

COMPACT MULTIFUNCTION CALIBRATOR

CA71
\$1450



CA71, \$1450, shown smaller than actual size.

- ✓ Simultaneously Sources and Measures
- ✓ Voltage, Pulse, Current, Resistance, Thermocouple, RTD, Frequency Signals
- ✓ Autostep, Sweep, and Memory Functions

The CA71 is a small, lightweight, multifunction calibrator that can simultaneously source and measure voltage, current, resistance, thermocouple, RTD, frequency, and pulse signals.

Rotary switches allow for easy operation. Upon opening the carrying case cover and connecting the cables, the user is ready to take measurements.

The CA71 offers many useful functions, including source (output can be set in steps); power; transmitter; divided (n/m, eliminating need for calculations for percentage output); autostep (changes can be sourced every 10% or 25%); online communication (RS232); sweep (linearly changes output over 16 or 32 seconds); memory (50 sets); and temperature monitor.

SPECIFICATIONS

Parameter

Signal Generating Unit Response

Time: Approx. 1 second

Signal Generating Unit Voltage

Limiter: Approx. 32V

Signal Generating Unit Current

Limiter: Approx. 25 mA

Divided Output (n/m) Function:

Output = setting x (n/m)

where n = 0 to m; m = 1 to 19; n x m

Autostep Output Function:

n value sent automatically when n/m function selection is selected (approx. 2.5 or 5 seconds/step)

Sweep Function: Sweep time (approx. 16 or 32 seconds)

Memory Function: 50 value sets (generated and measured values)

Measuring Unit Maximum Input:

Voltage Terminal: 300 Vac

Current Terminal: 120 mA DC

Current Input (Fuses): 125 mA/250V

Measuring Unit Ground Voltage:

Maximum 300 Vac

Measurement Display Updating Rate:

Approx. 1 second

Serial Interface:

Enabled via CA71-RS cable

Display:

Segmented LCD (approx. 76 x 48 mm (3.0 x 1.8"))

Backlight:

LED backlight; auto-off

Power Supply:

4 "AA" alkaline batteries (included)

Battery Life:

Approx. 20 hr for measurement and voltage output (12 hr for current)

Power Consumption: Approx. 7 VA (using 120 Vac adaptor)

Auto Power-Off Function: Approx. 10 minutes (can be disabled)

Applicable Standards: IEC61010-1, IEC61010-2-31; EN61326-1: 1997 + A1, 1998; EN55011: 1998, Class B, Group 1

Insulation Resistance:

500 Vdc, 50 MΩ or greater

Withstand Voltage:

3.7 kVac, for 1 minute

Operating Temperature and Humidity

Ranges: 0 to 50°C (32 to 122°F),

20 to 80% RH (non-condensing)

Storage Temperature and Humidity

Ranges: -20 to 50°C (-4 to 122°F),

90% RH or less (non-condensing)

Dimensions:

Approx. 190 W x 120 H x 55 mm D

(7.5 x 4.7 x 2.2")

Weight: Approx. 730 g (1.6 lb)

with batteries

MEASUREMENT UNIT (TEMPERATURE)

ACCURACY: ±(READING PERCENTAGE + °C)

FUNCTION	REFERENCE	RANGE	ACCURACY (23 ±5°C PER YEAR)	RESOLUTION
T/C *1	K	-200 to 1372°C	±(0.05% + 1.5°C) (-100°C or greater) ±(0.05% + 2°C) (-100°C or less)	0.1°C
	E	-200 to 1000°C		
	J	-200 to 1200°C		
	T	-200 to 400°C		
	N	-200 to 1300°C		
	L	-200 to 900°C		
	R	0 to 1768°C	±(0.05% + 2°C) (100°C or greater) ±(0.05% + 3°C) (100°C or less)	1°C
	S	0 to 1768°C		
	B	600 to 1800°C		
RTD	Pt100*2	-200 to 850°C	±(0.05% + 0.6°C) (3-wire)	0.1°C
	JPt100	-200 to 500°C		

Temperature coefficient: accuracy shown above x (1/5)/°C.

* 1: According to JIS C 1604-1997 (ITS-90). IPTS-68 may be selected through internal settings (DIP switch).

* 2: According to JIS C 1602-1995 (ITS-90) (L and U are DIN specs). K, E, J, T, N, R, S, and B may be switched to IPTS-68 through internal settings (DIP switch) (L and U are not switched).

MEASUREMENT UNIT RANGE AND ACCURACY
ACCURACY: ±(READING PERCENTAGE PLUS μV, MV, μA, Ω, OR DIGIT)



OMEGACARESM extended warranty program is available for models shown on this page. Ask your sales representative for full details when placing an order. OMEGACARESM covers parts, labor and equivalent loaners.

FUNCTION	REFERENCE	RANGE	ACCURACY (23±5°C PER YEAR)	RESOLUTION	REMARKS
DC Voltage	100 mV	0 to ±110 mV	±(0.025% + 20 μV)	10 μV	Input resistance: 10 MΩ or greater
	1V	0 to ±1.1V	±(0.025% + 0.2 mV)	0.1 mV	
	10V	0 to ±11V	±(0.025% + 2 mV)	1 mV	Input resistance: approx. 1 MΩ
	100V	0 to ±110V	±(0.05% + 20 mV)	0.01V	
DC Current	20 mA	0 to ±24 mA	±(0.025% + 4 μA)	1 μA	Input resistance: approx. 14 Ω
	100 mA	0 to ±100 mA	±(0.04% + 30 μA)	10 μA	
Resistance	400 Ω	0 to 400 Ω	±(0.05% + 0.1 Ω)	0.01 Ω	Accuracy during 3-wire measurement
AC Voltage	1V	0 to 1.1V	±(0.5% + 5 dgt)	1 mV	Input resistance: Approx. 10 Ω/10 pF
	10V	0 to 11V		0.01V	
	100V	0 to 110V	±(0.5% + 2 dgt)	0.1V	Input resistance: M/10 pF Approximately 1 value rectification
	300V	0 to 300V		1V	
Frequency, Pulse	100 Hz	1.00 to 100 Hz	±2 dgt	0.01 Hz	Maximum input: 30V peak Input resistance: 200 k or greater Sensitivity: 0.5V peak or greater Contact input: maximum 100 Hz Notes cpm: Counts per minute cph: Counts per hour
	1000 Hz	1.0 to 1000 Hz		0.1 Hz	
	10 kHz	0.001 to 11 kHz		0.001 kHz	
	cpm	0 to 99,999 cpm		1 cpm	
	cph	0 to 99,999 cph		1 cph	

SIGNAL SOURCING UNIT RANGE AND ACCURACY

FUNCTION	REFERENCE	RANGE	ACCURACY (23±5°C PER YEAR)	RESOLUTION	REMARKS
DC voltage	100 mV	-10 to 110 mV	±(0.02% + 15 μV)	10 μV	Max output: 5 mA Max output: 10 mA Max output: 10 mA *1
	1V	0 to 1.1V	±(0.02% + 0.1 mV)	10 μV	
	10V	0 to 11V	±(0.02% + 1 mV)	1 mV	
	30V	0 to 30V	±(0.02% + 10 mV)	10 mV	
DC Current Generation	20 mA 4 to 20 mA	0 to 24 mA 4/8/12/16/20	±(0.025% + 3 μA)	1 μA 4 mA	Max. load: 12V
mA Sink	20 mA	0.1 to 24 mA	±(0.05% + 3 μA)	1 μA	External power supply: 5 to 28V
Resistance	400Ω	0 to 400 Ω	±(0.025% + 0.1 Ω)	0.01 Ω	Excitation current: 0.5 to 5 mA*3 If 0.1 mA, add 0.25 Ω or 0.6°C; subject device input capacitance: 0.1 μF or less
	Pt100 *2 JPt100	-200 to 850°C -200 to 500°C	±(0.025% + 0.3°C)	0.1°C	
T/C *4	K	-200.0 to 1372.0°C	±(0.02% + 0.5°C)	1°C	T/C source accuracy does not include RJ sensor accuracy. RJ sensor specs Measurement range: -10 to 50°C Accuracy (when combined with main unit) 18 to 28°C (64 to 82°F): ±0.5°C Other than the above: ±1°C
	E	-200.0 to 1000.0°C	(-100°C or greater) ±(0.02% + 1°C)		
	J	-200 to 1200°C	(-100°C or less)		
	T	-200 to 400°C	±(0.02% + 0.5°C)		
	N	-200 to 1300°C	(0°C or greater)		
	L	-200 to 900°C	±(0.02% + 1°C)		
	U	-200 to 400°C	(0°C or less)		
	R	0 to 1768°C	±(0.02% + 2.5°C)	1°C	
	S		(100°C or less) ±(0.02% + 1.5°C)		
	B	600 to 1800°C	±(0.02% + 2°C) (1000°C or less) ±(0.02% + 1.5°C) (1000°C or greater)		
Frequency Pulse	500 Hz	1 to 500 Hz	0.1 Hz	±0.2 Hz	Output voltage: +0.1--15 V (zero base waveform) Amplitude accuracy: ±(5% + 0.1 V) Maximum load current: 10 mA Contact output: (with 0.0V amplitude setting, FET switch ON/OFF) Maximum open/close voltage/current: +28 V/50 mA
	1000 Hz	90 to 1100 Hz	1 Hz	±1 Hz	
	10 kHz	0.9 to 11 kHz	0.1 kHz	±0.1 kHz	
	Pulse Cycle *5	1 to 99,999 cycles	—	1 cycle	

Temperature coefficient: Accuracy shown above x (1/°)°C
 *1: Output up to 24 V/22 mA is possible when using the AC adaptor.
 *2: According to JIS C 1604-1997 (ITS-90); IPTS-68 may be selected through internal settings (DIP switch).
 *3: Excitation current: If less than 0.1 mA to 0.5 mA, then add [0.025/ls (mA)] Ω or [0.06/ls (mA)]°C.
 *4: According to JIS C 1602-1995 (ITS-90); (L and U are DIN specs). K, E, J, T, N, R, S, and B may be switched to IPTS-68 through internal settings (DIP switch). L and U are not switched).
 *5: Frequency (interval between one pulse and another) and amplitude during pulse cycle generation may have the same range as during frequency generation.

AVAILABLE FOR FAST DELIVERY!

To Order (Specify Model Number)		
MODEL NO.	PRICE	DESCRIPTION
CA71	\$1450	Multifunction calibrator
CA71-NIST	1777	Calibrator with NIST calibration certificate

Comes complete with signal-generating lead cables (1 red, 2 black), measurement lead cables (1 red, 1 black), carrying case, terminal adaptor, operator's manual, fuse: A1501EF (for current terminal input protection), and 4 "AA" alkaline batteries.

Ordering Example: CA71, calibrator, supply adaptor, \$1450.

OCW-2, OMEGACARESM extends standard 3-year warranty to a total of 5 years, (\$261), \$1450 + 261 = \$1711.

ACCESSORIES

MODEL NO.	PRICE	DESCRIPTION
CA71-PS	\$46	120 Vac adaptor
CA71-PS230	99	230 Vac adaptor
CA71-FUSE	10	Fuse, input, package of 1
CA71-RS	85	RS232 cable
CA71-RJC	147	External RJC*

* Allows remote cold-junction compensation for thermocouples instead of using the standard internal sensor.



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