CesCom

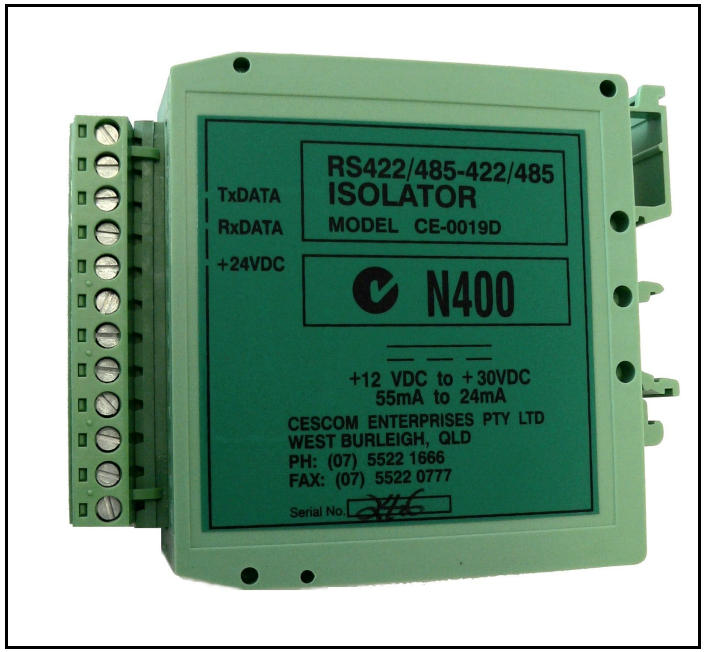
N400
ACA approved

CE0019D
RS485/422 – RS485/422 REPEATER ISOLATOR

Isolates and extends RS485/422 buses

Features

- 3KV **optical isolation** barrier
- Full/half duplex operation to 115Kbps
- >1200 metres transmission capability
- Wide supply range **single** DC power
- Efficient **switch-mode** regulation
- RS422/485 **gas-tube lightning protection**
- Self-resetting **polyfuses**
- **ATE** - Automatic Transmit Enable
- Fast 1.5bit RS485 **line turn-around**
- Compact vertical DIN rail mounting
- Pluggable **Combicon** terminal connections
- LED indicators



Overview

RS485 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-0019D electrically isolates RS485 buses from other RS485 buses through an optical isolation barrier rated at over 3,000 volts. Not only does this prevent harmful voltages being coupled through to the each side but it also isolates grounds from side which otherwise could affect the inherent common-mode voltage rejection, a problem on many balanced networks.

RS-485 networks are half-duplex and normally require a transmit enable signal, something akin to the “press to talk” on 2-way radios. Cescom's range of converters feature Automatic Transmit Enable (ATE) processing based upon precise timing related to each character sent so that the transmit enable automatically engages on the reception of a character from either side. This transmit enable stays asserted for the length of the character and de-asserts if no other characters have been detected within 1.5 bits after the stop bit.

This makes the CE-0019D the perfect candidate for RS-485 networks which require isolation and repeater functions to improve the range and reliability of the network.

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Specifications

Supply Voltage	+8V to +30VDC
Current	55ma @12VDC, 24ma @30VDC
Physical	80mm x 26mm x 100mm (HWD)
Weight	200 grams (approx)
Weight	200g
Case Material	Polyamide 6.6
Environment	0 to +75'C operating
Standards	EIA/RS485; AS/NZS-3548 EMI/EMC; C Tick compliant

RS485/422 Speed	9600, 19200, 38400, or fixed 1ms timeout
TX/RX Control	ATE
ATE turnon	2us typical
ATE turnoff	1.5 character bits or 1ms
Indicators	TxData, RxData, Power

OPERATION

RS-485 to RS-485

In the idle state both sides of the repeater are tristated and as such are ready to receive. Whichever side receives data first will be the one to switch the other side to transmit until the receiving side stops receiving data within the ATE time-out period in which it will return to the idle state.

CONNECTIONS

1	TXRX+	RS-422 Transmit A or RS-485 Transmit/Receive A
2	TXRX-	RS-422 Transmit B or RS-485 Transmit/Receive B
3	RX+	RS-422 Receive A
4	RX-	RS-422 Receive B
5	GND	Power supply ground
6	+VDC	Power-supply positive input
7	NC	
8	EARTH	Isolation Protection ground
9	TXRX+	RS-422 Transmit A or RS-485 Transmit/Receive A *1
10	TXRX-	RS-422 Transmit B or RS-485 Transmit/Receive B *1
11	RX+	RS-422 Receive A *1
12	RX-	RS-422 Receive B *1

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

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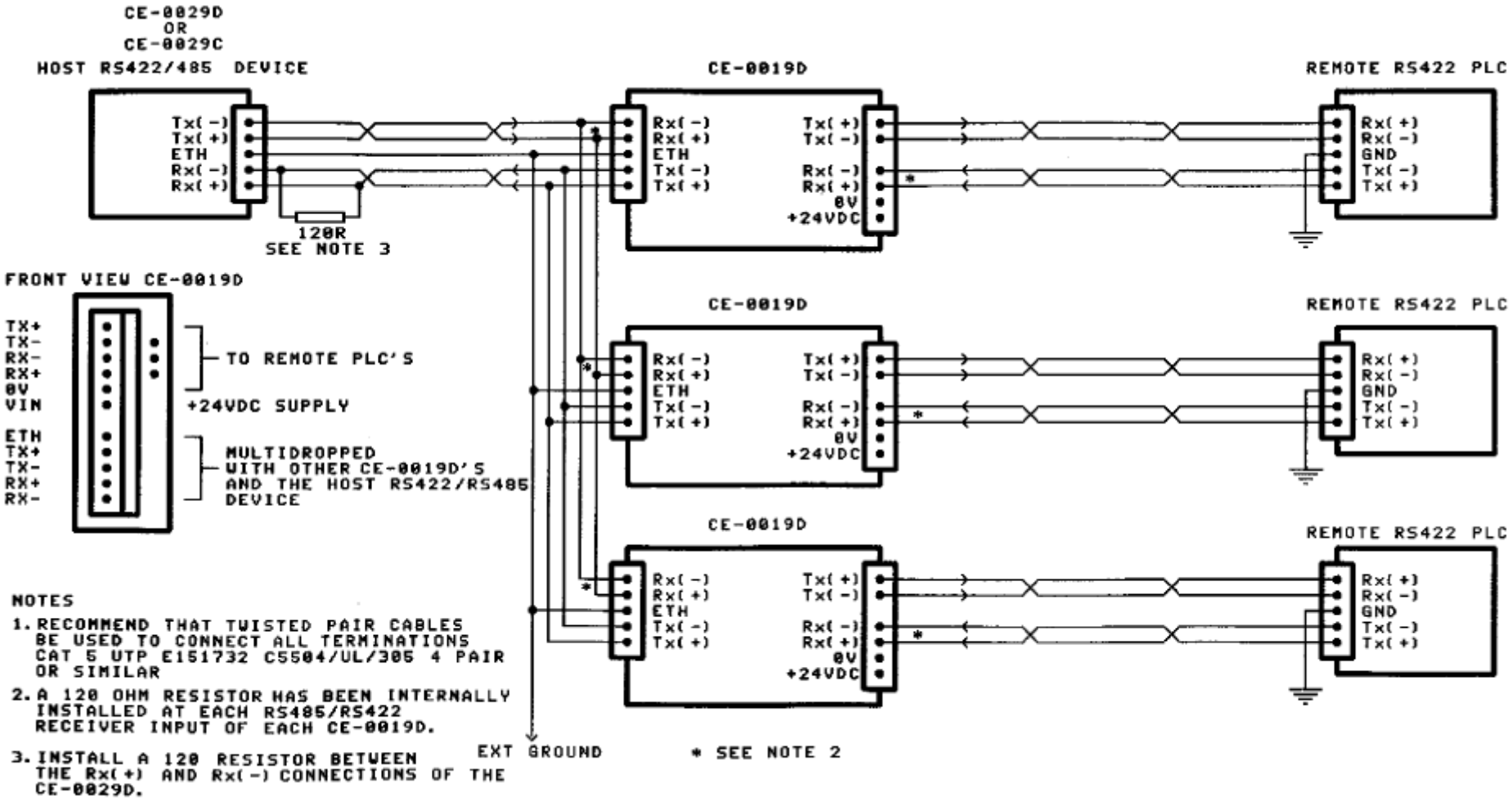

NOTES

1. RECOMMEND THAT TWISTED PAIR CABLES BE USED TO CONNECT ALL TERMINATIONS CAT 5 UTP E151732 C5504/UL/305 4 PAIR OR SIMILAR
2. A 120 OHM RESISTOR HAS BEEN INTERNALLY INSTALLED AT EACH RS485/RS422 RECEIVER INPUT OF EACH CE-0019D.
3. INSTALL A 120 RESISTOR BETWEEN THE Rx(+) AND Rx(-) CONNECTIONS OF THE CE-0029D.