Termination Carriers

Consistent interface solutions for system technology
Termination Carriers – Consistent interface solutions for system technology

Termination carriers are compact solutions for connecting standard interfaces to your automation system in a quick, yet smooth manner. You can simply connect the signals – plug-and-play – using standardized system cables.

The following standard DIN rail devices are available for safe signal processing:

- Isolating amplifiers for Ex i circuits and SIL applications
- 6.2 mm isolating amplifiers for non-Ex i circuits
- Safe coupling relays for process automation

The termination carrier concept

- Stable gridless aluminum device profile with integrated DIN rail design to accommodate standard interfaces
- Protected by device profile PCBs – mechanically decoupled
- Integrated DIN rail attachment with end clamps
- Module connection via plug-in and coded cable sets
- Hood with labeling options

Your consistent interface solution for system technology

1. Selecting a standard module
   Select the appropriate functions for signal processing from a wide range of standard DIN rail devices.

2. Termination carriers
   Snap the standard modules onto the DIN rails integrated into the device profile. The connection to the termination carrier PCB is established quickly and safely thanks to plug-in and coded cable sets.
3. Front adapter with system cable
The devices are connected to controller-specific I/O modules via high-position system cables. These enable connections via standardized or controller-specific systems.

**compact**
For high packing density
- Saves up to 30% of space due to compact design
- Space-saving connection points
- Integrated end clamps

**rugged**
For high system availability
- Stable, vibration-resistant aluminum carrier device profile
- Mechanically decoupled termination PCB
- Passive PCB without active components
- Redundant supply and monitoring electronics in a separate DIN rail module

**easy maintenance**
For simplified documentation and startup
- Use of standard DIN rail devices
- Easy access to connection points
- Module replacement during operation (hot swap)
- Pre-assembled system cabling with front adapter

**flexible**
For optimum adaptation
- Gridless profile lengths for controller-specific number of I/Os
- Different system plug types, even redundant
- Horizontal and vertical mounting

ABB
Honeywell
Invensys
Siemens
Yokogawa
and more...
Universal termination carriers –
Product overview

We offer the following universal termination carrier versions for the three standard device ranges:

•  For up to 16 standard DIN rail modules, with 1:1 signal routing to a 37-pos. DSUB37 plug-in connector – for connection to pre-assembled system cables

•  Also with HART decoupling; for communication between HART-compatible field devices and a management system – in combination with a HART multiplexer

### MINI Analog – Ultra-compact isolating amplifiers

-  With a design width of just 6.2 mm, you can measure temperatures as well as convert, electrically isolate, and filter signals
-  Saves up to 65% of space, when compared to other isolation amplifiers on the market
-  High energy efficiency and service life thanks to low power consumption
-  Straightforward configuration via DIP switches
-  Voltage supply – flexible and easy with the DIN rail connector

#### Ordering information

Alongside universal termination carriers, versions are also available which are tailored to I/O modules for different automation systems. Please contact us for more information.

<table>
<thead>
<tr>
<th>Designation</th>
<th>Order No.</th>
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<tbody>
<tr>
<td>TC-D37SUB-ADIO16-M-P-UNI</td>
<td>2902933</td>
</tr>
<tr>
<td>For 16 MINI Analog devices + 1 x power module and 1 x feed-through terminal block, with 1:1 pinning on DSUB37</td>
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| TC-D37SUB-AIO16-M-PS-UNI     | 2902934   |
| For 16 MINI Analog devices + 1 x power module and 1 x feed-through terminal block, with 1:1 pinning on DSUB37 and additional option of HART decoupling |
MACX Analog – Isolating amplifiers for Ex i circuits and SIL applications

- With a design width of only 12.5 mm (1- and 2-channel)
- Safe 3-way electrical isolation
- Accurate signal transmission with low current consumption
- Voltage supply and diagnostics – flexible and easy with the DIN rail connector
- Plug-in and polarized connection terminal blocks with integrated test sockets
- Easy configuration via DIP switches or FDT/DTM software

PSR – SIL coupling relays for process automation

- Available for ESD as well as for F&G applications
- Tailored to higher-level control systems in the process industry
- Suitable for applications up to max. SIL 3
- With a design width of only 17 mm
- Easy diagnostics and high availability thanks to forcibly guided contacts as well as line load detection
- Long service life thanks to filtering of test pulses
- Integrated, replaceable, standard fuse
- Plug-in and polarized connection terminal blocks

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<tr>
<td>TC-D37SUB-ADIO16-EX-P-UNI</td>
<td>2924854</td>
<td>For 16 MACX Analog Ex devices + 1 x power module with 1:1 pinning on DSUB37</td>
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<tr>
<td>TC-D37SUB-AIO16-EX-PS-UNI</td>
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<tr>
<td>TC-2D37SUB-DO16-ESD-AR-UNI</td>
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<td>For 16 PSR coupling relays, for the safe interruption of circuits, with 1:1 pinning on DSUB37</td>
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<tr>
<td>TC-2D37SUB-DO16-F&amp;G-AR-UNI</td>
<td>2902914</td>
<td>For 16 PSR coupling relays for safe switching on of circuits, with 1:1 pinning on DSUB37</td>
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Application example –
Efficient signal connection with
MACX Analog Ex

Many process plants have areas where potentially explosive atmospheres may occur. As such, measurement and control circuits are designed in protection method intrinsic safety – Ex i.

MACX Analog Ex i isolating amplifiers and measuring transducers isolate intrinsically safe from non-intrinsically safe circuits and safely limit the energy supplied to the Ex area. Furthermore, they handle extensive signal conditioning tasks.

Space-saving and quick to install
The compact termination carrier solution enables you to integrate up to 384 signals in one 80 x 200 cm control cabinet – when using 2-channel MACX Analog Ex devices.
Experience fast and problem-free mounting and startup with pre-assembled system cables.

MACX Analog Ex product overview –
Maximum explosion protection for all Ex zones and gas groups

<table>
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<th>Isolating, converting, filtering, and amplifying – MACX Analog Ex offers you a comprehensive product range with a design width of just 12.5 mm.</th>
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<tr>
<td><strong>Analog IN</strong> Measuring transducer repeater power supply and input isolating amplifiers for intrinsically safe operation of 2-wire transmitters and 4-wire measuring transducers as well as current sources.</td>
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<tr>
<td><strong>Analog OUT</strong> Output isolating amplifiers for intrinsically safe operation of control valves, I/P converters, and LEDs.</td>
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Modular power concept – for high availability
The isolating amplifiers are connected to a separate power module and error message module via the integrated DIN rails. As such, the PCB is terminated in a passive manner – it does not contain active components whose failure would require the replacement of the termination carrier.

The power and error message module offers:
- Single or diode-decoupled redundant supply, as preferred
- Error message in the event of auxiliary voltage failures, fuse faults or line faults
- Replaceable fuses

Diagram of typical system with point-to-point wiring

In the hazardous Ex area, cables from intrinsically safe field devices are grouped together via junction boxes to form shielded multi-core cables. In the non-hazardous area, they are then routed via the marshalling level to the interface level.

From there, the isolating amplifiers are individually wired with the corresponding I/O cards. The significant amount of time needed for installation and startup is greatly reduced by the termination carrier, thanks to the use of plug and play system cables.

Digital IN
- NAMUR switching amplifiers for intrinsically safe operation of proximity sensors and switches.

Digital OUT
- Solenoid drivers for intrinsically safe operation of solenoid valves and alarm transmitters.

Temperature
- Programmable FDT/DTM temperature transducers for intrinsically safe operation of resistance thermometers, remote resistance-type sensors, thermocouples, and mV sources.
Further information on the products presented here and on the world of solutions from Phoenix Contact can be found at www.phoenixcontact.net/catalog

Or contact us directly.

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