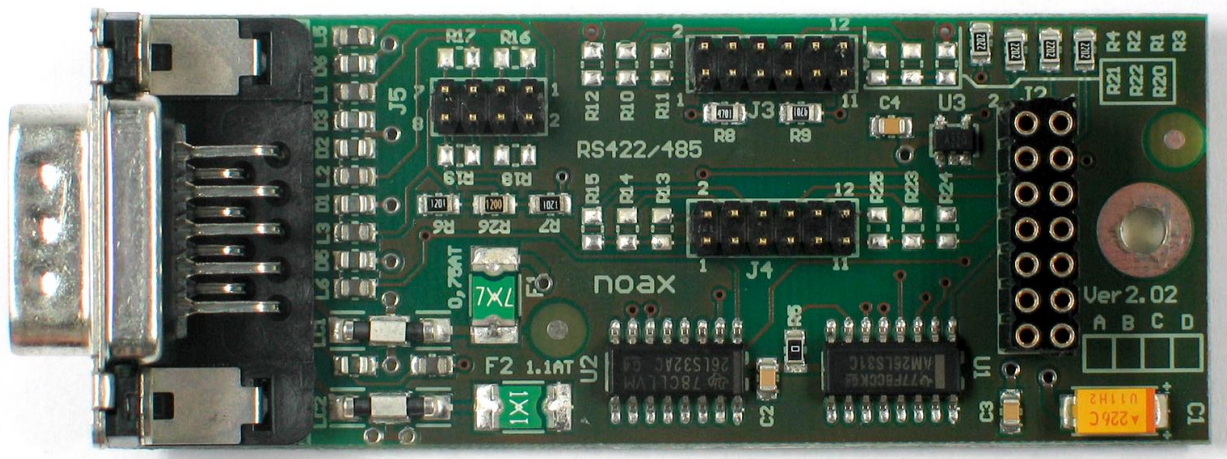noax®
Technologies

RS422/485DP interface module
part No. 15138, 15139, 15146 and 15147

pin out - configuration - operating examples

The interface module RS422/485DP was developed for serial high-speed data transfer over long distances. The RS422 in unidirectional operating mode allows a maximum of 10 receivers per transmitter. The RS485 bi-directional bus system allows a maximum of 32 participating clients. The serial data is transmitted (both, RS422 and RS485) as a voltage-difference based signal with two corresponding wires. For every signal that is transmitted there exists a pair of wires, consisting of an inverted line (e.g. RxD- / D-) and a non-inverted line (e.g. RxD+ / D+)

Using appropriate cables the range of 1200 meters at a speed of 100kBaud is possible.

Additionally the noax RS422/RS485 module is providing two voltages (+5V / +12V DC) at the connector for supplying external devices.

pin out of the D-SUB connector:

| pin D-SUB	function
1	+ TXD
2	+ RXD
3	+ RN
4	+12V supply (self-healing fuse 750 mA)
5	GND
6	- TXD
7	- RXD
8	- RN
9	+5V supply (self-healing fuse 1 A)
shield	GND

ATTENTION:

The connections have to be made with the correct polarity – otherwise the data transmission will not work.

The configuration of the RS422/485DP module is made with jumper arrays: J3, J4 and J5.
Additional spare jumpers are provided if needed.

Factory default settings:

RS422 operation (part No. 15139 and 15147)

jumper array	jumper on pins	function
J3	11 – 12	**sender always active**
	1 – 3	*spare (no function)*
	7 – 9	*spare (no function)*
	6 – 8	*spare (no function)*
J4	1 – 3	*spare (no function)*
	9 – 11	*spare (no function))*
	6 – 8	*spare (no function)*
J5	5 – 7 6 – 8	**termination resistors are connected to the receiver terminals**
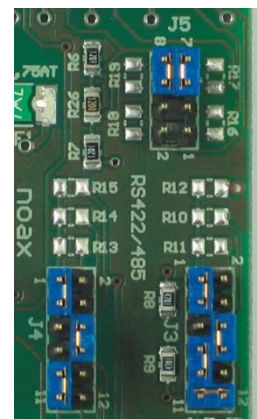
RS485 operation (part No. 15138 and 15146)

Jumper array	Jumper on pins	function
J3	1 – 2 9 – 10	**sender active when RTS state is "ON"**
	3 – 5	*spare (no function)*
	6 – 8	*spare (no function)*
J4	1 – 3	*spare (no function)*
	9 – 11	*spare (no function)*
	6 – 8	*spare (no function)*
J5	1 – 3 2 – 4	**receiver- and transmitter terminals are connected internally**
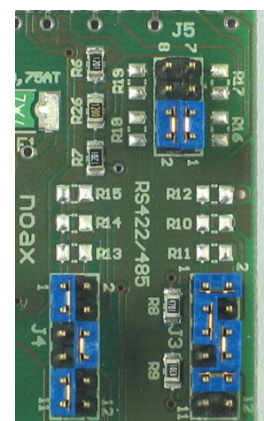
Configuration:

Jumper array J3 – enabling the transmitter

RS485 applications must make sure that only one sender can be active. This is controlled by the RTS or DTR signal from application side. (RS422 has an always active sending unit).

jumper J3 on pins	function
3 – 4	active transmitter at low RTS signal level
1 – 2 9 – 10	active transmitter at high RTS signal level
5 – 6	active transmitter at low DTR signal level
1 – 2 7 – 8	active transmitter at high DTR signal level
11 – 12	transmitter always active
1 – 3 or 3 – 5 7 – 9 or 9 – 11 6 – 8	*"parking position" for spare jumpers (without function)*

Jumper array J4 – setting the status signals

Some programs need a defined setting of the status lines. With jumper block J4 the status signals (CTS, DSR, RI, DCD) can be connected to the output signals (RTS, DTR) to be able to control them.

Jumper J4 on pins	function
1 – 2	connects CTS to RTS
3 – 4	connects RI to RTS
5 – 6	connects DCD to RTS
7 – 8	connects DCD to DTR
9 – 10	connects RI to DTR
11 – 12	connects DSR to DTR
1 – 3 or 3 – 5 7 – 9 or 9 – 11 6 – 8	*"parking position" for spare jumpers (without function)*

*Jumper terminal J5 – transmitter and receiver lines and bus terminator*

RS485 bus systems have to be terminated with appropriate resistors on both ends of the bus lines.

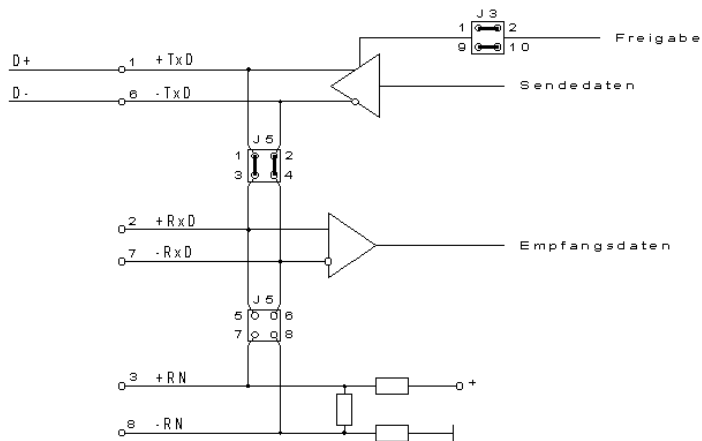| Jumper J5 on pins	function
1 – 3 2 – 4	transmitter terminals are connected to the receiver terminals
5 – 7 6 – 8	terminator connected to the receiver terminals
3 – 5 4 – 6	*"parking position" for spare jumpers (without function)*

Operating examples:

Example 1 for RS422 operation:

Sender is active (as usual for RS422 mode)
The terminators are connected to the receiver lines (a must for RS422).
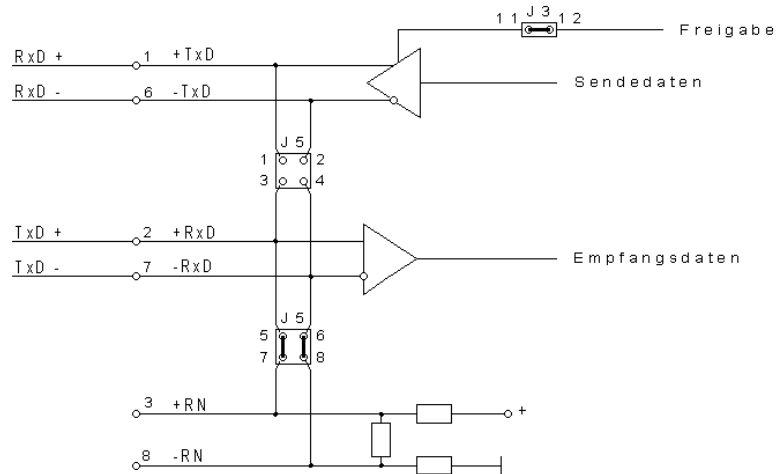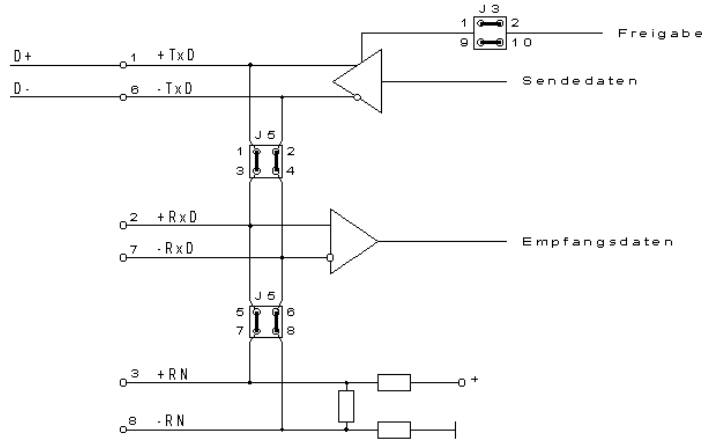

Example 2 for RS485 operation:

The transmitter terminals are connected to the receiver terminals (a must for RS485).
The sender is active at RTS signal state "ON".
No terminators are connected.
The unit is in the middle of an RS485 bus system.

Example 3 for RS485 operation:

The transmitter terminals are connected to the receiver terminals (a must for RS485).
The sender is active at RTS signal state "ON".
The terminator is internally connected to the data terminals.
This unit can be used at both ends of the RS485 bus system.

Example 4 for RS485 operation:

The transmitter terminals are connected to the receiver terminals (a must for RS485).
The sender is active at RTS signal state "ON".
An external terminator is connected to the data terminals.
This unit can be used at both ends of the RS485 bus system.
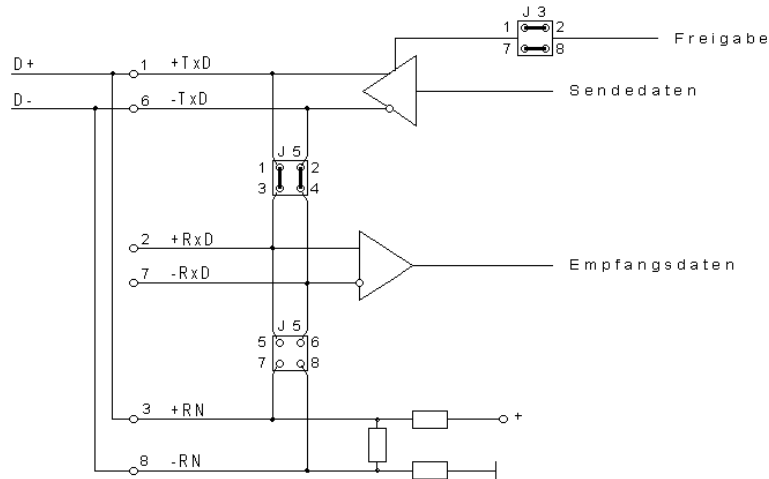
**Precaution
Subject to change without notice!**