

Part No	TMSB00000-01		
Description	Thermal Management System TMS		
Issue	Date	Bug no	Comments
1	-	-	For Review
2	9 Oct 2012	1335	Updated with review comments
3	11 Oct 2012	1335	Reformatted, further review
4	11 Aug 2015	1831	Added Reference website link for GUI and Terminal interface

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This unit must be connected and configured to suit the particular application, for full details see:
TMS Operation and Maintenance Instruction 210-OMI12093, 210-OMI13963, 210-OMI13962, downloadable
 from

www.ebmpapst.co.uk/instructions and www.ebmpapst.co.uk/tms

Introduction

This highly configurable controller sets the speed of up to four fans, based on temperature. It is designed for use with four wire type fans (Power, 0V, Speed control, Tachometer/Alarm) on 12V, 24V or 48V systems. It can also be used with mains powered EC fans (EC Fan 10V output unused).

Each fan may be configured for a different speed/temperature profile, for 0-10V or Open Collector controlled fans. Compatible with Open Collector Tachometer, Open Collector Alarm or Relay Alarm type fans.

Configurable Alarm actions (fan speed change, Alarm relays operate), four Alarm Relay outputs, indicator LED's.

Configurable control response, Thermistor or 0-10V inputs, Switch inputs.

PC Interface for Configuration and Data Logging.

Specification

TMSB00000-01		
Supply Voltage	VDC	11-57VDC (also compatible with -48V supply)
Supply Current	A	25mA Controller only, 11A max. including Fans
Inputs		NTC Thermistors 2 off, Fan Tachometers 4 off, Switch Inputs 2 off
Outputs		Fan Power 4 off, Fan Speed Control 4 off, Alarm Relay 4 off (plus RS485 and Relay Expansion ebm-papst EC-Matrix, Reserved)
Configuration		PC Interface, electrically isolated, use ebm-papst cable 210-HAR11887
IP Rating		20
Environment	°C / RH	-40°C to 70°C / 0-95% Non Condensing at 40°C max
EMC Compliance		Radiated: Emissions BS EN55022:2006, Class B, Immunity EN61000-4-3:2002 +A1+A2 Fast Transient Bursts EN61000-4-4:2004, Conducted Immunity EN61000-4-6:2007
PCB		980-CAS11007

ESD

Many modern electronic components are susceptible to damage from Electro Static Discharge (Static Electricity). During commissioning, avoid unnecessary contact with electronic components on PCB's.

PCB's which are Static Sensitive should be stored and transported in anti-static packaging until they are required to be installed.

Safety

- Compliant with EN60950.
- Installation must be by qualified personnel in accordance with local applicable standards.
- This appliance is intended to be enclosed in the equipment and not accessed by the user.
- Access is limited to service personnel only.
- Residual risk of contact with fan. Maintenance personnel should take due care and attention

Installation

See "Connection Details" below.

It is recommended that all sensor and control cables over 3m length be screened.

Route sensor and control wiring separately from DC power and AC mains wiring

Any connection to a DC Distribution Network should be made via an EN61000-4-5 compliant interface

Connect the supply, 11-57VDC. The controller must be powered from a 15A maximum fused supply.

Connect the Fans. If total fan current exceeds 11A route power directly to the fans

Connect the Thermistor(s) e.g. 2m length cable 210-HAR12302, plus Alarm Outputs and Switch Inputs as required for the application.

Configure the TMS as required for the application, see ebm-papst OMI document 210-OMI1209.

Mechanical Outline

Enclosure Length = 143mm, Width = 65.5mm, Height = 23mm. Weight of PCB plus enclosure = 170g.

Fixing Hole Size 3.5mm diameter (4 off), Fixing centres 134x55mm

DIN mountable using appropriate fixings e.g. Weidmuller Snap-on mount bracket, part number 0687900000

210-OMI13192	ORIGINAL INSTRUCTIONS	Page 2 of 4
ebm-papst UK Ltd	Chelmsford Business Park Chelmsford Essex CM2 5EZ Telephone: +44(0)1245468555 Fax: +44(0)1245466336 e-mail sales@uk.ebmpapst.com	

Operation

The green Power LED will pulse slowly when power is connected.
 The Fan speed will be varied in response to Thermistor temperature, Switch Inputs or Alarms, as programmed.
 The Alarm Relay outputs and red Alarm LED's will indicate the alarm state, as programmed.
 Any Fan or Thermistor alarm will be indicated by the red LED adjacent to the Fan/Thermistor connector

Maintenance and Servicing

The TMS Alarm Relay outputs and LED's, Fan Alarm LED's and Thermistor Alarm LED's will indicate any faults with the connected equipment, depending on TMS configuration.
 The PCB has no replaceable parts, if a fault develops return the PCB to the manufacturer.

Declaration of Conformity



Part No - 980-CAS11007

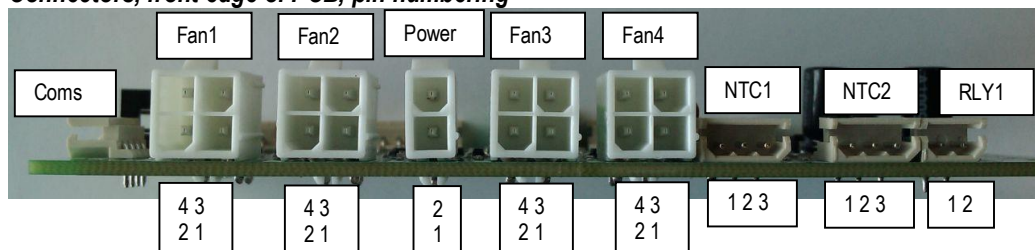
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Certificate No - 980-CAS11007CE

CE DECLARATION OF CONFORMITY		
Declaration		
We, ebm-papst UK Ltd, Chelmsford Business Park, Chelmsford, Essex CM2 5EZ certify that the product(s) listed are in conformity with;		
Low Voltage Directive 2006/95/EC Electromagnetic Compatibility Directive 2004/108/EC		
	Declaration Approved	Technical File Compiled
Name	G. M. Lockwood	Jeff Elkins
Position	Technical Director	Electronics Design Engineer
Signature		
Date of Declaration	23-Jan-2011	23-Jan-2011
Part number:	980-CAS11007	
Description:	Fan speed controller and monitor, 48V DC	
The product(s) have been assessed by the application of the following Standards; BS EN 60950-1 - Information technology equipment. Safety. General requirements BS EN61000-6-3:2007 (emissions) BS EN61000-6-2:2005 (immunity) Radiated Emissions BS EN55022:2006, Class B Radiated Immunity EN61000-4-3:2002 +A1+A2 Fast Transient Bursts EN61000-4-4:2004 Conducted Immunity EN61000-4-6:2007		

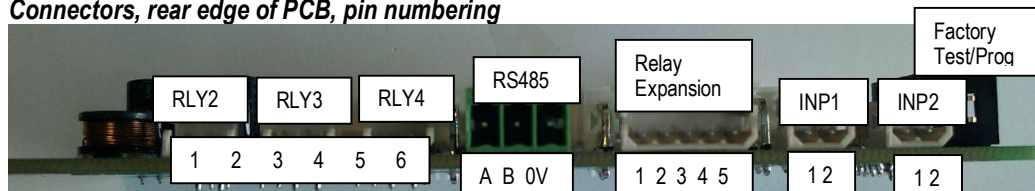
Connection Details

Connectors, front edge of PCB, pin numbering



Connector	Pin	Description, connectors on front edge of PCB	
Power Input	1	Positive supply +11 to +57V	
	2	0V	
Fans	1	0V (connected to Power connector pin 2)	
	2	+11 to +57V Out (connected to Power connector pin 1)	
	3	PWM Output, Fan Speed Control	
	4	Tachometer Input (For Relay Alarm fans connect relay between this pin and 0V)	
NTC Thermistors or 0-10V Input	1	Thermistor terminal 1	(No connection for 0-10V in)
	2	(No thermistor connection)	0V
	3	Thermistor terminal 2	0-10V Input
Relay Outputs, Relay 1	1	Relay 1 terminal 1	
	2	Relay 1 terminal 2	

Connectors, rear edge of PCB, pin numbering



Connector	Pin	Description,, connectors on rear edge of PCB
Relay Outputs, Relays 2-4	1	Relay 2 terminal 1
	2	Relay 2 terminal 2
	3	Relay 3 terminal 1
	4	Relay 3 terminal 2
	5	Relay 4 terminal 1
	6	Relay 4 terminal 2
RS485 (Reserved)	A	RS485 A
	B	RS485 B
	0V	0V
Relay Expansion (Reserved)	1-5	Standard ebm-papst EC-Matrix compatible control interface pin-out, plus supply power on Pin 5 (connected to Power connector pin 1).
Switch Inputs 1-2	1	Switch input (Volt Free or Open Collector Compatible). On-board pull-up resistor.
	2	0V (connected to Power connector pin 2)