

400/600 Watts

MCC Series



- Baseplate-cooled
- Up to 4 Regulated Outputs
- Optional 200 W Conditioned Output
- MIL-STD 1275 and DEF-STAN 61-5
- MIL-STD 461 and DEF-STAN 59-411
- Rugged Construction to MIL-STD 810F
- 3 Year Warranty

Specification

Input

Input Voltage Range	• 18.5-34 VDC steady state
Input Current	• 27 A at 18.5 V max
Inrush Current	• <60 A
Input Reverse Voltage Protection	• Continuous
Input Transient	• MIL-STD-1275A/B/C/D
Undervoltage Lockout	• Vin <18 VDC

Output

Output Voltage	• O/P 1-4: regulated outputs 2-48 VDC
Output Voltage Adjustment	• O/P 1-4: 10-110% factory set A minimum load of 10% is required for outputs below 90% of nominal voltage
Optional Aux. Output Rail Voltage	• Vin - 2 VDC ⁽¹⁾
Optional Aux. Output Power	• 200 W for MCC600 (9 A max)
Maximum Aux. Output	• Vout clamped <36 VDC
Minimum Load	• No minimum load (output ripple increased at Pout <10% Pout max)
Line Regulation	• 1% max
Load Regulation	• 1% max
Cross Regulation	• Outputs 1-4 individually regulated, no cross regulation
Output Set Tolerance	• ±100 mV
External Hold Up	• External connection for additional hold up capacitance, see longform datasheet
Ripple & Noise	• 50 mV or 1% pk-pk, whichever is the greater, 20 MHz bandwidth
Low Noise (Option 'Q')	• Outputs 1 & 2: 25 mV reduction Outputs 3 & 4: 45 mV reduction
Temperature Coefficient	• ±0.05%/°C
Overvoltage Protection	• 110-120% of nominal output, recycle input to restart
Overcurrent Protection	• 110-120% of nominal output, auto recovery
Short Circuit Protection	• Continuous, with auto restart
Overtemperature Protection	• >+90 °C baseplate temperature, auto restart
Remote Sense	• Outputs 1 & 2, Compensate for 0.5 V total voltage drop

General

Efficiency	• 75% typical
Isolation Voltage	• 500 VDC Input to Output, 500 VDC Output to Chassis, 500 VDC Input to Chassis
Material and Finish	• Aluminium baseplate and safety cover
Input Inhibit	• Global enable and disable function, short to negative input to inhibit
Output Inhibit	• Each regulated output has independent inhibit, TTL high to inhibit
Inhibited Input Current	• <5 mA when input inhibit function is used
DC OK Signal	• Optional on output voltages ≥5 VDC Isolated opto-coupler transistor output
MTBF	• 517 kHrs to MIL-HDBK-217F at 40 °C, GB

Environmental

Operating Temperature	• -40 °C to +70 °C ambient with baseplate temperature within -40 °C to +90 °C
Extended Temperature	• -55 °C to +90 °C baseplate temperature, (see note 4)
Cooling	• Baseplate-cooled. It is recommended that a thermal pad or compound is fitted between the MCC baseplate and any heatsink
Operating Humidity	• 20-95% non-condensing
Storage Temperature	• -55 °C to +90 °C
Storage Humidity	• 20-95% non-condensing
Shock	• 40 g MIL-STD-810F, method 516.5-1
Vibration	• MIL-STD-810F, method 514.5C-17 minimum integrity test for military equipment

EMC

Emissions	• EN55022 Level B conducted MIL-STD-461E/F army ground use CE101 & CE102 DEF-STAN 59-411, DCE01/DCE02
Conducted Immunity	• MIL-STD-1275A/B/C/D, MIL-STD-461E/F CS101, CS114, CS115, CS116 DEF-STAN 61-5 part 6 issue 5

⁽¹⁾ Vin - 2VDC minimum 36 VDC (clamped) maximum

Model Number & Ratings

MCC400/600 

DC-DC

			1	2	3	4							
MCC			4	Q	2J	2J	2J	2J	E	X	X	X	X
Chassis Designations, Power & Sizes													
Code	Power	Slots											
MCC4	400 W	4											
MCC6	400 W + 200 W Aux	4											
			Modules Output Voltage / Current Rating										
			V	I	W	Slots	Code						
			3.3	22.7 A	75 W	1	2C						
			3.3	45.4 A	150 W	2	3C						
			3.3	80.0 A	264 W	4	4C ⁽²⁾						
			5	20.0 A	100 W	1	2D						
			5	40.0 A	200 W	2	3D						
			5	80.0 A	400 W	4	4D ⁽²⁾						
			12	8.3 A	100 W	1	2J						
			12	16.6 A	200 W	2	3J						
			12	33.3 A	400 W	4	4J ⁽²⁾						
			15	6.6 A	100 W	1	2L						
			15	13.3 A	200 W	2	3L						
			15	26.7 A	400 W	4	4L ⁽²⁾						
			24	4.1 A	100 W	1	2P						
			24	8.3 A	200 W	2	3P						
			24	16.7 A	400 W	4	4P ⁽²⁾						
			28	3.5 A	100 W	1	2Q						
			28	7.1 A	200 W	2	3Q						
			28	14.3 A	400 W	4	4Q ⁽²⁾						
			36	2.78 A	100 W	1	2T						
			36	5.56 A	200 W	2	3T						
			36	11.11 A	400 W	4	4T						
			48	2.1 A	100 W	1	2W						
			48	4.1 A	200 W	2	3W						
			48	8.3 A	400 W	4	4W ⁽²⁾						

MCC400/600:

Single (S), Dual (D), Triple (T) or Quad (Q)
(4 slots max where all slots must be filled)

D - DC OK, leave blank if not required
Q - Low noise output
L - Passive filtering only⁽⁴⁾
P - Conformal coating

S - Standard
E - Screening option⁽³⁾
A - Auxiliary Turn Off⁽⁵⁾

Notes

- Modules 1 to 4 available for MCC400/600 e.g. MCC4Q2D2J2L2PED.
- 4 series output modules to be used with single MCC400/600 models only.
- DC-DC output modules are stress-screened for -55 °C to +90 °C operation.
- Low cost option with passive EMI filtering only. No auxiliary output, EMI to EN55022 level B only.
- Global inhibit will also turn off the auxiliary output - Option A.

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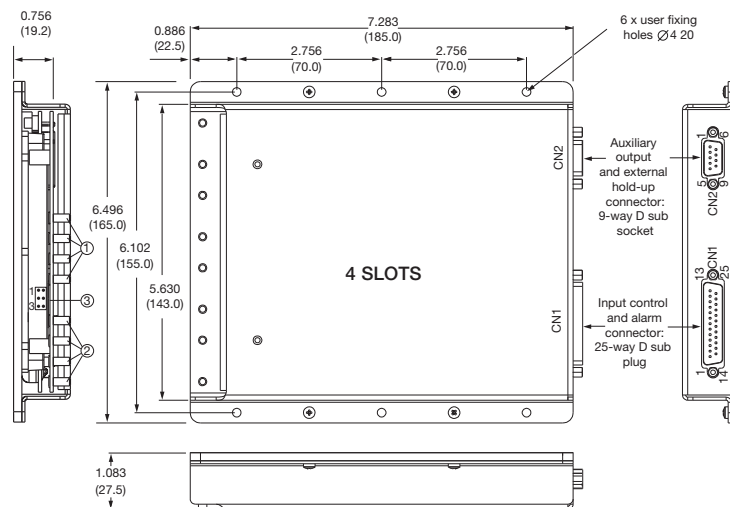
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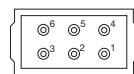
Mechanical Details

MCC400-600



③ Signal Connector

① ② = M4 output studs polarity marked on PCB silk screen. Output polarity varies for multiple outputs.



Harwin 2mm Datamate Connector.
Horizontal male, p/n: M80-8410642
Mates with p/n: M80-8890605

MCC400-600: Signals Connector			
Pin	Function	Pin	Function
1	Disable	4	DC OK RTN
2	+sense	5	Disable RTN
3	-sense	6	DC OK

MCC400-600: CN1 25-Pin Input Connector			
Pin	Function	Pin	Function
1	DC OK	14	DC OK RTN
2	Global Inhibit	15	Global Inhibit RTN
3	N/C	16	Negative Input
4	Negative Input	17	Negative Input
5	Negative Input	18	Negative Input
6	Negative Input	19	Negative Input
7	Negative Input	20	Negative Input
8	Negative Input	21	Positive Input
9	Positive Input	22	Positive Input
10	Positive Input	23	Positive Input
11	Positive Input	24	Positive Input
12	Positive Input	25	Positive Input
13	Positive Input		

MCC400-600: CN2 9-Pin Aux Output Connector			
Pin	Function	Pin	Function
1	External Holdup Positive	6	External Holdup Negative
2	External Holdup Positive	7	External Holdup Negative
3	N/C	8	Aux Output Negative
4	Aux Output Positive	9	Aux Output Negative
5	Aux Output Positive		

Notes

- All dimensions are in inches (mm).
- Weight: MCC400/600: 2.31 lb (1.05kg) max.
- Tolerance: ±0.008 in (±0.2 mm).
- Max Torque: M4 studs 17.7 lbs-in (2.0 Nm)
- For mating signal connector kit order part number MCC-SIG CON KIT



T H E X P E R T S I N P O W E R

09-Oct-14