

<b>Part No</b>	RM-ECd and CN1100		
<b>Description</b>	0-10V/PWM fan speed Controller with Tacho Display		
<b>Issue</b>	<b>Date</b>	<b>Bug no</b>	<b>Comments</b>
1	07/05/2014		1 <sup>st</sup> Issue by Louis Abraka
2	03/02/2015	Bug 1770	Issue 2 – explained the CN1100
3			

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# Operating and Maintenance Instructions **ebmpapst**

## Summary

The control board can be used to generate 0-10V (control voltage - PWM) for multiple fans.

It displays the control voltage value on a legible LCD display.

Depending on the DIP switch settings, the speed of the connected fan can be measured and displayed on the LCD screens instead.

## Specification

Product	RM-ECd	CN1100
Supply Voltage	10V + 10% DC	10V + 10% DC
Supply Current	Up to 1 mA	Up to 1 mA
Inputs	Open Collector fan Tachometer (1)	Open Collector fan Tachometer (1)
Output	0-10V fan speed control signal	0-10V fan speed control signal
Operating Temperature	-20°C to +60°C	-20°C to +60°C
Enclosure	94x94x55mm, IP54 Rating	Unboxed version see Mechanical outline below

## Installation

The RM-ECd is supplied in a plastic box enclosure which has a clear lid.

Four breakout holes are available on the bottom of the plastic box for mounting.

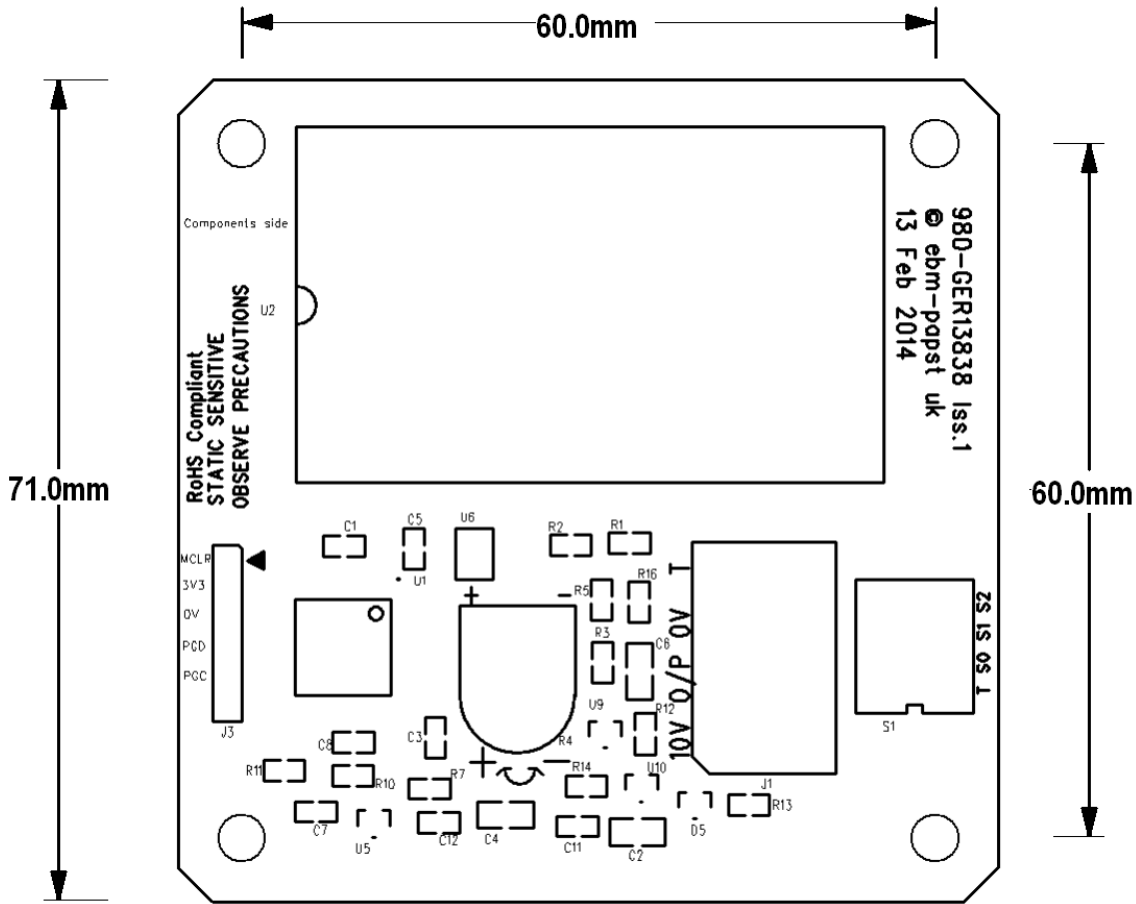
Four fixing holes are also available on the controller board for fixing onto the enclosure.

A screw terminal block J1 is provided on the board for connecting signal wires.

See the mechanical out line below for the connections.

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## Mechanical Outline



## Connection Details

1. 10V DC Power Supply
2. O/P => 0 -10V Control Signal
3. 0V
4. T => Tacho Signal

## Operation

The board is designed to generate a control voltage depending on the potentiometer setting. This can be adjusted by turning the spindle clockwise for a higher duty cycle PWM signal and vice versa. The range of the PWM is 0-100% duty cycle which is equivalent to 0-10v. The potentiometer (R4) and spindle are located as seen in mechanical outline. A DIP Switch ('T') on the board enables the user to toggle between control voltage display and tacho count display. For control voltage display, set the DIP Switch 'T' to **ON**. For tacho count display, set the same DIP switch to **OFF**. Only one fan tacho can be monitored or its reading displayed at any one time. To set the number of pulses per revolution, use DIP switch S0 and S1. See table below for the various configuration. Set unused DIP switch S2 to **OFF** before powering the controller to prevent it entering TEST MODE.

S0	S1	Pulses per revolution
OFF	OFF	1
OFF	ON	2
ON	OFF	3
ON	ON	4

## ESD

Many modern electronic components are susceptible to damage from Electro Static Discharge (Static Electricity). PCB's which are Static Sensitive should be stored and transported in anti-static packaging until they are required to be installed. The board must be mounted in an enclosure or cover to prevent access.

## Safety

- The controller is only suitable for a low voltage (10V DC) supply
- Electrical installations should only be carried out by qualified personnel
- This appliance is intended to be enclosed in an enclosure which can be accessed by the user during commissioning.

## Transport and Storage

PCBs should be transported in anti static build-up bag or static dissipative bags.

Store in a dry environment

Storage temperature: -30°C to +60°C.

## Maintenance and Servicing

There are no user serviceable parts.

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Part No - CN1100 and RMEC-d

0205

Certificate No - CN1100 and RMEC-d CE

CE DECLARATION OF CONFORMITY		
<b>Declaration</b>		
We, ebm-papst UK Ltd, Chelmsford Business Park, Chelmsford, Essex CM2 5EZ certify that the product(s) listed are in conformity with;		
Electromagnetic Compatibility Directive 2004/108/EC		
	Declaration Approved	Technical File Compiled
Name	G. M. Lockwood	Louis Abraka
Position	Technical Director	Electronic Design Engineer
Signature		
Date of Declaration	07-May-14	07-May-2014
Issue / Bug No	Issue 1	Bug No 1643
Part number:	CN1100 and RMEC-d	
Description:	0-10V/PWM Fan speed Control with Tachometer display	
<p>The product(s) have been assessed by the application of the following Standards;</p> <p>BS EN 61000-4-2 - Electromagnetic compatibility (EMC). Testing and measurement techniques. Electrostatic discharge immunity test. Contact Discharge through adjacent objects.</p> <p>BS EN 61000-4-3 - Electromagnetic compatibility (EMC). Testing and measurement techniques. Radiated, radio-frequency, electromagnetic field immunity test. Industrial limits of 10V/m.</p> <p>BS EN 61000-4-4, Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test</p> <p>BS EN 61000-4-6, Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields</p> <p>BS EN 61000-4-11, Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests</p> <p>BS EN 61000-6-3:2007, Electromagnetic compatibility (EMC) Generic standards. Emission standard for residential, commercial and light-industrial environments</p>		

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