



# Compax3M Servo Drive Systems

Specifications of Multi-axis systems



ENGINEERING **YOUR** SUCCESS.



10kW supply with three M150D6 axis units = 7.87"

Compax3M device	Current** (Arms)		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	22Aeff
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	0.5Vpp
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 <sub>eff</sub>	8A <sub>eff</sub>	12.5A <sub>eff</sub>
Pulse current for 5s *	8A <sub>eff</sub>	16A <sub>eff</sub>	25A <sub>eff</sub>
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<sub>max</sub> with option card.

## Output Data @ 240/400VAC – C3 Mxxx

Device type Compax3	M050D6	M100D6	M150D6
Output voltage	3x 0-400V		
Nominal output current	5A <sub>eff</sub>	10A <sub>eff</sub>	15A <sub>eff</sub>
Pulse current for 5s *	10A <sub>eff</sub>	20A <sub>eff</sub>	30A <sub>eff</sub>
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<sub>max</sub> with option card.

## Current Output at Different Frequencies 480VAC

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

## Current Output at Different Frequencies 240/400VAC

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

## 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

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

## Resolution of Motor Position

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

## Cooling – C3MP / C3M

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

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



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