



## tSG-3781B/tSG-3781L

1-channel 4 ~ 20 mA  
Current Input / PWM Output Signal Conditioner

### Features

- Convert 1-channel 4 ~ 20mA Current Input to 1-channel PWM Output
- PWM output duty ratio converted by 4 ~ 20 mA Input
- PWM output frequency configured via push buttons
- LCD displays the PWM output duty ratio and frequency



### Introduction

The tSG-3781B/L is a single-channel DC current input signal conditioning module that converts 4~20mA current input to PWM output. PWM output has a duty cycle of 0%~100% and performs a linear conversion of the 4~20mA current input. PWM output frequency is adjustable from 600Hz to 800Hz via push buttons. tSG-3781B/L includes a monochrome LCD display that shows the duty cycle and frequency of the PWM output signal.

### Applications

- Heating system in buildings
- Ventilation system
- Controlling servo-assisted diaphragm valve



### System Specifications

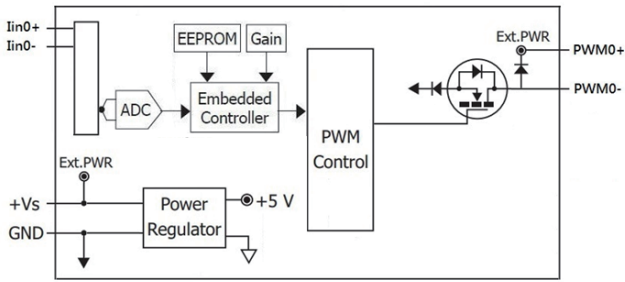
Display	
Type	Monochrome Graphics LCD (26x26 mm Viewing Area)
EMS Protection	
ESD (IEC 61000-4-2)	±4 kV Contact for each Terminal
EFT (IEC 61000-4-4)	±4 kV for Power Line
LED Indicators	
Status	1 x Power and Communication
Power	
Reverse Polarity Protection	Yes
Input Range	+10 ~ +30 VDC
Consumption	0.2 W(Typ.) 22.0 W Max.
Mechanical	
Dimensions (mm)	53 x 27 x 87 (W x L x H)
Installation	DIN-Rail Mounting
Environment	
Operating Temperature	-25 to +75°C
Storage Temperature	-40 to +85°C
Humidity	10 to 95% RH, Non-condensing

### I/O Specifications

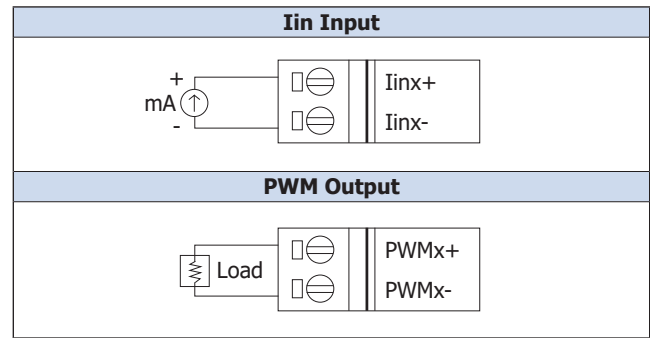
Analog Input	
Channels	1
Range	+4 ~ +20 mA
Accuracy	±0.1% of full range
Range	1 kHz
Input Impedance	141 Ω
PWM	
Channels	1
Type	PWM
Sink/Source (NPN/PNP)	Source
Load Current	+24 VDC @ 1 A/Channel (Note1)
Frequency	600 ~ 800 Hz
Duty Cycle	1 to 100%
Mode	Continuous

Note1: The PWM output voltage is linked with the power input voltage of the module.

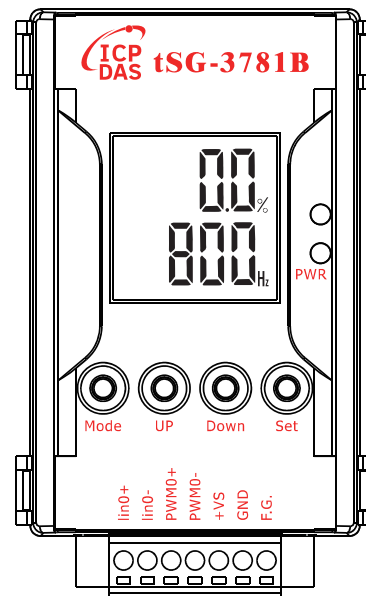
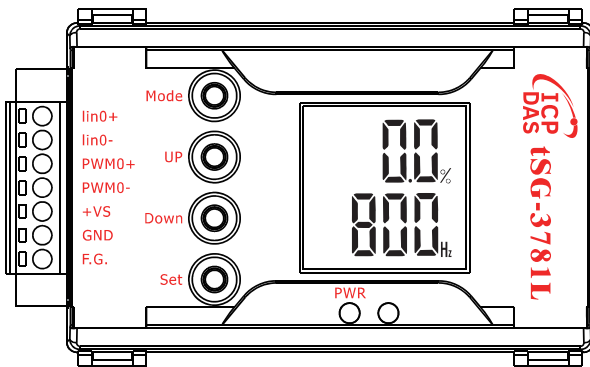
## Internal I/O Structure



## Wire Connections

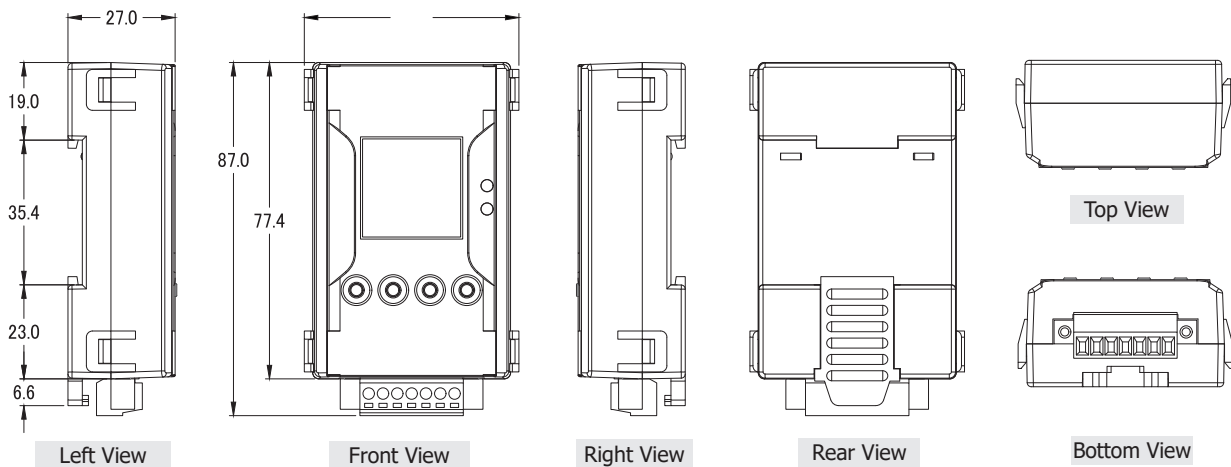


## Pin Assignments/Appearance



PWR	The power LED of the module
Mode	Press MODE to modify the channel frequency, the channel frequency flashes.
Up	Press UP to increase the frequency, long press to increase quickly.
Down	Press DOWN to decrease the frequency, long press to decrease quickly.
Set	Press SET to save the modified value. Press MODE during the modification to stop the modification.

## Dimensions (Units: mm)



## Ordering Information

<b>tSG-3781B CR</b>	1-channel DC Current Input Signal Conditioner Module (Setting buttons are located at bottom side) (RoHS)
<b>tSG-3781L CR</b>	1-channel DC Current Input Signal Conditioner Module (Setting buttons are located at left side) (RoHS)