Technical data

MICROMASTER 430 inverter

Mains voltage and Power ranges		3 AC 380 V to 480 V ± 10 % 7.5 kW to 250 kW (variable torque)
Power frequency		47 Hz to 63 Hz
Output frequency	7.5 kW to 90 kW	0 Hz to 650 Hz (limitation to 550 Hz in production to comply with legal requirements) [1])
	110 kW to 250 kW	0 Hz to 267 Hz
Power factor		≥ 0.95
Inverter efficiency		
	7.5 kW to 90 kW	96 % to 97 %
	110 kW to 250 kW	97 % to 98 % (Further information is available on the Internet at: http://support.automation.siemens.com/WW/view/en/22978972)
Overload capability	7.5 kW to 90 kW	Overload current 1.4 x rated output current (i.e. +140 % overload capability) for 3 s, and 1.1 x rated output current (i.e. 110 % overload capability) for 60 s, cycle time 300 s
	110 kW to 250 kW	Overload current 1.5 x rated output current (i.e. 150 % overload capability) for 1 s and 1.1 x rated output current (i.e. 110 % 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), energy saving mode
Pulse frequency	7.5 kW to 90 kW	4 kHz (standard) 2 kHz to 16 kHz (in 2 kHz steps)
	110 kW to 250 kW	2 kHz (standard) 2 kHz to 4 kHz (in 2 kHz steps)
Fixed frequencies		15, programmable
Skip frequency ranges		4, programmable
Setpoint resolution		0.01 Hz digital; 0.01 Hz serial; 10 bit analog
Digital inputs		6 fully programmable isolated digital inputs; switchable PNP/NPN
Analog inputs		2 programmable analog inputs • 0 V to 10 V, 0 mA to 20 mA and –10 V to +10 V (AIN1) • 0 V to 10 V and 0 mA to 20 mA (AIN2) • both can be used as 7th/8th digital input
Relay outputs		3, programmable, 30 V DC/5 A (resistive load); 250 V AC/2A (inductive load)
Analog outputs		2, programmable (0/4 mA to 20 mA)
Serial interfaces		RS-485, optional RS-232
Motor cable length	7.5 kW to 90 kW	
	without output choke	max. 50 m (shielded); max. 100 m (unshielded)
	with output choke	see variant dependent options
	110 kW to 250 kW	
	without output choke	max. 200 m (shielded); max. 300 m (unshielded)
	with output choke	see variant dependent options
Electromagnetic compatibility		
	7.5 kW to 90 kW	Inverter with internal filter Class A available
	For inverters without filter	
	7.5 kW to 15 kW	EMC filter, Class B to EN 55 011 available as an option
	18.5 kW to 90 kW	EMC filter, Class B from Schaffner available as an option
	110 kW to 250 kW	EMC filter, Class A available as an option
Braking		DC braking, compound braking
Degree of protection		IP20
Operating temperature range		
	7.5 kW to 90 kW	–10 °C to +40 °C (+14 °F to +104 °F)
	110 kW to 250 kW	0 °C to +40 °C (+32 °F to +104 °F)
Storage temperature		–40 °C to +70 °C (–40 °F to +158 °F)
Relative humidity		95 % (non-condensing)
Installation altitude	7.5 kW to 90 kW	Up to 1000 m above sea level without derating
	110 kW to 250 kW	Up to 2000 m above sea level without derating
Standard SCCR (Short Circuit Current Rating) [2])		FSC: 10 kA FSD, FSE, FSF, FSFX, FSGX: 65 kA
Protection features for		undervoltage, overvoltage, overload, earth faults, short-circuits, stall prevention, locked motor protection, motor overtemperature, inverter overtemperature, parameter change protection
Conformity with standards		
	7.5 kW to 90 kW	cULus, cULus, CE, c-tick
	110 kW to 250 kW	cULus available soon, cULus available soon, CE
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)
C	54.9/116.3	245 x 185 x 195	5.7
D	2 x 54.9/2 x 116.3	520 x 275 x 245	17
E	2 x 54.9/2 x 116.3	650 x 275 x 245	22
F without filter	150/317.79	850 x 350 x 320	56
F with filter	150/317.79	1150 x 350 x 320	75
FX	225/478.13	1400 x 326 x 356	116
GX	440/935	1533 x 326 x 545	174

1) + 2) For footnotes, see next page. CFM: Cubic Feet per Minute

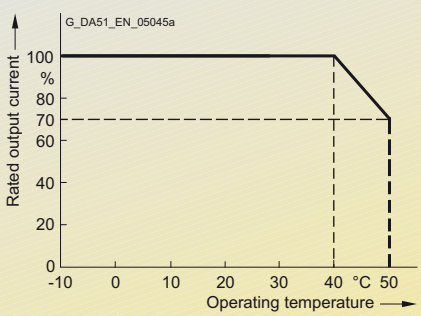
Derating data

Pulse frequency

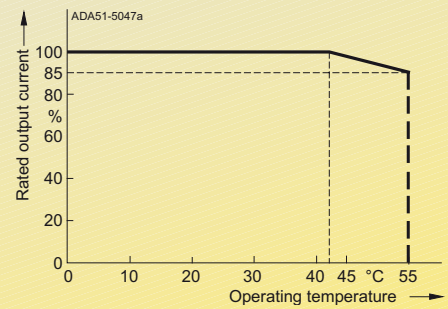
Output (for 3 AC 400 V)	**Rated output current in A** for a pulse frequency of							
kW	2 kHz	4 kHz	6 kHz	8 kHz	10 kHz	12 kHz	14 kHz	16 kHz
7.5	19.0	19.0	17.1	15.2	13.3	11.4	9.5	7.6
11.0	26.0	26.0	24.7	23.4	20.8	18.2	15.6	13.0
15.0	32.0	32.0	28.8	25.6	22.4	19.2	16.0	12.8
18.5	38.0	38.0	36.1	34.2	30.4	26.6	22.8	19.0
22	45.0	45.0	40.5	36.0	31.5	27.0	22.5	18.0
30	62.0	62.0	55.8	49.6	43.4	37.2	31.0	24.8
37	75.0	75.0	71.3	67.5	60.0	52.5	45.0	37.5
45	90.0	90.0	81.0	72.0	63.0	54.0	45.0	36.0
55	110.0	110.0	93.5	77.0	63.3	49.5	41.3	33.0
75	145.0	145.0	123.3	101.5	83.4	65.3	54.4	43.5
90	178.0	178.0	138.0	97.9	84.6	71.2	62.3	53.4
110	205.0	180.4	–	–	–	–	–	–
132	250.0	220.0	–	–	–	–	–	–
160	302.0	265.8	–	–	–	–	–	–
200	370.0	325.6	–	–	–	–	–	–
250	477.0	419.8	–	–	–	–	–	–

Operating temperature

Inverter 7.5 kW to 90 kW



Inverter 110 kW to 250 kW



1) For further information see http://support.automation.siemens.com/WW/view/en/107669667

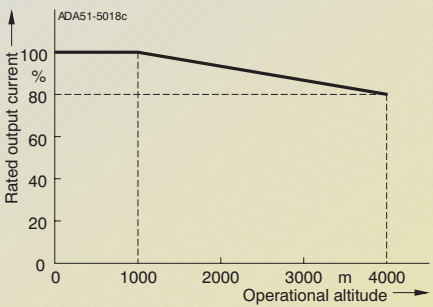
2) Applies to industrial control cabinet installations to NEC article 409/UL 508A.

Technical data

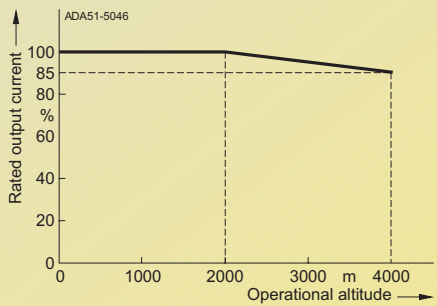
Derating data (continued)

Installation altitude above sea level

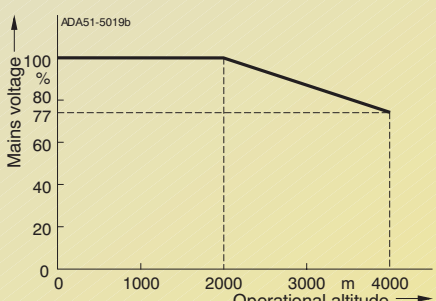
Permissible output current
in % of the rated output current
Inverter 7.5 kW to 90 kW



Inverter 110 kW to 250 kW



Permissible mains voltage
in % of the max. possible mains voltage
Inverter 7.5 kW to 90 kW



Inverter 110 kW to 250 kW