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TRANE AC Drives Selection Guide

Class 8839



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Input voltage	400 V ±15% and 460 V ±15% or 208 V ±10% and 230 V ±15%
Displacement power factor	Approximately 0.96
Input frequency	47.5 to 63 Hz
Output voltage	Maximum voltage equal to input line voltage
Frequency resolution	Drive controller: Input AI1: (High Speed/1,024) Hz [1] Input AI2: (High Speed/512) Hz [1] Keypad display: 0.1 Hz increments Processor: 0.015 Hz increments With Option Board: Option board analog inputs: (High Speed/4096) Hz [1] Serial link: 0.015 Hz increments
Frequency accuracy	±(0.0075 Hz + 0.00005 times High Speed)
Temperature drift [2]	Drive controller: Analog inputs: 3 x 10^{-4} times High Speed/°C typical Keypad display: 7 x 10^{-7} times High Speed/°C maximum With option board: Option board analog inputs: 2.5 x 10^{-5} times High Speed/ °C typical Serial link: 7 x 10^{-7} times High Speed/ °C maximum
Frequency range	ATV66U41N4 to C13N4: 0.1 to 400 Hz (constant torque configuration) ATV66C15N4 to C31N41: 0.1 to 200 Hz (constant torque configuration) ATV66U41N4 to C31N41: 0.1 to 60/72 Hz (variable torque configuration) ATV66U41M2 to D46M2: 0.1 to 400 Hz (constant torque configuration) ATV66U41M2 to D46M2: 0.1 to 75/90 Hz (variable torque configuration)
Torque/overtorque	See page 58.
Speed reference	AI1: 0-10 V AI2: 4-20 mA 0-5 V with switch on control board 0-20 mA, x-20 mA, 20-4 mA with keypad display
Speed regulation	V/f: determined by motor slip, typically 3% SLFV (sensorless flux vector): 1% (Optional tachometer: 0.5%)
Efficiency	Typically greater than 96%
Reference sample time	10 ms
Ramps	Acceleration: 0.1 to 999.9 seconds Deceleration: 0.1 to 999.9 seconds
Braking to standstill	By DC injection: Automatic for 0.5 s if frequency drops below 1 Hz Manual by external signal
Dynamic braking	By optional resistor (see Dynamic Braking User's Manual)
Drive controller protection	Against short circuits: • between output phases • between output phases and ground • on the outputs of internal supplies • on the logic and analog outputs Against input line supply under/overvoltage Against overheating: by thermal sensor
Motor protection	Incorporated electronic thermal protection (page 56)
Keypad display	• Self-diagnostics with full fault messages in seven languages • Also refer to Level 1 & 2 Configuration manual
[1] Resolution limited to processor resolution. [2] Drive Controller at operating load and temperature.	
Communication	• Complete programming by DOS-compatible computer or keypad • Optional multidrop serial link
Temperature	Operation: +32 to +104 °F (0 to +40 °C) Storage: -13 to +158 °F (-25 to +70 °C)
Humidity	95% maximum without condensation or dripping water
Altitude	≤ 3,300ft (1,000 m); above this derate by 1.2% for every 300ft (100 m), max. 6,600ft (2,000 m)
Enclosure	NEMA Type 1 (IP30)
Pollution Degree	Pollution Degree 3 per NEMA ICS-1 and IEC 664-1.
Resistance to vibration	Conforming to IEC 68-2-6: • ATV66U41N4 to D46N4 and ATV66U41M2 to D33M2: 1 mm peak to peak from 5 to 22.3 Hz and 2 g peak from 22.3 to 150 Hz • ATV66D54N4 to C31N41 and ATV66D46M2: 0.15 mm peak to peak from 10 to 58 Hz and 1 g peak from 58 to 150 Hz
Resistance to shock	Conforming to IEC 68-2-27: • 15 g peak for 11 ms
Codes and standards	UL Listed per UL 508C under category NMMS as incorporating electronic overload protection CSA certified Conforms to applicable NEMA ICS, NFPA, IEC, and ISO 9001 standards

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AC Drives Selection Guide for TRANE®
ALTIVAR™ 66 Open Style Chassis Mount
208/230 Volt

The ALTIVAR™ 66 adjustable frequency drive is a microprocessor based drive that will provide the exceptional reliability and performance necessary to meet your energy savings goals. The pulse width modulated (PWM) design utilizes Insulated Gate Bipolar Transistors (IGBT's). The randomly modulated switching frequency reduces single tone motor noise. The NOLD (No Load) function automatically optimizes the volts/hertz curve to maximize energy savings and further reduce motor noise.

Motor HP*	Rated Output Current	Type No.
3	10.6	ATV66U41M2
5	16.7	ATV66U72M2
7.5	24.2	ATV66U90M2
10	31	ATV66D12M2
15	47	ATV66D16M2
20	60	ATV66D23M2
25/30	88	ATV66D33M2
40	115	ATV66D46M2



***** Motor HP is based on standard NEMA B, 4 pole design

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Features:

- User friendly graphical keypad
  - — 6x21 alphanumeric character lines
  - — Text lines, bar graphs, and user defined speed output
  - — 7 languages
  - — Configure and monitor drive parameters in full text words
  - — Fault diagnostics in full text words
  - — Start up assistance by prompts and questions
- NEMA 1 rated enclosure
- Separately adjustable linear or "S" curve (accel/decel)
- Selectable process follower inputs 0-10 V, 4-20 mA, x-20 mA, 20-4 mA, 0-5 V
- Skip frequencies - Qty. 3
- DC injection braking
- ISO 9001 manufacturing
- 10 kilohertz modulating switching frequency
- Volts/hertz curve optimization with NOLD (No Load)

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The Altivar™ 66 adjustable frequency drive is a microprocessor based drive that will provide the exceptional reliability and performance necessary to meet your energy savings goals. The pulse width modulated (PWM) design utilizes Insulated Gate Bipolar Transistors (IGBT's). The randomly modulated switching frequency reduces single tone motor noise. The NOLD (No Load) function automatically optimizes the volts/hertz curve to maximize energy savings and further reduce motor noise.

Motor HP*	Rated Output Current	Type No.
2	3.4	ATV66U41N4
3	4.8	ATV66U41N4
5	7.6	ATV66U72N4
7.5	11	ATV66U90N4
10	14	ATV66D12N4
15	21	ATV66D16N4
20	27	ATV66D23N4
25/30	40	ATV66D33N4
40	52	ATV66D46N4
50	65	ATV66D54N4
60	77	ATV66D64N4
75	96	ATV66D79N4
100	124	ATV66C10N4
125	158	ATV66C10N4
150	180	ATV66C13N4
200	240	ATV66C15N4



* Motor HP is based on standard NEMA B 4 pole designs

Contact your local Square D Sales office for Pricing (see back cover for listing of offices)

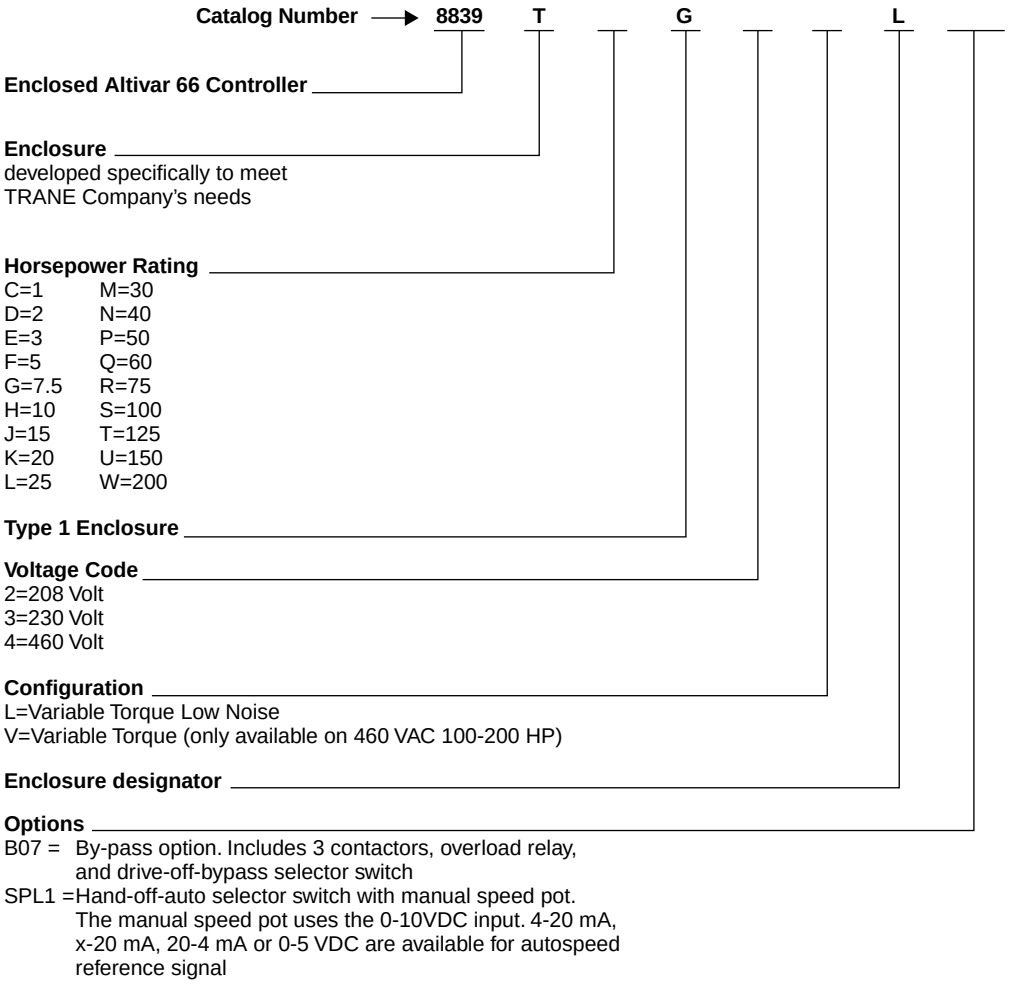
Features:

- User friendly graphical keypad
  - — 6x21 alphanumeric character lines
  - — Text lines, bar graphs, and user defined speed output
  - — 7 languages
  - — Configure and monitor drive parameters in full text words
  - — Fault diagnostics in full text words
  - — Start up assistance by prompts and questions
- NEMA 1 rated enclosure
- Separately adjustable linear or "S" curve (accel/decel)
- Selectable process follower inputs 0-10 V, 4-20 mA, x-20 mA, 20-4 mA, 0-5 V
- Skip frequencies - Qty. 3
- DC injection braking
- ISO 9001 manufacturing
- 10 kilohertz modulating switching frequency
- Volts/hertz curve optimization with NOLD (No Load)

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AC Drives Selection Guide for TRANE®
ALTIVAR™ 66 Enclosed and with Bypass
Catalog Number Identification

Interpret the Altivar 66 enclosed catalog numbers as follows:



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TRANE Modular Climate Changers with the Square D ALTIVAR 66 Variable Frequency Drive

The TRANE Company is now offering the Square D ALTIVAR 66 enclosed drive, mounted and wired and specifically configured for air handling applications. The drive package includes the following specifications.

- NEMA 1 enclosure with disconnect
- Current limiting fuses: Class CC or Class T
- Optional 3 contactor by-pass with Class 10 bi-metal overload relay
  - By-pass option includes “Drive Off By-pass” selector switch
- Door mounted LED indicators for power on, thermal fault pending and fault
- Door mounted 18 button keypad with back-lit LCD screen:
  - 6 lines each 21 characters or bar graphs for current, voltage, or frequency.
- Terminal block connections for:
  - Drive fault contact, closes on fault
  - Drive run contact, closes when running
  - User start contact, close to start drive
  - User 0-10VDC speed reference signal
- All control wires labeled for ease of circuit diagnostics.
- Finger safe construction
- Manufactured in ISO 9002 facility
- Pulse width modulated drive output with IGBT type transistors
- Self-diagnostic with plain text fault messages
- Speed reference inputs of 0-10V, (0-20mA, 4-20mA or 20-4 mA optional)
- Operational temperature of 0° to +40°C, -25° to +70°C storage
- Maximum relative humidity of 95%, non-condensing
- Altitude up to 3300 ft., above 3300, derate by 1.2% for every 300 ft.
- NOLD (No Load) function automatically optimize volts/ hertz to maximize energy savings and further reduce motor noise.
- Codes and Standards: NEMA, UL, CSA, NEC, VDE, and IEC
  - Conforms to ISO 9001 standards
- High switching frequency with random modulation to reduce motor noise
- Auto restart with programmable time delay for up to 5 restarts
- Synchronized restart to catch a spinning motor
- Three user selectable skip frequency ranges
- Single family of product 1HP to 200HP
- 24 hour a day product support via telephone with factory trained personnel
- Global on-site service available through Square D Technical Services Division

Protection:

- Protection against short circuits:
  - between output phases
  - between output phase and ground
  - on internal power supplies
  - on logic and analog outputs
- Protection against input line supply under and over voltage
- Thermal protection against overheating
- Solid state I^2t Class 10 motor thermal protection which is UL listed
- Frequency foldback if motor is overloaded
- Power loss ride through of 200 msec.

The optional three contactor by-pass provides line side and load side isolation to the adjustable frequency controller and allows for back-up across-the-line operation of the fan motor. A bi-metal, Class 10 overload relay is included.

Motor noise is reduced by using a high switching frequency and then randomly modulating the switching frequency to eliminate a single pitch noise usually associated with AC drives. The drive utilizes 10Khz through 50HP, 4Khz through 75HP and 2Khz through 200HP.

Standard parts warranty is 18 months from date of invoice of equipment. An extended warranty includes parts and labor, for 36 months from date of start-up is available if start-up is performed by a Square D authorized agent.

Line reactors and filters are not required on most projects. The amount of harmonic distortion at the point of common coupling (PCC) is a function of the distribution system characteristics (impedance of the distribution lines and available fault current,) and the power source size relative to the AC drive load. If line reactors or filters are required, they will need to be price separately and mounted in separate enclosures.

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AC Drives Selection Guide for TRANE®
ALTIVAR™ 66 Enclosed and with Bypass
208 Volt

The Altivar™ 66 enclosed drive is UL508 listed as an enclosed device. It incorporates the Altivar 66 controller with a circuit breaker disconnect, fuses control transformer and internal cooling fan. Optional bypass feature includes line contactor, isolation and bypass contactor with overload in the same enclosure with the controller.

Motor HP*	Rated Output Current	Part No. Enclosed	Part No. Enclosed w/ Bypass
		8839	8839
1	4	-TCG2LL	-TCG2LLB07
2	7.5	-TDG2LL	-TDG2LLB07
3	10	-TEG2LL	-TEG2LLB07
5	16.7	-TFG2LL	-TFG2LLB07
7.5	24.2	-TGG2LL	-TGG2LLB07
10	30.8	-THG2LL	-THG2LLB07
15	46.2	-TJG2LL	-TJG2LLB07
20	59.4	-TKG2LL	-TKG2LLB07
25	74.8	-TLG2LL	-TLG2LLB07
30	88	-TMG2LL	-TMG2LLB07
40	114	-TNG2LL	-TNG2LLB07



* Motor HP is based on standard NEMA B, 4 pole designs

Contact your local Square D Sales office for Pricing (see back cover for listing of offices)

Features:

- NEMA Type 1 Enclosure
- Chassis mount ATV66
- AC line fuses
- Disconnect with door interlocked flange-mounted handle
- Oversized control power transformer with fuses
- Control wiring to terminal strips for customer connection
- Keypad mounted thru door
- Off-Drive selector switch

The Isolation Bypass option includes:

- AC line contactor
- Bypass contactor
- Isolation contactor
- Motor thermal overload relay
- Drive-Off-Bypass selector switch

Optional hand-off-auto selector switch with manual speed pot:

Add SPL1 to end of part number. The manual pot uses the 0-10VDC input. The following are available for auto speed reference signal; 4-20 mA, x-20 mA, 20-4 mA or 0-5VDC.

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The Altivar™ 66 enclosed drive is UL508 listed as an enclosed device. It incorporates the Altivar 66 controller with a circuit breaker disconnect, fuses control transformer and internal cooling fan. Optional bypass feature includes line contactor, isolation and bypass contactor with overload in the same enclosure with the controller.

Motor HP*	Rated Output Current	Part No. Enclosed	Part No. Enclosed w/ Bypass
		8839	8839
1	4	-TCG3LL	-TCG3LLB07
2	6.8	-TDG3LL	-TDG3LLB07
3	10	-TEG3LL	-TEG3LLB07
5	15.2	-TFG3LL	-TFG3LLB07
7.5	22	-TGG3LL	-TGG3LLB07
10	28	-THG3LL	-THG3LLB07
15	40	-TJG3LL	-TJG3LLB07
20	54	-TKG3LL	-TKG3LLB07
25	68	-TLG3LL	-TLG3LLB07
30	80	-TMG3LL	-TMG3LLB07
40	104	-TNG3LL	-TNG3LLB07



* Motor HP is based on standard NEMA B, 4 pole designs

Contact your local Square D Sales office for Pricing (see back cover for listing of offices)

Features:

- NEMA Type 1 Enclosure
- Chassis mount ATV66
- AC line fuses
- Disconnect with door interlocked flange-mounted handle
- Oversized control power transformer with fuses
- Control wiring to terminal strips for customer connection
- Keypad mounted thru door
- Off-Drive selector switch

The Isolation Bypass option includes:

- AC line contactor
- Bypass contactor
- Isolation contactor
- Motor thermal overload relay
- Drive-Off-Bypass selector switch

Optional hand-off-auto selector switch with manual speed pot:

Add SPL1 to end of part number. The manual pot uses the 0-10VDC input. The following are available for auto speed reference signal; 4-20 mA, x-20 mA, 20-4 mA or 0-5VDC.

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AC Drives Selection Guide for TRANE®
ALTIVAR™ 66 Enclosed and with Bypass
460 Volt

The Altivar™ 66 enclosed drive is UL508 listed as an enclosed device. It incorporates the Altivar 66 controller with a circuit breaker disconnect, fuses control transformer and internal cooling fan. Optional bypass feature includes line contactor, isolation and bypass contactor with overload in the same enclosure with the controller.

Motor HP*	Rated Output Current	Type No, Enclosed	Type No. Enclosed w/ Bypass
		8839	8839
1	2	- TCG4LL	- TCG4LLB07
2	3.4	-TDG4LL	-TDG4LLB07
3	4.8	-TEG4LL	-TEG4LLB07
5	7.6	-TFG4LL	-TFG4LLB07
7.5	11	-TGG4LL	-TGG4LLB07
10	14	-THG4LL	-THG4LLB07
15	21	-TJG4LL	-TJG4LLB07
20	27	-TKG4LL	-TKG4LLB07
25	34	-TLG4LL	-TLG4LLB07
30	40	-TMG4LL	-TMG4LLB07
40	50	-TNG4LL	-TNG4LLB07
50	65	-TPG4LL	-TPG4LLB07
60	77	-TQG4LL	-TQG4LLB07
75	96	-TRG4LL	-TRG4LLB07
100	124	-TSG4VL	-TSG4VLB07
125	158	-TTG4VL	-TTG4VLB07
150	180	-TUG4VL	-TUG4VLB07
200	240	-TWG4VL	-TWG4VLB07



* Motor HP is based on standard NEMA B 4 pole designs

Contact your local Square D Sales office for Pricing (see back cover for listing of offices)

Features:

- NEMA Type 1 Enclosure
- Chassis mount ATV66
- AC line fuses
- Disconnect with door interlocked flange mounted handle
- Oversized control power transformer with fuses
- Control wiring to terminal strips for customer connection
- Keypad mounted thru door
- Off-drive selector switch

The Isolation Bypass includes:

- AC line contactor
- Bypass contactor
- Isolation Contactor
- Motor thermal overload relay
- Drive-Off-Bypass selector switch

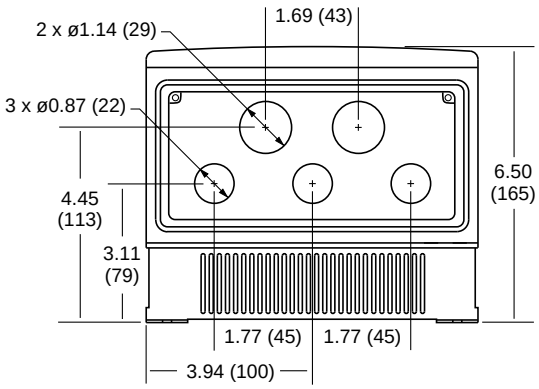
Optional hand-off-auto selector switch with manual speed pot:

Add SPL1 to end of part number. The manual pot uses the 0-10VDC input. The following are available for auto speed reference signal; 4-20 mA, x-20 mA, 20-4 mA or 0-5V.

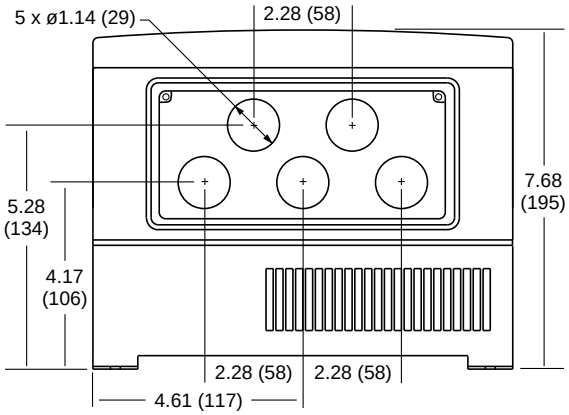
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Dimensions & Weights for Wall or Panel Mounting

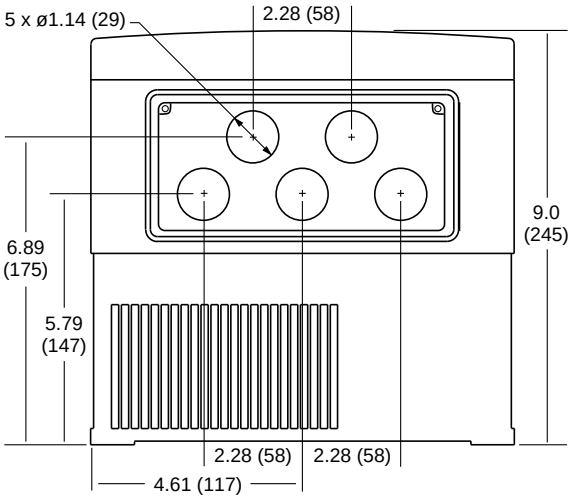
Conduit Entries - Bottom View



Outline 1

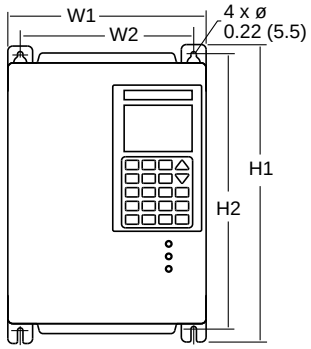


Outline 2



Outline 3

Mounting



Approximate Dimensions **Inches**
mm

Mounting Dimensions

	Drive Controller ATV66•••N4	Drive Controller ATV66•••M2	H1		H2		W1		W2		Ø		Weight		Door Swing Clearance [1]	
			in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg	in	mm
1	U41 - U72	U41	11.6	295	10.9	280	7.8	200	6.9	175	0.22	5.5	10.4	4.7	7.8	200
2	U90, D12	U72, U90	12.8	325	12.2	310	9.2	234	8.2	209	0.22	5.5	16.1	7.3	9.2	234
3	D16, D23	D12, D16	16.3	415	15.7	400	9.2	234	8.2	209	0.22	5.5	30.9	14	9.2	234

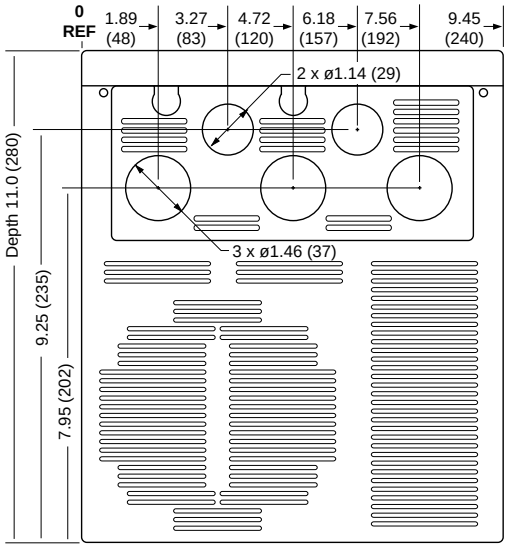
[1] Door hinges on left-hand side of drive controller.

Note: *When metallic conduit is used with ATV66U41N4 to D23N4 drives, install a metal conduit entry plate (kit VY1-A66201 - separately ordered). Kit mounts in place of the existing plastic plate.*

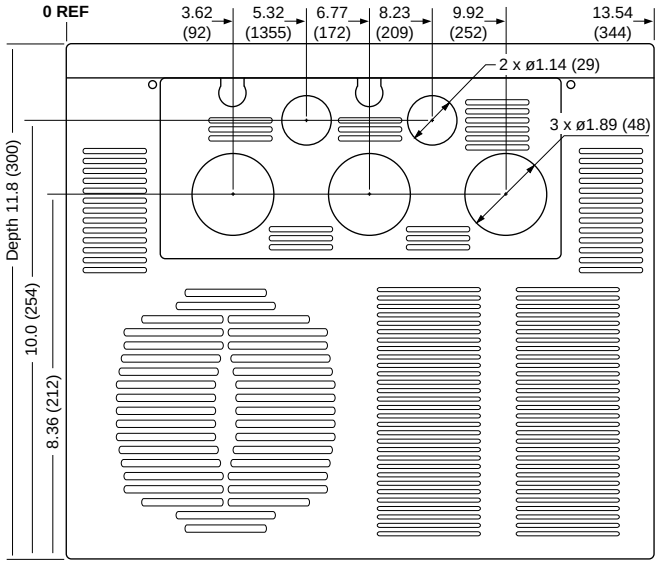
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Dimensions & Weights for Wall or Panel Mounting (cont.)

Conduit Entries - Bottom View

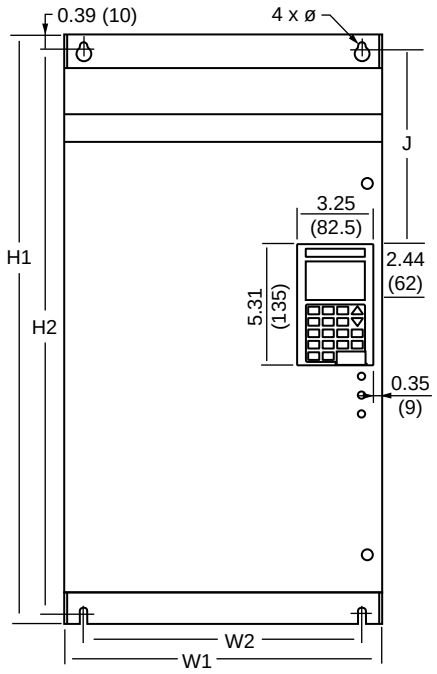


Outline 4



Outline 5

Mounting



Approximate Dimensions **Inches**
mm

Mounting Dimensions

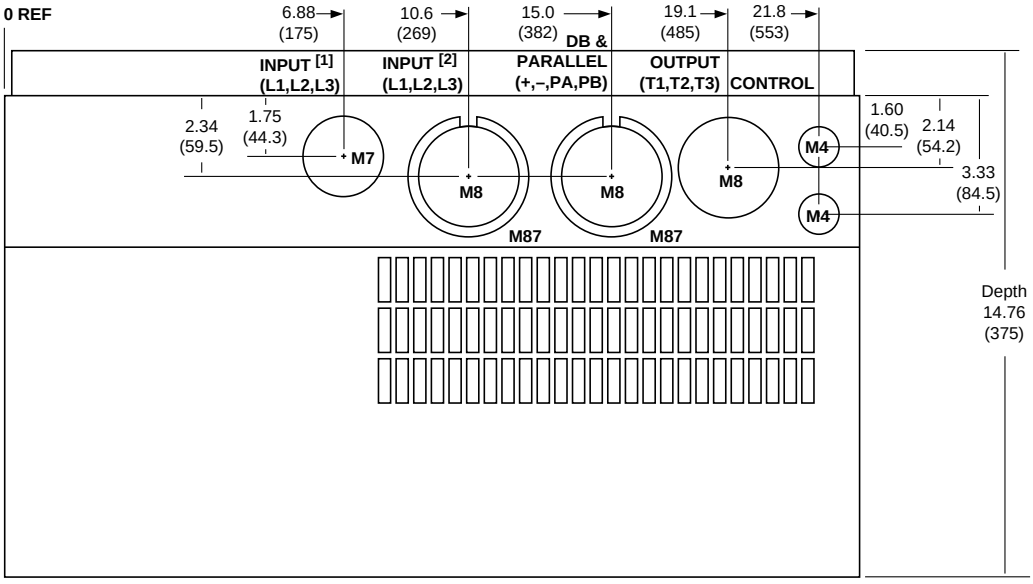
	Drive Controller ATV66•••N4	Drive Controller ATV66•••M2	H1		H2		W1		W2		Ø		J		Weight		Door Swing Clearance [1]	
			in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg	in	mm
4	D33, D46	D23, D33	23.6	600	22.8	580	9.5	240	8.1	205	0.28	7	3.19	81	59.5	27	9.5	240
5	D54 - D79	D46	25.6	650	24.4	620	13.8	350	11.8	300	0.35	9	3.39	86	88.2 90.4	40 41	13.8	350

[1] Door hinges on left-hand side of drive controller.

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Dimensions & Weights for Wall or Panel Mounting (cont.)

Conduit Entries - Bottom View



Outline 6

KNOCKOUTS:

M4 = 2 x 1.00 (25.4) dia.

M7 = 2.00 (50.8) dia.

M8 = 2.50 (63.5) dia.

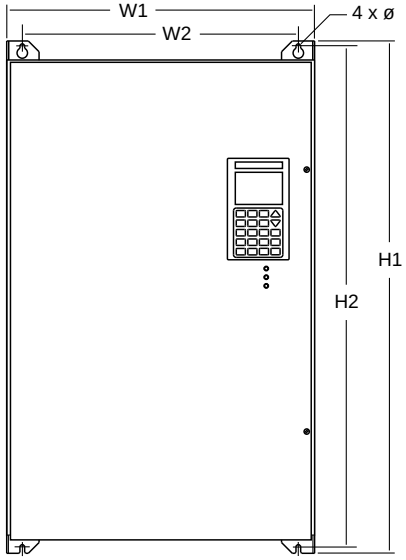
M87 = 3.00 (76.2) dia. w/ 2.50 (63.5) dia.

NOTES:

[1] Use 2 in (50.8 mm) knockout for parallel cable runs.

[2] Use single 3 in (76.2 mm) knockout for single cable run.

Mounting



Approximate Dimensions **Inches**
mm

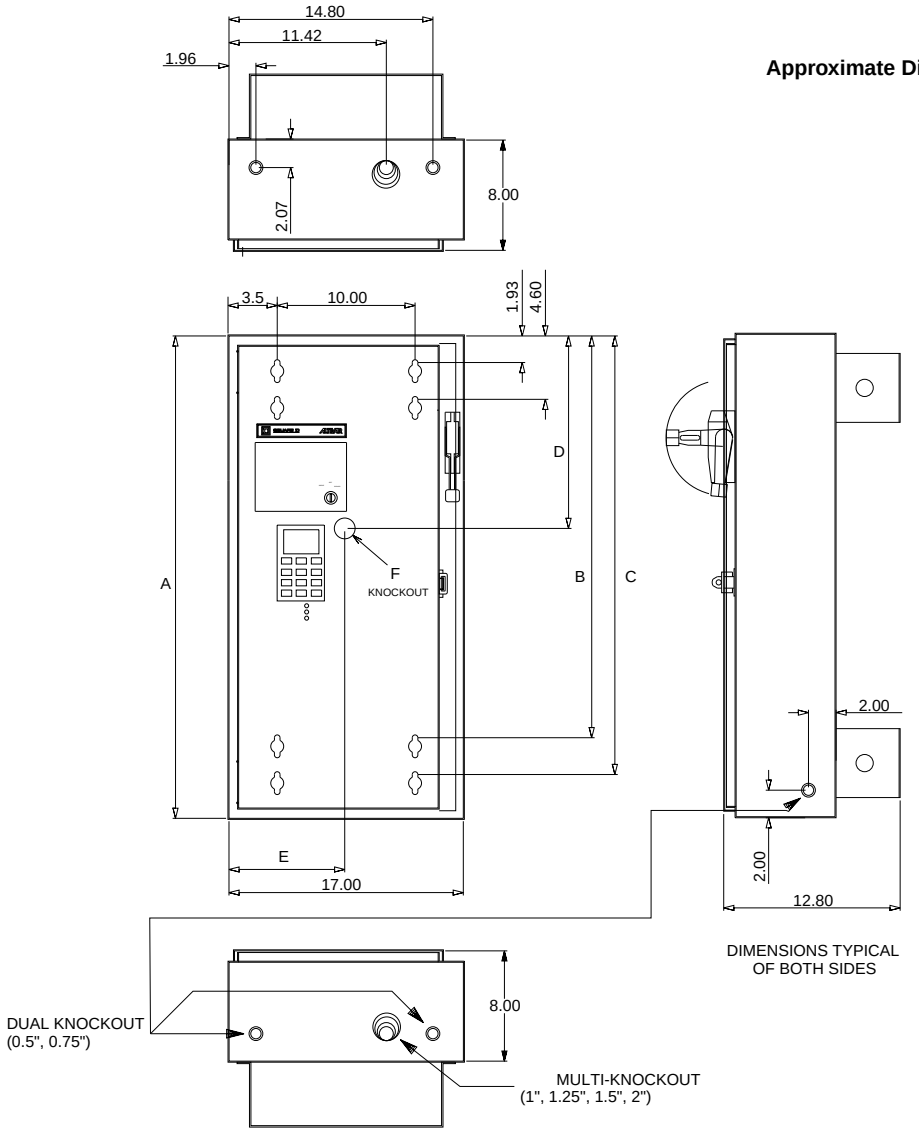
Mounting Dimensions

	Drive Controller ATV66•••N4	H1		H2		W1		W2		Ø		Weight		Door Swing Clearance [1]	
		in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg	in	mm
5	C10 C13, C15, C19	38.6	980	37.7	960	23.0	585	20.8	528	0.375	9.5	280 300	127 136	23	584

[1] Door hinges on left-hand side of drive controller.

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1-10 HP 208/230 Volt, 1-20 HP 460 Volt w/ or w/out Bypass



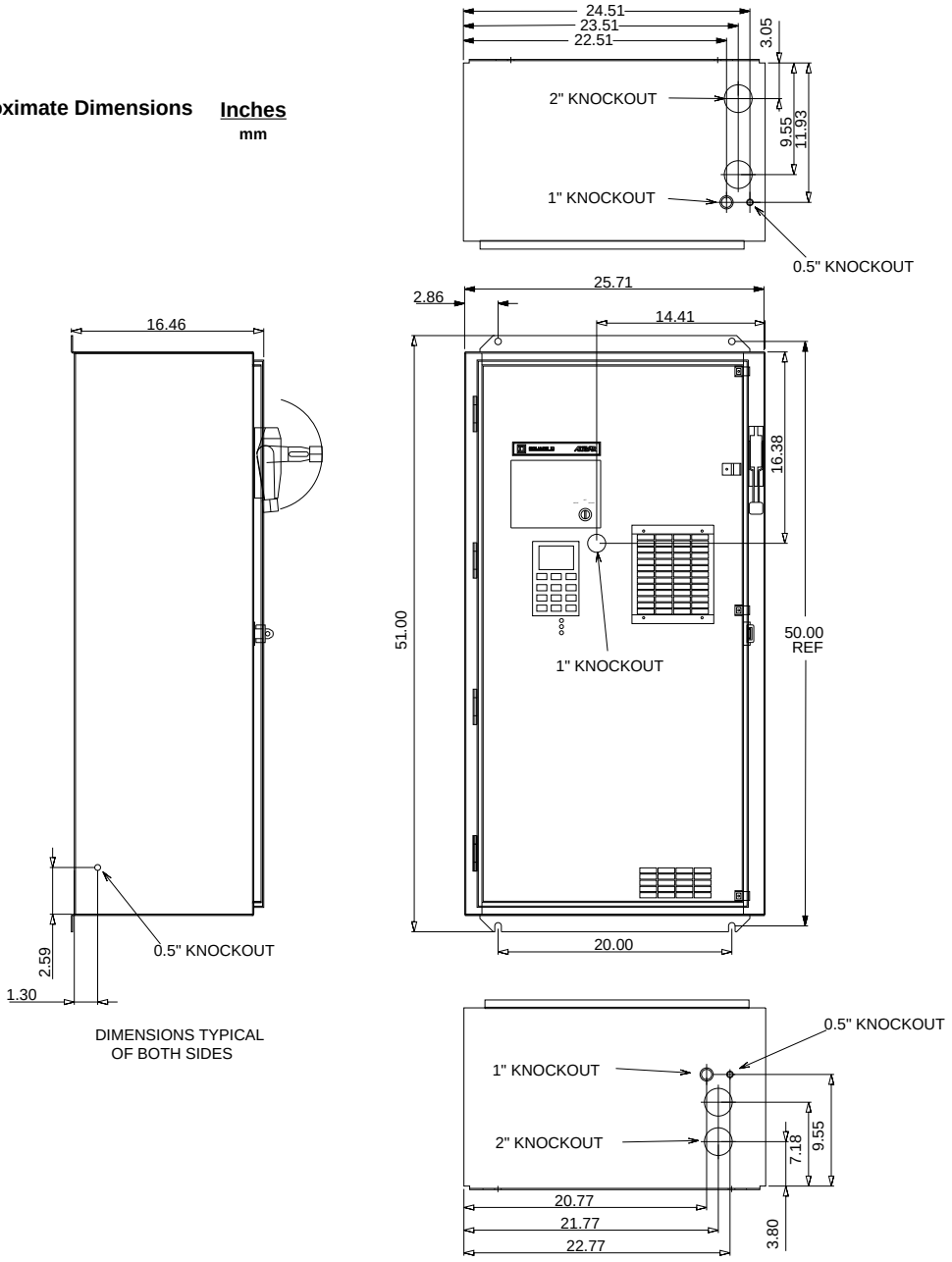
Approximate Dimensions **Inches**
mm

VOLTAGE	HP	A	B	C	D	E	F	Wt (lbs) w/out Bypass	Wt (lbs) w/ Bypass	Door Swing Radius
208/230	1	24.75	18.90	21.57	8.02	8.08	0.5	120	135	16 inches
208/230	2	24.75	18.90	21.57	8.02	8.08	0.5			
208/230	3	24.75	18.90	21.57	8.02	8.08	0.5			
208/230	5	30.00	24.15	26.82	13.89	8.08	0.5	135	156	
208/230	7.5	35.00	29.15	31.82	14.39	8.19	1.0	160	175	
208/230	10	35.00	29.15	31.82	14.39	8.19	1.0			
460	1	24.75	18.90	21.57	8.02	8.08	0.5	120	135	
460	2	24.75	18.90	21.57	8.02	8.08	0.5			
460	3	24.75	18.90	21.57	8.02	8.08	0.5			
460	5	24.75	18.90	21.57	8.02	8.08	0.5			
460	7.5	30.00	24.15	26.82	13.89	8.08	0.5	135	150	
460	10	30.00	24.15	26.82	13.89	8.08	0.5			
460	15	35.00	29.15	31.82	14.39	8.19	1.0	160	175	
460	20	35.00	29.15	31.82	14.39	8.19	1.0			

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15-20 HP 208/230 Volt, 25-40 HP 460 Volt w/ or w/out Bypass

Approximate Dimensions **Inches**
mm

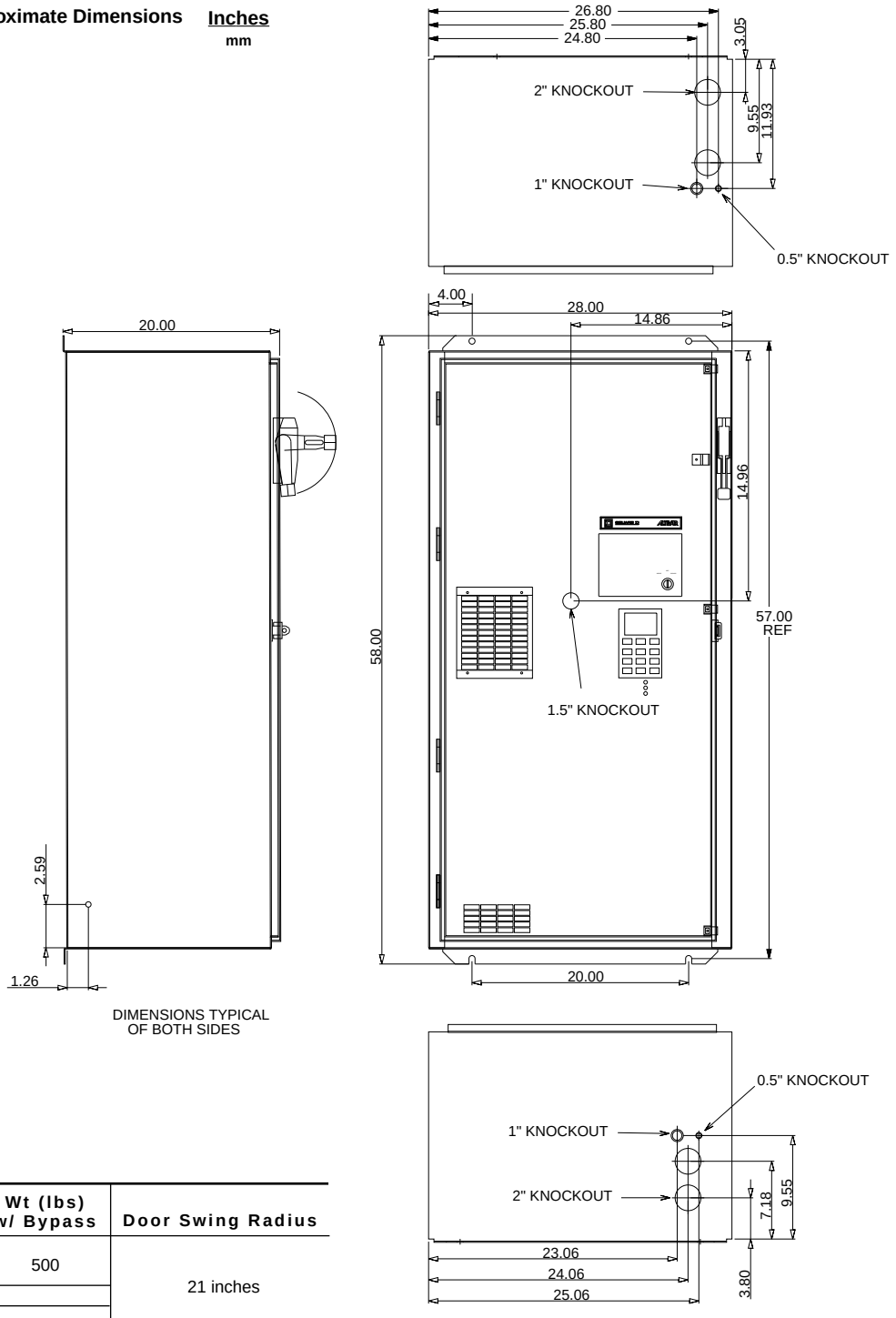


VOLTAGE	HP	Wt (lbs) w/out Bypass	Wt (lbs) w/ Bypass	Door Swing Radius
208/230	15	270	300	25 inches
208/230	20			
460	25/30	270	300	
460	40			

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25-40 HP 208/230 Volt, 50-75 HP 460 Volt w/ or w/out Bypass

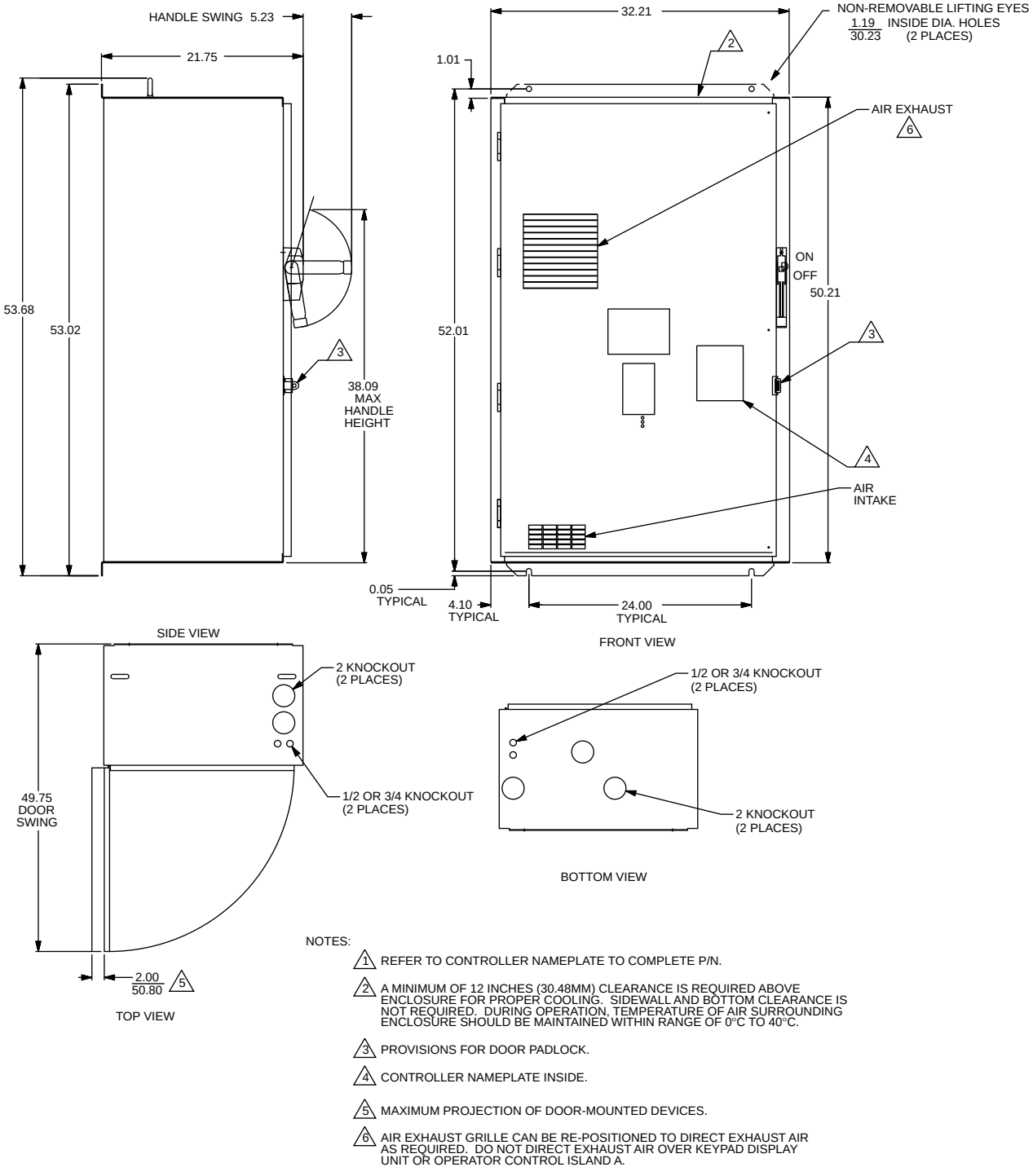
Approximate Dimensions **Inches**
mm



VOLTAGE	HP	Wt (lbs) w/out Bypass	Wt (lbs) w/ Bypass	Door Swing Radius
208/230	25/30	470	500	21 inches
208/230	40			
460	50	470	500	
460	60			
460	75			

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100 HP 460 Volt w/out Bypass



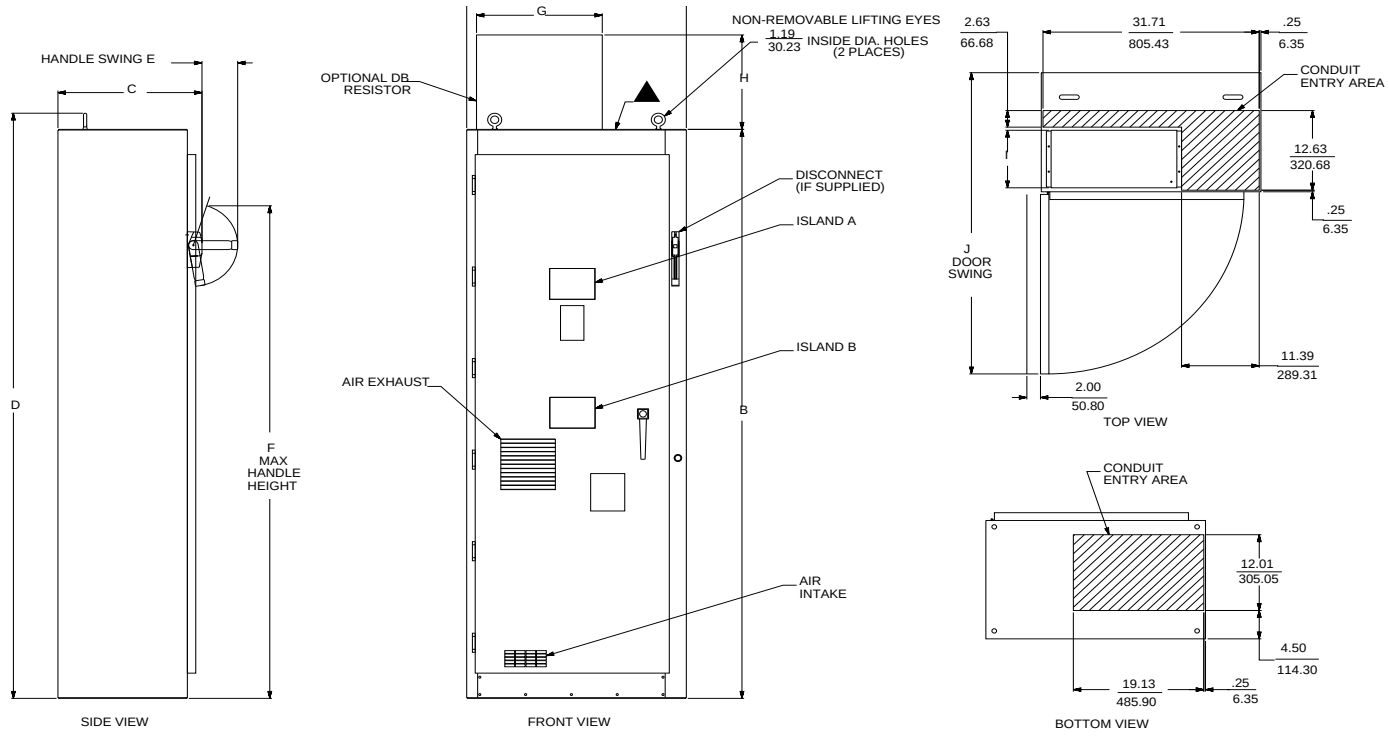
NOTES:

1. REFER TO CONTROLLER NAMEPLATE TO COMPLETE P/N.
2. A MINIMUM OF 12 INCHES (30.48MM) CLEARANCE IS REQUIRED ABOVE ENCLOSURE FOR PROPER COOLING. SIDEWALL AND BOTTOM CLEARANCE IS NOT REQUIRED. DURING OPERATION, TEMPERATURE OF AIR SURROUNDING ENCLOSURE SHOULD BE MAINTAINED WITHIN RANGE OF 0°C TO 40°C.
3. PROVISIONS FOR DOOR PADLOCK.
4. CONTROLLER NAMEPLATE INSIDE.
5. MAXIMUM PROJECTION OF DOOR-MOUNTED DEVICES.
6. AIR EXHAUST GRILLE CAN BE RE-POSITIONED TO DIRECT EXHAUST AIR AS REQUIRED. DO NOT DIRECT EXHAUST AIR OVER KEYPAD DISPLAY UNIT OR OPERATOR CONTROL ISLAND A.

VOLTAGE	HP	Wt (lbs) w/out Bypass	Door Swing Radius
460	100	500	29 inches

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100 HP 460 Volt w/ Bypass, 125-200 HP 460 Volt w/ or w/out Bypass

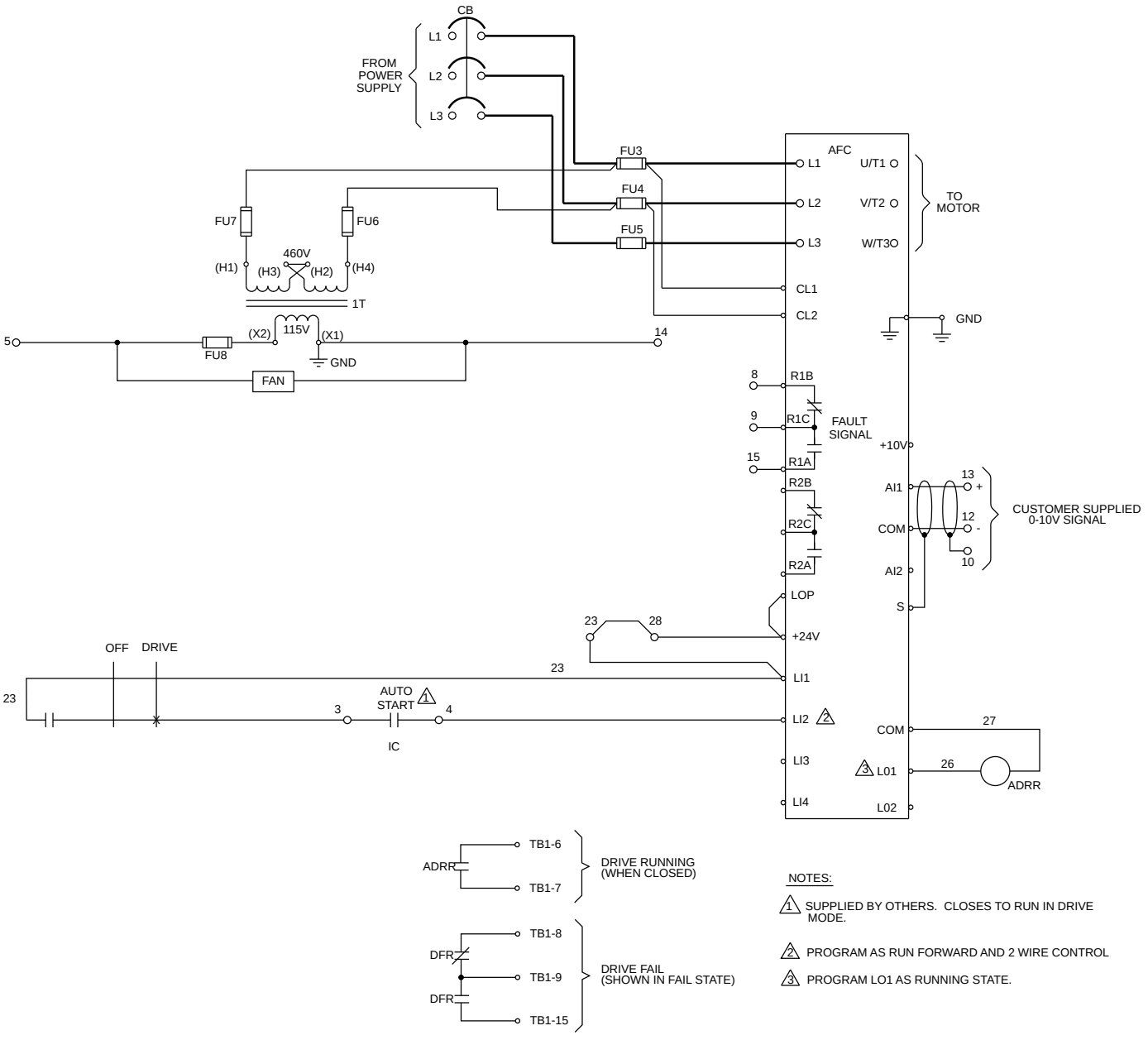


▲ A MINIMUM OF 12 INCHES (30.48MM) CLEARANCE IS REQUIRED ABOVE ENCLOSURE FOR PROPER COOLING. SIDEWALL AND BOTTOM CLEARANCE IS NOT REQUIRED. DURING OPERATION, TEMPERATURE OF AIR SURROUNDING ENCLOSURE SHOULD BE MAINTAINED WITHIN RANGE OF 0°C TO 40°C.

Voltage	HP	A		B		C		D		E		F		G		H		I		J		Weight (lb)	Door Swing Radius
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		in
460	100	32.21	818.14	90.21	2291.34	21.12	536.45	93.02	2362.78	5.23	132.84	78.09	1983.49	18.44	468.38	14.97	380.24	9.12	231.65	47.76	1213.11	700	52
	125																						
	150																			51.76	1314.7	980	57
	200																						

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Wiring Diagram w/out Bypass

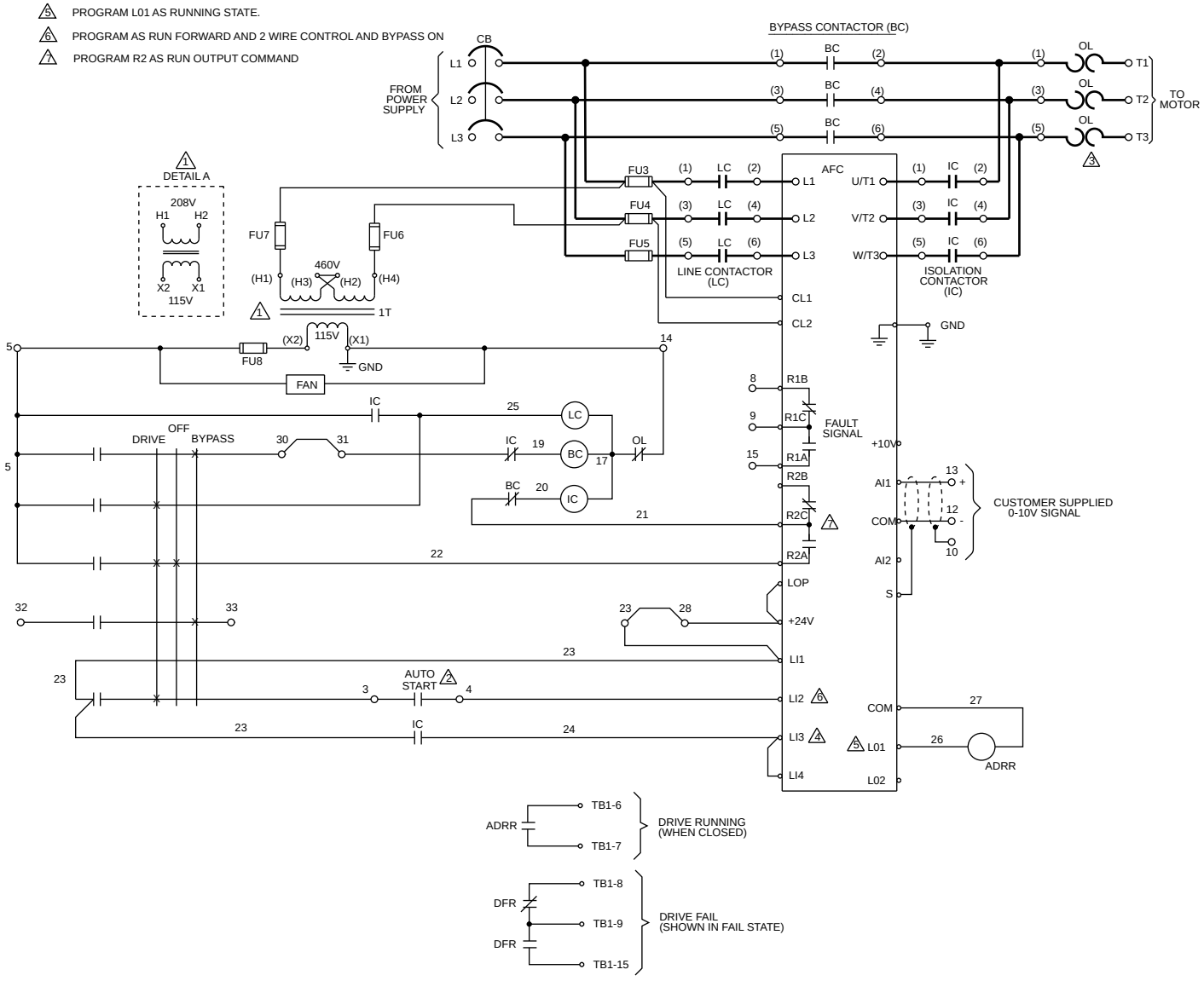


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Wiring Diagram w/ Bypass

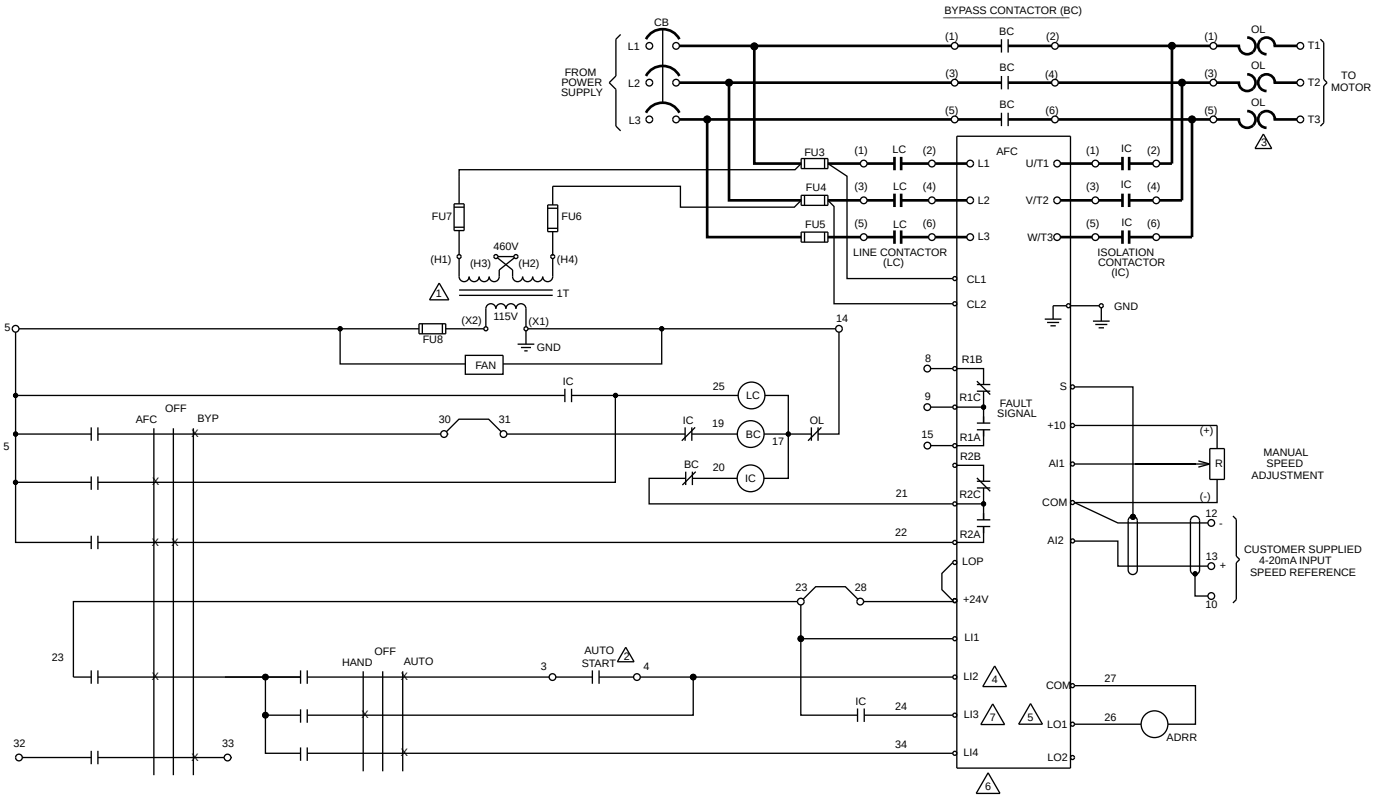
NOTES:

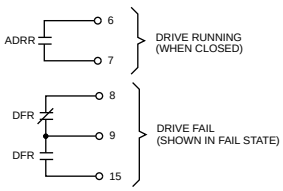
1. CONTROL TRANSFORMER SHOWN FOR 460V PRIMARY. FOR 230V PRIMARY, JUMPER H2-H3 IS REMOVED AND JUMPERS H1-H3 AND H2-H4 ARE INSTALLED DETAIL A SHOWS CONNECTION FOR 208V TRANSFORMER
2. SUPPLIED BY OTHERS. CLOSES TO RUN IN DRIVE MODE.
3. THE OVERLOAD RELAY TRIP SETTING MUST BE ADJUSTED TO CORRESPOND WITH THE MOTOR FULL LOAD CURRENT AS SHOWN ON THE MOTOR NAMEPLATE.
4. PROGRAM LI3 AS SEQUENCE INPUT AND LI4 AS PROCESS INPUT
5. PROGRAM L01 AS RUNNING STATE.
6. PROGRAM AS RUN FORWARD AND 2 WIRE CONTROL AND BYPASS ON
7. PROGRAM R2 AS RUN OUTPUT COMMAND



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Wiring Diagram w/ Bypass and HOA with Manual Speed Pot



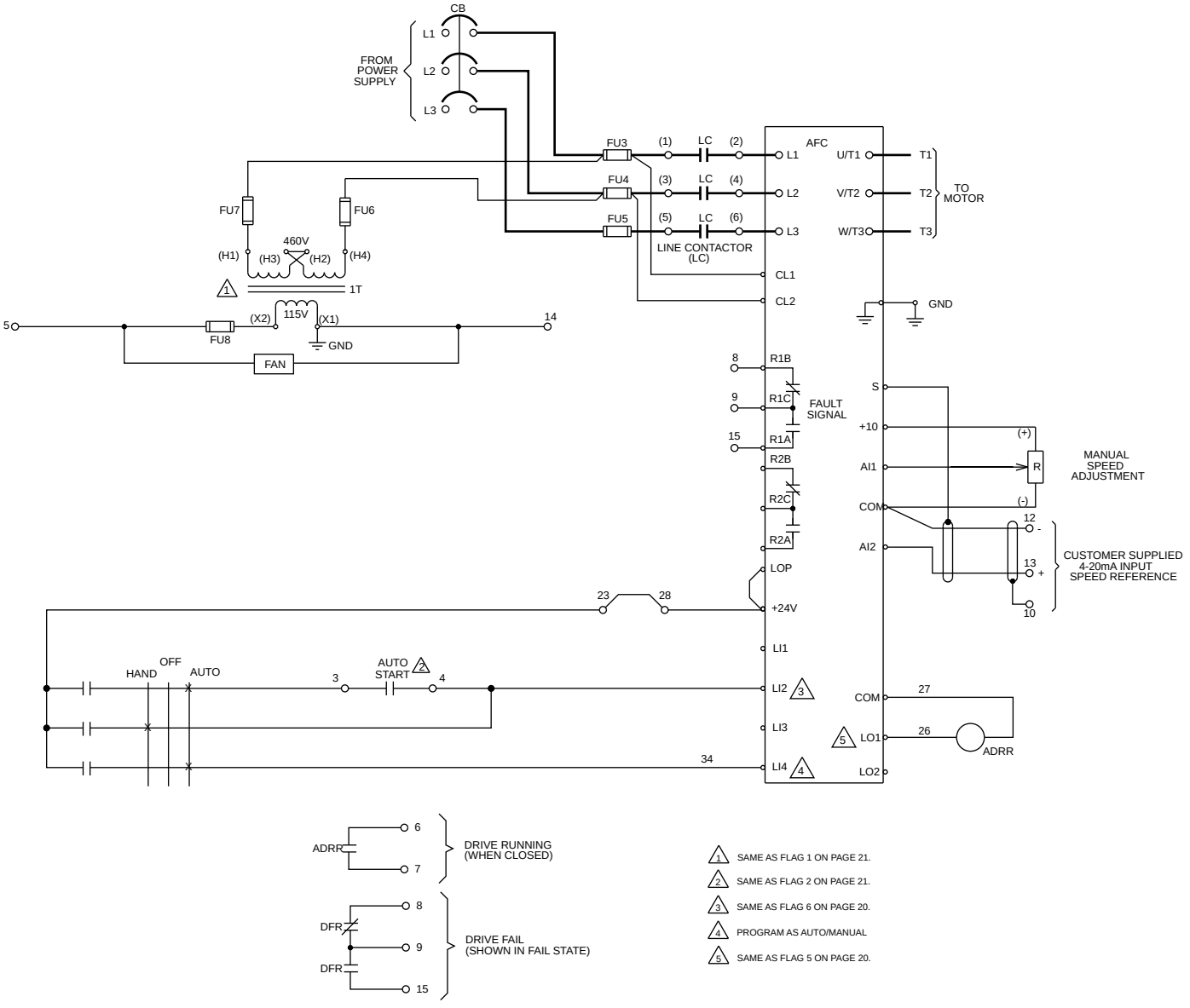


NOTES:

1. CONTROL TRANSFORMER SHOWN FOR 460V PRIMARY. FOR 230V PRIMARY, JUMPER H2-H3 IS REMOVED AND JUMPERS H1-H3 AND H2-H4 ARE INSTALLED
2. SUPPLIED BY OTHERS. CLOSES TO RUN IN AFC AUTO MODE.
3. THE OVERLOAD RELAY TRIP SETTING MUST BE ADJUSTED TO CORRESPOND WITH THE MOTOR FULL LOAD CURRENT AS SHOWN ON THE MOTOR NAMEPLATE.
4. SAME AS FLAG 6 ON PAGE 20.
5. SAME AS FLAG 5 ON PAGE 20.
6. PROGRAM AS AUTO/MANUAL
7. PROGRAM L13 AS SEQUENCE INPUT

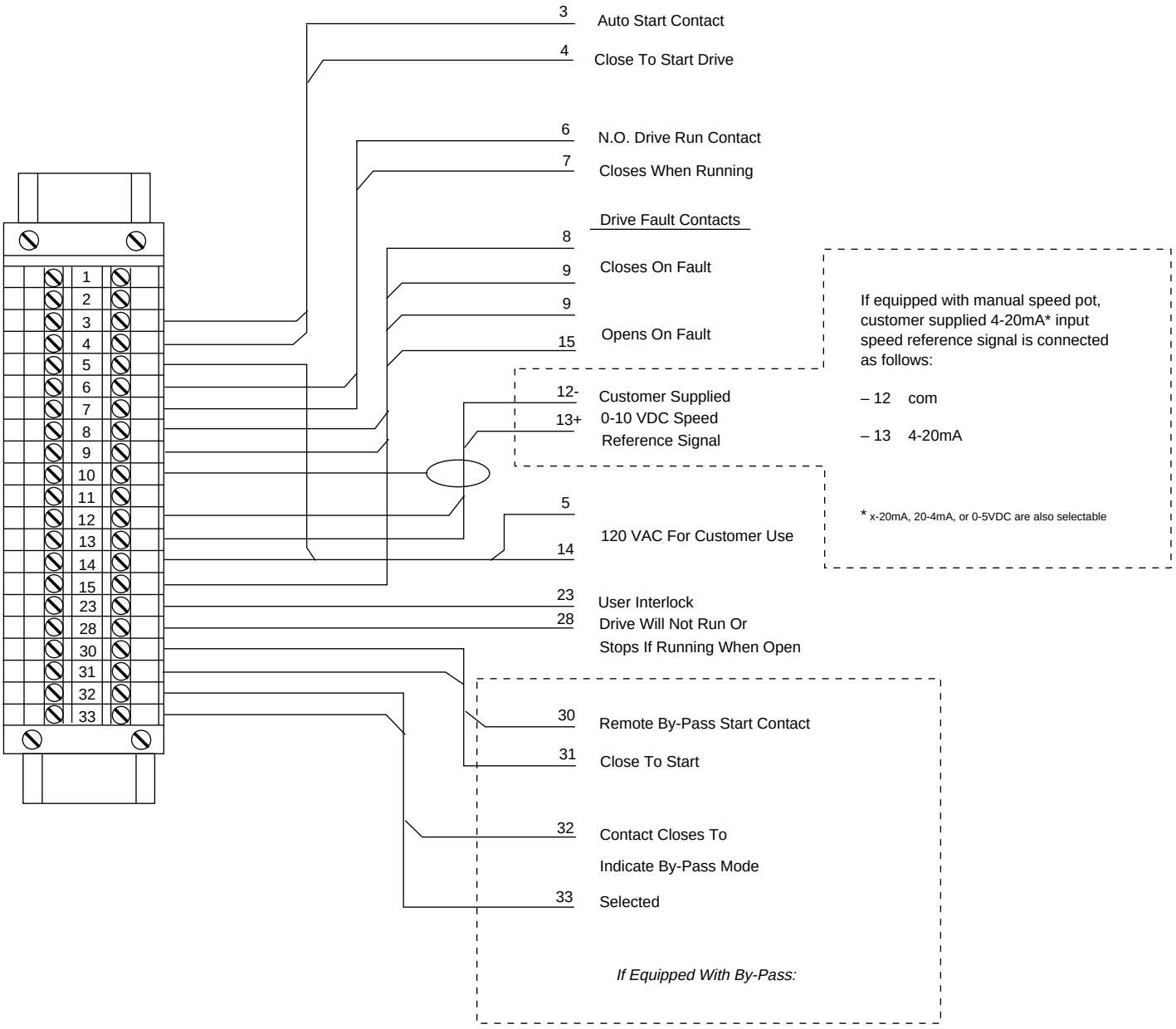
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Wiring Diagram HOA with Manual Speed Pot



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Enclosed Drive User Connection Diagram



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Description	Menu	Configuration Setting	Default Value
LI1	2.1	Run permissive	yes
LI2	2.1	Run forward	yes
LO1	7.3	Running state	no
Display configuration	4	Hertz	yes
Torque type	6.1	Variable low noise	no
Command type	6.2	2 wire maintained	yes
Motor power (1-3 HP only)	6.3	1, 2, or 3 HP	no
Nominal current *Set motor nameplate full load amps here.*	7.11		no
Nominal voltage *Set motor nameplate voltage here.*	7.11		no
Current limit	7.11	110% of drive rating	yes
Maximum frequency	7.12	60 Hz	no
Low speed	7.12	22 Hz	no
High speed	7.12	60 Hz	no
Acceleration	7.12	10 seconds	no
Deceleration	7.12	10 seconds	no
Control type	7.13	NOLD (No Load)	no
Damping	1	100%	no
Speed reference	7.2	AI1	yes
Controlled stop	7.2	By frequency level Set “BY FREQ. LEVEL” to 3 Hz Set “STOP TYPE” to free	no
Bypass I/O *Configure only of unit has bypass.*	7.2	LI3 = sequence input LI4 = process input R2 = run output command	no
Power loss	7.4	RAMP	no
Auto-restart	7.4	2 times 15 seconds	no
Software locking	10	Partial unlock	yes
For further information, reference the Receiving, Installation and Start-Up User’s Manual (VD0C06S304) and the Level 1 & 2 Configuration User’s Manual (VD0C06S305) that ship with each device. All parameters not mentioned above are at factory default values.			

Square D/Telemecanique ALTIVAR 66 Adjustable Frequency Controllers are designed to operate from industrial power systems with normal AC line conditions without the need of additional line impedance from either an isolation transformer or a line reactor. In some instances, additional line impedance is required for the following criteria:

- Reduce the current harmonic distortion content such that the input RMS current is equal to or less than the motor current at rated horsepower of the drive controller.

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- Limit the total harmonic voltage distortion from the drive controller at the point of common coupling.
- Limit the peak input current and DC bus overvoltage during transient overvoltages due to capacitor switching.

As a final note, a line reactor will not provide isolation to the drive. Please consult with our Class 7460 Drive Isolation Transformers pricing guide for further assistance (see Square D Digest 170, Section 11-12).

208/230 Volt Open Style Line Reactor

Drive Rating	Line Reactor Open Part#	Wt (lbs)	Inductance (μH)	Ith rating (Amps)	Watts Loss
1-2 HP	RL-00804	13	3000	12	30
3-5 HP	RL-01803	18	2500	27	87
7.5-10 HP	RL-03503	30	1200	52.5	99
15-20 HP	RL-05503	41	850	82.5	127
25-40 HP	RL-10003	74	500	150	192
50-60 HP	RL-16003	65	230	240	210
75-100 HP	RL-25003	141	150	375	218
125-150 HP	RL-40003B6	180	105	600	256
200 HP	RL-50003B6	264	85	750	387

208/230 Volt Enclosed (Type 1 Enclosure) Line Reactor

Drive Rating	Line Reactor Enclosed Part#	Approximate Wt (lbs)	Cabinet Style	Enclosure Dimensions
1-2 HP	RL-00814	20	CAB-8	8”H by 8”W by 6”D
3-5 HP	RL-01813	49	CAB-13	15”H by 13”W by 13”D
7.5-10 HP	RL-03513	61	CAB-13	15”H by 13”W by 13”D
15-20 HP	RL-05513	72	CAB-13	15”H by 13”W by 13”D
25-40 HP	RL-10013	105	CAB-13	15”H by 13”W by 13”D
50-60 HP	RL-16013	96	CAB-13	15”H by 13”W by 13”D
75-100 HP	RL-25013	186	CAB-17	22”H by 17”W by 17”D
125-150 HP	RL-40013B6	225	CAB-17	22”H by 17”W by 17”D
200 HP	RL-50013B6	309	CAB-17	22”H by 17”W by 17”D

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Square D/Telemecanique ALTIVAR 66 Adjustable Frequency Controllers are designed to operate from industrial power systems with normal AC line conditions without the need of additional line impedance from either an isolation transformer or a line reactor. In some instances, additional line impedance is required for the following criteria:

- Reduce the current harmonic distortion content such that the input RMS current is equal to or less than the motor current at rated horsepower of the drive controller.
- Limit the total harmonic voltage distortion from the drive controller at the point of common coupling.
- Limit the peak input current and DC bus overvoltage during transient overvoltages due to capacitor switching.

As a final note, a line reactor will not provide isolation to the drive. Please consult with our Class 7460 Drive Isolation Transformers pricing guide for further assistance (see Square D Digest 170, Section 11-12).

460 Volt Open Style Line Reactor

Drive Rating	Line Reactor Open Part#	Wt (lbs)	Inductance (μH)	Ith rating (Amps)	Watts Loss
1-2 HP	RL-00403	4	9000	6	34
3-5 HP	RL-01203	18	4200	18	48
7.5-10 HP	RL-01803	14	2500	27	87
15-20 HP	RL-03503	28	1200	52.5	99
25-40 HP	RL-05503	41	850	82.5	127
50-75 HP	RL-10003	74	500	150	192
100-125 HP	RL-16003	78	230	240	210
150-200 HP	RL-25003	130	150	375	218
250-300 HP	RL-40003B6	180	105	600	256
350-400 HP	RL-50003B6	264	85	750	387

460 Volt Enclosed (Type 1 Enclosure) Line Reactor

Drive Rating	Line Reactor Enclosed Part#	Approximate Wt (lbs)	Cabinet Style	Enclosure Dimensions
1-2 HP	RL-00413	11	CAB-8	8”H by 8”W by 6”D
3-5 HP	RL-01213	25	CAB-8	8”H by 8”W by 6”D
7.5-10 HP	RL-01813	37	CAB-13	15”H by 13”W by 13”D
15-20 HP	RL-03513	51	CAB-13	15”H by 13”W by 13”D
25-40 HP	RL-05513	64	CAB-13	15”H by 13”W by 13”D
50-75 HP	RL-10013	97	CAB-13	15”H by 13”W by 13”D
100-125 HP	RL-16013	101	CAB-13	15”H by 13”W by 13”D
150-200 HP	RL-25013	175	CAB-17	22”H by 17”W by 17”D
250-300 HP	RL-40013B6	225	CAB-17	22”H by 17”W by 17”D
350-400 HP	RL-50013B6	309	CAB-17	22”H by 17”W by 17”D

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