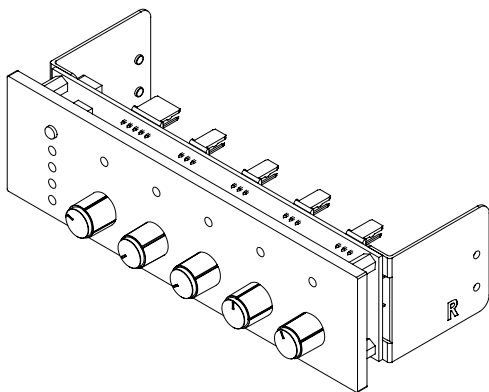


User's Manual

ZM-MFC1 Combo



To ensure safe and easy installation,
please read the following precautions.

www.ZALMAN.com

1. Warning & Caution



Warning

Neglecting the following may cause serious injury or death.

- ▶ Handling the power cord with wet hands may cause electrocution.
- ▶ Power OFF the system prior to installation.



Caution

Neglecting the following may cause minor injuries, degrade product conditions, or cause malfunction.

- ▶ Operating the product in an extremely cold or hot environment can degrade product performance and life span.
- ▶ Allowing liquids to enter the product can result in malfunction.
- ▶ Operating in a humid or non-ventilated environment can reduce product life span.
- ▶ Using the product for purposes not specified by ZALMAN may cause damage to other devices connected to this product.
- ▶ Must be installed on an easily reachable location.

2. Environmental Conditions

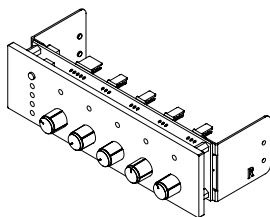
This product must be used under the following environmental conditions.

- ▶ Indoor use
- ▶ Altitudes up to 2,000m
- ▶ Temperatures between 5 °C and 40 °C
- ▶ Maximum relative humidity 80% for temperatures up to 31 °C decreasing linearly to 50% relative humidity at 40 °C.

3. Specifications

Spec. \ Model	ZM-MFC1 Combo		
Dimensions	70(L) X 148(W) X 42(H)mm		
Channels	5 Channels(1 x PWM Control Channel, 4 x Voltage Control Channels)		
Fan Control Method	FAN1, 2, 3, 4: Voltage Controlled		5 - 11 VDC
	PWM Fan: PWM Control	AUTO LOW	Duty 50%(BLUE)
		AUTO MID	Duty 75%(PURPLE)
		AUTO HIGH	Duty 100%(RED)
		MANUAL	Duty 25~100%(GREEN)
Maximum Output	7.0W(Max 0.6A) / Channel		
Input Voltage	+12VDC / +5VDC ±10%		
Output Voltage	5VDC ~ 11VDC ±5%		

4. Components



ZM-MFC1 Combo



User's Manual



C1 Cable



C3 Cable



Y Cable



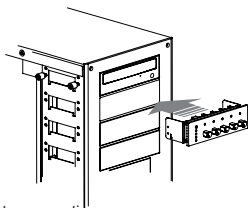
C4 Cable



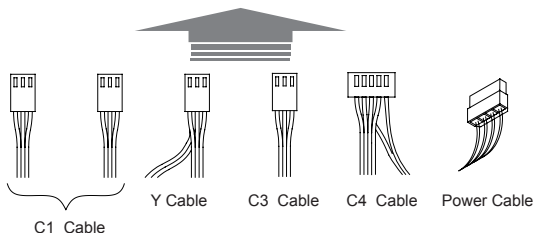
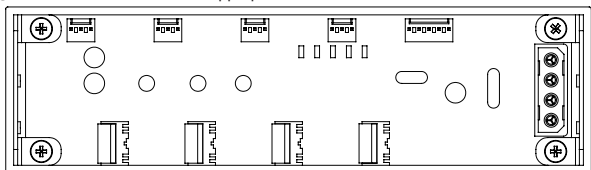
Fixing Bolts

5. Installation

- ① After securing the ZM-MFC1 Combo into a 5.25" bay, fasten with Fixing Bolts.



- ② Connect the cables to their appropriate connections.

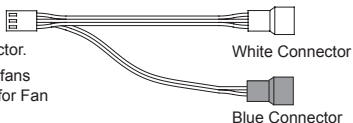


- ▶ C1 Cable: Connect directly to 3-Pin Fan
- ▶ Y Cable: Can connect two 3-Pin Fans simultaneously
- ▶ C3 Cable: Sends the CPU or Case Fan RPM signal to the motherboard during booting to prevent BIOS error.
- ▶ C4 Cable: Sends the PWM Fan's RPM signal to the motherboard during booting to prevent BIOS error.

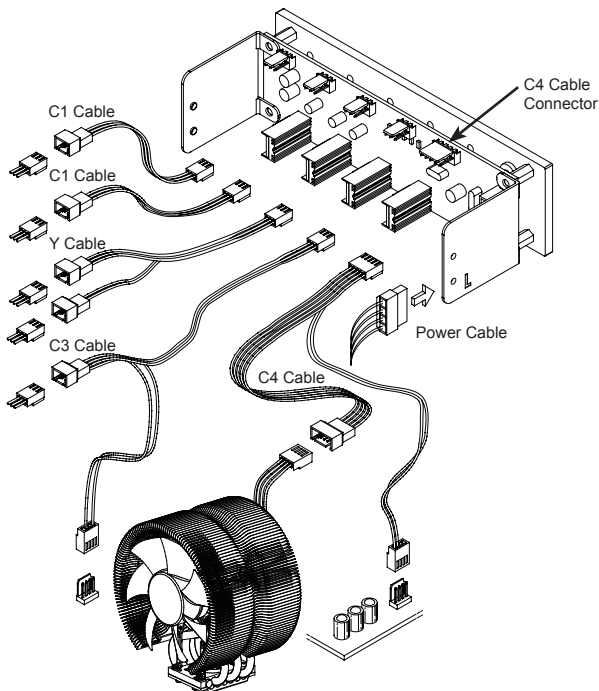


Caution

- ▶ When using the Y Cable with one Fan, connect with the White Connector.
- ▶ When connecting two fans, the two fans must be of the same specifications for Fan Control.

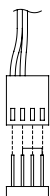
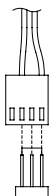
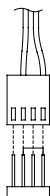


6. Wiring Diagram



C3 Cable

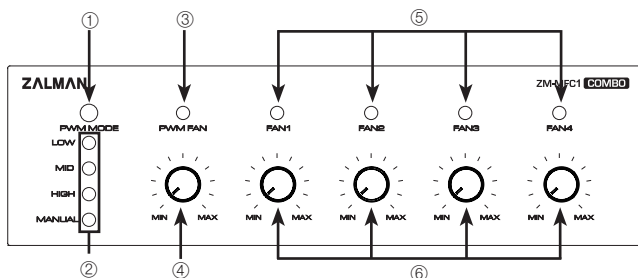
C4 Cable



Caution

An error can occur if the fan RPM is set too low. In this case, deactivate the monitoring feature for the CPU fan in the BIOS. For BIOS settings information, refer to the motherboard's manual.

7. Functions and Usage



① Mode Toggle Button: This Button controls the PWM Fan Mode. Each consecutive press changes the Fan mode from LOW → MID → HIGH → MANUAL.

② PWM Mode Display LED

Mode	Output Duty	LED Color
LOW	50%	BLUE
MID	75%	PURPLE
HIGH	100%	RED
MANUAL	adjustable from 25 to 100%	GREEN

③ PWM Fan RPM Display LED

FAN RPM	200~1000rpm	1000~1500rpm	1500rpm +
LED Color	BLUE	PURPLE	RED

※ Under 200rpm or fan not connected → LED Off

④ PWM Fan RPM Controller

When the PWM Fan Mode is set to MANUAL, the PWM Fan Duty can be adjusted from 25 to 100%.

⑤ FAN1 ~ FAN4 Voltage Status LED

Voltage	5~7V	7~9V	9~11V
LED Color	BLUE	PURPLE	RED

※ Fan not connected → LED Off

⑥ FAN RPM Controller: FAN1 ~ FAN4's voltage is adjusted from 5 to 11V.



8. Troubleshooting

1. Please check if the ZM-MFC1 Combo is properly connected to the PSU.
2. Please check that all cables have been properly connected.
3. Please check Fan specifications.
 - 1) 2-Pin Fans that do not output a voltage signal cannot be used. 3-Pin Fans with 2 clock pulses per revolution must be used.
 - 2) If a 3-Pin Fan is connected to a 4-Pin Connector, RPM control will not function properly.
4. If there is a malfunction with the Fan, the RPM clock signal will be disrupted and RPM control will not function properly.
5. If the fan has a minimum threshold RPM, setting the RPM below this threshold will cause the Fan to intermittently start and stop. Set the fan RPM above the minimum required threshold RPM to prevent malfunction.