



## M-7088-16

16-channel PWM Output Module

### Features

- 16-channel PWM Output
- Burst Mode and Continuous Mode for PWM Output
- Software Trigger Mode for PWM Output
- Individual and Synchronous PWM Output
- 4 kV ESD and EFT Protection
- Dual Watchdog
- Wide Operating Temperature Range: -25 to +75°C



### Introduction

The M-7088-16 provides 16-channel PWM (Pulse Width Modulation) Output, and can be used to develop powerful and cost-effective analog control systems. PWM is a powerful technique for controlling analog circuits that uses the Digital Output to generate a waveform with a variable duty cycle and frequency which can then be used to control an analog circuit in applications such as controlling the position or speed of motors, the brightness of lamps, or the speed of fans, etc. Either burst mode or continuous mode can be used for the PWM output depending on the application. It supports both the Modbus RTU and the DCON protocols, and External PWR allows the load voltage to be increased from +3.5 to +50 V for the 16-channels PWM (Pulse Width Modulation) output.

### System Specifications

Model	M-7088-16
<b>Communication</b>	
Interface	RS-485
Bias Resistor	No (Usually supplied by the RS-485 Master. Alternatively, add a tM-SG4 or SG-785.)
Format	(N, 8, 1), (N, 8, 2), (E, 8, 1), (O, 8, 1)
Baud Rate	1200 to 115200 bps
Protocol	Modbus RTU, DCON
Dual Watchdog	Yes, Module (1.6 Seconds), Communication (Programmable)
<b>LED Indicators/Display</b>	
System LED Indicator	Yes, 1 as Power/Communication Indicator
I/O LED Indicators	-
7-segment LED Display	-
<b>Isolation</b>	
Intra-module Isolation, Field-to-Logic	2500 Vdc
<b>EMS Protection</b>	
ESD (IEC 61000-4-2)	±4 kV Contact for each Terminal
EFT (IEC 61000-4-4)	±4 kV to Power
Surge (IEC 61000-4-5)	-
<b>Power</b>	
Reverse Polarity Protection	Yes
Input Range	+10 ~ +48 VDC
Consumption	2.9 W
<b>Mechanical</b>	
Dimensions (L x W x H)	121 mm x 76 mm x 42 mm
Installation	DIN-Rail or Wall Mounting
<b>Environment</b>	
Operating Temperature	-25 to +75°C
Storage Temperature	-40 to +85°C
Humidity	10 to 95% RH, Non-condensing

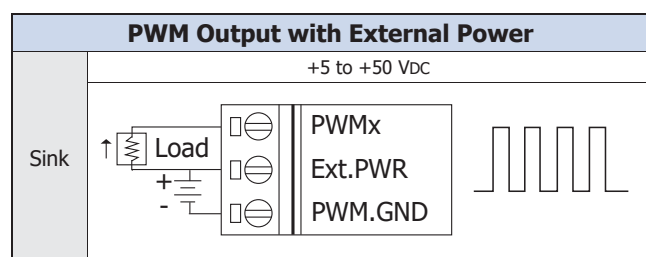
### I/O Specifications

Model	M-7088-16	
Channels	16	
Type	PWM, TTL	
Sink/Source (NPN/PNP)	Sink	
Load Voltage	+5 ~ +50 Vdc	
Max. Load Current	Sink	+50 VDC @ 200 mA/Channel
	Source	-
PWM	Frequency	1 Hz ~ 500 KHz
	Duty Cycle	0.1 to 99.9%
	Mode	Burst, Continuous
	Burst Count	1 to 65535
	Trigger Start	Software
Power-on Value	-	
Safe Value	-	

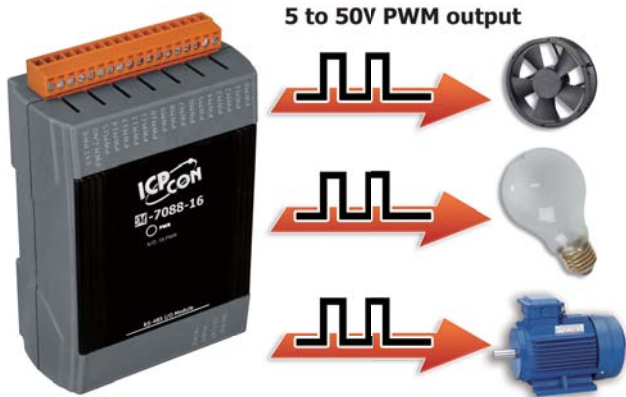
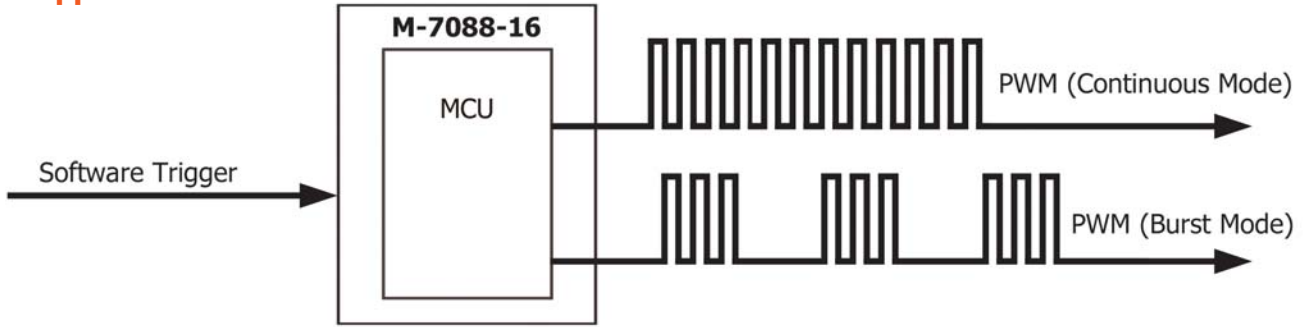
### Applications

- Controlling Motor Position/Speed
- Dimming Lamp Brightness
- Controlling Fan Speed

### Wire Connections

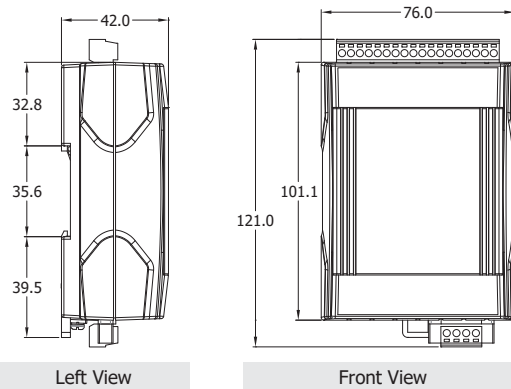


## Applications

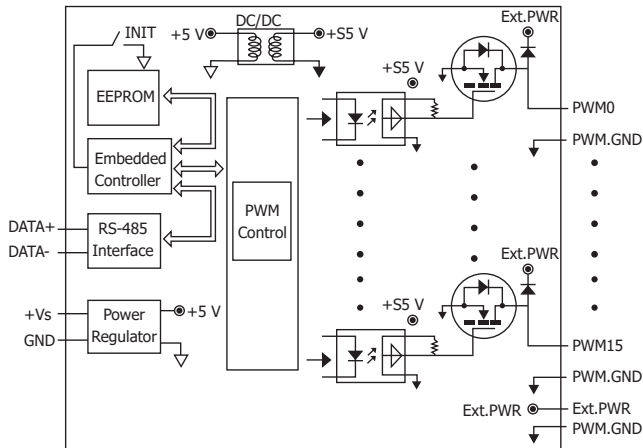


5 to 50V PWM output

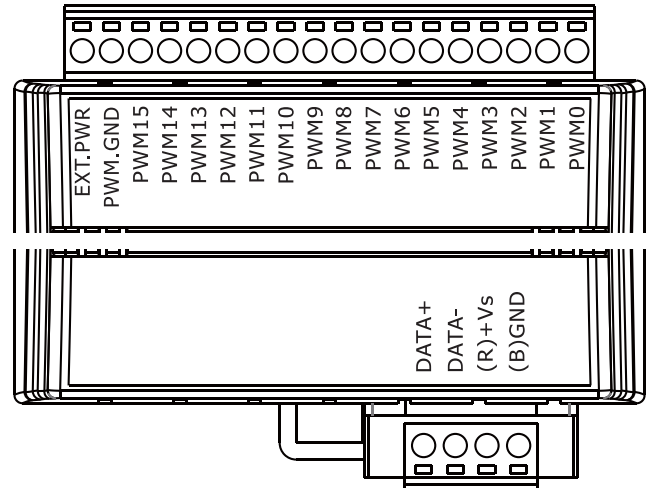
## Dimensions (Units: mm)



## Internal I/O Structure



## Pin Assignments



## Ordering Information

<b>M-7088-16-G CR</b>	16-channel PWM Output Module using the DCON and Modbus Protocols (Gray Cover) (RoHS)
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## Accessories

	tM-7520U CR	RS-232 to RS-485 Converter (RoHS)
	tM-7561 CR	USB to RS-485 Converter (RoHS)
	tM-SG4 CR	RS-485 Bias and Termination Resistor Module (RoHS)

	I-7514U CR	4-channel RS-485 Hub (RoHS)
	SG-770 CR	7-channel Differential or 14-channel Single-ended Surge Protector (RoHS)