



Submittal Data Information

Advantage 21 Variable Speed Drive

301-1890

EFFECTIVE: AUGUST 1, 2010

SUPERSEDES: JULY 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 IP20				
HP	KW	Amps	Reference	Frame Size
1	0.75	4.6	ATV21H075M3XM	1
2	1.5	7.5	ATV21HU15M3XM	1
3	2.2	10.6	ATV21HU22M3XM	1
4	3	13.7	ATV21HU30M3XM	2
5	4	17.5	ATV21HU40M3XM	2
7.5	5.5	24.2	ATV21HU55M3XM	3
10	7.5	32.0	ATV21HU75M3XM	3
15	11	46.2	ATV21HD11M3XM	4
20	15	61.0	ATV21HD15M3XM	4
25	18.5	74.8	ATV21HD18M3XM	4
30	22	88.0	ATV21HD22M3XM	5
40	30	117.0	ATV21HD30M3XM	6

Supply Voltage: Three Phase 380-480V IP20				
HP	KW	Amps	Reference	Frame Size
1	0.75	2.2	ATV21H075N4M	1
2	1.5	3.7	ATV21HU15N4M	1
3	2.2	5.1	ATV21HU22N4M	1
4	3	7.2	ATV21HU30N4M	2
5	4	9.1	ATV21HU40N4M	2
7.5	5.5	12.0	ATV21HU55N4M	2
10	7.5	16.0	ATV21HU75N4M	3
15	11	22.5	ATV21HD11N4M	3
20	15	30.5	ATV21HD15N4M	4
25	18.5	37.0	ATV21HD18N4M	4
30	22	43.5	ATV21HD22N4M	5
40	30	58.5	ATV21HD30N4M	5
50	37	79.0	ATV21HD37N4M	6
60	45	94.0	ATV21HD45N4M	6
75	55	116.0	ATV21HD55N4M	7
100	75	160.0	ATV21HD75N4M	7

Supply Voltage: Three Phase 380-480V IP54				
HP	KW	Amps	Reference	Frame Size
1	0.75	2.2	ATV21W075N4M	1
2	1.5	3.7	ATV21WU15N4M	1
3	2.2	5.1	ATV21WU22N4M	2
4	3	7.2	ATV21WU30N4M	2
5	4	9.1	ATV21WU40N4M	2
7.5	5.5	12.0	ATV21WU55N4M	2
10	7.5	16.0	ATV21WU75N4M	2
15	11	22.5	ATV21WD11N4M	3
20	15	30.5	ATV21WD15N4M	3
25	18.5	37.0	ATV21WD18N4M	4
30	22	43.5	ATV21WD22N4M	5
40	30	58.5	ATV21WD30N4M	5
50	37	79.0	ATV21WD37N4M	6
60	45	94.0	ATV21WD45N4M	6
75	55	116.0	ATV21WD55N4M	7
100	75	160.0	ATV21WD75N4M	7



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:

User Interface Kits

Description		Catalog Number
Remote Keypad Display Mounting Kit	Includes remote keypad, hardware and cable. IP65 rated	VW3A21101M
PC Soft Test and Commissioning Software	Free for download on Telemecanique.com	VW3A2104M
PC Connection Kit		VW3A8106M

Communication Card Kits

Description	Catalog Number
LONWORKS	VW3A21312M
METASYS N2	VW3A21313M
APOGEE FLN P1	VW3A21314M
BACnet	VW3A21315M

Note: Only logic inputs F and R, analog input VIB, relay output FL, common and 24 V supply terminals and RJ45 Modbus connector are available when a communication option card is installed.

Field Installed Kits

Description	For Drives	Catalog Number
DIN Rail Mount Kit	ATV21H075M3X...HU22M3X	VW3A31852M
Din Rail Mounting Plate for 35 mm wide din rail	ATV21H075N4...HU22N4	
Conduit Entrance Kit for UL Type 1 rating multiple knockout sizes	ATV21H075M3X...HU22M3X ATV21H075N4...HU22N4	VW3A31814M
	ATV21HU30M3X...HU40M3X ATV21HU30N4...HU55N4	VW3A31815M
	ATV21HU55M3X, HU75M3X ATV21HU75N4, HD11N4	VW3A31816M
	ATV21HD11M34X...HD18M3X ATV21HD15N4...HD18N4	VW3A31817M
	ATV21HD22M3X ATV21HD22N4, HD30N4	VW3A9206M
	ATV21HD37N4, HD45N4	VW3A9207M
	ATV21HD30M3X ATV21HD55N4, HD75N4	VW3A9208M
RFI Input Filter For compliance with European (CE) conducted emissions standard 55022 Class B		
Three phase supply voltage: 200 to 240 V 50/60 Hz	ATV21H075M3X ATV21HU15M3X ATV21HU22M3X ATV21H075N4 ATV21HU15N4 ATV21HU22N4	VW3A31404M
	ATV21HU30M3X ATV21HU40M3X ATV21HD22M3X	
	ATV21HU55M3X ATV21HU75M3X	VW3A31407M
	ATV21HD11M3X ATV21HD15M3X ATV21HD18M3X ATV21HD30M3X	VW3A31408M
Three phase supply voltage: 300 to 500 V 50/60 Hz	ATV21H075N4 ATV21HU15N4 ATV21HU22N4	VW3A31404M
	ATV21HU30N4 ATV21HU40N4 ATV21HU55N4 ATV21HD22N4 ATV21HD30N4	VW3A31406M
	ATV21HU75N4 ATV21HD11N4 ATV21HD37N4 ATV21HD45N4	VW3A31407M
	ATV21HD55N4 ATV21HD75N4	VW3A31408M
	ATV21HD15N4 ATV21HD18N4	VW3A31409M

SPECIFICATIONS:

Electrical

Input Voltage	200 -15% to 240 +10%, 380 -15% to 480 +10%
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 200 Hz
Torque/Overtorque	120% of nominal motor torque for 60 seconds
Current (transient)	110% of controller rated current for 60 seconds, 180% for 2 seconds
Switching Frequency	Selectable from 6 to 16 kHz, 12 kHz nominal rating for 1 HP to 20 HP @ 200/240 V, 380/480 V Selectable: 6 to 16 kHz, 8kHz nominal rating for 30 HP to 40 HP @ 200/240 V, 30 HP to 100 HP @ 380/480 V
Logic Inputs	3 logic inputs (F,R,RES) 24 Vdc, compatible with level 1 PLC, IEC 65A-68 standard Impedance: 3.5 k Ω , Maximum voltage: 30 Vdc, Max. sampling time: 2 ms $\pm$ 0.5 milliseconds Multiple assignment makes it possible to configure several functions on one input
Speed Reference Inputs	VIA: Voltage analog input 0 to 10 Vdc, impedance 30 k Ω (max. safe voltage: 24 Vdc). Analog current input X-Y mA by programming X and Y from 0 to 20 mA, with impedance 242 Ω . Can also be configured as a logic input VIB: Voltage analog input, configurable as an analog input or as a PTC probe input. 0-10 Vdc, impedance 30 k Ω (max. safe voltage 24 Vdc)
Analog Reference Resolution	0.0048 Hz (11 bits)
Relay Outputs	FL (FLA,FLB,FLC) 1 N/C contact, and 1 N/O contact with common point R (RY,RC) 1 N/O contact Maximum switching capacity: • On resistive load ($\cos \phi = 1$): 5 A for 250 Vac or 30 Vdc • On inductive load ($\cos \phi = 0.4$ and L/R = 7 ms): 2 A for 250 Vac or 30 Vdc
I/O Sampling Time	2 milliseconds $\pm$ 0.5 milliseconds on analog inputs & outputs, & logic inputs, 7 milliseconds $\pm$ 0.5 milliseconds on relay outputs
Acceleration and Deceleration Ramps	0.1 to 3200 seconds (definition in 0.1 seconds 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 volts/hertz profile or SLFV (sensorless flux vector)
Speed Range	1:10
Motor Protection	Class 10 electronic overload protection
Keypad/Display Terminal	4 segment, LED display with Run and Units LED indication. Run/ Stop, Local/ remote (with LED indication), and programming buttons. Quick Start, Fault History, I/O mapping, Last-used menus. 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, etc.
Compliance	RoHS
Codes and Standards	UL, CSA, NOM 117, DNV, CE, C-Tick, HPST, UL 1995 Plenum rated

Environmental

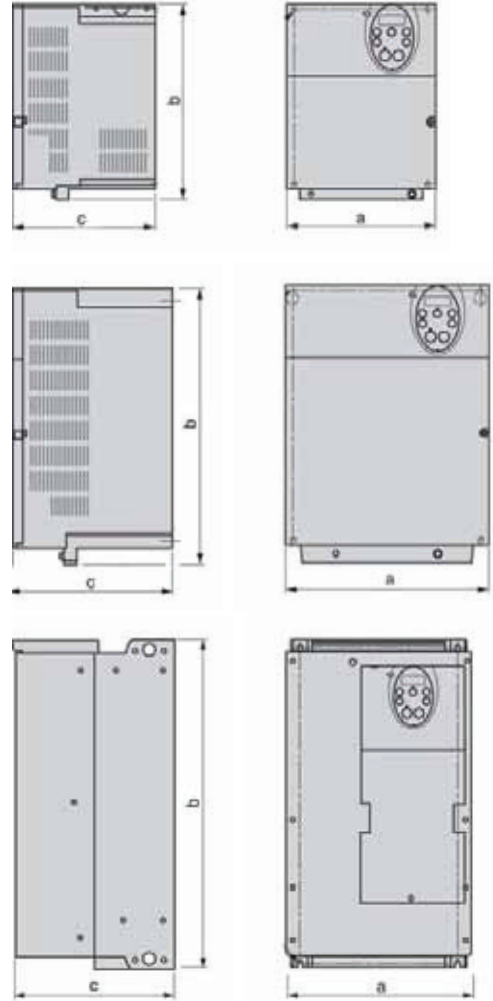
Temperature	Storage: -13 to +158 °F (-25 to +70 °C) Operation: +14 to +104 °F (-10 to +40 °C) without derating, +14 to +122 °F (-10 to +50 °C) with derating
Humidity	95% with no condensation or dripping water, conforming to IEC 60068-2-3.
Altitude	Up to 3,300 ft (1,000 m) without derating; derate by 1% for each additional 330 ft (100 m) up to 10,000 ft (3,000 m) Limit to 6,600 ft (2,000 m) if supplied by corner grounded distribution system
Enclosure Rating	• NEMA/UL open type (IP20) with top vent cover removed. • NEMA/UL Type 1 with the top vent cover in place and with the Conduit Entry Kit installed • IP21 and IP41 and on top of drive controller
Pollution Degree	1 HP to 25 HP @ 200/240 V, 1 HP to 5 HP @ 380/480 V: Pollution degree 2 per IEC/EN 61800-5-1, 30 HP to 40 HP @ 200/240 V, 30 HP to 100 HP @ 380/480 V: Pollution degree 3 per IEC/EN 61800-5-1
Vibration Resistance	1.5 mm peak to peak from 3 to 13 Hz, 1 gn from 13 to 150 Hz, conforming to IEC/EN 60068-2-6
Shock Resistance	15 gn for 11 ms conforming to IEC/EN 60068-2-27

DIMENSIONS:

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

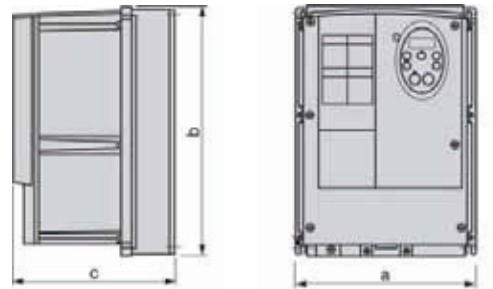
IP20					UL Type 1
Frame Size	a Width	b Height	c Depth	Approx. Weight	b Height with Type 1 Conduit Kit
1	4.13 (105)	5.63 (143)	5.91 (150)	2.65 (1.2)	8.31 (211)
2	5.51 (140)	7.24 (184)	5.91 (150)	5.29 (2.4)	9.92 (252)
3	7.09 (180)	9.13 (232)	6.69 (170)	10.36 (4.7)	12.91 (328)
4	9.65 (245)	11.61 (295)	8.39 (213)	15.44 (7.0)	15.51 (394)
5	9.45 (240)	15.75 (400)	8.39 (213)	19.85 (9.0)	18.11 (460)
6	9.45 (240)	21.65 (550)	9.61 (244)	84.01 (38.1)	27.01 (686)
7	12.60 (320)	24.80 (630)	11.41 (290)	122.16 (55.4)	32.80 (833)

IP20 Drives



IP54				
Frame Size	a Width	b Height	c Depth	Approx. Weight
1	8.46 (215)	11.69 (297)	7.56 (192)	15.44 (7.0)
2	9.06 (230)	13.39 (340)	8.19 (208)	21.28 (9.7)
3	11.42 (290)	22.05 (560)	12.40 (315)	66.81 (30.3)
4	12.20 (310)	26.18 (665)	12.40 (315)	82.47 (37.4)
5	11.18 (284)	28.35 (720)	12.40 (315)	109.15 (49.5)
6	11.18 (284)	34.65 (880)	13.59 (345)	126.57 (57.4)
7	14.25 (362)	39.51 (1000)	14.33 (364)	136.49 (61.9)

IP54 Drives



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