

# netTAP 151

Data Converter for Real-Time Ethernet Networks

- Bridging between any two Real-Time Ethernet networks
- Flexible choice of operating modes Slave/Master or Slave/Slave
- Effortless integration as standard IO device
- Secure network segregation via internal data buffer
- Fast conversion time less than 10 milliseconds



The gateway netTAP 151 transmits IO data bidirectionally between any two industrial Real-Time Ethernet networks. It is the ideal solution for installations with heterogeneous networks or such of the same kind to exchange data across given network boundaries. With more than 25 different combinations of the protocols PROFINET, EtherCAT, EtherNet/IP, POWERLINK, Sercos and Modbus TCP, the device series provides a solution for any conversion.

The integration as simple IO device into the primary network makes the converter compatible with any common PLC. On the secondary side it works either as IO device too or controls a subordinate network as a bus master. The length of the IO data can be scaled to any application and the data in between can be mapped on byte level arbitrarily.

Secure network separation is provided by two Ethernet controllers, each connected to a Dual Ethernet port with integrated switch. That allows realizing star, ring and inline network topologies without further peripherals. Both controllers handle the protocols independent from each other and exchange only the IO data across a data buffer. An overall data processing time lower than 10 milliseconds is achieved.

The devices can be ordered preloaded with firmware and license or unloaded. Unloaded devices minimize the storage costs. Subsequent loading of a firmware configures these devices for any conversion most flexible. All devices are commissioned and diagnosed network independent over USB.



# Technical Data / Product Overview

## Protocol matrix

|              |             | Network A      |             |           |          |          |          |
|--------------|-------------|----------------|-------------|-----------|----------|----------|----------|
|              |             | EtherCAT       | EtherNet/IP | POWERLINK | PROFINET | Sercos   |          |
| NT 151-RE-RE |             | Slave          | Slave       | Slave     | Slave    | Slave    |          |
| Network B    | EtherCAT    | Slave          | /ECS/ECS    | /EIS/ECS  | /PLS/ECS | /ECS/PNS | /S3S/ECS |
|              |             | Master         | /ECS/ECM    | /EIS/ECM  | /PLS/ECM | /PNS/ECM | /S3S/ECM |
|              | EtherNet/IP | Slave          | /EIS/ECS    | /EIS/EIS  | /PLS/EIS | /EIS/PNS | /EIS/S3S |
|              |             | Master         | /ECS/EIM    | /EIS/EIM  | /PLS/EIM | /PNS/EIM | /S3S/EIM |
|              | POWERLINK   | Slave          | /PLS/ECS    | /PLS/EIS  | -        | /PLS/PNS | /PLS/S3S |
|              |             | Master         | -           | -         | -        | -        | -        |
|              | PROFINET    | Slave          | /ECS/PNS    | /EIS/PNS  | /PLS/PNS | /PNS/PNS | /S3S/PNS |
|              |             | Master         | /ECS/PNM    | /EIS/PNM  | /PLS/PNM | /PNS/PNM | /S3S/PNM |
|              | Sercos      | Slave          | /S3S/ECS    | /EIS/S3S  | /PLS/S3S | /S3S/PNS | /S3S/S3S |
|              |             | Master         | /ECS/S3M    | /EIS/S3M  | /PLS/S3M | /PNS/S3M | /S3S/S3M |
|              | Modbus TCP  | Slave / Master | /ECS/OMB    | /EIS/OMB  | /PLS/OMB | /PNS/OMB | /S3S/OMB |

| Parameter              | Value                                    |
|------------------------|--|
| Service Interface      | Mini USB                                 |
| Displays               | LED SYS, APL, protocol specific          |
| Configuration          | SYCON.net, Windows® 7                    |
| Power Supply           | 18 ... 30 V / 190 mA @ 24V               |
| Connector              | Mini-COMBICON 5-pin                      |
| Operating temperature  | -20 °C .. +60 °C                         |
| Dimensions (L x W x H) | 99 x 22,5 x 114,5 mm (without connector) |
| Mounting               | DIN-Rail, DIN EN 60715                   |
| Weight                 | 121 g                                    |
| CE Sign                | yes                                      |
| Emission               | EN55011 / CISPR 11; Class A              |
| Noise Immunity         | EN 61000-6-2                             |
| Card Slot              | SD card                                  |

| Protocol    | Maximum Cyclic Process Data |       |               |
|-------------|-----------------------------|-------|---------------|
|             | Master                      | Slave |               |
| EtherCAT    | 9200                        | 512   | Bytes IO data |
| EtherNet/IP | 11472                       | 1008  | Bytes IO data |
| POWERLINK   | -                           | 1490  | Bytes IO data |
| PROFINET    | 11472                       | 2048  | Bytes IO data |
| Sercos      | 11472                       | 240   | Bytes IO data |
| Modbus TCP  | 11520                       | 11520 | Bytes IO data |

The maximum convertible number of IO data of a protocol combination is determined by the protocol with the lower amount of IO data.

**Note:** Technical data may be changed without further notice.

| Product Name     | Part Number  | Brief Description  |
|------------------|--------------|--|
| NT 151-RE-RE     | 1722.122     | Loadable device for any Slave/Slave protocol combination (incl. Modbus TCP master) |
| NT 151-RE-RE/+ML | 1722.122/+ML | Loadable device for any Slave/Master or Slave/Slave protocol combination           |
| SD card          | 1719.003     | SD card to realize the backup and restore functions                                |

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