

# AC Drives And Soft Starts

Pricing Guide  
8800PL9701R06/09

2009

Class 8800



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ATV21H  
Open Type Drive



ATV21W  
IP54 / UL Type 12

**Table 1: Altivar® 21 Selection and Pricing (for Variable Torque applications only)**

Input Line Voltage	Three Phase Motor Power▲		Open Drives■			IP54/UL Type 12 Enclosed	
	HP	kW	A▲	Catalog Number	\$ Price	Catalog Number	Class A EMC \$ Price▼
208/240 Vac Three Phase	1	0.75	4.6	ATV21H075M3X	309.00	—	—
	2	1.5	7.5	ATV21HU15M3X	400.00	—	—
	3	2.2	10.6	ATV21HU22M3X	454.00	—	—
	—	3	13.7	ATV21HU30M3X	555.00	—	—
	5	4	16.7	ATV21HU40M3X	618.00	—	—
	7.5	5.5	24.2	ATV21HU55M3X	799.00	—	—
	10	7.5	32	ATV21HU75M3X	963.00	—	—
	15	11	46.2	ATV21HD11M3X	1225.00	—	—
	20	15	61	ATV21HD15M3X	1532.00	—	—
	25	18.5	74.8	ATV21HD18M3X	1795.00	—	—
400/480 Vac Three Phase	30	22	88	ATV21HD22M3X	2188.00	—	—
	40	30	117	ATV21HD30M3X	2806.00	—	—
	1	0.75	2.2	ATV21H075N4	400.00	ATV21W075N4	500.00
	2	1.5	3.7	ATV21HU15N4	472.00	ATV21WU15N4	590.00
	3	2.2	5.1	ATV21HU22N4	545.00	ATV21WU22N4	681.00
	—	3	7.2	ATV21HU30N4	618.00	ATV21WU30N4	772.00
	5	4	8.2	ATV21HU40N4	654.00	ATV21WU40N4	817.00
	7.5	5.5	12	ATV21HU55N4	798.00	ATV21WU55N4	998.00
	10	7.5	16	ATV21HU75N4	946.00	ATV21WU75N4	1183.00
	15	11	22.5	ATV21HD11N4	1145.00	ATV21WD11N4	1489.00
20	15	30.5	ATV21HD15N4	1425.00	ATV21WD15N4	1853.00	
25	18.5	37	ATV21HD18N4	1705.00	ATV21WD18N4	2131.00	
	30	22	43.5	ATV21HD22N4	1856.00	ATV21WD22N4	2412.00
	40	30	58.5	ATV21HD30N4	2284.00	ATV21WD30N4	2855.00
	50	37	79	ATV21HD37N4	2686.00	ATV21WD37N4	3358.00
	60	45	94	ATV21HD45N4	3372.00	ATV21WD45N4	4215.00
	75	55	116	ATV21HD55N4	3883.00	ATV21WD55N4	4853.00
	100	75	160	ATV21HD75N4	4433.00	ATV21WD75N4	5541.00

- ▲ These horsepower, wattage and continuous ampere ratings apply to default switching frequency and maximum 40°C ambient. Refer to the installation manual for derating curves as a function of switching frequency, ambient temperature, and mounting conditions.
- Open type Altivar 21 Drives can be installed as UL Type 1 with an optional conduit box when following instruction in the Installation Manual.
- ◆ For ATV21 with Class B EMC filter, add the letter "C" to the end of the standard catalog number and multiply \$ Price by 1.3.

**Table 2: Altivar 21 Options**

	Description	For Use on Drives	Catalog Number	\$ Price
<b>User Interface Kits</b>				
Remote Keypad Display Mounting Kit	Includes remote, keypad, remote mounting hardware and 3 meter cable.	ATV21 all ranges	VW3A21101	200.00
PCSoft Software Options▲	Cable connection kit for PC	ATV21	VW3A8106	75.00
<b>Communication Card Kits</b>				
LONWORKS	This card is equipped with a removable 3-way screw terminal block.	ATV21 all ranges	VW3A21312	375.00
METASYS N2	This card is equipped with a removable 4-way screw terminal block.	ATV21 all ranges	VW3A21313	185.00
APOGEE FLN P1	This card is equipped with a removable 4-way screw terminal block.	ATV21 all ranges	VW3A21314	185.00
BACnet	This card is equipped with a remote 4-way screw terminal block.	ATV21 all ranges	VW3A21315	185.00

- ▲ Altivar 21 PC Soft can be downloaded free of charge from [www.schneider-electric.com](http://www.schneider-electric.com).

**Table 3: Conduit Entrance Kits for ATV 21**

Description	For use With Altivar 21	Catalog Number	\$ Price
Multiple knockout sizes Installation of conduit entrance kit and retention of vent cover on top of drive controller provides the ATV21with UL Type 1 rating	ATV21H075M3X, ATV21HU15M3X, ATV21HU22M3X, ATV21H075N4, ATV21HU15N4, ATV21HU22N4	VW3A31814	45.00
	ATV21HU30M3X, ATV21HU40M3X, ATV21HU30N4, ATV21HU40N4, ATV21HU55N4	VW3A31815	45.00
	ATV21HU55M3X, ATV21HU75M3X, ATV21HU75N4, ATV21HD11N4	VW3A31816	45.00
	ATV21HD11M3X, ATV21HD15M3X, ATV21HD18M3X, ATV21HD15N4, ATV21HD18N4	VW3A31817	45.00
	ATV21HD22M3X, ATV21HD22N4, ATV21HD30N4	VW3A9206	65.00
	ATV21HD37N4, ATV21HD45N4	VW3A9207	65.00
	ATV21HD30M3X, ATV21HD55N4, ATV21HD75N4	VW3A9208	135.00

**Table 4: Altivar® 61 Selection and Pricing**

Input Line Voltage	Variable Torque			Catalog Number with LCD Keypad (Stocked)	\$ Price	Catalog Number to have ATV61 and Type 1 conduit lentry kit shipped as one line item. Field installation required (Packaged as kit at warehouse).	\$ Price	Catalog Number with LED Keypad (Non-stocked)	\$ Price
	Three-Phase Motor Power		Continuous Output Current						
	hp	kW	A						
208/240 Vac Single Phase	0.5	0.37	3	ATV61H075M3▲▼□	639.	ATV61H075M3T1▼	684.	ATV61H075M3Z	544.
	1	0.75	4.8	ATV61HU15M3▲▼□	663.	ATV61HU15M3T1▼	708.	ATV61HU15M3Z	568.
	2	1.5	8	ATV61HU22M3▲▼□	764.	ATV61HU22M3T1▼	809.	ATV61HU22M3Z	669.
	3	2.2	11	ATV61HU30M3▲▼□	925.	ATV61HU30M3T1▼	970.	ATV61HU30M3Z	830.
	4	3	13.7	ATV61HU40M3▲▼□	1035.	ATV61HU40M3T1▼	1080.	ATV61HU40M3Z	940.
	5	4	17.5	ATV61HU55M3▲▼□	1292.	ATV61HU55M3T1▼	1337.	ATV61HU55M3Z	1197.
	7.5	5.5	27.5	ATV61HU75M3▲▼□	1586.	ATV61HU75M3T1▼	1631.	ATV61HU75M3Z	1491.
208/240 Vac Three Phase	1	0.75	4.8	ATV61H075M3▲▼□	639.	ATV61H075M3T1▼	684.	ATV61H075M3Z	544.
	2	1.5	8	ATV61HU15M3▲▼□	663.	ATV61HU15M3T1▼	708.	ATV61HU15M3Z	568.
	3	2.2	11	ATV61HU22M3▲▼□	764.	ATV61HU22M3T1▼	809.	ATV61HU22M3Z	669.
	4	3	13.7	ATV61HU30M3▲▼□	925.	ATV61HU30M3T1▼	970.	ATV61HU30M3Z	830.
	5	4	17.5	ATV61HU40M3▲▼□	1035.	ATV61HU40M3T1▼	1080.	ATV61HU40M3Z	940.
	7.5	5.5	27.5	ATV61HU55M3▲▼□	1292.	ATV61HU55M3T1▼	1337.	ATV61HU55M3Z	1197.
	10	7.5	33	ATV61HU75M3▲▼□	1586.	ATV61HU75M3T1▼	1631.	ATV61HU75M3Z	1491.
	15	11	54	ATV61HD11M3X◆▼◇	2011.	ATV61HD11M3XT1◆▼	2056.	ATV61HD11M3XZ◆	1916.
	20	15	66	ATV61HD15M3X◆▼◇	2525.	ATV61HD15M3XT1◆▼	2570.	ATV61HD15M3XZ◆	2430.
	25	18	75	ATV61HD18M3X◆▼◇	2943.	ATV61HD18M3XT1◆▼	3008.	—	—
	30	22	88	ATV61HD22M3X◆▼◇	3586.	ATV61HD22M3XT1◆▼	3651.	—	—
	40	30	120	ATV61HD30M3X◆▼◇	4599.	ATV61HD30M3XT1◆▼	4684.	—	—
	50	37	144	ATV61HD37M3X◆▼◇	5342.	ATV61HD37M3XT1◆▼	5427.	—	—
	60	45	176	ATV61HD45M3X◆▼◇	6326.	ATV61HD45M3XT1◆▼	6411.	—	—
	75	55	221	ATV61HD55M3X◆▼◇	7806.	ATV61HD55M3XT1◆▼	8266.	—	—
	100	75	285	ATV61HD75M3X◆▼◇	9379.	ATV61HD75M3XT1◆▼	9839.	—	—
	125	90	359	ATV61HD90M3X◆▼◇	11954.	ATV61HD90M3XT1◆▼	12507.	—	—
400/480 Vac Three Phase	1	0.75	2.3	ATV61H075N4▲▼□	754.	ATV61H075N4T1▼	799.	ATV61H075N4Z	659.
	2	1.5	4.1	ATV61HU15N4▲▼□	857.	ATV61HU15N4T1▼	902.	ATV61HU15N4Z	762.
	3	2.2	5.8	ATV61HU22N4▲▼□	999.	ATV61HU22N4T1▼	1044.	ATV61HU22N4Z	904.
	4	3	7.8	ATV61HU30N4▲▼□	1125.	ATV61HU30N4T1▼	1170.	ATV61HU30N4Z	1030.
	5	4	10.5	ATV61HU40N4▲▼□	1158.	ATV61HU40N4T1▼	1203.	ATV61HU40N4Z	1063.
	7.5	5.5	14.3	ATV61HU55N4▲▼□	1299.	ATV61HU55N4T1▼	1344.	ATV61HU55N4Z	1204.
	10	7.5	17.6	ATV61HU75N4▲▼□	1578.	ATV61HU75N4T1▼	1623.	ATV61HU75N4Z	1483.
	15	11	27.7	ATV61HD11N4▲▼□	1868.	ATV61HD11N4T1▼	1913.	ATV61HD11N4Z	1773.
	20	15	33	ATV61HD15N4▲▼□	2322.	ATV61HD15N4T1▼	2367.	ATV61HD15N4Z	2227.
	25	18	41	ATV61HD18N4▲▼□	2795.	ATV61HD18N4T1▼	2840.	ATV61HD18N4Z	2700.
	30	22	48	ATV61HD22N4▲▼□	3042.	ATV61HD22N4T1▼	3107.	ATV61HD22N4Z	2947.
	40	30	66	ATV61HD30N4▲▼□	3744.	ATV61HD30N4T1▼	3809.	ATV61HD30N4Z	3649.
	50	37	79	ATV61HD37N4▲▼□	4403.	ATV61HD37N4T1▼	4468.	ATV61HD37N4Z	4308.
	60	45	94	ATV61HD45N4▲▼□	5528.	ATV61HD45N4T1▼	5563.	ATV61HD45N4Z	5433.
	75	55	116	ATV61HD55N4▲▼□	6365.	ATV61HD55N4T1▼	6500.	ATV61HD55N4Z	6270.
	100	75	160	ATV61HD75N4▲▼□	7267.	ATV61HD75N4T1▼	7402.	ATV61HD75N4Z	7172.
	125	90	179	ATV61HD90N4▲▼□	7988.	ATV61HD90N4T1▼	8448.	—	—
	150	110	215	ATV61HC11N4★▼◇	9022.	ATV61HC11N4T1▼	9575.	—	—
	200	130	259	ATV61HC13N4★▼◇	10366.	ATV61HC13N4T1▼	10939.	—	—
	250	160	314	ATV61HC16N4★▼◇	11711.	ATV61HC16N4T1▼	12299.	—	—
350	220	427	ATV61HC22N4★▼◇	13993.	ATV61HC22N4T1▼	14561.	—	—	
400	250	481	ATV61HC25N4★▼◇	16475.	ATV61HC25N4T1▼	17079.	—	—	
500	315	616	ATV61HC31N4★▼◇	23734.	ATV61HC31N4T1	24338.	—	—	
600	400	759	ATV61HC40N4★▼◇	31763.	—	—	—	—	
700	500	941	ATV61HC50N4★▼◇	44235.	—	—	—	—	
900	630	1188	ATV61HC63N4★▼◇	63935.	—	—	—	—	

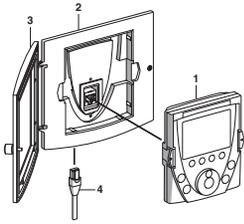
- ▲ Option to have product treated for increased protection for dusty and corrosive environments. This product is not stocked. Add "S337" to the end of the catalog number and multiply the listed price by 1.2 to obtain new price. With this option, exposed copper is tinned, circuit boards are conformal coated in critical areas and plastics are treated to better withstand the corrosive nature of certain oils. This option is standard on 55 kW/75 hp @ 230 Vac and higher and 90 kW/125 hp @ 460 Vac and higher.
- These products require a user supplied 3% line reactor when used with single-phase input.
- ◆ Product does not contain an EMC filter.
- ★ Product ships with a DC choke that must be field mounted. A 5% line reactor may be purchased and installed in place of the DC choke. Add "D" to the end of the catalog number to receive just the AC drive and multiply the listed price by .96 to obtain new price.
- ▼ These products can be ordered with Lonworks® or BACnet communication option card shipped as one line item. Field installation required. Add "LW" to the end of the part number to receive a Lonworks® option card. Add \$550 to the list price. Add "BN" to the end of the part number to receive a BACnet option card. Add \$225 to the list price.
- △ These products do not contain a dynamic braking transistor. A separate transistor must be added for applications requiring dynamic braking.
- When ordering replacements for Square D E-Flex, MCC and M-Flex containing the Altivar 61 drive, identify the replacement catalog number by referring to the applicable instruction manual, the side nameplate on power converter, or using the graphic keypad (menu 1.11 identification).
- ◇ Option to have product treated for increased protection for dusty and corrosive environments. This product is not stocked. Add "337" to the end of the catalog number and multiply the listed price by 1.2 to obtain new price. With this option, exposed copper is tinned, circuit boards are conformal coated in critical areas and plastics are treated to better withstand the corrosive nature of certain oils. This option is standard on 55 kW/75 hp @ 230 Vac and higher and 90 kW/125 hp @ 460 Vac and higher.



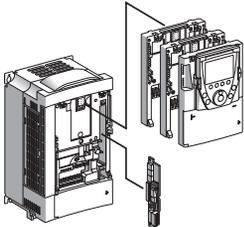
Altivar® 61 Selection and Pricing (continued)

Input Line Voltage	Variable Torque			 Catalog Number with LCD Keypad (Stocked)	\$ Price
	Three-Phase Motor Power		Continuous Output Current		
	hp	kW	A		
575/690 Vac Three-Phase	3	3	3.9	ATV61HU30Y▲	1889.00
	4	4	5.8	ATV61HU40Y▲	1990.00
	5	5.5	6.1	ATV61HU55Y▲	2099.00
	7.5	7.5	9	ATV61HU75Y▲	2380.00
	10	11	11	ATV61HD11Y▲	2799.00
	15	15	17	ATV61HD15Y▲	3380.00
	20	18.5	22	ATV61HD18Y▲	3979.00
	25	22	27	ATV61HD22Y▲	4790.00
	30	30	32	ATV61HD30Y▲	5780.00
	40	37	41	ATV61HD37Y▲	6999.00
	50	45	52	ATV61HD45Y▲	8579.00
	60	55	62	ATV61HD55Y▲	10379.00
	75	75	77	ATV61HD75Y▲	12199.00
	100	90	99	ATV61HD90Y▲	14399.00
	125	110	125	ATV61HC11Y▲■	16899.00
	150	132	150	ATV61HC13Y▲■	19179.00
	—	160	180	ATV61HC16Y▲■	20795.00
	200	200	220	ATV61HC20Y▲■	24290.00
	250	250	290	ATV61HC25Y▲◆	28950.00
	350	315	355	ATV61HC31Y▲◆	35950.00
450	400	420	ATV61HC40Y▲◆	46750.00	
550	500	543	ATV61HC50Y▲◆	59590.00	
700	630	675	ATV61HC63Y▲◆	78490.00	
800	800	840	ATV61HC80Y▲◆	103390.00	

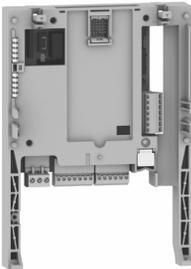
- ▲ Conformal coating is standard.
- An AC 5% line reactor is mandatory.
- ◆ These products do not contain a dynamic braking transistor. A separate transistor must be added for applications requiring dynamic braking.



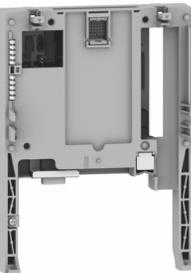
LCD Keypad Mounting Kits



Option Card Assembly



I/O Option Card



Communication Option Card



Incremental Encoder Interface Option Card

**Table 5: Options—Field Installed**

	Description	For Use on Drives	Catalog No.	\$ Price	
<b>Operator Interface</b>	LCD graphic keypad: IP54 rating	any ATV61 any ATV71	VW3A1101	115.00	
	Remote mounting kit: includes bezel and mounting hardware		VW3A1102	55.00	
	Door for use with remote mount kit for IP65 rating		VW3A1103	45.00	
	Cable for remote mounting LCD graphic keypad RJ-45 connector on each end		1 meter	VW3A1104R10	35.00
			3 meters	VW3A1104R30	35.00
			5 meter	VW3A1104R50	35.00
			10 meters	VW3A1104R100	45.00
RJ-45 female—female adaptor to connect LCD keypad and cable. Not required if using VW3A1102.	VW3A1105	35.00			
<b>PowerSuite™ Software Options</b>	PowerSuite™ software on CD for PC	Altivar AC drives Altistart 48 TesyS U—line	VW3A8104	150.00	
	Cable connection kit for PC		VW3A8106	75.00	
<b>For Wireless Connection</b>	Modbus® to Bluetooth® Gateway and RS-485 converter	any ATV61 any ATV71	VW3A8114	125.00	
<b>I/O Adaptor</b>	115 Vac logic input adaptor adapts 7 logic inputs for use with user supplied 115 Vac signals	any ATV61 any ATV71	VW3A3101	195.00	
<b>I/O Extension Option Cards</b>	Basic I/O option card—4 logic inputs, 2 logic outputs, 1 Form C relay output, an input for PTC motor probes, a 24 Vdc output, a—10 Vdc output	any ATV61 any ATV71	VW3A3201	165.00	
	Extended I/O option card—contains all the I/O on the Basic I/O option card plus 2 analog inputs, 2 analog outputs, 1 pulse input		VW3A3202	195.00	
<b>CANopen Adaptor</b>	This adaptor connects to the RJ-45 port and provides a 9-pin male SUB-D connector conforming to the CANopen standard (CIA DRP 303-1)	any ATV61 any ATV71	VW3CANA71	45.00	
<b>CANopen Connector</b>	9-pin female SUB-D with line terminator (can be disabled). 180° cable outlet CAN-H, CAN-L, CAN-GND connection	any ATV61 any ATV71	VW3CANKCDF180T	45.00	
<b>Incremental Encoder Interface Option Cards</b>	with RS-422 outputs, 5 Vdc	any ATV71	VW3A3401	85.00	
	with RS-422 outputs, 15 Vdc		VW3A3402	85.00	
	with open collector outputs, 12 Vdc		VW3A3403	85.00	
	with open collector outputs, 15 Vdc		VW3A3404	85.00	
	with push-pull outputs, 12 Vdc		VW3A3405	85.00	
	with push-pull outputs, 15 Vdc		VW3A3406	85.00	
	with push-pull outputs, 24 Vdc		VW3A3407	85.00	
	Resolver		VW3A3408	85.00	
	Universal with SinCos, SinCos Hiperface®, SinCos EnDat® or SSI output		VW3A3409	85.00	
	incremental with RS422 outputs and encoder emulation		VW3A3411	85.00	
<b>Communication Option Cards</b>	Modbus® Plus card	any ATV61 any ATV71	VW3A3302	550.00	
	Modbus® / Unitelway card		VW3A3303	225.00	
	Modbus® TCP/IP Daisy Chain		VW3A3310D	275.00	
	Interbus® S card		VW3A3304	550.00	
	Profibus DP card		VW3A3307	550.00	
	Profibus DPv1 card		VW3A3307S371	550.00	
	DeviceNet™ card		VW3A3309	225.00	
	Ethernet/IP card		VW3A3316	275.00	
	Fipio® card		VW3A3311	550.00	
	Lonworks® card		VW3A3312	550.00	
	MetaSYS® N2 card		VW3A3313	225.00	
	APOGEE FLN P1 card		VW3A3314	225.00	
	BACnet card		VW3A3315	225.00	
<b>Controller Inside Option Card</b>	Programmable option card, conforms with IEC61131-3 programming standard.	any ATV61 any ATV71	VW3A3501	550.00	
<b>Water Solutions Control Card</b>	This option card contains a variety of pre-programmed functions and features to manage multi-pump installations.	any ATV61 any ATV71	VW3A3503	650.00	
<b>Simple Loader</b>	Using RJ45 port connections, the configurations of a drive can be downloaded then uploaded to compatible drive.	ATV31,ATV61 and ATV71	VW3A8120	175.00	

The drive cannot support the VW3A3503 water solutions card and the VW3A3501 controller inside option card simultaneously.  
For use with the ATV71H...383 drive ONLY.

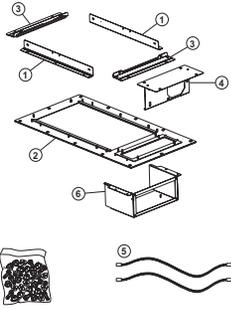
Options—Field Installed (continued)

Description		For Use on Drives	Catalog No.	\$ Price		
Fan Kit	Installation of kit enables the drive to operate in higher ambient temperatures. Fan mounts on drive. Consult the product catalog for more information.	ATV61/71HD18M3X...HD22M3X, ATV61/71HD22N4	VW3A9404	135.00		
		ATV61/71HD30N4...HD37N4	VW3A9405	145.00		
		ATV61/71HD30M3X...HD45M3X	VW3A9406	165.00		
		ATV61/71HD45N4...HD75N4	VW3A9407	195.00		
<b>ATV61: Options and Accessories — Variable Torque Applications</b>						
Description		ATV58 Drive	Replaced by	Reference Mounting Plate	\$ Price	
<b>Single-phase supply voltage: 200...240V 50/60 Hz</b>						
Mounting Plate Kit	Kit includes: Mechanical adaptors required for mounting and Altivar 61/71 drive in the place of an Altivar 58 or Altivar 58F drive using same holes.	ATV58HU09M2ZU	ATV61H075M3	VW3A9301	83.00	
		ATV58HU18M2ZU	ATV61HU15M3	VW3A9301	83.00	
		ATV58HU29M2ZU	ATV61HU22M3	VW3A9303	83.00	
		ATV58HU41M2ZU	ATV61HU30M3	VW3A9303	83.00	
		ATV58HU72M2ZU	ATV61HU40M3	VW3A9304	93.00	
		ATV58HU90M2ZU	ATV61HU55M3	VW3A9306	133.00	
		ATV58HD12M2ZU	ATV61HU75M3	VW3A9307	133.00	
		<b>Three-phase supply voltage 200...240 V 50/60 Hz</b>				
		ATV58HU29M2ZU	ATV61HU15M3	VW3A9302	83.00	
		ATV58HU41M2ZU	ATV61HU22M3	VW3A9303	83.00	
		ATV58HU54M2ZU	ATV61HU30M3	VW3A9304	93.00	
		ATV58HU72M2ZU	ATV61HU40M3	VW3A9304	93.00	
		ATV58HU90M2ZU	ATV61HU55M3	VW3A9306	133.00	
		ATV58HD12M2ZU	ATV61HU75M3	VW3A9307	133.00	
		ATV58HD16M2XZU	ATV61HD11M3X	VW3A9309	170.00	
		ATV58HD16M2XZU	ATV61HD15M3X	VW3A9309	170.00	
		ATV58HD23M2XZU	ATV61HD18M3X	VW3A9310	170.00	
		ATV58HD28M2XZU	ATV61HD22M3X	VW3A9312	337.00	
		ATV58HD33M2XZU	ATV61HD30M3X	VW3A9312	337.00	
		ATV58HD46M2XZU	ATV61HD37M3X	VW3A9312	337.00	
		<b>Three-phase supply voltage: 380...480V 50/60 Hz</b>				
		ATV58HU18N4ZU	ATV61H075N4	VW3A9302	83.00	
		ATV58HU29N4ZU	ATV61HU15N4	VW3A9302	83.00	
		ATV58HU41N4ZU	ATV61HU22N4	VW3A9302	83.00	
		ATV58HU54N4XZU	ATV61HU40N4	VW3A9304	93.00	
		ATV58HU72N4XZU	ATV61HU55N4	VW3A9305	93.00	
		ATV58HU90N4XZU	ATV61HU75N4	VW3A9305	93.00	
		ATV58HD12N4XZU	ATV61HD11N4	VW3A9307	133.00	
		ATV58HD16N4XZU	ATV61HD15N4	not available	—	
		ATV58HD23N4XZU	ATV61HD18N4	VW3A9308	138.00	
		ATV58HD28N4XZU	ATV61HD22N4	VW3A9310	170.00	
		ATV58HD33N4XZU	ATV61HD30N4	VW3A9310	170.00	
		ATV58HD46N4XZU	ATV61HD37N4	VW3A9310	170.00	
ATV58HD54N4XZU	ATV61HD45N4	VW3A9312	337.00			
ATV58HD64N4XZU	ATV61HD55N4	VW3A9312	337.00			
ATV58HD79N4XZU	ATV61HD75N4	VW3A9312	337.00			
<b>ATV71: Options and Accessories – Constant Torque Applications</b>						
Description		ATV58 Drive	Replaced by	Reference Mounting Plate	\$ Price	
<b>Single-phase supply voltage: 200...240V 50/60 Hz</b>						
Mounting Plate Kit	Kit includes: Mechanical adaptors required for mounting and Altivar 61/71 drive in the place of an Altivar 58 or Altivar 58F drive using same holes.	ATV58HU09M2ZU	ATV71H075M3	VW3A9301	83.00	
		ATV58HU18M2ZU	ATV71HU15M3	VW3A9301	83.00	
		ATV58HU29M2ZU	ATV71HU22M3	VW3A9303	83.00	
		ATV58HU41M2ZU	ATV71HU30M3	VW3A9303	83.00	
		ATV58HU72M2ZU	ATV71HU40M3	VW3A9304	93.00	
		ATV58HU90M2ZU	ATV71HU55M3	VW3A9306	133.00	
		ATV58HD12M2ZU	ATV71HU75M3	VW3A9307	133.00	
		<b>Three-phase supply voltage: 200...240V 50/60 Hz</b>				
		ATV58HU29M2ZU	ATV71HU15M3	VW3A9302	83.00	
		ATV58HU41M2ZU	ATV71HU22M3	VW3A9303	83.00	
		ATV58HU54M2ZU	ATV71HU30M3	VW3A9304	93.00	
		ATV58HU72M2ZU	ATV71HU40M3	VW3A9304	93.00	
		ATV58HU90M2ZU	ATV71HU55M3	VW3A9306	133.00	
		ATV58HD12M2ZU	ATV71HU75M3	VW3A9307	133.00	
		ATV58HD16M2XZU	ATV71HD11M3X	VW3A9309	170.00	
		ATV58HD16M2XZU	ATV71HD15M3X	VW3A9309	170.00	
		ATV58HD23M2XZU	ATV71HD18M3X	VW3A9310	170.00	
		ATV58HD28M2XZU	ATV71HD22M3X	VW3A9312	337.00	
		ATV58HD33M2XZU	ATV71HD30M3X	VW3A9312	337.00	
		ATV58HD46M2XZU	ATV71HD30M3X	VW3A9312	337.00	
		<b>Three-phase supply voltage 380...480 V 50/60 HZ</b>				
		ATV58HU18N4ZU	ATV71H075N4	VW3A9302	83.00	
		ATV58HU29N4ZU	ATV71HU15N4	VW3A9302	83.00	
		ATV58HU41N4ZU	ATV71HU22N4	VW3A9302	83.00	
		ATV58HU54N4ZU	ATV71HU30N4	VW3A9304	93.00	
		ATV58HU72N4ZU	ATV71HU40N4	VW3A9304	93.00	
		ATV58HU90N4ZU	ATV71HU55N4	VW3A9305	93.00	
		ATV58HD12N4ZU	ATV71HU75N4	VW3A9306	133.00	
		ATV58HD16N4ZU	ATV71HD11N4	VW3A9307	133.00	
		ATV58HD23N4ZU	ATV71HD15N4	VW3A9308	138.00	
		ATV58HD28N4ZU	ATV71HD18N4	VW3A9309	170.00	
		ATV58HD33N4ZU	ATV71HD22N4	VW3A9310	170.00	
		ATV58HD46N4ZU	ATV71HD30N4	VW3A9310	170.00	
ATV58HD54N4ZU	ATV71HD37N4	VW3A9312	337.00			
ATV58HD64N4ZU	ATV71HD45N4	VW3A9312	337.00			
ATV58HD79N4ZU	ATV71HD55N4	VW3A9312	337.00			

Verify motor/drive ratings and application for proper replacement selections.

Catalog number may or may not contain an "X" in this position.

**Options—Field Installed (continued)**



Flange Kit VW3A9506

Description		For Use on Drives	Catalog No.	\$ Price			
<b>Flange Kit</b>	Kit includes: a metal frame, seals, mounting hardware, and bracket to mount fan kit so fan can be accessed from the front of the drive template.  Kit used to mount the heatsink of the drive outside of an enclosure.	ATV61/71H037M3...HU15M3	VW3A9501	255.00			
		ATV61/71H075N4...HU22N4					
		ATV61/71HU22M3...HU40M3	VW3A9502	279.00			
		ATV61/71HU30N4...HU40N4					
		ATV61/71HU55M3					
		ATV61/71HU55N4, HU75N4	VW3A9503	325.00			
		ATV61/71HU75M3					
		ATV61/71HD11N4	VW3A9504	358.00			
		ATV61/71HD11M3X...HD15M3X					
		ATV61/71HD15N4, HD18N4	VW3A9505	419.00			
		ATV61/71HD18M3X...HD22M3X					
		ATV61/71HD22N4, ATV61/71HU30Y...HD30Y	VW3A9506	438.00			
		ATV61/71HD30N4, HD37N4	VW3A9507	469.00			
		ATV61/71HD30M3X...HD45M3X	VW3A9508	469.00			
		ATV61/71HD45N4...HD75N4, ATV61/71HD37Y...HD90Y	VW3A9509	477.00			
		ATV61HD55M3X...HD75M3X					
		ATV61HD90N4...HC11N4	VW3A9510	500.00			
		ATV71HD55M3X, ATV71HD90N4					
		ATV61HD90M3X, ATV61HC13N4					
		ATV71HD75M3X, ATV71HC11N4	VW3A9511	667.00			
		ATV61HC16N4, ATV61HC20Y, ATV61/71HC11Y...HC16Y, ATV71HC13N4	VW3A9512	1053.00			
		ATV61HC22N4, ATV71HC16N4	VW3A9513	1053.00			
		ATV61HC25N4...HC31N4					
		ATV61HC40Y					
		ATV61/71HC25Y, HC31Y	VW3A9514	1053.00			
		ATV71HC20N4...HC28N4					
		ATV71HC20Y					
		ATV61HC25N4...HC31N4 with VW3A7101 braking transistor					
		ATV61HC40Y					
		ATV61/71HC25Y, HC31Y	VW3A9515	1062.00			
ATV71HC20N4...HC28N4 with VW3A7101 braking transistor							
ATV71HC20Y							
<b>Type 1 Conduit Kit</b>	Kit includes: a metal box, with conduit knockouts Kit provides conduit landing when wall mounting the drive	ATV61/71H037M3...HU15M3	VW3A9201	45.00			
		ATV61/71H075N4...HU22N4					
		ATV61/71HU22M3...HU40M3	VW3A9202	45.00			
		ATV61/71HU30N4...HU40N4					
		ATV61/71HU55M3					
		ATV61/71HU55N4, HU75N4	VW3A9203	45.00			
		ATV61/71HU75M3					
		ATV61/71HD11N4	VW3A9204	45.00			
		ATV61/71HD11M3X...HD15M3X					
		ATV61/71HD15N4, HD18N4	VW3A9205	45.00			
		ATV61/71HD18M3X...HD22M3X					
		ATV61/71HD22N4	VW3A9206	65.00			
		ATV61/71HU30Y...HD30Y					
		ATV61/71HD30N4, HD37N4	VW3A9207	65.00			
		ATV61/71HD30M3X...HD45M3X	VW3A9217	85.00			
		ATV61/71HD45N4...HD75N4					
		ATV61/71HD37Y...HD90Y	VW3A9208	135.00			
		ATV61HD55M3X...HD75M3X					
		ATV61HD90N4...HC11N4	VW3A9209	460.00			
		ATV71HD55M3X, ATV71HD90N4, ATV61HC11N4					
		ATV61HD90M3X, ATV61HC13N4					
		ATV71HD75M3X, ATV71HC11N4	VW3A9210	553.00			
		ATV61HC16N4, ATV71HC13N4					
		ATV61/71HC11Y...HC16Y	VW3A9211	573.00			
		ATV61HC20Y					
		ATV61HC22N4, ATV71HC16N4	VW3A9212	588.00			
		ATV61HC25N4...ATV61HC31N4					
		ATV71HC20N4...HC28N4					
		ATV71HC20Y					
		ATV61/71HC25Y, HC31Y	VW3A9213	604.00			
ATV61HC40Y							
ATV61HC25N4...HC31N4 with VW3A7101 braking transistor							
ATV71HC20N4...HC28N4 with VW3A7101 braking transistor							
ATV71HC20Y							
ATV61/71HC25Y, HC31Y	VW3A9214	604.00					
ATV61HC40Y							
<b>Profibus Option Card Cover</b>	Type 1 cover for Profibus Option Card	230V Drive controllers		480V Drive controllers			
		<b>ATV61H****▲</b>	<b>ATV71H****</b>	<b>ATV61H****</b>	<b>ATV71H****</b>		
		075M3	037M3	075N4	075N4		
		U15M3	075M3	U15N4	U15N4	VW3A9201PF	101.00
		—	U15M3	U22N4	U22N4		
		U22M3	U22M3	U30N4	U30N4		
		U30M3	U30M3	U40N4	U40N4	VW3A9292PF	102.00
		U40M3	U40M3	—	—		
		U55M3	U55M3	U55N4	U55N4	VW3A9203PF	104.00
		—	—	U75N4	U75N4		
		U75M3	U75M3	D11N4	D11N4	VW3A9204PF	107.00
		D11M3X	D11M3X	D15N4	D15N4		
		D15M3X	D15M3X	D18N4	D18N4	VW3A9205PF	112.00

▲ The symbol "▲" indicates the part of the number that varies with controller size or rating.

Variable Torque AC Drive —208 V, and 460 V Ratings

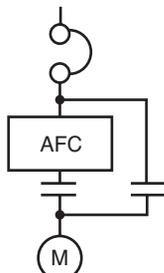
Table 6: S-Flex™ 21 Enclosed Drive Selection and Pricing

Input Line Voltage	hp	kW	Output Current A	Catalog Number	Standard Product List \$ Price	Options			
						Non-Bypass	Disc Switch	Line Contactor	
						MOD W Price \$▲	MOD A07 Price \$■	MOD B07 Price \$■	
208 Vac Three-phase	1	0.75	4.8	SFD21CG2Y	1402.00	1048.00	1584.00	1480.00	
	2	1.5	7.8	SFD21DG2Y	1501.00	1123.00	1689.00	1585.00	
	3	2.2	11	SFD21EG2Y	1593.00	1193.00	1784.00	1682.00	
	5	4	17.5	SFD21FG2Y	1789.00	1342.00	1992.00	1889.00	
	7.5	5.5	25.3	SFD21GG2Y	1957.00	1468.00	2177.00	2066.00	
	10	7.5	32.2	SFD21HG2Y	2253.00	1700.00	2478.00	2378.00	
	15	11	48.3	SFD21JG2Y	2758.00	2089.00	3023.00	2886.00	
	20	15	62.1	SFD21KG2Y	3169.00	2389.00	3476.00	3316.00	
	25	18.5	78.2	SFD21LG2Y	3865.00	2910.00	4240.00	4044.00	
	30	22	92	SFD21MG2Y	4705.00	3542.00	5171.00	4950.00	
	40	30	120	SFD21NG2Y	5920.00	4911.00	6370.00	6294.00	
	230 Vac Three-phase	1	0.75	4.2	SFD21CG3Y	1402.00	1048.00	1584.00	1480.00
		2	1.5	6.8	SFD21DG3Y	1501.00	1123.00	1689.00	1585.00
		3	2.2	9.6	SFD21EG3Y	1593.00	1193.00	1784.00	1682.00
5		4	15.2	SFD21FG3Y	1789.00	1342.00	1992.00	1889.00	
7.5		5.5	22	SFD21GG3Y	1957.00	1468.00	2177.00	2066.00	
10		7.5	28	SFD21HG3Y	2253.00	1700.00	2478.00	2378.00	
15		11	42	SFD21JG3Y	2758.00	2089.00	3023.00	2886.00	
20		15	54	SFD21KG3Y	3169.00	2389.00	3476.00	3316.00	
25		18.5	68	SFD21LG3Y	3865.00	2910.00	4240.00	4044.00	
30		22	80	SFD21MG3Y	4705.00	3542.00	5171.00	4950.00	
40		30	104	SFD21NG3Y	5920.00	4911.00	6370.00	6294.00	
460 Vac Three-phase		1	0.75	2.1	SFD21CG4Y	1250.00	880.00	1314.00	1289.00
		2	1.5	3.4	SFD21DG4Y	1317.00	928.00	1384.00	1358.00
		3	2.2	4.8	SFD21EG4Y	1419.00	1000.00	1491.00	1463.00
	5	4	7.6	SFD21FG4Y	1554.00	1095.00	1633.00	1602.00	
	7.5	5.5	11	SFD21GG4Y	1690.00	1190.00	1776.00	1742.00	
	10	7.5	14	SFD21HG4Y	1892.00	1333.00	1988.00	1950.00	
	15	11	21	SFD21JG4Y	2227.00	1624.00	2361.00	2296.00	
	20	15	27	SFD21KG4Y	2709.00	2060.00	2909.00	2864.00	
	25	18.5	34	SFD21LG4Y	3229.00	2455.00	3467.00	3409.00	
	30	22	40	SFD21MG4Y	3749.00	3037.00	3956.00	3903.00	
	40	30	52	SFD21NG4Y	4359.00	3641.00	4600.00	4538.00	
	50	37	65	SFD21PG4Y	5347.00	4545.00	5643.00	5567.00	
	60	45	77	SFD21QG4Y	6257.00	5444.00	6603.00	6514.00	
	75	55	96	SFD21RG4Y	7102.00	6392.00	7527.00	7379.00	
100	75	124	SFD21SG4Y	8097.00	7293.00	8581.00	8413.00		

- ▲ When ordering a Non-Bypass unit insert a "W" in place of the "Y" in the Catalog Number.
- Options A07 Disconnect Switch and B07 Line Contactor are available only when a full voltage bypass standard "Y" product is selected. Options A07 and B07 are mutually exclusive.



S-Flex™ 21 Enclosed Drive Controller Type 1  
Rated +14 to +140°F  
(-10 to +40°C)



Power Circuit Y Bypass Package

Table 7: Miscellaneous Options▲

Description	Option Number	\$ Price
BACnet Communication Card	A06	185.00
LonWorks N2 Communication Card	B06	375.00
Metasys N2 Communications Card	C06	185.00
Apogee FLN P1 Communications Card	D06	185.00
Modbus Monitoring	N06	N/C
Seismic Qualification	S07	215.00

- ▲ Miscellaneous Options A06, B06, C06, and D06 are mutually exclusive. Add Misc. Option number to S-Flex™ 21 Catalog Number when ordering communications card factory installed.

Table 8: Accessories

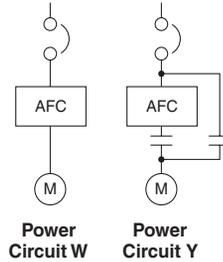
Description	Catalog Number	\$ Price
Altivar 21 PCSof software PC Soft Test and Commissioning Software. For use with Microsoft Windows 95, 98, NT, XP, and Vista operating systems for PC's only. (Cable not included)	VW3A2104■	N/C
PC Cable for Test and Commissioning Software Includes 3-meter (9.8 ft.) cable, RS-485/RS-232C adaptor and connectors	VW3A8106	75.00
EZ-M Mounting Channel, 72" length	EZM72MC	42.00

- Can be downloaded from the internet at [www.Schneider-Electric.com](http://www.Schneider-Electric.com)

All S-Flex™ 21 Enclosed Drives are supplied with:

- Altivar® 21 power converter
- Square D® circuit breaker disconnect (Power Fuses for 460 V version only)
- UL508C coordinated short circuit rating for 100,000 A
- Adjustable Frequency Controller-Off-Bypass selector switch
- Local/Remote configurable on controller
- Power On red LED
- Bypass Run green LED
- Fire/Freezestat interlock for Adjustable Frequency Drive and Bypass mode
- Form C Adjustable Frequency Controller fault auxiliary contact
- Modbus RJ-45 communication port
- Smoke Purge Function
- Bypass Run Auxiliary Contact
- Drive Run Auxiliary Contact
- Full Voltage Bypass Power Circuit with overload relay
- 120 Vac fused control power transformer

**Variable Torque AC Drive—208, 230 V and 460 V Ratings**



hp	Output Amperes		
	208 V	230 V	460 V
1	4.6	4.2	2.1
2	7.5	6.8	3.4
3	10.6	9.6	4.8
5	16.7	15.2	7.6
7.5	24.2	22	11
10	30.8	28	14
15	46.2	42	21
20	59.4	54	27
25	74.8	68	34
30	88	80	40
40	114	104	52
50	143	130	65
60	—	—	77
75	—	—	96
100	—	—	124

Class	Type	Modifications								
		Control			Lights			Misc		
8839	EFD									
		1	2	3	4	5	6	7	8	9

Note: Standard packages are rated 100 k AIC

**Table 9: E-Flex™ Selection and Pricing**

2 hp Code	3 Enclosure Type						4 Voltage Code	5 Application Type (Applied Rating Code)	6 Device Type				9 Miscellaneous Options					
	208/230 V			460 V					W—Without Bypass Package		Y—Bypass Package □		Mod X09 3% Line Reactor		Mod A09 5% Line Reactor		Mod B09 Line Contactor	
	G= Type 1	A= Type 12K	H= Type 3R	G= Type 1	A= Type 12K	H= Type 3R			208/230 V	460 V	208/230 V	460 V	208/230 V	460 V	208/230 V	460 V	208/230 V	460 V
	\$ Price			\$ Price					\$ Price		\$ Price		\$ Price		\$ Price		\$ Price	
C = 1	155.00	1500.00		155.00	1500.00		1561.00	1530.00	1773.00	1739.00	173.00	173.00	216.00	216.00	50.00	50.00		
D = 2	155.00	1500.00		155.00	1500.00		1561.00	1653.00	1773.00	1878.00	188.00	188.00	235.00	235.00	50.00	50.00		
E = 3	155.00	1500.00		155.00	1500.00		1561.00	1791.00	1773.00	2036.00	188.00	188.00	235.00	235.00	60.00	50.00		
F = 5	155.00	1500.00		155.00	1500.00		1766.00	1928.00	2007.00	2191.00	202.00	202.00	253.00	253.00	70.00	50.00		
G = 7.5	155.00	1700.00		155.00	1500.00		1887.00	2044.00	2144.00	2323.00	238.00	238.00	298.00	298.00	70.00	60.00		
H = 10	155.00	1700.00		155.00	1700.00		2183.00	2226.00	2480.00	2578.00	306.00	306.00	382.00	382.00	90.00	70.00		
J = 15	362.00	2625.00		155.00	1700.00		2838.00	2479.00	3225.00	2817.00	315.00	315.00	394.00	394.00	120.00	78.00		
K = 20	362.00	2625.00		155.00	1700.00		3621.00	2892.00	4115.00	3286.00	382.00	382.00	478.00	478.00	168.00	90.00		
L = 25	362.00	2625.00		155.00	1700.00		3694.00	3083.00	4198.00	3503.00	382.00	382.00	478.00	478.00	195.00	120.00		
M = 30	362.00	3750.00		362.00	2625.00		4635.00	3686.00	5267.00	4189.00	398.00	398.00	497.00	497.00	195.00	120.00		
N = 40	362.00	3750.00		362.00	2625.00		5850.00	4424.00	6647.00	4800.00	448.00	448.00	560.00	560.00	252.00	168.00		
P = 50	362.00	3750.00		516.00	2625.00		7316.00	5222.00	8314.00	5934.00	583.00	583.00	729.00	729.00	364.00	195.00		
Q = 60	—	—		516.00	3750.00		—	6604.00	—	7505.00	—	583.00	—	729.00	—	195.00		
R = 75	—	—		516.00	3750.00		—	7372.00	—	8378.00	—	649.00	—	811.00	—	252.00		
S = 100	—	—		516.00	3750.00		—	8908.00	—	10122.00	—	777.00	—	971.00	—	364.00		

**7 Control Options**

A07	Hand-Off—Auto, Speed Pot.	Included
B07	Hand-Off—Auto, Start-Stop, Speed Pot.	100.00
C07	Start-Stop, Speed Pot.	75.00
D07	Hand-Off-Comm, Speed Pot.	N/C
E07	Hand-Off-Comm, Start-Stop, Speed Pot.	100.00
N07	No operators; wired for remote operation	-100.00

- ▲ Control Option C07 (Start-Stop, Speed Potentiometer) is not compatible with Power Circuit Y Bypass or Light Option A08 or B08.
- Light Options A08, B08 and C08 cannot be selected together. Select only one.
- ◆ Light Option B08 (Power On, Run, Fault, Bypass) is not compatible with Power Circuit W Without Bypass.
- ★ Misc. Option B09 Line Contactor is not compatible with Power Circuit W (Without Bypass).
- ▼ Misc. Option E09 Smoke Purge (Fireman's Override) permits motor to run at full speed.
- △ Hand-Off—Auto switch must be placed in off position for AFC fault reset.
- When Power Circuit Y Bypass selected, AFC—Off—Bypass switch and Test—Normal switch is supplied.
- ◇ When communication options are selected, Control Option D07 or E07 must be selected for control.
- ☆ Misc. Option C09 3–15 PSI Transducer is not compatible with Control Options C07, D07 or E07, J09 0–10 Vdc Auto Speed Reference Option, H09 I/O Extension Card, F09, L09, M09, O09, P09, Q09, R09 Serial Communication Cards

**8 Light Options**

A08	Power On, Run, Fault, Auto Lights	80.00
B08	Power On, Run, Fault, Bypass Lights	80.00
C08	Power On, Run, Fault Lights	65.00

- ▽ Misc. Option H09 I/O Extension Card is not compatible with C09 3–15 PSI Transducer or Serial Communications Cards F09, L09, M09, O09, P09, Q09, or R09.
- Misc. Option J09 input programmed for 0–10 Vdc is not compatible with Control Options C07, D07 or E07 Control Options or Misc. Option C09 3–15 PSI Transducer.
- \* Omit the Keypad Option D09 from Enclosure Door. User must buy a separate device to program the controller inside.
- ◇ Serial Communication Options F09, L09, M09, O09, P09, Q09, R09 cannot be selected together. Select only one. Serial Communications and Misc. Option H09 are not compatible. Control Option D07 or E07 must be selected for monitoring and control with Serial Communication Options.
- Light Option A08 is compatible with Control Options A07, B07, D07 and E07.
- Misc. Option S09 End Damper Control is not compatible with Control Options D07 Hand-Off-Comm, Speed Pot. Or E07 Hand-Off-Comm, Start-Stop, Speed Pot.
- Misc. Option B09 Line Contactor is not compatible with H03 Type 3R Enclosure.
- ◇ Option T09 service entrance rating and K09 (cUL) are mutually exclusive.

**NOTE: Order part numbers by using the Product Selectors.**

**9 Miscellaneous Options**

A09	5% Line Reactor option	See Above
B09	Line Contactor	See Above
C09	3–15 PSI Transducer	180.00
D09	Omit Keypad	-40.00
E09	Smoke Purge (Fireman's Override)	80.00
F09	Profibus DP	400.00
H09	I/O Extension Card, 0–20 mA Output	150.00
J09	Input programmed for 0–10 Vdc	N/C
K09	cUL Listing Certification	140.00
L09	LonWorks Card	400.00
M09	Modbus / Unitelway Card	165.00
O09	Apogee P1 Card	165.00
P09	Metasys N2 Card	165.00
Q09	Ethernet TCP/IP	165.00
R09	BACnet Card	165.00
S09	End Damper Control	115.00
T09	Service entrance rating	185.00
U09	Seismic Qualification	215.00
V09	DeviceNet Option Card	225.00
X09	3% Line Reactor option	See Above

**E-Flex devices are supplied with:**

- Circuit breaker as the overcurrent protective device (OCPD) and have a coordinated short circuit current rating of 100,000 A symmetrical.
- Equivalent 3% DC choke is standard. Option A09 replaces DC choke with 5% line reactor.
- Fire/Freezestats interlock locations wired to customer terminal strip
- One Form C AFC run mode contact
- One Form C AFC Fault contact
- Circuit Breaker Disconnect
- Analog Output terminals on terminal strip (A01 and COM)
- Modbus and CANopen communications built into Drive. Modbus Unitelway card option provides Modbus ASCII and 4 wire RS485 functions.
- Speed Potentiometer as part of keypad or separately mounted on the enclosure door

**General Information**

M-Flex enclosed adjustable frequency (AC) drive controllers are designed for industrial, commercial and municipal process applications, where high functionality of features is required. Each M-Flex enclosed drive offers a platform of standard, engineered and special features to meet the most demanding application and specification requirements. M-Flex enclosed drive controllers are low voltage products in the following ratings:

Constant torque (Heavy duty ratings – 150% current limit)

- Altivar® 71 power converter
- 1 to 450 hp, 460 V
- 1 to 40 hp, 208/230 V

Variable torque (Light duty ratings – 110% current limit)

- Altivar® 61 power converter
- 1 to 500 hp, 460 V
- 1 to 50 hp, 208/230 V

**Application Data**

The table below outlines typical application characteristics with load requirements and should be used as a guideline only. This information should be confirmed by the responsible system designer for a designated installation.

Application	Speed-Torque Relationship	Breakaway Torque
Agitators Liquid Slurry	Variable Torque▲ Variable Torque▲	Moderate♦ Moderate♦
Blowers Centrifugal Positive Displacement	Variable Torque Constant Torque	Low★ Low (Unloaded)★
Calendars	Constant Torque	Low★
Card Machines	Constant Torque	Moderate♦
Centrifuges	Constant Torque	Moderate♦
Chippers	Constant Torque▲	High■
Compressors Axial-Centrifugal Reciprocating Rotary	Variable Torque Constant Torque▲ Constant Torque	Low★ Moderate♦ Moderate♦
Conveyors Belt Screw Shaker	Constant Torque Constant Torque▲ Constant Torque▲	Moderate♦ High■ Moderate♦
Cranes Bridge Trolley Hoist	Constant Torque Constant Torque Constant Torque	Moderate♦ Moderate♦ Moderate♦
Crushers	Constant Torque▲	High■
Drill Presses	Constant Horsepower	Moderate♦
Elevators	Constant Torque	Moderate♦
Extruders	Constant Torque	Moderate♦
Fans-Centrifugal	Variable Torque	Low★
Frames-Spinning	Constant Horsepower	Low★
Grinders	Constant Horsepower	Moderate♦
Kiln	Constant Torque	High■
Looms	Constant Torque	Moderate♦
Lathes	Constant Horsepower▲	Moderate♦

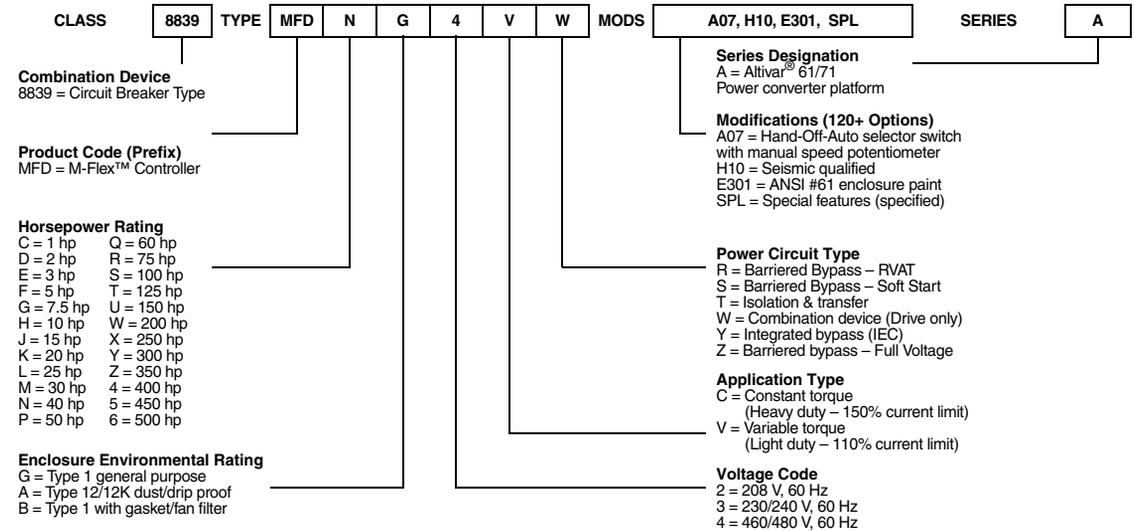
- ▲ Potential impact load.
- > 150% torque.
- ♦ 100 to 150% torque.
- ★ < 100% torque.

Application	Speed-Torque Relationship	Breakaway Torque
Machines Boring Bottling Milling	Constant Torque Constant Torque Constant Horsepower▲	Moderate♦ Moderate♦ Moderate♦
Mills Rolling Rubber	Constant Torque▲ Constant Torque▲	Moderate♦ Moderate♦
Mixers Chemical Dough Slurry	Constant Torque Constant Torque Constant Torque	High■ High■ High■
Planers	Constant Torque	Moderate♦
Plows-Conveyor	Constant Torque	Moderate♦
Presses Printing Punch	Constant Torque Constant Torque▲	Moderate♦ Moderate♦
Pullers-Car	Constant Torque	Moderate♦
Pumps Centrifugal Positive Displacement Slurry	Variable Torque Constant Torque Constant Torque	Low★ Moderate♦ High■
Roll Benders	Constant Torque	Moderate♦
Sanders	Constant Torque	Low★
Saws	Constant Torque▲	Moderate♦
Shakers	Constant Torque▲	High■
Shears	Constant Torque▲	Low★
Tension Drives	Constant Horsepower	Moderate♦
Tool Machines	Constant Horsepower	Moderate♦
Walkways	Constant Torque	Low★
Winches	Constant Torque	Moderate♦
Winders	Constant Horsepower	Moderate♦
Washers	Constant Torque	Moderate♦

**Product Selection**

To select a M-Flex enclosed drive controller, identify the basic drive and optional devices by Class, Type, Modifications (MODS, E-MODS) and Special Features as required to create the catalog number shown below. In all cases, Q2C/Product Selectors are preferred to price enclosed drives.

Contact Seneca TAG for pricing assistance with special features if required. Features highlighted in gray within this selection are ENGINEERED and require special handling by factory personnel in lieu of system supported features.



**NOTE:** Type 12/12K pending UL approval of new UL508C Section 9.6 testing requirements for insulation materials and is subject to availability and Q2C/Product Selector support.

- Type 12/12K dust/drip proof enclosure ratings
- White component mounting plate
- Conduit knockouts on top and bottom for wall mounted enclosures
- Removable conduit entry plates on top and bottom for floor mount enclosures
- ANSI #49 gray enclosure
- Class 10 electronic overload protection
- Custom wiring diagrams

**Standard M-Flex™ Features**

- Circuit Breaker Disconnect
- 3% AC line reactor
- UL listed to UL508C Power Conversion Equipment
- 100,000 A symmetrical short circuit rating
- Heavy duty industrial disconnect handle with lockout/tag-out provisions
- Hand-Off-Auto selector switch and manual speed potentiometer
- 0–10 Vdc and 4-20 mAdc speed reference input
- 0–10 Vdc or x-y mAdc programmable output
- Door mounted graphic display terminal
- Auto Start Relay (120 Vac control)
- One Form 'C' AFC Run mode contact
- One Form 'C' AFC Fault contact
- Remote fault condition reset in AUTO mode with transition of auto start contact
- Manual fault condition reset in OFF position of H-O-A selector switch
- Safety interlock/Run permissive wired to customer terminal strip

**Isolation/Bypass Standard Features**

- Class 20 overload protection with door mounted reset
- AFC-Off-Bypass selector switch
- Test-Normal selector switch
- AC3 duty rated isolation and bypass contactors (with mechanical and electrical interlocking)
- Bypass and isolation contactor sequencing provides true motor isolation
- Remote automatic bypass operation using Auto Start Relay
- Custom wiring diagrams

- Permanent wire markings

**Table 10: Pricing – Constant Torque**

HP Reference Code	HP Ratings	Controller Output Current	Enclosure Frame Size	List Price – Power Circuits (Type 1 General Purpose Enclosures)					
				Constant Torque – Heavy Duty Rating (150% Current Limit)					
				Power Circuit W: Combination Disconnect (Drive Only) \$ Price	Power Circuit Y: IEC Integrated Isolation/Bypass \$ Price	Power Circuit S: Soft Start Isolation/Bypass▲ \$ Price	Power Circuit Z: Full Voltage Barriered Isolation/Bypass \$ Price	Power Circuit T: Separate Starter Isolation/Transfer▲ \$ Price	Power Circuit R: RVAT Isolation/Bypass▲ \$ Price
<b>208/230 V</b>									
C	1 hp	4.6 A	C	4163.00	4730.00	N/A	5760.00	4730.00	N/A
D	2 hp	7.5 A		4189.00	4760.00	N/A	5790.00	4760.00	N/A
E	3 hp	10.6 A		4498.00	5111.00	N/A	6141.00	5111.00	N/A
F	5 hp	16.7 A		4891.00	5218.00	N/A	6248.00	5218.00	N/A
G	7.5 hp	24.2 A	D	5598.00	6247.00	N/A	7277.00	6247.00	N/A
H	10 hp	30.8 A		6078.00	6906.00	N/A	7936.00	6906.00	N/A
J	15 hp	46.2 A	E	6799.00	7725.00	N/A	8965.00	7725.00	N/A
K	20 hp	59.4 A		8270.00	10175.00	N/A	11415.00	10175.00	N/A
L	25 hp	74.8 A		9342.00	12932.00	N/A	14682.00	12932.00	N/A
M	30 hp	88 A	F	11129.00	14895.00	N/A	16645.00	14895.00	N/A
N	40 hp	114 A		14379.00	16339.00	N/A	18799.00	16339.00	N/A
<b>460 V</b>									
C	1 hp	2.1 A	C	3753.00	4909.00	N/A	5939.00	4909.00	N/A
D	2 hp	3.4 A		3985.00	5120.00	N/A	6150.00	5120.00	N/A
E	3 hp	4.8 A		4343.00	5557.00	N/A	6587.00	5557.00	N/A
F	5 hp	7.6 A		4829.00	6037.00	N/A	7067.00	6037.00	N/A
G	7.5 hp	11 A		5778.00	6767.00	N/A	7797.00	6767.00	N/A
H	10 hp	14A		6465.00	7333.00	N/A	8363.00	7333.00	N/A
J	15 hp	21 A		7053.00	8416.00	N/A	9656.00	8416.00	N/A
K	20 hp	27 A		8140.00	9250.00	N/A	10490.00	9250.00	N/A
L	25 hp	34 A	9594.00	11441.00	N/A	13191.00	11441.00	N/A	
M	30 hp	40 A	E	11228.00	13351.00	N/A	15101.00	13351.00	N/A
N	40 hp	52 A		13071.00	14854.00	20594.00	17314.00	14854.00	21194.00
P	50 hp	65 A		15326.00	17416.00	24566.00	22086.00	17416.00	25656.00
Q	60 hp	77 A	F	17344.00	19709.00	27659.00	24379.00	19709.00	32009.00
R	75 hp	96 A		20130.00	22875.00	31325.00	27545.00	22875.00	35175.00
S	100 hp	124 A		24200.00	31540.00	40540.00	34180.00	31540.00	43840.00
T	125 hp	156 A	H	28400.00	36050.00	46500.00	38740.00	36050.00	56250.00
U	150 hp	180 A	I	34000.00	41990.00	53790.00	44740.00	41990.00	62190.00
W	200 hp	240 A		39200.00	53590.00	66740.00	56430.00	53590.00	73790.00
X	250 hp	302 A		46000.00	N/A	76130.00	64190.00	61230.00	81430.00
Y	300 hp	361 A	J	52000.00	N/A	83800.00	71560.00	68450.00	106150.00
Z	350 hp	414 A		59200.00	N/A	94920.00	80480.00	77170.00	114870.00
4	400 hp	477 A		67600.00	N/A	108130.00	91710.00	88030.00	125730.00
5	450 hp	515 A		76390.00	N/A	121880.00	102010.00	98080.00	135780.00

▲ Factory engineered products – dimensions subject to design modifications.

**Table 11: Pricing – Variable Torque**

HP Reference Code	HP Ratings	Controller Output Current	Enclosure Frame Size	List Price – Power Circuits (Type 1 General Purpose Enclosures)					
				Variable Torque – Light Duty Ratings (110% Current Limit)					
				Power Circuit W: Combination Disconnect (Drive Only) \$ Price	Power Circuit Y: IEC Integrated Isolation/Bypass \$ Price	Power Circuit S: Soft Start Isolation/Bypass \$ Price	Power Circuit Z: Full Voltage Barriercd Isolation/Bypass \$ Price	Power Circuit T: Separate Starter Isolation/Transfer \$ Price	Power Circuit R: RVAT Isolation/Bypass \$ Price
<b>208/230 V</b>									
C	1 hp	4.6 A	C	4068.00	4623.00	N/A	5653.00	4623.00	N/A
D	2 hp	7.5 A		4163.00	4730.00	N/A	5760.00	4730.00	N/A
E	3 hp	10.6 A		4189.00	4760.00	N/A	5790.00	4760.00	N/A
F	5 hp	16.7 A		4498.00	5111.00	N/A	6141.00	5111.00	N/A
G	7.5 hp	24.2 A	D	4891.00	5218.00	N/A	6248.00	5218.00	N/A
H	10 hp	30.8 A		5598.00	6247.00	N/A	7277.00	6247.00	N/A
J	15 hp	46.2 A	E	6078.00	6906.00	N/A	7936.00	6906.00	N/A
K	20 hp	59.4 A		6799.00	7725.00	N/A	8965.00	7725.00	N/A
L	25 hp	74.8 A		8270.00	10175.00	N/A	11415.00	10175.00	N/A
M	30 hp	88 A	F	9342.00	12932.00	N/A	14682.00	12932.00	N/A
N	40 hp	114 A		11129.00	14895.00	N/A	16645.00	14895.00	N/A
<b>460V</b>									
C	1 hp	2.1 A	C	3528.00	4646.00	N/A	5676.00	4646.00	N/A
D	2 hp	3.4 A		3753.00	4909.00	N/A	5939.00	4909.00	N/A
E	3 hp	4.8 A		3985.00	5120.00	N/A	6150.00	5120.00	N/A
F	5 hp	7.6 A		4343.00	5557.00	N/A	6587.00	5557.00	N/A
G	7.5 hp	11 A		4829.00	6037.00	N/A	7067.00	6037.00	N/A
H	10 hp	14 A		5778.00	6767.00	N/A	7797.00	6767.00	N/A
J	15 hp	21 A		6465.00	7333.00	N/A	8363.00	7333.00	N/A
K	20 hp	27 A		7053.00	8416.00	N/A	9656.00	8416.00	N/A
L	25 hp	34 A		8140.00	9250.00	N/A	10490.00	9250.00	N/A
M	30 hp	40 A		E	9594.00	11441.00	N/A	13191.00	11441.00
N	40 hp	52 A	11228.00		13351.00	19091.00	15101.00	13351.00	19781.00
P	50 hp	65 A	13071.00		14854.00	22004.00	17314.00	14854.00	23094.00
Q	60 hp	77 A	F	15326.00	17416.00	25366.00	22086.00	17416.00	29716.00
R	75 hp	96 A		17344.00	19709.00	28159.00	24379.00	19709.00	32009.00
S	100 hp	124 A		20130.00	22875.00	31875.00	27545.00	22875.00	35175.00
T	125 hp	156 A	H	24200.00	31540.00	41990.00	34180.00	31540.00	51740.00
U	150 hp	180 A	I	28400.00	36050.00	47850.00	38740.00	36050.00	56250.00
W	200 hp	240 A		34000.00	41990.00	55140.00	44740.00	41990.00	62190.00
X	250 hp	302 A		39200.00	N/A	68490.00	56430.00	53590.00	91290.00
Y	300 hp	361 A	J	46000.00	N/A	76580.00	64190.00	61230.00	98930.00
Z	350 hp	414 A		52000.00	N/A	86200.00	71560.00	68450.00	106150.00
4	400 hp	477 A		59200.00	N/A	97270.00	80480.00	77170.00	114870.00
5	450 hp	515 A		67600.00	N/A	111830.00	91710.00	88030.00	125730.00
5	450 hp	515 A		67600.00	N/A	111830.00	91710.00	88030.00	125730.00
6	500 hp	590 A		76390.00	N/A	121880.00	102010.00	98080.00	162580.00

▲ Factory engineered products – dimensions subject to design modifications.

**Table 12: Type 12 & 1G Environment Adders**

Constant Torque	Variable Torque	A = Type 12 (Dust/Drip) \$ Price	B = Type 1 G (Gasket) \$ Price
<b>HP @ 208/230 V</b>			
1–10 hp	1–10 hp	349.00	N/A
15–40 hp	15–50 hp	749.00	N/A
<b>HP @ 460 V</b>			

**Table 12: Type 12 & 1G Environment Adders**

Constant Torque	Variable Torque	A = Type 12 (Dust/Drip) \$ Price	B = Type 1 G (Gasket) \$ Price
1–20 hp	1–25 hp	349.00	N/A
25–40 hp	30–50 hp	749.00	N/A
50–75 hp	60–100 hp	949.00	N/A
100–450 hp	125–500 hp	N/A	557.00

**Table 13: Dimensions**

M-Flex™ Enclosed AC Drives Class 8839 Type MFD – With or Without Options				Dimensions			Weights	Construction Data								
HP/Voltage (VT)	HP/Voltage (CT)	Power Circuit Configuration	Enclosure Size	Height (In)	Width (In)	Depth (In)	lbs.	Wall or Floor Mount	Environment Rating	Operating Handle						
1–25 hp @ 460 V	1–20 hp @ 460 V	Power Circuit W Combination Device or Power Circuit & Integrated Bypass	C	49.00	20	14.81	175	Wall	Type 1 or Type 12/12K	3" Metal Rotary						
1–5 hp @ 208/230 V	1–5 hp @ 208/230 V															
7.5–10 hp @ 208/230 V	7.5–10 hp @ 208/230 V		Power Circuits Z, S, T or R Barrierced Designs with 2 Disconnects	Barrierced C/D	93.87	20	20.38	379		Floor Mount	6" Metal Rotary					
30–50 hp @ 460 V	25–40 hp @ 460 V															
15–25 hp @ 208/230 V	15–20 hp @ 208/230 V										Barrierced E	93.87	25	20.38	512	6" Metal Rotary
60–100 hp @ 460 V	50–75 hp @ 460 V															
30–50 hp @ 208/230 V	25–40 hp @ 208/230 V	Barrierced F	93.87	30	20.38	684	Type 1 or Type 1G Filtered	Flange								
1–25 hp @ 460 V	1–20 hp @ 460 V															
1–10 hp @ 208/230 V	1–10 hp @ 208/230 V	Power Circuit W▲	25" Wide Relay Section	94.58	25	20	489	Type 1 or Type 1G Filtered	Flange							
30–50 hp @ 460 V	25–40 hp @ 460 V															
15–25 hp @ 208/230 V	15–20 hp @ 208/230 V	Power Circuit W◆	30" Wide Relay Section	94.58	30	20	657	Type 1 or Type 1G Filtered	Flange							
60–100 hp @ 460 V	50–75 hp @ 460 V															
30–50 hp @ 208/230 V	25–40 hp @ 208/230 V	Power Circuit W★▼	35" Wide Relay Section	94.58	35	20	969	Type 1 or Type 1G Filtered	Flange							
125 hp @ 460V	100 hp @ 460 V															
150–250 hp @ 460 V	125–200 hp @ 460 V															
300–500 hp @ 460 V	250–450 hp @ 460 V															

- ▲ Integrated bypass for 125 hp offered in 20" wide section adder (45" total width). Barrierced bypass offered in 25" wide section adder (50" total width) – standard product configuration
- Integrated bypass for 150-200 hp offered in 20" wide section adder (50" total width). Barrierced bypass offered in 25" wide section adder (55" total width) – standard configuration
- ◆ Integrated bypass for 250 hp offered in 20" wide section adder (50" total width). Barrierced bypass offered in 30" wide section adder (60" total width) – factory engineered configuration
- ★ Integrated bypass for 300-400 hp not available. Barrierced bypass offered in 30" wide section adder (65" total width) – factory engineered configuration
- ▼ Integrated bypass for 450-500 hp not available. Barrierced bypass offered in 35" wide section adder (70" total width) – factory engineered configuration

**Operator Control Device Options**

Door mounted operator controls provide dedicated control for commanding operation of the power converter functions. Select only one.

MOD	Description	\$ Price
<b>Hand-Off-Auto selector switch with manual speed potentiometer▲</b>		
A07	Provides a three position selector switch and manual speed potentiometer door mounted. The Hand-Off-Auto selector switch is used to select between the AI1 and AI2 analog inputs. In the Auto position the motor may be started and stopped by a user supplied remote contact. The speed may be adjusted by a 4–20 mAdc signal to analog input reference AI2 or the door mounted manual speed potentiometer. The Off position will stop the motor. The Off position is also used to reset drive controller faults.	—
<b>Hand-Off-Auto selector switch, Start/Stop push-buttons with manual speed potentiometer</b>		
B07	Provides a three-position selector switch and manual speed potentiometer door mounted. The Hand-Off-Auto selector switch is used to select between the AI1 and AI2 analog inputs. In the Auto position the motor may be started and stopped by a user supplied remote contact. The speed may be adjusted by a 4–20 mAdc signal to analog input reference AI2 or the door mounted manual speed potentiometer. In the Hand position, Start/Stop push-buttons are used to start and stop the motor using a "three-wire" control strategy. The Off position will also stop the motor. The Off position is also used to reset drive controller faults	100.00
<b>Start/Stop push-buttons with manual speed potentiometer■</b>		
C07	Provides Start/Stop pushbuttons to start and stop the motor using a "three-wire" control strategy. The speed is adjusted by a door mounted manual speed potentiometer. The drive disconnect is used to reset drive controller faults unless "Fault Reset" (P10) is ordered.	75.00
<b>Start/Stop push-buttons, Forward-Reverse selector switch with manual speed potentiometer■</b>		
D07	Provides Start/Stop push-buttons to start and stop the motor using a "three-wire" control strategy. The speed is adjusted by a door mounted manual speed potentiometer. Motor direction is controlled with a forward–reverse selector switch. The drive disconnect is used to reset drive controller faults unless "Fault Reset" (P10) is ordered.	200.00
<b>Hand-Off-Auto selector, Local-Remote selector switch with manual speed potentiometer</b>		
E07	Provides a three-position selector switch and manual speed potentiometer door mounted. The Hand-Off-Auto selector switch is used to select between the AI1 and AI2 analog inputs. In the Auto position the motor may be started and stopped by a user supplied remote contact. The speed may be adjusted by a 4–20 mAdc signal to analog input reference AI2 or the door mounted manual speed potentiometer. The Off position will stop the motor. The Off position is also used to reset drive controller faults.	100.00
<b>Communication-Hand-Off-Auto selector switch with manual speed potentiometer◆</b>		
F07	Provides a four-position selector switch and manual speed potentiometer door mounted. The Communication-Hand-Off-Auto selector switch is used to select between the AI1 and AI2 analog inputs. In the Auto position the motor may be started and stopped by a user supplied remote contact. The speed may be adjusted by a 4–20 mAdc signal to analog input reference AI2 or the door mounted manual speed potentiometer. The Off position will stop the motor. The Off position is also used to reset drive controller faults.	250.00
<b>No Door Mounted Operators (wired for remote operation)</b>		
N07	No operators are provided on the enclosure door. The customer must provide remote mounted operator controls. Drive controllers are factory programmed and configured for remote mounted Hand-Off-Auto operation.	Deduct 100.00

- ▲ Control option defined by default.
- Available only with Power Circuit W.
- ◆ Provides control and monitoring capabilities when supplied with any communication card.

**Pilot Light Combination Options**

Pilot lights are ordered in light groups and door mounted. Pilot light groups are selected with compatible control options. Pilot lights are all 22 mm long life LED type. Select only one.

MOD	Description	\$ Price
<b>Power On, Fault, AFC Run, Auto pilot lights▲</b>		
A08	Provides a combination of (4) pilot lights for visual indication of protective functions and circuit status; power on (red), fault (yellow), AFC run (green) and auto (yellow).	245.00
<b>Power On, Fault, AFC Run, Bypass pilot lights■</b>		
B08	Provides a combination of (4) pilot lights for visual indication of protective functions and circuit status; power on (red), fault (yellow), AFC run (green) and bypass (yellow).	245.00
<b>Power On, Fault, AFC Run pilot lights</b>		
C08	Provides a combination of (3) pilot lights for visual indication of protective functions and circuit status; power on (red), fault (yellow) and AFC run (green).	185.00
<b>Power On, Fault, AFC Forward, AFC Reverse pilot lights◆★</b>		
D08	Provides a combination of (4) pilot lights for visual indication of protective functions and circuit status; power on (red), fault (yellow), forward (green) and reverse (green).	245.00
<b>Power On, Fault, AFC Run, Hand, Auto pilot lights▼△</b>		
E08	Provides a combination of (5) pilot lights for visual indication of protective functions and circuit status; power on (red), fault (yellow), AFC run (green), hand (blue) and auto (yellow).	305.00
<b>Power On, Fault, AFC Run, Communication pilot lights□</b>		
F08	Provides a combination of (4) pilot lights for visual indication of protective functions and circuit status; power on (red), fault (yellow), AFC run (green) and communication (yellow).	245.00

- ▲ Not available with C07 or D07.
- Not available with Power Circuit W.
- ◆ Available only with D07 or N07.
- ★ Available only with Power Circuit W.
- ▼ Available only with A07, B07, E07 or N07.
- △ Supplied with AMR relay.
- Available only with F07 or N07.

### Option Cards

All communication cards are provided without factory programming. Select only one.

MOD	Description	\$ Price
<b>Modbus Plus communication card</b>		
A09	Provides a factory installed plug-in Modbus Plus card, VW3A3302. This interface device connects to a Modbus Plus tap.	795.00
<b>Modbus/Unitelway communication card</b>		
B09	Provides a factory installed plug-in Modbus/Unitelway card, VW3A3303.	476.00
<b>Johnson Controls MetaSYS N2 communication card</b>		
C09	Provides a factory installed plug-in Johnson Controls MetaSYS N2 card, VW3A3313.	476.00
<b>Ethernet TCP/IP communication card</b>		
D09	Provides a factory installed plug-in Ethernet TCP/IP card, VW3A3310, with user termination to RJ45 plug-in interface connector.	476.00
<b>LonWorks communication card</b>		
E09	Provides a factory installed LonWorks card, VW3A3312.	795.00
<b>DeviceNet communication card</b>		
F09	Provides a factory installed DeviceNet card, VW3A3309.	476.00
<b>Profibus DP communication card</b>		
G09	Provides a factory installed Profibus DP card, VW3A3307.	795.00
<b>I/O Extension card</b>		
H09	Provides a factory installed I/O Extension card, VW3A3202. Adds (2) analog outputs, 4 logic inputs, 2 logic outputs and 1 differential analog input.	275.00
<b>Siemens APOGEE FLN / P1 communication card</b>		
J09	Provides a factory installed Siemens Building Automation Apogee FLN / P1 card, VW3A3314.	476.00
<b>BACnet communication card</b>		
K09	Provides a factory installed BACnet card, VW3A3315.	476.00
<b>Interbus S communication card</b>		
L09	Provides a factory installed Interbus S card, VW3A3304.	795.00
<b>FIPIO communication card</b>		
M09	Provides a factory installed FIPIO card, VW3A3311.	795.00
R09	Ethernet IP Option Card, Provides a factory installed Ethernet/ip Card VW3A3316	476.00
D09	Ethernet TCP/IP Daisy Chain Card, Provides a factory installed Ethernet TCP/IP Daisy Chain Card VW3A3310D	476.00

**Miscellaneous Options**

Additional system supported features to provide miscellaneous product modifications.

MOD	Description	\$ Price		
		208/230 V	460 V	
<b>5% AC line reactor ▲</b>				
A10	Provides an integrally mounted, 5% AC line reactor factory-installed and wired between the circuit breaker disconnect means and the power converter for harmonic mitigation.	1–3 hp	823.00	823.00
		5–7.5 hp	949.00	949.00
		10–15 hp	1054.00	1000.00
		20 hp	1481.00	1000.00
		25 hp	1481.00	1518.00
		30–40 hp	1761.00	1518.00
		50 hp	1938.00	1714.00
		60 hp	—	1714.00
		75 hp	—	1839.00
		100 hp	—	2000.00
		125 hp	—	2078.00
		150 hp	—	2291.00
		200 hp	—	3303.00
		250 hp	—	3697.00
300 hp	—	3806.00		
350–400 hp	—	4988.00		
450–500 hp	—	5261.00		
<b>Line contactor ■ ◆</b>				
B10	A line contactor is added between the circuit breaker disconnect (or line reactor or harmonic filter when provided) and the power converter for bypass configured Power Circuits. With the line contactor, the AFC Fault light illuminates when the AFC-Off-Bypass selector switch is in the Off or Bypass position to indicate that the power converter is not running. When the line contactor is open, serial communication is disabled.	1–5 hp	120.00	120.00
		7.5–10 hp	197.00	157.00
		15 hp	287.00	187.00
		20 hp	402.00	213.00
		25–30 hp	466.00	287.00
		40 hp	601.00	402.00
		50 hp	868.00	466.00
		60 hp	—	466.00
		75 hp	—	601.00
		100 hp	—	868.00
		125 hp	—	1065.00
		150 hp	—	1275.00
		200 hp	—	1750.00
		250 hp	—	2150.00
		300 hp	—	2750.00
		350 hp	—	3250.00
400 hp	—	3680.00		
450 hp	—	4185.00		
500 hp	—	4695.00		

- ▲ All M-Flex™ enclosed drive controllers include a 3% AC line reactor as standard. The selection of A10 substitutes a 5% line reactor in place of the 3% AC line reactor.
- Available only with Power Circuit Y, unless factory engineered.
- ◆ Factory engineered for 125–500 hp ratings.

## Miscellaneous Options (continued)

MOD	Description	\$ Price
<b>3-15 PSI transducer▲■◆</b>		
C10	Allows the controller to follow a user supplied 3-15 PSI input.	450.00
<b>Omit door mounted graphic display terminal</b>		
D10	The graphic display terminal is not supplied. To alter the programming of the power converter, the user must buy a graphic display terminal or PowerSuite software to program the drive controller.	Deduct 100.00
<b>Smoke purge relay</b>		
E10	Provides a smoke purge operating mode controlled by a user-supplied 120 Vac signal wired to terminal block TB1. Smoke purge operation is full speed bypass (when provided) or High Speed in the drive controller. This operation is designed run the motor from any operator control setting except emergency stop or open safety interlocks	225.00
<b>Additional control power VA◆</b>		
F10	Provides additional control power VA using a larger control transformer (120 Vac) connected to terminal block TB1 for customer use. 1–50 hp @ 208/230 V / 1–100 hp @ 460 V – 50 VA 125–500 hp @ 460 V – 50 VA	290.00 380.00
<b>CSA / cUL certification</b>		
G10	Provides a Canadian cUL (or CSA) certification when required by local code requirements.	335.00
<b>Seismic qualified</b>		
H10	Supplies a certification label and hardware qualified to seismic rating ICC ES AC156 acceptance criteria test protocol with an importance factor of 1.5.	425.00
<b>Permanent wire markers (sleeve type)★</b>		
I10	Provides permanent wire sleeve type markers on control wiring.	1750.00
<b>0-10 Vdc Auto speed reference (programming)▼</b>		
J10	Provides a controller interface for 0-10 Vdc user supplied auto speed reference signal to the AI2 input, on terminal block TB2. The 0–10 V analog input is not isolated, but it does contain noise suppression circuitry and a programmable electronic filter.	N/C
<b>1 Additional N.O. auxiliary drive run contact◆</b>		
K10	Provides 1 additional N.O. contact for drive run indication wired to TB1.	185.00
<b>1 Additional N.C. auxiliary drive fault contact★</b>		
L10	Provides 1 additional N.C. contact for drive fault indication wired to TB1.	185.00
<b>1 N.O. Auxiliary bypass run contact◆△</b>		
M10	Provides 1 additional N.O. contact for bypass run indication wired to TB1.	185.00
<b>1 N.O. Auxiliary auto mode contact▲◆</b>		
O10	Provides 1 additional N.O. contact for auto mode indication wired to TB1.	185.00
<b>AFC Fault reset push-button ▲◆□</b>		
P10	Provides factory installed door-mounted push button to fault reset LI4 on the power converter at terminal TB2 when Hand-Off-Auto is not supplied.	100.00
<b>Push-to-Test pilot lights◆</b>		
Q10	Provides push-to-test function on all pilot lights except Power On.	210.00
<b>Auto transfer to bypass△☆</b>		
R10	Provides an automatic transfer (time adjustable 0.1–10 s) to bypass in the event that the drive controller faults. A selector switch is provided inside the enclosure to enable or disable this function. Longer transfer time requirements are available by replacing the plug-in adjustable timer.	270.00
<b>Motor elapsed time meter◆</b>		
S10	Provides a dedicated non-resettable elapsed time meter to record the motor run time. Runs whenever the motor is running.	270.00
<b>Emergency stop mushroom head push-button ▲◆</b>		
T10	Provides door mounted maintained off emergency stop red mushroom pushbutton with turn-to-reset feature.	127.00
<b>Motor space heater sequencing circuit (light duty)▽☉</b>		
U10	Provides 50 VA/120V to terminal block TB1 for motor space heater whenever the motor is not running.	400.00
<b>Seal water solenoid◆★</b>		
V10	Provides 50 VA/120V to terminal block TB1 for seal water solenoid whenever the motor is running.	400.00
<b>Check valve sequencing circuit (gravity type)◆</b>		
W10	Provides an automatic shutdown of the drive controller when the user supplied N.C. contact from the check valve limit switch does not open within 5 seconds after the motor starts. The user limit switch contact connects to terminal block TB1. Circuit provides reset function with an illuminated (blue) push-button.	520.00
<b>ID engraved nameplates</b>		
X10	Provides an engraved laminated nameplate attached to the front door of the enclosure (engraved per user request at time of order).	100.00

- ▲ Not available with C07 or D07.
- Mutually exclusive with J09.
- ◆ Factory engineered for 125–500 hp ratings.
- ★ Permanent wire marking is provided as standard.
- ▼ Not available with C07, D07 or C10.
- △ Available only with Power Circuits Y, S, Z, R and T.
- Available only with Power Circuit W.
- ◇ Not available on Fault pilot light if P10 is selected.
- ☆ Not available with B07, C07 or D07.
- ▽ Mutually exclusive with V10 unless F10 is also selected.
- ☉ For 125–500 hp, select E217.
- \* Exclusive with U10 unless F10 is also selected.

**Miscellaneous Options (continued)**

MOD	Description	\$ Price			
<b>Harmonic filter provisions▲■◆</b>					
Y10	Provides fused output terminals with return terminals for connection of an externally mounted harmonic filter (provided separately). Class J fuses are provided.  For 125–500 hp VT units, the standard 3% line reactor is removed due to the line impedance of the harmonic filter.			208/230V	460V
		CT	VT		
		5–10 hp	5–10 hp	740.00	740.00
		15–20 hp	15–25 hp	850.00	850.00
		25–40 hp	30–50 hp	960.00	960.00
		50–200 hp	60–250 hp	N/A	1070.00
		250–450 hp	300–500 hp	N/A	1515.00

- ▲ Not available with 1–3 hp controllers.
- Mutually exclusive with A10
- ◆ Factory engineered for 125–500 hp

MOD	Description	\$ Price
<b>24 Vdc power supply</b>		
Z10	Provides a 24 Vdc, 300 mA power supply at terminal block TB2.	370.00
<b>RFI/EMI suppressor</b>		
410	Provides radio frequency interference suppression with ferrite cores which are factory supplied on the power wires ahead of the power converter.	250.00

**Engineered Features**

Factory orders with engineered features (E-MOD, SPL, etc.) are subject to review by factory personnel and have longer lead-time availability. Standard M-Flex™ enclosure dimensions may no longer apply to orders containing any combination of engineered features. In addition, factory orders containing engineered features may carry a UL508A (Industrial Control Equipment) label in lieu of a UL508C (Power Conversion Equipment) label depending on configuration.

**Control Options**

The E200 series features cover control circuit option configurations for M-Flex™ enclosed drive controllers.

E-MOD	Description	\$ Price
<b>Door mounted meters (dedicated displays)▲■</b>		
Provides a dedicated door mounted meter display, analog or digital		
E201	Analog percent speed meter scaled 0 to 120% base speed.	540.00
E202	Analog percent current scaled 0 to 100% of rated output current.	540.00
E203	Digital ammeter (amperes) scaled 0 to 2 times rated output amperes.	630.00
E204	Digital speed meter (frequency) scaled 0 to 72 Hz output frequency.	630.00
E205	Digital percent speed meter scaled 0 to 120% base speed.	630.00
E206	Digital percent current scaled 0 to 100% of rated output current.	630.00
<b>Door mounted RJ45 port</b>		
E211	Provides (1) Sixnet RJ45 door mounted 30 mm bulk head connector and internal CAT5 cabling for access via PC with PowerSuite software. The RJ45 (Modbus/CANopen) drive port provides customer access through the enclosure door.	325.00
<b>Auxiliary drive run contacts◆★▼</b>		
E212	Provides (3) Form 'C' contacts rated 5A @ 120 Vac wired to terminal blocks for customer use.	310.00
<b>Auxiliary bypass run contacts△□◇</b>		
E213	Provides (3) Form 'C' contacts rated 5A @ 120 Vac wired to terminal blocks for customer use.	310.00
<b>Auxiliary drive fault contacts◆★</b>		
E214	Provides (3) Form 'C' contacts rated 5A @ 120 Vac wired to terminal blocks for customer use.	310.00
<b>Auxiliary auto mode contacts▽◐</b>		
E215	Provides (3) Form 'C' contacts rated 5A @ 120 Vac wired to terminal blocks for customer use.	310.00
<b>Adjustable restart delay timer</b>		
E216	Provides an adjustable On Time Delay Relay for power up restart function, mounted and wired for AFC mode (hand or auto) mode and/or in the bypass mode (hand/auto).	240.00
<b>Motor space heater (heavy duty)</b>		
E217	Provides control circuit contacts, 120 Vac, 500VA supply and fusing wired to terminals for customer use.	1000.00
<b>Signal loss follower alarm relay*</b>		
E218	Provides (1) Form 'C' contact rated 5A @ 120 Vac wired to terminal blocks for customer use. Intended for 4-20mA dc control loop applications where upon the loss of input signal it is desired to retain the output signal at the last input signal level. The relay provides an alarm relay contact for signal loss alert.	360.00
<b>Inhibit/shutdown sequence (timed operation)</b>		
E219	Provides a relay circuit operating in the fail safe mode where a remote initiating contact opens the relay, de-energizes and after a specified time shuts the drive controller down in the AFC mode (hand or auto) and/or in the bypass mode (hand or auto).	580.00
<b>Check valve sequence (motorized type)</b>		
E220	Provides relay circuitry sequenced from a check valve limit switch. A valve closed position limit switch will energize relays that will initiate a remote valve operating solenoid limited to 50VA and give a run permissive to the drive controller in the AFC mode (hand or auto) and/or in the bypass mode (hand or auto). A valve closed position limit switch will de-energize a timer relay such that if this relay is not de-energized within a specified time period, the drive controller will shut down in the AFC mode (hand or auto) and/or in the bypass mode (hand or auto).	710.00
<b>Seal water solenoid - with pressure switch feedback</b>		
E221	Provides relay, which will energize a remote seal water solenoid limited to 50VA during drive controller operation. Additionally, the remote initiating contact will open the relay, de-energizing and after a specified time shuts the drive controller down in the AFC mode (hand or auto) and/or in the bypass mode (hand or auto).	1220.00
<b>Moisture detection relay circuit (without relay)◐</b>		
E222	Provides 24 V or 120 V control power to a customer supplied moisture detection relay device, either electronic or electro-mechanical. Factory provides pre-wired socket or mounting space only.	350.00
<b>Moisture detection relay circuit (with relay options)◐</b>		
E223A	Relay option: Provides 24 V or 120 V control power to a moisture detection relay device, either electronic or electro-mechanical. The moisture detection relay is mounted and wired by the factory.	1220.00
E223B	Relay and Pilot Light indication option: Provides 24 V or 120 V control power to a customer supplied moisture detection relay device, either electronic or electro-mechanical. Includes a pilot light for discrete input(s). The customer supplied moisture detection relay is mounted and wired by the factory.	1395.00

- ▲ Limited to one meter selection unless H09 is selected.
- If H09 is selected, (1) additional meter can be selected.
- ◆ One (1) Form 'C' contact for drive run indication is supplied as standard.
- ★ Available only if K10 is selected.
- ▼ Available without K10 for 125–500 hp.
- △ One (1) N.O. contact for bypass run indication is supplied as standard when bypass is provided.
- Available only if M10 is selected.
- ◇ Available without M10 for 125–500 hp.
- ★ Available only if L10 is selected.
- ▽ One (1) N.O. contact for auto mode indication is supplied as standard when auto mod operation is provided.
- ◐ Available only if O10 is selected.
- \* Requires use of logic output LO1.
- ◊ Customer supplies relay. Details concerning type must also be provided at time of order entry in "Engineering Notes" within Q2C.
- ◉ Details concerning type must be provided at time of order entry in "Engineering Notes" within Q2C.

E-MOD	Description	\$ Price
<b>Substitute Type K operators</b>		
E224	Provides Class 9001 Type K 30 mm heavy duty multi-function operators in lieu of standard 22 mm pilot devices.	410.00
<b>Spare control relays (for customer use)</b>		
E225	Provides control relays mounted and unwired for customer use. Up to (3) are available.	150.00 each
<b>Substitute pilot light lens color(s)▲</b>		
E226	Provides the flexibility to configure lens cap colors to contract equipment designations.	—
<b>Blown fuse indicators on control fuses</b>		
E227	Provides blown circuit fuse indicators on control circuit fuses in lieu of standard fuses.	750.00
<b>Motor over temperature logic input</b>		
E228	Provides dedicated terminals using an external motor over temperature input (N.C. contact) factory wired and programmed.	186.00
<b>RTD inputs (motor protection alarm)■</b>		
E229	Provides capability for accepting RTD inputs using an RTD limit alarm, factory mounted and wired. Limited to three (3) RTD inputs.	4122.00
<b>Motor management relay option♦</b>		
Provides motor protection and metering functions using a selection of motor management relays. This relay provides protection for motor and load conditions: overload, differential, stator temperature, high inertia loads, undercurrent, under power, jam and bearing over temperature. The motor management relay is factory mounted and wired. Includes PT's and CT's.		
E230A	Schneider Electric Sepam Series 20 motor protective relay.	2850.00
E230B	Schneider Electric Sepam Series 41 motor protective relay.	3975.00
E230C	GE Multilin 269+ motor management relay.	13995.00
E230D	GE Multilin 469 motor management relay.	14750.00
<b>PowerLogic® power meter display option</b>		
Provides a Class 3020 PM800 series power module true rms meter display with basic instrumentation, demand, THD, date/time stamping, neutral current, min/max, alarms, event and data storage factory mounted and wired.		
E231A	PM820 power module.	1400.00
E231B	PM850 power module.	1550.00
E231C	PM870 power module.	1995.00
<b>PowerLogic circuit monitor option</b>		
Provides a Class 3020 CM3000 or CM4000 series circuit monitor display with instrumentation, 0.2% accuracy, data logging and waveform capture, factory mounted and wired. Includes PT's and CT's.		
E232A	CM3250 circuit monitor.	2415.00
E232B	CM3350 circuit monitor.	2415.00
E232C	CM4000T circuit monitor.	4275.00
E232D	CM4250 circuit monitor.	4275.00
<b>Spare terminal blocks (unwired)</b>		
E234	Provides (10) spare terminal blocks 'unwired' for customer use using the Class 9080 Type G series terminals.	120.00
<b>End damper control circuit</b>		
E235	Provides a damper control circuit to coordinate starting of the drive controller or the bypass with the position of the damper. Requires connection to customer damper limit switch.	240.00
<b>Emergency power off push-button</b>		
E236	Provides a shunt trip modified molded case switch or circuit breaker where a push-pull maintained mushroom head push-button energizes the shunt trip coil and instantaneously opens to shut down power supplied to the drive controller in the AFC mode and/or bypass mode, coasting to an uncontrolled stop.	540.00
<b>Audible alarm horn with silencer</b>		
E238	Provides an audible alarm horn, timer to annunciate a user defined conditions with a silencer push-button, factory assembled and wired for customer use.	625.00
<b>Three phase ammeter with selector switch</b>		
Provides 3 CT's with 3-position selector switch to indicate Phase A, B or C connected on the motor leads to monitor full load amps.		
E239A	Monitor input full load amps.	1575.00
E239B	Monitor output full load amps.	1575.00
<b>Basin high level alarm indication option</b>		
E240A	Alarm with pilot light: Provides relay circuit and pilot light indicator alarm for high level alarm limit switch via contact closure. Includes master reset push-button and (1) Form 'C' contact for customer use.	795.00
E240B	Command to run and alarm with pilot light indication: Provides relay circuit, timer and pilot light indicator sequenced for high level alarm limit switch via contact closure, energizing the drive controller and/or bypass to run full speed. Includes master reset push-button and (1) Form 'C' contact for customer use.	895.00

- ▲ Specify lens cap colors desired at time of order in "Engineering Notes" field within Q2C.
- Specify RTD values at time of order entry in "Engineering Notes" within Q2C.
- ♦ Available for 125–500 hp only.

E-MOD	Description	\$ Price
<b>Basin low level stop with pilot light indication</b>		
E241	Provides relay circuit and pilot light indicator sequenced for low level alarm limit switch via N.O./N.C. contact closure, causing the drive controller to stop. Includes master reset push-button and (1) Form 'C' contact for customer use.	795.00
<b>Enclosure ventilation fan shutdown</b>		
E242	Provides interlocking and timer functions of enclosure ventilation fans to shutdown during drive controller idle conditions.	795.00
<b>High discharge pressure with pilot light indication</b>		
E243	Provides relay circuitry with pilot light indicator sequenced from a pressure switch input, causing the drive controller to stop. Includes master reset push-button and (1) Form 'C' contact for customer use.	795.00
<b>Low discharge pressure with pilot light indication</b>		
E244	Provides relay circuit, timer with pilot light sequenced from a pressure switch input when low discharge condition. Includes master reset push-button and (1) Form 'C' contact for customer use.	795.00
<b>Low seal water shutdown with pilot light indication▲</b>		
E245	Provides relay circuitry, timer with pilot light sequenced from a pressure switch input when not enough seal water is supplied. Includes master reset push-button and (1) Form 'C' contact for customer use.	795.00
<b>Motor over temperature shutdown with pilot light■</b>		
E246	Provides dedicated terminals using an external motor over temperature input (Form 'C' contact) and a pilot light indicator factory wired and programmed.	380.00
<b>Phase failure relay♦</b>		
E247	Provides a phase failure relay (Tele RM4T series) mounted and wired to indicate phase reversal, phase loss and imbalance operating conditions.	725.00
<b>Single test pilot light push-button★</b>		
E248	Provides a dedicated 30 mm push-to-test button for indication of operable pilot lights.	130.00
<b>Substitute TeSys 600 V relay(s)</b>		
E249	Substitutes TeSys Type NEMA rated relays rated 600 V, 10A.	985.00

- ▲ Mutually exclusive to E221.
- Mutually exclusive to E228.
- ♦ Available with Power Circuits Y, Z, S, T or R only.
- ★ Must also select E224.

### Enclosure & Miscellaneous Modifications

The E300 series features cover enclosure and miscellaneous option configurations for the M-Flex™ enclosed drive controller.

E-MOD	Description	\$ Price
<b>ANSI #61 enclosure paint</b>		
E301	Provides option to configure enclosure paint to industry standard ANSI #61 light gray paint in lieu of ANSI #49 gray.	526.
<b>Free standing enclosure▲</b>		
E302	Converts all standard wall mounted enclosure configurations to a floor mounted 90" high enclosure.	925.
<b>Enclosure expansion■</b>		
E303	Converts all standard wall and floor mounted enclosures up one enclosure size.	925.
<b>Barriered enclosure expansion♦</b>		
E304	Uses Barriered enclosure for non-bypass drives controllers. Bypass space is configured with circuit breaker disconnect and handle only.	1450.
<b>Enclosure space heater option</b>		
E305A	Space heater only: Provides a Hoffman type enclosure strip heater and thermostat to maintain internal low temperature ambient ratings.	1500.
E305B	Space heater with storage operation provision: Provides a Hoffman type enclosure strip heater and thermostat to maintain internal low temperature ambient ratings. Includes 120 V remote source input terminals for operation during storage conditions.	1800.

- ▲ Available on configurations 1–20 hp CT or 1–25 hp VT only.
- Available on configurations 1–50 hp CT or 1–60 hp VT only.
- ♦ Available on configurations 1–75 hp CT or 1–100 hp VT only.

**Power Options**

The E400 series features cover engineered power option configurations for M-Flex™ enclosed drive controllers.

E-MOD	Description	208/230V Rating	\$ Price	460V Rating	\$ Price
<b>Dynamic braking resistors</b>					
E401	Provides dynamic braking resistor top mounted on the enclosure. Resistors are 10% duty cycle constant torque (CT) applications. Overload protection for externally mounted dynamic braking resistor is mounted inside the drive controller enclosure.	1 hp	1035.00	1-3 hp	1415.00
		2-5 hp	1245.00	5 hp	1595.00
		7.5 hp	1595.00	7.5 hp	1775.00
		10-15 hp	2015.00	10-20 hp	2545.00
		20-25 hp	2525.00	25-40 hp	2725.00
		30-40 hp	3515.00	50 hp	4015.00
		—	—	60-75 hp	5335.00
<b>Motor protection filter</b>					
E402	Provides a factory mounted and wired dV/dt filter on the drive output for long motor lead lengths considerations in excess of published guidelines.			1 hp	1120.00
				2 hp	1120.00
				3 hp	1145.00
				5 hp	1165.00
				7.5 hp	1215.00
				10 hp	1222.00
				15 hp	1530.00
				20 hp	1695.00
				25 hp	1770.00
				30 hp	1840.00
				40 hp	1895.00
				50-60 hp	2675.00
				75 hp	3145.00
				100 hp	3675.00
				125 hp	5025.00
		150 hp	5230.00		
		200 hp	5330.00		
		250 hp	5365.00		
		300 hp	5645.00		
		350 hp	6540.00		
		400 hp	6980.00		
		450-500 hp	7310.00		
<b>NEMA rated contactors ▲</b>					
E403	Provides NEMA rated contactors for isolation and bypass configuration in lieu of the IEC rated contactors.	1-3 hp	1725.00	1-3 hp	1152.00
		5-7.5 hp	2013.00	5-10 hp	1259.00
		10-15 hp	2415.00	15-20 hp	2013.00
		20-25 hp	2875.00	25-30 hp	2415.00
		30 hp	3450.00	40-50 hp	2875.00
		40-50 hp	4830.00	60 hp	3450.00
		—	—	75-100 hp	4830.00
		—	—	125 hp	5290.00
		—	—	150 hp	6240.00
		—	—	200 hp	7610.00
		—	—	250 hp	8870.00
		—	—	300 hp	8980.00
		—	—	350 hp	9450.00
		—	—	400 hp	11280.00
—	—	450 hp	12260.00		
—	—	500 hp	12580.00		

▲ Available for Barriered design configurations only; requires selection of Power Circuit S, Z, T or R.

E-MOD	Description	\$ Price	
<b>Transient voltage surge suppressor</b>			
E405	Provides supplementary surge protection using a Class 1310 TVSS XWF Series Transient Voltage Surge Suppressor hard-wired and factory mounted. 100,000 peak volts of surge protection.	1885.00	E405
Note: Service connection type (Delta or Wye) must be specified in "Engineering Notes" within Q2C.			
<b>Dual motor overloads and branch short circuit protection▲</b>			
E406	Provides short circuit and overload protection for (2) motors connected to the output of the drive controller. Includes thermal overload modules for each motor.	1-10 hp	720.00
		15-25 hp	790.00
		30-50 hp	880.00
		60-100 hp	1250.00
		125-200 hp	3650.00
<b>Motor A or B contactor alternation scheme■</b>			
E407	Provides a contactor interlocked for the selection of one motor for load share via a selector switch or rotation timer scheme.	1-10 hp	1310.00
		15-25 hp	1950.00
		30-50 hp	2450.00
		60-100 hp	5520.00
		125-200 hp	11450.00
250-500 hp	24950.00		
<b>SEMI F47 compliance</b>			
E408	Provides modified drive controller settings and hardware configuration for ride-through capability to comply with SEMI F47-0200 standards, 50% voltage sag, 200ms sustained without interruption. Drive must be configured for 2-wire control and the start signal must maintain during sag conditions.		
	Power Circuit W		1169.00
	Power Circuits Y, S, Z, T or R		1675.00
<b>Line contactor (without bypass)</b>			
E409	Provides a line contactor between the circuit breaker disconnect (or line reactor or harmonic filter where provided) and the power converter. When the line contactor is open, serial communications is disabled.	1-10 hp	1169.00
		15-25 hp	1675.00
		30-50 hp	2176.00
		60-100 hp	4891.00
125-200 hp	10862.00		
<b>Secondary surge arrester</b>			
E413	Provides a secondary surge arrester Class 6671 SDSA3650 mounted and wired.		485.00
<b>3% output reactor◆</b>			
E414	Provides a 3% rated output reactor to address long lead considerations, mounted and wired.	1-5 hp	750.00
		7.5-25 hp	850.00
		30-40 hp	1450.00
		50-60 hp	1650.00
		75-100 hp	1750.00
		125 hp	1850.00
		150 hp	2050.00
		200 hp	3150.00
		250 hp	3450.00
		300-350 hp	4350.00
400-450 hp CT/ 400-500 hp VT	4850.00		

- ▲ The sum of the total connected motors must not exceed the drive controller FLA rating. Specify motor FLA values at time of order entry in "Engineering Notes" within Q2C.
- Specify mode of operation via "Motor A-Off-Motor B" selector switch, remote contact closure or rotation timer scheme at time of order entry in "Engineering Notes" within Q2C.
- ◆ Available for 460/480 V rated devices only.

**PowerGard Series C—18-Pulse Drives**

Class 8839 Type CPD family of drive controllers now features the Altivar® 61/71 platform in an integrated 18-Pulse AC drive solution designed for the construction and industrial markets. A patented 18-Pulse converter design provides near linear load performance for adjustable frequency controllers rated 40 hp and above. This product is strategically designed to help the user comply with IEEE 519 guidelines.

Each PowerGard 18-Pulse enclosed drive offers a feature rich platform of standard, engineered and user configurable options to meet the most demanding application and specification requirements with availability in the following ratings:

Constant torque (Heavy duty ratings – 150% current limit)

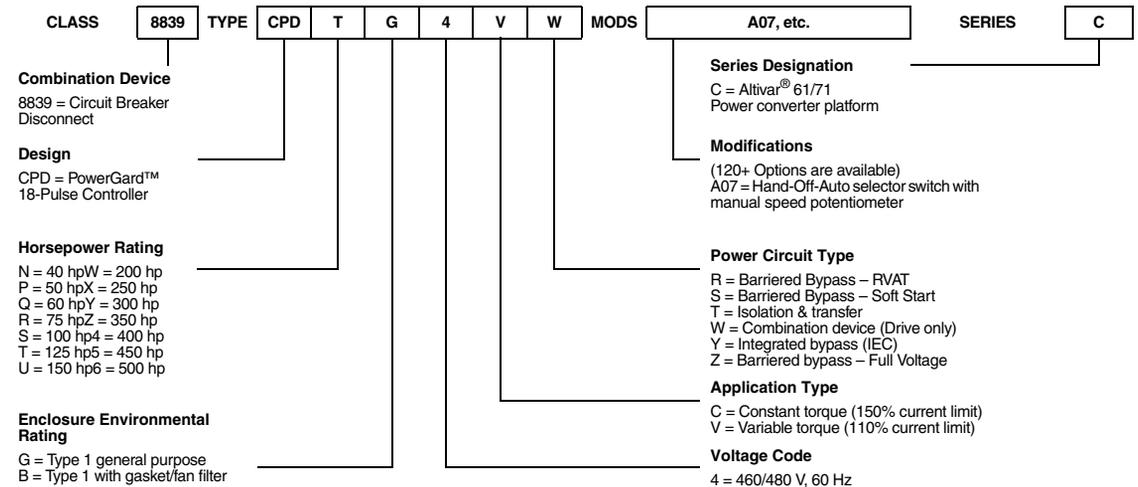
- Altivar 71 power converter platform
- 40 to 450 hp, 460 V

Variable torque (Normal duty ratings – 110% current limit)

- Altivar 61 power converter platform
- 50 to 500 hp, 460 V

**Selection**

To select a PowerGard 18-Pulse enclosed drive controller, identify the basic drive and optional devices by Class, Type, Options (MODS, E-MODS,) and Special Features (if required) to create the catalog number as shown below. This catalog number is used to identify the features of the product. In all cases, Q2C/Product Selectors must be used to price enclosed drives.



**Standard PowerGard Features**

- Circuit Breaker Disconnect
- UL listed to UL508
- 100,000 A symmetrical short circuit rating
- Heavy duty industrial disconnect handle with lockout/tag-out provisions
- 18-Pulse transformer/reactor assembly
- 18-Pulse bridge rectifier assembly
- Altivar® 61/71 power converter
- 120 V fused control transformer
- Hand-Off-Auto selector switch and manual speed potentiometer
- Door mounted graphic display terminal
- Auto Start Relay (120 V control)
- One Form "C" AFC Run mode contact
- One Form "C" AFC Fault contact
- Remote fault condition reset in AUTO mode with transition of auto start contact
- Manual fault condition reset in OFF position of H-O-A selector switch

- Safety interlock (e.g., run permissive) wired to user terminal block TB1
- Permanent wire markings
- White component mounting plate
- Top and bottom conduit access
- ANSI #49 gray enclosure
- Class 10 electronic overload protection
- Optional equipment as specified
- Customized wiring diagrams

**Typical Isolation/Bypass Features (when provided)**

- Class 20 overload protection with door mounted reset
- 120 V fused control transformer
- AFC-Off-Bypass selector switch
- Test-Normal selector switch
- AC3 duty rated isolation and bypass contactors (with mechanical and electrical interlocking)
- Bypass and isolation contactor sequencing provides true motor isolation
- Overload relay reset push button
- Customized wiring diagrams

**Table 14: Selection and Pricing**

Horsepower HP @ 460 V	Hp Code	Output Current (A)	Power Circuit Configurations (Type 1 General Purpose Enclosures)					
			Combination Drive Only W \$ Price	Integrated Bypass Full Voltage Y \$ Price	Barrired Bypass Full Voltage Z \$ Price	Barrired Bypass Soft Start S \$ Price	Isolation & Transfer Separate Starter T \$ Price	Barrired Bypass RVAT R \$ Price
<b>Constant Torque - Heavy Duty Ratings (150% Current Limit)</b>								
40	N	52	53059.00	57486.00	57935.00	65709.00	57141.00	66817.00
50	P	65	54032.00	60035.00	61806.00	69177.00	59690.00	73835.00
60	Q	77	54347.00	61224.00	62443.00	70941.00	60879.00	75024.00
75	R	96	55685.00	63057.00	64218.00	73407.00	62712.00	76857.00
100	S	124	65632.00	74924.00	77960.00	86941.00	74579.00	87809.00
125	T	156	70980.00	83078.00	86172.00	96648.00	82848.00	106078.00
150	U	180	75730.00	91439.00	94601.00	106561.00	91094.00	114324.00
200	W	240	79874.00	96423.00	99689.00	113558.00	94928.00	127933.00
250	X	302	98342.00	115857.00	119261.00	133509.00	115512.00	154267.00
300	Y	361	120928.00	139846.00	143422.00	160258.00	139501.00	182856.00
350	Z	414	129253.00	149919.00	153725.00	173034.00	149574.00	195229.00
400	4	477	136845.00	160340.00	164572.00	187710.00	159995.00	212550.00
450	5	515	138523.00	163467.00	167986.00	190837.00	163122.00	237297.00
<b>Variable Torque - Light Duty Ratings (110% Current Limit)</b>								
50	P	65	53059.00	57486.00	57935.00	65709.00	57141.00	66617.00
60	Q	77	54032.00	60035.00	61806.00	69177.00	59690.00	73835.00
75	R	96	54347.00	61224.00	62443.00	70941.00	60879.00	75024.00
100	S	124	55685.00	63057.00	64218.00	73407.00	62712.00	76857.00
125	T	156	65632.00	74924.00	77960.00	86941.00	74579.00	97809.00
150	U	180	70980.00	83078.00	86172.00	96648.00	82848.00	106078.00
200	W	240	75730.00	91439.00	94601.00	106561.00	91094.00	114324.00
250	X	302	79874.00	96423.00	99689.00	113558.00	94928.00	127933.00
300	Y	361	98342.00	115857.00	119261.00	133509.00	115512.00	154267.00
350	Z	414	120928.00	139846.00	143422.00	160258.00	139501.00	182856.00
400	4	477	129253.00	149919.00	153725.00	173034.00	149574.00	195229.00
450	5	515	136845.00	160340.00	164572.00	187710.00	159995.00	212550.00
500	6	590	138523.00	163467.00	167986.00	190837.00	163122.00	237297.00

**Notes:**

For Type 1B enclosures with fan filter option, add \$550.  
The listings define the available factory modifications. Modifications in gray shaded areas require order engineering support. All modifications follow specific interoperability rules for selection and configuration. Modification selection can be validated at the time of quotation or order entry by the Q2C/Product Selector process. Contact your nearest Square D/Schneider Electric sales office for details.  
When options with an "E" and/or "SPL" prefix appear on the nameplate, engineered-to-order options are provided.

**Table 15: Dimensions**

Hp @ 480 V	PowerGard™ Series C enclosure width dimensions								
	Combination Drive only W	Integrated Bypass Full Voltage Y		Barrired Bypass Full Voltage / Separate Starter Z or T		Barrired Bypass Soft Start S		Barrired Bypass RVAT R	
	Total	Extender	Total	Extender	Total	Extender	Total	Extender	Total
50 to 75	36"	—	36"	20"	56"	20"	56"	42"	78"
100	36"	—	36"	20"	56"	36"	72"	42"	78"
125	36"	20"	56"	20"	56"	36"	72"	42"	78"
150	42"	20"	62"	20"	62"	36"	78"	48"	90"
200	42"	20"	62"	20"	62"	36"	78"	48"	90"
250	42"	20"	62"	20"	62"	42"	84"	54"	90"
300	48"	25"	73"	25"	73"	42"	90"	54"	102"
350	48"	25"	73"	25"	73"	42"	90"	54"	102"
400	48"	25"	73"	25"	73"	42"	90"	54"	102"
450	48" or 54"	36"	84"	36"	84"	48"	96"	54"	102"
500	48" or 54"	36"	84"	36"	84"	48"	96"	54"	102"

**Note:**

All enclosures are 94.65" height and 24" depth standard switchboard enclosures.

**Table 16: Weights and Heat Loss Data**

HP @ CT rating	Weight lbs.	PowerGard Series C - Power Circuit W					
		Estimated Heat Loss		HP @ VT rating	Weight	Estimated Heat Loss	
		Watts Loss	BTU/Hour			Watts Loss	BTU/Hour
40	1603	2478	8457	—	—	—	—
50	1603	2674	9126	50	1603	2674	9126
60	1603	2838	9686	60	1603	2838	9686
75	1603	3027	10331	75	1603	3027	10331
100	1703	4776	16300	100	1703	3756	12819
125	2070	6333	21615	125	1703	4843	16529
150	2070	6637	22652	150	2070	6637	22652
200	2086	7074	24144	200	2086	7074	24144
250	2682	9582	32703	250	2086	9582	32703
300	2682	11216	38280	300	1682	11216	38280
350	2682	11684	39877	350	2682	11684	39877
400	2682	12894	44007	400	2682	12894	44007
450	3148	13793	47076	450	3148	13793	47076
—	—	—	—	500	3148	14691	50140

### Operator Control Device Options

Door mounted operator controls provide dedicated control for commanding power converter speed and start/stop functions. Select only one.

MOD	Description	\$ Price
<b>Hand-Off-Auto selector switch with manual speed potentiometer</b>		
A07	Provides a three position selector switch and manual speed potentiometer door mounted. The Hand-Off-Auto selector switch is used to select between the AI1 and AI2 analog inputs. In the Auto position the motor may be started and stopped by a user supplied remote contact. The speed may be adjusted by a 4-20 mAdc signal to analog input reference AI2 or the door mounted manual speed potentiometer. The Off position will stop the motor. The Off position is also used to reset drive controller faults.	—
Rules: Control option defined by default.		
<b>Hand-Off-Auto selector switch, Start/Stop push-buttons with manual speed potentiometer</b>		
B07	Provides a three-position selector switch and manual speed potentiometer door mounted. The Hand-Off-Auto selector switch is used to select between the AI1 and AI2 analog inputs. In the Auto position the motor may be started and stopped by a user supplied remote contact. The speed may be adjusted by a 4-20 mAdc signal to analog input reference AI2 or the door mounted manual speed potentiometer. In the Hand position, Start/Stop push-buttons are used to start and stop the motor using a "three-wire" control strategy. The Off position will also stop the motor. The Off position is also used to reset drive controller faults.	100.00
<b>Start/Stop push-buttons with manual speed potentiometer</b>		
C07	Provides Start/Stop pushbuttons to start and stop the motor using a "three-wire" control strategy. The speed is adjusted by a door mounted manual speed potentiometer. The drive disconnect is used to reset drive controller faults unless "Fault Reset" (MOD P10) is ordered.	75.00
Rules: Available only with Power Circuit W.		
<b>Start/Stop push-buttons, Forward-Reverse selector switch with manual speed potentiometer</b>		
D07	Provides Start/Stop push-buttons to start and stop the motor using a "three-wire" control strategy. The speed is adjusted by a door mounted manual speed potentiometer. Motor direction is controlled with a forward -reverse selector switch. The drive disconnect is used to reset drive controller faults unless "Fault Reset" (Option P10) is ordered.	200.00
Rules: Available only with Power Circuit W.		
<b>Hand-Off-Auto selector, Local-Remote selector switch with manual speed potentiometer</b>		
E07	Provides a three-position selector switch and manual speed potentiometer door mounted. The Hand-Off-Auto selector switch is used to select between the AI1 and AI2 analog inputs. In the Auto position the motor may be started and stopped by a user supplied remote contact. The speed may be adjusted by a 4-20 mAdc signal to analog input reference AI2 or the door mounted manual speed potentiometer. The Off position will stop the motor. The Off position is also used to reset drive controller faults. The Local-Remote switch selects whether speed control is sent by a signal into terminal AI1 (local) or AI2 (remote) on terminal block TB2, when the Hand-Off-Auto switch is in Auto mode.	100.00
<b>Communication-Hand-Off-Auto selector switch with manual speed potentiometer</b>		
F07	Provides a four-position selector switch and manual speed potentiometer door mounted. The Communication-Hand-Off-Auto selector switch is used to select between the AI1 and AI2 analog inputs. The communication position is for communication option card control of the drive controller. In the Auto position the motor may be started and stopped by a user supplied remote contact. The speed may be adjusted by a 4-20 mAdc signal to analog input reference AI2 or the door mounted manual speed potentiometer. The Off position will stop the motor. The Off position is also used to reset drive controller faults.	250.00
Rules: Provides control and monitoring capabilities when supplied with any communication card.		
<b>No Door Mounted Operators (wired for remote operation)</b>		
N07	No operators are provided on the enclosure door. The customer must provide remote mounted operator controls. Drive controllers are factory programmed and configured for remote mounted Hand-Off-Auto operation.	Deduct \$100.00

### Pilot Light Options

Pilot lights are ordered in light groups and door mounted. Pilot light groups are selected with compatible control options. Pilot lights are all 22mm, long life LED type. Select only one.

MOD	Description	\$ Price
<b>Power On, Fault, AFC Run, Auto pilot lights</b>		
A08	Provides a combination of (4) pilot lights for visual indication of protective functions and circuit status; power on (red), fault (yellow), AFC run (green) and auto (yellow).	245.00
Rules: Not available with C07 or D07.		
<b>Power On, Fault, AFC Run, Bypass pilot lights</b>		
B08	Provides a combination of (4) pilot lights for visual indication of protective functions and circuit status; power on (red), fault (yellow), AFC run (green) and bypass (yellow).	245.00
Rules: Not available with Power Circuit W.		
<b>Power On, Fault, AFC Run pilot lights</b>		
C08	Provides a combination of (3) pilot lights for visual indication of protective functions and circuit status; power on (red), fault (yellow) and AFC run (green).	185.00
<b>Power On, Fault, AFC Forward, AFC Reverse pilot lights</b>		
D08	Provides a combination of (4) pilot lights for visual indication of protective functions and circuit status; power on (red), fault (yellow), forward (green) and reverse (green).	245.00
Rules: 1. Available only with D07 or N07. 2. Available only with Power Circuit W.		
<b>Power On, Fault, AFC Run, Hand, Auto pilot lights</b>		
E08	Provides a combination of (5) pilot lights for visual indication of protective functions and circuit status; power on (red), fault (yellow), AFC run (green), hand (blue) and auto (yellow).	305.00
Rules: 1. Available only with A07, B07, E07 or N07. 2. Supplied with AMR relay.		
<b>Power On, Fault, AFC Run, Communication pilot lights</b>		
F08	Provides a combination of (4) pilot lights for visual indication of protective functions and circuit status; power on (red), fault (yellow), AFC run (green) and communication (yellow).	245.00
Rules: Available only with F07 or N07.		

### Option Cards

All communication cards are provided without factory programming. Select only one.

MOD	Description	\$ Price
<b>Modbus Plus communication card</b>		
A09	Provides a factory installed plug-in Modbus Plus card, VW3A3302. This interface device connects to a Modbus Plus tap.	795.00
<b>Modbus/Unitelway communication card</b>		
B09	Provides a factory installed plug-in Modbus/Unitelway card, VW3A3303.	476.00
<b>Johnson Controls MetaSYS N2 communication card</b>		
C09	Provides a factory installed plug-in MetaSYS N2 card, VW3A3313.	476.00
<b>Ethernet TCP/IP communication card</b>		
D09	Provides a factory installed plug-in Ethernet TCP/IP card, VW3A3310, with user termination to RJ45 plug-in interface connector.	476.00
<b>LonWorks communication card</b>		
E09	Provides a factory installed LonWorks card, VW3A3312.	795.00
<b>DeviceNet communication card</b>		
F09	Provides a factory installed DeviceNet card, VW3A3309.	476.00
<b>Profibus DP communication card</b>		
G09	Provides a factory installed Profibus DP card, VW3A3307.	795.00
<b>I/O Extension card</b>		
H09	Provides a factory installed I/O extension card, VW3A3202. Adds (2) analog outputs, 4 logic inputs, 2 logic outputs and 1 differential analog input.	275.00
<b>Siemens APOGEE FLN / P1 communication card</b>		
J09	Provides a factory installed Apogee P1 card, VW3A3314.	476.00
<b>BACnet communication card</b>		
K09	Provides a factory installed BACnet card, VW3A3315.	476.00
<b>Interbus S communication card</b>		
L09	Provides a factory installed Interbus card, VW3A3304.	795.00
<b>FIPIO communication card</b>		
M09	Provides a factory installed Fipio card, VW3A3311.	795.00
<b>Bluetooth Modbus</b>		
P09	Provides a Bluetooth Modbus adapter, VW3A8114.	125.00
<b>FIPIO communication card</b>		
R09	Ethernet IP Option Card, Provides a factory installed Ethernet/ip Card VW3A3316	476.00
D09	Ethernet TCP/IP Daisy Chain Card, Provides a factory installed Ethernet TCP/IP Daisy Chain Card VW3A3310D	476.00

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### Miscellaneous Options

Pre-engineered and system supported options to provide miscellaneous product modifications.

MOD	Description	\$ Price
<b>3-15 PSI Transducer</b>		
C10	Allows the controller to follow a user supplied 3-15 PSI input. Rules: 1. Not available with C07 or D07. 2. Mutually exclusive with J09.	<b>450.00</b>
<b>Omit Door mounted graphic display terminal</b>		
D10	The graphic display terminal is not supplied. To alter the programming of the power converter, the user must buy a graphic display terminal or PowerSuite software to program the drive controller.	<b>Deduct 100.00</b>
<b>Smoke Purge Relay</b>		
E10	Provides a smoke purge operating mode controlled by a user-supplied 120 VAC signal wired to terminal block TB1. Smoke purge operation is full speed bypass (when provided) or High Speed in the drive controller. This operation is designed run the motor from any operator control setting except emergency stop or open safety interlocks.	<b>225.00</b>
<b>Additional 200 VA Control Power</b>		
F10	Provides additional control power 200 VA using a larger 120 V control transformer connected to terminal block TB1 for customer use.	<b>380.00</b>
<b>cUL Certification</b>		
G10	Provides a Canadian cUL certification when required by local code requirements.	<b>335.00</b>
<b>Seismic Qualified</b>		
H10	Supplies a certification label and hardware qualified to seismic rating ICC ES AC156 acceptance criteria test protocol with an importance factor of 1.5.	<b>425.00</b>
<b>Permanent Wire Marker (Sleeve Type)</b>		
I10	Provides permanent wire sleeve type markers on control wiring. Note: Permanent wire markings are provided as standard.	<b>1750.00</b>
<b>Input programmed for 0 - 10 Vdc AI2 input</b>		
J10	Provides programming for 0-10 Vdc user supplied auto speed reference signal to the AI2 input, on terminal block TB2. The 0-10 Vdc analog input is not isolated, but it does contain noise suppression circuitry and a programmable electronic filter. using a 0-10V/4-20mA converter (P/n# 31158-297-50). Source impedance: Z=40kΩ	—
Rules: Not available with C07, D07 or C10.		
<b>1 Additional N.O. Auxiliary Drive Run Contact</b>		
K10	Provides 1 additional N.O. contact for drive run indication wired to TB1.	<b>185.00</b>
<b>1 Additional N.C. Auxiliary Drive Fault Contact</b>		
L10	Provides 1 additional N.C. contact for drive fault indication wired to TB1.	<b>185.00</b>
<b>1 N.O. Auxiliary Bypass Run Contact</b>		
M10	Provides 1 additional N.O. contact for bypass run indication wired to TB1. Rules: Available only with Power Circuits Y, S, Z, R and T.	<b>185.00</b>
<b>1 N.O. Auxiliary Auto Mode Contact</b>		
O10	Provides 1 additional N.O. contact for auto mode indication wired to TB1. Rules: Not available with C07 or D07.	<b>185.00</b>
<b>AFC Fault Reset Push-button</b>		
P10	Provides factory installed door-mounted push button to fault reset LI4 on the power converter at terminal TB1 when Hand-Off-Auto is not supplied. Rules: 1. Available only with C07 or D07. 2. Available only with Power Circuit W.	<b>100.00</b>
<b>Push-to-Test Pilot Lights</b>		
Q10	Provides push-to-test function on all pilot lights except Power On pilot light. Rules: Not available on Fault pilot light if P10 is selected.	<b>210.00</b>
<b>Auto Transfer to Bypass</b>		
R10	Provides an automatic transfer (time adjustable 0.1-10 s) to bypass in the event that the drive controller faults. A selector switch is provided inside the enclosure to enable or disable this function. Longer transfer time requirements are available by replacing the plug-in adjustable timer. Rules: 1. Available only with Power Circuits Y, S, Z, T or R. 2. Not available with B07, C07 or D07.	<b>270.00</b>
<b>Motor Elapsed Time Meter</b>		
S10	Provides a dedicated elapsed time meter to record the motor run time. Runs whenever the motor is running. The motor elapsed time meter is non-resettable.	<b>270.00</b>
<b>Emergency Stop Mushroom Head Push-button</b>		
T10	Provides door mounted maintained off emergency stop red mushroom pushbutton with turn-to-reset feature. Rules: Not available with C07 or D07.	<b>127.00</b>
<b>Motor Space Heater Sequencing Circuit - Light Duty</b>		
U10	Provides 50 VA/120 V to terminal block TB1 for motor space heater whenever the motor is not running. Rules: Mutually exclusive with V10 unless F10 is also selected.	<b>400.00</b>

MOD	Description	\$ Price
<b>Seal Water Solenoid</b>		
V10	Provides 50 VA/120 V to terminal block TB1 for seal water solenoid whenever the motor is running.	400.00
Rules: Exclusive with U10 unless F10 is also selected.		
<b>Check Valve Sequencing Circuit (Gravity Type)</b>		
W10	Provides an automatic shutdown of the drive controller when the user supplied N.C. contact from the check valve limit switch does not open within 5 seconds after the motor starts. The user limit switch contact connects to terminal block TB1. Circuit provides reset function with an illuminated (blue) push-button.	520.00
<b>54 inch wide enclosure</b>		
Y10	Provides a 54 inch wide switchboard enclosure for bottom conduit entry space provisions.	275.00
Rules: Available for 450-500 hp ratings only.		
<b>24 VDC Power Supply</b>		
Z10	Provides a 24 Vdc, 300 mA power supply at terminal block TB1.	370.00
<b>ID Engraved Nameplates</b>		
610	Provides an engraved laminated nameplate attached to the front door of the enclosure (engraved per user request at time of order).	100.00

### Engineered Features

Factory orders with engineered features (E-MOD, SPL, etc.) are subject to review by factory personnel and have longer lead-time availability. Standard PowerGard™ enclosure dimensions may no longer apply to orders containing any combination of engineered features. In addition, factory orders containing engineered features may carry a UL508A (Industrial Control Equipment) label in lieu of a UL508C (Power Conversion Equipment) label depending on configuration.

### Control Options

The E200 series features cover control circuit option configurations for PowerGard™ enclosed drive controllers.

E-MOD	Description	\$ Price
<b>Door mounted meters (dedicated displays)</b>		
Provides a dedicated door mounted meter display, analog or digital.		
E201	Analog percent speed meter scaled 0 to 120% base speed.	540.00
E202	Analog percent current scaled 0 to 100% of rated output current.	540.00
E203	Digital ammeter (amperes) scaled 0 to 2 times rated output amperes.	630.00
E204	Digital speed meter (frequency) scaled 0 to 72 Hz output frequency.	630.00
E205	Digital percent speed meter scaled 0 to 120% base speed.	630.00
E206	Digital percent current scaled 0 to 100% of rated output current.	630.00
Rules: 1. Limited to one meter selection unless H09 is selected. 2. If H09 is selected, (1) additional meter can be selected.		
<b>Door mounted RJ45 port</b>		
E211	Provides (1) Sixnet RJ45 door mounted 30 mm bulk head connector and internal CAT5 cabling for access via PC with PowerSuite software. The RJ45 (Modbus/CANopen) drive port provides customer access through the enclosure door.	325.00
<b>Auxiliary drive run contacts</b>		
E212	Provides (3) Form 'C' contacts rated 5 A @ 120 V wired to terminal blocks for customer use.	310.00
Note: One (1) Form 'C' contact for drive run indication is supplied as standard. Rules: 1. Available only if K10 is selected. 2. Available without K10 for 100-450 hp CT / 125-500 hp VT.		
<b>Auxiliary bypass run contacts</b>		
E213	Provides (3) Form 'C' contacts rated 5 A @ 120 V wired to terminal blocks for customer use.	310.00
Note: One (1) N.O. contact for bypass run indication is supplied as standard when bypass is provided. Rules: 1. Available only if M10 is selected. 2. Available without M10 for 100-450 hp CT / 125-500 hp VT.		
<b>Auxiliary drive fault contacts</b>		
E214	Provides (3) Form 'C' contacts rated 5 A @ 120 V wired to terminal blocks for customer use.	310.00
Note: One (1) Form 'C' contact for drive fault indication is supplied as standard. Rules: Available only if L10 is selected.		
<b>Auxiliary auto mode contacts</b>		
E215	Provides (3) Form 'C' contacts rated 5 A @ 120 V wired to terminal blocks for customer use.	310.00
Note: One (1) N.O. contact for auto mode indication is supplied as standard when auto mod operation is provided. Rules: Available only if O10 is selected.		
<b>Adjustable restart delay timer</b>		
E216	Provides an adjustable On Time Delay Relay for power up restart function, mounted and wired for AFC mode (hand or auto) mode and/or in the bypass mode (hand/auto).	240.00

E-MOD	Description	\$ Price
<b>Motor space heater (heavy duty)</b>		
E217	Provides control circuit contacts, 120 V, 500 VA supply and fusing wired to terminals for customer use.	1000.00
<b>Signal loss follower alarm relay</b>		
E218	Provides (1) Form 'C' contact rated 5 A @ 120 V wired to terminal blocks for customer use. Intended for 4-20 mA dc control loop applications where upon the loss of input signal it is desired to retain the output signal at the last input signal level. The relay provides an alarm relay contact for signal loss alert.	360.00
Note: Requires use of logic output LO1.		
<b>Inhibit/shutdown sequence (timed operation)</b>		
E219	Provides a relay circuit operating in the fail safe mode where a remote initiating contact opens the relay, de-energizes and after a specified time shuts the drive controller down in the AFC mode (hand or auto) and/or in the bypass mode (hand or auto).	580.00
<b>Check valve sequence (motorized type)</b>		
E220	Provides relay circuitry sequenced from a check valve limit switch. A valve closed position limit switch will energize relays that will initiate a remote valve operating solenoid limited to 50 VA and give a run permissive to the drive controller in the AFC mode (hand or auto) and/or in the bypass mode (hand or auto). A valve closed position limit switch will de-energize a timer relay such that if this relay is not de-energized within a specified time period, the drive controller will shut down in the AFC mode (hand or auto) and/or in the bypass mode (hand or auto).	710.00
<b>Seal water solenoid - with pressure switch feedback</b>		
E221	Provides relay, which will energize a remote seal water solenoid limited to 50 VA during drive controller operation. Additionally, the remote initiating contact will open the relay, de-energizing and after a specified time shuts the drive controller down in the AFC mode (hand or auto) and/or in the bypass mode (hand or auto).	1220.00
<b>Moisture detection relay circuit (without relay)</b>		
E222	Provides 24 V or 120 V control power to a customer supplied moisture detection relay device, either electronic or electro-mechanical. Factory provides pre-wired socket or mounting space only.	350.00
Note: Customer supplies relay. Details concerning type must also be provided at time of order entry in "Engineering Notes" within Q2C.		
<b>Moisture detection relay circuit (with relay options)</b>		
E223A	Relay option: Provides 24 V or 120 V control power to a moisture detection relay device, either electronic or electro-mechanical. The moisture detection relay is mounted and wired by the factory.	1220.00
E223B	Relay and Pilot Light indication option: Provides 24 V or 120 V control power to a customer supplied moisture detection relay device, either electronic or electro-mechanical. Includes a pilot light for discrete input(s). The customer supplied moisture detection relay is mounted and wired by the factory.	1395.00
Note: Details concerning type must be provided at time of order entry in "Engineering Notes" within Q2C.		
<b>Substitute Type K operators</b>		
E224	Provides Class 9001 Type K 30mm heavy duty multi-function operators in lieu of standard 22mm pilot devices.	410.00
<b>Spare control relays (for customer use)</b>		
E225	Provides control relays mounted and unwired for customer use. Up to (3) are available.	150.00 each
<b>Substitute pilot light lens color(s)</b>		
E226	Provides the flexibility to configure lens cap colors to contract equipment designations.	—
Notes: Specify lens cap colors desired at time of order entry in "Engineering Notes" field within Q2C.		
<b>Blown fuse indicators on control fuses</b>		
E227	Provides blown circuit fuse indicators on control circuit fuses in lieu of standard fuses.	750.00
<b>Motor over temperature logic input</b>		
E228	Provides dedicated terminals using an external motor over temperature input (N.C. contact) factory wired and programmed.	186.00
<b>RTD inputs (motor protection alarm)</b>		
E229	Provides capability for accepting RTD inputs using an RTD limit alarm, factory mounted and wired. Limited to three (3) RTD inputs.	4122.00
Note: Specify RTD values at time of order entry in 'Engineering Notes' within Q2C.		
<b>Motor management relay option</b>		
Provides motor protection and metering functions using a selection of motor management relays. This relay provides protection for motor and load conditions: overload, differential, stator temperature, high inertia loads, undercurrent, under power, jam and bearing over temperature. The motor management relay is factory mounted and wired. Includes PT's and CT's.		
E230A	Schneider Electric Sepam® Series 20 motor protective relay.	2850.00
E230B	Schneider Electric Sepam® Series 41 motor protective relay.	3975.00
E230C	GE Multiin® 269+ motor management relay.	13995.00
E230D	GE Multiin® 469 motor management relay.	14750.00
<b>PowerLogic® power meter display option</b>		
Provides a Class 3020 PM800 series power module true rms meter display with basic instrumentation, demand, THD, date/time stamping, neutral current, min/max, alarms, event and data storage factory mounted and wired.		
E231A	PM820 power module.	1400.00
E231B	PM850 power module.	1550.00
E231C	PM870 power module.	1995.00

Trademarks used herein are properties of their respective owners.

E-MOD	Description	\$ Price
<b>PowerLogic circuit monitor option</b>		
Provides a Class 3020 CM3000/CM4000 series circuit monitor display with instrumentation, 0.2% accuracy, data logging and waveform capture, factory mounted and wired. Includes PT's and CT's.		
E232A	CM3250 circuit monitor.	2415.00
E232B	CM3350 circuit monitor.	2415.00
E232C	CM4000T circuit monitor.	4275.00
E232D	CM4250 circuit monitor.	4275.00
<b>Spare terminal blocks (unwired)</b>		
E234	Provides (10) spare terminal blocks 'unwired' for customer use using the Class 9080 Type G series terminals.	120.00
<b>End damper control circuit</b>		
E235	Provides a damper control circuit to coordinate starting of the drive controller or the bypass with the position of the damper. Requires connection to customer damper limit switch.	240.00
<b>Emergency power off push-button</b>		
E236	Provides a shunt trip modified molded case switch or circuit breaker where a push-pull maintained mushroom head push-button energizes the shunt trip coil and instantaneously opens to shut down power supplied to the drive controller in the AFC mode and/or bypass mode, coasting to an uncontrolled stop.	540.00
<b>Audible alarm horn with silence</b>		
E238	Provides an audible alarm horn, timer to annunciate a user defined conditions with a silencer push-button, factory assembled and wired for customer use.	625.00
<b>Three phase ammeter with selector switch</b>		
Provides 3 CT's with 3-position selector switch to indicate Phase A, B or C connected on the motor leads to monitor full load amps.		
E239A	Monitor input full load amps.	1575.00
E239B	Monitor output full load amps.	1575.00
<b>Basin high level alarm indication option</b>		
E240A	Alarm with pilot light: Provides relay circuit and pilot light indicator alarm for high level alarm limit switch via contact closure. Includes master reset push-button and (1) Form 'C' contact for customer use.	795.00
E240B	Command to run and alarm with pilot light indication: Provides relay circuit, timer and pilot light indicator sequenced for high level alarm limit switch via contact closure, energizing the drive controller and/or bypass to run full speed. Includes master reset push-button and (1) Form 'C' contact for customer use.	895.00
<b>Basin low level stop with pilot light indication</b>		
E241	Provides relay circuit and pilot light indicator sequenced for low level alarm limit switch via N.O./N.C. contact closure, causing the drive controller to stop. Includes master reset push-button and (1) Form 'C' contact for customer use.	795.00
<b>Enclosure ventilation fan shutdown</b>		
E242	Provides interlocking and timer functions of enclosure ventilation fans to shutdown during drive controller idle conditions.	795.00
<b>High discharge pressure with pilot light indication</b>		
E243	Provides relay circuitry with pilot light indicator sequenced from a pressure switch input, causing the drive controller to stop. Includes master reset push-button and (1) Form 'C' contact for customer use.	795.00
<b>Low discharge pressure with pilot light indication</b>		
E244	Provides relay circuit, timer with pilot light sequenced from a pressure switch input when low discharge condition. Includes master reset push-button and (1) Form 'C' contact for customer use.	795.00
<b>Low seal water shutdown with pilot light indication</b>		
E245	Provides relay circuitry, timer with pilot light sequenced from a pressure switch input when not enough seal water is supplied. Includes master reset push-button and (1) Form 'C' contact for customer use.	795.00
Rules: Mutually exclusive to E221.		
<b>Motor over temperature shutdown with pilot light</b>		
E246	Provides dedicated terminals using an external motor over temperature input (Form 'C' contact) and a pilot light indicator factory wired and programmed.	380.00
Rules: Mutually exclusive to E228.		
<b>Phase failure relay</b>		
E247	Provides a phase failure relay (Tele RM4T series) mounted and wired to indicate phase reversal, phase loss and imbalance operating conditions.	725.00
Rules: Available with Power Circuits Y, Z, S, T or R only.		
<b>Single test pilot light push-button</b>		
E248	Provides a dedicated 30mm push-to-test button for indication of operable pilot lights.	130.00
Rules: Must also select E224.		
<b>Substitute TeSys® 600V relay(s)</b>		
E249	Substitutes TeSys® Type NEMA rated relays rated 600 V, 10 A.	985.00

**Enclosure & Miscellaneous Modifications**

The E300 series features cover enclosure and miscellaneous option configurations for the PowerGard™ enclosed drive controller.

E-MOD	Description	\$ Price
<b>ANSI #61 enclosure paint</b>		
E301	Provides option to configure enclosure paint to industry standard ANSI #61 light gray paint in lieu of ANSI #49 gray.	526.00
<b>Enclosure space heater option</b>		
E305A	Space heater only: Provides a Hoffman type enclosure strip heater and thermostat to maintain internal low temperature ambient ratings.	1500.00
E305B	Space heater with storage operation provision: Provides a Hoffman type enclosure strip heater and thermostat to maintain internal low temperature ambient ratings. Includes 120 V remote source input terminals for operation during storage conditions.	1800.00

**Power Options**

The E400 series features cover engineered power option configurations for PowerGard™ enclosed drive controllers.

E-MOD	Description	\$ Price
<b>Motor protection filter</b>		
Provides a factory mounted and wired dV/dt filter on the drive output for long motor lead lengths considerations in excess of our published guidelines, up to 1000 feet.		
E402	40 hp CT	1895.00
	50-60 hp	2675.00
	75 hp	3145.00
	100 hp	3675.00
	125 hp	5025.00
	150 hp	5230.00
	200 hp	5330.00
	250 hp	5365.00
	300 hp	5645.00
	350 hp	6540.00
	400hp	6980.00
	450-500 hp	7310.00
<b>Transient voltage surge suppressor</b>		
E405	Provides supplementary surge protection using a Class 1310 TVSS XWF Series Transient Voltage Surge Suppressor hard-wired and factory mounted. 100,000 peak volts of surge protection.	1885.00
Note: Service connection type (Delta or Wye) must be specified in "Engineering Notes" within Q2C.		
<b>SEMI F47 compliance</b>		
Provides modified drive controller settings and hardware configuration for ride-through capability to comply with SEMI F47-0200 standards, 50% voltage sag, 200ms sustained without interruption. Drive must be configured for 2-wire control and the start signal must maintain during sag conditions.		
E408	Power Circuit W	1169.
	Power Circuits Y, S, Z, T or R	1675.
<b>Secondary surge arrester</b>		
E413	Provides a secondary surge arrester Class 6671 SDSA3650 mounted and wired.	485.
<b>3% output reactor</b>		
Provides a 3% rated output reactor to address long lead considerations, mounted and wired.		
E414	40 hp CT	1450.
	50-60 hp	1650.
	75-100 hp	1750.
	125 hp	1850.
	150 hp	2050.
	200 hp	3150.
	250 hp	3450.
	300-350 hp	4350.
	400-450 hp CT / 400-500 hp VT	4850.



**Adjustable Frequency AC Drives**

The ALTIVAR 11 is an adjustable speed drive that incorporates sensorless flux vector control technology in a compact, nano drive design. This cost-effective solution improves low-speed torque, speed regulation and starting torque over traditional per hertz drives, while offering excellent performance and reliability.

**Table 17: Selection and Pricing**

Voltage + 10% -15% 50/60 Hz		Motor ▲		Nominal Current Rating A	Catalog Number■	\$ Price
Input	Output	kW	Horsepower			
115 V single phase	230 V three phase	0.18	0.25	1.6	ATV11HU05F1U	181.00
		0.37	0.5	2.4	ATV11HU09F1U	188.00
		0.75	1	4.6	ATV11HU18F1U	220.00
		0.37	0.5	2.4	ATV11PU09F1U	188.00
230 V single phase	230 V three phase	0.18	0.25	1.6	ATV11HU05M2U	181.00
		0.37	0.5	2.4	ATV11HU09M2U	188.00
		0.75	1	4.6	ATV11HU18M2U	220.00
		1.5	2	7.5	ATV11HU29M2U	285.00
		2.2	3	10.6	ATV11HU41M2U	342.00
		0.37	0.5	2.4	ATV11PU09M2U	188.00
		0.75	1	4.6	ATV11PU18M2U	220.00
230 V three phase	230 V three phase	0.18	0.25	1.6	ATV11HU05M3U	166.00
		0.37	0.5	2.4	ATV11HU09M3U	173.00
		0.75	1	4.6	ATV11HU18M3U	202.00
		1.5	2	7.5	ATV11HU29M3U	262.00
		2.2	3	10.6	ATV11HU41M3U	314.00
		0.37	0.5	2.4	ATV11PU09M3U	173.00
		0.75	1	4.6	ATV11PU18M3U	202.00

- ▲ Power ratings are for a switching frequency of 4 kHz in continuous operation.
- ATV11P... units have baseplates for mounting on steel or aluminum frames.

**Table 18: Options**

Description	Catalog Number	\$ Price
EMC Filters .25 to 1 hp—Single Phase	VW3A11401	105.00
EMC Filters 2 to 3 hp—Single Phase	VW3A11402	160.00
EMC Filters .25 to 1 hp—Three Phase	VM3A11403	120.00
EMC Filters 2 to 3 hp—Three Phase	VM3A11404	180.00
Adapter Kit	VW3A11811	25.00
DIN Rail Kit .25 to 1 hp	VW3A11851	25.00
DIN Rail Kit 2 to 3 hp	VW3A11852	25.00
Braking Module♦	VW3A11701	105.00
ECM Mounting Plate	VW3A11831	25.00
Replacement Fan Kit 1 to 3 hp	VW3A11821	50.00
PowerSuite Commissioning Software V1.4	VW3A8104	150.00
PowerSuite upgrade CD — provides upgrade to most recent version	VW3A8105	98.00
PowerSuite cable adapter★	VW3A11301	45.00
Cable kit for use with PowerSuite commissioning software on PC	VW3A8106	75.00

- ♦ Resistor Not Supplied.
- ★ Intended for use with PowerSuite cable kits purchased before December 2002. The adapter will be included in kits VW3A9106 and VW3A8111 in December 2002.

**Selection and Pricing**

**Table 19: Altivar® 31 Selection and Pricing**

Input Line Voltage	Three Phase Motor Power ▲		Open Drives ■				IP54 / UL Type 12 Enclosed	
	kW	HP	A▲	Catalog Number	Standard \$ Price	Local Control \$ Price ♦	Catalog Number	Standard \$ Price
208/230 Vac Single Phase	0.18	0.25	1.5	ATV31H018M2	268.00	308.00	ATV31C018M2	362.00
	0.37	0.5	3.3	ATV31H037M2	287.00	330.00	ATV31C037M2	387.00
	0.55	0.75	3.7	ATV31H055M2	306.00	352.00	ATV31C055M2	413.00
	0.75	1	4.6	ATV31H075M2	335.00	385.00	ATV31C075M2	452.00
	1.1	1.5	6.9	ATV31HU11M2	363.00	418.00	ATV31CU11M2	490.00
	1.5	2	8	ATV31HU15M2	402.00	462.00	ATV31CU15M2	543.00
	2.2	3	11	ATV31HU22M2	468.00	539.00	ATV31CU22M2	632.00
208/230 Vac Three Phase	0.18	0.25	1.5	ATV31H018M3X	258.00	297.00	—	—
	0.37	0.5	3.3	ATV31H037M3X	287.00	330.00	—	—
	0.55	0.75	3.7	ATV31H055M3X	306.00	352.00	—	—
	0.75	1	4.8	ATV31H075M3X	325.00	374.00	—	—
	1.1	1.5	6.9	ATV31HU11M3X	363.00	418.00	—	—
	1.5	2	8	ATV31HU15M3X	421.00	484.00	—	—
	2.2	3	11	ATV31HU22M3X	478.00	550.00	—	—
	3	4	13.7	ATV31HU30M3X	554.00	638.00	—	—
	—	5	17.5	ATV31HU40M3X	650.00	748.00	—	—
	5.5	7.5	27.5	ATV31HU55M3X	841.00	967.00	—	—
	7.5	10	33	ATV31HU75M3X	1013.00	1165.00	—	—
	11	15	54	ATV31HD11M3X	1338.00	1539.00	—	—
	15	20	66	ATV31HD15M3X	1721.00	1979.00	—	—
400/480 Vac Three Phase	0.37	0.5	1.5	ATV31H037N4	363.00	418.00	ATV31C037N4	490.00
	0.55	0.75	1.9	ATV31H055N4	392.00	451.00	ATV31C055N4	529.00
	0.75	1	2.3	ATV31H075N4	421.00	484.00	ATV31C075N4	568.00
	1.1	1.5	3	ATV31HU11N4	449.00	517.00	ATV31CU11N4	606.00
	1.5	2	4.1	ATV31HU15N4	497.00	572.00	ATV31CU15N4	671.00
	2.2	3	5.5	ATV31HU22N4	574.00	660.00	ATV31CU22N4	774.00
	3	4	7.1	ATV31HU30N4	650.00	748.00	ATV31CU30N4	878.00
	—	5	9.5	ATV31HU40N4	688.00	792.00	ATV31CU40N4	929.00
	5.5	7.5	14.3	ATV31HU55N4	860.00	989.00	ATV31CU55N4	1162.00
	7.5	10	17	ATV31HU75N4	1052.00	1209.00	ATV31CU75N4	1420.00
	11	15	27.7	ATV31HD11N4	1386.00	1594.00	ATV31CD11N4	1733.00
	15	20	33	ATV31HD15N4	1721.00	1979.00	ATV31CD15N4	2151.00
	575/600 Vac Three Phase★	0.75	1	1.7	ATV31H075S6X	484.00	—	—
1.5		2	2.7	ATV31HU15S6X	572.00	—	—	—
2.2		3	3.9	ATV31HU22S6X	660.00	—	—	—
3.7/4.0		5	6.1	ATV31HU40S6X	792.00	—	—	—
5.5		7.5	9	ATV31HU55S6X	989.00	—	—	—
7.5		10	11	ATV31HU75S6X	1209.00	—	—	—
11		15	17	ATV31HD11S6X	1594.00	—	—	—
15	20	22	ATV31HD15S6X	1979.00	—	—	—	

- ▲ These horsepower, wattage, and continuous ampere ratings apply to 4 kHz switching frequency and maximum 50°C ambient. Refer to the installation manual for derating curves as a function of switching frequency, ambient temperature, and mounting conditions.
- Open type Altivar 31 Drives can be installed as UL Type 1 with optional conduit box when following instructions in the installation manual.
- ♦ Add the letter "A" to the end of the standard open type catalog number for a drive controller with a reference potentiometer and RUN/STOP buttons. This does not apply to the IP54 / UL Type 12 products.
- ★ A minimum 3% line reactor is required on all 575 V drive installations.



ATV31H  
Open Type Drive



ATV31C  
IP54 / UL Type 12



ATV31H037M2A  
Open Drive with Local Operator

**Table 20: Altivar 31 Options**

	Description	For Use on Drives	Catalog Number	\$ Price
Simple Loader	Using RJ45 port connections, the configurations of a drive can be downloaded then uploaded to compatible drive.	ATV31, ATV61 and ATV71	VW3A8120	175.00
<b>User Interface Kits</b>				
Powersuite (SoMove) Test and Commissioning Software Kit	Software on CD-ROM. For use with Microsoft Windows 95, 98, NT, and XP operating systems for PCs	ATV31 all ranges	VW3A8104	150.00
PC Cable for Test and Commissioning Software	Includes a 3 meter (9.8 ft) cable, an RS-485/RS-232C adapter, and connectors	All Altivar Drives	VW3A8106	75.00

**NOTE:** Reference Catalog #8800CT0401 for communication cables.

**Table 21: Options—Field Installed Kits**

	Description	For Use on Drives	Catalog Number	\$ Price
DIN Rail Mount Kit	DIN Rail Mounting Plate for 35 mm wide DIN rail	ATV31H018M2, ATV31H037M2, ATV31H055M2, ATV31H075M2, ATV31H018M3X, ATV31H037M3X, ATVH055M3X, ATV31H075M3X	VW3A11851	25.00
		ATV31HU11M2, ATV31HU15M2, ATV31HU11M3X, ATV31HU15M3X, ATV31HU22M3X, ATV31H037N4, ATV31H055N4, ATV31H075N4, ATV31HU11N4, ATV31HU15N4, ATV31H075S6X, ATV31HU15S6X	VW3A31852	25.00
Conduit Entrance Kit	Multiple knockout sizes Installation of conduit entrance kit and retention of vent cover on top of drive controller provides the ATV31 with UL Type 1 rating.	ATV31H018M2, ATV31H037M2, ATV31H055M2, ATV31H075M2	VW3A31812	45.00
		ATV31H018M3X, ATV31H037M3X, ATV31H055M3X, ATV31H075M3X	VW3A31811	45.00
		ATV31HU11M3X, ATV31HU15M3X	VW3A31813	45.00
		ATV31HU11M2, ATV31HU15M2, ATV31HU22M3X, ATV31H037N4, ATV31H055N4, ATV31H075N4, ATV31HU11N4, ATV31HU15N4, ATV31H075S6X, ATV31HU15S6X	VW3A31814	45.00
		ATV31HU22M2, ATV31HU30M3X, ATV31HU40M3X, ATV31HU22N4, ATV31HU30N4, ATV31HU40N4, ATV31HU22S6X, ATV31HU40S6X	VW3A31815	45.00
		ATV31HU55M3X, ATV31HU75M3X, ATV31HU55N4, ATV31HU75N4, ATV31HU55S6X, ATV31HU75S6X	VW3A31816	45.00
ATV28 Replacement Kit	This kit contains brackets that adapt the spacing of the ATV31 mounting holes to be equivalent to that of an ATV28 with the same rating. This will permit the ATV31 to be secured to the panel holes and mounting hardware already in place for the ATV28.	ATV31H018M2, ATV31H037M2, ATV31H055M2, ATV31H075M2, ATV31H018M3X, ATV31H037M3X, ATV31H055M3X, ATV31H075M3X	VW3A31821	25.00
		ATV31HU11M2, ATV31HU15M2, ATV31HU11M3X, ATV31HU15M3X, ATV31HU22M3X, ATV31H075S6X, ATV31HU15S6X	VW3A31822	25.00
		ATV31HU55N4, ATV31HU75N4, ATV31HU55M3X, ATV31HU75M3X, ATV31HU55S6X, ATV31HU75S6X	VW3A31823	25.00
Dynamic Braking Resistor Kit	DB resistors are provided in a Type 1 enclosure and are thermally protected.	ATV31H018M2-037M2, ATV31H018M3X-037M3X, ATV31H037N4-U40N4	VW3A66711	422.00
		ATV31H055M2-U22M2, ATV31H055M3X-U22M3X, ATV31HU55N4-U75N4	VW3A66712	633.00
		ATV31HU30M3X-U40M3X, ATV31HD11N4-D15N4	VW3A66713	950.00
		ATV31HU55M3X-U75M3X	VW3A66714	1266.00
		ATV31HD11M3X-D15M3X	VW3A66715	1846.00

**Options—Field Installed Kits (Continued)**

Description		For Use on Drives	Catalog Number	\$ Price				
Line Reactors	230/460 V	See page 56 of this Price Guide.						
	575 V	Open Style	ATV31H075S6X	RL00202	158.00			
			ATV31HU15S6X ATV31HU22S6X	RL00403	163.00			
			ATV31HU40S6X ATV31HU55S6X ATV31HU75S6X ATV31HD11S6X ATV31HD15S6X	RL00803 RL00802 RL01202 RL01802 RL02502	245.00 179.00 200.00 253.00 291.00			
			ATV31H075S6X	RL00212	289.00			
			ATV31HU15S6X ATV31HU22S6X	RL00413	294.00			
		Enclosed (Type 1)	ATV31HU40S6X ATV31HU55S6X ATV31HU75S6X ATV31HD11S6X ATV31HD15S6X	RL00813 RL00812 RL01212 RL01812 RL02512	379.00 310.00 332.00 388.00 507.00			
			RFI Input Filter	For compliance with European (CE) conducted emissions standard 55022 Class B (Class A filter built into 230/460 V ATV31 drives)	Single phase supply voltage: 200–240 V 50/60 Hz	ATV31H037M2 ATV31H055M2 ATV31H075M2	VW3A31401	58.00
						ATV31HU11M2 ATV31HU15M2	VW3A31403	79.00
						ATV31HU22M2	VW3A31405	108.00
3-phase supply voltage: 200–240 V 50/60 Hz					ATV31H018M3X ATV31H037M3X ATV31H055M3X ATV31H075M3X	VW3A31402	72.00	
	ATV31HU11M3X ATV31HU15M3X ATV31HU22M3X	VW3A31404			90.00			
	ATV31HU30M3X ATV31HU40M3X	VW3A31406			133.00			
	ATV31HU55M3X ATV31HU75M3X	VW3A31407			189.00			
	ATV31HD11M3X ATV31HD15M3X	VW3A31408			297.00			
3-phase supply voltage: 380–500 V 50/60 Hz	ATV31HD11N4 ATV31HD15N4	VW3A31409			243.00			
	ATV31H037N4 ATV31H055N4 ATV31H075N4 ATV31HU11N4 ATV31HU15N4	VW3A31404			90.00			
	ATV31HU22N4 ATV31HU30N4 ATV31HU40N4	VW3A31406	133.00					
	ATV31HU55N4 ATV31HU75N4	VW3A31407	189.00					
ATV31HD11N4 ATV31HD15N4	VW3A31409	243.00						

**Table 22: Altivar® 71 Selection and Pricing**



LCD Keypad



LED Keypad

Input Line Voltage	Constant Torque				\$ Price		\$ Price		\$ Price
	Three-Phase Motor Power		Continuous Output Current						
	hp	kW	A						
208/240 Vac Single Phase	0.5	0.37	3	ATV71H075M3▲▼	652.00	ATV71H075M3T1	697.00	ATV71H075M3Z	557.00
	1	0.75	4.8	ATV71HU15M3▲▼	684.00	ATV71HU15M3T1	729.00	ATV71HU15M3Z	589.00
	2	1.5	8	ATV71HU22M3▲▼	796.00	ATV71HU22M3T1	841.00	ATV71HU22M3Z	701.00
	3	2.2	11	ATV71HU30M3▲▼	984.00	ATV71HU30M3T1	1029.00	ATV71HU30M3Z	889.00
	4	3	13.7	ATV71HU40M3▲◆	1150.00	ATV71HU40M3T1◆◆	1195.00	ATV71HU40M3Z◆◆	1055.00
	5	4	17.5	ATV71HU55M3▲◆◆▼	1458.00	ATV71HU55M3T1◆◆	1503.00	ATV71HU55M3Z◆◆	1363.00
	7.5	5.5	27.5	ATV71HU75M3▲◆◆▼	1790.00	ATV71HU75M3T1◆◆	1835.00	ATV71HU75M3Z◆◆	1695.00
208/240 Vac Three Phase	0.5	0.37	3	ATV71H037M3▲▼	616.00	ATV71H037M3T1	661.00	ATV71H037M3Z	521.00
	1	0.75	4.8	ATV71H075M3▲▼	652.00	ATV71H075M3T1	697.00	ATV71H075M3Z	557.00
	2	1.5	8	ATV71HU15M3▲▼	684.00	ATV71HU15M3T1	729.00	ATV71HU15M3Z	589.00
	3	2.2	11	ATV71HU22M3▲▼	796.00	ATV71HU22M3T1	841.00	ATV71HU22M3Z	701.00
	4	3	13.7	ATV71HU30M3▲▼	984.00	ATV71HU30M3T1	1029.00	ATV71HU30M3Z	889.00
	5	4	17.5	ATV71HU40M3▲▼	1150.00	ATV71HU40M3T1	1195.00	ATV71HU40M3Z	1055.00
	7.5	5.5	27.5	ATV71HU55M3▲▼	1458.00	ATV71HU55M3T1	1503.00	ATV71HU55M3Z	1363.00
	10	7.5	33	ATV71HU75M3▲▼	1790.00	ATV71HU75M3T1	1835.00	ATV71HU75M3Z	1695.00
	15	11	54	ATV71HD11M3X◆◆△	2270.00	ATV71HD11M3XT1◆	2315.00	ATV71HD11M3XZ◆	2175.00
	20	15	66	ATV71HD15M3X◆◆△	2850.00	ATV71HD15M3XT1◆	2895.00	—	—
	25	18	75	ATV71HD18M3X◆◆△	3422.00	ATV71HD18M3XT1◆	3487.00	—	—
	30	22	88	ATV71HD22M3X◆◆△	4170.00	ATV71HD22M3XT1◆	4235.00	—	—
	40	30	120	ATV71HD30M3X◆◆△	5348.00	ATV71HD30M3XT1◆	5433.00	—	—
	50	7	144	ATV71HD37M3X◆◆△	6212.00	ATV71HD37M3XT1◆	6297.00	—	—
	60	45	176	ATV71HD45M3X◆◆△	7356.00	ATV71HD45M3XT1◆	7491.00	—	—
	75	55	221	ATV71HD55M3X◆◆△	8870.00	ATV71HD55M3XT1◆	9330.00	—	—
	100	75	285	ATV71HD75M3X◆◆△	10658.00	ATV71HD75M3XT1◆	11211.00	—	—

- ▲ Option to have product treated for increased protection for dusty and corrosive environments. This product is not stocked. Add "S337" to the end of the catalog number and multiply the listed price by 1.2 to obtain new price. With this option, exposed copper is tinned, circuit boards are conformal coated in critical areas and plastics are treated to better withstand the corrosive nature of certain oils. This option is standard on 55 kW/75 hp @ 230 Vac and higher & 90 kW/125 hp @ 460 Vac and higher.
- These products require a user supplied 3% line reactor when used with single-phase input.
- ◆ Product does not contain an EMC filter.
- ★ Product ships with a DC choke that must be field mounted. A 5% line reactor may be purchased and installed in place of the DC choke. Add "D" to the end of the catalog number to receive just the AC drive and multiply the listed price by .96 to obtain new price.
- ▼ Also possible for use with a synchronous motor. Add "383" to the end of the catalog number and multiply the listed price by 1.2 to obtain new price.
- △ Option to have product treated for increased protection for dusty and corrosive environments. This product is not stocked. Add "337" to the end of the catalog number and multiply the listed price by 1.2 to obtain new price. With this option, exposed copper is tinned, circuit boards are conformal coated in critical areas and plastics are treated to better withstand the corrosive nature of certain oils. This option is standard on 55 kW/75 hp @ 230 Vac and higher and 90 kW/125 hp @ 460 Vac and higher.
- Conformal coating is standard.
- ◇ An AC 5% line reactor is mandatory.

**Altivar® 71 Selection and Pricing (continued)**



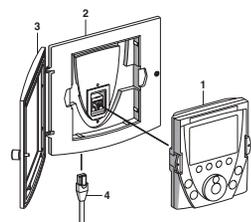
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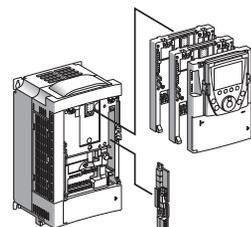
AT71HC31Y

Input Line Voltage	Constant Torque			 Catalog Number with LCD Keypad (Stocked)	\$ Price	 Catalog Number to have ATV71 drive and Type 1 conduit entry kit shipped as one line item. Field installation required (Packaged as kit at warehouse).	\$ Price	 Catalog Number with LED Keypad (Non-stocked)	\$ Price
	Three-Phase Motor Power		Continuous Output Current						
	hp	kW							
400/480 Vac Three Phase	1	0.75	2.3	ATV71H075N4▲▼	794.00	ATV71H075N4T1	839.00	ATV71H075N4Z	699.00
	2	1.5	4.1	ATV71HU15N4▲▼	912.00	ATV71HU15N4T1	957.00	ATV71HU15N4Z	817.00
	3	2.2	5.8	ATV71HU22N4▲▼	1110.00	ATV71HU22N4T1	1155.00	ATV71HU22N4Z	1015.00
	4	3	7.8	ATV71HU30N4▲▼	1250.00	ATV71HU30N4T1	1295.00	ATV71HU30N4Z	1155.00
	5	4	10.5	ATV71HU40N4▲▼	1316.00	ATV71HU40N4T1	1361.00	ATV71HU40N4Z	1221.00
	7.5	5.5	14.3	ATV71HU55N4▲▼	1584.00	ATV71HU55N4T1	1629.00	ATV71HU55N4Z	1489.00
	10	7.5	17.6	ATV71HU75N4▲▼	1924.00	ATV71HU75N4T1	1969.00	ATV71HU75N4Z	1829.00
	15	11	27.7	ATV71HD11N4▲▼	2278.00	ATV71HD11N4T1	2323.00	ATV71HD11N4Z	2183.00
	20	15	33	ATV71HD15N4▲▼	2832.00	ATV71HD15N4T1	2877.00	ATV71HD15N4Z	2737.00
	25	18	41	ATV71HD18N4▲▼	3408.00	ATV71HD18N4T1	3453.00	ATV71HD18N4Z	3313.00
	30	22	48	ATV71HD22N4▲▼	3710.00	ATV71HD22N4T1	3775.00	ATV71HD22N4Z	3615.00
	40	30	66	ATV71HD30N4▲▼	4566.00	ATV71HD30N4T1	4631.00	ATV71HD30N4Z	4471.00
	50	37	79	ATV71HD37N4▲▼	5370.00	ATV71HD37N4T1	5435.00	ATV71HD37N4Z	5275.00
	60	45	94	ATV71HD45N4▲▼	6742.00	ATV71HD45N4T1	6877.00	ATV71HD45N4Z	6647.00
	75	55	116	ATV71HD55N4▲▼	7762.00	ATV71HD55N4T1	7897.00	ATV71HD55N4Z	7667.00
	100	75	160	ATV71HD75N4▲▼	8862.00	ATV71HD75N4T1	8997.00	ATV71HD75N4Z	8767.00
	125	90	179	ATV71HD90N4★▼	9742.00	ATV71HD90N4T1	10202.00	—	—
	150	110	215	ATV71HC11N4★▼	11002.00	ATV71HC11N4T1	11555.00	—	—
	200	130	259	ATV71HC13N4★▼	12642.00	ATV71HC13N4T1	13215.00	—	—
	250	160	314	ATV71HC16N4★▼	14282.00	ATV71HC16N4T1	14870.00	—	—
300	200	387	ATV71HC20N4★▼☆	16462.00	ATV71HC20N4T1	17066.00	—	—	
400	250	481	ATV71HC25N4★▼☆	19382.00	ATV71HC25N4T1	19986.00	—	—	
450	280	550	ATV71HC28N4★▼☆	23002.00	ATV71HC28N4T1	23606.00	—	—	
500	310	616	ATV71HC31N4★▼☆	27922.00	—	—	—	—	
600	400	759	ATV71HC40N4★▼☆	37392.00	—	—	—	—	
700	500	941	ATV71HC50N4★▼☆	52041.00	—	—	—	—	
575/690 Vac Three Phase	2	2.2	2.7	ATV71HU22Y□	1889.00	—	—	—	—
	3	3	3.9	ATV71HU30Y□	1990.00	—	—	—	—
	4	4	5.8	ATV71HU40Y□	2009.00	—	—	—	—
	5	5.5	6.1	ATV71HU55Y□	2380.00	—	—	—	—
	7.5	7.5	9	ATV71HU75Y□	2799.00	—	—	—	—
	10	11	11	ATV71HD11Y□	3380.00	—	—	—	—
	15	15	17	ATV71HD15Y□	3979.00	—	—	—	—
	20	18.5	22	ATV71HD18Y□	4790.00	—	—	—	—
	25	22	27	ATV71HD22Y□	5780.00	—	—	—	—
	30	30	32	ATV71HD30Y□	6999.00	—	—	—	—
	40	37	41	ATV71HD37Y□	8579.00	—	—	—	—
	50	45	52	ATV71HD45Y□	10379.00	—	—	—	—
	60	55	62	ATV71HD55Y□	12199.00	—	—	—	—
	75	75	77	ATV71HD75Y□	14399.00	—	—	—	—
	100	90	99	ATV71HD90Y□	16899.00	—	—	—	—
	125	110	125	ATV71HC11Y□	19179.00	—	—	—	—
	150	132	150	ATV71HC13Y□◇	23795.00	—	—	—	—
175	160	180	ATV71HC16Y□◇	24290.00	—	—	—	—	
200	200	220	ATV71HC20Y□◇☆	28950.00	—	—	—	—	
250	250	290	ATV71HC25Y□◇☆	35950.00	—	—	—	—	
350	315	355	ATV71HC31Y□◇☆	46750.00	—	—	—	—	
450	400	420	ATV71HC40Y□◇☆	59590.00	—	—	—	—	
550	500	543	ATV71HC50Y□◇☆	78490.00	—	—	—	—	
700	630	675	ATV71HC63Y□◇☆	103390.00	—	—	—	—	

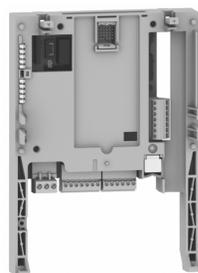
- ▲ Option to have product treated for increased protection for dusty and corrosive environments. This product is not stocked. Add "S337" to the end of the catalog number and multiply the listed price by 1.2 to obtain new price. With this option, exposed copper is tinned, circuit boards are conformal coated in critical areas and plastics are treated to better withstand the corrosive nature of certain oils. This option is standard on 55 kW/75 hp @ 230 Vac and higher & 90 kW/125 hp @ 460 Vac and higher.
- These products require a user supplied 3% line reactor when used with single-phase input.
- ◆ Product does not contain an EMC filter.
- ★ Product ships with a DC choke that must be field mounted. A 5% line reactor may be purchased and installed in place of the DC choke. Add "D" to the end of the catalog number to receive just the AC drive and multiply the listed price by .96 to obtain new price.
- ▼ Also possible for use with a synchronous motor. Add "383" to the end of the catalog number and multiply the listed price by 1.2 to obtain new price.
- △ Option to have product treated for increased protection for dusty and corrosive environments. This product is not stocked. Add "337" to the end of the catalog number and multiply the listed price by 1.2 to obtain new price. With this option, exposed copper is tinned, circuit boards are conformal coated in critical areas and plastics are treated to better withstand the corrosive nature of certain oils. This option is standard on 55 kW/7 hp @ 230 Vac and higher and 90 kW/125 hp @ 460 Vac and higher.
- Conformal coating is standard.
- ◇ An AC 5% line reactor is mandatory.
- ☆ These products do not contain a dynamic braking transistor. A separate transistor must be added for applications requiring dynamic braking.



LCD Keypad Mounting Kits



Option Card Assembly



I/O Option Card



Communication Option Card



Incremental Encoder Interface Option Card

**Table 23: Options—Field Installed**

	Description	For Use on Drives	Catalog No.	\$ Price	
<b>Operator Interface</b>	LCD graphic keypad: IP54 rating	any ATV61 any ATV71	VW3A1101	115.00	
	Remote mounting kit: includes bezel and mounting hardware		VW3A1102	55.00	
	Door for use with remote mount kit for IP65 rating		VW3A1103	45.00	
	Cable for remote mounting LCD graphic keypad RJ-45 connector on each end		1 meter	VW3A1104R10	35.00
			3 meters	VW3A1104R30	35.00
			5 meter	VW3A1104R50	35.00
10 meters		VW3A1104R100	45.00		
RJ-45 female—female adaptor to connect LCD keypad and cable. Not required if using VW3A1102.	VW3A1105	35.00			
<b>PowerSuite™ Software Options</b>	PowerSuite™ software on CD for PC	Altivar AC drives Altistart 48 TesyS U—line	VW3A8104	150.00	
	Cable connection kit for PC		VW3A8106	75.00	
<b>For Wireless Connection</b>	Modbus® to Bluetooth® Gateway and RS-485 converter	any ATV61 any ATV71	VW3A8114	125.00	
<b>I/O Adaptor</b>	115 Vac logic input adaptor adapts 7 logic inputs for use with user supplied 115 Vac signals	any ATV61 any ATV71	VW3A3101	195.00	
<b>I/O Extension Option Cards</b>	Basic I/O option card—4 logic inputs, 2 logic outputs, 1 Form C relay output, an input for PTC motor probes, a 24 Vdc output, a—10 Vdc output	any ATV61 any ATV71	VW3A3201	165.00	
	Extended I/O option card—contains all the I/O on the Basic I/O option card plus 2 analog inputs, 2 analog outputs, 1 pulse input		VW3A3202	195.00	
<b>CANopen Adapter</b>	This adaptor connects to the RJ-45 port and provides a 9-pin male SUB-D connector conforming to the CANopen standard (CIA DRP 303-1)	any ATV61 any ATV71	VW3CANA71	45.00	
<b>CANopen Connector</b>	9-pin female SUB-D with line terminator (can be disabled). 180° cable outlet CAN-H, CAN-L, CAN-GND connection	any ATV61 any ATV71	VW3CANKCDF180T	45.00	
	with RS-422 outputs, 5 Vdc		VW3A3401	85.00	
	with RS-422 outputs, 15 Vdc		VW3A3402	85.00	
	with open collector outputs, 12 Vdc		VW3A3403	85.00	
	with open collector outputs, 15 Vdc		VW3A3404	85.00	
	with push-pull outputs, 12 Vdc		VW3A3405	85.00	
	with push-pull outputs, 15 Vdc		VW3A3406	85.00	
	with push-pull outputs, 24 Vdc		VW3A3407	85.00	
	Resolver		VW3A3408	85.00	
	Universal with SinCos, SinCos Hiperface®, SinCos EnDat® or SSI output incremental with RS422 outputs and encoder emulation		VW3A3409	85.00	
	VW3A3411	85.00			
<b>Communication Option Cards</b>	Modbus® Plus card	any ATV61 any ATV71	VW3A3302	550.00	
	Modbus® / Unitelway card		VW3A3303	225.00	
	Modbus® TCP/IP Daisy Chain		VW3A3310D	275.00	
	Interbus® S card		VW3A3304	550.00	
	Profibus DP card		VW3A3307	550.00	
	Profibus DPv1 card		VW3A3307S371	550.00	
	DeviceNet™ card		VW3A3309	225.00	
	Ethernet/IP card		VW3A3316	275.00	
	Fipio® card		VW3A3311	550.00	
	Lonworks® card		VW3A3312	550.00	
	MetaSYS® N2 card		VW3A3313	225.00	
	APOGEE FLN P1 card		VW3A3314	225.00	
	BACnet card		VW3A3315	225.00	
<b>Controller Inside Option Card</b>	Programmable option card, conforms with IEC61131-3 programming standard.	any ATV61 any ATV71	VW3A3501	550.00	
<b>Water Solutions Control Card</b>	This option card contains a variety of pre-programmed functions and features to manage multi-pump installations.	any ATV61 any ATV71	VW3A3503	650.00	
<b>Simple Loader</b>	Using RJ45 port connections, the configurations of a drive can be downloaded then uploaded to compatible drive.	ATV31, ATV61 and ATV71	VW3A8120	175.00	

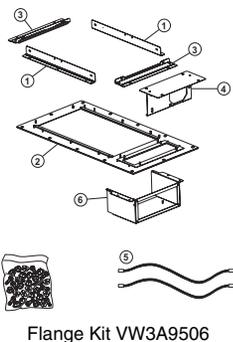
The drive cannot support the VW3A3503 water solutions card and the VW3A3501 controller inside option card simultaneously.  
For use with the ATV71H...383 drive ONLY.

**Options—Field Installed (continued)**

Description		For Use on Drives	Catalog No.	\$ Price			
<b>Fan Kit</b>	Installation of kit enables the drive to operate in higher ambient temperatures. Fan mounts on drive. Consult the product catalog for more information.	ATV61/71HD18M3X...HD22M3X, ATV61/71HD22N4	VW3A9404	135.00			
		ATV61/71HD30N4...HD37N4	VW3A9405	145.00			
		ATV61/71HD30M3X...HD45M3X	VW3A9406	165.00			
		ATV61/71HD45N4...HD75N4	VW3A9407	195.00			
<b>Description</b>		<b>ATV61: Options and Accessories — Variable Torque Applications</b>					
		<b>ATV58 Drive</b>	<b>Replaced by</b>	<b>Reference Mounting Plate</b>			
				<b>\$ Price</b>			
<b>Mounting Plate Kit</b>	Kit includes: Mechanical adaptors required for mounting and Altivar 61/71 drive in the place of an Altivar 58 or Altivar 58F drive using same holes.	<b>Single-phase supply voltage: 200...240V 50/60 Hz</b>					
		ATV58HU09M2ZU	ATV61H075M3	VW3A9301	83.00		
		ATV58HU18M2ZU	ATV61HU15M3	VW3A9301	83.00		
		ATV58HU29M2ZU	ATV61HU22M3	VW3A9303	83.00		
		ATV58HU41M2ZU	ATV61HU30M3	VW3A9303	83.00		
		ATV58HU72M2ZU	ATV61HU40M3	VW3A9304	93.00		
		ATV58HU90M2ZU	ATV61HU55M3	VW3A9306	133.00		
		ATV58HD12M2ZU	ATV61HU75M3	VW3A9307	133.00		
		<b>Three-phase supply voltage 200...240 V 50/60 hz</b>					
		ATV58HU29M2ZU	ATV61HU15M3	VW3A9302	83.00		
		ATV58HU41M2ZU	ATV61HU22M3	VW3A9303	83.00		
		ATV58HU54M2ZU	ATV61HU30M3	VW3A9304	93.00		
		ATV58HU72M2ZU	ATV61HU40M3	VW3A9304	93.00		
		ATV58HU90M2ZU	ATV61HU55M3	VW3A9306	133.00		
		ATV58HD12M2ZU	ATV61HU75M3	VW3A9307	133.00		
		ATV58HD16M2XZU	ATV61HD11M3X	VW3A9309	170.00		
		ATV58HD16M2XZU	ATV61HD15M3X	VW3A9309	170.00		
		ATV58HD23M2XZU	ATV61HD18M3X	VW3A9310	170.00		
		ATV58HD28M2XZU	ATV61HD22M3X	VW3A9312	337.00		
		ATV58HD33M2XZU	ATV61HD30M3X	VW3A9312	337.00		
		ATV58HD46M2XZU	ATV61HD37M3X	VW3A9312	337.00		
		<b>Three-phase supply voltage: 380...480V 50/60 Hz</b>					
		ATV58HU18N4ZU	ATV61H075N4	VW3A9302	83.00		
		ATV58HU29N4ZU	ATV61HU15N4	VW3A9302	83.00		
		ATV58HU41N4ZU	ATV61HU22N4	VW3A9302	83.00		
		ATV58HU54N4XZU	ATV61HU40N4	VW3A9304	93.00		
		ATV58HU72N4XZU	ATV61HU55N4	VW3A9305	93.00		
		ATV58HU90N4XZU	ATV61HU75N4	VW3A9305	93.00		
		ATV58HD12N4XZU	ATV61HD11N4	VW3A9307	133.00		
		ATV58HD16N4XZU	ATV61HD15N4	not available	—		
		ATV58HD23N4XZU	ATV61HD18N4	VW3A9308	138.00		
		ATV58HD28N4XZU	ATV61HD22N4	VW3A9310	170.00		
		ATV58HD33N4XZU	ATV61HD30N4	VW3A9310	170.00		
		ATV58HD46N4XZU	ATV61HD37N4	VW3A9310	170.00		
		ATV58HD54N4XZU	ATV61HD45N4	VW3A9312	337.00		
		ATV58HD64N4XZU	ATV61HD55N4	VW3A9312	337.00		
		ATV58HD79N4XZU	ATV61HD75N4	VW3A9312	337.00		
				<b>ATV71: Options and Accessories – Constant Torque Applications</b>			
				<b>ATV58 Drive</b>	<b>Replaced by</b>	<b>Reference Mounting Plate</b>	
						<b>\$ Price</b>	
		<b>Mounting Plate Kit</b>	Kit includes: Mechanical adaptors required for mounting and Altivar 61/71 drive in the place of an Altivar 58 or Altivar 58F drive using same holes.	<b>Single-phase supply voltage: 200...240V 50/60 Hz</b>			
				ATV58HU09M2ZU	ATV71H075M3	VW3A9301	83.00
				ATV58HU18M2ZU	ATV71HU15M3	VW3A9301	83.00
				ATV58HU29M2ZU	ATV71HU22M3	VW3A9303	83.00
				ATV58HU41M2ZU	ATV71HU30M3	VW3A9303	83.00
				ATV58HU72M2ZU	ATV71HU40M3	VW3A9304	93.00
				ATV58HU90M2ZU	ATV71HU55M3	VW3A9306	133.00
				ATV58HD12M2ZU	ATV71HU75M3	VW3A9307	133.00
<b>Three-phase supply voltage: 200...240V 50/60 Hz</b>							
ATV58HU29M2ZU	ATV71HU15M3			VW3A9302	83.00		
ATV58HU41M2ZU	ATV71HU22M3			VW3A9303	83.00		
ATV58HU54M2ZU	ATV71HU30M3			VW3A9304	93.00		
ATV58HU72M2ZU	ATV71HU40M3			VW3A9304	93.00		
ATV58HU90M2ZU	ATV71HU55M3			VW3A9306	133.00		
ATV58HD12M2ZU	ATV71HU75M3			VW3A9307	133.00		
ATV58HD16M2XZU	ATV71HD11M3X			VW3A9309	170.00		
ATV58HD23M2XZU	ATV71HD15M3X			VW3A9309	170.00		
ATV58HD28M2XZU	ATV71HD18M3X			VW3A9310	337.00		
ATV58HD33M2XZU	ATV71HD22M3X			VW3A9312	337.00		
ATV58HD46M2XZU	ATV71HD30M3X			VW3A9312	337.00		
<b>Three-phase supply voltage 380...480 V 50/60 HZ</b>							
ATV58HU18N4ZU	ATV71H075N4			VW3A9302	83.00		
ATV58HU29N4ZU	ATV71HU15N4			VW3A9302	83.00		
ATV58HU41N4ZU	ATV71HU22N4			VW3A9302	83.00		
ATV58HU54N4ZU	ATV71HU30N4			VW3A9304	93.00		
ATV58HU72N4ZU	ATV71HU40N4			VW3A9304	93.00		
ATV58HU90N4ZU	ATV71HU55N4			VW3A9305	93.00		
ATV58HD12N4ZU	ATV71HU75N4			VW3A9306	133.00		
ATV58HD16N4ZU	ATV71HD11N4			VW3A9307	133.00		
ATV58HD23N4ZU	ATV71HD15N4			VW3A9308	138.00		
ATV58HD28N4ZU	ATV71HD18N4			VW3A9309	170.00		
ATV58HD33N4ZU	ATV71HD22N4			VW3A9310	170.00		
ATV58HD46N4ZU	ATV71HD30N4			VW3A9310	170.00		
ATV58HD54N4ZU	ATV71HD37N4			VW3A9312	337.00		
ATV58HD64N4ZU	ATV71HD45N4			VW3A9312	337.00		
ATV58HD79N4ZU	ATV71HD55N4			VW3A9312	337.00		

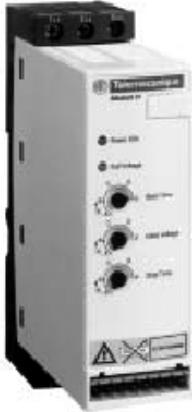
- ▲ Verify motor/drive ratings and application for proper replacement selections.
- Catalog number may or may not contain an "X" in this position.

Options—Field Installed (continued)



Description		For Use on Drives	Catalog No.	\$ Price			
<b>Flange Kit</b>	Kit includes: a metal frame, seals, mounting hardware, and bracket to mount fan kit so fan can be accessed from the front of the drive template.  Kit used to mount the heatsink of the drive outside of an enclosure.	ATV61/71H037M3...HU15M3	VW3A9501	255.00			
		ATV61/71H075N4...HU22N4					
		ATV61/71HU22M3...HU40M3	VW3A9502	279.00			
		ATV61/71HU30N4...HU40N4					
		ATV61/71HU55M3	VW3A9503	325.00			
		ATV61/71HU55N4, HU75N4					
		ATV61/71HU75M3	VW3A9504	358.00			
		ATV61/71HD11N4					
		ATV61/71HD11M3X...HD15M3X	VW3A9505	419.00			
		ATV61/71HD15N4, HD18N4					
		ATV61/71HD18M3X...HD22M3X	VW3A9506	438.00			
		ATV61/71HD22N4, ATV61/71HU30Y...HD30Y					
		ATV61/71HD30N4, HD37N4	VW3A9507	469.00			
		ATV61/71HD30M3X...HD45M3X					
		ATV61/71HD45N4...HD75N4, ATV61/71HD37Y...HD90Y	VW3A9509	477.00			
		ATV61/71HD55M3X...HD75M3X					
		ATV61/71HD90N4...HC11N4	VW3A9510	500.00			
		ATV71HD55M3X, ATV71HD90N4					
		ATV61HD90M3X, ATV61HC13N4	VW3A9511	667.00			
		ATV71HD75M3X, ATV71HC11N4					
		ATV61HC16N4, ATV61HC20Y, ATV61/71HC11Y...HC16Y, ATV71HC13N4	VW3A9512	1053.00			
		ATV61HC22N4, ATV71HC16N4					
		ATV61HC25N4...HC31N4	VW3A9514	1053.00			
		ATV61HC40Y					
		ATV61/71HC25Y, HC31Y	VW3A9515	1062.00			
ATV71HC20N4...HC28N4							
ATV61HC25N4...HC31N4 with VW3A7101 braking transistor	VW3A9515	1062.00					
ATV61HC40Y							
ATV61/71HC25Y, HC31Y	VW3A9515	1062.00					
ATV71HC20N4...HC28N4 with VW3A7101 braking transistor							
ATV71HC20Y	VW3A9515	1062.00					
ATV61HC40Y							
<b>Type 1 Conduit Kit</b>	Kit includes: a metal box, with conduit knockouts Kit provides conduit landing when wall mounting the drive	ATV61/71H037M3...HU15M3	VW3A9201	45.00			
		ATV61/71H075N4...HU22N4					
		ATV61/71HU22M3...HU40M3	VW3A9202	45.00			
		ATV61/71HU30N4...HU40N4					
		ATV61/71HU55M3	VW3A9203	45.00			
		ATV61/71HU55N4, HU75N4					
		ATV61/71HU75M3	VW3A9204	45.00			
		ATV61/71HD11N4					
		ATV61/71HD11M3X...HD15M3X	VW3A9205	45.00			
		ATV61/71HD15N4, HD18N4					
		ATV61/71HD18M3X...HD22M3X	VW3A9206	65.00			
		ATV61/71HD22N4					
		ATV61/71HU30Y...HD30Y	VW3A9207	65.00			
		ATV61/71HD30N4, HD37N4					
		ATV61/71HD30M3X...HD45M3X	VW3A9217	85.00			
		ATV61/71HD45N4...HD75N4					
		ATV61/71HD37Y...HD90Y	VW3A9208	135.00			
		ATV61HD55M3X...HD75M3X					
		ATV61HD90N4...HC11N4	VW3A9209	460.00			
		ATV71HD55M3X, ATV71HD90N4, ATV61HC11N4					
		ATV61HD90M3X, ATV61HC13N4	VW3A9210	553.00			
		ATV71HD75M3X, ATV71HC11N4					
		ATV61HC16N4, ATV71HC13N4	VW3A9211	573.00			
		ATV61/71HC11Y...HC16Y					
		ATV61HC20Y	VW3A9212	588.00			
		ATV61HC22N4, ATV71HC16N4					
		ATV61HC25N4...ATV61HC31N4	VW3A9213	604.00			
		ATV71HC20N4...HC28N4					
		ATV71HC20Y	VW3A9213	604.00			
		ATV61/71HC25Y, HC31Y					
		ATV61HC40Y	VW3A9214	604.00			
		ATV61HC25N4...HC31N4 with VW3A7101 braking transistor					
ATV71HC20Y	VW3A9214	604.00					
ATV61/71HC25Y, HC31Y							
ATV61HC40Y	VW3A9214	604.00					
ATV61HC40Y							
<b>Profibus Option Card Cover</b>	Type 1 cover for Profibus Option Card	<b>230V Drive controllers</b>		<b>480V Drive controllers</b>			
		<b>ATV61H****▲</b>	<b>ATV71H****</b>	<b>ATV61H****</b>	<b>ATV71H****</b>		
		075M3	037M3	075N4	075N4	VW3A9201PF	101.00
		U15M3	075M3	U15N4	U15N4		
		—	U15M3	U22N4	U22N4	VW3A9292PF	102.00
		U22M3	U22M3	U30N4	U30N4		
		U30M3	U30M3	U40N4	U40N4	VW3A9203PF	104.00
		U40M3	U40M3	—	—		
		U55M3	U55M3	U55N4	U55N4	VW3A9204PF	107.00
		—	—	U75N4	U75N4		
		U75M3	U75M3	D11N4	D11N4	VW3A9205PF	112.00
		D11M3X	D11M3X	D15N4	D15N4		
D15M3X	D15M3X	D18N4	D18N4				

▲ The symbol "\*" indicates the part of the number that varies with controller size or rating.



**ATS•01N2 Soft Starts**

Three-phase motors rated for 6 to 32 A at 230, 400, and 460 volts.

- TeSys U-line compatible** Full motor control solution
- Soft start and soft stop** 1–10 second ramp
- Motor voltage** 230, 400, 460
- Three-phase motor** 1 to 20 hp, 0.75–15 kW
- Internal shorting contactor** Cool, reliable operation
- Application** Derate for high duty cycle, temperature > 40°C, altitude > 1000 m (see ATS01 Catalog 8637CT0401 for more detail)
- Adjustments** Start and stop times (1–10 s) and initial (starting) voltage (30–80%)
- Voltage boost (Kickstart)** Activated by BOOST logic input—full voltage for first 12 cycles of motor starting (200 mS)
- LED display** Two: "Power ON" and "Full Voltage" (up to speed)
- Control inputs and outputs** 2 or 3 wire control, fault relay (also for isolation contactor control), "up to speed" logic output
- Plug-in control terminals** Ease of wiring

**Table 24: ATSU01N2 Family Selection and Pricing**  
For use with TeSys® U-line motor starter (24 Vdc control power)

A	Catalog Number	Three-Phase Motor Power				\$ Price
		230 V		400 V	460 V	
6	ATSU01N206LT	0.75–1.1 kW	1–1.5 hp	1.5–2.2 kW	2–3 hp	133.00
9	ATSU01N209LT	1.5 kW	2 hp	3–4 kW	5 hp	152.00
12	ATSU01N212LT	2.2–3 kW	3 hp	5.5 kW	7.5 hp	175.00
22	ATSU01N222LT	4–5.5 kW	5–7.5 hp	7.5–11 kW	10–15 hp	219.00
32	ATSU01N232LT	7.5 kW	10 hp	15 kW	20 hp	300.00

**NOTE:** The ATSU01N2 soft start must be externally supplied with 24 Vdc control power. If this is not available, select from the ATS01N2 table below.

The ATSU01N2 soft start is shipped with a custom ATSU01N2 to TeSys U-line power connector.

**Table 25: ATS01N2 Family Selection and Pricing**  
For use with TeSys® U-line▲, GV2, GV3, and other motor starters

A	Catalog Number	Three-Phase Motor Power				\$ Price
		230 V		400 V	460 V	
6	ATS01N206LU	0.75 / 1.1 kW	1 / 1.5 hp	—	—	133.00
9	ATS01N209LU	1.5 kW	2 hp	—	—	152.00
12	ATS01N212LU	2.2 / 3 kW	3 hp	—	—	175.00
22	ATS01N222LU	4 / 5.5 kW	5 / 7.5 hp	—	—	219.00
32	ATS01N232LU	7.5 kW	10 hp	—	—	300.00
6	ATS01N206QN	—	—	1.5 / 2.2 kW	—	133.00
9	ATS01N209QN	—	—	3 / 4 kW	—	152.00
12	ATS01N212QN	—	—	5.5 kW	—	175.00
22	ATS01N222QN	—	—	7.5 / 11 kW	—	219.00
32	ATS01N232QN	—	—	15 kW	—	300.00
6	ATS01N206RT	—	—	—	2 / 3 hp	133.00
9	ATS01N209RT	—	—	—	5 hp	152.00
12	ATS01N212RT	—	—	—	7.5 hp	175.00
22	ATS01N222RT	—	—	—	10 / 15 hp	219.00
32	ATS01N232RT	—	—	—	20 hp	300.00

▲ No separate control voltage is needed.

**Table 26: Accessory**

Description	Catalog No.	\$ Price
Custom power connector (between ATS01N2 and TeSys U-line motor starter)	VW3G4104	10.00





**ATS01N1 Soft Starts**

Single or three-phase motors rated for 3 to 12 A at 110, 208, 230, 400 and 460 volts

- Soft start (no soft stop)** 1–5 second ramp
- Motor voltage** 110, 208, 230, 400, 460
- Three-phase motor** 1/2 to 7.5 hp
- Single-phase motor** 1/4 to 2 hp
- External control power** 24 Vac/dc or 110–230 Vac
- Internal shorting contactor** 9 and 12 A models—cool, reliable operation
- Application** Derate for temperature > 40°C, altitude > 1000 m (see ATS01 Catalog 8637CT0401 for more detail)
- Adjustments** Start time (1–5 s) and initial (starting) voltage (30–80%)
- LED display** Two: "Power ON" and "Full Voltage" (up to speed)
- Plug-in control terminals** 9 and 12 A models—ease of wiring

**Table 27: ATS01N1 Selection and Pricing**

A	Catalog Number	Motor Power								\$ Price
		Single-Phase				Three-Phase				
		110 V	208 V	230 V		230 V		400 V	460 V	
3	ATS01N103FT	—	1/4 hp	0.37 kW	1/4 hp	0.37–0.55 kW	1/2 hp	1.1 kW	1–1.5 hp	100.00
6	ATS01N106FT	1/4 hp	1/2 hp	0.75 kW	1/2 hp	0.75–1.1 kW	1–1.5 hp	2.2 kW	2–3 hp	115.00
9	ATS01N109FT	1/3 hp	1 hp	1.1 kW	1 hp	1.5 kW	2 hp	4 kW	5 hp	130.00
12	ATS01N112FT	1/2 hp	1.5 hp	1.5 kW	2 hp	2.2 kW	3 hp	5.5 kW	7.5 hp	145.00

**Table 28: Accessory**

Description	Catalog No.	\$ Price
DZ5 MB DIN rail (L <sub>1</sub> ) adaptor for 3 and 6 A models (sold only in packages of 10)	RHZ66▲	3.60

▲ Discount Schedule I.

**ATS01 Higher Horsepower Soft Starts**

Three-phase motors rated for 32 to 85 A at 230, 400, 460, 575, and 690 volts.

- Soft start and soft stop** 1–25 second ramp
- Motor voltage** 230, 400, 460, 575, 690
- Three-phase motor** 10 to 75 hp, 7.5–85 kW
- External control power** 110 Vac
- Internal shorting contactor** Cool, reliable operation
- Application** Derate for high duty cycle and altitude > 2000 m. (see ATS01 Catalog 8637CT0401 for more detail). Maximum temperature = 55°C
- Adjustments** Start and stop times (1–25 s) and initial (starting) voltage (30–80%)
- LED display** "Power ON" and "Full Voltage" (up to speed)
- Control inputs and outputs** 2 or 3 wire control, fault relay (also for isolation contactor control), "Up to Speed" auxiliary relay (accessory: LAD8N11)

**Table 29: ATS01N2 Selection and Pricing**

A	Catalog Number	Three-Phase Motor Power					\$ Price	
		230 V		400 V	460 V	575 V		690 V
32	ATS01N230LY	7.5 kW	10 hp	15 Kw	20 hp	30 hp	30 kW	613.00
44	ATS01N244LY	11 kW	15 hp	22 kW	30 hp	40 hp	37 kW	799.00
72	ATS01N272LY	18.5 kW	25 hp	37 kW	50 hp	60 hp	55 kW	1013.00
85	ATS01N285LY	22 kW	30 hp	45 kW	60 hp	75 hp	85 kW	1227.00

**Table 30: Accessories**

Description	Catalog No.	\$ Price
"Up to Speed" auxiliary relay contact (attaches to side of ATS01)	LAD8N11▲	20.70
DIN rail adaptor (32 and 44 A models)	VY1H4101	25.00

▲ Discount Schedule I12.



### Altistart® 48 Soft Starts

The Altistart 48 soft start combines ease of selection with simple installation and high motor control performance. With its exclusive and patented motor Torque Control System, the Altistart 48 helps eliminate uncontrolled motor acceleration and deceleration, a problem inherent with standard voltage—ramp soft starts. The Altistart 48 includes features to help with motor and machine protection and is available for motors ranging from 208 to 575 volts. In addition to a built-in display and programming terminal, a remote keypad option and programming software is available to ease integration and commissioning. The Altistart 48 has a built-in Modbus port and is offered with serial communication gateways to such popular networks as Ethernet and DeviceNet.

### Open Style Soft Starts 50–60 Hz, Three-Phase, 690 V Maximum—AC3 Duty

The Altistart 48 soft start must be selected using the table below, based on nameplate full load ampere rating of the motor. The horsepower ratings shown in table are for reference only.

**Table 31: Altistart® 48 Selection and Pricing▲**

Standard Duty (Low Inertia Loads)■ Maximum Horsepower					Altistart® Soft Starts		
208 V	230 V	400 V	460 V	575 V	Rated A	Catalog Number	\$ Price
3	5	5.5	10	15	17	ATS48D17Y	780.00
5	7.5	7.5	15	20	22	ATS48D22Y	810.00
7.5	10	11	20	25	32	ATS48D32Y	840.00
10	—	15	25	30	38	ATS48D38Y	900.00
—	15	18.5	30	40	47	ATS48D47Y	950.00
15	20	22	40	50	62	ATS48D62Y	1200.00
20	25	30	50	60	75	ATS48D75Y	1280.00
25	30	37	60	75	88	ATS48D88Y	1500.00
30	40	45	75	100	110	ATS48C11Y	1700.00
40	50	55	100	125	140	ATS48C14Y	2100.00
50	60	75	125	150	170	ATS48C17Y	2300.00
60	75	90	150	200	210	ATS48C21Y	2600.00
75	100	110	200	250	250	ATS48C25Y	2900.00
100	125	132	250	300	320	ATS48C32Y	3300.00
125	150	160	300	350	410	ATS48C41Y	3900.00
150	—	220	350	400	480	ATS48C48Y	4700.00
—	200	250	400	500	590	ATS48C59Y	5400.00
200	250	315	500	600	660	ATS48C66Y	6200.00
250	300	355	600	800	790	ATS48C79Y	7200.00
350	350	400	800	1000	1000	ATS48M10Y	8600.00
400	450	500	1000	1200	1200	ATS48M12Y	10600.00

- ▲ Motor full load amperage (FLA) must not exceed the ampere rating of the soft start.
- Low Inertia—Connected motor load inertia equal or less than 10 times motor rotor inertia.
- High Inertia—Connected motor load inertia greater than 10 times motor rotor inertia.

**NOTE:** For severe duty or high inertia loads, derate by 1 hp size.

**Table 32: Altistart® 48 Options**

Description	Catalog Number	\$ Price
Remote Keypad Display Mounting Kit, including: Keypad with 3-character 7-segment display IP65 cover and seal, mounting screws, and 3 meter cable to connect keypad display to Altistart 48	VW3G48101	165.00
Cover for power terminals—Set of 6 for ATS48C14Y and ATS48C17Y	LA9F702★	61.00
Cover for power terminals—Set of 6 for ATS48C21Y, ATS48C25Y, and ATS48C32Y	LA9F703★	82.00
Ethernet Bridge	174CEV30020▼	1027.00
DeviceNet Gateway	LUFFP9Δ	495.00
Profibus DP Gateway	LUFFP7Δ	495.00
FIPIO Gateway	LUFFP1Δ	495.00
1/3 meter connection cable (RJ-45 to RJ-45)	VW3A8306R03	20.00
1 meter connection cable (RJ-45 to RJ-45)	VW3A8306R10	25.00
3 meter connection cable (RJ-45 to RJ-45)	VW3A8306R30	30.00
1/3 meter splitter cable (For RJ-45 daisy chain connection)	VW3A8306TF03	75.00
1 meter splitter cable (For RJ-45 daisy chain connection)	VW3A8306TF10	85.00
RJ45 terminator (2 per package)	VW3A8306RC	6.00
Modbus hub (Eight RJ-45 ports)	LU9GC3Δ	208.00
Powersuite commissioning software on CD◆	VW3A8104□	150.00
PowerSuite upgrade CD from most recent to new version◆	VW3A8105□	98.00
PC connection kit. To connect PC to Altistart 48 soft start◆	VW3A8106□	75.00
Pocket PC connection kit. To connect JORNADA® or iPAQ® PPC to Altistart soft start◆	VW3A8111□	95.00
Size M10 Bolt Kit	W808780210111	8.00
Size M12 Bolt Kit	W808780220111	10.00

- ◆ For more information, see Data Bulletin 8806DB0001.
- ★ Use discount schedule I12
- ▼ Use discount schedule PC41
- Δ discount schedule I11
- discount schedule CP4C

For additional information on Altistart 48, reference Catalog #8636CT0201.



### General Information

Enclosed Altistart 48 Soft Starts (Enclosed 48) are available from 11 to 604 amperes in Type 1, 12 and 3R enclosures. The Enclosed 48 soft start can provide soft starting (reduced voltage) and stopping with deceleration control with machine and motor protection of standard NEMA Design B squirrel cage asynchronous motors in the following ranges:

- 3–200 hp, 208 V
- 5–250 hp, 230 V
- 10–500 hp, 460 V
- 15–600 hp, 575 V

### Selection

The Enclosed 48 controller must be selected based on three main criteria:

- AC mains voltage supply (distribution voltage): Three-phase AC voltage: 208, 240, 480 or 600 V.
- The power and the nominal motor current (FLA) indicated on the motor nameplate.
- The type of application and the operating cycle. To simplify selection, applications are categorized as either standard duty or severe duty applications. Standard or severe duty applications define the limiting values of the current and the duty cycle ratings. **If severe duty is required, select the next higher horsepower device.**

Depending on the type of machine, the applications are categorized as standard or severe duty based on the starting characteristics, which are given by example are illustrated within the table below.

Type of Machine	Application	Functions performed by the ATS48	Starting Current (% In)	Starting Time (secs)
Centrifugal pump	Standard	Deceleration (reduction in pressure surges) Protection against underloads or inversion of the phase rotation direction	300	5 to 15
Piston pump	Standard	Control of running dry and direction of rotation of the pump	350	5 to 10
Fan	Standard Severe if > 30s	Detection of overloads caused by clogging or underloads (motor fan transmission broken) Braking torque on stopping	300	10 to 40
Cold compressor	Standard	Protection, even for special motors	300	5 to 10
Screw compressor	Standard	Protection against inversion of direction of phase rotation Contact for automatic draining on stopping	300	3 to 20
Centrifugal compressor	Standard Severe if > 30s	Protection against inversion of direction of phase rotation Contact for automatic emptying on stopping	350	10 to 40
Piston compressor	Standard	Protection against inversion of direction of phase rotation Contact for automatic emptying on stopping	350	5 to 10
Conveyor, transporter	Standard	Overload control for detecting faults or underload control for detecting breaks	300	3 to 10
Lifting screw	Standard	Overload control for detecting hard spots or underload control for detecting breaks	300	3 to 10
Drag lift	Standard	Overload control for detecting jamming or underload control for detecting breaks	400	2 to 10
Lift	Standard	Overload control for detecting jamming or underload control for detecting breaks Constant starting with variable load	350	5 to 10
Circular saw, band saw	Standard Severe if > 30s	Braking for fast stop	300	10 to 60
Pulper, butchery knife	Severe	Torque control on starting	400	3 to 10
Agitator	Standard	The current display indicates the density of the product	350	5 to 20
Mixer	Standard	The current display indicates the density of the product	350	5 to 10
Grinder	Severe	Braking to limit vibrations during stopping, overload control to detect jamming	450	5 to 60
Crusher	Severe	Braking to limit vibrations during stopping, overload control to detect jamming	400	10 to 40
Refiner	Standard	Torque control on starting and stopping	300	5 to 30
Press	Severe	Braking to increase the number of cycles	400	20 to 60

**Special Applications**

Contact Seneca Enclosed Drives TAG for additional application information and pricing for those applications requiring:

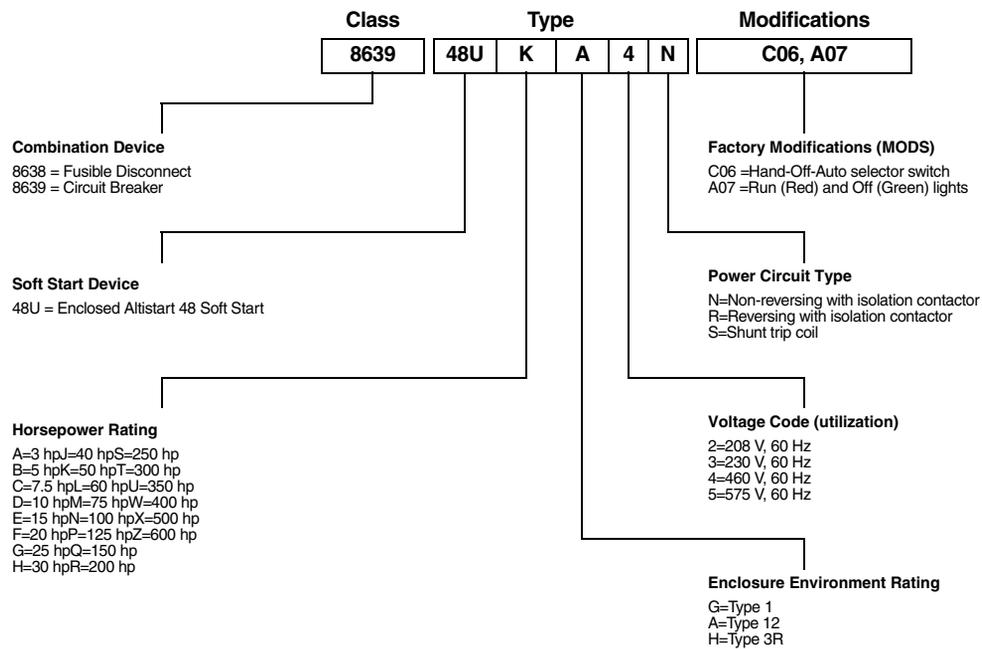
- Two-speed or delta-wye motors. The ATS48 can operate with a 2-speed motor. A motor demagnetizing period must elapse before changing from low speed to high speed in order to avoid anti-phase between the line supply and the motor, which would generate very high currents.
- Motors other than NEMA Design B.
- High efficiency motors.
- Low slip motors.
- Power factor correction capacitors. Do not connect power factor correction capacitors to the terminals of a motor controlled by an ATS48 soft start. The power factor capacitors must be controlled and connected to a line side contactor sequenced by the ATS48 at end of starting.
- Controller oversizing of more than 50%.
- Non-standard trip characteristics.
- Modifications not listed in this pricing guide.

- Horsepower greater than those listed in this pricing guide.
- Long motor cable lengths. Very long motor cables cause voltage drops due to the resistance of the cable. If the voltage drop is significant, it could affect the current consumption and the torque available. This criterion must be taken into account when selecting the motor and the starter.
- Miscellaneous application precautions. Do not use the ATS48 controller upstream of loads other than motors (i.e., transformers and resistance type loads)

**Pricing And Special Feature Assistance**

Square D/Schneider Electric personnel are to use the Q2C computer-based pricing system to determine Enclosed 48 controller pricing. For pricing and delivery assistance on equipment and options not listed in Q2C or this pricing guide, contact the Seneca Enclosed Drives Technical Applications Group (TAG) located in the Seneca plant for further assistance.

**Enclosed 48 Catalog Number Identification**



**Table 33: Combination Controller—Enclosed 48 Soft Starts (Fusible Disconnect)  
60Hz, Three Phase, 208/230/460/575 Volts—AC3 Duty**

Class 8638 Enclosed 48—FUSIBLE Disconnect						8638 Power Circuit Type (Type 1 Enclosure) (See page 50 for description)			Enclosure Type Adders	
Size	ATS48_YU	208 V	230 V	460 V	575 V	Power Circuit N \$ Price	Power Circuit R \$ Price	Power Circuit S \$ Price	Type 12 \$ Price	Type 3R \$ Price
A	D17	3	5	10	15	2944.00	3327.00	2576.00	200.00	750.00
	D22	5	7.5	15	20	3128.00	3535.00	2668.00	200.00	750.00
	D32	7.5	10	20	25	3404.00	3847.00	2944.00	200.00	750.00
	D38	10	—	25	30	3662.00	4138.00	3128.00	200.00	750.00
	D47	—	15	30	40	3662.00	4138.00	3128.00	200.00	750.00
B	D62	15	20	40	50	4180.00	4723.00	3608.00	300.00	1200.00
	D75	20	25	50	60	5315.00	6006.00	4752.00	300.00	1200.00
	D88	25	30	60	75	5940.00	6712.00	5368.00	300.00	1200.00
C	C11	30	40	75	100	6442.00	7279.00	5808.00	300.00	1200.00
	C14	40	50	100	125	6800.00	7684.00	6205.00	450.00	1750.00
	C17	50	60	125	150	7990.00	9029.00	7310.00	450.00	1750.00
D	C21	60	75	150	200	9070.00	10249.00	8415.00	600.00	2200.00
	C25	75	100	200	250	10200.00	11526.00	9520.00	600.00	2200.00
	C32	100	125	250	300	11645.00	13159.00	10600.00	600.00	2200.00
E	C41	125	150	300	350	11880.00	13424.00	10925.00	825.00	2900.00
	C48	150	—	350	400	13864.00	15666.00	12240.00	825.00	2900.00
	C59	—	200	400	500	15840.00	17899.00	13840.00	825.00	2900.00
	C66	200	250	500	600	18920.00	21380.00	16480.00	825.00	2900.00

**Table 34: Combination Controller—Enclosed 48 Soft Starts (Circuit Breaker Disconnect)  
60Hz, Three Phase, 208/230/460 Volts—AC3 Duty**

Class 8639 Enclosed 48—CIRCUIT BREAKER Disconnect						8639 Power Circuit Type (Type 1 Enclosure) (See page 50 for description)			Enclosure Type Adders	
Size	ATS48_YU	208 V	230 V	460 V	575 V	Power Circuit N \$ Price	Power Circuit R \$ Price	Power Circuit S \$ Price	Type 12 \$ Price	Type 3R \$ Price
A	D17	3	5	10	▲	2856.00	3227.00	2499.00	200.00	750.00
	D22	5	7.5	15		3034.00	3429.00	2588.00	200.00	750.00
	D32	7.5	10	20		3302.00	3731.00	2856.00	200.00	750.00
	D38	10	—	25		3552.00	4013.00	3034.00	200.00	750.00
	D47	—	15	30		3552.00	4013.00	3034.00	200.00	750.00
B	D62	15	20	40		4055.00	4582.00	3500.00	300.00	1200.00
	D75	20	25	50		5156.00	5826.00	4609.00	300.00	1200.00
	D88	25	30	60		5762.00	6511.00	5207.00	300.00	1200.00
C	C11	30	40	75		6248.00	7061.00	5634.00	300.00	1200.00
	C14	40	50	100		6596.00	7453.00	6019.00	450.00	1750.00
	C17	50	60	125		7750.00	8758.00	7091.00	450.00	1750.00
D	C21	60	75	150		8797.00	9941.00	8163.00	600.00	2200.00
	C25	75	100	200		9894.00	11180.00	9234.00	600.00	2200.00
	C32	100	125	250		11296.00	12764.00	10282.00	600.00	2200.00
E	C41	125	150	300		11524.00	13022.00	10597.00	825.00	2900.00
	C48	150	—	350	13448.00	15196.00	11873.00	825.00	2900.00	
	C59	—	200	400	15365.00	17362.00	13425.00	825.00	2900.00	
	C66	200	250	500	18352.00	20738.00	15986.00	825.00	2900.00	

▲ Not available in 575 V ratings.

**Configuration & Factory Modifications**

The Enclosed 48 combination controllers can be configured with pre-engineered features and functions identified below. Factory modifications (MODS) identified by “custom engineered option” has extended lead times and will be handled by a factory order engineer for processing.

**Enclosed 48 Features**

- Class 8638 fusible disconnect version with provisions for Class J or L fuses are provided. Fuses are not installed at the factory.
- Class 8639 circuit breaker version provided with MAG-GARD or thermal-magnetic circuit breaker as OCPD.
- Three power circuit configurations—shunt trip, non-reversing and reversing options.
- Industrial rated flange disconnect operating handle and mechanism.
- Shorting contactors (AC1 duty) provided on all Enclosed 48 soft starts.
- Input isolation contactor option.
- Full voltage bypass (AC3 duty) option.
- Transient suppression modules on all contactors.
- Agency listing to UL508 Industrial Control Equipment. cUL and/or CSA label available as an option.
- Coordinated short circuit ratings:

Enclosure Size	Horsepower Rating				8638 Fusible Disconnect	8639 Circuit Breaker
	@ 208 V	@ 230 V	@ 460 V	@ 575 V		
A-C	3-50	5-60	10-125	15-150	100k	25k
D	60-100	75-125	150-250	200-300	100k	30k
E	125-200	150-250	300-500	350-600	65k	30k

- Type 1, 12 or 3R enclosure environmental ratings.
- 22 mm LED long life pilot light clusters with option for push-to-test configurations.
- 120 Vac control power transformers, with or without an additional 150 VA for customer use.
- Top and bottom conduit knockouts on wall-mounted enclosures
- Removable conduit entry plates on floor mounted enclosures.
- Cabinet component identification.
- ANSI #49 gray enclosure paint.
- Door mounted keypad on Type 1 and 12 units.
- Wire marking identification.

- Factory specific drawings.

**Altistart 48 Soft Start Device Features**

**TCS™ Torque Control System**

The Altistart 48 soft start uses TCS ramping to accelerate the motor to full voltage. Basing the acceleration ramp on the motor torque rather than current or voltage, as used in traditional soft starts, provides a linear speed ramp independent of the motor loading without tachometer feedback. The TCS ramp is also used for improved control of deceleration independent of motor loading. When used in pumping applications, TCS ramping can eliminate water hammer problems and provide an alternative to expensive motorized control valves.

**Starting and Stopping**

Four types of starting are available:

- TCS soft start—adjustable from 1 to 60 seconds
- TCS with “boost”—adjustable 50 to 100% of mains voltage
- Current limit—adjustable from 150 to 500% of controller rating
- Voltage ramping

**Modes of stopping**

- Freewheel or coast to stop
- TCS soft stop—adjustable from 1 to 60 seconds

**Device Protective Features**

- Solid State motor thermal overload protection—programmable from Class 10 through 30
- Soft start thermal protection
- Motor phase loss protection
- Line supply failure
- Overcurrent fault
- Locked rotor fault
- Line frequency outside limits ±5% or ±20%—EGSA compliance with Class 3 application (droop operation) generators.
- Selectable protection, including:
  - Phase reversal
  - Stall and jam
  - Thermal overload pre-alarm
  - Current threshold alarm
  - Underload fault

### Device Monitoring and Indication

Door mounted keypad:

- Displays setup parameters and fault codes.
- Factory presets for most common adjustments.
- Security to avoid accidental controller modifications is provided by dipswitches on the back of the keypad, which must be adjusted to provide access to three programming levels.

Real time indication via the digital keypad of:

- Motor current
- Load Torque
- Motor thermal state
- Power factor
- Fault status

Two logic outputs:

- Motor thermal overload or indication of motor current present
- Current threshold alarm
- Motor underload alarm

One analog output for 4 to 20 or 0 to 20 mA indication of motor current, torque, thermal state, active power or power factor.

Two logic inputs, which are configurable for force to freewheel, thermal overload reset or indication of external fault.

Refer to the Altistart 48 product catalog (8636CT0201) for additional information.

### Power Circuit Descriptions (pick one)

#### Power Circuit N—

##### Non-Reversing with Isolation Contactor

A contactor ahead of the soft start is coordinated to automatically disconnect the motor from the ac line in the conditions of a fault. In addition, the isolation contactor is coordinated to open when the motor is running. This provides protection from voltage transients when the electronics are most susceptible to damage. The isolation contactor operation shall be coordinated via the R1 relay in isolation contactor control mode. The control scheme and contactor sequencing shall maintain the control power and remove the main power to the soft start after a fault or normal stop. Not available with shunt trip option, and is required with full voltage bypass option.

#### Power Circuit R—

##### Reversing with Isolation Contactor

The reversing combination starter is configured for forward and reverse operation through a reversing contactor and appropriate logic control. The reversing contactor also provides isolation for the motor from the line supply power following a stop command (and deceleration period, if selected) or in the condition of a fault. Control of the forward and reverse contactors shall use time delay relays (time set for 2 seconds) and the R1 fault relay in fault configuration. Not available with NEMA contactors or full voltage bypass.

#### Power Circuit S—

##### Shunt Trip Coil

If a fault is detected, a shunt trip coil on the disconnect means removes all power on the load side of the disconnect. The disconnect must be reset before restarting is permitted after all fault conditions. The shunt trip function shall be coordinated via a time delay relay (time set for 2 seconds) signaled from the R1 relay in fault configuration. Shunt trip coils shall be standard for MCC & option S for enclosed, and available on both circuit breaker & molded case switch versions. Not available with input isolation contactor option (Power Circuit N).

**Control Options (pick one)**

Mod	Start/Stop push buttons	\$ Price
Mod A06	Provides black start and red stop push buttons (3 wire control scheme).	132.00

Rules: Not available on Power Circuit R (Reversing).

Mod	Forward-Off-Reverse selector switch	\$ Price
Mod B06	Provides three-position selector switch to select between forward, off and reverse. Uses 2-wire control.	240.00

Rules: Available for Power Circuit R (Reversing) configurations only.

Mod	Hand-Off-Auto selector switch	\$ Price
Mod C06	Provides a three-position selector switch, 2-wire control scheme.	132.00

Rules: Not available on Power Circuit R (Reversing).

Mod	Stop-Run selector switch	\$ Price
Mod D06	Provides a two-position selector switch.	132.00

Rules: Not available on Power Circuit R (Reversing).

Mod	Hand-Auto selector switch and Start/Stop push buttons	\$ Price
Mod E06	Provides a two-position selector switch and start/stop push buttons (3-wire control).	264.00

Rules: Not available on Power Circuit R (Reversing).

**Pilot Light Cluster Options (pick one)**

Mod	Pilot Light Cluster #1	\$ Price
Mod A07	Consists of red "RUN" and green "OFF" pilot lights. Provides standard red "RUN (ON)" and green "OFF" pilot lights for status annunciation.	180.00

Mod	Pilot Light Cluster #2	\$ Price
Mod B07	Consists of red "RUN" (push-to-test) and green "OFF" (push-to-test) pilot lights. Provides push-to-test type red "RUN (ON)" and standard green "OFF" pilot lights for status annunciation.	360.00

Mod	Pilot Light Cluster #3	\$ Price
Mod C07	Consists of red "RUN", green "OFF" and yellow "FAULT" pilot lights. Provides standard red "RUN (ON)", green "OFF", and yellow "FAULT" pilot lights for status annunciation.	270.

Rules: Not available with Power Circuit S (Shunt Trip).

Mod	Pilot Light Cluster #4	\$ Price
Mod D07	Consists of red "RUN (ON)" (push-to-test), green "OFF" (push-to-test) and yellow "FAULT" (push-to-reset) pilot lights. Provides push-to-test type red "RUN (ON)", standard green "OFF", and push-to-reset type yellow "FAULT" for status annunciation.	540.00

Rules: Not available on Power Circuit S (Shunt Trip).

**Meter Display Options (pick one)**

Mod	Ammeter	\$ Price
Mod A08	Provides a single-phase ammeter fed from the ATS48 analog output. Dial is in percent of device rated current.	1188.00

Rules: Not available on Type 3R Enclosed.

Mod	Elapsed Time Meter	\$ Price
Mod B08	Provides a seven-digit analog, non-resettable elapsed run time meter.	348.00

Rules: Not available on Type 3R Enclosed.

**Communications/Gateway Options (pick one)**

Factory installed communication features shall be available as a custom engineered option utilizing the RJ45 communications port for control and annunciation of the soft start in "link" mode.

Mod	Modbus®	\$ Price
Mod A09	Provides Modbus communications (native protocol)	850.00

Mod	Modbus Plus	\$ Price
Mod B09	Provides Modbus communications.	950.00

Mod	Ethernet	\$ Price
Mod C09	Provides Ethernet gateway communications protocol.	950.00

Mod	Devicenet	\$ Price
Mod D09	Provides Devicenet gateway communications protocol.	950.00

Miscellaneous Options (multiple compatible options may be selected)

	Full voltage bypass	\$ Price
<b>Mod A10</b>	Provides an AC3 duty rated bypass/shorting contactor, normal/bypass selector switch, Class 20 bi-metal motor OL relay, door mounted OL reset push-button for across the line starting capability.	
	Enclosure Size A adder:	500.00
	Enclosure Size B adder:	600.00
	Enclosure Size C adder:	700.00
	Enclosure Size D adder:	750.00
	Enclosure Size E adder:	900.00

**Rules:** Only available for Power Circuit N (Non-Reversing). Not available with Power Circuit S (Shunt Trip) SCR fault isolation scheme.

<b>Mod B10</b>	150 VA additional control power capacity	\$ Price
	Provides 150 VA additional control VA capacity for customer use.	150.00

<b>Mod C10</b>	Power Up ON delay (start relay)	\$ Price
	Provides an electronic time delay relay adjustable from 0.1 to 60 seconds. Relay is pre-wired to inhibit start for users set delay time upon power-up of control power circuit.	150.00

**Rules:** Only available on 2-wire control circuits.

<b>Mod D10</b>	Emergency Stop push button	\$ Price
	Provides a push-button for immediate removal of all power.	140.00

**Rules:** Requires Power Circuit S (Shunt Trip).

<b>Mod E10</b>	"cUL" Label	\$ Price
	Provides a Canadian Underwriters Laboratories label when required by local code requirements.	200.00

<b>Mod F10</b>	Auxiliary contacts for run mode	\$ Price
	Provides 1 Form 'C' contact rated 5 A @ 120 Vac (8501 Type R relay or equivalent) wired to terminal blocks for customer use. Contacts change state when soft start is sending current to the motor. Controlled by the R3 relay programmed for "rml".	550.00

<b>Mod G10</b>	Auxiliary contacts for full voltage bypass run mode	\$ Price
	Provides 1 Form 'C' contact rated 5 A @ 120 Vac (8501 Type R relay or equivalent) wired to terminal blocks for customer use. Contacts change state when motor is operated across the line with full voltage bypass starter.	550.00

**Rules:** MOD A10 (Full Voltage Bypass) must be selected. Must use Power Circuit N or R (line isolation contactor combination). Not compatible with Power Circuit S (Shunt Trip).

<b>Mod H10</b>	Auxiliary contacts for auto mode	\$ Price
	Provides an auxiliary starter mode (auto) contact that will energize a relay with 1 Form 'C' contact rated 5 A @ 120 Vac (8501 Type R relay or equivalent) wired to terminal blocks for customer use.	550.00

**Rules:** MOD C06 (Hand-Off-Auto selector switch) or E06 (Hand-Auto selector switch) must be specified.

<b>Mod J10</b>	Auxiliary contacts for fault mode	\$ Price
	Provides an auxiliary starter mode (auto) contact that will energize a relay with 1 Form 'C' contact rated 5 A @ 120 Vac (8501 Type R relay or equivalent) wired to terminal blocks for customer use.	650.00

<b>Mod K10</b>	Motor space heater provisions (custom engineered option)	\$ Price
	Provides control circuit contacts, 120 V, 150-500 kW supply and fusing, wired to terminals (9080 GM6) for customer use.	640.00

<b>Mod L10</b>	ID engraved nameplates	\$ Price
	Provides a lamacoid nameplate, engraved with equipment designation.	50.00

<b>Mod M10</b>	Spare terminal blocks	\$ Price
	Provides up to (10) spare terminal blocks 'unwired' for customer use. Since Phoenix style terminal blocks will be used, extra terminal points will be provided as standard. 20 terminal points are available as standard for all control wiring (including any additional customer spare terminal points).	340.00

<b>Mod P10</b>	Permanent wire markers	\$ Price
	Provides permanent sleeve type wire markers on control wiring assemblies.	1400.00

<b>Mod Q10</b>	ANSI #61 painted enclosure (custom engineered option)	\$ Price
	Provides the option to configure the enclosure paint scheme to standard ANSI #61 paint instead of ANSI #49 paint.	375.00

<b>Mod R10</b>	MOV / Surge arrester (custom engineered option)	\$ Price
	Provides supplementary MOV protection using a Class 6671 SDSA3650 Surgebreaker® Secondary Surge Arrester hard-wired and factory mounted.	450.00

<b>Mod S10</b>	Dual motor overloads and branch circuit protection (custom engineered option)	\$ Price
	Provides dual rated motor OLs rated equally, one-half the hp of the selected starter. Motor branch short circuit protection is provided per NEC. Maximum total current rating of the combined motors not to exceed the continuous current rating of the starter package.	
	Enclosure Size A adder:	820.00
	Enclosure Size B adder:	1874.00
	Enclosure Size C adder:	2645.00
	Enclosure Size D adder:	3160.00
	Enclosure Size E adder:	6570.00

**Rules:** Available on Class 8639 circuit breaker disconnect configurations only.

<b>Mod U10</b>	Omit door mounted keypad display	\$ Price
	Removes the keypad display from outside the enclosure door. The keypad on the ATS48 soft start can be used for programming and commissioning.	(50.00)

**Rules:** Only for Type 3R size D and E enclosures.

<b>Mod W10</b>	NEMA style contactors (custom engineered option)	\$ Price
	Provides horsepower rated NEMA rated contactors instead of AC3 rated IEC TeSys or F-line contactors.	
	Enclosure Size A adder:	400.00
	Enclosure Size B adder:	600.00
	Enclosure Size C adder:	700.00
	Enclosure Size D adder:	2000.00
	Enclosure Size E adder:	4500.00

**Rules:** Not available with Power Circuit R (Reversing) or MOD A10 (Full voltage bypass).

<b>Mod X10</b>	50 Degrees C operation	\$ Price
	Provides extended range high ambient equipment rating above 40°C (104°F) to a maximum of 50°C (122°F) without de-rating.	125.00

**Rules:** Standard on Type 3R enclosures.

<b>Mod Y10</b>	Seismic Qualification label	\$ Price
	Provides a self-certified identification label with compliance to 2000 IBC, NFPA 5000, 2001 CBC, 1997 UBC, 1999 NBC, 1999SBC, ASCE-7 02 seismic qualification/certification. The label criteria will be uniform for all enclosed products. Enclosures shall contain additional bracing as defined by the seismic qualification/certification criteria.	450.00

**Rules:** Not available for Enclosure Sizes A-C (wall mounted enclosures).

<b>Mod Z10</b>	Service Entrance Rating	\$ Price
	Provides a UL869A approved insulated ground neutral lug assembly, mounting bracket with bonded enclosure ground wire suitable for use as service entrance equipment.	185.00

**Table 35: Renewal Parts**

Description	Line Voltage	Class 8636 Controllers		Class 8638/8639 Combination Controllers				Catalog Number	\$ Price
		Type 1 No Shorting	Type 1 and 12 W/Shorting	Standard Duty	Heavy Duty	Standard W/Bypass	Heavy W/Bypass		
Control Power Primary Fuse FU8 Standard VA	460 V		10–20 hp ▲	10–20 hp	7.5–15 hp			2543020020	11.00
	208 V		3–7.5 hp ▲	3–7.5 hp	2–5 hp			2543020050	11.00
	230 V		5–10 hp ▲	5–10 hp	3–7.5 hp				
	460 V	30–60 hp	30–75 hp	30–75 hp	20–60 hp				
	230 V	15–30 hp	15–40 hp	15–40 hp	10–30 hp			2543020100	11.00
	460 V	75–100 hp	100–125 hp	100–125 hp	75–100 hp	75 hp			
	208 V	10–25 hp	10–30 hp	10–30 hp	7.5–25 hp			2543020112	11.00
	460 V	125 hp	150 hp	150 hp	125 hp			2543020125	14.76
	460 V	250–400 hp	300–500 hp	300–500 hp	150–400 hp			2543020150	11.00
	460 V	150–200 hp	200–250 hp	200–250 hp	150–200 hp	150 hp	125 hp	2543020180	11.00
	230 V	40–50 hp	50–60 hp	50–60 hp	40–50 hp	40 hp		2543020200	11.00
	208 V	30–40 hp	40–50 hp	40–50 hp	30–40 hp	30 hp		2543020250	13.68
	230 V	60 hp	75 hp	75 hp	60 hp				
	208 V	50 hp	60 hp	60 hp	50 hp			2543020300	11.00
	230 V	125–200 hp	150–250 hp	150–250 hp	125–200 hp			2543020350	11.00
	208 V	100–150 hp	125–200 hp	125–200 hp	100–150 hp				
	230 V	75–100 hp	100–125 hp	100–125 hp	75–100 hp	75 hp	60 hp	2543020400	11.00
	208 V	60–75 hp	75–100 hp	75–100 hp	60–75 hp	60 hp	50 hp	2543020400	11.00
Control Power Primary Fuse FU8 Form T41 100 Additional VA	460 V		10–20 hp ▲	10–20 hp	7.5–15 hp			2543020060	11.00
	460 V	30–60 hp	30–75 hp	30–75 hp	20–60 hp			2543020100	11.00
	230 V		5–10 hp ▲	5–10 hp	3–7.5 hp			2543020150	11.00
	460 V	75–100 hp	100–125 hp	100–125 hp	75–100 hp	75 hp			
	208 V		3–7.5 hp ▲	3–7.5 hp	2–5 hp			2543020160	14.76
	460 V	125 hp	150 hp	150 hp	125 hp			2543020180	11.00
	230 V	15–30 hp	15–40 hp	15–40 hp	10–30 hp			2543020200	11.00
	208 V	10–25 hp	10–30 hp	10–30 hp	7.5–25 hp			2543020250	13.68
	460 V	150–400 hp	200–500 hp	200–500 hp	150–400 hp	150 hp	125 hp		
	230 V	40–50 hp	50–60 hp	50–60 hp	40–50 hp	40 hp		2543020300	11.00
	230 V	75–200 hp	100–250 hp	100–250 hp	75–200 hp	75 hp	60 hp	2543020320	11.00
	208 V	30–40 hp	40–50 hp	40–50 hp	30–40 hp	30 hp		2543020350	11.00
	230 V	60 hp	75 hp	75 hp	60 hp				
	208 V	50–150 hp	60–200 hp	60–200 hp	50–150 hp	60 hp	50 hp	2543020400	11.00
Control Power Primary Fuse FU8 Form T42 200 Additional VA	460 V		10–20 hp ▲	10–20 hp	7.5–15 hp			2543020125	14.67
	460 V	30–60 hp	30–75 hp	30–75 hp	20–60 hp			2543020150	11.00
	230 V		5–10 hp ▲	5–10 hp	3–7.5 hp			2543020250	13.68
	460 V	75–125 hp	100–150 hp	100–150 hp	75–125 hp	75 hp			
	460 V	250–400 hp	300–500 hp	300–500 hp	250–400 hp				
	208 V		3–7.5 hp ▲	3–7.5 hp	2–5 hp			2543020300	11.00
	230 V	15–30 hp	15–40 hp	15–40 hp	10–30 hp				
	230 V	40–60 hp	50–75 hp	50–75 hp	40–60 hp	40 hp		2543020320	11.00
	230 V	125–200 hp	150–250 hp	150–250 hp	125–200 hp				
	208 V	10–25 hp	10–30 hp	10–30 hp	7.5–25 hp			2543020350	11.00
	460 V	150–200 hp	200–250 hp	200–250 hp	150–200 hp	150 hp	125 hp		
	208 V	30–50 hp	40–60 hp	40–60 hp	30–50 hp	30 hp		2543020400	11.00
	208 V	100–150 hp	125–200 hp	125–200 hp	100–150 hp				
	230 V	75–100 hp	100–125 hp	100–125 hp	75–100 hp	75 hp	60 hp	2543020500	11.00
208 V	60–75 hp	75–100 hp	75–100 hp	60–75 hp	60 hp	50 hp	2543020600	11.00	

▲ These Type 1 and 12 units are not shipped with a shorting contactor installed.

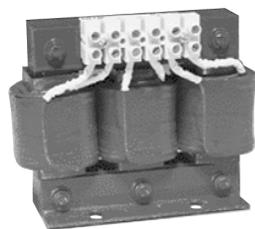
**Table 36: Renewal Parts**

Description	Line Voltage	Class 8636 Controllers		Class 8638/8639 Combination Controllers				Catalog Number	\$ Price	
		Type 1 No Shorting	Type 1 & 12 W/Shorting	Standard Duty	Heavy Duty	Standard W/Bypass	Heavy W/Bypass			
Control Power Secondary Fuse FU6 & 7 Standard VA	208 V		3-7.5 hp ▲	3-7.5 hp	2-5 hp			2543020060	11.00	
	230 V		5-10 hp ▲	5-10 hp	3-7.5 hp					
	460 V		10-20 hp▲	10-20 hp	7.5-15 hp					
	208 V	10-25 hp	10-30 hp	10-30 hp	7.5-25 hp			2543020125	14.76¢	
	230 V	15-30 hp	15-40 hp	15-40 hp	10-30 hp					
	460 V	30-60 hp	30-75 hp	30-75 hp	20-60 hp					
	208 V	30-40 hp	40-50 hp	40-50 hp	30-40 hp	30 hp			2543020250	13.68¢
	230 V	40-50 hp	50-60 hp	50-60 hp	40-50 hp	40 hp				
	460 V	75-100 hp	100-125 hp	100-125 hp	75-100 hp	75 hp				
	208 V	50 hp	60 hp	60 hp	50 hp			2543020300	11.00	
	230 V	60 hp	75 hp	75 hp	60 hp					
	460 V	125 hp	150 hp	150 hp	125 hp					
	208 V	100-150 hp	125-200 hp	125-200 hp	100-150 hp			2543020400	11.00	
	230 V	125-200 hp	150-250 hp	150-250 hp	125-200 hp					
	460 V	250-400 hp	300-500 hp	300-500 hp	250-400 hp					
	208 V	60-75 hp	75-100 hp	75-100 hp	60-75 hp	60 hp	50 hp	2543020500	11.00	
	230 V	75-100 hp	100-125 hp	100-125 hp	75-100 hp	75 hp	60 hp			
	460 V	150-200 hp	200-250 hp	200-250 hp	150-200 hp	150 hp	125 hp			
Control Power Secondary Fuse FU6 & 7 Form T41 100 Additional VA	208 V		3-7.5 hp ▲	3-7.5 hp	2-5 hp			2543020200	11.00	
	230 V		5-10 hp ▲	5-10 hp	3-7.5 hp					
	460 V		10-20 hp ▲	10-20 hp	7.5-15 hp					
	208 V	10-25 hp	10-30 hp	10-30 hp	7.5-25 hp			2543020250	13.68¢	
	230 V	15-30 hp	15-40 hp	15-40 hp	10-30 hp					
	460 V	30-60 hp	30-75 hp	30-75 hp	20-60 hp					
	208 V	30-40 hp	40-50 hp	40-50 hp	30-40 hp	30 hp			2543020400	11.00
	230 V	40-50 hp	50-60 hp	50-60 hp	40-50 hp	40 hp				
	460 V	75-100 hp	100-125 hp	100-125 hp	75-100 hp	75 hp				
	208 V	50 hp	60 hp	60 hp	50 hp			2543020500	11.00	
	230 V	60 hp	75 hp	75 hp	60 hp					
	460 V	125 hp	150 hp	150 hp	125 hp					
208 V	60-150 hp	75-200 hp	75-200 hp	60-150 hp	60 hp	50 hp	2543020700	11.00		
230 V	75-200 hp	100-250 hp	100-250 hp	75-200 hp	75 hp	60 hp				
460 V	150-400 hp	200-500 hp	200-500 hp	150-400 hp	150 hp	125 hp				
Control Power Secondary Fuse FU6 & 7 Form T42 200 Additional VA	208 V		3-7.5 hp ▲	3-7.5 hp	2-5 hp			2543020300	11.00	
	230 V		5-10 hp ▲	5-10 hp	3-7.5 hp					
	460 V		10-20 hp ▲	10-20 hp	7.5-15 hp					
	208 V	10-25 hp	10-30 hp	10-30 hp	7.5-25 hp			2543020400	11.00	
	230 V	15-30 hp	15-40 hp	15-40 hp	10-30 hp					
	460 V	30-60 hp	30-75 hp	30-75 hp	20-60 hp					
	208 V	30-50 hp	40-60 hp	40-60 hp	30-50 hp	30 hp			2543020700	11.00
	208 V	100-150 hp	125-200 hp	125-200 hp	100-150 hp					
	230 V	40-60 hp	50-75 hp	50-75 hp	40-60 hp	40 hp				
	230 V	125-200 hp	150-250 hp	150-250 hp	125-200 hp			2543020700	11.00	
	460 V	75-125 hp	100-150 hp	100-150 hp	75-125 hp					75 hp
	460 V	250-400 hp	300-500 hp	300-500 hp	250-400 hp					
	208 V	60-75 hp	75-100 hp	75-100 hp	60-75 hp	60 hp	50 hp	2543021000	11.00	
	230 V	75-100 hp	100-125 hp	100-125 hp	75-100 hp	75 hp	60 hp			
	460 V	150-200 hp	200-250 hp	200-250 hp	150-200 hp	150 hp	125 hp			

▲ These Type 1 & 12 units are not shipped with a shorting contactor installed.

Description	Line Voltage	Class 8636 Controllers		8638/8639 Combination Controllers		Catalog Number	\$ Price	
		Type 1	Type 1 & 12	Standard	Heavy			
		No Shorting	W/Shorting	Duty	Duty			
Altistart CL1-CL2 Control Power Fuse FU4 & 5	208 V	3–7.5 hp	3–10 hp ▲	3–10 hp	2–7.5 hp	2543020025	11.00	
	230 V	5–10 hp	5–15 hp ▲	5–15 hp	3–10 hp			
	460 V	10–75 hp	10–100 hp ▲	10–100 hp	7.5–75 hp			
		208 V	10–30 hp	15–40 hp	15–40 hp	10–30 hp	2543020050	11.00
		230 V	15–40 hp	20–50 hp	20–50 hp	15–40 hp		
		460 V	100–200 hp	125–250 hp	125–250 hp	100–200 hp	2543020080	11.00
		460 V	250–400 hp	300–500 hp	300–500 hp	250–400 hp	2543020100	11.00
		208 V	40–75 hp	50–100 hp	50–100 hp	40–75 hp	2543020160	14.76 <sub>q</sub>
		230 V	50–100 hp	60–125 hp	60–125 hp	50–100 hp		
		208 V	100–150 hp	125–200 hp	125–200 hp	100–150 hp	2543020200	11.00
230 V		125–200 hp	150–250 hp	150–250 hp	125–200 hp			
Auxiliary CPT Primary Fuses FU9 & 10		208 V	10–150 hp	10–200 hp	10–200 hp	7.5–150 hp	2543021500	11.00
	230 V	15–200 hp	15–250 hp	15–250 hp	10–200 hp			
	460 V	30–400 hp	30–500 hp	30–500 hp	20–500 hp			
1.2VA / 6V Bulb for Pilot Lights	208 V	ALL	ALL	ALL	ALL	DL1CB006	5.30 <sub>c</sub>	
	230 V	ALL	ALL	ALL	ALL			
	460 V	ALL	ALL	ALL	ALL			

▲ Units with the following hp ratings are not shipped with shorting contactors: 3–7.5 hp (208 V), 5–10 hp (230 V) and 10–20 hp (460 V)



Options—Field Installed

Table 37: Line Reactors—480 V Rated Three Phase

460 V Drive Rating		Open Style Part Number	\$ Price	Enclosed Part Number (Type 1)	Approx. Wt. (Lbs.)	Enclosure Dimensions HxWxD (In.)	\$ Price
Horsepower	kW						
1	—	RL00202▲	169.00	RL00212▲	11	8x8x6	310.00
2-3	—	RL00403▲	174.00	RL00413▲	12	8x8x6	315.00
5	—	RL00803▲	262.00	RL00813▲	18	15x13x13	405.00
7.5	—	RL01203	308.00	RL01213	25	15x13x13	455.00
10	—	RL01803	357.00	RL01813	49	15x13x13	590.00
15	—	RL02503	368.00	RL02513	49	15x13x13	602.00
20-25	—	RL03503	487.00	RL03513	61	15x13x13	727.00
30	—	RL04503	571.00	RL04513	70	15x13x13	816.00
40	—	RL05503	578.00	RL05513	72	15x13x13	822.00
50-60	—	RL08003	939.00	RL08013	86	15x13x13	1200.00
75	—	RL10003	1096.00	RL10013	105	15x13x13	1366.00
100	—	RL13003	1120.00	RL13013	105	15x13x13	1392.00
125	—	RL16003	1260.00	RL16013	105	15x13x13	1539.00
150	—	RL20003	1539.00	RL20013	131	15x13x13	1831.00
200	—	RL25003	2727.00	RL25013	185	24x17x17	3447.00
250	—	RL32003	2915.00	RL32013	235	24x17x17	3646.00
300	—	RL40003	3576.00	RL40013	245	24x17x17	4338.00
350-400	—	RL50003	4150.00	RL50013	335	24x17x17	5761.00
450-500	—	RL60003	5740.00	RL60013	335	24x17x17	7431.00

Table 38: Line Reactors—208/230 V Rated Three Phase

208 V Drive Rating		230 V Drive Rating		Open Style Part Number	\$ Price	Enclosed Part Number (Type 1)	Approx. Wt. (Lbs.)	Enclosure Dimensions HxWxD (In.)	\$ Price
Horsepower	kW	Horsepower	kW						
1	—	1	—	RL00402	168.00	RL00412	11	8x8x6	308.00
1.5-2	—	1.5-2	—	RL00802▲	192.00	RL00812▲	15	8x8x6	332.00
3	—	3	—	RL01202▲	214.00	RL01212▲	17	8x8x6	356.00
5	—	5	—	RL01802▲	270.00	RL01812▲	19	8x8x6	416.00
7.5	—	7.5	—	RL02502▲	311.00	RL02512▲	45	15x13x13	542.00
10	—	10	—	RL03502	327.00	RL03512	47	15x13x13	559.00
15	—	15	—	RL04502	431.00	RL04512	59	15x13x13	669.00
20	—	20	—	RL05502	455.00	RL05512	59	15x13x13	693.00
25	—	25-30	—	RL08002	534.00	RL08012	82	15x13x13	776.00
30	—	40	—	RL10002	746.00	RL10012	82	15x13x13	999.00
40	—	50	—	RL13002	848.00	RL13012	88	15x13x13	1106.00
50	—	—	—	RL16002	1048.00	RL16012	88	15x13x13	1317.00

Table 39: Line Reactors—208/230 V Rated Single Phase

208 V Drive Rating		230 V Drive Rating		Open Style Part Number	\$ Price	Enclosed Part Number (Type 1)	Approx. Wt. (Lbs.)	Enclosure Dimensions HxWxD (In.)	\$ Price
Horsepower	kW	Horsepower	kW						
.5	—	.5-1	—	RL00801	171.00	RL00811	15	8x8x6	311.00
1	—	2	—	RL01201	202.00	RL01211	17	8x8x6	344.00
2	—	3	—	RL01801	263.00	RL01811	19	8x8x6	407.00
3	—	—	—	RL02501	275.00	RL02511	45	15x13x13	504.00
—	3	—	3	RL01801	246.00	RL01811	47	15x13x13	380.00
5	—	5	—	RL03501	311.00	RL03511	59	15x13x13	542.00
7.5	—	7.5	—	RL04501	410.00	RL04511	82	15x13x13	646.00

▲ Suitable for use with ATV 31, 575 V. See Altivar 31 Options for selection.



Table 40: Motor Protecting Output Filters—480 V Rated Type 1 Enclosed Motor Protection Output Filters (UL508A)

Horsepower	Amperes	KLCUL Filter Enclosed Part Number	\$ Price	Approximate Weight (lbs)	Enclosure Dimensions					
					H		W		D	
					IN	mm	IN	mm	IN	mm
1-2	4	KLCUL4A1	1126.00	15	12.25	311	12.50	318	6.75	171
3	6	KLCUL6A1	1148.00	15	12.25	311	12.50	318	6.75	171
5	8	KLCUL8A1	1171.00	15	12.25	311	12.50	318	6.75	171
7.5	12	KLCUL12A1	1224.00	15	12.25	311	12.50	318	6.75	171
10	16	KLCUL16A1	1249.00	17	12.25	311	12.50	318	6.75	171
15	25	KLCUL25A1	1355.00	20	12.25	311	12.50	318	6.75	171
20-25	35	KLCUL35A1	1485.00	20	12.25	311	12.50	318	6.75	171
30	45	KLCUL45A1	1535.00	20	12.25	311	12.50	318	6.75	171
40	55	KLCUL55A1	1672.00	20	12.25	311	12.50	318	6.75	171
50-60	80	KLCUL80A2	2178.00	56	19.13	486	15.50	394	15.50	394
75	110	KLCUL110A2	3005.00	60	19.13	486	15.50	394	15.50	394
100	130	KLCUL130A2	3368.00	66	19.13	486	15.50	394	15.50	394
125	160	KLCUL160A2	3617.00	80	19.13	486	15.50	394	15.50	394
150	200	KLCUL200A3	3766.00	102	22.13	562	20.50	521	24.37	619
200	250	KLCUL250A3	3841.00	110	22.13	562	20.50	521	24.37	619
250	300	KLCUL300A3	3863.00	115	22.13	562	20.50	521	24.37	619
300	360	KLCUL360A3	4300.00	125	22.13	562	20.50	521	24.37	619
350	420	KLCUL420A3	4659.00	145	22.13	562	20.50	521	24.37	619
400	480	KLCUL480A3	5221.00	150	22.13	562	20.50	521	24.37	619
450-500	600	KLCUL600A3	5393.00	167	22.13	562	20.50	521	24.37	619

**NOTE:** Line reactors and filters are intended for separate mounting and wiring by the user. Based on NEC (NFPA 70) 430-150 current ratings. If drive has higher FLA rating, use the "amperes" rating to select the appropriate filter.

	Description	For Use on Drives	Catalog Number	\$ Price
Replacement Parts	Arm of IGBT Inverter	ATV61HD30M3X, ATV71HD30M3X	VZ3IM2201M1271	487.00
	Arm of IGBT Inverter	ATV61HD37M3X, ATV71HD37M3X	VZ3IM2301M1271	625.00
	Arm of IGBT Inverter	ATV61HD45M3X, ATV71HD45M3X	VZ3IM2401M1271	798.00
	Arm of the Rectifier	ATV61HD45M3X, ATV71HD45M3X	VZ3TD1162M1671	309.00
	Control Terminal Board Kit	All ATV61 & ATV71	VX4A1104	142.00
	Fan Kits	ATV61HD75M3X, ATV61HD90N4, ATV61HD55M3X, ATV61HC11N4, ATV71HD90N4, ATV71HD55M3X	VZ3V1215	199.00
	Braking IGBT	ATV61HD30N4, ATV61HD37N4, ATV71HD30N4, ATV71HD37N4	VZ3IM1145M1271	160.00
	Braking IGBT	ATV61HD30M3X, ATV71HD30M3X	VZ3IM1195M0671	154.00
	Braking IGBT	ATV61HD37M3X, ATV61HD45M3X, ATV71HD37M3X, ATV71HD45M3X	VZ3IM1300M0671	211.00
	Braking IGBT	ATV61HD45N4, ATV61HD55N4, ATV61HD75N4, ATV71HD45N4, ATV71HD55N4, ATV71HD75N4	VZ3IM1300M1271	212.00
	Braking Module	ATV61HC13N4, ATV61HD90N4, ATV61HC11N4, ATV71HC11N4, ATV71HD90N4	VZ3TM1400M1271	407.00
	Braking Module IGBT	ATV61HD75M3X, ATV61HD55M3X, ATV71HD55M3X	VZ3TM1400M0671	370.00
	Braking Unit Kit	ATV61HC16N4, ATV61HC22N4, ATV71HC13N4, ATV71HC16N4	VZ3F1110	1030.00
	Capacitor Kit	ATV61HD90N4, ATV61HC11N4, ATV71HD90N4	VY1ADC1110	628.00
	Capacitor Kit	ATV61HC13N4, ATV71HC11N4	VY1ADC1111	910.00
	Capacitor Kit	ATV61HC16N4, ATV61HC31N4, ATV61HC50N4, ATV61HC63N4, ATV71HC13N4, ATV71HC25N4, ATV71HC28N4, ATV71HC40N4, ATV71HC50N4	VY1ADC1112	1088.00
	Capacitor Kit	ATV61HC22N4, ATV71HC16N4	VY1ADC1113	1441.00
	Capacitor Kit	ATV61HC25N4, ATV61HC40N4, ATV71HC20N4, ATV71HC31N4	VY1ADC1114	794.00
	Capacitor Kit	ATV61HD75M3X, ATV61HD55M3X, ATV71HD55M3X	VY1ADC1115	693.00
	Capacitor Kit	ATV61HD90M3X, ATV71HD75M3X	VY1ADC1116	453.00
	Control Board Kit	ATV61..075M3 to ATV61..D45M3X, ATV61..075N4 to ATV61..D75N4	VX4A61100Y	325.00
	Control Board Kit	ATV61..D55M3X to ATV61..D90M3X, ATV61..D90N4 to ATV61..C63N4	VX4A61101Y	375.00
	Control Board Kit	ATV71..037M3 to ATV71..D45M3X, ATV71..075N4 to ATV71..D75N4	VX4A71100Y	325.00
	Control Board Kit	ATV71..D55M3X to ATV71..D75M3X, ATV71..D90N4 to ATV71..C50N4	VX4A71101Y	375.00
	Control Front Cover with 4x7 Segments	All ATV61 & ATV71	VX4A1103	144.00
	Control Module Cover Assembly W/2 LEDS	All ATV61 & ATV71	VX4A1102	423.00
	Fan Control Board	ATV61HC16N4, ATV61HC22N4, ATV61HC25N4, ATV61HC31N4, ATV61HC13N4, ATV61HC40N4, ATV61HC50N4, ATV61HC63N4, ATV61HD90M3X, ATV71HC13N4, ATV71HC16N4, ATV71HC20N4, ATV71HC25N4, ATV71HC28N4, ATV71HC11N4, ATV71HC31N4, ATV71HC40N4, ATV71HC50N4, ATV71HD75M3X	VX5A1400	160.00
	Fan Kits	ATV61H075M3, ATV61HU15M3, ATV61H075N4, ATV61HU15N4, ATV61HU22N4, ATV71H075M3, ATV71HU15M3, ATV71H037M3, ATV71H075N4, ATV71HU15N4, ATV71HU22N4	VZ3V1203	44.00
	Fan Kits	ATV61HU55M3, ATV61HU55N4, ATV61HU75N4, ATV71HU55M3, ATV71HU55N4, ATV71HU75N4	VZ3V1204	61.00
	Fan Kits	ATV61HD11M3X, ATV61HD15M3X, ATV61HD15N4, ATV61HD18N4, ATV71HD11M3X, ATV71HD15M3X, ATV71HD15N4, ATV71HD18N4	VZ3V1205	98.00
	Fan Kits	ATV61HD30N4, ATV61HD37N4, ATV71HD30N4, ATV71HD37N4	VZ3V1206	104.00
	Fan Kits	ATV61HD30M3X, ATV61HD37M3X, ATV61HD45M3X, ATV71HD30M3X, ATV71HD37M3X, ATV71HD45M3X	VZ3V1207	137.00
	Fan Kits	ATV61HD45N4, ATV61HD55N4, ATV61HD75N4, ATV71HD45N4, ATV71HD55N4, ATV71HD75N4	VZ3V1208	137.00
	Fan Kits	ATV61HU22M3, ATV61HU30M3, ATV61HU40M3, ATV61HU30N4, ATV61HU40N4, ATV71HU22M3, ATV71HU30M3, ATV71HU40M3, ATV71HU30N4, ATV71HU40N4	VZ3V1209	55.00
	Fan Kits	ATV61HU75M3, ATV61HD11N4, ATV71HU75M3, ATV71HD11N4	VZ3V1210	78.00
	Fan Kits	ATV61HD18M3X, ATV61HD22M3X, ATV61HD22N4, ATV71HD18M3X, ATV71HD22M3X, ATV71HD22N4	VZ3V1211	104.00
	Heat Sink Fan	ATV61HC16N4, ATV61HC22N4, ATV61HC25N4, ATV61HC31N4, ATV61HC13N4, ATV61HC40N4, ATV61HC50N4, ATV61HC63N4, ATV71HC13N4, ATV71HC16N4, ATV71HC20N4, ATV71HC25N4, ATV71HC28N4, ATV71HC11N4, ATV71HC31N4, ATV71HC40N4, ATV71HC50N4	VZ3V1212	578.00
	Fan Power Electronic	ATV61HD90M3X, ATV71HD75M3X	VZ3V1216	1278.00
	Filter Board	ATV61HD18M3X, ATV61HD22M3X, ATV71HD18M3X, ATV71HD22M3X	VX4A1106	46.00
	Filter Board	ATV61HD22N4, ATV71HD22N4	VX4A1107	260.00
	Filter Board	ATV61HD30N4, ATV61HD37N4, ATV71HD30N4, ATV71HD37N4	VX4A1108	149.00
	Filter Board	ATV61HD30M3X, ATV61HD37M3X, ATV61HD45M3X, ATV71HD30M3X, ATV71HD37M3X, ATV71HD45M3X	VX4A1109	84.00
	Filter Board	ATV61HD45N4, ATV61HD55N4, ATV61HD75N4, ATV71HD45N4, ATV71HD55N4, ATV71HD75N4	VX4A1110	130.00
	Filter Board	ATV61HC16N4, ATV71HC13N4	VX4A1113	294.00
	Filter Board	ATV61HC22N4, ATV71HC16N4	VX4A1114	382.00
Filter Board	ATV61HC25N4, ATV61HC31N4, ATV71HC20N4, ATV71HC25N4, ATV71HC28N4	VX4A1115	412.00	
Filter Board	ATV61HD75M3X, ATV61HC13N4, ATV61HD90N4, ATV61HD55M3X, ATV61HD90M3X, ATV61HC11N4, ATV71HC11N4, ATV71HD90N4, ATV71HD55M3X, ATV71HD75M3X	VX4A1116	151.00	
Filter Board	ATV61HC50N4, ATV61HC63N4, ATV71HC40N4, ATV71HC50N4	VX4A1117	244.00	

	Description	For Use on Drives	Catalog Number	\$ Price
	Filter Board	ATV61HC40N4,ATV71HC31N4	VX4A1118	333.00
	Front Cover Incl./O Terminal Cover	ATV61HD75M3X, ATV61HD90N4, ATV61HD55M3X, ATV61HC11N4, ATV71HD90N4, ATV71HD55M3X Common Part?	VY1A1210	283.00
	Front Cover Incl./O Terminal Cover	ATV61HC13N4, ATV61HD90M3X,ATV71HC11N4,ATV71HD75M3X Common part?	VY1A1211	283.00
	Front Cover Incl./O Terminal Cover	ATV61HC16N4,ATV71HC13N4 (Common part?)	VY1A1212	441.00
	Front Cover Incl./O Terminal Cover	ATV61HC22N4,ATV71HC16N4 (Check common part?)	VY1A1213	500.00
	Front Cover Incl./O Terminal Cover	ATV61HC25N4, ATV61HC31N4, ATV71HC20N4,ATV71HC25N4,ATV71HC28N4 Common Part?	VY1A1214	529.00
	Front Cover Incl./O Terminal Cover	ATV61HC40N4, ATV61HC50N4, ATV71HC31N4, ATV71HC40N4 common part?	VY1A1216	813.00
	Front Cover Incl./O Terminal Cover	ATV61HC63N4,ATV71HC50N4	VY1A1217	1111.00
	Gate Drive Board IGBT	ATV61HC16N4, ATV71HC13N4	VX5A1200	1294.00
	Gate Drive Board IGBT	ATV61HC22N4, ATV61HC25N4, ATV71HC16N4, ATV71HC20N4	VX5A1201	647.00
	Gate Drive Board IGBT	ATV61HC31N4, ATV71HC25N4, ATV71HC28N4	VX5A1202	647.00
	Gate Drive Board IGBT	ATV61HC40N4, ATV61HC50N4, ATV71HC31N4, ATV71HC40N4	VX5A1203	1084.00
	Gate Drive Board IGBT	ATV61HC63N4, ATV71HC50N4	VX5A1204	1220.00
	Internal Fan	ATV61HC16N4, ATV61HC22N4, ATV61HC25N4 , ATV61HC31N4, ATV61HC40N4, ATV61HC50N4, ATV61HC63N4, ATV71HC13N4, ATV71HC16N4, ATV71HC20N4, ATV71HC25N4, ATV71HC28N4, ATV71HC31N4, ATV71HC40N4, ATV71HC50N4	VZ3V1213	47.00
	Internal Fan	ATV61HD75M3X, ATV61HC13N4, ATV61HD90N4, ATV61HD55M3X, ATV61HD90M3X, ATV61HC11N4, ATV71HC11N4, ATV71HD90N4, ATV71HD55M3X, ATV71HD75M3X	VZ3V1214	42.00
	Motor Current Sensor	ATV61HD75M3X, ATV61HC13N4, ATV61HD90N4, ATV61HD55M3X, ATV61HD90M3X, ATV61HC11N4, ATV71HC11N4, ATV71HD90N4, ATV71HD55M3X, ATV71HD75M3X	VY1A1105	106.00
	Motor Current Sensor	ATV61HC16N4, ATV71HC13N4	VY1A1107	118.00
	Motor Current Sensor	ATV61HC22N4, ATV61HC25N4, ATV61HC31N4, ATV71HC16N4, ATV71HC20N4, ATV71HC25N4, ATV71HC28N4	VY1A1108	176.00
	Motor Current Sensor	ATV61HC40N4, ATV61HC50N4, ATV61HC63N4, ATV71HC31N4, ATV71HC40N4, ATV71HC50N4	VY1A1109	190.00
	Plastic Kit	ATV61H075M3, ATV61HU15M3, ATV61H075N4, ATV61HU15N4, ATV61HU22N4, ATV71H075M3, ATV71HU15M3, ATV71H037M3, ATV71H075N4, ATV71HU15N4, ATV71HU22N4	VY1A1202	33.00
Replacement Parts	Plastic Kit	ATV61HU22M3, ATV61HU30M3, ATV61HU40M3, ATV61HU30N4, ATV61HU40N4, ATV71HU22M3, ATV71HU30M3, ATV71HU40M3, ATV71HU30N4, ATV71HU40N4	VY1A1203	33.00
	Plastic Kit	ATV61HU55M3, ATV61HU55N4, ATV61HU75N4, ATV71HU55M3, ATV71HU55N4, ATV71HU75N4	VY1A1204	52.00
	Plastic Kit	ATV61HD11M3X, ATV61HD15M3X, ATV61HD15N4,ATV61HD18N4, ATV71HD11M3X, ATV71HD15M3X, ATV71HD15N4, ATV71HD18N4	VY1A1205	56.00
	Plastic Kit	ATV61HU75M3, ATV61HD11N4, ATV71HU75M3, ATV71HD11N4	VY1A1215	58.00
	Plastic Kit	ATV61HC16N4, ATV71HC13N4	VY1A1401	882.00
	Plastic Kit	ATV61HC22N4, ATV71HC16N4	VY1A1402	618.00
	Plastic Kit	ATV61HC25N4, ATV61HC31N4, ATV71HC20N4, ATV71HC25N4, ATV71HC28N4	VY1A1403	706.00
	Plastic Kit	ATV61HC40N4, ATV61HC50N4, ATV71HC31N4, ATV71HC40N4	VY1A1406	1111.00
	Plastic Kit	ATV61HC63N4, ATV71HC50N4	VY1A1407	1274.00
	Plastic Kit	ATV61HD75M3X, ATV61HD90N4, ATV61HD55M3X, ATV61HC11N4, ATV71HD90N4, ATV71HD55M3X	VY1A1404	131.00
	Plastic Kit	ATV61HC13N4, ATV61HD90M3X, ATV71HC11N4, ATV71HD75M3X	VY1A1405	134.00
	Power Board	ATV61HC13N4, ATV71HC11N4	VX5A1HC1113	737.00
	Power Board	ATV61HC16N4, ATV71HC13N4	VX5A1HC1316	1235.00
	Power Board	ATV61HC22N4, ATV71HC16N4	VX5A1HC1622	1824.00
	Power Board	ATV61HC25N4, ATV71HC20N4	VX5A1HC2025	1824.00
Power Board	ATV71HC25N4, ATV61HC31N4	VX5A1HC2531	1824.00	
Power Board	ATV61HC40N4, ATV71HC31N4	VX5A1HC3140	2792.00	
Power Board	ATV61HC50N4, ATV71HC40N4	VX5A1HC4050	2846.00	
Power Board	ATV61HC63N4, ATV71HC50N4	VX5A1HC5063	2846.00	
Power Board	ATV61HD18M3X, ATV71HD18M3X	VX5A1HD18M3X	486.00	
Power Board	ATV61HD37N4, ATV71HD37N4	VX5A1HD37N4	446.00	
Power Board	ATV61HD45M3X, ATV71HD45M3X	VX5A1HD45M3X	459.00	
Power Board	ATV61HD75M3X, ATV61HD55M3X, ATV71HD55M3X	VX5A1HD5575	956.00	
Power Board	ATV61HD90M3X, ATV71HD75M3X	VX5A1HD7590	956.00	
Power Board	ATV61HD90N4, ATV61HC11N4, ATV71HD90N4	VX5A1HD9011	737.00	
Power Board	ATV71HC28N4	VX5A71HC28N4	1904.00	
Power Board	ATV61HD22M3X, ATV71HD22M3X	VX5A1HD22M3X	486.00	
Power Board	ATV61HD22N4, ATV71HD22N4	VX5A1HD22N4	475.00	
Power Board	ATV61HD30M3X, ATV71HD30M3X	VX5A1HD30M3X	459.00	

	Description	For Use on Drives	Catalog Number	\$ Price
	Power Board	ATV61HD37M3X, ATV71HD37M3X	VX5A1HD37M3X	459.00
	Power Board / IGBT Modules	ATV61HD30N4, ATV71HD30N4	VX5IM2145M1271	1139.00
	Power Board / IGBT Modules	ATV61HD45N4, ATV71HD45N4	VX5IM2200M1271	1379.00
	Power Board / IGBT Modules	ATV61HD55N4, ATV71HD55N4	VX5IM2300M1271	1252.00
	Power Board / IGBT Modules	ATV61HD75N4, ATV71HD75N4	VX5IM2400M1271	992.00
	Power IGBT Module	ATV61HC13N4, ATV61HD90N4, ATV61HC11N4, ATV71HC11N4, ATV71HD90N4	VZ3IM1400M1271	606.00
	Power IGBT Module	ATV61HC22N4, ATV61HC25N4, ATV71HC16N4, ATV71HC20N4	VZ3IM1402M1271	794.00
	Power IGBT Module	ATV61HD75M3X, ATV61HD55M3X, ATV61HD90M3X, ATV71HD55M3X, ATV71HD75M3X	VZ3IM1600M0671	461.00
	Power IGBT Module	ATV61HC16N4, ATV71HC13N4	VZ3IM1600M1271	529.00
	Power IGBT Module	ATV61HC31N4, ATV71HC25N4, ATV71HC28N4	VZ3IM1602M1271	1059.00
	Power IGBT Module	ATV61HC40N4, ATV61HC50N4, ATV71HC31N4, ATV71HC40N4	VZ3IM1603M1271	1491.00
	Power IGBT Module	ATV61HC63N4, ATV71HC50N4	VZ3IM1604M1271	1952.00
	Power IGBT Module	ATV61HD37N4, ATV71HD37N4	VZ3IM2195M1271	223.00
	Power Rectifier Module	ATV61HD90N4, ATV61HC11N4, ATV71HD90N4	VZ3TD1250M1671	310.00
	Power Rectifier Module	ATV61HC16N4, ATV61HC13N4, ATV71HC13N4, ATV71HC11N4	VZ3TD1285M1671	353.00
	Power Terminal Block	ATV61HD11M3X, ATV61HD15M3X, ATV61HD15N4, ATV61HD18N4, ATV71HD11M3X, ATV71HD15M3X, ATV71HD15N4, ATV71HD18N4	VZ3N1205	65.00
	Power Terminals Block	ATV61HD18M3X, ATV61HD22M3X, ATV61HD22N4, ATV71HD18M3X, ATV71HD22M3X, ATV71HD22N4	VZ3N1206	229.00
	Power Terminals Block	ATV61HD30N4, ATV61HD37N4, ATV71HD30N4, ATV71HD37N4	VZ3N1207	229.00
	Rectifier Module Thyristor/Diode	ATV61HC22N4, ATV61HD75M3X, ATV61HD55M3X, ATV61HD90M3X, ATV71HC16N4, ATV71HD55M3X, ATV71HD75M3X	VZ3TD1330M1601	412.00
	Rectifier Module Diode	ATV61HC25N4, ATV61HC31N4, ATV61HC40N4, ATV61HC50N4, ATV61HC63N4, ATV71HC20N4, ATV71HC25N4, ATV71HC28N4, ATV71HC31N4, ATV71HC40N4, ATV71HC50N4	VZ3DM1600M1671	412.00
	Rectifier Module Thyristor	ATV61HC25N4, ATV61HC50N4, ATV71HC20N4, ATV71HC40N4	VZ3TM1425M1671	382.00
	Rectifier Module Thyristor	ATV61HC31N4, ATV61HC40N4, ATV61HC63N4, ATV71HC25N4, ATV71HC28N4, ATV71HC31N4, ATV71HC50N4	VZ3TM1600M1671	407.00
Replacement Parts	Rectifier Snubber Circuit	ATV61HC16N4, ATV61HC22N4, ATV61HC25N4, ATV61HC31N4, ATV61HC40N4, ATV61HC50N4, ATV61HC63N4, ATV71HC13N4, ATV71HC16N4, ATV71HC20N4, ATV71HC25N4, ATV71HC28N4, ATV71HC31N4, ATV71HC40N4, ATV71HC50N4	VX4A1200	294.00
	SCR Modules	ATV61HD30N4, ATV71HD30N4	VZ3TD1057M1671	44.00
	SCR Modules	ATV61HD37N4, ATV61HD45N4, ATV71HD37N4, ATV71HD45N4	VZ3TD1072M1671	156.00
	SCR Modules	ATV61HD30M3X, ATV61HD55N4, ATV71HD30M3X, ATV71HD55N4	VZ3TD1092M1671	155.00
	SCR Modules	ATV61HD37M3X, ATV61HD75N4, ATV71HD37M3X, ATV71HD75N4	VZ3TD1132M1671	290.00
	Screw Kit	ATV61HD75M3X, ATV61HD90N4, ATV61HD55M3X, ATV61HC11N4, ATV71HD90N4, ATV71HD55M3X	VY1ADV1105	107.00
	Screw Kit	ATV61HC22N4, ATV71HC16N4, ATV71HC20N4	VY1ADV1108	76.00
	Screw Kit	ATV61HC25N4, ATV61HC31N4, ATV71HC20N4, ATV71HC25N4, ATV71HC28N4	VY1ADV1109	76.00
	Screw Kit	ATV61HC40N4, ATV61HC50N4, ATV71HC31N4, ATV71HC40N4	VY1ADV1110	70.00
	Screw Kit	ATV61HC63N4, ATV71HC50N4	VY1ADV1111	70.00
	Screw Kit	ATV61HC13N4, ATV61HD90M3X, ATV71HC11N4, ATV71HD75M3X	VY1ADV1106	109.00
	Screw Kit	ATV61HC16N4, ATV71HC13N4	VY1ADV1107	76.00
	Snubber Capacitor Kit	ATV61HD90N4, ATV61HC11N4, ATV71HD90N4	VZ3S1910	407.00
	Snubber Capacitor Kit	ATV61HD75M3X, ATV61HD55M3X, ATV61HD90M3X, ATV71HD55M3X, ATV71HD75M3X	VZ3S1911	68.00
	Snubber Capacitor Kit	ATV61HC13N4, ATV71HC11N4	VZ3S1912	
	Soft Charge Board	ATV61HC16N4, ATV61HC22N4, ATV61HD75M3X, ATV61HC25N4, ATV61HC31N4, ATV61HC13N4, ATV61HD90N4, ATV61HC40N4, ATV61HC50N4, ATV61HC63N4, ATV61HD55M3X, ATV61HD90M3X, ATV61HC11N4, ATV71HC13N4, ATV71HC16N4, ATV71HC20N4, ATV71HC25N4, ATV71HC28N4, ATV71HC11N4, ATV71	VX5A1300	126.00
	Thermal Sensor	ATV61HD75M3X, ATV61HC13N4, ATV61HD90N4, ATV61HD55M3X, ATV61HD90M3X, ATV61HC11N4, ATV71HC11N4, ATV71HD90N4, ATV71HD55M3X, ATV71HD75M3X	VZ3G1102	41.00
	Thermal Sensor	ATV61HC16N4, ATV61HC22N4, ATV61HC25N4, ATV61HC31N4, ATV61HC40N4, ATV61HC50N4, ATV61HC63N4, ATV71HC13N4, ATV71HC16N4, ATV71HC20N4, ATV71HC25N4, ATV71HC28N4, ATV71HC31N4, ATV71HC40N4, ATV71HC50N4	VZ3G1104	71.00
	Wire Kit	ATV61HC16N4, ATV71HC13N4	VZ3N1316	382.00
	Wire Kit	ATV61HC22N4, ATV71HC16N4	VZ3N1317	471.00
Wire Kit	ATV61HC31N4, ATV61HC25N4, ATV71HC25N4, ATV71HC28N4, ATV71HC20N4	VZ3N1318	2765.00	
Wire Kit	ATV61HC40N4, ATV61HC50N4, ATV71HC31N4, ATV71HC40N4	VZ3N1333	1135.00	
Wire Kit	ATV61HC63N4, ATV71HC50N4	VZ3N1334	894.00	
Wire Kit	ATV61HD75M3X, ATV61HD90N4, ATV61HD55M3X, ATV61HC11N4, ATV71HD90N4, ATV71HD55M3X	VZ3N1323	244.00	
Wire Kit	ATV61HC13N4, ATV61HD90M3X, ATV71HC11N4, ATV71HD75M3X	VZ3N1324	242.00	

Note: Spare Parts not listed are not yet available for Commercial sale. For installation contact your local Square D Services location or call 1-888-788-2733 (option Technical Support then option for Field Services) for scheduling assistance.

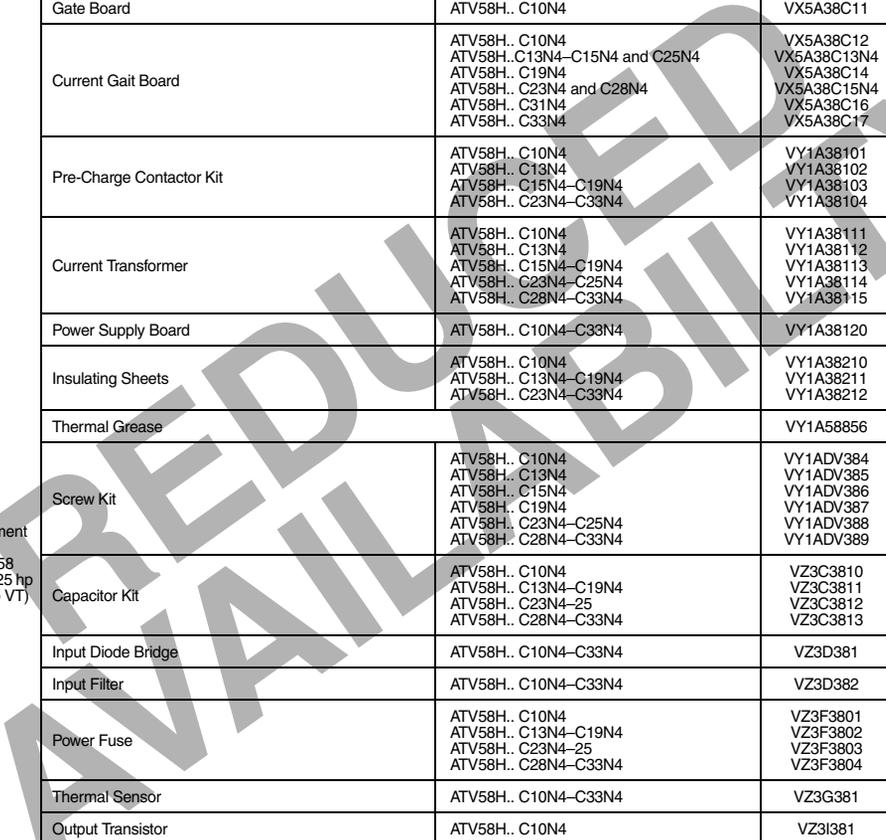
	Description	For Use on Drives	Catalog Number	\$ Price
	ATV58 TRX Control Board Kit	ATV58 Type E, F, H and N	VX4A581U	625.00
	ATV58 Flux Vector Control Board	FVC only	VX4A58F1	1195.00
	Removable ATV58 Control Board Terminal Strips (Includes relay terminal strip and both 9 pin and 10 pin terminal strips)	ATV58 Type E, F, H and N	VZ3N581U	25.00
	Internal Fan Kit for ATV58 Frame 2 and Frame 3 (2 Fans)	ATV58..U29M2, U41M2▲, U54M2, U72M2 and ATV58..U18N4, U29N4, U41N4, U54N4, U72N4, U90N4	VZ3V58223U	125.00
	Internal Fan Kit for ATV58 Frame 4 and Frame 5 (3 Fans)	ATV58..U90M2, D12M2 and ATV58..D12N4, D16N4, D23N4	VZ3V58245U	158.00
	Internal Fan Kit for ATV58 Frame 6 (4 Fans)	ATV58..D16M2, D23M2 and ATV58..D28N4, D33N4, D46N4	VZ3V58260U	198.00
	Internal Fan Kit for ATV58 Frame 7 (4 Fans)	ATV58..D28M2, D33M2, D46M2 and ATV58..D54N4, D64N4, D79N4	VZ3V58270U	235.00
	Power Terminal Block for ATV58 Frame 6	ATV58..D16M2 and ATV58..D28N4, D33N4	VZ3N58160U	155.00
	Power Terminal Block for ATV58 Frame 6	ATV58..D23M2 and ATV58..D46N4	VZ3N58165U	165.00
	Power Terminal Block for ATV58 Frame 7	ATV58..D28M2, D33M2, D46M2 and ATV58..D54N4, D64N4, D79N4	VZ3N58170U	175.00
Replacement Parts	Internal EMC Filter Kit	ATV58 ..D28N4	VX4A58861U	325.00
		ATV58 ..D33N4	VX4A58862U	475.00
ATV58 ..D46N4		VX4A58863U	485.00	
ATV58 ..D54N4		VX4A58871U	547.00	
ATV58 ..D64N4		VX4A58872U	634.00	
ATV58 ..D79N4		VX4A58873U	883.00	
Power Board	ATV58 ..D16M2	VX5A58D16M2U	1138.00	
	ATV58 ..D23M2	VX5A58D23M2U	1138.00	
	ATV58 ..D28M2	VX5A58D28M2U	1510.00	
	ATV58 ..D33M2	VX5A58D33M2U	1595.00	
	ATV58 ..D46M2	VX5A58D46M2U	1595.00	
	ATV58 ..D28N4	VX5A58D28N4U	1138.00	
	ATV58 ..D33N4	VX5A58D33N4U	1138.00	
	ATV58 ..D46N4	VX5A58D46N4U	1138.00	
	ATV58 ..D54N4	VX5A58D54N4U	1510.00	
	ATV58 ..D64N4	VX5A58D64N4U	1595.00	
	ATV58 ..D79N4	VX5A58D79N4U	1595.00	
Output Transistor Kit [Six (6) transistors included per kit]	ATV58 ..D28N4	VZ3IM6075M1258U	740.00	
	ATV58 ..D16M2 & D33N4	VZ3IM6100M1258U	905.00	
	ATV58 ..D23M2, D28M2 & D46N4, D54N4	VZ3IM6150M1258U	1036.00	
	ATV58 ..D33M2, D46M2 & D64N4, D79N4	VZ3IM2200M1258U	1308.00	
Dynamic Braking Transistor	ATV58 ..D16M2, D23M2, & D28N4, D33N4, D46N4	VZ3IM1050M1258U	310.00	
	ATV58 ..D28M2 & D54N4	VZ3IM1100M1258U	340.00	
	ATV58 ..D33M2, D46M2 & D64N4, D79N4	VZ3IM1150M1258U	380.00	
Input Diode/Thyristor Bridge Kit for all three (3) phases	ATV58 ..D16M2, & D28N4, D33N4	VZ3TD1055M1658U	410.00	
	ATV58 ..D23M2, D28M2 & D46N4, D54N4	VZ3TD1090M1658U	456.00	
	ATV58 ..D33M2, D46M2 & D64N4, D79N4	VZ3TD1130M1658U	520.00	

▲ This kit can be used on ATV58..U41M2 product with a date code of 0126 or later. ATV58..U41M2 product manufactured prior to this date had the fan leads soldered to the power board and should be sent to the factory for repair or exchange.  
Note: We anticipate offering renewal parts for 5 years through 2012. The ATV61 and ATV71 AC drive should be used in new applications.

	Description	For Use on Drives	Catalog Number	\$ Price
	Control Board	ATV58H..C10N4-C33N4	VX4A381	680.00
	Interface Board	ATV58H.. C10N4-C33N4	VX4A382	300.00
	Gate Drive Board	ATV58H.. C10N4-C33N4	VX5A38C10N4	820.00
	Gate Board	ATV58H.. C10N4	VX5A38C11	180.00
	Current Gait Board	ATV58H.. C10N4	VX5A38C12	400.00
		ATV58H..C13N4-C15N4 and C25N4	VX5A38C13N4	400.00
		ATV58H.. C19N4	VX5A38C14	400.00
		ATV58H.. C23N4 and C28N4	VX5A38C15N4	400.00
		ATV58H.. C31N4	VX5A38C16	400.00
	Pre-Charge Contactor Kit	ATV58H.. C10N4	VY1A38101	360.00
		ATV58H.. C13N4	VY1A38102	370.00
		ATV58H.. C15N4-C19N4	VY1A38103	890.00
		ATV58H.. C23N4-C33N4	VY1A38104	1565.00
	Current Transformer	ATV58H.. C10N4	VY1A38111	100.00
		ATV58H.. C13N4	VY1A38112	100.00
		ATV58H.. C15N4-C19N4	VY1A38113	100.00
		ATV58H.. C23N4-C25N4	VY1A38114	260.00
		ATV58H.. C28N4-C33N4	VY1A38115	260.00
	Power Supply Board	ATV58H.. C10N4-C33N4	VY1A38120	820.00
	Insulating Sheets	ATV58H.. C10N4	VY1A38210	120.00
		ATV58H.. C13N4-C19N4	VY1A38211	240.00
		ATV58H.. C23N4-C33N4	VY1A38212	320.00
	Thermal Grease		VY1A58856	80.00
	Screw Kit	ATV58H.. C10N4	VY1ADV384	85.00
		ATV58H.. C13N4	VY1ADV385	100.00
		ATV58H.. C15N4	VY1ADV386	100.00
		ATV58H.. C19N4	VY1ADV387	100.00
		ATV58H.. C23N4-C25N4	VY1ADV388	150.00
		ATV58H.. C28N4-C33N4	VY1ADV389	160.00
	Capacitor Kit	ATV58H.. C10N4	VZ3C3810	2455.00
		ATV58H.. C13N4-C19N4	VZ3C3811	3560.00
		ATV58H.. C23N4-25	VZ3C3812	6230.00
		ATV58H.. C28N4-C33N4	VZ3C3813	7350.00
	Input Diode Bridge	ATV58H.. C10N4-C33N4	VZ3D381	345.00
	Input Filter	ATV58H.. C10N4-C33N4	VZ3D382	145.00
	Power Fuse	ATV58H.. C10N4	VZ3F3801	305.00
		ATV58H.. C13N4-C19N4	VZ3F3802	320.00
		ATV58H.. C23N4-25	VZ3F3803	565.00
		ATV58H.. C28N4-C33N4	VZ3F3804	565.00
	Thermal Sensor	ATV58H.. C10N4-C33N4	VZ3G381	180.00
	Output Transistor	ATV58H.. C10N4	VZ3I381	1120.00
	Output Transistor Kit	ATV58H.. C13N4-C19N4	VZ3I382	2225.00
		ATV58H.. C23N4-C25N4	VZ3I383	4305.00
		ATV58H.. C28N4-C33N4	VZ3I384	5340.00
	Internal Cable Kit	ATV58H.. C10N4	VZ3N3808	455.00
		ATV58H.. C13N4-C19N4	VZ3N3809	475.00
		ATV58H.. C23N4-C33N4	VZ3N3810	1040.00
	Pre-Charge Resistor	ATV58H.. C10N4	VZ3R3810	335.00
		ATV58H.. C13N4-C19N4	VZ3R3811	195.00
		ATV58H.. C23N4-C33N4	VZ3R3812	240.00
	Control Transformer	ATV58H.. C10N4	VZ3TR381	180.00
		ATV58H.. C13N4-C19N4	VZ3TR382	305.00
		ATV58H.. C23N4-C33N4	VZ3TR383	350.00
	Heatsink Fans	ATV58H.. C10N4	VZ3V3808	675.00
		ATV58H.. C13N4-C19N4	VZ3V3809	970.00
		ATV58H.. C23N4-C33N4	VZ3V3810	1780.00
	Internal Fan Kit	ATV58H.. C10N4-C19N4	VZ3V3818	120.00
		ATV58H.. C19N4	VZ3V3819	60.00
		ATV58H.. C23N4-C33N4	VZ3V3820	225.00

Note: Note: We anticipate offering renewal parts for 5 years through 2012. The ATV61 and ATV71 AC drive should be used in new applications.

Replacement Parts  
(For ATV58  
Type H 125 hp  
to 500 hp VT)



**Table 41: Options—Field Installed**

	Description	For Use on Drives	Catalog Number	\$ Price	
<p><b>Operator Interface Options</b></p>	Keypad	ATV58 Type E, F, H, N and FVC	VW3A58101U	115.00	
	Keypad Remote Mount Kit (IP65 rating)	ATV58 Type H and FVC	VW3A58103	125.00	
	Power Suite test & commissioning software for PC & PPC on CD	ATV58 all types	VW3A8104	150.00	
	PowerSuite upgrade CD from most recent to new version	ATV58 all types	VW3A8105	98.00	
	PC Cable connection kit to connect to PC to drive	ATV58 all types	VW3A8106	75.00	
	Closing Plate Kit	ATV58 Type N	VW3A58836	25.00	
	Keypad Mount Kit	ATV58 Type N	VW3A58837	55.00	
	Operator, mounting collar, 2.5k ohm, 1/2 watt potentiometer	All enclosed models, ATV58 Type H	ATVPOT25K	69.00	
<p><b>I/O Extension Cards</b></p>	Analog I/O Option Card Provides 2 Logic Inputs, 1 Logic Output, 1 Analog Output, and 1 Bi-polar Analog Input	ATV58 Type E, F, H, N and FVC	VW3A58201U	200.00	
	Digital I/O Option Card Provides 2 Logic Inputs, 1 Logic Output, 1 Analog Output, and A, A-, B, B- Logic Inputs for Encoder Speed Feedback.	ATV58 Type E, F, H, N and FVC	VW3A58202U	200.00	
	General Purpose Option Card Provides 1 Form C Relay Output and 3 Analog Outputs	ATV58 Type E, F, H and N	VW3A58253U	350.00	
<p><b>Application Option Cards</b></p>	Pump Switching Card Sequences up to five pumps with one ATV58	ATV58 Type E, F, H and N	VW3A58210U	550.00	
	115 Vac ATV58 Logic Input Module Provides 115 Vac conversion for logic inputs LI1, LI2, LI3 & LI4	ATV58 Type H and N	VW3A58275U	195.00	
	0–10 volt to 4–20 mA Adapter Card	ATV58 all types	3115829750	175.00	
<p><b>Communication Options</b></p>	FIPIO Communication Card	ATV58 Type E, F, H, N and N	VW3A58301U	550.00	
	Modbus® + Communication Card	ATV58 Type E, F, H, N and FVC	VW3A58302U	550.00	
	Modbus/Unitelway Communication Card	ATV58 Type E, F, H, N and FVC	VW3A58303U	300.00	
	Interbus S Communication Card	ATV58 Type E, F, H, N and FVC	VW3A58304EU	550.00	
	RS485 Cable w/ Modbus Mapping Guide	ATV58 Type E, F, H, N and FVC	VW3A58306U	50.00	
	Profibus DP Communication Card	ATV58 Type E, F, H, N and FVC	VW3A58307U	550.00	
	Device Net Communication Card	ATV58 Type E, F, H, N and FVC	VW3A58309U	550.00	
	Ethernet Modbus/TCP/IP Communication Card	ATV58 Type E, F, H, N and FVC	VW3A58310U	550.00	
	FIPIO Communication Card	ATV58 Type H 125–500 hp and FVC	VW3A58311U	550.00	
	LonWorks to Modbus DIN Rail Mount Gateway	ATV58 Type E, F, H and N	VW3A58312PU	495.00	
	Johnson Controls N2 Communication Card	ATV58 Type E, F, H and N	VW3A58354U	300.00	
<p><b>Fan Kit</b></p>	ATV58..U09M2, U18M2		VW3A58821	100.00	
	ATV58..U29M2, U41M2 and ATV58..U18N4, U29N4, U41N4		VW3A58822	100.00	
	ATV58..U54M2, U72M2 and ATV58..U54N4, U72N4, U90N4		VW3A58823	150.00	
	ATV58..U90M2, D12M2 and ATV58..D12N4, D16N4, D23N4		VW3A58824	175.00	
	ATV58..D16M2, D23M2 and ATV58..D28N4, D33N4, D46N4		VW3A58825	195.00	
	ATV58..D28M2, D33M2, D46M2 and ATV58..D54N4, D64N4, D79N4		VW3A58826	225.00	
<p><b>Braking Components</b></p>	DB Transistor	ATV58..U09M2, U18M2	VW3A58701	280.00	
	Protected DB Resistors in Type 1 Enclosure. For use with ATV58 Type E, F, FVC, H and N.	ATV58..U09M2, U18M2: U18N4, U29N4, U41N4, U54N4, U72N4		VW3A66711	422.00
		ATV58..U29M2, U41M2: U90N4, D12N4		VW3A66712	633.00
		ATV58..U54M2, U72M2: D16N4, D23N4		VW3A66713	950.00
		ATV58..U90M2, D12M2 and ATV58..D28N4, D33N4, D46N4		VW3A66714	1266.00
		ATV58..D16M2, D23M2 and ATV58..D54N4		VW3A66715	1846.00
		ATV58..D28M2, D33M2, D46M2 and ATV58..D64N4, D79N4		VW3A66716	2321.00
<p><b>Hardware</b></p>	Line Reactor for Single Phase Input IP00 Rating for use with ATV58 Type E, F, H and N	ATV58..U09M2, U18M2, U29M2, U41M2, U72M2	VW3A58501	350.00	
		ATV58..U90M2, D12M2	VW3A58502	380.00	
	EMC Wiring Plate Assist in compliance with Level A EMC directive. These plates are used to land the shield of shielded motor cables. For use with ATV58 Type FVC and Type H.	ATV58..U09M2, U18M2		VW3A58831	25.00
		ATV58..U29M2, U41M2 and ATV58..U18N4, U29N4, U41N4		VW3A58832	25.00
		ATV58..U54M2, U72M2 and ATV58..U54N4, U72N4, U90N4		VW3A58833	25.00
	Conduit Entrance Kit These kits have various sized knockouts to land conduit and provide wire bending space to wire line and load cables. For use with ATV58 Type FVC and Type H.	ATV58..U90M2, D12M2 and ATV58..D12N4, D16N4, D23N4		VW3A58834	25.00
		ATV58..U09M2, U18M2		VW3A58842	45.00
		ATV58..U29M2, U41M2 and ATV58..U18N4, U29N4, U41N4		VW3A58843	45.00
		ATV58..U54M2, U72M2 and ATV58..U54N4, U72N4, U90N4		VW3A58844	45.00
		ATV58..U90M2, D12M2 and ATV58..D12N4, D16N4, D23N4		VW3A58845	45.00
	ATV58..D16M2, D23M2 and ATV58..D28N4, D33N4, D46N4		VW3A58846	65.00	
	ATV58..D28M2, D33M2, D46M2 and ATV58..D54N4, D64N4, D79N4		VW3A58847	65.00	

▲ PL7 Software provides pre-defined configuration selections for 1/2 to 100 hp Type H products.  
Note: Note: We anticipate offering renewal parts for 5 years through 2012. The ATV61 and ATV71 AC drive should be used in new applications.

Description	For Soft Start:	Catalog Number	\$ Price
Control Board	All ATS48 soft starts	VX4G481	2530.00
Power Board	ATS48D17Y	VX5G48D17Y	625.00
	ATS48D22Y	VX5G48D22Y	635.00
	ATS48D32Y	VX5G48D32Y	650.00
	ATS48D38Y	VX5G48D38Y	675.00
	ATS48D47Y	VX5G48D47Y	715.00
	ATS48D62Y	VX5G48D62Y	840.00
	ATS48D75Y	VX5G48D75Y	900.00
	ATS48D88Y	VX5G48D88Y	1050.00
	ATS48C11Y	VX5G48C11Y	1110.00
	ATS48C14Y	VX5G48C14Y	1260.00
	ATS48C17Y	VX5G48C17Y	1315.00
	ATS48C21Y	VX5G48C21Y	1425.00
	ATS48C25Y	VX5G48C25Y	1515.00
	ATS48C32Y	VX5G48C32Y	1650.00
	ATS48C41Y	VX5G48C41Y	1795.00
	ATS48C48Y	VX5G48C48Y	1880.00
	ATS48C59Y	VX5G48C59Y	1975.00
	ATS48C66Y	VX5G48C66Y	2070.00
	ATS48C79Y	VX5G48C79Y	2180.00
	ATS48M10Y	VX5G48M10Y	2330.00
ATS48M12Y	VX5G48M12Y	2650.00	
Filter Board	ATS48D17, D22, D32, D38, D47Y	VX4G48161Y	175.00
	ATS48D62, D75, D88, C11Y	VX4G48162Y	215.00
	ATS48C14, C17Y	VX4G48163Y	330.00
	ATS48C21, C25, C32Y	VX4G48164Y	435.00
Firing Board	ATS48C41-C79, M10-M12Y	VX4G48165Y	340.00
SCR Power Module	ATS48D17, D22, D32Y	VZ3TM2056M18	243.00
	ATS48D38, D47Y	VZ3TM2091M18	277.00
	ATS48D62, D75Y	VZ3TM2132M18	372.00
	ATS48D88, C11Y	VZ3TM2162M18	478.00
	ATS48C14, C17Y	VZ3TM2250M18	658.00
	ATS48C21, C25, C32Y	VZ3TM2500M18	872.00
	ATS48C41, C79Y	VZ3TP2800M18	1125.00
	ATSC48-C66Y, M10-M12Y	VZ3TP2M12M18	1495.00
Temperature Sensor	ATS48D17-D88Y, C11-C32Y	VZ3G001	25.00
	ATS48C41-C79Y, M10-M12Y	VZ3G002	19.00
Fan	ATS48D32, D38Y	VZ3V481	65.00
	ATS48D47Y	VZ3V4811	71.00
	ATS48D62-D88, C11Y	VZ3V482	105.00
	ATS48C14, C17Y	VZ3V483	165.00
	ATS48C21, C25, C32Y	VZ3V484	218.00
	ATS48C41-C79Y, M10-M12Y	VZ3V485	293.00

**Drive Product Support Group**

For support and assistance, contact the Drive Product Support Group. The Drive Product Support Group is staffed from 8:00 am until 6:00 pm Eastern time to assist with product selection, start-up, and diagnosis of product or application problems.

**EMERGENCY** Technical phone support is available 24 hours a day, 365 days a year.

Toll Free 1-888-Square D (1-888-778-2733)  
E-mail drive.products.support@us.schneider-electric.com  
Fax 919-217-6508

**Square D Service (On-Site)**

The Square D Services division is committed to providing quality on-site service that consistently meets customer expectations. Services responds to your requests, seven days a week, 24 hours a day.

Phone: 888-778-2733 (Square D)

**Square D Customer Training**

Square D offers a variety of instructor-led skill enhancing and technical product training programs for customers. For a complete list of drives/soft start training with dates, locations and pricing please call:

Phone: 978-975-9306

Fax: 978-975-2821

**Customer Information Center**

**(Assist with stock checks, assist with claims, and assist with order management issues)**

To provide additional support, Square D has rolled out new Technical Service Representatives in local offices which have the strongest needs.

Due to time zone changes and different time operation requirements, business operation times vary.

Phone: 888-778-2733 (Square D)

Fax: 888-329-9773 (FAXXSQD)

Web Address: <http://www.SquareD.com>

**Literature Fulfillment Center**

To obtain support literature for your product or application needs, contact the Square D Literature Fulfillment Center.

Phone: 800-888-2448

Fax: 920-766-6675

E-mail: SquareD@banta.com

**Documentation, Start-up and Training**

**Standard Documentation**

Each AC Drive or Soft Start shipped includes one set of instruction bulletins. Additional instruction bulletins are available for **\$30.00 net** each. Each set of instruction bulletins includes installation, start-up, trouble shooting and wiring diagram information. Separate Approval and/or Record Drawings are not included.

**Approval Drawings**

Standard approval drawings are available for the enclosed drives and soft starts. The price adder for custom approval drawings are listed in the table below.

**NOTE:** Before manufacturing of the enclosed drive/soft start can begin, the approving parties must stamp and sign the transmittal forms that accompany the drawings. In the unlikely event that approval drawings are not approved and must be resubmitted, the approving parties must mark up, stamp and sign the drawings before a second set of approval drawings can be submitted.

**Record Drawings**

**Table 42: Pricing ▲**

Drawing Size	Approval Drawings ■		Record Drawings	
	One set per drive \$ Price	Floppy disks \$ Price	One set per drive \$ Price	Floppy disks \$ Price
A 8.5 x 11	250.00 net	350.00 net	175.00 net	270.00 net
B 11 x 17	250.00 net	350.00 net	175.00 net	270.00 net
C 17 x 22	250.00 net	350.00 net	175.00 net	270.00 net

- ▲ Enter drawing requirement as a separate line item on purchase order.
- Pricing for Approval Drawings include pricing for Record Drawings
- ◆ One set equals a maximum of 8 copies. Additional copies are available at **\$75.00 net** each.
- ★ Floppy Disks are available in both double and high density formats for both 3.5" and 5.25" diskettes. The drawings are available in several formats. They are.DWG; .DXF; .IGS; and Microcad.

**Table 43: Square D Services Drives Start-up Pricing**

Square D Service offers standard pricing for start-up under conditions as described below. The pricing is for Drives and Soft Starts located within the U.S., excluding Alaska and Hawaii.

Call 1-888-Square D for scheduling.

Service	Standard Price (Work Performed on weekdays during normal business hours) \$ Price	Premium Price (Work performed outside of normal business hours, Saturday, Sunday or Holidays) \$ Price
On Site Labor	\$165.00/Drive	\$300.00/Drive
Travel and Expense	See Below	See Below

**Notes:**

- Maximum of six drives or soft starts can be tested per day.
- When less than three days (72 hours) notice of start-up date is provided, the premium rate will be charged.

**Travel Time and Expenses**

Travel time and expenses will be calculated based on actual "round trip" mileage traveling from the Square D Sales Office to the job site and return.

Travel and living expenses will be billed at cost plus an administrative charge.

Travel and expense pricing will be based on actual number of trips with travel charges applied to each separate trip Square D Service makes to the job site.

**Schneider Electric USA**

3700 Sixth St. SW  
Cedar Rapids, IA 52404  
1-888-Square D  
1-888-778-2733  
www.schneider-electric.us