

DIGITAL TACHOMETER MODEL CT203C



Features

- 6 digit bright 7 segment display for RPM
- Scale factor settable from 0.001 to 999.999
- RPM with resolution from 0.001 RPM to 1 RPM
- Suitable for use with proximity sensor. Can be modified for electromagnetic sensor.
- Set Limit for RPM with Relay output
- Rear Scale Factor lock to prevent tampering
- Aesthetically designed front panel with touch type membrane switches housed in ABS cabinet

Specifications

- Display : 6 digit 7 segment Red LED display
- Displayed RPM : RPM of shaft x Scale Factor
- Range : 50000 RPM for 1.00000 < Scale Factor < 9.99999
5000.0 RPM for 0.10000 < Scale Factor < 0.99999
500.00 RPM for 0.01000 < Scale Factor < 0.09999
50.000 RPM for 0.00001 < Scale Factor < 0.00999
- Sensor : Non-contact Proximity sensor to take 1pulse/rev from rotor
- Sensor Supply : +10V to drive proximity sensor
- Scale Factor : User settable from 0.001 to 999.999
- RPM resolution : 000.001 RPM for 0.00001 < Scale Factor < 0.00999
0000.10 RPM for 0.01000 < Scale Factor < 0.09999
00000.1 RPM for 0.10000 < Scale Factor < 0.99999
000001 RPM for 1.00000 < Scale Factor < 9.99999
- Alarm Limits : 2 separate alarm outputs with user settable limits
Relay ON when RPM > Set Point
- Relay Outputs : NO-P-NC contacts of 5 Amp/220V AC contact rating
- Scale Factor Lock : By rear jumper (open to lock) for preventing tampering with Scale Factor
- Accuracy : +/- 1 RPM in the range of 20 to 9999 RPM
- Size : 48mm x 96mm
- Depth : 180mm
- Supply : 220V AC \pm 15%

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REAR TERMINAL CONNECTIONS

- **L,N and E:** Line and Neutral terminals to connect 220V AC mains. Earth terminal is connected to mains Earth
- **+10V:** Proximity sensor supply
- **SIG IN (+ -):** Input signal from the Proximity Sensor. Connect shield to negative input of signal
- **Scale Factor Lock Terminals:** After settings have been made, remove jumper to prevent changes in Scale Factor from front panel
- **NO, P, NC :** Normally Open(NO), Pole (P) (Common) , Normally Closed (NC) contact terminals of relay.

DIRECTIONS FOR CONFIGURATION

- 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 'Scale Factor Lock' is connected. This allows changes to be made to the settings
- **Scale Factor Setting**
 - Press Mode switch . The display indicates SCALE and then the current scale factor which is a multiplying factor.
 - The range is 0.001 to 999.999
 - Displayed RPM = RPM of rotor x Scale Factor
 - Use Increment and Decrement switches to make changes. After changes are done, press the Mode switch. The rear Scale Factor Lock jumper needs to be open for changes to be made.
- **Limit Setting**
 - After the previous setting, the display indicates LIMIT. This represents the alarm limit setting for RPM.
 - Relay ON for RPM > Limit
 - Use Increment and Decrement switches to make changes. After changes have been made, press the Mode switch to save changes and go to normal display

NOTE: After changes have been made, ensure that the rear jumper on Scale Factor Lock terminals is removed to prevent any changes in the Scale Factor from the front panel.

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DIRECTIONS FOR USAGE

- Once the instrument has been configured as detailed above, it is ready to use.
- A cut-out of 92mm x 44mm is required for mounting the panel equipment. The instrument is pushed in from the front and held tightly in the panel by screwing the two side clamps from the rear.
- To connect the signal and supply wires for the digital encoder, refer to the pin-connections label on the top of the instrument or as detailed in the manual.
- Mount the Proximity sensor in the same plane as the rotor. Ensure that the front tip of the sensor is only about 1-2mm away from the keyway/teeth of the rotor. The Proximity sensor should also be mounted rigidly to prevent any shake during operation.
- The sensor wires should be well separated from the AC wiring and the wiring to the rear relay contact terminals. This helps to reduce noise to give a more stable reading of the RPM displayed.
- When the equipment is switched ON, the display indicates the current RPM. This usually takes about 1-2 seconds on power On.

Maintenance

- If the displays are blank and no LED is glowing
 - Remove the rear two screws and push the terminal plate to slide out the equipment.
 - Remove the cartridge fuse of 200mA and check for continuity. If open, then replace.
 - Check the continuity of the mains input. This is done by first removing the external AC wiring and measuring the resistance across L and N rear terminals. The resistance should be 1K Ω approximately. If open, then either is transformer primary open, or the series choke is open. Check the continuity.
 - If the mains continuity is present, then confirm the 5V DC at Pin 3 of 7805 regulator. This is easily visible as it is the regulator attached to the heat sink. Measure the voltage between Pins 2 and 3 of the regulator.
 - The main microcontroller is in a 40 Pin IC socket. Just press the IC down to ensure that it has not come out of the socket.

For any other faults, please consult the manufacturer and send the product for servicing.

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