Calibrator for Voltage, Current and Frequency

1 YEAR WARRANTY

CE

Model CLF-II DISCONTINUED PRODUCT

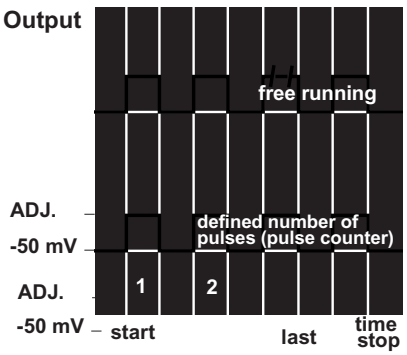
Model CLF-II

$1995

Includes test Leads and carrying case as shown

- Generates Pulses and Reads Frequency
- Converts Any Input into Any Output Signal
- Powers, Reads and Simulates Digital Sensors
- Sources and Reads Millivolts, Volts and Milliamps
- Powers, Reads and Simulates 2-Wire Transmitters
- Simultaneous Input and Output Readings
- Outputs Pre-Set Number of Pulses
- Scale Factors for Flow Readings
- Stop-Watch Pulse Counting

CLF-II: Your Personal Tester and Calibrator for Voltage, Current and Frequency



Transmitter Simulation and Calibration

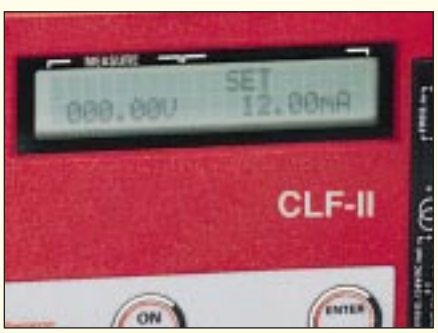
To simulate process conditions, model CLF-II can be connected to loop powered transmitter inputs, allowing easy performance tests on system software. For transmitter calibration, model CLF-II offers an integral 24 Vdc power supply and loop current read-out. Transmitter readings may be scaled into engineering units like psi, pascal, bar, etc. Readings in percent (%) on 4-20mA ranges can be obtained directly by pressing the "% /mA" key; this is useful when testing or adjusting alarm settings.

Simultaneous Readings

Signal outputs and measurement inputs are fully electrically isolated from each other to read output and input simultaneously. This feature helps to observe related signals like signal converters, flow computers and controllers. Almost any input-output mix can be selected.

Functions for PLC Testing

Square wave pulses can be generated with frequencies from 0.01 Hz to 10 kHz. Pulse height is adjustable between 100 mV and 24 Volts. Output can drive 34 mA to simulate signals from photo electrics, electro magnetic sensors and proximity switches. With this powerful function, the user can even test electro mechanical devices such as counters and relays. Pulse generation can be either "free running" or a "counted number." A counter input with adjustable thresholds offers you a test facility for your digital sensors.



Signal Converter Function

Any input can be converted into any output signal. For example, frequency can be converted into milliamps, millivolts into Volts, Volts into millivolts, etc. An input signal can also be converted into the same type of output but with different zero and span settings like 4-20 mA into 0-20 mA or low frequency into high frequency. Zero and span settings, for both input and output are fully programmable. These features enable the user to create a signal transmitter (converter) when a regular type of transmitter is not available.

Any Input Can Be Converted Into Any Output Signal!

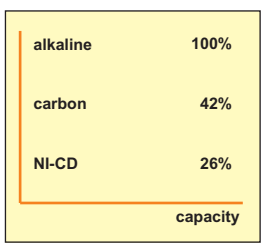
Millivolts ⟷ Volts

Volts ⟷ Milliamps

Frequency ⟷ Millivolts

Milliamps ⟷ Frequency

Frequency ⟷ Volts



Extended Use on Alkaline Batteries

Thanks to low power CMOS components and the use of alkaline cells, the CLF-II operates for more than 20 hours in the measurement mode on one set of alkaline batteries. Battery condition is monitored, indicating replacement priorities at two levels. For bench use, tester may be line powered by using a battery eliminator adaptor.

Factory Floor Design

The model CLF-II has been designed for use in industrial environments such as factory floors, process plants, service departments and maintenance workshops. The unit is rugged and has a rain tight front. Connectors are suitable for use with 4 mm test plugs. A strong and handy carrying case protects the tester when stored in a toolbox and accommodates the test leads and instructions. Special carrying straps allow you to use the tester hands-free.

Instrumentation Calibration

Millivolts, Volts, milliamps, and frequency can be measured and generated at the same time. Both accuracy performance and stability allow you to calibrate field and control room instrumentation. Menu structured operation and LCD “man-machine” dialogues make the operating manual almost obsolete. Functions are available to ramp signals automatically and to store 2 to 6 pre-set output values. Pre-set values can be recalled manually or automatically with interval times between 10 and 100 second, a handy feature when stroking control valves.

Flow Computer Testing

Special functions are available to simulate signals from turbine meters, vortex flow transmitters and differential pressure flow transmitters. Scaling can be performed on both measurement and output signals on frequency and milliamp ranges. On both ranges, the user can set the scale ends between -9999 and +9999. In addition to the milliamp ranges, a square root function may be selected. Scaled readings may represent engineering units such as liters/min, gallons/hour, etc. The “counted number of pulses” feature offers a unique test facility for batch counters, frequency and flow indicators.

Calibrator for Voltage, Current and Frequency, Model CLF-II

Function	Range	Resolution	Accuracy % of span	Remarks
Measure mVolts	0 to 120 mV	0.01 mV	±0.025%	R-input > 20 MΩ
Output mVolts	0 to 120 mV	0.01 mV	±0.025%	R-output 0.2 Ω
Measure Volts	0 to 120 V	0.01 V	±0.05%	R-input 1 MΩ
Output Volts	0 to 12 V	0.00 1V	±0.025%	R-output 0.2 Ω
Measure mA	0 to 52 mA	0.01 mA	±0.05%	R-input 3.5 Ωfused
Output mA	0 to 24 mA	0.01 mA	±0.05%	R-max. 900 Ω
Transmitter simulation	0 to 24 mA	0.01 mA	±0.05%	V-max. ext. 56 Volts
Measure frequency	0 to 10 kHz aut. range 100 KΩ at > 7.5V	0.01 Hz, f < 100 Hz 1 Hz, f > 100 Hz	±0.01 Hz ±1 Hz	> 300 KΩ > 300 KΩ 100 KΩ at > 7.5V
Counter input	0 to 10^7 - 1 counts	1 count	infinite	> 300 KΩ 100 KΩ at > 7.5V
Counted pulse output	0 to 10^7 - 1 counts	1 count	infinite	0 - 24 V/34 mA max.
Pulse output low freq.	0 to 100 Hz	0.01 Hz	±0.01 Hz	0 - 24 V/34 mA max.
Pulse output high freq.	0 to 10 kHz	1 Hz	±1 Hz	0 - 24 V/34 mA max.

Specifications

Thresholds Frequency/Counter Input:
Selectable at 0.02, 0.05, 0.1, 0.2, 0.5, 1.0, 2.0, 5.0 Volts
Pulse Output Level:
Adjustable from 0.1 to 24 Volts
with a resolution of 0.1 Volts
Output Pulse Form:
AC symmetrical square wave, -50 mV zero based
Pulse Output Transmission Speed:
Adjustable from 1 to 10.000 bauds
Pulse Output Frequency:
Selectable in Hz, Pulses/min. and Pulses/hour
Special functions:
1. Programmable steps (2 to 6 steps manual/auto)
2. Signal ramping (up/dwell/down)
3. Scaling (engineering units)
4. Transmitter (signal converter)

Reference: 20°C (68°F) ±3K
Calibration: Traceable to National Standards
Long Term Stability: ±0.03% of range/year
Indicated Accuracies:
Specified for 15 to 35°C, (60 to 95°F).
Outside these limits; ±1 lsd max. on zero and ±0.001%/°C on span
Operating Temperature: -10 to 50°C (14 to 122°F)
Storage Temperature: -20 to 70°C (-4 to 158°F)
Warm-Up Time: 2 minutes to rated accuracy
Relative Humidity: 0 to 90% non-condensing
Input/Output Protection: 70 Volts on millivolt input, 30 Volts on outputs, 200 Volts on Volts input
Input/Output Isolation: 500 Vdc continuous

Output Voltage: Protected by load monitor, displays "too low load resistance"
Output Current: Protected by load monitor, displays "check loop"
Transmitter Power Supply: Available for user; 24 Vdc/current limited at 34 mA
Read-Out: Simultaneous read-out of input and output values $3^3/_4$ or $4^1/_2$ digits, depending on the selected range
Batteries: 4 x 1.5 Volt, type LR14 (Size C alkaline) or rechargeable NiCd
Battery Life: 22 hours with alkaline batteries at 20°C (68°F), 7 hours with 20 mA load
Low Battery Indication: Pre-warning alternately flashes "bat". After approx. 15 minutes, unit stops working and indicates steady "replace batteries"
External Power Supply: By optional charger/line adaptor model number: CLBPS 230/115 V - 50/60 Hz
Connections: Suitable for 4 mm test plugs
Protection: IP53
Housing: Textured high-impact ABS plastic
Size: 200 x 117 X 32 mm (8.0 x 4.7 x 1.3") without carrying case
Weight: 0.9 kg (2 lb) including batteries, carrying case and test leads

To Order *(Specify Model No.)*		
Model Number	**Price**	**DISCONTINUED PRODUCT!!**
CLF-II	**$1995**	Calibrator for voltage, current and frequency
CLBPS	**138**	Charger/power supply
FTL	**55**	Test leads & small parts for CLF-II

Ordering example: CLF-II**, Calibrator for voltage, current and frequency, **$1995.
Model CLF-II includes: carrying case, batteries, instruction manual, calibration certificate, spare fuse & set of test leads.

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