

ViscoScope[®] **D250/4450** Process Viscometer

Transmitter VS-4450



Transmitter VS-D250



ViscoScope[®] - The premium process viscometer brand

The ViscoScope[®]-Transmitters

VS-4450 and VS-D250 series are compatible with all ViscoScope[®] VA-300 and VA-100 sensors as well as their predecessor models. This guarantees maximum flexibility when selecting the optimum instruments and replacing older transmitters.

The transmitter drives the sensor and maintains the amplitude of the sensor's resonance frequency at a constant level using

a fast PID controller. Thus the higher the viscosity, the higher the voltage required. This can be used to measure the dynamic viscosity in $\text{mPa}\cdot\text{s} \times \text{g}/\text{cm}^3$ ($\eta \times \rho$). The 16 bit internal resolution ensures that the system provides outstanding coverage even of viscosity ranges over 4 decades.

The system is factory-calibrated and ready for immediate use. Calibration is performed using

Overview of the various transmitters

Transmitter type	VS-4450	VS-D250
Measured parameters	Viscosity Process-Temperature Coil-Temperature External input Resonance frequency	
Calculated parameters	Temperature compensation Dynamic viscosity Kinematic viscosity User viscosity	
Display	4-line alphanumeric - 2 pages	
Outputs	front panel RS232 output, MODBUS RTU (Standard)	
option	0/4..20 mA or 0/2..10 VDC (activ) free configurable RS232 or RS485 / 2 SPDT-Relays	0/4..20 mA or 0/2..10 VDC (activ) free configurable RS232 or RS485
Slots for outputs	4	2
External input (integrated)	0/4..20 mA or 0/2..10 VDC, i.e. for density or pressure	
Transmitter configuration	3 push buttons on front panel	
Filter	Moving average (up to 200 measurements)	
Alarm system	System function Sensor diagnostics Coil temperature 2 configurable LED's	
Power supply	95...250 VAC, 50...60 Hz, 15 W 24 VAC / VDC	24 VDC, 12 W
Dimensions	19"-Standard 3RU 21HP x 180 mm / 7.1"	L x W x H 142 x 106 x 73 mm / 5.6 x 4.2 x 2.9"
Enclosure	Panel mount enclosure IP42 144 x 144 x 218 mm / 5.7 x 5.7 x 8.6" Wall mount enclosure, IP65 19" rack, 3RU 84HP Ex-d enclosure	DIN-rail enclosure, IP42 Ex-d enclosure
Ambient temperature	0°C to 50°C / 0°F to 122°F	

a variety of certified Newtonian calibration oils to ensure reproducible measurements. The original calibration is stored in a separate memory partition so the user can overwrite the current calibration values with a calibration value of his own, e.g. with drain seconds or laboratory values.

The transmitter can also be configured to perform measurements with extremely small differences in viscosity (example: milk and whey).

Both transmitters are fitted with a configurable display. Measurement data is transmitted using standard industrial analog or serial interfaces. The VS-4450 model is also available with two SPDT

relays for time proportional regulation or alarms.

The VS-4450 transmitter is designed in accordance with the 19" standard and can therefore be mounted in practically any suitable housing. The transmitter is usually supplied in a 144 x 144 mm panel mount housing but can alternatively be supplied in a wall mount housing, 19" rack or Ex-d housing.

The VS-D250 model is designed for mounting on a DIN rail. However, it can also be used with an adapter for wall mounting or mounted in a wall- or Ex-d housing.