



Compax3M Servo Drive Systems

Specifications of Multi-axis systems



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10kW supply with three M150D6 axis units = 7.87"

Compax3M device	Current** (A _{rms})		DC Bus Voltage
	I _{cont}	I _{peak}	
M050D6	4	8	325 – 679 VDC**
M010D6	8	16	
M150D6	12.5	25	
M300D6	24	48	
AC supply module	Output power (kW)		AC Voltage
	P _{cont}	P _{peak}	
C3MP10D6	10	20	3 * 240/480VAC
C3MP20D6	20	40	

**Current shown for 480VAC (679VDC bus) supply. Check manual for other voltages

AC Mains Connection

Device type Compax3	MP10
Supply voltage	Rated voltage 3AC 400V 230-480VAC ±10% / 50-60Hz
Input current	22A _{eff}
Maximum fuse rating per device (=short circuit rating)	25A MTP miniature circuit breaker (ABB) Recommendation: S203-K25

Control Voltage 24VDC for C3MP / C3M

Device type	Compax3MP / Compax3M
Voltage range	21 - 27VDC
Mains module	with switch-on current limitation, due to capacitive load
Fuse	MTP miniature circuit breaker or "delayed action fuse", due to capacitive load
Current drain of the device	C3MP10D6: 0.2A
Total current drain	C3M050D6: 0.85A C3M100D6: 0.85A C3M150D6: 0.85A + Total load of the digital outputs + current for the motor holding brake
Ripple	0.5V _{pp}
Requirement according to safe extra low voltage (SELV)	yes
Short-circuit proof	conditional (internally protected with 3.15AT)

Motor Holding Brake Output

Motor holding brake output	Compax3
Voltage range	21 – 27VDC
Maximum output current (short circuit proof)	1.6A
Minimum output current	150 mA
Securing of brake Compax3M	3.15A

Output Data @ 480VAC – C3 Mxxx

Device type Compax3	M050D6	M100D6	M150D6
Output voltage	3x 0-480V		
Nominal output current	4A _{eff}	8A _{eff}	12.5A _{eff}
Pulse current for 5s *	8A _{eff}	16A _{eff}	25A _{eff}
Power	3.33kVA	6.66kVA	10kVA
Switching frequency	8 kHz	8 kHz	8 kHz
Power loss for In	60W+**	80W+**	110W+**

*Turning frequency for pulse current: f>5Hz

** Losses microelectronics (24VDC): 10.3W without option card, 15W_{max} with option card.

Output Data @ 240/400VAC – C3 Mxxx

Device type Compax3	M050D6	M100D6	M150D6
Output voltage	3x 0-400V		
Nominal output current	5A _{eff}	10A _{eff}	15A _{eff}
Pulse current for 5s *	10A _{eff}	20A _{eff}	30A _{eff}
Power	3.33kVA	6.66kVA	10kVA
Switching frequency	8 kHz	8 kHz	8 kHz
Power loss for In	60W+**	80W+**	110W+**

*Turning frequency for pulse current: f>5Hz

** Losses microelectronics (24VDC): 10.3W without option card, 15W_{max} with option card.

Current Output at Different Frequencies 480VAC

Switching frequency*		M050D6	M100D6	M150D6
8 kHz	I _{nominal}	4A _{eff}	8A _{eff}	12.5A _{eff}
	I _{peak} (<5s)	8A _{eff}	16A _{eff}	25A _{eff}
16kHz	I _{nominal}	3A _{eff}	5.5A _{eff}	8A _{eff}
	I _{peak} (<5s)	6A _{eff}	11A _{eff}	16A _{eff}
32kHz	I _{nominal}	2A _{eff}	2.5A _{eff}	4A _{eff}
	I _{peak} (<5s)	4A _{eff}	5A _{eff}	8A _{eff}

Current Output at Different Frequencies 240/400VAC

Switching frequency*		M050D6	M100D6	M150D6
8 kHz	I _{nominal}	5A _{eff}	10A _{eff}	15A _{eff}
	I _{peak} (<5s)	10A _{eff}	20A _{eff}	30A _{eff}
16kHz	I _{nominal}	3.8A _{eff}	7.5A _{eff}	10A _{eff}
	I _{peak} (<5s)	7.5A _{eff}	15A _{eff}	20A _{eff}
32kHz	I _{nominal}	2.5A _{eff}	3.8A _{eff}	5A _{eff}
	I _{peak} (<5s)	5A _{eff}	7.5A _{eff}	10A _{eff}

Braking Operation of C3MxxxD6

Device type Compax3	M050	M100	M150
Capacitance / storable energy	110µF/ 18Ws at 400V 10Ws at 480V	220µF/ 37Ws at 400V 21Ws at 480V	220µF/ 37Ws at 400V 21Ws at 480V

Breaking Resistors for C3MPxxD6

BRM13/01 (30Ω)	Compax3MP10D6	500 W
BRM14/01 (15Ω)	Compax3MP10D6*	500 W

*for Compax3MP10D6 2x15Ω in series

Size and Weight of C3MP / C3M

Device type	Dimensions	Weight [kg]
	HxWxD [mm]	
Compax3MP010D6	360 x 50 x 263	3,95
Compax3M050D6	360 x 50 x 263	3,5
Compax3M100D6	360 x 50 x 263	3,6
Compax3M150D6	360 x 50 x 263	3,6

Environmental Conditions – C3MP / C3M

General ambient conditions	According to EN 60 721-3-1 to 3-3 Climate (temperature/humidity/barometric pressure): Class 3K3	
Permissible ambient temperature:		
Operation Storage Transport	0 to +40 C Class 3K3 -25 to +70 C -25 to +70 C	
Tolerated humidity:	No condensation	
Operation Storage Transport	<= 85% class 3k3 <= 95% <= 95%	(Relative humidity)
Elevation of operating site	<=1000m above sea level for 100% load ratings <=2000m above sea level for 1% / 100m power reduction Please inquire for greater elevations	
Sealing	IP20 protection class according to EN 60 529	
Mechanic resonances:	Class 2M3, 20m/s ² ;8-200Hz	

Resolution of Motor Position

For option F10: Resolver	<ul style="list-style-type: none"> Position resolution: 16Bit (= 0.005°) Absolute accuracy: ±0,167°
For option F11: SinCos®	<ul style="list-style-type: none"> Position resolution: 13.5Bit/Encoder sine period => 0.03107°/encoder resolution
For option F12:	<ul style="list-style-type: none"> Maximum position resolution <ul style="list-style-type: none"> Linear: 24 Bits per motor magnet spacing Rotary: 24 bits per motor revolution Resolution for analog hall sensors with 1Vss signal (e.g. EnDat): 13.5 bits / graduation of the scale of the encoder For RS 422 encoders: 4x encoder resolution Accuracy of the feedback zero pulse acquisition = accuracy of the feedback resolution Resolution for analog hall sensors with 1Vss signal: 13.5 bits / motor magnet spacing

Cooling – C3MP / C3M

Cooling mode:	Forced air ventilation with fan in the heat dissipator
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EMC Limit Values – C3MP / C3M

EMC interference emission	Limit values according to EN 61 800-3, Limit value class C3 with mains filter.
EMC disturbance immunity	Industrial area limit values in accordance with EN 61 800-3



Parker Hannifin Corporation
Electromechanical Automation Division
5500 Business Park Drive
Rohnert Park, CA 94928
parkermotion.com