

# MICROMASTER 440

## Technical data

### MICROMASTER 440 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 % 3 AC 500 V to 600 V $\pm$ 10 %	<b>CT</b> (constant torque) 0.12 kW to 3 kW 0.12 kW to 45 kW 0.37 kW to 200 kW 0.75 kW to 75 kW	<b>VT</b> (variable torque) – 5.5 kW to 55 kW 7.5 kW to 250 kW 1.5 kW to 90 kW
Input frequency	47 Hz to 63 Hz		
Output frequency	0.12 kW to 75 kW 90 kW to 200 kW	0 Hz to 650 Hz (in V/f mode) 0 Hz to 267 Hz (in V/f mode)	0 Hz to 200 Hz (in vector mode) 0 Hz to 200 Hz (in vector mode)
Power factor	$\geq$ 0.95		
Inverter efficiency	0.12 kW to 75 kW: 96 % to 97 %; 90 kW to 200 kW: 97 % to 98 %		
Overload capability – CT mode	0.12 kW to 75 kW 90 kW to 200 kW	Overload current 1.5 x rated output current (i.e. 150 % overload capability) for 60 s, cycle time 300 s and 2 x rated output current (i.e. 200 % overload capability) for 3 s, cycle time 300 s Overload current 1.36 x rated output current (i.e. 136 % overload capability) for 57 s, cycle time 300 s and 1.6 x rated output current (i.e. 160 % overload capability) for 3 s, cycle time 300 s	
– VT mode	5.5 kW to 90 kW 110 kW to 250 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 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 59 s, cycle time 300 s	
Inrush current	not higher than rated input current		
Control method	Vector control, torque control, linear V/f characteristic; quadratic V/f characteristic; Multipoint characteristic (programmable V/f characteristic); flux current control (FCC)		
Pulse frequency	0.12 kW to 75 kW 90 kW to 200 kW	4 kHz (standard); 16 kHz (standard with 230 V inverters 0.12 kW to 5.5 kW) 2 kHz to 16 kHz (in 2 kHz steps) 2 kHz (standard with VT mode); 4 kHz (standard with CT mode) 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 lengths without output choke	0.12 – 75 kW 90 – 250 kW	max. 50 m (shielded), max. 100 m (unshielded) max. 100 m (shielded), max. 150 m (unshielded)	
with output choke	see variant dependent options		
Electromagnetic compatibility (see Selection and Ordering Data)	EMC filter, Class A or Class B to EN 55 011 available as an option Inverter with internal filter Class A available		
Braking	Resistance braking with DC braking, compound braking, integrated brake chopper (integrated brake chopper only with 0.12 kW to 75 kW inverters)		
Degree of protection	IP20		
Operating temperature (without derating)	0.12 kW to 75 kW 90 kW to 200 kW	CT: –10 °C to +50 °C (+14 °F to +122 °F) VT: –10 °C to +40 °C (+14 °F to +104 °F) 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	0.12 kW to 75 kW 90 kW to 200 kW	up to 1000 m above sea level without derating up to 2000 m above sea level without derating	
Protection features for	Undervoltage, overvoltage, overload, earth faults, short-circuits, stall prevention, locked motor protection, motor over-temperature, inverter overtemperature, parameter change protection		
Compliance with standards	Ⓜ, cⓂ, CE, c-tick		
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, max. (mm) Weight, approx. (kg)
	A	4.8/10.2	173 x 73 x 149 1.3
	B	24/51	202 x 149 x 172 3.4
	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 545 176

CFM: Cubic Flow per Minute