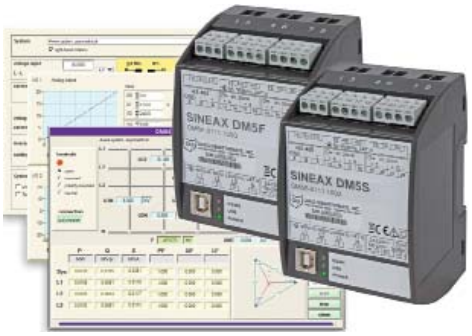
PROGRAMMABLE MULTI-FUNCTION TRANSDUCER *MODEL* DM5

DESCRIPTION

The DM5 series multifunction transducers measure all parameters of voltage, current and power in 1-, 2- and 3-phase systems with direct connections of up to 5Aac and 693VL-L. The included CB-Manager software allows the user to quickly and easily configure each device for specific applications through the convenient USB port or remotely via the RS485 Modbus/RTU interface option. This software allows the user full configuration access as well as data storage and acquisition, device setting and resetting, and security controls. All DM5 models are available with up to 4 bi-directional analog outputs. The DM5S also offers the capability of monitoring up to 32 energy meters with individual tariffs and base measurement quantities.



MODEL SELECTION

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MEASUREMENT TIME		SYSTEM CONFIGURATION		COMMUNICATION INTERFACE		ANALOG OUTPUTS		TEST CERTIFICATE	
F	Programmable, 1/2-, 1/2 (1)-, 1-, 2-, 4- or 8-cycle measurement	1	Universal for all applications (3 voltage inputs, 3 current inputs)	0	(none)	0	(none)	0	(none)
		2	1Φ, 3Φ3W or 3Φ4W balanced load (3 voltage inputs, 1 current input)	1	RS-485 (Modbus/RTU protocol)	1	1 analog output, bidirectional ±20mA	E	Includes certificate in English
S	Programmable, 4- to 1024-cycle measurement plus energy metering	3	1Φ, 3Φ4W balanced load (1 voltage input, 1 current input)			2	2 analog outputs, bidirectional ±20mA		
						3	3 analog outputs, bidirectional ±20mA		
						4	4 analog outputs, bidirectional ±20mA		

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c UL us LISTED MEASURING EQUIPMENT 4DP5

SPECIFICATIONS

INPUT

Current, Nominal ..... 1 to 5Aac, adjustable
Maximum ..... 7.5A (sinusoidal)
Overload without damage ..... 10A, continuous
100A, 10 x 1s, at 100s intervals
Burden ..... ≤ I² / 3MΩ per phase
Voltage, Nominal .....57.7 to 400VL-N, 100 to 693VL-L
Maximum ..... 480VL-N, 832VL-L (sinusoidal)
Overload without damage
480VL-N, 832VL-L continuous
600VL-N, 1040VL-L, 10 x 10s, at 10s intervals
800VL-N, 1386VL-L, 10 x 1s, at 10s intervals
Burden .....≤ V² / 3MΩ per phase
Impedance ..... 1.54 MΩ per phase
Frequency Range .....45...50/60...65Hz
True RMS measurement up to 63rd harmonic

INSTRUMENT POWER

Nominal ... 100-230Vac ±15%, 50-400Hz or 24-230Vdc ±15%
Burden ..... ≤ 10VA

SYSTEM CONFIGURATIONS ACCOMMODATED

Single-phase
Split-phase (2 phase system)
Three-phase ....3-wire, balanced load (1 1/2 element)
3-wire, bal. load, phase shift (DM5S only)
3-wire, unbalanced load (2 ele., 3 ele.)
3-wire, unbalanced load, Aron connection
4-wire, balanced load (1 ele.)
4-wire, unbalanced load (2 1/2 ele., 3 ele.)
4-wire, unbalanced load, Open-Y

CONFIGURATION INTERFACE

Type ..... USB, max. 10ft. (3m)
Physical ..... Socket USB-B
Device Class ..... Human interface device (HID)

COMMUNICATION INTERFACE

Modbus/RTU ..... RS-485 (max. 32 devices)
Physical ..... max. 4000ft. (1200m), via plug-in terminals
Baud Rate ..... 2.4k to 115.2kBaud

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SPECIFICATIONS, CONNECTIONS & DIMENSIONS *MODEL* DM5

SPECIFICATIONS

ANALOG OUTPUTS

Connections ..... plug-in terminals, galvanically isolated
Linearization ..... linear or kinked
Range ..... ±20mA (24mA max.), bipolar
Uncertainty ..... ±0.1% (included in basic accuracy)
Response Time (50Hz)
DM5S ..... 85...165ms (for 4 cycles measurement)
DM5F ..... 15…25ms (for ½ cycle measurement)
Burden ..... ≤ 500Ω (max. 10 V / 20 mA)
Burden Influence ..... ≤ 0.1%
Residual Ripple ..... ≤ 0.2%

MEASUREMENT UNCERTAINTY

Ref. Cond. ..... Ambient 23°C ±1°C, sinusoidal, PF=1, (acc. IEC/EN 60688), 50-60 Hz, Burden 250 Ω,
DM5S ..... Measurement over 8 cycles
DM5F ..... Measurement over 1 cycle
Voltage, Current ..... ± 0.15% F.S. Volts / F.S. Amps 1) 2)
Power ..... ± 0.2% (FSU x FSI) 2)
Power Factor ..... ± 0.1° 2)
Frequency ..... ± 0.01 Hz
Active Energy (DM5S only) ..... Class 0.5S, EN 62 053-22
Reactive Energy (DM5S only) ..... Class 2, EN 62 053-23

1) F.S. Volts / F.S. Amps represents the configured maximum value of voltage and current inputs.
2) Additional uncertainty if neutral wire is not connected for 3-wire connections:
Voltage, Power ..... 0.1% of Rdg.
Load factor ..... 0.1°
Energy ..... Voltage influence x 2, Angle uncertainty x 2

SAFETY

Current Inputs are galvanically isolated from each other.
Protection Class ..... II (protective insulation, voltage inputs via protective impedance)
Pollution Degree 2
Protection Rating ..... IP30 (housing), IP20 (terminals)
Overvoltage Category ..... CAT III up to 600V

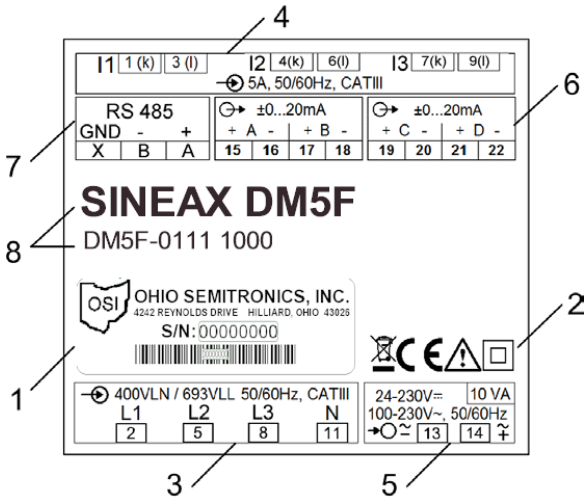
PHYSICAL AND ENVIRONMENTAL

NOTE: Intended for indoor use only!
Operating Temperature ..... –20 … 22 … 24 … + 55°C
Storage Temperature ..... –25 to +70 °C
Temperature Effect ..... 0.5 x basic uncertainty per 10°C
Long-term Drift ..... 0.5 x basic uncertainty per year
Others ..... Usage group II (EN 60 688)
Relative Humidity ..... < 95% non-condensing
Altitude ..... ≤ 6561ft. (2000m) max.
Enclosure Material ..... Polycarbonate
Weight ..... 1.1 lb. (500 g)
Flammability Class ..... UL94V-0, self-extinguishing, non-dripping, halogen-free

NOTE: Refer to the Device Handbook (Operator's Manual), ModBus Basics, Modbus Interface and Safety Instructions for additional information.

CASE DIMENSIONS AND CONNECTIONS

All dimensions in inches [mm].
Tolerance - 0.00±0.03in. (unless otherwise specified)



Measurement Input
Input Voltage
Input Current
System Frequency
1 Serial Number
2 Test and Conformity Marks
3 Voltage Inputs
4 Current Inputs
5 Power Supply
6 Analog Outputs
7 Modbus
8 Model Number

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