

Low pressure series

## Programmable controller S-ND for discrete and continuous dosage



- High-quality pump controller for continuous and discrete dosage
- Powerful 16-bit microcontroller
- Programming of controller with Windows® Software »Motion Manager«
- Potentiometer for speed set
- Analog input 0-10 V
- 1 digital output, optionally programmable as input
- 3 digital outputs with switches
- EEPROM memory
- RS-232 interface

The controller S-ND is recommended for high requirements in control of discrete and continuous dosage tasks in combination with a mzp-pump of the low pressure series. The 16-bit microcontroller

allows speed and position control for highly accurate dosage. The compact design on a PCB offers flexible installation. Process control link can be realized via a RS-232 interface. Motor speed or volume

flow can be set either by an analog input (0-10 V) or a potentiometer mounted on the PCB. Three digital inputs are equipped with switches. Programs for dosage can be saved in the memory.

### Technical Data

Control	PI-controller, speed and position control
Supply voltage $U_B$	12 – 24 V
Speed	1 – 6 000 U/min
Power	DIN 45323 socket, terminal screw, pin plug 4 mm
Pump connector	10-pole socket
Serial interface	RS-232, SUB-D plug 9-poles
Protection class	IP 20
Input # 1 (speed)	$\pm 10$ V
Error output (input # 2)	Open collector max. $U_B / 30$ mA no error: connected to GND as input: low 0...0,5 V / high 4 V... $U_B$
Digital inputs # 3, 4, 5	low 0...0,5 V / high 4...30 V
Program memory	7936 Bytes
Measurements (L x W x H)	approx. 105 x 85 x 36 mm
Weight	approx. 170 g

Subject to technical changes.

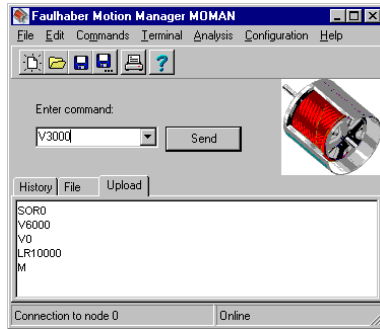
### Contact

HNP Mikrosysteme GmbH  
Juri-Gagarin-Ring 4 · D-19370 Parchim

phone +49| 3871| 451-301  
fax +49| 3871| 451-333

e-mail [info@hnp-mikrosysteme.de](mailto:info@hnp-mikrosysteme.de)  
<http://www.hnp-mikrosysteme.de>

## Software



All motor parameters for pump control can be set and saved with the Windows® based software »Motion manager«. The program language is ASCII based. Dosage programs can easily be programmed on a computer and transferred to the EEPROM.

Several sample programs are supplied such as triggering different dosage programs with the internal PCB switches.

## Configuration

```
SOR 0 ;RS-232
SOR 1 ;potentiometer
      ;or 0-10 V
```

Set interface

```
V3000 ;speed 3000 rpm
V0    ;stop
```

Control volume flow via speed control

```
LR640 ;load 10 revolutions
M      ;start positioning
```

Dosage

```
SP6000 ;set maximum speed
AC500  ;set acceleration
LPC400 ;load peak current
LCC200 ;load cont. current
```

Set motor parameters

```
GV      ;get command velocity
=> 3000
GN      ;get actual velocity
=> 2998
GRC     ;get actual current
=> 200
POS     ;get actual position
=> 640
```

Retrieve parameters and motor data

```
EEPSAV ;save configuration
```

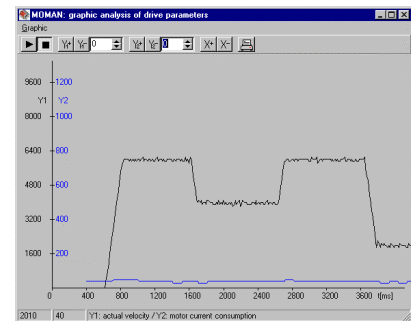
Save parameters to EEPROM

## Programming

```
PROGSEQ ;start program
A1      ;label 1
V1000  ;speed 1000 rpm
DELAY 100 ;wait 1 sec
NP      ;notify position
LR 6400 ;load 10 revolutions
M       ;start motion
JMP1    ;jump to label 1
END     ;end program
```

Dosage program

## Graphic online analysis



Sample chart: speed and motor current

## Mode of operation

```
CONTMOD standard mode
APCMOD  analog position
         control mode
STEPMOD stepper motor mode
```

Choose mode of operation for control

## Item number

66 02 01 00

Controller S-ND pumps low pressure series, zero modem cable, software »Motion Manager«, sample programs

## Accessories

Power supply  
Multiplexer-module

External 24 V power supply 100–240 V AC 50/60 Hz with connector for controller S-ND  
Operation of up to 255 pumps with a single RS-232 interface