

RS-232↔RS-485/422 Converters

Transmits data fast—up to 115 kbps!
Plus three selectable modes
of operation.



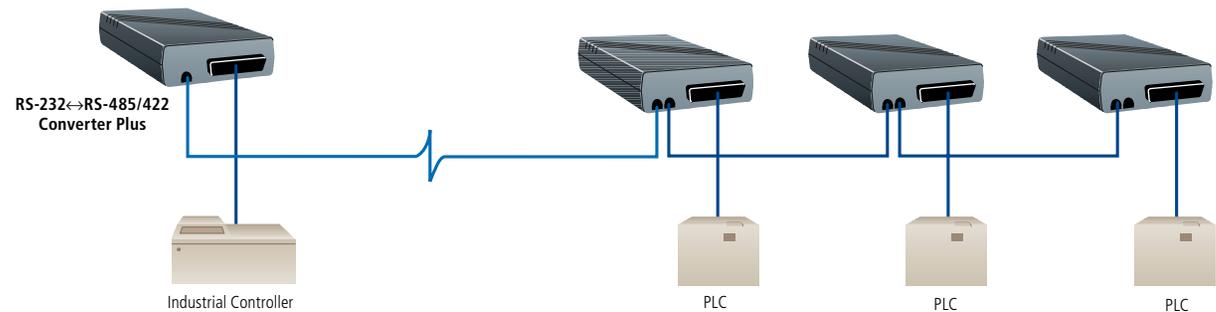
FEATURES

- » Send data at speeds up to 115.2 kbps.
- » Switch the RS-232 interface for DCE or DTE.
- » Version available with opto-isolation to prevent damage from ground loops.
- » Link up to 32 devices together in 2-wire multipoint applications using IC109 models.
- » Bidirectional conversion from RS-232 (V.24) to RS-422/485.
- » Choose standalone or rackmount versions.

These converters enable an industrial controller to gather information from several remote programmable logic controller stations (PLCs).

A system protocol has been defined so that all the PLCs receive the information sent by the industrial controller, but only the remote station specifically

addressed will respond. In this system, the industrial controller and all the remote stations are DTE devices.



OVERVIEW

Transmit data up to 4000 feet (1219.2 m) over 2- or 4-wire lines in full- or half-duplex. And send it at speeds up to 115.2 kbps! Use these converters with PCs and other RS-232 equipment that has the 16550 UART.

Switch settings enable you to customize the converter to your specific application. Now set line bias to match your 485 equipment, set the line termination resistors, and switch the RS-232 interface for DCE or DTE.

Improved surge suppression keeps your converter safe from induced surges on the RS-485 side. If you are transmitting between buildings or over long distances, order one of the Opto-Isolation models for protection against ground-loop surges.

Specially designed circuitry lets the converter inhibit the CTS signal if the CD signal is present. That way, a device on the 485 side can act as a controller.

Data Enable Mode is also faster—up to 64 kbps! So you won't lose data when you transmit in Data Enable.

TECH SPECS

Data Rate — Up to 115 kbps, transparent to data

Optical Isolation — IC109A-R3 and IC109C only

Operation — Point-to-point or multipoint; 4-wire half- or full duplex; 2-wire half-duplex; transparent to data; selectable RTS-to-CTS delay with option to inhibit CTS if CD is present (DCE); DTE or DCE configurable RS-232 port; normal or loopback operation

Pins Supported — RS-232 port: TD, RD, RTS, CTS, CD, DTR, DSR, SG, and FG; RS-485 port: TXA, TXB, RXA, RXB

Timeout Delay — 0.15, 0.7, 2, 7, or 70 msec (for the RS-485 driver enabled by data feature)

Interface — (1) Asynchronous RS-232 port (DTE/DCE selectable); (1) asynchronous RS-485 port with improved surge protection and switch-selectable line termination or line bias

Connectors — (1) DB25 female (DTE or DCE, RS-232 port), (1) 4-screw terminal block (RS-485 port)

Indicators — (5) LEDs: TX, RX, RTS, CD, and PWR

Temperature Tolerance — Operating: 32 to 122°F (0 to 50°C); Storage: -4 to +158°F (-20 to +70°C)

Humidity Tolerance — Up to 95%, noncondensing

MTBF — Approximately 180,000 hours (ground benign environment)

Power — IC108A, IC109A-R3: PS154 (Input is 120V, 60 Hz, and 20W; Output is AC 17 VCT and 0.7A); IC108C, IC109C: Powered by the RM005 rack

Size — IC108A, IC109A-R3: 1.8"H x 5.5"W x 8.5"D (4.6 x 14 x 21.6 cm); IC108C, IC109C: 7.4"L x 4.7"W (18.8 x 11.9 cm), 0.6" (1.5 cm) thick

Weight — IC108A, IC109A-R3: 1 lb. (0.5 kg); Power supply only (PS154): 0.4 lb. (0.2 kg)



IC108A

Technically Speaking

IC109A-R3 and IC109C protect one segment of your extended network from problems that arise on the other. Inside the RS-232/485/422 Converter Plus with Opto-Isolation, optical-isolation circuits convert electrical signals to light and back again, to keep signal noise and ground loops from crossing between segments of your RS-485 installation. That means the electrical noise from your factory floor doesn't affect your office communications, and the difference in ground potential over long distances and between buildings won't damage your sensitive equipment.

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.

What's included

IC108A:

- ◆ RS-232↔485/422 Converter Plus
- ◆ Power supply
- ◆ Users' manual

IC108C, IC109C:

- ◆ RS-232↔485/422 Converter Plus Rackmount Card or Converter Plus with Opto-Isolation Rackmount Card
- ◆ Users' manual

IC109A-R3:

- ◆ RS-232↔485/422 Converter Plus with Opto-Isolation
- ◆ Power supply
- ◆ 6-ft. (1.8-m) AT® Modem Cable, Premium, DB9 Female/DB25 Male, 9-Conductor, 24 AWG (EVMBMC-0006)
- ◆ 6-ft. (1.8-m) PC Modem Cable, Standard, DB25 Male/DB25 Female, 10-Conductor, 28 AWG (BC00401)
- ◆ Users' manual

Item	Code
RS-232↔RS-485/422 Converter Plus Standalone	IC108A
Rackmount Card	IC108C
RS-232↔RS-485/422 Converter Plus with Opto-Isolation Standalone with Cables	IC109A-R3
Rackmount Card	IC109C
You might also need...	
Category 3 2-Pair Twisted-Pair Cable	EYN712A
Multi-Function Rack	RM005