

## Dosing and filling system

### smartDoS®

Compact and efficiently dosed. By hand or automated.



- Dosing volumes in the microliter and milliliter range
- Adjustable dosing dynamic
- Wide viscosity range
- Self-priming micro pump
- Graphical user interface
- Signal exchange with PLC
- Gentle, bubble-free dosage
- No liquid quality loss
- Effective use of raw materials
- Cost and time savings
- Easy emptying, rinsing and adaption

smartDoS® is a flexible dosing and filling system that is configured according to customer requirements. On the one hand smartDoS® is suitable for the ergonomic design of manual workstations for small and pilot series. On the other hand, production processes can be automated due to the integrability of mechanics and control technology.

#### Applications

- Dosing in cosmetics
- Filling in the pharmaceutical sector
- Dosing of ink and colorants
- Bubble-free filling of oil dampers

#### Typical liquids

- Oils, greases, silicones, waxes
- Adhesives, UV-adhesives, colorants
- Solvents
- Additives in process engineering, pharma and food industry

#### Technical data

|                             |  |
|-----------------------------|--|
| Pumps                       | Micro annular gear pumps of the Low pressure and High performance pump series, of the Hermetic inert, Magnetic hermetic and Modular pump series                      |
| Flow rate                   | 0.0015 – 288 ml/min *  |
| Differential pressure range | 0 – 40 bar *   |
| Liquid temperature range    | -20 ... +150 °C *  |
| Max. inlet pressure         | 1 – 10 bar *   |
| Viscosity range             | 0.3 – 50,000 mPas (1,000,000 mPas) *   |
| Dosage precision            | < 1 % Coefficient of Variation CV  |
| Fluid connection            | 1/8" NPT, 1/4"-28 UNF  |
| Wetted parts                | stainless steel 1.4404/1.4435 (316L), tungsten carbide Ni based; shaft seal: graphite-reinforced PTFE, stainless steel 316L; static seals: FPM, optional: EPDM, FFPM |
| Controller                  | mzr-Touch Control with 4,3"-Touch Display and graphical user interface   |
| Power supply                | 24 V DC / 3 A (5 A *)  |
| Standard interface          | 0 – 10 V, socket 6-pole according to DIN 45321   |
| Digital output              | Open Collector, 24 V, 0.5 A  |

Customized solution on request.

\* Options depending on the chosen configuration

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.

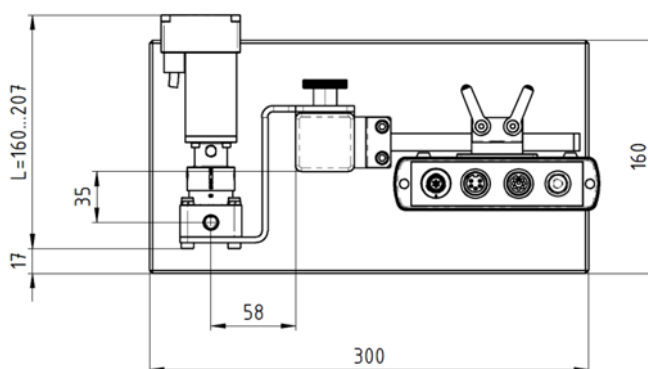
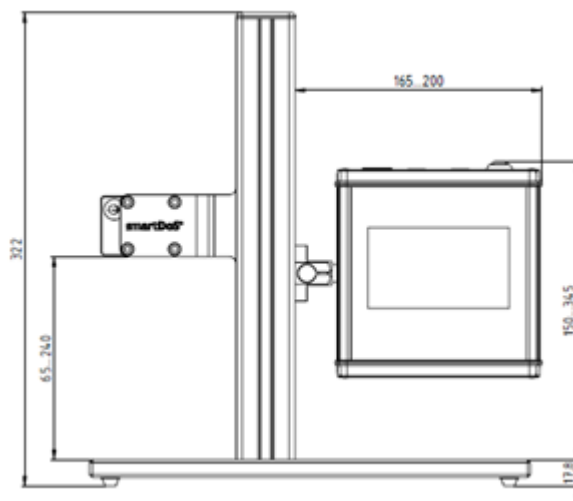
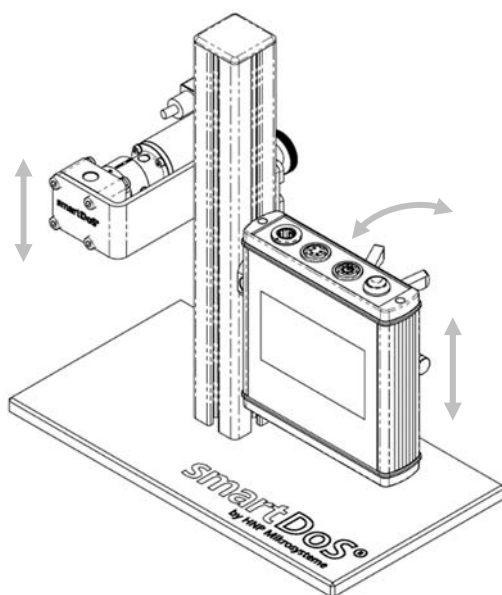
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## Dimensions



Subject to technical modifications.

## Accessories

|  |  |
|--|--|
| <i>Terminal box for power supply 120 W / 5 A</i> | At higher viscosity or higher differential pressure.   |
| <i>Filter</i>                                    | Mesh size and filter surface will be designed to the application.  |
| <i>Reservoir</i>                                 | Cartridges with and without upstream pressure (30 – 900 ml) or packaging provided by customer.   |
| <i>Stop valve</i>                                | Shutting down the system for clean work. Also available as 3/2-way ball-valve combination with a rinsing setup.  |
| <i>Check valve</i>                               | Alternative to the ball valve, mechanical valve that opens and closes automatically.   |
| <i>Dispensing needle</i>                         | Standard dispensing needle with Luer-Lock, special dispensing needles with hydrophobic coating, customer-specific dispensing needles, adapters for common dispensing needles |
| <i>Hand or foot switch</i>                       | Start of dosing via external buttons for ergonomic work (signal input also possible via PLC or contact switch).  |

Micro annular gear pumps (and housings) are protected by assigned patents: EP 1354135, US 7,698,818 B2, DE 10 2011 001 041.6, 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. Patents pending: DE 10 2011 051 486.4, EP 12 72 8264.8. In the US, Europe and China additional patents are pending. HNP<sup>®</sup>, mzr<sup>®</sup>, ColorDoS<sup>®</sup>, LiquiDoS<sup>®</sup>, MoDoS<sup>®</sup>, smartDoS<sup>®</sup>, µDispense<sup>®</sup>, µ-Clamp<sup>®</sup> are registered German trademarks of HNP Mikrosysteme GmbH.