

tM-SG4

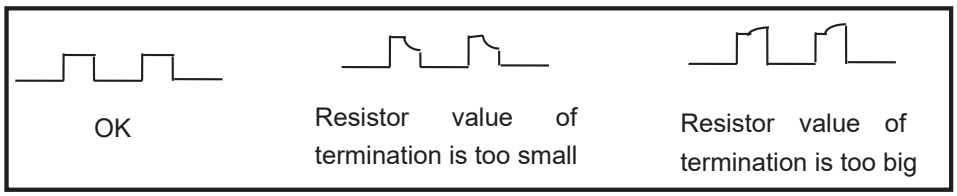
The RS-485 Pull-high/Pull-low and Termination Resistors Module

Features

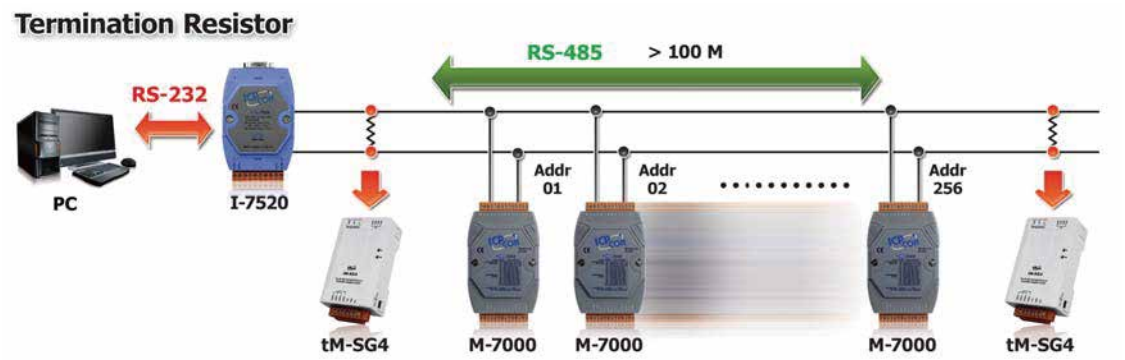
- Switch-selectable Pull-high/Pull-low Resistors
- 15-step Switch-selectable Termination Resistor
- LED Indicator for Power/Termination
- DIN-Rail mountable
- Cost-effective
- Wide Operating Temperature Range: -25 °C ~ +75 °C

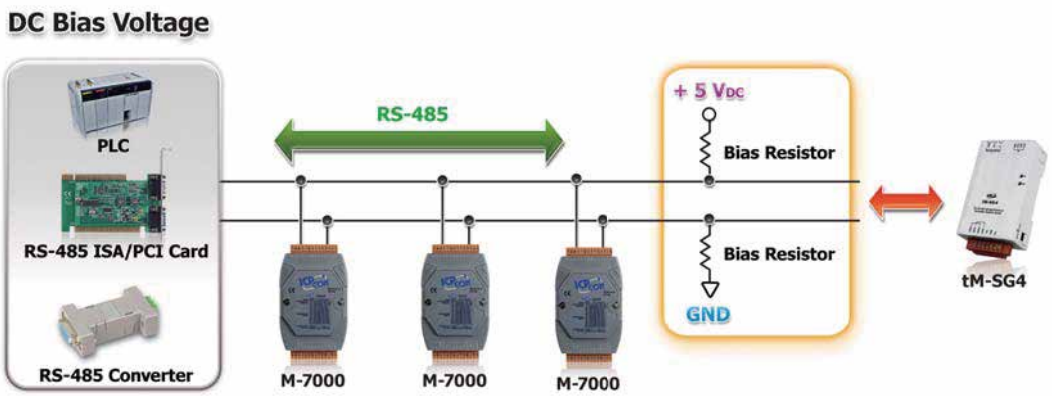
Introduction

The tM-SG4 is an optional module that is used to improve the communication of RS-485 network. It provides switch selectable pull-high and pull-low resistors on RS-485 network. It also has 15-step switch selectable termination resistor such that the user can select a proper termination resistor to be connected to the RS-485 network easily. If the RS-485 network is not over 100 meters, the termination resistors are not needed. Otherwise, it may be necessary to insert two termination resistors at both end of the RS-485 network. It is not easy to calculate the value of a termination resistor on the RS-485 network. The best way to do this is to use an oscilloscope to check the RS-485 signal directly. If the impedance match of RS-485 network is OK, the oscilloscope will show a very nice square wave. If these square wave signals are distorted, the user will need to insert two termination resistors at both end of the RS-485 network.



Applications





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System Specifications

RS-485 Interface	
Pull-high/Pull-low Resistors	1 kΩ, 10 kΩ, 100 kΩ, Switch-selectable
Termination Resistance	15 Steps, 65 ~ 560 Ω
LED Indicators	
Power	1 Red LED as Power Indicator
Termination Resistor	1 Green LED as Termination Indicator
EMS Protection	
ESD (IEC 61000-4-2)	±4 kV Contact for Each Terminal
Power Requirements	
Reverse Polarity Protection	Yes
Powered from Terminal Block	Yes, 10 ~ 30 V_{DC}
Consumption	0.5 W Max.
Mechanical	
Dimensions (W x L x H)	52 mm x 87 mm x 27 mm
Installation	DIN-Rail Mounting
Environment	
Operating Temperature	-25 ~ +75 °C
Storage Temperature	-40 ~ +85 °C
Humidity	10 ~ 90% RH, Non-condensing

Termination Resistance Settings

120R	330R	470R	560R	Termination Resistance (Ω)
ON	ON	ON	ON	65
ON	ON	ON	OFF	74
ON	ON	OFF	ON	76
ON	OFF	ON	ON	81
ON	OFF	OFF	ON	99
ON	OFF	ON	OFF	96
ON	ON	OFF	OFF	88
ON	OFF	OFF	OFF	120
OFF	OFF	ON	ON	144
OFF	ON	ON	OFF	193
OFF	ON	OFF	ON	207
OFF	ON	OFF	OFF	330
OFF	OFF	ON	ON	256
OFF	OFF	ON	OFF	470
OFF	OFF	OFF	ON	560

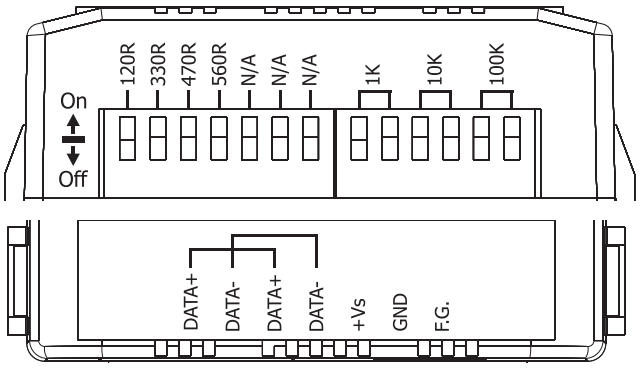
Termination Resistance On/Off Switch

OFF	Termination Resistor do NOT work.
ON	Termination Resistor is worked, and TR LED is light.

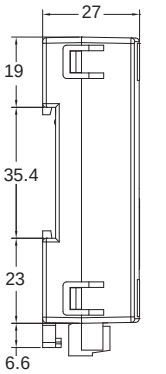
Pull-high and Pull-low Settings

1k	10k	100k	RS-485 Data Line Status
OFF	OFF	OFF	No pull-high/pull-low on RS-485 data line
ON	OFF	OFF	1k Ω pull-high and pull-low
OFF	ON	OFF	10k Ω pull-high and pull-low
OFF	OFF	ON	100k Ω pull-high and pull-low

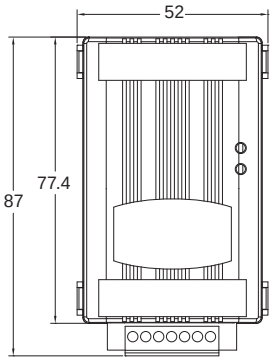
Pin Assignments



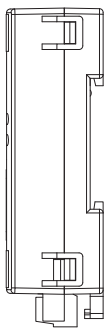
Dimensions (Units: mm)



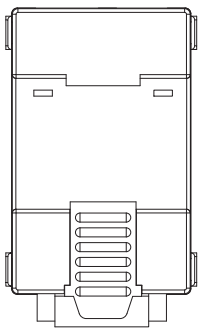
Left Side View



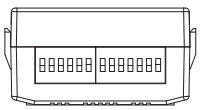
Front View



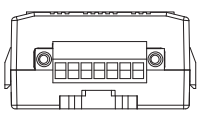
Right Side View



Rear View



Top View



Bottom View

Ordering Information

tM-SG4 CR	RS-485 Pull-high/Pull-low and Termination Resistor Module (RoHS)

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