INSTRUCTION MANUAL

ANALOG CALIBRATOR

MODEL : SHN-CAL

◆Preface

Thank you for purchasing our SHN - CAL made by Shinho System Co., Ltd. This manual describes specifications and information for you to install and maintain the product. For any problem or question during use, contact our Sales Department of Head Office or local dealer.

◆Overview

SHN-CAL is a 2-wre transmitter simulation tester and source (mA) calibrator.
It is also a multi-functional analog calibrator equipped with functions for measurement of mA Output, power supply and measurement of 2-wire transmitter, and Measurement of DC voltage for checking of loop power.

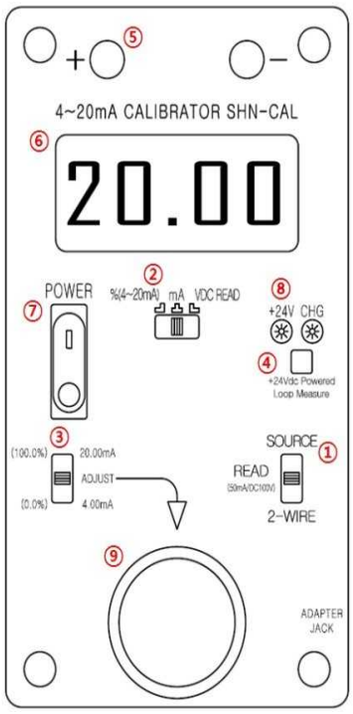
<Features>

▷ Compact and light weight for each carrying.
▷ Proud of high accuracy of ±0.03% using high performance and high accuracy 16bit A/D converter. (±0.01mA error at 4~20mA)
▷ Long time service with built-in Li-Polymer battery.
(Max. 13 hours on +24Vdc 20mA output)
▷ Fast switching with a slide switch.
▷ Indicating 0~25mA or -25.0~125.0% with 4-digit display.

◆Specifications

Display	4-Digit (LCD) -25.0~125.0% or 0~25mA	
Accuracy	±0.05% Full Scale, ±1 Digit (25℃±5℃)	
Output	Source	4 ~ 20mA
	2-wire	4 ~ 20mA
Input	Vdc Measure	0 ~ 70Vdc
	mA Measure	0 ~ 45mA
	mA Measure while 24Vdc	0 ~ 45mA
Loop Power	24Vdc	
Power Supply	1pcs 3.7V 2600mAh Li-Polymer Battery	
	DC 5V Adapter Charge	
Life time of Battery	13Hour (+24Vdc 20mA Output)	
Charging time	3Hour (DC 5V / 2A Adapter)	
Weight	about 350g	

◆Title of each Part



① Mode Selector Switch

② Display Selector Switch (%, mA, Vdc)

③ Output Selector Switch (20mA, ADJ, 4mA)

④ +24Vdc Powered Measure S/W

⑤ In/Out Terminals (Cautious on Polarity of Outpts)

⑥ LCD Display

⑦ Power S/W

⑧ Status Check LED
- +24V : Loop Powered Measure Mode
  Output Mode for LED OFF
  Measurement Mode for LED ON
- CHG : Charging Check Lamp
  Being Charged for LED ON
  Charging Completed for LED OFF

⑨ Output 4~20mA Variable Volume

※ Excessive switch operation may result in failure of the product.

◆Operation Method

	①	②	③	④
1. Source mA (4~20mA Output)	SOURCE	%(4~20mA) mA	(100.0%) 20.00mA ADJUST 4.00mA (0.0%)	+24V OFF
2. Read mA (24V Powered Measure)	SOURCE	%(4~20mA) mA	(100.0%) 20.00mA ADJUST 4.00mA (0.0%)	+24V ON
3. Read mA (mA Measure)	READ	%(4~20mA) mA	•	+24V OFF
4. Read Vdc (Vdc Measure)	READ	VDC READ	•	+24V OFF
5. 2-Wire Transmitter (Non Power)	2-WIRE	%(4~20mA) mA	(100.0%) 20.00mA ADJUST 4.00mA (0.0%)	+24V OFF

1. Source mA Output Mode

■ This function is used to supply 0.00 ~ 24.00mA Output.
Check operation of your mA receiver with DC 24V output voltage.

1) Draw out one input wire from the instrument to be calibrated.
2) Move the central slide switch to mA or % and the right slide switch to Source.
3) Connect (+) input of the instrument to a red source line of the calibrator and (-) input to a black source line.
4) Turn the nob to adjust output current.

2. Read mA (+24Vdc Powered Measure) Mode

■ This function is used to measure the output current from the transmitter by supplying +24Vdc.

1) Draw out output wires from the instrument to be calibrated.
2) Press +24Vdc powered S/W with slide switches at Source mA Output Mode. (+24V LED On)
3) Connect Red wire (+) and Black wire (-) of the calibrator to + and – of the Output, respectively.
4) Check if the current is put out within a range of 0.00~45.00mA.

3. Read mA (Current Measurement) Mode

■ This function is used to measure 0.00 ~ 45.00mA or -25.0~260.0%.

1) Connect one current loop of convenient part of the signal line.
2) Move the central slide switch to mA or % and the right slide switch to Read.
3) Connect Red wire (+) and Black wire (-) of the calibrator to + and – of the Output, respectively.
4) Check if the current is put out within a range 0.00~55.00mA.

4. Read Vdc (Voltage Measurement) Mode

■ This function is used to measure 0.00~+70.00Vdc.

1) Move the central slide switch to mA or % and the right slide switch to Read.
2) Connect Red wire (+) of the calibrator to + and Black wire (-) to – pole of the voltage to be measured. It is able to measure voltage to a range of 0~70.00V.
3) When signal voltage of the loop power supply receiver exceeds DC 100V, the internal fuse is disconnected
.

5. 2-Wire Transmitter Simulation Test

■ This function is used to simulate a test for 0.00 ~ 24.00mA output from 2-Wire transmitter.

1) Disconnect and loose one or both inputs from the instrument to be calibrated.
2) Move the central slide switch to mA or % and the right slide switch to 2-Wire.
3) Connect Red wire (+) and Black wire (-) of the calibrator to + and – of the Output, respectively.
4) Turn the nob to adjust output current.

For other problems than described above, please contact our head office.

A/S Guide

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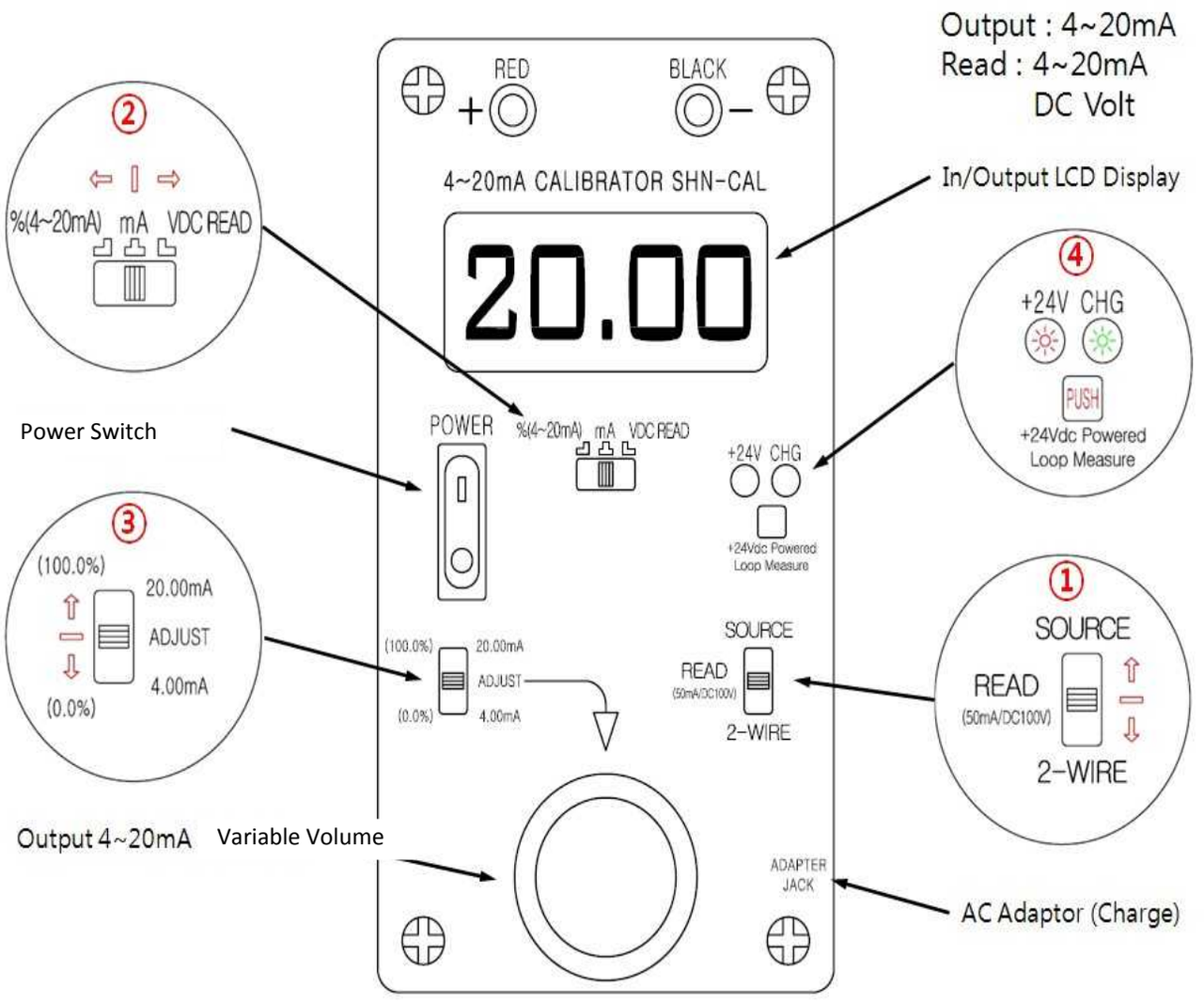
◆ **Operation Method**



	①	②	③	④
1. Source mA (4~20mA Output)	SOURCE	%(4~20mA) mA	(100.0%) 20.00mA ADJUST 4.00mA (0.0%)	+24V OFF
2. Read mA (24V Powered Measure)	SOURCE	%(4~20mA) mA	(100.0%) 20.00mA ADJUST 4.00mA (0.0%)	+24V ON
3. Read mA (mA Measure)	READ (50mA/DC100V)	%(4~20mA) mA	•	+24V OFF
4. Read Vdc (Vdc Measure)	READ (50mA/DC100V)	VDC READ	•	+24V OFF
5. 2-Wire Transmitter (Non Power)	2-WIRE	%(4~20mA) mA	(100.0%) 20.00mA ADJUST 4.00mA (0.0%)	+24V OFF