

Multifunction Process Calibrator

Model No : TSC-05SP

TSC-05 SP Process Calibrator is a Excellent handheld, battery-operated instrument that measures and sources a variety of electrical parameters. It can be widely applied in industrial fields and laboratories.

Special Features

A Split-screen Display : The upper display allows you to measure volts, current and thermocouples. The lower display allows you to measure and source volts, resistance temperature detectors (RTD), thermocouples (TC), resistance and frequency

Measuring Temperature with Thermocouples or RTDs : The calibrator supports eight standard thermocouples, including types J, K, T, E, R, S, B or N. The calibrator supports six standard RTDs which are Cu50, Pt100, Pt100-3916, Pt200, Pt-500 or Pt1000. The calibrator accepts RTD measurement input in two-, three or four-wire connections, with the three-wire connection the most common.

Ramping and Stepping the Output : Two ways are available for adjusting the value of source function: manual stepping and ramping the output.

Storage and recall of 10 setups : You can store up to 10 setups in a nonvolatile memory and recall them for later use. A low battery condition or a battery change does not jeopardize the stored setups.

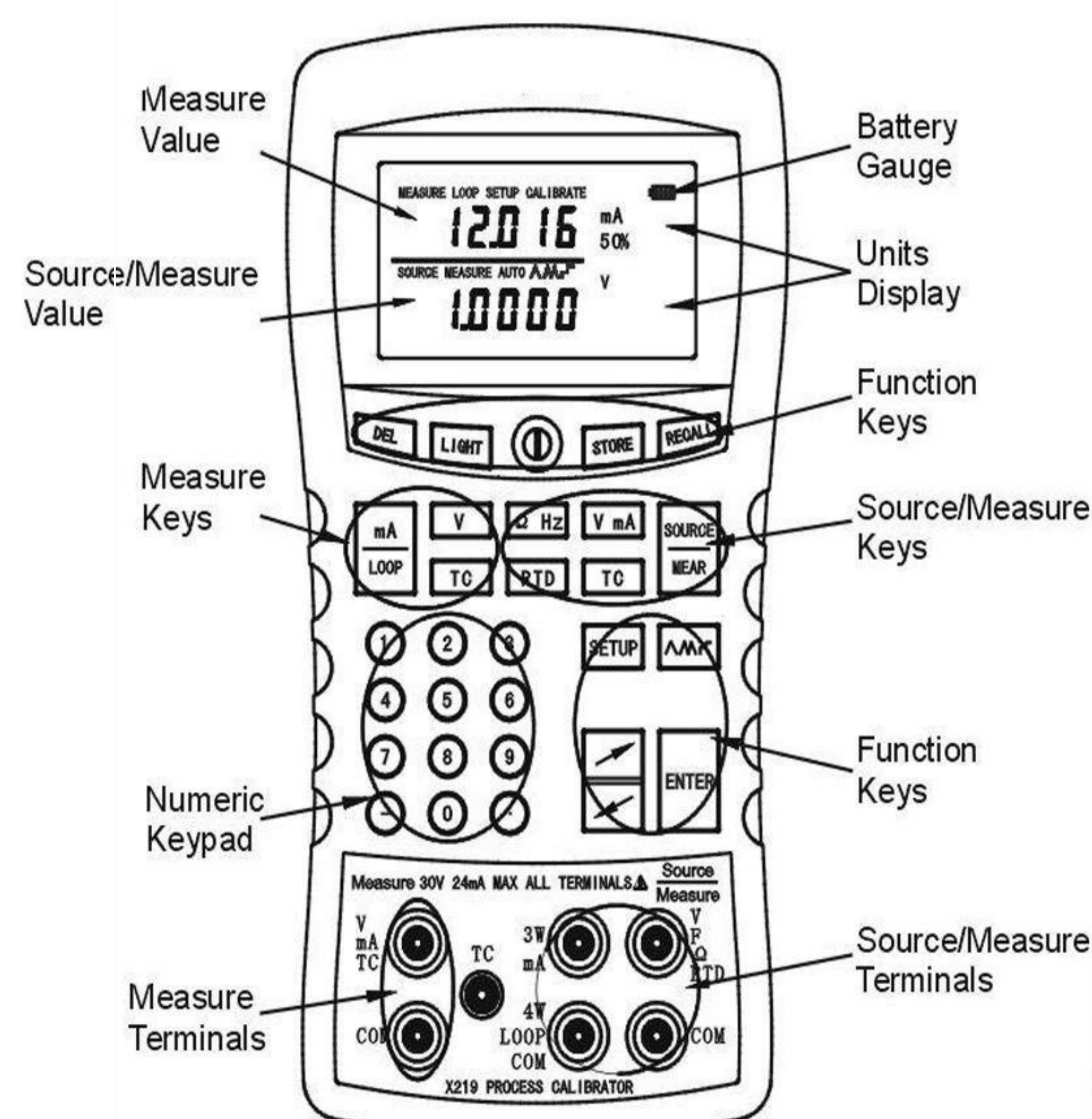
AutoFlash Terminals : You can connect the test leads according to auto flash prompt in order to avoid the misoperation.



Features

1. Split-screen Display.
2. DC Voltage Measurement/Source
3. DC Current Measurement
4. DC Current Source.
5. Resistance Measurement/ Source.
6. RTD Measurement/Source.
7. Thermocouple Measurement/ Source.
8. Look-up table to ITS-90 bi-directionally.
9. Frequency Measurement/ Source.
10. Counting Pulse
11. Transmitter Signal Simulation
12. Two-, Three- or Four- Wire RTD Measurement
13. Calibration Functions
14. (4~20)mA Loop Power Supply.
15. Auto Ramping and AutoStepping
16. Manual and Auto Cold Junction Compensating.
17. Auto Flash Terminals
18. Backlight LCD
19. Battery Gauge.

Display, Keys and Terminals



Multifunction Process Calibrator

Measurement / Source Function

Function	Range		
	Measure	Source/Measure	
	Measure	Measure	Source
V DC(V)	0~30	0~20	0~10
mV DC(mV)	0~100	0~100	0~100
mA DC(mA)	0~24	—	0~24
Current	0~24	—	—
Transmitter	—	—	0~24
Counting Pulse	—	1~99999	1~10000*
Frequency(Hz)	—	1~10k	1~5k
resistance(Ω)	—	0~3.2k	15~3.2k
Thermocouple	J, K, T, E, R, S, B, N		
RTD (Resistance)	—	Cu50, Pt100(385), Pt100(3916),	

General Specification

General

Environmental performance

Normal operating conditions:

Operating temperature: (-10~55) °C

Storage temperature: (-20~70) °C

Relative humidity (% RH non-condensing): 35% (50~55) °C

45% (40~50) °C

75% (30~40) °C

90% (10~30) °C

Uncontrolled <10°C

All specifications apply from +18°C to +28°C unless stated otherwise. All specifications assume a 5-minute warm-up period. Temperature coefficient from -10°C to +18°C and +28°C to +55°C is $\pm 0.005\%/^{\circ}\text{C}$ of range per °C.

All specifications are valid for six months.

Technical specification

DC Voltage

Type	Range	Accuracy(%reading)
Measure	(0~100)mVDC (Measure)	± 0.02
	(0~30)VDC (Measure)	± 0.02
	(0~100)mVDC (Source/Measure)	± 0.02
	(0~20)VDC (Source/Measure)	± 0.02
Source	(0~100)mVDC	± 0.02
	(0~10)VDC	± 0.02

mA

Type	Range	Accuracy(%reading)
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Measure	(0~24)mADC	± 0.2
Source	(0~24)mADC	± 0.2

Loadcapacity: 750 Ω /20mA

Safety Standards and Certifications

EMC standards: EN 55022, EN 55024

Vibration: Random, 2g, (5~500)Hz

Shock: Half-sine wave, 30g, 11ms

Physical

Dimension and weight: 215mm×109mm×44.5mm

Weight : 500g approx.

Power requirement: 4 Ni-MH, Ni-Cd batteries



Multifunction Process Calibrator

Resistance

Type	Range	Accuracy%	
		4 Wire	2, 3 Wire
Measure	(0~400) Ω	± 0.1	± 0.15
	(0.4~1.5)k Ω	± 0.5	± 1.0
	(1.5~3.2)k Ω	± 1.0	± 1.5

Excitation Current: 0.5mA
 3-wire: Assumes matched leads with a total resistance not exceeding 100 Ω
 Resolution: (0~1000) Ω : 0.01 Ω
 (1.0~3.2)k Ω : 0.1 Ω

Source	Range	Excitation Current from Measurement device	Accuracy
Source (2-wire)	(15~400) Ω	(0.15~0.5)mA	± 0.15
	(15~400) Ω	(0.5~3)mA	± 0.1
	(0.4~1.5)k Ω	(0.05~0.8)mA	± 0.5
	(1.5~3.2)k Ω	(0.05~0.4)mA	± 1.0

Before sourcing or measuring, offset errors caused by internal elements or external factors must be cleared

RTD

Type	Range($^{\circ}$ C)	Measure Accuracy()		Source(2-wire) Accuracy()
		4-wire	2-,3-wire	
		Cu50	-50~150	± 0.6
Pt100(385)	-200~800	± 0.3	± 0.5	± 0.3
Pt100(3916)	-200~510	± 0.3	± 0.5	± 0.3
Pt200(385)	-200~250	± 0.2	± 0.3	± 0.2
	250~630	± 0.8	± 1.6	± 0.8
	-200~500	± 0.3	± 0.6	± 0.3
	500~630	± 0.4	± 0.9	± 0.4
	-200~100	± 0.2	± 0.4	± 0.2

Resolution: 0.1 $^{\circ}$ C

Excitation Current (Source):

Cu50, Pt100(385), Pt100(3916), Pt200(385): (0.15~3.0)mA

Pt500(385): (0.05~0.80)mA

Pt1000(385): (0.05~0.40)mA

3-wire: Assumes matched leads with a total resistance not exceeding 100 Ω Before sourcing or measuring, offset errors caused by internal elements or external factors must be cleared.

Thermocouple

Type	Range()	Accuracy() (excluding cold junction error)
J	-200~0	± 0.8
	0~1200	± 0.5
K	-200~0	± 1.0
	0~1370	± 0.6
T	-200~0	± 1.0
	0~400	± 0.6
E	-100~0	± 0.7
	0~950	± 0.5
R	-20~0	± 2.3
	0~500	± 1.6
	500~1750	± 1.2
S	-20~0	± 2.3
	0~500	± 1.6
	500~1750	± 1.3
B	600~800	± 2.0
	800~1000	± 1.6
	1000~1800	± 1.2
N	-200~0	± 1.3
	0~1300	± 0.7

Resolution: 0.1

Cold junction error: ± 0.5

Typical error of the temperature detector: ± 0.2

Accessory



Test lead



External temperature detector

Tunix Corporation, 520, MS1-A, Opp. Mall-Go-down road, New Siyaganj, Indore-452001, Madhya Pradesh, India.

Email: products@tunix.co.in, Call: 6264901140

T & C : All product specifications, images are indicative & may change without prior notice, Images shown are for reference only, actual product may differ in color, shape and size.