






# Expansion port **RS232**

**USER'S GUIDE**

## Symbols used

-  Danger – important notice, which may have an influence on the user’s safety or the function of the device.
-  Attention – notice on possible problems, which can arise in specific cases.
-  Information, notice – information, which contains useful advice or special interest.

## GPL licence

Source codes under GPL licence are available free of charge by sending an email to [info@conel.cz](mailto:info@conel.cz).



**Declared quality system  
ISO 9001**

Conel s.r.o., Sokolska 71, 562 04 Usti nad Orlici, Czech Republic  
Issue in CZ, 12/15/2011





## Contents

1.	Safety instructions .....	1
2.	Product disposal instructions.....	2
3.	Expansion port description .....	3
4.	Connection of RS232 connector.....	3
5.	State indication of RS232 port.....	4
6.	Delivery Identification .....	5
7.	Technical specification .....	5
8.	Recommended literature .....	5
9.	Customers support .....	6

## Image list

Fig. 1: RS232 port connector .....	3
Fig. 2: Meter connection to modem.....	3
Fig. 3: PC connection to modem .....	4
Fig. 4: RS232 equipment connection to modem .....	4



## Table list

Table 1: Connection of RS232 connector .....	3
Table 2: State indication.....	4
Table 3: Delivery identification .....	5
Table 4: Port RS232 label .....	5
Table 5: Technical specification .....	5

## 1. Safety instructions

*Please observe the following safety instructions:*

- The expansion port must be used in compliance with all applicable international and national laws and in compliance with any special restrictions regulating the utilization of the communication module in prescribed applications and environments.
- Use only the original Conel company accessories. Thus you will prevent possible health risks and damage to the devices and ensure compliance with all relevant provisions. Unauthorised adjustments or use of unapproved accessories may result in damage to the expansion port and breach of applicable laws. Use of unapproved adjustments or accessories may lead to cancellation of guarantee, which has no effects on your legal rights.
- Do not expose the expansion port to extreme conditions. Protect it from dust, moisture and heat.



## 2. Product disposal instructions

The WEEE (Waste Electrical and Electronic Equipment: 2002/96/EC) directive has been introduced to ensure that electrical/electronic products are recycled using the best available recovery techniques to minimize the impact on the environment. This product contains high quality materials and components which can be recycled. At the end of its life this product **MUST NOT** be mixed with other commercial waste for disposal. Check with the terms and conditions of your supplier for disposal information.

## 3. Expansion port description

The expansion port RS232 is created as expansion port which enables to use of the next hardware interface of Conel routers for next signal processing. This interface is physical connected on RJ45 connector on appropriate router. The expansion port RS232 is internal supplies from appropriate router. Against bus overload the expansion port RS232 is protect.



Expansion port RS232 is possible fitted into PORT1 and PORT2.

## 4. Connection of RS232 connector

Panel socket RJ45 (RS232 – DCE - Data Communication Equipment)

Pin no.	Signal mark	Description	Direction
1	RTS	Request To Send	Input
2	CTS	Clear To Send	Output
3	DTR	Data Terminal Ready	Input
4	DSR	Data Set Ready – connect to +3 V trough R 330 Ohm	Output
5	GND	Signal ground	
6	RXD	Receive Data	Output
7	CD	Carrier Detect	Output
8	TXD	Transmit Data	Input

Table 1: Connection of RS232 connector

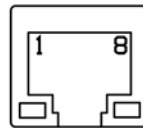


Fig. 1: RS232 port connector

Example of the meter connection to router:

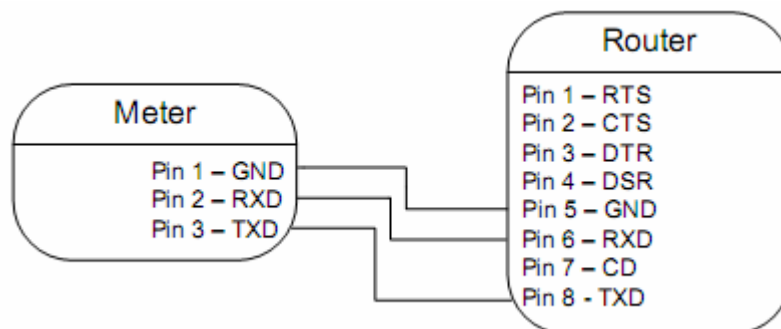


Fig. 2: Meter connection to router





Example of the PC connection to router:

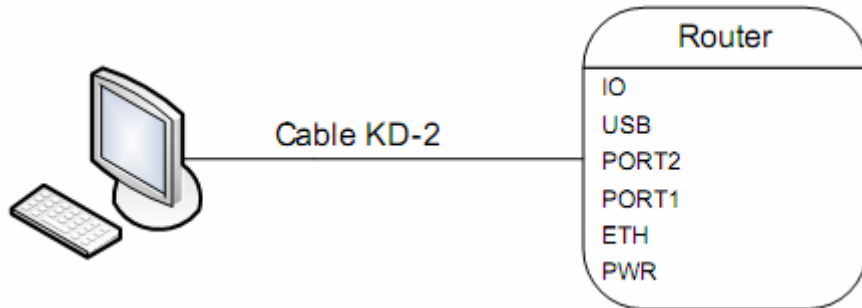


Fig. 3: PC connection to router

- Cable KD2 is connected to serial port PC (example COM1)



Example of the RS232 equipment connection to router (possibility to use all RS232 ports):

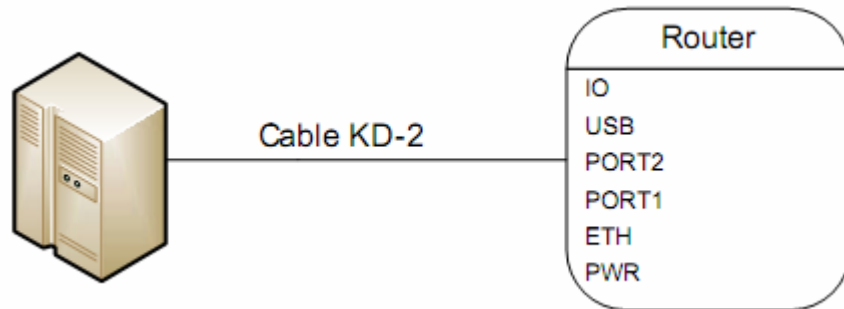


Fig. 4: RS232 equipment connection to router

## 5. State indication of RS232 port

LED port indicator	
Green LED	Indicates Receive data
Yellow LED	Indicates Transmit data

Table 2: State indication



Status indication is supported from 4th revision of boards.

## 6. Delivery Identification

Trade name	Type name	Power supply
XC-RS232	XC-232	Internal supply

Table 3: Delivery identification

Example of expansion PORT RS232 label:

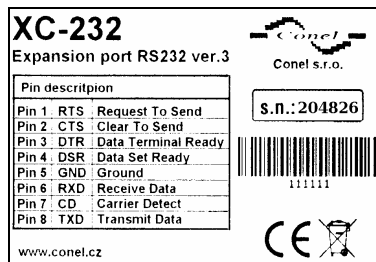


Table 4: Port RS232 label

## 7. Technical specification

Name of product	Expansion port RS232	
Power supply	Internal	+3,3V
Environment	Operating temperature	-30 .. +60 C
	Storage temperature	-30 .. +85 C
Standards	Emission	EN 55022/B
	Immunity	ETS 300 342
	Safety	EN 60950
	Isolation	EN 60747
RS232 specifications (EN 1434)	Max. operating bus current	15 mA
	Max. data rate	230400 bps
	Max. overvoltage	±30 V
	Max. total cable length (300Bd, 200nF/km)	20 m

Table 5: Technical specification

## 8. Recommended literature

[1] Conel: Application guide – Expansion port mounting.

## 9. Customers support

Up to date information about the product is on website:

<http://www.conel.cz/>

### **Upkeep-advice:**

During cleaning of the router do not use aggressive chemicals, solvents and abrasive cleaners!

Conel Company hereby declares that the router narrated in this user's guide fits all basic demands of directive 1999/5/EC (R&TTE).

Router fits values of coefficient SAR defined by association ICNIRP and values of "About protection of health before non-ionized radiation".



Declaration about consistency was issued and is possible get it in accompanying CD or at producer.