

Programmable controller S-HD-KL

For discrete dosage and continuous delivery



- High quality pump controller for continuous and discrete delivery
- For mzs-pumps mzs-2909 Ex, mzs-4609 Ex, mzs-7209 Ex, mzs-7259 Ex
- Powerful 16-bit microcontroller
- Programming of controller
- Windows®-based software »Motion Manager«
- Potentiometer for speed set
- Analog input 0-10 V
- 3 digital inputs, 1 input is equipped with a switch
- 1 digital output, programmable as input
- Two colored LED status indicator
- EEPROM memory
- RS-232 interface

The controller S-HD-KL is recommended for high requirements in control of discrete dosage and continuous delivery tasks in combination with Ex-pumps mzs-2909 Ex / 4609 Ex / 7209 Ex and mzs-7259 Ex.

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 established via a RS-232 interface. Motor speed or

flow rate can be set either by an analog input (0-10 V) or a potentiometer mounted on the PCB. For the three digital inputs there is a screw terminal. Programs for dosage control can be saved in the memory.

Technical data

Control	PI-controller, speed and position control
Supply voltage U_B	24 V DC (12 – 30 V)
Speed	1 – 6000 rpm
Power	DIN 45323 socket, screw terminal
Pump connection	screw terminal
Serial interface	RS-232, SUB-D plug, 9-pole
Protective class	IP 20
Input # 1 (speed)	0 – 10 V
Fault 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 input # 3 with switch
Program memory	6,600 Bytes
Dimensions (L x W x H)	approx. 112 x 85 x 36 mm
Weight	approx. 180 g

Subject to technical changes.

Contact

HNP Mikrosysteme GmbH
Bleicherufer 25 · D-19053 Schwerin

phone +49 385 52190-301
fax +49 385 52190-333

e-mail info@hnp-mikrosysteme.de
<http://www.hnp-mikrosysteme.de>

Software



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

Several sample programs are supplied such as the triggering of different dosage programs with the digital inputs.

Configuration

```

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

V3000     ;speed 3000 rpm
V0        ;stop

LR4000     ;load 2 revolutions
M         ;start positioning

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

GV        ;get command velocity
⇒ 3000
GN        ;get actual velocity
⇒ 2998
GRC       ;get actual current
⇒ 200
POS       ;get actual position
⇒ 640

EEPSAV    ;save configuration

```

Set interface

Flow rate set via speed control

Dosage

Set motor parameters

Retrieve parameters and motor data

Save parameters to the EEPROM

Programming

```

PROGSEQ  ;start program
A1       ;label 1
V1000   ;speed 1000 rpm
DELAY 100 ;wait 1 sec
NP       ;notify position
LR 8000  ;load 4 revolutions
M        ;start motion
JMP1    ;jump to label 1
END     ;end program

```

Dosage program

Mode of operation

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

Selection of the control mode

Item number

66 02 01 04

controller S-HD-KL for Ex-pumps mzs-2909 Ex, mzs-4609 Ex, mzs-7209 Ex, mzs-7259 Ex, null-modem cable, software »Motion Manager«, sample programs

Accessories

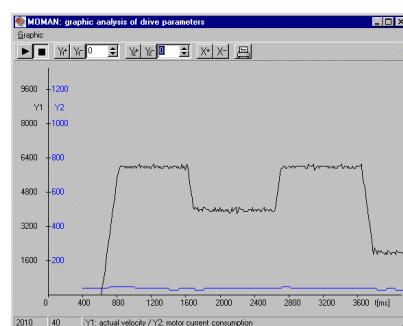
Power supply

external power supply 24 V DC, input voltage 100–240 V AC 50/60 Hz, with connector for controller S-HD-KL

Multiplexer module

simultaneous operation of up to 255 pumps with a single RS-232 interface

Graphic online analysis



Sample chart: speed and motor current