

16 CHANNEL TEMPERATURE SCANNER Model 6316



Features

- 16 Channel Microprocessor Based Temperature Scanner, linearised for PT100 & 3 T/Cs (J,K,R) with cold junction compensation.
- Manual/Auto Scanning selectable.
- Scan rate settable from front panel up to 99sec/channel.
- Sensor input selectable individually for each channel
- Individual offset setting for each channel
- Number of channels user selectable.
- Configuration locks at rear to lock the number of channels
- Non-volatile memory to save settings.
- Aesthetically designed front panel with membrane switches.

Specifications

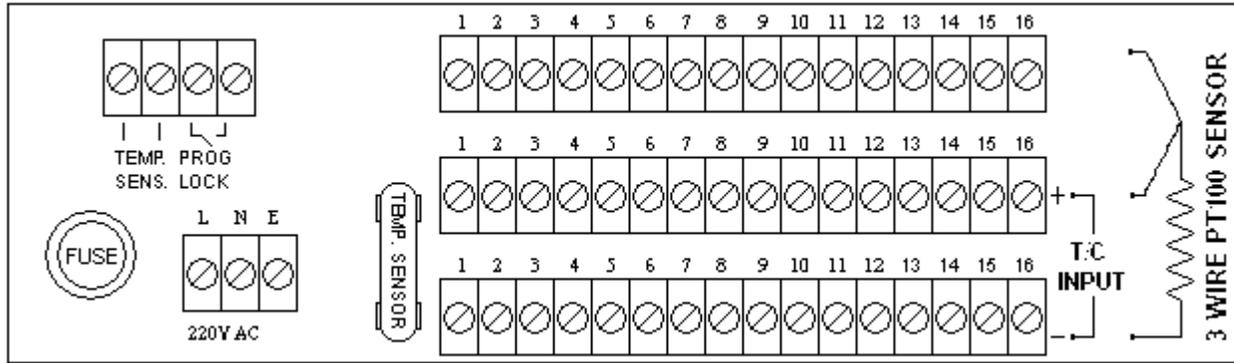
- Display : 4 Digit 0.56" 7 Segment Red LEDs for Temperature
2 Digit 0.56" 7 Segment Green LEDs for Channel Number
- Number of Channels: Maximum 16
- Sensor : J,K,R T/C or 3 wire PT-100 (common for all channels)
- Range : J T/C : -50°C to 750°C K T/C : -50°C to 1250°C
R T/C : 0 to 1700°C PT100: -100.0 to +600.0°C
- Resolution : 1°C for thermocouples and 0.1°C for PT100
- Accuracy : $\pm 0.1\%$ of F.S. ± 1 Digit
- Offset : Individually settable for each channel from -9.9 to +9.9
- Auto/Manual mode : Toggle between Auto/Manual modes with front panel indication of mode
- Display Rate : 1 to 99 seconds per channel in Auto Mode
- Memory : Non-volatile EEPROM for saving settings
- Configuration Lock : At rear terminals to lock number of channels
- Supply : 220V AC $\pm 15\%$ at 50/60Hz
- Ambient Temp. : Maximum 55°C
- Size (Front) : 96 x 192 mm
- Depth : 170 mm

Manufactured By:

COUNTRONICS

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REAR TERMINAL DIAGRAM



- Temperature Sense Terminals:** An external PT100 sensor is factory connected to these terminals. This allows sensing the room/ambient temperature for J/K/R thermocouples for cold junction compensation.
- Prog Lock Terminals:** When a connector/jumper is placed across these terminals, changes can be made to the number of channels being used. If the jumper is removed, these selections can only be viewed.
- L,N and E:** These terminals represent Line, Neutral and Earth terminals. 220V AC should be connected to L and N terminals. Supply earth should be connected to E terminal.
- Terminals marked 1-16:** These represent the channel numbers. Use the upper and the lower terminals for K-thermocouples. Ensure that the positive and the negative terminals of the thermocouple are connected correctly.

DIRECTIONS FOR USAGE

- Connect 220V AC mains on rear terminals marked as 'L' & 'N'. Ensure that the earth on terminal marked 'E' is connected to Mains Earth. This reduces the problems of electrical noise to the equipment increasing its safety and reliability.
- Ensure that the jumper on rear terminals 'Prog. Lock' is connected. This allows changes to be made to the number of channels used.
- When the temperature sensors are connected to the instrument, ensure that no intermediate channels are left unused. Such channels will be displayed as "Open".

- **Auto/Mode selection**

- Press  to toggle between Auto/Manual scanning modes.
- The mode is indicated by the corresponding LED.
- In Auto Mode, the channel displayed cannot be changed by Increment and Decrement switches. The channel automatically changes according to the set Scan Rate.

- **Channel selection in Manual Mode**

- In Manual mode, use Increment and Decrement switches to change channel. Here, the channel can only be changed by the user with no relation to the scanning rate.

CONFIGURATION SETTINGS

1. Setting Scan Rate for Auto Mode

- Press  Mode Switch. The Green display shows “Sr” while the Red display gives the current Scan Rate in seconds.
- Use Increment and Decrement switches to change the rate.
- The range of scan rate is 1-99 seconds
- When changes have been made, press the  Mode switch to save changes and go to next setting.

2. Offset setting for each channel

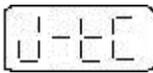
- After previous setting, the Green display blanks while the Red display indicates “Zero”.
- If the temperature displayed for any of the channel needs to be adjusted, an offset setting is provided which is individually settable for each channel.
- If any such positive or negative offsets are to be made, press the  ‘Auto/Manual’ switch. Now the left green display indicates ‘01’ while the right red display indicates the last set offset for Channel 01.
- Use the Increment and Decrement switches if changes need to be made. The range for this setting is +99 to -99 for J/K/R thermocouples and +9.9 to -9.9 for PT100.
- After changes have been made for this channel, press the  ‘Auto/Manual’ again. Now the channel number increment to ‘02’ and the corresponding offset is displayed.
- Repeat the above steps for all the channels in which offsets are to be added/subtracted.
- After changes have been made, press the  Model switch to save changes and go to next setting.

3. Setting Number of Channels required

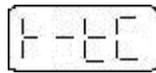
- After previous setting, the Green display changes to indicate “Ch” while the Red display indicates “1-XX” where “XX” indicates the number of channels being used. It can be set to a maximum of 16.
- Use the Increment and Decrement switches if changes need to be made.
- Intermediate channels cannot be skipped. So the selection has to be made for channels being used starting from Channel 1.
- This setting affects the Auto/Manual Mode scanning with the channel number rolling back to 1 after channel number reaches the number of channels being used. It also affects the logging, with the logging of only the selected channels being logged.
- After changes have been made, press the  Model switch to save changes and go to next setting.

4. Selecting sensor type

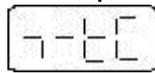
- After the previous setting, the Green display blanks while the Red display indicates “SENS”.
- If changes are to be made to the channel input settings, press the  ‘Auto/Manual’ switch. Now the left green display indicates ‘01’ while the right red display indicates the last set sensor selection for Channel 01.
- Use the Increment and Decrement switches if changes need to be made. The selection can be made between J/K/R thermocouples and PT100.



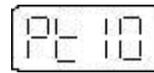
(J-T/C)



(K-T/C)



(R-T/C)



(PT-100)

- Use the Increment and Decrement switches to make changes to the sensor selection.
- After changes have been made for this channel, press the  ‘Auto/Manual’ again.
- Now channel increments to ‘02’ and the corresponding sensor selection is displayed.
- Repeat the above steps for all the channels
- The J/K/R thermocouples indicate the temperature with a 1°C resolution while the resolution for PT100 is 0.1°C.
- The ranges for the temperature sensors are as below
J T/C : -50°C to 750°C K T/C : -50°C to 1250°C
R T/C : 0 to 1700°C PT100: -100.0 to +600.0°C
- After changes have been made, press the Mode switch to save setting and go to next selection

• Configuration Lock

- After all settings have been modified as per requirement, remove the rear PROG LOCK in order to prevent tampering with the settings.
- Once PROG LOCK has been removed, the number of channels cannot be changed.
- After the number of channels has been selected, remove jumper on rear terminals marked as “PROG LOCK”. This prevents any changes in the number of channels selection.