MIDAM
CONTROL SYSTEM

MIDAM CRS01

RS232/RS485 converter

Summary

CRS01 is a microprocessor controlled multi-speed half-duplex physical level converter that allows to interface a RS232 network with a RS485 network. The communication circuits are galvanically isolated from other parts of the module against spikes and surges.

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Application

- RS232 to RS485 conversion
- I/O modules link to PC
- SCADA / HMI supervisory softwares

Function

The CRS01 converter supports half-duplex communication for RS485 communication bus. For automatic flow control, a microcontroller is used which is regulated by CTS or DSR signals (DSR as default). The communication speed of both channels must be equal and has to be set by DIP switches under the front top cap of the converter. There are three LEDs at the front panel to indicate power supply and RS485 data flow status. 2-pole connector is used for RS485 connection. The line is protected against overvoltage. In case the converter is used as the last device in the communication bus, a terminating resistor may be embedded by connecting DIP switch accessible below the RS485 terminal. CANON 9M (pins) connector is used for RS232 connection. For PC connection, use nullmodem (cross) cable with CANON 9F (female) at both ends.

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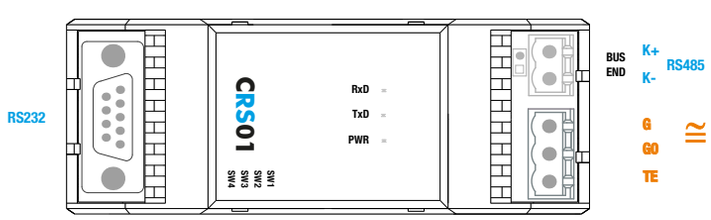
Technical data

Power supply	24 V AC/DC ± 10 %
Consumption	max. 2 W
Communication	**RS485, Modbus RTU (K+, K-)** baud rates 1200 ... 115 200 bit/s, parity and bits are set over Modbus RTU, default 9600/8/N/1 maximal bus length 1200 m, maximum number of modules depends on requested response time 255 addresses are supported galvanic isolation 1 kV **RS232, Modbus RTU, (RxD, TxD, GND)** 1200 to 115200 bps, galvanic isolation 1 kV
Data flow control	Auto, CTS or DSR
Indication	3x LEDs - Green (RxD receiving data, PWR), Red (TxD, RS485 transmitting data)
Mechanical and dimensions	98.7 x 36.2 x 64 mm (l x w x h) Polycarbonate enclosure (UL94V0), IP20 5x DIP switch blocks - SW1...SW4 (serial line speed) under the module top cap, BUS END
Terminals	5x M3 screw terminals (PWR, K+, K-) Recommended wire diameter 0.5 to 1.5 mm^2 CANNON 9 (male), the enclosure sides are milled and can be removed using a decent force
Ambient conditions	+5 to +40 °C, 5 % to 85 % rH (EN 60721-3-3. Class 3K3)

Terminals and connection

RS232	serial link RS232; CANNON 9 male (1- DCD, 2 - RXD, 3-TXD,4-DTR, 5-GND,6-DSR,7-RTS,8-CTS)
K+	Serial line RS485 +
K-	Serial line RS485 +
G	Power supply
G0	Power supply
TE	Technical ground



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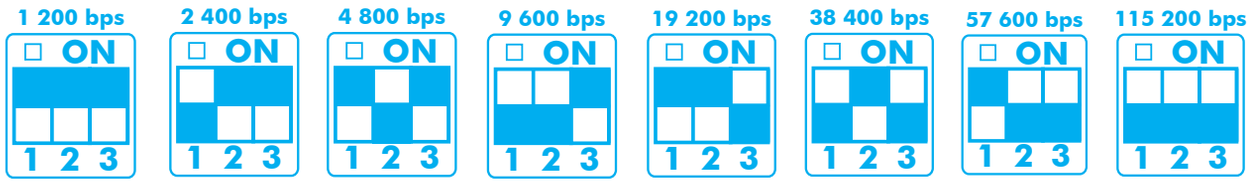
LED indication and DIP switches

RxD	Green LED – RS485 receiving data (flashing: transmitting data; OFF: no data traffic).
TxD	Red LED – RS485 transmitting data (flashing: transmitting data; OFF: no data traffic).
PWR	Green LED – power (ON: power OK; OFF: no power applied, weak or damaged power supply).
SW1	RS485 communication speed switch (for combination and values see scheme below).
SW2	RS485 communication speed switch (for combination and values see scheme below).
SW3	RS485 communication speed switch (for combination and values see scheme below).
SW4	Number of bits (OFF: 8bits; On: 9 bits) If parity (Even/Odd) is used, switch must be ON (9 bits).
BUS END	Bus end RS485, the first and last devices on the bus should have bus end in ON position.

RS485 communication speed setup



Changes in versions

02/2020	New datasheet version (v20/02)

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Subject to technical changes and General Terms and Conditions.