

The Simple Guide to Standard Variable Speed Drives

MICROMASTER 4th Generation



MICROMASTER 4 is the latest Siemens universal drive series for AC motors from 120W up to 250kW. It distinguishes itself by a new, user-friendly parameter structure, simple installation and commissioning as well as the fact that it can be simply integrated into automation projects, e.g. using Drive ES (Drive Engineering Software), whilst easily accessible terminals and interchangeable operator panels simplify installation and start-up.

Introduction to Variable Speed Drives

Variable Speed Drives (VSDs) is the term generally applied to electronic devices used to control a motor to give variable rotational speed control. VSDs may also be known as Power Drive Systems (PDSs), Adjustable Speed Drives (ASDs), Inverters, Frequency Converters or simply "Drives".

VSDs are most frequently used to control standard "squirrel cage" motors which are widely used as the workhorse of industry. Standard Inverters are used in the majority of VSD applications such as pumps, fans and conveying. High performance drives with superior dynamic response (often called "Vector Drives) are available for more demanding applications such as motor testbeds, metal processing, web handling – applications where torque control dynamics are critical

Method Of operation

Apart from small variations under load, standard motors are essentially constant speed devices when operated directly from the mains supply. An electronic variable speed drive provides a variable voltage and frequency supply that enables the motor speed and torque (current) to be precisely controlled. Developments in technology have enabled the original simple speed variators to today's highly specified controllers

Why Use a Variable Speed Drive

There are many benefits from the use of a properly specified VSD, including

- Energy Efficiency
- Cost reductions through energy saving characteristics
- Process improvements through precise and repeatable control
- Increased production flexibility
- Increased life of mechanical components due to reduced stressing
- Distributed intelligence capability
- Simple connection to higher level automation system
- Easy maintenance with extensive diagnostic functions

Typical Applications

Water Industry

Pumping Stations, Sewerage treatment, Dosing

Mechanical Handling

Hoists, Conveyors, Centrifuges ...

Food & Beverage

Packaging, Conveyors, Centrifuges ...

Building Automation

Heating, Ventilating, Air Con, Access Control

Paper and Film

Winders, Transport, Slitters ...

Petrochemical

Pumping, Compressors, Fans ...

Automotive

Paint Spraying, Conveyors, Testbeds

Metals Industries

Rolling Mills, Roller tables, Metals processing

Rubber & Plastics



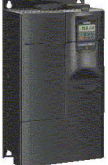
Mixers, Callenders, Extruders ...

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MICROMASTER – Its EASY!

<p>Easy Connection System</p> <ul style="list-style-type: none"> • Easy to access terminals • Clear, coloured cage clamp terminals • Simple EMC Shielding & compliance • DIN rail mounting for small units <p>Easy to commission</p> <ul style="list-style-type: none"> • Simple to use plug on/off keypad • Clear Parameter structure • Multi language text display • Plug on communication modules • Control of multiple drives from one keypad <p>Easy fault free operation</p> <ul style="list-style-type: none"> • Simple status display • Password protection if required • Upload/download of parameters • Store 10 parameter sets in 1 keypad 	<p>Unbelievably Flexible</p> <ul style="list-style-type: none"> • Wide range of options • Easy Totally Integrated Automation (Drives ES) • Profibus / USS / Devicenet options • Freely configurable I/O • PC Connection kit <p>Space Saving</p> <ul style="list-style-type: none"> • Compact Design • Side by side mounting • Footprint mounted chokes <p>Robust Design</p> <ul style="list-style-type: none"> • Steel Base Plate • Opto-isolated I/O • Wide Voltage Tolerance • Auto restart / Flying restart • Kinetic buffering 440
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Product Range

MICROMASTER 410	MICROMASTER 420	MICROMASTER 440
		
Contactor Style	General purpose	High Performance/Power
Voltage / Frequency Control and Flux Current Control	Voltage / Frequency Control and Flux Current Control	Voltage / Frequency Control, Flux Current Control Sensorless Vector Control, True Vector with encoder feedback module
0.12kW – 0.75kW	0.12kW – 11kW	0.37kW – 250kW
1 Phase supply 110 / 220V	1/3 Phase 240V / 380V	1/3 Phase 240V / 380V / 600V
Pump, Fans, Conveyors, Food Processing, Access Control, Display Boards...	Pumps, Fans and ventilation systems, Conveyors, Bottling Lines, etc	Pumps, Fans, Conveyors, Compressors, Hoists, Extruders, Packaging, Textile Machines.....

Options – Make this excellent product an excellent range		
Basic Operator Panel	Advanced Operator Panel	PC Connection Kit
PC Connection Kit	Gland Plate Kits	Profibus Module
Device Net Module	Input/Output Chokes	Keypad door mounting kits

Distributed through the foremost electrical distribution network in the U.K., MicroMaster offers class leading characteristics combined with lower cost drive solutions. For more information, please see - http://www1.ad.siemens.de/sd/n_inverter/html_76/index.htm or contact our national automation and drives sales hotline on 0161 446 6400.