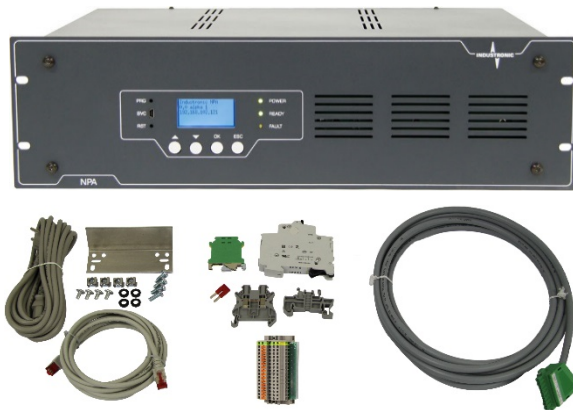


Preferred Module NPA

IP-based Public Address Module



Features and Functions

- Decentralized PA unit controlled by the INTRON-D *plus* over Ethernet/IP
- Up to 600 W amplification in up to 8 integrated, selectively addressable speaker circuits
- Surge protection inclusive
- Single circuit breaker for each rectifier
- Intelligent backup control
- Redundant network interface
- Integrated web interface
- All cables (network, power, Ethernet) already included
- All mounting accessories included
- Easy installation with our guideline

Preferred Modules is a special and prioritized INDUSTRONIC product line. These solutions secure the well-known quality of our PA, PAGA, Intercom and Siren Systems. Especially designed for use in industrial environments, our years of experience have made these modules the number one choice of our Oil & Gas, Chemical & Pharmaceutical, Steel and Power industry customers.

One of our Preferred Module is the IP-based Public Address Unit of the NPA series. This is a fully integrated public address solution that's ready for use out of the box.

The benefits are:

- Well-selected products for an outstanding system performance
- Secured availability and faster delivery
- Faster project execution
- Optimized for Local Assembly
- Easy assembly
- Cost reduction
- Comprehensive and intelligible documentation
- Regular use results in experience and service know-how

Our Preferred IP Public Address Modules

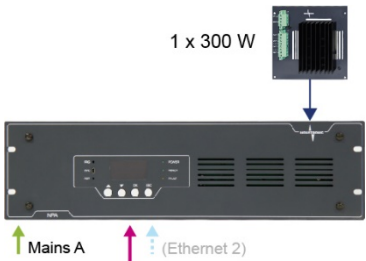
The multi-channel, IP-based PA Modules of the NPA series are used to control up to 8 selectively addressable speaker circuits.

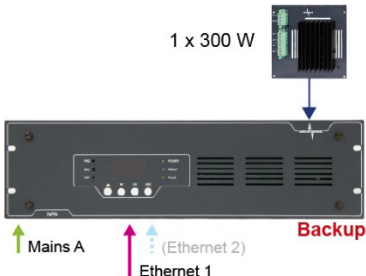
Via Ethernet/IP network the decentralized unit can be connected to the INTRON-D *plus* communication and public address system from INDUSTRONIC and can be operated within a network of systems.

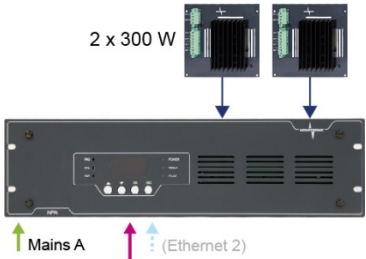
Via the integrated speaker monitoring system there is the option to continuously monitor speaker circuits for short circuit, earth leakage, line interruption, and impedance changes.

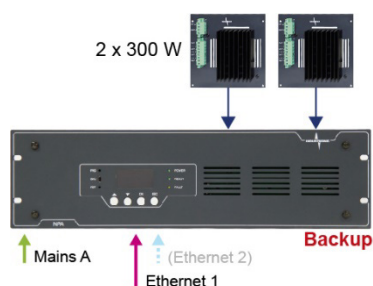
It's possible to use the intelligent backup control by operating the entire NPA unit redundantly with a backup amplifier in N+1 configuration.

The integrated web interface is used for easy commissioning and maintenance via a standard web browser installed on your PC.

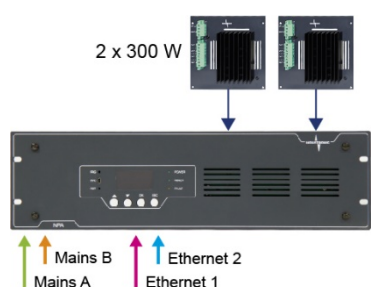
	<table border="1"> <tr> <td>Type</td> <td>PMOD IP-PA 300W 01</td> </tr> <tr> <td>Description</td> <td>NPA unit with 300 W output power (1 x 300 W), up to 4 speaker circuits (monitoring as option), 1 amplifier channel, circuit breaker, screw type terminals with surge protection, 5 m (5.5 yd) power cord, 3 m (3.3 yd) Ethernet cable, slide-in support, mounting accessories</td> </tr> <tr> <td>Type Number</td> <td>325-310-001</td> </tr> </table>	Type	PMOD IP-PA 300W 01	Description	NPA unit with 300 W output power (1 x 300 W), up to 4 speaker circuits (monitoring as option), 1 amplifier channel, circuit breaker, screw type terminals with surge protection, 5 m (5.5 yd) power cord, 3 m (3.3 yd) Ethernet cable, slide-in support, mounting accessories	Type Number	325-310-001
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Type Number	325-310-001						

	<table border="1"> <tr> <td>Type</td> <td>PMOD IP-PA 300W 01/BA</td> </tr> <tr> <td>Description</td> <td>NPA unit with 300 W output power (1 x 300 W) as backup amplifier for PMOD IP-PA 300W 01, circuit breaker, 5 m (5.5 yd) power cord, 3 m (3.3 yd) Ethernet cable, slide-in support, mounting accessories</td> </tr> <tr> <td>Type Number</td> <td>325-310-002</td> </tr> </table>	Type	PMOD IP-PA 300W 01/BA	Description	NPA unit with 300 W output power (1 x 300 W) as backup amplifier for PMOD IP-PA 300W 01, circuit breaker, 5 m (5.5 yd) power cord, 3 m (3.3 yd) Ethernet cable, slide-in support, mounting accessories	Type Number	325-310-002
Type	PMOD IP-PA 300W 01/BA						
Description	NPA unit with 300 W output power (1 x 300 W) as backup amplifier for PMOD IP-PA 300W 01, circuit breaker, 5 m (5.5 yd) power cord, 3 m (3.3 yd) Ethernet cable, slide-in support, mounting accessories						
Type Number	325-310-002						

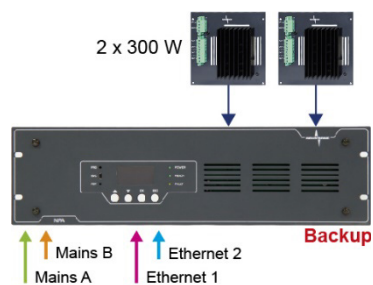
	<table border="1"> <tr> <td>Type</td> <td>PMOD IP-PA 600W 01</td> </tr> <tr> <td>Description</td> <td>NPA unit with 600 W output power (2 x 300 W), up to 8 speaker circuits (monitoring as option), 2 amplifier channels, circuit breaker, screw type terminals with surge protection, 5 m (5.5 yd) power cord, 3 m (3.3 yd) Ethernet cable, slide-in support, mounting accessories</td> </tr> <tr> <td>Type Number</td> <td>325-310-003</td> </tr> </table>	Type	PMOD IP-PA 600W 01	Description	NPA unit with 600 W output power (2 x 300 W), up to 8 speaker circuits (monitoring as option), 2 amplifier channels, circuit breaker, screw type terminals with surge protection, 5 m (5.5 yd) power cord, 3 m (3.3 yd) Ethernet cable, slide-in support, mounting accessories	Type Number	325-310-003
Type	PMOD IP-PA 600W 01						
Description	NPA unit with 600 W output power (2 x 300 W), up to 8 speaker circuits (monitoring as option), 2 amplifier channels, circuit breaker, screw type terminals with surge protection, 5 m (5.5 yd) power cord, 3 m (3.3 yd) Ethernet cable, slide-in support, mounting accessories						
Type Number	325-310-003						



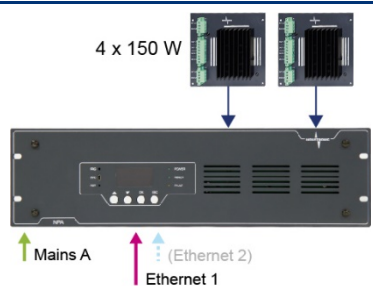
Type	PMOD IP-PA 600W 01/BA
Description	NPA unit with 600 W output power (2 x 300 W) as backup amplifier for PMOD IP-PA 600W 01, circuit breaker, 5 m (5.5 yd) power cord, 3 m (3.3 yd) Ethernet cable, slide-in support, mounting accessories
Type Number	325-310-004



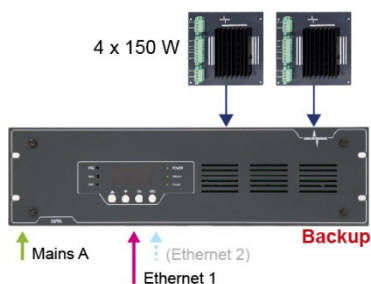
Type	PMOD IP-PA 600W 01/2
Description	NPA unit with 600 W output power (2 x 300 W), redundant network and power supply connection, up to 8 speaker circuits (monitoring as option), 2 amplifier channels, circuit breaker, screw type terminals with surge protection, two 5 m (5.5 yd) power cords, two 3 m (3.3 yd) Ethernet cables, slide-in support, mounting accessories
Type Number	325-310-005



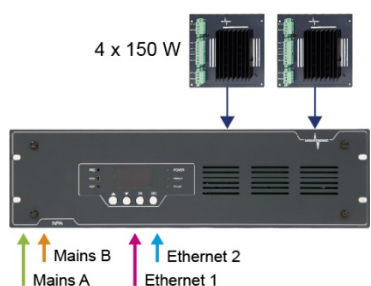
Type	PMOD IP-PA 600W 01/2/BA
Description	NPA unit with 600 W output power (2 x 300 W) as backup amplifier for PMOD IP-PA 600W 01/2, circuit breaker, screw type terminals with surge protection, two 5 m (5.5 yd) power cords, two 3 m (3.3 yd) Ethernet cables, slide-in support, mounting accessories
Type Number	325-310-006



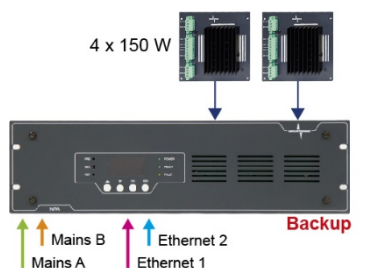
Type	PMOD IP-PA 600W 21
Description	NPA unit with 600 W output power (4 x 150 W), up to 8 speaker circuits (monitoring as option), 4 amplifier channels, circuit breaker, screw type terminals with surge protection, 5 m (5.5 yd) power cord, 3 m (3.3 yd) Ethernet cable, slide-in support, mounting accessories
Type Number	325-310-007



Type	PMOD IP-PA 600W 21/BA
Description	NPA unit with 600 W output power (4 x 150 W) as backup amplifier for PMOD IP-PA 600W 21, circuit breaker, screw type terminals with surge protection, 5 m (5.5 yd) power cord, 3 m (3.3 yd) Ethernet cable, slide-in support, mounting accessories
Type Number	325-310-008



Type	PMOD IP-PA 600W 21/2
Description	NPA unit with 600 W output power (4 x 150 W), redundant network and power supply connection, up to 8 speaker circuits (monitoring as option), 4 amplifier channels, circuit breaker, screw type terminals with surge protection, two 5 m (5.5 yd) power cords, two 3 m (3.3 yd) Ethernet cables, slide-in support, mounting accessories
Type Number	325-310-009



Type	PMOD IP-PA 600W 21/2/BA
Description	NPA unit with 600 W output power (4 x 150 W) as backup amplifier for PMOD IP-PA 600W 21/2, circuit breaker, screw type terminals with surge protection, two 5 m (5.5 yd) power cords, two 3 m (3.3 yd) Ethernet cables, slide-in support, mounting accessories
Type Number	325-310-010

Application Example

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

For redundant power supply, two AC inputs can be used. Each power supply unit has its own mains connection so that it can also be powered by different supply mains.

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.

Completely redundant NPA units which are configured in N+1 redundancy always provide one backup device which takes on the function of the device which failed. N means 1 to 4 for NPA units with 2 x 300 W and 1 to 2 for NPA units with 4 x 150 W.

As an option you can use the ring topology for speaker circuits.

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

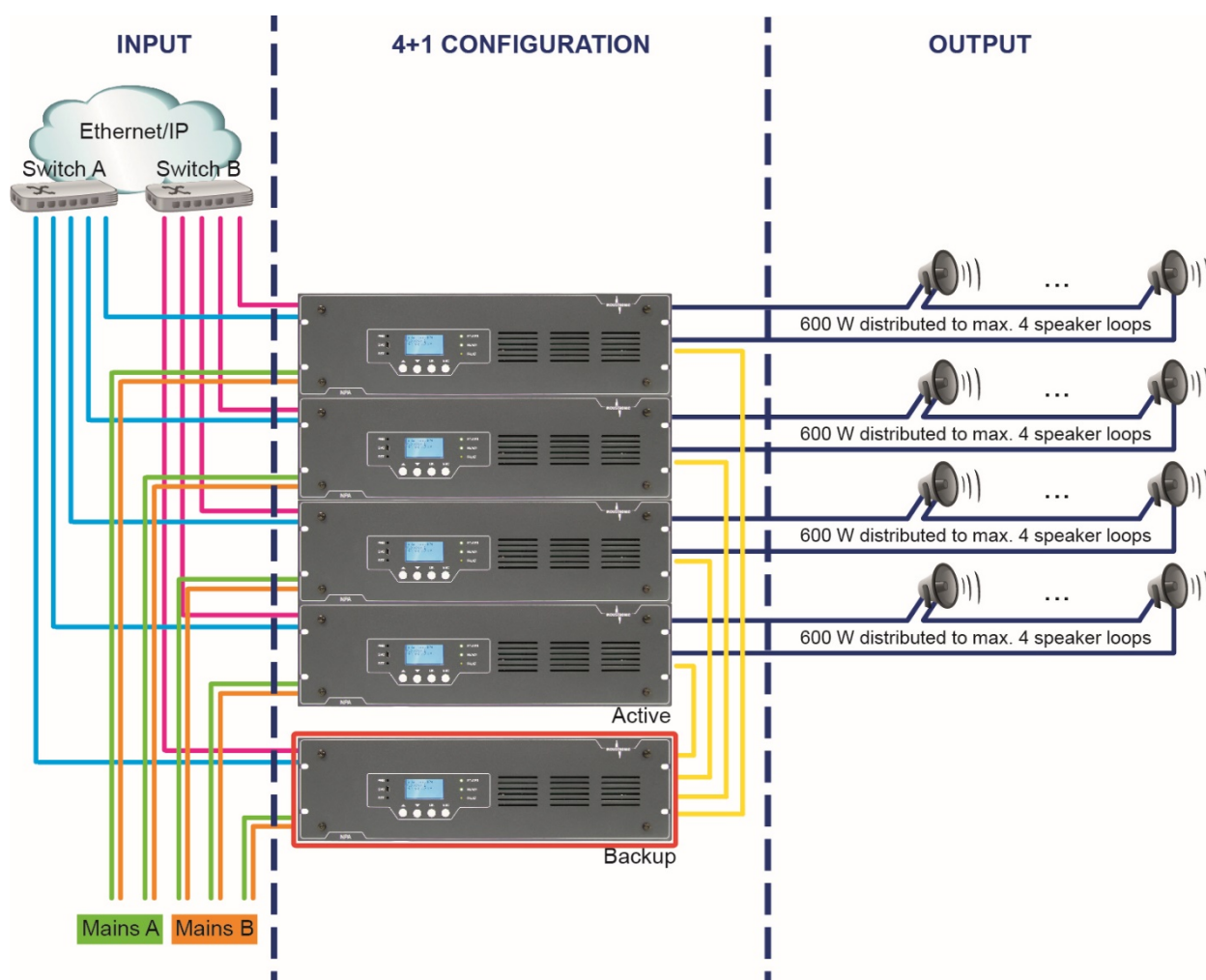


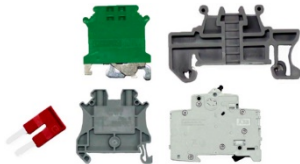

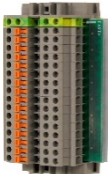
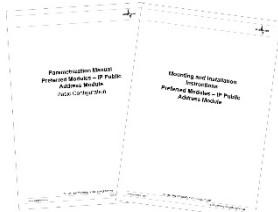


Fig. 1: Maximum configuration with 4 x PMOD IP-PA 600W 01/2 and 1 x PMOD IP-PA 600W 01/2/BA

Included Accessories

	<p>Type 1 NCK 01</p> <p>Description Connection kit for NPA types with 300 W, including 5 m (5.5 yd) power cord, 3 m (3.3 yd) Ethernet cable, slide-in support and mounting accessories</p> <p>Type Number 302-149-010</p>
	<p>Type 2 NCK 01</p> <p>Description Connection kit for NPA types with 600 W, including two 5 m (5.5 yd) power cords, two 3 m (3.3 yd) Ethernet cable, slide-in support and mounting accessories</p> <p>Type Number 302-149-012</p>
	<p>Type 1 PSK 01</p> <p>Description Power supply connection kit incl. circuit breaker and terminals</p> <p>Type Number 218-073-100</p>
	<p>Type 8 SB 01/5</p> <p>Description Cable harness with 8 single wires, 100 V, 5 m, open cable end, for central exchange cabinets</p> <p>Type Number 218-814-100/5</p>
	<p>Type 8 OVDT 01</p> <p>Description Terminal block for 8 twin wires with surge protection and disconnecting function, clamping range 0.14 mm² to 4 mm²</p> <p>Type Number 218-810-100</p>
	<p>Description Mounting and installation instructions, parametrization manual</p> <p>Type Number UMN-325-310-001, PMN-325-310-001</p>

Technical Data of the NPA

Please observe also the general data sheet of the NPA series for further information (Doc. no. DAT-302-140-100).

Mechanical Data

• Mounting	19" rack mounting, 3 RU
• Width x height x depth	483 mm x 132 mm x approx. 330 mm (19.02" x 5.20" x approx. 12.99")
• Display	128 x 64 screen resolution
• Weight	Max. 13.5 kg (max. 29.76 lbs) (depending on device type)

Electrical Data

• AC supply voltage	100 VAC to 276 VAC
• AC power consumption	Quiescent 14 VA, max. 850 VA
• Power frequency	47 Hz to 63 Hz
• Power factor correction (PFC)	0.95
• DC supply voltage	42 VDC to 72 VDC
• DC current consumption at 48 VDC	Type 300 NPA: quiescent 0.12 A, max. 8.1 A Type 600 NPA: quiescent 0.15 A, max. 16 A
• Frequency response	150 Hz to 16kHz (+/-3 dB)
• Efficiency	> 80 %
• Signal-to-noise-ratio	> 80 dB
• Distortion factor	< 0.5%
• Control voltage output	48 V / 0.5 A

Connections and Interfaces

- 1 x Ethernet port LAN1
- 1 x Ethernet port LAN2 for redundant connection
- 1 x USB service interface
- 1 x control voltage output 48 VDC / 0.5 A
- 2 x mains voltage input
- 1 x DC voltage input

Network Requirements

- IPv4 network
- Support of UDP, SCTP, RTP und RTCP protocols
- Quality of Service (QoS)
 - Ideal latency value: < 20 ms (max. 50 ms)
 - Jitter max. 10 ms
- 10Base-T/100Base-TX Ethernet (IEEE 802.3), 100 Mbit/s recommended
- 200kBit/s basic bandwidth and 100 kBit/s per active amplifier channel

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
IEC/EN 61000-6-4 |

Type Overview

The chart below describes the different modules: resulting number of power supplies, independent amplifier channels, speaker circuits, mounting material, cables, etc.

Type	PMOD IP-PA 300W 01	PMOD IP-PA 600W 01	PMOD IP-PA 600W 01/2	PMOD IP-PA 600W 21	PMOD IP-PA 600W 21/2
Amplifier slot 1	1 x 300 W	1 x 300 W	1 x 300 W	2 x 150 W	2 x 150 W
Amplifier slot 2	-	1 x 300 W	1 x 300 W	2 x 150 W	2 x 150 W
Total output	300 W	600 W	600 W	600 W	600 W
Amplifier channels	1	2	2	4	4
Speaker circuits	4	8	8	8	8
AC power supply	1	1	2	1	2
DC power supply	1	1	1	1	1
Power supply connection kit 1 PSK 01	1	1	2	1	2
Terminal block with surge protection 8 OVDT 01	1	1	1	1	1
Cable harness 8 SB 01/5	1	2	2	2	2
Connection kit 1 NCK 01	1	1	-	1	-
Connection kit 2 NCK 01	-	-	1	-	1
Type number	325-310-001	325-310-003	325-310-005	325-310-007	325-310-009

For each of these modules is a specific backup version available: These types are labelled with the amendment "BA" (e.g. PMOD IP-PA 300W/BA).

Please Note:

You need INDUSTRONIC activations to start up the modules!

Required Activations	ACT-IP Device	ACT-IP Device connected redundantly*	ACT-NPA Speaker Circuit Monitoring
PMOD IP-PA 300W 01	x	(optional)	(optional)
PMOD IP-PA 300W 01/BA	x	(optional)	-
PMOD IP-PA 600W 01	x	(optional)	(optional)
PMOD IP-PA 600W 01/BA	x	(optional)	-
PMOD IP-PA 600W 01/2	x	(optional)	(optional)
PMOD IP-PA 600W 01/2/BA	x	(optional)	-
PMOD IP-PA 600W 21	x	(optional)	(optional)
PMOD IP-PA 600W 21/BA	x	(optional)	-
PMOD IP-PA 600W 21/2	x	(optional)	(optional)
PMOD IP-PA 600W 21/2/BA	x	(optional)	-
Type number	101-100-002	101-100-004	101-200-101

*depending on system design

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