i8 Series from $240
1/8 DIN Temperature/Process & PID Controllers

Specifications:

- High Quality
- Extended 5-year Warranty
- High Accuracy ±0.5°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

i/16 Series
1/16 DIN panel meter

i/32 Series
1/32 DIN panel meter

Selection Guide
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.

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. 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.

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<td>0 to 20 mA</td>
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<td>J Iron-Constantan</td>
<td>-210 to 760°C / -346 to 1400°F</td>
<td>0.4°C / 0.7°F</td>
</tr>
<tr>
<td>K CHRNEWPORT®-ALNEWPORT®</td>
<td>-270 to -160°C / -160 to 1372°C</td>
<td>1.0°C / 0.4°C</td>
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<tr>
<td>T Copper-Constantan</td>
<td>-270 to -190°C / -190 to 400°C</td>
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</tr>
<tr>
<td>E CHRNEWPORT®-Constantan</td>
<td>-270 to -220°C / -220 to 1000°C</td>
<td>1.0°C / 0.4°C</td>
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<td>R Pt/13%Rh-Pt</td>
<td>-50 to 40°C / 40 to 1768°C</td>
<td>1.0°C / 0.5°C</td>
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<tr>
<td>S Pt/10%Rh-Pt</td>
<td>-50 to 100°C / 100 to 1768°C</td>
<td>1.0°C / 0.5°C</td>
</tr>
<tr>
<td>B 30%Rh-Pt/6%Rh-Pt</td>
<td>100 to 640°C / 640 to 1820°C</td>
<td>1.0°C / 0.5°C</td>
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<tr>
<td>C 5%Re-W/26%Re-W</td>
<td>0 to 2320°C / 32 to 4208°F</td>
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<td>N Nicrosil-Nisil</td>
<td>-250 to -100°C / -100 to 1300°C</td>
<td>1.0°C / 0.4°C</td>
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<td>L J DIN</td>
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<tr>
<td>RTD Pt, 0.00385, 100ohm, 500ohm, 1000ohm</td>
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<tr>
<td>RTD Pt, 0.00392, 100ohm, 500ohm, 1000ohm</td>
<td>-200 to 850°C / -328 to 1562°F</td>
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</table>
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 ±0.5°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
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.

http://www.newportus.com/Products/Temprature/i16.htm (2 of 4) [4/13/2000 8:30:59 AM]
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/cool 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.

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<td></td>
<td>Material</td>
<td>Temperature Range (°C/°F)</td>
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<td>J</td>
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<td>K</td>
<td>CHRNEWPORT®-ALNEWPORT®</td>
<td>-270 to -160°C / -160 to 1372°C, -454 to -256°F / -256 to 2502°F</td>
</tr>
<tr>
<td>T</td>
<td>Copper-Constantan</td>
<td>-270 to -190°C / -190 to 400°C, -454 to -310°F / -310 to 752°F</td>
</tr>
<tr>
<td>E</td>
<td>CHRNEWPORT®-Constantan</td>
<td>-270 to -220°C / -220 to 1000°C, -454 to -364°F / -364 to 1832°F</td>
</tr>
<tr>
<td>R</td>
<td>Pt/13%Rh-Pt</td>
<td>-50 to 40°C / 40 to 1768°C, -58 to 104°F / 104 to 3214°F</td>
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<tr>
<td>S</td>
<td>Pt/10%Rh-Pt</td>
<td>-50 to 100°C / 100 to 1768°C, -58 to 212°F / 212 to 3214°F</td>
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<tr>
<td>B</td>
<td>30%Rh-Pt/6%Rh-Pt</td>
<td>100 to 640°C / 640 to 1820°C, 212 to 1184°F / 1184 to 3308°F</td>
</tr>
<tr>
<td>C</td>
<td>5%Re-W/26%Re-W</td>
<td>0 to 2320°C / 32 to 4208°F</td>
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<td>N</td>
<td>Nicrosil-Nisil</td>
<td>-250 to -100°C / -100 to 1300°C, -418 to -148°F / -148 to 2372°F</td>
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i32 Series from $150
1/32 DIN Temperature/Process & PID Controllers

i/8 Series
1/8 DIN panel meter

i/16 Series
1/16 DIN panel meter

Selection Guide

Specifications:

High Quality
Extended 5-year Warranty
High Accuracy ±0.5°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

±0.04°C /°C RTD and ±0.05°C /°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
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
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.

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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
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](http://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. 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.

<table>
<thead>
<tr>
<th>Input Type</th>
<th>Range</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process Voltage</td>
<td>0 to 100 mV, 0 to 1 V, 0 to 10 Vdc</td>
<td>0.03% rdg</td>
</tr>
<tr>
<td>Process Current</td>
<td>0 to 20 mA</td>
<td>0.03% rdg</td>
</tr>
<tr>
<td>J Iron-Constantan</td>
<td>-210 to 760°C / -346 to 1400°F</td>
<td>0.4°C / 0.7°F</td>
</tr>
<tr>
<td>K CHRNEWPORT®-ALNEWPORT®</td>
<td>-270 to -160°C / -160 to 1372°C</td>
<td>1.0°C / 0.4°C</td>
</tr>
<tr>
<td></td>
<td>-454 to -256°F / -256 to 2502°F</td>
<td>1.8°F / 0.7°F</td>
</tr>
<tr>
<td>T Copper-Constantan</td>
<td>-270 to -190°C / -190 to 400°C</td>
<td>1.0°C / 0.4°C</td>
</tr>
<tr>
<td></td>
<td>-454 to -310°F / -310 to 752°F</td>
<td>1.8°F / 0.7°F</td>
</tr>
<tr>
<td>E CHRNEWPORT®-Constantan</td>
<td>-270 to -220°C / -220 to 1000°C</td>
<td>1.0°C / 0.4°C</td>
</tr>
<tr>
<td></td>
<td>-454 to -364°F / -364 to 1832°F</td>
<td>1.8°F / 0.7°F</td>
</tr>
<tr>
<td>R Pt/13%Rh-Pt</td>
<td>-70 to 40°C / 40 to 1768°C</td>
<td>1.0°C / 0.5°C</td>
</tr>
<tr>
<td></td>
<td>-58 to 104°F / 104 to 3214°F</td>
<td>1.8°F / 0.9°F</td>
</tr>
<tr>
<td>S Pt/10%Rh-Pt</td>
<td>-50 to 100°C / 100 to 1768°C</td>
<td>1.0°C / 0.5°C</td>
</tr>
<tr>
<td></td>
<td>-58 to 212°F / 212 to 3214°F</td>
<td>1.8°F / 0.9°F</td>
</tr>
<tr>
<td>B 30%Rh-Pt/6%Rh-Pt</td>
<td>100 to 640°C / 640 to 1820°C</td>
<td>1.0°C / 0.5°C</td>
</tr>
<tr>
<td></td>
<td>212 to 1184°F / 1184 to 3308°F</td>
<td>1.8°F / 0.9°F</td>
</tr>
<tr>
<td>C 5%Re-W/26%Re-W</td>
<td>0 to 2320°C / 32 to 4208°F</td>
<td>0.4°C / 0.7°F</td>
</tr>
<tr>
<td>N Nicrosil-Nisil</td>
<td>-250 to -100°C / -100 to 1300°C</td>
<td>1.0°C / 0.4°C</td>
</tr>
<tr>
<td></td>
<td>-418 to -148°F / -148 to 2372°F</td>
<td>1.8°F / 0.7°F</td>
</tr>
<tr>
<td>L J DIN</td>
<td>-200 to 900°C / -328 to 1652°F</td>
<td>0.4°C / 0.7°F</td>
</tr>
<tr>
<td>RTD Pt, 0.00385, 100ohm, 500ohm, 1000ohm</td>
<td>-200 to 900°C / -328 to 1652°F</td>
<td>0.4°C / 0.7°F</td>
</tr>
<tr>
<td>RTD Pt, 0.00392, 100ohm, 500ohm, 1000ohm</td>
<td>-200 to 850°C / -328 to 1562°F</td>
<td>0.4°C / 0.7°F</td>
</tr>
</tbody>
</table>
## iSeries Pricing

**To Order (Specify Model No.)**

<table>
<thead>
<tr>
<th>Model #</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>i3200</td>
<td>Monitor only (no control outputs) 1/32 DIN</td>
<td>$150</td>
</tr>
<tr>
<td>i1600</td>
<td>Monitor only (no control outputs) 1/16 DIN</td>
<td>$180</td>
</tr>
<tr>
<td>i800</td>
<td>Monitor only (no control outputs) 1/8 DIN</td>
<td>$240</td>
</tr>
</tbody>
</table>

**CONTROL OUTPUTS #1 & 2 Direct (Cool) or Reverse (Heat) Acting**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>i32</td>
<td>Two control outputs 1/32 DIN</td>
<td>$195</td>
</tr>
<tr>
<td>i16</td>
<td>Two control outputs 1/16 DIN</td>
<td>$225</td>
</tr>
<tr>
<td>i16D</td>
<td>Two control outputs with dual display 1/16 DIN</td>
<td>$245</td>
</tr>
<tr>
<td>i8</td>
<td>Two control outputs 1/8 DIN</td>
<td>$310</td>
</tr>
<tr>
<td>i8A</td>
<td>Two control outputs with Isolated Analog Output 1/8 DIN</td>
<td>$365</td>
</tr>
</tbody>
</table>

2 Two solid state relays (SSR’s): 1 A @ 120/240 Vac continuous
2 SSR and relay: Form “C” SPDT 3 A @ 120 Vac, 3 A @ 240 Vac
2 SSR and pulsed 10 Vdc @ 20 mA (for use with external SSR)
3 2 Relays: Form “C” SPDT 3 A @ 120 Vac, 3 A @ 240 Vac
3 Relay and pulsed 10 Vdc @ 20 mA (for use with external SSR)
4 Two pulsed 10 Vdc @ 20 mA (for use with external SSR)
5 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 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**

- **-DC** Standard power input: 90 to 240 Vac/dc, 50 to 400 Hz (no entry required) N/C $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 output $245.
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 Temprtur/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.

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 Temprtur/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:** ±0.5°C temp; 0.03% rdg. process
- **Resolution:** 1°/0.1°; 10 µV process
- **Temperature Stability:** 0.08°C/°C; 50 ppm/°C process
- **Thermocouple Cold End Tracking:** 0.05°C/°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

http://www.newportus.com/Products/process/ICN7700.htm (2 of 4) [4/13/2000 8:32:23 AM]
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.)**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>Omit for standard square 1/16 DIN cutout</td>
</tr>
<tr>
<td>R</td>
<td>Round cutout with detachable NEMA 1 faceplate for fast, easy installation. Cutout diameter is 1.75&quot; (44 mm)</td>
</tr>
</tbody>
</table>

**PACKAGE CONFIGURATION**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td><strong>INFINITY®</strong> style NEMA 12 1/16 DIN bezel 1.89 sq. and standard 1/16 DIN 1.772&quot; (45mm) sq. panel cutout</td>
</tr>
<tr>
<td>5</td>
<td>NEMA 4 (IP-65) bezel 2.1 x 2.1&quot; (53.4 x 53.4mm) and standard 1/16 DIN 1.772&quot; (45mm) sq. panel cutout</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2 Solid state relay <strong>SSR</strong>: 1A @ 120/240 Vac continuous</td>
</tr>
<tr>
<td>3</td>
<td>Relay: form “C” 5A @ 120Vac, 3A @ 240Vac</td>
</tr>
<tr>
<td>4</td>
<td>Pulsed 10Vdc @ 20mA (use for external SSR)</td>
</tr>
<tr>
<td>5</td>
<td>Non-isolated 1 to 10Vdc or 0 to 20mA @500 ohm max</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Enter “0” if second output is not needed</td>
</tr>
<tr>
<td>2</td>
<td>Solid state relay <strong>SSR</strong>: 1A @ 120/240 Vac continuous</td>
</tr>
<tr>
<td>3</td>
<td>Relay: 5A @ 120Vac, 3A @ 240Vac</td>
</tr>
<tr>
<td>4</td>
<td>4 Pulsed 10Vdc @ 20mA (use for external SSR)</td>
</tr>
</tbody>
</table>

**OPTIONAL OUTPUT**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>None</td>
</tr>
<tr>
<td>-A2</td>
<td>Second Alarm, SPST relay, 5A @ 120 Vac, 3A @ 240Vac</td>
</tr>
<tr>
<td>-C2</td>
<td>Isolated RS 232, 300 to 19.2k baud</td>
</tr>
<tr>
<td>-C4</td>
<td>Isolated RS 485, 300 to 19.2k baud</td>
</tr>
<tr>
<td>-PV</td>
<td>Isolated Analog Output (scaled from process variable)</td>
</tr>
<tr>
<td>-RSP</td>
<td>Remote Setpoint selection</td>
</tr>
</tbody>
</table>
POWER SUPPLY

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

ADD-ON OPTIONS

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>RHS43</td>
<td>Arbored holesaw 43mm (1 11/16&quot;) for ICN77R meters</td>
<td>$19.00</td>
</tr>
<tr>
<td>TP4</td>
<td>Trimplate adapter to install 1/16 DIN meter in existing 1/4 DIN panel cutout</td>
<td>$19.00</td>
</tr>
<tr>
<td>TP6</td>
<td>Trimplate adapter to install 1/16 DIN meter in existing 1/8 DIN panel cutout</td>
<td>$19.00</td>
</tr>
</tbody>
</table>

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.