tM-SG4 Hardware User Guide *Ver. 1.0*

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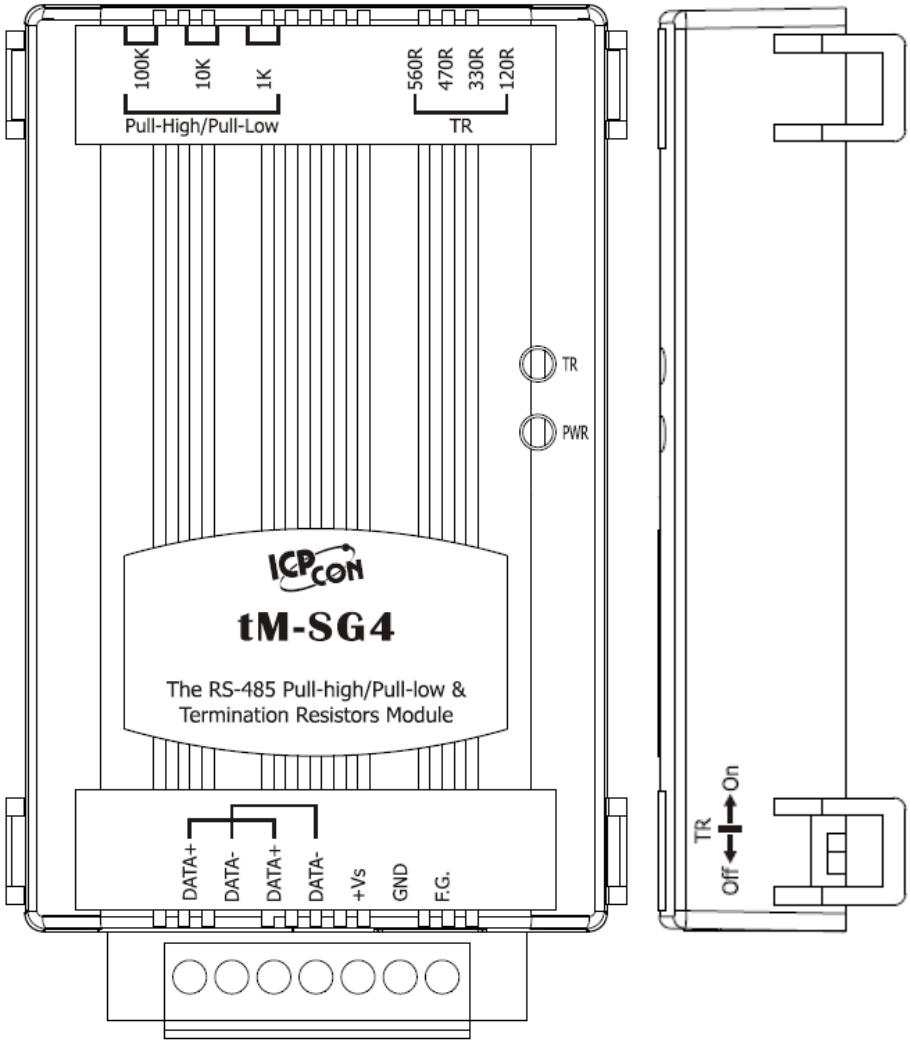
Introduction

The tM-SG4 is an optional module that is used to improve the communication of RS-485 network. It contains selectable pull-high and pull-low resistors on RS-485 and 15-step selectable termination resistor such that the user can select a proper termination resistor to be connected to the RS-485 network easily.

Specifications

General	
Interface	RS-485
Pull-high/pull-low Resistance	1k, 10k, 100k Ω
Termination Resistance	15 steps, 65 ~ 560 Ω
LED Display	1 red LED as power indicator 1 green LED as termination indicator
Power	
Input Range	10 ~ 30 V_{DC}
Power Consumption	0.02A@24 V_{DC}, 0.5W
Environment	
Operating Temperature	-25 °C ~ +75 °C
Storage Temperature	-40 °C ~ +85 °C
Humidity	10 ~ 90 % RH, non-condensing

tM-SG4 Pin Assignments



LED Display	
PWR	Power LED, Red
TR	Termination Resistor LED, Green
Switches	
TR	Termination Resistance Settings
Pull-High/Pull-Low	Pull-high/Pull-low Settings
TR On/Off	Termination Resistor On/Off switch
Terminal Block	
DATA+, DATA-	RS-485 Data Line
+Vs, GND	Power Line
F. G.	Frame Ground

tM-SG4 Switch Setting

RS-485 Termination Resistance Settings

120R	330R	470R	560R	Termination Resistance (ohm)
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	ON	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

RS-485 Termination Resistance On/Off Switch

Off	Termination Resistor do NOT work.
On	Termination Resistor is worked, and TR LED is light.

RS-485 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 Ohms pull-high and pull-low
OFF	ON	OFF	10k Ohms pull-high and pull-low
OFF	OFF	ON	100k Ohms pull-high and pull-low