RS-232 / RS-232 interface isolator

The RS-232 interface is an asymmetrical voltage interface (common signal earth for all signals). In addition to a very low signal output, the interface is characterized by the signal earth being connected to the grounded chassis housing. The consequence is very low interference resistance and a range of a maximum of 15 m.

A considerable increase in the immunity to interference in industrial applications can be achieved by the use of RS-232 isolator modules. The high-grade, 3-way isolation between both interface sides, supply and ground potential provides a floating and interference-resistant RS-232 interface. The positive side-effect: the expensive terminal equipment is also protected from damage by this decoupling.

To avoid compensating currents, it is sufficient to use an isolator module. The interference resistance can be further increased by the use of isolator modules at both device interfaces. As a result, the transmission link is completely free from potential references.

The 22.5 mm slim control cabinet module, PSM-ME..., designed for industrial applications, ensures high-grade, 3-way isolation with 2 kV. The additionally integrated surge protection discharges transient interference effectively to ground potential via the self-contacting snap-on foot.

The module is supplied with 24 V AC or DC. The "field side" RS-232 connection is made using pluggable COMBICON screw terminal blocks to provide a convenient connection for differing cable lengths. The local RS-232 connection is made via an RS-232 standard cable with SUB-D-9. In addition to the TxD/RxD data channels, the two control lines, RTS/CTS are also transmitted. The integrated data indicator affords a useful extra function in providing an optical display for the transmit and receive channels when data transmission is taking place.

RS-232 / TTY interface converter

The converters are used to convert an RS-232 interface bidirectionally into a 20 mA TTY current loop interface. With the interference-free TTY signal, the data can be transmitted without difficulty over a distance of up to 1000 m via a twisted pair or shielded 4-wire cables.

The following tasks are generally solved with the converters (see illustration):
- Interface conversion between RS-232 and TTY interfaces, range 1000 m.
- Programming connection between PC (RS-232) and, for example, control systems with TTY programming interface for temporary coupling.

The compact control cabinet module, PSM-ME..., designed for industrial applications, converts the TxD/RxD RS-232 data signals full duplex to the TTY current loop standard. Transmission rates of up to 19.2 kbps and transmission distances of up to 1000 m can be achieved in active TTY mode. The 22.5 mm slim module is snapped onto standard EN DIN rails and supplied with 24 V AC or DC. The RS-232 connection is made via SUB-D-9 and standard RS-232 cable. An integrated data indicator provides a dynamic display of transmit and receive data. The TTY field connection is made with pluggable COMBICON screw terminal blocks. Depending on the choice of pin configuration, the TTY operating mode can be chosen to be semi-active, active or passive.

High-grade, 3-way isolation between the supply, RS-232 and TTY interface ensures reliable decoupling of the potentials with 2 kV. Additional protection is provided by the integrated surge protection that discharges transient interference effectively to ground potential via the self-contacting snap-on foot.
### Interface isolator

For electrical isolation of RS-232 (V.24) interfaces, four channels, rail-mountable

<table>
<thead>
<tr>
<th>Description</th>
<th>Type</th>
<th>Order No.</th>
<th>Pcs. / Pkt.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RS-232 SUB-D cable, length: 2 m</strong></td>
<td><strong>PSM-ME-RS232/RS232-P</strong></td>
<td>2744461</td>
<td>1</td>
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<td>- 9-pos. socket on 25-pos. socket</td>
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<td>- 9-pos. socket on 9-pos. socket</td>
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### Interface converter

For conversion from RS-232 (V.24) to TTY, with electrical isolation, two channels, rail-mountable

<table>
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<th>Type</th>
<th>Order No.</th>
<th>Pcs. / Pkt.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RS-232 SUB-D cable, length: 2 m</strong></td>
<td><strong>PSM-ME-RS232/TTY-P</strong></td>
<td>2744458</td>
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<tr>
<td>- 9-pos. socket on 9-pos. socket</td>
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### Technical data

#### Supply
- **Supply voltage**: 24 V AC/DC ±20%
- **Nominal current consumption**: Approx. 40 mA

#### RS-232 Interface
- **Transmission speed**: 115.2 kbps
- **Transmission length**: 15 m (twisted pair)
- **Connection method**: D-SUB-9 male connector
- **Pluggable screw connection**:
- **TTY interface**
  - **Transmission speed**: -
  - **Transmission length**: -
  - **Connection method**: -
  - **Operating mode**: -
- **Load**: ≤ 500 Ω

#### Test voltage
- 2 kV

#### Ambient temperature range
- 0°C ... 55°C

#### Housing material
- PA

#### Electrical isolation
- RS-232 (A) // RS-232 (B) // supply
- RS-232 // TTY // supply

#### Dimensions
- 22.5 mm / 118.6 mm / 99 mm

#### Conformance / approvals
- cUL 508 Recognized