

# OMEGA MONOGRAM<sup>®</sup> iSeries

DPI32 Series

\$150

1/32 DIN Meter



For More Information  
[omega.com/specs/iseries](http://omega.com/specs/iseries)



**i/32**  
1/32 DIN display



**i/16**  
1/16 DIN display



**i/8**  
1/8 DIN display

- ✓ User Friendly, Simple to Configure
- ✓ High Quality
- ✓ Extended 5-Year Warranty
- ✓ Powerful Features
- ✓ Free Software, Active X Controls
- ✓ Full Autotune PID Control, Optional

- ✓ Totally Programmable Color Displays, Standard
- ✓ High Accuracy  $\pm 0.5^{\circ}\text{C}$  ( $0.9^{\circ}\text{F}$ ), 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 @  $25^{\circ}\text{C}$  ( $77^{\circ}\text{F}$ )
- ✓ Both RS-232 and RS-485 MODBUS on One Instrument Selectable from Menu, Optional

- ✓ Universal Inputs: Thermocouple, RTD, Process Voltage/Current
- ✓ Built-in Excitation, Standard
- ✓ 2 Control or Alarm Outputs. Choice of dc Pulse, Solid State Relays, Mechanical Relays, Analog Voltage and Current.

The innovative OMEGA<sup>®</sup> 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 OMEGA<sup>®</sup> 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 OMEGA<sup>®</sup> 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 OMEGA<sup>®</sup> 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.

# Meters & PID Controllers at any set point

Designed and manufactured in the USA, the innovative OMEGA® **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. 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 OMEGA® **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.



**\$240**  
1/8 DIN meter  
**\$310**  
with 2 control outputs

## Built-in Excitation Standard

The **iSeries** comes standard with built-in excitation for transmitters or other devices, 24 Vdc @ 25 mA. 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 & 1 k | in 0.00385 or 0.00392, 0 to 20 mA, 0 to 100 mV, 0 to 1 V and 0 to 10 Vdc.



## Totally Programmable Color Display



The OMEGA® **i/8**, **i/16**, and **i/32** are the first complete series of 1/8, 1/16 and 1/32 DIN process control instruments with totally programmable color displays. The display can be programmed to change color at any setpoint or alarm point.



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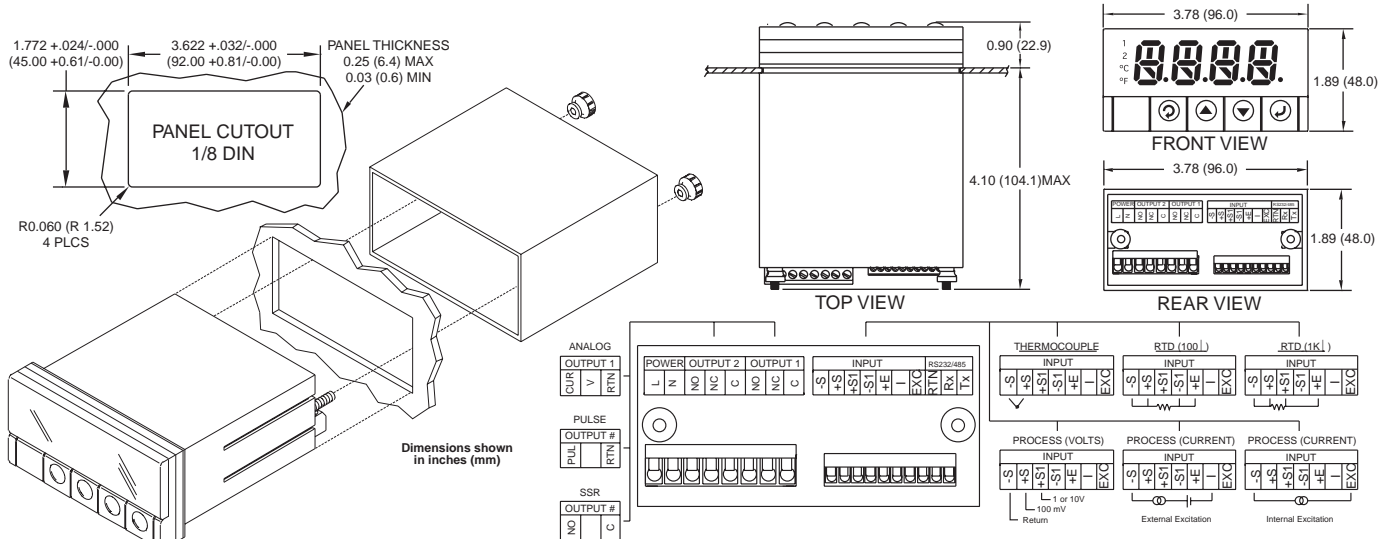
iSeries meters  
**change color**  
at any set point

The OMEGA® 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 “DPi8” model is an extremely accurate digital panel meter with no control outputs.

The “CNI8” adds a selection of outputs for complete control or alarm capability. The user can easily program the CNI8 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 DPi8A for the monitor or CNI8A33 with two relays.

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



## 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.



Standard 1/8 DIN - 14 mm LED



NEW iSeries - 21 mm LED

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



# Model **i/16** $\frac{1}{16}$ DIN

## Temperature & Process Meters & PID Controllers



**iSeries, Single and Dual Display meters change color at any set point\***

\*The setpoint display is green and does not change colors.



**\$180**  
DPI16 Meter  
**\$245**  
CNI16D  
Dual Display controller

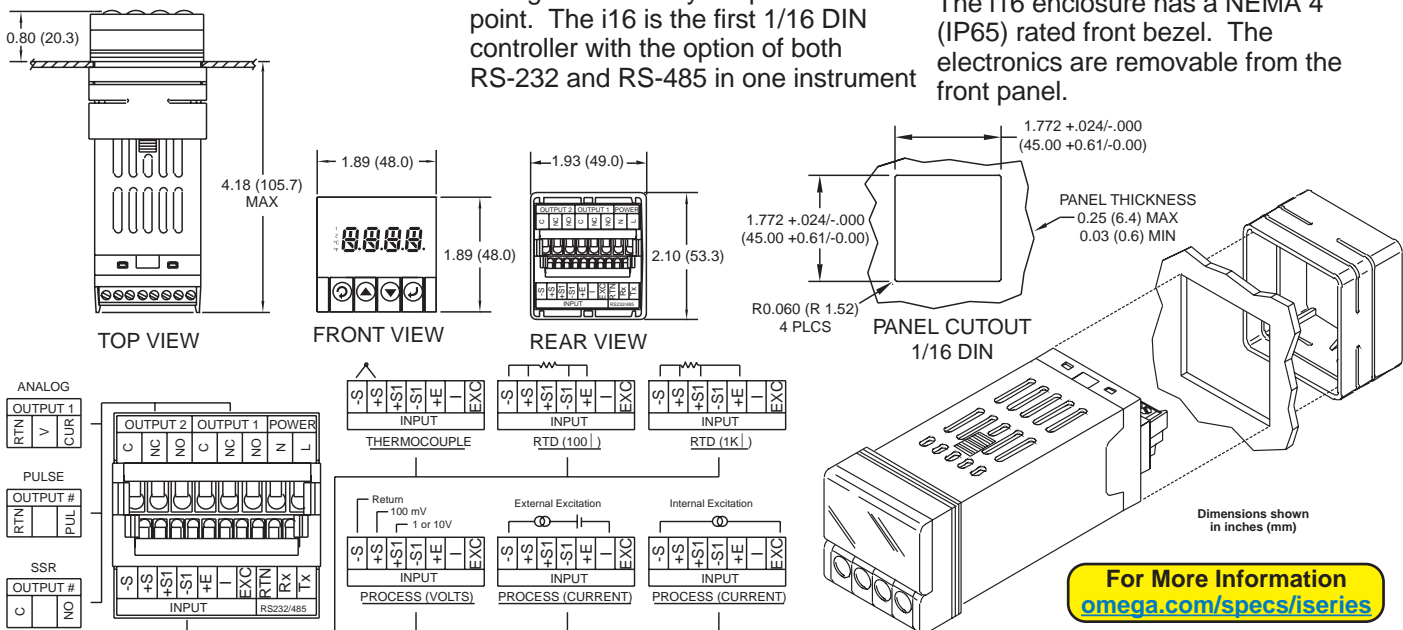
**Totally Programmable Color Displays**

The OMEGA® i16 is the popular 1/16 DIN size (48mm square) meter or controller. The meter (model #DPI16) displays the process value and has no control outputs.

The controller is available with a single (CNI16) or dual display (CNI16D) 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 OMEGA® ASCII protocol. OMEGA® 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.



For More Information  
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### **CUSTOM CONFIGURATIONS**

Custom firmware & hardware available in quantity.  
 Custom color bezels and enclosures are available for Original Equipment Manufacturers. Enhance the appearance of your equipment design with custom colors.  
 Consult the OMEGA® OEM GROUP.



# iSeries



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

# 1/32 DIN Model i/32 Temperature & Process Meters & PID Controllers

For More Information  
[omega.com/specs/iseries](http://omega.com/specs/iseries)



The OMEGA® i32 is the iSeries meter (DPi32) and controller (CNI32) 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.

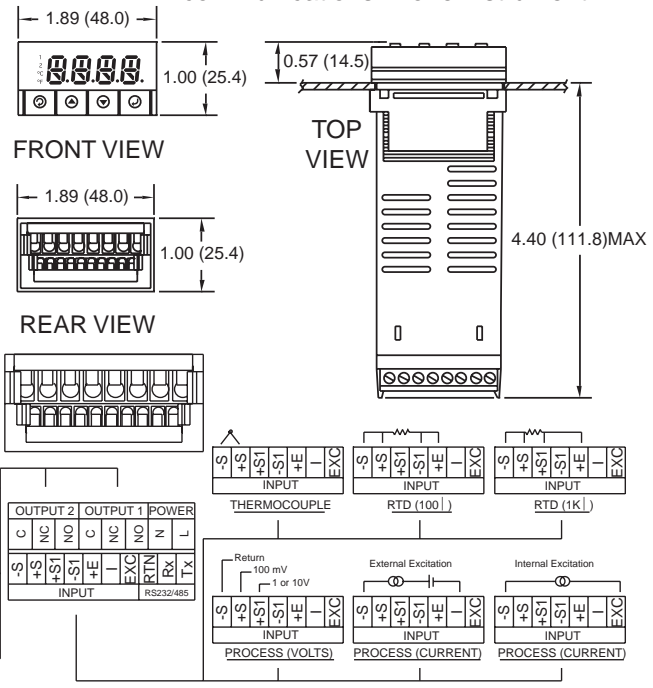
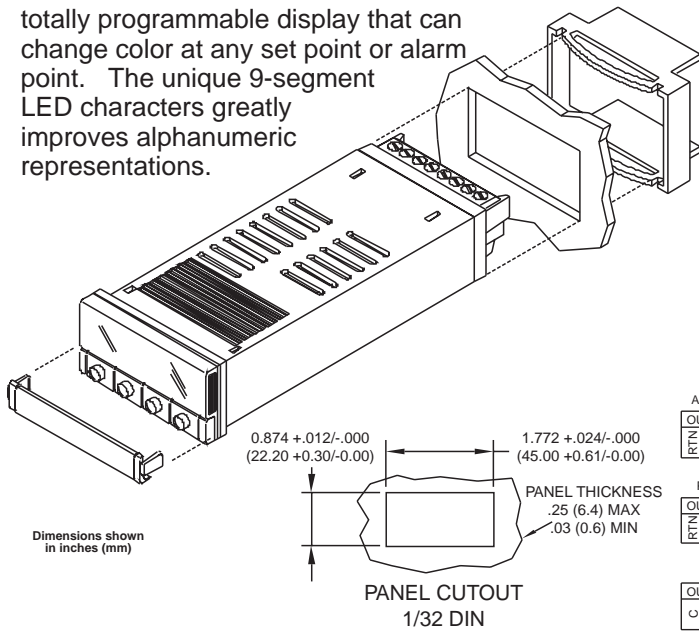
The i32 handles more thermocouple, RTD, process voltage and current inputs than any other 1/32 DIN controller.

The i32 is the first 1/32 DIN controller offering 2 SPDT (Single Pole Double Throw) Form C relays, instead of the single throw relays on typical 1/32 DIN controllers.

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 is the first 1/32 DIN controller with built-in excitation for transmitters or other devices, 24 Vdc @ 25mA.

The i32 is the first to offer both RS-232 and RS-485 serial communications in one instrument.



9-segment LED

makes operating and programming simpler and easier.



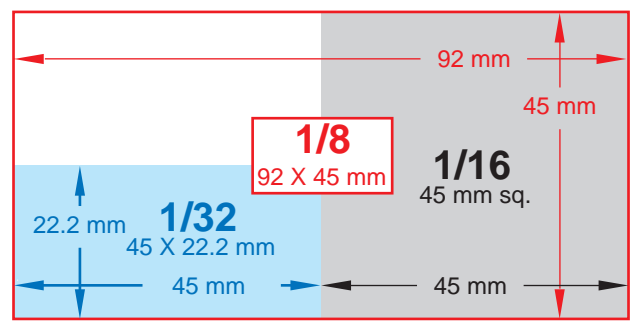
9 segment display



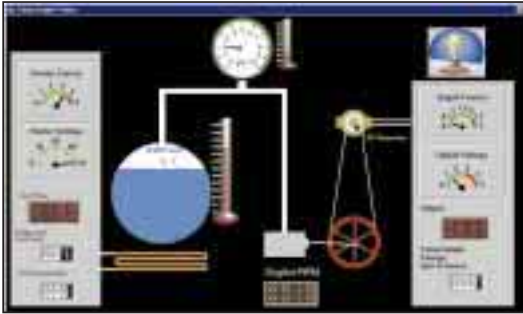
7 segment display

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

## DIN Panel Cutout Dimensions



# FREE SOFTWARE



Free software is provided for easy set-up, configuration and data acquisition with the OMEGA® **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 OMEGA®, GE Fanuc, Intellution, Rockwell Automation, Object Automation, iconics, and Wonderware among others.



## Optional Isolated RS-232 and RS-485 Serial Communications

The **iSeries** is the first **intelligent industrial instrument** 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 OMEGA® 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 OMEGA® 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.

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
<b>J</b>	Iron-Constantan	-210 to 760°C/-346 to 1400°F	0.4°C/0.7°F
<b>K</b>	CHROMEPA®-ALOMEGA®	-270 to -160°C/-160 to 1372°C -454 to -256°F/-256 to 2502°F	1.0°C/0.4°C 1.8°F/0.7°F
<b>T</b>	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
<b>E</b>	CHROMEPA®-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
<b>R</b>	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
<b>S</b>	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>B</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
<b>C</b>	5%Re-W/26%Re-W	0 to 2320°C/32 to 4208°F	0.4°C/0.7°F
<b>N</b>	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
<b>L</b>	J DIN	-200 to 900°C/-328 to 1652°F	0.4°C/0.7°F
<b>RTD</b>	Pt, 0.00385, 100, 500, 1000	-200 to 900°C/-328 to 1652°F	0.4°C/0.7°F
<b>RTD</b>	Pt, 0.00392, 100, 500, 1000	-200 to 850°C/-328 to 1562°F	0.4°C/0.7°F

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

Model Number	Description	Price
<b>DPI32</b>	Monitor only (no control outputs) ½ DIN	<b>\$150</b>
<b>DPI16</b>	Monitor only (no control outputs) ⅙ DIN	<b>180</b>
<b>DPI8</b>	Monitor only (no control outputs) ⅓ DIN	<b>240</b>
<b>DPI8A</b>	Monitor w/Isolated Analog Output ⅓ DIN	<b>295</b>
<b>CONTROL OUTPUTS #1 &amp; 2 Direct (Cool) or Reverse (Heat) Acting</b>		
<b>CNI32</b> (*) (*)	Two control outputs ½ DIN	<b>195</b>
<b>CNI16</b> (*) (*)	Two control outputs ⅙ DIN	<b>225</b>
<b>CNI16D</b> (*) (*)	Two control outputs with dual display ⅙ DIN	<b>245</b>
<b>CNI8</b> (*) (*)	Two control outputs ⅓ DIN	<b>310</b>
<b>CNI8A</b> (*) (*)	Two control outputs w/Isolated Analog Output	<b>365</b>
<b>2 2</b>	Two solid state relays (SSR's): 1 A @ 120/240 Vac continuous	<b>N/C</b>
<b>2 3</b>	SSR and relay: Form "C" SPDT 3 A @ 120 Vac, 3 A @ 240 Vac	
<b>2 4</b>	SSR and pulsed 10 Vdc @ 20 mA (for use with external SSR)	
<b>3 3</b>	2 relays: Form "C" SPDT 3 A @ 120 Vac, 3 A @ 240 Vac	
<b>3 4</b>	Relay and pulsed 10 Vdc @ 20 mA (for use with external SSR)	
<b>4 4</b>	Two pulsed 10 Vdc @ 20 mA (for use with external SSR)	
<b>5 2</b>	Analog output selectable as either control or retransmission of process value; 0 to 10 Vdc or 0-20 mA @ 500 ohm max. and SSR	
<b>5 3</b>	Analog output 0 to 10 Vdc or 0-20 mA @ 500 ohm max. and Relay	
<b>5 4</b>	Analog output 0 to 10 Vdc or 0-20 mA @ 500 ohm max. and pulse 10 Vdc	

SERIAL COMMUNICATION		Price
<b>-C24</b>	Isolated RS-232 and RS-485 300 to 19.2 k baud	<b>60</b>
<b>POWER SUPPLY</b>		
*	Standard power input: 90 to 240 Vac/dc, 50 to 400 Hz (no entry required)	<b>N/C</b>
<b>-DC</b>	10-34 Vac/dc (optional)	<b>60</b>
<b>FACTORY SETUP</b>		
<b>-FS</b>	Factory Setup and Configuration (requires -C24 Serial Comm. option)	<b>N/C</b>

**ORDERING EXAMPLES:** **DPI8A** is a 1/8 DIN Meter with isolated scalable analog retransmission of the process value \$295

**CNI322-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.

**CNI16D** is a 1/16 DIN dual display PID Controller with two control outputs \$245.