

SMG2000B Double Clamp Digital Phase Meter



I. Introduction

SMG2000B Double Clamp Digital Phase Meter is special designed for testing voltage, current and phase onsite, it is in high-precision, low price, portable hand-held, dual-channel input measuring products. It's easy to measure the phase between U-U, I-I and U-I, identify the inductive circuit ,capacitive circuit and the phase sequence of three-phase voltage, detect the wiring group of transformer, test the secondary circuit and bus differential protection system, read the phase relationship among the CT groups of a differential protection system, and check if the watt-hour meter was correctly wired. When testing customers do not need cut off the measured circuit which input by split core current transformer. When measuring the phase between U1 and U2, the two input circuit loop are completely insulated isolation, so the possibility of misconnection is absolutely avoided, which may result in short circuit or even burn the meter. The device with high-contrast LCD screen, and the character in big size, which helps to obtain the best visual effects.

II.Features

1.Withstand Voltage

Parts between voltage input terminal and meter shell, parts between the iron core of the clamp-current transformer and secondary windings can stand 1000V/50Hz. Parts between the two voltage input terminals can stand Sinusoidal AC Voltage 500V/50Hz for 1min when testing.

2.Insulation Resistance

Between meter circuit and meter shell, between the two voltage input terminals : $\geq 10M\Omega$

III. Parameters

Intrinsic Error

Reference Working Conditions	Temperature	(23±5)°C
	Humidity	(45~75)%RH
	Wave forms of measured signal	sine wave、 $\beta=0.02$
	Frequency of measured signal	(50±0.2)Hz
	Position of Measured current carrying conductor in the nipper jaw	Optional position
	Amplitude range of measured signal when measuring phase	100~220V、0.5~1.5A
	External reference frequency electromagnetic interference	Should be avoided

Limits of Intrinsic Error

1. AC Voltage

Table 1 : Measurement Error of AC Voltage		
Measure range	Resolution	Limits of intrinsic error
20V	0.01V	± (1.0%RD+2)
200V	0.1V	
500V	1V	

Input Impedance : 2MΩ for all the measure range

2. Alternating current

Table 2 : Measurement Error of alternating current		
Measure range	Resolution	Limits of intrinsic error
200mA	0.1mA	± (1.0%RD+2)
2A	1mA	
10A	10mA	

3. Phase

U-U、U-I、I-I (see Table 3)

Table 3 : Measurement Error of Power-frequency Phase		
Range	Resolution	Limits of intrinsic error
0~360°	1°	±3°

Impedance of input voltage loop when measuring phase of U1-U2 : 40KΩ

Operating error

Rated Working Conditions	Temperature	(0~40)°C
	Humidity	(20~80)% RH
	Wave forms of measured signal	Sine wave、 $\beta=0.05$
	Frequency of measured signal	(50±0.5)Hz
	Position of Measured current carrying conductor in the nipper jaw	Optional position.
	Amplitude range of measured signal when measuring phase	Phase U1-U2 : 30V~500V
		Phase I1-I2 : 10mA~10.00A
Phase U1-I2 or I1-U2 : 10V~500V、10mA~10.00A		
External reference frequency electromagnetic interference	should be avoided	
Limits of Rated Working Error	Under the conditions described in 1, the limits of the rated operating error will not exceed twice of the limits of intrinsic error.	

Other technical features

Display	three and half	
Sampling rate	3 times per second	
Power supply	Single 9V laminated cell, current of power is less than 5mA	
Dimensions	Meter shell	192×95×55mm ³
	Clamp shell	140×42×20mm ³
	Nipper jaw	Φ7mm×9mm
Weight	Meter body	280g
	Measuring clamps	2×200g
Storage Conditions	Temperature	-10°C~50°C

IV. Accessories

