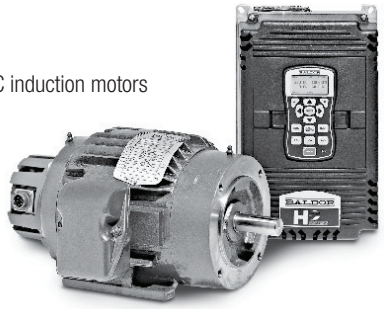
AC Motor Adjustable Speed Range Capabilities



Inverter Drive, Vector Drive, V*S Master and RPMAC Motors

Inverter Drive, Vector Drive, V*S Master and RPMAC Motors exceed all requirements of NEMA MG-1 Parts 30 and 31 for AC induction motors powered from adjustable speed inverter control. Satisfactory motor performance depends on proper drive setup.

Super-E® Motors

Super-E motors are Inverter-Ready and meet NEMA MG 1 Part 31.4.4.2. Super-E motors are suitable for use with inverter drives. Motor inverter setup is unique to each specific application. Proper setup and wiring procedures must be closely followed.

Application Considerations

It is necessary that motor-drive applications are commissioned by persons familiar with the operation and setup of adjustable speed drives, applicable electrical codes and any other regulations.

Each drive must be tuned to the motor for the specific application. System operating parameters must be checked, including voltage at motor power leads, to insure that motor/drive setup has been successfully completed.

Applications that are not properly setup can lead to substandard performance and failure of system components. In some installations, shaft grounding and isolated bearings may prevent bearing fluting and are available as an option or through Mod Express.

Reference the chart below for constant torque and variable torque capabilities for each product family. Torque performance depends upon proper drive setup.

Motors 48 body style and smaller are suitable for maximum 230V inverter operation.

Efficiency Savings

Significant energy savings can be achieved when applying Inverter Ready motors such as the Baldor Super-E to centrifugal load applications (fan and centrifugal pump) and running at reduced speed taking advantage of the affinity laws where motor load and corresponding energy consumption is reduced by the cube of the speed.

Family	Enclosure	Frame Size	Constant Torque	Variable Torque	Comments
Super E Motors 230, 460 and 575 Volts (2)					
EM	TEFC	56-210 (1)	20:1	20:1	General Purpose Premium Efficient
		250-320	10:1	20:1	
		360-400	4:1	20:1	
		444-449	2:1	20:1	
EM	ODP	56-210 (1)	10:1	20:1	General Purpose Premium Efficient
		250-320	5:1	20:1	
		360 - 449	2:1	20:1	
ECP/XEX and ECP8/841XL (3)	TEFC	140	20:1	20:1	Severe Duty Premium Efficient
		180-210	10:1	20:1	
		250-400	4:1	20:1	
		444-449	2:1	20:1	
EWDM	TENV,TEFC	56-256 (1)	20:1	20:1	Washdown Duty Premium Efficient
ESS/SSE	TEFC	56-250	2:1	10:1	Stainless Steel Washdown Duty
	TENV	56-140	4:1	10:1	
Standard-E Motors 230/460 and 575V (2) (4)					
M (TEFC)		56-326T frames (1)	4:1	20:1	General Purpose motors
		360T - 449T	2:1	20:1	
M (ODP)		56-326T frames (1)	4:1	20:1	
		360T - 449T	2:1	20:1	
CP/XT		145T frames	4:1	20:1	Severe Duty
		180T-445T frames	2:1	20:1	
		447T-449T frames	2:1	20:1	
WDM		56-215T frames (1)	4:1	20:1	Washdown Duty
Inverter Duty and Vector Duty Motors 230, 460 and 575 Volts					
IDCSWDM	TENV	56-140	5:1	10:1	Inverter Duty, Paint Free
IDCSWDM	TEFC	56-215	3:1	10:1	Inverter Duty, Paint Free
IDM	TEBC	143-5009	1000:1	1000:1	Inverter Duty, Blower Cooled
IDNM	TENV	143-256	1000:1	1000:1	Inverter Duty, Totally Enclosed Non-Ventilated
ZDM	TEBC	143-5009	1000:1	1000:1	Vector Duty, Blower Cooled
ZDNM	TENV	143-256	1000:1	1000:1	Vector Duty, Non-Ventilated
IDXM	TEXP	182-405	2:1	10:1	Inverter Duty, Explosion Proof
(2 families)		56-405	10:1	10:1	
IDWNM	TENV	143-254	1000:1	1000:1	Inverter Duty, Washdown, Non-Ventilated
ZDWNM	TENV	143-254	1000:1	1000:1	Vector Duty, Washdown, Non-Ventilated
V*S Master Motors 230 & 460 Volts					
IDNVSM	TENV	56-256	1000:1	1000:1	Inverter Duty, TENV, V*S Master
IDVSM	TEFC	182-449	1000:1	1000:1	Inverter Duty, TEFC, V*S Master
ZDNVSM	TENV	56-256	1000:1	1000:1	Vector Duty, TENV, V*S Master
ZDVSM	TEFC	182-449	1000:1	1000:1	Vector Duty, TEFC, V*S Master
ZDVSCP	TEFC-XT	143-326	1000:1	1000:1	Vector Duty, TEFC-XT, V*S Master
RPMAC Motors 230 & 460					
IDRPMN	TENV	FL180-FL210	1000:1	1000:1	Inverter Duty, TENV, RPMAC
IDRPMN	TEFC, TEBC, DPG-FV	FL180-FL440	1000:1	1000:1	Inverter Duty, TEFC, TEBC, DPG-FV, RPMAC
ZDNRPM	TENV	FL180-FL210	1000:1	1000:1	Vector Duty, TENV, RPMAC
ZDRPM	TEFC, TEBC	FL180-L400	1000:1	1000:1	Vector Duty, TEFC & TEBC, RPMAC
ZDPM	TEBC	FL180 - FL440	1000:1	1000:1	Vector Duty, TEBC, PM, RPMAC

(1) Baldor type 35M frames and larger
(2) For greater speed range capabilities, please select an Inverter Duty®, Vector Duty®, V*S Master or RPM AC type motor, or contact your local Baldor Sales Office for a custom motor design.
(3) Stock IEEE-841 motors include Division 2 labeling as standard. These motors will require a nameplate change through Mod Express to add inverter duty markings to the motors.
(4) Standard-E EPAct efficient motors are suitable for use in adjustable speed applications per NEMA MG 1 Part 30.

RPM AC, Salient Pole PM Rotor, Three Phase, TEBC

10 thru 150 Hp FL1831C thru FL2890

Applications: Extruders, conveyors, crane & hoist systems, converting, pumps, web processing, test stands, traction duty, winders, printing.

Features: Above premium efficient design utilizing salient pole PM rotor technology to achieve high efficiency, low FLA and optimized power factor. Synchronous speed performance in a compact square frame design FL180 aluminum and FL210-280 laminated steel frame design. Must be applied with VS1PM permanent magnet drive specifically designed for permanent magnet rotor performance. Speed feedback and rotor positioning provided via Tamagawa resolver (800123-5A). Continuous constant torque from base speed down to zero speed 1000:1 turn down. Premium class H insulation 40 C ambient, 1.0 S.F., ball bearings, three normally closed thermostats (one per phase). Surpasses the requirements of MG1, Part 31. Exclusive optimum pole Inverter Duty - not for across the line operation.

Hp	RPM	NEMA Frame	Catalog Number	List [c] Price	Mult. Sym.	"C" Dim.	Aprx. Wt. (lb)	Full Load Efficiency [b]	Voltage	Full Load Amps [b]	Rotor Inertia lb-ft^2	Notes [a]
10	1800	FL1831C	**ZDPM18010C-BV**	7,233	E2	27.50	135	94	230/460	11.2	0.46	8, 77, 91
15	1800	FL1838C	**ZDPM18015C-BV**	7,315	E2	29.00	143	94.6	460	16.2	0.63	8, 77, 92
20	1800	FL1844C	**ZDPM18020C-BV**	8,892	E2	30.50	180	94.7	460	22.5	0.77	8, 77, 92
25	1800	FL1852C	**ZDPM18025C-BV**	8,913	E2	32.50	209	95.1	460	26.7	0.96	8, 77, 92
30	1800	FL1852C	**ZDPM18030C-BV**	8,913	E2	32.50	209	94.7	460	32.6	0.96	8, 77, 92
40	1800	FL2162	**ZDPM21040-BV**	9,339	E2	33.50	290	94.5	460	44.7	2.14	8, 77, 93
50	1800	FL2168	**ZDPM21050-BV**	9,674	E2	35.00	330	94.8	460	54.8	2.60	8, 77, 93
60	1800	FL2173	**ZDPM21060-BV**	10,597	E2	36.00	355	94.8	460	66.8	2.99	8, 77, 93
75	1800	FL2578	**ZDPM25075-BV**	17,411	E2	38.50	540	95.8	460	82.3	4.90	8, 77, 93
100	1800	FL2586	**ZDPM25100-BV**	18,448	E2	40.50	605	96.8	460	110.4	5.83	8, 77, 93
125	1800	FL2882	**ZDPM28125-BV**	19,486	E2	43.61	730	95.9	460	136.9	9.43	8, 77, 93
150	1800	FL2890	**ZDPM28150-BV**	20,523	E2	45.61	805	96	460	163.4	11.16	8, 77, 93

[a] See notes on inside back flap.
[b] The data - including efficiency - is for fundamental sinewave components of amps and volts and does not include losses due to inverter pwm waveshapes.
[c] List price includes magnet surcharge and resolver.

All TEBC have integral blower rated 230/460 volts 3 phase. See VS1PM Drives on next page for matched performance drive.

MUST BE APPLIED WITH DRIVE FROM PAGE 178-179 SPECIFICALLY DESIGNED FOR PERMANENT MAGNET ROTOR PERFORMANCE.

VS1PM Permanent Magnet Drive

10 Hp **230 VAC** **3 Phase - 50/60 Hz**
10 thru 200 Hp **460 VAC** **3 Phase - 50/60 Hz**

Applications: Constant or Variable Torque Applications. New installations and original equipment manufactures (OEM).

Features: Exclusively for use with our RPMAC Interior Permanent Magnet Motors. Very high efficiency motor/drive packages. NEMA 1 Enclosures. Output frequency 0 to 66 Hz with peak overload capacity of 175%. Built-in two and three input PID process control loop. Automatically tuned to Baldor RPMAC Interior PM Motors. Uses same Graphic Keypad and Expansion Boards as the VS1SP/GV Families.

Output Ratings	Horsepower	10 HP @ 230VAC, 3PH; 10-200 HP @ 460VAC, 3PH
	Overload Capacity	Heavy Duty (Constant Torque) = 150% for 60 seconds, 175% for 3 seconds
		Normal Duty (Variable Torque) = 115% for 60 seconds
	Frequency	0-66 Hz
	Voltage	0-Maximum input voltage (RMS)
Input Ratings	Frequency	50 or 60 Hz ±5%
	Voltage	230 = 180-234 & 460 = 340-528
	Phase	Three Phase (single phase with derating)
	Impedance	1% minimum from mains connection
Control Spec	Control Method	Microprocessor controlled PWM, selectable closed loop vector
	PWM Frequency	Adjustable 4-5 kHz STD, 5-16 kHz quiet
	Speed Setting	±5 VDC, 0-5 VDC ±10 VDC, 0-10 VDC, 4-20 mA or 0-20 mA; digital (keypad), Serial Comms/USB 2.0, and Modbus RTU
	Accel/Decel	0-3600 sec
	Brake Torque	20% standard on Sizes AA and B, 1% standard on Size C, D, E requires external resistor
	Motor Matching	Automatic tuning to motor with manual override
	PC Setup Software	Mint WorkBench Software available using the USB 2.0 port for commissioning wizard, firmware download, parameter viewer scope capture and cloning,
	Maximum Output Frequency	66 Hz
	Selectable Operating Modes	Keypad, Standard Run, 2-Wire, Standard Run 3-Wire, 15 Preset Speeds, Fan Pump 2-Wire, Fan Pump 3-Wire, Process Control, 3-SPD ANA 2-Wire, 3-SPD ANA 3-Wire, Electronic Pot 2-Wire, Electronic Pot 3-Wire, Network Profile Run, Bipolar
Motor Feedback	Feedback Type	Resolver Feedback (Std.); Optional Incremental Encoder Feedback for VT Loads.
Protective Functions	Trip	Missing control power, over current, over voltage, under voltage, over temperature (motor or control), output shorted or grounded, motor overload, encoder loss.
	Stall Prevention	Over voltage suppression, overcurrent suppression
	External Output	LED trip condition indicators, 4 assignable logic outputs, 2 assignable analog outputs
	Short Circuit	Phase to phase, phase to ground
	Electronic Motor Overload	Meets UL508C (I^2T)
Environmental Conditions	Temperature	10 to 45°C. Derate 3% per °C to maximum ambient temperature of 55°C.
	Cooling	Forced air
	Enclosure	NEMA 1 (-1B, -1T)
	Altitude	Sea level to 3300 Feet (1000 Meters) Derate 2% per 1000 Feet (303 Meters) above 3300 Feet
	Humidity	NEMA 1: 10 to 90% RH Non-Condensing
	Shock/Vibration	1G / 0.5G at 10Hz to 60Hz
	Storage Temperature	-10 to +65°C
Keypad Display	Display	LCD Graphical 128x64 Pixel
	Keys	14 key membrane with tactile feedback
	Functions	Output status monitoring, Digital speed control, Parameter setting and display, Diagnostic and Fault log display, Motor run and jog, Local/ Remote toggle, One-step tuning
	LED Indicators	Forward run command, Reverse run command, Stop command, Jog active
	Remote Mount	200 feet (60.6m) maximum from control, NEMA 4 Rated
	Trip	Separate message and trace log for each trip, last 10 trips retained in memory
Analog Inputs	One Differential	±5VDC, ±10VDC, 4-20 mA and 0-20 mA, 11-bit + sign
	One Single Ended	0 - 10 VDC, 11-bit
	Input Impedence	80 kOhms (Volt mode); 500 Ohms (Current mode)
Analog Outputs	Analog Outputs	2 Assignable
	Full Scale Range	AOUT1 (0-5V, 0-10V, 0-20mA or 4-20mA), AOUT2 (+5V, +10V)
	Source Current	1 mA maximum (volt mode), 20mA (current mode)
	Resolution	9 bits
Digital Inputs	Opto-isolated Inputs	8 Assignable, 1 dedicated input (Drive Enable)
	Rated Voltage	10 - 30 VDC (closed contacts std)
	Input Impedance	4.71 k Ohms
	Leakage Current	10 mA maximum
	Update Rate	16 msec
Digital Outputs (2 Opto Outputs)	Rated Voltage	5 to 30VDC
	Maximum Current	60 mA Maximum
	ON Voltage Drop	2 VDC Maximum
	OFF Leakage Current	0.1 mA Maximum
	Output Conditions	31 Conditions
Digital Outputs (2 Relay Outputs)	Rated Voltage	5 to 30VDC or 240VAC
	Maximum Current	5A Maximum non-inductive
	Output Conditions	31 Conditions

VS1PM Permanent Magnet Drive Output Ratings

Catalog Number	Size	Heavy Duty			Normal Duty			List Price	Mult. Sym.
		Hp/kW	Continuous	Peak	Hp/kW	Continuous	Peak		
460 Volts - Three Phase									
VS1PM410-1B	AA	10/7.5	11.9	20.8	10/7.5	11.9	13.7	3,146	EC
VS1PM415-1B	B	15/11	17.9	31.2	20/15	23.0	26.4	3,945	EC
VS1PM420-1B	B	20/15	23.0	40.2	25/18.7	28.9	33.2	4,603	EC
VS1PM425-1B	B	25/18.7	28.9	50.6	30/22	34.0	39.1	5,806	EC
VS1PM430-1B	C	30/22	35.2	61.6	40/30	45.1	51.9	6,793	EC
VS1PM440-1B	C	40/30	44.2	77.4	50/37	55.3	63.5	8,546	EC
VS1PM450-1B	C	50/37	55.3	96.7	60/45	65.5	75.3	10,079	EC
VS1PM460-1B	D	60/45	74.2	129.9	75/55	90.8	104.4	10,846	EC
VS1PM475-1B	D	75/55	90.8	158.9	100/75	116.6	134.0	12,708	EC
VS1PM4100-1B	D	100/75	106.9	187.1	125/93	136.3	156.8	14,680	EC
VS1PM4125-1B	D	125/93	137.3	240.2	125/93	143.8	165.4	15,556	EC
VS1PM4150-1T *	E	150/112	153.0	262.8	200/150	204.0	234.6	18,691	EC
VS1PM4200-1T *	E	200/150	204.0	357.0	250/187	256.7	295.2	24,921	EC
VS1PM4250-1T *	E	250/187	256.7	449.2	300/224	306.7	352.9	31,152	EC

* VS1PM "-1T" drives include an internal braking transistor. An integral braking resistor is not included.

Dimensions in/(mm)

Size	Outside			Mounting		Ap'x Shpg. Wgt. Lbs. (kg)
	Height	Width	Depth	Height	Width	
AA	12.27(312)	7.97(202)	8.21(209)	11.75(298)	7.38(187)	20(9.1)
B	18.00(457)	9.10(231)	9.77(248)	17.25(438)	7.00(178)	30(13.6)
C	22.00(559)	9.10(231)	9.77(248)	21.25(540)	7.00(178)	60(27.2)
D	28.00(711)	11.50(292)	13.00(330)	27.25(692)	9.50(241)	120(54.4)
E	41.00(1041)	18.75(476)	16.00(406)	39.75(1010)	15.75(400)	250(113.4)

RPM AC, Inverter Duty, Three Phase

5 thru 1000 Hp — FL1838 thru L446I

Applications: Extruders, conveyors, crane & hoist systems, converting, pumps, web processing, test stands, traction duty, winders, printing.

Features: Compact square laminated steel frame FL210-L440 (FL180 is extruded aluminum) for inverter duty and vector duty 1000:1 constant torque. Premium class H insulation, 40 C ambient, 1.0 S.F. Ball bearing. Three normally closed thermostats (one per phase). Surpasses the requirements of MG1, Part 31. VPI insulation & insulated O.D.E. bearing is standard on all L440 frames. Exclusive optimum pole Inverter Duty - not for across the line operation.

Hp	RPM	Max. RPM	NEMA Frame	Enclosure	Catalog Number	List Price	Mult. Sym.	"C" Dim.	Aprx. Wt. (lb)	Voltage	Full Load Amps	Notes [a]
5	1800	3500	FL1838C	TENV	**IDNRPM18054C**	3,666	E2	17.87	170	230/460	7.4	90
7 1/2	1800	3500	FL1852C	TENV	**IDNRPM18074C**	4,215	E2	21.87	210	230/460	11	91
10	1800	3500	FL1844C	TEFC	**IDFRPM18104C**	4,376	E2	23.26	214	230/460	13.9	91
			FL2162C	TENV	**IDNRPM21104C**	4,990	E2	23.11	285	230/460	13.6	91
15	1800	3500	FL1844C	TEBC	**IDBRPM18154C**	4,522	E2	23.89	216	460	21	92
			FL2162C	TEFC	**IDFRPM21154C**	5,450	E2	26.74	307	460	20	92
20	1800	3500	FL1852C	TEBC	**IDBRPM18204C**	4,983	E2	25.89	286	460	12.5	92
			FL2162C	TEFC	**IDFRPM21204C**	5,450	E2	26.74	325	460	27	92
25	1800	3500	FL2162C	TEBC	**IDBRPM21254C**	5,800	E2	26.74	320	460	34	92
		2600	FL1844C	DPG-FV	**IDDRPM18254C**	5,244	E2	22.32	215	460	33	92
		3500	FL2173C	TEFC	**IDFRPM21254C**	5,886	E2	29.50	375	460	34	92
30	1800	3500	FL2162C	TEBC	**IDBRPM21304C**	5,800	E2	26.74	315	460	40	92
		3475	FL1852C	DPG-FV	**IDDRPM18304C**	5,456	E2	23.32	215	460	39	92
		3500	FL2570C	TEFC	**IDFRPM25304C**	6,195	E2	29.54	215	460	38	92
40	1800	3500	FL2173	TEBC	**IDBRPM21404**	6,409	E2	29.25	428	460	51	93
		2000	RL2162	DPG-FV	**IDDRPM21404**	6,356	E2	23.12	370	460	50	93
		3550	FL2586	TEFC	**IDFRPM25404**	6,739	E2	33.79	215	460	51	93
50	1800	3500	FL2570	TEBC	**IDBRPM25504**	7,147	E2	29.79	510	460	65	93
		2000	RL2168	DPG-FV	**IDDRPM21504**	8,556	E2	24.62	420	460	62	93
		3550	FL2882	TEFC	**IDFRPM28504**	11,510	E2	34.59	775	460	64	93
	1200	1300	RL2570	DPG-FV	**IDDRPM25506**	10,275	E2	26.38	552	460	64	93
60	1800	3500	FL2578	TEBC	**IDBRPM25604**	10,549	E2	31.79	580	460	75	93
		2200	RL2168	DPG-FV	**IDDRPM21604**	8,556	E2	24.62	438	460	74	93
		3550	FL2890	TEFC	**IDFRPM28604**	11,510	E2	36.59	855	460	76	93
	1200	1300	RL2578	DPG-FV	**IDDRPM25606**	12,458	E2	28.38	624	460	73	93
75	1800	3500	FL2586	TEBC	**IDBRPM25754**	12,599	E2	33.79	686	460	92	93
		2500	RL2570	DPG-FV	**IDDRPM25754**	10,275	E2	26.38	565	460	96	93
		3550	FL2898	TEFC	**IDFRPM28754**	13,751	E2	38.59	800	460	94	93
	1200	1300	RL2586	DPG-FV	**IDDRPM25756**	16,509	E2	30.38	687	460	91	93
100	1800	3550	FL2890	TEBC	**IDBRPM281004R1**	14,259	E2	41.11	785	460	124	93
		2000	RL2578	DPG-FV	**IDDRPM251004**	12,458	E2	28.38	630	460	119	93
	1200	1450	RL2882	DPG-FV	**IDDRPM281006**	18,432	E2	31.14	785	460	124	93
125	1800	3550	FL2898	TEBC	**IDBRPM281254**	15,089	E2	43.11	930	460	156	93
		3500	L3203	TEBC	**IDBRPM321254**	21,135	E2	44.25	1170	460	150	93
		2000	RL2586	DPG-FV	**IDDRPM251254**	16,509	E2	30.38	710	460	148	93
	1200		RL2898	DPG-FV	**IDDRPM281256**	24,030	E2	35.14	810	460	159	93
150	1800	3500	L3213	TEBC	**IDBRPM321504**	28,276	E2	46.75	1340	460	177	93
		2000	RL2882	DPG-FV	**IDDRPM281504**	18,432	E2	31.14	770	460	156	93
	1200	1600	L3203	DPG-FV	**IDDRPM321506**	28,276	E2	39.88	1145	460	180	93
200	1800	3500	L3614	TEBC	**IDBRPM362004**	31,281	E2	42.75	1746	460	227	93
			L4022	TEBC	**IDBRPM402004**	33,751	E2	42.12	1996	460	227	93
		2700	RL2898	DPG-FV	**IDDRPM282004**	24,030	E2	35.14	940	460	241	93
	1200	2000	L3213	DPG-FV	**IDDRPM322006**	32,927	E2	42.38	1325	460	236	93

[a] See notes on inside back flap.

All TEBC and DPG-FV have integral blower rated 230/460 volts 3 phase. All TENV, TEFC and TEBC have top mounted conduit box. All DPG-FV are F1.

ENCODER MOUNTING PROVISIONS - INCLUDE MACHINED ODE BRACKET AND SHAFT TAPPED FOR STUB SHAFT. FOR CLOSED LOOP CONTROL SEE ENCODER FEEDBACK KITS ON PAGES 183 AND 184 FOR USE WITH ID-RPM AC MOTORS. FOR RPM AC MOD EXPRESS, CONTACT YOUR BALDOR•RELIANCE DISTRICT OFFICE.

RPM AC, Inverter Duty, Three Phase

Hp	RPM	Max. RPM	NEMA Frame	Enclosure	Catalog Number	List Price	Mult. Sym.	"C" Dim.	Aprx. Wt. (lb)	Voltage	Full Load Amps	Notes [a]
250	1800	3500	L4034	TEBC	**IDBRPM402504**	39,164	E2	45.12	2244	460	283	93
		2945	L3203	DPG-FV	**IDDRPM322504**	28,276	E2	39.88	1150	460	290	93
	1200	2000	L3614	DPG-FV	**IDDRPM362504**	41,696	E2	45.00	1750	460	289	93
300	1800	3500	L4046	TEBC	**IDBRPM403004**	48,044	E2	48.12	2540	460	336	93
		2500	L3213	DPG-FV	**IDDRPM323004**	32,927	E2	42.88	1360	460	350	93
	1200	2000	L4034	DPG-FV	**IDDRPM403006**	55,045	E2	52.00	2289	460	360	93
350	1800	2200	L3614	DPG-FV	**IDDRPM363504**	41,696	E2	45.00	1812	460	401	93
400	1800	2500	L3614	DPG-FV	**IDDRPM364004**	41,696	E2	45.00	1742	460	477	93
		2700	FL4440	TEBC	**IDBRPM444004**	64,562	E2	78.57	3940	460	479	93
	1200	2000	L4046	DPG-FV	**IDDRPM404006**	67,104	E2	55.00	2485	460	451	93
500	1800	2700	FL4440	TEBC	**IDBRPM445004**	74,643	E2	78.57	3940	460	591	93
		2400	L4034	DPG-FV	**IDDRPM405004**	55,045	E2	52.00	2310	460	557	94
	1200	2380	L4461	DPG-FV	**IDDRPM445006**	104,952	E2	63.63	3875	460	669	95
600	1800	2200	L4046	DPG-FV	**IDDRPM406004**	67,104	E2	55.00	2100	460	666	94
		2500	FL4461	TEBC	**IDBRPM446004**	75,188	E2	86.82	4905	460	708	93
700	1800	2300	L4429	DPG-FV	**IDDRPM447004**	83,747	E2	55.63	3000	460	875	94
1,000	1800	2000	L4461	DPG-FV	**IDDRPM4410004**	104,952	E2	63.63	3890	460	1202	94

[a] See notes on inside back flap.

All TEBC and DPG-FV have integral blower rated 230/460 volts 3 phase. All TENV, TEFC and TEBC have top mounted conduit box. All DPG-FV are F1.

ENCODER MOUNTING PROVISIONS - INCLUDE MACHINED ODE BRACKET AND SHAFT TAPPED FOR STUB SHAFT. FOR CLOSED LOOP CONTROL SEE ENCODER FEEDBACK KITS ON PAGES 183 AND 184 FOR USE WITH ID-RPM AC MOTORS. FOR RPM AC MOD EXPRESS, CONTACT YOUR BALDOR•RELIANCE DISTRICT OFFICE.

RPM AC, Vector Duty, Three Phase, Totally Enclosed

5 thru 200 Hp FL1838 thru L4022

Applications: Test stands, extruders, conveyors, crane & hoist systems, converting, web processing, traction duty, winders, printing.

Features: Compact square laminated steel frame FL210-L440 (FL180 is extruded aluminum) for vector duty 1000:1 constant torque. Premium class H insulation, 40 C ambient, 1.0 S.F. Ball bearing. Three normally closed thermostats (one per phase). Surpasses the requirements of MG1, Part 31. VPI insulation & insulated O.D.E. bearing is standard on all L440 frames. Exclusive optimum pole Inverter Duty - not for across the line operation. Includes BEI HS35 1024 ppr hollow shaft encoder with MS twist lock connector, mating connector and protective cover.

Hp	RPM	Max. RPM	NEMA Frame	Enclosure	Catalog Number	List Price	Mult. Sym.	"C" Dim.	Aprx. Wt. (lb)	Voltage	Full Load Amps	Notes [a]
5	1800	3500	FL1838C	TENV	**ZDNRPM18054C**	5,692	E2	17.87	175	230/460	7.4	90
7 1/2	1800	3500	FL1852C	TENV	**ZDNRPM18074C**	6,241	E2	21.87	220	230/460	11	91
10	1800	3500	FL1844C	TEFC	**ZDFRPM18104C**	6,402	E2	23.23	179	230/460	13.9	91
			FL2162C	TENV	**ZDNRPM21104C**	7,017	E2	23.11	280	230/460	13.6	91
15	1800	3500	FL1844C	TEBC	**ZDBRPM18154C**	6,548	E2	28.93	180	460	21	92
20	1800	3500	FL1852C	TEBC	**ZDBRPM18204C**	7,010	E2	30.39	209	460	27	92
		2500	FL2162C	TEFC	**ZDFRPM21204C**	7,827	E2	26.74	290	460	27	92
25	1800	3500	FL2173C	TEFC	**ZDFRPM21254C**	7,912	E2	29.50	355	460	34	92
30	1800	3500	FL2162C	TEBC	**ZDBRPM21304C**	7,827	E2	31.24	290	460	40	92
			FL2570C	TEFC	**ZDFRPM25304C**	8,221	E2	29.54	475	460	40	92
40	1800	3500	FL2173	TEBC	**ZDBRPM21404**	8,242	E2	33.75	355	460	52	93
			FL2586	TEFC	**ZDFRPM25404**	8,572	E2	33.79	605	460	52	93
50	1800	3500	FL2570	TEBC	**ZDBRPM25504**	8,981	E2	34.26	558	460	61	93
60	1800	3500	FL2578	TEBC	**ZDBRPM25604**	12,383	E2	36.29	540	460	74	93
75	1800	3500	FL2586	TEBC	**ZDBRPM25754**	14,432	E2	38.29	605	460	94	93
100	1800	3550	FL2890	TEBC	**ZDBRPM281004R1**	16,091	E2	45.61	805	460	124	93
125	1800	3550	FL2898	TEBC	**ZDBRPM281254**	16,923	E2	47.61	985	460	156	93
		3500	L3203	TEBC	**ZDBRPM321254**	22,967	E2	44.25	1170	460	150	93
150	1800	3500	L3213	TEBC	**ZDBRPM321504**	30,109	E2	46.75	1310	460	177	93
200	1800	3500	L3614	TEBC	**ZDBRPM362004**	33,113	E2	46.75	1700	460	240	93
			L4022	TEBC	**ZDBRPM402004**	35,581	E2	49.12	2103	460	240	93

[a] See notes on inside back flap.
All TEBC have integral blower rated 230/460 volts 3 phase.

CONTINUOUS CONSTANT TORQUE TO ZERO SPEED

Encoder Feedback Kits

1024 PPR, Includes all Mounting Hardware and Mating Connector
The following kits for use with RPM AC motors on pages 180-181.

Catalog Number	Motor Enclosure	Type	Frame Size	Mfg.	Mag or Optical	Conn Type	Input Voltage VDC	List Price	Mult. Sym.	Ap'x. Shpg. Wgt.
417077-136	TENV	HS35	FL180-FL/RL280 (1)	BEI	O	MS-ST	5-15	1,442	E8	4
417077-208TL	TENV	HS35	FL180-FL280 (1)	BEI	O	MS-TL	5-28	1,442	E8	6
417077-153	TENV	H20	FL180-FL/RL280 (1)	Dynapar	O	MS-ST	5-15	1,598	E8	9
417077-156	TENV	RL67	FL180-FL/RL280 (1)	Dynapar	M	Latch	5-15	2,060	E8	9
417077-170	TENV	HS35M	FL180-FL/RL280 (1)	Avtron	M	MS-ST	5-24	1,442	E8	10
417077-133	TEFC	HS35	FL180-FL/RL280 (1)	BEI	O	MS-ST	5-15	1,442	E8	5
417077-165	TEBC	HS35	FL180	BEI	O	MS-ST	5-15	1,442	E8	15
417077-188	TEBC	HS35	FL210 Only	BEI	O	MS-ST	5-15	1,442	E8	10
417077-189	TEBC	HS35	FL250 Only	BEI	O	MS-ST	5-15	1,442	E8	10
417077-212TL	TEBC	HS35	FL250	BEI	O	MS-TL	5-28	1,442	E8	6
417708-140	TEBC	HS35	L320	BEI	O	MS-ST	5-15	1,442	E8	10
417708-142	TEBC	HS35	L400	BEI	O	MS-ST	5-15	1,442	E8	15
417077-173	TEBC	HS35M	FL180	Avtron	M	MS-ST	5-24	1,442	E8	10
417077-182	TEBC	HS35M	FL210 Only	Avtron	M	MS-ST	5-24	1,442	E8	10
417077-176	TEBC	HS35M	L280	Avtron	M	MS-ST	5-24	1,442	E8	15
417077-177	TEBC	HS35M	L320	Avtron	M	MS-ST	5-24	1,442	E8	35
417077-179	TEBC	HS35M	L400	Avtron	M	MS-ST	5-24	1,442	E8	35
417077-167	TEBC	H20	FL180	Dynapar	O	MS-ST	5-15	1,598	E8	20
417077-191	TEBC	H20	FL250 Only	Dynapar	O	MS-ST	5-15	1,598	E8	10
417708-90	TEBC	H20	L280	Dynapar	O	MS-ST	5-15	1,598	E8	13
417708-91	TEBC	H20	L320	Dynapar	O	MS-ST	5-15	1,598	E8	15
417077-168	TEBC	RL67	FL180	Dynapar	M	Latch	5-15	2,060	E8	10
417077-193	TEBC	RL67	FL250 Only	Dynapar	M	Latch	5-15	2,060	E8	10
417077-136	DPFV	HS35	FL180-RL280 (2)	BEI	O	MS-ST	5-15	1,442	E8	4
417077-208TL	DPFV	HS35	FL180-RL280 (2)	BEI	O	MS-TL	5-28	1,442	E8	6
417708-130	DPFV	HS35	L280-L400	BEI	O	MS-ST	5-15	1,442	E8	5
417077-218TL	DPFV	HS35	L320-L400	BEI	O	MS-TL	5-28	1,442	E8	6
417077-170	DPFV	HS35M	FL180-RL280 (2)	Avtron	M	MS-ST	5-24	1,442	E8	10
417077-171	DPFV	HS35M	L280-L400	Avtron	M	MS-ST	5-24	1,442	E8	5

Encoder Feedback Kits RPM AC Designs

Catalog Number	Motor Encl	Type	Frame Size	Mfg.	Mag or Optical	Conn Type	Input Voltage VDC	List Price	Mult. Sym.	Ap'x. Shpg. Wgt.
417077-153	DPFV	H20	FL180-RL280 (2)	Dynapar	O	MS-ST	5-15	1,598	E8	9
417708-85	DPFV	H20	L280-L400	Dynapar	O	MS-ST	5-15	1,598	E8	5
417077-156	DPFV	RL67	FL180-RL280 (2)	Dynapar	M	Latch	5-15	2,060	E8	9
417708-87	DPFV	RL67	L280-L400	Dynapar	M	Latch	5-15	2,060	E8	6
417708-120	DPFV	RL67	L440	Dynapar	M	Latch	5-15	2,060	E8	23

(1) Includes FL180, FL210, FL250, RL210, RL250, FL280 and RL280
(2) Includes FL180, RL210, RL250 and RL280

Encoder Mounting Kits - no encoder

Kit includes stub shaft only (no encoder) - unmounted - for RPM AC motor frames FL180-L440.

Encoder (reference)	Frame	Enclosure	Catalog Number	List Price	Mult. Sym.
BEI HS35 (1 inch dia.)	FL180-FL/RL250 (3)	DPFV,TENV,TEFC,TEBC (2)	**417708-201**	165	E8
	FL/RL280 thru L400	DPFV & TEBC (2)	**417708-202**	165	E8
	L440	DPFV & TEAO-P/B	**417708-203**	165	E8

(2) Note: encoder addition requires an extended blower cover on TEBC motors in all frames except L320. Cover is included in complete kits only.
(3) Includes FL180, FL210, FL250, RL210, RL250

RPM AC Slide Bases

Application: Used for adjustable belt tension on belted application not suitable for wall or ceiling mounting.

Frame	Catalog Number	List Price	Mult. Symbol	Dimension Sheet	Approx. Wt. (Lb.)
FL1831	**419914-9A**	469	E8	609957-9	13
FL1838	**419914-9B**	469	E8	609957-9	14
FL1844	**419914-9C**	469	E8	609957-9	15
FL1852	**419914-9D**	469	E8	609957-9	17
FL/RL2153	**419914-10A**	469	E8	609957-10	39
FL/RL2158	**419914-10B**	469	E8	609957-10	27
FL/RL2162	**419914-10D**	547	E8	609957-10	48
FL/RL2168	**419914-10L**	547	E8	609957-10	52
FL/RL2173	**419914-10M**	547	E8	609957-10	28
FL/RL2570	**419914-10G**	547	E8	609957-10	55
FL/RL2578	**419914-10N**	703	E8	609957-10	58
FL/RL2586	**419914-10P**	703	E8	609957-10	56
L2875	**419914-10J**	703	E8	609957-10	37
FL/RL/L2882	**419914-10K**	1,006	E8	609957-10	80
FL/RL/L2890	**419914-10R**	1,006	E8	609957-10	80
FL/RL/L2898	**419914-10S**	1,006	E8	609957-10	90
L3203	**419914-11P**	1,110	E8	609977-10	90
L3213	**419914-11R**	1,110	E8	609977-10	90
UL3698	**419914-11M**	1,300	E8	609977-10	105
UL3699	**419914-11C**	1,300	E8	609977-10	105
UL3607	**419914-11D**	1,300	E8	609977-10	74
UL3614	**419914-11N**	1,300	E8	609977-10	124
UL4022	**419914-11E**	2,476	E8	609977-10	105
UL4034	**419914-11F**	2,476	E8	609977-10	132
UL4046	**419914-11G**	2,476	E8	609977-10	141
UL4429	**419914-11H**	4,672	E8	609977-10	140
UL4440	**419914-11J**	4,672	E8	609977-10	150
UL4451	**419914-11K**	4,672	E8	609977-10	160
UL4461	**419914-11L**	4,672	E8	609977-10	165

RPM AC Filter Kits

Application: For use with DPFV enclosures

Frame	Catalog Number	List Price	Mult. Symbol	Description	Approx. Wt. (Lb.)
FL180	**417077-57**	911	A8	Washable Wire Mesh Canister Type	2
RL210	**417077-59**	911	A8	Washable Wire Mesh Canister Type	4
RL250	**417077-59**	911	A8	Washable Wire Mesh Canister Type	4
RL/L280	**417077-59**	911	A8	Washable Wire Mesh Canister Type	4
L320	**417077-59**	911	A8	Washable Wire Mesh Canister Type	4
L360	**417077-65**	1,165	A8	Washable Wire Mesh Canister Type	7
L400	**417077-102**	1,642	A8	Washable Wire Mesh Canister Type	6
L440	**417077-124**	1,893	A8	Square Replaceable Polyester Type	18

RPM AC Mounting Conversion Kits for FL180-FL280 Frames

Kits are for relocation of the conduit box of stock FL180 - FL280 frame motors as noted.
Installation of this kit requires complete disassembly/reassembly of motor. Price is for kit only.

Frame	Catalog Number	List Price	Mult. Sym.	Enclosure	Relocate Conduit Box:
			For FL180-FL280 Frames		
FL180	**417077-184**	503	E8	TENV, TEBC, TEFC	From Top to F-1 or F-2
FL180	**417077-185**	503	E8	DPFV	From F-1 to F-2
FL210	**417077-186**	591	E8	TENV, TEBC, TEFC	From Top to F-1 or F-2
FL250	**417077-187**	591	E8	TENV, TEBC, TEFC	From Top to F-1 or F-2
FL280	**417077-201**	632	E8	TENV, TEBC, TEFC	From Top to F-1 or F-2
			For RL210-RL280 Frames		
RL2153 thru RL2173	**417077-129**	503	E8	DPFV	From F-1 to F-2
RL250 thru RL2586	**417077-131**	503	E8	DPFV	From F-1 to F-2
RL2153 thru RL2173	**417077-130**	591	E8	TENV, TEBC, TEFC	From Top to F-1 or F-2
RL2570 thru RL2586	**417077-132**	591	E8	TENV, TEBC, TEFC	From Top to F-1 or F-2
RL2882 thru RL2898	**417077-202**	632	E8	DPFV	From F-1 to F-2

Replacement Blower Kits for DPG-FV RPM AC Motors

Kit includes blower motor and shroud, blower wheel and all mounting hardware. Filter is not included.

DPFV Frame	Catalog Number	List Price	Mult. Sym.
RL210	**417077-144**	897	E8
RL250	**417077-145**	1,753	E8
L280	**419947-31**	1,747	E8
L320	**419947-33**	1,944	E8
L360	**417077-127**	2,123	A8
L400	**417077-75**	2,324	A8
L440	**417077-126**	4,738	A8

Kit includes terminal box and blower motor only.

TEBC Frame	Catalog Number	List Price	Mult. Sym.
FL180 (3)	**417077-143**	897	E8
FL/RL210-320(3)	**417077-141**	1,142	E8

(3) Compact inline blower used on stock models (IP44 rating)

V*S Master Inverter Drive, Three Phase, Totally Enclosed

1/3 thru 300 Hp **NEMA 56C thru 449T**

Applications: Conveyors, extruders, printing lines, converting, test stands, anywhere constant torque is required over a wide speed range.

Features: Designed specifically for Inverter operation where up to 1000:1 constant torque speed range is required. Includes provisions for stub shaft for hollow shaft encoder, three thermostats, and all 440T frames include an ODE insulated bearing. Meets NEMA MG 1, Part 31. Continuous constant torque to zero speed.

Hp	RPM	Max. RPM	NEMA Frame	Enclosure	Catalog Number	List Price	Mult. Sym.	"C" Dim.	Aprx. Wt. (lb)	Full Load Efficiency	Voltage	Full Load Amps	Notes [a]
1/3	1800	6000	56C	TENV	**IDVSNM3534**	495	E2	13.84	35	80	230/460	0.6	2, 48
1/2	1800	6000	56C	TENV	**IDVSNM3538**	579	E2	13.84	35	84	230/460	0.9	2, 48
3/4	1800	6000	56C	TENV	**IDVSNM3542**	645	E2	13.84	34	84	230/460	1.2	2, 48
1	1800	6000	56C	TENV	**IDVSNM3546**	1,048	K	14.84	45	82.5	230/460	1.4	2, 48
			143TC	TENV	**IDVSNM3581T**	1,315	E2	14.65	58	85.5	230/460	1.5	2, 48
			143TC	TENV	**IDVSNM3581T-5**	1,256	E2	14.65	62	84	575	1.2	2, 48
	1200	2800	145TC	TENV	**IDVSNM3582T**	1,715	E2	14.65	61	82.5	230/460	1.8	2, 48
1 1/2	1800	5000	145TC	TENV	**IDVSNM3584T-5**	1,451	E2	14.65	64	86.5	575	1.7	2, 48
		6000	145TC	TENV	**IDVSNM3584T**	1,451	E2	14.65	64	82.5	230/460	2.1	2, 48
2	1800	6000	145TC	TENV	**IDVSNM3587T-5**	1,448	E2	14.65	62	86.5	575	2.2	2, 48
			145TC	TENV	**IDVSNM3587T**	1,516	E2	14.65	67	86.5	230/460	2.8	2, 48
3	1800	2700	182TC	TEFC	**IDVSM3661T**	1,674	E2	16.38	124	88.5	230/460	3.8	2, 48
			182TC	TENV	**IDVSNM3661T**	1,722	E2	14.94	126	87.5	230/460	3.8	2, 48
5	1800	2700	L184TC	TEFC	**IDVSM3665T**	1,941	E2	17.88	142	90.5	230/460	6.4	2, 48
			L184TC	TENV	**IDVSNM3665T**	1,995	E2	14.94	153	90.3	230/460	6.4	2, 48
7 1/2	1800	2700	213TC	TEFC	**IDVSM3770T**	2,497	E2	20.00	180	91.8	230/460	9.6	2, 48
			L215TC	TENV	**IDVSNM2237T**	2,567	E2	19.25	212	91	230/460	9.2	2, 48
10	1800	2700	L215TC	TEFC	**IDVSM3774T**	3,255	E2	20.88	205	91	230/460	12.4	2, 48
			254TC	TENV	**IDVSNM2238T**	3,521	E2	24.05	305	91.7	230/460	13	2, 48
15	1800	2700	254TC	TEFC	**IDVSM2333T**	3,787	E2	26.71	334	92.4	230/460	18	2, 48
			256TC	TENV	**IDVSNM2333T**	4,235	E2	24.05	335	94.1	230/460	18.5	2, 48
20	1800	2700	256TC	TEFC	**IDVSM2334T**	4,106	E2	26.71	366	93	230/460	24	2, 48
25	1800	2700	284TC	TEFC	**IDVSM4103T**	5,214	E2	30.42	451	93.6	230/460	30	2, 48
30	1800	2700	286TC	TEFC	**IDVSM4104T**	5,696	E2	30.42	475	94.1	230/460	36	2, 48
40	1800	2700	324T	TEFC	**IDVSM4110T**	6,571	E2	30.44	695	93.9	230/460	49.8	2, 48
50	1800	2700	326T	TEFC	**IDVSM4115T**	8,031	E2	30.28	697	94	230/460	60	2, 48
60	1800	2700	364T	TEFC	**IDVSM4314T**	9,948	E2	33.44	830	94.2	230/460	71.2	2, 48
75	1800	2700	365T	TEFC	**IDVSM4316T**	12,459	E2	33.44	901	94.3	230/460	89.2	2, 48
100	1800	2700	405T	TEFC	**IDVSM4400T-4**	16,102	E2	38.31	1259	94.1	460	115	2, 48
125	1800	2700	444T	TEFC	**IDVSM4410T-4**	19,987	E2	44.62	1664	94.1	460	150	2, 48
150	1800	2700	445T	TEFC	**IDVSM4406T-4**	23,853	E2	44.62	1832	95	460	177	2, 48
200	1800	2700	447T	TEFC	**IDVSM4407T-4**	28,263	E2	48.40	2226	95.4	460	226	2, 48
250	1800	2700	449T	TEFC	**IDVSM4408T-4**	39,946	E2	53.40	2567	95.8	460	277	2, 48
300	1800	2700	449T	TEFC	**IDVSM44304T-4**	39,946	E2	53.40	2857	96.2	460	338	2, 48

[a] See notes on inside back flap.

CONTINUOUS CONSTANT TORQUE TO ZERO SPEED

Cast Iron Frame

V*S Master Vector Drive, Three Phase, Totally Enclosed

1/2 thru 300 Hp NEMA 56C thru 449T

Applications: Conveyors, extruders, printing lines, converting, test stands, anywhere constant torque is required over a wide speed range.

Features: Designed specifically for Inverter operation where up to 1000:1 constant torque speed range is required. Includes 1024 ppr hollow shaft encoder, three thermostats, and all 440T frames include an ODE insulated bearing. Meets NEMA MG 1, Part 31. Continuous constant torque to zero speed.

Hp	RPM	Max. RPM	NEMA Frame	Enclosure	Catalog Number	List Price	Mult. Sym.	"C" Dim.	Aprx. Wt. (lb)	Full Load Efficiency	Voltage	Full Load Amps	Notes [a]
1/2	1800	6000	56C	TENV	**ZDVSNM3538**	2,136	E2	13.84	35	84	230/460	0.9	2, 46, 48
3/4	1800	6000	56C	TENV	**ZDVSNM3542**	2,201	E2	13.84	38	82.5	230/460	1.1	2, 46, 48
1	1800	6000	145TC	TENV	**ZDVSNM3581T**	2,872	E2	14.65	58	85.5	230/460	1.5	2, 46, 48
1 1/2	1800	6000	145TC	TENV	**ZDVSNM3584T**	3,006	E2	14.65	65	86.5	230/460	2.1	2, 46, 48
2	1800	6000	145TC	TENV	**ZDVSNM3587T**	3,315	E2	14.65	67	86.5	230/460	2.8	2, 46, 48
3	1800	2700	182TC	TEFC	**ZDVSM3661T**	3,508	E2	19.69	127	88.5	230/460	3.8	2, 46, 48
			182TC	TENV	**ZDVSNM3661T**	3,556	E2	14.69	132	87.5	230/460	3.8	2, 46, 48
5	1800	2700	L184TC	TEFC	**ZDVSM3665T**	3,773	E2	21.19	145	90.5	230/460	6.4	2, 46, 48
			L184TC	TENV	**ZDVSNM3665T**	3,828	E2	16.19	152	90.3	230/460	6.4	2, 46, 48
7 1/2	1800	2700	213TC	TEFC	**ZDVSM3770T**	4,329	E2	23.31	184	91.8	230/460	9.6	2, 46, 48
			L215TC	TENV	**ZDVSNM2237T**	4,399	E2	19.25	211	91	230/460	9.2	2, 46, 48
10	1800	2700	L215TC	TEFC	**ZDVSM3774T**	5,088	E2	24.19	210	91	230/460	12.4	2, 46, 48
			254TC	TENV	**ZDVSNM2238T**	5,354	E2	27.09	314	92.4	230/460	12.7	2, 46, 48
15	1800	2700	254TC	TEFC	**ZDVSM2333T**	5,620	E2	28.37	343	92.4	230/460	18.4	2, 46, 48
			256TC	TENV	**ZDVSNM2333T**	6,069	E2	27.09	342	92.4	230/460	18.7	2, 46, 48
20	1800	2700	256TC	TEFC	**ZDVSM2334T**	5,939	E2	28.37	361	93	230/460	25.5	2, 46, 48
25	1800	2700	284TC	TEFC	**ZDVSM4103T**	7,046	E2	30.75	458	93.6	230/460	31	2, 46, 48
30	1800	2700	286TC	TEFC	**ZDVSM4104T**	7,528	E2	30.75	458	94.1	230/460	38.1	2, 46, 48
40	1800	2700	324T	TEFC	**ZDVSM4110T**	8,404	E2	33.75	716	93.9	230/460	49.8	2, 46, 48
50	1800	2700	326T	TEFC	**ZDVSM4115T**	9,863	E2	33.75	716	94	230/460	62.5	2, 46, 48
60	1800	2700	364T	TEFC	**ZDVSM4314T**	11,781	E2	36.75	890	94.2	230/460	71.2	2, 46, 48
75	1800	2700	365T	TEFC	**ZDVSM4316T**	14,292	E2	36.75	930	94.3	230/460	89.2	2, 46, 48
100	1800	2700	405T	TEFC	**ZDVSM4400T-4**	17,935	E2	41.62	1191	94.1	460	115	2, 46, 48
125	1800	2700	444T	TEFC	**ZDVSM4410T-4**	21,819	E2	47.93	1771	94.1	460	150	2, 46, 48
150	1800	2700	445T	TEFC	**ZDVSM4406T-4**	25,685	E2	47.93	1860	95	460	177	2, 46, 48
200	1800	2700	447T	TEFC	**ZDVSM4407T-4**	30,096	E2	51.71	2268	95.4	460	226	2, 46, 48
250	1800	2700	449T	TEFC	**ZDVSM4408T-4**	41,779	E2	56.71	2601	95.8	460	277	2, 46, 48
300	1800	2700	449T	TEFC	**ZDVSM44304T-4**	41,779	E2	56.71	2852	96.2	460	338	2, 46, 48

[a] See notes on inside back flap.

CONTINUOUS CONSTANT TORQUE TO ZERO SPEED

Cast Iron Frame

V*S Master Severe Duty Vector Drive, Three Phase, Totally Enclosed

1/2 thru 50 Hp — NEMA 140T thru 320T

Applications: Conveyors, extruders, printing lines, converting, test stands, anywhere constant torque is required over a wide speed range. These Severe Duty motors are designed for harsh industrial environments by protecting motor components from moisture, chemicals, corrosion and abrasives.

Features: Designed specifically for Inverter operation where up to 1000:1 constant torque speed range is required. Includes 1024 ppr hollow shaft encoder and three thermostats. Uses Dynapar HSD38M encoder on 180 frame and up. Meets NEMA MG 1, Part 31. Continuous constant torque to zero speed.

Hp	RPM	Max. RPM	NEMA Frame	Enclosure	Catalog Number	List Price	Mult. Sym.	"C" Dim.	Aprx. Wt. (lb)	Full Load Efficiency	Voltage	Full Load Amps	Notes [a]
1	1800	6000	143TC	TENV	**ZDVSNCP3581T**	3,016	E2	14.61	58	87.5	230/460	1.5	2, 46, 48
1 1/2	1800	6000	145TC	TENV	**ZDVSNCP3584T**	3,150	E2	14.61	65	86.5	230/460	2.1	2, 46, 48
2	1800	6000	145TC	TENV	**ZDVSNCP3587T**	3,459	E2	14.61	67	86.5	230/460	2.8	2, 46, 48
3	1800	2700	182TC	TEFC	**ZDVSCP3661T**	3,902	E2	19.78	135	88.5	230/460	3.8	2, 46, 48
5	1800	2700	L184TC	TEFC	**ZDVSCP3665T**	4,234	E2	21.28	158	90.5	230/460	6.4	2, 46, 48
7 1/2	1800	2700	213TC	TEFC	**ZDVSCP3770T**	4,905	E2	23.46	201	91.8	230/460	9.6	2, 46, 48
10	1800	2700	L215TC	TEFC	**ZDVSCP3774T**	5,368	E2	24.34	218	91	230/460	12.4	2, 46, 48
15	1800	2700	254TC	TEFC	**ZDVSCP2333T**	6,421	E2	28.46	367	92.4	230/460	18.4	2, 46, 48
20	1800	2700	256TC	TEFC	**ZDVSCP2334T**	6,819	E2	28.46	381	93	230/460	25.5	2, 46, 48
25	1800	2700	284TC	TEFC	**ZDVSCP4103T**	8,157	E2	30.84	473	93.6	230/460	31	2, 46, 48
30	1800	2700	286TC	TEFC	**ZDVSCP4104T**	8,760	E2	30.84	481	94.1	230/460	38.1	2, 46, 48
40	1800	2700	324T	TEFC	**ZDVSCP4110T**	10,047	E2	33.84	762	93.9	230/460	49.8	2, 46, 48
50	1800	2700	326T	TEFC	**ZDVSCP4115T**	11,872	E2	33.84	746	94	230/460	62.5	2, 46, 48

[a] See notes on inside back flap.

CONTINUOUS CONSTANT TORQUE TO ZERO SPEED

Cast Iron Frame

V*S Master Encoder Feedback Kits

Encoder kits below feature 1024 pulses per revolution unless otherwise noted in the encoder type column. Connector styles include the MS twist lock (MS-TL), military style 10 pin screw tight (MS-ST), and the EPIC latch style (Latch). HS35, RAHS35M and HSD35 feature hollow shaft mounting. The HSD35 carry the Northstar brand. Encoder kits include the encoder and all mounting hardware. IDVSM & IDRPM kits include the mating connector.

Catalog Number	Motor Enclosure	Type	PPR	Frame Size	Mfg.	Mag or Optical	Conn Type	Input Voltage VDC	List Price	Mult. Sym.	Ap'x. Shpg. Wgt.
K99G72	TENV	HS35	1024	180T-250T	BEI	O	MS-ST	5-15	1,442	E8	6
K99G74	TENV	HS35-2048	2048	180T-250T	BEI	O	MS-ST	5-15	1,442	E8	6
K99G76	TENV	HS35	1024	180T-250T	BEI	O	MS-ST	5-24	1,442	E8	6
K99G70	TENV	RAHS35M	1024	180T-250T	Avtron	M	MS-ST	5-24	1,442	E8	9
K99G78	TENV	HSD35	1024	180T-250T	Dynapar	O	Latch	5-26	1,622	E8	8
K99G73	TEFC	HS35	1024	180T-440T	BEI	O	MS-ST	5-15	1,442	E8	6
K99G75	TEFC	HS35-2048	2048	180T-440T	BEI	O	MS-ST	5-24	1,442	E8	6
K99G77	TEFC	HS35	1024	180T-440T	BEI	O	MS-ST	5-24	1,442	E8	6
K99G71	TEFC	RAHS35M	1024	180T-440T	Avtron	M	MS-ST	5-24	1,442	E8	9
K99G79	TEFC	HSD35	1024	180T-440T	Dynapar	O	Latch	5-26	1,622	E8	8
K99G80	TENV	HS35	1024	180T-250T	BEI	O	MS-TL	5-28	1,442	E8	6
K99G81	TEFC	HS35	1024	180T-440T	BEI	O	MS-TL	5-28	1,442	E8	6

NOTE: For 56 and 140 IDVSM frame sizes use the kits from the IDM product table.

Inverter, Three Phase, TEBC and TENV, C-Face, Foot Mounted

1/3 thru 200 Hp NEMA 56C thru 447T

Applications: Conveyors, pumps, fans, metal processing, compressors, test stands, and material handling equipment.

Features: Designed for inverter or vector applications where up to a 1000:1 constant torque speed range is required. Compatible with optional encoder feedback devices for use in closed loop velocity or position control. Meets NEMA MG 1, Part 31. Encoder has mating connector.

Hp	RPM	Max. RPM	NEMA Frame	Enclosure	Catalog Number	List Price	Mult. Sym.	"C" Dim.	Aprx. Wt. (lb)	Full Load Efficiency	Voltage	Full Load Amps	Notes [a]
1/3	1800	6000	56C	TENV	**IDNM3534**	495	E2	13.84	33	76	230/460	0.6	2, 8, 60
1/2	1800	6000	56C	TENV	**IDNM3538**	579	E2	13.84	31	80	230/460	0.8	2, 8, 60
3/4	1800	6000	56C	TENV	**IDNM3542**	645	E2	13.84	33	78.5	230/460	1.4	2, 8, 60
1	1800	6000	143TC	TENV	**IDNM3581T**	1,315	E2	14.65	58	85.5	230/460	1.5	2, 8, 60
			143TC	TEBC	**IDM3581T**	1,737	E2	19.15	58	87.5	230/460	1.5	2, 8, 70
			143TC	TEBC	**IDM3581T-5**	1,737	E2	19.02	56	85.5	575	1.2	2, 8, 70
	1200	2800	145TC	TEBC	**IDM3582T**	2,040	E2	19.15	62	82.5	230/460	1.8	2, 8, 70
1 1/2	1800	6000	145TC	TENV	**IDNM3584T**	1,451	E2	14.65	58	84	230/460	2.3	2, 8, 60
			145TC	TEBC	**IDM3584T**	1,837	E2	19.02	70	88.5	230/460	2.1	2, 8, 70
			145TC	TEBC	**IDM3584T-5**	1,837	E2	19.02	63	88.5	575	1.7	2, 8, 70
	1200		182TC	TEBC	**IDM3667T**	2,294	E2	21.71	112	87.5	230/460	2.5	2, 8, 70
2	1800	6000	145TC	TEBC	**IDM3587T**	1,964	E2	19.15	65	88.5	230/460	2.7	2, 8, 70
			145TC	TEBC	**IDM3587T-5**	1,964	E2	19.02	73	88.5	575	2.3	2, 8, 70
	1200		184TC	TEBC	**IDM3664T**	2,356	E2	21.71	113	88.5	230/460	3.2	2, 8, 70
	1800		145TC	TENV	**IDNM3587T**	1,516	E2	14.65	67	86.5	230/460	2.8	2, 8, 60
			182TC	TENV	**IDNM3669T**	1,759	E2	17.21	94	84	230/460	2.9	2, 8, 60
3	1800	6000	184TC	TEBC	**IDM3661T**	2,509	E2	21.71	111	89.5	230/460	4.1	2, 8, 70
			184TC	TEBC	**IDM3661T-5**	2,509	E2	21.71	100	89.5	575	3.3	2, 8, 70
	1200		213TC	TEBC	**IDM3764T**	3,082	E2	29.14	187	90.2	230/460	4.5	2, 8, 70
	1800		184TC	TENV	**IDNM3661T**	1,986	E2	17.21	108	88.5	230/460	4	2, 8, 60
5	1800	6000	184TC	TEBC	**IDM3665T**	2,654	E2	21.71	118	90.2	230/460	6.5	2, 8, 70
			184TC	TEBC	**IDM3665T-5**	2,654	E2	21.71	100	90.2	575	5.2	2, 8, 70
	1200		215TC	TEBC	**IDM3768T**	3,772	E2	29.14	226	90.2	230/460	7.3	2, 8, 70
	1800		184TC	TENV	**IDNM3665T**	2,215	E2	17.21	118	89.5	230/460	6.6	2, 8, 60
			213TC	TENV	**IDNM3767T**	2,469	E2	20.40	170	89.5	230/460	6.7	2, 8, 60
7 1/2	1200	5000	254TC	TEBC	**IDM2276T**	5,423	E2	33.07	310	91.7	230/460	10.7	2, 8, 70
	1800	4000	213TC	TEBC	**IDM3770T**	3,200	E2	29.14	170	91.7	230/460	9.5	2, 8, 70
			213TC	TEBC	**IDM3770T-5**	3,200	E2	30.07	170	91.7	575	7.5	2, 8, 70
		5000	254TC	TENV	**IDNM2237T**	3,071	E2	24.05	270	90.2	230/460	9.1	2, 8, 60
		6000	213TC	TENV	**IDNM3770T**	2,563	E2	20.40	196	91.7	230/460	10.1	2, 8, 60
10	1200	5000	256TC	TEBC	**IDM2332T**	6,626	E2	33.07	345	91.7	230/460	14.2	2, 8, 70
	1800	6000	215TC	TEBC	**IDM3774T**	3,428	E2	29.14	231	92.4	230/460	12.5	2, 8, 70
		4000	215TC	TEBC	**IDM3774T-5**	3,428	E2	30.07	231	92.4	575	10	2, 8, 70
		5000	256TC	TENV	**IDNM2238T**	3,213	E2	24.05	286	91.7	230/460	13	2, 8, 60
15	1800	5000	256TC	TEBC	**IDM2333T**	3,726	E2	33.07	255	92.4	230/460	18.5	2, 8, 70
			256TC	TEBC	**IDM2333T-5**	3,726	E2	34.15	255	92.4	575	14.8	2, 8, 70
	1200	4000	284T	TEBC	**IDM4100T**	7,855	E2	36.48	425	93	230/460	19.7	2, 8, 45, 70
	1800	5000	254TC	TENV	**IDNM2333T**	3,310	E2	24.05	286	94.1	230/460	18.5	2, 8, 60
20	1800	5000	256TC	TEBC	**IDM2334T**	3,980	E2	33.07	286	93	230/460	24	2, 8, 70
			256TC	TEBC	**IDM2334T-5**	3,980	E2	34.15	286	93	575	19	2, 8, 70
	1200	4000	286T	TEBC	**IDM4102T**	8,844	E2	36.48	455	93	230/460	26	2, 8, 45, 70
	1800		284T	TENV	**IDNM2334T**	4,573	E2	27.36	437	94.5	230/460	25.5	2, 8, 45, 60

[a] See notes on inside back flap.

Constant velocity fan: 115 volts, single phase from 143TC through 184TC and all 575 volt drive motors.
Constant velocity fan: 230/460, three phase from 213 TC through 447T.
May be converted to C-Face in Mod Express or built as custom motors.
Consult District Office for availability of 2 pole motors and C-Face motors for 284T through 5009L frames.

1000:1 CONSTANT TORQUE SPEED RANGE

Cast Iron Frame

Inverter, Three Phase, TEBC and TENV, C-Face, Foot Mounted

Hp	RPM	Max. RPM	NEMA Frame	Enclosure	Catalog Number	List Price	Mult. Sym.	"C" Dim.	Aprx. Wt. (lb)	Full Load Efficiency	Voltage	Full Load Amps	Notes [a]
25	1800	4000	286T	TEBC	**IDM4103T**	4,908	E2	36.48	427	93.6	230/460	30	2, 8, 45, 70
	1200	3900	324T	TEBC	**IDM4111T**	10,079	E2	39.24	605	93	230/460	32	2, 8, 45, 70
30	1800	4000	286T	TEBC	**IDM4104T**	5,629	E2	36.48	437	94.1	230/460	36	2, 8, 45, 70
	1200	3900	326T	TEBC	**IDM4117T**	11,217	E2	39.24	650	93	230/460	39	2, 8, 45, 70
40	1800	3900	324T	TEBC	**IDM4110T**	7,612	E2	39.24	578	94.5	230/460	47	2, 8, 45, 70
50	1800	3900	326T	TEBC	**IDM4115T**	8,543	E2	39.24	608	94.5	230/460	57	2, 8, 45, 70
75	1200	2800	405T	TEBC	**IDM4404T**	20,302	E2	46.68	1196	95	230/460	88	2, 8, 45, 70

[a] See notes on inside back flap.
Constant velocity fan: 115 volts, single phase from 143TC through 184TC and all 575 volt drive motors.
Constant velocity fan: 230/460, three phase from 213 TC through 447T.
May be converted to C-Face in Mod Express or built as custom motors.
Consult District Office for availability of 2 pole motors and C-Face motors for 284T through 5009L frames.
1000:1 CONSTANT TORQUE SPEED RANGE
Cast Iron Frame

Inverter Motor, Paint Free, Three Phase, Totally Enclosed, C-Face

1/2 thru 10 Hp — NEMA 56C thru 215TC

Applications: Conveyors, pumps and other equipment in food processing and severe environments where motors receive washdown on a regular basis.

Features: Includes all the advantages of our standard "Paint Free" washdown duty motors. Specifically designed and built for use on adjustable speed drives. For adjustable speed applications not requiring full torque at zero speed. Not encoder adaptable. 1.00 Service Factor. Class "H" insulated.

Hp	RPM	Max. RPM	NEMA Frame	Enclosure	Catalog Number	List Price	Mult. Sym.	"C" Dim.	Aprx. Wt. (lb)	Full Load Efficiency	Voltage	Full Load Amps	Notes [a]
C-Face, Foot Mounted													
1/2	1800	6000	56C	TENV	**IDCSWDM3538**	1,551	E2	11.06	35	82.5	208-230/460	0.8	48, 60
3/4	1800	6000	56C	TENV	**IDCSWDM3542**	1,756	E2	11.06	35	82.5	208-230/460	1.1	48, 60
1	1800	3600	56C	TENV	**IDCSWDM3546**	1,823	E2	12.06	40	85.5	208-230/460	1.5	48, 60
			143TC	TENV	**IDCSWDM3546T**	1,823	E2	12.12	39	85.5	230/460	1.5	48, 60
1 1/2	1800	4000	56C	TEFC	**IDCSWDM3554**	1,950	E2	14.12	52	88.5	230/460	2.1	48
			145TC	TEFC	**IDCSWDM3554T**	1,950	E2	14.17	50	88.5	230/460	2.1	48
2	1800	3600	56C	TEFC	**IDCSWDM3558**	2,083	E2	13.24	45	86.5	230/460	2.9	48
		4500	145TC	TEFC	**IDCSWDM3558T**	2,083	E2	13.29	45	86.5	230/460	2.9	48
3	1800	6000	182TC	TEFC	**IDCSWDM3611T**	2,284	E2	16.56	72	89.5	230/460	4	48
5	1800	6000	184TC	TEFC	**IDCSWDM3615T**	2,658	E2	18.06	101	90.2	230/460	6.4	48
7 1/2	1800	6000	213TC	TEFC	**IDCSWDM3710T**	4,024	E2	19.81	135	91.7	230/460	9.5	48
10	1800	6000	215TC	TEFC	**IDCSWDM3714T**	4,601	E2	21.31	187	92.4	230/460	12.5	48
C-Face, Footless													
1/2	1800	6000	56C	TENV	**IDVSWDM3538**	1,538	E2	11.06	35	84	230/460	0.9	48, 60
3/4	1800	6000	56C	TENV	**IDVSWDM3542**	1,748	E2	11.06	38	82.5	230/460	1.1	48, 60
1	1800	3600	56C	TENV	**IDVSWDM3546**	1,814	E2	12.06	39	85.5	208-230/460	1.5	48, 60
		6000	143TC	TENV	**IDVSWDM3546T**	1,814	E2	12.12	39	85.5	208-230/460	1.5	48, 60
1 1/2	1800	4000	56C	TEFC	**IDVSWDM3554**	1,940	E2	14.12	52	88.5	230/460	2.1	48
			145TC	TEFC	**IDVSWDM3554T**	1,940	E2	14.17	50	88.5	230/460	2.1	48
2	1800	3600	56C	TEFC	**IDVSWDM3558**	2,066	E2	13.24	45	86.5	230/460	2.9	48
		4500	145TC	TEFC	**IDVSWDM3558T**	2,066	E2	13.29	45	86.5	230/460	2.9	48
3	1800	6000	182TC	TEFC	**IDVSWDM3611T**	2,172	E2	16.56	72	89.5	230/460	4	48
5	1800	6000	184TC	TEFC	**IDVSWDM3615T**	2,532	E2	18.06	101	90.2	230/460	6.4	48

[a] See notes on inside back flap.

Inverter, Explosion Proof, Three Phase, TEFC, Class I, Group D

1/2 thru 75 Hp **NEMA 56C thru 405T**

Applications: Designed for use in hazardous locations with Inverters.

Features: UL and CSA approved for hazardous locations. 1/3 through 2 Hp Division, Class I, Group D, Class II, Groups F & G, Temperature Code T3C (160°C). 3 Hp and larger, Division 1, Class I, Group D only, Temperature Code T2B (280°C). Class F insulation, ISR (Inverter Spike Resistant) magnet wire, 1.0 service factor, thermostats. All ratings constant horsepower 60 to 90 Hz. Not encoder adaptable. Meets NEMA MG 1, Part 31.

Hp	RPM	Max. RPM	NEMA Frame	Catalog Number	XP Cls/Grp	Temp Code	List Price	Mult. Sym.	"C" Dim.	Aprx. Wt. (lb)	Full Load Efficiency	Voltage	Full Load Amps	Notes [a]
2:1 Constant Torque, 10:1 Variable Torque Ratings														
3	1800	2700	182TC	**IDXM7142T**	①	T2B	1,715	E2	18.24	127	89.5	230/460	4.1	2, 20
5	1800	2700	184TC	**IDXM7144T**	①	T2B	2,040	E2	18.24	161	89.5	230/460	6.5	2, 20
7 1/2	1800	2700	213TC	**IDXM7147T**	①	T2B	2,565	E2	20.69	227	91.7	230/460	9.5	2, 20
10	1800	2700	215TC	**IDXM7170T**	①	T2B	3,516	E2	20.69	231	92.4	208-230/460	12.5	2, 20
15	1800	2700	254TC	**IDXM7054T**	①	T2B	4,026	E2	26.00	356	92.4	230/460	18	2, 20
20	1800	3600	256TC	**IDXM7056T**	①	T2B	5,224	E2	26.00	393	93	230/460	24	2, 20
25	1800	2700	284T	**IDXM7058T**	①	T2B	6,190	E2	28.61	494	93.6	230/460	30.5	2, 20
30	1800	2700	286T	**IDXM7060T**	①	T2B	7,550	E2	28.61	518	94.1	230/460	36	2, 20
40	1800	2700	324T	**IDXM7062T**	①	T2B	10,113	E2	32.12	608	94.5	230/460	46	2, 20
50	1800	2700	326T	**IDXM7064T**	①	T2B	11,765	E2	32.00	764	94.5	230/460	57	2, 20
60	1800	2700	364T	**IDXM7066T**	①	T2B	13,433	E2	33.44	910	95	230/460	68	2, 20
75	1800	2700	405T	**IDXM7068T**	①	T2B	14,892	E2	38.31	1407	95	230/460	83	2, 20, 45
10:1 Constant Torque and Variable Torque Ratings														
1/3	1800	2700	56C	**IDXM7002**	②	T3C	1,190	E2	14.30	45	80	230/460	0.6	2, 20
1/2	1800	2700	56C	**IDXM7006**	②	T3C	1,223	E2	14.30	37	82.5	230/460	0.8	2, 20
3/4	1800	2700	56C	**IDXM7010**	②	T3C	1,250	E2	14.30	46	84	230/460	1.1	2, 20
1	1800	2700	143TC	**IDXM7014T**	②	T3C	1,392	E2	15.23	52	87.5	230/460	1.5	2, 20
1 1/2	1800	2700	145TC	**IDXM7034T**	②	T3C	1,442	E2	16.10	60	88.5	230/460	2.1	2, 20
2	1800	2700	145TC	**IDXM7037T**	②	T3C	1,577	E2	16.10	63	88.5	230/460	2.8	2, 20
3	1800	2700	182TC	**IDXM7542T**	①	T2B	1,799	E2	18.24	137	89.5	230/460	4.1	2, 20
5	1800	2700	213TC	**IDXM7544T**	①	T2B	2,621	E2	20.65	212	90.2	230/460	6.3	2, 20
7 1/2	1800	2700	215TC	**IDXM7547T**	①	T2B	3,685	E2	20.65	226	91.7	230/460	9.5	2, 20
10	1800	2700	254TC	**IDXM7570T**	①	T2B	4,124	E2	26.00	382	91.7	230/460	13	2, 20
15	1800	2700	256TC	**IDXM7554T**	①	T2B	5,348	E2	26.00	381	92.4	230/460	17	2, 20
20	1800	2700	284T	**IDXM7556T**	①	T2B	6,485	E2	28.61	550	93	230/460	23	2, 20
25	1800	2700	324T	**IDXM7558T**	①	T2B	7,808	E2	32.00	704	93.6	230/460	30	2, 20
30	1800	3900	326T	**IDXM7560T**	①	T2B	9,088	E2	32.12	713	94.5	230/460	35	2, 20
40	1800	2700	364T	**IDXM7562T**	①	T2B	10,165	E2	33.44	910	95	230/460	48.2	2, 20
50	1800	2700	365T	**IDXM7564T**	①	T2B	12,680	E2	33.44	910	93.6	230/460	61.6	2, 20
60	1800	2700	405T	**IDXM7566T**	①	T2B	15,021	E2	38.31	1418	93.6	230/460	67.6	2, 20

[a] See notes on inside back flap.

① = Class I, Group D; ② = Class I, Group D, Class II, Group F&G

Cast Iron Frame

CAUTION: Explosion-proof motors have a tight fit between mating parts to ensure the integrity of the explosion-proof enclosure. This can lead to an accumulation of moisture inside the motors due to condensation. Care should be used when selecting an explosion-proof motor, especially when installed outdoors and on intermittent duty.

Vector, Three Phase, TEBC and TENV, C-Face

1 thru 150 Hp

NEMA 56 thru 445T

Applications: Test stands, material handling, packaging equipment, printing presses, etc.

Features: Applications requiring adjustable speed operation with full torque from zero to base speed and constant horsepower to maximum speed. Includes HS25 or HS35 encoder feedback with MS connector. Meets NEMA MG 1, Part 31.

Hp	RPM	Max. RPM	NEMA Frame	Enclosure	Catalog Number	List Price	Mult. Sym.	"C" Dim.	Aprx. Wt. (lb)	Full Load Efficiency	Voltage	Full Load Amps	Notes [a]
1	1800	6000	143TC	TEBC	**ZDM3581T**	3,291	E2	19.15	58	87.5	230/460	1.5	2, 8, 46, 60, 70
			143TC	TEBC	**ZDM3581T-5**	3,291	E2	19.02	56	85.5	575	1.2	2, 8, 46, 70
	1200	2800	143TC	TEBC	**ZDM3582T**	3,594	E2	19.15	62	82.5	230/460	1.8	2, 8, 46, 70
	1800	6000	143TC	TENV	**ZDNM3581T**	2,872	E2	14.65	58	85.5	230/460	1.5	2, 8, 46
1 1/2	1800	6000	145TC	TEBC	**ZDM3584T**	3,392	E2	19.02	63	88.5	230/460	2.1	2, 8, 46, 60, 70
			145TC	TEBC	**ZDM3584T-5**	3,392	E2	19.15	62	87.5	575	1.7	2, 8, 46
	1200		182TC	TEBC	**ZDM3667T**	3,849	E2	21.71	99	87.5	230/460	2.5	2, 8, 46, 70
	1800		145TC	TENV	**ZDNM3584T**	3,006	E2	14.65	58	84	230/460	2.3	2, 8, 46
2	1800	6000	145TC	TEBC	**ZDM3587T**	3,517	E2	19.02	64	88.5	230/460	2.8	2, 8, 46, 70
			145TC	TEBC	**ZDM3587T-5**	3,517	E2	19.15	74	86.5	575	2	2, 8, 46, 70
	1200		184TC	TEBC	**ZDM3664T**	3,913	E2	21.71	113	88.5	230/460	3.2	2, 8, 46, 70
	1800		182TC	TENV	**ZDNM3669T**	3,315	E2	17.21	95	84	230/460	2.9	2, 8, 46, 60
3	1800	6000	182TC	TEBC	**ZDM3661T**	4,065	E2	21.71	100	89.5	230/460	4.1	2, 8, 46, 70
			182TC	TEBC	**ZDM3661T-5**	4,065	E2	21.71	100	89.5	575	3.2	2, 8, 46, 70
	1200		213TC	TEBC	**ZDM3764T**	4,636	E2	29.14	187	90.2	230/460	4.5	2, 8, 46, 70
	1800		184TC	TENV	**ZDNM3661T**	3,543	E2	17.21	108	88.5	230/460	4	2, 8, 46, 60
5	1800	6000	184TC	TEBC	**ZDM3665T**	4,209	E2	21.71	118	90.2	230/460	6.5	2, 8, 46, 70
			184TC	TEBC	**ZDM3665T-5**	4,209	E2	21.71	118	90.2	575	5.2	2, 8, 46, 70
	1200		215TC	TEBC	**ZDM3768T**	5,328	E2	29.14	226	90.2	230/460	7.3	2, 8, 46, 70
	1800		213TC	TENV	**ZDNM3767T**	4,024	E2	20.40	173	91	230/460	6.7	2, 8, 46, 60
7 1/2	1200	5000	254TC	TEBC	**ZDM2276T**	6,979	E2	33.07	310	91.7	230/460	10.7	2, 8, 46, 70
	1800	4000	213TC	TEBC	**ZDM3770T**	4,754	E2	29.14	170	91.7	230/460	9.5	2, 8, 46, 70
			213TC	TEBC	**ZDM3770T-5**	4,754	E2	30.07	170	91.7	575	7.5	2, 8, 46, 70
		5000	256TC	TENV	**ZDNM2237T**	4,627	E2	24.05	270	90.2	230/460	9.1	2, 8, 46, 60
10	1200	5000	256TC	TEBC	**ZDM2332T**	8,180	E2	33.07	345	91.7	230/460	14.2	2, 8, 46, 70
	1800	6000	215TC	TEBC	**ZDM3774T**	4,982	E2	29.14	231	92.4	230/460	12.5	2, 8, 46, 70
		4000	215TC	TEBC	**ZDM3774T-5**	4,982	E2	30.07	231	92.4	575	10	2, 8, 46, 70
		5000	256TC	TENV	**ZDNM2238T**	4,770	E2	24.05	286	91.7	230/460	13	2, 8, 46, 60
15	1800	5000	256TC	TEBC	**ZDM2333T**	5,282	E2	33.07	301	92.4	230/460	18.5	2, 8, 46, 70
			256TC	TEBC	**ZDM2333T-5**	5,282	E2	34.15	255	92.4	575	14.8	2, 8, 46, 70
	1200	4000	284T	TEBC	**ZDM4100T**	9,409	E2	36.48	425	93	230/460	19.7	2, 8, 45, 46, 70
	1800	5000	254TC	TENV	**ZDNM2333T**	4,866	E2	24.05	286	94.1	230/460	18.5	2, 8, 46, 60
20	1800	5000	256TC	TEBC	**ZDM2334T**	5,537	E2	33.07	286	93	230/460	24	2, 8, 46, 70
			256TC	TEBC	**ZDM2334T-5**	5,537	E2	34.15	286	93	575	19	2, 8, 46, 70
	1200	4000	286T	TEBC	**ZDM4102T**	10,401	E2	36.48	455	93	230/460	26	2, 8, 45, 46, 70
	1800		284T	TENV	**ZDNM2334T**	6,129	E2	27.36	437	94.5	230/460	25.5	2, 8, 45, 46, 60
25	1800	4000	284T	TEBC	**ZDM4103T**	6,461	E2	36.48	415	93.6	230/460	30	2, 8, 45, 46, 70
	1200	3900	324T	TEBC	**ZDM4111T**	11,636	E2	39.24	605	93	230/460	32	2, 8, 45, 46, 70
30	1800	4000	286T	TEBC	**ZDM4104T**	7,186	E2	36.48	437	94.1	230/460	36	2, 8, 45, 46, 70
	1200	3900	326T	TEBC	**ZDM4117T**	12,773	E2	39.24	650	93	230/460	39	2, 8, 45, 46, 70
40	1800	3900	324T	TEBC	**ZDM4110T**	9,166	E2	39.24	610	94.5	230/460	47	2, 8, 45, 46, 70
50	1800	3900	326T	TEBC	**ZDM4115T**	10,099	E2	39.24	608	94.5	230/460	57	2, 8, 45, 46, 70

[a] See notes on inside back flap.

Consult District Office for availability of 2 pole motors and C-Face motors for 284T through 5009L frames.

FULL TORQUE AT ZERO SPEED, 1000:1 CONSTANT TORQUE SPEED RANGE.

Cast Iron Frame

Inverter Motor, Three Phase, TENV, C-Face, Foot Mounted

1 thru 10 Hp — NEMA 143TC thru 254TC

Applications: Conveyors, pumps and other equipment in food processing and other wet environments.

Features: Designed for inverter or vector applications where up to a 1000:1 constant torque speed range is required. Provisions for mounting optional HS25 encoder feedback devices shown on page 196 for use in closed loop velocity or position control. Meets NEMA MG 1, Part 31. 1.00 Service Factor. Class “H” insulated.

Hp	RPM	Max. RPM	NEMA Frame	Catalog Number	List Price	Mult. Sym.	“C” Dim.	Aprx. Wt. (lb)	Full Load Efficiency	Voltage	Full Load Amps	Notes [a]
1	1800	6000	143TC	**IDWNM3546T**	1,551	E2	14.90	39	85.5	230/460	1.5	48
1 1/2	1800	4500	145TC	**IDWNM3554T**	1,708	E2	15.78	50	86.5	230/460	2.1	48
2	1800	6000	182TC	**IDWNM3609T**	1,882	E2	17.77	72	84	230/460	2.9	48
3	1800	6000	184TC	**IDWNM3611T**	2,050	E2	17.77	81	88.5	230/460	4	48
5	1800	4000	213TC	**IDWNM3707T**	2,320	E2	19.84	120	89.5	230/460	6.7	48
7 1/2	1800	5000	254TC	**IDWNM22937T**	3,593	E2	23.92	242	91	230/460	9.1	48
10	1800	5000	254TC	**IDWNM22938T**	4,208	E2	23.92	288	91.7	230/460	12	48

[a] See notes on inside back flap.

1000:1 CONSTANT TORQUE SPEED RANGE.

Vector Motor, Three Phase, TENV, C-Face, Foot Mounted

1 thru 10 Hp — NEMA 143TC thru 254TC

Applications: Material handling, packaging equipment in food processing and other wet environments.

Features: Designed for inverter or vector applications where up to a 1000:1 constant torque speed range is required. Motors include 1024 PPR HS25 encoder feedback with MS connector. Meets NEMA MG 1, Part 31. 1.00 Service Factor. Class “H” insulated.

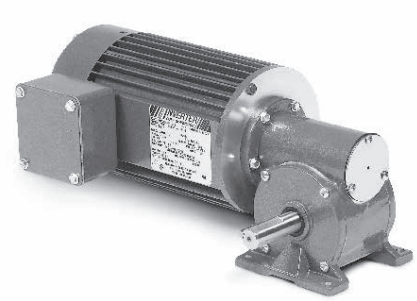
Hp	RPM	Max. RPM	NEMA Frame	Catalog Number	List Price	Mult. Sym.	“C” Dim.	Aprx. Wt. (lb)	Full Load Efficiency	Voltage	Full Load Amps	Notes [a]
1	1800	6000	143TC	**ZDWNM3546T**	3,107	E2	14.90	39	85.5	230/460	1.5	48
1 1/2	1800	4500	145TC	**ZDWNM3554T**	3,264	E2	15.78	56	86.5	230/460	2.1	48
2	1800	6000	182TC	**ZDWNM3609T**	3,438	E2	17.77	72	84	230/460	2.9	48
3	1800	6000	184TC	**ZDWNM3611T**	3,609	E2	17.77	81	88.5	230/460	4	48
5	1800	6000	213TC	**ZDWNM3707T**	3,878	E2	19.84	124	89.5	230/460	6.7	48
7 1/2	1800	5000	254TC	**ZDWNM22937T**	5,152	E2	23.92	247	91	230/460	9.1	48
10	1800	5000	254TC	**ZDWNM22938T**	5,767	E2	23.92	282	91.7	230/460	12	48

[a] See notes on inside back flap.

1000:1 CONSTANT TORQUE SPEED RANGE.

Inverter Gear Motor - Right Angle and Parallel Shaft -TEFC

3/8 Hp



Applications: Ideally suited for conveyors, material handing, packaging equipment applications requiring adjustable speed and no maintenance. Available in a broad range of gear ratios to meet your demanding application needs.

Features: Superior insulation system designed to comply with NEMA MG-1 part 31 for inverter power. IP44 environmental protection. Designed for use on Baldor Series 15J, 15P and Series 5 Inverters operating on 230 volts output. Both Parallel shaft and Right Angle gearmotors are lubricated for life and require no routine maintenance. Right Angle gearmotors feature our internal oil expansion bladder which eliminates the need for a breather while allowing the gearmotor to be mounted in any position (see note below).

Input Motor Hp	Output RPM 60 Hz.	Gear Ratio	Speed Range	Maximum Safe Torque In-Lbs @ 60 Hz	Catalog Number	List Price	Mult. Sym.	Ap'x. Shpg. Wgt.	Motor Type & Gear Style	Volt Code
Right Angle										
3/8	22	75	3.4-33	315	**IDGM2509**	766	E2	17	2528M-K	C
	28	60	4.5-41	252	**IDGM2508**	766	E2	17	2528M-K	C
	41	40	6.6-62	228	**IDGM2506**	766	E2	18	2528M-K	C
	83	20	12-123	138	**IDGM2503**	766	E2	17	2528M-K	C
	165	10	23.246	105	**IDGM2501**	766	E2	17	2528M-K	C
	330	5	43-490	68	**IDGM2500**	766	E2	17	2528M-K	C
Parallel Shaft										
3/8	55	30	8.0-82	350	**IDGMP2505**	742	E2	20	2528M-PS	C
	83	20	12-123	233	**IDGMP2503**	699	E2	20	2528M-PS	C
	165	10	23-246	116	**IDGMP2501**	699	E2	18	2528M-PS	C
	330	5	43-490	58	**IDGMP2500**	699	E2	18	2528M-PS	C

NOTE: Avoiding those positions where the high speed oil seal is immersed in oil, will provide greater security against seal wear.
Vertical motor below gearbox mounting is possible with modification, contact Baldor for details.
Voltage: @ 60 Hz: C = 230 volts

Feedback Cable Assembly with MS Connector

For the convenience of our customers, we offer a connector plug/cable assembly for Vector and DC motors. This assembly provides the connection from the encoder to the control. The twisted pair shielded cable provides additional noise protection. The assembly decreases installation time and effort. Recommended for Vector Drive and DC applications. For ZDM, ZDNM, ZDWNM, ZDNRPM, ZDBRPM and ZDVS motors. Uses Baldor style MS twist lock connector.

Catalog Number	Cable Extension Length	List Price	Mult. Sym.	Ap'x Shpg. Wgt.
CBL015ZD-2	5 Ft = 1.5 Meters	198	E8	1
CBL030ZD-2	10 Ft = 3 Meters	230	E8	1
CBL046ZD-2	15 Ft = 4.6 Meters	263	E8	2
CBL061ZD-2	20 Ft = 6.1 Meters	291	E8	2
CBL091ZD-2	30 Ft = 9.1 Meters	355	E8	3
CBL152ZD-2	50 Ft = 15.2 Meters	477	E8	6
CBL229ZD-2	75 Ft = 22.9 Meters	632	E8	8
CBL305ZD-2	100 Ft = 30.5 Meters	787	E8	8
CBL379ZD-2	125 Ft = 37.9 Meters	943	E8	14
CBL455ZD-2	150 Ft = 45.5 Meters	1,023	E8	2
CBL606ZD-2	200 Ft = 60.6 Meters	1,407	E8	16

Encoder Feedback Kits for IDM, IDNM and IDWNM Motors

For use with Legacy Baldor Motor Designs


ENC00NV-B1


ENC02BC-B2

Encoder kits below feature 1024 pulses per revolution unless otherwise noted in the encoder type column. Connector style MS twist lock (MS-TL). HS35, HS35M and HSD35 feature hollow shaft mounting. The HSD35 carry the Northstar brand. The H20 is a couple mount encoder. The RL67 and SL85 are bearingless encoders and both carry the Northstar brand. Encoder kits include the encoder and all mounting hardware.

Catalog Number	Type Enclosure	Description	Magnetic or Optical	Connector Type	Input Voltage	Output Voltage Limited	NEMA Frame	List Price	Ap'x. Mult. Sym.	Shpg. Wgt.
ENC00NV-A2	TENV	HS35M Avtron	Magnetic	TL	5-24 VDC	24	213T-215T	1,442	E8	1
ENC00NV-B1	TENV	HS25 BEI	Optical	TL	5-15 VDC	15	56-215T	1,442	E8	2
ENC00NV-D1	TENV	HS35 Dynapar	Optical	TL	5-24 VDC	5	56-215T	1,622	E8	4
ENC01BC-B1	TEBC	HS25 BEI	Optical	TL	5-15 VDC	15	143T-215T	1,442	E8	3
ENC01BC-D1	TEBC	HS35 Dynapar	Optical	TL	5-24 VDC	5	56-215T	1,622	E8	4
ENC01NV-A2	TENV	HS35M Avtron	Magnetic	TL	5-24 VDC	24	254T-256T	1,442	E8	1
ENC01NV-B2	TENV	HS35 BEI	Optical	TL	5-15 VDC	15	254T-284T	1,442	E8	2
ENC01NV-D1	TENV	HS35 Dynapar	Optical	TL	5-24 VDC	5	254T-256T	1,622	E8	4
ENC02BC-A2	TEBC	HS35M Avtron	Magnetic	TL	5-24 VDC	24	254T-447T	1,442	E8	1
ENC02BC-B2	TEBC	HS35 BEI	Optical	TL	5-15 VDC	15	254T-447T	1,442	E8	2
ENC02BC-D1	TEBC	HS35 Dynapar	Optical	TL	5-24 VDC	5	254T-447T	1,622	E8	4

NOTE: For 56 and 140 IDVSM frame sizes use the kits from the table above.

Constant Velocity Blower Cooling Conversion Kits

NEMA 143TC thru 447TC

For use with Legacy Baldor Motor Designs

These kits convert TENV or TEFC AC motors to a Totally Enclosed Blower Cooled (TEBC) design. This is advantageous where continuous cooling is required regardless of motor shaft speed. These kits can be mounted on the back of the motor after removing the fan guard and fan. Removing the TEFC fan shaft is not required. Does not fit Athens-built 180-440 M, CP or ECP motors

Voltage	Phase	NEMA Frame	Catalog Number	List Price	Mult. Sym.	Ap'x. Shpg. Wgt.
115	1	143TC-145TC	**BLWL05-L**	814	E8	7
		182TC-184TC	**BLWL06-L**	917	E8	8
		213TC-215TC	**BLWL07-L**	962	E8	21
		254TC-256TC	**BLWL09-L**	988	E8	5
		284TC-286TC	**BLWL10-L**	1,068	E8	35
		324TC-326TC	**BLWL12-L**	1,134	E8	46
		364TC-365TC	**BLWL14-L**	1,206	E8	55
230/380/460	3	213TC-215TC	**BLWM07-F**	962	E8	20
		254TC-256TC	**BLWM09-F**	999	E8	30
		284TC-286TC	**BLWM10-F**	1,068	E8	35
		324TC-326TC	**BLWM12-F**	1,134	E8	46
		364TC-365TC	**BLWM14-F**	1,219	E8	55
		404TC-405TC	**BLWM16-F**	1,704	E8	70
		444TC-447TC	**BLWM18-F**	2,387	E8	87

NOTE: Blower cooling conversion kits should be further selected by Baldor motor type as noted within the catalog number.
As an example: BLWM10-F fits a 310M type also built as a 324-326TC. Does not fit Athens-built 180-440 M, CP or ECP motors.

BSM-Series Brushless Motors with Hall Feedback C-Face with Base

1/4 thru 3 Hp **NEMA 42-56C**

Applications: Conveyors, Pumps, Mixers, Packaging Machinery

Features: NEMA 42/56 foot/base mount, Hall sensor feedback, Face/Foot mount, High energy Neodymium magnets, Premium 200˚C moisture resistant wire, ABEC Quality Class 3 bearings, High 155˚C winding temperature design, UL/CE/cUL. Speed range to 7,000 RPM

Hp / kW	RPM	NEMA Frame	Catalog Number	List Price	Mult. Sym.	"C" Dim.	Aprx. Wt. (lb)	Voltage	Notes [a]
C-Face, Footless									
.25 / .18	1800	42C	**BSM25C-1177MHC**	733	E4	7.95	13	320	
.51 / .37	1800	42C	**BSM25C-2177MHC**	764	E4	8.41	9	320	
C-Face, Foot Mounted									
.51 / .37	1800	56C	**BSM33C-2177MHQ**	808	E4	8.76	33	320	
1 / .75	1800	56C	**BSM33C-3177MHQ**	859	E4	9.86	22	320	
1.5 / 1.13	1800	56C	**BSM33C-4177MHQ**	987	E4	12.20	25	320	
2 / 1.5	1800	56C	**BSM33C-5177MHQ**	1,317	E4	15.20	30	320	
3 / 2.25	1800	56C	**BSM33C-6177MHQ**	1,552	E4	16.70	31	320	

[a] See notes on inside back flap.

BMC-Series Adjustable Speed Brushless Control

Applications: Conveyors, Pumps, Mixers, Packaging Machinery

Features: Speed regulation better than 0.5%, Peak current two times continuous, Jumper selections: line voltage, motor poles, automatic/manual start, braking, Diagnostic LED's, Industry standard speed command of +/- 10 Vdc or pot input, Diagnostic LEDs, Trimpot adjustments, Accel/decel time 0.1 - 30 sec

Rating	Input Vac	Phase	Output			Catalog Number	List Price	Mult. Sym.	Height	Width	Length
Hp/Kw	50/60Hz		VDC	Cont.Amps	Peak Amps				in/mm	in/mm	in/mm
.25/0.18	115/208/230	1	320	1.5	3	**BMC6A01**	411	E3	2.75/70	4.05/103	5.4/136
.05/0.37	115/208/230	1	320	2.4	4.8	**BMC6A02**	448	E3	2.75/70	4.05/103	5.4/136
1/0.75	115/208/230	1	320	4.0	8	**BMC6A04**	494	E3	5/127	4.05/103	6.8/172
1.5/1.13	115/208/230	1	320	5.5	11	**BMC6A05**	531	E3	4.5/114	4.05/103	6.8/172
2/1.5	208/230	1,3	320	6.7	13.4	**BMC2A06**	645	E3	4.45/113	4.05/103	8.6/217
3/2.25	208/230	3	320	9.0	18	**BMC2A09**	740	E3	4.45/113	4.05/103	8.6/217

Baldor V*S Drives Selection Chart

VS1ST	VS1SM	VS1MD	VS1MX	VS1PF	VS1SP	VS1GV
						
Main Attributes						
Starter-style Microdrive; V/Hz Control, Built-In PI Loop; DIN or Panel Mounting.	Sub-Micro Drive; Single-Phase Input / Three-Phase Output; V/Hz or Sensorless Vector Control; Built-In Filter Available	Mircrodrive; V/Hz or Sensorless Vector Control; Built-In PID; Ready to Operate Out of the Box	Microdrive; NEMA 4X & NEMA 12 Enclosures; V/Hz Control; Built-In Disconnect	Pump & Fan Drive; Energy Savings Features; V/Hz or Sensorless Vector; Text-Based Menus and Parameter Names	Enhanced Sensorless Vector or V/Hz Control; NEMA 1 Enclosure; Built-In Braking; Full-Graphic Display	Performance Vector, Sensorless Vector or V/Hz Control; NEMA 1 Enclosure; Built-In Braking; Full-Graphic Display; Encoder Feedback Standard
Hp Range						
0.5 to 15	0.5 to 3	0.5 to 30	0.5 to 10	5 to 700	1 to 1000	1 to 1000
Voltage Range						
115V/230V 1-Phase 230V/460V 3-Phase 600V 3-Phase (STS)	230V 1-Phase	230V 1-Phase 230V/460V 3-Phase	115V/230V 1-Phase 230V/460V 3-Phase 600V 3-Phase (MXS)	230V/460V/600V 3-Phase	115V/230V - 1 phase 230V/460V/600V 3-Phase	115V/230V - 1 Phase 230/460V/600V 3-Phase
Enclosure Selection						
IP20	IP20	IP20/NEMA 1 Kits Available	NEMA 4X/12 (Indoor) NEMA 12; with or w/o Disconnect	NEMA 1 (7.5 to 15 Hp) IP00/NEMA 1 Kit Option (20 to 125Hp) IP00 (150 to 700Hp)	NEMA 1 (1 to 500 Hp) NEMA 4X/12 (1 to 25Hp)	NEMA 1 (1 to 500 Hp) NEMA 4X/12 (1 to 25Hp)
Control Mode						
V/Hz Sensorless Vector (STS)	Sensorless Vector or V/Hz	Sensorless Vector or V/Hz	V/Hz Sensorless Vector (MXS)	Sensorless Vector or V/Hz	Sensorless Vector or V/Hz	Closed Loop Vector, Sensorless Vector or V/Hz
Speed Range (Typ.)						
20:1	30:1	30:1	20:1	30:1	90:1	1000:1
Communications Options						
Built-In Modbus-RTU (RS-485)	Built-In Modbus-RTU (RS-485)	Built-In Modbus-RTU (RS-485) DeviceNet Profibus-DP Ethernet-IP Modbus/TCP	Built-in Modbus-RTU (RS-485)	Built-In RS-485, Modbus-RTU, DeviceNet, PROFIBUS-DP, Modbus/TCP, Lonworks, BACnet, Siemens-P1, Metasys-N2	Built-In USB and Modbus-RTU, Ethernet Server, DeviceNet, EtherNet/IP, PROFIBUS-DP, LonWorks, Metasys-N2, BACnet	Built-In USB and Modbus-RTU, Ethernet Server, DeviceNet, EtherNet/IP, PROFIBUS-DP, LonWorks, Metasys-N2, BACnet
Operator Interface						
Local or Remote Mounted LED Display and Keypad	Embedded LED Display and Keypad; Speed Pot	Local or Remote Mounted LED Display and Keypad; Copycat Capability	Local or Remote Mounted LED Display and Keypad; Copycat Capability; Speed Pot; Fwd/Rev Switch; Input Disconnect	Local or Remote Mounted Text Based LCD Display and Keypad; Copycat Capability	Local or Remote (NEMA 4) Mounted Graphical LCD Display and Keypad; Copycat Capability	Local or Remote (NEMA 4) Mounted Graphical LCD Display and Keypad; Copycat Capability
Differentiating Feature						
Low Cost; Designed for Panel Use; DIN Rail Mounting; Simple parameter list; CE filter option.	Designed for High Volume Applications; Simple Interface with Built-In Speed Pot; CE filter option	Low Cost; Basic Startup Menu; Runs Right Out of the Box; Full-Featured Application Oriented Firmware	Washdown and Harsh Environment Compatible Enclosure; Built-In Speed Pot, Fwd/Rev Switch, and Input Disconnect	Easy-to-Use Basic Startup Menu; Designed to Save Energy; Pump and Fan Application Specific Firmware	USB Interface; Display Help Text; NEMA 1 Enclosures (Washdown Available to 25Hp); PLC Functionality; Free Workbench software w/Oscilloscope Functionality; Wide Variety of Options	Encoder Interface Standard; USB Interface; Display Help Text; NEMA 1 Enclosures (Washdown Available to 25Hp); PLC Functionality; Free Workbench Software w/Oscilloscope Functionality; Wide Variety of Options
Matched Performance® Motors						
M & CP Standard-E, EM & ECP Super-E	M & CP Standard-E, EM & ECP Super-E	M & CP Standard-E®, EM & ECP Super-E®	E-Z KLEEN® Plus, Ultra KLEEN®, WDM Standard-E, EWDM Super-E	M & CP Standard-E, EM & ECP Super-E	VS-Master, RPM-AC, M & CP Standard-E, EM&ECP Super-E, IDM & IDNM InverterDuty®, IDWNM InverterDuty	VS-Master, RPM-AC, ZDM VectorDuty®, ZDNM VectorDuty, ZDWNM VectorDuty

VS1ST
AC Micro Drive

1/2 thru 1.5 Hp	**115 VAC**	**1 Phase - 50/60 Hz**
1/2 thru 3 Hp	**230 VAC**	**1 Phase - 50/60 Hz**
1/2 thru 5 Hp	**230 VAC**	**3 Phase - 50/60 Hz**
1 thru 15 Hp	**460 VAC**	**3 Phase - 50/60 Hz**

Applications: Variable torque, constant torque or constant horsepower applications. New installations, replacements and original equipment manufactures (OEM).

Features: Volts per Hertz Control with peak overload capacity of 175% and PI capability. **Flexible mounting options with IP20 enclosure as standard and DIN Rail mounting.** Integral keypad, operator interface and local speed control. Basic set of programming parameters. Power ratings up to 5 Hp at 230V and 15 Hp at 460V versions.

Performance Features	Control Modes	V/Hz
	Operator Interface Module	Integral Drive Mounted
	Display Lines	6-Character LED Display
	Programmable Preset Speeds	Four
	Analog Outputs	One (0-10 VDC)
	Auto Restart	Yes – Up to 5 attempts
	Frequency Avoidance	One Band
	Fault History	Last Four Faults
	Digital Inputs: Four	Two Programmable Digital Inputs, Two user selectable analog/digital inputs
	Digital Inputs Type	Pull-Up
Drive Specifications	Analog Inputs: Two	0-10VDC, 0 to 20mA or 4 to 20mA
	Relay Outputs: One	Built-in Form C Relay
	Analog Output/Digital Output	0-10 VDC: One Analog Usable for Meter (Freq., Current, Voltage) or Digital Output
	Maximum Load	15 Hp @ 460 VAC
	Overload Capacity	Drive Output 150% for one minute and 175% for 2 seconds
	Input Voltage Ranges	115 VAC (99-126); 230 VAC (198-264); 460 VAC (342-528)
	Rated Input Frequency	50-60Hz (±5%)
	Carrier Frequency	4-32 kHz (8 kHz default)
	Operating Temperature	0° to 50°C
	Snubber (Dynamic Braking)	Built-in Transistor (Frames B & C)
	Dynamic Braking External	Up to 150% Dynamic Braking with appropriately sized resistor
	DC Injection Braking	Included
	Volts/Hz	Linear V/Hz, Energy Optimizer Function
	Frequency Control Range	0 - 500Hz
	Accel/Decel:	Independently adjustable accel. & decel. ramps
	Time Range:	0 to 600 Seconds
	Keypad Speed Control	Yes
	Sink/Source Inputs	Selectable, 24 VDC Logic
	Electronic Overload Trip	Electronic Motor Overload Inverse 150% for 1 minute or 175% for 2 seconds
	Communications	Built-in MODBUS-RTU (RS-485) Communications
	PI Control	Built-in
Protective Features	Under Voltage	Level Depends on Voltage Class (240, 480, or 575)
	Output Short Circuit	Phase-to-Phase on Drive Output
	Over Temperature	Heatsink Monitor
	DC Bus Overvoltage	DC Bus Level Trip
	Drive Overload	Exceed Drive rating of 150% for One Minute or 175% for 2 seconds
	Over Current	Over-current/short-Circuit protection
	Output Phase	Trips on open Output Phase
	Loss of Reference	Trips on Loss of Speed Command Signal
	Comm. Error	Detects a communication error (fault)
Agency Certifications		UL, cUL, CE, C-tick
Service Conditions	Altitude	1,000 m (3,300 ft.), derate by 1% per 100m up to 2,000 on maximum.
	Ambient Temperature	IP20: -10°C (14°F) to 50°C (122°F)
	Storage Temperature	-40°C (-40°F) to 60°C (140°F)
	Relative Humidity	10% to 95%, non-condensing

VS1ST – 115V, 50/60 Hz, 1-Phase Input (230V, 3-Phase Output)

Catalog Number	Transistor	Frame	Hp	Output Current	List Price	Mult. Sym.
VS1ST10P5-0	No	A	0.5	2.3	453	EA
VS1ST11-0	No	A	1	4.3	529	EA
VS1ST11P5-0T	Yes	B	1.5	5.8	649	EA

VS1ST – 230V, 50/60 Hz, 1-Phase Input (230V, 3-Phase Output)

Catalog Number	Transistor	Frame	Hp	Output Current	List Price	Mult. Sym.
VS1ST80P5-0	No	A	0.5	2.3	364	EA
VS1ST81-0	No	A	1	4.3	395	EA
VS1ST82-0	No	A	2	7	475	EA
VS1ST82-0T	Yes	B	2	7	592	EA
VS1ST83-0T	Yes	B	3	10.5	661	EA

VS1ST – 230V, 50/60 Hz, 3-Phase Input (230V, 3-Phase Output)

Catalog Number	Transistor	Frame	Hp	Output Current	List Price	Mult. Sym.
VS1ST20P5-0	No	A	0.5	2.3	364	EA
VS1ST21-0	No	A	1	4.3	395	EA
VS1ST22-0	No	A	2	7	475	EA
VS1ST22-0T	Yes	B	2	7	556	EA
VS1ST23-0T	Yes	B	3	10.5	568	EA
VS1ST25-0T	Yes	C	5	18	752	EA

VS1ST – 460V, 50/60 Hz, 3-Phase Input (460V, 3-Phase Output)

Catalog Number	Transistor	Frame	Hp	Output Current	List Price	Mult. Sym.
VS1ST41-0	No	A	1	2.2	475	EA
VS1ST42-0	No	A	2	4.1	557	EA
VS1ST42-0T	Yes	B	2	4.1	637	EA
VS1ST43-0T	Yes	B	3	5.8	684	EA
VS1ST45-0T	Yes	B	5	9.5	800	EA
VS1ST47-0T	Yes	C	7.5	14	1,135	EA
VS1ST410-0T	Yes	C	10	18	1,263	EA
VS1ST415-0T	Yes	C	15	24	1,704	EA

NOTE: For EMC filtered units, refer to catalog CA769 (Baldor Drives and Capabilities).

Mounting Dimensions

Frame	Height Inches (mm)	Width Inches (mm)	Depth Inches (mm)
A	6.81 (173)	3.23 (82)	4.84 (123)
B	8.70 (221)	4.29 (109)	5.91 (150)
C	10.28 (261)	5.16 (131)	6.89 (175)

VS1ST – Accessories

Remote Keypad for VS1ST

The VS1ST Remote Keypad can be panel mounted for remote control or display of the drive. The remote keypad comes with a standard 9 foot (3.0 m) cable and is suitable for IP54 mounting.

Catalog Number	Description	List Price	Mult. Sym.
VS1ST-RKEY3	VS1ST Remote Keypad with 3m cable	110	EA

Cable Kits for VS1ST

Option cable assemblies for setting up and connecting a simple serial network.

Catalog Number	Description	List Price	Mult. Sym.
VS1ST-J45SP	RJ45 Cable Splitter	23	EA
VS1ST-CBL0P5	1.5 ft. (0.5m) RJ45 Cable	12	EA
VS1ST-CBL1	3 ft. (1m) RJ45 Cable	12	EA
VS1ST-CBL3	9 ft. (3m) RJ45 Cable	12	EA

Copycat Loader for VS1ST

Connects to the RJ45 Port on the front of the VS1ST and allows the upload or download of software parameters.

Catalog Number	Description	List Price	Mult. Sym.
VS1ST-CCL	VS1ST RJ45 Copycat Loader	28	EA

Relay Output Cards for VS1ST

Provides additional relay outputs for signal and control.

Catalog Number	Description	List Price	Mult. Sym.
VS1ST-2ROUT	Provides one additional relay output for the drive	153	EA
VS1ST-HVAC	Provides two relays for “drive running” & “drive tripped”	153	EA
VS1ST-LOGHV-11	115 VAC control logic input card	131	EA
VS1ST-LOGHV-23	230 VAC control logic input card	131	EA

VS1ST Dynamic Braking Resistors

VS1ST Frame B and C drives include built-in braking transistors to aid in applications requiring the ability to stop rapidly. The resistor kits are designed specifically for the VS1ST and mount internally to the drive.

Catalog Number	Ohms	Wattage	Frame	List Price	Mult. Sym.
VS1ST-R100W200	100	200	B & C	198	EA

VS1ST Field Bus Gateways

Connects the VS1ST Modbus RTU RS485 Communication interface to the fieldbus gateway head.

Catalog Number	Description	List Price	Mult. Sym.
VS1ST-PBUS	Profibus Gateway Head	953	EA
VS1ST-DNET	DeviceNet Gateway Head	953	EA
VS1ST-ENET	Ethernet-IP or Modbus/TCP Gateway Head	902	EA

VS1STS
600V Starter Style AC Micro Drive

1 thru 60 Hp **500-600 VAC** **3 Phase - 50/60 Hz**

Product Highlights: The VS1STS is a feature rich V/Hz & Sensorless Vector product targeted at the 600V market and equipment manufacturing applications.

Applications: Variable torque, constant torque or constant horsepower applications. New installations, replacements and original equipment manufactures (OEM).

Features: V/Hz and Sensorless Vector Control with peak overload capacity of 175% and PID capability. Flexible mounting options with IP20 enclosure as standard and DIN rail capability. Integral keypad, operator interface and local speed control. Basic setup parameter list and advanced software settings. Built-in braking transistor allows connection to remote braking resistor for enhanced performance needs. Power ratings up to 60 Hp at 600V, pluggable I/O terminal strip.

Performance Features	Control Modes	V/Hz & Sensorless Vector Control
	Operator Interface Module	Integral Drive Mounted; basic start/stop, forward/reverse and speed control
	Display Lines	6-Character LED Display
	Programmable Preset Speeds	Eight
	Analog Output: One	0-10VDC or 20mA
	Auto Restart	Yes -- Up to 5 attempts
	Frequency Avoidance	One Band
	Fault History	Last 4 Faults
	Digital Inputs: Four	Two programmable digital inputs, two user selectable analog/digital inputs
	Digital Inputs Type	Pull-Up
Drive Specifications	Analog Inputs: Two	One bi-polar and one 0-10VDC, 0 to 20mA or 4 to 20mA
	Relay Output: One	Built-in Form C Relay, normally open contact
	Analog Output/Digital: One	0-10 VDC: One Analog Usable for Meter (Freq., Current, Voltage) or Digital Output
	Maximum Load:	60 HP @ 600 VAC
	Overload Capacity	Drive Output 150% for one minute and 175% for 2 seconds
	Input Voltage Ranges:	500 - 600VAC
	Input Voltage Tolerance	10% / -10%
	Rated Input Frequency	50-60Hz (±5%)
	Carrier Frequency:	4-32 kHz (8 kHz default)
	Operating Temperature:	-10° to 50°C
	Snubber (Dynamic Braking):	Built-in Transistor
	Dynamic Braking External:	Up to 150% Dynamic Braking with appropriately sized resistor
	DC Injection Braking:	Included
	Volts/Hz	Linear V/Hz
		Energy Optimization Function
	Sensorless Vector	Full Sensorless Vector Control with Autotune and motor model
	Frequency Control Range:	0 - 2000Hz
	Accel/Decel:	Independently adjustable accel. & decel. ramps
	Keypad Speed Control	Yes
	Sink/Source Inputs	Selectable, 24 VDC Logic
	Electronic Overload Trip	Electronic Motor Overload Inverse 150% for 1 minute or 175% for 2 seconds
Protective Features	Under Voltage	Level Depends on Voltage Class (600V)
	Output Short Circuit	Phase-to-Phase on Drive Output
	Over Temperature	Heatsink Monitor
	DC Bus Overvoltage	DC Bus Level Trip
	Drive Overload	Exceed Drive rating of 150% for One Minute or 175% for 2 seconds
	Over Current	Over-current/short-Circuit protection
	Output Phase	Trips on open Output Phase
	Loss of Reference	Trips on Loss of Speed Command Signal
	Communication Error	Detects a communication error (fault)
Agency Certifications		UL, cUL, CE, CCC, C-tick
Service Conditions	Altitude:	1,000 m (3,300 ft.) Maximum
	Ambient Temperature:	IP20: -10°C to 50°C
	Storage Temperature:	-20°C to 60°C
	Relative Humidity:	10% to 90%, non-condensing
	Intermittent Overload:	150% overload capacity for up to 1 minute
		175% overload capacity for up to 2 seconds

VS1STS – 500-600V ±10% 3-Phase Input

Catalog Number	Frame	Hp	kW	Output Current	List Price	Mult. Sym.
VS1STS51-0T	B	1	0.75	1.7	926	EA
VS1STS52-0T	B	2	1.5	3.1	1,042	EA
VS1STS53-0T	B	3	2.2	4.1	1,158	EA
VS1STS55-0T	B	5	4	6.1	1,390	EA
VS1STS57-0T	B	7.5	5.5	9	1,737	EA
VS1STS510-0T	C	10	7.5	14	2,084	EA
VS1STS515-0T	C	15	11	18	2,546	EA
VS1STS520-0T	C	20	15	24	3,241	EA
VS1STS530-0T	D	30	22	39	5,093	EA
VS1STS540-0T	D	40	30	46	5,787	EA
VS1STS560-0T	D	60	45	62	6,944	EA

Mounting Dimensions

Frame	Height Inches (mm)	Width Inches (mm)	Depth Inches (mm)
A	10.24 (260)	3.94 (100)	6.89 (175)
B	10.24 (260)	6.73 (171)	6.89 (175)
C	20.47 (520)	13.39 (340)	8.66 (220)

Remote Keypad for the VS1STS

Catalog Number	Description	List Price	Mult. Sym.
VS1STS-RKEY3	VS1STS Remote Keypad with 3m cable	93	EA

The VS1STS-RKEY3 Remote Keypad can be panel mounted for remote control or display of drive parameters. The kit comes standard with a 9 foot (3 meter) cable and is suitable for IP54 mounting. This keypad can be used with either the VS1STS or the VS1MXS. Depending on the requirement of the application, VS1STS-RKEY3 can be used point to point or with multiple drives.

Cable Kits for the VS1STS

To support a basic serial network, option cable assemblies and splitters are available.

Catalog Number	Description	List Price	Mult. Sym.
VS1STS-J11SP	RJ45 Cable Splitter	24	EA
VS1STS-CBL0P3	1 ft. (0.3m) RJ11 Cable	6	EA
VS1STS-CBL1	3 ft. (1m) RJ11 Cable	8	EA
VS1STS-CBL3	9 ft. (3m) RJ11 Cable	12	EA

VS1SM
AC Micro Drive

1/2 thru 3 Hp 230 VAC 1 Phase - 50/60 Hz Input / 3 Phase Output

Applications: Variable torque, constant torque or constant horsepower applications. New installations, replacements and original equipment manufactures (OEM).

Features: Volts per Hertz or Sensorless Vector Control with peak overload capacity of 200%, PID capability and built in MODBUS RS-485 Communications. Integral keypad, operator interface and local speed control. Programming by Groups makes it easy to navigate and find parameters. Basic Program Group contains the most common application related parameters. Power ratings up to 3 Hp 230V Single Phase. Available with or without built in CE Filters. Built-in braking transistor allows connection to remote braking resistor for enhanced performance needs.

Performance Features	Control Modes	V/Hz or Sensorless Vector
	Operator Interface Module	Integral Drive Mounted
	Display Lines	3-Character LED Display
	Programmable Preset Speeds	Eight
	Analog Outputs	One (0-10 VDC)
	Local Speed Control	Built-in Speed Potentiometer
	Auto Restart	Yes – Up to 10 attempts
	Frequency Avoidance	Three Bands
	Fault History	Last Five Faults
	Digital Inputs	Five Completely Configurable Inputs
	Digital Inputs Type	Pull-up or Pull-down
Drive Specifications	Analog Inputs: Two Total	One: 0-10VDC; One: 4-20mADC
	Digital Outputs: Two Total	One Opto-coupled (Configurable); Form C Relay
	Meter Outputs	0-10 VDC: One Analog Usable for Meter (Freq., Current, Voltage, DC Voltage)
	Maximum Load	3 Hp @ 230VAC
	Overload Capacity	Drive Output 150% for One Minute
	Frequency Accuracy	Digital Command: 0.01% of Max. Output Frequency; Analog Command: 0.1% of Max. Output Frequency
	Input Voltage Ranges	190-253VAC - 1-Phase
	Rated Input Frequency	50-60Hz (±5%)
	Carrier Frequency	1-15 kHz (3 kHz default)
	Operating Temperature	–10° to 50°C (IP20)
	Snubber (Dynamic Braking)	Use External Braking Unit
	Dynamic Braking External	Dynamic Braking via External Braking Unit connected to DC bus.
	DC Injection Braking	Included
	Volts/Hz	Linear V/Hz; Quadratic V/Hz; Custom 4-point V/Hz Curve
	Sensorless Vector	Full Sensorless Vector; Control with Autotune Function and motor model
	Frequency Control Range	0-400 Hz
	Accel/Decel	Eight independently adjustable sets of ramps
	Time Range	0.1 to 6000 Seconds
	S Curve Accel. & Decel.	Yes, with adjustable rounding percentage
	Keypad Speed Control	Yes
	Sink/Source Inputs	Selectable, 24 VDC Logic
	Electronic Overload Trip	Electronic motor Overload Inverse Time calculation with program warning level
	Communications	Built-in MODBUS-RTU (RS-485) Communications
	PID Control	Built-in
Protective Features	Under Voltage	Level Depends on Voltage Class (240, 480)
	Ground Fault Protection	Ground Fault protection active during run
	Output Short Circuit	Phase-to-Phase on Drive Output
	Over Temperature	Heatsink Monitor
	DC Bus Overvoltage	DC Bus Level Trip
	Drive Overload	Exceed Drive rating of 150% for one minute
	Over Current	Over-current/short-Circuit protection
	Output Phase	Trips on open Output Phase
	Loss of Reference	Trips on Loss of Speed Command Signal
	Cooling Fan	Detects an inverter fan failure (replace fan)
Agency Certifications	Listings	UL, cUL, CE
Service Conditions	Altitude	1,000 m (3,300 ft.), derate by 1% per 100 m up to 2,000m maximum.
	Ambient Temperature	IP20: -10°C (14°F) to 50°C (122°F)
	Storage Temperature	-20°C (-2°F) to 65°C (149°F)
	Relative Humidity	10% to 95%, non-condensing

VS1SM – 230V, 50/60 Hz, 1-Phase Input (230V, 3-Phase Output)

Catalog Number	EMC Filter	Frame	Hp (Normal Duty)	Output Current	List	Mult. Sym.
VS1SM80P5	No	A	0.5	2.5A	338	EA
VS1SM80P5-F	Yes	A	0.5	2.5A	394	EA
VS1SM81	No	A	1	5.0A	418	EA
VS1SM81-F	Yes	A	1	5.0A	473	EA
VS1SM82	No	B	2	8.0A	529	EA
VS1SM82-F	Yes	B	2	8.0A	585	EA
VS1SM83	No	B	3	12.0A	675	EA
VS1SM83-F	Yes	B	3	12.0A	742	EA

Mounting Dimensions

Frame	Height Inches (mm)	Width Inches (mm)	Depth Inches (mm)	Weight lbs (kg)
A	5.63 (143)	3.11 (79)	5.64 (143)	1.96 (0.89)
A (with Filter)	5.63 (143)	3.11 (79)	5.64 (143)	2.14 (0.97)
B	5.63 (143)	6.14 (156)	5.64 (143)	4.08 (1.85)
B (with Filter)	5.63 (143)	6.14 (156)	5.64 (143)	4.41 (2.0)

VS1MD
AC Micro Drive

1/4 thru 5 Hp **230 VAC** **1 Phase - 50/60 Hz**
1/2 thru 30 Hp **230 VAC** **3 Phase - 50/60 Hz**
1/2 thru 30 Hp **460 VAC** **3 Phase - 50/60 Hz**

Applications: Variable torque, constant torque or constant horsepower applications. New installations, replacements and original equipment manufactures (OEM).

Features: Volts per Hertz or Sensorless Vector Control with peak overload capacity of 200% and PID capability. Flexible mounting options with IP20 enclosure as standard and NEMA 1 kit option. Integral keypad, operator interface and local speed control. Programming by Groups makes it easy to navigate and find parameters. Basic Program Group contains the most common application related parameters. Power ratings up to 30 Hp in both 230V and 460V versions. Built-in braking transistor allows connection to remote braking resistor for enhanced performance needs.

Performance Features	Control Modes	V/Hz or Sensorless Vector
	Operator Interface Module	Integral Drive Mounted
	Display Lines	4-Character LED Display
	Programmable Preset Speeds	Eight
	Analog Outputs	One (0-10 VDC)
	Auto Restart	Yes -- Up to 10 attempts
	Frequency Avoidance	Three Bands
	Fault History	Last Five Faults
	Digital Inputs	Eight Completely Configurable Inputs
	Digital Inputs Type	Pull-up or Pull-down
Drive Specifications	Analog Inputs: Two Total	One: 0-10VDC or -10 to 10VDC, One: 4-20mADC
	Digital Outputs: Two Total	One Opto-coupled (Configurable), Form C Relay
	Meter Outputs	0-10 VDC: One Analog Usable for Meter (Proportional to Frequency, Output Current, AC Output Voltage, or DC Output Voltage)
	Maximum Load	30 Hp @ 460 VAC
	Overload Capacity	Drive Output 150% for One Minute, 200% for Twelve Seconds
	Frequency Accuracy	Digital Command: 0.01% of Max. Output Frequency, Analog Command: 0.1% of Max. Output Frequency
	Input Voltage Ranges	230 VAC (170-253); 460 VAC (323-528)
	Rated Input Frequency	50-60Hz (±5%)
	Carrier Frequency	2-15 kHz (3 kHz default)
	Operating Temperature	–10° to 50°C (IP20)
	Snubber (Dynamic Braking)	Built-in Transistor
	Dynamic Braking External	Up to 150% Dynamic Braking with appropriately sized resistor
	DC Injection Braking	Included
	Volts/Hz	Linear V/Hz, Quadratic V/Hz, Custom 4-Point V/Hz Curve
	Sensorless Vector	Full Sensorless Vector Control with Autotune Function and motor model
	Frequency Control Range	0-400 Hz
	Accel/Decel	Eight independently adjustable sets of ramps
	Time Range	0.1 to 600 Seconds
	S Curve Accel. & Decel.	Yes, with adjustable rounding percentage
	Keypad Speed Control	Yes
	Sink/Source Inputs	Selectable, 24 VDC Logic
	Electronic Overload Trip	Electronic Motor Overload Inverse Time calculation with Programmable Warning Level
	Communications	Built-in MODBUS-RTU (RS-485) Communications - optional Devicenet, Profibus-DP, Ethernet-IP or Modbus/TCP
	PID Control	Built-in
Protective Features	Under Voltage	Level Depends on Voltage Class (240, 480)
	Ground Fault Protection	Ground Fault protection active during run
	Output Short Circuit	Phase-to-Phase on Drive Output
	Over Temperature	Heatsink Monitor
	DC Bus Overvoltage	DC Bus Level Trip
	Drive Overload	Exceed Drive rating of 150% for One Minute
	Over Current	Over-current/short-Circuit protection
	Output Phase	Trips on open Output Phase
	Loss of Reference	Trips on Loss of Speed Command Signal
	Cooling Fan	Detects an inverter fan failure (replace fan)
	Comm. Error	Detects a communication error (fault)
Agency Certifications		UL, cUL, CE
Service Conditions	Altitude	1,000 m (3,300 ft.), derate by 1% per 100 m up to 2,000 m maximum.
	Ambient Temperature	IP20: -10°C (14°F) to 50°C (122°F)
	Storage Temperature	-20°C (-2°F) to 65°C (149°F)
	Relative Humidity	10% to 95%, non-condensing

VS1MD – 230V, 50/60 Hz, 3-Phase

Catalog Number	Frame	3-Phase Hp	1-Phase Hp	Output Current	List Price	Mult. Sym.
VS1MD20P5	A	0.5	0.25	2.5A	473	EA
VS1MD21	A	1	0.5	5.0A	491	EA
VS1MD22	B	2	1	8.0A	614	EA
VS1MD23	C	3	2	12.0A	709	EA
VS1MD25	C	5	3	16.0A	909	EA
VS1MD27	D	7.5	-	24.0A	1,327	EA
VS1MD210	D	10	5	32.0A	1,574	EA
VS1MD215	E	15		46.0A	1,966	EA
VS1MD220	E	20		60.0A	2,459	EA
VS1MD225	F	25		74.0A	3,072	EA
VS1MD230	F	30		88.0A	3,840	EA

VS1MD – 460V, 50/60 Hz, 3-Phase

Catalog Number	Frame	Hp	Output Current	List Price	Mult. Sym.
VS1MD40P5	A	0.5	1.25A	565	EA
VS1MD41	A	1	2.5A	592	EA
VS1MD42	B	2	4.0A	715	EA
VS1MD43	C	3	6.0A	826	EA
VS1MD45	C	5	8A	1,027	EA
VS1MD47	D	7.5	12.0A	1,329	EA
VS1MD410	D	10	16.0A	1,587	EA
VS1MD415	E	15	24.0A	1,984	EA
VS1MD420	E	20	30.0A	2,479	EA
VS1MD425	F	25	39.0A	3,099	EA
VS1MD430	F	30	45.0A	3,874	EA

VS1MD – 230V, 50/60 Hz, 3-Phase Communication Ready Base Unit

Does not include local keypad

Catalog Number	Frame	Hp	Output Current	List Price	Mult. Sym.
VS1MD20P5-8	A	0.5	2.5A	426	EA
VS1MD21-8	A	1	5.0A	442	EA
VS1MD22-8	B	2	8.0A	553	EA
VS1MD23-8	C	3	12.0A	638	EA
VS1MD25-8	C	5	16.0A	818	EA
VS1MD27-8	D	7.5	24.0A	1,194	EA
VS1MD210-8	D	10	32.0A	1,416	EA
VS1MD215-8	E	15	46.0A	1,892	EA
VS1MD220-8	E	20	60.0A	2,384	EA
VS1MD225-8	F	25	74.0A	2,998	EA
VS1MD230-8	F	30	88.0A	3,787	EA

VS1MD – 460V, 50/60 Hz, 3-Phase Communication Ready Base Unit

Does not include local keypad

Catalog Number	Frame	Hp	Output Current	List Price	Mult. Sym.
VS1MD40P5-8	A	0.5	1.25A	508	EA
VS1MD41-8	A	1	2.5A	532	EA
VS1MD42-8	B	2	4.0A	643	EA
VS1MD43-8	C	3	6.0A	744	EA
VS1MD45-8	C	5	8A	925	EA
VS1MD47-8	D	7.5	12.0A	1,195	EA
VS1MD410-8	D	10	16.0A	1,429	EA
VS1MD415-8	E	15	24.0A	1,911	EA
VS1MD420-8	E	20	30.0A	2,406	EA
VS1MD425-8	F	25	39.0A	3,015	EA
VS1MD430-8	F	30	45.0A	3,799	EA

Mounting Dimensions

Frame	Height Inches (mm)	Width Inches (mm)	Depth Inches (mm)
A	5.04 (128)	2.75 (70)	5.12 (130)
B	5.04 (128)	3.94 (100)	5.12 (130)
C	5.04 (128)	5.20 (140)	6.10 (155)
D	8.66 (220)	7.08 (180)	6.69 (170)
E	15.40 (320)	11.30 (235)	9.12 (189.50)
F	19.73 (410)	12.50 (260)	10 (208.50)

VS1MD – Accessories

DB Resistor Kits

VS1MD drives include built-in braking transistors to aid in applications requiring the ability to stop rapidly. External braking resistors are required to implement the dynamic braking function. The below resistor selection provides resistors that are designed for 15% to 20% duty cycle braking applications. These resistors must be separately mounted.

VS1MD Dynamic Braking Resistors

Input Volts	Hp	Braking Transistor Specifications		100% Torque Braking Resistors					150% Torque Braking Resistors				
		Minimum Allowable Ohms	Maximum Continuous Braking Wattage	Ohms	Wattage	Catalog Number	List Price	Mult. Sym.	Ohms	Wattage	Catalog Number	List Price	Mult. Sym.
230	0.5	50	116	200	200	**VS1-R200W200**	62	EA	200	200	**VS1-R200W200**	62	EA
	1	44	174	160	200	**VS1-R160W200**	62	EA	100	200	**VS1-R100W200**	47	EA
	2	40	278	50	400	**VS1-R50W400**	136	EA	50	400	**VS1-R50W400**	136	EA
	3	26	464	50	400	**VS1-R50W400**	136	EA	33	600	**VS1-R33W600**	287	EA
	5	16	767	33	600	**VS1-R33W600**	287	EA	20	800	**VS1-R20W800**	316	EB
	7.5	8	929	20	800	**VS1-R20W800**	316	EB	15	1200	**VS1-R15W1200**	382	EB
	10	8	1394	15	1200	**VS1-R15W1200**	382	EB	10	2400	**VS1-R10W2400**	504	EB
460	0.5	133	116	200	200	**VS1-R200W200**	62	EA	200	200	**VS1-R200W200**	62	EA
	1	66	174	200	200	**VS1-R200W200**	62	EA	200	200	**VS1-R200W200**	62	EA
	2	66	348	200	400	**VS1-R200W400**	136	EA	200	400	**VS1-R200W400**	136	EA
	3	80	464	200	400	**VS1-R200W400**	136	EA	130	600	**VS1-R130W600**	287	EA
	5	64	755	100	400	**VS1-R100W400**	136	EA	85	1000	**VS1-R85W1000**	357	EB
	7.5	32	1235	85	1000	**VS1-R85W1000**	357	EB	40	2000	**VS1-R40W2000**	479	EA
	10	32	1394	60	1200	**VS1-R60W1200**	382	EB	40	2000	**VS1-R40W2000**	479	EA

NEMA 1/IP30 Kit

The VS1MD AC drive has an enclosure rating of IP20, but includes provisions to mount a NEMA 1 kit. This kit provides a metal conduit plate for attaching user conduit, as well as a plastic top cover for the drive.

VS1MD NEMA 1 Kits

Description	Catalog Number	List Price	Mult. Sym.
VS1MD NEMA 1 Kit, Frame A	**VS1MD-NM1A**	42	EA
VS1MD NEMA 1 Kit, Frame B	**VS1MD-NM1B**	42	EA
VS1MD NEMA 1 Kit, Frame C	**VS1MD-NM1C**	50	EA
VS1MD NEMA 1 Kit, Frame D	**VS1MD-NM1D**	60	EA
VS1MD NEMA 1 Kit, Frame E	**VS1MD-NM1E**	66	EA
VS1MD NEMA 1 Kit, Frame F	**VS1MD-NM1F**	90	EA

VS1MD – Accessories Continued...

DIN Rail Mounting Kit

Adapter Kit to convert the VS1MD drive for DIN Rail Mounting.
Low profile mounting to the back of the AC Drive adds minimal depth.

VS1MD Din Rail Kit

Description	Catalog Number	List Price	Mult. Sym.
VS1MD Din Rail Kit A-Frame	**VS1MD-DINA**	20	EA
VS1MD Din Rail Kit B-Frame	**VS1MD-DINB**	26	EA
VS1MD Din Rail Kit C-Frame	**VS1MD-DINC**	34	EA

VS1MD NEMA 1 Remote Keypads

The VS1MD Remote Keypad can be panel mounted for remote keypad configuration or control of the VS1MD.
The remote keypad can be mounted up to 15ft. from the VS1MD drive.

Description	Catalog Number	List Price	Mult. Sym.
VS1MD Remote Keypad with 6 ft. (2m) cable	**VS1MD-RKEY2**	101	EA
VS1MD Remote Keypad with 9 ft. (3m) cable	**VS1MD-RKEY3**	111	EA
VS1MD Remote Keypad with 15 ft. (5m) cable	**VS1MD-RKEY5**	131	EA

VS1MD CopyCat Keypad

The VS1MD CopyCat Keypad allows a CopyCat function so that the parameters of the drive can be stored to and retrieved from the Remote Keypad.

Description	Catalog Number	List Price	Mult. Sym.
VS1MD CopyCat Keypad	**VS1MD-CCL**	105	EA

VS1MD Communication Option Kits

Ideal for factory, building and process automation industries, Communication cards are available for DeviceNet, dual protocol Ethernet IP/ModBus TCP/IP and Profibus.

Network cards fit internal to the VS1MD drive replacing the standard operator interface and I/O board. In order to use a communication option, order a VS1MD Communication Ready Drive from the preceding pages. The Communication Ready Drives can be identified by the "-8" suffix on the part number. Then, select a VS1MD Communication Option from the list below. It is also possible to convert a standard VS1MD Drive to work with these communication options. In order to use a standard VS1MD Drive with a Communication Option, you must also order a communications-ready conversion kit MD11040001769 (includes a new front cover, baseplate, and communications board header adapter).

Description	Catalog Number	List Price	Mult. Sym.
DeviceNet Communication Card	**VS1MD-DNET**	223	EA
Profibus Communication Card	**VS1MD-PBUS**	335	EA
Ethernet IP Communication Card	**VS1MD-ENET**	292	EA

VS1 USB to RS485 Converter Kit

This kit allows communications between a USB port on a computer and the VS1MD Drive RS485 control terminals.

Description	Catalog Number	List Price	Mult. Sym.
VS1 USB to RS485 Converter Kit	**VS1-COMMUSB**	529	EA

DriveView Software

DriveView communications software for Baldor VS1MD Drives is available at no charge by downloading from the Baldor VS Drives web site at www.baldor.com.

VS1MX
AC Micro Drive

1/2 thru 1.5 Hp	**115 VAC**	**1 Phase - 50/60 Hz**
1/2 thru 3 Hp	**230 VAC**	**1 Phase - 50/60 Hz**
1/2 thru 5 Hp	**230 VAC**	**3 Phase - 50/60 Hz**
1 thru 10 Hp	**460 VAC**	**3 Phase - 50/60 Hz**

Applications: Applications that require a washdown or harsh duty enclosure. Ideal for environments where dust, oil mist or water is prevalent. Variable torque, constant torque or constant horsepower applications. Target stand alone applications where a local disconnect is required. New installations, replacements and original equipment manufactures (OEM).

Features: Volts per Hertz Control with peak overload capacity of 175%. Flexible mounting options NEMA 12, NEMA 4X (Indoor) Input Disconnect models and EMC Filter models. Integral keypad, operator interface and local speed control. Speed potentiometer and F-O-R switch on input disconnect models only. Basic set of less than forty programming parameters. Power ratings up to 10 Hp in 460V versions.

Performance Features	Control Modes	V/Hz
	Operator Interface Module	Integral Drive Mounted
	Display Lines	6-Character LED Display
	Programmable Preset Speeds	Four
	Analog Outputs	One (0-10 VDC)
	Auto Restart	Yes – Up to 5 attempts
	Frequency Avoidance	One Band
	Fault History	Last Four Faults
	Digital Inputs	Three Configurable Inputs
	Digital Inputs Type	Pull-Up
Drive Specifications	Analog Inputs: Two	0-10VDC or 4 to 20mA
	Relay Outputs: One	One Built-in Form C Relay
	Analog Outputs / Digital Output	0-10 VDC: One Analog Usable for Meter (Freq., Current, Voltage) or Digital Output
	Maximum Load	10 Hp @ 460 VAC
	Overload Capacity	Drive Output 150% for one minute and 175% for 2 seconds
	Input Voltage Ranges	115 VAC (99-126); 230 VAC (198-264); 460 VAC (342-528)
	Rated Input Frequency	50-60Hz (±5%)
	Carrier Frequency	4-32 kHz (8 kHz default)
	Operating Temperature	–10° to 40°C
	Snubber (Dynamic Braking)	Built-in Transistor on Frames 2 and 3 only
	Dynamic Braking External	Up to 150% Dynamic Braking with appropriately sized resistor
	DC Injection Braking	Included
	Volts/Hz	Linear V/Hz, Energy Optimizer Function
	Frequency Control Range	0 - 500Hz
	Accel/Decel	Independently adjustable accel. & decel. ramps
	Time Range	0.1 to 600.0 Seconds
	Keypad Speed Control	Yes
	Sink/Source Inputs	Selectable, 24 VDC Logic
	Electronic Overload Trip	Electronic Motor Overload Inverse 150% for 1 minute or 175% for 2
	Communications	Built-in MODBUS-RTU (RS-485) Communications
	PI Control	Built-in
Protective Features	Under Voltage	Level Depends on Voltage Class (240, 480, or 575)
	Output Short Circuit	Phase-to-Phase on Drive Output
	Over Temperature	Heatsink Monitor
	DC Bus Overvoltage	DC Bus Level Trip
	Drive Overload	Exceed Drive rating of 150% for One Minute or 175% for 2 seconds
	Over Current	Over-current/short-Circuit protection
	Output Phase	Trips on open Output Phase
	Loss of Reference	Trips on Loss of Speed Command Signal
	Comm. Error	Detects a communication error (fault)
Agency Certifications		UL, cUL, CE, CCC, C-tick
Service Conditions	Altitude	1,000 m (3,300 ft.), derate by 1% per 100m up to 2,000m maximum
	Ambient Temperature	-10°C (14°F) to 40°C (102°F)
	Storage Temperature	-40°C (-40°F) to 60°C (140°F)
	Relative Humidity	10% to 95%, non-condensing
	Intermittent Overload	150% overload capacity for up to 1 minute, 175% overload capacity for up to 2 seconds

VS1MX – 115V, 50/60 Hz, 1-Phase Input (230V, 3-Phase Output) – NEMA 4X/12 (White Enclosure) **

Catalog Number	Disconnect *	Frame	Hp	Output Current	List Price	Mult. Sym.
VS1MX10P5-4	No	A	0.5	2.3	701	EA
VS1MX10P5-4D	Yes	A	0.5	2.3	770	EA
VS1MX11-4	No	A	1	4.3	726	EA
VS1MX11-4D	Yes	A	1	4.3	800	EA
VS1MX11P5-4T	No	B	1.5	5.8	910	EA
VS1MX11P5-4TD	Yes	B	1.5	5.8	1,000	EA

VS1MX – 115V, 50/60 Hz, 1-Phase Input (230V, 3-Phase Output) – NEMA 12 (Green Enclosure)

Catalog Number	Disconnect *	Frame	Hp	Output Current	List Price	Mult. Sym.
VS1MX10P5-2	No	A	0.5	2.3	644	EA
VS1MX10P5-2D	Yes	A	0.5	2.3	708	EA
VS1MX11-2	No	A	1	4.3	669	EA
VS1MX11-2D	Yes	A	1	4.3	736	EA
VS1MX11P5-2T	No	B	1.5	5.8	837	EA
VS1MX11P5-2TD	Yes	B	1.5	5.8	920	EA

VS1MX – 230V, 50/60 Hz, 1-Phase Input (230V, 3-Phase Output) – NEMA 4X/12 (White Enclosure) **

Catalog Number	Disconnect *	Frame	Hp	Output Current	List Price	Mult. Sym.
VS1MX80P5-4	No	A	0.5	2.3	609	EA
VS1MX80P5-4D	Yes	A	0.5	2.3	670	EA
VS1MX81-4	No	A	1	4.3	632	EA
VS1MX81-4D	Yes	A	1	4.3	695	EA
VS1MX82-4	No	A	2	7	790	EA
VS1MX82-4D	Yes	A	2	7	870	EA
VS1MX82-4T	No	B	2	7	879	EA
VS1MX82-4TD	Yes	B	2	7	966	EA
VS1MX83-4T	No	B	3	10.5	913	EA
VS1MX83-4TD	Yes	B	3	10.5	1,002	EA

VS1MX – 230V, 50/60 Hz, 1-Phase Input (230V, 3-Phase Output) – NEMA 12 (Green Enclosure)

Catalog Number	Disconnect *	Frame	Hp	Output Current	List Price	Mult. Sym.
VS1MX80P5-2	No	A	0.5	2.3	560	EA
VS1MX80P5-2D	Yes	A	0.5	2.3	616	EA
VS1MX81-2	No	A	1	4.3	582	EA
VS1MX81-2D	Yes	A	1	4.3	640	EA
VS1MX82-2	No	A	2	7	728	EA
VS1MX82-2D	Yes	A	2	7	801	EA
VS1MX82-2T	No	B	2	7	808	EA
VS1MX82-2TD	Yes	B	2	7	889	EA
VS1MX83-2T	No	B	3	10.5	840	EA
VS1MX83-2TD	Yes	B	3	10.5	923	EA

NOTE: For EMC filtered units, refer to catalog CA769 (Baldor Drives and Capabilities).
* Disconnect models include speed potentiometer and F-O-R switch.
** Indoor

VS1MX – 230V, 50/60 Hz, 3-Phase Input (230V, 3-Phase Output) – NEMA 4X/12 (White Enclosure) **

Catalog Number	Disconnect *	Frame	Hp	Output Current	List Price	Mult. Sym.
VS1MX20P5-4	No	A	0.5	2.3	626	EA
VS1MX20P5-4D	Yes	A	0.5	2.3	688	EA
VS1MX21-4	No	A	1	4.3	688	EA
VS1MX21-4D	Yes	A	1	4.3	711	EA
VS1MX22-4	No	A	2	7	712	EA
VS1MX22-4D	Yes	A	2	7	783	EA
VS1MX22-4T	No	B	2	7	791	EA
VS1MX22-4TD	Yes	B	2	7	870	EA
VS1MX23-4T	No	B	3	10.5	821	EA
VS1MX23-4TD	Yes	B	3	10.5	903	EA
VS1MX25-4T	No	C	5	18	1,170	EA
VS1MX25-4TD	Yes	C	5	18	1,288	EA

VS1MX – 230V, 50/60 Hz, 3-Phase Input (230V, 3-Phase Output) – NEMA 12 (Green Enclosure)

Catalog Number	Disconnect *	Frame	Hp	Output Current	List Price	Mult. Sym.
VS1MX20P5-2	No	A	0.5	2.3	574	EA
VS1MX20P5-2D	Yes	A	0.5	2.3	632	EA
VS1MX21-2	No	A	1	4.3	596	EA
VS1MX21-2D	Yes	A	1	4.3	655	EA
VS1MX22-2	No	A	2	7	654	EA
VS1MX22-2D	Yes	A	2	7	720	EA
VS1MX22-2T	No	B	2	7	728	EA
VS1MX22-2TD	Yes	B	2	7	800	EA
VS1MX23-2T	No	B	3	10.5	755	EA
VS1MX23-2TD	Yes	B	3	10.5	831	EA

VS1MX – 460V, 50/60 Hz, 3-Phase Input (460V, 3-Phase Output) – NEMA 4X/12 (White Enclosure) **

Catalog Number	Disconnect *	Frame	Hp	Output Current	List Price	Mult. Sym.
VS1MX41-4	No	A	1	2.2	762	EA
VS1MX41-4D	Yes	A	1	2.2	838	EA
VS1MX42-4	No	A	2	4.1	920	EA
VS1MX42-4D	Yes	A	2	4.1	1,013	EA
VS1MX42-4T	No	B	2	4.1	1,022	EA
VS1MX42-4TD	Yes	B	2	4.1	1,125	EA
VS1MX43-4T	No	B	3	5.8	1,065	EA
VS1MX43-4TD	Yes	B	3	5.8	1,170	EA
VS1MX45-4T	No	B	5	9.5	1,323	EA
VS1MX45-4TD	Yes	B	5	9.5	1,456	EA
VS1MX47-4T	No	C	7.5	14	1,708	EA
VS1MX47-4TD	Yes	C	7.5	14	1,879	EA
VS1MX410-4T	No	C	10	18	2,025	EA
VS1MX410-4TD	Yes	C	10	18	2,228	EA

NOTE: For EMC filtered units, refer to catalog CA769 (Baldor Drives and Capabilities).
* Disconnect models include speed potentiometer and F-O-R switch.
** Indoor

VS1MX – 460V, 50/60 Hz, 3-Phase Input (460V, 3-Phase Output) – NEMA 12 (Green Enclosure)

Catalog Number	Disconnect *	Frame	Hp	Output Current	List	Mult. Sym.
VS1MX41-2	No	A	1	2.2	701	EA
VS1MX41-2D	Yes	A	1	2.2	770	EA
VS1MX42-2	No	A	2	4.1	846	EA
VS1MX42-2D	Yes	A	2	4.1	931	EA
VS1MX42-2T	No	B	2	4.1	940	EA
VS1MX42-2TD	Yes	B	2	4.1	1,034	EA
VS1MX43-2T	No	B	3	5.8	979	EA
VS1MX43-2TD	Yes	B	3	5.8	1,077	EA
VS1MX45-2T	No	B	5	9.5	1,217	EA
VS1MX45-2TD	Yes	B	5	9.5	1,339	EA

NOTE: For EMC filtered units, refer to catalog CA769 (Baldor Drives and Capabilities).
* Disconnect models include speed potentiometer and F-O-R switch.

Mounting Dimensions - NEMA 12 (IP55)

Frame	Height Inches (mm)	Width Inches (mm)	Depth Inches (mm)
A	7.87 (200)	5.51 (140)	6.54 (166)
B	12.2 (310)	6.5 (165)	7.09 (180)

Mounting Dimensions - NEMA 4X (IP66)

Frame	Height Inches (mm)	Width Inches (mm)	Depth Inches (mm)
A	9.13 (232)	6.34 (161)	6.89 (175)
B	10.12 (257)	7.40 (178)	7.30 (185.5)
C	12.01 (305)	8.29 (210.5)	8.97 (227.8)

VS1MX Accessories

VS1MX Dynamic Braking Resistors

VS1MX Frame B and C drives include built-in braking transistors to aid in applications requiring the ability to stop rapidly. The resistor kit is designed for the VS1MX and mount external to the drive.

Description	Catalog Number	List Price	Mult. Sym.
DB Resistor 50 Ohm, 200 Watt	**VS1MX-R50W200**	350	EA

VS1MX IP55 Padlock

VS1MX IP55 Drives with a built in disconnect switch can be locked out using the padlock below.

Description	Catalog Number	List Price	Mult. Sym.
VS1MX IP55 Padlock	**VS1MX-ILOCK**	36	EA

VS1MX Accessories Continued...

VS1MX RJ45 Copycat Loader

This device allows uploading of drive parameters. Simply insert the device into the RJ45 port on the front of the VS1MX, press the upload button and you are done. Parameters are stored in memory and can be downloaded later or used to duplicate drive setup across a number of drives. Can also be used with VS1ST.

Catalog Number	Description	List Price	Mult. Sym.
VS1ST-CCL	RJ45 Copycat Loader	28	EA

VS1MX Remote Keypad

The VS1ST-RKEY3 Remote Keypad can be panel mounted for remote control or display of drive parameters. The kit comes standard with a 9 foot (3 meter) cable and is suitable for IP54 mounting. Depending on the requirement of the application, VS1ST-RKEY3 can be used point to point or with multiple drives. This keypad can be used with either the VS1ST or the VS1MX.

Catalog Number	Description	List Price	Mult. Sym.
VS1ST-RKEY3	Remote Keypad with 3m cable	110	EA

VS1MX Cable Kits

To support a basic serial network, option cable assemblies and splitters are available.

Catalog Number	Description	List Price	Mult. Sym.
VS1ST-J45SP	RJ45 Cable Splitter	23	EA
VS1ST-CBL0P5	1.5 ft. (0.5m) RJ45 Cable	12	EA
VS1ST-CBL1	3 ft. (1m) RJ45 Cable	12	EA
VS1ST-CBL3	9 ft. (3m) RJ45 Cable	12	EA

VS1MX Field Bus Gateways

The Field Bus Gateways incorporate the Anybus Communicator and can connect a VS1MX to industrial networks. The communicator performs an intelligent conversion between the drive's serial protocol and the chosen industrial network. Can also be used with VS1ST.

Catalog Number	Description	List Price	Mult. Sym.
VS1ST-PBUS	Profibus Gateway Head	953	EA
VS1ST-DNET	DeviceNet Gateway Head	953	EA
VS1ST-ENET	Ethernet-IP or Modbus/TCP Gateway Head	902	EA

VS1MX Relay & Control Board Option Cards

To provide additional capabilities for the VS1MX, add on option cards are available. These include both I/O expansion and 115 or 230VAC control logic interface boards. Can also be used with VS1ST.

Catalog Number	Description	List Price	Mult. Sym.
VS1ST-2ROUT	Provides one additional relay output for the drive	153	EA
VS1ST-HVAC	Provides two relays for "drive running" & "drive tripped"	153	EA
VS1ST-LOGHV-11	115 VAC control logic input card	131	EA
VS1ST-LOGHV-23	230 VAC control logic input card	131	EA

VS1MXS
600V Harsh Duty
AC Micro Drive

1 thru 7.5 Hp **500-600 VAC** **3 Phase - 50/60 Hz**

Product Highlights: The VS1MXS is a feature rich V/Hz & Sensorless Vector product targeted at the 600V market and harsh duty applications.

Applications: Variable torque, constant torque or constant horsepower applications. New installations, replacements and original equipment manufactures (OEM).

Features: V/Hz and Sensorless Vector Control with peak overload capacity of 175% and PID capability. Flexible mounting options with IP55 (NEMA 12) enclosure as standard. Integral keypad, operator interface and local speed control. Basic setup parameter list and advanced software settings. Built-in braking transistor allows connection to remote braking resistor for enhanced performance needs. Power ratings up to 7.5 HP at 600V, pluggable I/O terminal strip.

Performance Features	Control Modes	V/Hz & Sensorless Vector Control
	Operator Interface Module	Integral Drive Mounted; basic start/stop, forward/reverse and speed control
	Display Lines	6-Character LED Display
	Programmable Preset Speeds	Eight
	Analog Output: One	0-10VDC or 20mA
	Auto Restart	Yes -- Up to 5 attempts
	Frequency Avoidance	One Band
	Fault History	Last 4 Faults
	Digital Inputs: Four	Two programmable digital inputs, two user selectable analog/digital inputs
	Digital Inputs Type	Pull-Up
Drive Specifications	Analog Inputs: Two	One bi-polar and one 0-10VDC, 0 to 20mA or 4 to 20mA
	Relay Output: One	Built-in Form C Relay, normally open contact
	Analog Output/Digital: One	0-10 VDC: One Analog Usable for Meter (Freq., Current, Voltage) or Digital Output
	Maximum Load:	7.5 HP @ 600 VAC
	Overload Capacity	Drive Output 150% for one minute and 175% for 2 seconds
	Input Voltage Ranges	500 - 600VAC
	Input Voltage Tolerance	10% / -10%
	Rated Input Frequency	50-60Hz (±5%)
	Carrier Frequency	4-32 kHz (8 kHz default)
	Operating Temperature	-10° to 50°C
	Snubber (Dynamic Braking)	Built-in Transistor
	Dynamic Braking External	Up to 150% Dynamic Braking with appropriately sized resistor
	DC Injection Braking	Included
	Volts/Hz	Linear V/Hz, Energy Optimization Function
	Sensorless Vector	Full Sensorless Vector Control with Autotune and motor model
	Frequency Control Range	0 - 2000Hz
	Accel/Decel:	Independently adjustable accel. & decel. ramps
	Keypad Speed Control	Yes
	Sink/Source Inputs	Selectable, 24 VDC Logic
	Electronic Overload Trip	Electronic Motor Overload Inverse 150% for 1 minute or 175% for 2 seconds
	Communications	Built-in MODBUS-RTU (RS-485) Communications, RJ11 connection
	PID Control	Built-in with sleep/wake function
Protective Features	Under Voltage	Level Depends on Voltage Class (600V)
	Output Short Circuit	Phase-to-Phase on Drive Output
	Over Temperature	Heatsink Monitor
	DC Bus Overvoltage	DC Bus Level Trip
	Drive Overload	Exceed Drive rating of 150% for One Minute or 175% for 2 seconds
	Over Current	Over-current/short-Circuit protection
	Output Phase	Trips on open Output Phase
	Loss of Reference	Trips on Loss of Speed Command Signal
	Communication Error	Detects a communication error (fault)
Agency Certifications		UL, cUL, CE, CCC, C-tick
Service Conditions	Altitude	1,000 m (3,300 ft.) Maximum
	Ambient Temperature	-10°C to 50°C
	Storage Temperature:	-20°C to 60°C
	Relative Humidity	10% to 90%, non-condensing
	Intermittent Overload	150% overload capacity for up to 1 minute
		175% overload capacity for up to 2 seconds

VS1MXS – 500-600V ±10% 3-Phase Input

Catalog Number	Frame	Disconnect	Hp	kW	Output Current	List Price	Mult. Sym.
VS1MXS51-2T	B	No	1	0.75	1.7	1,047	EA
VS1MXS51-2TD	B	Yes	1	0.75	1.7	1,152	EA
VS1MXS52-2T	B	No	2	1.5	3.1	1,266	EA
VS1MXS52-2TD	B	Yes	2	1.5	3.1	1,393	EA
VS1MXS53-2T	B	No	3	2.2	4.1	1,463	EA
VS1MXS53-2TD	B	Yes	3	2.2	4.1	1,610	EA
VS1MXS55-2T	B	No	5	4	6.1	1,819	EA
VS1MXS55-2TD	B	Yes	5	4	6.1	2,000	EA
VS1MXS57-2T	B	No	7.5	5.5	9	2,348	EA
VS1MXS57-2TD	B	Yes	7.5	5.5	9	2,582	EA

Mounting Dimensions

Frame	Height Inches (mm)	Width Inches (mm)	Depth Inches (mm)
B	12.2 (310)	6.46 (164)	7.09 (180)

Remote Keypad for the VS1MXS

The VS1STS-RKEY3 Remote Keypad can be panel mounted for remote control or display of drive parameters. The kit comes standard with a 9 foot (3 meter) cable and is suitable for IP54 mounting. Depending on the requirement of the application, VS1STS-RKEY3 can be used point to point or with multiple drives. This keypad can be used with either the VS1STS or the VS1MXS.

Catalog Number	Description	List Price	Mult. Sym.
VS1STS-RKEY3	Remote Keypad with 3m cable	93	EA

Cable Kits for the VS1MXS

To support a basic serial network, option cable assemblies and splitters are available.

Catalog Number	Description	List Price	Mult. Sym.
VS1STS-J11SP	RJ45 Cable Splitter	24	EA
VS1STS-CBL0P3	1 ft. (0.3m) RJ11 Cable	6	EA
VS1STS-CBL1	3 ft. (1m) RJ11 Cable	8	EA
VS1STS-CBL3	9 ft. (3m) RJ11 Cable	12	EA

VS1PF Pump and Fan AC Drive

7.5 thru 40 Hp **230 VAC** **3 Phase - 50/60 Hz**
7.5 thru 700 Hp **460 VAC** **3 Phase - 50/60 Hz**
7.5 thru 150 Hp **600 VAC** **3 Phase - 50/60 Hz**

Applications: Pump and Fan AC Drive Applications (both Variable and Constant Torque) from 5 to 700 Hp.

Features: Nema 1 enclosure as standard up to 15Hp. IP00 with NEMA 1 enclosure Kits available from 20 Hp to 125 Hp. IP00 as standard over 125 Hp. Integral keypad and plain English 2-line display including UP/DOWN keys to adjust speed reference. Dual PID control loops. External DBU Dynamic Braking kits connect to remote braking resistor for enhanced performance needs. Sleep/Wake Function -- Ability to disable/re-enable drives automatically as demand dictates. Energy Savings Function. Power Dip Ride-thru. Flying Start Function.

Input Ratings	Voltage	230	460	600
	Voltage Range	170-253	323-528	446-660
	Phase	3 Phase (single phase with 50% derate)		
	Frequency	50/60 Hz +5%		
Output Ratings	Horsepower	7.5-40 Hp @ 230VAC, 3PH; 7.5-700 Hp @ 460VAC, 3 PH; 7.5-150 Hp @ 600 VAC, 3 PH		
	Overload Capacity	Heavy Duty (Constant Torque) = 150% for 60 seconds, 180% for 4 seconds		
		Normal Duty (Variable Torque) = 110% for 60 seconds and 130% for 4 seconds.		
	Frequency	0-120 Hz		
	Voltage	0 to maximum input voltage (RMS)		
Protective Features	Trip	Missing control power, over current, over voltage, under voltage, over temperature (motor or control), output shorted or grounded, motor overload		
	External Output	LED trip condition indicators, 5 assignable logic outputs, 2 assignable analog outputs		
	Short Circuit	Phase to phase, phase to ground		
Environmental Conditions	Temperature	-10 to 40°C. Derate 2% per °C to maximum ambient temperature of 50°C.		
	Cooling	Forced air		
	Enclosure	NEMA 1 and IP00		
	Altitude	Sea level to 3300 Feet (1000 Meters) Derate 2% per 1000 Feet (303 Meters) above 3300 Feet		
	Humidity	10 to 95% RH Non-Condensing		
	Storage Temperature	-40 to +70°C		
Keypad Display	Display	16 character x 2-line, plain-English alpha-numeric display		
	Keys	9 key membrane with tactile response		
	Functions	Output status monitoring, Digital speed control, Parameter setting and display, Diagnostic and Fault log display, Motor run and jog, Local/Remote toggle		
	LED Indicators	Forward run command, Reverse run command, Stop command		
	Remote Mount	4000 foot distance		
	Trip	Separate message and trace log for each trip, last 5 trips retained in memory		
Control Specifications	Control Method	Microprocessor controlled PWM output, selectable encoderless vector or V/Hz inverter		
	Sleep / Wake Function	Ability to disable/re-enable drive automatically as demand dictates		
	Programmable Preset Speeds	Sixteen		
	Accel/Decel	0-6000 seconds, linear, S-Curve, U-Curve		
	Energy Savings Function	Automatic Mode		
	Frequency Control Range	0-120 Hz		
	Frequency Avoidance	3 Bands		
	Selectable Operating Modes	Keypad, 2-Wire, 3-Wire, 16 Preset Speeds, Fan Pump, Process Control.		
Analog Inputs	Two total	One: 0-10VDC or -10 to 10VDC		
		One: 4-20mADC		
Analog Outputs	Two	Two: 0-12 VDC		
Digital Inputs	Pull - up or Pull - down	8 Completely Configurable Inputs		
Digital Outputs	Five Total	Four Form A Relays		
		One Form C Relay		

VS1PF – 230V, 50/60 Hz, 3-Phase

Catalog Number	Frame	Hp (Normal Duty)	Output Current	List Price	Mult. Sym.
VS1PF27-1	A	7.5	24	1,350	EB
VS1PF210-1	B	10	32	1,574	EB
VS1PF215-1	B	15	46	1,743	EB
VS1PF220-9	C	20	60	2,023	EB
VS1PF225-9	C	25	74	2,585	EB
VS1PF230-9	E	30	88	3,371	EB
VS1PF240-9	E	40	115	3,933	EB

VS1PF – 460V, 50/60 Hz, 3-Phase

Catalog Number	Frame	Hp (Normal Duty)	Output Current	List Price	Mult. Sym.
VS1PF47-1	A	7.5	12	1,293	EB
VS1PF410-1	B	10	16	1,574	EB
VS1PF415-1	B	15	24	1,686	EB
VS1PF420-9	C	20	30	2,091	EB
VS1PF420-9L *	D	20	30	2,472	EB
VS1PF425-9	C	25	39	2,472	EB
VS1PF425-9L *	D	25	39	2,922	EB
VS1PF430-9	E	30	45	3,259	EB
VS1PF430-9L *	F	30	45	3,652	EB
VS1PF440-9	E	40	61	3,933	EB
VS1PF440-9L *	F	40	61	4,327	EB
VS1PF450-9	G	50	75	4,720	EB
VS1PF450-9L *	J	50	75	5,281	EB
VS1PF460-9	G	60	91	6,068	EB
VS1PF460-9L *	J	60	91	6,741	EB
VS1PF475-9	H	75	110	7,304	EB
VS1PF475-9L *	K	75	110	7,977	EB
VS1PF4100-9	L	100	152	8,203	EB
VS1PF4100-9L *	M	100	152	9,102	EB
VS1PF4125-9	L	125	183	10,112	EB
VS1PF4125-9L *	M	125	183	11,068	EB
VS1PF4150-9L *	N	150	223	11,685	EB
VS1PF4200-9L *	N	200	264	13,482	EB
VS1PF4250-9L *	P	250	325	15,730	EB
VS1PF4300-9L *	R	300	413	19,100	EB
VS1PF4350-9L *	R	350	432	22,471	EB
VS1PF4400-9L *	R	400	547	31,458	EB
VS1PF4500-9	S	500	613	35,953	EB
VS1PF4600-9	T	600	731	44,940	EB
VS1PF4700-9	T	700	877	53,928	EB

* Built-In DC Link Inductor

VS1PF – 600V, 50/60 Hz, 3-Phase

Catalog Number	Frame	Hp (Normal Duty)	Output Current	List Price	Mult. Sym.
VS1PF57-1	A	7.5	9	1,422	EB
VS1PF510-1	A	10	12	1,731	EB
VS1PF515-1	A	15	17	1,855	EB
VS1PF520-1	C	20	23	2,300	EB
VS1PF525-9	C	25	27	2,719	EB
VS1PF530-9	E	30	34	3,585	EB
VS1PF540-9	E	40	43	4,326	EB
VS1PF550-9	H	50	55	5,192	EB
VS1PF560-9	H	60	64	6,676	EB
VS1PF575-9	H	75	80	8,032	EB
VS1PF5100-9	L	100	104	9,023	EB
VS1PF5125-9	L	125	128	11,122	EB
VS1PF5150-9L	N	150	150	12,853	EB

VS1PF Pump and Fan Bypass AC Drive

7.5 thru 40 Hp **230 VAC** **3 Phase - 50/60 Hz**
7.5 thru 125 Hp **460 VAC** **3 Phase - 50/60 Hz**

Applications: Pump and Fan AC Drive Applications from 7.5 to 125 Hp, where System Bypass capability is required.

Features: Nema 1 type enclosure, Circuit Breaker with lockable Disconnect, Line Reactor rated at 3%, Surge Suppression, VS1PF control, Thermostat Input, Class 10 Motor Overload, Hand-Off-Auto selector switch, ASD-Bypass-Test Selector Switch, Manual Potentiometer for Hand mode, Analog input voltage or current for Auto mode, Power on, Fault, ASD Bypass indicating light. PID control - Internal and External, Flying Start, Sleep/Wake, Sensorless Vector Control, Energy Savings.

Options: Fused Drive Input, Load Reactor, Communication Boards

VS1PFB – 208V, 50/60 Hz, 3-Phase

Catalog Number	Frame	Hp (Normal Duty)	Output Current	List Price	Mult. Sym.
VS1PFB77-1	A1	7.5	24	4,086	E1
VS1PFB710-1	B1	10	32	4,562	E1
VS1PFB715-1	B1	15	46	6,989	E1
VS1PFB720-1	C1	20	60	6,693	E1
VS1PFB725-1	C1	25	74	7,919	E1
VS1PFB730-1	E1	30	88	9,067	E1
VS1PFB740-1	E1	40	115	11,328	E1

VS1PFB – 230V, 50/60 Hz, 3-Phase

Catalog Number	Frame	Hp (Normal Duty)	Output Current	List Price	Mult. Sym.
VS1PFB27-1	B2	7.5	24	4,016	E1
VS1PFB210-1	B2	10	32	4,208	E1
VS1PFB215-1	B2	15	46	5,363	E1
VS1PFB220-1	C2	20	60	6,110	E1
VS1PFB225-1	C2	25	74	7,135	E1
VS1PFB230-1	E2	30	88	8,247	E1
VS1PFB240-1	E2	40	115	10,565	E1

VS1PFB – 460V, 50/60 Hz, 3-Phase

Catalog Number	Frame	Hp (Normal Duty)	Output Current	List Price	Mult. Sym.
VS1PFB47-1	B4	7.5	12	4,046	E1
VS1PFB410-1	B4	10	16	4,094	E1
VS1PFB415-1	B4	15	24	4,895	E1
VS1PFB420-1	C4	20	30	5,880	E1
VS1PFB425-1	C4	25	39	6,717	E1
VS1PFB430-1	E4	30	45	7,754	E1
VS1PFB440-1	E4	40	61	9,827	E1
VS1PFB450-1	G4	50	75	11,353	E1
VS1PFB460-1	G4	60	91	12,420	E1
VS1PFB475-1	H4	75	110	15,049	E1
VS1PFB4100-1	L4	100	152	19,785	E1
VS1PFB4125-1	L4	125	183	21,026	E1

NOTE: Above Bypass Units available with optional fused Drive Input and Load Reactors. Contact your local Baldor•Reliance District Office.

VS1PF – Accessories

VS1PF NEMA 1 Kit

Description	Catalog Number	List Price	Mult. Sym.
NEMA 1 Kit for 20Hp & 25Hp Without Built-In DC Link Inductor	**VS1PF-NM1C**	62	EB
NEMA 1 Kit for 20Hp & 25Hp With Built-In DC Link Inductor	**VS1PF-NM1D**	71	EB
NEMA 1 Kit for 30Hp & 40Hp Without Built-In DC Link Inductor	**VS1PF-NM1E**	82	EB
NEMA 1 Kit for 30Hp & 40Hp With Built-In DC Link Inductor	**VS1PF-NM1F**	91	EB
NEMA 1 Kit for 50Hp to 75Hp Without Built-In DC Link Inductor	**VS1PF-NM1GH**	123	EB
NEMA 1 Kit for 50Hp to 75Hp With Built-In DC Link Inductor	**VS1PF-NM1JK**	123	EB
NEMA 1 Kit for 100Hp & 125Hp Without Built-In DC Link Inductor	**VS1PF-NM1L**	164	EB
NEMA 1 Kit for 100Hp & 125Hp With Built-In DC Link Inductor	**VS1PF-NM1M**	164	EB

VS1PF Drive Keypad

Description	Catalog Number	List Price	Mult. Sym.
VS1PF Drive Keypad 7.5-40 Hp	**VS1PF-RKEY**	101	EB
VS1PF Drive Keypad 50-700 Hp	**VS1PF-RKEY-M**	101	EB

VS1PF NEMA 4X Keypad

A NEMA 4X Keypad is available for remote mounting. Use the cables listed in the VS1PF remote keypad cables table below for mounting the NEMA 4X keypad.

Description	Catalog Number	List Price	Mult. Sym.
VS1PF NEMA 4X Remote Keypad	**VS1PF-RKEYN4**	213	EB

VS1PF Remote Keypad Extension Cable

The VS1PF Keypad can be removed and remote mounted to door of a host enclosure. To remote mount the VS1PF Keypad, an extension cable is needed.

Description	Catalog Number	List Price	Mult. Sym.
VS1PF Remote Keypad 2m cable	**VS1PF-CBL2**	56	EB
VS1PF Remote Keypad 3m cable	**VS1PF-CBL3**	71	EB
VS1PF Remote Keypad 5m cable	**VS1PF-CBL5**	86	EB

VS1PF Remote Keypad Extender Kit

This kit allows a remote keypad to be located up to 4000 feet from the PF device.

Description	Catalog Number	List Price	Mult. Sym.
VS1PF Remote Keypad Extender Kit	**VS1PF-KPEXT**	1,052	EB

VS1PF Communication Options

Several Communication Option Boards are available & planned for the VS1PF.

Description	Catalog Number	List Price	Mult. Sym.
DeviceNet Option Board for VS1PF	**VS1PF-DNET**	330	EB
MODBUS-RTU Option Board for VS1PF	**VS1PF-MBUS**	281	EB
Profibus Option Board for VS1PF	**VS1PF-PBUS**	506	EB
MODBUS TCP/IP Option Board for VS1PF	**VS1PF-MBTCP**	600	EB
LONWORKS Option Board for VS1PF	**VS1PF-LON**	476	EB
BACNET TCP/IP Option Board for VS1PF	**VS1PF-BAC**	476	EB
Metasys-N2 Option Board for VS1PF	**VS1PF-METV2**	476	EB
Siemens P1 Communications Bridge	**VS1PF-P1B**	883	EB

VS1PF mA Output Board

This kit allows the ability for the VS1PF to provide a 0-20mA output signal.

Description	Catalog Number	List Price	Mult. Sym.
VS1PF mA Output Board	**VS1PF-MAOUT**	213	EB

VS1 USB to RS485 Converter Kit

This kit allows communications between a USB port on a computer and the VS1PF Drive RS485 control terminals.

Description	Catalog Number	List Price	Mult. Sym.
VS1 USB to RS485 Converter Kit	**VS1-COMMUSB**	529	EA

VS1PF Extended I/O Function Board

This kit allows the ability to provide a second analog voltage reference input (V2) to the PF drive.

Description	Catalog Number	List Price	Mult. Sym.
VS1PF Extended I/O Function Board	**VS1PF-EXTIO**	129	EB

Pressure-to-Electrical Transducer Kit

This kit converts a 3-15 psig pressure sensor signal into an electrical signal which the PF drive can follow.

Description	Catalog Number	List Price	Mult. Sym.
PTE Transducer Kit	**VS1PF-PET**	567	EB

DriveView Software

DriveView communications software for Baldor VS1PF Drives is available at no charge by downloading from the Baldor VS Drives web site at www.baldor.com.

VS1PF Dynamic Braking Units and Resistors

Input Volts	Dynamic Braking Unit Selection **					Recommended Dynamic Braking Resistors					
	Hp	Dynamic Braking Unit Catalog Number	List Price (Each)	Mult. Sym.	Minimum Allowable Ohms	Maximum Continuous Braking Wattage	Resistor Catalog Number	List Price (Each)	Mult. Sym.	Ohms	Wattage
230	7.5	**VS1PF-T220**	631	EB	8.5	3,200	**VS1-R20W800**	316	EB	20	800
	10	**VS1PF-T220**	631	EB	8.5	3,200	**VS1-R15W1200**	382	EB	15	1,200
	15	**VS1PF-T220**	631	EB	8.5	3,200	**VS1-R10W2400**	504	EB	10	2,400
	20	**VS1PF-T220**	631	EB	8.5	3,200	**VS1-R10W2400**	504	EB	10	2,400
	25	**VS1PF-T230**	706	EB	5.7	4,800	**VS1-R8W2400**	504	EB	8	2,400
	30	**VS1PF-T230**	706	EB	5.7	4,800	**VS1-R8W2400**	504	EB	8	2,400
	40	**VS1PF-T250**	1,389	EB	4.2	6,400	**VS1-R5W3600**	908	EB	5	3,600
	50	**VS1PF-T250**	1,389	EB	4.2	6,400	**VS1-R5W3600**	908	EB	5	3,600
	60	**VS1PF-T275**	1,589	EB	2.8	9,600	**VS1-R8W2400 ***	504	EB	4	4,800
	75	**VS1PF-T275**	1,589	EB	2.8	9,600	**VS1-R8W2400 ***	504	EB	4	4,800
460	7.5	**VS1PF-T420**	631	EB	33.9	3,200	**VS1-R85W1000**	357	EB	85	1,000
	10	**VS1PF-T420**	631	EB	33.9	3,200	**VS1-R60W1200**	382	EB	60	1,200
	15	**VS1PF-T420**	631	EB	33.9	3,200	**VS1-R40W2000**	479	EA	40	2,000
	20	**VS1PF-T420**	631	EB	33.9	3,200	**VS1-R40W2000**	479	EA	40	2,000
	25	**VS1PF-T430**	706	EB	22.8	4,800	**VS1-R30W2400**	504	EB	30	2,400
	30	**VS1PF-T430**	706	EB	22.8	4,800	**VS1-R30W2400**	504	EB	30	2,400
	40	**VS1PF-T450**	1,389	EB	16.9	6,400	**VS1-R20W3600**	908	EB	20	3,600
	50	**VS1PF-T450**	1,389	EB	16.9	6,400	**VS1-R20W3600**	908	EB	20	3,600
	60	**VS1PF-T475**	1,589	EB	11.4	9,600	**VS1-R30W2400 ***	504	EB	15	4,800
	75	**VS1PF-T475**	1,589	EB	11.4	9,600	**VS1-R30W2400 ***	504	EB	15	4,800
	100	**VS1PF-T4100**	1,639	EB	8.4	12,800	**VS1-R20W3600 ***	908	EB	10	7,200

* Use two resistors in parallel to provide the recommended ohms and wattage.
** Enclosure = IP20
The Dynamic Braking Unit and resistors must be mounted separate from the VS1PF drive. See the VS1PF Manual for additional details.

VS1SP Inverter/Encoderless Vector Drive

1 thru 3 Hp **115/230 VAC** **1 Phase - 50/60 Hz**
1 thru 60 Hp **230 VAC** **3 Phase - 50/60 Hz**
1 thru 500 Hp **460 VAC** **3 Phase - 50/60 Hz**
1 thru 300 Hp **600 VAC** **3 Phase - 50/60 Hz**

Applications: Constant torque, variable torque or constant horsepower applications. New installations, replacements and original equipment manufacturers (OEM).

Features: NEMA 1 and NEMA 4 enclosure. Output frequency 0 to 500 Hz with peak overload capacity of 175%. Separate accel/decel rates and controlled reversing. Built-in two and three input PID process control loop.

Input Ratings	Voltage	115	230	230	460	600
	Voltage Range	95-130	180-264	180-264	340-528	515-660
	Phase	Single Phase		Three Phase (single phase with derating)		
	Frequency	50/60Hz +5%				
	Impedance	1% minimum from mains connection				
Output Ratings	Horsepower	1-3 Hp @ 115/230VAC, 1PH; 1-60 Hp @ 230VAC, 3PH; 1-1000 Hp @ 460VAC, 3PH; 1-300 Hp @ 575VAC, 3PH				
	Overload Capacity	Heavy Duty (Constant Torque) = 150% for 60 seconds, 175% for 3 seconds				
		Normal Duty (Variable Torque) = 115% for 60 seconds				
	Frequency	0-500Hz				
	Voltage	0 to maximum input voltage (RMS) (Note: 0 to 230 V for 115 V Single Phase Units)				
Protective Features	Trip	Missing control power, over current, over voltage, under voltage, over temperature (motor or control), output shorted or grounded, motor overload				
	Stall Prevention	Over voltage suppression, overcurrent suppression				
	External Output	LED trip condition indicators, 4 assignable logic outputs, 2 assignable analog outputs				
	Short Circuit	Phase to phase, phase to ground				
	Electronic Motor Overload	Meets UL508C (I^2T)				
Environmental Conditions	Temperature	-10 to 45°C. Derate 3% per °C to maximum ambient temperature of 55°C. (NEMA 4X B-Frame -10-40°C)				
	Cooling	Forced air				
	Enclosure	NEMA 1	NEMA 4X			
	Altitude	Sea level to 3300 Feet (1000 Meters) Derate 2% per 1000 Feet (303 Meters) above 3300 Feet				
	Humidity	NEMA 1:	10 to 90% RH Non-Condensing		NEMA 4X:	To 100% RH Condensing
	Shock / Vibration	1G / 0.5G at 10Hz to 60Hz				
	Storage Temperature	-10 to +65°C				
Keypad Display	Display	LCD Graphical 128x64 Pixel				
	Keys	14 key membrane with tactile feedback				
	Functions	Output status monitoring, Digital speed control, Parameter setting and display, Diagnostic and Fault log display, Motor run and jog, Local/Remote toggle				
	LED Indicators	Forward run command, Reverse run command, Stop command, Jog active				
	Remote Mount	200 feet (60.6m) maximum from control, NEMA 4 Rated				
	Trip	Separate message and trace log for each trip, last 10 trips retained in memory				
Control Specifications	Control Method	Microprocessor controlled PWM output, selectable encoderless vector or V/Hz inverter				
	PWM Frequency	Adjustable 1.5-5kHz STD, 5-16 kHz quiet				
	Frequency Setting	±5 VDC, 0-5 VDC ±10 VDC, 0-10 VDC, 4-20 mA or 0-20 mA; digital (keypad), Serial Comms/USB 2.0, and Modbus RTU standard				
	Accel/Decel	0-3600 seconds				
	V/Hz Ratio	Linear to squared reduced, base frequency, output voltage, minimum frequency limit, maximum frequency limit				
	Torque Boost	0-30% of input voltage; automatic with manual override				
	Brake Torque	20% standard on Sizes AA and B, 1% standard on Size C, D; External on E, F, G-Frames				
	Skip Frequency	Three zones 0-Max frequency				
	PC Setup Software	MINT® WorkBench Software available using the USB 2.0 port for commissioning wizard, firmware download, parameter viewer, scope capture and cloning				
	Maximum Output Frequency	500 Hz				
	Selectable Operating Modes	Keypad, Standard Run 2-Wire, Standard Run 3-Wire, 15 Preset Speeds, Fan Pump 2-Wire, Fan Pump 3-Wire, Process Control, 3-SPD ANA 2-Wire, 3-SPD ANA 3-Wire, Electronic Pot 2-Wire, Electronic Pot 3-Wire, Network Profile Run, Bipolar				
Analog Inputs	One Differential	±5VDC, ±10VDC, 4-20 mA and 0-20 mA, 11-bit + sign				
	One Single Ended	0 - 10 VDC, 11-bit				
	Input Impedance	80 kOhms (Volt mode); 500 Ohms (Current mode)				
Analog Outputs	Analog Outputs	2 Assignable				
	Full Scale Range	AOUT1 (0-5V, 0-10V, 0-20mA or 4-20mA), AOUT2 (+5V, +10V)				
	Source Current	1 mA maximum (volt mode), 20mA (current mode)				
	Resolution	9 bits				
Digital Inputs	Opto-isolated Inputs	8 Assignable, 1 dedicated input (Drive Enable)				
	Rated Voltage	10 - 30 VDC (closed contacts std)				
	Input Impedance	4.71 k Ohms				
	Leakage Current	10 mA maximum				
	Update Rate	16 msec				
Digital Outputs (2 Opto Outputs)	Rated Voltage	5 to 30VDC				
	Maximum Current	60 mA Maximum				
	ON Voltage Drop	2 VDC Maximum				
	OFF Leakage Current	0.1 mA Maximum				
	Output Conditions	31 Conditions				
Digital Outputs (2 Relay Outputs)	Rated Voltage	5 to 30VDC or 240VAC				
	Maximum Current	5A Maximum non-inductive				
	Output Conditions	31 Conditions				

VS1SP Inverter/Encoderless Vector – NEMA 1 Enclosure

Catalog Number	Size	Heavy Duty				Normal Duty				List Price	Mult. Sym.
		Hp	kW	Cont. Amps	Peak Amps	Hp	kW	Cont. Amps	Peak Amps		
115/230 Volts - Single Phase Input											
VS1SP61-1B	AA	1	0.75	4.2	7.4	2	1.5	6.8	8.5	1,133	EC
VS1SP62-1B	AA	2	1.5	6.8	11.9	3	2.2	9.6	12	1,290	EC
VS1SP63-1B	AA	3	2.2	9.6	16.8	3	2.2	9.6	12	1,507	EC
230 Volts - Three Phase Input											
VS1SP21-1B	AA	1	0.75	4.2	7.35	2	1.5	6.8	8.5	1,030	EC
VS1SP22-1B	AA	2	1.5	6.8	11.9	3	2.2	9.6	12	1,172	EC
VS1SP23-1B	AA	3	2.2	9.6	16.8	5	3.7	15.2	19	1,370	EC
VS1SP25-1B	AA	5	3.7	15.2	26.6	7.5	5.6	22	27.5	1,567	EC
VS1SP27-1B	AA	7.5	5.6	22	38.5	7.5	5.6	22	27.5	1,961	EC
VS1SP210-1B	B	10	7.5	28	49	15	11	42	52.5	2,761	EC
VS1SP215-1B	B	15	11	42	73.5	20	15	54	67.5	3,287	EC
VS1SP220-1B	B	20	15	54	94.5	25	18.7	68	85	4,382	EC
VS1SP225-1B	C	25	18.7	68	119	30	22.4	80	92	5,259	EC
VS1SP230-1B	C	30	22.4	80	140	40	29.8	104	120	6,793	EC
VS1SP240-1B	C	40	29.8	104	182	40	29.8	104	120	8,107	EC
VS1SP250-1B	D	50	37	130	228	60	45	154	177	10,298	EC
VS1SP260-1B	D	60	45	154	270	60	45	154	177	13,082	EC
460 Volts - Three Phase Input											
VS1SP41-1B	AA	1	0.75	2.1	3.68	2	1.5	3.4	4.25	1,238	EC
VS1SP42-1B	AA	2	1.5	3.4	5.95	3	2.2	4.8	6	1,501	EC
VS1SP43-1B	AA	3	2.2	4.8	8.4	5	3.7	7.6	9.5	1,819	EC
VS1SP45-1B	AA	5	3.7	7.6	13.3	7.5	5.6	11	13.75	1,973	EC
VS1SP47-1B	AA	7.5	5.6	11	19.3	10	7.5	14	17.5	2,499	EC
VS1SP410-1B	AA	10	7.4	14	24.5	10	7.5	14	17.5	2,740	EC
VS1SP415-1B	B	15	11	21	36.75	20	15	27	33.75	3,068	EC
VS1SP420-1B	B	20	15	27	47.25	25	18.7	34	42.5	3,725	EC
VS1SP425-1B	B	25	18.7	34	60	30	22	40	50	4,602	EC
VS1SP430-1B	C	30	22.4	40	70	40	29.8	52	60	5,478	EC
VS1SP440-1B	C	40	29.8	52	91	50	37.3	65	75	6,354	EC
VS1SP450-1B	C	50	37.3	65	114	60	44.8	77	89	7,889	EC
VS1SP460-1B	D	60	45	77	135	75	56	96	110	10,296	EC
VS1SP475-1B	D	75	56	96	168	100	75	124	143	11,942	EC
VS1SP4100-1B	D	100	75	124	217	125	93	156	179	13,804	EC
VS1SP4125-1B	D	125	93	156	273	125	93	156	179	14,790	EC
VS1SP4150-1 *	E	150	112	180	315	200	149	240	300	17,764	EC
VS1SP4200-1 *	E	200	149	240	420	250	187	302	378	23,686	EC
VS1SP4250-1 *	E	250	187	302	529	300	224	361	451	29,607	EC
VS1SP4300-1 *	F	300	224	361	632	350	261	414	476	32,866	EC
VS1SP4350-1 *	F	350	261	414	725	400	298	477	549	38,344	EC
VS1SP4400-1 *	F	400	298	477	835	450	336	534	614	43,821	EC
VS1SP4450-1 *	F	450	336	534	935	500	373	590	679	50,394	EC
VS1SP4500-1 *	F	500	373	590	1033	500	373	590	679	59,159	EC

* VS1SP E, F & G-Frame Drives do not include an internal braking transistor.

CF = Contact Factory

VS1SP Inverter/Encoderless Vector – NEMA 1 Enclosure

Catalog Number	Size	Heavy Duty				Normal Duty				List Price	Mult. Sym.
		Hp	kW	Cont. Amps	Peak Amps	Hp	kW	Cont. Amps	Peak Amps		
600 Volts - Three Phase Input											
VS1SP51-1B	AA	1	0.75	1.7	3	2	1.5	2.7	3.4	1,362	EC
VS1SP52-1B	AA	2	1.5	2.7	4.7	3	2.2	3.9	4.9	1,651	EC
VS1SP53-1B	AA	3	2.2	3.9	6.8	5	3.7	6.1	7.6	2,001	EC
VS1SP55-1B	AA	5	3.7	6.1	10.7	7.5	5.6	9	11.3	2,169	EC
VS1SP57-1B	AA	7.5	5.6	9	15.8	10	7.5	11	13.8	2,748	EC
VS1SP510-1B	AA	10	7.5	11	19.3	10	7.5	11	13.8	3,014	EC
VS1SP515-1B	B	15	11	17	29.8	20	15	22	27.5	3,857	EC
VS1SP520-1B	B	20	15	22	38.5	25	18.7	27	33.8	4,580	EC
VS1SP525-1B	B	25	18.7	27	47.2	30	22	32	40	5,664	EC
VS1SP530-1B	C	30	22.4	32	56	40	29.8	41	47	6,869	EC
VS1SP540-1B	C	40	29.8	41	72	50	37.3	52	60	8,435	EC
VS1SP550-1B	C	50	37.3	52	91	60	45	62	71	10,123	EC
VS1SP560-1B	D	60	45	62	109	75	56	77	89	11,328	EC
VS1SP575-1B	D	75	56	77	135	100	75	99	114	13,135	EC
VS1SP5100-1B	D	100	75	99	173	125	93	125	144	15,185	EC
VS1SP5125-1B	D	125	93	125	219	150	112	144	166	16,269	EC
VS1SP5150-1 *	E	150	112	144	252	200	149	192	240	19,463	EC
VS1SP5200-1 *	E	200	149	192	336	250	187	242	302	25,951	EC
VS1SP5250-1 *	E	250	187	242	423	300	224	289	361	32,439	EC
VS1SP5300-1 *	E	300	224	289	506	300	224	289	361	36,146	EC

* VS1SP E-Frame drives do not include an internal braking transistor.

VS1SP Inverter/Encoderless Vector – NEMA 4 Washdown Enclosure

Catalog Number	Size	Heavy Duty				Normal Duty				List Price	Mult. Sym.
		Hp	kW	Cont. Amps	Peak Amps	Hp	kW	Cont. Amps	Peak Amps		
115/230 Volts - Single Phase Input											
VS1SP61-4B	AA	1	0.75	4.2	7.4	2	1.5	6.8	8.5	1,218	EC
VS1SP62-4B	AA	2	1.5	6.8	11.9	3	2.2	9.6	12	1,387	EC
VS1SP63-4B	AA	3	2.2	9.6	16.8	3	2.2	9.6	12	1,602	EC
230 Volts - Three Phase Input											
VS1SP21-4B	AA	1	0.75	4.2	7.35	2	1.5	6.8	8.5	1,106	EC
VS1SP22-4B	AA	2	1.5	6.8	11.9	3	2.2	9.6	12	1,260	EC
VS1SP23-4B	AA	3	2.2	9.6	16.8	5	3.7	15.2	19	1,472	EC
VS1SP25-4B	AA	5	3.7	15.2	26.6	7.5	5.6	22	27.5	1,699	EC
VS1SP27-4B	AA	7.5	5.6	22	38.5	7.5	5.6	22	27.5	2,104	EC
VS1SP210-4B	B-N4X	10	7.5	28	49	15	11	42	52.5	2,982	EC
VS1SP215-4B	B-N4X	15	11	42	73.5	20	15	54	67.5	3,549	EC
VS1SP220-4B	B-N4X	20	15	54	94.5	25	18.7	68	85	4,732	EC
460 Volts - Three Phase Input											
VS1SP41-4B	AA	1	0.75	2.1	3.68	2	1.5	3.4	4.25	1,370	EC
VS1SP42-4B	AA	2	1.5	3.4	5.95	3	2.2	4.8	6	1,557	EC
VS1SP43-4B	AA	3	2.2	4.8	8.4	5	3.7	7.6	9.5	1,895	EC
VS1SP45-4B	AA	5	3.7	7.6	13.3	7.5	5.6	11	13.75	2,169	EC
VS1SP47-4B	AA	7.5	5.6	11	19.3	10	7.5	14	17.5	2,849	EC
VS1SP410-4B	AA	10	7.4	14	24.5	10	7.4	14	17.5	3,014	EC
VS1SP415-4B	B-N4X	15	11	21	36.75	20	15	27	33.75	3,856	EC
VS1SP420-4B	B-N4X	20	15	27	47.25	25	18.7	34	42.5	4,580	EC
VS1SP425-4B	B-N4X	25	18.7	34	60	30	22	40	55	5,664	EC
575 Volts - Three Phase Input											
VS1SP51-4B	AA	1	0.75	1.7	3	2	1.5	2.7	3.4	1,507	EC
VS1SP52-4B	AA	2	1.5	2.7	4.7	3	2.2	3.9	4.9	1,712	EC
VS1SP53-4B	AA	3	2.2	3.9	6.8	5	3.7	6.1	7.6	2,085	EC
VS1SP55-4B	AA	5	3.7	6.1	10.7	7.5	5.6	9	11.3	2,387	EC
VS1SP57-4B	AA	7.5	5.6	9	15.8	10	7.5	11	13.8	3,134	EC
VS1SP510-4B	AA	10	7.5	11	19.3	10	7.5	11	13.8	3,314	EC
VS1SP515-4B	B-N4X	15	11	17	29.8	20	15	22	27.5	4,243	EC
VS1SP520-4B	B-N4X	20	15	22	38.5	25	18.7	27	33.8	5,038	EC
VS1SP525-4B	B-N4X	25	18.7	27	47.2	30	22	32	40	6,231	EC

Mounting Dimensions

Frame	Dimensions inches (mm)					Ap'x. Shpg. Wgt.
	Outside			Mounting		
	Height Inches (mm)	Width Inches (mm)	Depth Inches (mm)	Height Inches (mm)	Width Inches (mm)	lbs. (kg)
AA	12.27 (312)	7.97 (202)	8.21 (209)	11.75 (298)	7.38 (187)	20 (9.1)
B	18.00 (457)	9.10 (231)	9.77 (248)	17.25 (438)	7.00 (178)	30 (13.6)
C	22.00 (559)	9.10 (231)	9.77 (248)	21.25 (540)	7.00 (178)	60 (27.2)
D	28.00 (711)	11.50 (292)	13.00 (330)	27.25 (692)	9.50 (241)	120 (54.4)
E	42.81 (1087)	18.75 (476)	16.00 (406)	39.75 (1010)	15.75 (400)	250 (113.4)
F	86.56 (2199)	31.78 (807)	24.59 (625)	Floor Mount		915 (415)*
B-N4X	17.5 (444)	10.73 (273)	10.47 (266)	16.5 (419)	9.78 (248) or 7.88 (200)	32 (14.5)

Note: E-Frame dimensions include a 3.0" H x 17.5" W x 5.2" D conduit box which is removable for panel mount (chassis) applications.
Frame size F Drives supplied as standard for bottom entry of conduits. Top entry styles available in wider cabinet.
*VS1SP4300-1 weighs 825 lbs. (374 kg); all other F-Frame models are 915 lbs. (415 kg)

VS1GV Vector Drive

1 thru 3 Hp **115/230 VAC** **1 Phase - 50/60 Hz**
1 thru 60 Hp **230 VAC** **3 Phase - 50/60 Hz**
1 thru 500 Hp **460 VAC** **3 Phase - 50/60 Hz**
1 thru 300 Hp **600 VAC** **3 Phase - 50/60 Hz**

Applications: Constant torque or constant horsepower applications. New installations, replacements and original equipment manufacturers (OEM).

Features: NEMA 1 and NEMA 4 enclosure. Output frequency 0 to 500 Hz with peak overload capacity of 175%. Digital speed or torque control. Built-in two and three input PID process control loop. Automatic tuning to motor and full rated torque down to zero speed.

Input Ratings	Voltage	115	230	230	460	600
	Voltage Range	95-130	180-264	180-264	340-528	515-660
	Phase	Single Phase		Three Phase (single phase with derating)		
	Frequency	50/60Hz +5%				
	Impedance	1% minimum from mains connection				
Output Ratings	Horsepower	1-3 Hp @ 115/230VAC, 1PH; 1-60 Hp @ 230VAC, 3PH; 1-1000 Hp @ 460VAC, 3PH; 1-300 Hp @ 575VAC, 3PH				
	Overload Capacity	Heavy Duty (Constant Torque) = 150% for 60 seconds, 175% for 3 seconds				
		Normal Duty (Variable Torque) = 115% for 60 seconds				
	Frequency	0-500Hz				
	Voltage	0 to maximum input voltage (RMS) (Note: 0 to 230 V for 115 V Single Phase Units)				
Protective Features	Trip	Missing control power, over current, over voltage, under voltage, over temperature (motor or control), output shorted or grounded, motor overload, encoder loss.				
	Stall Prevention	Over voltage suppression, overcurrent suppression				
	External Output	LED trip condition indicators, 4 assignable logic outputs, 2 assignable analog outputs				
	Short Circuit	Phase to phase, phase to ground				
	Electronic Motor Overload	Meets UL508C (I^2T)				
Environmental Conditions	Temperature	-10 to 45°C. Derate 3% per °C to maximum ambient temperature of 55°C. (NEMA 4X B-Frame -10-40°C)				
	Cooling	Forced air				
	Enclosure	NEMA 1 NEMA 4X				
	Altitude	Sea level to 3300 Feet (1000 Meters) Derate 2% per 1000 Feet (303 Meters) above 3300 Feet				
	Humidity	NEMA 1: 10 to 90% RH Non-Condensing NEMA 4X: To 100% RH Condensing				
	Shock / Vibration	1G / 0.5G at 10Hz to 60Hz				
	Storage Temperature	-10 to +65°C				
Keypad Display	Display	LCD Graphical 128x64 Pixel				
	Keys	14 key membrane with tactile feedback				
	Functions	Output status monitoring, Digital speed control, Parameter setting and display, Diagnostic and Fault log display, Motor run and jog, Local/Remote toggle, One-step tuning				
	LED Indicators	Forward run command, Reverse run command, Stop command, Jog active				
	Remote Mount	200 feet (60.6m) maximum from control, NEMA 4 Rated				
	Trip	Separate message and trace log for each trip, last 10 trips retained in memory				
Control Specifications	Control Method	Microprocessor controlled PWM output, selectable closed loop vector, encoderless vector or V/Hz inverter				
	PWM Frequency	Adjustable 1.5-5kHz STD, 5-16 kHz quiet				
	Frequency Setting	±5 VDC, 0-5 VDC ±10 VDC, 0-10 VDC, 4-20 mA or 0-20 mA; digital (keypad), Serial Comms/USB 2.0, and Modbus RTU standard				
	Accel/Decel	0-3600 seconds				
	Brake Torque	20% standard on Sizes AA and B, 1% standard on Size C, D, transistor only standard size E, F & G				
	Motor Matching	Automatic tuning to motor with manual override				
	PC Setup Software	MINT® WorkBench Software available using the USB 2.0 port for commissioning wizard, firmware download, parameter viewer, scope capture and cloning				
	Maximum Output Frequency	500 Hz				
	Selectable Operating Modes	Keypad, Standard Run, 2-Wire, Standard Run 3-Wire, 15 Preset Speeds, Fan Pump 2-Wire, Fan Pump 3-Wire, Process Control, 3-SPD ANA 2-Wire, 3-SPD ANA 3-Wire, Electronic Pot 2-Wire, Electronic Pot 3-Wire, Network Profile Run, Bipolar				
Motor Feedback	Feedback Type	Incremental encoder coupled to motor shaft; optional resolver feedback				
	Pulses/Rev	60-20,000 selectable, 1024 standard				
	Voltage Output	2 channel in quadrature, 5 VDC, differential				
	Marker Pulse	Required for position orientation				
	Power Input	5 VDC, 12 VDC, 300 mA maximum				
	Max. Frequency	4 MHz				
	Positioning	Buffered encoder pulse train output for position loop controller				
Analog Inputs	One Differential	±5VDC, ±10VDC, 4-20 mA and 0-20 mA, 11-bit + sign				
	One Single Ended	0 - 10 VDC, 11-bit				
	Input Impedance	80 kOhms (Volt mode); 500 Ohms (Current mode)				
Analog Outputs	Analog Outputs	2 Assignable				
	Full Scale Range	AOUT1 (0-5V, 0-10V, 0-20mA or 4-20mA), AOUT2 (+5V, +10V)				
	Source Current	1 mA maximum (volt mode), 20mA (current mode)				
	Resolution	9 bits				
Digital Inputs	Opto-isolated Inputs	8 Assignable, 1 dedicated input (Drive Enable)				
	Rated Voltage	10 - 30 VDC (closed contacts std)				
	Input Impedance	4.71 k Ohms				
	Leakage Current	10 mA maximum				
	Update Rate	16 msec				
Digital Outputs (2 Opto Outputs)	Rated Voltage	5 to 30VDC				
	Maximum Current	60 mA Maximum				
	ON Voltage Drop	2 VDC Maximum				
	OFF Leakage Current	0.1 mA Maximum				
	Output Conditions	31 Conditions				
Digital Outputs (2 Relay Outputs)	Rated Voltage	5 to 30VDC or 240VAC				
	Maximum Current	5A Maximum non-inductive				
	Output Conditions	31 Conditions				

VS1GV Closed Loop Vector
NEMA 1 Enclosure

Catalog Number	Size	Heavy Duty				Normal Duty				List Price	Mult. Sym.
		Hp	kW	Cont. Amps	Peak Amps	Hp	kW	Cont. Amps	Peak Amps		
115/230 Volts - Single Phase Input											
VS1GV61-1B	AA	1	0.75	4.2	7.4	2	1.5	6.8	8.5	1,592	EC
VS1GV62-1B	AA	2	1.5	6.8	11.9	3	2.2	9.6	12	1,796	EC
VS1GV63-1B	AA	3	2.2	9.6	16.8	3	2.2	9.6	12	2,001	EC
230 Volts - Three Phase Input											
VS1GV21-1B	AA	1	0.75	4.2	7.35	2	1.5	6.8	8.5	1,434	EC
VS1GV22-1B	AA	2	1.5	6.8	11.9	3	2.2	9.6	12	1,633	EC
VS1GV23-1B	AA	3	2.2	9.6	16.8	5	3.7	15.2	19	1,819	EC
VS1GV25-1B	AA	5	3.7	15.2	26.6	7.5	5.6	22	27.5	2,104	EC
VS1GV27-1B	AA	7.5	5.6	22	38.5	7.5	5.6	22	27.5	2,378	EC
VS1GV210-1B	B	10	7.5	28	49	15	11	42	52.5	3,232	EC
VS1GV215-1B	B	15	11	42	73.5	20	15	54	67.5	3,951	EC
VS1GV220-1B	B	20	15	54	94.5	25	18.7	68	85	5,041	EC
VS1GV225-1B	C	25	18.7	68	119	30	22.4	80	92	5,917	EC
VS1GV230-1B	C	30	22.4	80	140	40	29.8	104	120	7,790	EC
VS1GV240-1B	C	40	29.8	104	182	40	29.8	104	120	8,983	EC
VS1GV250-1B	D	50	37	130	228	60	45	154	177	11,503	EC
VS1GV260-1B	D	60	45	154	270	60	45	154	177	14,730	EC
460 Volts - Three Phase Input											
VS1GV41-1B	AA	1	0.75	2.1	3.68	2	1.5	3.4	4.25	1,973	EC
VS1GV42-1B	AA	2	1.5	3.4	5.95	3	2.2	4.8	6	2,049	EC
VS1GV43-1B	AA	3	2.2	4.8	8.4	5	3.7	7.6	9.5	2,137	EC
VS1GV45-1B	AA	5	3.7	7.6	13.3	7.5	5.6	11	13.75	2,410	EC
VS1GV47-1B	AA	7.5	5.6	11	19.3	10	7.5	14	17.5	2,771	EC
VS1GV410-1B	AA	10	7.4	14	24.5	10	7.5	14	17.5	3,146	EC
VS1GV415-1B	B	15	11	21	36.75	20	15	27	33.75	3,375	EC
VS1GV420-1B	B	20	15	27	47.25	25	18.7	34	42.5	4,098	EC
VS1GV425-1B	B	25	18.7	34	60	30	22	40	50	5,062	EC
VS1GV430-1B	C	30	22.4	40	70	40	29.8	52	60	6,026	EC
VS1GV440-1B	C	40	29.8	52	91	50	37.3	65	75	6,990	EC
VS1GV450-1B	C	50	37.3	65	114	60	44.8	77	89	8,677	EC
VS1GV460-1B	D	60	45	77	135	75	56	96	110	10,846	EC
VS1GV475-1B	D	75	56	96	168	100	75	124	143	12,708	EC
VS1GV4100-1B	D	100	75	124	217	125	93	156	179	14,680	EC
VS1GV4125-1B	D	125	93	156	273	125	93	156	179	15,556	EC
VS1GV4150-1T *	E	150	112	180	315	200	149	240	300	18,691	EC
VS1GV4200-1T *	E	200	149	240	420	250	187	302	378	24,921	EC
VS1GV4250-1T *	E	250	187	302	529	300	224	361	451	31,152	EC
VS1GV4300-1T *	F	300	224	361	632	350	261	414	476	34,510	EC
VS1GV4350-1T *	F	350	261	414	725	400	298	477	549	40,261	EC
VS1GV4400-1T *	F	400	298	477	835	450	336	534	614	46,012	EC
VS1GV4450-1T *	F	450	336	534	935	500	373	590	679	52,913	EC
VS1GV4500-1 *	F	500	373	590	1033	500	373	590	679	62,116	EC

* VS1GV "-1T"; "-1" drives do not include an internal braking transistor. An integral braking resistor is not included.
CF = Contact Factory

VS1GV Closed Loop Vector
NEMA 1 Enclosure

Catalog Number	Size	Heavy Duty				Normal Duty				List Price	Mult. Sym.
		Hp	kW	Cont. Amps	Peak Amps	Hp	kW	Cont. Amps	Peak Amps		
575 Volts - Three Phase Input											
VS1GV51-1B	AA	1	0.75	1.7	3	2	1.5	2.7	3.4	2,169	EC
VS1GV52-1B	AA	2	1.5	2.7	4.7	3	2.2	3.9	4.9	2,254	EC
VS1GV53-1B	AA	3	2.2	3.9	6.8	5	3.7	6.1	7.6	2,350	EC
VS1GV55-1B	AA	5	3.7	6.1	10.7	7.5	5.6	9	11.3	2,651	EC
VS1GV57-1B	AA	7.5	5.6	9	15.8	10	7.5	11	13.8	3,048	EC
VS1GV510-1B	AA	10	7.5	11	19.3	10	7.5	11	13.8	3,462	EC
VS1GV515-1B	B	15	11	17	29.8	20	15	22	27.5	4,339	EC
VS1GV520-1B	B	20	15	22	38.5	25	18.7	27	33.8	5,062	EC
VS1GV525-1B	B	25	18.7	27	47.2	30	22	32	40	6,387	EC
VS1GV530-1B	C	30	22.4	32	56	40	29.8	41	47	7,472	EC
VS1GV540-1B	C	40	29.8	41	72	50	37.3	52	60	9,400	EC
VS1GV550-1B	C	50	37.3	52	91	60	45	62	71	11,087	EC
VS1GV560-1B	D	60	45	62	109	75	56	77	89	11,931	EC
VS1GV575-1B	D	75	56	77	135	100	75	99	114	13,979	EC
VS1GV5100-1B	D	100	75	99	173	125	93	125	144	16,149	EC
VS1GV5125-1B	D	125	93	125	219	150	112	144	166	17,112	EC
VS1GV5150-1T *	E	150	112	144	252	200	149	192	240	20,545	EC
VS1GV5200-1T *	E	200	149	192	336	250	187	242	302	27,393	EC
VS1GV5250-1T *	E	250	187	242	423	300	224	289	361	34,241	EC
VS1GV5300-1T *	E	300	224	289	506	300	224	289	361	37,958	EC

* VS1GV E-frame drives include an internal braking transistor. An internal braking resistor is not included.

VS1GV Closed Loop Vector
NEMA 4 Washdown Enclosure

Catalog Number	Size	Heavy Duty				Normal Duty				List Price	Mult. Sym.
		Hp	kW	Cont. Amps	Peak Amps	Hp	kW	Cont. Amps	Peak Amps		
115/230 Volts - Single Phase Input											
VS1GV61-4B	AA	1	0.75	4.2	7.4	2	1.5	6.8	8.5	1,705	EC
VS1GV62-4B	AA	2	1.5	6.8	11.9	3	2.2	9.6	12	1,941	EC
VS1GV63-4B	AA	3	2.2	9.6	16.8	3	2.2	9.6	12	2,261	EC
230 Volts - Three Phase Input											
VS1GV21-4B	AA	1	0.75	4.2	7.35	2	1.5	6.8	8.5	1,549	EC
VS1GV22-4B	AA	2	1.5	6.8	11.9	3	2.2	9.6	12	1,765	EC
VS1GV23-4B	AA	3	2.2	9.6	16.8	5	3.7	15.2	19	2,056	EC
VS1GV25-4B	AA	5	3.7	15.2	26.6	7.5	5.6	22	27.5	2,378	EC
VS1GV27-4B	AA	7.5	5.6	22	38.5	7.5	5.6	22	27.5	2,955	EC
VS1GV210-4B	B-N4X	10	7.5	28	49	15	11	42	52.5	3,555	EC
VS1GV215-4B	B-N4X	15	11	42	73.5	20	15	54	67.5	4,346	EC
VS1GV220-4B	B-N4X	20	15	54	94.5	25	18.7	68	85	5,546	EC
460 Volts - Three Phase Input											
VS1GV41-4B	AA	1	0.75	2.1	3.68	2	1.5	3.4	4.25	2,055	EC
VS1GV42-4B	AA	2	1.5	3.4	5.95	3	2.2	4.8	6	2,178	EC
VS1GV43-4B	AA	3	2.2	4.8	8.4	5	3.7	7.6	9.5	2,465	EC
VS1GV45-4B	AA	5	3.7	7.6	13.3	7.5	5.6	11	13.75	2,820	EC
VS1GV47-4B	AA	7.5	5.6	11	19.3	10	7.5	14	17.5	3,418	EC
VS1GV410-4B	AA	10	7.4	14	24.5	10	7.4	14	17.5	3,616	EC
VS1GV415-4B	B-N4X	15	11	21	36.75	20	15	27	33.75	4,339	EC
VS1GV420-4B	B-N4X	20	15	27	47.25	25	18.7	34	42.5	5,063	EC
VS1GV425-4B	B-N4X	25	18.7	34	60	30	22	40	55	6,387	EC
575 Volts - Three Phase Input											
VS1GV51-4B	AA	1	0.75	1.7	3	2	1.5	2.7	3.4	2,260	EC
VS1GV52-4B	AA	2	1.5	2.7	4.7	3	2.2	3.9	4.9	2,396	EC
VS1GV53-4B	AA	3	2.2	3.9	6.8	5	3.7	6.1	7.6	2,711	EC
VS1GV55-4B	AA	5	3.7	6.1	10.7	7.5	5.6	9	11.3	3,102	EC
VS1GV57-4B	AA	7.5	5.6	9	15.8	10	7.5	11	13.8	3,760	EC
VS1GV510-4B	AA	10	7.5	11	19.3	10	7.5	11	13.8	3,978	EC
VS1GV515-4B	B-N4X	15	11	17	29.8	20	15	22	27.5	4,773	EC
VS1GV520-4B	B-N4X	20	15	22	38.5	25	18.7	27	33.8	5,569	EC
VS1GV525-4B	B-N4X	25	18.7	27	47.2	30	22	32	40	7,026	EC

Mounting Dimensions

Frame	Dimensions inches (mm)					Ap'x. Shpg. Wgt.
	Outside			Mounting		
	Height Inches (mm)	Width Inches (mm)	Depth Inches (mm)	Height Inches (mm)	Width Inches (mm)	lbs. (kg)
AA	12.27 (312)	7.97 (202)	8.21 (209)	11.75 (298)	7.38 (187)	20 (9.1)
B	18.00 (457)	9.10 (231)	9.77 (248)	17.25 (438)	7.00 (178)	30 (13.6)
C	22.00 (559)	9.10 (231)	9.77 (248)	21.25 (540)	7.00 (178)	60 (27.2)
D	28.00 (711)	11.50 (292)	13.00 (330)	27.25 (692)	9.50 (241)	120 (54.4)
E	42.81 (1087)	18.75 (476)	16.00 (406)	39.75 (1010)	15.75 (400)	250 (113.4)
F	86.56 (2199)	31.78 (i807)	2459 (625)	Floor Mount		915 (415)*
B-N4X	17.5 (444)	10.73 (273)	10.47 (266)	16.5 (419)	9.76 (248) or 7.88 (210)	3.2 (14.5)

Note: E-Frame dimensions include a 3.0" H x 17.5" W x 5.2" D conduit box which is removable for panel mount (chassis) applications.
Frame size F Drives supplied as standard for bottom entry of conduits. Top entry styles available in wider cabinet.
*VS1GV4300-1 weighs 825 lbs. (374 kg); all other F-Frame models are 915 lbs. (415 kg)

VS1SP / VS1GV Keypad Extension Cable

For the convenience of our customers, we offer a connector plug/cable assembly.
This assembly provides the connection from the keypad to the control for remote keypad operation.

Catalog Number	Cable Extension Length	List Price	Mult. Sym.	Apx. Shpg. Wgt.
CBLHH015KP	5 feet (1.5 meter)	46	EC	1
CBLHH030KP	10 feet (3.0 meter)	66	EC	1
CBLHH046KP	15 feet (4.6 meter)	86	EC	1
CBLHH061KP	20 feet (6.1 meter)	106	EC	1
CBLHH091KP	30 feet (9.1 meter)	124	EC	3
CBLHH152KP	50 feet (15.2 meter)	177	EC	3
CBLHH229KP	75 feet (22.9 meter)	255	EC	4
CBLHH305KP	100 feet (30.5 meter)	333	EC	5
CBLHH457KP	150 feet (45.7 meter)	466	EC	6
CBLHH610KP	200 feet (61.0 meter)	596	EC	7

VS1SP / VS1GV Dynamic Braking Resistor Assemblies

Dynamic Braking Resistor Assemblies include braking resistors completely assembled and mounted into a NEMA 1 enclosure. Select the braking resistor that has correct ohm value for the control and adequate continuous watts capacity to meet load requirements.

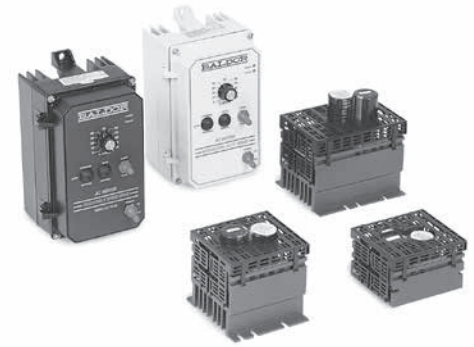
Input Volts	Hp	Total Ohms	Continuous Rated Watts						
			600	1200	2400	4800	6400	9600	14200
230	1 - 7.5	20	**RGA620**	**RGA1220**	**RGA2420**				
	10 - 20	6		**RGA1206**	**RGA2406**	**RGA4806**			
	25 - 40	4		**RGA1204**	**RGA2404**	**RGA4804**			
460	1 - 3	120	**RGA6120**	**RGA12120**	**RGA24120**				
	5 - 10	60	**RGA660**	**RGA1260**	**RGA2460**	**RGA4860**			
	15 - 25	20	**RGA620**	**RGA1220**	**RGA2420**	**RGA4820**			
	30 - 50	10		**RGA1210**	**RGA2410**	**RGA4810**			
	60 - 125	4		**RGA1204**	**RGA2404**	**RGA4804**	**RGA6404**	**RGA9604**	**RGA14204**
575	1 - 3	120	**RGA6120**	**RGA12120**	**RGA24120**				
	5 - 10	60	**RGA660**	**RGA1260**	**RGA2460**	**RGA4820**			
	15 - 25	30	**RGA630**	**RGA1230**	**RGA2430**	**RGA4830**			
	30	24		**RGA1224**	**RGA2424**	**RGA4824**			
	40 - 125	14				**RGA4814**	**RGA6414**		
		List Price	590	875	1,338	2,170	5,471	8,779	12,081
		Mult. Sym.	EC	EC	EC	EC	EC	EC	EC

VS1SP / VS1GV Expansion Boards

Baldor offers a wide variety of plug-in expansion boards for the VS1SP/VS1GV/VS1SD and H2 Series of drives. Expansion boards allow the drive to be interfaced with various inputs and outputs. Each control has the capability to utilize up to two expansion boards.

Catalog Number	Description	List Price	Mult. Sym.
EXBHH001A01	Ethernet Server Expansion Board Provides easy connection to all drive parameters for setup and review using any PC based Web Browser via an Ethernet connection. Download parameter values, operating conditions, and fault log data for review and archive. Uses standard RJ-45 female terminal for Ethernet connection.	168	EC
EXBHH003A01	Isolated Input Expansion Board Contains 9 isolated inputs jumper configurable for 90-130 VAC. All inputs must be the same voltage – one side of all inputs is common. This board replaces all the opto inputs on the main control board. Uses screw terminals for connection.	218	EC
EXBHH005A01	High Resolution Analog Input/Output Board Provides two additional analog inputs and two additional analog outputs with up to 16 bits resolution. Acceptable DC inputs: ± 10V, 0-10V, or ± 5V with 300 microvolt resolution. Current inputs: 0-20 mA or 4-20 mA with 0.6 microamp resolution. Input / Resolution ± 10 V — 16 bit 0 - 10 V — 15 bit ± 5 V — 15 bit 0 - 5 V — 14 bit 0 - 20 mA — 15 bit 4 - 20 mA — 15 bit All inputs can be inverted through software.	340	EC
EXBHH007A01	Master Pulse Reference/Isolated Pulse Follower Board 1. Accepts a 5V or 12V quadrature pulse train input or pulse and direction input to use as a master reference. 2. Re-transmits the input pulse train at 5Vdc for different ratios from 1:20 up to 65535:1 (Scaled output). 3. Can be used as a auxiliary encoder input to the control. 4. A CANOpen port utilizing a RJ-45 female connector for adding an additional I/O breakout box or CAN HMI terminal.	556	EC
EXBHH013A02	DeviceNet / EtherNet / IP / Modbus - TCP Expansion Board Allows VS1GV, VS1SP, VS1SD and H2 Drives to be connected to a DeviceNet Communications Network or an EtherNet/IP Communications Network or a Modbus - TCP Communications Network. Uses plug-in terminals for connection to a DeviceNet Communications Network or an RJ-45 to connect to an EtherNet/IP or a Modbus - TCP Communications Network.	575	EC
EXBHH014A01	PROFIBUS-DP Expansion Board Allows VS1GV, VS1SP and H2 Drives to be connected to a PROFIBUS Communications Network. Uses plug-in terminals for connection.	690	EC
EXBHH015A01	BACnet Expansion Board Allows VS1GV, VS1SP and H2 Drives to be connected to a BACnet Communications Network. Uses 9-pin D-shell for connection.	593	EC
EXBHH016A01	LonWorks Communications Expansion Board Allows VS1GV, VS1SP and H2 Drives to be connected to a LonWorks Communications Bus. Uses plug-in terminals for connection.	565	EC
EXBHH017A01	Metasys N2 Communications Expansion Board allows VS1GV, VS1SP and H2 drives to be connected to a NA communications network. Uses plug-in terminals for connection.	593	EC

Series 5 Micro Inverters



1/2 thru 2 Hp	**97-132 VAC**	**1 Phase - 50/60 Hz**
1/2 thru 2 Hp	**195-265 VAC**	**1 Phase - 50/60 Hz**
2 thru 3 Hp	**195-265 VAC**	**3 Phase - 50/60 Hz**
1 thru 5 Hp	**323-529 VAC**	**3 Phase - 50/60 Hz**

Applications: Variable torque, constant torque or constant horsepower applications. New installations, replacements and original equipment manufacturers (OEM).

Features: NEMA 4X or open chassis mount standard. Output frequency 0.25 to 120 Hz with peak overload capacity of 150%. Separate accel/decel rates and controlled reversing.

Design Specifications
- PWM output
- Accel/decel rate adjustment
- Controlled reversing
- Adjustable current limit
- I^2t motor overload protection
- Adjustable slip compensation
- Min/max output frequency adjustment
- Selectable auto/manual restart

Operator Interface-Enclosed Units
- Start/Stop command
- NEMA 4X enclosure
- Power on/off
- Rotary speed control
- Fwd/Rev optional
- Auto/Manual optional

Environmental and Operating Conditions
- Input voltage:
  1 phase 115 VAC ±15%,
  1 phase 230 VAC ±15%
  3 phase 230V ±15%
  3 phase 460 ± 15%
- Input frequency 50 or 60Hz ±10%
- Service factor - 1.0
- Duty - continuous
- Humidity - 90% max RH non-condensing
- Altitude - 3300 feet max without derate
- Chassis mount or NEMA 4X enclosure as standard

Protective Features
- Selectable automatic restart at momentary power loss
- Power indicator
- Status indicator
- Adjustable time base overload
- Electronic in rush current limiting

Output Ratings	Overload Capacity	150% for 120 seconds	
	Voltage - 3 Phase	0-230 VAC (RMS), 0-460 V AC (RMS)	
Control Spec	Control Method	Sinewave carrier input, PWM output	
	PWM Frequency	Rated 8.0 kHz	
	V/Hz Ratio	Factory set for optimum output	
	Torque Boost	Factory set for 60 Hz motors. Adjustable 6-30% for 50 Hz motors	Adjustable 0-30% max
	Current Limit	Adjustable 63 to 188% of rated output	0-200%
	Frequency Setting	0-5 VDC, 0-10 VDC with external resistor network, non-isolated input	
	Accel/Decel	Separate accel/decel rates, 0.3-20 sec for 60 Hz motors	0.3-20 Sec
		Combined accel/decel for 50 Hz motors	
Protective Functions	Inverter Trip	Over voltage, over current, under voltage, motor overload, output short circuit	
	Status Indicators	Tricolor LED indicator for status and green LED indicator for power on	
	Short Circuit	Output phase to phase	
Ambient Conditions	Temperature	0-45°C	0-50°C
	Cooling	Convection 1/2 - 2 Hp; Forced Air 3-5 Hp	Convection
	Enclosure	Open chassis	NEMA 4X (IP65)

Series 5 Micro Inverters continued...

Hp/kW	Input Voltage	Output Current		Catalog Number	List Price	Mult. Sym.	Ap'x. Shpg. Wgt.	Dimensions in/(mm)				
								Outside			Mounting	
		Cont.	120 Sec.					H	W	D	H	W
Open Chassis Mount – Single Phase Input												
0.5/0.37	115/230	2.4	3.6	**ID56F50-CO**	395	E9	4	4.3	3.9	2.75	3.8	2.5
1/0.75	115/230	4	6	**ID5601-CO**	478	E9	5	4.3	3.9	5	3.87	3.7
1.5/1.13 - 2/1.5 (2)	115/230	5.5	8.25	**ID5602-CO**	621	E9	6	4.67	5.58	5.7	3.87	2.5
Open Chassis Mount – Three Phase Input												
2/1.5	230	6.7	10.1	**ID5202-CO**	753	E9	5	8.55	4.68	4.5	6.5	3.9
3/2.25	230	8.8	13.2	**ID5203-CO**	793	E9	5	8.55	4.68	4.5	6.5	3.9
1/0.75	460	2.5	3.75	**ID5401-CO**	820	E9	5	8.55	4.68	4.5	6.5	3.9
2/1.5	460	4	6	**ID5402-CO**	842	E9	5	8.55	4.68	4.5	6.5	3.9
3/2.25	460	4.5	6.75	**ID5403-CO**	866	E9	5	8.55	4.68	4.5	6.5	3.9
5/3.7	460	7.6	11.4	**ID5405-CO**	1,104	E9	5	8.55	4.68	4.5	6.5	3.9
NEMA 1 Enclosed - Single Phase Input												
1/0.75	115/230	4	6	**ID5601-EO**	576	E9	6	7.13	6.25	2.75		
NEMA 4X Enclosed – Single Phase Input												
1/0.75	115/230	3.6	5.4	**ID5601-WO**	763	E9	6	9.53	5.51	5.86	8.85	–
1/0.75	115/230	3.6	5.4	**ID5601-BO**	715	E9	6	9.53	5.51	5.86	8.85	–
1.5/1.13 - 2/1.5 (2)	115/230	5.5/6.7	8.3/10.0	**ID5602-WO**	1,076	E9	6	9.8	7.55	7.25	9.25	1
1.5/1.13 - 2/1.5 (2)	115/230	5.5/6.7	8.3/10.0	**ID5602-BO**	1,015	E9	8	9.8	7.55	7.25	9.25	1
NEMA 4X Enclosed – Three Phase Input												
3/2.25	230	9	13.5	**ID5203-WO**	1,219	E9	6	9.8	7.55	7.25	9.25	1
3/2.25	230	9	13.5	**ID5203-BO**	1,159	E9	6	9.8	7.55	7.25	9.25	1
3/2.25 (1)	460	4.6	6.9	**ID5403-WO**	1,291	E9	6	9.8	7.55	7.25	9.25	1
3/2.25 (1)	460	4.6	6.9	**ID5403-BO**	1,230	E9	6	9.8	7.55	7.25	9.25	1
5/3.7	460	8.3	12.45	**ID5405-WO**	1,373	E9	6	9.8	7.55	7.25	9.25	1
5/3.7	460	8.3	12.45	**ID5405-BO**	1,315	E9	6	9.8	7.55	7.25	9.25	1

(1) Jumper configurable for 1 HP and 2 HP
(2) ID5602 is rated 1.5 Hp max with 115 VAC input and 2 Hp max with 230 VAC input.
NOTE: -WO is white in color -BO is black in color; -EO is NEMA 1.

Series 5 Options

Catalog Number	Description	List Price	Mult. Sym.	Ap'x. Shpg. Wgt.
ID5RGA-1	Dynamic braking kit for open chassis 115/230V 1/2 Hp and 1 Hp rated controls	214	E9	3
ID5SI-1	Signal isolator for open chassis units Provides isolation for up to 24 VDC and 4-20mA command signals and run relay output. Select relay as N.O. or N.C. contacts rated at 125 VAC @ 0.5A	213	E9	4
ID5SI-2	Signal isolator for NEMA 4X enclosed units Provides isolation for up to 24 VDC and 4-20mA command signals.	240	E9	1
ID5AMS-1	Auto/Manual selection switch for NEMA 4X enclosed units Allows selection of remote or on-board speed commands	59	E9	1
ID5FRS-1	Forward/Stop/Reverse selection switch for NEMA 4X enclosed units Allows selection of forward or reverse motor direction commands	33	E9	1
ID5FRS-2	Forward/Stop/Reverse selection switch for NEMA 1 enclosed units. Allows selection of forward or reverse motor direction commands.	33	E9	1

Three Phase - Line and Load Reactors

1 thru 500 Hp

Applications: Line side power conditioning for AC motor controls to prevent unwanted harmonics and nuisance drive trips. Load side power conditioning to smooth power wave form to connected motor to reduce motor electrical stresses and increase motor life.

Features: Open construction with connection terminals. 3% impedance rating at rated current.

Hp	kW	Input Voltage	Rated Amps	Induct. (mH)	Full Load Watts Loss	Catalog Number	List Price	Mult. Sym.	Ap'x. Shpg. Wgt.	Optional NEMA 1 Cabinet Enclosure [a]
208/230 Volt input, 60 Hz, 3% Impedance										
1	0.75	230	4	3	15	**LRAC00401**	316	E8	9	LRENC-8
1 1/2-2	1.15-1.5	208/230	8	1.5	20	**LRAC00801**	316	E8	3	LRENC-8
3	2.2	208/230	12	1.25	26	**LRAC01201**	510	E8	10	LRENC-8
5	3.7	208/230	18	0.8	36	**LRAC01801**	535	E8	4	LRENC-8
7 1/2	5.5	208/230	25	0.5	48	**LRAC02501**	642	E8	11	LRENC-13
10	7.4	208/230	35	0.4	49	**LRAC03501**	681	E8	19	LRENC-13
15	11.1	230	45	0.3	54	**LRAC04501**	718	E8	23	LRENC-13
20	14.9	230	55	0.25	64	**LRAC05501**	763	E8	25	LRENC-13
25	18.6	208/230	80	0.2	82	**LRAC08001**	803	E8	25	LRENC-13
30-40	22.3-29.8	208/230	130	0.1	108	**LRAC13001**	977	E8	29	LRENC-13
50	37.2	208/230	160	0.075	116	**LRAC16001**	1,135	E8	41	LRENC-13
460 Volt input, 60 Hz, 3% Impedance										
1-1 1/2	0.75-1.1	460	2	12	8	**LRAC00201**	266	E8	4	LRENC-8
2	1.5	460	4	6.5	20	**LRAC00402**	335	E8	4	LRENC-8
3-5	2.2-3.7	460	8	3	29	**LRAC00802**	391	E8	7	LRENC-8
7 1/2	5.5	460	12	2.5	31	**LRAC01202**	539	E8	9	LRENC-8
10	7.4	460	18	1.5	43	**LRAC01802**	564	E8	10	LRENC-8
15	11.1	460	25	1.2	52	**LRAC02502**	807	ED	13	LRENC-13
20-25	14.9-18.6	460	35	0.8	54	**LRAC03502**	858	ED	15	LRENC-13
30	22.3	460	45	0.7	62	**LRAC04502**	1,024	E8	27	LRENC-13
40	29.8	460	55	0.5	67	**LRAC05502**	1,057	ED	29	LRENC-13
50-60	37.2-44.7	460	80	0.4	86	**LRAC08002**	1,069	E8	33	LRENC-13
75-100	56-75	460	130	0.2	180	**LRAC13002**	1,087	E8	43	LRENC-13
125	93.2	460	160	0.15	149	**LRAC16002**	1,198	E8	50	LRENC-13
150	112	460	200	0.11	168	**LRAC20002**	1,664	E8	54	LRENC-13
200	149	460	250	0.09	231	**LRAC25002**	2,170	E8	80	LRENC-17
250-300	186.5-223.8	460	400	0.06	333	**LRAC40002**	2,785	E8	118	LRENC-17
350-400	261-298	460	500	0.05	340	**LRAC50002**	3,910	E8	118	LRENC-26C
500	373	460	600	0.04	414	**LRAC60002**	6,091	E8	175	LRENC-26C
575 Volt input, 60 Hz, 3% Impedance										
1-2	0.75-1.5	575	2	20	12	**LRAC00202**	295	E8	4	LRENC-8
3	2.2	575	4	9	20	**LRAC00403**	349	E8	4	LRENC-8
5	3.7	575	8	3	29	**LRAC00802**	391	E8	7	LRENC-8
7 1/2	5.5	575	8	5	26	**LRAC00803**	516	E8	10	LRENC-8
10	7.5	575	12	2.5	31	**LRAC01202**	539	E8	9	LRENC-8
15	11	575	18	1.5	43	**LRAC01802**	564	E8	10	LRENC-8
20	15	575	25	1.2	52	**LRAC02502**	807	ED	13	LRENC-13
30	22	575	35	0.8	54	**LRAC03502**	858	ED	15	LRENC-13
40	30	575	45	0.7	62	**LRAC04502**	1,024	E8	27	LRENC-13
50	37.2	575	55	0.5	67	**LRAC05502**	1,057	ED	29	LRENC-13
60-75	44.7-56	575	80	0.4	86	**LRAC08002**	1,069	E8	33	LRENC-13
100-125	75-93	575	130	0.2	180	**LRAC13002**	1,087	E8	43	LRENC-13
150	112	575	160	0.15	149	**LRAC16002**	1,198	E8	50	LRENC-13
200	149	575	200	0.11	168	**LRAC20002**	1,664	E8	54	LRENC-13
250	186.5	575	250	0.09	231	**LRAC25002**	2,170	E8	80	LRENC-17
300	223/8	575	320	0.075	264	**LRAC32002**	2,614	E8	102	LRENC-17

[a] See page 236 for Line Reactor enclosures, prices and dimensions

NOTE: 2.5% impedance rating. % impedance decreases if load current is less than reactor rated current.

Three Phase - Line and Load Reactors continued...

Hp (Rated)	kW (Rated)	Input Voltage	Rated Amps	Induct. (mH)	Full Load Watts Loss	Catalog Number	List Price	Mult. Sym.	Ap'x. Shpg. Wgt.	Optional NEMA 1 Cabinet Enclosure [a]
200-240 Volt input, 50 Hz, 3% Impedance										
1	0.75	240	4	3	15	**LRAC00401**	316	E8	9	LRENC-8
1 1/2-2	1.1-1.5	200/240	8	1.5	20	**LRAC00801**	316	E8	3	LRENC-8
3	2.2	200/240	12	1.25	26	**LRAC01201**	510	E8	10	LRENC-8
5	3.7	200/240	18	0.8	36	**LRAC01801**	535	E8	4	LRENC-8
7 1/2	5.5	240	25	0.5	48	**LRAC02501**	642	E8	11	LRENC-13
10	7.5	200/240	35	0.4	49	**LRAC03501**	681	E8	19	LRENC-13
15	11.1	240	45	0.3	54	**LRAC04501**	718	E8	23	LRENC-13
20	14.9	240	55	0.25	64	**LRAC05501**	763	E8	25	LRENC-13
25	18.6	200/240	80	0.2	82	**LRAC08001**	803	E8	25	LRENC-13
30-40	22.3-29.8	200/240	130	0.1	108	**LRAC13001**	977	E8	29	LRENC-13
50	37.2	200/240	160	0.075	116	**LRAC16001**	1,135	E8	41	LRENC-13
380/400/415 Volt input, 50 Hz, 3% Impedance										
1	0.75	380	2	12	8	**LRAC00201**	266	E8	4	LRENC-8
1	0.75	400/415	2	20	12	**LRAC00202**	295	E8	4	LRENC-8
2	1.5	380	4	6.5	20	**LRAC00402**	335	E8	4	LRENC-8
2	1.5	400/415	4	9	20	**LRAC00403**	349	E8	4	LRENC-8
3	2.2	380/400/415	8	3	29	**LRAC00802**	391	E8	7	LRENC-8
5	3.7	380/400/415	8	5	26	**LRAC00803**	516	E8	10	LRENC-8
7 1/2	5.5	380/400/415	12	2.5	31	**LRAC01202**	539	E8	9	LRENC-8
10	7.5	380/400/415	18	1.5	43	**LRAC01802**	564	E8	10	LRENC-8
15	11.1	380/400/415	25	1.2	52	**LRAC02502**	807	ED	13	LRENC-13
20	14.9	380/400/415	35	0.8	54	**LRAC03502**	858	ED	15	LRENC-13
25-30	18.6-22.3	380/400/415	45	0.7	62	**LRAC04502**	1,024	E8	27	LRENC-13
40-50	29.8-37.2	380/400/415	80	0.4	86	**LRAC08002**	1,069	E8	33	LRENC-13
60-75	44.7-56	380/400/415	130	0.2	180	**LRAC13002**	1,087	E8	43	LRENC-13
100	75	400/415	160	0.15	149	**LRAC16002**	1,198	E8	50	LRENC-13
125	93	380/400/415	200	0.11	168	**LRAC20002**	1,664	E8	54	LRENC-13
150-200	112-149	380/400/415	250	0.09	231	**LRAC25002**	2,170	E8	80	LRENC-17
250-300	186.2-223.8	380/400/415	400	0.06	333	**LRAC40002**	2,785	E8	118	LRENC-17
350-400	261-298	380/400/415	500	0.05	340	**LRAC50002**	3,910	E8	118	LRENC-26C

[a] See below for Line Reactor enclosures, prices and dimensions

Line Reactor Enclosures NEMA 1

Enclosure Catalog No.	Mount Type	List Price	Mult. Sym.	Ap'x Shpg. Wgt. (Lbs)	Width (IN/mm)	Height (IN/mm)	Depth (IN/mm)
LRENC-8	WALL	199	E8	12	8 (293)	10 (254)	6 (152)
LRENC-13	FLOOR	391	E8	16	13 (330)	15 (381)	13 (330
LRENC-17	FLOOR	880	E8	27	17.5 (445)	31 (787)	21 (533)
LRENC-26C	FLOOR	2,030	E8	144	26.5 (673)	47 (1194)	25 (635)

NOTE: See notes on inside back flap.

Remote Operator Control Stations

Baldor offers a variety of remote operator's control stations to meet the needs of most AC or DC drive applications. A unique feature of the controls is the choice of non-maintained or maintained stop push button functions. Other standard features include:

- Convenient easy-to-connect terminal blocks. Numbered/indicated contacts;
- UL listing. Optional features include: 5K ohm speed potentiometer; run/jog selector switch or push button; forward/reverse selector; auto/manual selector switch; and hand-off-auto selector switches.

Start Push Button	Stop Push Button (a)	5K Speed Pot	Run-Jog Switch	Jog Push Button	Fwd-Rev Switch	Hand-Auto Switch	Hand-Off-Auto Switch	Catalog Number	List Price	Mult. Sym.	Ap'x. Shpg. Wgt.	Dimensions		
												Height (in/mm)	Width (in/mm)	Depth (in/mm)
NEMA 1, 3R, 4, 4X and 12 Remote Operator Stations														
X	NM							**9C80**	262	E8	1	5/128	2.9/74	2.5/64
X	M							**9C81**	262	E8	1	5/128	2.9/74	2.5/64
X	NM	X						**9C90**	351	E8	1	6.6/167	2.9/74	2.5/64
X	M	X						**9C91**	351	E8	1	6.6/167	2.9/74	2.5/64
X	NM	X	X					**9C200**	409	E8	2	8.1/207	2.9/74	2.5/64
X	M	X	X					**9C201**	409	E8	2	8.1/207	2.9/74	2.5/64
X	NM	X				X		**9C210**	502	E8	2	8.1/207	2.9/74	2.5/64
X	M	X				X		**9C211**	502	E8	2	8.1/207	2.9/74	2.5/64
X	NM	X					X	**9C220**	502	E8	2	8.1/207	2.9/74	2.5/64
X	M	X					X	**9C221**	502	E8	2	8.1/207	2.9/74	2.5/64
X	NM	X	X			X		**9C230**	737	E8	2	11.3/287	2.9/74	2.5/64
X	M	X	X			X		**9C231**	737	E8	2	11.3/287	2.9/74	2.5/64
X	NM	X		X				**9C240**	436	E8	2	8.1/207	2.9/74	2.5/64
X	M	X		X				**9C241**	436	E8	2	8.1/207	2.9/74	2.5/64
X	NM	X	X		X			**9C300**	490	E8	2	11.3/287	2.9/74	2.5/64
X	M	X	X		X			**9C301**	490	E8	2	11.3/287	2.9/74	2.5/64
X	NM	X			X	X		**9C310**	719	E8	2	11.3/287	2.9/74	2.5/64
X	M	X			X	X		**9C311**	719	E8	2	11.3/287	2.9/74	2.5/64
X	NM	X			X		X	**9C320**	653	E8	2	11.3/287	2.9/74	2.5/64
X	M	X			X		X	**9C321**	653	E8	2	11.3/287	2.9/74	2.5/64
X	NM	X	X		X	X		**9C330**	730	E8	2	11.3/287	2.9/74	2.5/64
X	M	X	X		X	X		**9C331**	730	E8	2	11.3/287	2.9/74	2.5/64
X	NM	X		X	X			**9C340**	484	E8	2	11.3/287	2.9/74	2.5/64
X	M	X		X	X			**9C341**	484	E8	2	11.3/287	2.9/74	2.5/64
NEMA 7/9 Explosion Proof Remote Operator Stations														
X	NM	X	X		X			**9C16**	2,637	E8	15	5.3/134	14.1/258	3.3/84
X	NM	X	X					**9C17**	2,437	E8	12	5.3/134	10.6/269	3.3/84

NOTE: (a) M = Maintained (Stop button contact remains open after stop button is depressed. To restart the drive, the stop button must be depressed before the start button.)
NM = Non-Maintained (Stop button contact momentarily opens and stops the drive. The contact then closes allowing the drive to be started when the start button is depressed.)