



# CesCom

**N400**  
ACA approved

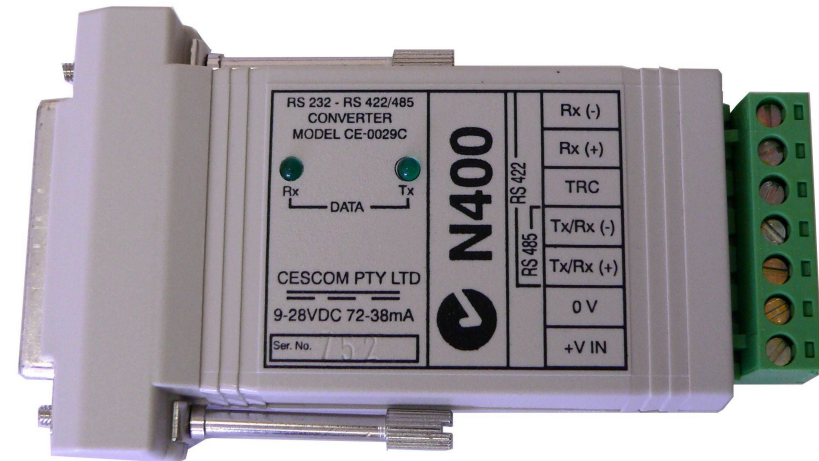


## CE0029C RS232 – RS422/RS485 ISOLATED CONVERTER

*Isolates and interfaces RS232 to RS485/422 buses*

### Features

- 3KV **optical isolation** barrier
- Full duplex operation to 115K baud
- Auto **half-duplex switching** does not require any control line
- >1200 metres transmission capability
- Wide supply range **single** DC power
- Efficient **switch-mode** regulation
- RS422/RS485 transient voltage **protection**
- Compact DB25 Headshell
- Pluggable **Combicon** terminal connections
- LED indicators



### Overview

RS422 lines can typically run hundreds of metres or more. One side effect of such long line lengths can be harmful transients and ground-loop currents which can introduce errors or disrupt communications or even damage the host.

The CE-0029C interfaces three wire RS-232 signals to RS-422 or RS-485 buses through an optical isolation barrier. Power for the RS422 and RS485 interface is provided through an internal DC-DC converter so that only a single supply is required. This combination signal and power barrier is rated at over 3,000 volts isolation. Not only does this prevent harmful voltages being coupled through to each side but it also isolates grounds which otherwise could affect the inherent common-mode voltage rejection, a problem on many balanced networks. Some installations try to overcome this by means of aggressive earthing. In fact this earthing is not required at all when the interface is isolated and relies completely on the differential signalling thus insuring maximum noise rejection.

This makes the CE-0029C the perfect candidate for interfacing to RS422 and RS485 networks which require isolation and protection to improve the range and reliability of the network.



## Specifications

<b>Supply Voltage</b>	+9V to +28VDC
<b>Current</b>	72ma @9VDC, 38ma @28VDC (Polarity protected)
<b>Physical</b>	95mm x 22mm x 43mm (LWD)
<b>Weight</b>	200 grams (approx)
<b>Case Material</b>	ABS 94HB
<b>Environment</b>	0 to +70°C operating
<b>Standards</b>	TS001/AS/NZS 3260, TS006, AS/NZS 3548

<b>RS232 Speed</b>	120K baud max
<b>RS422 Speed</b>	120Kbaud max
<b>Termination</b>	120 ohms on receive lines
<b>RS422/485 Bias</b>	Internal 1K resistors to +5V and ground
<b>Indicators</b>	TxDatA, RxData

## OPERATION

### RS-232 to RS-422

RS-232 data is received and buffered through an optical isolation barrier to the RS422/RS485 drivers. The RS422/485 drivers are automatically disabled when there is no RS232 data to send which allows other multi-dropped devices to use the TX/RX lines.

### RS485 Operation

The RS485 automatically switches to transmit whenever and immediately data from the RS232 port is detected and maintains the RS485 port in transmit for an additional ½ stop bit before releasing the transmit mode. If new data is detected in this period then the transmit cycle will be extended repeatedly as long as there is data.

### Biasing

Line biasing is built-in to ensure that undriven lines revert to an inactive state.

### Telecommunications reference conductor

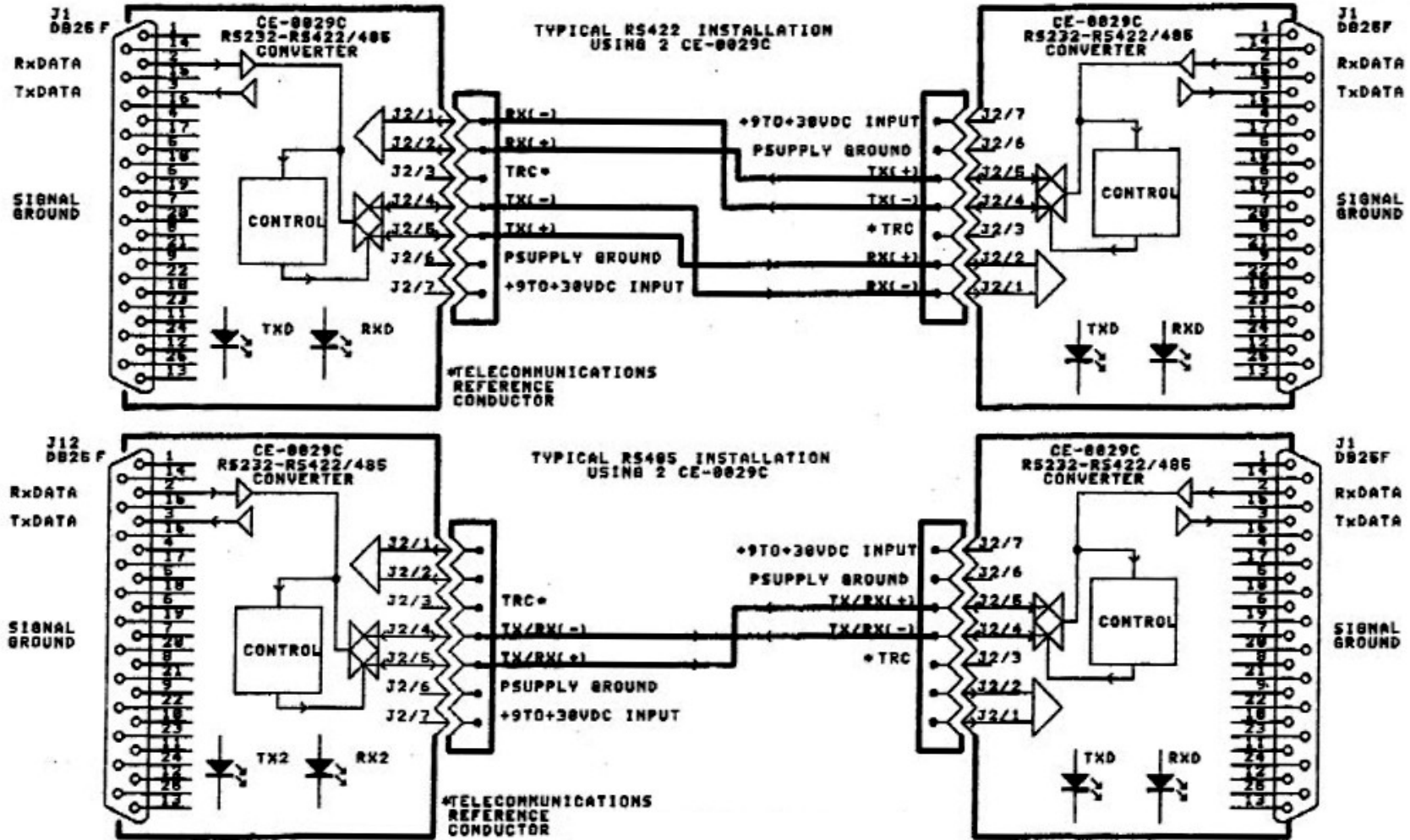
This line should be earthed for the protection circuitry only. It **should not be used as a signal ground** as the RS-422/485 lines are differential and isolated and do not require a signal ground. Do not connect this as a signal ground even if the terminating port specifies this.

## CONNECTIONS

DB25	NAME	DESCRIPTION
2	RXD	RS-232 Receive data in
3	TXD	RS-232 Transmit data out
7	GND	RS-232 Signal ground

TERM	NAME	ALT	DESCRIPTION
1	RX-		RS-422 Receive data – (or B)
2	RX+		RS-422 Receive data+ (or A)
3	TRC		Telecommunications reference conductor
4	TX-	B	RS-422 Transmit – (or B) or RS-485 B
5	TX+	A	RS-422 Transmit + (or A) or RS-485 A
6	VGND		Power Supply ground
7	VDC		+9 to 30VDC Power Supply input

Notes: \*1 Ensure lines are terminated (usually 120ohms)



*Installation diagram*