	TYPE -	--- V	- T	Z	374 LBS (169.6 KG)	- W

APPROX. WEIGHT	TOTAL DISSIPATE WATTS
374 LBS (169.6 KG)	- W

✓	ORQUE TYPE	-T
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STAGE	-V
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RIATIC

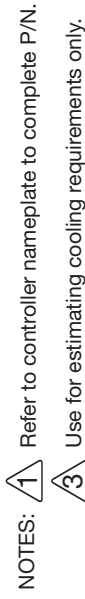
TABLE

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2095

A diagram showing a cart on a horizontal track. A horizontal arrow labeled P points to the right, representing a force applied to the cart.

ENCLOSURE OUTLINE & GENERAL ARRANGEMENT FOR CONTROLLER P/N



DIMENSIONS & WEIGHTS:

M-Flex™ Enclosed AC Drives Class 8839 Type MFD with or without options			Dimensions			Weights	Construction Data		
HP/Voltage (VT)	Power Circuit Configuration	Enclosure Size	Height (in)	Width (in)	Depth (in)	Lbs.	Wall or Floor Mount	Environment	Operating Handle
1 hp to 25 hp @ 460 V 1 hp to 5 hp @ 208 V/230 V	Power circuit W combination device or power circuit Y integrated bypass	C	49.00	20	14.81	175	Wall	Type 1 or Type 12/12K	3" metal rotary
7.5 hp to 10 hp @ 208 V/230 V		D	63.00	25	14.81	243	Wall		
30 hp to 50 hp @ 460 V 15 hp to 25 hp @ 208 V/230 V		E	93.87	20	20.38	170.5	Floor		6" metal rotary
60 hp to 100 hp @ 460 V 30 hp to 50 hp @ 208 V/230 V		F	93.87	25	20.38	249.1			
1 hp to 25 hp @ 460 V 1 hp to 10 hp @ 208 V/230 V	Power circuits Z, S, T or R barriered designs with 2 disconnects	Barriered C/D	93.87	20	20.38	379		3" metal rotary	
30 hp to 50 hp @ 460 V 15 hp to 25 hp @ 208 V/230 V		Barriered E	93.87	25	20.38	512	6" metal rotary		
60 hp to 100 hp @ 460 V 30 hp to 50 hp @ 208 V/230 V		Barriered F	93.87	30	20.38	684			
125 hp @ 460 V	Power circuit W ¹	H	94.58	25	20	489	Type 1 or Type 1A filtered	Flange	
150 hp to 250 hp @ 460 V	Power circuit W ^{2,3}	I	94.58	30	20	657			
300 hp to 500 hp @ 460 V	Power circuit W ^{4,5}	J	94.58	35	20	969			

Notes:

¹ Integrated bypass for 125 hp offered in 20 in. wide section adder (45 in. total width). Barriered bypass offered in 25 in. wide section adder (50 in. total width) — standard product configuration

² Integrated bypass for 150 hp to 200 hp offered in 20 in. wide section adder (50 in. total width). Barriered bypass offered in 25 in. wide section adder (55 in. total width) — standard product configuration

³ Integrated bypass for 250 hp offered in 20 in. wide section adder (50 in. total width). Barriered bypass offered in 30 in. wide section adder (60 in. total width) — factory engineered configuration

⁴ Integrated bypass for 300 hp to 400 hp not available. Barriered bypass offered in 30 in. wide section adder (65 in. total width) – factory engineered configuration

⁵ Integrated bypass for 450 hp to 500 hp not available. Barriered bypass offered in 35 in. wide section adder (70 in. total width) – factory engineered configuration

Power Circuit – Description

R – Barriered bypass with autotransformer reduced voltage starter

S – Barriered bypass with soft start

T – Isolation and transfer (separate starter)

W – Combination drive with disconnect means only

Y – Integrated-bypass drive with full-voltage starter in same enclosure compartment

Z – Barriered-bypass drive with full-voltage starter in separate enclosure compartment

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