

S6-VR VISCOSITY CONTROL SYSTEM

Automatic control of viscosity and temperature based on the vibration measuring principle



(Fig. Vibration viscometer with PentaSmart control unit installed and wired in stainless steel mounting box).

Features

- Substantial and sustainable cost reductions
- Improving print quality
- Productivity increase
- Optimal price-performance ratio
- Maintenance free
- Simple installation and commissioning
- Inline operation

Functions

- Precise control of viscosity and temperature
- Decentralised or centralised control
- Solvent mixing / consumption measurement
- Central colour database
- Print job management
- Reporting and analyses
- PLC Integration

Areas of application

- Gravure printing
- Flexo printing
- Coating
- Lamination
- Paper and corrugated board printing
- Solvent and water-based media
- Lacquer, 2K lacquer, adhesives

Specifications

- Viscosity output: cup seconds
- Measuring principle: Vibrating resonator
- Measuring range viscosity: 0.2-500CP
- Measuring range temperature: 0-75°C
- Standard interface: MODBUS RTU
- Power supply: 24V DC
- Atex: II 2G Ex db IIC T6 Gb

The diagram illustrates the PentaSmart inkjet printing system. It shows the flow of ink (blue lines) and solvent (green lines) through various components. The ink flow starts from the ink tank (11), goes through a pump (10), a main pipe fitting (6), a cleaning valve (7), and an adding valve (8) before reaching the printing unit (12). The solvent flow starts from the solvent supply (9), goes through a T-sensor fitting (5) and a main pipe fitting (6) before reaching the printing unit (12). The printing unit (12) is connected to a medium recovery bin (13). The system is controlled by a control unit (1) connected to a viscometer interface (2), a servo valve assembly (3), and a viscometer (4). The viscometer (4) is connected to a T-sensor fitting (5) and a main pipe fitting (6). The servo valve assembly (3) is connected to a cleaning valve (7) and an adding valve (8). The control unit (1) is also connected to a 24 VDC power source. The system is housed in a cabinet with a green front panel and a grey top panel. The back of the cabinet shows the electrical connections and the 24 VDC power source. The front panel has a label 'EX ZONE'.

- 1 Control unit PentaSmart
- 2 Viscometer interface
- 3 Servo valve assembly
- 4 Viscometer FAS-VR5030
- 5 T-sensor fitting
- 6 Main pipe fitting
- 7 Cleaning valve NO
- 8 Adding valve NC
- 9 Solvent supply
- 10 Pump
- 11 Ink tank
- 12 Printing unit
- 13 Medium recovery bin

--- Air — Ink
 — Electrical connections
 — Lösemittel

The diagram illustrates the PentaSmart system architecture. It shows the following components and their connections:

- 1 Control unit PentaSmart**: The central control unit.
- 2 Viscometer interface**: Connects the control unit to the viscometer.
- 3 Servo valve**: Receives electrical signals from the control unit and interface.
- 4 Viscometer FAS-VR5030**: The main processing unit.
- 5 Solvent supply**: Provides solvent to the system.
- 6 Adding valve NC**: A non-return valve for adding solvent.
- 7 Pump**: Circulates the medium through the system.
- 8 Medium tank**: The source of the medium.
- 9 Printing unit**: The output device.
- 10 Medium recovery bin**: Collects excess medium.

Legend:

- Air (dashed yellow line)
- Ink (blue line)
- Electrical connection (red line)
- Solvent (green line)