



A Regal Belsit Company

CONFIDENTIAL

Marathon Electric Motors (India) Limited
ROTATING MACHINES
INDUSTRIAL PRODUCTS UNIT

SPEC.NO. : C12R1ED655
PAGE : 1 OF 3
ISSUE : C
DATE : 07.07.2008

BRAND - CHALLENGER - VD Series
Enclosure - TEFC
Protection - IP55
3PH, 415V±10%, 50Hz±5%
INSL. - CL-'F'
Ambient Temp.- 50°C
Temperature Rise - Class 'B' Limit

SQ. CAGE CRANE DUTY MOTOR
INVERTER(VVVF) DRIVE

OUTPUT (KW) CHART

6 POLE

CONTROL-VVVF

- * IGBT Drive
- * Carrier Switching Frequency : 3 - 5 KHzs
- * Total Harmonic Distortion : < 2.5%
- * Voltage Rise Time > 0.1 m sec.
- * Peak Voltage : 1400 V (Max.)
- * Max. Cable Length (Without Filter) - 100m
- * Acceleration Time - 1.5 Secs.

FRAME	60 Starts/ Hour									150 Starts/ Hour							300 Starts/ hour							GD ²	(kg M ²)				
	SIZE	25%	FLA	40%	FLA	60%	FLA	100%	FLA	RPM	25%	FLA	40%	FLA	60%	FLA	100%	FLA	25%	FLA	40%	FLA	60%			FLA	100%	FLA	MOTOR
VD80	0.7	2.3	0.6	2	0.5	1.7	0.5	1.7	900	0.6	2	0.5	1.7	0.5	1.7	0.5	1.7	0.5	1.7	0.5	1.7	0.5	1.7	0.5	1.7	0.5	1.7	0.0069	0.18
VD90S	0.9	2.3	0.8	2	0.7	1.8	0.7	1.8	910	0.8	2	0.7	1.8	0.7	1.8	0.6	1.7	0.7	1.8	0.7	1.8	0.6	1.7	0.6	1.7	0.6	1.7	0.0105	0.24
VD90L	1.4	3.9	1.2	3.4	1.1	3	1	2.7	918	1.1	3	1	2.7	1	2.7	0.9	2.4	1	2.7	1	2.7	0.9	2.4	0.9	2.4	0.9	2.4	0.014	0.36
VD100L	1.9	4.1	1.6	3.5	1.5	3.3	1.4	3	925	1.5	3.3	1.4	3	1.3	2.8	1.3	2.8	1.4	3	1.3	2.8	1.3	2.8	1.3	2.8	1.3	2.8	0.04	0.47
VD112M	2.8	6.3	2.4	5.3	2.2	4.9	2	4.5	930	2.2	4.9	2.1	4.7	2	4.5	1.9	4.4	2.1	4.7	2	4.5	1.9	4.4	1.8	4.3	1.8	4.3	0.05	0.7
VD132S	4.7	10.1	4.1	9.1	3.7	8.4	3.3	7.8	955	3.8	8.6	3.5	8	3.3	7.8	3.1	7.6	3.5	8	3.3	7.8	3.1	7.6	3.1	7.6	3.1	7.6	0.11	1.1
VD132M	6.9	14.2	6	12.5	5.4	11.7	5	11	955	5.6	12.1	5.2	11.3	4.9	10.8	4.6	10.5	5.2	11.3	4.9	10.8	4.6	10.5	4.6	10.5	4.6	10.5	0.15	1.7
VD160M	9.5	20	8.2	17	7.4	15.2	6.8	14.5	964	7.6	15.6	7.1	14.6	6.7	14.3	6.3	13.7	7.1	14.6	6.7	14.3	6.3	13.7	6.3	13.7	6.3	13.7	0.26	2.3
VD160L	13.9	27.5	12.1	24	10.9	22	9.9	20.7	965	11.2	22.4	10.4	21	9.8	20.6	9.3	20	10.4	21	9.8	20.6	9.3	20	9.2	19.8	9.2	19.8	0.3	3.4
#VD180L	17.6	34	15.4	30.5	13.9	28.3	12.6	26	975	14.3	29.1	13.3	26	12.5	25.8	11.8	25.9	13.3	26	12.5	25.8	11.8	25.9	11.7	25.7	11.7	25.7	0.65	4.1
VD200LA	21.4	41.2	18.7	36	16.8	32	15.3	29.9	975	17.3	33	16.1	31.3	15.2	29.7	14.3	27.9	16.1	31.3	15.2	29.7	14.3	27.9	14.2	27.7	14.2	27.7	0.95	4.8
VD200LB	25.2	51.3	22	46.5	19.8	42	18	39.6	985	20.4	43.2	19	40.4	17.9	39	16.9	38.1	19	40.4	17.9	39	16.9	38.1	16.7	37.7	16.7	37.7	1.11	5.7
VD225M	33.4	60	29.1	53	26.2	47.7	23.9	43.6	989	27	49.2	25.1	46	23.7	43.2	22.3	41.8	25.1	46	23.7	43.2	22.3	41.8	22.2	41.6	22.2	41.6	2.82	6.1
VD250M	42.8	80.3	37.3	71	33.7	65.4	30.6	61.6	990	34.6	66.7	32.2	63	30.4	61.1	28.7	57.8	32.2	63	30.4	61.1	28.7	57.8	28.5	57.4	28.5	57.4	3.43	8.1
VD280S	56.7	103	49.4	91	44.6	84	40.5	75	988	45.8	86	42.7	81	40.2	74.4	37.9	72	42.7	81	40.2	74.4	37.9	72	37.7	71.6	37.7	71.6	4.81	10.4
#VD280M	66.8	123	58.2	108.6	52.5	99.2	47.7	92	986	54	101.8	50.3	96	47.4	91.4	44.7	85.4	50.3	96	47.4	91.4	44.7	85.4	44.4	87.2	44.4	87.2	5.89	12
VD315S	81.9	155	71.4	137.8	64.4	127	58.5	118	991	66.2	129	61.6	122	58.1	117	54.8	111	61.6	122	58.1	117	54.8	111	54.4	110	54.4	110	8.39	13.6
VD315M	100.8	178	87.8	157	79.2	144	72	133	990	81.5	147	75.9	140	71.5	132	67.4	126.5	75.9	140	71.5	132	67.4	126.5	67	126.3	67	126.3	9.65	17.4
VD315L	113.4	200	99	178	89.1	164	81	152	991	91.6	167	85.3	158	80.4	151	75.8	144.5	85.3	158	80.4	151	75.8	144.5	75.3	143.5	75.3	143.5	10.6	19.8
VD315L	138.6	239	121	211	109	193.5	99	179	992	112	198	104.3	187	98.3	178	92.7	170	104.3	187	98.3	178	92.7	170	92.1	169	92.1	169	12.8	24.4
VD355S	166	278	145	243	131	219	119	210	993	134	224	125	221	118	208	111	200	125	221	118	208	111	200	110	198	110	198	30	14.6
VD355MA	189	319	165	278	149	251	135	235	991	153	258	142	248	134	233	126	222	142	248	134	233	126	222	126	222	126	222	33.6	17.1
VD355MB	202	347	176	302	158	271	144	254	993	163	281	152	265	143	252	135	241	152	265	143	252	135	241	134	239	134	239	35.7	18.4
VD355LA	227	378	198	330	178	296	162	282	992	183	306	171	295	161	280	152	262	171	295	161	280	152	262	151	260	151	260	40	20.8
VD355LB	252	434	220	379	198	341	180	322	993	204	353	190	335	179	320	169	309	190	335	179	320	169	309	167	305	167	305	44.3	23.3
VD355LC	315	533	275	464	248	419	225	380	993	255	431	237	409	223	377	211	368	237	409	223	377	211	368	209	365	209	365	49.3	35.2

Suitable for 45°C ambient. Apply deration for 50°C as per table given below.

Note : 1.The FLA mentioned above are to be used as a guide for drive rating selection . Actual nameplate FLA may vary.

2. This supersedes C12R1ED655 Issue B (Page 1 of 3) dtd. 14.12.2007

Output Deration Factor : Higher Ambient Temperature			
Ambient Temperature	50°C	55°C	60°
Deration Factor	0.95	0.9	0.85



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BRAND - CHALLENGER - VD Series
 Enclosure - TEFC
 Protection - IP55
 3PH, 415V±10%, 50Hz±5%
 INSL. - CL-F'
 Ambient Temp.- 50°C
 Temperature Rise - Class 'B' Limit

SQ. CAGE CRANE DUTY MOTOR
 INVERTER(VVVF) DRIVE

OUTPUT (KW) CHART

6 POLE

CONTROL-VVVF

- * IGBT Drive
- * Carrier Switching Frequency : 3 - 5 KHz
- * Total Harmonic Distortion : < 2.5%
- * Voltage Rise Time > 0.1 m sec.
- * Peak Voltage : 1400 V (Max.)
- * Max. Cable Length (Without Filter) - 100m
- * Acceleration Time - 3 Secs.

FRAME	60 Starts/ Hour									150 Starts/ Hour								300 Starts/ hour								GD ²	(kg M ²)		
	SIZE	25%	FLA	40%	FLA	60%	FLA	100%	FLA	RPM	25%	FLA	40%	FLA	60%	FLA	100%	FLA	25%	FLA	40%	FLA	60%	FLA	100%			FLA	MOTOR
VD80	0.7	2.3	0.6	2	0.5	1.7	0.5	1.7	900	0.5	1.7	0.5	1.7	0.5	1.7	0.4	1.5	0.5	1.7	0.5	1.7	0.4	1.5	0.4	1.5	0.4	1.5	0.0069	0.36
VD90S	0.9	2.3	0.8	2	0.7	1.8	0.7	1.8	910	0.7	1.8	0.6	1.7	0.6	1.7	0.6	1.7	0.6	1.7	0.6	1.7	0.6	1.7	0.6	1.7	0.6	1.7	0.0105	0.5
VD90L	1.4	3.9	1.2	3.4	1.1	3	1	2.7	918	1	2.7	0.9	2.4	0.9	2.4	0.9	2.4	0.9	2.4	0.9	2.4	0.9	2.4	0.9	2.4	0.9	2.4	0.014	0.73
VD100L	1.9	4.1	1.6	3.5	1.5	3.3	1.4	3	925	1.3	2.8	1.3	2.8	1.2	2.6	1.2	2.6	1.3	2.8	1.2	2.6	1.2	2.6	1.2	2.6	1.2	2.6	0.04	0.97
VD112M	2.8	6.3	2.4	5.3	2.2	4.9	2	4.5	930	1.9	4.4	1.9	4.4	1.8	4.3	1.7	4	1.9	4.4	1.8	4.3	1.7	4	1.7	4	1.7	4	0.05	1.4
VD132S	4.7	10.1	4.1	9.1	3.7	8.4	3.3	7.8	955	3.2	7.7	3.1	7.6	3	7.3	2.9	7.1	3.1	7.6	3	7.3	2.9	7.1	2.9	7.1	2.9	7.1	0.11	2.4
VD132M	6.9	14.2	6	12.5	5.4	11.7	5	11	955	4.8	10.7	4.6	10.5	4.5	10.3	4.4	10.2	4.6	10.5	4.5	10.3	4.4	10.2	4.3	9.8	4.3	9.8	0.15	3.6
VD160M	9.5	20	8.2	17	7.4	15.2	6.8	14.5	964	6.5	13.9	6.3	13.7	6.1	13.3	6	13.1	6.3	13.7	6.1	13.3	6	13.1	5.9	12.9	5.9	12.9	0.26	4.8
VD160L	13.9	27.5	12.1	24	10.9	22	9.9	20.7	965	9.6	20.2	9.3	20	9	19.8	8.7	19.5	9.3	20	9	19.8	8.7	19.5	8.6	19.3	8.6	19.3	0.3	7.1
#VD180L	17.6	34	15.4	30.5	13.9	28.3	12.6	26	975	12.2	25.3	11.8	25.9	11.5	25.2	11.1	24.4	11.8	25.9	11.5	25.2	11.1	24.4	11	24.2	11	24.2	0.65	8.8
VD200LA	21.4	41.2	18.7	36	16.8	32	15.3	29.9	975	14.8	28.9	14.4	28	13.9	27.6	13.5	27.3	14.4	28	13.9	27.6	13.5	27.3	13.4	27.1	13.4	27.1	0.95	10.5
VD200LB	25.2	51.3	22	46.5	19.8	42	18	39.6	985	17.5	39.4	16.9	38.1	16.4	37.4	15.9	36.6	16.9	38.1	16.4	37.4	15.9	36.6	15.7	36.1	15.7	36.1	1.11	12.4
VD225M	33.4	60	29.1	53	26.2	47.7	23.9	43.6	989	23.1	42.8	22.4	42	21.7	40.4	21.1	39.5	22.4	42	21.7	40.4	21.1	39.5	20.8	39	20.8	39	2.82	15.1
VD250M	42.8	80.3	37.3	71	33.7	65.4	30.6	61.6	990	29.7	59.8	28.7	57.8	27.9	56.6	27	55.4	28.7	57.8	27.9	56.6	27	55.4	26.7	55	26.7	55	3.43	19.5
VD280S	56.7	103	49.4	91	44.6	84	40.5	75	988	39.3	72.5	38	72.2	36.9	71	35.8	70	38	72.2	36.9	71	35.8	70	35.4	69	35.4	69	4.81	25.6
#VD280M	66.8	123	58.2	108.6	52.5	99.2	47.7	92	986	46.3	90	44.8	85.6	43.4	85.7	42.1	83.8	44.8	85.6	43.4	85.7	42.1	83.8	41.6	83.2	41.6	83.2	5.89	29.9
VD315S	81.9	155	71.4	137.8	64.4	127	58.5	118	991	56.8	114.5	54.9	111.9	53.2	109	51.7	107	54.9	111.9	53.2	109	51.7	107	51.1	105	51.1	105	8.39	35.5
VD315M	100.8	178	87.8	157	79.2	144	72	133	990	69.9	130	67.6	126.9	65.5	124	63.6	121.5	67.6	126.9	65.5	124	63.6	121.5	62.8	120	62.8	120	9.65	44.4
VD315L	113.4	200	99	178	89.1	164	81	152	991	78.6	148.5	76	144.9	73.7	142	71.6	139	76	144.9	73.7	142	71.6	139	70.7	138	70.7	138	10.6	50.2
VD315L	138.6	239	121	211	109	193.5	99	179	992	96	175	92.9	170.5	90.1	166.5	87.5	163	92.9	170.5	90.1	166.5	87.5	163	86.4	161.5	86.4	161.5	12.8	61.5

Suitable for 45°C ambient. Apply deration for 50°C as per table given below.
 Note : 1.The FLA mentioned above are to be used as a guide for drive rating selection . Actual nameplate FLA may vary.
 2. This supersedes C12R1ED655 Issue B (Page 2 of 3) dtd. 14.12.2007

Output Deration Factor : Higher Ambient Temperature			
Ambient Temperature	50°C	55°C	60°
Deration Factor	0.95	0.9	0.85



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BRAND - CHALLENGER - VD Series
Enclosure - TEFC
Protection - IP55
3PH, 415V±10%, 50Hz±5%
INSUL. - CL-F'
Ambient Temp. - 50°C
Temperature Rise - Class 'B' Limit

SQ. CAGE CRANE DUTY MOTOR
INVERTER(VVVF) DRIVE

CONTROL-VVVF
* IGBT Drive
* Carrier Switching Frequency : 3 - 5 KHz
* Total Harmonic Distortion : < 2.5%
* Voltage Rise Time > 0.1 m sec.
* Peak Voltage : 1400 V (Max.)
* Max. Cable Length (W/ithout Filter) - 100m
* Acceleration Time - 4 Secs.

OUTPUT (KW) CHART

6 POLE

FRAME	60 Starts/ Hour										150 Starts/ Hour						300 Starts/ hour						GD ²	(kg M ²)					
	SIZE	25%	FLA	40%	FLA	60%	FLA	100%	FLA	RPM	25%	FLA	40%	FLA	60%	FLA	100%	FLA	25%	FLA	40%	FLA			60%	FLA	100%	FLA	MOTOR
VD80	0.7	2.3	0.6	2	0.5	1.7	0.5	1.7	900	0.4	1.5	0.4	1.5	0.43	1.5	0.42	1.5	0.4	1.5	0.43	1.5	0.4	1.5	0.4	1.5	0.4	1.5	0.0069	0.49
VD90S	0.9	2.3	0.8	2	0.7	1.8	0.7	1.8	910	0.6	1.7	0.6	1.7	0.58	1.7	0.58	1.7	0.6	1.7	0.6	1.7	0.6	1.7	0.6	1.7	0.6	1.7	0.0105	0.67
VD90L	1.4	3.9	1.2	3.4	1.1	3	1	2.7	918	0.9	2.4	0.9	2.4	0.86	2.3	0.84	2.2	0.9	2.4	0.9	2.3	0.8	2.2	0.8	2.2	0.8	2.2	0.014	1
VD100L	1.9	4.1	1.6	3.5	1.5	3.3	1.4	3	925	1.2	2.6	1.2	2.6	1.2	2.6	1.2	2.6	1.2	2.6	1.2	2.6	1.2	2.6	1.1	2.4	0.04	1.3		
VD112M	2.8	6.3	2.4	5.3	2.2	4.9	2	4.5	930	1.8	4.3	1.7	4	1.7	4	1.7	4	1.7	4	1.7	4	1.7	4	1.6	3.9	0.05	1.9		
VD132S	4.7	10.1	4.1	9.1	3.7	8.4	3.3	7.8	955	3	7.3	2.9	7.1	2.9	7.1	2.8	6.9	2.9	7.1	2.9	7.1	2.8	6.9	2.8	6.9	0.11	3.2		
VD132M	6.9	14.2	6	12.5	5.4	11.7	5	11	955	4.4	10.2	4.4	10.2	4.3	9.8	4.2	9.7	4.4	10.2	4.3	9.8	4.2	9.7	4.1	9.6	0.15	4.6		
VD160M	9.5	20	8.2	17	7.4	15.2	6.8	14.5	964	6	13.1	5.9	12.9	5.8	12.7	5.8	12.7	5.9	12.9	5.8	12.7	5.8	12.7	5.6	12.5	0.26	6.5		
VD160L	13.9	27.5	12.1	24	10.9	22	9.9	20.7	965	8.9	19.7	8.7	19.5	8.6	19.3	8.4	19.2	8.7	19.5	8.6	19.3	8.4	19.2	8.3	19	0.3	9.6		
#VD180L	17.6	34	15.4	30.5	13.9	28.3	12.6	26	975	11.3	24.8	11.1	24.4	10.9	24.3	10.7	23.9	11.1	24.4	10.9	24.3	10.7	23.9	10.6	23.6	0.65	12		
VD200LA	21.4	41.2	18.7	36	16.8	32	15.3	29.9	975	13.7	27.5	13.5	27.3	13.2	26.8	13	26.5	13.5	27.3	13.2	26.8	13	26.5	12.9	26.4	0.95	14.4		
VD200LB	25.2	51.3	22	46.5	19.8	42	18	39.6	985	16.1	37	15.8	36.4	15.6	35.9	15.4	35.9	15.8	36.4	15.6	35.9	15.4	35.9	15.1	35.6	1.11	16.9		
VD225M	33.4	60	29.1	53	26.2	47.7	23.9	43.6	989	21.3	39.9	21	39.3	20.6	39.4	20.3	38.3	21	39.3	20.6	39.4	20.3	38.3	20	37.7	2.82	21.1		
VD250M	42.8	80.3	37.3	71	33.7	65.4	30.6	61.6	990	27.4	56.2	26.9	55.2	26.5	54.6	26.1	53.8	26.9	55.2	26.5	54.6	26.1	53.8	25.7	53.6	3.43	27.2		
VD280S	56.7	103	49.4	91	44.6	84	40.5	75	988	36.2	70.7	35.6	69.6	35	68.5	34.5	68	35.6	69.6	35	68.5	34.5	68	34	67.5	4.81	35.7		
#VD280M	66.8	123	58.2	108.6	52.5	99.2	47.7	92	986	42.7	85	42	83.6	41.3	82.6	40.7	81.9	42	83.6	41.3	82.6	40.7	81.9	40.1	81	5.89	41.9		
VD315S	81.9	155	71.4	137.8	64.4	127	58.5	118	991	52.3	107	51.5	106	50.6	105	49.9	103.5	51.5	106	50.6	105	49.9	103.5	49.1	102	8.39	50.2		
VD315M	100.8	178	87.8	167	79.2	144	72	133	990	64.4	122.5	63.4	121	62.3	120	61.4	118	63.4	121	62.3	120	61.4	118	60.5	117	9.65	62.4		
VD315L	113.4	200	99	178	89.1	164	81	152	991	72.4	140	71.3	138.5	70.1	137	69.1	135.5	71.3	138.5	70.1	137	69.1	135.5	68	134	10.6	70.5		
VD315L	138.6	239	121	211	109	193.5	99	179	992	88.5	164	87.1	162	85.7	160	84.4	159	87.1	162	85.7	160	84.4	159	83.2	157	12.8	86.3		

Suitable for 45°C ambient. Apply deration for 50°C as per table given below.

Note : 1.The FLA mentioned above are to be used as a guide for drive rating selection . Actual nameplate FLA may vary.

2. This supersedes C12R1ED655 Issue B (Page 3 of 3) dtd. 14.12.2007

Output Deration Factor : Higher Ambient Temperature			
Ambient Temperature	50°C	55°C	60°
Deration Factor	0.85	0.9	0.88

ISSUE	A	B	C																										
DATE	27.09.07	14.12.07	07.07.2008																										
SIGN																													
NAME																													
DATE																													

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