

# MICROMASTER® 430 AC Inverters

## The Simple Standard to Save Energy

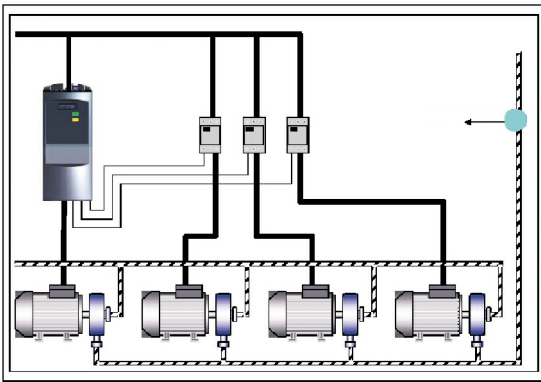
The **MICROMASTER 430** inverter is a variable torque drive designed for industrial variable speed fan and pump applications. The MM430 is an easy-to-use inverter characterized by linear and quadratic V/Hz control capability. User-oriented functionality includes commissioning macro, flying restart, manual/auto mode, energy consumption monitoring, pump staging, and bypass logic control. The MM430 can interface with input voltage ranges from 380V to 480V in power ranges from 10 to 125hp.

### Main Characteristics

- Ready to install<sup>1</sup> and operate right out of the box.
- Simple commissioning macro to easily make changes in factory programming.
- Side-by-side mounting.
- Six fully programmable isolated digital inputs.
- Two scalable analog inputs, can also be used as 7th and 8th digital inputs.
- Two fully programmable analog outputs.
- Three fully programmable relay outputs.
- Silent motor operation is possible when using high switching frequencies.
- Complete inverter and motor protection.

### Performance Features

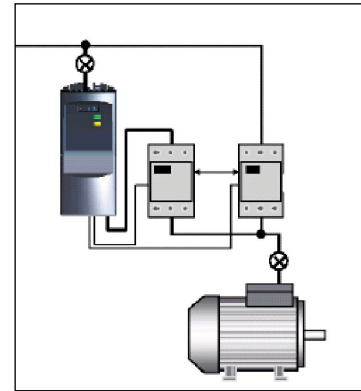
- Latest IGBT technology.
- Digital microprocessor control.



<sup>1</sup>Factory pre-programmed for 4 pole NEMA or IEC motors; digital input control for switching the inverter "on," "fault reset," and analog setpoint speed control.



- Programmable, multi-point V/Hz curve, linear V/Hz control, quadratic V/Hz control.
- High grade PID controller for process control with energy saving mode.
- Load torque detection for dry well/belt break detection.
- Integrated pump cascade control logic (motor staging).
- Automatic restart following power failure or fault.
- Integrated bypass control logic.
- Binary Connector (BiCo) technology.
- Fast, repeatable digital input response time.
- Programmable acceleration/ deceleration, 0s to 650s.
- Multi-curve, adjustable ramp smoothing.
- Fast current limit (FCL) for trip free operation.
- Standard RS-485 serial port.



### Siemens — Your Best Choice

The **MICROMASTER MM430** product line is integrated into the Siemens family of drives, motor, and programmable controller automation products. All products are backed by Siemens worldwide service and support capability. Contact your local Siemens sales office or distributor to get the complete story of the MICROMASTER MM4 drives.

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## Variant Independent Options

### Basic Operator Panel–2 (BOP–2)

With the BOP–2, individual parameter settings can be made. Values and units are shown on a 5-digit display. One basic BOP–2 operator panel can be used for several inverters and can be directly mounted on the inverter or in an enclosure door using an optional mounting kit. The BOP–2 includes Hand/Auto selection for control/setpoint changeover.



### PROFIBUS Communication Module

With the optional PROFIBUS communication module, PROFIBUS–DP operation is possible up to 12MB.

In addition, the BOP–2 can be attached to the front of the PROFIBUS module giving a form-fitting, operational display. The PROFIBUS module can also be powered from an external 24V supply to ensure the node remains active when power is removed from the inverter.

### DeviceNet Communication Module

Optional DeviceNet Module is used for networking inverters to the DeviceNet fieldbus system. Maximum transmission rate of 500 kbaud is possible.

### DriveMonitor Commissioning Tool

DriveMonitor is a Windows®-based, commissioning software package for MICROMASTER inverters. Parameter lists can be read, altered, stored, entered, and printed.

## Technical Specifications – MM430 AC Inverter

Input voltage and power ranges 380 V to 480 V 3 AC ± 10%	Variable torque rated 10hp to 125hp																				
Input frequency	47 Hz to 63 Hz																				
Output frequency	0 Hz to 650 Hz																				
Power factor	>98%																				
Inverter efficiency	96% to 97%																				
Overload capability	1.1 x rated output current for 60 seconds (every 300 seconds) or 1.4 x rated for 3 seconds (every 60 seconds).																				
Inrush current	Less than rated input current																				
Control method	Programmable V/Hz curve; Linear V/Hz curve; Quadratic V/Hz curve																				
PWM frequency	4kHz standard, adjustable 2 kHz to 16 kHz (in 2 kHz steps)																				
Fixed frequencies	15, programmable																				
Skip frequency bands	4, programmable																				
Setpoint resolution	0.01 Hz digital 0.01 Hz serial 10 bit analog																				
Digital inputs	6 fully programmable, isolated digital inputs plus the option for up to eight; selectable PNP/NPN																				
Analog input	2 for setpoint or PID input (0–10V, 0–20mA, or (AIN1)) scalable, or for use as 7th and 8th digital inputs																				
Relay output	3 configurable 30 V DC/5 A (resistive), 250 V AC/2 A (inductive); 2 Form C, 1 NO																				
Analog output	2, programmable (0/4 mA to 20 mA)																				
Serial interfaces	RS-485, optional RS-232																				
Electromagnetic compatibility	Optional EMC filters to EN 55 011, Class A or Class B, Inverter with internal filter Class A available																				
Braking	DC Injection Braking and Compound Braking																				
Protection level	IP 20																				
Temperature range	–10°C to +40°C																				
Storage temperature	–40°C to +70°C																				
Humidity	95% Relative Humidity – non-condensing																				
Operational altitudes	up to 3,300 ft (1,000 m) without derating																				
Protection features	<ul style="list-style-type: none"> <li>• under-voltage</li> <li>• over-voltage</li> <li>• stall prevention</li> <li>• overload</li> <li>• ground faults</li> <li>• locked motor</li> <li>• short circuits</li> <li>• motor over-temperature I2t, PTC Thermistor or Klixon Thermostat</li> <li>• inverter over-temperature</li> <li>• parameter PIN protection</li> </ul>																				
Standards	UL, cUL, c-Tick																				
CE Mark	Conformity with CE low voltage directive 73/23/EEC and the EMC directive 89/336/EEC with filtering																				
Dimensions and weights (Without gland plate)	<table border="1"> <thead> <tr> <th>Frame size</th> <th>W x H x D (mm)</th> <th>W x H x D (in.)</th> <th>Weight (lbs)</th> </tr> </thead> <tbody> <tr> <td>C</td> <td>185 x 245 x 195</td> <td>7.3 x 9.6 x 7.7</td> <td>12.1</td> </tr> <tr> <td>D</td> <td>275 x 520 x 245</td> <td>10.8 x 20.5 x 9.6</td> <td>35</td> </tr> <tr> <td>E</td> <td>275 x 650 x 245</td> <td>10.8 x 25.6 x 9.6</td> <td>44</td> </tr> <tr> <td>F w/o filter</td> <td>350 x 850 x 320</td> <td>13.8 x 33.5 x 12.6</td> <td>123</td> </tr> </tbody> </table>	Frame size	W x H x D (mm)	W x H x D (in.)	Weight (lbs)	C	185 x 245 x 195	7.3 x 9.6 x 7.7	12.1	D	275 x 520 x 245	10.8 x 20.5 x 9.6	35	E	275 x 650 x 245	10.8 x 25.6 x 9.6	44	F w/o filter	350 x 850 x 320	13.8 x 33.5 x 12.6	123
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