AC Motor Adjustable Speed Range Capabilities

Inverter Drive® and Vector Drive® Motors

Inverter Drive® and Vector Drive® Motors exceed all requirements of NEMA MG-1 Parts 30 and 31 for AC induction motors powered from adjustable speed controls. Definite-Purpose Inverter-Fed Polyphase Motors, as defined for Inverter Drive Motors are suitable for variable torque applications and rated 1000:1 for constant torque (except for those Inverter Duty motors rated for use in hazardous locations). Vector Drive motors are capable of full, rated torque at 0 RPM, continuous duty. Satisfactory motor performance depends on proper drive setup.

It is necessary that motor-drive applications are commissionedby 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 set up has been successfully completed. Applications that are not properly set up can lead to substandard performance and failure of system components.

Super-E® Motors

All 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 in applications with variable torque and with a constant torque 20:1 speed range except as noted below. Motor inverter setup is unique to each specific application. Setup and correct wiring procedures must be closely followed.

Standard-E® Motors

Standard-E EPAct efficient motors are suitable for use in adjustable speed applications per NEMA MG 1 Part 30. With proper motor-inverter setup, Standard-E motors are suitable for use at 20:1 variable torque and 4:1 constant torque applications.

Note: Use of explosion proof motors with inverters should be limited to Inverter-Duty Explosion proof motors only. Contact your local Baldor District Office for application questions regarding your specific application.

Family	Frame Size	Constant Torque	Variable Torque	Comments
Super-E Motors 230, 460 and 575 Volts				
EM (TEFC)	56 - 365 (1) 404 - 449 (1)	20:1 10:1	20:1 20:1	General Purpose Premium Efficiency
EM (ODP)	143 - 445	20:1	20:1	General Purpose Premium Efficiency
ECP	143 - 365 404 - 449	20:1 10:1	20:1 20:1	Severe Duty Premium Efficiency
ECP8 (IEEE841)	143 - 365 404 - 449	20:1 10:1	20:1 20:1	Severe Duty Premium Efficiency May not meet temp rise as specified in IEEE841 when used with ASD.
EWDM	56 - 215 (1)	20:1	20:1	Washdown Duty Premium Efficiency
Standard-E Motors 230, 460 and 575 Volts				
M (TEFC)	56 - 5009 (1)	4:1	20:1	General Purpose
M (ODP)	56 - 5009 (1)	4:1	20:1	General Purpose
CP	143 - 405	4:1	20:1	Severe Duty
WDM	56 - 215 (1)	4:1	20:1	Washdown Duty
Inverter Duty and Vector Duty Motors 230, 460 and 575 Volts				
V*S Master				
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	143 - 326	1000:1	1000:1	Vector Duty TEFC - XT V*S Master
RPMAC				
IDRPMN (TENV)	FL1838 - FL2162	1000:1	1000:1	Inverter Duty TENV RPMAC
IDRPM (TEFC, TEBC, DPGFV)	FL1844 - L4461	1000:1	1000:1	Inverter Duty TENV, TEBC, DPG-FV RPMAC
ZDRPMN (TENV)	FL1838 - FL2162	1000:1	1000:1	Vector Duty TENV RPMAC
ZDRPM (TEFC, TEBC)	FL1844 - L4022	1000:1	1000:1	Vector Duty TEFC, TEBC RPMAC
ZDRPM (TEBC)	FL1831 - FL2586	1000:1	1000:1	Vector Duty TEBC Permanent Magnet PM RPMAC
IDM (TEBC)	143 - 5009	1000:1	1000:1	Inverter Duty/Blower cooled
IDNM (TENV)	143 - 256	1000:1	1000:1	Inverter Duty/Non-Vented
ZDM (TEBC)	143 - 5009	1000:1	1000:1	Vector Duty/Blower Cooled
ZDNM (TENV)	143 - 256	1000:1	1000:1	Vector Duty/Non Vented
IDXM (2 families)	182 - 405 56 - 405	2:1 10:1	10:1 10:1	Explosion Proof Inverter Duty
IDWNM	143 - 254	20:1	1000:1	Washdown Duty Inverter Duty/Non Vented
ZDWNM	143 - 254	1000:1	1000:1	Washdown Duty Vector Duty/Non Vented

(1) Baldor type 35M and larger.

RPM AC, Vector Duty, Three Phase, Totally Enclosed

5 thru 200 Hp

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 1024 ppr hollow shaft encoder.

Hp	RPM	Max. RPM	NEMA Frame	Enclosure [a]	Catalog Number	List Price	Mult. Sym.	"C" Dim.	Aprx. Wt. (lb)	Voltage	Full Load Amps	Notes [b]	Reliance M/N
5	1800	3500	FL1838C	TENV	**ZDNRPM18054C**[c]	4,351	E2	17.87	143	230/460	7.4		P18T369
7 1/2	1800	3500	FL1852C	TENV	**ZDNRPM18074C**[d]	4,775	E2	21.87	194	230/460	11		P18T370
10	1800	3500	FL1844C	TEFC	**ZDFRPM18104C**[d]	4,900	E2	23.26	179	230/460	13.9		P18T371
			FL2162C	TENV	**ZDNRPM21104C**[d]	5,374	E2	23.11	280	230/460	13.6		P21T399
15	1800	3500	FL1844C	TEBC	**ZDBRPM18154C**[e]	5,011	E2	28.93	180	460	21		P18T372
20	1800	2500	FL2162C	TEFC	**ZDFRPM21204C**[e]	5,653	E2	26.74	290	460	27		P21T400
		3500	FL1852C	TEBC	**ZDBRPM18204C**[e]	5,369	E2	30.39	209	460	27		P18T373
25	1800	3500	FL2173C	TEFC	**ZDFRPM21254C**[e]	6,062	E2	29.50	355	460	34		P21T401
30	1800	3500	FL2162C	TEBC	**ZDBRPM21304C**[e]	6,261	E2	31.24	290	460	40		P21T402
			FL2570C	TEFC	**ZDFRPM25304C**[e]	6,303	E2	29.54	475	460	40		P25T311
40	1800	3500	FL2173	TEBC	**ZDBRPM21404**[f]	6,470	E2	33.75	355	460	52		P21T403
			FL2586	TEFC	**ZDFRPM25404**[f]	6,725	E2	33.79	605	460	52		P25T312
50	1800	3500	FL2570	TEBC	**ZDBRPM25504**[f]	7,865	E2	34.29	475	460	61		P25T313
60	1800	3500	FL2578	TEBC	**ZDBRPM25604**[f]	9,669	E2	36.29	540	460	74		P25T314
75	1800	3500	FL2586	TEBC	**ZDBRPM25754**[f]	11,251	E2	38.29	605	460	94		P25T315
100	1800	3500	L2898	TEBC	**ZDBRPM281004**[f]	14,528	E2	41.12	1,045	460	123		P28L280
125	1800	3500	L3203	TEBC	**ZDBRPM321254**[f]	18,122	E2	44.25	1,170	460	150		P32L273
150	1800	3500	L3213	TEBC	**ZDBRPM321504**[f]	23,636	E2	46.75	1,310	460	177		P32L274
200	1800	3500	L3614	TEBC	**ZDBRPM362004**[f]	25,959	E2	46.75	1,700	460	240		P36L239
			L4022	TEBC	**ZDBRPM402004**[f]	27,866	E2	49.12	1,750	460	240		P40L1301

[a] All TEBC have integral blower rated 230/460 volts 3 phase.
[b] See notes on inside back flap and pages 5-6.
[c] Foot mounted and 180TC face.
[d] Foot mounted and 210TC face.
[e] Foot mounted and 250TC face.
[f] Foot mounted only.

CONTINUOUS CONSTANT TORQUE TO ZERO SPEED

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

10 thru 100 Hp FL1831C thru FL2586

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

Features: Synchronous speed performance in a compact square frame design FL180 aluminum and FL210-250 laminated steel frame design. Must be applied with drive specifically designed for permanent magnet rotor performance, feedback control normally required. 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. Above premium efficient design utilizing salient pole PM rotor technology to achieve high efficiency, low FLA and optimized power factor.

Hp	RPM	NEMA Frame	Catalog Number	List Price	Mult. Sym.	"C" Dim.	Aprx. Wt. (lb)	Full Load Efficiency [a]	Voltage	Full Load Amps [a]	Rotor Inertia lb-ft^2	Notes [b]
10	1800	FL1831C	**ZDPM18010C-BV**[c]	5,880	E2	27.50	135	93.6	230/460	11.17	0.46	
15	1800	FL1838C	**ZDPM18015C-BV**[d]	6,013	E2	29.00	143	94.3	460	16.15	0.63	
20	1800	FL1844C	**ZDPM18020C-BV**[d]	6,443	E2	30.50	180	95.3	460	22.53	0.77	
25	1800	FL1852C	**ZDPM18025C-BV**[d]	7,274	E2	32.50	209	95	460	26.74	0.96	
30	1800	FL1852C	**ZDPM18030C-BV**[d]	7,573	E2	32.50	209	95	460	32.59	0.96	
40	1800	FL2162	**ZDPM21040-BV**[e]	7,764	E2	33.50	290	95.9	460	44.68	2.14	
50	1800	FL2168	**ZDPM21050-BV**[e]	9,438	E2	35.00	330	95.7	460	54.83	2.60	
60	1800	FL2173	**ZDPM21060-BV**[e]	11,602	E2	36.00	355	95.6	460	66.77	2.99	
75	1800	FL2578	**ZDPM25075-BV**[e]	13,501	E2	38.50	540	96.4	460	82.29	4.90	
100	1800	FL2586	**ZDPM25100-BV**[e]	17,433	E2	40.50	605	96.5	460	110.42	5.83	

[a] The data - including efficiency - is for fundamental sinewave components of amps and volts and does not include losses due to inverter pwm waveshapes.
[b] See notes on pages 8-9, and inside back flap.
[c] Foot mounted and 210TC face.
[d] Foot mounted and 250TC face.
[e] Foot mounted only.
All TEBC have integral blower rated 230/460 volts 3 phase.
Contact your Baldor-Reliance District Office for proper drive selection.

V*S Master and RPM AC Encoder Feedback Kits

Encoder kits below 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 stlye (Latch). HS35, RAHS35M 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. 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	1120	E8	6
K99G74	TENV	HS35-2048	2048	180T-250T	BEI	O	MS-ST	5-15	1120	E8	6
K99G76	TENV	HS35	1024	180T-250T	BEI	O	MS-ST	5-24	1120	E8	6
K99G70	TENV	RAHS35M	1024	180T-250T	Avtron	M	MS-ST	5-24	1120	E8	9
K99G78	TENV	HSD35	1024	180T-250T	Dynapar	O	Latch	5-26	1260	E8	8
K99G73	TEFC	HS35	1024	180T-440T	BEI	O	MS-ST	5-15	1120	E8	6
K99G75	TEFC	HS35-2048	2048	180T-440T	BEI	O	MS-ST	5-24	1120	E8	6
K99G77	TEFC	HS35	1024	180T-440T	BEI	O	MS-ST	5-24	1120	E8	6
K99G71	TEFC	RAHS35M	1024	180T-440T	Avtron	M	MS-ST	5-24	1120	E8	9
K99G79	TEFC	HSD35	1024	180T-440T	Dynapar	O	Latch	5-26	1260	E8	8

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

V*S Master Inverter 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 provisions for stub shaft for hollow shaft encoder, three thermostats, and all 440T frames include an ODE insulated bearing. Insulation system exceeds NEMA MG 1-2006, Part 31.4.4.2. Continuous constant torque to zero speed.

Hp	RPM	Max. RPM	NEMA Frame	Enclosure	Catalog Number	List Price	Mult. Sym.	"C" Dim.	Aprx. Wt. (lb)	Voltage	Full Load Amps	Notes [a]	Reliance M/N
1/3	1800	6000	56C	TENV	**IDVSNM3534**	381	E2	13.84	29	230/460	0.6		
1/2	1800	6000	56C	TENV	**IDVSNM3538**	446	E2	13.84	32	230/460	0.8		
3/4	1800	6000	56C	TENV	**IDVSNM3542**	497	E2	13.84	35	230/460	1.1		
1	1800	6000	143TC	TENV	**IDVSNM3581T**	1,015	E2	14.65	59	230/460	1.6		
1 1/2	1800	6000	143TC	TENV	**IDVSNM3584T**	1,119	E2	14.65	66	230/460	2.1		
2	1800	6000	145TC	TENV	**IDVSM3587T**	1,170	E2	14.65	68	230/460	2.7		
3	1800	2700	182TC	TENV	**IDVSNM3661T**	1,253	E2	14.69	86	230/460	3.8		P18G1188
			182TC	TEFC	**IDVSM3661T**	1,216	E2	15.62	110	230/460	3.8		P18G1193
5	1800	2700	L184TC	TENV	**IDVSNM3665T**	1,464	E2	16.19	121	230/460	6.4		P18G1189
			L184TC	TEFC	**IDVSM3665T**	1,422	E2	17.12	115	230/460	6.4		P18G1194
7 1/2	1800	2700	213TC	TEFC	**IDVSM3770T**	1,777	E2	19.25	170	230/460	9.6		P21G1167
			L215TC	TENV	**IDVSNM2237T**	1,831	E2	19.25	175	230/460	9.2		P21G1162
10	1800	2700	L215TC	TEFC	**IDVSM3774T**	2,063	E2	20.12	190	230/460	12.4		P21G1164
			254TC	TENV	**IDVSNM2238T**	2,268	E2	23.78	185	230/460	12.7		P25G1152
15	1800	2700	254TC	TEFC	**IDVSM2333T**	2,474	E2	24.50	280	230/460	18.4		P25G1153
			256TC	TENV	**IDVSNM2333T**	2,820	E2	23.78	265	230/460	18.7		P25G1150
20	1800	2700	256TC	TEFC	**IDVSM2334T**	2,711	E2	24.50	325	230/460	25.5		P25G1184
25	1800	2700	284TC	TEFC	**IDVSM4103T**	3,429	E2	27.44	445	230/460	31		P28G1088
30	1800	2700	286TC	TEFC	**IDVSM4104T**	3,801	E2	27.44	450	230/460	38.1		P28G1089
40	1800	2700	324T	TEFC	**IDVSM4110T**	5,074	E2	30.44	540	230/460	49.8		P32G3225
50	1800	2700	326T	TEFC	**IDVSM4313T**	6,202	E2	30.44	580	230/460	62.5		P32G3226
60	1800	2700	364T	TEFC	**IDVSM4314T**	7,683	E2	33.44	800	230/460	71.2		P36G3221
75	1800	2700	365T	TEFC	**IDVSM4316T**	9,622	E2	33.44	840	230/460	89.2		P36G3222
100	1800	2700	405T	TEFC	**IDVSM4400T-4**	12,437	E2	38.31	1,160	460	116		P40G3207
125	1800	2700	444T	TEFC	**IDVSM4410T-4**	15,437	E2	44.62	1,540	460	150		P44G3207
150	1800	2700	445T	TEFC	**IDVSM4406T-4**	18,424	E2	44.62	1,730	460	177		P44G3208
200	1800	2700	447T	TEFC	**IDVSM4407T-4**	21,830	E2	48.13	2,275	460	226		P44G3213
250	1800	2700	449T	TEFC	**IDVSM4408T-4**	26,986	E2	53.13	2,650	460	277		P44G3214
300	1800	2700	449T	TEFC	**IDVSM44304T-4**	30,854	E2	53.13	2,650	460	338		P44G3215

[a] See notes on inside back flap and pages 5-6.

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 insultated bearing. Insulation system exceeds NEMA MG 1-2006, Part 31.4.4.2. Continuous constant torque to zero speed.

Hp	RPM	Max. RPM	NEMA Frame	Enclosure	Catalog Number	List Price	Mult. Sym.	"C" Dim.	Aprx. Wt. (lb)	Voltage	Full Load Amps	Notes [a]	Reliance M/N
1/2	1800	6000	56C	TENV	**ZDVSNM3538**	1,648	E2	13.84	32	230/460	0.8		
3/4	1800	6000	56C	TENV	**ZDVSNM3542**	1,699	E2	13.84	35	230/460	1.1		
1	1800	6000	143TC	TENV	**ZDVSM3581T**	2,217	E2	14.65	59	230/460	1.6		
1 1/2	1800	6000	143TC	TENV	**ZDVSM3584T**	2,320	E2	14.65	66	230/460	2.1		
2	1800	6000	145TC	TENV	**ZDVSM3587T**	2,560	E2	14.65	68	230/460	2.7		
3	1800	2700	182TC	TENV	**ZDVSNM3661T**	2,667	E2	14.69	86	230/460	3.8		P18G1232
			182TC	TEFC	**ZDVSM3661T**	2,630	E2	15.62	110	230/460	3.8		P18G1233
5	1800	2700	L184TC	TENV	**ZDVSNM3665T**	2,877	E2	16.19	121	230/460	6.4		P18G1234
			L184TC	TEFC	**ZDVSM3665T**	2,834	E2	17.12	115	230/460	6.4		P18G1235
7 1/2	1800	2700	213TC	TEFC	**ZDVSM3770T**	3,191	E2	19.25	170	230/460	9.6		P21G1185
			L215TC	TENV	**ZDVSNM2237T**	3,243	E2	19.25	175	230/460	9.2		P21G1184
10	1800	2700	L215TC	TEFC	**ZDVSM3774T**	3,475	E2	20.12	190	230/460	12.4		P21G1186
			254TC	TENV	**ZDVSNM2238T**	3,681	E2	23.78	185	230/460	12.7		P25G1178
15	1800	2700	254TC	TEFC	**ZDVSM2333T**	3,887	E2	24.50	280	230/460	18.4		P25G1180
			256TC	TENV	**ZDVSNM2333T**	4,234	E2	23.78	265	230/460	18.7		P25G1179
20	1800	2700	256TC	TEFC	**ZDVSM2334T**	4,125	E2	24.50	325	230/460	25.5		P25G1181
25	1800	2700	284TC	TEFC	**ZDVSM4103T**	4,841	E2	27.44	445	230/460	31		P28G3215
30	1800	2700	286TC	TEFC	**ZDVSM4104T**	5,214	E2	27.44	450	230/460	38.1		P28G3216
40	1800	2700	324T	TEFC	**ZDVSM4110T**	6,487	E2	30.44	540	230/460	49.8		P32G3221
50	1800	2700	326T	TEFC	**ZDVSM4313T**	7,614	E2	30.44	580	230/460	62.5		P32G3222
60	1800	2700	364T	TEFC	**ZDVSM4314T**	9,095	E2	33.44	800	230/460	71.2		P36G3219
75	1800	2700	365T	TEFC	**ZDVSM4316T**	11,036	E2	33.44	840	230/460	89.2		P36G3220
100	1800	2700	405T	TEFC	**ZDVSM4400T-4**	13,851	E2	38.31	1,160	460	116		P40G3217
125	1800	2700	444T	TEFC	**ZDVSM4410T-4**	16,851	E2	44.62	1,540	460	150		P44G3247
150	1800	2700	445T	TEFC	**ZDVSM4406T-4**	19,836	E2	44.62	1,730	460	177		P44G3248
200	1800	2700	447T	TEFC	**ZDVSM4407T-4**	23,243	E2	48.13	2,275	460	226		P44G3249
250	1800	2700	449T	TEFC	**ZDVSM4408T-4**	28,398	E2	53.13	2,650	460	277		P44G3250
300	1800	2700	449T	TEFC	**ZDVSM44304T-4**	32,267	E2	53.13	2,650	460	338		P44G3251

[a] See notes on inside back flap and pages 5-6.

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. Insulation system exceeds NEMA MG 1-2006, Part 31.4.4.2. Continuous constant torque to zero speed.

Hp	RPM	Max. RPM	NEMA Frame	Enclosure	Catalog Number	List Price	Mult. Sym.	"C" Dim.	Aprx. Wt. (lb)	Voltage	Full Load Amps	Notes [a]	Reliance M/N
1	1800	6000	143TC	TENV	**ZDVSCP3581T**	2,329	E2	14.65	59	230/460	1.6		
1 1/2	1800	6000	143TC	TENV	**ZDVSCP3584T**	2,431	E2	14.65	66	230/460	2.1		
2	1800	6000	145TC	TENV	**ZDVSCP3587T**	2,671	E2	14.65	68	230/460	2.7		
3	1800	2700	182TC	TEFC	**ZDVSCP3661T**	2,755	E2	15.62	110	230/460	3.8		P18G1236
5	1800	2700	L184TC	TEFC	**ZDVSCP3665T**	2,961	E2	17.12	115	230/460	6.4		P18G1237
7 1/2	1800	2700	213TC	TEFC	**ZDVSCP3770T**	3,376	E2	19.25	170	230/460	9.6		P21G1187
10	1800	2700	L215TC	TEFC	**ZDVSCP3774T**	3,661	E2	20.12	190	230/460	12.4		P21G1188
15	1800	2700	254TC	TEFC	**ZDVSCP2333T**	4,137	E2	24.50	280	230/460	18.4		P25G1182
20	1800	2700	256TC	TEFC	**ZDVSCP2334T**	4,376	E2	24.50	325	230/460	25.5		P25G1183
25	1800	2700	284TC	TEFC	**ZDVSCP4103T**	5,132	E2	27.44	445	230/460	31		P28G3217
30	1800	2700	286TC	TEFC	**ZDVSCP4104T**	5,505	E2	27.44	450	230/460	38.1		P28G3218
40	1800	2700	324T	TEFC	**ZDVSCP4110T**	6,830	E2	30.44	540	230/460	49.8		P32G3223
50	1800	2700	326T	TEFC	**ZDVSCP4313T**	7,957	E2	30.44	580	230/460	62.5		P32G3224

[a] See notes on inside back flap and pages 5-6.

CONTINUOUS CONSTANT TORQUE TO ZERO SPEED

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**	1,196	E2	11.07	29	82.5	230/460	0.8	
3/4	1800	6000	56C	TENV	**IDCSWDM3542**	1,355	E2	12.07	36	78.5	230/460	1	
1	1800	3600	56C	TENV	**IDCSWDM3546**	1,407	E2	12.07	39	85.5	208-230/460	1.4	
			143TC	TENV	**IDCSWDM3546T**	1,407	E2	12.12	39	85.5	208-230/460	1.4	
1 1/2	1800	4000	56C	TEFC	**IDCSWDM3554**	1,505	E2	13.30	45	87.5	230/460	2.1	
			145TC	TEFC	**IDCSWDM3554T**	1,505	E2	13.30	44	87.5	230/460	2.1	
2	1800	3600	56C	TEFC	**IDCSWDM3558**	1,607	E2	14.12	47	86.5	230/460	2.5	
			145TC	TEFC	**IDCSWDM3558T**	1,607	E2	14.18	52	86.5	230/460	2.5	
3	1800	6000	182TC	TEFC	**IDCSWDM3611T**	1,763	E2	16.56	74	89.5	230/460	4	
5	1800	6000	184TC	TEFC	**IDCSWDM3615T**	2,052	E2	18.06	93	90.2	230/460	6.4	
7 1/2	1800	6000	213TC	TEFC	**IDCSWDM3710T**	3,107	E2	19.81	140	91.7	230/460	9.5	
10	1800	6000	215TC	TEFC	**IDCSWDM3714T**	3,553	E2	21.31	187	92.4	230/460	12.5	
C-Face, Footless													
1/2	1800	6000	56C	TENV	**IDVSWDM3538**	1,187	E2	11.07	29	82.5	230/460	0.8	
3/4	1800	6000	56C	TENV	**IDVSWDM3542**	1,349	E2	12.07	36	78.5	230/460	1	
1	1800	3600	56C	TENV	**IDVSWDM3546**	1,400	E2	12.07	39	85.5	208-230/460	1.4	
			143TC	TENV	**IDVSWDM3546T**	1,400	E2	12.12	39	85.5	208-230/460	1.4	
1 1/2	1800	4000	56C	TEFC	**IDVSWDM3554**	1,497	E2	13.24	42	87.5	230/460	2.1	
			145TC	TEFC	**IDVSWDM3554T**	1,497	E2	13.30	43	87.5	230/460	2.1	
2	1800	3600	56C	TEFC	**IDVSWDM3558**	1,594	E2	14.12	49	86.5	230/460	2.5	
			145TC	TEFC	**IDVSWDM3558T**	1,594	E2	14.18	49	86.5	230/460	2.5	
3	1800	6000	182TC	TEFC	**IDVSWDM3611T**	1,677	E2	16.56	73	89.5	230/460	4	
5	1800	6000	184TC	TEFC	**IDVSWDM3615T**	1,955	E2	18.06	101	90.2	230/460	6.4	

[a] See notes on inside back flap and pages 5-6.

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. 1/2 through 2 Hp Class I, Group D, Class II, Groups F & G, Temperature Code T3C (160°C). 3 Hp and larger, 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	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**	1,324	E2	18.24	142	89.5	230/460	4	2,20,56
5	1800	2700	184TC	**IDXM7144T**	1,574	E2	18.24	158	89.5	230/460	6.5	2,20,56
7 1/2	1800	2700	213TC	**IDXM7147T**	1,979	E2	20.69	228	91.7	230/460	9.5	2,20,56
10	1800	2700	215TC	**IDXM7170T**	2,715	E2	20.69	196	92.4	208-230/460	12.5	2,20,56
15	1800	2700	254TC	**IDXM7054T**	3,109	E2	26.00	356	92.4	230/460	18	2,20,56
20	1800	2700	256TC	**IDXM7056T**	4,034	E2	26.00	393	93	230/460	24	2,20,56
25	1800	2700	284T	**IDXM7058T**	4,780	E2	28.61	541	93.6	230/460	30.5	2,20,56
30	1800	2700	286T	**IDXM7060T**	5,831	E2	28.61	561	94.1	230/460	36	56
40	1800	2700	324T	**IDXM7062T**	7,810	E2	32.12	782	94.5	230/460	46	2,20,56
50	1800	2700	326T	**IDXM7064T**	9,087	E2	32.12	785	94.5	230/460	57	2,20,56
60	1800	2700	364T	**IDXM7066T**	10,375	E2	33.25	967	95	230/460	69	2,20,56
75	1800	2700	405T	**IDXM7068T**	11,501	E2	38.75	1,259	94.1	230/460	85	2,20,45,56
10:1 Constant Torque and Varialbe Torque Ratings												
1/3	1800	2700	56C	**IDXM7002**	918	E2	12.55	43	—	230/460	0.6	
1/2	1800	2700	56C	**IDXM7006**	943	E2	14.30	39	82.5	230/460	0.8	2,20,59
3/4	1800	2700	56C	**IDXM7010**	964	E2	14.30	43	82.5	230/460	1.1	2,20,59
1	1800	2700	143TC	**IDXM7014T**	1,074	E2	15.23	47	87.5	230/460	1.5	2,20,59
1 1/2	1800	2700	145TC	**IDXM7034T**	1,113	E2	16.10	53	88.5	230/460	2.1	2,20,59
2	1800	2700	145TC	**IDXM7037T**	1,216	E2	17.48	67	88.5	230/460	2.6	2,20,59
3	1800	2700	182TC	**IDXM7542T**	1,389	E2	18.24	141	89.5	230/460	4	2,20,56
5	1800	2700	213TC	**IDXM7544T**	2,023	E2	20.65	212	90.2	230/460	6.3	56
7 1/2	1800	2700	215TC	**IDXM7547T**	2,845	E2	20.65	225	91.7	230/460	9.5	2,20,56
10	1800	2700	254TC	**IDXM7570T**	3,184	E2	26.00	378	91.7	230/460	13	2,20,56
15	1800	2700	256TC	**IDXM7554T**	4,130	E2	26.00	381	92.4	230/460	17	2,20,56
20	1800	2700	284T	**IDXM7556T**	5,008	E2	28.61	523	90.2	230/460	24.5	2,20,56
25	1800	2700	324T	**IDXM7558T**	6,031	E2	32.12	742	91.7	230/460	30	2,20,56
30	1800	2700	326T	**IDXM7560T**	7,018	E2	32.12	747	94.5	230/460	35	2,20,56
40	1800	2700	364T	**IDXM7562T**	7,851	E2	33.25	913	93.6	230/460	46	2,20,56
50	1800	2700	365T	**IDXM7564T**	9,794	E2	33.25	971	93.6	230/460	61	2,20,56
60	1800	2700	405T	**IDXM7566T**	11,601	E2	38.75	1,265	93.6	230/460	69	2,20,56

[a] See notes on inside back flap and pages 5-6.

Cast Iron Frame

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

1 thru 200 Hp

NEMA 56C thru 447T

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**	2,541	E2	19.15	62	87.5	230/460	1.5	2,8,46,55,60
			143TC	TEBC	**ZDM3581T-5**	2,541	E2	19.15	64	86.5	575	1.1	2,8,46,55
			143TC	TENV	**ZDNM3581T**	2,217	E2	14.65	56	81.5	230/460	1.6	2,8,46,55
	1200	6000	143TC	TEBC	**ZDM3582T**	2,775	E2	19.15	66	82.5	230/460	1.8	2,8,46,55
1 1/2	1800	6000	145TC	TEBC	**ZDM3584T**	2,619	E2	19.15	63	88.5	230/460	2.1	2,8,46,55,60
			145TC	TEBC	**ZDM3584T-5**	2,619	E2	19.15	68	87.5	575	1.7	2,8,46,55
			145TC	TENV	**ZDNM3584T**	2,320	E2	14.65	65	82.5	230/460	2.1	2,8,46,55
	1200	6000	182TC	TEBC	**ZDM3667T**	2,972	E2	21.71	110	86.5	230/460	2.6	2,8,46,55
2	1800	6000	145TC	TEBC	**ZDM3587T**	2,716	E2	19.15	69	88.5	230/460	2.7	2,8,46,55
			145TC	TEBC	**ZDM3587T-5**	2,716	E2	19.15	69	86.5	575	2	2,8,46,55
			182TC	TENV	**ZDNM3669T**	2,560	E2	17.21	94	84	230/460	2.9	2,8,46,55,60
	1200	6000	184TC	TEBC	**ZDM3664T**	3,021	E2	21.71	118	87.5	230/460	3.6	2,8,46,55
3	1800	6000	182TC	TEBC	**ZDM3661T**	3,138	E2	21.71	106	89.5	230/460	4	2,8,46,55
			182TC	TEBC	**ZDM3661T-5**	3,138	E2	21.71	105	89.5	575	3.2	2,8,46,55
			184TC	TENV	**ZDNM3661T**	2,736	E2	17.21	108	88.5	230/460	4	2,8,46,55,60
	1200	6000	213TC	TEBC	**ZDM3764T**	3,580	E2	29.14	174	89.5	230/460	5	2,8,46,70
5	1800	6000	184TC	TEBC	**ZDM3665T**	3,250	E2	21.71	121	90.2	230/460	6.5	2,8,46,55
			184TC	TEBC	**ZDM3665T-5**	3,250	E2	21.71	123	90.2	575	5.2	2,8,46,55
			213TC	TENV	**ZDNM3767T**	3,107	E2	20.40	167	91	230/460	6.7	2,8,46,60,70
	1200	6000	215TC	TEBC	**ZDM3768T**	4,114	E2	29.14	200	88.5	230/460	8	2,8,46,70
7 1/2	1800	5000	256TC	TENV	**ZDNM2237T**	3,573	E2	24.05	250	90.2	230/460	9.1	2,8,46,60,70
		6000	213TC	TEBC	**ZDM3770T**	3,671	E2	29.14	177	91.7	230/460	9.5	2,8,46,70
			213TC	TEBC	**ZDM3770T-5**	3,671	E2	30.07	169	90.2	575	7.8	2,8,46,70
	1200	5000	254TC	TEBC	**ZDM2276T**	5,390	E2	33.07	282	91.7	230/460	10.7	2,8,46,70
10	1800	5000	256TC	TENV	**ZDNM2238T**	3,683	E2	24.05	289	91.7	230/460	13	2,8,46,60,70
		6000	215TC	TEBC	**ZDM3774T**	3,847	E2	29.14	196	92.4	230/460	12.5	2,8,46,70
			215TC	TEBC	**ZDM3774T-5**	3,847	E2	30.07	196	91.7	575	10	2,8,46,70
	1200	5000	256TC	TEBC	**ZDM2332T**	6,318	E2	33.07	324	91.7	230/460	14.2	2,8,46,70
15	1800	5000	254TC	TENV	**ZDNM2333T**	3,757	E2	24.05	286	94.1	230/460	18.5	2,8,46,60,70
			256TC	TEBC	**ZDM2333T**	4,078	E2	33.07	301	92.4	230/460	18.5	2,8,46,70
			256TC	TEBC	**ZDM2333T-5**	4,078	E2	34.15	310	92.4	575	14.8	2,8,46,70
	1200	4000	284T	TEBC	**ZDM4100T**	7,267	E2	36.48	426	93	230/460	19.7	2,8,45,46,70
20	1800	5000	256TC	TEBC	**ZDM2334T**	4,275	E2	33.07	286	93	230/460	24	2,8,46,70
			256TC	TEBC	**ZDM2334T-5**	4,275	E2	34.15	286	93	575	19	2,8,46,70
			284T	TENV	**ZDNM2334T**	4,733	E2	27.36	420	94.5	230/460	25.5	2,8,45,46,60,70
	1200	4000	286T	TEBC	**ZDM4102T**	8,032	E2	36.48	476	93	230/460	26	2,8,45,46,70
25	1800	4000	284T	TEBC	**ZDM4103T**	4,990	E2	36.48	424	93.6	230/460	30	2,8,45,46,70
	1200	3900	324T	TEBC	**ZDM4111T**	8,987	E2	39.24	566	93	230/460	32	2,8,45,46,70
30	1800	4000	286T	TEBC	**ZDM4104T**	5,549	E2	36.48	452	94.1	230/460	36	2,8,45,46,70
	1200	3900	326T	TEBC	**ZDM4117T**	9,865	E2	39.24	594	93	230/460	38	2,8,45,46,70
40	1800	3900	324T	TEBC	**ZDM4110T**	7,079	E2	39.24	606	94.5	230/460	47	2,8,45,46,70
	1200	3600	364T	TEBC	**ZDM4308T**	11,166	E2	41.58	808	94.1	230/460	49	2,8,45,46,70
50	1800	3900	326T	TEBC	**ZDM4115T**	7,799	E2	39.24	679	94.5	230/460	57	2,8,45,46,70
	1200	3600	365T	TEBC	**ZDM4312T**	12,692	E2	41.58	868	94.1	230/460	61	2,8,45,46,70

[a] See notes on inside back flap and pages 5-6.

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

Cast Iron Frame

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

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

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]
60	1800	3600	364T	TEBC	**ZDM4314T**	8,810	E2	41.58	811	95	230/460	69	2,8,45,46,70
	1200	2800	404T	TEBC	**ZDM4403T**	14,666	E2	46.68	1,050	94.5	230/460	72	2,8,45,46,70
75	1800	3600	365T	TEBC	**ZDM4316T**	10,065	E2	41.58	909	95.4	230/460	84	2,8,45,46,70
	1200	2800	405T	TEBC	**ZDM4404T**	16,882	E2	46.68	1,167	95	230/460	88	2,8,45,46,70
100	1800	2800	405T	TEBC	**ZDM4400T-4**	15,490	E2	46.68	1,198	95.4	460	109	2,8,45,46,70
	1200	2400	444T	TEBC	**ZDM4409T-4**	16,864	E2	51.98	1,773	95.4	460	120	2,8,45,46,70
125	1800	2400	444T	TEBC	**ZDM4410T-4**	19,209	E2	51.98	1,636	95.4	460	139	2,8,45,46,70
150	1800	2400	445T	TEBC	**ZDM4406T-4**	21,599	E2	51.98	1,798	95.8	460	173	2,8,45,46,70
200	1800	2400	447T	TEBC	**ZDM4407T-4**	24,574	E2	55.49	2,202	96.2	460	224	2,8,45,46,70

[a] See notes on inside back flap and pages 5-6.

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

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**	2,398	E2	14.90	42	86.5	230/460	1.4	46,77
1 1/2	1800	6000	145TC	**ZDWNM3554T**	2,520	E2	15.78	51	87.5	230/460	2.1	46,77
2	1800	6000	182TC	**ZDWNM3609T**	2,654	E2	17.77	67	84	230/460	2.9	46,77
3	1800	6000	184TC	**ZDWNM3611T**	2,786	E2	17.77	79	88.5	230/460	4	46,77
5	1800	6000	213TC	**ZDWNM3707T**	2,994	E2	19.84	125	89.5	230/460	6.7	46,77
7 1/2	1800	5000	254TC	**ZDWNM22937T**	3,978	E2	23.92	240	91	230/460	9.1	46,77
10	1800	5000	254TC	**ZDWNM22938T**	4,453	E2	23.92	292	91.7	230/460	12	46,77

[a] See notes on inside back flap and pages 5-6.

1000:1 CONSTANT TORQUE SPEED RANGE

Vector, Elevator Duty, Three Phase, ODP

10 thru 75 Hp — NEMA 256T thru 405T

Applications: Elevator modernizations where a premium efficient, quiet, high torque motor is required.

Features: Cast iron frame and endplates, electrically isolated 1024 PPR HS35 optical encoder with connector, Class H insulation, 50°C rise, 320% minimum breakdown torque, winding thermostat, 1/8" shaft endplay. Superior insulation system designed to comply with NEMA MG-1 part 31 for inverter power.

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]
10	1200	1800	256T	**ZDME2511T-CI**	4,295	E2	24.70	280	89.5	230/460	17	2,8,46
15	1200	1800	286T	**ZDME2524T-CI**	5,046	E2	27.35	391	90.2	230/460	21	2,8,46
20	1200	1800	286T	**ZDME2528T-CI**	5,698	E2	27.35	420	90.2	230/460	28	2,8,46
25	1200	1800	324T	**ZDME2532T-CI**	6,841	E2	28.54	522	91.7	230/460	32	2,8,46
30	1200	1800	326T	**ZDME2536T-CI**	6,967	E2	30.04	557	91.7	230/460	39	2,8,46
40	1200	1800	364T	**ZDME2540T-CI**	7,693	E2	32.49	725	91.7	230/460	59	2,8,46
50	1200	1800	365T	**ZDME2544T-CI**	8,481	E2	32.49	815	91	230/460	70	2,8,46
60	1200	1800	404T	**ZDME2548T-CI**	10,715	E2	36.80	1,077	91.7	460	74	2,8,46
75	1200	1800	405T	**ZDME2552T-CI**	11,671	E2	36.80	1,162	91.7	460	90	2,8,46

[a] See notes on inside back flap and pages 5-6.

Cast Iron Frame

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**	590	E2	22	2528M-K	C
	28	60	4.5-41	252	**IDGM2508**	590	E2	22	2528M-K	C
	41	40	6.6-62	228	**IDGM2506**	590	E2	22	2528M-K	C
	83	20	12-123	138	**IDGM2503**	590	E2	22	2528M-K	C
	165	10	23.246	105	**IDGM2501**	590	E2	22	2528M-K	C
	330	5	43-490	68	**IDGM2500**	590	E2	22	2528M-K	C
Parallel Shaft										
3/8	55	30	8.0-82	350	**IDGMP2505**	572	E2	20	2528M-PS	C
	83	20	12-123	233	**IDGMP2503**	539	E2	20	2528M-PS	C
	165	10	23-246	116	**IDGMP2501**	539	E2	20	2528M-PS	C
	330	5	43-490	58	**IDGMP2500**	539	E2	20	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 and ZDWNM motors.

Catalog Number	Cable Extension Length	List Price	Mult. Sym.	Ap'x Shpg. Wgt.
CBL015ZD-2	5 Ft = 1.5 Meters	153	E8	1
CBL030ZD-2	10 Ft = 3 Meters	178	E8	2
CBL046ZD-2	15 Ft = 4.6 Meters	203	E8	2
CBL061ZD-2	20 Ft = 6.1 Meters	225	E8	2
CBL091ZD-2	30 Ft = 9.1 Meters	274	E8	3
CBL152ZD-2	50 Ft = 15.2 Meters	370	E8	6
CBL229ZD-2	75 Ft = 22.9 Meters	490	E8	8
CBL305ZD-2	100 Ft = 30.5 Meters	610	E8	12
CBL379ZD-2	125 Ft = 37.9 Meters	732	E8	14
CBL455ZD-2	150 Ft = 45.5 Meters	794	E8	15
CBL606ZD-2	200 Ft = 60.6 Meters	1092	E8	16

Encoder Feedback Kits for IDM, IDNM and IDWNM Motors

ENC00NV-B1

ENC02BC-B2

Encoder kits below 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 stlye (Latch). HS35, RAHS35M 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	Input Voltage	NEMA Frame	List Price	Ap'x. Mult. Sym.	Shpg. Wgt.
ENC00NV-A2	TENV	HS35M Avtron	Magnetic	5-24 VDC	213T-215T	1120	E8	2
ENC00NV-B1	TENV	HS25 BEI	Optical	5-15 VDC	56-215T	1120	E8	2
ENC00NV-D1	TENV	HS35 Dynapar	Optical	5-24 VDC	56-215T	1260	E8	3
ENC01BC-B1	TEBC	HS25 BEI	Optical	5-15 VDC	143T-215T	1120	E8	2
ENC01BC-D1	TEBC	HS35 Dynapar	Optical	5-24 VDC	56-215T	1260	E8	3
ENC01NV-A2	TENV	HS35M Avtron	Magnetic	5-24 VDC	254T-256T	1120	E8	2
ENC01NV-B2	TENV	HS35 BEI	Optical	5-15 VDC	254T-284T	1120	E8	3
ENC01NV-D1	TENV	HS35 Dynapar	Optical	5-24 VDC	254T-256T	1260	E8	3
ENC02BC-A2	TEBC	HS35M Avtron	Magnetic	5-24 VDC	254T-447T	1120	E8	2
ENC02BC-B2	TEBC	HS35 BEI	Optical	5-15 VDC	254T-447T	1120	E8	3
ENC02BC-D1	TEBC	HS35 Dynapar	Optical	5-24 VDC	254T-447T	1260	E8	3

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

Constant Velocity Blower Cooling Conversion Kits

NEMA 143TC thru 447TC

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**	631	E8	7
		182TC-184TC	**BLWL06-L**	712	E8	8
		213TC-215TC	**BLWL07-L**	747	E8	13
		254TC-256TC	**BLWL09-L**	767	E8	5
		284TC-286TC	**BLWL10-L**	829	E8	35
		324TC-326TC	**BLWL12-L**	880	E8	46
		364TC-365TC	**BLWL14-L**	936	E8	55
230/380/460	3	213TC-215TC	**BLWM07-F**	747	E8	20
		254TC-256TC	**BLWM09-F**	775	E8	27
		284TC-286TC	**BLWM10-F**	829	E8	35
		324TC-326TC	**BLWM12-F**	880	E8	46
		364TC-365TC	**BLWM14-F**	946	E8	55
		404TC-405TC	**BLWM16-F**	1323	E8	70
		444TC-447TC	**BLWM18-F**	1854	E8	157

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.

Replacement Blower Kits for DPG-FV RPM AC Motors on pages 194-195

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

DPFV Frame	Catalog Number	List Price	Mult. Sym.
FL & RL210	**417077-144**	951	A8
FL & RL250	**417077-145**	1072	A8
L280	**419947-31**	1357	A8
L320	**419947-33**	1509	A8
L360	**419947-35**	1725	A8
L400	**417077-75**	2283	A8
L440	Contact Baldor Electric for Ordering Number		

Kit includes terminal box and blower motor only.

TEBC Frame	Catalog Number	List Price	Mult. Sym.
FL180 (3)	**417077-143**	697	A8
FL/RL210-320(3)	**417077-141**	697	A8

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

Filter Kits - For Use With DPG-FV RPM AC Motors on pages 194-195

Frame	Catalog Number	List Price	Mult. Sym.	Description	Ap'x. Shpg. Wgt. (Lb.)
FL180	**417077-57**	476	A8	Washable Wire Mesh Canister Type	5
RL210	**417077-59**	476	A8	Washable Wire Mesh Canister Type	5
RL250	**417077-59**	476	A8	Washable Wire Mesh Canister Type	5
L280	**417077-59**	476	A8	Washable Wire Mesh Canister Type	5
L320	**417077-59**	476	A8	Washable Wire Mesh Canister Type	5
L360	**417077-65**	609	A8	Washable Wire Mesh Canister Type	5
L400	**417077-102**	831	A8	Washable Wire Mesh Canister Type	5
L440	**417077-124**	831	A8	Square Replaceable Polyester Type	5

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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 10 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 PID 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 10 Hp in both 230V and 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	0-10 VDC: One Analog Usable for Meter (Freq., Current, Voltage, or Digital Output/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	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
	Communications	Built-in MODBUS-RTU (RS-485) Communications
	PID 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

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% and PID capability. 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 Funciton 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 ajustable 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	Ground Fault Protection	Ground Fault protection active during run
Under Voltage	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

VS1MD
AC Micro Drive

1/4 thru 5 Hp **230 VAC** **1 Phase - 50/60 Hz**
1/2 thru 10 Hp **230 VAC** **3 Phase - 50/60 Hz**
1/2 thru 15 Hp **460 VAC** **3 Phase - 50/60 Hz**

Applications: Variable torque, constant torque or constant horsepower applications. New installations, replacments and orginal equipment manufatures (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 15 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	15 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	1-15 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
	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

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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**
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, Input Disconnect models and EMC Filter models. Integral keypad, operator interface and local speed control. Basic set of less than forty programming parameters. Power ratings up to 10 Hp in 460V versions.

Performance Features	Control Modes	V/Hz or Sensorless Vector
	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: One	0-10VDC or 4 to 20mA
	Digital Outputs: Two Total	One Built-in Form C Relay, One Optional Form C Relay
	Meter Outputs	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
	Sensorless Vector	Full Sensorless Vector Control with Autotune Function and motor model
	Frequency Control Range	0 - 500Hz
	Accel/Decel	Independently adjustable accel. & decel. ramps
	Time Range	0.1 to 3000 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
	PID Control	Future Release
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	IP20: -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

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**

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

Features: Nema 1 as standard up to 15Hp. IP00 with NEMA 1 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
	Voltage Range	170-253	323-528
	Phase	3 Phase (single phase with derate)	
	Frequency	50/60 Hz +5%	
Output Ratings	Horsepower	7.5-40 Hp @ 230VAC, 3PH; 7.5-700 Hp @ 460VAC, 3 PH;	
	Overload Capacity	Heavy Duty (Constant Torque) = 150% for 60 seconds, 200% for 3 seconds	
		Normal Duty (Variable Torque) = 110% for 60 seconds and 150% overload for 3 seconds.	
	Frequency	0-400 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-numericic 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	5 meter 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	0-400 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	

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VS1SP Inverter/Encoderless Vector Drive

1 thru 3 Hp **115/230 VAC** **1 Phase - 50/60 Hz**
1 thru 75 Hp **230 VAC** **3 Phase - 50/60 Hz**
1 thru 300 Hp **460 VAC** **3 Phase - 50/60 Hz**
1 thru 300 Hp **575 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/decl rates and controlled reversing. Built-in two and three input PID process control loop.

Input Ratings	Voltage	115	230	230	460	575
	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; 1-75 Hp @ 230VAC, 3PH; 1-300 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.				
	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				
	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	25 Conditions				
Digital Outputs (2 Relay Outputs)	Rated Voltage	5 to 30VDC or 240VAC				
	Maximum Current	5A Maximum non-inductive				
	Output Conditions	25 Conditions				

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VS1GV Vector Drive

1 thru 3 Hp **115/230 VAC** **1 Phase - 50/60 Hz**
1 thru 75 Hp **230 VAC** **3 Phase - 50/60 Hz**
1 thru 300 Hp **460 VAC** **3 Phase - 50/60 Hz**
1 thru 300 Hp **575 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	575
	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; 1-75 Hp @ 230VAC, 3PH; 1-300 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.				
	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				
	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	25 Conditions				
Digital Outputs (2 Relay Outputs)	Rated Voltage	5 to 30VDC or 240VAC				
	Maximum Current	5A Maximum non-inductive				
	Output Conditions	25 Conditions				

SP500 General Purpose AC Drive

1 Hp	**115 VAC**	**1 Phase - 50/60 Hz**
1 thru 5 Hp	**208-230 VAC**	**3 Phase - 50/60 Hz**
1 thru 20 Hp	**380-460 VAC**	**3 Phase - 50/60 Hz**
1 thru 10 Hp	**575 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 150% for one minute. Flexible mounting options NEMA 1 or NEMA 4X/12. Integral keypad, operator interface and local speed control. Basic set of less than 30 programming parameters. Power ratings from 1 Hp to 5 Hp 230Vac, 20 Hp 460 Vac and 10 Hp 575 Vac.

Performance Features	Control Modes	V/Hz Control
	Operator Interface Module	Integral Drive Mounted
	Display Lines	4-Character LED display
	Programmable Preset Speeds	Three
	Analog Output	One (0-10 VDC)
	Auto Restart	Yes - Up to 10 attempts
	Frequency Avoidance	One Band
	Fault History	Last Three Faults
	Digital Inputs	Dedicated control terminals for start/stop, forward/reverse and fault/reset
Drive Specifications	Analog Input	One: 0-10VDC or 4-20 mA
	Digital Output	One Form C Relay
	Maximum Load	20 Hp @ 460 VAC
	Overload Capacity	Drive Output 150% for One Minute
	Input Voltage Ranges	115VAC, 208-230VAC, 380-460VAC and 575VAC
	Input Voltage Tolerance	10% / -10%
	Rated Input Frequency	50-60 Hz (±5%)
	Carrier Frequency	4, 6 or 8 kHZ
	Operating Temperature	-10° to 40°C
	Volts/Hz	Linear or Custom V/Hz
	Frequency Control Range	0 to 240 Hz
	Accel/Decel Range	0.5 to 90 Seconds
	Keypad Speed Control	Yes
Protective Features	Function Loss	Function loss input open
	High Bus Voltage	DC bus voltage above trip level
	Low Bus Voltage	DC bus voltage below trip level
	Over Current, short circuit or ground fault	Drive output exceeds 200% rating
	Thermostat/Drive Overload	Excess drive temperature
	Electronic Thermal Overload	Exceed Drive rating of 150% for One Minute
Agency Certifications		UL, cUL, CE
Service Conditions	Altitude	1,000 m (3,300 ft.) Maximum
	Ambient Temperature	0°C (32°F) to 40°C (104°F)
	Storage Temperature	-40°C +65°C (-40° to +149°F)
	Relative Humidity	5% to 95%, non-condensing
	Intermittent Overload	150% overload capacity for up to 1 minute; 200% instantaneous overload

H2 Inverter/ Encoderless Vector

3/4 thru 3 Hp **115/230 VAC** **1 Phase - 50/60 Hz**
1 thru 75 Hp **230 VAC** **3 Phase - 50/60 Hz**
1 thru 150 Hp **460 VAC** **3 Phase - 50/60 Hz**
1 thru 150 Hp **575 VAC** **3 Phase - 60 Hz**

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

Features: NEMA 1 enclosure as standard. 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**	**575**
	Voltage (VAC)	95-130	180-264	180-264	340-528	515-660
	Phase	Single Phase		Three phase (or single phase with derate)		
	Frequency	50 or 60 Hz ±5%				
	Impedance	1% minimum from mains connection				
Output Ratings	Horsepower	1-3 HP @ 115/230VAC, 1PH; 1-75 HP @ 230VAC, 3PH; 1-125 HP @ 460VAC, 3PH; 1-125 HP @ 575VAC, 3PH				
	Overload Capacity	Heavy Duty (Constant Torque) = 150% for 60 sec, 175% for 3 sec; Normal Duty (Variable Torque) = 115% for 60 sec				
	Frequency	0-500 Hz standard				
	Voltage	0-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 indicator for trip conditions, 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 degree C above 45°C to maximum ambient temperature of 55°C				
	Cooling	Forced air				
	Enclosure	NEMA 1; NEMA 4X				
	Altitude	Sea level 3300 feet (1000m), derate 2% per 1000 ft (303m) above 3300 ft				
	Humidity	NEMA 1 – 90% maximum RH non-condensing; NEMA 4X – 100% condensing				
	Shock/ Vibration	1G/ 0.5G at 10 Hz to 60 Hz				
	Storage Temperature	-10 to +65°C				
Keypad Display	Display	Backlit LCD 128 x 64 graphical display				
	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 Spec	Control Method	Microprocessor controlled PWM output; selectable encoderless vector or V/Hz inverter				
	PWM Frequency	Adjustable 1-5 kHz standard, 5-16 kHz quiet				
	Frequency Setting	±5 VDC, 0-5 VDC ± 10 VDC, 0-10 VDC, 4-20 mA, 0-20 mA, digital (keypad), Serial Comms/USB 2.0 and ModBus RTU standard				
	Accel/Decel	Separate accel/decel rates, 0-3600 sec to maximum frequency, linear, S-curve				
	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				
	Skip Frequency	Three zones 0-Max frequency				
	PC Setup Software	MINT® WorkBench Software available via connection to USB 2.0 port for commissioning wizard, firmware download, parameter viewer, scope capture, and cloning				
	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)				
Digital Outputs	Rated Voltage	5 to 30VDC (2 Opto Outputs); 5 to 30VDC or 240VAC (2 Relay Outputs)				
	Maximum Current	60 mA Maximum (2 Opto Outputs); 5A Maximum non-inductive (2 Relay Outputs)				
	Output Conditions	25 Conditions				

OPTIONS: See page 256 for optional Expansion Boards including Ethernet, Isolated Input etc. See page 255 for optional Dynamic Braking Assemblies.

H2 Vector Drive

1 thru 3 Hp **115/230 VAC** **1 Phase - 50/60 Hz**
3/4 thru 75 Hp **230 VAC** **3 Phase - 50/60 Hz**
3/4 thru 150 Hp **460 VAC** **3 Phase - 50/60 Hz**
3/4 thru 150 Hp **575 VAC** **3 Phase - 60 Hz**

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

Features: NEMA 1 enclosure as standard. Output frequency 0 to 500 Hz with peak overload capacity of 175%. Automatic tuning to motor and full rated torque down to zero speed.

Input Ratings	**Voltage**	**115**	**230**	**230**	**460**	**575**
	Voltage (VAC)	95-130	180-264	180-264	340-528	515-660
	Phase	Single Phase		Three phase (or single phase with derate)		
	Frequency	50 or 60 Hz ±5%				
	Impedance	1% minimum from mains connection				
Output Ratings	Horsepower	1-3 HP @ 115/230VAC, 1PH; 1-75 HP @ 230VAC, 3PH; 1-125 HP @ 460VAC, 3PH; 1-125 HP @ 575VAC, 3PH				
	Overload Capacity	Heavy Duty (Constant Torque) = 150% for 60 sec, 175% for 3 sec; Normal Duty (Variable Torque) = 115% for 60 sec				
	Frequency	0-500 Hz standard				
	Voltage	0-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 indicator for trip conditions, 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 degree C above 45°C to maximum ambient temperature of 55°C				
	Cooling	Forced air				
	Enclosure	NEMA 1; NEMA 4X				
	Altitude	Sea level 3300 feet (1000m), derate 2% per 1000 ft (303m) above 3300 ft				
	Humidity	NEMA 1 – 90% maximum RH non-condensing; NEMA 4X – 100% condensing				
	Shock/ Vibration	1G/ 0.5G at 10 Hz to 60 Hz				
	Storage Temperature	-10 to +65°C				
Keypad Display	Display	LCD graphical 128 x 64 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 Spec	Control Method	Microprocessor controlled PWM output; selectable closed loop vector, encoderless vector or V/Hz inverter				
	PWM Frequency	Adjustable 1-5 kHz standard, 5-16 kHz quiet				
	Frequency Setting	±5 VDC, 0-5 VDC ± 10 VDC, 0-10 VDC, 4-20 mA, 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				
	Motor Matching	Automatic tuning to motor with manual override				
	PC Setup Software	MINT® WorkBench Software available via connection to 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 + sign				
Digital Inputs	Opto-isolated Inputs	8 Assignable, 1 dedicated input (Drive Enable)				
	Rated Voltage	10 - 30 VDC (closed contacts std)				
Digital Outputs	Rated Voltage	5 to 30VDC (2 Opto Outputs); 5 to 30VDC or 240VAC (2 Relay Outputs)				
	Maximum Current	60 mA Maximum (2 Opto Outputs); 5A Maximum non-inductive (2 Relay Outputs)				
	Output Conditions	25 Conditions				

Series 15H Inverter

3/4 thru 50 Hp **230 VAC** **3 Phase - 50/60 Hz**
3/4 thru 450 Hp **460 VAC** **3 Phase - 50/60 Hz**
3/4 thru 150 Hp **575 VAC** **3 Phase - 60 Hz**

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

Features: NEMA 1 enclosure as standard. Output frequency 0.25 to 400 Hz with peak overload capacity of 170-200%. Separate accel/decel rates and controlled reversing. Built in two and three input PID process control loop.

Design Specifications
- Process follower 0-5 VDC, 0-10 VDC, 4-20 mA
- Free run or ramp stop
- Selectable preset speeds
- Jog speed
- Dynamic braking (optional on size C2 and larger)
- DC injection braking
- 2 analog meter outputs
- 2 opto isolated outputs
- 2 relay outputs
- Through wall & panel mount size C2, E and F.

Operator Keypad
- Forward/Reverse command
- Motor RUN and JOG
- Local/Remote key
- Stop command
- Parameter setting and display
- 32 character display
- Remote mount to 100 feet (60m) from control
- NEMA 4X enclosure

when mounted on panel

Environmental and Operating Conditions
- Input voltage
  3 phase 200-240 VAC ±10%
  3 phase 378-480 VAC ±10%
  3 phase 573-600 VAC ±10%
- Input frequency - 50 or 60Hz ±5%
- Service factor - 1.0
- Duty - continuous
- Humidity - 90% max RH non-condensing
- Altitude - 3300 feet (1000m) max without derate

Protective Features
- Selectable automatic restart at momentary power loss
- DC bus charge indicator
- Fault indicator
- Adjustable time based overload
- Cause of last 31 trips retained in memory
- Digital display for fault conditions
- Linear heat sink thermal sensor
- Isolated control circuitry

Output Ratings	Overload Capacity	150% for 60 seconds; 170-200% for 3 seconds for constant torque
		115% for 60 seconds for variable torque
	Frequency	0.25-400 Hz
	Voltage	0-Maximum input voltage (RMS)
Input Ratings	Frequency	50 or 60 Hz ± 5%
	Voltage	180 - 264 VAC; 340 - 528 VAC, 515 - 660 VAC
	Phase	Three phase (or single phase with derate)
	Impedance	1% minimum for size C2, F, G and G2 (3% minimum required for size A, B, D and E)
Control Spec	Control Method	Sinewave carrier input, PWM output
	PWM Frequency	Adjustable 1-5 kHz standard, 1-15 kHz quiet
	V/Hz Ratio	Linear to squared reduced, base frequency, output voltage, minimum frequency limit, maximum frequency limit
	Torque Boost	0-15% of input voltage; automatic with manual override
	Brake Torque	20% standard on -E and -W; and -EO requires external assembly
	Skip Frequency	Three zones 0-Max frequency
	Frequency Setting	0-5 VDC, 0-10 VDC, 4-20mA, digital via optional RS232/485
	Accel/Decel	Separate accel/decel rates, 0-3600 sec to maximum frequency
Protective Functions	Inverter Trip	Over voltage, over current, under voltage, external trip, heatsink thermal, motor overload
	Stall Prevention	Over voltage suppression, overcurrent suppression
	External Output	OPTO isolated outputs, relay outputs, and LED indicator for trip
	Short Circuit	Phase to phase, phase to ground
LCD Display	Running	Output frequency, set frequency, output current(%), voltage, RPM, custom units
	Setting	Parameter values for setup and review
	Trip	Separate message for each trip, cause of last 31 trips retained in memory
Ambient Conditions	Temperature	-10 to + 40°C For UL Listing
	Cooling	Forced air included when required

OPTIONS: See page 275-276 for optional Expansion Boards including RS-232, RS-485 isolated input etc.
See page 273-274 for optional Dynamic Braking Assemblies.

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Series 15H Washdown Inverter

3/4 thru 15 Hp 230 VAC 3 Phase - 50/60 Hz
3/4 thru 15 Hp 460 VAC 3 Phase - 50/60 Hz

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

Features: NEMA 4X enclosure as standard. Output frequency 0.25 to 400 Hz with peak overload capacity of 200%. Separate accel/decel rates and controlled reversing. Built in two and three input PID process control loop.

Design Specifications
- Process follower 0-5VDC, 0-10VDC,4-20mA
- Free run or ramp stop
- Selectable preset speeds
- Jog speed
- Dynamic braking
- DC injection braking
- 2 analog meter outputs
- 2 opto isolated output
- 2 relay outputs

Operator Keypad
- Forward/Reverse command
- Motor RUN and JOG
- Local/Remote key
- Stop command
- Parameter setting and display
- 32 character display
- Remote mount to 100 feet (60M) from control
- NEMA 4X enclosure when mounted on panel

Environmental and Operating Conditions
- Input voltage
  3 phase 200-240 VAC±10%
  3 phase 378-480 VAC ±10%
- Input frequency
  50 or 60Hz ±5%
- Service factor - 1.0
- Duty - continuous
- Humidity - 100% max RH
- Altitude - 3300 feet (1000m) max without derate

Protective Features
- Selectable automatic restart at momentary power loss
- DC bus charge indicator
- Fault indicator
- Adjustable time based overload
- Cause of last 31 trips retained in memory
- Digital display for fault conditions
- Isolated control circuitry

Output Ratings	Overload Capacity	150% for 60 seconds; 170-200% for 3 seconds for constant torque
		115% for 60 seconds for variable torque
	Frequency	0.25-120 Hz optional 0.25-400 Hz
	Voltage	0-Maximum input voltage (RMS)
Input Ratings	Frequency	50 or 60 Hz ± 5%
	Voltage	180 - 264 VAC; 340 - 528 VAC
	Phase	Three phase (or single phase with derate)
	Impedance	3% minimum required for size A, B
Control Spec	Control Method	Sinewave carrier input, PWM output
	PWM Frequency	Adjustable 1-5 kHz standard, 1-15 kHz quiet
	V/Hz Ratio	Linear to squared reduced, base frequency, output voltage, minimum frequency limit, maximum frequency limit
	Torque Boost	0-15% of input voltage; automatic with manual override
	Brake Torque	20% standard on -E and -W
	Skip Frequency	Three zones 0-Max frequency
	Frequency Setting	0-5 VDC, 0-10 VDC, 4-20mA, digital via optional RS232/485
	Accel/Decel	Separate accel/decel rates, 0-3600 sec to maximum frequency
Protective Functions	Inverter Trip	Over voltage, over current, under voltage, external trip, heatsink thermal, motor overload
	Stall Prevention	Over voltage suppression, overcurrent suppression
	External Output	OPTO isolated outputs, relay outputs and LED indicator for trip
	Short Circuit	Phase to phase, phase to ground
LCD Display	Running	Output frequency, set frequency, output current(%), voltage, RPM, custom units
	Setting	Parameter values for setup and review
	Trip	Separate message for each trip, cause of last 31 trips retained in memory
Ambient Conditions	Temperature	0 to 40°C for UL listing
	Cooling	Forced air included when required

OPTIONS: See pages 275-276 for optional Expansion Boards including RS-232, RS-485 etc.

BALDOR • RELIANCE

Series 18H Vector Drive

3/4 thru 50 Hp **230 VAC** **3 Phase - 50/60 Hz**
3/4 thru 450 Hp **460 VAC** **3 Phase - 50/60 Hz**
3/4 thru 150 Hp **575 VAC** **3 Phase - 60 Hz**

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

Features: NEMA 1 enclosure as standard. Output frequency 0-500Hz with peak overload capability of 170-200%. Automatic tuning to motor and full rated torque down to zero speed. Digital speed or torque control. Built in two and three input PID process control loop.

Design Specifications
- Motor shaft orient to marker
- Process follow ±5VDC 0-5 VDC, ±10VDC 0-10 VDC ,4-20mA, digital via keypad or optional RS232/485
- Linear or S-curve deceleration
- 15 preset speeds
- 2 assignable analog outputs
- 2 assignable opto outputs
- 2 assignable relay outputs
- 2 assignable analog inputs
- Through wall and panel mount size C2, E and F

Operator Keypad
- Forward/Reverse command
- Motor RUN and JOG
- Local/Remote key
- Stop command
- 32 character display
- Remote mount to 100 feet (60m) from control
- NEMA 4X enclosure when mounted on panel

Environmental and Operating Conditions
- Input voltage
  3 phase 200-240 VAC ±10%
  3 phase 378-480 VAC ±10%
  3 phase 573-600 VAC ±10%
- Input frequency
  50 or 60Hz ±5%
- Service factor - 1.0
- Duty - continuous
- Humidity - 90% max RH non-condensing
- Altitude - 3300 feet (1000m) max without derate

Protective Features
- Adjustable current limit
- Isolated control circuitry
- Digital display for fault conditions
- Selectable automatic restart at momentary power loss
- DC bus charge indicator
- Cause of last 31 trips retained in memory

Output Ratings	Overload Capacity	150% for 60 seconds, 170-200% for 3 seconds for constant torque
		115% for 60 seconds for variable torque
	Frequency	0-500 Hz
	Voltage	0-maximum input voltage (RMS)
Input Ratings	Frequency	50 or 60 Hz ±5%
	Voltage	180 - 264 VAC; 340 - 528 VAC; 515 - 660 VAC
	Phase	Three phase (or single phase with derate)
	Impedance	1% minimum for size C2, F, G, and G2 (3% minimum required for Size A, B, D and E)
Control Spec	Control Method	Microprocessor controlled PWM output
	PWM Frequency	Adjustable 1-5kHz STD, 1-16 kHz quiet
	Speed Setting	±5 VDC, 0-5 VDC ±10 VDC, 0-10 VDC, 4-20 mA; digital via keypad, RS232/485
	Accel/Decel	0-3600 sec.
	Motor Matching	Automatic tuning to motor with manual override
Motor Feedback	Feedback Type	Incremental encoder coupled to motor shaft
	Pulses/Rev	60 -15,000 selectable, 1024 standard
	Voltage Output	2 channel in quadrature, 5 VDC, differential
	Marker Pulse	Required for position orientation
	Power Input	5 VDC, 300 mA maximum
	Max. Frequency	1 MHz
	Positioning	Buffered encoder pulse train output for position loop controller
Protective Functions	Vector Trip	Missing control power, over current, over voltage, under voltage, motor over speed
		Over temperature (motor or control), output shorted or grounded, motor overload
	External Output	LED indicator for trip conditions, 4 assignable logic outputs, 2 assignable analog outputs 0-5 VDC
	Short Circuit	Phase to phase, phase to ground
LCD Display	Running	Output frequency, motor RPM; output current, voltage (selectable)
	Setting	Parameter values for setup and review
	Trip	Separate message for each trip, last 31 trips retained in memory
Ambient Conditions	Temperature	-10 to 40°C for UL listing
	Cooling	Forced air included when required

OPTIONS: See pages 275-276 for optional Expansion Boards including RS-232, RS-485. See page 264 for enclosure Dimensions
See pages 273-274 for optional Dynamic Braking Assemblies.

Series 18H Washdown Vector

3/4 thru 15 Hp **230 VAC** **3 Phase - 50/60 Hz**
3/4 thru 15 Hp **460 VAC** **3 Phase - 50/60 Hz**

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

Features: NEMA 4X enclosure as standard. Output frequency 0-500Hz with peak overload capability of 200%. Automatic tuning to motor and full rated torque down to zero speed. Digital speed or torque control. Built in two and three input PID process control loop.

Design Specifications
- Process follower ±5VDC 0-5 VDC, ±10VDC 0-10 VDC, 4-20mA, digital via keypad or optional RS232/485
- Linear or S-curve deceleration
- 15 preset speeds
- 2 assignable analog outputs
- 2 assignable opto outputs
- 2 assignable relay outputs

Operator Keypad
- Forward/Reverse command
- Motor RUN and JOG
- Local/Remote key
- Stop command
- 32 character display
- Remote mount to 100 feet (60m) from control
- NEMA 4X enclosure when mounted on panel

Environmental and Operating Conditions
- Input voltage
  Three phase 200-240 VAC ±10%
  Three phase 378-480 VAC ±10%
- Input frequency
  50 or 60Hz ±5%
- Service factor - 1.0
- Duty - continuous
- Humidity - 100% max RH
- Altitude - 3300 feet (1000m) max without derate

Protective Features
- Adjustable current limit
- Isolated control circuitry
- Digital display for fault conditions
- Selectable automatic restart at momentary power loss
- DC bus charge indicator
- Cause of last 31 trip retained in memory

Output Ratings	Overload Capacity	150% for 60 seconds, 170-200% for 3 seconds for constant torque
		115% for 60 seconds for variable torque
	Frequency	0-500 Hz
	Voltage	0-maximum input voltage (RMS)
Input Ratings	Frequency	50 or 60 Hz ±5%
	Voltage	180 - 264 VAC; 340 - 528 VAC
	Phase	Three phase (or single phase with derate)
	Impedance	3% minimum required for Size A, B
Control Spec	Control Method	Microprocessor controlled PWM output
	PWM Frequency	Adjustable 1-5kHz STD, 1-16 kHz quiet
	Speed Setting	±5 VDC, 0-5 VDC ±10 VDC, 0-10 VDC, 4-20 mA; digital via keypad, RS232/485
	Accel/Decel	0-3600 sec.
	Motor Matching	Automatic tuning to motor with manual override
Motor Feedback	Feedback Type	Incremental encoder coupled to motor shaft
	Pulses/Rev	60-15,000 selectable, 1024 standard
	Voltage Output	2 channel in quadrature, 5 VDC, differential
	Marker Pulse	Required for position orientation
	Power Input	5 VDC, 300 mA maximum
	Max. Frequency	1 MHz
	Positioning	Optional buffered encoder pulse train output for position loop controller
Protective Functions	Vector Trip	Missing control power, over current, over voltage, under voltage, motor over speed
		Over temperature (motor or control), output shorted or grounded, motor overload
	External Output	LED indicator for trip conditions, 4 assignable logic outputs 2 assignable analog outputs 0-5 VDC
	Short Circuit	Phase to phase, phase to ground
LCD Display	Running	Output frequency, motor RPM; output current, voltage (selectable)
	Setting	Parameter values for setup and review
	Trip	Separate message for each trip, last 31 trips retained in memory
Ambient Conditions	Temperature	-10 to 40˚C for UL listing
	Cooling	Forced air included when required

OPTIONS: See pages 275-276 for optional Expansion Boards including RS-232, RS-485. See page 266 for enclosure Dimensions
See pages 273-274 for optional Dynamic Braking Assemblies.

GV3000 Vector Drive

1 thru 100 Hp **230 VAC** **3 Phase - 50/60 Hz**
1 thru 400 Hp **460 VAC** **3 Phase - 50/60 Hz**

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

Features: NEMA 1, NEMA 4, NEMA 12, IP20, and IP00 enclosures. Output frequency 0 to 200 Hz with peak overload capacity of 150%. Digital speed or torque control. Built-in PID process control loop. Automatic tuning to motor and full rated torque down to zero speed.

Input Ratings	Voltage	230	460
	Voltage Range	180-264	340-528
	Phase	3 Phase	
	Frequency	50/60 Hz +5%	
	Impedance	Line reactor needed for supplies with greater than 30,000 amp symmetrical fault capacity	
Output Ratings	Horsepower	1-100 Hp @ 230VAC, 3PH; 1-400 Hp @ 460VAC, 3 PH;	
	Overload Capacity	Heavy Duty (Constant Torque) = 150% for 60 seconds, 200% for 3 seconds	
		Normal Duty (Variable Torque) = 110% for 60 seconds and 150% overload for 3 seconds.	
	Frequency	0-200 Hz	
	Voltage	0 to maximum input voltage (RMS)	
Protective Features	Trip	Microprocessor checksum, over current, over voltage, under voltage, over temperature (motor or control), output shorted or grounded, motor overload, encoder loss.	
	External Output	LED trip condition indicators codes, fault relay output	
	Short Circuit	Phase to phase, phase to ground	
	Electronic Motor Overload	Meets UL508C (I^2T)	
Environmental Conditions	Temperature	0° to 40°C, NEMA 1;0° to 50°C, Power Module IP00	
	Cooling	Forced air	
	Enclosure	NEMA 1, NEMA 4X, NEMA 12, IP20 and IP00	
	Altitude	Sea level to 3300 Feet (1000 Meters)	
	Humidity	NEMA1: 5% to 95% RH Non-Condensing; NEMA 4X To 100% RH Condensing	
	Storage Temperature	-40 to +65°C	
Keypad Display	Display	4 digit bright 7-segment LED readout; 14 discrete LED indicators	
	Keys	9 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, Auto/Manual toggle	
	LED Indicators	Forward run command, Reverse run command, Jog active, Auto/Manual Indication, Monitor display indication	
	Remote Mount	Optional remote mountable LCD keypad, fullt text display, multi-language support, quick start menu, NEMA 12 rating, 5 meter distance capable with included cable	
	Trip	Last 10 trips retained in memory with elapsed time stamp	
Control Specifications	Control Method	Microprocessor controlled PWM output, selectable encoderless vector, sensorless vector or V/Hz inverter	
	PWM Frequency	Selectable 2KHz, 4KHz (Standard), or 8KHz	
	Frequency Setting	±10 VDC, 0-10 VDC, 4-20 mA or 0-20 mA; digital (keypad); Serial Communications (via option); RS-232 via CS3000 Software	
	Accel/Decel	0-999.9 seconds	
	Motor Matching	Automatic tuning to motor with manual override	
	PC Setup Software	CS3000 Software available using the RS-232 port for commissioning, parameter viewer, scope capture and cloning	
	Maximum Output Frequency	200 Hz	
Motor Feedback	Feedback Type	Incremental encoder coupled to motor shaft	
	Pulses/Rev	512 PPR, 1024 PPR (Standard), 2048 PPR, 4096 PPR, SE (No encoder - sensorless vector operation)	
	Input Type	2 channel in quadrature, 15 VDC, differential	
	Power Supply for Encoder	15 VDC, 250 mA maximum	
	Max. Frequency	125 KHz	
Analog Inputs	One Differential	±10VDC, 0-10VDC, 4-20 mA or 0-20 mA, 10-bit + sign	
	Input Impedance	50 kOhms (Volt mode); 250 Ohms (Current mode)	
Analog Outputs	Analog Outputs	1 Assignable	
	Full Scale Range	0-10V or 4-20mA	
	Source Current	1 mA maximum (volt mode), 20mA (using external supply or +15V encoder supply)	
	Resolution	9 bits	
Digital Inputs	Quantity	3 Assignable, 5 dedicated inputs (Function Loss, Run/Jog, Reset, Stop, Start)	
	Rated Voltage	24VDC Nominal Utilizing Internal 24VDC Isolated Power Supply	
	Update Rate	75mSec ~ 126mSec (depending on input and whether V/Hz or Vector mode)	
Relay Outputs	Rated Voltage	250VAC/30VDC maximum	
	Maximum Current	5A maximum resistive / 2 amps maximum inductive	
	Output Conditions	7 Programmable Conditions	

SmartMotor® Adjustable Speed Integrated Motor/Drive 230 and 460 Volts

1 thru 10 Hp **NEMA 56C thru 215TC**

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

Features: TEFC matched motor and control. NEMA 1 enclosure on CSM and JMSM designs. NEMA 4X enclosure on CWDSM designs. Output speeds to 2X base speed and overload capacity of 150%. NEMA standard motor frames with premium efficiency motor designs.

Design Specifications
- Dual microprocessor controlled PWM output
- Free run or ramp stop
- Controlled reversing
- Selectable preset speeds
- Dynamic braking option
- DC injection braking
- Analog meter output
- One digital output
- One analog Input
- Process control (PID)
- Profile Run

Operator Keypad–Optional Remote Mount Keypad
- Digital speed control
- Forward/Reverse command
- Stop command
- Jog command
- Parameter setting and display
- Display 2 lines by 16 character
- Membrane keys with tactile feel

Environmental and Operating Conditions
- Input voltage
  3 phase 200-240 VAC±10%,
  3 phase 380-480 VAC ±10%,
- Input frequency -
  50 or 60 Hz ±10%
- Service factor - 1.0
- Duty - continuous
- Humidity - 90% max non-condensing
- Altitude - 3300 feet max without derate

Protective Features
- Selectable automatic restart at momentary power loss
- DC bus and fault indicator
- Adjustable time based overload
- Cause of last 31 trips retained in memory
- Digital display for fault conditions
- Isolated control circuitry

Output Ratings	Overload Capacity	150% for 60 seconds
	Speed Range	180 to 3600 RPM maximum; 180-3450 RPM variable or constant torque for 3450 RPM base speed
		180 to 1800 RPM variable torque, 180-1800 RPM constant torque max,
		1800 to 3600 RPM constant hp for 1750 RPM base
	Horsepower	Base speed ratings at 230 VAC or 460 VAC
Input Ratings	Frequency	50 or 60 Hz ± 5%
	Voltage	200-240 VAC ±10%; 380-480 VAC ± 10%
	Phase	Three phase or single phase with derate. No single phase derate required for 1 and 2 horsepower
	Impedance	1% minimum required
Control Spec	Control Method	Sinusoidal PWM
	PWM Frequency	Adjustable 2.2 to 18 kHz (1-3 Hp); 2.2 to 9 kHz (5-10 Hp)
	V/Hz Ratio	Factory tuned to motor, minimum frequency limit, maximum frequency limit (120Hz)
	Torque Boost	0-15% of input voltage; automatic with manual override
	Brake Torque	20% standard on CSM and CWDSM catalog numbers (optional on JMSM)
	Skip Frequency	Three zones 0-max frequency
	Speed Setting	0-5 VDC, 0-10 VDC, 0-20mA, 4-20mA
	Accel/Decel	Separate accel/decel rates, 0-3600 sec. to maximum frequency
	External Output	1 assignable digital output and LED indicator for trip
Protective Functions	Motor Trip	Over voltage, over current, under voltage, external trip, heatsink thermal, motor overload
	Stall Prevention	Over voltage suppression, overcurrent suppression
LCD Display (optional)	Running	Output frequency, set frequency, output current, voltage, RPM, custom units
	Setting	Parameter values for setup and review
	Trip	Separate message for each trip, cause of last 31 trips retained in memory
Ambient Conditions	Temperature	-10 + 40˚C ambient
	Cooling	Fan cooled

Digital Speed Potentiometer with Display

Baldor's microprocessor-based digital speed potentiometer with LED display of set speed may be used to replace the conventional 3-wire analog speed pot for most AC and DC drives. Desired set speed may be entered into the large 1/2" LED display by pressing the "up" and "down" pushbuttons: one digit at a time or in a fast sweep. Display shows 0.1% increments of full motor speed (0-100%).

Specifications

Temperature	-10°C to +45°C
AC input voltage	85-264 VAC
Input frequency	50/60 Hz
Supply voltage applied across output	5 VDC to 15 VDC
Speed regulation	Same as driven unit
Input impedance to DSP4 will drive	500 ohm to 100 K ohm
Output	Isolated 3-wire pseudo-pot (normal or inverted output)
Display settings	0-100% of set speed range in 0.1% increments (resolution of 1000)
Non-volatile memory	Retains last set point upon loss of AC power (user selectable via dip switch settings)

Catalog Number	Description	List Price	Mult. Sym.	Ap'x. Shpg. Wgt.	Input Voltage
DSP4-6	Digital Speed Potentiometer with Display	484	E9	2	120/240 VAC 50/60 hz

Field Programmable Digital Tachometer for Rate and Time with Display

Baldor offers an economical micro-processor-based digital tachometer capable of measuring motor speeds as low as 1 RPM. Unit is field programmable for desired user specified units: RPM, FPM and GPM. Process time or other engineering units requires an input signal unit with 1 to 30,000 PPR such as the HPU and RK60 devices on page 341.

Specifications

Temperature	-10°C to +45°C
AC input voltage	85-264 VAC
Input frequency	50/60 Hz
Input pulse rate	1 to 30,000 input pulses per minute
Resolution	from 0.01 RPM
Accuracy	±0.04% display update every pulse or 0.5 seconds, whichever is longer
Isolated high/low alarm output	5 amp 240 VAC max.
Transducer signal input	0-5 to 0-24 VDC square wave (hall-effect, photoelectric, magnetic or any TTL NPN open collector device.)

Catalog Number	Description	List Price	Mult. Sym.	Ap'x. Shpg. Wgt.	Input Voltage
DTM8000-6	Digital Tachometer for Rate & Time with Display	529	E9	1	120/240 VAC 50/60 hz