



Submittal Data Information

Advantage 61 Variable Speed Drive

301-1896

EFFECTIVE: AUGUST 15, 2010

SUPERSEDES: AUGUST 1, 2010

JOB _____ ENGINEER _____

CONTRACTOR _____ REP. _____

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

SELECTION GUIDE:

Supply Voltage: Three Phase 200-240V				
HP	KW	Amps	References (LCD keypad included)	Frame Size
1	0.75	4.8	ATV61H075M3M ⁽¹⁾	1
2	1.5	8	ATV61HU15M3M ⁽¹⁾	1
3	2.2	11	ATV61HU22M3M ⁽¹⁾	2
4	3	13.7	ATV61HU30M3M ⁽¹⁾	2
5	4	17.5	ATV61HU40M3M ⁽²⁾	2
7.5	5.5	27.5	ATV61HU55M3M ⁽²⁾	3
10	7.5	33	ATV61HU75M3M ⁽²⁾	4
15	11	54	ATV61HD11M3XM ⁽³⁾	5
20	15	66	ATV61HD15M3XM ⁽³⁾	5
25	18.5	75	ATV61HD18M3XM ⁽³⁾	6
30	22	88	ATV61HD22M3XM ⁽³⁾	6
40	30	120	ATV61HD30M3XM ⁽³⁾	8
50	37	144	ATV61HD37M3XM ⁽³⁾	8
60	45	176	ATV61HD45M3XM ⁽³⁾	8
75	55	221	ATV61HD55M3XM ⁽³⁾⁽⁴⁾	10
100	75	285	ATV61HD75M3XM ⁽³⁾⁽⁴⁾	10
125	90	359	ATV61HD90M3XM ⁽³⁾⁽⁴⁾	11

For 20 HP and smaller, add the letter "Z" to the reference for an ATV61 to receive the drive with an LED keypad in place of the LCD keypad. For example, reference ATV61H075M3M becomes ATV61H075M3ZM.

Supply Voltage: Three Phase 380-480V				
HP	KW	Amps	References (LCD keypad included)	Frame Size
1	0.75	2.3	ATV61H075N4M	1
2	1.5	4.1	ATV61HU15N4M	1
3	2.2	5.8	ATV61HU22N4M	1
4	3	7.8	ATV61HU30N4M	2
5	4	10.5	ATV61HU40N4M	2
7.5	5.5	14.3	ATV61HU55N4M	3
10	7.5	17.6	ATV61HU75N4M	3
15	11	27.7	ATV61HD11N4M	4
20	15	33	ATV61HD15N4M	5
25	18.5	41	ATV61HD18N4M	5
30	22	48	ATV61HD22N4M	6
40	30	66	ATV61HD30N4M	7
50	37	79	ATV61HD37N4M	7
60	45	94	ATV61HD45N4M	9
75	55	116	ATV61HD55N4M	9
100	75	160	ATV61HD75N4M	9
125	90	179	ATV61HD90N4M ⁽⁴⁾	10
150	110	215	ATV61HC11N4M ⁽⁴⁾	10
200	132	259	ATV61HC13N4M ⁽⁴⁾	11
250	160	314	ATV61HC16N4M ⁽⁴⁾	12
350	220	427	ATV61HC22N4M ⁽⁴⁾	13
400	250	481	ATV61HC25N4M ⁽⁴⁾	14
500	315	616	ATV61HC31N4M ⁽⁴⁾	14
600	400	759	ATV61HC40N4M ⁽⁴⁾	15
700	500	941	ATV61HC50N4M ⁽⁴⁾	15
900	630	1188	ATV61HC63N4M ⁽⁴⁾	16

For 100 HP and smaller, add the letter "Z" to the reference for an ATV61 to receive the drive with an LED keypad in place of the LCD keypad. For example, reference ATV61H075N4M becomes ATV61H075N4ZM.

Inputs/outputs on board

Analog input #1: +/- 10Vdc bipolar input, 1 bits + 1 sign resolution, 2ms +/- 0.5ms sample time
Analog input #2: software selectable from 1-10Vdc or x-y mA, x-y selectable from 0-20 mA, 11 bits resolution, 2ms +/- 0.5ms sample time

Analog output #1: software selectable from 1-10Vdc or x-y mA, x-y selectable from 0-20mA, 10 bits resolution, 2ms +/- 0.5ms sample time

Relay output #1: one NO (normally open), one NC (normally closed)

Relay output #2: one NO (normally open)

6 logic inputs: 24Vdc, 2ms +/- 0.5ms sample time, multiple function assignment possible, positive logic (source) or negative logic (sink) choice LI6 offers PTC probe assignment

Power Removal input: 1 input for interlocking function (run permissive)

RJ45 port: Modbus or CANopen (selectable)

Power Suite™ software workshop

PowerSuite CD-ROM for PC VW3 A 8104M

Connection kit for PC VW3 A 8106M

Adaptor for wireless link Modbus-Bluetooth® VW3 A 8114M

Input/output cards

Logic inputs/outputs

1 voltage output, 24V

1 voltage output, -10V

1 logic output, relay

4 programmable logic inputs

2 assignable logic outputs with open collector

1 input for 6 PTC probes maximum VW3 A 3201M

Extended inputs/outputs

Same as logic inputs/outputs card plus

2 analog inputs

2 analog outputs

1 pulse input VW3 A 3202M

Communication Cards

Modbus Plus VW3 A 3302M

Uni-Telway VW3 A 3303M

InterBus VW3 A 3304M

Profibus DP VW3 A 3307M

DeviceNet VW3 A 3309M

Ethernet VW3 A 3310M

Fipio VW3 A 3311M

LonWorks VW3 A 3312M

METASYS N2 VW3 A 3313M

APOGEE FLN VW3 A 3314M

BACnet VW3 A 3315M

Pump application card VW3 A 3503M

(1) For single-phase 0.75 to 7.5 kW range, select the next rating up. For example, 22kW - reference = ATV61HU30M3M.

(2) For single-phase operation, select the next rating up and add a line choke.

(3) Without EMC filter.

(4) With integrated DC bus inductance.

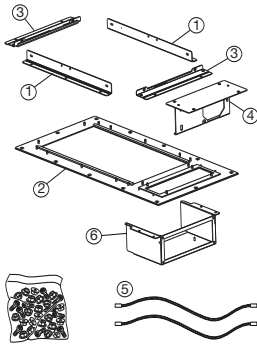


In order to provide the most efficient pump solution to our customers, Taco is now working with Schneider Electric.

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.



ACCESSORIES GUIDE:



Heatsink Mounting
Kit VW3A9506M

Control Fan Kit

Installation of kit enables the drive to operate in higher ambient temperature. Fan mounts on top of drive and is powered from the drive.

For Drives	Catalog Number
ATV 61H037M3...HU55M3 ATV 61H075N4...HU75N4	VW3 A9 401M
ATV 61HU75M3...HD15M3 ATV 61HD11N4...HD18N4	VW3 A9 402M
ATV 61HD18M3X...HD22M3X ATV 61HD22N4	VW3 A9 404M
ATV 61HD30N4...HD37N4	VW3 A9 405M
ATV 61HD30M3X...HD45M3X	VW3 A9 406M
ATV 61HD45N4...HD75N4	VW3 A9 407M

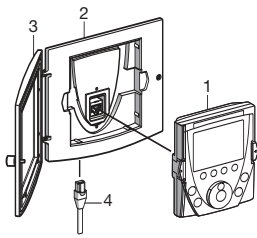
Type 1 Conduit Kit

Kit includes: a metal box, with conduit knockouts. Kit provides conduit landing when wall mounting the drive.

For Drives	Catalog Number
ATV 61H037M3...HU15M3 ATV 61H075N4...HU22N4	VW3 A9 201M
ATV 61HU22M3...HU40M3 ATV 61HU30N4, HU40N4	VW3 A9 202M
ATV 61HU55M3 ATV 61HU55N4, HU75N4	VW3 A9 203M
ATV 61HU75M3 ATV 61HD11N4	VW3 A9 204M
ATV 61HD11M3X, HD15M3X ATV 61HD15N4, HD18N4	VW3 A9 205M
ATV 61HD18M3X, HD22M3X ATV 61HD22N4	VW3 A9 206M
ATV 61HD30N4, HD37N4	VW3 A9 207M
ATV 61HD30M3X...HD45M3X	VW3 A9 217M
ATV 61HD45N4...HD75N4	VW3 A9 208M
ATV 61HD55M3X, HD75M3X ATV 61HD90N4, HC11N4	VW3 A9 209M
ATV 61HD90M3X ATV 61HC13N4	VW3 A9 210M
ATV 61HC16N4	VW3 A9 211M
ATV 61HC22N4	VW3 A9 212M
ATV 61HC25N4...HC31N4 Without braking unit	VW3 A9 213M
With braking unit VW347101	VW3 A9 214M



ATV61HU40N4M
with VW3A9202M
Conduit Kit



LCD Keypad
Mounting Kit

Kit for Mounting Heatsink thru Back of Enclosure

Kit used to mount the heatsink of the drive outside of an enclosure. Kit includes: a metal frame, seals, mounting hardware, bracket to mount fan kit so fan can be accessed from the front of the drive.

For Drives	Catalog Number
ATV 61H037M3...HU15M3 ATV 61H075N4...HU22N4	VW3 A9 501M
ATV 61HU22M3...HU40M3 ATV 61HU30N4, HU40N4	VW3 A9 502M
ATV 61HU55M3 ATV 61HU55N4, HU75N4	VW3 A9 503M
ATV 61HU75M3 ATV 61HD11N4	VW3 A9 504M
ATV 61HD11M3X, HD15M3X ATV 61HD15N4, HD18N4	VW3 A9 505M
ATV 61HD18M3X, HD22M3X ATV 61HD22N4	VW3 A9 506M
ATV 61HD30N4, HD37N4	VW3 A9 507M
ATV 61HD30M3X...HD45M3X	VW3 A9 508M
ATV 61HD45N4...HD75N4	VW3 A9 509M
ATV 61HD55M3X, HD75M3X ATV 61HD90N4, HC11N4	VW3 A9 510M
ATV 61HD75M3X ATV 61HC11N4	VW3 A9 511M
ATV 61HC16N4	VW3 A9 512M
ATV 61HC16N4	VW3 A9 513M
ATV 61HC25N4...HC31N4 Without braking unit	VW3 A9 514M
With braking unit VW3A7101	VW3 A9 515M

LCD Keypad Mounting Kit

Use the remote mounting kit to mount the LCD keypad in an enclosure door.

Add the clear plastic door to improve to an IP65 rating and view the LCD screen.

Refer to diagram for item number	Catalog Number
1 LCD graphic keypad: IP54 rating	VW3A 1101M
2 Remote mounting kit: includes bezel and mounting hardware	VW3A 1102M
3 Door for use with remote mount kit for IP65 rating	VW3A 1103M
4 Cable for remote mounting LCD graphic keypad RJ45 connector on each end	
	1 meter VW3A1104 R10M
	3 meters VW3A1104 R30M
	5 meters VW3A1104 R50M
	10 meters VW3A1104 R100M

RJ 45 female female adaptor to
connect LCD keypad and cable.
Not required if using VW3A1102M

VW3A1105M

SPECIFICATIONS:

Electrical Specifications

Input Voltage	200 -15% to 240 +10%, 380 -15% to 480 +10%
Displacement Power Factor	98% through speed range
Input Frequency	50 Hz -5% to 60 Hz +5%
Drive Input Section	Six pulse bridge rectifier
Drive Output Section	Three Phase, IGBT Inverter with Pulse Width Modulated (PWM) 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 500 Hz
Torque/overtorque	110% of nominal motor torque for 60 s, minimum
Current (transient)	110% of controller rated current for 60 s, minimum
Switching Frequency	Selectable from 1 to 16 kHz, 12 kHz nominal rating for 1-60 hp @ 200/240 V, 1-100 hp @ 380/480 V. Selectable: 2.5 to 8 kHz, 2.5 kHz nominal rating for 75-125 hp @ 200/240 V 125-900 hp @ 380/480 V.
Speed Reference Inputs	AI: 0 to +10 V, Impedance = 30 kOhms Used for Speed potentiometer, 1-10 kOhms AI2: Factory setting = 4 to 20mA, software configurable for current, (0-20mA, X-Y) or voltage
Analog Reference Resolution	0.1 for 100 Hz (11 bits)
I/O Sampling Time	2 ms +/- 0.5 ms on analog inputs & outputs, & logic inputs, 7 ms +/- 0.5 ms on relay outputs
Power Removal/Run Permissive Input	24Vdc input, for use to prohibit unintended equipment operation
Efficiency	98% at full load typical
Acceleration and Deceleration Ramps	0.1 to 999.9 seconds (definition in 0.1 s increments)
Skip Frequencies	Three configurable skip frequency/jump frequency bands
Motor Control Profiles	Energy economizer (flux optimization) motor algorithm to maximize energy savings. (Automatically optimizes voltage based on load.) or select from 2 point or 5 point volts/hertz profile or SLFV (sensorless flux vector)
Speed Range	1 to 100, open loop
Motor Protection	Class 10 electronic overload protection or PTC probe
Graphic Display Terminal	Simply Start menu, PID set-up menu, network set-up menu, Logic I/O & Analog I/O mapping and status, Monitoring and self diagnostics with fault messages and status such as; Power on time, elapsed time, motor run time, line voltage, motor current, ready to run, running, motor speed
Compliance	RoHS and WEEE (Waste Electrical & Electronic Equipment compliant)
Codes and Standards	UL, CSA, NOM 117, DNV, CE, C-Tick, GOST, UL 1995 Plenum rated, SEMI-F47 certified for voltage dip ride-through

Environmental Specifications

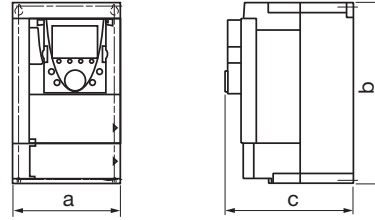
Temperature	Operation:+14 to + 122° F (-10 to +50° C) Storage:-13 to +158° F (-25 to +70° C)
Humidity	95% with no condensation or dripping water, conforming to IEC 600068-2-3.
Altitude	3,300 ft. (1,000 m) without derating; 3,300- 9850 ft (1,000-3,000 m) derate output current by 1% for each additional 330 ft. (100 m). 6560 ft (2000m) maximum for corner grounded distribution system.
Enclosure Rating	1-60 hp @ 200/240 V, 1-100 hp @ 380/480 V: IP 41 on top IP21 on all other surfaces, Type 1 with optional conduit kit. 75-125 hp @ 200/240 V, 125-500 hp @ 380/480 V: IP 41 on top, IP30 sides & front IP00 on bottom, Type 1 w/ optional conduit kit. 600 -900 hp @ 380/480 V. IP 41 on top, IP30 sides and front, IP00 on bottom
Pollution Degree	1-20 hp @ 200/240 V, 1-25 hp @ 380/480 V Pollution degree 2 per IEC/EN 61800-5-1, Option S337 provides protection per IEC 60721-3-3 Class 3C2 25-60 hp @ 200/240 V, 30-100 hp @ 380/480 V Pollution degree 3 per IEC/EN 61800-5-1, Option S337 provides protection per IEC 60721-3-3 Class 3C2 60-125hp @ 200/240 V, 125-900 hp @ 380/480 V Pollution degree 3 per IEC/EN 61800-5-1 and protection per IEC 60721-3-3 Class 3C2
Vibration Resistance	1-60hp @ 200/240V 1-100 hp @ 380/480 V Conforming to IEC/EN 60068-2-6 1.5mm peak to peak from 3 to 13 Hz, 1gn from 13 to 200 Hz. 75-125 hp @ 200/240V, 125-900 hp @ 380/480V: Conforming to IEC/EN 60068-2-6 1.5mm peak to peak from 3 to 10 Hz, 0.6gn from 10 to 200 Hz.
Shock Resistance	1-60 hp @ 200/240 V, 1-100 hp @ 380/480 V: 15gn for 11ms conforming to IEC/EN 600068-2-27 75-125 hp @ 200/240 V, 125-500 hp @ 380/480 V: 7gn for 11ms conforming to IEC/EN 600068-2-27 600-900 hp @ 380/480 V. 4gn for 11ms conforming to IEC/EN 600068-2-27

DIMENSIONS:

Dimensions are in inches (millimeters). Metric data is presented in ().
Weights are in pounds (Kg). Kg weight is presented in ().

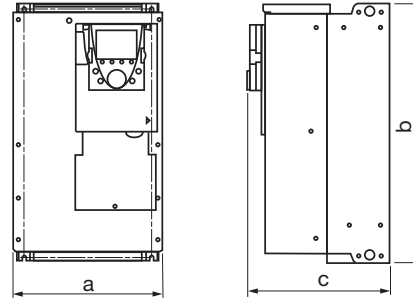
Frame Size	a Width	b Height	c Depth	Weight	b Height with Type 1 Kit
1	5.12 (130)	9.06 (230)	6.89 (175)	6.61 (3)	14.05 (357)
2	6.10 (155)	10.24 (260)	7.36 (187)	8.82 (4)	15.23 (387)
3	6.89 (175)	11.61 (295)	7.36 (187)	12.13 (5.5)	16.61 (422)
4	8.27 (210)	11.61 (295)	8.39 (213)	15.43 (7)	15.61 (396)
5	9.06 (230)	15.75 (400)	8.39 (213)	19.84 (9.0)	19.75 (502)

For a drive without a graphic display terminal, the depth is reduced by 1.02 in. (26mm).
For a drive with one option card installed, the depth increases 0.91 in. (23mm).
For a drive with two option cards installed, the depth increases 1.81 in. (46mm).



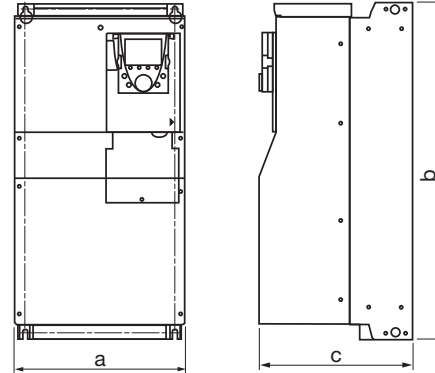
Frame Size	a Width	b Height	c Depth	Weight	b Height with Type 1 Kit
6	9.45 (240)	16.54 (420)	9.29 (236)	66.14 (30)	21.54 (547)
7	9.45 (240)	21.65 (550)	10.47 (266)	81.57 (37)	26.65 (677)
8	12.60 (320)	21.65 (550)	10.47 (266)	81.87 (37)	29.65 (753)
9	12.60 (320)	24.80 (630)	11.42 (290)	99.21 (45)	32.80 (833)

For a drive without a graphic display terminal, the depth is reduced by 1.02 in. (26mm).
For a drive with one option card installed, the depth increases 0.91 in. (23mm).
For a drive with two option cards installed, the depth increases 1.81 in. (46mm).



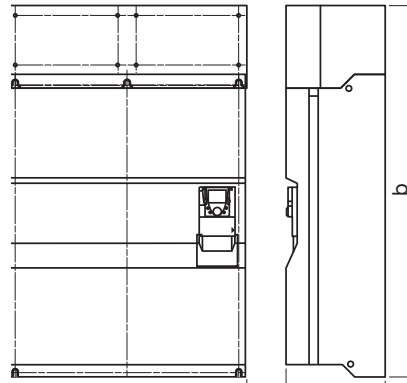
Frame Size	a Width	b Height	c Depth	Weight	b Height with Type 1 Kit
10	12.60 (320)	36.22 (920)	14.84 (377)	163 (74)	38.77 (985)
11	14.17 (360)	40.24 (1022)	14.84 (377)	176 (80)	46.79 (1188)
12	13.39 (340)	46.85 (1190)	14.84 (377)	242 (110)	57.90 (1471)
13	17.32 (440)	46.85 (1190)	14.84 (377)	309 (140)	55.40 (1407)
14	23.43 (595)	46.85 (1190)	14.84 (377)	474 (215)	57.40 (1458)

For a drive with one option card installed, the depth remains the same.
For a drive with two option cards installed, the depth increases 0.59 in. (15mm).



Frame Size	a Width	b Height	c Depth	Weight
15	35.04 (890)	54.72 (1390)	14.84 (377)	496 (225)
16	44.09 (1120)	54.72 (1390)	14.84 (377)	661 (300)

For a drive with one option card installed, the depth remains the same.
For a drive with two option cards installed, the depth increases 0.59 in. (15mm).



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