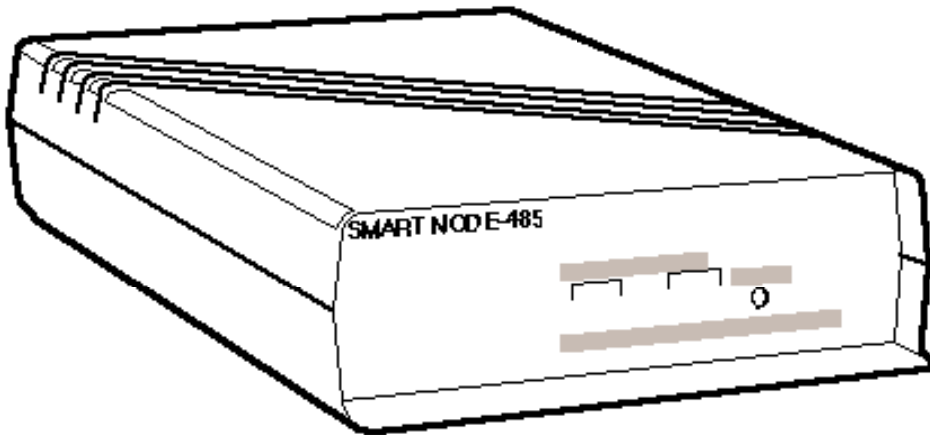# BLACK BOX®

NETWORK SERVICES

SMARTNODE 485

The only way to put your async RS-232 devices on an RS-485 network!

Key Features

▶ *Poll "dumb" RS-232 devices on your multidrop RS-485 line.*

▶ *Place your RS-232 devices up to 5000 ft. (1524 m) away from each other.*

▶ *253 addresses for each network.*

▶ *Send commands to individual SmartNode 485s or broadcast messages over the entire network.*

▶ *No need to modify your RS-232 device or your RS-485 line.*

SmartNode 485 is the first device to allow async RS-232 printers, terminals, scales, lathes, bar code readers—any "dumb" RS-232 device—to function in a multidrop RS-485 network.

An RS-485 network consists of a master device polling slaving devices for information. RS-485 devices already have the "smarts" needed to follow the rules for orderly communication. In contrast, RS-232 devices are "dumb"—unaided, they can't follow the rules of a multipoint protocol. And that's where SmartNode 485 comes in.

SmartNode 485 does two jobs. It converts your RS-232 signals to the RS-485 interface so your async ASCII devices can operate in an RS-485 polled environment.

It also acts as the address node for your RS-232 device, allowing it to communicate with a master device on a multidrop network.

SmartNode 485 lets you combine the variety of RS-232 devices with the advantages of RS-485. For example, the superb noise immunity of RS-485 enables your RS-232 devices to send data at rates up to 38.4 kbps, while residing on the network up to 1524 m (5000 ft.) away from one another.

SmartNode 485 does not require you to modify your RS-232 device. Instead, you configure SmartNode 485 for your device's requirements through internal DIP switches.

Each RS-485 network segment can consist of 32 devices. Up to 253 device addresses are available to SmartNode 485s on a network. Using repeaters, your SmartNode 485 network can be as complex as your application demands.
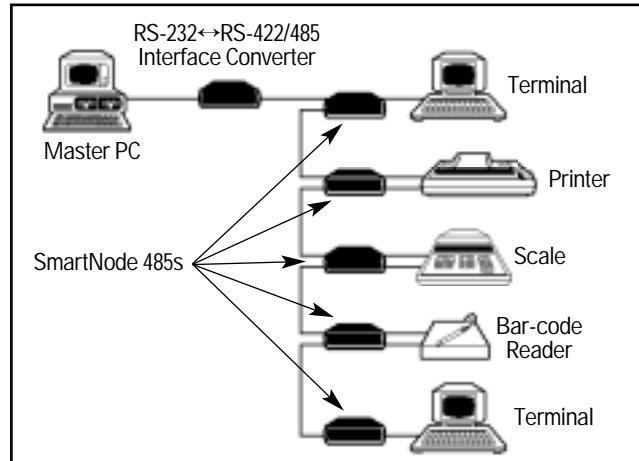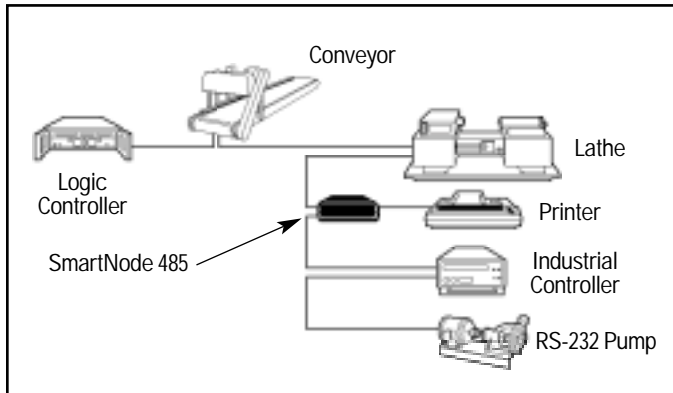
SmartNode 485 is available in either standalone or rackmount card versions. A 230-VAC model is also available.

Typical Applications

Add RS-232 devices to your existing RS-485 network. Your unmodified RS-232 devices operate along side your RS-485 machines.

Create a multidrop network of RS-232 devices. Place RS-232 printers, terminals, and bar code readers up to 5000 ft. (1524 m) apart. Control them with an RS-232 host controlling the network via an RS-232↔RS-485 Interface Converter.

Add RS-232 devices to your RS-485 environment, or create an RS-232 multidrop network.

Technically Speaking

- SmartNode 485 responds to master-device polls using the unique SmartNode protocol.
- Each of the SmartNode 485's ports are user-configurable. Set each port for speed, parity, and data code of the device to which it is attached.
- Use inexpensive, twisted-pair cable to connect the devices on your RS-485 network.

- RS-485's exceptional noise immunity enables you to network RS-232 devices in electrically noisy environments like machine shops, hospitals, and factories.
- An 8K buffer is available either to store data from the RS-232 device until the master asks for it, or to spool master-device requests until the RS-232 device can respond.

Additional equipment you may need

- To use a PC in your network, try our PC↔422/485 Card (IC030C-R2). It fits right inside your PC to enable communication with RS-422/485 devices.
- To place an RS-232 master on your RS-485 line, you'll need an interface converter. Try our RS-232↔RS-422/485 Interface Converter (IC007A).

Specifications

Speed: 50 bps to 38.4 kbps

Connectors: (1) DB9 F DTE; (1) 4-wire terminal block

Indicators: Both ports: RD, TD

Leads Supported: RS-232: pins 1 through 9 (TD, RD, CTS, RTS, DSR, CD, SG, DTR, RI); RS-485: TD, RD

Power: Primary: 115 VAC/60 Hz or 230 VAC/50 Hz; Secondary: 17-VAC center tap, 750 mA

MTBF: 50,000 hours

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

Maximum Altitude: 3048 m (10,000 ft)

Size: Standalone: 4.6H x 14W x 21.6D cm (1.8"H x 5.5"W x 8.5"D); Card: 11.4H x 18.4L cm (4.5" x 7.3")

Weight: 0.9 kg (2 lb.)

Ordering Information

ITEM	CODE
SmartNode 485	
Standalone	IC150A
Rackmount Card	IC150C
230-VAC Version	IC150AE
You may also need…	
12-Card Rack for SmartNode	RM010-SN
9-Pin to DTE Cable	EHN023
9-Pin to Modem Cable	EHN024
9-Pin to AT Cable	EHN025
9-Pin to PC Cable	EHN026
DB9 Extension Cable	EDN12H-0010-MF