

MICROMASTER 420

Technical data

MICROMASTER 420 inverter

Mains voltage and power ranges	1 AC 200 V to 240 V $\pm$ 10 % 3 AC 200 V to 240 V $\pm$ 10 % 3 AC 380 V to 480 V $\pm$ 10 %	0.12 kW to 3 kW 0.12 kW to 5.5 kW 0.37 kW to 11 kW		
Power frequency	47 Hz to 63 Hz			
Output frequency	0 Hz to 650 Hz (Due to legal restrictions a limitation to 550 Hz is under preparation)			
Power factor	$\geq$ 0.95			
Inverter efficiency	96 % to 97 % (Further information is available on the Internet at: http://support.automation.siemens.com/WW/view/en/22978972)			
Overload capability	Overload current 1.5 x rated output current (i.e. 150 % overload capability) for 60 s, cycle time 300 s			
Inrush current	Less than rated input current			
Control method	Linear V/f-characteristic; quadratic V/f characteristic; multipoint characteristic (programmable V/f characteristic); flux current control (FCC)			
Pulse frequency	16 kHz (standard with 1/3 AC 230 V) 4 kHz (standard with 3 AC 400 V) 2 kHz to 16 kHz (in 2 kHz steps)			
Fixed frequencies	7, programmable			
Skip frequency ranges	4, programmable			
Setpoint resolution	0.01 Hz digital 0.01 Hz serial 10 bit analog			
Digital inputs	3 fully programmable isolated digital inputs; switchable PNP/NPN			
Analog input	1, for setpoint or PI controller (0 V to 10 V, scaleable or for use as 4th digital input)			
Relay outputs	1, programmable, 30 V DC/5 A (resistive load); 250 V AC/2A (inductive load)			
Analog output	1, programmable (0 mA to 20 mA)			
Serial interfaces	RS-485, optional RS-232			
Motor cable lengths	without output choke max. 50 m (shielded) without output choke max. 100 m (unshielded) see variant dependent options			
Electromagnetic compatibility	Inverter available with internal EMC filter Class A; available as options are EMC filters to EN 55 011, Class A or Class B			
Braking	DC braking, compound braking			
Degree of protection	IP20			
Operating temperature	-10 °C to +50 °C (+14 °F to +122 °F)			
Storage temperature	-40 °C to +70 °C (-40 °F to +158 °F)			
Relative humidity	95 % (non-condensing)			
Installation altitude	Up to 1000 m above sea level without derating			
Standard SCCR (Short Circuit Current Rating) ¹⁾	10 kA			
Protection features for	• Undervoltage • Overvoltage • Overload • Earth faults • Short circuit • Stall prevention • Locked motor protection • Motor overtemperature • Inverter overtemperature • Parameter interlock			
Compliance with standards	   			
CE marking	Conformity with low-voltage directive 73/23/EEC			
Cooling-air volumetric flow required, dimensions and weights (without options)	Frame size (FS)	Cooling-air volumetric flow required (l/s)/(CFM)	H x W x D (mm)	Weight, approx. (kg)
	A	4.8/10.2	173 x 73 x 149	1.0
	B	24/51	202 x 149 x 172	3.3
	C	54.9/116.3	245 x 185 x 195	5.0

CFM: Cubic Feet per Minute

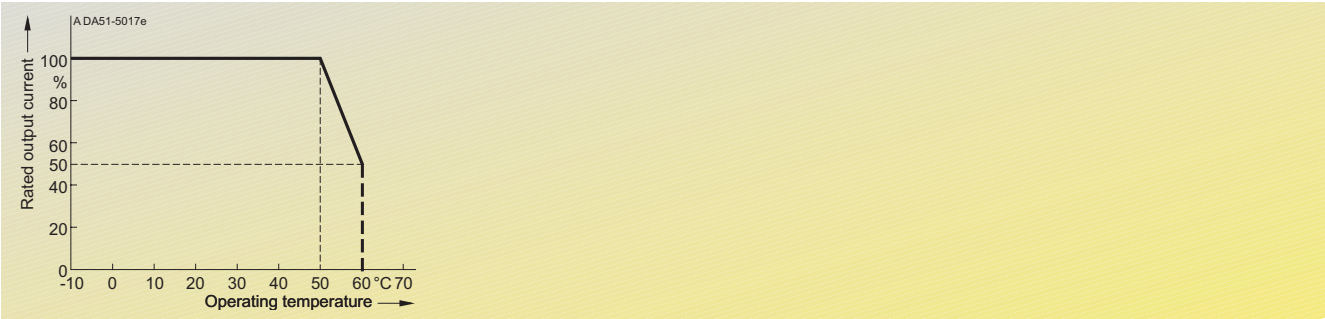
1) Applies to industrial control cabinet installations to NEC article 409/UL 508A.

Derating data

Pulse frequency

Output (for 3 AC 400 V) kW	Rated output current in A for a pulse frequency of						
	4 kHz	6 kHz	8 kHz	10 kHz	12 kHz	14 kHz	16 kHz
0.37	1.2	1.2	1.2	1.2	1.2	1.2	1.1
0.55	1.6	1.6	1.6	1.6	1.6	1.6	1.1
0.75	2.1	2.1	2.1	2.1	1.6	1.6	1.1
1.1	3.0	3.0	2.7	2.7	1.6	1.6	1.1
1.5	4.0	4.0	2.7	2.7	1.6	1.6	1.1
2.2	5.9	5.9	5.1	5.1	3.6	3.6	2.6
3.0	7.7	7.7	5.1	5.1	3.6	3.6	2.6
4.0	10.2	10.2	6.7	6.7	4.8	4.8	3.6
5.5	13.2	13.2	13.2	13.2	9.6	9.6	7.5
7.5	19.0	18.4	13.2	13.2	9.6	9.6	7.5
11	26.0	26.0	17.9	17.9	13.5	13.5	10.4

Operating temperature



Installation altitude above sea level

