

Overview

Options

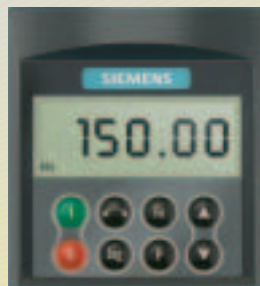
Various options are available for the MICROMASTER inverters:

- Filters
- Chokes
- Operator panels
- PROFIBUS module
- DeviceNet module
- CANopen module
- Pulse encoder evaluation module
- Gland plates
- Mounting kits, etc.

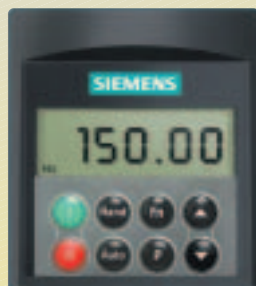
Assignment of operator panels and modules to the inverter ranges

Options	Order No.	MICROMASTER			
		410	420	430	440
Operator panels					
OP	6SE6400-0SP00-0AA0	●			
BOP	6SE6400-0BP00-0AA0		●		●
BOP-2	6SE6400-0BE00-0AA0			●	
AOP	6SE6400-0AP00-0AA1		●		●
AAOP	6SE6400-0AP00-0AB0		●		●
Modules					
PROFIBUS	6SE6400-1PB00-0AA0		●	●	●
DeviceNet	6SE6400-1DN00-0AA0		●	●	●
CANopen	6SE6400-1CB00-0AA0		●	●	●
Pulse encoder evaluation	6SE6400-0EN00-0AA0				●

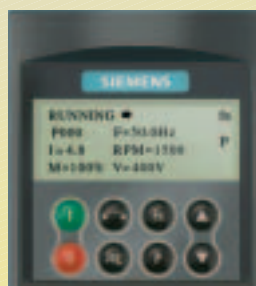
● Possible combination



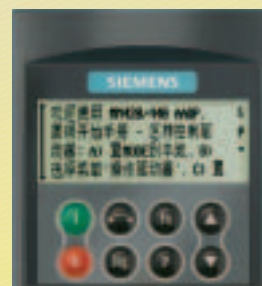
OP/BOP



BOP-2



AOP



AAOP

Operator panels



PROFIBUS



DeviceNet



CANopen



Pulse encoder evaluation

Modules

Overview

Basic Operator Panel (BOP)

With the BOP, individual parameter settings can be made. Values and units are shown on a 5-digit display.



Basic Operator Panel (BOP)

A BOP can be used for several inverters. It can be directly mounted on the inverter or in a control cabinet door using a mounting kit.

Advanced Operator Panel (AOP)

The AOP enables MICROMASTER 440 parameter kits to be easily read and modified. In contrast to the BOP, the value and meaning of the parameters can be directly displayed as plain text in several languages by fast scrolling of the address.



Advanced Operator Panel (AOP)

The AOP is directly plugged into the inverter, or communicates with the latter through a door mounting kit. Together with the "AOP door mounting kit for multiple inverters", the AOP permits bus communication with up to 30 inverters at a transmission rate of 38 kbaud. (RS485, USS).

For servicing purposes, the AOP furthermore supports the download and upload of complete parameter kits.

Asian Advanced Operator Panel (AAOP)

The AAOP is the Chinese version of the AOP operator panel. It has an enhanced display and supports the operating languages of Chinese (simplified) and English.



Asian Advanced Operator Panel (AAOP)

PROFIBUS module

For a complete PROFIBUS connection with up to ≤ 12 Mbaud. Remote control of the inverter is possible with the PROFIBUS module. Remote control and operation at the inverter can be combined using an operator panel plugged onto the PROFIBUS module. The PROFIBUS module can be supplied by an external 24 V DC power supply and is thus also active when the inverter is disconnected from the power supply.

Connection by means of a 9-pin Sub-D connector (available as an option).

DeviceNet module

For networking the inverters to the DeviceNet fieldbus system widely used on the American market. A maximum transmission rate of 500 kbaud is possible. Remote control of the inverter is possible with the DeviceNet module. Remote control and operation at the inverter can be combined using an operator panel plugged onto the DeviceNet module.

The connection to the DeviceNet bus system is made using a 5-pin connector with terminal strip.

CANopen module

Using the CANopen communications module, an inverter can be linked to the CANopen fieldbus system and remote control is then possible.

Remote control and operation at the inverter can be combined using an operator panel plugged onto the CANopen module.

The module is connected to the bus system through a 9-pin Sub-D connector.

Pulse encoder evaluation module

The pulse encoder evaluation module permits direct connection of the most widely encountered digital pulse encoders to the inverter.

They offer the following functions:

- Zero speed at full load torque
- Extremely accurate speed control
- Increased dynamic response of speed and torque control.

This module can be used with HTL and TTL pulse encoders (High voltage Transistor Logic, 24 V and Transistor Logic, 5 V).

Options

Variant independent options

Overview (continued)

Connection kit for PC to inverter

For controlling an inverter directly from a PC if the appropriate software has been installed (e.g. STARTER). Isolated RS-232 adapter module for reliable point-to-point connection to a PC. Includes a Sub-D connector and an RS-232 standard cable (3 m).

Connection kit for PC to AOP

For connecting a PC to an AOP or AAOP. Offline programming of inverters and archiving of parameter kits possible. Includes a desktop attachment kit for an AOP or AAOP, an RS-232 standard cable (3 m) with Sub-D connectors and a universal power supply unit.

Operator panel door mounting kit for single inverter

For mounting an operator panel in a control cabinet door. Degree of protection IP56. Contains a cable adapter module with screwless terminals for use with user's own RS-232 cables ¹⁾.

AOP door mounting kit for multiple inverters (USS)

For mounting an AOP or AAOP in a control cabinet door. Degree of protection IP56. The AOP or AAOP can communicate with several inverters by means of the RS-485 USS protocol. The 4-pin connecting cable from the AOP or AAOP to the RS-485 terminals of the inverter and to the 24 V user terminal strip is not included ²⁾.

- 1) A shielded cable of type Belden 8132 (28 AWG) is recommended. The maximum cable length is 5 m for RS-232.
- 2) A shielded cable of type Belden 8/32 (28 AWG) is recommended. The maximum cable length is 10 m for RS-485.

Start-up tools

- **STARTER**
Starter is graphic start-up software for guided start-up for MICROMASTER 410/420/430/440 frequency inverters under Windows NT/2000/XP Professional. Parameter lists can be read out, altered, stored, entered and printed.
- **DriveMonitor**
is a start-up software for list-oriented programming of frequency inverters. This program executes under Windows 95/98/NT/2000/XP Professional.

Both programs are included on the Docu CD which is provided with every inverter.

Selection and ordering data

The options listed here are suitable for all MICROMASTER 440 inverters.

Options	Order No.
Basic Operator Panel (BOP)	6SE6400-0BP00-0AA0
Advanced Operator Panel (AOP)	6SE6400-0AP00-0AA1
Asian Advanced Operator Panel (AAOP)	6SE6400-0AP00-0AB0
PROFIBUS module	6SE6400-1PB00-0AA0
DeviceNet module	6SE6400-1DN00-0AA0
CANopen module	6SE6400-1CB00-0AA0
Pulse encoder evaluation module	6SE6400-0EN00-0AA0
RS485/PROFIBUS bus connector	6GK1500-0FC00
Connection kit for PC to inverter	6SE6400-1PC00-0AA0
Connection kit for PC to AOP	6SE6400-0PA00-0AA0
Operator panel door mounting kit for single inverter	6SE6400-0PM00-0AA0
AOP door mounting kit for multiple inverters (USS)	6SE6400-0MD00-0AA0

Technical data

PROFIBUS module
6SE6400-1PB00-0AA0



DeviceNet module
6SE6400-1DN00-0AA0



Size (height x width x depth)	161 mm x 73 mm x 46 mm	
Degree of protection	IP20	
Degree of pollution	2 to IEC 60 664-1 (DIN VDE 0110/T1), no condensation permitted during operation	
Strain resistance	to IEC 60 068-2-6 (if module is installed correctly)	
• Stationary	Deflection	0.15 mm in the frequency range of 10 Hz to 58 Hz
• Transport	Acceleration	19.6 m/s ² in the frequency range of 58 Hz to 500 Hz
	Deflection	3.5 mm in the frequency range of 5 Hz to 9 Hz
	Acceleration	9.8 m/s ² in the frequency range of 9 Hz to 500 Hz
Climatic category (during operation)	3K3 to IEC 60 721-3-3	
Cooling method	Natural air cooling	
Permissible ambient or cooling agent temperature		
• Operation	-10 °C to +50 °C (+14 °F to +122 °F)	
• Storage and transport	-25 °C to +70 °C (-13 °F to +158 °F)	
Relative humidity (permissible humidity rating)		
• Operation	≤ 85 % (non-condensing)	
• Storage and transport	≤ 95 %	
Electromagnetic compatibility	Emission Interference	to EN 55 011 (1991) Class A to IEC 60 801-3 and EN 61 000-4-3
Power supply	6.5 V ± 5 %, max. 300 mA, internal from inverter or 24 V ± 10 %, max. 350 mA, external	6.5 V ± 5 %, max. 300 mA internal from inverter or 24 V, max. 60 mA from DeviceNet-Bus
Output voltage	5 V ± 10 %, max. 100 mA, galvanically isolated supply • for terminating the serial interface bus or • for supplying the OLP (Optical Link Plug)	–
Data transmission rate	max. 12 Mbaud	125, 250 and 500 Kbaud