EXTECH 412300 Current Calibrator with Loop Power User Guide

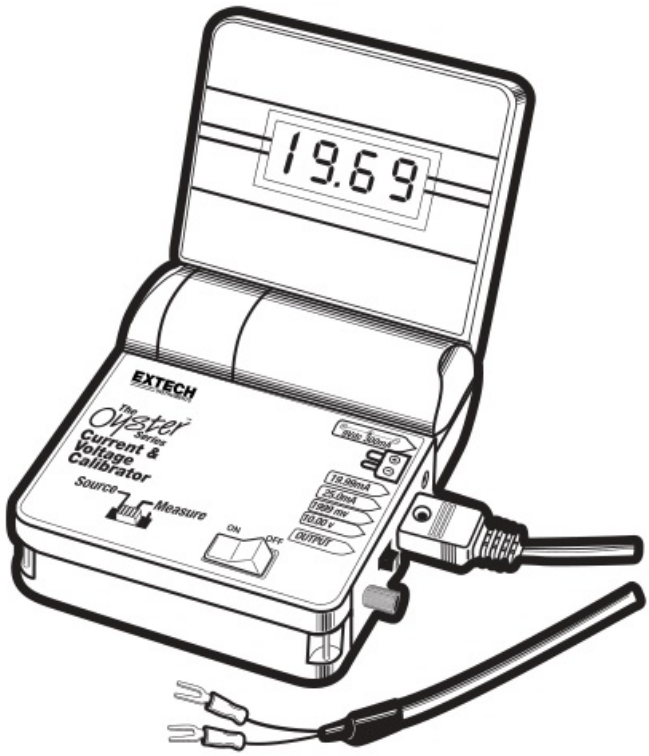
EXTECH 412300 Current Calibrator with Loop Power User Guide

User's Guide

EXTECH INSTRUMENTS

Model 412300 Current Calibrator with Loop Power

Model 412355 Current / Voltage Calibrator



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Introduction

Congratulations on your purchase of the Extech Calibrator. The Model 412300 Current Calibrator can measure and source current. It also has 12VDC loop power for powering and measuring simultaneously. The Model 412355 can measure and source current and voltage. The Oyster Series meters have a convenient flip up display with neck-strap for hands-free operation. With proper care this meter will provide years of safe, reliable service.

Specifications

General Specifications

Display	3 ½ digit LCD (2000 counts, displays 0 to 1999)
Accuracy (of reading)	± (0.075% + 1 digit) or ± 3 digits, whichever is greater
Meter Power	9 volt battery or optional AC adaptor
Loop Power	12V DC (412300 only)
Maximum Load	350 ohms at 20 mA
Dimensions	3.8 x 4.2 x 1.8" (96 x 108 x 45mm) folded
Weight	12 oz. (340g)
Accessories Supplied	9V battery and calibration cable with spade lugs
Optional Accessories	AC Adaptor, NIST Certificate, and Carrying Case

Range Specifications

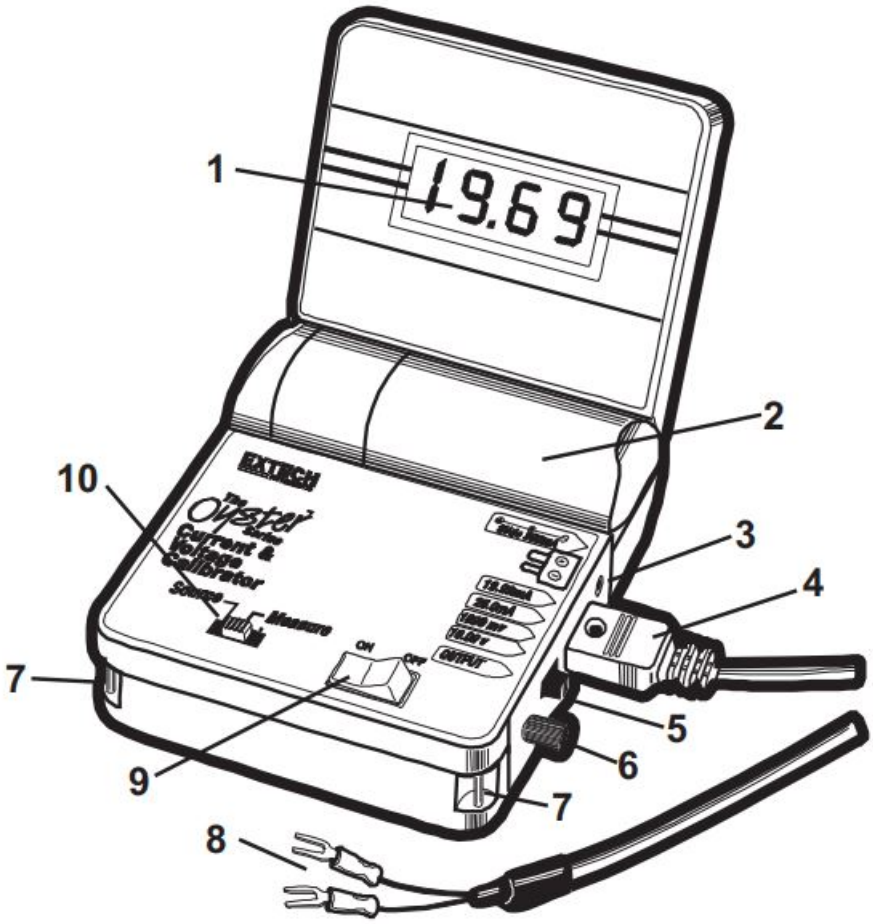
Model 412300 Current Calibrator	
Measurement range (resolution)	0 to 50mA (0.1mA)
Output ranges (resolution)	0 to 19.99mA (0.01mA)
	0 to 24.0mA (0.1mA)
	-25% to +125% (0.1%) (0% = 4mA, 100% = 20mA)
Model 412355 Current and Voltage Calibrator	
Measurement ranges (resolution)	0 to 50mA (0.1mA)
	0 to 19.99V (0.01V)
Output ranges (resolution)	0 to 19.99mA (0.01mA))
	0 to 25.0mA (0.1mA)
	0 to 1999mV (1mV)
	0 to 10.00V (0.01V)

Meter Description

Refer to the Model 412300 diagram. The Model 412355, pictured on the front cover of this user guide, has the same switches, connectors, jacks, etc. Operational differences are described in this manual.

1. LCD display
2. Battery Compartment for 9V Battery

3. AC Adapter input jack
4. Calibrator cable input
5. Range switch
6. Fine output adjustment knob
7. Neck-strap connector posts
8. Calibration spade lug connectors
9. ON-OFF switch
10. Mode switch



Operation

Battery and AC Adapter Power

1. This meter can either be powered by one 9V battery or an AC adapter.
2. Note that if the meter is going to be powered by the AC adapter, remove the 9V battery from the battery compartment.
3. If the LOW BAT display message appears on the LCD display, replace the battery as soon as possible. Low battery power may cause inaccurate readings and erratic meter operation.
4. Use the ON-OFF switch to turn the unit ON or OFF. The meter can be automatically shut off by closing the case with the meter on.

MEASURE (Input) Mode of Operation

In this mode, the unit will measure up to 50mADC (both models) or 20VDC (412355 only).

1. Slide the Mode switch to the MEASURE position.
2. Connect the Calibration Cable to the meter.
3. Set the Range switch to the desired measurement range.
4. Connect the Calibration Cable to the device or circuit under test.
5. Turn the meter on.
6. Read the measurement on the LCD display.

SOURCE (Output) Mode of Operation

In this mode, the unit can source current up to 24mADC (412300) or 25mADC (412355). The Model 412355 can source up to 10VDC.

1. Slide the Mode switch to the SOURCE position.
2. Connect the Calibration Cable to the meter.
3. Set the Range switch to the desired output range. For the -25% to 125% output range (Model 412300 only) the output range is 0 to 24mA. Refer to the Table below.

Display	-25%	**0%**	25%	50%	75%	**100%**	125%
mA output	0mA	**4mA**	8mA	12mA	16mA	**20mA**	24mA

4. Connect the Calibration Cable to the device or circuit under test.
5. Turn the meter on.
6. Adjust the fine output knob to the desired output level. Use the LCD display to verify the output level.

POWER/MEASURE Mode of Operation (412300 only)

In this mode the unit can measure current up to 24mA and power a 2-wire current loop. The maximum loop voltage is 12V.

1. Slide the Mode switch to the POWER/MEASURE position.
2. Connect the Calibration Cable to the meter and to the device to be measured.
3. Select the desired measurement range with the range switch.
4. Turn the calibrator on.
5. Read the measurement on the LCD.

Important Note: Do NOT short the Calibration Cable leads while in the POWER/MEASURE mode.
This will cause excess current drain and may damage the calibrator. If the cable is shorted the display will read 50mA.

Battery Replacement

When the LOW BAT message appears on the LCD, replace the 9V battery as soon as possible.

1. Open the calibrator's lid as far as possible.
2. Open the battery compartment (shown in Meter Description section earlier in this manual) using a coin at the arrow indicator.
3. Replace the battery and close the cover.

Warranty

FLIR Systems, Inc. warrants this Extech Instruments brand device to be free of defects in parts and workmanship for **one year** from date of shipment (a six month limited warranty applies to sensors and cables). If it should become necessary to return the instrument for service during or beyond the warranty period, contact the Customer Service Department for authorization. Visit the website **www.extech.com** for contact information. A Return Authorization (RA) number must be issued before any product is returned. The sender is responsible for shipping charges, freight, insurance and proper packaging to prevent damage in transit. This warranty does not apply to defects resulting from action of the user such as misuse, improper wiring, operation outside of specification, improper maintenance or repair, or unauthorized modification. FLIR Systems, Inc. specifically disclaims any implied warranties or merchantability or fitness for a specific purpose and will not be liable for any direct, indirect, incidental or consequential damages. FLIR's total liability is limited to repair or replacement of the product. The warranty set forth above is inclusive and no other warranty, whether written or oral, is expressed or implied.

Calibration, Repair, and Customer Care Services

FLIR Systems, Inc. offers repair and calibration services for the Extech Instruments products we sell. NIST certification for most products is also provided. Call the Customer Service Department for information on calibration services available for this product. Annual calibrations should be performed to verify meter performance and accuracy. Technical support and general customer service is also provided, refer to the contact information provided below.

Support Lines: U.S. (877) 439-8324; International: +1 (603) 324-7800

Technical Support: Option 3; E-mail: **support@extech.com**
Repair & Returns: Option 4; E-mail: **repair@extech.com**
Product specifications are subject to change without notice
Please visit our website for the most up-to-date information

www.extech.com
FLIR Commercial Systems, Inc., 9 Townsend West, Nashua, NH 03063 USA
ISO 9001 Certified

Documents / Resources

	**EXTECH 412300 Current Calibrator with Loop Power** [pdf] User Guide 412300, 412355, 412300 Current Calibrator with Loop Power, 412300, Current Calibrator with Loop Power, Current Calibrator, Calibrator, Loop Power, Power

References

- **Extech is now on FLIR.com | Teledyne FLIR**