Benchtop Digital Thermometers

iSeries MONOGRAM®

Single- and 10-Channel Models with Embedded Ethernet Connectivity Option

Shown smaller than actual size.

Miniature quick disconnect thermocouples sold separately. GKMQSS-125U-6 shown. Visit us online.

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Transition junction and quick disconnect thermocouples sold separately. TTSS-18U-6 shown. Visit us online.

MDSi8 Series

5 YEAR WARRANTY

- Optional Embedded Internet
- Portable, Rugged Metal Benchtop Enclosure with Tilt Handle
- Single- and 10-Channel Models
- Built Around OMEGA's New iSeries Meters
- High Quality
- 5-Year Warranty
- High Accuracy ±0.5°C (±0.9°F), 0.03% Reading
- User-Friendly, Simple to Configure
- Universal Inputs: Thermocouple, RTD, Process Voltage/ Current, Strain on Single-Channel Models

- Totally Programmable Color Displays, Standard
- Optional Alarm Relays or Analog Output

Input Type		Range	Accuracy
	Process Voltage	0 to 100 mV, 0 to 1 V, 0 to 10 Vdc	0.03% rdg
	Process Current	0 to 20 mA (4 to 20 mA)	0.03% rdg
J	Iron–Constantan	-210 to 760°C/-346 to 1400°F	0.4°C/0.7°F
K	CHROMEGA®–ALOMEGA®	-270 to -160°C/-160 to 1372°C -454 to -256°F/-256 to 2502°F	1.0°C/0.4°C 1.8°F/0.7°F
T	Copper–Constantan	-270 to -190°C/-190 to 400°C -454 to -310°F/-310 to 752°F	1.0°C/0.4°C 1.8°F/0.7°F
E	CHROMEGA®–Constantan	-270 to -220°C/-220 to 1000°C -454 to -364°F/-364 to 1832°F	1.0°C/0.4°C 1.8°F/0.7°F
R	Pt/13%Rh-Pt	-50 to 40°C/40 to 1768°C -58 to 104°F/104 to 3214°F	1.0°C/0.5°C 1.8°F/0.9°F
S	Pt/10%Rh-Pt	-50 to 100°C/100 to 1768°C -58 to 212°F/212 to 3214°F	1.0°C/0.5°C 1.8°F/0.9°F
B	30%Rh–Pt/6%Rh-Pt	100 to 640°C/640 to 1820°C 212 to 1184°F/1184 to 3308°F	1.0°C/0.5°C 1.8°F/0.9°F
C	5%Re–W/26%Re-W	0 to 2320°C/32 to 4208°F	0.4°C/0.7°F
N	Nicrosil–Nisil	-250 to -100°C/-100 to 1300°C -418 to -148°F/-148 to 2372°F	1.0°C/0.4°C 1.8°F/0.7°F
L	J DIN	-200 to 900°C/-328 to 1652°F	0.4°C/0.7°F
RTD	Pt, 0.00385, 100, 500, 1000 Ω	-200 to 900°C/-328 to 1652°F	0.4°C/0.7°F
RTD	Pt, 0.00392, 100, 500, 1000 Ω	-200 to 850°C/-328 to 1562°F	0.4°C/0.7°F

panel meters. The iSeries meters feature the only LED displays that can be programmed to change color between **GREEN, AMBER,** and **RED** at any setpoint or alarm point. Other options include isolated programmable analog output, serial communications, MODBUS and Ethernet.

The universal temperature and process instrument (model "i") handles 10 common types of thermocouples, multiple RTD's, and several rocess (DC) voltage and current ranges.

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iSeries change color

at any setpoint

Totally Programmable Color Displays

1/32 DIN process control instruments with totally programmable color displays. The display can be programmed to change color at any setpoint or alarm point.

10-channel thermocouple model MDSSi8-TC-C4EI-AL, shown (top) with Ethernet/RS232 and alarm relay option. Single-channel universal model MDSi8-C4EI, shown (bottom) with Ethernet/RS232 option.

Specifications

Single-Channel Universal and 10-Channel Dedicated Temperature and Process Inputs

Accuracy: ±0.5°C (±0.9°F) temp; 0.03% reading process

Resolution: 1°/0.1°; 10 µV process

Temperature Stability:
RTD: 0.04°C/°C
Thermocouple @ 25°C (77°F): 0.05°C/°C (cold junction compensation)
Process: 50 ppm/°C

NMRR: 60 dB

CMRR: 120 dB

A/D Conversion: Dual slope

Reading Rate: 3 samples per second

Digital Filter: Programmable

Display: 4-digit, 9-segment LED, 10.2 mm (0.40")
i32, i16, i16D, i8DV: 21 mm (0.83")
i8: 10.2 mm (0.40") and 21 mm (0.83"), i8DH—**GREEN, AMBER,** and **RED** programmable colors for process variable, setpoint and temperatureunits

Input Types: Thermocouple, RTD, analog voltage, analog current

Thermocouple Lead Resistance: 100 Ω max

Thermocouple Type (ITS 90): J, K, T, E, R, S, B, C, N, L

RTD Input (ITS 68): 100/500/1000 Ω Pt sensor, 2-, 3- or 4-wire; 0.00385 or 0.00392 curve

Voltage Input: 0 to 100 mV, 0 to 1 V, 0 to 10 Vdc

Input Impedance: 10 MΩ for 100 mV, 1 MΩ for 1 or 10 Vdc

Current Input: 0 to 20 mA (5 Ω load)

Configuration: Single-ended

Polarity: Unipolar

Step Response: 0.7 s for 99.9%

Decimal Selection: None, 0.1 for temperature; none, 0.1, 0.01 or 0.001 for process

Setpoint Adjustment: -1999 to 9999 counts

Span Adjustment: 0.001 to 9999 counts

Offset Adjustment: -1999 to +9999

Network and Communications

Ethernet: Standards Compliance IEEE 802.3 10Base-T

Supported Protocols: TCP/IP, ARP, HTTPGET

RS232/RS422/RS485: Selectable from menu; both ASCII and MODBUS protocol selectable from menu; programmable 300 to 19.2 Kb; complete programmable setup capability; program to transmit current display, alarm status, min/max, actual measured input value and status

RS485: Addressable from 0 to 199

Connection: DB-9 connector on rear panel; optional alarm 1 and 2 (programmable)

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Optional Alarm 1 and 2 (Programmable)

Type: Form "C" SPDT relays
Operation: High/low, above/below, (limited output to 30 Vrms only) band, latch/unlatch, normally open/normally closed and process/deviation; front panel configurations

Optional Analog Output (Programmable):

Non-isolated, retransmission 0 to 10 Vdc or 0 to 20 mA, 500 Ω max (output 1 only). Accuracy is ± 1% of FS when following conditions are satisfied.

1) Input is not scaled below 1% of input FS
2) Analog output is not scaled below 3% of output FS

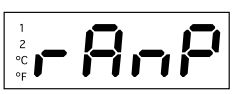
General

Power: 90 to 240 Vac, 50 to 60 Hz

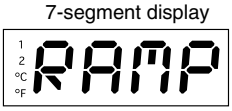
Note: *Each unit includes one power cord (model number **POWER CORD-NA**) rated for 120 Vac. Additional power cords for 230 Vac operation are available. See "Accessories."*

9-segment LED

The **iSeries** displays feature unique 9-segment LED characters, which greatly improves alphanumeric representations. The 7-segment LED characters found on most instruments are adequate for presenting numbers, but not letters. Words are easier to read with the unique 9-segment LED characters on the **iSeries**, which makes operating and programming simpler and easier.



7-segment display



9-segment display

To Order

Model No.	Description
MDSi8	1-channel benchtop thermometer, universal input (thermocouple, RTD, PV)
MDSi8A	1-channel benchtop thermometer, universal input (thermocouple, RTD, PV) with analog output
MDSi8S	1-channel benchtop strain meter
MDSSi8-TC	10-channel benchtop thermometer, dedicated thermocouple input
MDSSi8A-TC	10-channel benchtop thermometer, dedicated thermocouple input with analog output
MDSSi8-RTD	10-channel benchtop thermometer,dedicated 100 Ω RTD input
MDSSi8A-RTD	10-channel benchtop thermometer, dedicated 100 Ω RTD input with analog output
MDSSi8-PV	10-channel benchtop process meter, dedicated voltage/current input
MDSSi8A-PV	10-channel benchtop process meter, dedicated voltage/current input with analog output
Options	
-EIT	Ethernet with embedded web server*
-C24	Isolated RS232 and RS485/422
-C4EIT	Ethernet with embedded web server and RS484/422
-AL	Dual alarm relays (form "C" SPDT, 3 A @ 120/240 Vac)
-500/100	Configured for 500 or 1000 Ω RTD's (10-channel models only)
Ordering Examples	
MDSi8-C24	1-channel universal input benchtop thermometer with RS232/485 communication
MDSi8A-AL	1-channel universal input benchtop thermometer with analog output and alarm relays
MDSi8-EIT-AL	1-channel universal input benchtop thermometer with ethernet and alarm relays
MDSSi8-TC-C24	10-channel thermocouple input benchtop thermometer with RS232/485 communication
MDSSi8-RTD-AL	10-channel RTD input benchtop thermometer with alarm relays
MDSSi8-PV-EIT-AL	10-channel voltage/current input benchtop process meter with ethernet and alarm relays

Accessories	Description
POWER CORD-DM	Power cord with connector for Denmark
POWER CORD-E-10A	Power cord with connector for Continental Europe
POWER CORD-IT	Power cord with connector for Italy or Ireland
POWER CORD-SE	Power cord with stripped ends (no connection), all countries 250 Vac max
POWER CORD-UK	Power cord with connector for United Kingdom
POWER CORD-NA	Power cord with connector for North America (USA, Mexico, Canada), standard 120 Vac

Comes with complete operator's manual.

**Ethernet options are not available for the MDSi8A or MDSSi8A meters. For 10-channel models, communication port can only access input currently selected by 10-point selector switch on front of unit.*