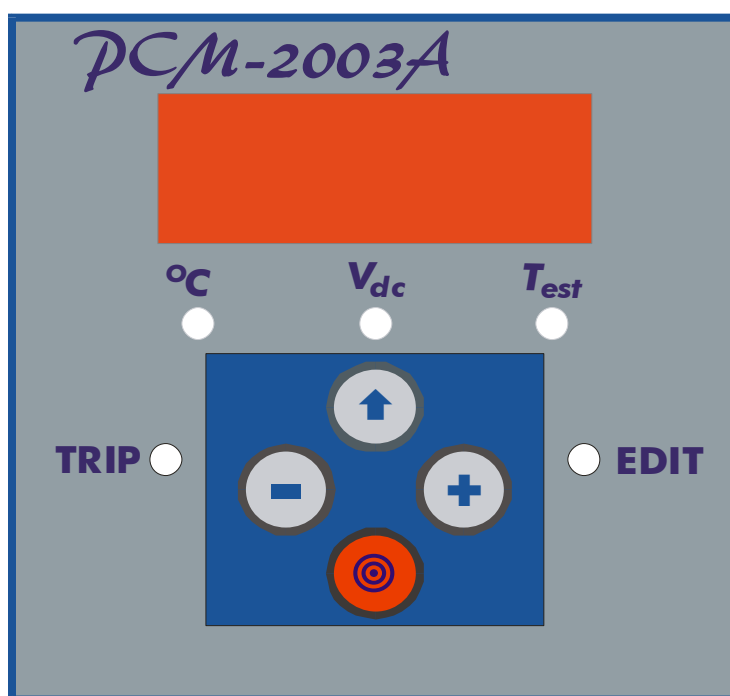




OPERATING INSTRUCTION: PCM-2003A



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PCM-2003A

Temperature and DC Voltage Meter with protection

1.1 Introduction

- The microcontroller based meter PCM2003A combines the measurement functions along with DC voltage and temperature protection.
- Housed in 96 x 96 flush mounted enclosure.

1.2 Salient features of the PCM2003A

1.2.1 Measurement:

- DC Voltage 18 – 70 VDC
- Temperature 0 °C TO 60 °C

1.2.2 Protection.

- DC under voltage
- Over temperature
- Air-Conditioner Control

1.3 Function:

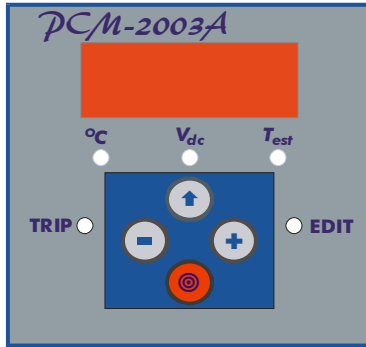
PCM2003A monitors the above mentioned parameters and provides protection for over-temperature and DC under voltage for 48/24V DC nominal supply input. The DC under voltage & over-temperature protection has two inbuilt programmable timer, one for pick-up / trip time setting the other for reset / release time. In case DC under voltage and/or over-temperature condition persist for more than the set trip delay, a contact(Trip Contact) operates and the cause of tripping is indicated on the front panel. The DC voltage supervision and over-temperature supervision have separate programmable hysteresis (pickup to dropout ratio) setting

The air conditioner can be switched ON/OFF at user-programmed temperature settings.

The meter has a test feature. On pressing the Test Switch, from the front panel or momentarily shorting pin 5 and pin 6 on back connector, Trip contact operates for the set time delay (User programmable) and the reverse counting of the remaining time is displayed. After expiry of the reverse counter the meter returns to the normal protection and supervision mode. Test mode can be prematurely terminated by again pressing the Test Key or momentarily shorting pin 5 and pin 6. There should be a minimum of five second delay between two successive press of Test key.

1.4 Display:

It has 4 Seven Segment bright LED display, to display the parameters and settings.. Beside the numeric display there are 10 LEDs for annunciations as shown below.



1.5 Programming mode:

Programming mode can be entered any time by simultaneously pressing **+** & **-** keys. While in program mode, the 4th digit (left most) shall have a digit indicating the parameter under programming. The following table details the various programmable parameters:

1.5.1 Setting table

Sl.No	Display on 4 th Digit	Parameter	Explanation of parameter	Factory setting	Setting Range
1	1	Over Temperature	Temperature healthy limit: Above this the temperature is treated as unhealthy	27°C	10 - 60°C
2	2	DC Under Voltage	Voltage healthy limit: Below this the DC voltage is treated as unhealthy	45 V	18 -60V
3	3	Over Temperature Hysterisis	In case the unit trips on over temperature, the unit shall reset when the temperature goes below the user defined over temperature limit minus this parameter.	3.0 °C	1.0 – 15.0 °C
4	4	DC Under Voltage Hysterisis	In case the unit trips on under voltage, the unit shall reset when the voltage goes above the user defined under voltage limit plus this parameter.	3.0 V	1.0 – 15.0 V
5	5	Trip Delay for DC Under Voltage or Over Temperature	Time for which the DC voltage has to be lower than DC under voltage setting or temperature has to be higher than the temperature over limit setting for generating trip command.	10 Sec	0-999Sec

6	6	Reset Delay for DC under voltage or Over Temperature	The tripped relay resets if the DC voltage is above the user defined limit plus its hysteresis and temperature is below the user defined limit minus its hysteresis for this time delay	10 Sec	0-999Sec
7	7	Test Time	On pressing the test button the trip contact is operated and remains operated till the expiry of test time. After that the unit returns to its normal functioning.	300 Sec	10-999Sec
8	8	Air Conditioner's Over temperature Setting	This setting defines the Room Temperature above which the Air Conditioner shall be switched ON.	27°C	10 - 60°C
9	9	Air Conditioner's Under temperature Setting	This setting defines the Room Temperature below which the Air Conditioner shall be switched OFF.	22°C	10 - 60°C

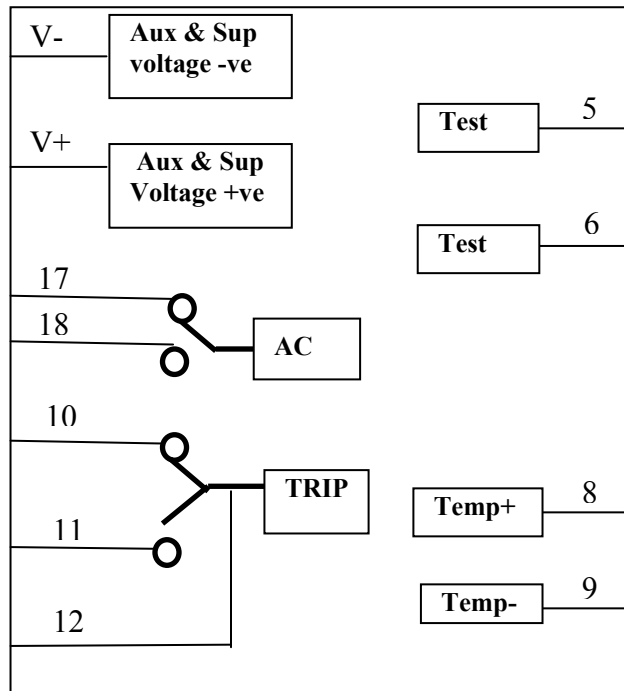
1.6 Switches Description:

S.No.	Switch Symbol	Switch Function	Description
1	↑	Next	Normal operation mode: In this mode, next is used to select the measured parameters. The corresponding LED shall light up to indicate the parameter that is displayed. Programming Mode: Next key is used to select the next parameter to be programmed.
2	+	Increment	This key is only active during programming mode and is used to increment the value of the parameter under programming.
3	-	Decrement	This key is only active during programming mode and is used to decrement the value of the parameter under programming.
4	⊙	Test	On pressing the Test key the meter goes to test mode. Test mode can be externally activated by shorting PIN5 and 6 of terminal block
5	+ & -	Programming Mode Entry	If both the keys are pressed simultaneously the unit will enter in programming mode.

1.7 Specifications

Temperature	0-60 C
Measurement Accuracy	1°C +1%
Auxiliary & Supervision Voltage	
Voltage Range	18V-72V
With Stand	72 VDC
Measurement Accuracy	1%
Surge 1.2/50Usec	2.5KV
Out Put Contact	1 Change over
Contact Rating	230V / 6A
Cut out Dimensions	90mm X 90mm
Depth	120mm

1.8 Connection Diagram



It is our endeavour to constantly upgrade our products, hence specifications are subject to change without any notice.