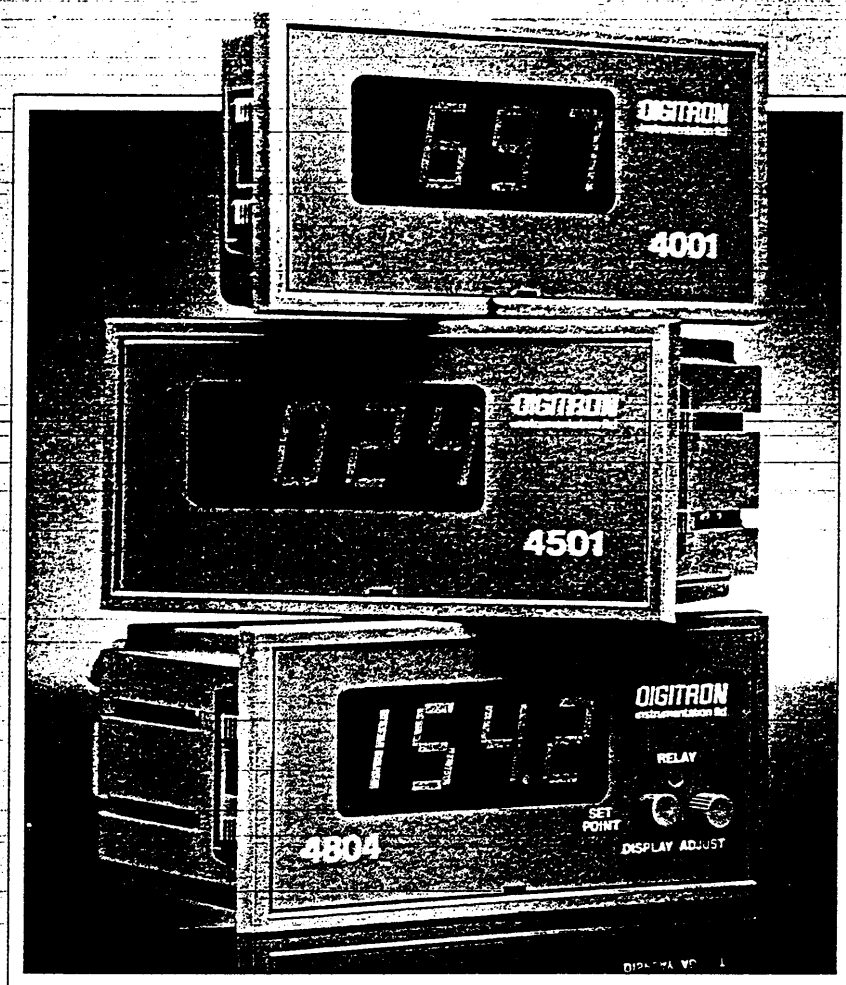


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993



4000 SERIES

"SLIMLINE" PANEL

THERMOMETERS

DIGITRON
Instrumentation

4000 SERIES "SLIMLINE" PANEL THERMO

Consider these benefits ...

- ☐ **Rugged low cost units - high accuracy, high reliability.**
- ☐ **Standard 96 × 48mm DIN case with minimal behind-the-panel space requirements.**
- ☐ **Large LED display.**
- ☐ **A wide choice of thermocouple and platinum resistance inputs for temperature ranges between -100°C to 1700°C.**
- ☐ **Resolution of 0.1 or 1 degree celsius.**
- ☐ **Controller option - front panel adjustable.**
- ☐ **Ease of maintenance via front access.**

Introducing the New DIGITRON 4000 Series - *a new standard of excellence in panel thermometry.*

Our Reputation Counts - Digitron has combined over 10 years of design and manufacturing experience with the latest state of the art technology to produce this complete range of indicators ideally suited for the panel builder and OEM user.

High Accuracy, Resolution and Repeatability - A comprehensive range of indicators and controllers for use with K, J, T, S, R thermocouples or Pt100 sensors with a unit resolution of 0.1 or 1-degree celsius. Temperature ranges from -100°C to 1700°C are catered for with an accuracy of ±0.3%, or better.

Tops for Quality - All instruments are subjected to detailed inspection and a rigorous testing programme before being calibrated on equipment traceable to National Standards.

Available Now at Low Cost - High performance 3½ digital indicators and controllers at highly competitive prices complete with a 12 month warranty on parts and labour.

Ease of Installation and Maintenance - Whilst retaining the standard 96 × 48mm DIN front panel and large LED display, instrument depth has been reduced to just 20mm for the DC and 63mm for the AC options. Should the need for calibration or servicing occur, the downtime has been minimised by providing front access to the PCB via the removable front window and the provision of rear plug-in terminals.

Great Versatility and Style - Digitron 4000 Series complete with a wide range of compatible probes and thermocouples are designed to satisfy even the most demanding applications in such industrial categories as:-

- ☐ **Process Industries (Food and Chemical).**
 - ☐ **Engineering and Manufacturing Industries.**
 - ☐ **Heating and Ventilation.**
 - ☐ **Plastics.**
 - ☐ **Public Utilities ...**
- and many other fields.**

The New 4000 Series -
Competitive - Convenient.
Why settle for less?

SPECIFICATION

Sensor Type	Range	Accuracy (15 to 25°C ambient)
Thermocouple:		
Thermocouple K	-50 to 700°C	±0.5%±1 digit
Thermocouple J	-50 to 625°C	±0.5%±1 digit
Thermocouple T	-50 to 350°C	±0.5%±1 digit
Thermocouple S	700 to 1700°C	±0.5%±1 digit
Thermocouple R	700 to 1700°C	±0.5%±1 digit
Platinum Resistance:		
Pt100 QA	-99.9 to 199.9°C	±0.2%±0.2°C
Pt100 QB	-100 to 650°C	±0.2%±1°C

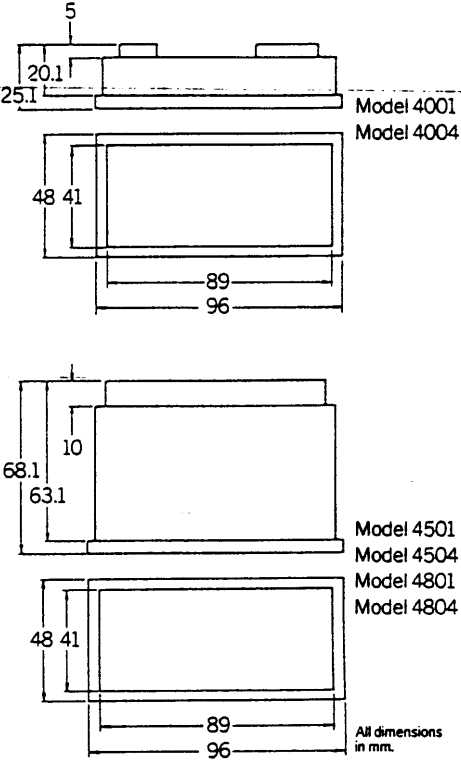
Model Number:	Model 4001	Model 4004	Model 4501
Sensor Type for ranges as detailed above	Thermocouple	Platinum Resistance	Thermocouple
Resolution	1°C	0.1 or 1°C	1°C
Ambient Operating Temperature	0-45°C	0-45°C	0-45°C
Cold Junction Compensation	Automatic by precision thermistor	—	Automatic by precision
Sensor Operating Mode	—	4-wire constant voltage sensing	—
Display	11.2mm LED	11.2mm LED	11.2mm LED
Power Supply	6-8V 120mA	6-8V 120mA	220V 50Hz* AC 10VA
Rear Connections	Plug-in rear terminal blocks	Plug-in rear terminal blocks	Plug-in rear terminal b
Output Device			
Overall Dimensions	96×48×25.1mm	96×48×25.1mm	96×48×68.1mm
Panel Cutout	92×45mm + 1.0mm-0.0mm	92×45mm + 1.0mm-0.0mm	92×45mm + 1.0mm

PLEASE NOTE: * 110V unit available as special option. All quoted accuracies relate to instruments only and do not account for sensor errors.
ORDERING INFORMATION: Please state 1.) Model Number e.g. 4004. 2.) Sensor Type e.g. K, Pt100 QA. 3.) Resolution e.g. 0.1°C or 1°C (for Pt100 Q Models on

METERS



DIMENSIONS



DIGITRON
Instrumentation

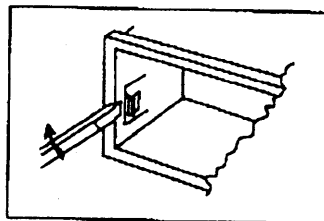
Model 4504	Model 4801	Model 4804
Platinum Resistance	Thermocouple	Platinum Resistance
0.1 or 1°C	1°C	0.1 or 1°C
0-45°C	0-45°C	0-45°C
—	Automatic by precision thermistor	—
4-wire constant voltage sensing	—	4-wire constant voltage sensing
11.2mm LED	11.2mm LED	11.2mm LED
220V 50Hz* AC 10VA	220V 50Hz* AC 10VA	220V 50Hz* AC 10VA
Plug-in rear terminal blocks	Plug-in rear terminal blocks	Plug-in rear terminal blocks
	Heavy duty relay Silver Cadmium Oxide. Rating 250 Volts AC, 5 amps resistive load. 30 Volts/DC 5 amps resistive load.	Heavy duty relay Silver Cadmium Oxide. Rating 250 Volts AC, 5 amps resistive load. 30 Volts/DC 5 amps resistive load.
96×48×68.1mm	96×48×68.1mm	96×48×68.1mm
92×45mm + 1.0mm-0.0mm	92×45mm + 1.0mm-0.0mm	92×45mm + 1.0mm-0.0mm

107-991

HYSTERESIS**(MODELS 4801, 4804)**

The hysteresis is factory preset to ± 2 counts. It should only be adjusted by qualified and trained staff, and using a small insulated screwdriver as indicated in figure 1.

It should not be carried out while the instrument is powered up. Hysteresis may be adjusted by ± 1 count up to ± 10 counts.

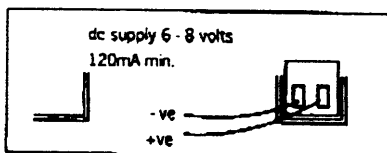
**REMOVAL OF PCB FROM CASE**

Follow instructions for removal. Tap instrument (face down) into the palm of the hand. If it does not slide out it can be pushed out by gentle pressure from the rear on the terminal pins. Do not use a screwdriver to prise out the PCB.

D.C. POWER**(MODELS 4001, 4004)**

These instruments are designed to operate from a d.c. supply in the range 6 to 8 volts. The supply must be able to deliver at least 120mA.

Connections to the terminal block are made as shown below:

**PANEL FITTING**

The instrument is designed to fit in a panel cut out measuring 92 x 45mm. The panel should be between 1.5 and 3.5mm thick.

The instrument is fitted by sliding into the aperture and pressing firmly home into position.

REMOVAL

Before the instrument can be removed from the panel, the connectors must be unplugged from the rear of the panel.

1. Ensure that the power is disconnected.
2. Remove the front window by gently levering with a small screwdriver on the slot on the lower edge of the window.
3. Use a screwdriver to release the clamping arms by slightly bending back the lugs as shown below, whilst gently pulling the instrument forward.

WIRING

All connections should be made using the supplied terminal plugs only, and these slide on to the appropriate terminal pins. Detailed connections are given on the rear of the instrument and these drawings should be used in conjunction with the following instructions.

Note: When refitting the plugs, ensure that this is done correctly.

ALARMS**(MODELS 4801, 4804)**

These models have a relay fitted and the alarm point can be adjusted from the front panel.

SET POINT ADJUSTMENT

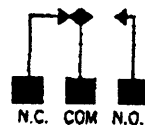
Hold in the set point button and adjust the set point potentiometer for the required number of counts as indicated by the display.

RELAY CONNECTIONS

These instruments have a control relay with a rating of 5A at 250V a.c., and 30V d.c. for resistive loads.

Connection is shown on the rear label and should be made using the supplied terminal block.

These ratings should not be exceeded and an external contactor should be used for high power or 3 phase requirements.



When relay is not energised:

N.C. = Normally Closed

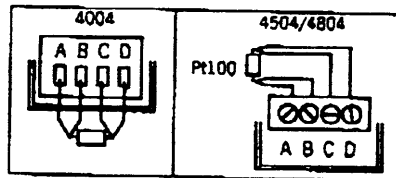
COM = Common

N.O. = Normally Open

NB: The rear cover should always be fitted.

PLATINUM RESISTANCE SENSORS**(MODELS 4004, 4504, 4804)**

The sensor should be connected to the instrument using a four core copper cable as shown below:

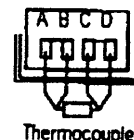


Standard Pt100 sensor identification colours:

Yellow	A	Red	C
Black	B	Blue	D

USING 3 WIRE SENSORS

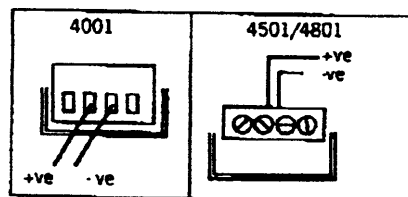
These should be connected as per the 2 wire sensors, but with terminal A=B and C+D linked.



Thermocouple

THERMOCOUPLES**(MODELS 4001, 4501, 4801)**

Thermocouples should, if possible, be wired directly into the terminal block taking care to observe the correct polarity.



If the thermocouple has to be extended, this should only be carried out by using extension or compensating cable of a type appropriate to the thermocouple being used.

NOTE: The accuracy may be effected by cable lengths. This is also affected by the type of cable.

4000 SERIES

Digitron

OPERATING INSTRUCTIONS

SAFETY STATEMENT

The design of this instrument has been checked to EN61010 for Class II use.

This operating instruction contains information and warnings that must be observed to keep the instrument in a safe condition. The instrument should not be switched on if it is damaged and it should not be used under wet conditions.

For the correct and safe use of this instrument it is essential that both operating and service personnel follow generally accepted safety procedures in addition to the safety precautions specified.

Whenever it is likely that a safety protection has been impaired the instrument must be made inoperative and be secured against any unintended operation. Qualified maintenance or repair personnel should be informed.

Safety protection is likely to be impaired, if for example, the instrument shows visible damage or fails to operate normally.

To clean the instrument, disconnect all power sources and then wipe the surface lightly with a clean, soft cloth dampened with water.

The instrument should preferably be operated in a clean, dry environment with an ambient temperature of between 0°C and +50°C.

WARNING

Before removing the covers for installation, maintenance, or repair, the mains supply must be isolated.

This instrument is specified for use in a Pollution Category II Environment which is normally non-conductive with temporary light condensation. This instrument must not be used in more hostile, dusty or wet conditions.

Do not use this instrument in a flammable or explosive atmosphere.

WARRANTY

This instrument has been carefully assembled and tested, and is warranted against faulty workmanship and materials for 12 months from the date of purchase. During the warranty period any defective instrument will be repaired or replaced at our discretion. This warranty does not cover damage or failure resulting from misuse or accident. Modification, adjustment or any alteration to the internal arrangement of the instrument apart from those covered in this operating instruction shall absolve us from any liability in respect of the instrument. Any instrument to be repaired should be forwarded to us carriage paid and at the owner's risk. A brief description of the fault should be included.

Digitron Instrumentation Limited,
Mead Lane, Hertford, Herts. SG13 7AW, England.
Phone: +44 (0)1992 587441 Fax: +44 (0)1992 500028
E-mail 101511.2237@compuserve.com

A SIFAM Company

XG.0430

SYMBOLS AND TERMS



Where caution is required. Refers the user to the operator manual for further information.



This symbol warns the user that high voltages are present close to this symbol.

WARNING

These statements identify conditions or practices that could be dangerous or fatal to personnel.



Alternating current.



Equipment protected throughout by reinforced insulation.

POWER AND FREQUENCY REQUIREMENTS

This instrument operates from line voltages to Installation Category II, local level supplies distributed within the building.

Supply Voltage: 196-253V a.c. 50/60Hz
96-126V a.c. 50/60Hz

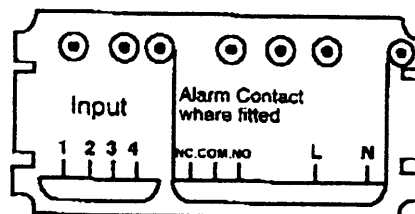
Power Consumption: 230V a.c. 25mA
115V a.c. 45mA

Fuse Rating: 230V a.c. 50mA (T) UL/CSA
115V a.c. 50mA (T) UL/CSA

SELECTING AND INSTALLING POWER SUPPLY (MODELS 4501, 4504, 4801, 4804)

Remove the PCB from its housing, locate the supply voltage selector as shown in figure 1, then configure to the desired voltage.

The supply should be wired to the terminal connector and fitted to the appropriate position as indicated on the back of unit.



The cable should be clamped into position using the clamping arms provided. It is imperative that all covers are replaced before the power supply is switched on.

WARNING

This instrument has different mains wiring details to instruments in the same series manufactured before January 1 1997. We strongly recommend close attention to the instruction manual supplied with this instrument.

The instrument is not fitted with a separate a.c. power supply on/off switch and will have a.c. voltages present whenever it is connected.

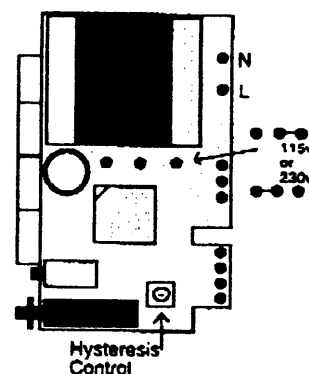


Figure 1