

£399
DP41-B



Patented

**Universal Inputs:
DC Voltage/Current, T/C, RTD,
and Strain**

- ✓ Accuracy: ±0.005% rdg
- ✓ 6-Digit Colour Changing LED Display
- ✓ Up to 166 Readings per Second
- ✓ 10-Point Linearisation
- ✓ 4 Isolated Open Collector Output
- ✓ Isolated Analogue Output Optional
- ✓ Four Relays Optional
- ✓ Optional Ethernet or RS232/RS485
- ✓ In-Line Calibration
- ✓ IP66 (NEMA 4) Front Bezel

NEWPORT goes **BEYOND INFINITY**® with the all new **DP41-B**. The NEWPORT INFINITY set the world standard for accuracy, performance, and quality in digital panel meters. The all new **DP41-B** raises the bar even higher with accuracy of up to ±0.005% of reading, and up to 166 readings per second.

The versatile NEWPORT **DP41-B** handles a broad spectrum of DC voltage and current ranges, nine thermocouple types, multiple RTDs, and signals from strain gauge transducers such as load cells and pressure transducers, as well as potentiometric inputs. It also features 10-point linearisation of input signals, programmable by the user for custom applications.

Built-in excitation to power virtually any sensor or transmitter, and four isolated open collector outputs for control or alarms, are standard. The big, bright, 6-digit patented LED display can be programmed to change colour between red, amber, and green at any setpoint. The digits are 58% bigger than the typical display. Output options include isolated programmable analogue voltage or current and four relays.

With the serial communications option, the user can select from a pushbutton menu between RS232, RS485, and either a straightforward ASCII protocol or MODBUS. With NEWPORT'S award-winning Ethernet/Internet option, the new **DP41-B** connects directly to an Ethernet network and transmits data in standard TCP/IP protocol. It is possible to monitor and control a process through a Web browser from anywhere on the Internet.

change colour

at any set point*



U.S. Patent #6,243,021

Totally Programmable Colour Displays

The new **BEYOND INFINITY**® DP41-B Meter has totally programmable colour displays.

The display can be programmed to change colour at any setpoint or alarm point.



RED
AMBER
GREEN



Embedded Internet and Serial Communications

Featuring optional "Embedded Internet" (specify EI option), the **DP41-B** connects directly to an Ethernet network and transmits data in standard TCP/IP packets, or even serves Web pages over a LAN or the Internet. The **DP41-B** is also available with serial communications. With the C24 option, the user can select from the pushbutton menu between RS232, RS422, and RS485, with straightforward ASCII commands or MODBUS.

Programmable Colour Display

The NEWPORT **DP41-B** has totally programmable colour displays. The display can be programmed to change colour at any setpoint or alarm point.

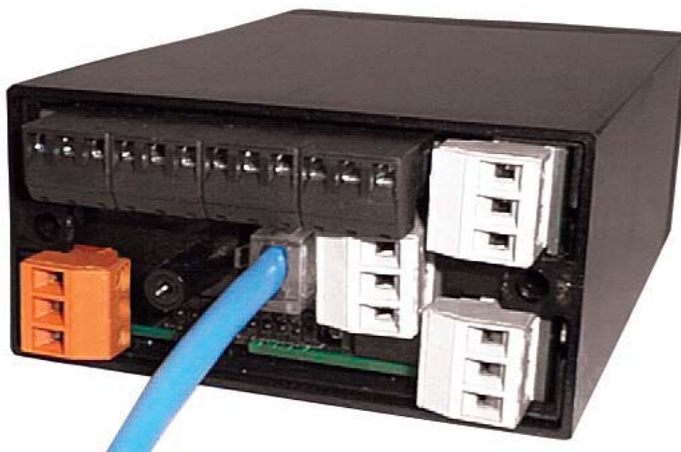
For example, the instrument can be programmed to display the process value in GREEN during warm-up, switching to AMBER to signal the normal operating range, and to RED to signal an alarm condition. The changes in colour are quickly seen from a distance, and machine operators can intuitively react to changing conditions. The colours can be programmed to change back when the value drops back below the alarm point or to "latch" on until reset by the operator.

The instrument can also be programmed to display only one unchanging colour: 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.

DP41-B LED displays are considerably bigger, brighter (and therefore more visible) than displays for conventional instruments with the same DIN size.

QUALITY and TECHNOLOGY

The innovative NEWPORT® **DP41-B** meters feature an extended five (5) year warranty at no extra charge. The **DP41-B** packs a wealth of power and features using COB (chip-on-board) and SMT (surface mount technology) assembly techniques and automation. Every **DP41-B** instrument is thoroughly calibrated and tested at several stages throughout production. The **DP41-B** offers the highest accuracy for industrial instrumentation at 0.005% of reading. The analogue-to-digital conversion uses patented algorithms and smart filtering.



Universal Inputs

The innovative **DP41-B** offers the broadest selection of signal inputs available on one industrial instrument. The choices are easily selected from the menu with front panel pushbuttons, or by serial or Ethernet communications.

9 Thermocouple Types

The **DP41-B** handles nine (9) thermocouple types: K, J, T, E, R, S, B, N, and J DIN. The patented thermocouple linearisation algorithms employed in the **DP41-B** produce the highest standard of accuracy.

Most Accurate RTD Measurements

The **DP41-B** works with the widest selection of RTDs and produces the most accurate RTD measurements. It handles 100 Ω Pt both 0.00385 and 0.00392 curves, any 6 to 6000 Ω NIST or DIN Pt, and any linear RTD (10 Ω Cu, etc.). A choice of 2-, 3-, and 4-wire RTD connections ensures the absolute highest degree of accuracy.

Process Voltage and Current

The NEWPORT® **DP41-B** measures process voltage: 0 to 100 mV, 0 to 1 V, 0 to 10 V, 0 to 100 V (unipolar), ± 50 mV, ± 500 mV, ± 5 V, ± 50 V (bipolar) ranges, and process current: 0 to 20 mA or

4 to 20 mA.

Strain Gauge

The **DP41-B** measures inputs from load cells, pressure transducers, and most strain gauge sensors. Input can be linearised over 10 pts on ranges. 0 to 100 mV, 0 to 1 V, 0 to 10 V, 0 to 100 V (unipolar), ± 50 mV, ± 500 mV, ± 5 V, ± 50 V (bipolar), in addition to 0 to 20mA. Excitation for transducers of 10 Volt and 24 Volt is standard.

Analogue Output

The optional analogue output can be programmed within a range of 0 to 10 Vdc or 0 to 20 mA. It is selectable as a calibrated retransmission of the process value.

Built-In Excitation Standard

The **DP41-B** comes standard with built-in excitation. You can capture and display both peak and valley levels of your input signals, an important feature for such applications as destructive and pressure testing. Five different kinds of excitation are available for sensors such as transmitters (24 Vdc @ 25 mA), strain gauges (1.5 to 10 Vdc @ up to 60 mA max.), and slide-wire potentiometers (1.25 Vdc @ 30 mA).

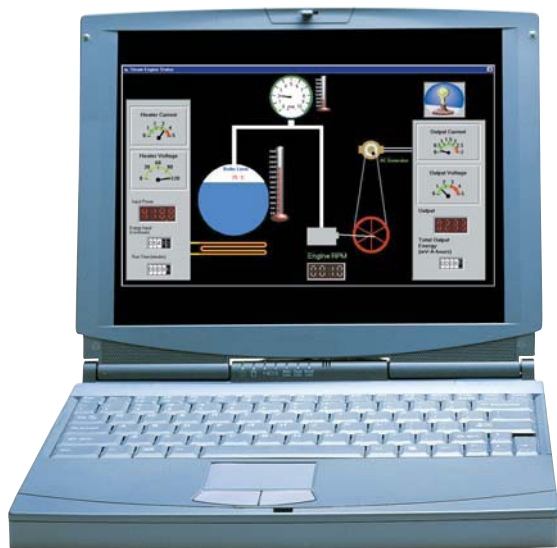
The **DP41-B** displays feature unique 9-segment LED characters, which greatly improves alphanumeric representations. The 7-segment LED characters found on most instruments are adequate for presenting numbers, but not letters. Words are easier to read with the unique 9-segment LED characters on the **DP41-B**, which makes operating and programming simpler and easier.

**DP41-B 9-Segment LED Digits
(Bigger 17.3 mm Height)**

**Typical 7-Segment LED Digits
(Smaller 13.7 mm Height)**



1/8 DIN Ultra High Performance Meter DP41-B



Free Software

Free software is provided for easy setup, configuration, and data acquisition with the NEWPORT® DP41-B.

Free ActiveX Controls

Free ActiveX Controls are provided for the DP41-B, making it easy to integrate the DP41-B 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.

SPECIFICATIONS

Accuracy: ±0.005% rdg

Span Temperature Coefficient: ±20 ppm

Power: 90 to 240 Vac

Normal Mode Rejection: 60 dB

Common Mode Rejection: 120 dB

Common Mode Voltage: 1500 V peak per Hv test

Resolution: 24-bit

Reading Rate: 7 to 166 sample/sec.

Display: Red/amber/green 6-digit, 9-segment colour changing, 17.3 mm; H x 10.2 mm W; 4 alarm indicators; °C, °F, & °K

Panel Cutout: 45 H x 92 mm W; 1/8 DIN

Depth: 156 mm behind panel--

Setpoint Outputs: Four, isolated open collector; rated 150 mA at 1 V sink, 30 V open

Four Relay Option: (2) 5 A & (2) 3 A relays Form-C, SPDT

Analogue Output: 0 to 5 V/1 to 5 V/0 to 10 V/0 to 20 mA/

4 to 20 mA, user selectable; 354 Vp isolation; 14-bit resolution; 0.1% accuracy, 6 msec step response

Ethernet: Standards Compliance IEEE 802.3 10Base-T Protocols: TCP/IP, ARP, HTTPGET

RS232/RS422/RS485/Telnet

Simulation/Tunneling/ MODBUS: Selectable from menu; both ASCII and MODBUS

Input Type

Sensor Type	Range	Accuracy*
J Iron Constantan	-210 to 760°C -346 to 1400°F 63.2 to 1673.2 K	0.2°C 0.3°F 0.2 K
K** Chromel Alumel	-250 to 1250°C -418 to 2282°F 23 to 977.2 K	0.2°C 0.3°F 0.2 K
T Copper Constantan	-270 to 400°C -454 to 752°F 3.2 to 673.2 K	0.2°C 0.3°F 0.2 K
E Chromel Constantan	-270 to 1000°C -454 to 1832°F 3.2 to 1273.2 K	0.2°C 0.3°F 0.2 K
R Pt/13%Rh Platinum	-50 to 1768°C -58 to 3214°F 223.2 to 2041.2K	0.2°C 0.3°F 0.2 K
S Pt/10%Rh Platinum	-50 to 1768°C -58 to 3214°F 223.2 to 2041.2K	0.2°C 0.3°F 0.2 K
B Pt/30%Rh Pt/6%Rh	+100 to 1820°C +212 to 3300°F 373.2 to 2093.2K	0.3°C 0.5°F 0.3 K
N OMEGALLOY* Nicrosil-Nisil	-270 to 1300°C -454 to 2372°F 3.2 to 1573.2K	0.2°C 0.3°F 0.2 K
J DIN Iron Constantan	-200 to 900°C -328 to 1652°F 73.2 to 1173.2K	0.6°C 1.0°F 0.6 K

Thermocouple inputs require "-TC" option

Sensor Type	Range	Accuracy*
RTD 1 10 ohm Copper	-200 to 200°C -328 to 392°F 73.2 to 473.2 K	1.0°C 2.0°F 1.0 K
RTD 2 100 ohm Pt 0.00385	-200 to 900°C -328 to 1652°F 73.2 to 1173.2 K	0.2°C 0.3°F 0.2 K
RTD 3 100 ohm Pt 0.00392	-200 to 850°C -328 to 1562°F 73.2 to 1123.2 K	0.2°C 0.3°F 0.2 K

* Includes (All ±) Maximum Linearization Error

** **For Type K:** Temperatures over 1250°C, accuracy will be 0.4°C/0.8°F/0.4°K

Voltage Input Ranges: 0 to 100 mV, 0 to 1 V, 0 to 10 V, 0 to 100 V, ±50 mV, ±500 mV, ±5 V, ±50 V

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

Polarity: Unipolar/bipolar, programmable

Thermocouple Input Types: J, K, T, E, R, S, B, N, J DIN

RTD Input: Any 6 Ω to 6 kΩ NIST or DIN platinum and any linear RTD

RTD Connection: 2-, 3- or 4-wire

Sensor Excitation: 10 V at 30 mA; 24 V at 25 mA

To Order (*Specify Model No.)

Model	Description	Price
DP41-B	Universal Digital Meter	£399
-DC	10 - 32Vdc Power Option	33.50
-4R	Four Form-C SPDT Relay Output Board (REL4-B)	67
-A	Isolated 14-Bit Analog Output Board (AN03-B)	67
-C24**	Serial Communications RS232 + RS485 + MODBUS* (RS24)	67
-EI	Ethernet/Internet* (EI-B)	67
-TC	Thermocouple Temperature Compensation Connector Kit (TC-B)	17

Ordering Example: DP41-B-4R-A-TC, Universal Digital Meter with optional relays, analogue output, and Thermocouple Cold Junction Card, £550.

* Mutually exclusive; can order one Communication/Ethernet Option per unit.

All output options are on printed circuit boards that can be installed at the factory or in the field.

** Factory scaling available at no additional charge if ordered with serial communications options.



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