MDS 3010+ & MDS 3020+ Series for low to medium viscosity

**Perform Most Complex Industrial Applications**

- **Highest Precision Piezo-based Dispensing**
- **Programmable Scenarios for User defined Patterns**
- **Real Time Parameter Setting**
- **Maximum Stability & Unique Tappet Suspension**
- **Highest Throughput in a Wide Range of Applications**
- **Real Time Clock**
- **Easy Maintenance**
PERFECT SOLUTION FOR LOW & MEDIUM VISCOSITY APPLICATIONS

- The modular design of the VERMES Microdispensing systems MDS 3010\textsuperscript{+} / MDS 3020\textsuperscript{+} enables a flexible use with fluids of low and medium viscosity
- The systems are suitable for a wide range of industrial applications including: Life science, medical diagnostics and pharmaceuticals, e.g. water based cell and protein solutions
  - Electronics, semiconductors and automotive, e.g. UV glues, Cyanoacrylate, anaerobe glues
  - Other electronics, e.g. solder flux, selective coating
  - Fine mechanics, e.g. oiling and greasing

PROGRAMMABLE SCENARIOS

- Four programmable and storable scenarios enable the user to define his own combinations of parameter sets
- Dispensing of lines with different widths, immediate change of drop size and speed
- Allows complex dispensing patterns without external control

PARAMETER CHANGE THROUGH SELECT PINS

- External control of setups and scenarios via the select pins of the AUX socket
- Select pins allow change of parameters on the fly

USER-FRIENDLY ADJUST MODES

- The controller MDC 3090\textsuperscript{+} offers both a first drop mode and a fixed adjust mode
- The first drop mode is especially useful when working with several systems in parallel ensuring that all valves and parameters are comparable
- The fixed adjust is needed for e.g. adhesives that are highly reactive, such as Cyanoacrylate. It is automatically coupled with the first drop mode

ADVANCED CONTROLLER FEATURES

- Built-in real time clock tracks all failures and unintentional stoppages
- The response time for signal handling is extremely fast with a PLC trigger delay of only 85 µs
- Trigger signals can be as low as 40 µs

OPTIONAL HEATER COMPONENTS

- Local nozzle heater can be added at any time and works together with the external VERMES MFC heater controller

MODULARITY & COMPATIBILITY

- The modular design of VERMES MDS 3010\textsuperscript{+} and MDS 3020\textsuperscript{+} allows highly flexible user defined configurations with a wide variety of nozzles and fluid boxes
- The controller MDC 3090\textsuperscript{+} is compatible with all valves of the MDV 3010 and the MDV 3020 series

LOW COST OF OWNERSHIP

- The valve design separates between wet and dry area which makes service easy and economical

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Recommended media

- Low viscous adhesives, such as aqueous fluids, UV glues, Cyanoacrylate, anaerobic glues
- Medium viscous adhesives, such as organic solvents, solder flux, oil, grease

Type of tappets

- Different shapes in monolithic ceramics or tungsten carbide

Type of nozzles

- Various shapes, materials and hole diameters

Dispensing quantity

- Min. 5 nl per pulse (depending on medium)

Droplet diameter

- Min. 300 µm (depending on medium)

Dispensing viscosity

- MDS 3010\textsuperscript{+} up to 300 mPas
- MDS 3020\textsuperscript{+} up to 8,000 mPas

Supply pressure

- 0.1 – 8 bar (rel.) max. 30 bar

Maximal frequency

- >3,000 Hz

PLC trigger delay

- 85 µs

Additional functionality

- Real-time behavior at:
  - Scenarios -> pre-programmable volume change
  - Select Pins -> operation controlled volume change

Valve operating modes

- Burst Mode: predefined burst after trigger signal
- Single Shot Mode: path length dependent triggering
- Infinite Mode: number of shots controlled by external trigger
- External Mode: application controlled definable drop volume setting

Optional heating system

- Regulated nozzle heating: 180 °C, higher upon request

Memory for parameter sets

- Internal: 10; external: unlimited

Standard interface

- RS232C; 24 V/5 V PLC

Dimensions

- Valve: 103 mm H x 39,5 mm W x 10 mm D
- Control unit: 128 mm H x 102 mm W x 173 mm D
  - (without cable) for installation into 19\textsuperscript{-}rack

Weight

- Valve: approx. 210 g, Controller MDC 3090\textsuperscript{+}: approx. 1,500 g

Power connection

- 110/240 V AC, 50/60 Hz power socket (back side)