



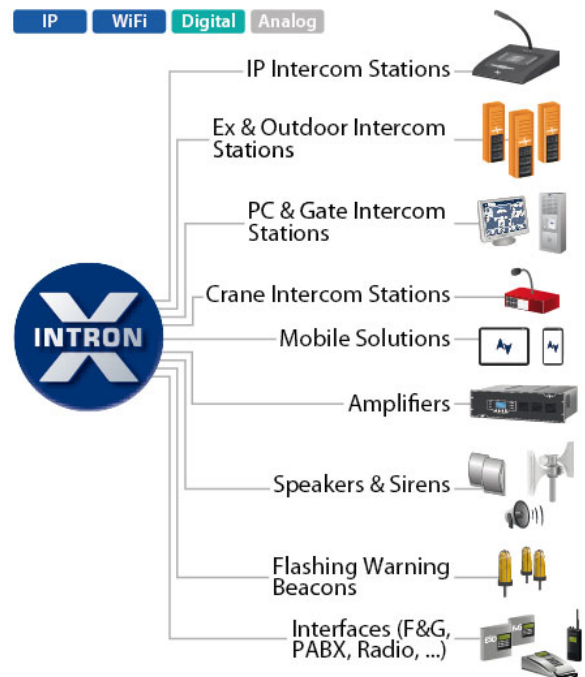
# INTRON-X

## IP INTERCOM, PA/GA AND PA SYSTEM

The INTRON-X is the modern, modular IP system platform for scalable Intercom, PA/GA and PA solutions from INDUSTRONIC.

Each INTRON-X system provides numerous interfaces for system networking and connection of external communication and control systems (e.g. SIP, SNMP, Modbus-TCP).

The modular and flexible system design allows for solutions meeting any type of industrial communication requirements.



- IP-based Intercom, PA/GA and PA system for small, medium-sized and complex solutions
- Flexible system networking via Ethernet/IP
- Integrated continuous self-monitoring
- Easy configuration
- Individual system architecture
- Connection of INDUSTRONIC IP, digital and analog terminal devices
- Connection of SIP terminal devices
- Flexibly configurable functions
- Configuration via INTRON-X management tools

### GENERAL PARAMETERS

Max. number of networked controllers	250
Max. number of terminal devices	100,000
Group calls	1,000
Speaker zones	1,000
Priority levels	200
Warning sequences	1,000

### SYSTEM NETWORKING

Ethernet - 10/100/1000BASE-T

### MAX. NUMBER OF TERMINAL DEVICES PER NODE

Terminal devices in total	400
INDUSTRONIC IP terminal devices	400
INDUSTRONIC digital terminal devices	200
Analog terminal devices	200

### MAX. DISTANCE BETWEEN INTERCOM STATION AND NODE

IP intercom station	Depends on the network
Digital intercom station	Up to 4 km (2.49 mi)
Analog intercom station	Up to 4 km (2.49 mi)

## MAX. NUMBER OF SIMULTANEOUS AUDIO CONNECTIONS PER NODE

Audio connections in total	400
IP - IP	400
Digital/analog - IP	200
Digital - digital	200

## TECHNICAL DATA

Power supply	110 / 120 V AC or 220 / 240 V AC
Internal operating voltage	48 V DC
Bandwidth of voice transmission*	300 Hz to 3,400 Hz (G.711) 50 Hz bis 7,000 Hz (G.722)

\*Depends on the system design

## NETWORK REQUIREMENTS

IPv4 network

10Base-T/100/1000Base-TX Ethernet (IEEE 802.3), 100 MBit/s recommended, for X-Controller XCO 1000 MBit/s

Support of UDP, TCP, SCTP, RTP and RTCP protocols

Quality of Service (QoS)

Ideal latency value < 20 ms (max. 50 ms)

Jitter: max. 10 ms

NTP support for access to a central NTP time server

Bandwidths required per node

1 MBit/s basic bandwidth and 100 kBit/s per IP simplex connection

1 MBit/s basic bandwidth and 200 kBit/s per IP duplex connection

For each IP intercom station: 200 kBit/s basic bandwidth and 200 kBit/s per active duplex audio channel, 100 kBit/s per simplex audio channel

For each IP public address unit NPA: 200 kBit/s basic bandwidth and 100 kBit/s per active audio channel

## OPTIONS

Audio processor

IP Voice Recorder NVR

Redundancy

Hot Standby System

A+B (shared operation)

N+1 amplifier redundancy

N+1 power supply redundancy

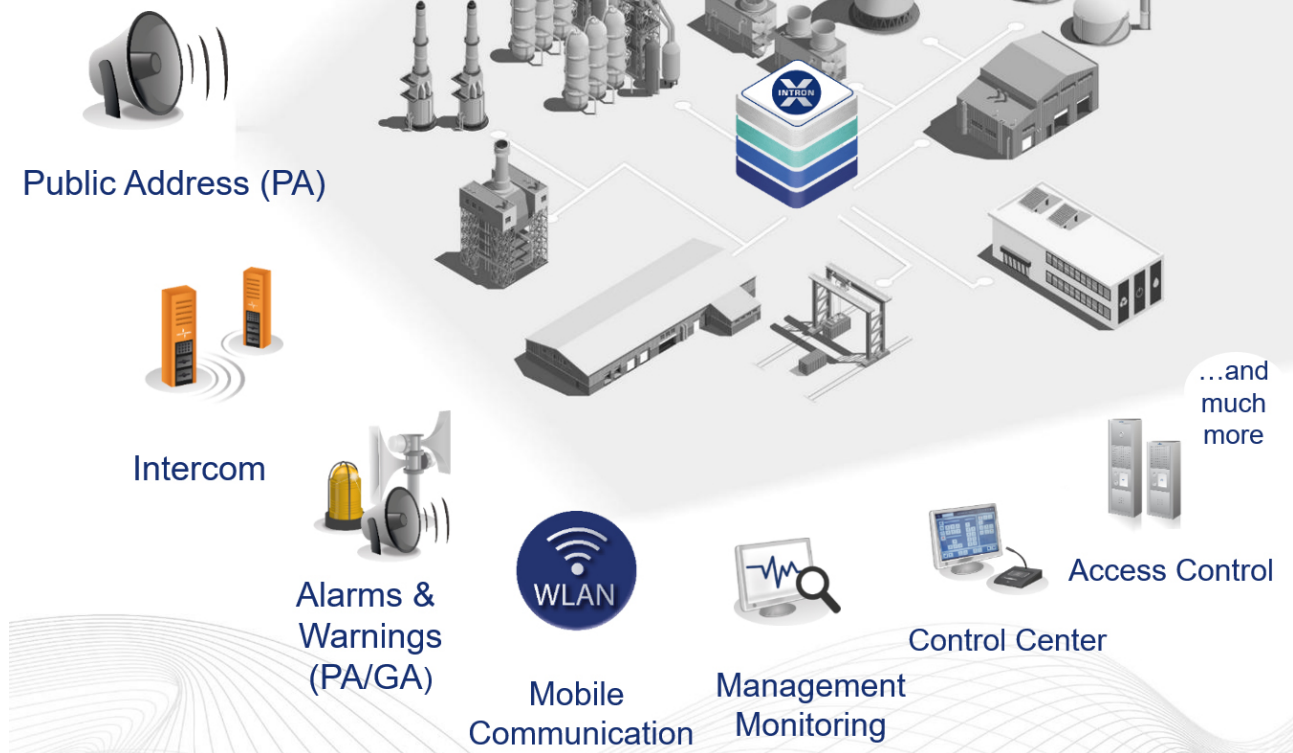
Network redundancy

Battery backup

Interconnection/integration of third-party systems

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## One System Solutions



## INTRON-X SYSTEM FEATURES



### Intercom

- Direct Two-way Communication\*
- Dynamic Two-way Communication\*
- Handsfree Communication\*
- Page & CallBack\*
- Conference
- Party Line
- Parallel Group\*
- Call Storage\*
- Quick Dialing\*



### Alarms / Warnings (PA/GA)

- Mass notification
- Live announcements or playback of stored alarm tones / texts (e.g. an evacuation alarm)
- Manual, automatic and semiautomatic triggering of warning sequences
- Individual or simultaneous alarms in different areas
- Prioritization of alarms
- Emergency call function





### Control Room Functions

- Call Request Control
- Switchboard Call
- **MultiControl Group\***
- Elevator Emergency Call



### Software & Interfaces

- Configuration software Config Manager X
- DUSTRON – App for industrial communication
- Interface to fire detection and gas alarm systems as well as to emergency shutdown systems (ESD)
- SIP interfaces for the connection of IP telephone systems
- Modbus TCP interface for communication with building management systems / fire detection and gas alarm systems
- CANopen interface for communication with control room systems
- SNMP interface for connection of a network management system
- E-mail interface for forwarding of fault messages



### Public Address (PA)

- **Group Call\***
- **Dynamic Group Call\***
- **All Call\***
- Store & Forward
- **Repeat Last Message\***



### Management / Monitoring

- **Integrated management via web interface\***
- **INTRON-X Service Tool XST\***
- **Permanent, automatic self-monitoring\***
- **Fault message processing\***
- **Automatic indication of fault messages and states\***
- **Event processing\***
- **Diagnostic functions\***
- Voice recording
- Redundancy concepts for highest availability



### Control Functions

- **Access control\***
- Time control
- Control of lines / outputs / relays
- **200 different priority levels\***
- **Maintenance mode\***
- **Muting\***
- **Volume control\***



### Signaling

- **Pre-busy signaling\***
- **Visual and acoustic call and busy signaling\***
- **Triggering of flashing warning beacons\***



### Audio

- **Audio bandwidth 7 kHz\***
- Playback of tones and texts
- Acoustic pre-announcement tone

**\*Included as standard function in the activation ACT-Controller XCO**

For further information on the individual system features, refer to our functional data sheets or the INDUSTRONIC specification.