In-line viscometer(For embedded applications)

# FVM70A Series

Embedded applications inline viscometer

FVM70A-ST

Compact inline viscometer can also be used in the lab





## Summary

- FVM70A is a torsional oscillation viscometer of inline process applications.

  It measures the viscosity and temperature in real time and continuously attached to tank, and pipe with the flange.
  - Maintenance-free viscometer due to piezoelectric ceramic in the driving unit.
    - Viscosity sensor portion (probe) has become a full sealed structure, non-explosion proof type is also possible to soak in the liquid the entire probe addition to being attached at the flange.
    - It is possible to viscosity measured in flow state of liquid by attaching to the pipe that the flow of the liquid and the tank is agitated.

### Feature

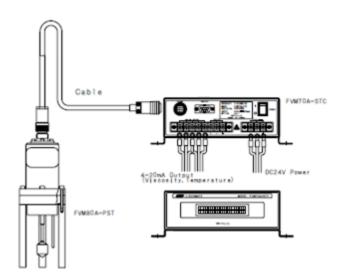
#### FVM70A-ST

- High precision is achieved by downsizing the technology of FVM80A series
  - Adopts DC24V to be able to share the same supply as the control equipment
  - By adopting the same probe and FVM80A / FEM-1000V, standardization of piping design is feasible.

#### FVM72A

- High precision is achieved by downsizing the technology of FVM80A series
  - It uses an AC adapter, making it easier to use as a lab machine.
    - Downsized in combination with the VM-200T2, T3 probe.

# System configuration FVM70A—ST



## Specifications

TYPE	FVM70A-ST			
	L-Type *Note 1	M-Type *Note 1	H-Type *Note 1	
Measuring Range	0.5~1000mPa·s	10∼5000mPa⋅s	500~20000mPa·s	
Accuracy	±2%(Reading) *Note 2			
Repeatability	±1%(Reading) *Note 2			
Temperature Range	0∼100°C			

Wetted temperature range	0∼70°C		
Calibrating method	Calibration with Standard Liquids for Calibrating Viscometers(JIS Z8809-2011)		
Viscosity display	3-digit LCD display (Without decimal point)		
Temperature display	3-digit LCD display (Without decimal point)		
System requirements	10~40 ℃, 20~80%RH(No condensation)		
Analog output	4~20mA viscosity ×1 temperature ×1		
Digital output	RS232C interface output		
Power	Input: DC24V 700mA		
Probe mounting size	Insertion hole diameter: $\Phi 46$ , Mounting bolt: $\Phi 60$ on the circumference, M4 $\times 4$ pieces		
Wetted Materials	Flange: SUS304, the vibrator part: SUS316		
	Probe:Φ46 · Φ70×L190[mm](including a connecting portion), approximately 1.4kg		
Weight and Dimensions	Controller: H72xW220xD220[mm] (except the connecting portion and terminal block) approximately 1.7kg		
Accessories	Connecting cable (5m) *Note 3, manual		

<sup>\*</sup>Note1 Select range L, M, H range of measurement.

Teflon coated probe (Probe: FVM80A-PST-T02)



<sup>\*</sup>Note2 Measurement condition: At the room temperature using a JISZ8809 viscosity calibration standard liquids, measured with stirring at a liquid temperature of  $23 \pm 3$  °C by stirrer or etc. \*Note3 Maximum 10m, up to 20m can be extended (paid option)

<sup>\*</sup>Option (paid)

2S ferrule installation (Probe: FVM80A-PST-F01)



TYPE	FVM72A-VM-200T2		FVM72A-VM-200T3			
	L-Type *Note 1	M-Type *Note 1	H-Type *Note 1	L-Type *Note 1	M-Type *Note 1	H-Type *Note 1
Measuring	0.5∼ 1000mPa	10∼ 5000mPa	500∼ 20000mPa	0.5∼ 1000mPa	10∼ 5000mPa	500∼ 20000mPa
Range	·s	·s	·s	·s	·s	·s
Accuracy	±2%(Reading) *Note 2					
Repeatability	±1%(Reading) *Note 2					
Temperature Range	0~100°C					
Wetted temperature range	0∼70°C					
Calibrating method	Calibration with Standard Liquids for Calibrating Viscometers (JIS Z8809-2011)					
Viscosity display	3-digit LCD display (Without decimal point)					
Temperature display	3-digit LCD display (Without decimal point)					
System requirements	10~40 ℃, 20~80%RH (No condensation)					
Analog output	$0\sim5$ V viscosity $\times1$ temperature $\times1$					
Digital output	RS232C interface output					
Power	AC adapter (Input: AC100~240V, Output: DC9V 2,600mA)					
Probe mounting size	Insertion hole diameter: $\Phi$ 35(T3,T2), Mounting bolt: $\Phi$ 50(T3) on the circumference, M4×4 pieces(T3)					
Wetted Materials	Flange: SUS304, the vibrator part: SUS316					

	Probe:Φ34 (T2) • Φ70 (T3 flange) xL220 (including a connecting portion) approximately 0.75kg
Weight and Dimensions	Controller: H72xW220xD220[mm] (except the connecting portion and terminal block) approximately 1.7kg
Accessories	Connecting cable (5m) *Note 3, manual
Option	Temperature sensor (Pt)

<sup>\*</sup>Note1 Select range L, M, H range of measurement.

#### Probe VM-200T2



Probe VM-200T3



<sup>\*</sup>Note2 Measurement condition: At the room temperature using a JISZ8809 viscosity calibration standard liquids, measured with stirring at a liquid temperature of  $23\pm3$  °C by stirrer or etc. \*Note3 Maximum 10m, up to 20m can be extended (paid option)