

## Model Information



### ■ Main Features

- Converts RS232 <=> RS422/485
- ARTc(Automatic Receive/Transmit Control) for RS485
- Auto Baudrate sensing
- Built-in 120Ω termination, no biasing needed
- LEDs for Power, RS232 & RS485
- Full software configuration, no jumpers
- Quick DIP configuration for standard modes
- Wide power supply range 9-30V @ 100mA
- 16kV ESD surge protection
- 2.5kV electrical isolation (ISO version only)
- DIN-Rail/Wall mountable option

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## SER-485 ISO (SER-485 PRO, SER-485 Lite, SER-485 PRO-SI)

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### ■ More Pictures



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### ■ Overview

The SER-485 is a smart bidirectional RS232 to RS422/RS485 converter that is fully configurable by software and suitable for industrial environments. The device supports the ARTc (Automatic Receive/Transmit Control) for RS485 and auto baud rate sensing. Whilst automatic line termination exists there is no need for biasing differential lines easing its deployment. Both the RS232 and the RS422/RS485 interfaces are ESD surge protected. The device is a table, Din-Rail or wall mountable system.

#### ARTc (Automatic Receive Transmit control)

In the RS485 mode, the data direction is managed by the bitrate adaptive function of the ARTc to allow faster transmitter switch-off times. Auto baud rate sensing analyses the data in real-time and adapts to the speed of the RS232 port; this way the change from transmit to receive is done quickly and automatically.

#### Software Configuration

All options and parameters of the SER-485 operation are configured by a software and controlled by an easy-to-use menu structure. This menu is accessed from standard terminal programs. The SER-485 has NO jumpers.

#### Quick & Easy DIP control

Operation modes that are frequently used by the RS485/RS422 are selected by rear DIP switches. The full versatility is controlled by the built-in software configuration menu. The internal termination resistors help to adjust the RS485 signals to connect to customers networks. These internal resistors are controlled by the configuration modes.

#### ESD protection and Isolation

For usage in hazardous industrial environments, the RS232 & RS422/RS422 interfaces and DCin are +/-16KV air and +/-8KV contact ESD surge protected. Long distance RS485/RS422 connections with

unbalanced ground loops could seriously damage the equipment; As such, an ISO version offers 2.5kV galvanic isolation.

### ■ Port RS232

<b>No. of Ports/Type</b>	1 × RS232
<b>Connector</b>	DB-9 female
<b>Protection</b>	16kV ESD surge protection
<b>Signals</b>	TxD,RxD, RTS, GND
<b>Baudrate</b>	200 bps to 460.8/500 kbps
<b>LEDs</b>	TxD/RxD

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### ■ Port RS422 / 485

<b>No. of Ports/Type</b>	1 × RS422/485 selected by DIP-switch or software
<b>Connector</b>	DB-9 male
<b>Protection</b>	<ul style="list-style-type: none"><li>• 16kV ESD surge protection</li><li>• 2.5kV electric isolation (ISO version only)</li></ul>
<b>Operating Modes</b>	<ul style="list-style-type: none"><li>• RS422 full duplex (120Ω on/off)</li><li>• RS485 4 wire, full duplex (120Ω on/off)</li><li>• RS485 2 wire, half duplex (120Ω on/off)</li></ul>
<b>Configuration</b>	One DIP switch sets operating mode and RS422/485 termination Also software can configure this No High/Low biasing resistors needed
<b>Signals</b>	<ul style="list-style-type: none"><li>• RS422: Tx+/-, Rx+/-, GND</li><li>• RS485 4 wire: Tx+/-, Rx+/-, GND</li><li>• RS485 2 wire: Data+/-, GND</li></ul>
<b>RS485 Data Direction Control</b>	<ul style="list-style-type: none"><li>• ARTc (Automatic Receive Transmit control)</li><li>• RTS Signal on RS232 port</li></ul>
<b>Baudrate</b>	<ul style="list-style-type: none"><li>• RS422: 200 bps to 500 kbps</li><li>• RS485+ARTc: 200 bps to 250 kbps</li><li>• RS485+RTS: 200 bps to 500 kbps</li></ul>
<b>LEDs</b>	TxD/RxD, ARTc

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### ■ Software Configuration

<b>Configuration Menu</b>	Software Utility with easy-to-use menu interface is accessed via standard terminal programs (Hyperterminal, PuTTY, miniterm, ...)
<b>ARTc Options</b>	<ul style="list-style-type: none"><li>• ARTc: Transmit/Receive change as quick, average, standard</li><li>• By RTS signal</li></ul>

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### ■ Power Requirements

<b>Input Voltage</b>	9-30V DC
<b>Power Consumption</b>	50mA @ 12V, 600mW
<b>Connector</b>	3-pin Terminal Block

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### ■ Housing and Mounting

<b>Case</b>	0.8mm sheet metal
<b>Weight</b>	w/o box 220g; w/h box 300g
<b>Dimensions</b>	115×73×25 mm <sup>3</sup> (W×L×H)
<b>Packaged</b>	150×107×48 mm <sup>3</sup>
<b>Mounting</b>	<ul style="list-style-type: none"><li>• DIN-Rail (optional)</li><li>• Wall mount (optional)</li></ul>

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### ■ Environmental Data

<b>Operating Temp</b>	-20°C - 65°C
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<b>Storage Temp</b>	-20°C – 85°C
<b>Ambient Humidity</b>	5-95% non condensing
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<b>■ Standards</b>	
<b>Declarations</b>	CE, FCC
<b>EMI</b>	<ul style="list-style-type: none"> <li>• EN 55022 Class B</li> <li>• EN 61000-3-2: Limits of harmonic current emissions</li> <li>• EN 61000-3-3: Limitation of voltage changes</li> <li>• 47 CFR FCC Part 15 Subpart B</li> </ul>
<b>EMS (EN 55024)</b>	<ul style="list-style-type: none"> <li>• EN 61000-4-3: Radiated RFI</li> <li>• EN 61000-4-4: Electrical Fast Transient</li> <li>• EN 61000-4-5: Surge</li> <li>• EN 61000-4-6: Induced RFI</li> <li>• EN 61000-4-8: Power Frequency Magnetic Field</li> <li>• EN 61000-4-11: Power supply dips</li> </ul>
<b>ESD</b>	EN 61000-4-2 4kV contact 8kV air for <ul style="list-style-type: none"> <li>• Serial Ports</li> <li>• DC Power connector</li> </ul>
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<b>■ MTBF (Mean Time Between Failures)</b>	
<b>MTBF</b>	available soon
<b>Standard</b>	Telcordia (Bellcore) Standard; RelCalc. 5.0 BELL-7
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<b>■ Warranty</b>	
<b>Warranty Period</b>	2 years
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<b>■ Ordering Information</b>	
<b>414</b>	SER-485
<b><u>415</u></b>	SER-485 ISO
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<b>■ Options</b>	
<b>6033</b>	Power adapter 110-230V AC to 9V @ 300mA, DC, EU plug
<b>6034</b>	Power adapter 110-230V AC to 12V @1A, DC, US plug
<b><u>6692</u></b>	DK-NCP DIN-Rail mounting kit (clamp on rear side)
<b><u>6693</u></b>	WK-NCP Wallmount kit
<b><u>663</u></b>	DB9F-to-TB/5Pins for RS422/485 free wiring option
<b><u>6061</u></b>	DB9F-to-RJ45 for changing from DB9 male to CAT5 wiring (Optimised for RS422/485 operating modes)
<b><u>6062</u></b>	RJ45-to-DB9M for changing back from CAT5 to DB9 wiring (Required to match the DB9 pinout at SER-485)
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<b>■ Packaging</b>	
<b>Packing list</b>	<ul style="list-style-type: none"> <li>• Converter SER-485</li> <li>• Terminal block for Power Supply</li> </ul>
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## Configuration Menu

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```
VScom RS422/485 Converter SER-485 Plus ISO v1.3.0          www.vscom.de
SN: 00000000 HW Ver: 1.0 Prd Date: 2016-05-31 www.visionsystems.de
```

### Operation Modes

- 1: RS-422
- 2: RS-485 controlled by RTS
- 3: \* RS-485 controlled by ART
- a: \* Tx switch off Delay (long, 11 bit)
- b: Tx switch off Delay (medium, 6 bit)
- c: Tx switch off Delay (short, 2 bit)

### Cabling Schemes

- d: \* Full Duplex (4-wire)
- e: Half Duplex (2-wire)
- h: \* Terminate Data-lines

W: + Write to memory

R: Read from memory

Enter new choice :

## Terminal Block Adapter

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## DIN-Rail Mount Kit DK-NCP

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## Wall Mount Kit

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**DK-NCP: SER-485 on DIN-Rail**

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**DSK-NCP: Side-mount on DIN-Rail**  
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