

## RS-232 ↔ Current Loop Interface Converters

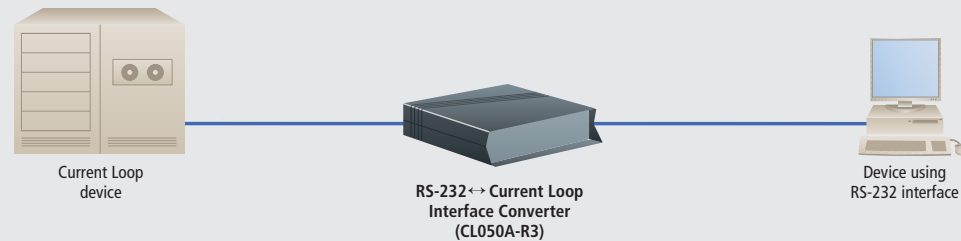


**Connect a Current Loop device  
to an RS-232 device.**

## FEATURES

- Interconnect a digital 20/30/60-mA unipolar Current Loop interface to an RS-232 interface.
- Units available for active or passive devices or passive-only devices.
- AC powered or interface powered.
- 220-VAC version of the active/passive model is available.
- Switches control duplex, loop current, and operation as either DTE or DCE devices.

*We have the ideal Current Loop solutions for your point-to-point configuration!*



## OVERVIEW

The RS-232↔Current Loop Interface Converters are bidirectional, self-contained units that enable you to interconnect a digital 20/30/60-mA unipolar Current Loop interface to an RS-232 interface. The converters cannot be used with an analog Current Loop (4 to 20 mA) or bipolar Current Loop.

### AC-Powered Active/Passive and Passive-Only Converters

These Active/Passive RS-232↔Current Loop Interface Converters (CL050A-R3, CL050A-E, and CL050-C) use AC power and act either as active or passive devices on the Current Loop. As active devices, these converters supply 20-, 30-, or 60-mA loop current at 18 VDC for operation. As passive devices, the converters will not supply loop current, but will operate with 20-, 30-, or 60-mA unipolar current at up to 30 VDC.

In contrast, the CL051A RS-232↔Current Loop Interface Converter operates in passive mode only. It will operate with 60-mA unipolar current at 65 to 130 VDC.

Switch selections enable you to choose half- or full duplex operation; loop current at 20, 30, or 60 mA; and configuring the converters as either DTE (data terminal equipment) or DCE (data communications equipment). Two LEDs monitor data flow.

### Interface-Powered Passive-Only Converters

For full duplex conversion of RS-232 async data to unipolar Current Loop, choose an interface-powered converter (CL412A-M, CL412A-F).

These units operate as passive devices only, and they must connect to the active Current Loop. They derive their power from the RS-232 device, which must provide 12 VDC on pins 6 or 20.

The converters are DTE/DCE selectable. Just flip a switch on the side of the units to configure them to operate as either data terminal or data communications equipment.

### Technically Speaking

Current Loop was designed to transfer data in a noisy environment with as much integrity as possible. All featured interface converters include optical isolators in both the transmit and receive loops to keep out electrical interference.

Note that the maximum calculated distance that any of these converters or adapters can be placed from other devices on the Current Loop is based on using 24 AWG and the lowest data rate.

## TECH SPECS

**Distance (Maximum)** — CL050A-R3, CL050A-E, CL050-C: Up to 9842.5 ft. (3000 m) at 300 bps over 24 AWG;  
 CL051A: Up to 2000 ft. (609.6 m) at 9600 bps over 24 AWG

**Operation** — CL050A-R3, CL050A-E, CL050-C, CL051A: Full or half-duplex;  
 CL412A-M, CL412A-F: Full duplex

**Switches** — CL050A-R3, CL050A-E, CL050-C, CL051A:  
 (1) 10-position DIP switch for Current Loop transmission mode,  
 (1) 10-position DIP switch for RS-232 DTE or DCE configuration,  
 (1) 4-screw terminal block for electrical current in the Current Loop

**Interface** — CL050A-R3, CL050A-E, CL050-C: RS-232 (DTE/DCE switch-selectable); unipolar 20/30/60 mA at 18 VDC (active) or up to 30 VDC (passive);  
 CL051A: RS-232 (DTE/DCE) switch-selectable;  
 unipolar 20/60 mA (passive) up to 130 VDC;  
 CL412A-M, CL412A-F: RS-232 (DTE/DCE) switch-selectable;  
 unipolar 20 mA (passive)

**Connectors** — CL050A-R3, CL050A-E, CL050-C, CL051A, CL412A-F:  
 RS-232: (1) DB25 F;  
 Current Loop: (1) 4-screw terminal block;  
 CL412A-M: RS-232: (1) DB25 M;  
 Current Loop: (1) 4-screw terminal block

**Indicators** — CL050A-R3, CL050A-E, CL050-C, CL051A: (1) RX, (1) TX LEDs for RS-232 port activity;  
 CL412A-M, CL412A-F: None

**Power** — CL050A-R3, CL050-C, CL051A: Input: 115 VAC, 60 Hz;  
 CL050A-E: Input: 220 VAC, 50 Hz;  
 CL412A-M, CL412A-F: From EIA interface (Pin 6 or 20), +12 VDC from the RS-232 device

**Size** — CL050A-R3, CL050A-E, CL050-C, CL051A:  
 1.75"H (1U) x 5.5"W x 8.5"D (4.4 x 14 x 21.6 cm);  
 CL412A-M, CL412A-F: 0.6"H x 1.6"W x 2.8"D (1.5 x 4.1 x 7.1 cm)

**Weight** — CL050A-R3, CL050A-E, CL050-C, CL051A: 1.5 lb. (0.7 kg);  
 CL412A-M, CL412A-F: 0.2 lb. (0.1 kg)



Top: CL412A-M;  
 bottom: CL050A-R3

## WHAT'S INCLUDED (CL050A-R3):

- ◆ (1) RS-232↔Current Loop Interface Converter (232/CL-E)
- ◆ (1) 6-foot (1.8-m) AT® Modem Cable (EVMBMC-0006)
- ◆ (1) DB9 Male to DB25 Female AT Adapter (FA521A-R3)
- ◆ (1) Users' manual

Item	Code
<b>RS-232↔Current Loop Interface Converters</b>	
Active/Passive	
Standalone (115-VAC)	<b>CL050A-R3</b>
Standalone (220-VAC)	<b>CL050A-E</b>
Rackmount Card (115-VAC)	<b>CL050-C</b>
Passive Only	
Standalone (115-VAC)	<b>CL051A</b>
<b>RS-232↔Current Loop Interface-Powered Converters</b>	
Passive Only	
Male	<b>CL412A-M</b>
Female	<b>CL412A-F</b>
<b>To rackmount your CL050-C cards, order...</b>	
16-Card Rack	<b>RM005</b>
<b>For optimum performance and a 20% savings, order...</b>	
Bulk Category 3 Cable, 2-Pair, PVC, 500-ft. (152.4-m)	<b>EYN712A-0500</b>

## Why Buy From Black Box? Exceptional Value. Exceptional Tech Support. Period.

### Recognize any of these situations?

- You wait more than 30 minutes to get through to a vendor's tech support.
- The so-called "tech" can't help you or gives you the wrong answer.
- You don't have a purchase order number and the tech refuses to help you.
- It's 9 p. m. and you need help, but your vendor's tech support line is closed.

According to a survey by Data Communications magazine, 90% of network managers surveyed say that getting the technical support they need is extremely important when choosing a vendor. But even though network managers pay anywhere from 10 to 20% of their overall purchase price for a basic service and support contract, the technical support and service they receive falls far short of their expectations—and certainly isn't worth what they paid.

At Black Box, we guarantee the best value and the best support. You can even consult our Technical Support Experts before you buy if you need help selecting just the right component for your application.

Don't waste time and money—call Black Box today.