NEWPORT®

iSeries

BiG Display
iLD Series

- **BIG Bright 2.25" (57.2 mm) or 4.00" (101.6 mm) LED Digits**
- **Program to Change Colors: RED, AMBER, GREEN**
- **Many Input Choices**
- **Optional Relays for Alarm and Full PID Control**
- **Communications Via Ethernet, RS-232, RS-485, and MODBUS**
- **Embedded Web Server**
- **Free Software, Active X Controls**

The award-winning **iSeries** meters and controllers now features a new **BIG** Display.

Like all **iSeries** meters, the new **BIG** Display can be programmed to change colors between **RED**, **AMBER**, and **GREEN** 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 equipment operators can intuitively react to changing conditions.

The **BIG** Display can be mounted flush in a panel or surface mounted with the included brackets. The entire **BIG** Display enclosure provides NEMA 4/IP65 protection. Whether panel-mounted or surface-mounted, the **BIG** Display does not need to go inside a bulky and expensive NEMA enclosure.

iSeries

Big Display

The **BIG** Displays can handle a wide variety of signal inputs directly from transducers or process transmitters as well as display data transmitted from other NEWPORT devices via Serial Communications or Ethernet.

The "**Universal Temperature + Process BIG Display**" is designed for Thermocouples, RTD's, and Process (DC) Voltage or Current. It handles TEN (10) thermocouple types: K, J, T, E, R, S, B, C, N, & J DIN. It works with a wide selection of RTD's, both Pt. 0.00385 and 0.00392 curves for 100 Ohm, 500 Ohm, and 1000 Ohm and it measures with 2, 3, or 4 wire connections for the highest accuracy. This model also measures process voltage: 0-100 mV, 0-1 Volt, 0-10 Volt ranges and process current, 0-20 mA (4-20 mA) with built-in excitation of 10 Vdc and 24 Vdc standard.

The "**Universal Strain + Process BIG Display**" handles a wide variety of DC voltage and current outputs from all common load cells, pressure transducers, and most any strain gauge type of transducer. The meter measures input ranges of 0 to 100 mV, -100 mV to 1V, 0 to 10 V, 0-20 mA (4-20 mA) with built-in excitation of 5 Vdc and 10 Vdc standard. This model also features Ten (10) Point Linearization enabling accurate measurements from a wide assortment of unique and nonlinear transducers.

The "**AC BIG Displays**" provide accurate isolated measurement of AC Voltage and Current signals. The AC Voltage model can be scaled for ranges from 0-400mVAC through 0-400VAC. The AC Current model covers ranges from 0-10 mA through 0-5 Amps AC.

The "**Frequency Pulse BIG Display**" provides accurate isolated measurement of frequency (from 200 Hz to 50 kHz) and pulse signals (up to 200M pulses full scale) that can be scaled to any engineering units.

The "**Ethernet BIG Display**" can display data transmitted via an Ethernet Network or via serial communications from NEWPORT instruments, from a computer, or from other devices which transmit ASCII data via RS-422 or RS-485. The Ethernet **BIG** Display is compatible with virtually all Newport devices that feature serial communications including: **iSeries** meters and controllers, **INFINITY**® Series digital panel meters, **MICRO-INFINITY**® controllers, iDRX DIN-RAIL mounted signal conditioners, and many more.

The **BIG** Displays are easy to configure and scale to virtually any engineering units with the push buttons on the front panel, or with a personal computer using the free configuration software and the optional Ethernet connectivity or Serial Communications. The Ethernet option allows the device to be connected on a standard Ethernet network and communicates using standard TCP/IP protocol.

The Ethernet option also includes RS-485 (and RS-422) Serial Communications. The serial communications option includes both RS-232 and RS-485 (and RS-422) on one instrument. It communicates with a straightforward ASCII communications protocol, as well as MODBUS protocol.

The **BIG** Display features a choice of two optional outputs: Form C SPDT (single pole double throw) mechanical relays, Solid State Relays, DC pulse, and/or programmable analog output selectable as either a controlling function or as retransmission of the process value.

The new **iSeries** are the world's first Panel Meters and Controllers with an embedded Web Server and can connect directly to Ethernet/Internet. You can "see" your meter and control your process through a web browser over the Internet from halfway around the world. With the new **BIG** Display, you can also see your meter from a hundred feet away.

Totally Programmable Color Display

Universal Temperature & Process Input (Model UTP)

Accuracy: ±0.5°C temp; 0.03% reading process
Resolution: 1°/0.1°; 10 µV process
Temperature Stability:
1) RTD: 0.04°C/°C
2) TC @ 25°C (77°F): 0.05°C/°C - Cold Junction Compensation
3) Process: 50 ppm/°C
NMRR: 60 dB
CMRR: 120 dB
A/D Conversion: Dual slope
Reading Rate: 3 samples per second
Digital Filter: Programmable
Display: 4-digit or 6-digit, 7-segment LED 57.2 mm (2.25") or 101.6 mm (4.00") 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 cts
Span Adjustment: 0.001 to 9999 cts
Offset Adjustment: -1999 to 9999
Excitation (optional in place of Communication): 24 Vdc @ 25 mA

Universal Strain & Process Input (Model SP)

Accuracy: 0.03% reading
Resolution: 10/1µV
Temperature Stability: 50 ppm/°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 cts
Span Adjustment: 0.001 to 9999 cts
Offset Adjustment: -1999 to 9999
Excitation (optional in place of Communication): 5 Vdc @ 40 mA; 10 Vdc @ 60 mA.

Ethernet, Serial Communications Input (Model EI)

Temperature Stability: 50 ppm/°C
Alarm: Alarm 1 and 2 programmable, Latch/Unlatch, High, Low, High/Low
Standards Compliance: IEEE 802.3 10Base-T
Supported Protocols: TCP/IP, ARP, HTTPGET
SERIAL INTERFACE
Communication Standard: RS485, RS422
Transfer speed (Baud rate): 300, 600, 1200, 2400, 4800, 9600, 19200 bps
Data Format:
7O1-7 bit: Odd, 1 stop bit
7E1-7 bit: Even, 1 stop bit
8N1-8 bit: No parity, 1 stop bit
Multi-point Address (RS-485): 0 to 199
Flow Control: No Flow control
Screw Terminals: For RS485/422 interface
NETWORK INTERFACE
10Base-T port (RJ45 connector)
Socket Port number: 1000
HTTP Port number: 80

AC Current Input (Model ACC)

Input Ranges: 10 mA, 100 mA, 1 Amp, 5 Amp AC current dedicated input terminals for (10, 100 mA same input), 1 Amp and 5 Amp. Return terminal common to all ranges
Frequency Range: 30Hz to 1 KHz
Input Impedance: 3.3 Ohms for 10, 100 mA input; 0.2 Ohms for 1 amp input; 0.04 Ohms for 5 Amp input
Isolation: Dielectric strength to 1000 Vrms transient per 1 min. test based on EN 61010 for 50 Vdc or Vrms working voltage
Three way Isolation: Power to input; Power to Analog output/ communication; Input to Analog output/communication
Input Over-Current Protection: 10% Above full scale continuously; 100% Above full scale for 10 sec.
Analog to Digital Technique: Dual slope
Read Rate: 3 readings/sec.
Accuracy at 25°C: ±0.2% of FS; 30 Hz to 1Hz
Temperature Stability:10, 100 mA Range 100 ppm/°C typical;
1 Amp Range 150 ppm/°C typical;
5 Amp Range 200 ppm/°C typical
Step Response: 2 sec. to 99% of the final value (filter time constant = 64)

AC Voltage Input (Model ACV)

Input Ranges: 400 mV, 4V, 40 V, 400 V
Frequency Range: 30Hz to 1 KHz
Input Impedance: 2.1 Meg for all ranges
Isolation: Dielectric strength to 1000 Vrms transient per 1 min. test based on EN 61010 for 50 Vdc or Vrms working voltage
Input Over-Voltage Protection: 10% Above full scale continuously; 100% Above full scale for 10 sec.
Analog to Digital Technique: Dual slope
Read Rate: 3 readings/sec.
Accuracy at 25°C: 400 mV, 4V, 40V and 400 V ranges; 49 Hz to 500 Hz ±0.2% of FS; 30 Hz to 1KHz ±0.2% of FS ±10 counts
Temperature Stability: 400 mV and 40 Volt range, 150 ppm/°C typical; 4 V and 400 Volt range, 100 ppm/°C typical
Step Response: 2 sec. to 99% of the final value (filter time constant = 64)

Frequency Pulse Input (Model FP)

Input Types: Min. Low level signal input (magnetic pickups): From 0 mV to 120 mV

- Open Collector NPN
- Open Collector PNP
- TTL/CMOS Input
- NAMUR Sensors: 8.2 V Excitation

Operating Modes:
Frequency: Range = 0.2 Hz to 50 KHz

Frequency	Resolution
0 to 9.99999 Hz	0.00001 Hz
10 to 99.9999 Hz	0.0001 Hz
100 to 999.999 Hz	0.001 Hz
1000 to 9999.99 Hz	0.01 Hz
10000 to 50000.0 Hz	0.1 Hz
0 to 50000 Hz	1 Hz

Totalize with Reset:
Range = 0 to 999999*
A-B Totalize (Reset input used as a +A input): Range = -99999 to 999999*
Quadrature (Reset input used as second input):
Range = -99999 to 999999*
*Resolution is 1 count
Input Impedance: Input: 1 Mohm to +EXC; Reset: 100K to +5V
Isolation: Dielectric strength to 1000 Vrms transient per 1 min. test based on EN 61010 for 50 Vdc or Vrms working voltage
Input Over-Voltage Protection: With 1K pull down: 14V; With 3K pull up: 20V; Without pull up/down: 60V
Excitation: 5, 8.2 or 12.5V at 25mA, programmable
Accuracy at 25°C: ±0.1% of FS Crystal time base accuracy: ± 50 ppm
Temperature Stability: ±50 ppm/°C typical; Time base stability: ±1 ppm/°C
Step response for RS485 Output: 0.1 second to 99% of the final value (Filter time constant = 0, Gate time = 0.05 Sec)

FOR ALL MODELS:

NETWORK & COMMUNICATION
(optional -C24, -C4EI, -EI)
Ethernet: Standards Compliance IEEE 802.3 10Base-T
Supported Protocols: TCP/IP, ARP, HTTPGET
RS-232/RS-422/RS-485/MODBUS: 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

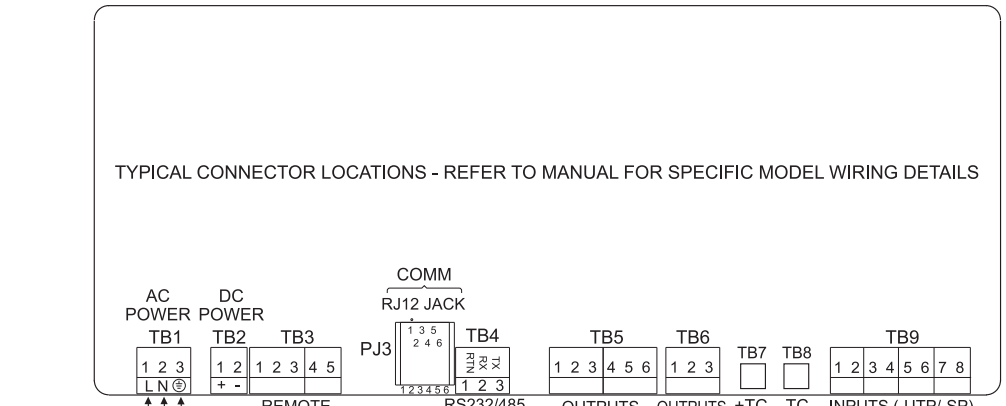
CONTROL for UTP, SP
Action: Reverse (heat) or direct (cool)

ALARM 1 & 2 (programmable)
Operation: High/low, above/below, band, latch/unlatch, normally open/normally closed and process/deviation; front panel configurations

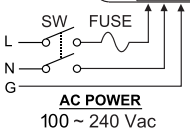
ISOLATION
Power to Input/Output: 2300 Vac per 1 minute test (RS-232/485, Input or Output)
Between Inputs: 500 Vac per 1 min. test

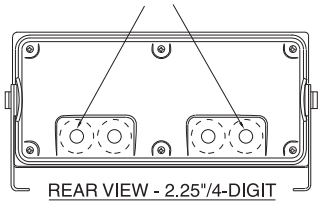
GENERAL
Power:
100-240 Vac ±10%, 50/60 Hz 22.5 W
Environmental Conditions:
0 to 40°C (32 to 104°F),
90% RH non-condensing
Warm up to rated Accuracy:
UTP, SP, FP, ACC, ACV = 60 minutes.
Protection: NEMA-4 (IP65) front bezel

Mounts in panel or on surface with included bracket

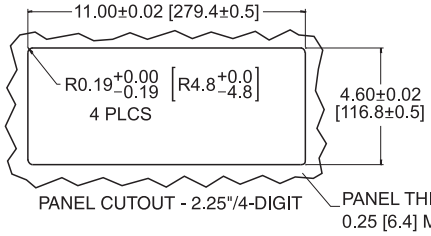


WIRE PASS-THROUGH AREAS.
MAX DIAMETER OF FITTINGS: 1.25 [31.8]
MAX PROTRUSION OF FITTINGS
INTO CASE: 0.50 [12.7]



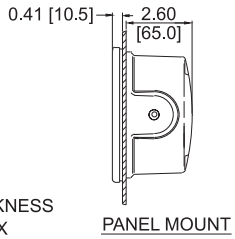


REAR VIEW - 2.25"/4-DIGIT

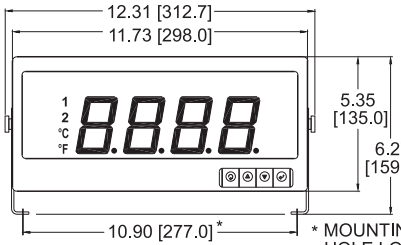


PANEL CUTOUT - 2.25"/4-DIGIT

PANEL THICKNESS
0.25 [6.4] MAX
0.03 [0.8] MIN

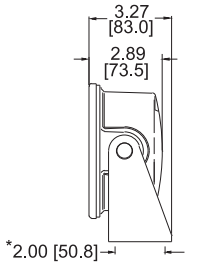


PANEL MOUNT

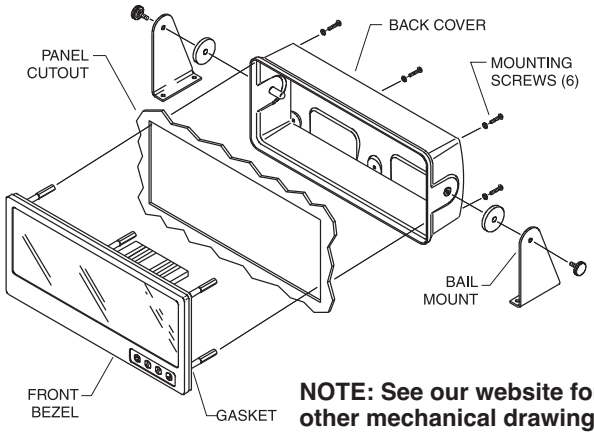


FRONT VIEW - 2.25"/4-DIGIT

* MOUNTING HOLE LOCATION



BRACKET MOUNT



NOTE: See our website for other mechanical drawings.

ORDERING MATRIX - OPTIONAL OUTPUTS			
	2 RELAYS	SERIAL OUT	ETHERNET
-UTP	X	X	X
-SP	X	X	X
-FP	X	X	
-ACC	X	X	
-ACV	X	X	
-EI			
-C2			

To Order *(Specify Model No.)*

Basic Model	Description *Insert 2 or 4 in (*) for LED height
iLD(*)4-UTP	4 Digit universal temperature/process, monitor
iLD(*)4-UTP-33	4 Digit universal temp/process, controller with 2 relays: Form “C” SPDT 3A @ 120/240 Vac
iLD(*)4-SP	4 Digit strain gage/process, monitor
iLD(*)4-SP-33	4 Digit strain gage/process, controller with 2 relays: Form “C” SPDT 3A @ 120/240 Vac
iLD(*)4-FP	4 Digit frequency/pulse totalize input, RS-485 output
iLD(*)6-FP	6 Digit frequency/pulse totalize input, RS-485 output
iLD(*)4-ACC	4 Digit AC current input, RS-485 output
iLD(*)4-ACV	4 Digit AC voltage input, RS-485 output
iLD(*)4-C2	4 Digit Remote display with ethernet, RS-232, RS-485/422 input
iLD(*)6-C2	6 Digit Remote display with ethernet, RS-232, RS-485/422 input
iLD(*)4-EI	4 Digit Remote display with ethernet input
iLD(*)6-EI	6 Digit Remote display with ethernet input
Network Options for UTP and SP Instruments (one option max.)	
-C24	Output: Isolated RS-232 and RS-485/422 with baud rate from 300 to 19.2 K
-C4EI	Output: Ethernet with embedded web server + RS-485/422 hub for up to 31 devices
,FS	Factory scaling (**Example: iLD24-SP,FS** for input 4-20 mA = 0-99.99)
Network Options for FP and AC Instruments (one option max.)	
-C2A	RS-232 + Isolated analog output (replaces standard RS-485)
-EI	Ethernet, RS-232, RS-485/422 output
,FS	Factory scaling (**Example: iLD24-ACV,FS** for 0-650 VAC = 0-1000) provide all signal parameters

Software (Requires Network Option)	
OPC-SERVER LICENSE	OPC server/driver software License

Ordering Example: ***iLD24-UTP*** *is a Large 2.25" 4 Digit display, Universal Temperature/Process, Monitor*
Contact sales for custom Control or Alarm Outputs.