



# IP-BASED PUBLIC ADDRESS UNIT

## NPA SERIES

Flexible and modular design with up to 600-W output power

Up to 4 amplifier channels which can be simultaneously and independently used

Up to 8 selectively addressable speaker circuits

Maximum reliability due to redundancy and integrated speaker monitoring

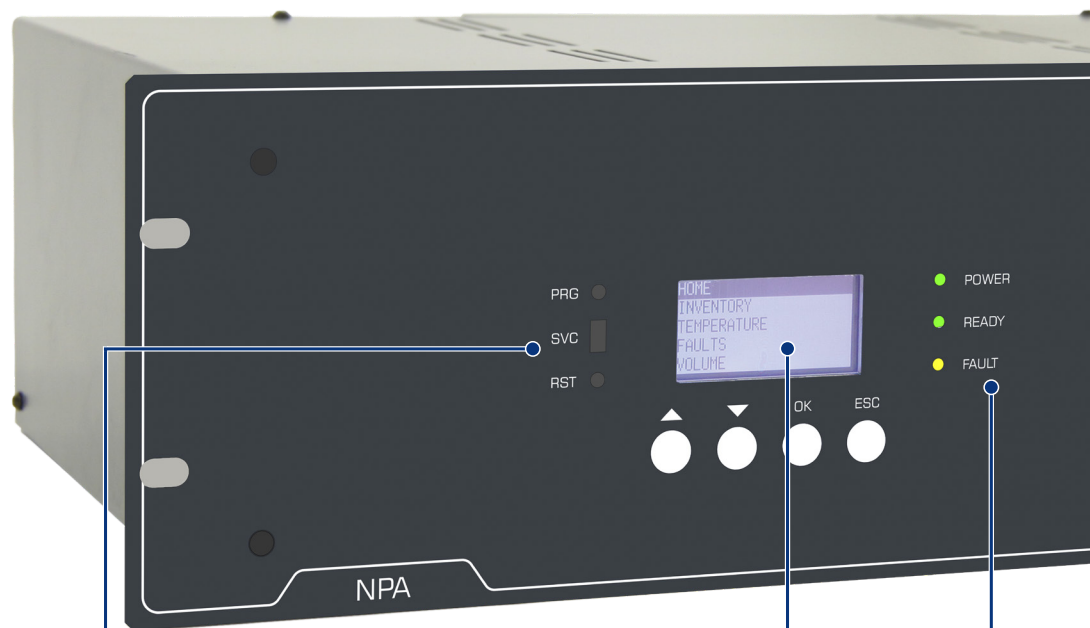
Easy integration into IP networks (IEEE 802.3)

High efficiency due to Class-D amplifier technology

# MULTI-CHANNEL IP-BASED PA UNIT

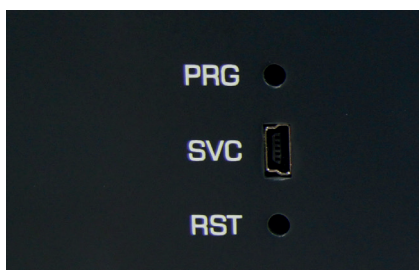
## INTELLIGENT PUBLIC ADDRESS SOLUTIONS

The multi-channel IP PA unit of the NPA series is INDUSTRONIC's top-of-the-line product for intelligent PA solutions. It ensures excellent speech intelligibility and seamlessly interfaces with the communication and public address system via an Ethernet/IP network. The IP PA unit is ideal for centralized or decentralized operation. Up to 4 amplifier channels enable the simultaneous broadcasting of voice announcements, tone signals, or background music to different speaker zones. The public address units are highly efficient due to Class-D amplifier technology.



### User-friendly maintenance

To facilitate maintenance, the IP PA unit is equipped with 2 recessed buttons and a USB port at the front of the device which can be easily accessed by service staff.



### Clear user interface and easy operation

The display shows important information, e.g. the status of the speaker circuits (active/inactive). The keys allow you to navigate through the menu with ease.



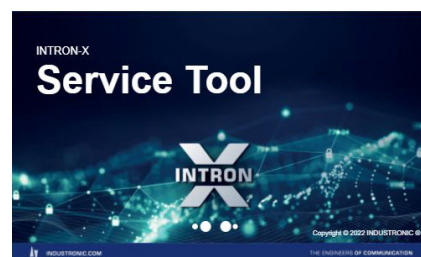
### Numerous terminals and interfaces

Different inputs and outputs on the back of the device enable you to connect additional equipment (e.g. emergency microphone).



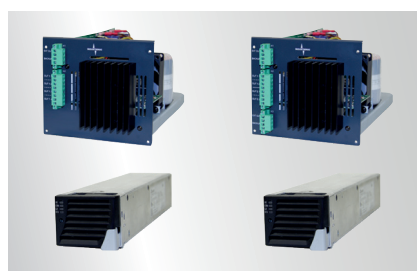
### INTRON-X Service Tool

The Service Tool facilitates commissioning and maintenance, enabling access to the NPA from any location over the network.



### Modular design

Different amplifier modules and power supply units enable fast and flexible implementation of your specific requirements. Individual solutions can be realized by simply inserting suitable modules and units on the back of the device.



### Clear signaling

The 3 status LEDs provide accurate information about the current status of the device during commissioning or normal operation. They let you know if the device is switched on, if it is ready for operation and if there are any faults.



# MAXIMUM FLEXIBILITY

## MODULAR DESIGN

The IP PA unit offers a high degree of flexibility thanks to the different amplifier modules and power supply units which can be combined to meet your specific public address needs.

### FLEXIBLE EXPANSION STAGES

The basic configuration provides 1 digital amplifier channel, up to 4 monitored speaker circuits, and a maximum output power of 300 Watts. The maximum configuration provides 4 simultaneously usable amplifier channels, 8 speaker circuits, and a maximum output power of 600 Watts.

### MANDATORY CALL OUTPUT

A mandatory call output can be additionally assigned to each amplifier channel. Then, a connected mandatory call relay always applies to all speaker circuits of the respective channel, even when they are individually controlled.

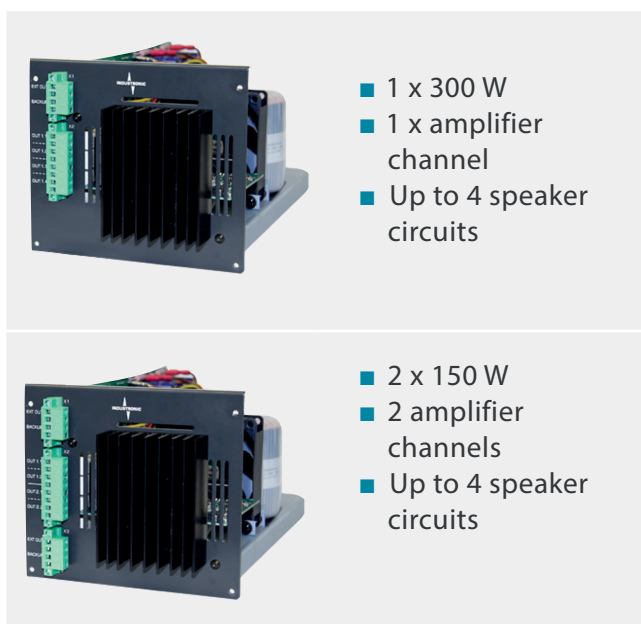
### EASY EXPANSION

Several IP PA units can be implemented for even more extensive solutions. Special types are available upon request.

### INDIVIDUAL COMBINATIONS

The amplifier modules are available in two different versions:

1 x 300 W and 2 x 150 W



### ■ Basic configuration

- 1 x digital amplifier channel
- Up to 4 monitored speaker circuits
- 300-W output power

### ■ Maximum configuration

- Up to 4 digital amplifier channels
- Up to 8 monitored speaker circuits
- Up to 600-W output power

### ■ Expandable now and in future

### SLIDE-IN MODULES AND UNITS

Individual solutions can be realized by simply inserting suitable modules or units on the back of the device.



# ADAPTATION TO MAINS VOLTAGES WORLDWIDE

There exists a variety of mains voltages worldwide. The power supply concept of the IP PA unit ensures reliable adaptation to different conditions anywhere in the world.

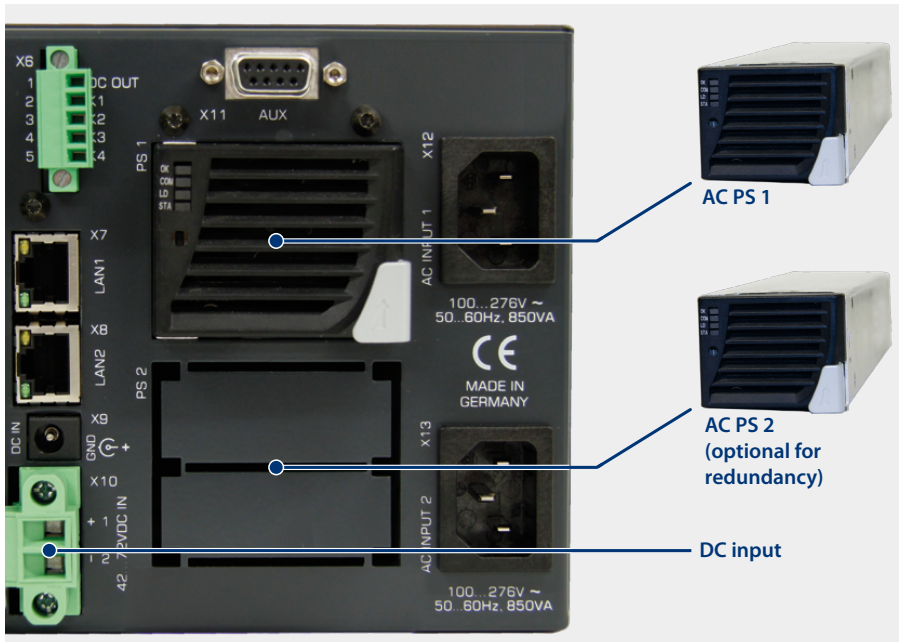
## AC AND DC VOLTAGE

A special feature of the device is that it provides 2 slots by default which can be equipped with AC power supply units (100 V AC to 276 V AC). Usually, one power supply unit can power a fully equipped IP PA unit during 230-V operation. Furthermore, there is 1 DC input available (42 V DC to 72 V DC).

- 100 V AC to 276 V AC
- 42 V DC to 72 V DC
- Wide-range input for worldwide use

## REDUNDANT POWER SUPPLY

If required, power supply can also be installed redundantly. To do this, the device is equipped with 2 AC power supply units on the back. The redundant power supply unit is operated in hot-standby mode. For even more protection, you can install an additional DC emergency power supply.



## THE RIGHT POWER SUPPLY FOR EACH APPLICATION

With 2 independent AC inputs and 1 DC input all local power supply requirements can be met - anywhere in the world. Each power supply unit has its own mains connection so that it can also be powered by redundant supply mains.

# MAXIMUM AVAILABILITY

## REDUNDANT CONFIGURATION

The permanent availability of the devices used is crucial especially when initiating alarms or voice announcements in emergency situations.

### REDUNDANT AMPLIFIER MODULES AND POWER SUPPLY

To backup an amplifier module with a second one, you simply insert an identical amplifier module into the second slot provided. For redundant power supply, both AC inputs are used. If the main power supply unit fails, there is an automatic switchover to the redundant power supply unit to ensure uninterrupted operation. Power supply units can easily and quickly be replaced during normal operation thanks to hot-swap capability. To provide additional protection, you can connect an emergency power supply (e.g. battery) to compensate for mains interferences.

### N+1 REDUNDANCY

Completely redundant IP PA units which are configured in N+1 redundancy mode (N = 1 to 4) always provide one backup device which takes on the function of the device which failed.

### REDUNDANT NETWORK INTERFACE

There are two network interfaces available which allow for a redundant network access. If one network interface fails, data is transmitted via the second one.

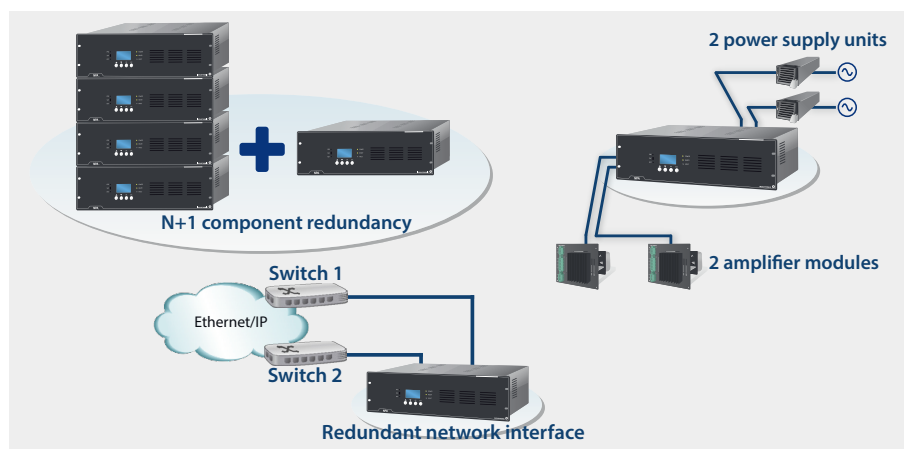
### LOOP CABLING OF SPEAKERS

Loop cabling of speakers provides highest availability as an open circuit on one line does not lead to a speaker failure.

### INDIVIDUAL SOLUTIONS

Every project has individual requirements. Together we will find the redundancy solution that best fits your needs.

- Redundant amplifier modules and power supply units
- Complete N+1 redundancy
- Redundant network interface
- Different redundancy solutions ensure uninterrupted operation
- Fast switchover to redundant components
- Hot-swap capability



### PERMANENT AVAILABILITY

A redundant configuration ensures maximum availability. With the IP PA units from INDUSTRONIC different redundancy concepts can be implemented.

# RELIABLE PUBLIC ADDRESS CONTINUOUS MONITORING

Continuous monitoring ensures the proper operation of the IP PA unit - at any time during alarms, announcements, or the playback of background music.

## INTEGRATED MONITORING

The IP PA unit monitors various states. The monitoring function is fully integrated into the device. This means less effort and expense for wiring and no external monitoring cards are required.

The IP PA unit monitors itself for:

- Voltage loss
- Short circuit
- Overload
- Excess temperature

## SPEAKER CIRCUIT MONITORING

You can optionally extend the monitoring function of the IP PA unit by activating speaker circuit monitoring. This functional extension enables you to continuously monitor individual speaker circuits for short circuit, ground leakage, line interruptions as well as impedance changes. Make all necessary settings via the INTRON-X Service Tool - from performing reference measurements through to defining measuring cycles.

## INDICATORS AND SIGNALING

Potential faults are indicated at the front panel as well as on the integrated web interface of the device. Furthermore, any faults are forwarded to the corresponding controller. This way, immediate measures can be taken to eliminate faults.

- Completely monitored public address solution
- All monitoring features integrated in the device
- Optional speaker monitoring can be activated
- All states can be conveniently displayed and retrieved via the INTRON-X Service Tool



## FULLY INTEGRATED MONITORING

Continuous monitoring of the proper operation of the device and all connected speaker circuits is crucial for a reliable public address solution. For this reason, all monitoring functions are fully integrated into the device.

# CENTRALIZED OR DECENTRALIZED INSTALLATION CUSTOMIZED SOLUTIONS

The IP PA unit seamlessly interfaces with INDUSTRONIC's public address and communication system via an Ethernet/IP network and offers centralized or decentralized operation to suit your needs.

## CENTRALIZED INSTALLATION

Centralized installation means that the IP PA unit and the controller are installed in the same location, e.g. inside a cabinet.

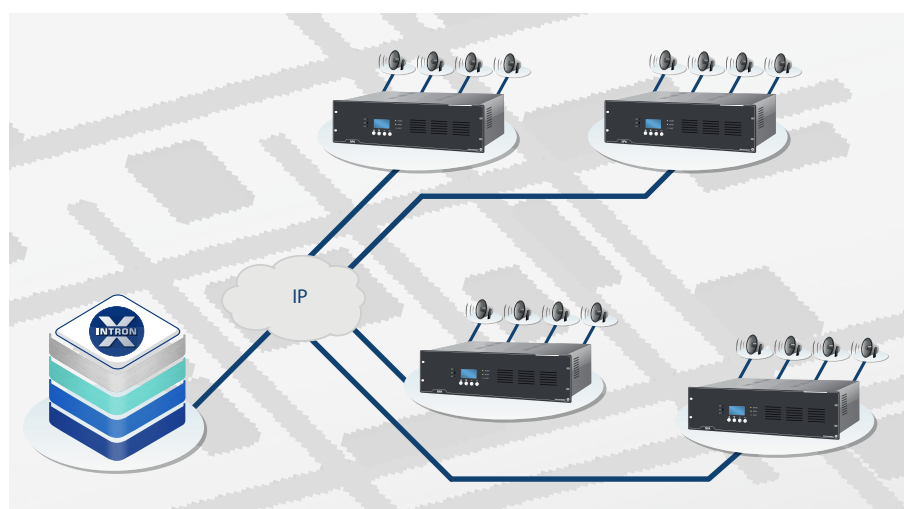
## DECENTRALIZED INSTALLATION

For a decentralized solution, the device is installed in a remote location other than the controller, but is still part of the same network. Usually, the device is installed close to the speakers to be connected. This ensures shorter cable distances and reduces cabling costs. The device is ideal for indoor installation in dry rooms, e.g. in existing server rooms or offices.

## INSTALLATION ANYWHERE ON THE LAN

In principle, the IP PA unit can be implemented anywhere on the LAN. This way, the device can be treated as an independent, remotely installed IP amplifier with fully integrated zone selection, optional speaker monitoring, and redundant power supply.

- Centralized or decentralized installation depending on your requirements
- Various installation locations possible (e.g. inside a cabinet or in offices)



## DECENTRALIZED INSTALLATION FROM CONTROLLER

For decentralized installation, the compact IP PA units are distributed throughout the plant without a cabinet and are installed near the speakers in a space-saving manner - exactly where they are needed. Short cable distances to speakers reduce cabling costs as cables with a smaller conductor cross section can be used.

# EASY EXPANDABILITY

## HIGHLY VERSATILE INPUTS, OUTPUTS, AND INTERFACES

Numerous inputs, outputs as well as interfaces allow you to individually expand the IP PA unit and use the full range of features to meet even complex requirements.

### PTT AUDIO AND CONTROL INPUT

A PTT audio input on the back of the device enables, for example, the connection of an emergency microphone which ensures the propagation of voice announcements at any time.

### OPEN-COLLECTOR OUTPUTS

4 open-collector outputs enable the connection of mandatory call relays or flashing warning beacons. A mandatory call relay is used to propagate acoustic signals or live announcements with maximum volume, no matter what volume is set at the speaker - even if the volume control is set to zero.

### FAULT INDICATION OUTPUT

The proper operation of the IP PA unit can be indicated externally via fault indication output (e.g. at an intercom station).

- 1 x PTT audio and control input
- 4 x open-collector outputs
- 1 x fault indication output



### FLASHING WARNING BEACON

Flashing warning beacons can be additionally used to visually alert people to an announcement.

### EMERGENCY MICROPHONE

The emergency microphone ensures uninterrupted operation even when the controller or the network fails. Live announcements initiated via emergency microphone always have the highest priority and interrupt other less urgent announcements or background music.



# CONVENIENT MANAGEMENT AND VISUALIZATION INTRON-X SERVICE TOOL

With the INTRON-X Service Tool you will never lose the big picture. You will have an overview of all relevant device information - clearly structured and displayed. There are several features available facilitating commissioning and maintenance.

## PERMANENT AVAILABILITY

The INTRON-X Service Tool operates independently from the controller. It is also available if the controller is out of service or not yet connected to the IP PA unit.

## LOCAL OR REMOTE ACCESS

The INTRON-X Service Tool can be accessed locally via PC/notebook using the USB interface at the front panel of the device or remotely via the network. This makes it easy to operate the IP PA unit from any location using the INTRON-X Service Tool.

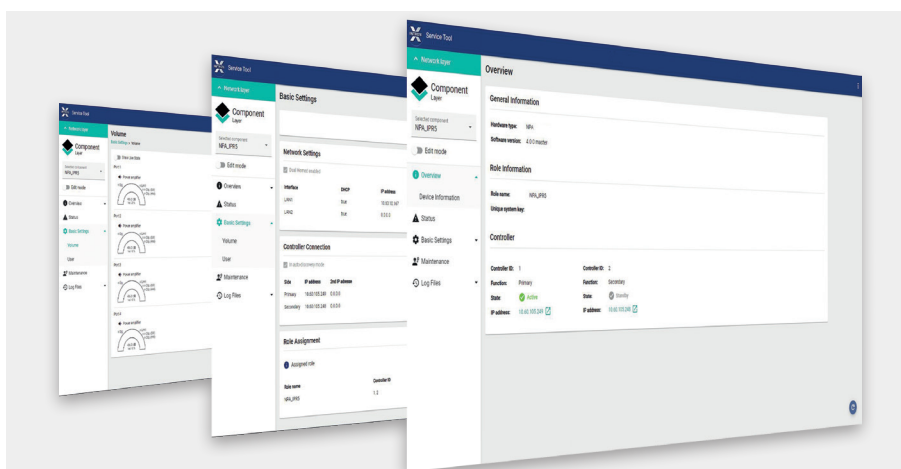
Among other things, you will be able to:

- Define network settings
- Configure speaker monitoring
- Display and download fault reports
- Analyze and evaluate status information
- View information in real time

- Intuitive operation
- Clear structure
- Accessible from any location within the network
- Always available

## CONFIGURATION WITH THE CONFIG MANAGER X

With the Config Manager X, INDUSTRONIC's feature-packed configuration software, you can configure the IP PA unit according to your needs. All functions are configured using the intuitive user interface and are then uploaded to the controller. As soon as a network connection is established between the controller and the IP PA unit, the configuration is automatically transferred to the NPA.



## INTRON-X SERVICE TOOL – INTUITIVE USER INTERFACE

The clear and user-friendly structure of the individual menus enables intuitive navigation. After commissioning you can create an account with user-defined functions.

# SERIES OVERVIEW CHART

| Type               | 300 NPA 111 | 300 NPA 121 | 600 NPA 121 | 600 NPA 122 |
|--------------------|-------------|-------------|-------------|-------------|
| Amplifier slot 1   | 1 x 300 W   | 2 x 150 W   | 1 x 300 W   | 1 x 300 W   |
| Amplifier slot 2   | -           | -           | 1 x 300 W   | 1 x 300 W   |
| Total power        | 300 W       | 300 W       | 600 W       | 600 W       |
| Amplifier channels | 1           | 2           | 2           | 2           |
| Speaker circuits   | 4           | 4           | 8           | 8           |
| AC power supply    | 1           | 1           | 1           | 2           |
| DC power supply    | 1           | 1           | 1           | 1           |
| Type number        | 302-144-100 | 302-144-200 | 302-144-300 | 302-145-300 |

Other types are available upon request.

| Option | Description                                                                                     | Type number |
|--------|-------------------------------------------------------------------------------------------------|-------------|
|        | ACT-NPA Speaker Circuit Monitoring                                                              | 101-200-101 |
|        | Activation of speaker circuit monitoring for the INDUSTRONIC IP-based PA unit of the NPA series |             |

## TECHNICAL DATA

### MECHANICAL DATA

|                        |                                                                    |
|------------------------|--------------------------------------------------------------------|
| Design                 | 19" rack mounting, 3 RU                                            |
| Width x height x depth | 482 mm x 132 mm x approx. 330 mm (19.02" x 5.20" x approx. 12.99") |
| Display                | 128 px x 64 px                                                     |
| Weight                 | Max. 13.50 kg (29.76 lbs) (depending on the device type)           |

### ELECTRICAL DATA

|                               |                                |
|-------------------------------|--------------------------------|
| AC supply voltage             | 100 V AC to 276 V AC           |
| Power frequency               | 47 Hz to 63 Hz                 |
| Power factor correction (PFC) | 0.95                           |
| DC supply voltage             | 42 V DC to 72 V DC             |
| Frequency range               | 150 Hz to 16,000 Hz (+/- 3 dB) |
| Efficiency                    | > 80 %                         |
| Signal-to-noise ratio         | > 80 dB                        |
| Distortion                    | < 0.5 %                        |
| Control voltage output        | 48 V / 0.5 A                   |

### ENVIRONMENTAL REQUIREMENTS AND STANDARDS

|                                      |                                      |
|--------------------------------------|--------------------------------------|
| Ambient temperature during operation | -5 °C to +50 °C (+23 °F to +122 °F)  |
| Relative humidity (non-condensing)   | Max. 95 %                            |
| EMC                                  | IEC/EN 61000-6-2<br>IEC/EN 61000-6-4 |

### CONNECTIONS AND INTERFACES

|                                                 |
|-------------------------------------------------|
| 1 x analog PTT audio and control input          |
| 1 x fault indication output                     |
| 1 x Ethernet port LAN1                          |
| 1 x Ethernet port LAN2 for redundant connection |
| 1 x fault indication input                      |
| 4 x open-collector outputs                      |
| 1 x USB service interface                       |
| 1 x control voltage output 48 V DC / 0.5 A      |
| 2 x mains voltage input                         |
| 1 x DC voltage input                            |

