

i8 Series from \$240

1/8 DIN Temperature/Process & PID Controllers



[i/16 Series](#)
[1/16 DIN panel meter](#)

[i/32 Series](#)
[1/32 DIN panel meter](#)

[Selection Guide](#)



Specifications:

- ✓ High Quality
- ✓ Extended 5-year Warranty
- ✓ High Accuracy $\pm 0.5^{\circ}\text{C}$, 0.03% Rdg
- ✓ Full Autotune PID Control (Optional)
- ✓ User Friendly, Simple to Configure
- ✓ Free Software, Active X Controls
- ✓ Largest Display (21mm LED's) of Any 1/8 DIN Instrument
- ✓ Universal Inputs: Thermocouple, RTD, Process Voltage/Current
- ✓ First 1/8 DIN Instrument with Totally Programmable Color Displays (Standard)
- ✓ First 1/8 DIN Instrument Offering Both RS-232 and RS-485 Serial Communications in One Instrument (Optional)
- ✓ First 1/8 DIN Instrument with Built-in Excitation, 24 Vdc, Standard
- ✓ 2 Control or Alarm Outputs (Optional)
 - dc Pulse
 - Solid State Relays (SSR's)
 - Mechanical Relays
 - Analog Voltage and Current

iSERIES MANUALS/CONFIGURATION SOFTWARE
<ul style="list-style-type: none"> • MANUALS i8 MANUALS • SOFTWARE CONFIGURATION SOFTWARE • SOFTWARE ACTIVE X COMPONENT FOR EXCEL • PRICE • MECHANICAL SPECIFICATIONS
REQUIRES ADOBE ACROBAT - HELP

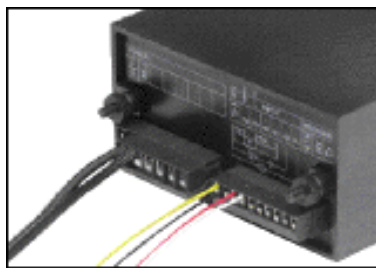
- ✓ **±0.04°C /°C RTD and ±0.05°C /°C TC @ 25°C**
- ✓ **NEMA-4, IP65 Front Bezel**
- ✓ **Front Removable and Plug Connectors**

The NEWPORT® i8 is the 1/8 DIN model (96mm x 48mm) featuring the biggest "i-catching" **iSeries** display. The unique i8 display is much bigger and brighter than any other 1/8 DIN meter or controller. The "i800" model is an extremely accurate digital panel meter with no control outputs.

The "i8XX" adds a selection of outputs for complete control or alarm capability. The user can easily program the i8XX for any control requirement from simple on-off to full autotune PID with a choice of SPDT relays, Solid State Relays, DC pulse, and Analog outputs.

Isolated Analog Output is available on this 1/8 DIN model, with or without 2 SPDT Form C relays. For isolated Analog Output, specify model i8A00 for the monitor or i8A33 with two relays.

The NEWPORT® i8 1/8 DIN enclosure has a NEMA 4 (IP65) rated front bezel and removable rear connectors for easy installation and wiring.



The i/8 series panel meter features plug/removable connectors and a sturdy panel mounting sleeve with adjustable thumb nuts for easy secure installation.

BIGGER, BRIGHTER DISPLAYS!

iSeries LED displays are considerably bigger, brighter and therefore more visible than displays for conventional instruments with the same DIN size. The segments in the i/8 are 21 mm (.83") high; in the i/32 and i/16, 10.2 mm (.40") high.



The innovative NEWPORT® **iSeries** of meters/controllers combines in one intelligent industrial instrument features of an extremely accurate digital panel meter and a fully functional PID controller. The NEWPORT **iSeries** instruments are simple to configure and use, while providing tremendous versatility and a wealth of powerful features.

i/8, i/16, i/32 FAMILY

The NEWPORT® **iSeries** is a family of microprocessor-based instruments offered in three true DIN sizes with NEMA-4, IP65 rated front bezels. All of the instruments share the same set-up and configuration menu and method of operation, a tremendous time saver for integration of a large system.

Programmable Color Display

The NEWPORT® 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. For example, the instrument can be programmed to display the Process Value in **GREEN** during warm-up, switching to **AMBER** to signal the normal operating range, and in **RED** to signal an alarm condition. The changes in color are quickly seen from a distance, and machine operators can intuitively react to changing conditions.

In another example, the instrument can be programmed to display **GREEN** for normal, **AMBER** to signal a minor alarm condition, and **RED** for a major alarm. The colors can be programmed to change back when the value drops back below the alarm point or to "latch" on until being reset by the operator.

The instrument can also be programmed to display only one unchanging color: **GREEN**, **AMBER**, or **RED**. This is a useful way to let an operator identify, at a glance, process values in three separate locations, or to display three different measurements such as Temperature, Pressure, and Flow.

Designed and Manufactured in the USA

The innovative NEWPORT® iSeries of meters/controllers features an extended Five (5) YEAR warranty at no extra charge. The **iSeries** packs a wealth of power and features into the smallest of packages, utilizing COB (chip-on-board) and SMT (surface mount technology) assembly techniques and automation. Every **iSeries** instrument is thoroughly calibrated and tested at several stages throughout production. The **iSeries** offers the highest accuracy for industrial instrumentation at 0.03% of reading. The analog-to-digital conversion utilizes proprietary 20-bit ASIC (application specific integrated circuit) patented algorithms and smart filtering.

Universal Inputs

The innovative **iSeries** offers the broadest selection of signal inputs available on one industrial instrument. The choices are easily selected from the Menu with four front panel pushbuttons, or by serial communications.

10 Thermocouple Types

The **iSeries** handles TEN (10) thermocouple types: K, J, T, E, R, S, B, C, N, and J DIN. The patented thermocouple linearization algorithms employed in the **iSeries** produce the highest standard of accuracy.



Most Accurate RTD Measurements

The **iSeries** works with the widest selection of RTD's and produces the most accurate RTD measurements. Both Pt 0.00385 and 0.00392 curves. 100 (ohm), 500 (ohm) and 1000 (ohm). A choice of 2-, 3- and 4-wire RTD connections ensures the absolute highest degree of accuracy.

Process Voltage and Current

The NEWPORT® **iSeries** measures process voltage: 0-100 millivolt, 0-1 Volt, 0-10 Volt ranges, and process current: 0-20 mA.

Analog Output

The optional analog output can be programmed within a range of 0-10 Vdc or 0-20 mA. It is selectable as either a control output or as a calibrated retransmission of the process value—a unique feature among controllers.

Built-in Excitation Standard

The **iSeries** comes standard with built-in 24 Vdc @ 25 mA excitation for transmitters or other devices. This means the same instrument can handle thermocouples, RTD's, and 4-20 mA transmitters, with its own excitation. (Built-in excitation is not available with optional Isolated RS-232/RS-485 Serial communications.)

Control Functions

The **iSeries** can control simple manual operation to ON-OFF and full Autotune PID control. (Selectable preset tune, adaptive tune, PID, PI, PD control modes.) The dual control outputs can be configured for a variety of independent control and alarm applications such as heat/heat, heat/cool, heat/alarm, cool/cool, cool/alarm or alarm/alarm. The ramp-to-setpoint feature allows the user to define the rate of rise to setpoint, minimizing thermal shock to the load during start-up. Maximum ramp time: 99.59 (HH.MM), Soak: 00.00 to 99.59 (HH.MM), Damping: 1 to 8 in unit steps. Input types: J, K, T, E, R, S, B, C, N, J-DIN, RTD 100 ohm, 500 ohm & 1k ohm in 0.00385 or 0.00392, 0 to 20 mA, 0 to 100 mV, 0 to 1 V and 0 to 10 Vdc.

Free Software

Free software is provided for easy set-up, configuration and data acquisition with the NEWPORT® **iSeries**.



Free ActiveX Controls

Free ActiveX Controls are provided for the **iSeries**, making it easy to integrate the **iSeries** with information systems using

"ActiveX Containers" such as Microsoft Visual Basic and Microsoft Excel as well as with popular OLE and OPC compliant data acquisition, process control, and industrial automation software from NEWPORT®, GE Fanuc, Intellution, Rockwell Automation, Object Automation, iconics, and Wonderware among others.

Optional Isolated RS-232 and RS-485 Serial Communications

The **iSeries** are the first **i**ntelligent **i**ndustrial **i**nstruments to offer both RS-232 and RS-485 serial communications in one instrument which can be selected from the menu.

The **iSeries** features both the **iSeries** serial protocol and MODBUS serial protocol.

Free Factory Setup and Configuration

Make installing your **iSeries** meter or controller easier by ordering it preconfigured by the factory, at no extra charge. You specify the input types, scaling if applicable, set points, alarm points, etc. and we will program the instruments to your specific requirements in our calibration lab prior to shipment. For a checklist of factory setup parameters, please consult your NEWPORT® applications engineers, or go to www.omega.com/specs/iseries/fs. The Factory Setup and configuration option requires the serial communication "-C24" option.

Custom Configurations

Custom color bezels and enclosures are available for Original Equipment Manufacturers. Enhance the appearance of your equipment design with custom colors. Consult the NEWPORT® OEM Group. i Series LED displays are considerably bigger, brighter and therefore more visible than displays for conventional instruments with the same DIN size. The segments in the i/8 are 21 mm (.83") high.

	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	0.03% rdg
J	Iron-Constantan	-210 to 760°C / -346 to 1400°F	0.4°C / 0.7°F
K	CHRNEWPORT®-ALNEWPORT®	-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	CHRNEWPORT®-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, 100ohm, 500ohm, 1000ohm	-200 to 900°C / -328 to 1652°F	0.4°C / 0.7°F
RTD	Pt, 0.00392, 100ohm, 500ohm, 1000ohm	-200 to 850°C / -328 to 1562°F	0.4°C / 0.7°F



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i16 Series from \$180

1/16 DIN Temperature/Process & PID Controllers

[i/8 Series](#)
[1/8 DIN panel meter](#)

[i/32 Series](#)
[1/32 DIN panel meter](#)

[Selection Guide](#)



Specifications:

- ✓ High Quality
- ✓ Extended 5-year Warranty
- ✓ High Accuracy $\pm 0.5^{\circ}\text{C}$, 0.03% Rdg
- ✓ Full Autotune PID Control (Optional)
- ✓ User Friendly, Simple to Configure
- ✓ Free Software, Active X Controls
- ✓ Universal Inputs: Thermocouple, RTD, Process Voltage/Current
- ✓ First 1/16 DIN Instrument with Totally Programmable Color Displays (Standard)
- ✓ First 1/16 DIN Instrument Offering Both RS-232 and RS-485 Serial Communications in One Instrument (Optional)
- ✓ First 1/16 DIN Instrument with Analog Output Selectable as a Control Output or as a Calibrated Retransmission of Process Variable
- ✓ 2 Control or Alarm Outputs (Optional)
 - DC Pulse
 - Solid State Relays (SSR's)

iSERIES MANUALS/CONFIGURATION SOFTWARE	
•	MANUALS i16 MANUALS
•	SOFTWARE CONFIGURATION SOFTWARE
•	SOFTWARE ACTIVE X COMPONENT FOR EXCEL
•	PRICE
•	MECHANICAL SPECIFICATIONS
REQUIRES ADOBE ACROBAT - HELP	

- Mechanical Relays
- Analog Voltage and Current

- ✓ ±0.04°C /°C RTD and ±0.05°C /°C TC @ 25°C
- ✓ NEMA-4, IP65 Front Bezel
- ✓ Front Removable and Plug Connectors

The NEWPORT® i16 is the popular 1/16 DIN size (48mm square) meter or controller. The meter (model #i1600) displays the process value and has no control outputs.

The controller is available with a single (i16) or dual display (i16D) that displays a set point along with the process value. The i16 is the first 1/16 DIN controller with a display that can be programmed to change color at any set point or alarm point. The i16 is the first 1/16 DIN controller with the option of both RS-232 and RS-485 in one instrument with both MODBUS serial protocol and the straightforward NEWPORT® ASCII protocol. NEWPORT® provides free configuration and data acquisition software for the **iSeries** on CD-ROM and for download off the Web. The i16 enclosure has a NEMA 4 (IP65) rated front bezel. The electronics are removable from the front panel.

The innovative NEWPORT® **iSeries** of meters/controllers combines in one intelligent industrial instrument features of an extremely accurate digital panel meter and a fully functional PID controller. The NEWPORT **iSeries** instruments are simple to configure and use, while providing tremendous versatility and a wealth of powerful features.

i/8, i/16, i32 FAMILY

The NEWPORT® **iSeries** is a family of microprocessor-based instruments offered in three true DIN sizes with NEMA-4, IP65 rated front bezels. All of the instruments share the same set-up and configuration menu and method of operation, a tremendous time saver for integration of a large system.

Programmable Color Display

The NEWPORT® **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. For example, the instrument can be programmed to display the Process Value in **GREEN** during warm-up, switching to **AMBER** to signal the normal operating range, and in **RED** to signal an alarm condition. The changes in color are quickly seen from a distance, and machine operators can intuitively react to changing conditions.

In another example, the instrument can be programmed to display **GREEN** for normal, **AMBER** to signal a minor alarm condition, and **RED** for a major alarm. The colors can be programmed to change back when the value drops back below the alarm point or to "latch" on until being reset by the operator.

The instrument can also be programmed to display only one unchanging color: **GREEN, AMBER, or RED**. This is a useful way to let an operator identify, at a glance, process values in three separate locations, or to display three different measurements such as Temperature, Pressure, and Flow.

Designed and Manufactured in the USA

The innovative NEWPORT® **iSeries** of meters/controllers features an extended Five (5) YEAR warranty at no extra charge. The **iSeries** packs a wealth of power and features into the smallest of packages, utilizing COB (chip-on-board) and SMT (surface mount technology) assembly techniques and automation. Every **iSeries** instrument is thoroughly calibrated and tested at several stages throughout production. The **iSeries** offers the highest accuracy for industrial instrumentation at 0.03% of reading. The analog-to-digital conversion utilizes proprietary 20-bit ASIC (application specific integrated circuit) patented algorithms and smart filtering.

Universal Inputs

The innovative **iSeries** offers the broadest selection of signal inputs available on one industrial instrument. The choices are easily selected from the Menu with four front panel pushbuttons, or by serial communications.

10 Thermocouple Types

The **iSeries** handles TEN (10) thermocouple types: K, J, T, E, R, S, B, C, N, and J DIN. The patented thermocouple linearization algorithms employed in the **iSeries** produce the highest standard of accuracy.



Most Accurate RTD Measurements

The **iSeries** works with the widest selection of RTD's and produces the most accurate RTD measurements. Both Pt 0.00385 and 0.00392 curves. 100 (ohm), 500 (ohm) and 1000 (ohm). A choice of 2-, 3- and 4-wire RTD connections ensures the absolute highest degree of accuracy.

Process Voltage and Current

The NEWPORT® **iSeries** measures process voltage: 0-100 millivolt, 0-1 Volt, 0-10 Volt ranges, and process current: 0-20 mA.

Analog Output

The optional analog output can be programmed within a range of 0-10 Vdc or 0-20 mA. It is selectable as either a control output or as a calibrated retransmission of the process value-a unique feature among controllers.

Built-in Excitation Standard

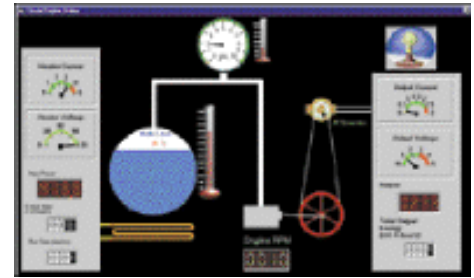
The **iSeries** comes standard with built-in 24 Vdc @ 25 mA excitation for transmitters or other devices. This means the same instrument can handle thermocouples, RTD's, and 4-20 mA transmitters, with its own excitation. (Built-in excitation is not available with optional Isolated RS-232/RS-485 Serial communications.)

Control Functions

The **iSeries** can control simple manual operation to ON-OFF and full Autotune PID control. (Selectable preset tune, adaptive tune, PID, PI, PD control modes.) The dual control outputs can be configured for a variety of independent control and alarm applications such as heat/heat, heat/cool, heat/alarm, cool/cool, cool/alarm or alarm/alarm. The ramp-to-setpoint feature allows the user to define the rate of rise to setpoint, minimizing thermal shock to the load during start-up. Maximum ramp time: 99.59 (HH.MM), Soak: 00.00 to 99.59 (HH.MM), Damping: 1 to 8 in unit steps. Input types: J, K, T, E, R, S, B, C, N, J-DIN, RTD 100 ohm, 500 ohm & 1k ohm in 0.00385 or 0.00392, 0 to 20 mA, 0 to 100 mV, 0 to 1 V and 0 to 10 Vdc.

Free Software

Free software is provided for easy set-up, configuration and data acquisition with the NEWPORT® **iSeries**.



Free ActiveX Controls

Free ActiveX Controls are provided for the **iSeries**, making it easy to integrate the **iSeries** with information systems using "ActiveX Containers" such as Microsoft Visual Basic and Microsoft Excel as well as with popular OLE and OPC compliant data acquisition, process control, and industrial automation software from NEWPORT®, GE Fanuc, Intellution, Rockwell Automation, Object Automation, iconics, and Wonderware among others.

Optional Isolated RS-232 and RS-485 Serial Communications

The **iSeries** are the first intelligent industrial instruments to offer both RS-232 and RS-485 serial communications in one instrument which can be selected from the menu.

The **iSeries** features both the **iSeries** serial protocol and MODBUS serial protocol.

Free Factory Setup and Configuration

Make installing your **iSeries** meter or controller easier by ordering it preconfigured by the factory, at no extra charge. You specify the input types, scaling if applicable, set points, alarm points, etc. and we will program the instruments to your specific requirements in our calibration lab prior to shipment. For a checklist of factory setup parameters, please consult your NEWPORT® applications engineers, or go to www.omega.com/specs/iseries/fs. The Factory Setup and configuration option requires the serial communication "-C24" option.

Custom Configurations

Custom color bezels and enclosures are available for Original Equipment Manufacturers. Enhance the appearance of your equipment design with custom colors. Consult the NEWPORT® OEM Group. i Series LED displays are considerably bigger, brighter and therefore more visible than displays for conventional instruments with the same DIN size. The segments in the i/8 are 21 mm (.83") high.

	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	0.03% rdg

J	Iron-Constantan	-210 to 760°C / -346 to 1400°F	0.4°C / 0.7°F
K	CHRNEWPORT®-ALNEWPORT®	-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
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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
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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, 100ohm, 500ohm, 1000ohm	-200 to 900°C / -328 to 1652°F	0.4°C / 0.7°F
RTD	Pt, 0.00392, 100ohm, 500ohm, 1000ohm	-200 to 850°C / -328 to 1562°F	0.4°C / 0.7°F



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i32 Series from \$150

1/32 DIN Temperature/Process & PID Controllers



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[1/8 DIN panel meter](#)

[i/16 Series](#)
[1/16 DIN panel meter](#)

[Selection Guide](#)



Specifications:

- ✓ High Quality
- ✓ Extended 5-year Warranty
- ✓ High Accuracy $\pm 0.5^{\circ}\text{C}$, 0.03% Rdg
- ✓ Full Autotune PID Control (Optional)
- ✓ User Friendly, Simple to Configure
- ✓ Free Software, Active X Controls
- ✓ Universal Inputs: Thermocouple, RTD, Process Voltage/Current
- ✓ First 1/32 DIN Instrument with Totally Programmable Color Displays (Standard)
- ✓ First 1/32 DIN Instrument Offering Both RS-232 and RS-485 Serial Communications in One Instrument (Optional)
- ✓ First 1/32 DIN Instrument with Analog Output Selectable as a Control Output or as a Calibrated Retransmission of Process Variable
- ✓ First 1/32 DIN Instrument with Built-in Excitation, 24 Vdc, Standard
- ✓ 2 Control or Alarm Outputs (Optional)
 - dc Pulse
 - Solid State Relays (SSR's)
 - Mechanical Relays
 - Analog Voltage and Current
- ✓ $\pm 0.04^{\circ}\text{C}/^{\circ}\text{C}$ RTD and $\pm 0.05^{\circ}\text{C}/^{\circ}\text{C}$ TC @ 25°C

iSERIES MANUALS/CONFIGURATION SOFTWARE	
•	MANUALS i32 MANUALS
•	SOFTWARE CONFIGURATION SOFTWARE
•	SOFTWARE ACTIVE X COMPONENT FOR EXCEL
•	PRICE
•	MECHANICAL SPECIFICATIONS
	REQUIRES ADOBE ACROBAT - HELP

- ✓ Analog Voltage and Current °C / °C RTD and $\pm 0.05^\circ\text{C} / ^\circ\text{C TC @ } 25^\circ\text{C}$
- ✓ NEMA-4, IP65 Front Bezel
- ✓ Front Removable and Plug Connectors

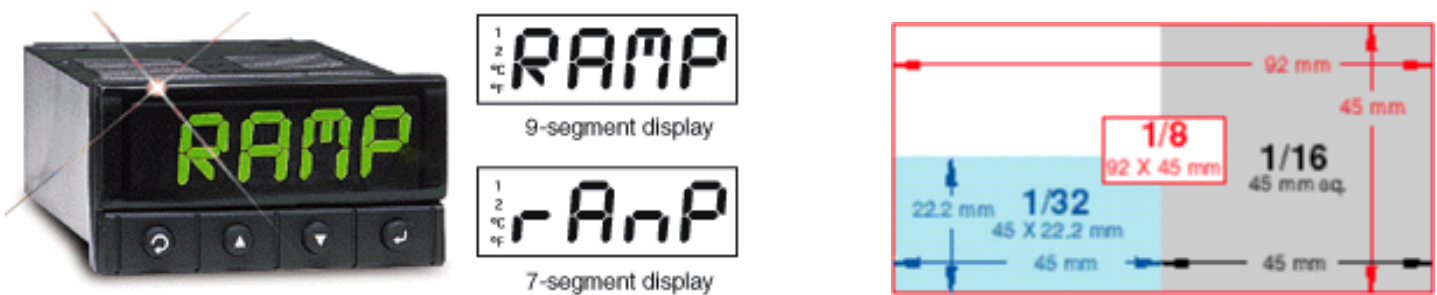
The NEWPORT® i32 is the **iSeries** meter (i3200) and controller (i32XX) in the extremely compact and increasingly popular 1/32 DIN size. The i32 is the most sophisticated and accurate instrument available in the small 1/32 DIN package, yet is still easy to configure.

The i32 introduces a number of unique features not yet found on any other 1/32 DIN instrument. The i32 is the first 1/32 DIN controller with a totally programmable display that can change color at any set point or alarm point. The unique 9-segment LED characters greatly improves alphanumeric representations.

The i32 handles more thermocouple, RTD, process voltage and current inputs than any other 1/32 DIN controller. The i32 is the first 1/32 DIN controller with built-in excitation for transmitters or other devices, 24 Vdc @ 25mA.

The i32 is the first 1/32 DIN controller offering 2 SPDT (Single Pole Double Throw) Form C relays, instead of the single throw relays on typical 1/32 DIN controllers. The i32 is the first to offer both RS-232 and RS-485 serial communications in one instrument.

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.



The innovative NEWPORT® **iSeries** of meters/controllers combines in one intelligent industrial instrument features of an extremely accurate digital panel meter and a fully functional PID controller. The NEWPORT **iSeries** instruments are simple to configure and use, while providing tremendous versatility and a wealth of powerful features.

i/8, i/16, i32 FAMILY

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Most Accurate RTD Measurements

The **iSeries** works with the widest selection of RTD's and produces the most accurate RTD measurements. Both Pt 0.00385 and 0.00392 curves. 100 (ohm), 500 (ohm) and 1000 (ohm). A choice of 2-, 3- and 4-wire RTD connections ensures the absolute highest degree of accuracy.

Process Voltage and Current

The NEWPORT® **iSeries** measures process voltage: 0-100 millivolt, 0-1 Volt, 0-10 Volt ranges, and process current: 0-20 mA.

Analog Output

The optional analog output can be programmed within a range of 0-10 Vdc or 0-20 mA. It is selectable as either a control output or as a calibrated retransmission of the process value—a unique feature among controllers.

Built-in Excitation Standard

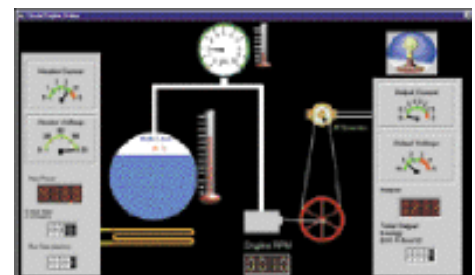
The **iSeries** comes standard with built-in 24 Vdc @ 25 mA excitation for transmitters or other devices. This means the same instrument can handle thermocouples, RTD's, and 4-20 mA transmitters, with its own excitation. (Built-in excitation is not available with optional Isolated RS-232/RS-485 Serial communications.)

Control Functions

The **iSeries** can control simple manual operation to ON-OFF and full Autotune PID control. (Selectable preset tune, adaptive tune, PID, PI, PD control modes.) The dual control outputs can be configured for a variety of independent control and alarm applications such as heat/heat, heat/cool, heat/alarm, cool/cool, cool/alarm or alarm/alarm. The ramp-to-setpoint feature allows the user to define the rate of rise to setpoint, minimizing thermal shock to the load during start-up. Maximum ramp time: 99.59 (HH.MM), Soak: 00.00 to 99.59 (HH.MM), Damping: 1 to 8 in unit steps. Input types: J, K, T, E, R, S, B, C, N, J-DIN, RTD 100 ohm, 500 ohm & 1k ohm in 0.00385 or 0.00392, 0 to 20 mA, 0 to 100 mV, 0 to 1 V and 0 to 10 Vdc.

Free Software

Free software is provided for easy set-up, configuration and data acquisition with the NEWPORT® **iSeries**.



Free ActiveX Controls

Free ActiveX Controls are provided for the **iSeries**, making it easy to integrate the **iSeries** with information systems using "ActiveX Containers" such as Microsoft Visual Basic and Microsoft Excel as well as with popular OLE and OPC compliant data acquisition, process control, and industrial automation software from NEWPORT®, GE Fanuc, Intellution, Rockwell Automation, Object Automation, iconics, and Wonderware among others.

Optional Isolated RS-232 and RS-485 Serial Communications

The **iSeries** are the first **i**ntelligent **i**ndustrial **i**nstruments to offer both RS-232 and RS-485 serial communications in one

instrument which can be selected from the menu.

The **iSeries** features both the **iSeries** serial protocol and MODBUS serial protocol.

Free Factory Setup and Configuration

Make installing your **iSeries** meter or controller easier by ordering it preconfigured by the factory, at no extra charge. You specify the input types, scaling if applicable, set points, alarm points, etc. and we will program the instruments to your specific requirements in our calibration lab prior to shipment. For a checklist of factory setup parameters, please consult your NEWPORT® applications engineers, or go to www.omega.com/specs/iseries/fs. The Factory Setup and configuration option requires the serial communication "-C24" option.

Custom Configurations

Custom color bezels and enclosures are available for Original Equipment Manufacturers. Enhance the appearance of your equipment design with custom colors. Consult the NEWPORT® OEM Group. i Series LED displays are considerably bigger, brighter and therefore more visible than displays for conventional instruments with the same DIN size. The segments in the i/8 are 21 mm (.83") high.

	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	0.03% rdg
J	Iron-Constantan	-210 to 760°C / -346 to 1400°F	0.4°C / 0.7°F
K	CHRNEWPORT®-ALNEWPORT®	-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	CHRNEWPORT®-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, 100ohm, 500ohm, 1000ohm	-200 to 900°C / -328 to 1652°F	0.4°C / 0.7°F
RTD	Pt, 0.00392, 100ohm, 500ohm, 1000ohm	-200 to 850°C / -328 to 1562°F	0.4°C / 0.7°F



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iSeries Pricing

To Order (*Specify Model No.)

Model #			Description	Price
i3200			Monitor only (no control outputs) 1/32 DIN	\$150
i1600			Monitor only (no control outputs) 1/16 DIN	\$180
i800			Monitor only (no control outputs) 1/8 DIN	\$240
CONTROL OUTPUTS #1 & 2 Direct (Cool) or Reverse (Heat) Acting				
i32	(*)	(*)	Two control outputs 1/32 DIN	\$195
i16	(*)	(*)	Two control outputs 1/16 DIN	\$225
i16D	(*)	(*)	Two control outputs with dual display 1/16 DIN	\$245
i8	(*)	(*)	Two control outputs 1/8 DIN	\$310
i8A	(*)	(*)	Two control outputs with Isolated Analog Output 1/8 DIN (not available with Analog output "5" option)	\$365
	2	2	Two solid state relays (SSR's): 1 A @ 120/240 Vac continuous	N/C
	2	3	SSR and relay: Form "C" SPDT 3 A @ 120 Vac, 3 A @ 240 Vac	
	2	4	SSR and pulsed 10 Vdc @ 20 mA (for use with external SSR)	
	3	3	2 Relays: Form "C" SPDT 3 A @ 120 Vac, 3 A @ 240 Vac	
	3	4	Relay and pulsed 10 Vdc @ 20 mA (for use with external SSR)	
	4	4	Two pulsed 10 Vdc @ 20 mA (for use with external SSR)	
	5	2	Analog Output selectable as either control or retransmission of process value; 0 to 10 Vdc or 0-20 mA @ 500 ohm max. and SSR	
	5	3	Analog Output 0 to 10 Vdc or 0-20 mA @ 500 ohm max. and Relay	
	5	4	Analog Output 0 to 10 Vdc or 0-20 mA @ 500 ohm max. and Pulse 10 Vdc	
SERIAL COMMUNICATION				
-C24	Isolated RS-232 and RS-485/300 to 19.2 k baud			\$60
POWER SUPPLY				
*	Standard power input: 90 to 240 Vac/dc, 50 to 400 Hz (no entry required)			N/C
-DC	10-34 Vac/dc (optional)			\$60
FACTORY SETUP				
-FS	Factory Setup and Configuration (requires -C24 Serial Comm. option)			N/C

ORDERING EXAMPLES:

i8A33 is a 1/8 DIN PID Controller with isolated scalable analog retransmission of the process value and 2 relays **\$365**.

i3222-C24 is a 1/32 DIN PID Controller with two solid state relays for PID control and serial communications, both RS-232 and RS-485 \$195 + \$60 = **\$255**.

i16D22 is a 1/16 DIN dual display PID Controller with two pulse control outputs **\$245**.



1/16 DIN MICRO-INFINITY® AUTOTUNE PID Temptrur/ PROCESS CONTROLLERS



NEWPORT PRODUCT INFO
• MANUAL (HTML) - PDF Version
• QUICK START
• MECHANICAL ICN77300 Series INFINITY® Style Square Cutout
• MECHANICAL ICN77500 Series NEMA 4 Square Cutout
• PRICE
REQUIRES ADOBE ACROBAT - HELP



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- ✓ High Accuracy $\pm 0.5^{\circ}\text{C}$, 0.03% Rdg.
- ✓ High Quality—Extended 5-Year Warranty at No Extra Charge
- ✓ Universal Inputs— Process Voltage/Current Thermocouple, RTD
- ✓ Custom Configurations and Firmware Available in Quantity—Consult NEWPORT OEM Group
- ✓ Dual 4-Digit LED Display and Indicators for Output and Alarm Status
- ✓ Relay, SSR, dc Pulse, 0 to 10 V and 0 to 20 mA Output Types
- ✓ Ramp to Setpoint Feature Standard
- ✓ Universal Power Supply, 90-250 Vac or Vdc (Optional 10-34 Vac or Vdc)
- ✓ Dual Output and Dual Alarm Capability
- ✓ Optional RS-232, RS-485, Isolated Analog Output or Remote Setpoint Selection

The MICRO-INFINITY® controllers offer unparalleled flexibility in process control. Each unit allows the user to select the input type, from 10 thermocouple types (J, K, T, E, R, S, B, C, N and J DIN), Pt RTDs (100, 200, 500 or 1000ohm, with either 385 or 392 curve), or analog voltage or current



input. The voltage/current inputs are fully scalable to engineering units, with selectable decimal point, perfect for use with pressure, flow or other process input.

The **MICRO-INFINITY®** controller features a large, dual LED display, front panel configuration, selectable Temptrur/process inputs and universal power supply that accepts 90 to 250 Vac or Vdc. Available in single and dual output configurations, the ICN77000 Series is available with relay, SSR, dc pulse, analog voltage or current outputs. A single alarm is standard. Options include a second alarm, RS-232, RS-485, analog output or remote setpoint selection.



"R" Series - For easy-to-drill round holes

The **"ICN77300"** series controllers have many features of larger, 1/4 DIN controllers in a compact, 1/16 DIN size. These controllers feature a 1/16 DIN cutout and bezel with a NEMA 12 rating, dual LED displays, with different colors for the actual process and setpoint values. Individual indicators provide output and alarm status.

The **"ICN77500"** features a 1/16 DIN cutout, 53.3 mm (2.1") square face with NEMA 4 rating, large dual LED display, front panel configuration, and selectable Temptrur/process inputs. Available in single and dual output configurations, the ICN77500 is available with relay, SSR, dc pulse, analog voltage or current outputs. A single alarm is standard.

The ICN77R300 and ICN77R500 controllers feature a unique detachable display and adapter with a NEMA 1 rating to allow mounting in a round, 1.75" cutout. This feature allows users to prepare the panel with a standard round hole saw. The 2-piece design snaps together, for quick easy installation.

SPECIFICATIONS

Accuracy: $\pm 0.5^{\circ}\text{C}$ temp; 0.03% rdg. process

Resolution: $1^{\circ}/0.1^{\circ}$; $10\ \mu\text{V}$ process

Temperature Stability: $0.08^{\circ}\text{C}/^{\circ}\text{C}$; 50 ppm/ $^{\circ}\text{C}$ process

Thermocouple Cold End Tracking: $0.05^{\circ}\text{C}/^{\circ}\text{C}$

NMRR: 60 dB

CMRR: 120 dB

Common Mode Voltage: 1500 V peak test, 350 V per IEC spacing

A/D Conversion: Dual slope

Reading Rate: 3 samples per second

Digital Filter: Programmable

Display: Dual 4-digit, 7-segment LED, 9.2 mm (0.36"); red process variable, green setpoint; indicators for output and alarm status; 7.6 mm (0.3") for NEMA 12 units

Warmup to Rated Accuracy: 30 min

INPUT

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

Thermocouple Lead Resistance: 100 ohm max

RTD Input: 2, 3, or 4-wire, 100, 500, and 1000ohm, 0.00385 or 0.00392 Pt curve

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

Current Input: 0 to 20 mA, 4 to 20 mA

Configuration: Single-ended

Polarity: Unipolar

Step Response: 0.7 sec for 99.9%

Decimal Selection: None, 0.1 or 0.01

Span Adjustment: 0.001 to 9999 counts

Offset Adjustment: -9999 to +9999

CONTROL

Action: Reverse (heat) or direct (cool)

Modes: Time proportioning and proportional control modes; selectable preset tune, adaptive tune, auto-tune, PID, proportional, proportional with integral, proportional with derivative with anti-reset windup, on-off

Rate: 0 to 999.9 sec

Reset: 0 to 99 min 59 sec

Cycle Time: 1 to 199 seconds; set to 0 for on/off operation

Gain: 0.5 to 100% of span; setpoints 1 or 2

Damping: 1 to 8 in unit steps

Soak: 00.00 to 99.59 (HH.MM)

Ramp to Setpoint: 00.00 to 99.59 (HH.MM)

Autotune: Operator initiated from front panel

CONTROL OUTPUT

Relay: 5 A @ 120 Vac, 3 A @ 240 Vac; configurable for on/off, PID or ramp and soak; output 1: SPDT type; output 2: SPST type

SSR: Rated 1 A @ 120/240 Vac, continuous

DC Pulse: non-isolated; 10 Vdc @ 20 mA

Analog Output: 0 to 10 Vdc or 0 to 20 mA; 500 ohm max

OPTIONS

Remote Setpoint Selection: Up to 3 setpoints stored in memory; contact closure selection

Analog Output: Isolated 0 to 10 Vdc or 0 to 20 mA, programmable

COMMUNICATIONS

RS-232 or RS-485: 300 to 19.2k baud; complete programmable setup capability; program to transmit current display, alarm status, min/max, actual measured input value and status

RS-485: Addressable from 0 to 199

Connection: Screw terminals

ALARM 2

Type: SPST relay, 5 A @ 120 Vac, 3 A @ 240 Vac

Operation: High/low, latching/ non-latching, and process/deviation; front panel configurations

INSULATION

Power to input or Output: 2500 Vac or dc except for alarm 2 option has only 1500 Vac or dc between inputs 500 Vac or dc

GENERAL

Power: 90 to 250 Vac/dc, 50 to 400 Hz; 10 to 34 Vac/dc power optional

Operating Ambient: 0 to 55°C (32 to 131°F), 90% RH non-condensing

Power Consumption: 6 VA max @ 120 Vac

PANEL CUTOUT

ICN77R000 Series: 44.5 mm (1.75") dia. round cutout

ICN77300 and ICN77500 Series: 45 mm (1.772") square, 1/16 DIN

DIMENSIONS

ICN77R000 Series: 48 H x 48 W x 144.7 mm D (1.89" x 1.89" x 5.70")

ICN77300 Series: 48 H x 48 W x 123.3 mm D (1.89" x 1.89" x 4.85")

ICN77500 Series: 53 H x 53 W x 123.3 mm D (2.1" x 2.1" x 4.85")

Weight: 227 g (0.5 lb)

BEZEL AND PANEL CUTOUT

ICN773 (NEMA-12, IP50)

INFINITY® Style 1/16 DIN bezel 1.89" (48 mm) sq. 1/16 cutout 1.772" (45 mm) sq.

ICN77R3 (NEMA-1)

INFINITY® Style 1/16 DIN bezel 1.89" (48 mm) sq. 1 3/4" (44 mm) round cutout

ICN775 (NEMA-4, IP65)

NEMA 4 bezel 2.1" (53.4 mm) sq. 1/16 cutout 1.772" (45 mm) sq.

ICN77R5 (NEMA-1)

NEMA 4 bezel 2.1" (53.4 mm) sq. 1 3/4" (44 mm) round cutout

MODEL [ICN77000](#)

PROCESS CONTROLLER, DUAL DISPLAY FOR THERMOCOUPLE, RTD, VOLTAGE OR CURRENT INPUTS IN A 1/16 DIN CASE

Dual displays for display of measured value and setpoint. Selectable preset tune, adaptive tune, auto-tune, PID, PI, PD. The control outputs are independently configurable for direct or reverse acting PID or ON/OFF operation. The ramp to setpoint feature defines the rate of rise to setpoint, minimizing thermal shock to the load during start-up. Max ramp and or Soak to 99.59 (HH.MM), Damping: 1 to 8 in unit steps. Input types include J, K, T, E, R, S, B, N, DIN-J, RTD 100ohm with alpha of 0.00385 or 0.00392 0-20mA, 0-100mV, 0-1V, and 0-10Vdc. Standard Alarm 1 output includes SPST relay, 5A @ 120Vac, 3A @ 240Vac.

ROUND CUTOUT (1 3/4" DIA.)

*	Omit for standard square 1/16 DIN cutout	N/C
R	Round cutout with detachable NEMA 1 faceplate for fast, easy installation. Cutout diameter is 1.75" (44 mm)	N/C

PACKAGE CONFIGURATION

3	INFINITY® style NEMA 12 1/16 DIN bezel 1.89 sq. and standard 1/16 DIN 1.772" (45mm) sq. panel cutout	\$219.00
5	NEMA 4 (IP-65) bezel 2.1 x 2.1" (53.4 x 53.4mm) and standard 1/16 DIN 1.772" (45mm) sq. panel cutout	\$229.00

CONTROL OUTPUT 1

2	2 Solid state relay SSR : 1A @ 120/240 Vac continuous	N/C
3	Relay : form "C" 5A @ 120Vac, 3A @ 240Vac	N/C
4	Pulsed 10Vdc @ 20mA (use for external SSR)	N/C
5	Non-isolated 1 to 10Vdc or 0 to 20mA @500 ohm max	N/C

CONTROL OUTPUT 2

0	Enter "0" if second output is not needed	N/C
2	Solid state relay SSR : 1A @ 120/240 Vac continuous	\$10.00
3	Relay : 5A @ 120Vac, 3A @ 240Vac	\$10.00
4	4 Pulsed 10Vdc @ 20mA (use for external SSR)	\$10.00

OPTIONAL OUTPUT

*	None	N/C
-A2	Second Alarm, SPST relay, 5A @ 120 Vac, 3A @ 240Vac	\$6.00
-C2	Isolated RS 232, 300 to 19.2k baud	\$50.00
-C4	Isolated RS 485, 300 to 19.2k baud	\$50.00
-PV	Isolated Analog Output (scaled from process variable)	\$65.00
-RSP	Remote Setpoint selection	\$25.00

POWER SUPPLY

*	90 to 250 Vac/dc, 50 to 400 Hz (Standard)	N/C
-DC	10 to 34Vac/dc power (coming soon)	\$20.00

ADD-ON OPTIONS

RHS43	Arbored holesaw 43mm (1 11/16") for ICN77R meters	\$19.00
TP4	Trimplate adapter to install 1/16 DIN meter in existing 1/4 DIN panel cutout	\$19.00
TP6	Trimplate adapter to install 1/16 DIN meter in existing 1/8 DIN panel cutout	\$19.00

Ordering Example: ICN77R323,C2 \$279: Round panel cutout with relay as second control output, RS-232 communication and solid state relay (SSR) as control output 1.

Note: The controller must be ordered completely configured. Options are not field installable.



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