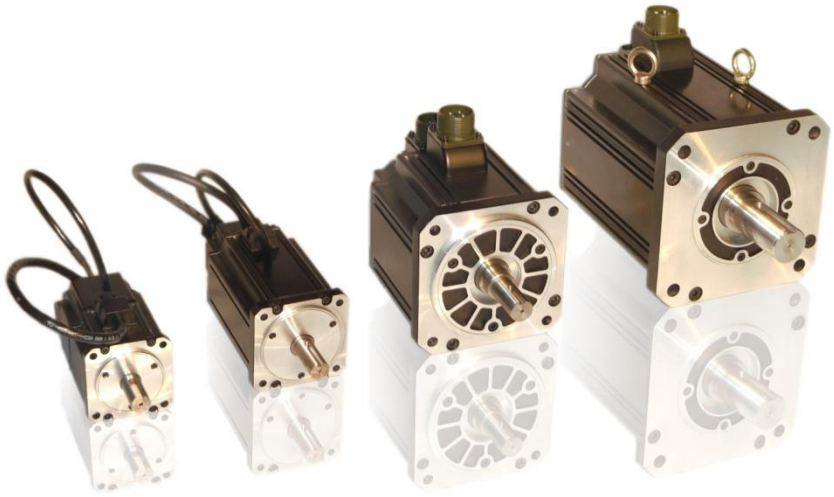
ORMEC's M-series AC brushless servo motors provide high torque-to-inertia ratios and excellent continuous torque and peak torque performance. With a compact design, these industrial-quality servo motors incorporate high performance neodymium magnets and a highly efficient stator winding design. This provides excellent power density.

The M-series servo motors completely eliminate brush wear maintenance problems and feature extremely durable construction. They include heavy duty bearings.

Rugged MS connectors provide reliable interconnections to motors and optical encoders.



ORMEC's M-series servo motors offer continuous stall torques from 1.4 to 845 in-lb (0.16 to 95 N-m)

Features

- ❒ Continuous stall torques from 1.4 to 845 in-lb (0.16 to 95 N-m)
- ❒ High peak torques from 4.4 to 2413 in-lb (0.5 to 273 N-m)
- ❒ Output power from 50 to 15,000 watts (0.07 to 20 HP)
- ❒ High maximum speeds from 2,000 to 5,000 RPM
- ❒ 200 VAC and 400 VAC operation
- ❒ UL approved and CE marked
- ❒ Class F insulation over Class B temperature rise provides additional thermal headroom for longer winding life under rated operating conditions
- ❒ Minimum torque ripple & cogging for smooth low-speed performance
- ❒ Totally Enclosed Non-ventilated (TENV) standard IP-65 (except shaft opening). Shaft oil seal is optional
- ❒ Optional fail-safe holding brakes

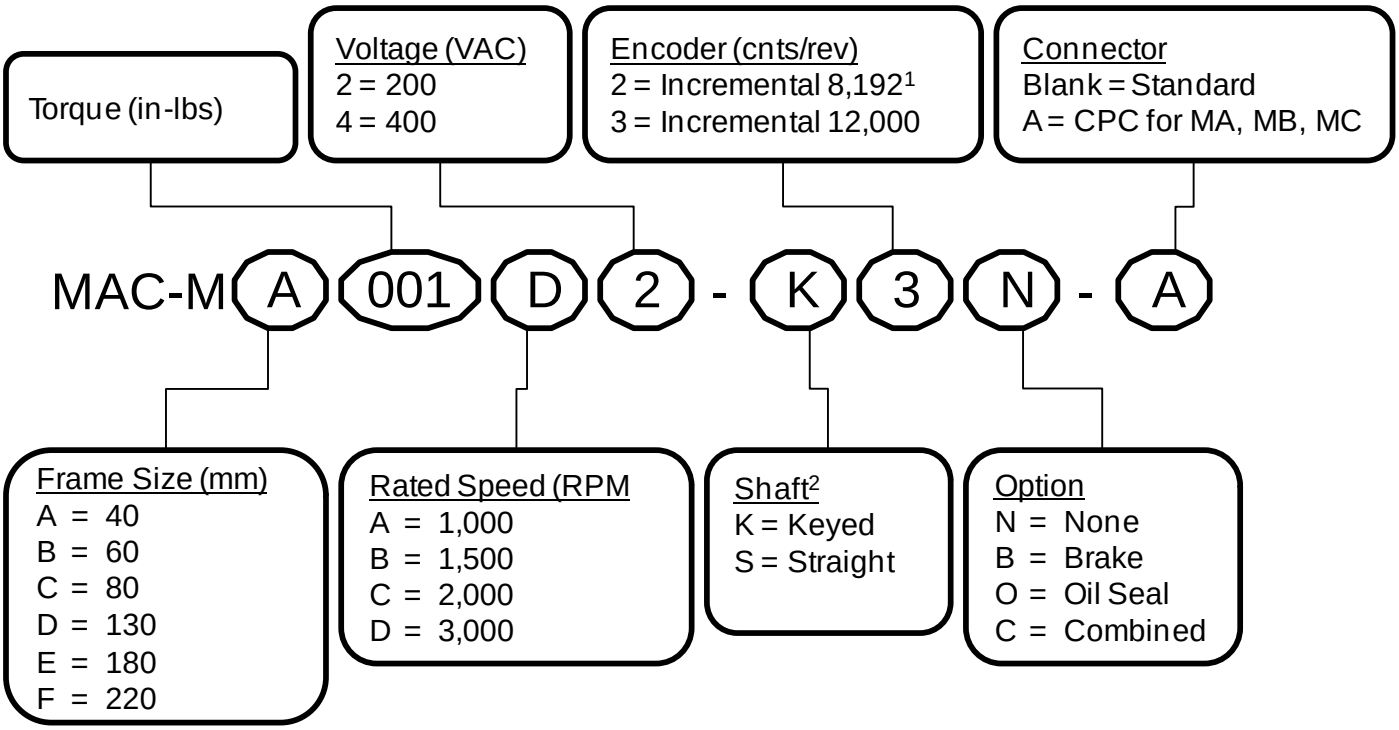
Motor/Drive Combinations

The performance of these servo motors is a direct function of the factory-matched servo motor/drive combination.

ORMEC's drives provide software controlled all-digital performance for consistent operation that totally eliminates analog potentiometer adjustments. High bandwidth operation and a quality high resolution encoder provide the response and accuracy for demanding applications. Peak torques up to three times the rated torque are available for a few seconds, allowing the motor/drive to handle high inertial loads and heavy duty cycle requirements. Each drive's motor parameters are software configurable for high performance and RMS current limiting.

Index

Motor Model Numbers



[1] The 8,192 Encoder is only available with the MA-Series Motor, all other motors will have the 12,000 Incremental encoder.
[2] Other shaft options may be available with special order.

MAC-MA, MAC-MB, MAC-MC and MAC-MD motors are UL approved. All motors carry the CE mark and are RoHS compliant.

The available encoder resolutions [shown post quadrature] for each motor family are noted in this chart:

MA	MB	MC	MD	ME	MF
8,192					
	12,000	12,000	12,000	12,000	12,000

Motor Power Ratings

200 VAC		
Rated Power		Motor Model
Watts	HP	
50	0.07	MAC-MA001D2
100	0.13	MAC-MB003D2
200	0.27	MAC-MB006D2
400	0.54	MAC-MB011D2
450	0.60	MAC-MD025B2
600	0.80	MAC-MC016D2
800	1.07	MAC-MC022D2
850	1.14	MAC-MD050B2
900	1.21	MAC-MD025D2
1000	1.34	MAC-MC028D2
1300	1.74	MAC-MD070B2
1500	2.01	MAC-MD050D2
1700	2.28	MAC-MD095B2
1800	2.41	MAC-ME100B2
2200	2.95	MAC-MD070D2
2900	3.89	MAC-ME160B2
3000	4.02	MAC-MD095D2
4400	5.90	MAC-ME250B2
5710	7.66	MAC-ME335B2
7500	10.1	MAC-ME420B2
8500	11.4	MAC-MF475B2
11000	14.8	MAC-MF620B2

400 VAC		
Rated Power		Motor Model
Watts	HP	
450	0.60	MAC-MD025B4
850	1.14	MAC-MD050B4
900	1.21	MAC-MD025D4
1250	1.68	MAC-MD070B4
1500	2.01	MAC-MD050D4
1700	2.28	MAC-MD095B4
1800	2.41	MAC-ME100B4
2200	2.95	MAC-MD070D4
2920	3.92	MAC-ME160B4
3000	4.02	MAC-MD095D4
4400	5.90	MAC-ME250B4
6000	8.05	MAC-ME335B4
7500	10.1	MAC-ME420B4
8500	11.4	MAC-MF475B4
11000	14.8	MAC-MF620B4
15000	20.1	MAC-MF845B4

200 VAC Motor Specifications

Specifications for Brake Models on page 18

Performance Specifications	Units	MAC-MA001D2	MAC-MB003D2	MAC-MB006D2
Servo Drive Model Number		SAC-x203	SAC-x203	SAC-x203
Rated Torque*	in-lb	1.4	2.8	5.6
	N-m	0.16	0.32	0.64
Rated Speed	RPM	3000	3000	3000
Peak Torque*	in-lb	4.4	8.8	17.6
	N-m	0.50	1.00	1.99
Maximum Speed	RPM	5000	5000	5000
Rated Power	Watts	50	100	200
	HP	0.07	0.13	0.27
Rated Torque/Inertia	radians/sec^2	66307	27919	34975

Mechanical Specifications				
Moment of Inertia	in-lb-sec^2 x 10^{-3}	0.0212	0.1009	0.1611
	kg-m^2 x 10^{-4}	0.0240	0.1140	0.1820
Servomotor Weight	lbs	0.84	1.81	2.38
	kg	0.38	0.82	1.08
Maximum Radial Shaft Load	lbs	33	46	46
	N	148	206	206
Maximum Axial Shaft Load	lbs	9	16	16
	N	39	69	69

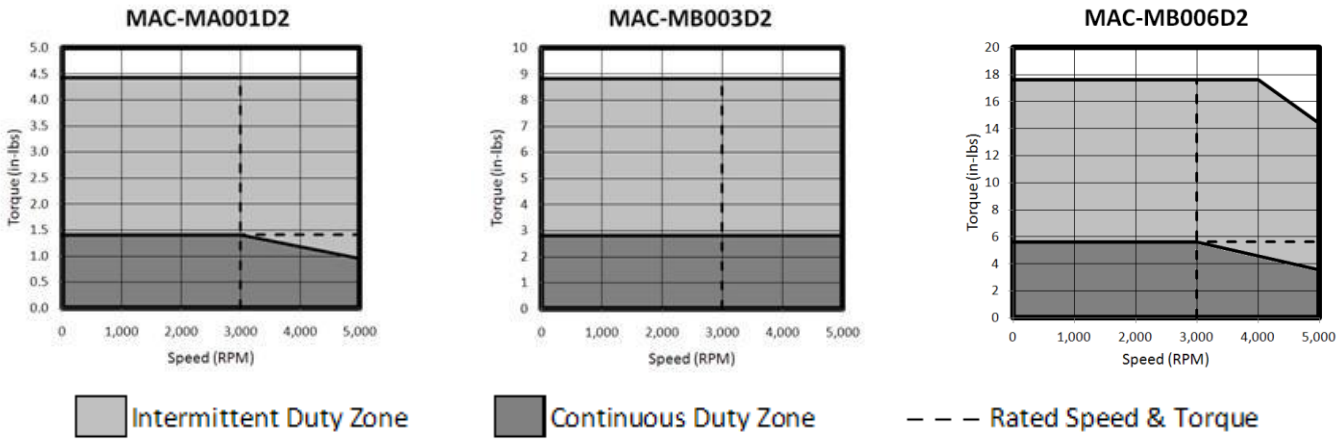
Electrical Specifications				
Torque Sensitivity	in-lb/Amp$_{RMS/\phi}$	1.26	1.82	3.68
	N-m/Amp$_{RMS/\phi}$	0.142	0.205	0.416
Servo Drive Input Power	volts AC	230	230	230
Continuous Motor Current	Amps$_{RMS/\phi}$	1.2	1.65	1.63
Peak Motor Current	Amps$_{RMS/\phi}$	3.6	4.95	4.89
Resistance (phase to phase)	Ohms	11.15	2.50	4.15
Inductance (phase to phase)	mH	8.78	7.37	15.21
Poles		8	8	8

Thermal Specifications				
Thermal Time Constant	minutes	7	14	15
Ambient Temperature	degrees C	40	40	40
Insulation Class		F†	F†	F†

* Torques may be limited by the current limits of the servo drive. The next larger drive may be used to increase available torque. Consult an Ormec Applications Engineer for details.

† F-class insulation against B-class temperature rise

Torque vs. Speed Characteristics *(at 230 VAC)*



200 VAC Motor Specifications

Specifications for Brake Models on page 18

Performance Specifications	Units	MAC-MB011D2	MAC-MC016D2	MAC-MC022D2
Servo Drive Model Number		SAC-x203	SAC-x205	SAC-x205
Rated Torque*	in-lb	11.3	16.9	22.5
	N-m	1.27	1.91	2.55
Rated Speed	RPM	3000	3000	3000
Peak Torque*	in-lb	34.8	52.0	69.3
	N-m	3.93	5.88	7.82
Maximum Speed	RPM	5000	5000	5000
Rated Power	Watts	400	600	800
	HP	0.54	0.80	1.1
Rated Torque/Inertia	radians/sec^2	39660	17488	16873

Mechanical Specifications				
Moment of Inertia	in-lb-sec^2 x 10^{-3}	0.2841	0.9665	1.3356
	kg-m^2 x 10^{-4}	0.3210	1.0920	1.5090
Servomotor Weight	lbs	3.48	5.56	7.01
	kg	1.58	2.52	3.18
Maximum Radial Shaft Load	lbs	46	57	57
	N	206	255	255
Maximum Axial Shaft Load	lbs	16	22	22
	N	69	98	98

Electrical Specifications				
Torque Sensitivity	in-lb/Amp$_{RMS/\phi}$	4.07	4.90	4.84
	N-m/Amp$_{RMS/\phi}$	0.460	0.554	0.546
Servo Drive Input Power	volts AC	230	230	230
Continuous Motor Current	Amps$_{RMS/\phi}$	2.89	3.58	4.83
Peak Motor Current	Amps$_{RMS/\phi}$	8.67	10.74	14.49
Resistance (phase to phase)	Ohms	1.64	1.43	0.87
Inductance (phase to phase)	mH	7.32	9.18	5.94
Poles		8	8	8

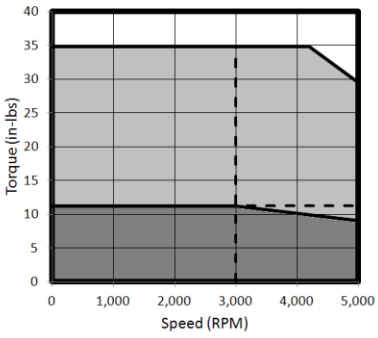
Thermal Specifications				
Thermal Time Constant	minutes	7	14	15
Ambient Temperature	degrees C	40	40	40
Insulation Class		F†	F†	F†

* Torques may be limited by the current limits of the servo drive. The next larger drive may be used to increase available torque. Consult an Ormec Applications Engineer for details.

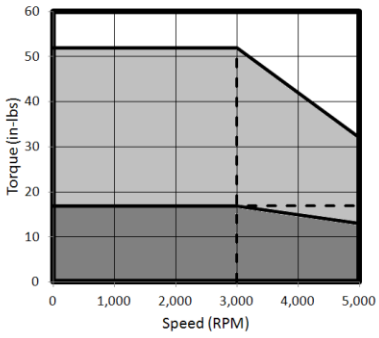
† F-class insulation against B-class temperature rise

Torque vs. Speed Characteristics *(at 230 VAC)*

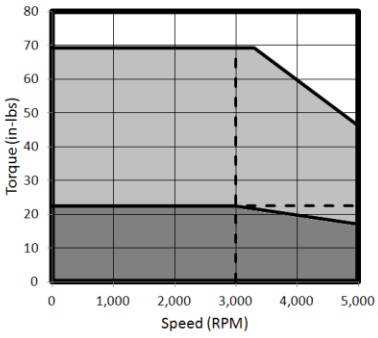
MAC-MB011D2



MAC-MC016D2



MAC-MC022D2



Intermittent Duty Zone Continuous Duty Zone – – – Rated Speed & Torque

200 VAC Motor Specifications

Specifications for Brake Models on page 18

Performance Specifications	Units	MAC-MC028D2	MAC-MD025B2	MAC-MD025D2
Servo Drive Model Number		SAC-x210	SAC-x205	SAC-x205
Rated Torque*	in-lb	28.2	25.4	25.4
	N-m	3.18	2.86	2.86
Rated Speed	RPM	3000	1500	3000
Peak Torque*	in-lb	86.8	77.5	77.6
	N-m	9.81	8.76	8.77
Maximum Speed	RPM	5000	3000	5000
Rated Power	Watts	1000	450	900
	HP	1.3	0.60	1.2
Rated Torque/Inertia	radians/sec^2	16517	4302	4302

Mechanical Specifications				
Moment of Inertia	in-lb-sec^2 x 10^{-3}	1.7055	5.8937	5.8937
	kg-m^2 x 10^{-4}	1.9270	6.6590	6.6590
Servomotor Weight	lbs	8.60	12.13	12.13
	kg	3.9	5.5	5.5
Maximum Radial Shaft Load	lbs	57	163	163
	N	255	725	725
Maximum Axial Shaft Load	lbs	22	81	81
	N	98	362	362

Electrical Specifications				
Torque Sensitivity	in-lb/Amp$_{RMS/\phi}$	5.46	6.57	5.28
	N-m/Amp$_{RMS/\phi}$	0.617	0.742	0.597
Servo Drive Input Power	volts AC	230	230	230
Continuous Motor Current	Amps$_{RMS/\phi}$	5.37	3.97	4.95
Peak Motor Current	Amps$_{RMS/\phi}$	16.11	11.91	14.85
Resistance (phase to phase)	Ohms	0.75	1.55	0.89
Inductance (phase to phase)	mH	5.04	12.98	7.87
Poles		8	8	8

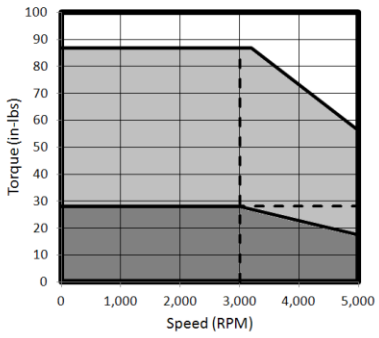
Thermal Specifications				
Thermal Time Constant	minutes	25	24	34
Ambient Temperature	degrees C	40	40	40
Insulation Class		F†	F†	F†

* Torques may be limited by the current limits of the servo drive. The next larger drive may be used to increase available torque. Consult an Ormec Applications Engineer for details.

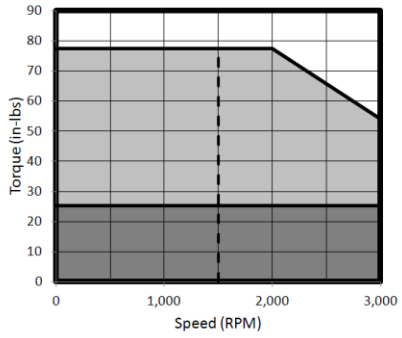
† F-class insulation against B-class temperature rise

Torque vs. Speed Characteristics *(at 230 VAC)*

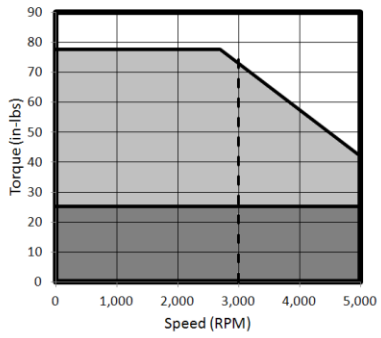
MAC-MC028D2



MAC-MD025B2



MAC-MD025D2



Intermittent Duty Zone Continuous Duty Zone – – – Rated Speed & Torque

200 VAC Motor Specifications

Specifications for Brake Models on page 18

Performance Specifications	Units	MAC-MD050B2	MAC-MD050D2	MAC-MD070B2
Servo Drive Model Number		SAC-x210	SAC-x210	SAC-x210
Rated Torque*	in-lb	47.9	42.3	73.2
	N-m	5.41	4.77	8.28
Rated Speed	RPM	1500	3000	1500
Peak Torque*	in-lb	145.6	128.7	222.0
	N-m	16.45	14.54	25.08
Maximum Speed	RPM	3000	5000	3000
Rated Power	Watts	850	1500	1300
	HP	1.1	2.0	1.7
Rated Torque/Inertia	radians/sec^2	4509	3979	4773

Mechanical Specifications				
Moment of Inertia	in-lb-sec^2 x 10^{-3}	10.6200	10.6200	15.3463
	kg-m^2 x 10^{-4}	11.9990	11.9990	17.3390
Servomotor Weight	lbs	16.62	16.62	21.34
	kg	7.54	7.54	9.68
Maximum Radial Shaft Load	lbs	163	163	163
	N	725	725	725
Maximum Axial Shaft Load	lbs	81	81	81
	N	362	362	362

Electrical Specifications				
Torque Sensitivity	in-lb/Amp$_{RMS/\phi}$	7.55	5.25	7.44
	N-m/Amp$_{RMS/\phi}$	0.853	0.593	0.840
Servo Drive Input Power	volts AC	230	230	230
Continuous Motor Current	Amps$_{RMS/\phi}$	6.47	8.23	10
Peak Motor Current	Amps$_{RMS/\phi}$	19.41	24.69	30
Resistance (phase to phase)	Ohms	0.77	0.41	0.47
Inductance (phase to phase)	mH	7.76	4.11	5.27
Poles		8	8	8

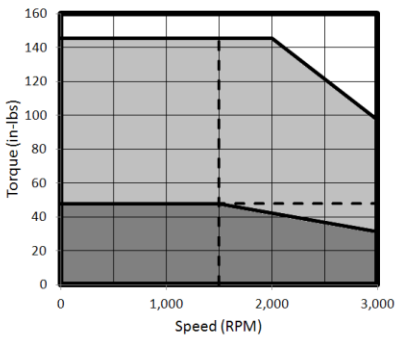
Thermal Specifications				
Thermal Time Constant	minutes	28	37	32
Ambient Temperature	degrees C	40	40	40
Insulation Class		F†	F†	F†

* Torques may be limited by the current limits of the servo drive. The next larger drive may be used to increase available torque. Consult an Ormec Applications Engineer for details.

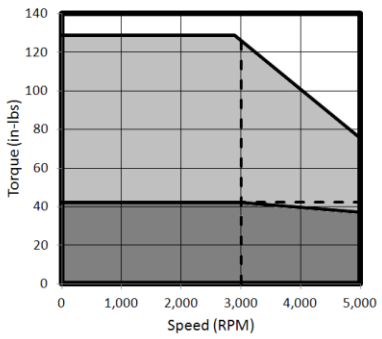
† F-class insulation against B-class temperature rise

Torque vs. Speed Characteristics *(at 230 VAC)*

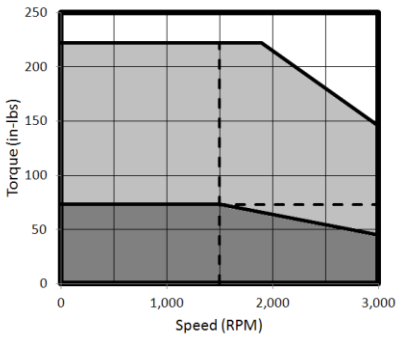
MAC-MD050B2



MAC-MD050D2



MAC-MD070B2



Intermittent Duty Zone Continuous Duty Zone – – – Rated Speed & Torque

200 VAC Motor Specifications

Specifications for Brake Models on page 18

Performance Specifications	Units	MAC-MD070D2	MAC-MD095B2	MAC-MD095D2
Servo Drive Model Number		SAC-x215	SAC-x215	SAC-x225
Rated Torque*	in-lb	62.0	95.8	84.5
	N-m	7.00	10.82	9.55
Rated Speed	RPM	3000	1500	3000
Peak Torque*	in-lb	188.1	290.4	248.6
	N-m	21.26	32.81	28.09
Maximum Speed	RPM	5000	3000	5000
Rated Power	Watts	2200	1700	3000
	HP	3.0	2.3	4.0
Rated Torque/Inertia	radians/sec^2	4038	4772	4210

Mechanical Specifications				
Moment of Inertia	in-lb-sec^2 x 10^{-3}	15.3463	20.0726	20.0726
	kg-m^2 x 10^{-4}	17.3390	22.6790	22.6790
Servomotor Weight	lbs	21.34	25.97	25.97
	kg	9.68	11.78	11.78
Maximum Radial Shaft Load	lbs	163	163	163
	N	725	725	725
Maximum Axial Shaft Load	lbs	81	81	81
	N	362	362	362

Electrical Specifications				
Torque Sensitivity	in-lb/Amp$_{RMS/\phi}$	5.27	7.63	5.00
	N-m/Amp$_{RMS/\phi}$	0.595	0.862	0.565
Servo Drive Input Power	volts AC	230	230	230
Continuous Motor Current	Amps$_{RMS/\phi}$	11.98	12.75	17.16
Peak Motor Current	Amps$_{RMS/\phi}$	35.94	38.25	51.48
Resistance (phase to phase)	Ohms	0.23	0.30	0.15
Inductance (phase to phase)	mH	2.53	3.82	1.82
Poles		8	8	8

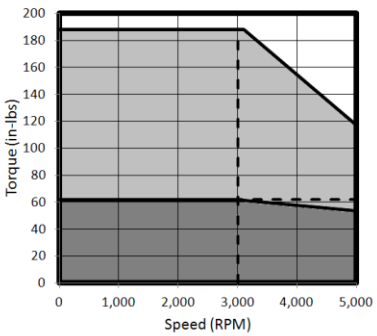
Thermal Specifications				
Thermal Time Constant	minutes	41	37	45
Ambient Temperature	degrees C	40	40	40
Insulation Class		F†	F†	F†

* Torques may be limited by the current limits of the servo drive. The next larger drive may be used to increase available torque. Consult an Ormec Applications Engineer for details.

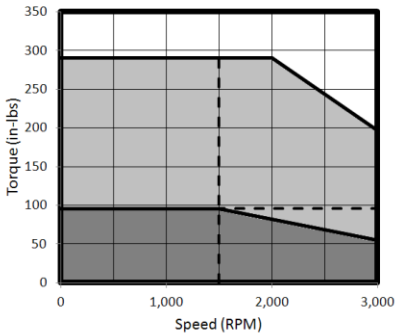
† F-class insulation against B-class temperature rise

Torque vs. Speed Characteristics *(at 230 VAC)*

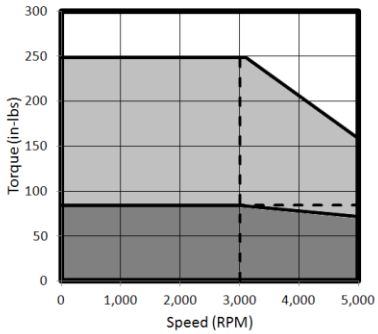
MAC-MD070D2



MAC-MD095B2



MAC-MD095D2



Intermittent Duty Zone Continuous Duty Zone – – – Rated Speed & Torque

200 VAC Motor Specifications

Specifications for Brake Models on page 18

Performance Specifications	Units	MAC-ME100B2	MAC-ME160B2	MAC-ME250B2
Servo Drive Model Number		SAC-x215	SAC-x225	SAC-x235
Rated Torque*	in-lb	101.4	163.4	247.9
	N-m	11.46	18.46	28.01
Rated Speed	RPM	1500	1500	1500
Peak Torque*	in-lb	311.1	401.4	556.5
	N-m	35.15	45.35	62.88
Maximum Speed	RPM	3000	3000	3000
Rated Power	Watts	1800	2900	4400
	HP	2.4	3.9	5.9
Rated Torque/Inertia	radians/sec^2	3727	3541	3350

Mechanical Specifications				
Moment of Inertia	in-lb-sec^2 x 10^{-3}	27.2072	46.1389	73.9922
	kg-m^2 x 10^{-4}	30.7400	52.1300	83.6000
Servomotor Weight	lbs	27.34	39.02	57.98
	kg	12.4	17.7	26.3
Maximum Radial Shaft Load	lbs	348	348	348
	N	1548	1548	1548
Maximum Axial Shaft Load	lbs	117	117	117
	N	519	519	519

Electrical Specifications				
Torque Sensitivity	in-lb/Amp$_{RMS/\phi}$	7.13	8.10	8.07
	N-m/Amp$_{RMS/\phi}$	0.806	0.915	0.912
Servo Drive Input Power	volts AC	230	230	230
Continuous Motor Current	Amps$_{RMS/\phi}$	14.7	20.6	31.75
Peak Motor Current	Amps$_{RMS/\phi}$	44.1	61.8	95.25
Resistance (phase to phase)	Ohms	0.22	0.11	0.06
Inductance (phase to phase)	mH	3.21	2.04	1.14
Poles		8	8	8

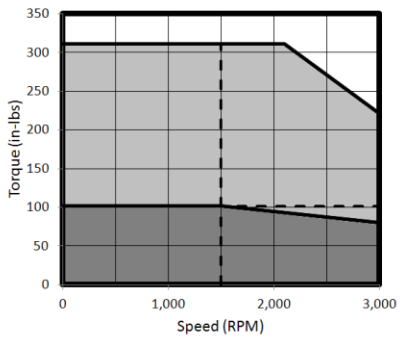
Thermal Specifications				
Thermal Time Constant	minutes	29	31	35
Ambient Temperature	degrees C	40	40	40
Insulation Class		F†	F†	F†

* Torques may be limited by the current limits of the servo drive. The next larger drive may be used to increase available torque. Consult an Ormec Applications Engineer for details.

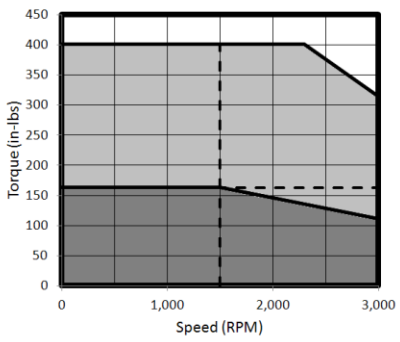
† F-class insulation against B-class temperature rise

Torque vs. Speed Characteristics *(at 230 VAC)*

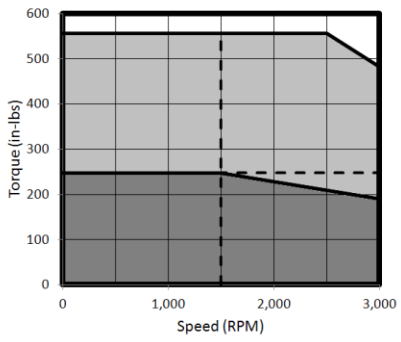
MAC-ME100B2



MAC-ME160B2



MAC-ME250B2



Intermittent Duty Zone Continuous Duty Zone – – – Rated Speed & Torque

200 VAC Motor Specifications

Specifications for Brake Models on page 18

Performance Specifications	Units	MAC-ME335B2	MAC-ME420B2
Servo Drive Model Number		SAC-x235	SAC-x260
Rated Torque*	in-lb	321.8	422.5
	N-m	36.36	47.74
Rated Speed	RPM	1500	1500
Peak Torque*	in-lb	655.1	1126.1
	N-m	74.02	127.24
Maximum Speed	RPM	2500	2500
Rated Power	Watts	5710	7500
	HP	7.7	10.1
Rated Torque/Inertia	radians/sec^2	2997	3319

Mechanical Specifications			
Moment of Inertia	in-lb-sec^2 x 10^{-3}	107.4038	127.2914
	kg-m^2 x 10^{-4}	121.3500	143.8200
Servomotor Weight	lbs	78.48	86.86
	kg	35.6	39.4
Maximum Radial Shaft Load	lbs	348	348
	N	1548	1548
Maximum Axial Shaft Load	lbs	117	117
	N	519	519

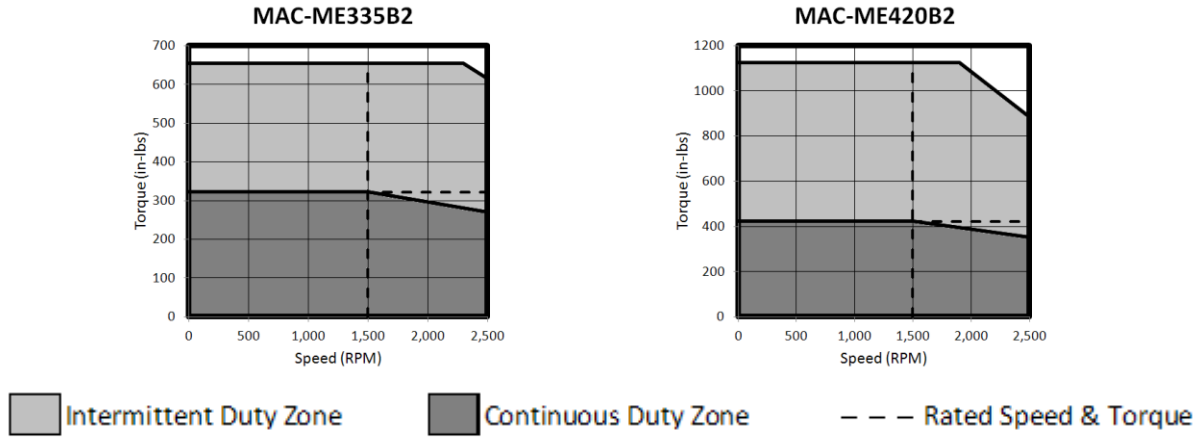
Electrical Specifications			
Torque Sensitivity	in-lb/Amp$_{RMS/\phi}$	9.52	9.46
	N-m/Amp$_{RMS/\phi}$	1.076	1.069
Servo Drive Input Power	volts AC	230	230
Continuous Motor Current	Amps$_{RMS/\phi}$	36.7	45.6
Peak Motor Current	Amps$_{RMS/\phi}$	110.1	136.8
Resistance (phase to phase)	Ohms	0.05	0.05
Inductance (phase to phase)	mH	1.13	1.05
Poles		8	8

Thermal Specifications			
Thermal Time Constant	minutes	40	45
Ambient Temperature	degrees C	40	40
Insulation Class		F†	F†

* Torques may be limited by the current limits of the servo drive. The next larger drive may be used to increase available torque. Consult an Ormec Applications Engineer for details.

† F-class insulation against B-class temperature rise

Torque vs. Speed Characteristics *(at 230 VAC)*



200 VAC Motor Specifications

Specifications for Brake Models on page 18

Performance Specifications	Units	MAC-MF475B2	MAC-MF620B2
Servo Drive Model Number		SAC-x260	SAC-x260
Rated Torque*	in-lb	478.9	619.7
	N-m	54.11	70.02
Rated Speed	RPM	1500	1500
Peak Torque*	in-lb	1109.8	1276.5
	N-m	125.39	144.22
Maximum Speed	RPM	2500	2000
Rated Power	Watts	8500	11000
	HP	11.4	14.8
Rated Torque/Inertia	radians/sec^2	1857	2403

Mechanical Specifications			
Moment of Inertia	in-lb-sec^2 x 10^{-3}	257.8753	257.8753
	kg-m^2 x 10^{-4}	291.3600	291.3600
Servomotor Weight	lbs	145.94	146.16
	kg	66.2	66.3
Maximum Radial Shaft Load	lbs	416	416
	N	1850	1850
Maximum Axial Shaft Load	lbs	176	176
	N	781	781

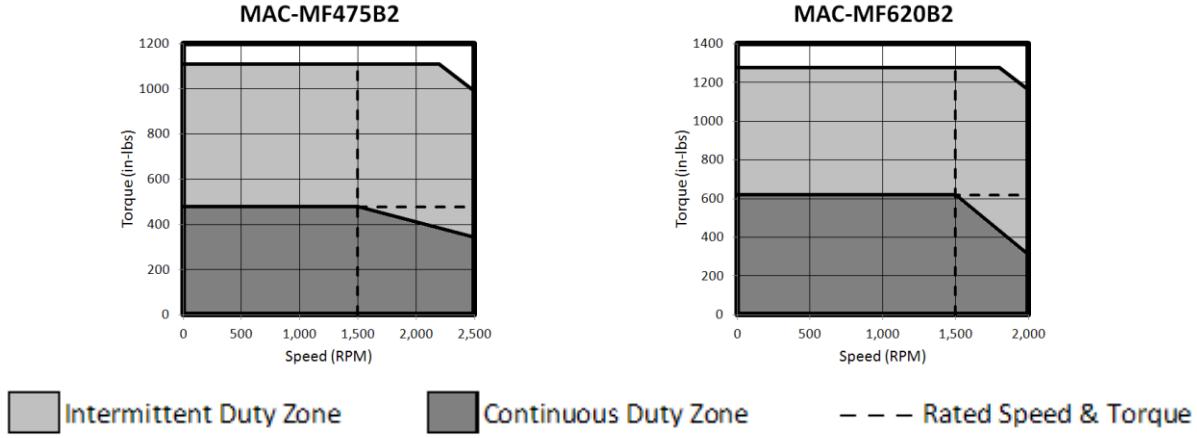
Electrical Specifications			
Torque Sensitivity	in-lb/Amp$_{RMS/\phi}$	9.41	10.82
	N-m/Amp$_{RMS/\phi}$	1.063	1.222
Servo Drive Input Power	volts AC	230	230
Continuous Motor Current	Amps$_{RMS/\phi}$	52.94	59.3
Peak Motor Current	Amps$_{RMS/\phi}$	158.82	177.9
Resistance (phase to phase)	Ohms	0.03	0.03
Inductance (phase to phase)	mH	0.77	1.04
Poles		8	8

Thermal Specifications			
Thermal Time Constant	minutes	51	55
Ambient Temperature	degrees C	40	40
Insulation Class		F†	F†

* Torques may be limited by the current limits of the servo drive. The next larger drive may be used to increase available torque. Consult an Ormec Applications Engineer for details.

† F-class insulation against B-class temperature rise

Torque vs. Speed Characteristics *(at 230 VAC)*



400 VAC Motor Specifications

Specifications for Brake Models on page 18

Performance Specifications	Units	MAC-MD025B4	MAC-MD025D4	MAC-MD050B4
Servo Drive Model Number		SAC-x405	SAC-x403	SAC-x405
Rated Torque*	in-lb	25.4	25.4	47.9
	N-m	2.87	2.87	5.41
Rated Speed	RPM	1500	3000	1500
Peak Torque*	in-lb	78.6	78.7	148.4
	N-m	8.88	8.89	16.77
Maximum Speed	RPM	3000	5000	3000
Rated Power	Watts	450	900	850
	HP	0.60	1.2	1.1
Rated Torque/Inertia	radians/sec^2	4303	4308	4509

Mechanical Specifications				
Moment of Inertia	in-lb-sec^2 x 10^{-3}	5.8937	5.8937	10.6200
	kg-m^2 x 10^{-4}	6.6590	6.6590	11.9990
Servomotor Weight	lbs	12.13	12.13	16.62
	kg	5.5	5.5	7.54
Maximum Radial Shaft Load	lbs	163	163	163
	N	725	725	725
Maximum Axial Shaft Load	lbs	81	81	81
	N	362	362	362

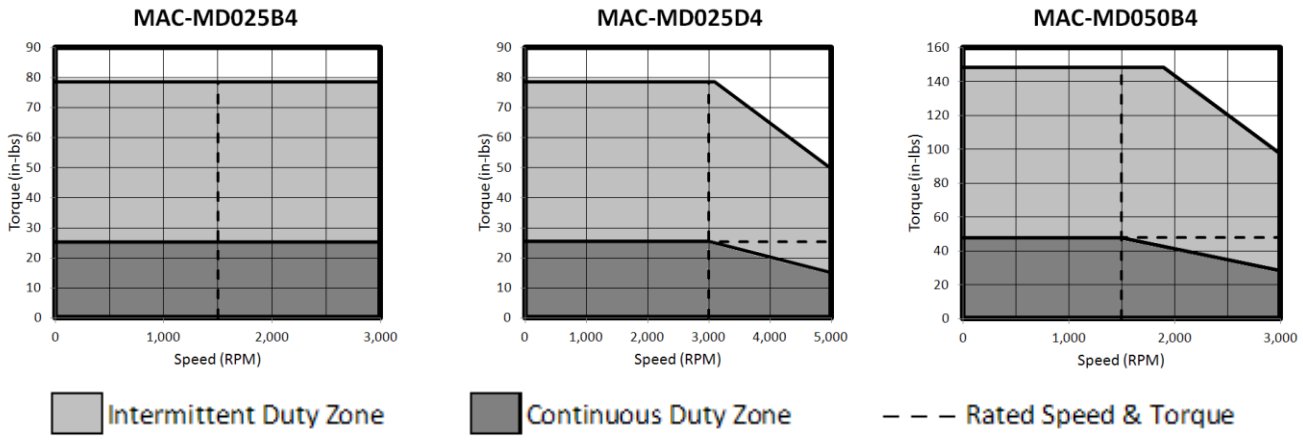
Electrical Specifications				
Torque Sensitivity	in-lb/Amp$_{RMS/\phi}$	7.46	8.97	14.92
	N-m/Amp$_{RMS/\phi}$	0.843	1.014	1.686
Servo Drive Input Power	volts AC	460	460	460
Continuous Motor Current	Amps$_{RMS/\phi}$	3.57	2.97	3.37
Peak Motor Current	Amps$_{RMS/\phi}$	10.71	8.91	10.11
Resistance (phase to phase)	Ohms	1.70	2.43	2.56
Inductance (phase to phase)	mH	15.63	22.61	31.27
Poles		8	8	8

Thermal Specifications				
Thermal Time Constant	minutes	24	34	28
Ambient Temperature	degrees C	40	40	40
Insulation Class		F†	F†	F†

* Torques may be limited by the current limits of the servo drive. The next larger drive may be used to increase available torque. Consult an Ormec Applications Engineer for details.

† F-class insulation against B-class temperature rise

Torque vs. Speed Characteristics *(at 460 VAC)*



400 VAC Motor Specifications

Specifications for Brake Models on page 18

Performance Specifications	Units	MAC-MD050D4	MAC-MD070B4	MAC-MD070D4
Servo Drive Model Number		SAC-x405	SAC-x405	SAC-x410
Rated Torque*	in-lb	42.3	70.4	62.0
	N-m	4.78	7.95	7.00
Rated Speed	RPM	3000	1500	3000
Peak Torque*	in-lb	131.0	218.6	192.1
	N-m	14.80	24.69	21.70
Maximum Speed	RPM	5000	3000	5000
Rated Power	Watts	1500	1250	2200
	HP	2.0	1.7	3.0
Rated Torque/Inertia	radians/sec^2	3981	4587	4038

Mechanical Specifications				
Moment of Inertia	in-lb-sec^2 x 10^{-3}	10.6200	15.3463	15.3463
	kg-m^2 x 10^{-4}	11.9990	17.3390	17.3390
Servomotor Weight	lbs	16.62	21.34	21.34
	kg	7.54	9.68	9.68
Maximum Radial Shaft Load	lbs	163	163	163
	N	725	725	725
Maximum Axial Shaft Load	lbs	81	81	81
	N	362	362	362

Electrical Specifications				
Torque Sensitivity	in-lb/Amp$_{RMS/\phi}$	9.07	14.82	9.07
	N-m/Amp$_{RMS/\phi}$	1.025	1.674	1.025
Servo Drive Input Power	volts AC	460	460	460
Continuous Motor Current	Amps$_{RMS/\phi}$	4.89	5.19	7.17
Peak Motor Current	Amps$_{RMS/\phi}$	14.67	15.57	21.51
Resistance (phase to phase)	Ohms	1.00	1.45	0.55
Inductance (phase to phase)	mH	11.56	20.56	7.71
Poles		8	8	8

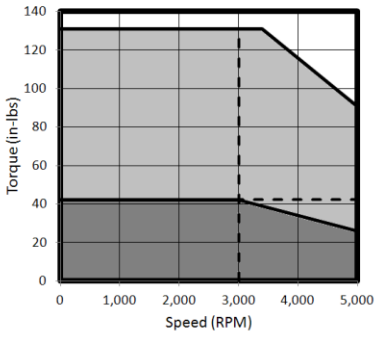
Thermal Specifications				
Thermal Time Constant	minutes	37	32	41
Ambient Temperature	degrees C	40	40	40
Insulation Class		F†	F†	F†

* Torques may be limited by the current limits of the servo drive. The next larger drive may be used to increase available torque. Consult an Ormec Applications Engineer for details.

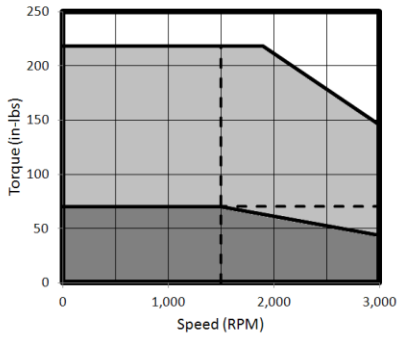
† F-class insulation against B-class temperature rise

Torque vs. Speed Characteristics *(at 460 VAC)*

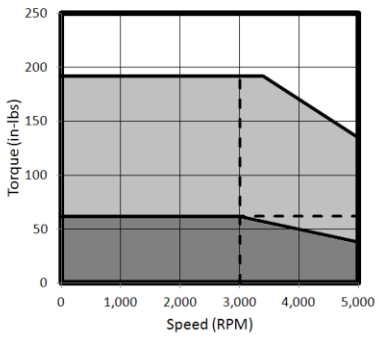
MAC-MD050D4



MAC-MD070B4



MAC-MD070D4



Intermittent Duty Zone Continuous Duty Zone – – – Rated Speed & Torque

400 VAC Motor Specifications

Specifications for Brake Models on page 18

Performance Specifications	Units	MAC-MD095B4	MAC-MD095D4	MAC-ME100B4
Servo Drive Model Number		SAC-x410	SAC-x410	SAC-x410
Rated Torque*	in-lb	95.8	84.5	101.3
	N-m	10.82	9.54	11.44
Rated Speed	RPM	1500	3000	1500
Peak Torque*	in-lb	296.9	261.9	312.1
	N-m	33.54	29.59	35.27
Maximum Speed	RPM	3000	5000	3000
Rated Power	Watts	1700	3000	1800
	HP	2.3	4.0	2.4
Rated Torque/Inertia	radians/sec^2	4772	4208	3723

Mechanical Specifications				
Moment of Inertia	in-lb-sec^2 x 10^{-3}	20.0726	20.0726	27.2072
	kg-m^2 x 10^{-4}	22.6790	22.6790	30.7400
Servomotor Weight	lbs	25.97	25.97	27.34
	kg	11.78	11.78	12.4
Maximum Radial Shaft Load	lbs	163	163	348
	N	725	725	1548
Maximum Axial Shaft Load	lbs	81	81	117
	N	362	362	519

Electrical Specifications				
Torque Sensitivity	in-lb/Amp$_{RMS/\phi}$	14.92	9.07	14.74
	N-m/Amp$_{RMS/\phi}$	1.686	1.025	1.666
Servo Drive Input Power	volts AC	460	460	460
Continuous Motor Current	Amps$_{RMS/\phi}$	6.74	9.78	7.15
Peak Motor Current	Amps$_{RMS/\phi}$	20.22	29.34	21.45
Resistance (phase to phase)	Ohms	1.07	0.39	0.92
Inductance (phase to phase)	mH	15.63	5.78	12.15
Poles		8	8	8

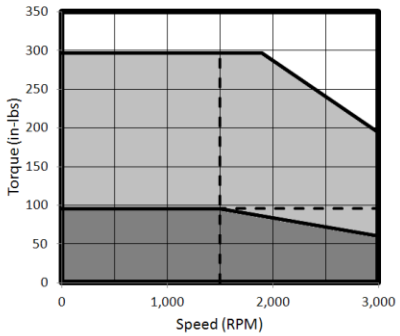
Thermal Specifications				
Thermal Time Constant	minutes	37	45	29
Ambient Temperature	degrees C	40	40	40
Insulation Class		F†	F†	F†

* Torques may be limited by the current limits of the servo drive. The next larger drive may be used to increase available torque. Consult an Ormec Applications Engineer for details.

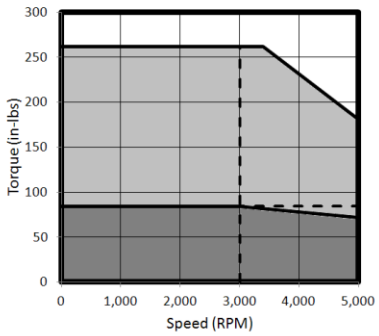
† F-class insulation against B-class temperature rise

Torque vs. Speed Characteristics *(at 460 VAC)*

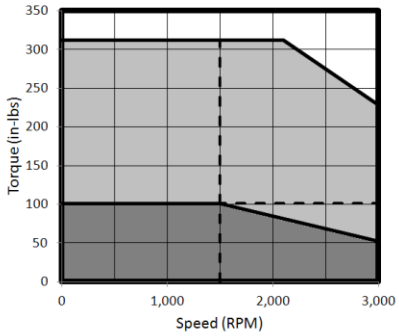
MAC-MD095B4



MAC-MD095D4



MAC-ME100B4



Intermittent Duty Zone Continuous Duty Zone – – – Rated Speed & Torque

400 VAC Motor Specifications

Specifications for Brake Models on page 18

Performance Specifications	Units	MAC-ME160B4	MAC-ME250B4	MAC-ME335B4
Servo Drive Model Number		SAC-x417	SAC-x425	SAC-x425
Rated Torque*	in-lb	164.6	247.8	338.0
	N-m	18.59	28.00	38.19
Rated Speed	RPM	1500	1500	1500
Peak Torque*	in-lb	506.9	754.1	758.1
	N-m	57.27	85.20	85.66
Maximum Speed	RPM	3000	3000	3000
Rated Power	Watts	2920	4400	6000
	HP	3.9	5.9	8.0
Rated Torque/Inertia	radians/sec^2	3567	3350	3147

Mechanical Specifications				
Moment of Inertia	in-lb-sec^2 x 10^{-3}	46.1389	73.9922	107.4038
	kg-m^2 x 10^{-4}	52.1300	83.6000	121.3500
Servomotor Weight	lbs	39.02	57.98	78.48
	kg	17.7	26.3	35.6
Maximum Radial Shaft Load	lbs	348	348	348
	N	1548	1548	1548
Maximum Axial Shaft Load	lbs	117	117	117
	N	519	519	519

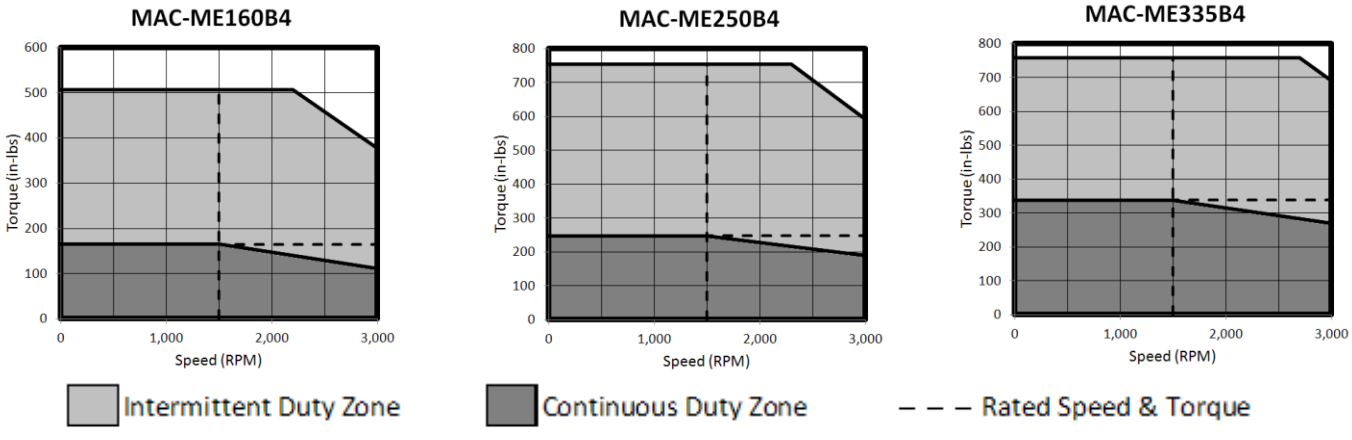
Electrical Specifications				
Torque Sensitivity	in-lb/Amp$_{RMS/\phi}$	15.28	15.28	15.43
	N-m/Amp$_{RMS/\phi}$	1.726	1.726	1.744
Servo Drive Input Power	volts AC	460	460	460
Continuous Motor Current	Amps$_{RMS/\phi}$	11.2	16.87	22.78
Peak Motor Current	Amps$_{RMS/\phi}$	33.6	50.61	68.34
Resistance (phase to phase)	Ohms	0.36	0.21	0.13
Inductance (phase to phase)	mH	7.21	4.35	3.01
Poles		8	8	8

Thermal Specifications				
Thermal Time Constant	minutes	31	35	40
Ambient Temperature	degrees C	40	40	40
Insulation Class		F†	F†	F†

* Torques may be limited by the current limits of the servo drive. The next larger drive may be used to increase available torque. Consult an Ormec Applications Engineer for details.

† F-class insulation against B-class temperature rise

Torque vs. Speed Characteristics *(at 460 VAC)*



400 VAC Motor Specifications

Specifications for Brake Models on page 18

Performance Specifications	Units	MAC-ME420B4	MAC-MF475B4
Servo Drive Model Number		SAC-x435	SAC-x435
Rated Torque*	in-lb	422.5	478.9
	N-m	47.74	54.11
Rated Speed	RPM	1500	1500
Peak Torque*	in-lb	1168.0	1208.4
	N-m	131.97	136.53
Maximum Speed	RPM	3000	2500
Rated Power	Watts	7500	8500
	HP	10.1	11.4
Rated Torque/Inertia	radians/sec^2	3319	1857

Mechanical Specifications			
Moment of Inertia	in-lb-sec^2 x 10^{-3}	127.2914	257.8753
	kg-m^2 x 10^{-4}	143.8200	291.3600
Servomotor Weight	lbs	86.86	145.94
	kg	39.4	66.2
Maximum Radial Shaft Load	lbs	348	416
	N	1548	1850
Maximum Axial Shaft Load	lbs	117	176
	N	519	781

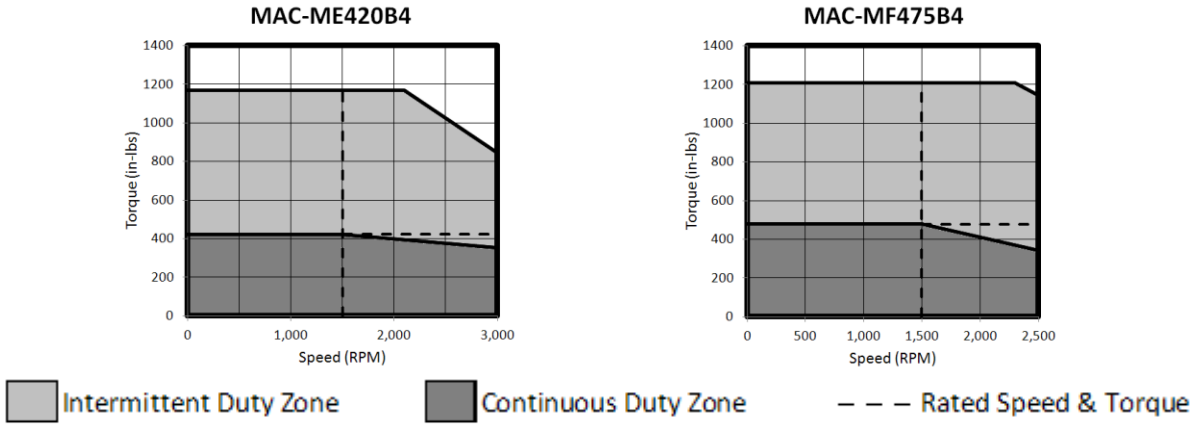
Electrical Specifications			
Torque Sensitivity	in-lb/Amp$_{RMS/\phi}$	16.93	17.47
	N-m/Amp$_{RMS/\phi}$	1.913	1.974
Servo Drive Input Power	volts AC	460	460
Continuous Motor Current	Amps$_{RMS/\phi}$	25.96	28.24
Peak Motor Current	Amps$_{RMS/\phi}$	77.88	84.72
Resistance (phase to phase)	Ohms	0.14	0.08
Inductance (phase to phase)	mH	3.30	2.56
Poles		8	8

Thermal Specifications			
Thermal Time Constant	minutes	45	51
Ambient Temperature	degrees C	40	40
Insulation Class		F†	F†

* Torques may be limited by the current limits of the servo drive. The next larger drive may be used to increase available torque. Consult an Ormec Applications Engineer for details.

† F-class insulation against B-class temperature rise

Torque vs. Speed Characteristics *(at 460 VAC)*



400 VAC Motor Specifications

Specifications for Brake Models on page 18

Performance Specifications	Units	MAC-MF620B4	MAC-MF845B4
Servo Drive Model Number		SAC-x435	SAC-x450
Rated Torque*	in-lb	619.7	845.1
	N-m	70.02	95.48
Rated Speed	RPM	1500	1500
Peak Torque*	in-lb	1576.1	2412.8
	N-m	178.08	272.61
Maximum Speed	RPM	2000	2000
Rated Power	Watts	11000	15000
	HP	14.8	20.1
Rated Torque/Inertia	radians/sec^2	2403	2477

Mechanical Specifications			
Moment of Inertia	in-lb-sec^2 x 10^{-3}	257.8753	341.2316
	kg-m^2 x 10^{-4}	291.3600	385.5400
Servomotor Weight	lbs	146.16	203.26
	kg	66.3	92.2
Maximum Radial Shaft Load	lbs	416	416
	N	1850	1850
Maximum Axial Shaft Load	lbs	176	176
	N	781	781

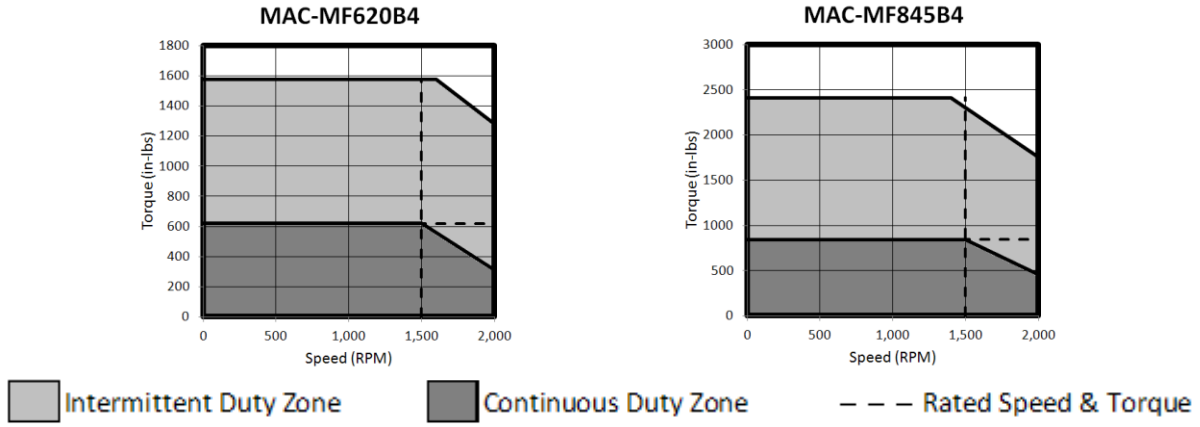
Electrical Specifications			
Torque Sensitivity	in-lb/Amp$_{RMS/\phi}$	22.78	24.38
	N-m/Amp$_{RMS/\phi}$	2.574	2.755
Servo Drive Input Power	volts AC	460	460
Continuous Motor Current	Amps$_{RMS/\phi}$	28.02	35.7
Peak Motor Current	Amps$_{RMS/\phi}$	84.06	107.1
Resistance (phase to phase)	Ohms	0.13	0.10
Inductance (phase to phase)	mH	4.35	3.57
Poles		8	8

Thermal Specifications			
Thermal Time Constant	minutes	55	60
Ambient Temperature	degrees C	40	40
Insulation Class		F†	F†

* Torques may be limited by the current limits of the servo drive. The next larger drive may be used to increase available torque. Consult an Ormec Applications Engineer for details.

† F-class insulation against B-class temperature rise

Torque vs. Speed Characteristics *(at 460 VAC)*



Motors with Fail-Safe Brake Specifications

200 VAC

Servo Motor Model	Brake Holding Torque	Motor Length w/brake	Motor Weight w/brake	Brake Coil Res.	Brake Rated Curr.	Brake Voltage
	in-lb / N-m	in / mm	lb / kg	Ohms	Amps	VDC
MAC-MA001D2	2.8 0.32	5.7 144	1.6 0.73	96	0.25	24
MAC-MB003D2	13.0 1.47	6.4 162	3.1 1.4	89	0.27	24
MAC-MB006D2	13.0 1.47	7.0 176	3.7 1.66	89	0.27	24
MAC-MB011D2	13.0 1.47	8.1 204	4.8 2.16	89	0.27	24
MAC-MC016D2	28.6 3.23	8.6 218	7.9 3.56	64	0.38	24
MAC-MC022D2	28.6 3.23	9.4 238	9.3 4.22	64	0.38	24
MAC-MC028D2	28.6 3.23	10.2 258	10.9 4.94	64	0.38	24
MAC-MD025B2	92.0 10.4	9.5 240	15.5 7.04	29.6	0.81	24
MAC-MD025D2	92 10.4	9.5 240	15.5 7.04	29.6	0.81	24
MAC-MD050B2	92 10.4	10.4 264	20.0 9.08	29.6	0.81	24
MAC-MD050D2	92 10.4	10.4 264	20.0 9.08	29.6	0.81	24
MAC-MD070B2	92 10.4	11.4 288	24.7 11.2	29.6	0.81	24
MAC-MD070D2	92 10.4	11.4 288	24.7 11.2	29.6	0.81	24
MAC-MD095B2	92 10.4	12.3 312	29.4 13.3	29.6	0.81	24
MAC-MD095D2	92 10.4	12.3 312	29.4 13.3	29.6	0.81	24
MAC-ME100B2	354 40	12.7 322	42.3 19.2	23	1.04	24
MAC-ME160B2	354 40	14.1 356	54.0 24.5	23	1.04	24
MAC-ME250B2	354 40	16.0 406	73.0 33.1	23	1.04	24
MAC-ME335B2	354 40	18.0 457	94.4 42.8	23	1.04	24

400 VAC

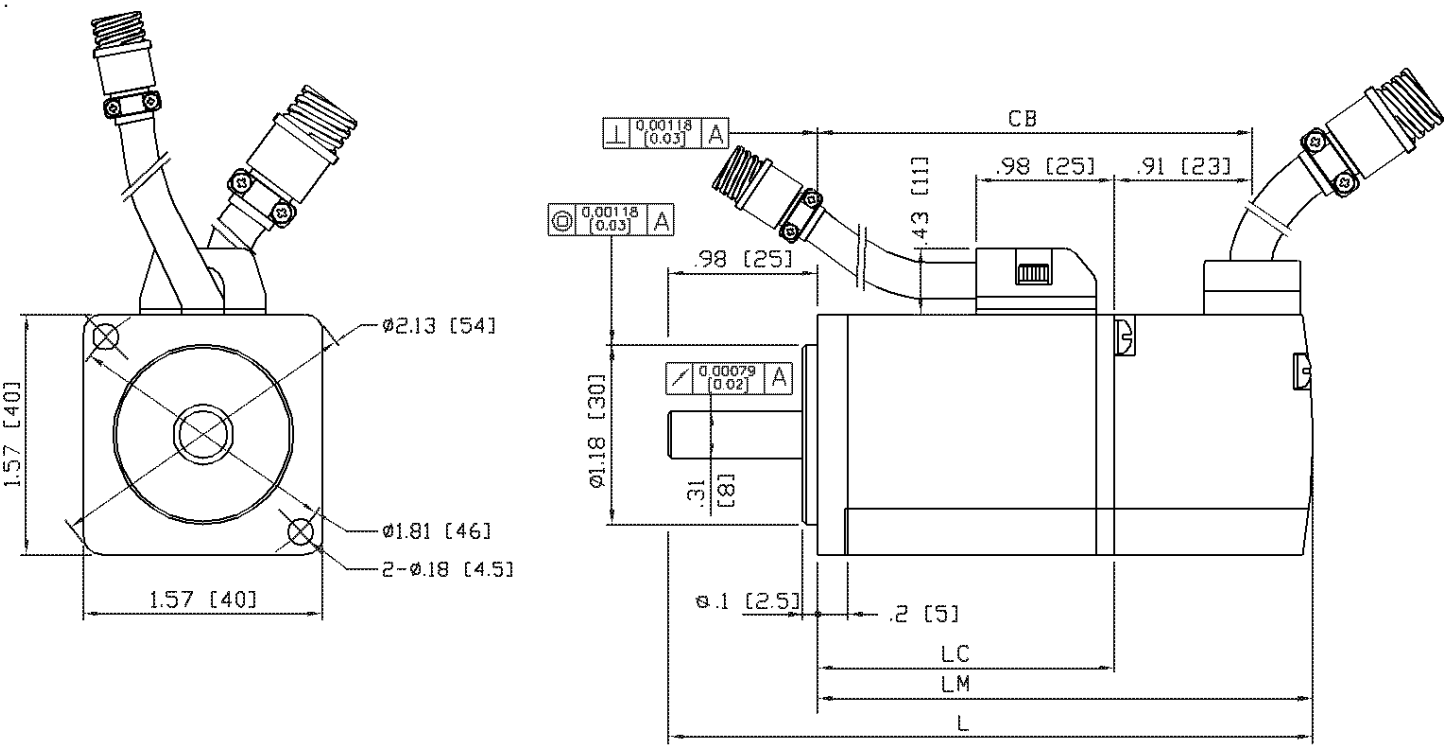
Servo Motor Model	Brake Holding Torque	Motor Length w/brake	Motor Weight w/brake	Brake Coil Res.	Brake Rated Curr.	Brake Voltage
	in-lb / N-m	in / mm	lb / kg	Ohms	Amps	VDC
MAC-MD025B4	92.0 10.4	9.5 240	15.5 7.04	29.6	0.81	24
MAC-MD025D4	92 10.4	9.5 240	15.5 7.04	29.6	0.81	24
MAC-MD050B4	92 10.4	10.4 264	20.0 9.08	29.6	0.81	24
MAC-MD050D4	92 10.4	10.4 264	20.0 9.08	29.6	0.81	24
MAC-MD070B4	92 10.4	11.4 288	24.7 11.2	29.6	0.81	24
MAC-MD070D4	92 10.4	11.4 288	24.7 11.2	29.6	0.81	24
MAC-MD095B4	92 10.4	12.3 312	29.4 13.3	29.6	0.81	24
MAC-MD095D4	92 10.4	12.3 312	29.4 13.3	29.6	0.81	24
MAC-ME100B4	354 40	12.7 322	42.3 19.2	23	1.04	24
MAC-ME160B4	354 40	14.1 356	54.0 24.5	23	1.04	24
MAC-ME250B4	354 40	16.0 406	73.0 33.1	23	1.04	24
MAC-ME335B4	354 40	18.0 457	94.4 42.8	23	1.04	24

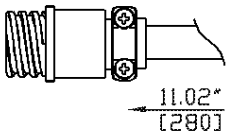
Note: MAC-ME420, MAC-MF475, MAC-MF620 & MAC-MF845 do not support the brake option.

Motor Outline Drawings

For length of models with failsafe brake option, see page 18. Contact ORMEC Application Engineer for design details.

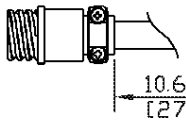
MA001





Encoder Cable Length: 11.02" [280mm]
Encoder Cable Diameter: Ø.276" [7mm]

11.02"
[280]



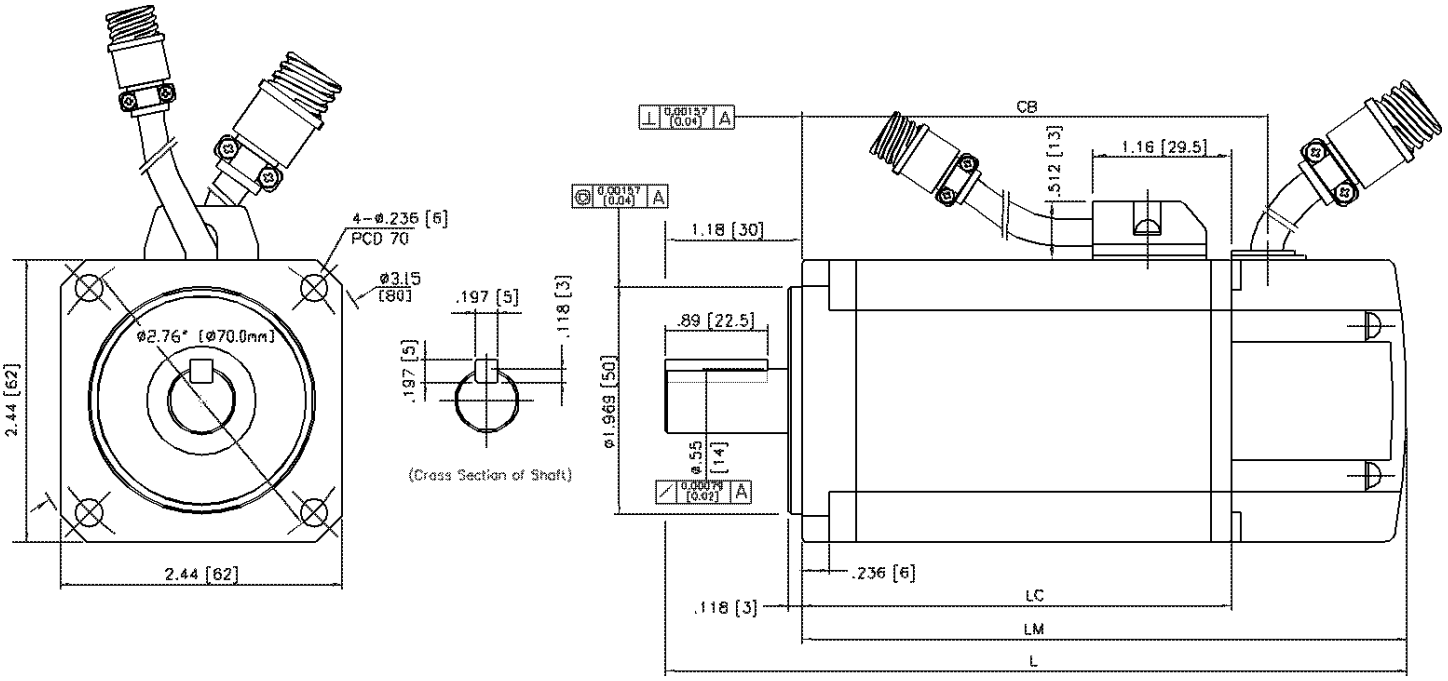
Power Cable Length: 10.63" [270mm]
Power Cable Diameter: Ø.276" [7mm]

10.63"
[270]

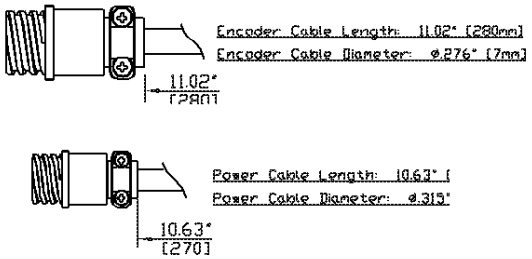
Model	External Dimensions (in [mm])				Weight (Lb [Kg])
	L	LM	LC	CB	
MAC-MA001	4.3 [108]	3.3 [83]	1.9 [49.5]	2.9 [73]	.88 [0.4]

Motor Outline Drawings

MB003, MB006, & MB011

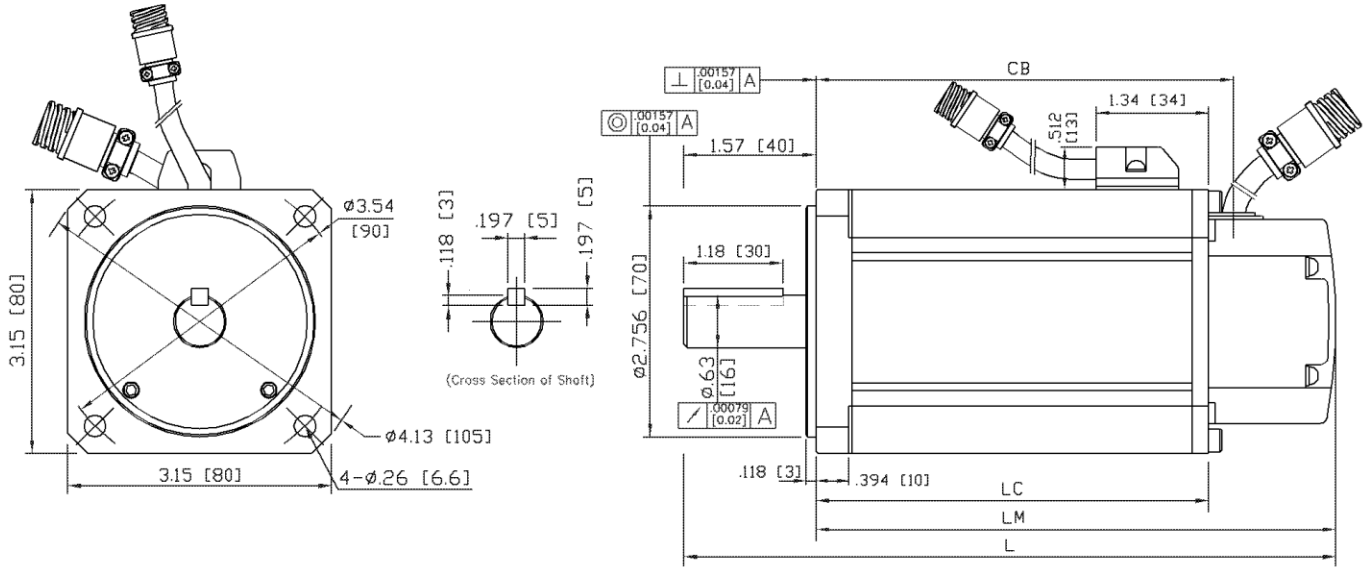


Model	External Dimensions (in [mm])				Weight (Lb [Kg])
	L	LM	LC	CB	
MAC-MB003	4.8 [122]	3.6 [92]	2.1 [52.5]	2.3 [59.5]	1.85 [0.84]
MAC-MB006	5.35 [136]	4.17 [106]	2.62 [66.5]	2.89 [73.5]	2.45 [1.11]
MAC-MB011	6.46 [164]	5.28 [134]	3.72 [94.5]	4.00 [101.5]	3.62 [1.64]

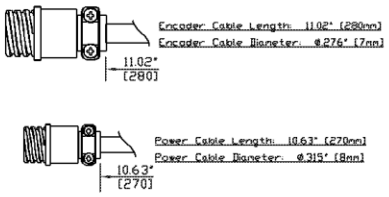


Motor Outline Drawings

MC016, MC022 & MC028

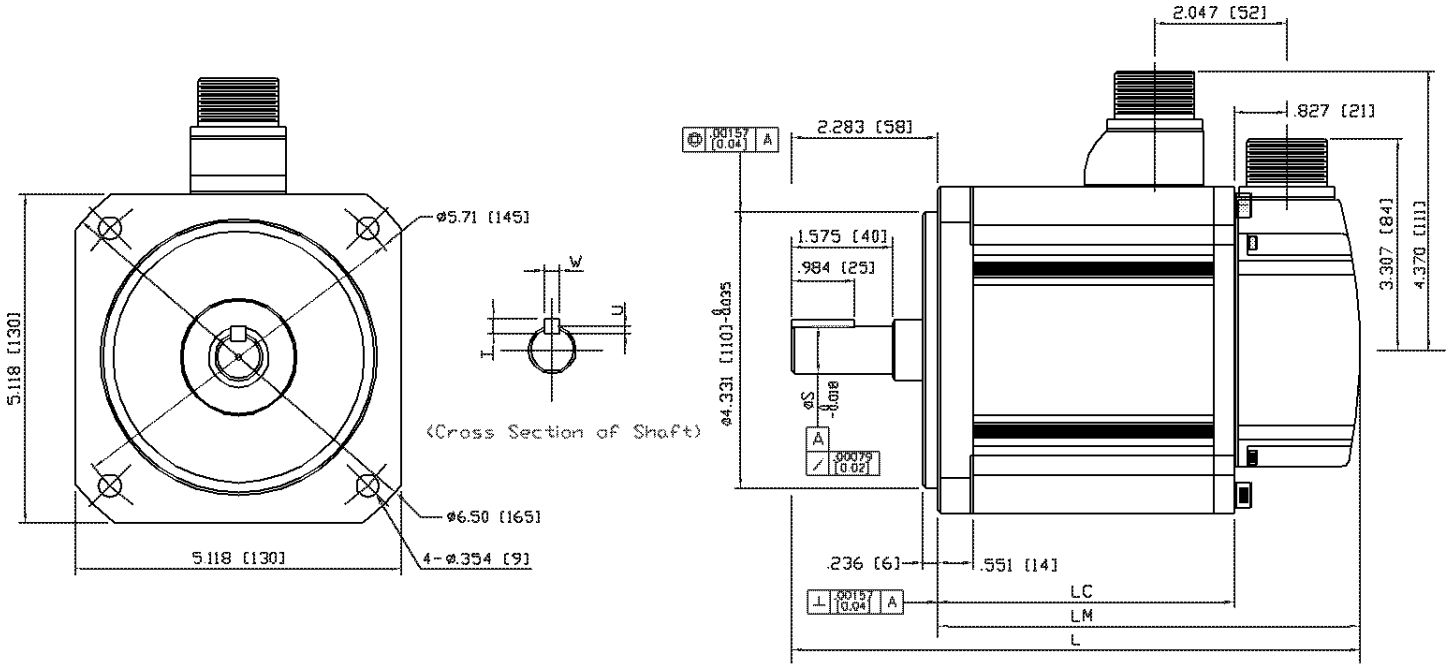


Model	External Dimensions (in [mm])				Weight (Lb [Kg])
	L	LM	LC	CB	
MAC-MC016	7.03 [178.5]	5.45 [138.5]	3.90 [99]	4.17 [106]	5.49 [2.49]
MAC-MC022	7.81 [198.5]	6.24 [158.5]	4.69 [119]	4.96 [126]	6.94 [3.15]
MAC-MC028	8.58 [218]	7.01 [178]	5.47 [139]	5.77 [147]	8.6 [3.9]



Motor Outline Drawings

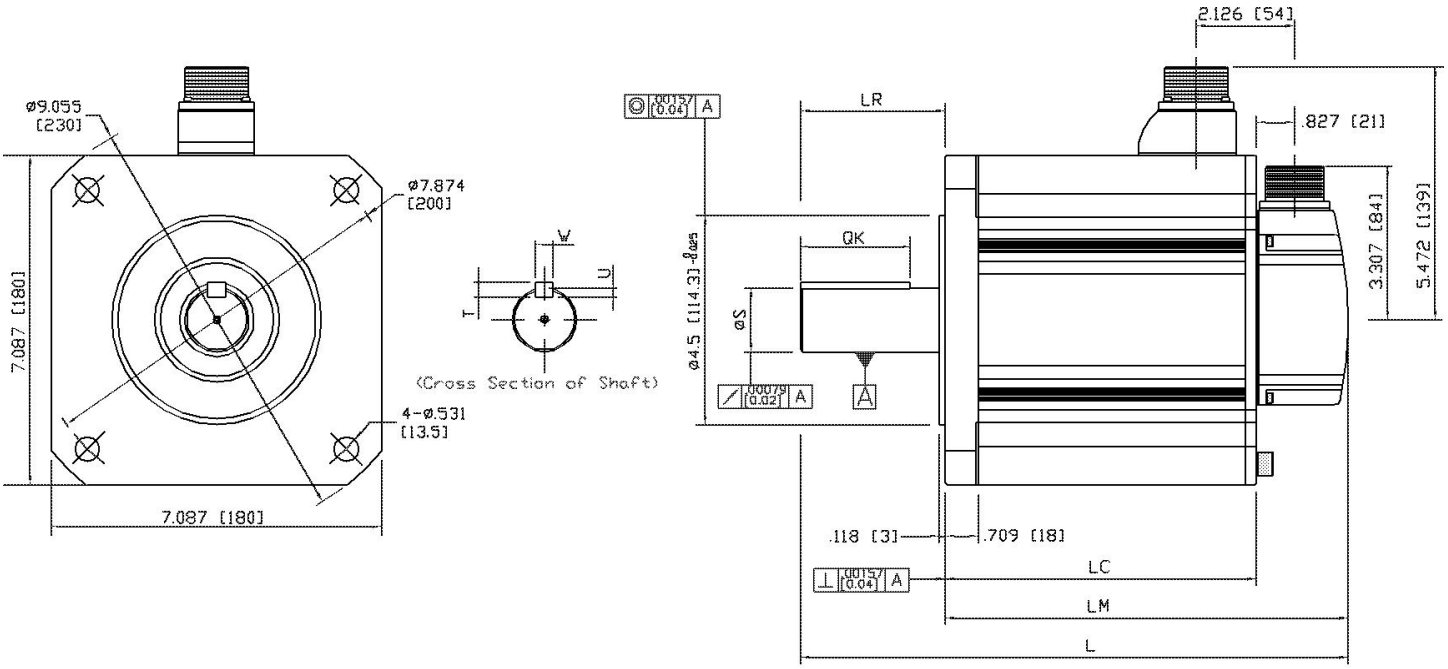
MD025, MD050, MD070 & MD095



Model	External Dimensions (In [mm])				Key			Weight (Lb [Kg])
	L	LM	LC	S	T	W	U	
MAC-MD025	7.95 [202]	5.67 [144]	3.70 [94]	.748 [19]	.197 [5]	.197 [5]	.118 [3]	12.35 [5.6]
MAC-MD050	8.90 [226]	6.61 [168]	4.65 [118]					15.87 [7.2]
MAC-MD070	9.84 [250]	7.56 [192]	5.59 [142]	.866 [22]	.236 [6]	.236 [6]	.138 [3.5]	19.18 [8.7]
MAC-MD095	10.79 [274]	8.50 [216]	6.54 [166]					22.49 [10.2]

Motor Outline Drawings

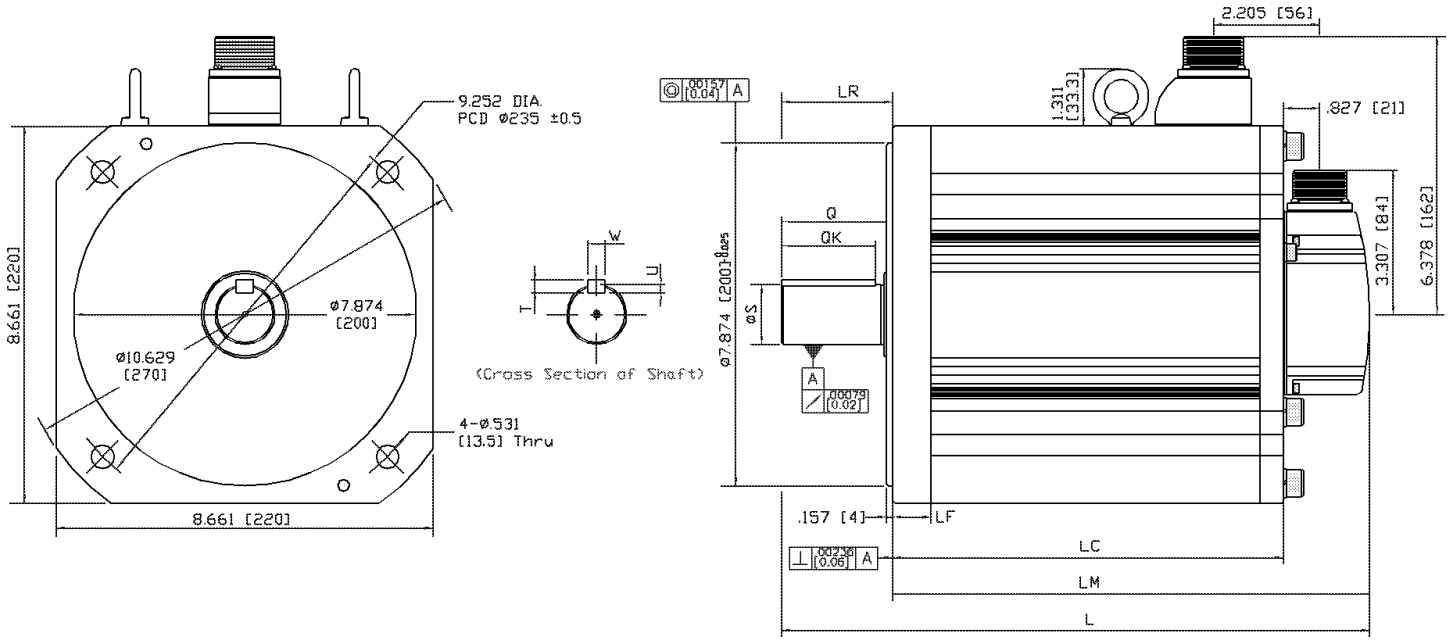
ME100, ME160, ME250, ME335 & ME420



Model	External Dimensions (In [mm])				Key					Weight (Lb [Kg])
	L	LM	LC	LR	S	QK	T	W	U	
MAC-ME100	10.63 [270]	7.52 [191]	5.24 [133]	3.110 [79]	1.378 [35]	2.362 [60]	.315 [8]	.394 [10]	.197 [5]	27.34 [12.4]
MAC-ME160	11.97 [304]	8.86 [225]	6.57 [167]							39.02 [17.7]
MAC-ME250	13.94 [354]	10.83 [275]	8.54 [217]							57.98 [26.3]
MAC-ME335	15.94 [405]	12.83 [326]	10.86 [276]							78.48 [35.6]
MAC-ME420	18.07 [459]	13.61 [346]	11.65 [296]	4.449 [113]	1.654 [42]	3.780 [96]		.472 [12]		86.86 [39.4]

Motor Outline Drawings

MF475, MF620 & MF845

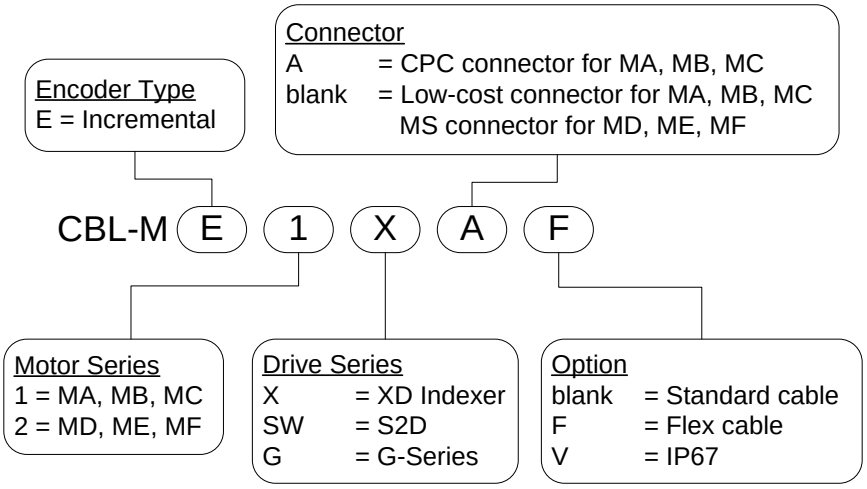


Model	External Dimensions (In [mm])					Key						Weight (Lb [Kg])
	L	LM	LC	LR	LF	S	Q	QK	T	W	U	
MAC-MF475	16.57 [421]	14.02 [356]	12.05 [306]	2.56 [65]	.866 [22]	1.772 [45]	2.362 [60]	2.165 [55]	.315 [8]	.394 [10]	.197 [5]	145.95 [66.2]
MAC-MF620	18.46 [469]	13.94 [354]	11.97 [304]	4.53 [115]	.866 [22]	1.654 [42]	4.331 [110]	3.780 [96]	.394 [10]	.472 [12]	.197 [5]	146.17 [66.3]
MAC-MF845	22.64 [575]	18.07 [459]	16.1 [409]	4.57 [116]	1.378 [35]	2.165 [55]	4.331 [110]	3.780 [96]	.394 [10]	.630 [16]	.236 [6]	203.27 [92.2]

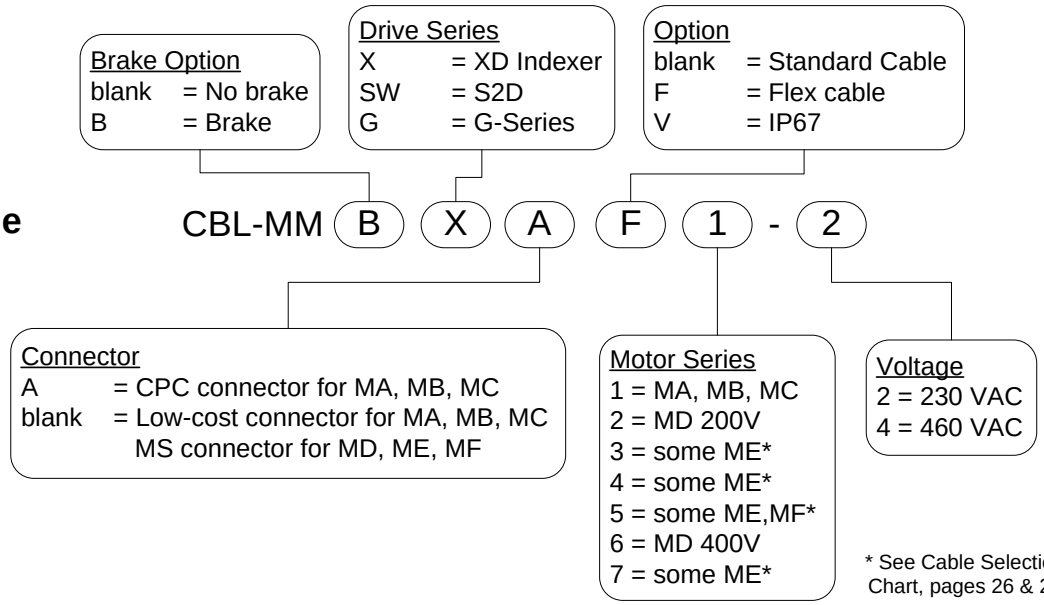
Encoder, Motor and Brake Cable Model Numbers

M-Series Cables

Encoder Cable

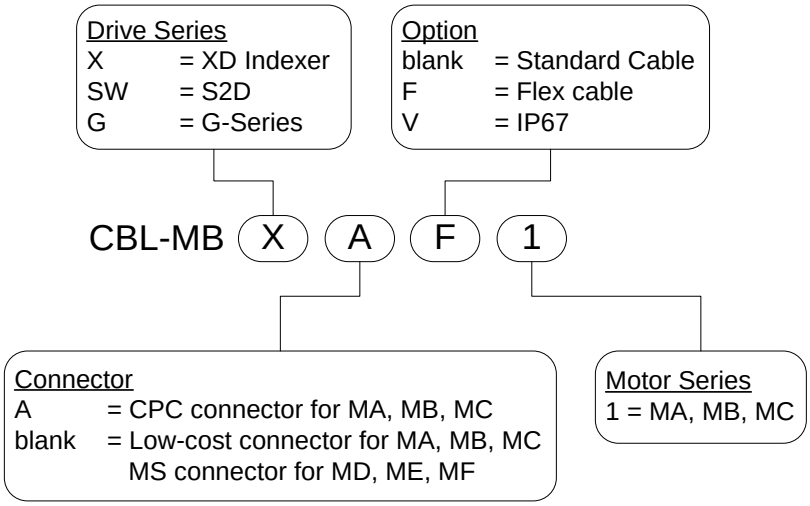


Motor Cable



* See Cable Selection Chart, pages 26 & 27

Brake Cable



Encoder, Motor and Brake Cables for XD Indexer Drives

	Motor Series	Model Number	Encoder Cable	Motor Cable (no brake)	Motor/Brake Cable
200 VAC	**MAC-MA, MB & MC**	MAC-MA001D2 MAC-MB003D2 MAC-MB006D2 MAC-MB011D2 MAC-MC016D2 MAC-MC022D2 MAC-MC028D2	CBL-ME1XA/len †	CBL-MMXA1-2/len †	CBL-MMXA1-2/len † and CBL-MBXA1/len †
	MAC-MD	MAC-MD025B2 MAC-MD025D2 MAC-MD050B2 MAC-MD050D2 MAC-MD070B2 MAC-MD070D2 MAC-MD095B2 MAC-MD095D2	CBL-ME2X/len	CBL-MMX2-2/len	CBL-MMBX2-2/len
	MAC-ME	MAC-ME100B2 MAC-ME160B2	CBL-ME2X/len	CBL-MMX3-2/len	CBL-MMBX3-2/len
		MAC-ME250B2 MAC-ME335B2		CBL-MMX4-2/len	CBL-MMBX4-2/len
		MAC-ME420B2*		CBL-MMX5-2/len	N/A*
	MAC-MF	MAC-MF475B2* MAC-MF620B2*	CBL-ME2X/len	CBL-MMX5-2/len	N/A*
400 VAC	**MAC-MD**	MAC-MD025B4 MAC-MD025D4 MAC-MD050B4 MAC-MD050D4 MAC-MD070B4 MAC-MD070D4 MAC-MD095B4 MAC-MD095D4	CBL-ME2X/len	CBL-MMX6-4/len	CBL-MMBX6-4/len
	MAC-ME	MAC-ME100B4 MAC-ME160B4 MAC-ME250B4	CBL-ME2X/len	CBL-MMX7-4/len	CBL-MMBX7-4/len
		MAC-ME335B4		CBL-MMX3-4/len	CBL-MMX3-4/len
		MAC-ME420B4*		CBL-MMX5-4/len	N/A*
	MAC-MF	MAC-MF475B4* MAC-MF620B4* MAC-MF845B4*	CBL-ME2X/len	CBL-MMX5-4/len	N/A*

† All MAC-MA, MB & MC cables can be ordered with low-cost connectors by removing the “A” in the model number.

* N/A – These motors do not support the brake option.

All cables can be ordered with the IP67 or flex option by adding a “V”or “F” in the part number.

For all cables the length of the cable is specified by adding the numerical length (in feet) in the "len" place holder in the part number. Consult ORMEC Sales for cables greater than 100 feet.

See page 255 for model numbering details.

Encoder, Motor and Brake Cables for S2D drives

	Motor Series	Model Number	Encoder Cable	Motor Cable (no brake)	Motor/Brake Cable
200 VAC	**MAC-MA, MB & MC**	MAC-MA001D2 MAC-MB003D2 MAC-MB006D2 MAC-MB011D2 MAC-MC016D2 MAC-MC022D2 MAC-MC028D2	CBL-ME1SWA/len †	CBL-MMSWA1-2/len †	CBL-MMSWA1-2/len † and CBL-MBSWA1/len †
	MAC-MD	MAC-MD025B2 MAC-MD025D2 MAC-MD050B2 MAC-MD050D2 MAC-MD070B2 MAC-MD070D2 MAC-MD095B2 MAC-MD095D2	CBL-ME2SW/len	CBL-MMSW2-2/len	CBL-MMBSW2-2/len
	MAC-ME	MAC-ME100B2 MAC-ME160B2	CBL-ME2SW/len	CBL-MMSW3-2/len	CBL-MMBSW3-2/len
		MAC-ME250B2 MAC-ME335B2		CBL-MMSW4-2/len	CBL-MMBSW4-2/len
		MAC-ME420B2*		CBL-MMSW5-2/len	N/A*
	MAC-MF	MAC-MF475B2* MAC-MF620B2*	CBL-ME2SW/len	CBL-MMSW5-2/len	N/A*
400 VAC	**MAC-MD**	MAC-MD025B4 MAC-MD025D4 MAC-MD050B4 MAC-MD050D4 MAC-MD070B4 MAC-MD070D4 MAC-MD095B4 MAC-MD095D4	CBL-ME2SW/len	CBL-MMSW6-4/len	CBL-MMBSW6-4/len
	MAC-ME	MAC-ME100B4 MAC-ME160B4 MAC-ME250B4	CBL-ME2SW/len	CBL-MMSW7-4/len	CBL-MMBSW7-4/len
		MAC-ME335B4		CBL-MMSW3-4/len	CBL-MMSW3-4/len
		MAC-ME420B4*		CBL-MMSW5-4/len	N/A*
	MAC-MF	MAC-MF475B4* MAC-MF620B4* MAC-MF845B4*	CBL-ME2SW/len	CBL-MMSW5-4/len	N/A*

† All MAC-MA, MB & MC cables can be ordered with low-cost connectors by removing the “A” in the model number.

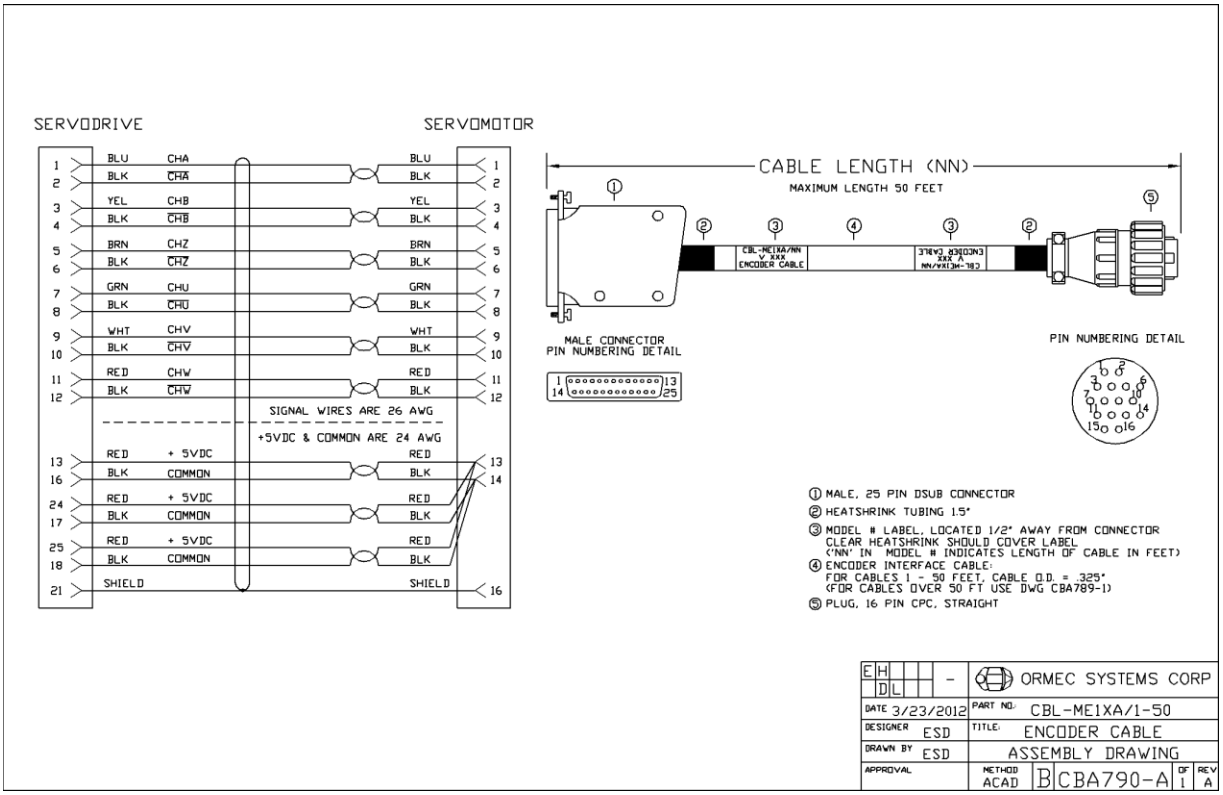
* N/A – These motors do not support the brake option.

All cables can be ordered with the IP67 or flex option by adding a “V”or “F” in the part number.

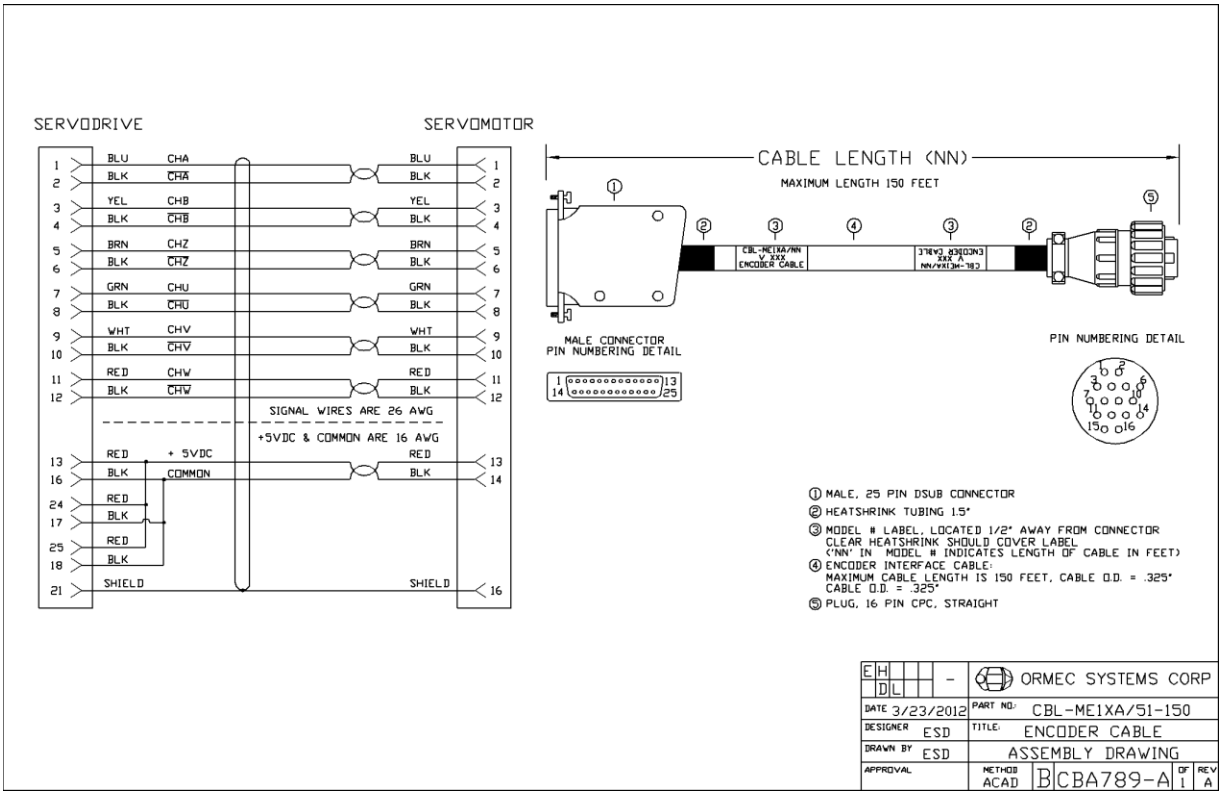
For all cables the length of the cable is specified by adding the numerical length (in feet) in the "len" place holder in the part number. Consult ORMEC Sales for cables greater than 100 feet.

See page 255 for model numbering details.

Encoder, Motor and Brake Cable Drawings

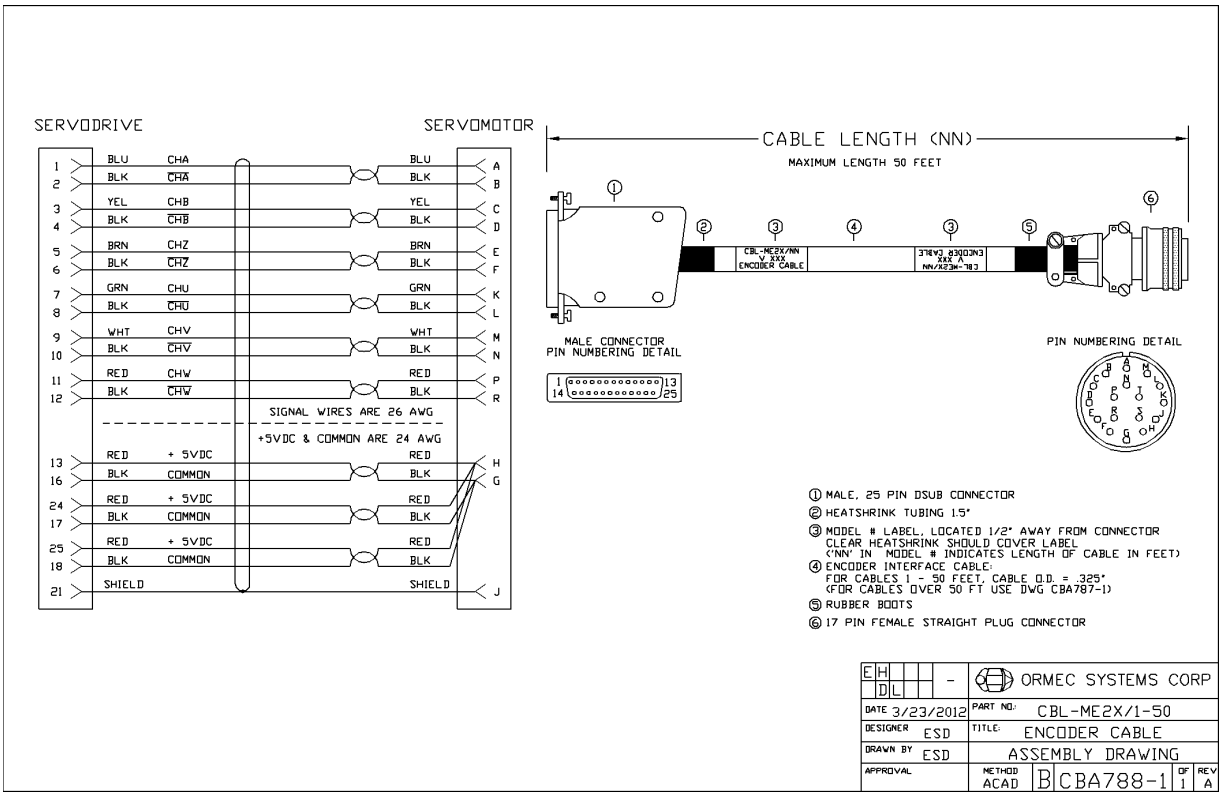


CBL-ME1XA/1-50

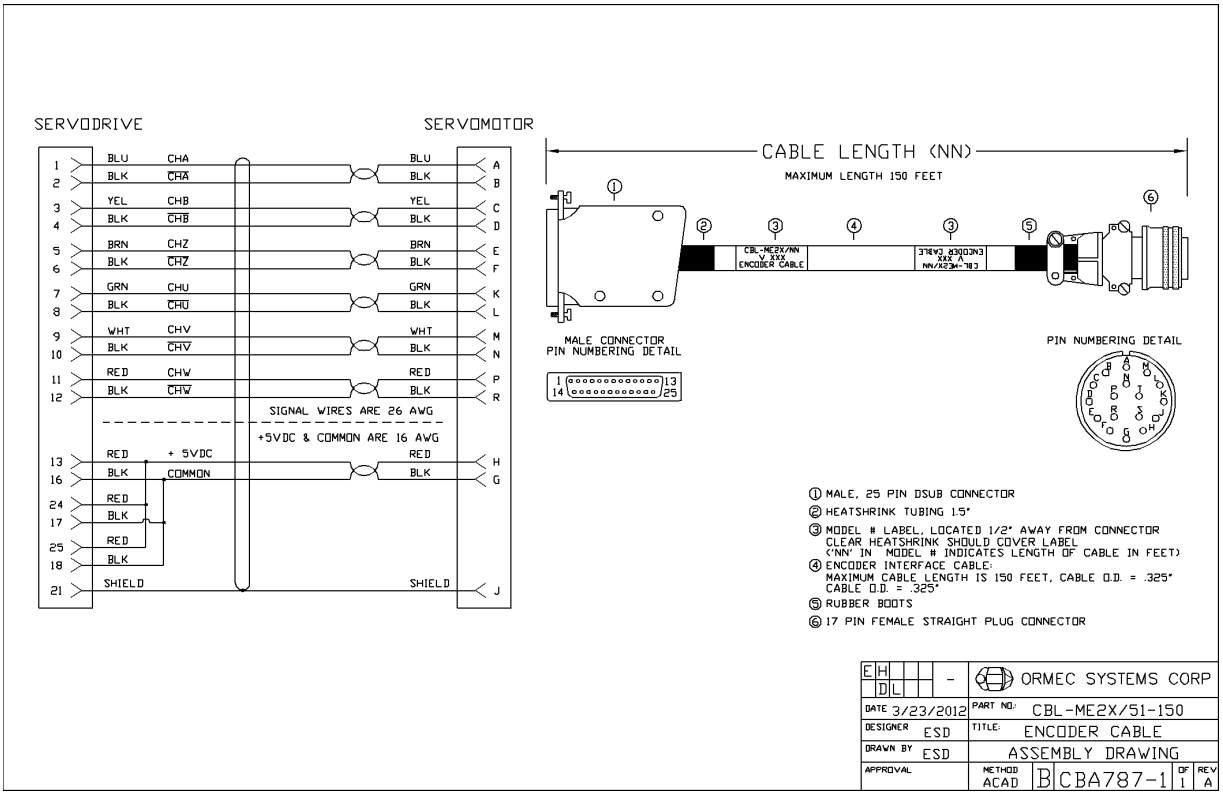


CBL-ME1XA/51-150

Encoder, Motor and Brake Cable Drawings

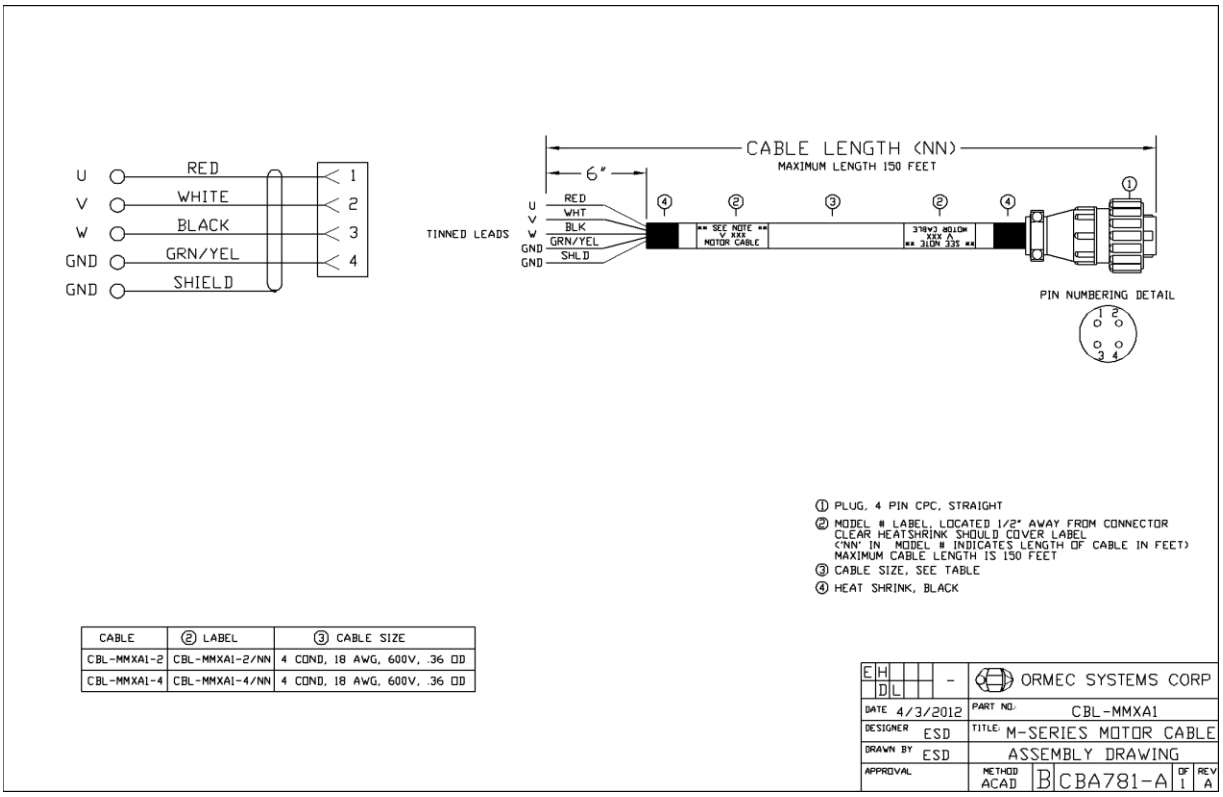


CBL-ME2X/1-50



CBL-ME2X/51-150

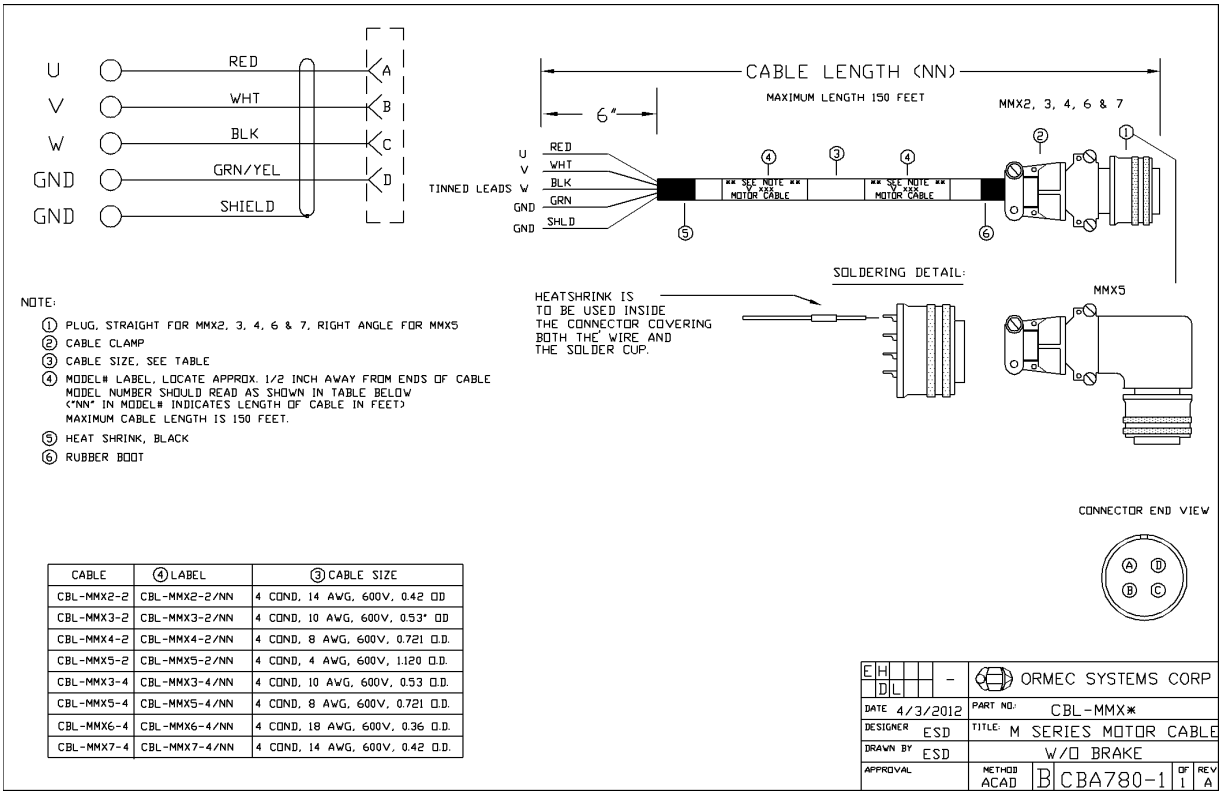
Encoder, Motor and Brake Cable Drawings



CABLE	② LABEL	③ CABLE SIZE
CBL-MMXA1-2	CBL-MMXA1-2/NN	4 COND, 18 AWG, 600V, .36 OD
CBL-MMXA1-4	CBL-MMXA1-4/NN	4 COND, 18 AWG, 600V, .36 OD

E H D L	-	ORMEC SYSTEMS CORP
DATE 4/3/2012	PART NO:	CBL-MMXA1
DESIGNER ESD	TITLE:	M-SERIES MOTOR CABLE
DRAWN BY ESD		ASSEMBLY DRAWING
APPROVAL	METHOD ACAD	B CBA781-A OF 1 REV A

CBL-MMXA1

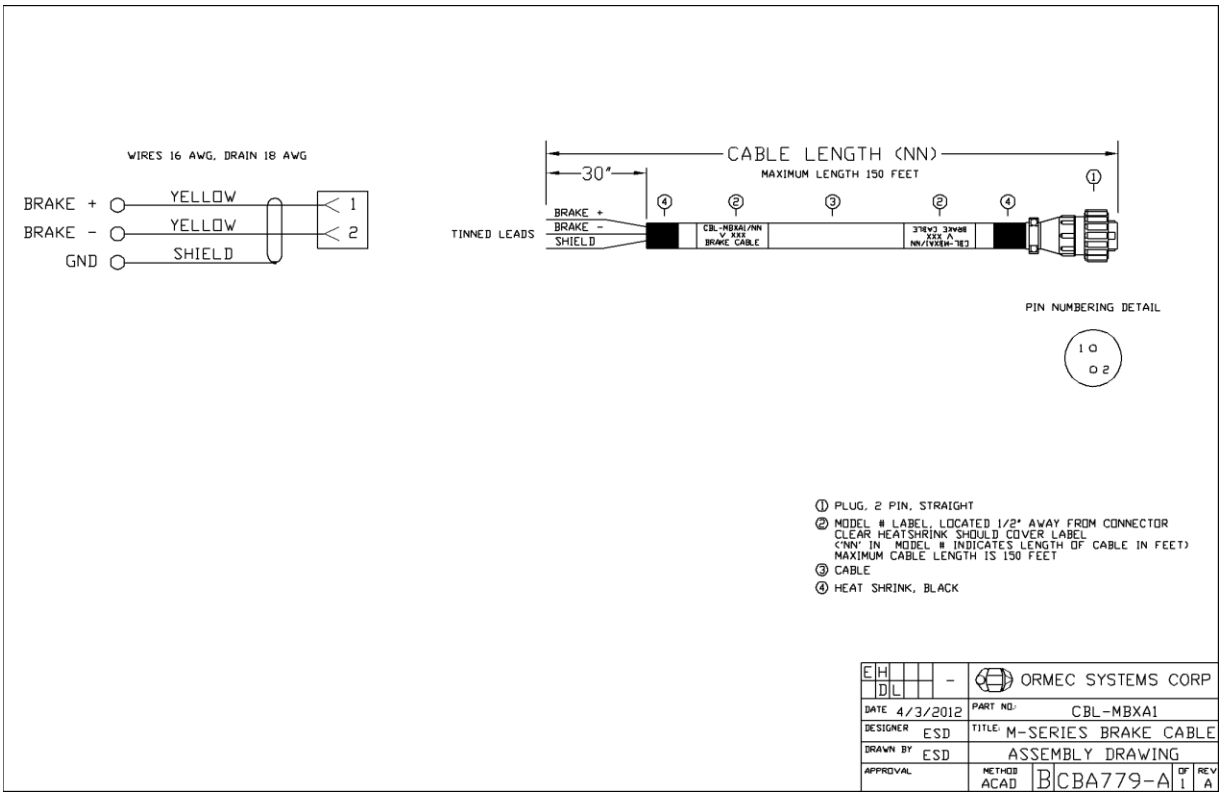


CABLE	④ LABEL	③ CABLE SIZE
CBL-MMX2-2	CBL-MMX2-2/NN	4 COND, 14 AWG, 600V, 0.42 OD
CBL-MMX3-2	CBL-MMX3-2/NN	4 COND, 10 AWG, 600V, 0.53" OD
CBL-MMX4-2	CBL-MMX4-2/NN	4 COND, 8 AWG, 600V, 0.721 O.D.
CBL-MMX5-2	CBL-MMX5-2/NN	4 COND, 4 AWG, 600V, 1.120 O.D.
CBL-MMX3-4	CBL-MMX3-4/NN	4 COND, 10 AWG, 600V, 0.53 O.D.
CBL-MMX5-4	CBL-MMX5-4/NN	4 COND, 8 AWG, 600V, 0.721 O.D.
CBL-MMX6-4	CBL-MMX6-4/NN	4 COND, 18 AWG, 600V, 0.36 O.D.
CBL-MMX7-4	CBL-MMX7-4/NN	4 COND, 14 AWG, 600V, 0.42 O.D.

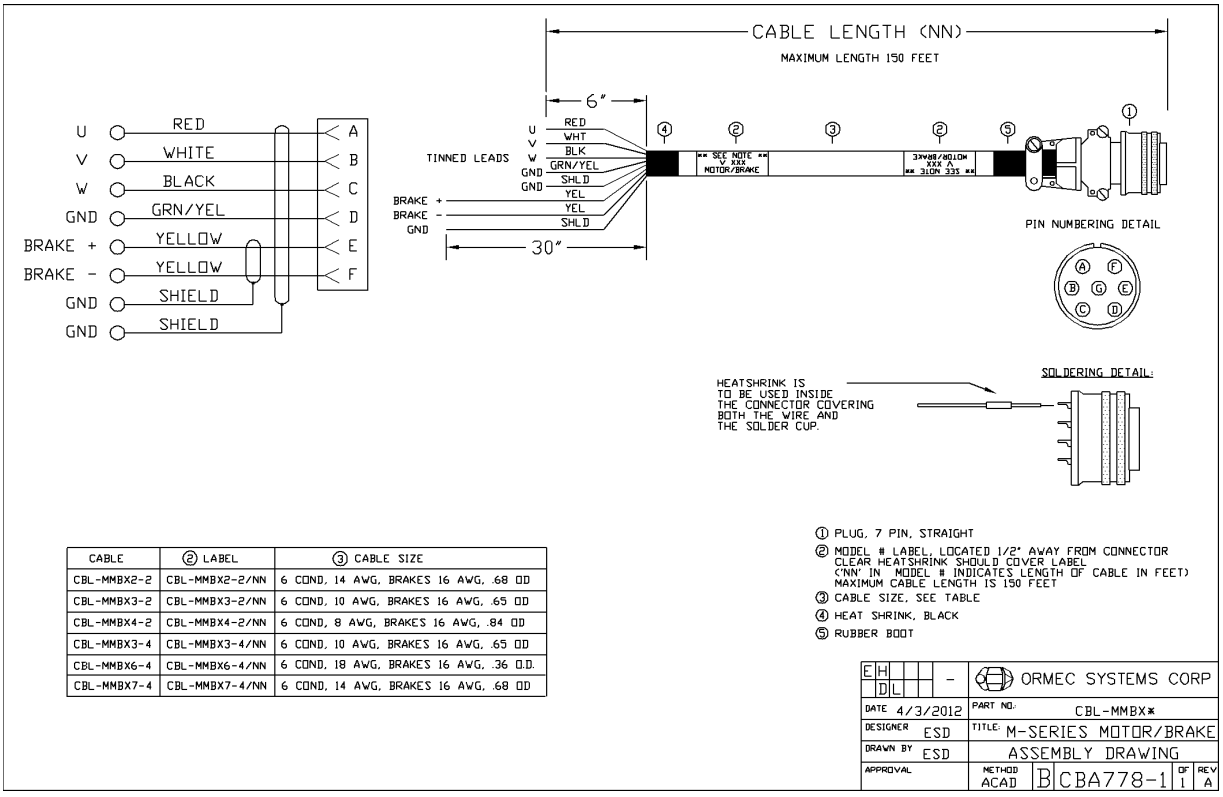
E H D L	-	ORMEC SYSTEMS CORP
DATE 4/3/2012	PART NO:	CBL-MMX*
DESIGNER ESD	TITLE:	M SERIES MOTOR CABLE
DRAWN BY ESD		W/O BRAKE
APPROVAL	METHOD ACAD	B CBA780-1 OF 1 REV A

CBL-MMX*

Encoder, Motor and Brake Cable Drawings



CBL-MBXA1



CABLE	② LABEL	③ CABLE SIZE
CBL-MMBX2-2	CBL-MMBX2-2/NN	6 COND, 14 AWG, BRAKES 16 AWG, .68 OD
CBL-MMBX3-2	CBL-MMBX3-2/NN	6 COND, 10 AWG, BRAKES 16 AWG, .65 OD
CBL-MMBX4-2	CBL-MMBX4-2/NN	6 COND, 8 AWG, BRAKES 16 AWG, .84 OD
CBL-MMBX3-4	CBL-MMBX3-4/NN	6 COND, 10 AWG, BRAKES 16 AWG, .65 OD
CBL-MMBX6-4	CBL-MMBX6-4/NN	6 COND, 18 AWG, BRAKES 16 AWG, .36 O.D.
CBL-MMBX7-4	CBL-MMBX7-4/NN	6 COND, 14 AWG, BRAKES 16 AWG, .68 OD

CBL-MMBX*

Technical information is subject to change without notice

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