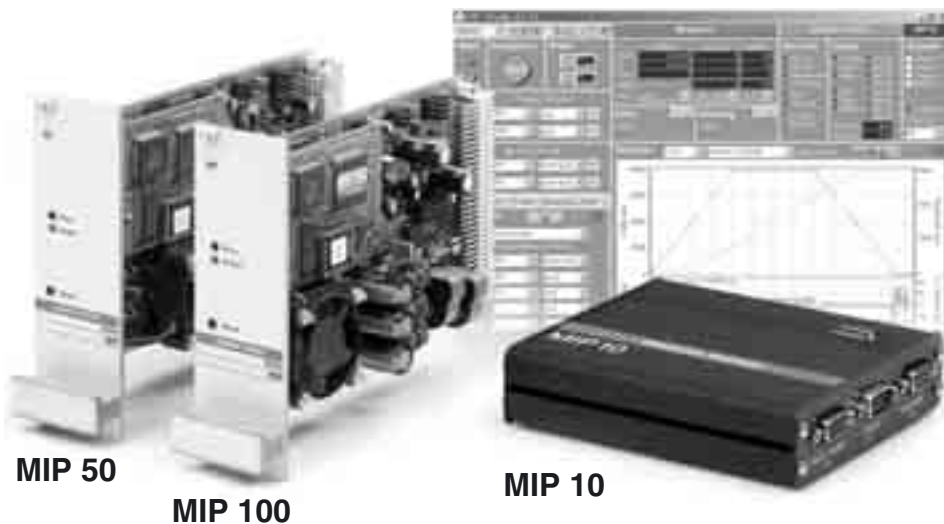


# MIP Technology



## Application

MIP positioning controllers are used for the setting up of flexible, digital drive solutions, for measuring-, analysis- and handling devices as well as for the positioning of workpieces, tools and end stop positioning in machine tool industry

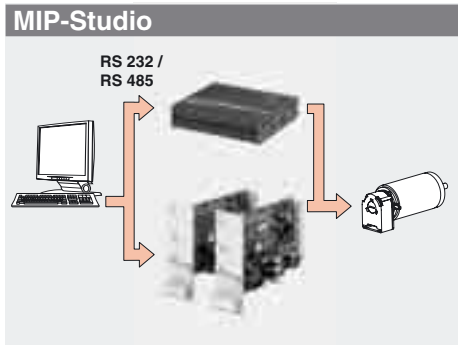
### Advantages

- Digital
- Flexible
- Extendable
- User friendly
- Interfaces
- Software compatible

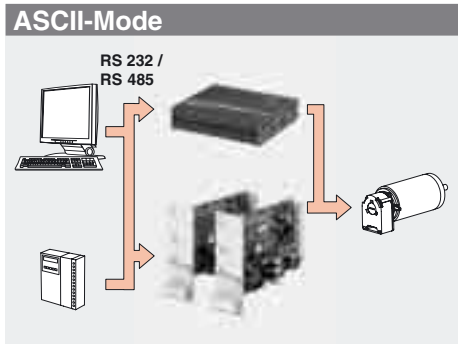
### Features

Digital position-, speed- and current-control  
 Digital trimming without potentiometers  
 Versions for brush and brushless DC drives  
 Networks of up to 64 drives are possible with a RS485 interface  
 Control concept and commanding of all components are uniform  
 Digital and analogue inputs and outputs for process control  
 Commanding by digital inputs / outputs, RS232 or RS485 interface  
 Microsoft Windows<sup>®</sup>, 32-bit DLLs, Tools, as well as sample programs for Visual C++<sup>®</sup>, Visual Basic<sup>®</sup>, DELPHI<sup>®</sup> and LabView<sup>®</sup> are available

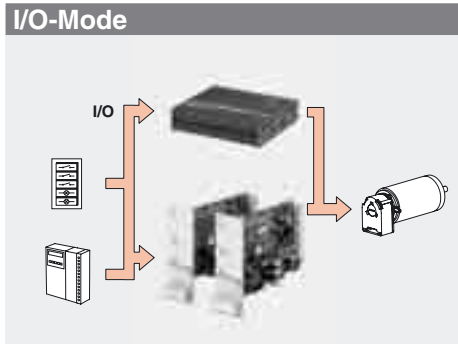
# MIP Operating Modes



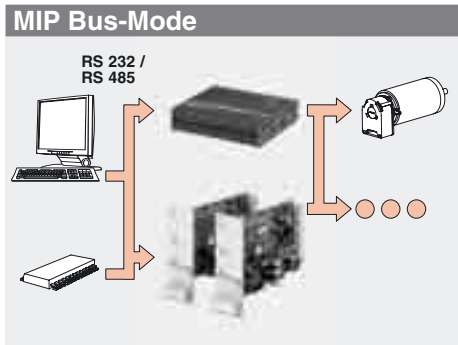
- Graphic tool for start-up procedure with user navigation for configuring the drive unit
- Support from automatic determination of motor parameters
- Autotuning the controller parameters
- Data recorder function
- Commanding of the motion sequences



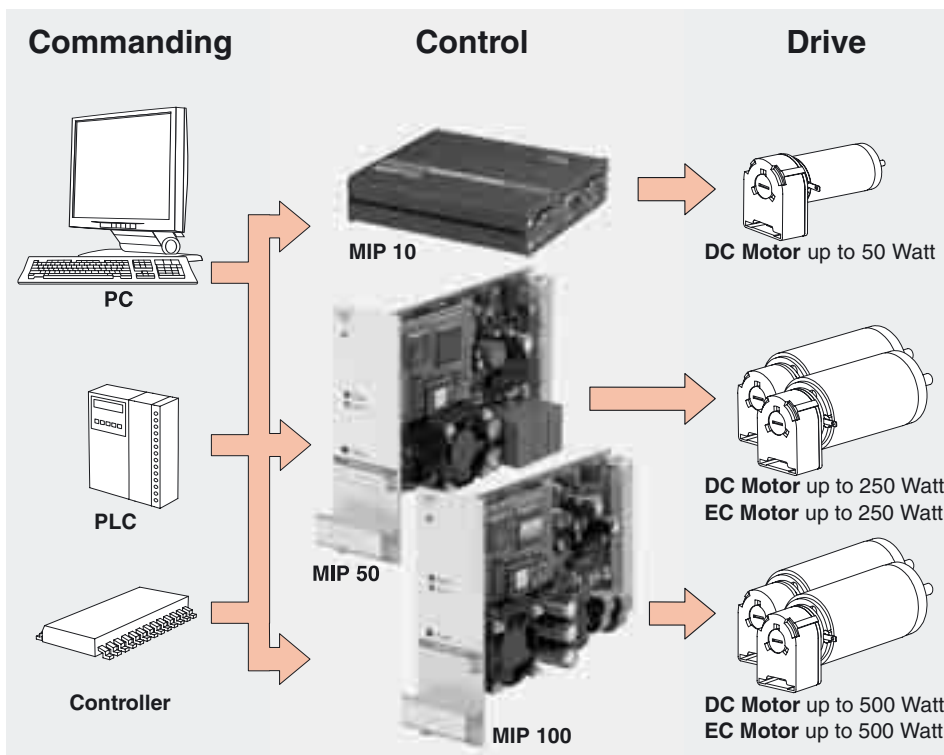
- Simple communication profile and commands for 1-Axis systems in connection with a PLC or a PC.



- Direct process control via tracer or a digital I/O of a small PLC.
- For simple and economically priced 1-Axis positioning systems without superior process control or in combination with a PLC.



- Complex communication profile and extensive commands.
- For 1- and multiple-axis systems with a superior system (for eg. PC or micro controller) for process control.



## MIP 10

The complete system for DC motors up to 50 Watt

DIGITAL

RS485

RS232

GUI



### Applications

- Test, evaluation and training
- Work equipment and examination equipment manufacturing
- Small series manufacturing

### Order Number

**111091** MIP 10 Set (incl. cable)  
**108971** MIP 10 Set (without cable)

### Characteristics

- Easy and fast start-up procedure
- All cables included
- Only one power supply 9 - 24 VDC

### Technical Data

- Supply voltage 9 - 24 VDC
- Max. output current  $I_{max}$  2 A (5 s)
- Continuous output current  $I_{cont}$  1.8 A
- Switching frequency of power stage 60 kHz
- Built-in motor choke per phase 1 mH
- Current limit digital adjustable
- Current resolution 5 mA
- Sample rate of PI-current controller 8 kHz
- Sample rate of PID-positioning control 1 kHz
- Max. speed 65 000 rpm
- I/O level max. 24 V
- I/O logic configurable by Jumper
- Digital inputs (ESD protected):  
 STOP, Enable, Reference,  
 Limit cw / ccw and 8 standard inputs
- Analogue inputs (ESD protected):  
 2 x 0 ... 5 VDC
- Encoder input  
 1 x incremental encoder / RS422  
 (5 V, channels A, A', B, B', I, I')
- Max. input frequency 250 kHz
- Digital outputs:  
 Error and 4 standard outputs  
 24 V-switching max. 100 mA each  
 GND-switching total 450 mA
- Other outputs  
 1 x PWM (50 kHz), freely adjustable
- Interface RS232 & RS485 (max. 57 600 Baud)
- Operating temperature 0 ... 40°C
- Housing Metal, 132 x 114 x 31 mm
- Connector 3 x 9-poles DSUB  
 (COM, Encoder, Power / Motor)  
 1 x 25-poles DSUB (I/O)

maxon motor control

## MIP 50 /100

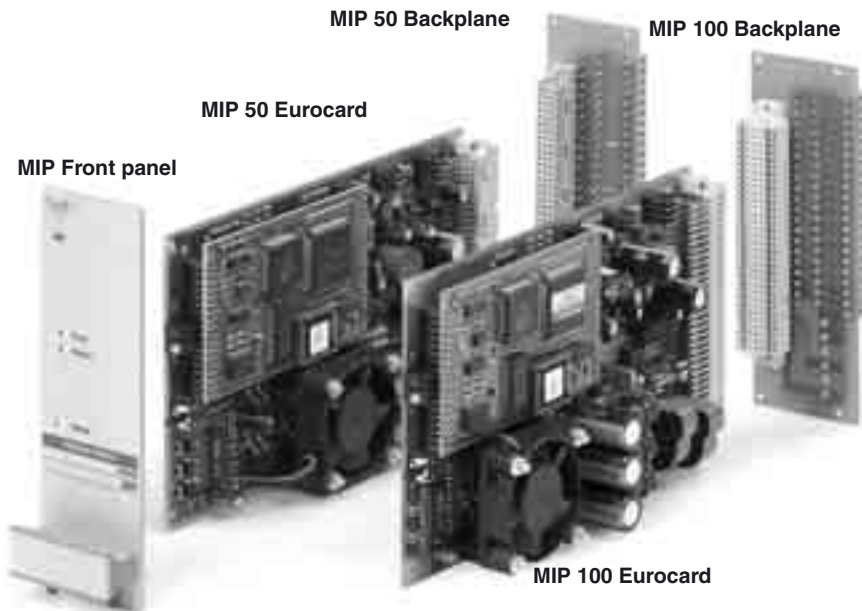
The modular solution for DC and EC motors up to 500 Watt

DIGITAL

RS485

RS232

GUI



### Applications

- Machine tool industry
- Work equipment and examination equipment manufacturing
- Small and large series manufacturing

### Order Number

**200640** MIP Front panel (3HE / 8TE)  
**200629** MIP 50 Eurocard  
**199950** MIP 50 Backplane  
**246244** MIP 100 Eurocard

### Characteristics

- To be installed in a 19"-subrack or in a plug-in card system
- Networks of up to 64 drives are possible by RS485 interface
- Complex digital inputs and outputs, configurable to high- or low-active logic

### Technical Data

- Supply voltage  
 MIP 50 24 - 48 VDC  
 MIP 100 24 - 48 VDC
- Max. output current  $I_{max}$   
 MIP 50 11 A (5 s), 13 A (200 ms)  
 MIP 100 15 A (5 s), 20 A (200 ms)
- Continuous output current  $I_{cont}$   
 MIP 50 5 A  
 MIP 100 10 A
- Switching frequency of power stage 60 kHz
- Built-in motor choke per phase  
 MIP 50 3 x 0.16 mH  
 MIP 100 none (minimal 3 x 0.09 mH)
- Current limit digital adjustable
- Current resolution  
 MIP 50 15 mA  
 MIP 100 45 mA
- Sample rate of PI-current controller 8 kHz
- Sample rate of PID-positioning control 1 kHz
- Max. speed (motor with 2 poles) 65 000 rpm
- I/O level max. 24 V
- I/O logic configurable by Jumper
- Digital inputs (ESD protected):  
 STOP, Enable, Reference  
 Limit cw / ccw and 8 standard inputs
- Analogue inputs (ESD protected):  
 MIP 50 2 x 0 ... 5 VDC  
 MIP 100 1 x 0 ... 5 VDC
- Encoder input  
 1 x incremental encoder / RS422  
 (5 V, channels A, A', B, B', I, I')
- Max. input frequency 250 kHz
- Digital outputs:  
 Error and 6 standard outputs  
 24 V-switching max. 100 mA each  
 GND-switching total 450 mA
- Other outputs  
 1 x PWM (50 kHz), freely adjustable
- Interface RS232 & RS485 (max. 57 600 Baud)
- Operating temperature 0 ... 40°C
- Version single eurocard 3HE / 8TE
- Connector, DIN41612-connector, type C  
 MIP 50 96-Pin  
 MIP 100 160-Pin