



Submittal Data Information

E-Flex™ Enclosed Drive

301-1893

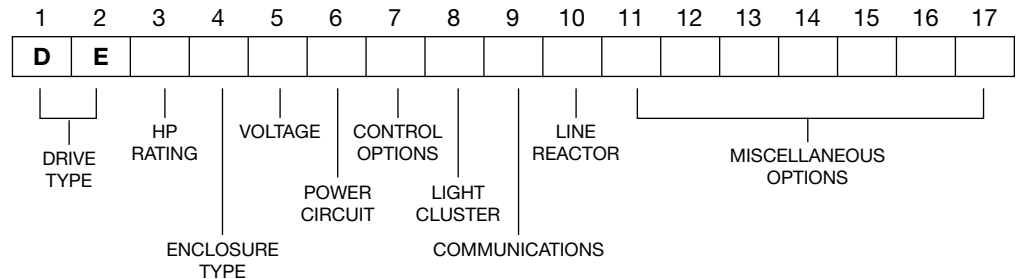
EFFECTIVE: AUGUST 1, 2011

SUPERSEDES: JUNE 1, 2011

JOB _____ ENGINEER _____

CONTRACTOR _____ REP. _____

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

E-FLEX PART NUMBERS:**(1-2) DRIVE TYPE**

DE	E-FLEX DRIVE
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(3) HP RATING

C	1
D	2
E	3
F	5
G	7.5
H	10
J	15
K	20
L	25
M	30
N	40
P	50
Q	60
R	75
S	100

(4) ENCLOSURE TYPE

A	TYPE 12K
G	TYPE 1
H	TYPE 3R

(5) VOLTAGE

2	208 V
3	230 V
4	460 V

(6) POWER CIRCUIT

W	WITHOUT BYPASS
Y	BYPASS

(7) CONTROL OPTIONS

N	NONE
A	HAND/OFF/AUTO, SPEED POT
B	HAND/OFF/AUTO, START/STOP, SPEED POT
C	START/STOP, SPEED POT
D	HAND/OFF/COMM, SPEED POT
E	HAND/OFF/COMM, START/STOP, SPEED POT

(8) LIGHT CLUSTER

A	ON/RUN/FAULT/AUTO
B	ON/RUN/FAULT/BYPASS
C	ON/RUN/FAULT
D	NONE

(9) COMMUNICATIONS

F	PROFIBUS DP
L	LONWORKS
M	Modbus/Unitelway
P	METASYS N2
Q	Ethernet TCP/IP
R	BACnet MSTP
0	Apogee P1
1	NONE

(10) LINE REACTOR

X	3% AC LINE REACTOR (Replaces 3% DC Choke)
A	5% AC LINE REACTOR (Replaces 3% DC Choke)
0	NONE

(11-17) MISCELLANEOUS OPTIONS

B	Line Contactor for 3-Contactor Bypass
C	3-15 PSI Transducer
E	Smoke Purge
H	Add 2 Analog Outputs (1 is Standard)
J	0-10 VDC Speed Reference, No Charge
K	cUL Listing Certification
S	End Damper Control
U	Seismic Qualifications



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:

Electrical Specifications

Input Voltage	208V $\pm$ 10%, 230V $\pm$ 10%, 460V $\pm$ 10%
Short Circuit Current Rating	100,000A symmetrical
Displacement Power Factor	98% through speed range
Input Frequency	50/60Hz $\pm$ 5%
Output Voltage	Three-phase output Maximum voltage equal to input voltage
Galvanic Isolation	Galvanic isolation between power and control (inputs, outputs and power supplies)
Frequency Range of Power Converter	0.5 to 500Hz (factory setting of 60Hz)
Torque/Overtorque	130% of nominal motor torque for 60s
Current (Transient)	120% of controller rated current for 60s
Switching Frequency	Selectable from 1 to 16kHz ^[1] Factory setting: 8kHz
Speed Reference	AI1: 0 to +10V, Impedance = 30k Ω Can be used for speed potentiometer, 1–10k Ω AI2: Factory setting: 4 to 20mA, Impedance = 242 Ω
Factory Resolution in Analog Reference	0.029 for 60Hz (11 bits)
Speed Regulation	V/f control: equal to the motor's rated slip SLFV (sensorless flux vector): 10% of motor's rated slip from 20% to 100% nominal motor torque
Efficiency	Varies from 93% to 97% full load typical
Reference Sample Time	2ms $\pm$ 0.5ms
Acceleration and Deceleration Ramps	0.1 to 999.9s (definition in 0.1s increments)
Drive Controller Protection	Thermal protection of power converter Phase loss of AC mains' enclosure short circuit protection rated at 100kAIC
Motor Protection	Class 20 electronic overload protection Class 20 electromechanical overload protection with bypass ^[2]
Graphic Display Terminal	Self diagnostics with status messages in three languages. Plain user language with ability to customize the display
Codes and Standards	UL Listed per UL 508C under category NMMS Conforms to applicable NEMA ICS, NFPA and IEC standards Manufactured under ISO 9001 standards

[1] On 1-100HP VT controllers, above 8kHz, select the next largest drive controller.

[2] Class 10 electromechanical for 1HP at 460V.

Environmental Specifications

Temperature	Storage for all enclosures: -13°F to +149°F (-25°C to +65°C) Type 1 and Type 12 Operation: +14°F to + 104°F (-10°C to +40°C) Type 3R Operation: +14°F to +122°F (-10°C to +50°C)
Humidity	95% with no condensation or dripping water, conforming to IEC 60068-2-3.
Altitude	3,300 ft. (1,000m) maximum without derating; derating of current by 1% for each additional 330ft. (100m) up to 3000m ^[1]
Enclosure	Type 1, Type 12/12K, and Type 3R
Pollution Degree	Type 1: Pollution degree 2 per NEMA ICS-1 Annex A and IEC 60664-1 Type 12/12K: Pollution degree 3 per NEMA ICS-1 and IEC17.560664-1
Operational Test Vibration	Conforming to IEC 60028-2-6 1.5 peak to peak from 3Hz to 13Hz 1g from 13Hz to 200Hz
Transit Test to Shock	Conforming to National Safe Transit Association and International Safe Transit Association test for packages
Operational Shock	15g, 11ms conforming to IEC/EN 60068-2-27
Seismic Qualification	2003 IBC, NFPA 5000, and ASCE 7 ICC ES AC156 acceptance criteria test protocol with importance factor of 1.5
Certifications	American Bureau of Ship Building (ABS) Type Approval in compliance with marine specifications

[1] Limited to 2000m altitude for common grounded power systems.

E-FLEX ENCLOSED AC DRIVE

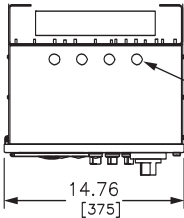
TYPE DE

460V 1-7.5HP
208/230V 1-5HP

TYPE 1 AND TYPE 12K (WALL MOUNT)

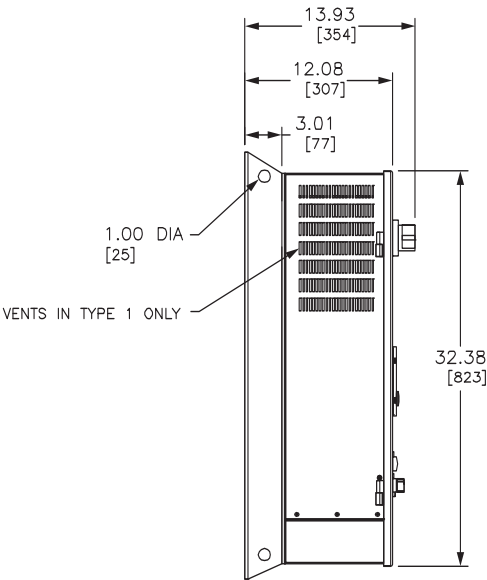
HP	HP	WEIGHT	
460V	208/230V	LB	KG
1 TO 7.5	1 TO 5	83	37.7

DUAL DIMENSIONS: INCHES
[MILLIMETERS]

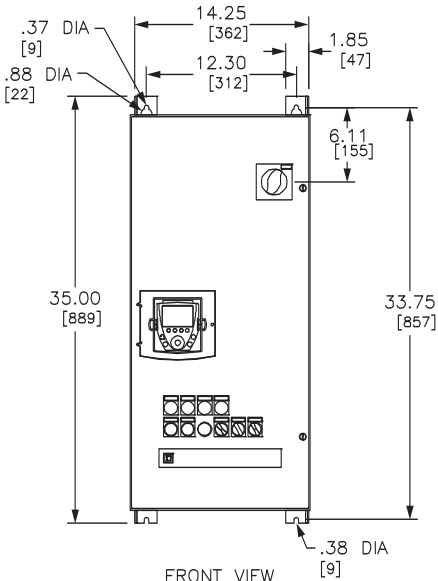


FOR .50/[13] CONDUIT
4 PLACES

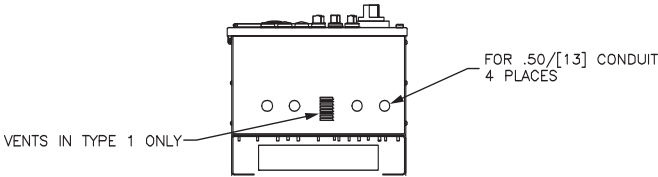
CONDUIT ENTRY - TOP VIEW



SIDE VIEW



FRONT VIEW



CONDUIT ENTRY - BOTTOM VIEW

NOTE:
PROVIDE AT LEAST 3.00/[76] OF MOUNTING CLEARANCE ON EACH SIDE OF THE DRIVE CONTROLLER.
PROVIDE AT LEAST 6.00/[152] OF MOUNTING CLEARANCE ON EACH TOP AND BOTTOM OF THE DRIVE CONTROLLER.

E-FLEX ENCLOSED AC DRIVE

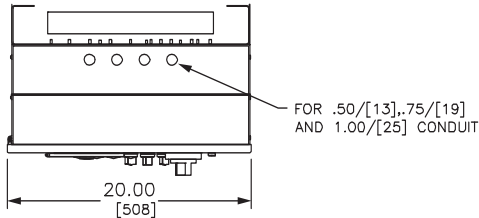
TYPE DE

460V 10-25HP
208/230V 7.5-10HP

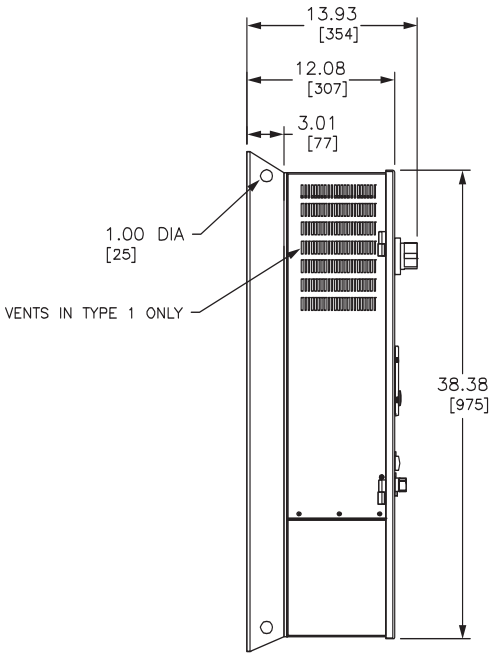
TYPE 1 AND TYPE 12K (WALL MOUNT)

HP	HP	WEIGHT	
460V	208/230V	LB	KG
10 TO 25	7.5 TO 10	126	57.2

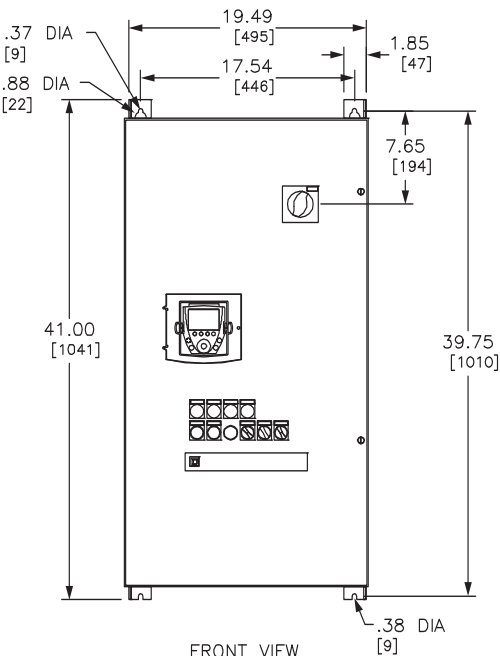
DUAL DIMENSIONS: INCHES
[MILLIMETERS]



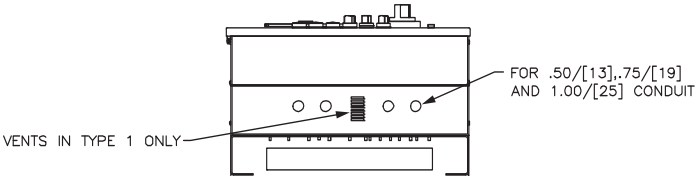
CONDUIT ENTRY — TOP VIEW



SIDE VIEW



FRONT VIEW



CONDUIT ENTRY — BOTTOM VIEW

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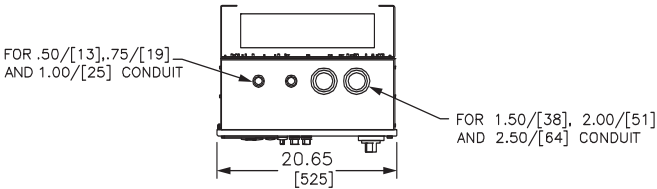
TYPE DE

460V 30-50HP
208/230V 15-25HP

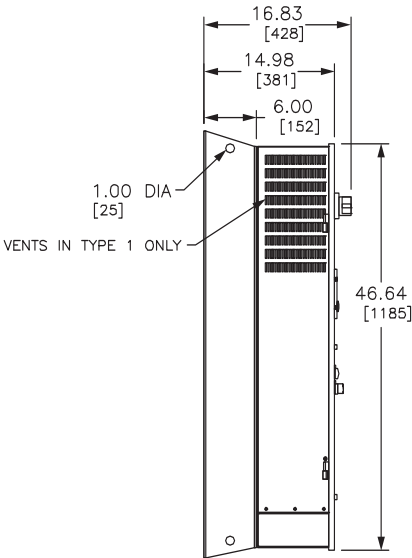
TYPE 1 AND TYPE 12K (WALL MOUNT)

HP	HP	WEIGHT	
460V	208/230V	LB	KG
30 TO 50	15 TO 25	177	80.5

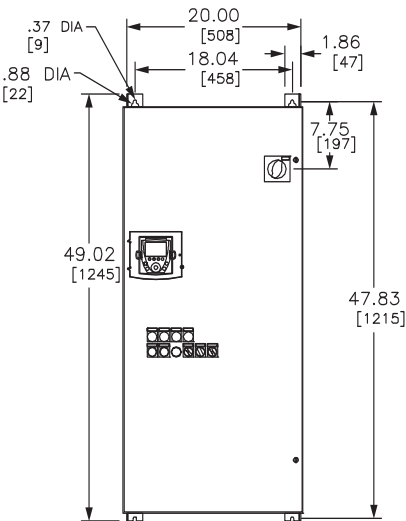
DUAL DIMENSIONS: INCHES
[MILLIMETERS]



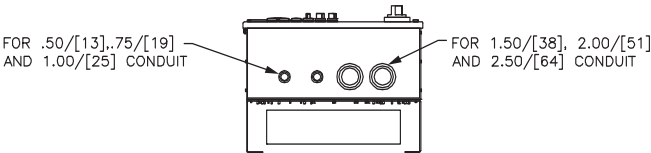
CONDUIT ENTRY — TOP VIEW



SIDE VIEW



FRONT VIEW



CONDUIT ENTRY — BOTTOM VIEW

NOTE:
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PROVIDE AT LEAST 6.00/[152] OF MOUNTING CLEARANCE ON EACH TOP AND BOTTOM OF THE DRIVE CONTROLLER.

E-FLEX ENCLOSED AC DRIVE

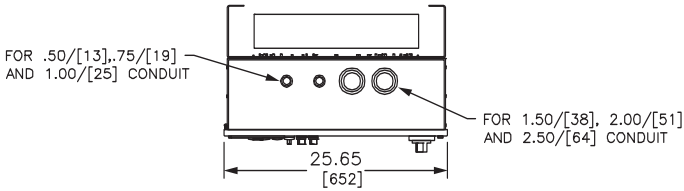
TYPE DE

460V 60-100HP
208/230V 30-50HP

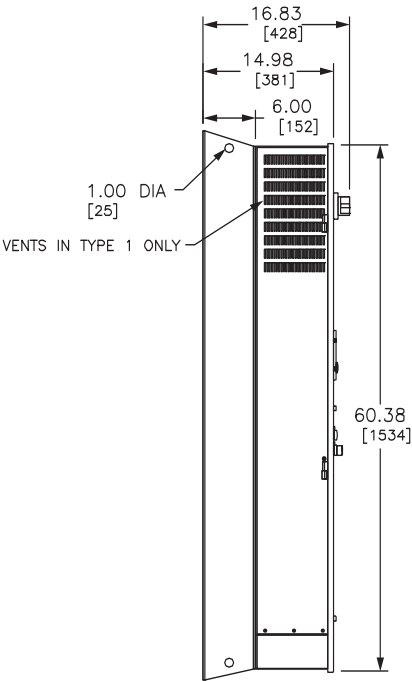
TYPE 1 AND TYPE 12K (WALL MOUNT)

HP	HP	WEIGHT
460V	208/230V	LB KG
60 TO 100	30 TO 50	211 95.9

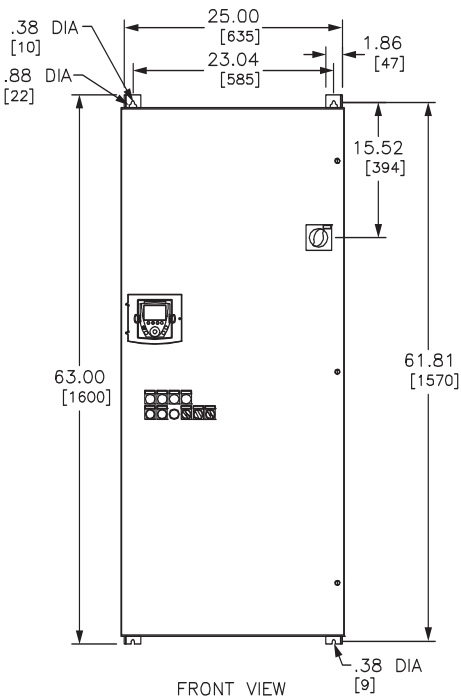
DUAL DIMENSIONS: INCHES
[MILLIMETERS]



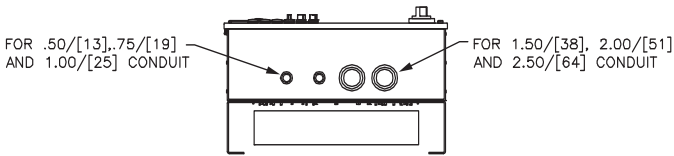
CONDUIT ENTRY - TOP VIEW



SIDE VIEW



FRONT VIEW



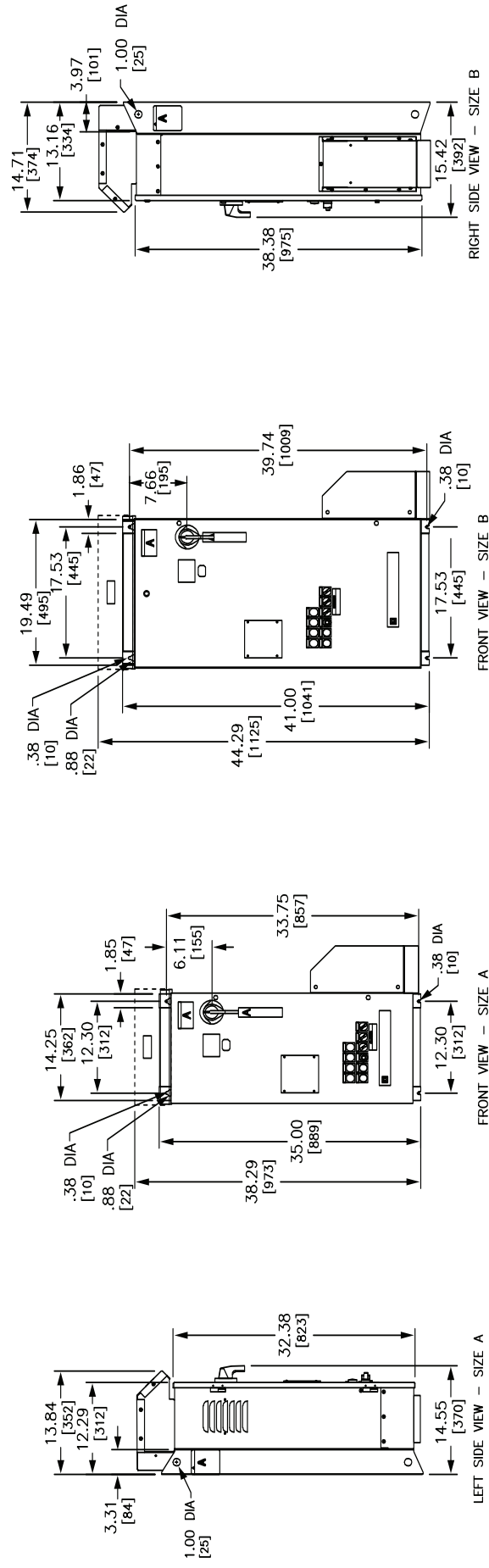
CONDUIT ENTRY - BOTTOM VIEW

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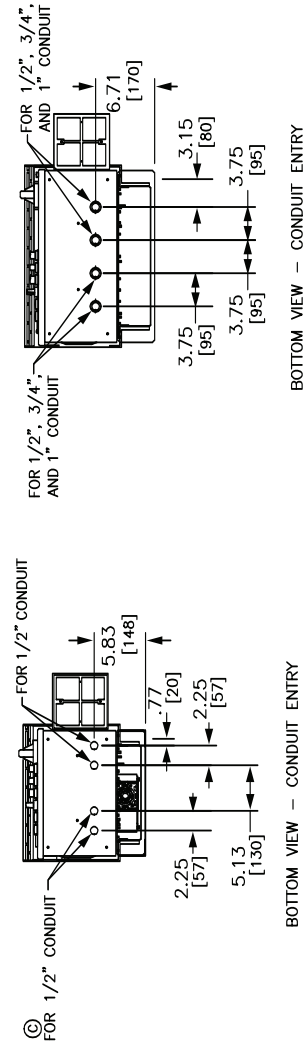
SIZE A & B

Diagram showing the top view of the device. Dimensions are indicated in inches and millimeters:

- Overall width: 20.63 [524]
- Overall height: 5.85 [149]
- Label: KNOCKOUTS FOR TOP ENTRY NOT INCLUDED FOR TYPE 3R
- Label: TOP VIEW - NO CONDUIT ENTRY 3R



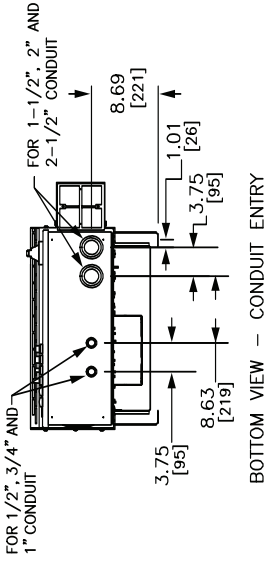
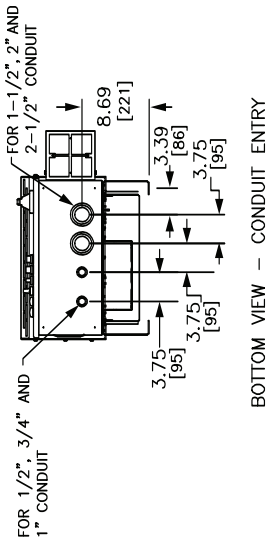
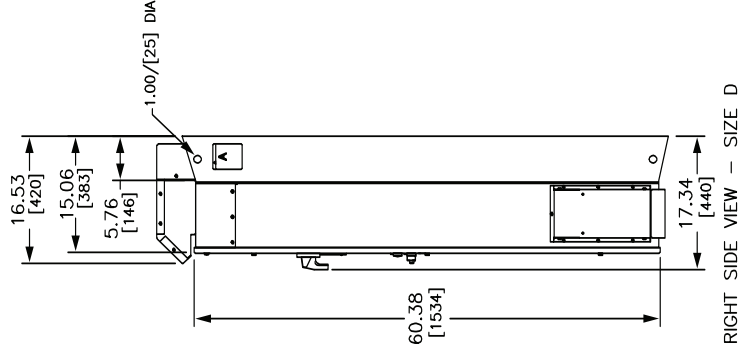
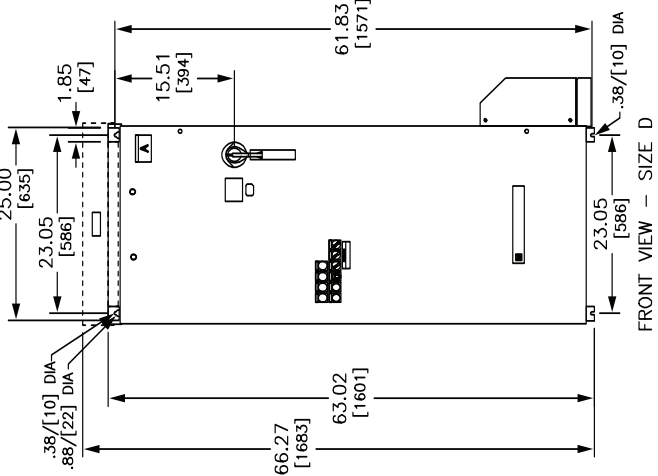
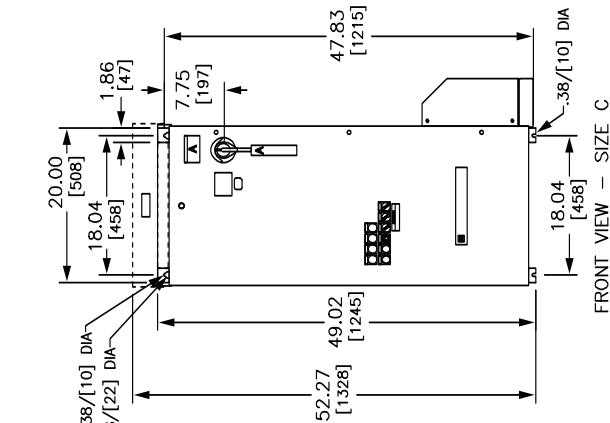
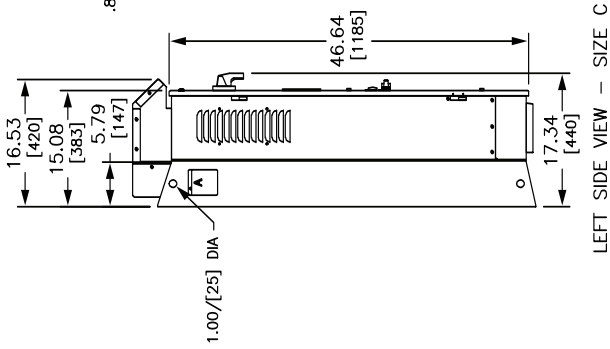
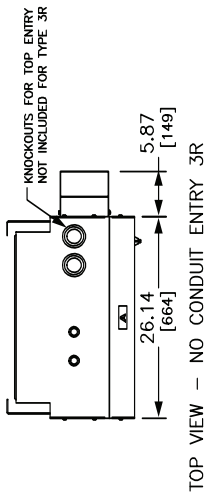
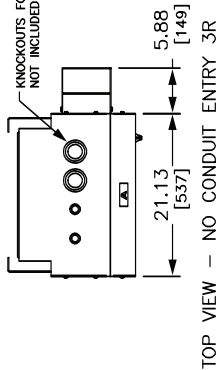
SIZE B	
460V	10-25HP (VT)
230V	7.5-10HP (VT)
208V	7.5-10HP (VT)



E-FLEX TYPE 3R OUTLINE DRAWING

SIZE C & D

DUAL DIMENSIONS: INCHES
[MILLIMETERS]



SIZE C
460V-30-50HP (VT)
230V-15-25HP (VT)
208V-15-25HP (VT)

SIZE D
460V-60-100HP (VT)
230-30-50HP (VT)
208-30-50HP (VT)

DIMENSIONS & WEIGHTS:

Type 1 or Type 12K Enclosures

HP		Height		Width		Depth		Weight ^[2]	
208/230V	460V	mm	in.	mm	in.	mm	in.	kg.	lbs.
1-5	1-7.5	889	35	374.9	14.76	353.91	13.93	37.7	83
7.5-10	10-25	1041.4	41	521.21	20.52	353.91	13.93	57.2	126
15-25	30-50	1244.6	49	524.51	20.65	427.49	16.83	80.5	177
30-50	60-100	1600.2	63	651.51	25.65	427.49	16.83	95.9	211

Type 3R Enclosures

HP		Height		Width		Depth		Weight ^[2]	
208/230V	460V	mm	in.	mm	in.	mm	in.	kg.	lbs.
1-5	1-7.5	889	35	620.52	24.43	347.73	13.69	52.3	115
7.5-10	10-25	1041.4	41	766.83	30.19	347.73	13.69	74.1	163
15-25	30-50	1326.39	52.22	770.13	30.32	415.04	16.34	96.8	213
30-50	60-100	1681.99	66.22	897.13	35.32	415.04	16.34	112.3	247

[2] Weight may vary based on options selected.

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