

SIEMENS

MICROMASTER Drives 6SE92

Getting Started

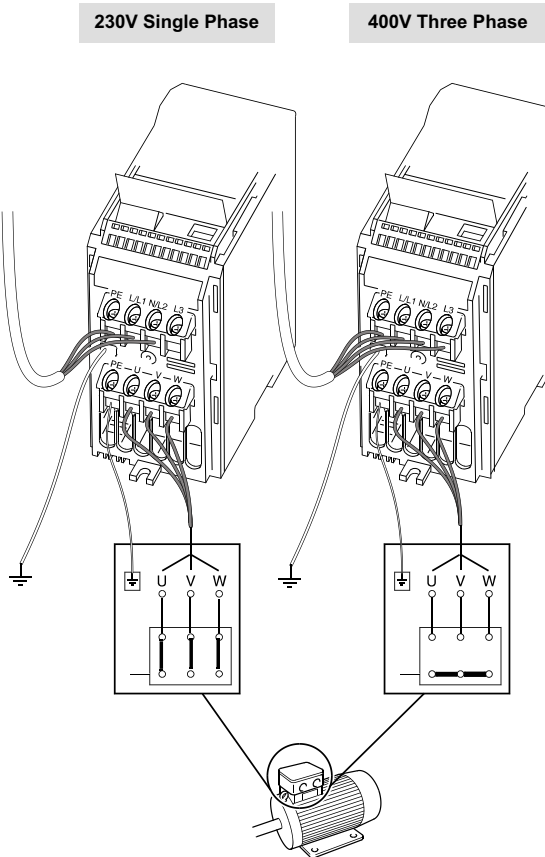
Caution: Before installing and putting this equipment into operation, please read the Operating Instructions Manual for Safety Precautions and Warnings



SIEMENS MICROMASTER

The MICROMASTER products are a range of frequency inverters for controlling the speed of three phase AC induction motors

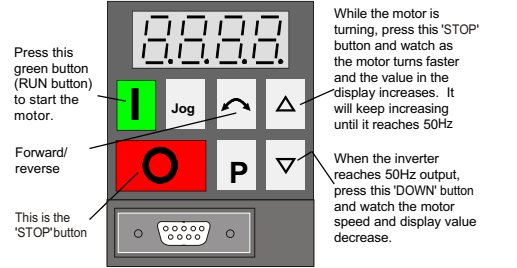
Step 1 Connecting up the MICROMASTER



Delta connection for 230V 3 phase Star connection for 400V 3 phase

Note: Motors above 11kW are usually configured 400V Delta / 690V Star.
In this case the motor should be connected in Delta.

Step 2 Getting the motor going



At any time, press the 'STOP' button and watch the motor stop.

Step 3 Changing the speed of the motor

The default output frequency of the drive is 5Hz (see **Hints and Tips** to convert this to RPM). This speed will probably be too low for most applications and a speed change may be required. The following steps will allow you to change the preset value of the inverter output to the required speed.

Step / Action	Display
Press the 'P' button to access the parameter settings.	P000
Press the button 5 times until the display reads P005.	P005
Press the 'P' button to display the current parameter value.	005.0
Press the button to change the value to 35Hz. (This number can be any number between 0 and 50Hz - default.)	035.0
Press the 'P' button to store the new value.	P005
Press the button until the display reads P000.	P000
Press the 'P' button to exit the parameterisation procedure. The display will alternate between the output frequency and the frequency set point.	000.0 035.0

The required speed has now been stored.

This method is used to access all parameters.

The drive can now be started by pressing the '**RUN**' button. It will ramp up to the frequency held in parameter **P005** and remain there. To stop the drive press the '**STOP**' button, the drive will then ramp down to 0Hz output.

Default Parameters:

Digital input	Terminal	Parameter	Default
1	5	P051 = 1	ON right
2	6	P052 = 2	ON left
3	7	P053 = 6	Fixed Frequency
Output Relay 1	10/11	P061 = 6	Fault Identification

Fault Codes:

F001	Overvoltage
F002	Overcurrent
F003	Overload
F005	Inverter overtemperature (internal PTC)
F074	Motor overtemperature by I ² t calculation
Other faults, see manual	

For further Technical Support Information, and to submit your suggestions for improvements, see our Web Site:

<http://www.con.siemens.co.uk>

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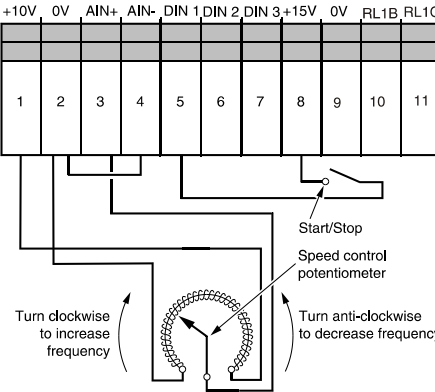
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Step 4 Controlling the motor speed with a potentiometer

A potentiometer can be used to control the running speed of the inverter. This is achieved by varying the voltage applied to the analogue input. Connect the potentiometer to the control terminals shown below. Starting and stopping of the motor may be achieved by connecting a switch to the digital input terminals shown.

The following parameter settings are required

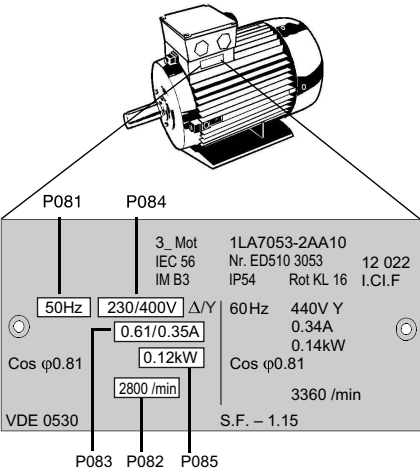
P006 Set to 1 to allow analogue input
P007 Set to 0 to enable control via digital input



4.7kΩ – 10kΩ

Telling the drive about your motor

To get the best performance from your drive, you should enter information from your motor ratings plate into certain parameters. The following diagram indicates the location of the information and the parameters which should be entered.



Commissioning MICROMASTER Basic

Display parameters	Basic parameters	Motor parameters	Frequently used parameters
Select display via P001	Ramp-up time P002 0-650 sec.	Nominal rating plate frequency for motor P081 0-400Hz	Minimum motor frequency P012 0-400Hz.
Display frequency, motor current and motor speed: P001 0 = output frequency 1 = frequency setpoint 2 = motor current 5 = Motor speed (RPM)	Ramp-down time P003 0-650 sec.	Nominal rating plate speed for motor P082 0-9999 RPM	Maximum motor frequency P013 0-400Hz
	Frequency setpoint P006 0 = digital 1 = analog 2 = fixed frequency	Nominal rating plate current for motor P083 0.1-99.9A	Automatic restart after mains failure P015 0 = disable 1 = enable
	Keypad control P007 0 = disable 1 = enable	Nominal rating plate voltage for motor P084 0-1000V	Start on the fly P016 0 = disable 2 = enable
	Parameter protection P009 0 = only P001-P009 can be altered 2, 3 = all can be altered.	Nominal rating plate power for motor P085 0-100kW	Analogue input P023 0 = 0-10V 1 = 2-10V
		Motor current limit P086 0-250%	Fixed frequency operation P041-048 0-400Hz
			Input terminal function P051-053
			Selection relay output P061
			DC injection braking P073 0-150%
			Pulse frequency P076 See Operator Manual
			Control mode P077 See Operator Manual
			Continuous boost P078 0-250%
			See Operator Manual for other parameters

Hints and Tips

- The direction of rotation of the motor can be reversed during commissioning by changing over two of the output connections on the inverter, or by pressing the Forward/Reverse button.
- Parameters **P000** to **P009** can always be read or set. Access to all other parameters is controlled by the contents of **P009**. The factory default value is '0' which only allows access to **P000** to **P009**. Changing its value to '3' allows all parameters to be accessed permanently. See Operator Manual for the function of other values of **P009**.
- In case there are problems with the parameter settings and wish to start again, change **P944** to '1'. This will perform a reset to the default values.
- The value displayed in **P000** is the output frequency of the inverter, this is the default setting but it can be changed by altering the value in **P001**. For example, changing **P001** to a value of '5' will cause the inverter to display the RPM of the motor in **P000**. See the Operator Manual for other settings of **P001**.
- The default value (0) of parameter **P006** ensures that the drive runs at the frequency set in **P005**. In order to control the output frequency by an analogue input signal, the value of **P006** should be set to '1'. For other methods of control using **P006**, see the Operator Manual.
- An **F002** fault is often caused by either too short a ramp up time or too much voltage boost. An increase in the value in **P002** will increase the ramp time. Alternatively lower the values in **P078** and **P079** to reduce the voltage boost. Please note that if **P078** falls below '100' (default value) then the motor may under-perform at low frequencies.
- An **F001** fault is often caused by attempting to stop the motor too quickly increasing the value in **P003** (ramp-down time) will reduce this possibility.
- If the display flashes during operation, the drive is registering a warning. Check **P931** for the cause.