

Benchtop Digital Thermometers iSeries



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



Shown smaller than actual size.

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

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

MDSi8 Series



- ✓ 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 $\pm 0.5^{\circ}\text{C}$ ($\pm 0.9^{\circ}\text{F}$), 0.03% Reading
- ✓ User-Friendly, Simple to Configure
- ✓ Universal Inputs: Thermocouple, RTD, Process Voltage/ Current, Strain on Single-Channel Models

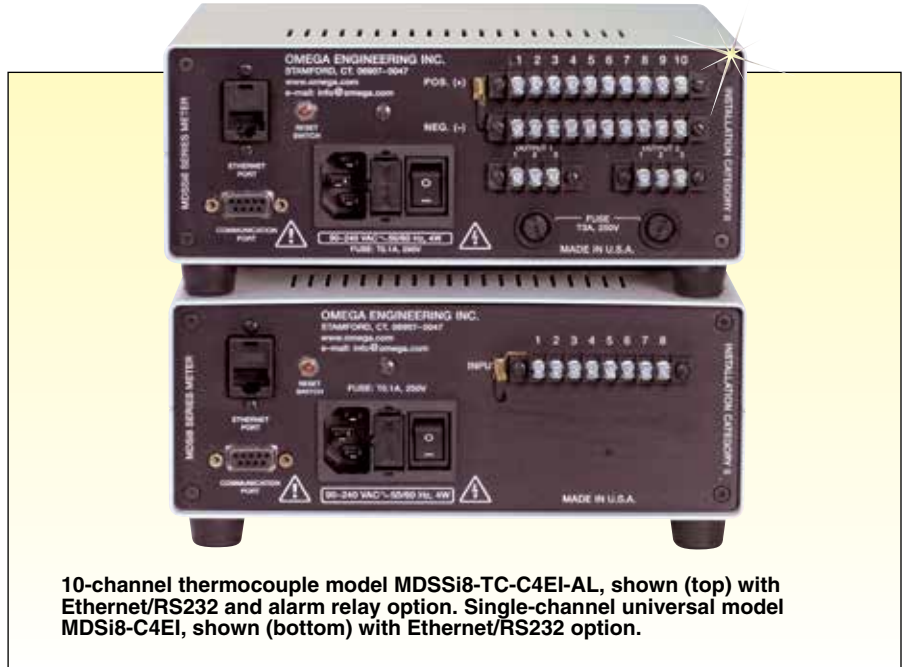
- ✓ Totally Programmable Color Displays, Standard

- ✓ Optional Alarm Relays or Analog Output
- ✓ RoHS 2 Compliant

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

The OMEGA® MDSi8 is a 1/2 DIN size (96 x 48 mm) digital panel meter in a rugged benchtop metal enclosure featuring the big iSeries color-changing display. The digits are twice the size of typical 1/2 DIN 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 process (DC) voltage and current ranges.



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:** $\pm 0.5^{\circ}\text{C}$ ($\pm 0.9^{\circ}\text{F}$) temp; 0.03% reading process
- Resolution:** $1^{\circ}/0.1^{\circ}$; $10\ \mu\text{V}$ process
- Temperature Stability:**
 - RTD: $0.04^{\circ}\text{C}/^{\circ}\text{C}$
 - Thermocouple @ 25°C (77°F): $0.05^{\circ}\text{C}/^{\circ}\text{C}$ (cold junction compensation)
 - Process: 50 ppm/ $^{\circ}\text{C}$
- 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 temperature units
- 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 M Ω for 100 mV, 1 M Ω 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)



Totally Programmable Color Displays

The OMEGA® i/8, i/16, and i/32 are the first complete series of 1/8, 1/16 and 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.





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

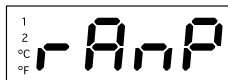
Power: 90 to 240 Vac, 50 to 60 Hz

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

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.