



For Temp. Units

\$150
1/32 DIN meter
\$195
with 2 control outputs



i/32



i/16



i/8

- ✔ **User Friendly, Simple to Configure**
- ✔ **High Quality**
- ✔ **Extended 5-Year Warranty**
- ✔ **Powerful Features**
- ✔ **Free Software, Active X Controls**
- ✔ **Full Autotune PID Control**
- ✔ **Totally Programmable Color Displays, Standard**
- ✔ **High Accuracy $\pm 0.5^{\circ}\text{C}$ (0.9°F), 0.03% Reading**
- ✔ **Temperature Stability $\pm 0.04^{\circ}\text{C}/^{\circ}\text{C}$ RTD and $\pm 0.05^{\circ}\text{C}/^{\circ}\text{C}$ TC @ 25°C (77°F)**
- ✔ **Both RS-232 and RS-485 MODBUS on One Instrument Selectable from Menu, Optional**
- ✔ **Universal Inputs: Thermocouple, RTD, Process Voltage/Current, Strain**
- ✔ **Built-in Excitation, Standard**
- ✔ **2 Control or Alarm Outputs. Choice of dc Pulse, Solid State Relays, Mechanical Relays, Analog Voltage and Current.**

The innovative NEWPORT® iSeries devices feature state of the art technology, uncompromising accuracy, and quality backed by an extended 5-year warranty.

The iSeries family includes extremely accurate digital panel meters and single loop PID controllers that are simple to configure and use, while providing tremendous versatility and a wealth of powerful features.

Embedded Internet and Serial Communications

Featuring optional "Embedded Internet" (specify EI option) the iSeries are the first instruments of their kind that connect directly to an Ethernet network and transmit data in standard TCP/IP packets, or even serve Web pages over a LAN or the Internet. The iSeries are also available with serial communications. With the C24 option, the user can select from the push-button menu between RS-232, RS-422, and RS-485, with straightforward ASCII commands or MODBUS.

iSeries 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 a similar set-up and configuration menu and method of operation, which is a tremendous time saver for integration of a large system.

Programmable Color Display

The NEWPORT iSeries 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 set point 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. 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.

QUALITY and TECHNOLOGY

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 a 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 or Ethernet 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.

Strain Meters & PID Controllers



Most Accurate RTD Measurements

The iSeries works with the widest selection of RTD's and produces the most accurate RTD measurements. Handles both Pt 0.00385 and 0.00392 curves, and 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 mVdc, 0-1 Vdc, 0-10 Vdc ranges, and process current: 0-20 mA.

Strain Gauge

The STRAIN/PROCESS meters and controllers measure inputs from Load Cells, Pressure Transducers, and most any strain gauge sensor. Input ranges include 0 to 100 mVdc, -100 mVdc to 1 Vdc and 0 to 10 Vdc in addition to 0-20 mA. Excitation for transducers of 5 Volt and 10 Volt is standard. Strain/Process meters and controllers are available in all iSeries Models.

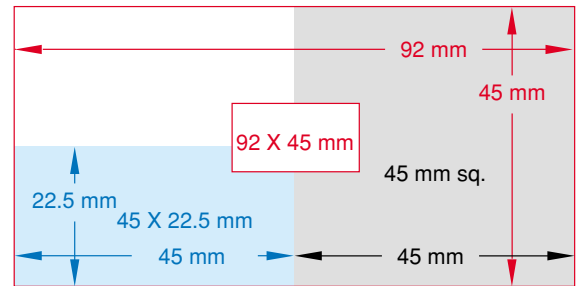
Analog Output

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.

Control Functions

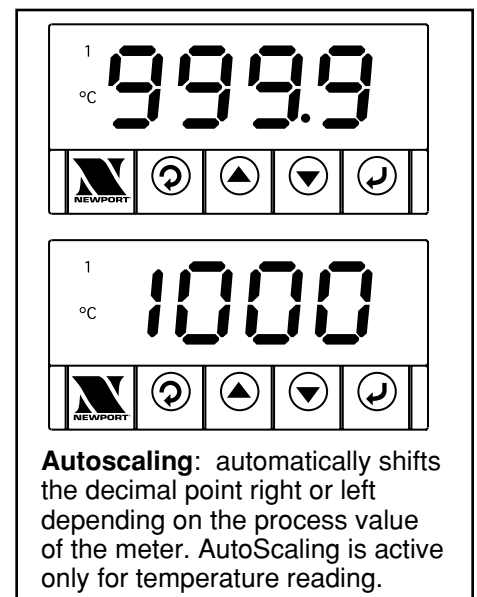
The iSeries can control simple manual operation to ON-OFF and full Autotune PID control. (Selectable preset tune, adaptive tune, PID, PI, PD control modes.) The dual control outputs can be configured for a variety of independent control and alarm applications such as heat/heat, heat/cool, heat/alarm, 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.

For those who only need simplified menus and no PID control, there are 2 options available: **-AL** Limit Alarm and **-SM** Simplified Menu ON-OFF Control.



Built-in Excitation Standard

The temperature/process (model "i") comes standard with built-in excitation (24 Vdc @ 25 mA). Any excitation voltage between 5 and 24 Vdc is available by special order. This means the same instrument can handle thermocouple, standard RTD's, or 4-20 mA transmitters, with the meter's built-in excitation. The strain/process (model "iS") comes standard with built-in excitation (10Vdc @ 60mA), 5V excitation is user selectable. (Built-in excitation is not available with optional isolated RS-232/ RS-485 serial communications or DC power option.)



Autoscaling: automatically shifts the decimal point right or left depending on the process value of the meter. AutoScaling is active only for temperature reading.



iSeries U.S. Patent #6,243,021

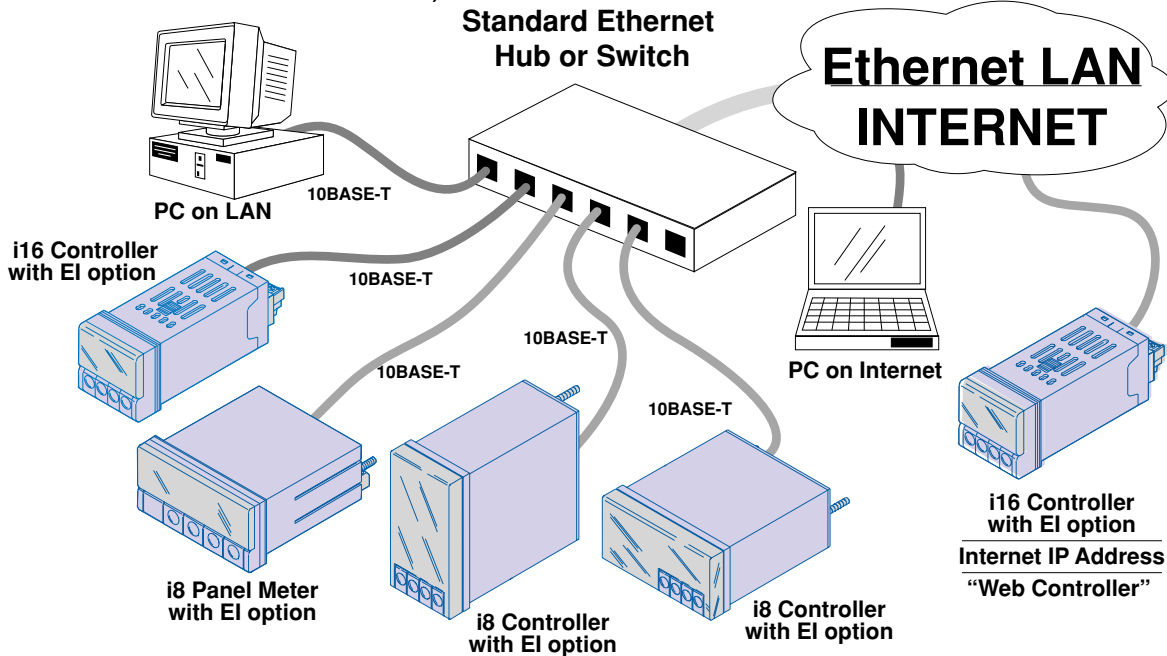
Totally Programmable Color Displays

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.



iSeries Embedded Internet

iSeries Meters and Controllers - Direct connection to Ethernet
(Each device has own IP Address)



EMBEDDED INTERNET

The NEWPORT® iSeries devices can connect directly to an Ethernet network with a standard RJ-45 connector and can send and receive data in standard TCP/IP packets. (Please specify EI or C4EI option.)

The iSeries devices can serve Web pages over an Ethernet LAN or even over the Internet making it possible to monitor and control a process through a web browser (such as Microsoft Internet Explorer) from anywhere in the facility or anywhere in the world.

Remote Control

For example, using an iSeries 1/16 DIN temperature controller to control a heater, an engineer can monitor the temperature, change set points or alarm points, turn the heater on and off, or make other modifications from anywhere on the local network, or anywhere on the Internet. The web pages are easily customized and secure password protected access to the devices is easily controlled. And it requires absolutely no special software on the engineer's computer to view the data and "supervise" the controller--nothing other than a Web Browser.

Email and Alarm

In fact, the iSeries controller can even send an email to the engineer (or anyone they choose) alerting them to an alarm condition or updating the status. Leveraging the technology of the Internet, the engineer could receive a message from the iSeries controller on an Internet enabled pager or cell phone.

Most remarkable is that all this can be accomplished without a computer. The NEWPORT® iSeries device (meter or controller) connects directly to the Ethernet Network -- not to the serial port of a computer functioning as a "server" and "master" to "slave" instruments connected through serial communications. The iSeries devices are also available with RS-232, RS-422, RS-485 and MODBUS serial communications. (Specify the C24 option.) In fact, the iSeries are the first instruments of this type which include all these serial protocols on one device, selectable from a menu.

Internet Appliances

With the EI option, these small 1/8 DIN and 1/16 DIN instruments are stand-alone Web Servers. The Ethernet and Web Server capability is actually embedded in the device. (The smallest 1/32 DIN size device must be connected to an external iServer.)

The NEWPORT® iSeries device is assigned an IP address on the network and can also be assigned an easily remembered name such as "Heater1". In fact, the device could be assigned an authorized Internet IP address from an Internet Service Provider and function as a World Wide Web Server delivering whatever specific information is called for. (For an example, please see www.newportUS.com/iserver)

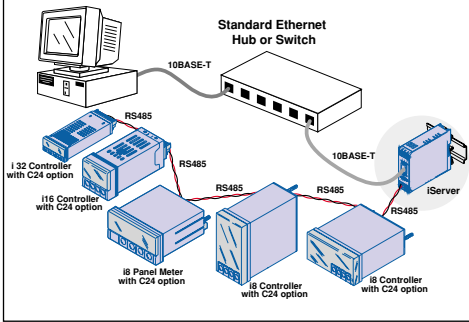
The iSeries devices work well with conventional industrial automation, data acquisition and control programs as well as Microsoft Visual Basic and Excel. NEWPORT® provides free software and demos which makes it fast and easy to get up and running with many applications.



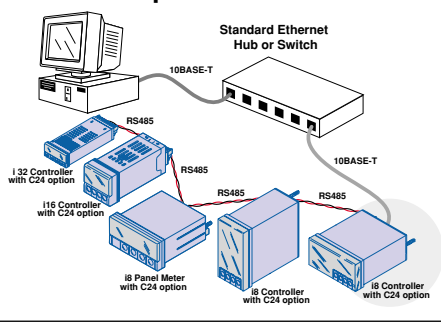
\$295
1/16 DIN
Controller



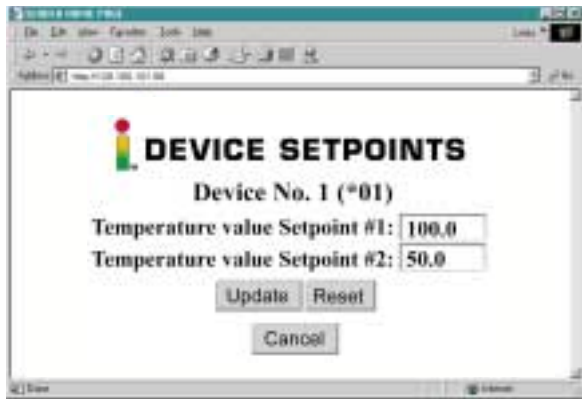
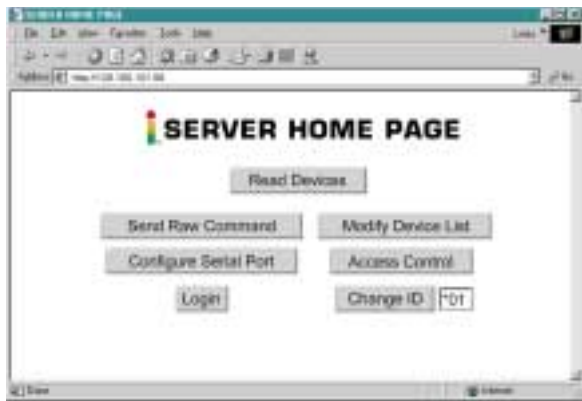
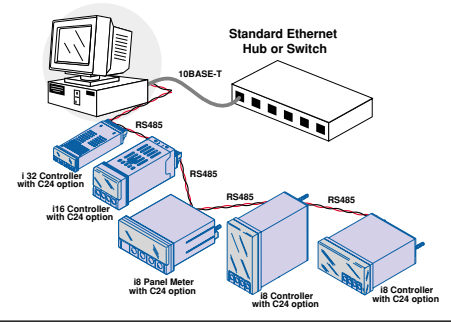
Using iServer as HUB/Server for up to 32 Devices



Using Newport 1/8 DIN iSeries controller with C4E1 option as HUB for up to 32 Devices



Conventional Serial Communication connections using PC with RS-485 Serial Communication



Get Internet E-mail Notification of Alarm Status on your web enabled phone or PDA.



iServer

The "iServer" is a DIN rail device which can be a hub connecting up to 32 instruments to the Ethernet and Internet. The iServer is both a Web Server and an Ethernet-Serial bridge. To connect to the iServer, iSeries devices must feature the "C24" Serial Communications option.

The NEWPORT iServer is also compatible with the NEWPORT INFINITY® family of ultra high performance digital panel meters and the NEWPORT iDRX family of Signal Conditioners. The iServer can also connect almost any RS-232 or RS-485 Serial Device to Ethernet.



\$195*
iServer

✓ A Web Server and an Ethernet bridge

✓ Serves up to 32 devices

The iServer is an alternate way to connect iSeries devices to an Ethernet LAN or Internet. Instead of Connecting each iSeries device directly to the Ethernet network, with individual IP Addresses for each device, the iServer can be a HUB/Server for up to 32 devices.

To Order		
Model Number	Description	Price
EIS-2B	iServer Industrial MicroServer, serves 32 devices	195
Options		
iDRN-PS-1000	Power supply (switching), 95 to 240 Vac input, 24 Vdc output @ 1 A (powers 10 units)	150

*Contact Newport for Quantity and OEM pricing.

iSeries Common Specifications (All i/8, i/16, i/32 DIN)

Universal Temperature & Process Input (Model "i")

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

Resolution: $1^{\circ}/0.1^{\circ}$; 10 μV process

Temperature Stability:

1) RTD: $0.04^{\circ}\text{C}/^{\circ}\text{C}$

2) TC @ 25°C (77°F): $0.05^{\circ}\text{C}/^{\circ}\text{C}$ - Cold Junction Compensation

3) 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

21 mm (0.83"): i8

10.2 mm (0.40"): i32, i16, i16D, i8DV

10.2 mm (0.40") and 21 mm (0.83"): i8DH

red, green and amber programmable colors for process variable, set point and temperature units

Input Types: Thermocouple, RTD, Analog Voltage, Analog Current

Thermocouple Lead Resistance:

100 ohm max

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

RTD Input (ITS 68): 100/500/1000 ohm 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 Mohm for 100 mV
1 Mohm for 1 or 10 Vdc

Current Input: 0 to 20 mA (5 ohm load)

Configuration: Single-ended

Polarity: Unipolar

Step Response: 0.7 sec 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

EXCITATION

(Not included with Communication):

24 Vdc @ 25 mA (Not Available for Low Power Option)

Universal Strain & Process Input (Model "iS")

Accuracy: 0.03% reading

Resolution: 10/1 μV

Temperature Stability: 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

Input Types: Analog Voltage, Analog Current

Voltage Input: 0 to 100 mVdc,

-100 mVdc to 1 Vdc, 0 to 10 Vdc

Input Impedance: 10 Mohm for 100 mV;
1 Mohm for 1 V or 10 Vdc

Current Input: 0 to 20 mA (5 ohm load)

Linearization Points: Up to 10

Linearization Points

Configuration: Single-ended

Polarity: Unipolar

Step Response: 0.7 sec for 99.9%

Decimal Selection: None, 0.1, 0.01 or 0.001

Setpoint Adjustment: -1999 to 9999 counts

Span Adjustment: 0.001 to 9999 counts

Offset Adjustment: -1999 to 9999

Excitation (optional in place of

Communication): 5 Vdc @ 40 mA;

10Vdc@60mA

Control

Action: Reverse (heat) or direct (cool)

Modes: Time and Amplitude Proportional Control Modes; selectable Manual or Auto PID, Proportional, Proportional with Integral, Proportional with Derivative with Anti-reset Windup and ON/OFF

Rate: 0 to 399.9 seconds

Reset: 0 to 3999 seconds

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: 0000 to 0008

Soak:

00.00 to 99.59 (HH:MM), or OFF

Ramp to Setpoint:

00.00 to 99.59 (HH:MM), or OFF

Auto Tune:

Operator initiated from front panel

Control Output 1 & 2

Relay: 250 Vac or 30 Vdc @ 3 A (Resistive Load); configurable for on/off, PID and Ramp and Soak

Output 1: SPDT type, can be configured as Alarm 1 output

Output 2: SPDT type, can be configured as Alarm 2 output

SSR: 20-265 Vac @ 0.05 - 0.5 A (Resistive Load); continuous

DC Pulse: Non-Isolated;

10 Vdc @ 20 mA

Analog Output (Output 1 only):

Non-Isolated, Proportional 0 to 10 Vdc or 0 to 20 mA; 500 Ω max

Network and Communications (Optional -C24, -C4EI, -EI)

Ethernet: Standards Compliance

IEEE 802.3 10Base-T

Supported Protocols:

TCP/IP, ARP, HTTPGET

RS-232/RS-422/RS-485: selectable from menu; both ASCII and Modbus protocol selectable from menu. Programmable 300 to 19.2 K 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 1 & 2 (programmable)

Type: Same as Output 1 & 2

Operation:

High/low, above/below, band, latch/unlatch, normally open/normally closed and process/deviation; front panel configurations

Analog Output (programmable):

Non-Isolated, Retransmission 0 to 10 Vdc or 0 to 20 mA, 500 Ω max (Output 1 only). Accuracy is $\pm 1\%$ 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: 90-240 Vac $\pm 10\%$, 50-400 Hz*, 110-375 Vdc, equivalent voltage

Low Voltage Power Option: 24 Vac**, 12 - 36 Vdc, power for i8, i8C, i16, i32; 20 - 36 Vdc, power for i8DH, i8DV, i16D from qualified safety approved source

Insulation

Power to Input/Output:

2300 Vac per 1 minute test

1500 Vac per 1 minute test

(For Low Voltage Power Option)

Power to Relays/SSR Outputs:

2300 Vac per 1 minute test

Relays/SSR to Relay/SSR Outputs:

2300 Vac per 1 minute test

RS-232/485 to Input/Outputs:

500 Vac per 1 minute test

Environmental Conditions:

90% RH non-condensing

All models: 0 to 55°C (32 - 131°F)

i8DV, i8DH, i16D: 0 to 50°C (32 to 122°F) for UL only

Protection:

NEMA-4 (IP65) front bezel

Approvals: FM, UL, C-UL,

CE per EN61010-1:2001

Dimensions

i/8 Series: 48 H x 96 W x 127 mm D (1.89 x 3.78 x 5")

i/16 Series: 48 H x 48 W x 127 mm D (1.89 x 1.89 x 5")

i/32 Series: 25.4 H x 48 W x 127 mm D (1.0 x 1.89 x 5")

Panel Cutout

i/8 Series: 45 H x 92 mm W

(1.772" x 3.622"), 1/8 DIN

i/16 Series: 45 mm (1.772") square, 1/16 DIN

i/32 Series: 22.5 H x 45 mm W (0.886" x 1.772"), 1/32 DIN

Weight

i/8 Series: 295 g (0.65 lb)

i/16 Series: 159 g (0.35 lb)

i/32 Series: 127 g (0.28 lb)

* No CE compliance above 60 Hz

** Units can be powered safely with 24Vac power, but no certification for CE/UL are claimed

iSeries
change color
at any
set point*

Totally
Programmable
Color Displays

RED
AMBER
GREEN