

## Product Quick Reference Card

### Device Maintenance

#### Battery Replacement

##### Materials:

Small Phillips Head Screwdriver

Replacement Battery (LTC-7PN)

- Puncture the center of the back label with the screw driver and unscrew the enclosure.
- Remove the battery by pulling it perpendicular to the circuit board.
- Insert the new battery into the terminals and verify it is secure.
- Screw the enclosure back together securely.

**Note: Be sure not to over tighten the screws or strip the threads.**

#### Battery Warning

**WARNING: FIRE, EXPLOSION, AND SEVERE BURN HAZARD. DO NOT SHORT CIRCUIT, CHARGE, FORCE OVER DISCHARGE, DISASSEMBLE, CRUSH, PENETRATE OR INCINERATE. BATTERY MAY LEAK OR EXPLODE IF HEATED ABOVE 80°C (176°F).**

#### Recalibration

The Process101 standard calibration is performed at 0mA and 90-100mA. The Process110 standard calibration varies by range.

Range	7mA	25mA	100mA
<b>Standard Calibration</b>	0mA and 0.9 - 1mA	0mA and 22.5 - 25mA	0mA and 90-100mA

#### Pricing:

Recalibration traceable to NIST \$60.00

Recalibration \$40.00

#### Additional:

As Found Data \$15.00

Additional Points \$15.00 per point

To send the devices back, visit [www.madgetech.com](http://www.madgetech.com), select Services then RMA Process.



Part Number	Process101	Process110
Current Range	-20 to +120mADC	
Current Resolution	10µA	
Calibrated Accuracy	±0.1% FSR @ 25 °C	*See Table Below
Input Impedance	10 Ω	
Channels	1	
Memory	32,767	
Sample Rate	1 second up to 12 hours	
LED Indicator	Red	
Required Interface package	IFC110 or IFC200	
Baud Rate	2,400	57,600
Typical Battery Life	1 year	10 years
Operating Environment	-40 to +80°C, 0 to 95%RH (non-condensing)	
Material	ABS plastic	
Dimensions	1.4" x 2.5" x 0.6" (36mm x 64mm x 16mm)	1.7" x 2.7" x 0.8" (44mm x 69mm x 21mm)
Approvals	CE	

\*Current Series Range, Resolution, Impedance and Calibrated Accuracy

Nominal Range	±1mA	±25mA	±100mA
<b>Measurement Range</b>	±1.5mA	±30mA	±120mA
<b>Common Mode Input Range</b>	0 to 2.5V	0 to 2.5V	0 to 2.5V
<b>Resolution</b>	0.05µA	1µA	5µA
<b>Input Impedance</b>	50 Ω	10 Ω	2 Ω
<b>Calibrated Accuracy @ 25°C</b>	±0.5%FSR	±0.1%FSR	±0.1%FSR

Specifications subject to change.

See MadgeTech's terms and conditions at [www.madgetech.com](http://www.madgetech.com)

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## Product Information Card

### Process101, Process110



#### Process101

Low Level Current Recorder

#### Process110

Low Level Current Recorder with 10 Year Battery Life

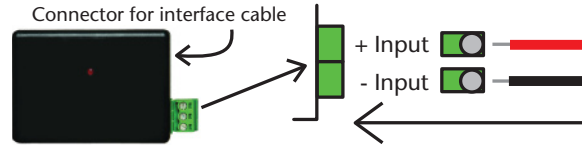


To view the full MadgeTech product line, visit our website at [www.madgetech.com](http://www.madgetech.com).

### Wiring the Data Logger

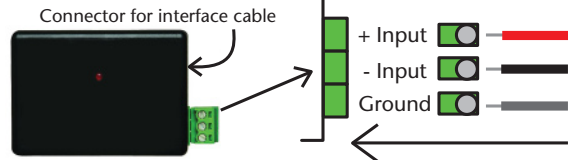
#### Process101 Wiring

Two-position removable screw terminal connections; accepts 2-wire configurations.



#### Process110 Wiring

Two position removable screw terminal connections, accepts 3 wire configurations.



**Warning:** Note the polarity instructions. Do not attach wires to the wrong terminals.

### Product Notes

#### LEDs

Once started, the LED will flash at the selected reading rate to indicate that the device is running.

#### Engineering Units

**Engineering units** are used to convert one measurement reading to another. The MadgeTech software allows for software level Engineering Units (conversion applied to data after download). Certain devices have device level Engineering Units, which upon download automatically appear in the chosen unit of measure.

Please refer to the app note "Engineering Units", found on the MadgeTech website, for information on how to manage Engineering Units.

### Installation Guide

#### Installing the Interface cable

- IFC200, IFC202 or IFC300  
Refer to the "Quick Start Guide" included in the package.
- IFC110, IFC102 or IFC103  
Plug the serial cable into the port and verify it is secure.
- USB-1 or USB-101  
Install the USB drivers from the CD provided in the kit, then plug the USB cable into the computer and the serial cable into the serial port.

#### Installing the software

Insert the Software CD in the CD-ROM Drive. If the autorun does not appear, locate the drive on the computer and double click on **Autorun.exe**. Follow the instructions provided in the Wizard.

#### Connecting the data logger

- Once the software is installed and running, plug the interface cable into the data logger.
- Click the **Communication Menu**, then **Auto Configure Port**.
- After a moment, a box similar to the following will appear;



- Click **OK**. The **Device Status** box will appear. Click **OK**.
- At this point, communications have been configured for your logger. These settings can be found under the **Communication Menu**.

**Note:** For additional installation instructions refer to your "Data Logger & Software Operating Manual".

### Device Operation

#### Starting the data logger

- Click **Device Menu** then **Start Device**.
- Choose the desired start method.
- Choose the start parameters by selecting a **Reading Rate** suitable for your application.
- Enter in any other desired parameters and click **Start**.
- A box will appear stating the data logger has been started. Click **OK**.



- Disconnect the data logger from the interface cable and place it in the environment to measure.

**Note:** The device will stop recording data when the end of memory is reached or the device is stopped. At this point the device cannot be restarted until it has been re-armed by the computer.

#### Downloading data from a data logger

- Connect the data logger to the interface cable.
- Click the **Device Menu** then **Read Device Data**. This will offload all recorded data onto the PC.

### Technical Support

Visit [www.madgetech.com](http://www.madgetech.com), or call (603) 456-2011. Technical support is also available by e-mailing [support@madgetech.com](mailto:support@madgetech.com)

Additional product information is available by e-mailing [info@madgetech.com](mailto:info@madgetech.com).