UT- 3
COMMUNICATION INTERFACE

INTRODUCTION

The UT-3 interface is used to convert signals between RS232 and RS422 standards. On RS232 side interface deliver TXD/RXD lines, on RS422 side the TXA/TXB/RXA/RXB lines are available. Usually the UT-3 interface is used to extend a communication distance between two devices which communicate via serial link, nevertheless, it may be also used in other situations, e.g. where a conversion between RS232 and RS422 standards is needed. A 1200m communication distance with a bit rate of up to 115 200 Baud can be achieved with link established by two UT-3 interfaces. Several electrical diagrams reflecting typical applications of the interface are attached to this guide.

INTERFACE INSTALLATION

The interface should be installed in an enclosed room far from sources of moisture and heat. The interface is supplied with 12V DC rated voltage, it consumes up to 150 mA current. The electrical connection on the side of RS422 interface should be made using a twisted-pair computer cable and the maximum length of the connection may not exceed 1200 m. The maximum RS232 cable is limited to 15m (originally UT-3 is delivered with 1.5m RS232 cable with connector).

Note: Unshielded cables are recommended for RS42 (UTP), shielded cables are allowed only if strong electrical disturbances exists.

If two UT-3 interfaces are interconnected, potential of power supply minuses of both interfaces must not differ more than –7.0 to +12.0 V DC. This requirement may be met in two ways: to earth the power supply minus of each of the installed interfaces or to make an electrical connection between power supply minuses of each of the interfaces using an additional cable equalizing their potentials. Several examples of UT-3 interface connections are illustrated on the electrical diagrams attached to this document.

LED INDICATION

The UT-3 interface is equipped with three LED indicators, which signalize the current status of the serial port line and the presence of power supply voltage. The meaning of each indicator is described in the table below.

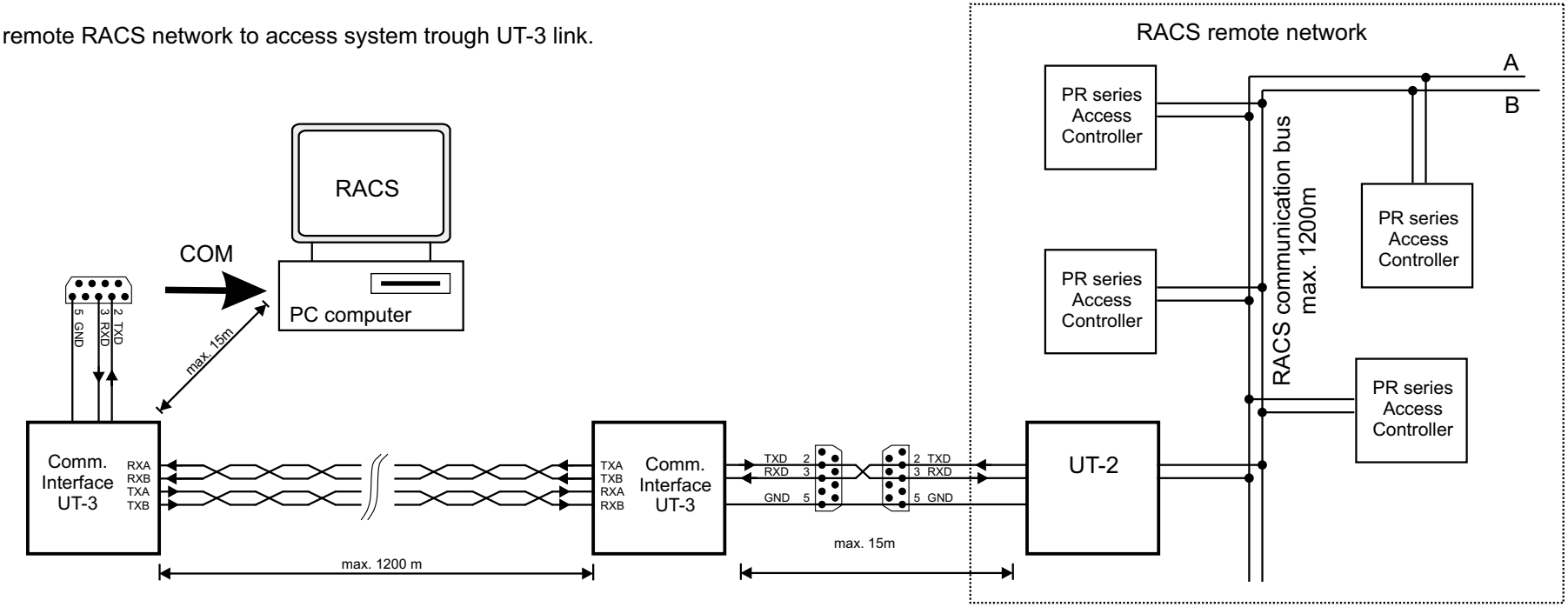
Name of LED indicator	Indicator function
POWER	Power supply.
TXD	Data transmitted.
RXD	Data received.

Ordering information	
UT-3	UT-3 interface in a plastic enclosure equipped with a ready-made connection cable to RS232 serial connector with DB9 plug.
UT-3-MD	UT-3 interface electronic module.

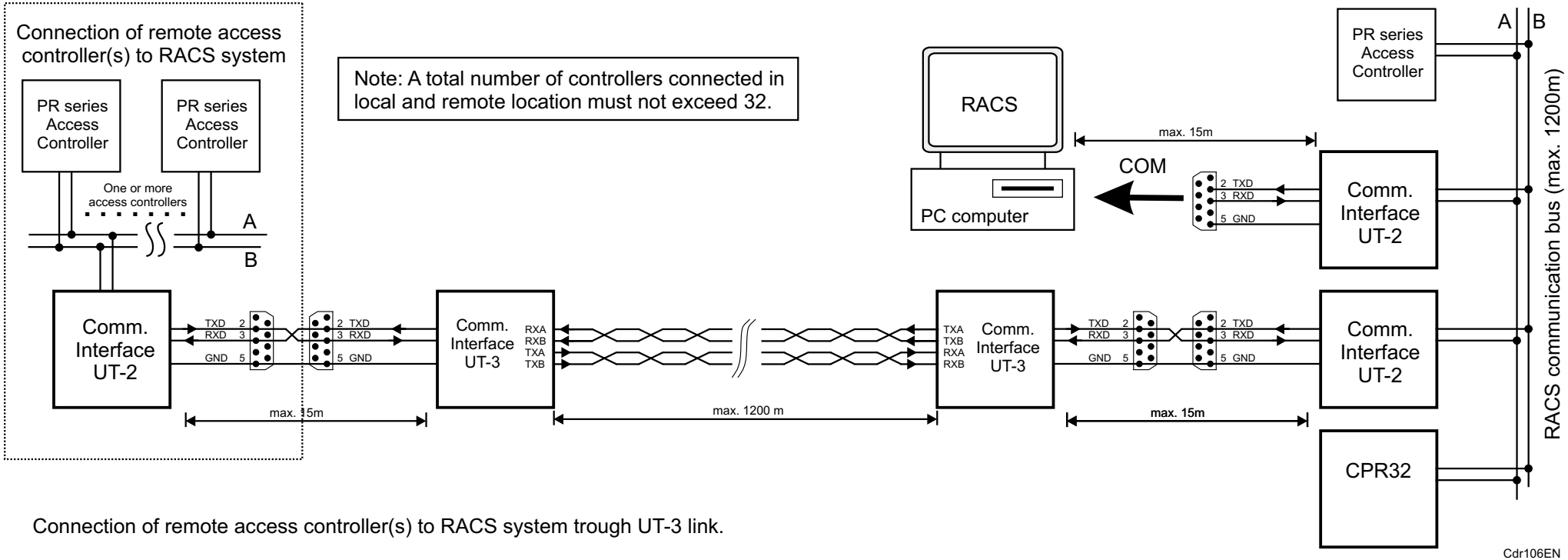
Technical specification	
Power supply voltage	10...15 V DC
Input current:	Avg. 80 mA (max. up to 150 mA)
Range of ambient temperature	0...+55º C.
Maximum transmission range on RS232 side	15 m (50 ft)
Maximum transmission range on RS422 side	1200 m (4000 ft)
Relative humidity	10 to 95% (no condensation)
Ingress Protection	IP30 (indoor use only)
Dimensions	100 x 68 x 35 (mm)
Weight	80 g

Designation of connecting terminals	
Name of terminal	**Function**
GND	Negative power supply terminal
+12V	Positive power supply terminal
EARTH	Connection to earth potential (grounding)
TXA	RS422, transmitter line A,
TXB	RS422, transmitter line B,
SHLD	RS422 interface cable shield
TXD	RS232 interface, transmitter line
GND	Signal ground on RS232 side
RXD	RS232 interface, receiver line
SHLD	RS232 cable shield
RXA	RS422, receiver line A
RXB	RS422, receiver line B

Connection of remote RACS network to access system trough UT-3 link.



Connection of remote access controller(s) to RACS system



Note: A total number of controllers connected in local and remote location must not exceed 32.

Connection of remote access controller(s) to RACS system trough UT-3 link.

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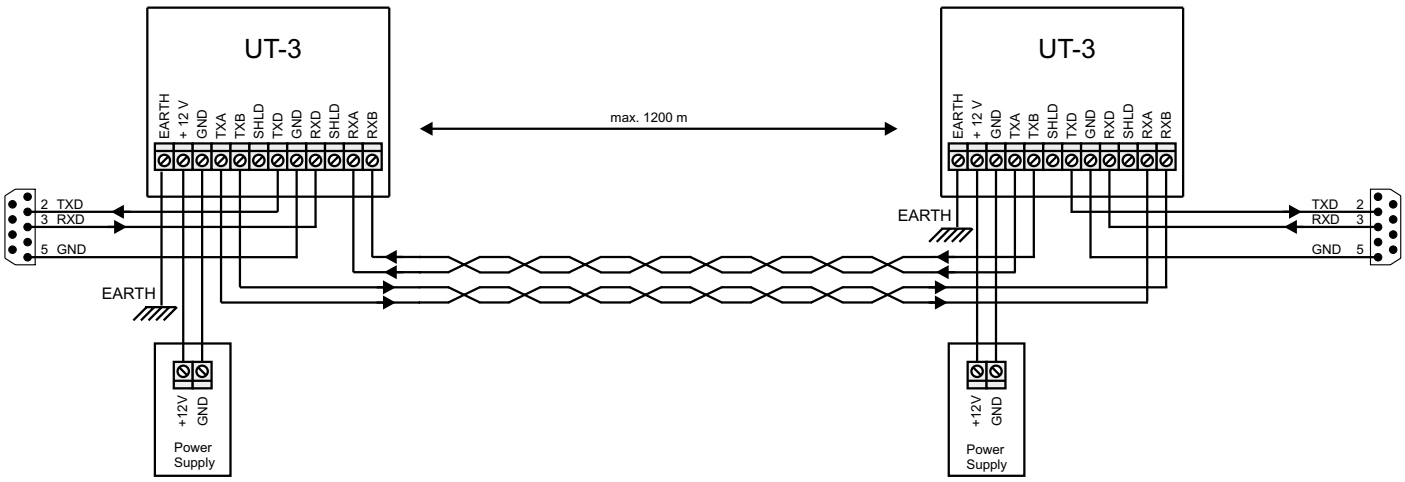
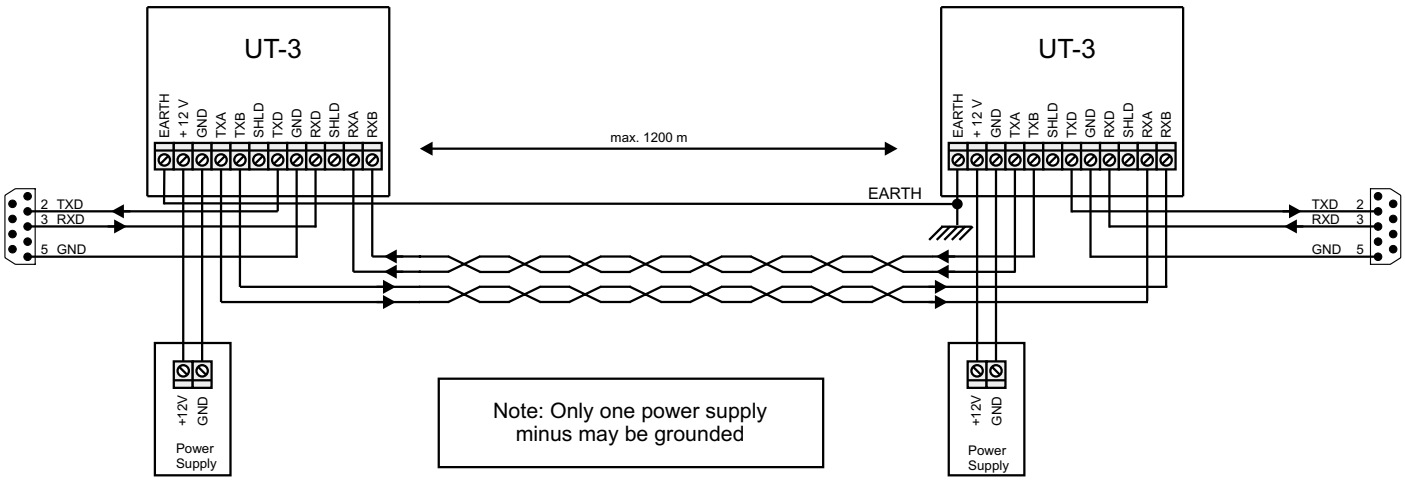
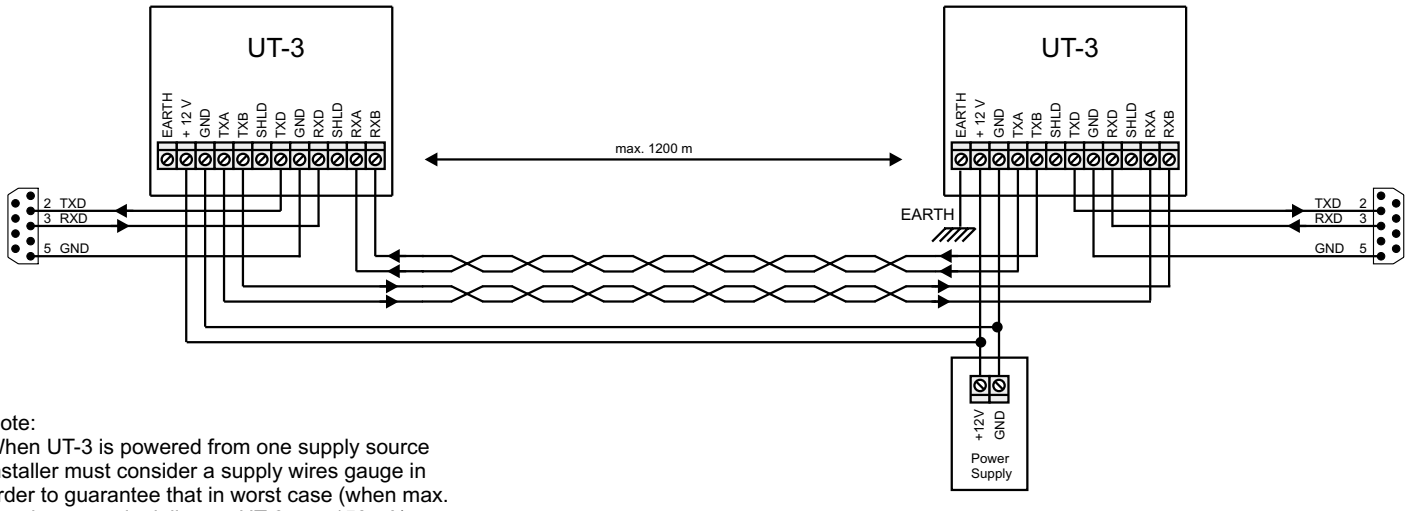
Power supply of UT-3 link with two separate grounding arrangements



Power supply of UT-3 link with one ground connection and additional wire between EARTH terminals



Power supply of UT-3 link from one supply source



Note:
When UT-3 is powered from one supply source installer must consider a supply wires gauge in order to guarantee that in worst case (when max. supply current is deliver to UT-3 app.150mA) the maximum voltage dropout between UT-3 and power supply must not exceed 1.0Vdc

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