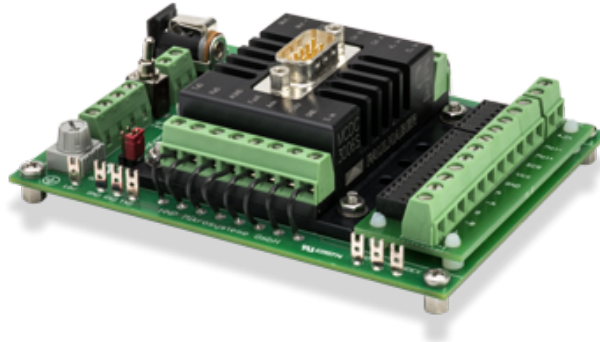


## Product information

### S-HD-KL · Controller



#### Description

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.

#### Advantages

- 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

## Technical data

Controller	PI-controller, speed and position control
Supply voltage	24 V DC (12 – 30 V)
Velocity range	1 - 6,000 rpm
Voltage	DIN 45323 socket, screw terminal
Pump connector	screw terminal
Serial interface	RS-232, SUB-D plug, 9-pole
Protection class	IP 20
Input # 1 (speed)	0 - 10 V
Error output (input # 2)	Open collector max. UB / 30 mA; no error: connected to GND; as input: low 0...0.5 V / high 4 V...UB
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
Remarks	Subject to technical changes.

### Notice

Even if single parameters are within the indicated performance range of technical data, certain parameter combinations may not be achievable. Single parameters may exceed their indicated performance range under adequate circumstances. For detailed evaluation please contact HNP Mikrosysteme. Actual performance may vary. Specifications are subject to change without notice.

## Patents and trademarks

Micro annular gear pumps (and housings) are protected by assigned patents: EP 1 354 135 B1; US 7,698,818 B2; DE 10 2011 001 041 B4; CN 103 348 141 B; US 10,012,220 B2; CN 103 732 921 B; US 9,404,492 B2; US 6,520,757 B1. HNP<sup>®</sup>, m<sub>z</sub>r<sup>®</sup>, MoDoS<sup>®</sup>, μ-Clamp<sup>®</sup>, μDispense<sup>®</sup>, Centrifluidic Technologies<sup>®</sup>, LiquiDoS<sup>®</sup>, smartDoS<sup>®</sup>, ColorDoS<sup>®</sup> are registered German trademarks of HNP Mikrosysteme GmbH.

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