Certificate no.:
TAA00003R4

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Public Address System

with type designation(s)
INTRON-X

issued to
INDUSTRONIC Industrie-Electronic GmbH & Co. KG
Wertheim, **Germany**

is found to comply with
DNV rules for classification – Offshore units
LSA Code VII 7.2
IMO A.1021(26) Code on alerts and indicators (2009)
IMO Res. A.694(17) General requirements for shipborne radio equipment forming part of the global maritime distress and safety system (GMDSS) and for electronic navigational aids

Application:

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Temperature	**A***
Humidity	**A**
Vibration	**A**
EMC	**B**
Enclosure	**A***

*** unless specifically stated otherwise in Appendix**

Issued at **Høvik** on **2025-11-18**
This Certificate is valid until **2030-11-17**.
DNV local unit: **Essen**

for **DNV**

Approval Engineer: **Jostein Sund Jensen**

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This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Product description

INTRON-X system can be provided as either:

- PA system only
- GA system only
- Integrated PA and GA system

For further product details and configurations, see Appendix.

INTRON-X Public Address and General Alarm System consisting of [1]:

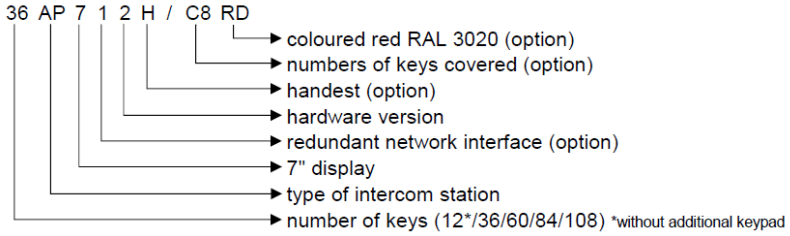
Equipment type	Description	Module	Article no.	SW	Location
Central Cabinets	Power supply system 230VAC input / 48VDC output	PMOD PS E48V 01/1	325-220-001		
	Change-over switch with mains monitoring	3,6 NUS 230/2	309-640-200		
	Networkable public address unit 600 Watt	600 NPA 132	302-145-400	4.2.x	
	Networkable public address unit 600 Watt	600 NPA 32	302-142-400	4.2.x	
	Telephone interface	Telefon-Gateway IP311 4x FXO / 2 x FXS	342-503-508		
	Entertainment	1 MTU 01	315-035-100		
	Managed industrial switch, max. 28 ports	Modular managed PoE+ FE Switch 19", DC	070-028-040		
	Add-on module for industrial switch 8x 10/100 BaseT(X); RJ-45 PoE according to 802.3af/at	8-Port FE PoE+ Modul	070-028-041		
	X-Controller plug-in device for controlling components connected to the INTRON-X system	1 XCO 001/1	344-001-100	10.5.x	
	Digital Gateway for connection of 2 digital INDUSTRONIC terminal devices	8 XDG 001/2	344-010-100	1.4.x	
	Beacon control plug-in device for controlling 4 flashing warning beacon circuits	4 XBC 001/1	344-030-100	4.3.x	
	Analog Line plug-in device for connection of 6 audio interfaces	6 XAL 001/2	344-021-100	4.2.x	
	I/O plug-in device with 24 control inputs/outputs	24 XIO 001/1	344-020-100	4.2.x	
	Power supply plug-in device with input voltage 90 … 264 V AC, output voltage 48 V DC … 55 V DC, output power 500 W	10 XPS 48	344-040-100		
	IP service intercom station	32 NSR 001/GM/C8	302-059-200/GM/C8	4.2.x	
	IP-Touch intercom station for 19" system	10 NER 001	351-700-100	1.7.x	
	Cabinet illumination set LED	1 SBS 03/DE	218-825-000		
	Digital Gateway for connection of 2 digital INDUSTRONIC terminal devices with redundant Fast Ethernet Interface 100Base-TX (electrical)	2 XDG 001	344-011-100	1.4.x	
	IP interface for analog systems with 4-wire AF interface, 11 potential-free inputs and 11 potential-free outputs	11/11 NSG 001	302-056-100	4.2.x	

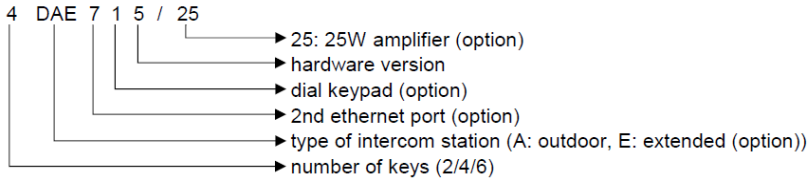
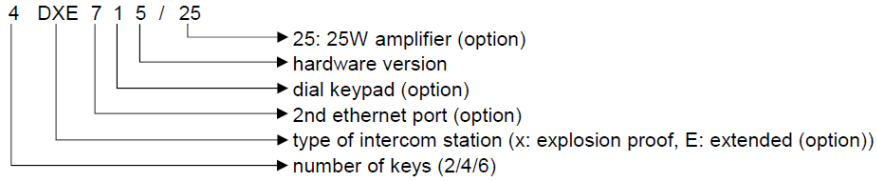
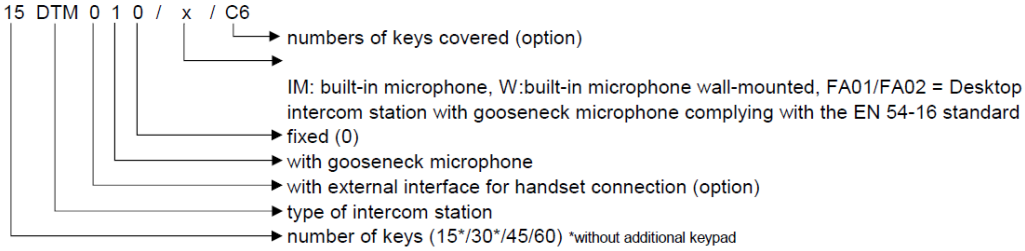
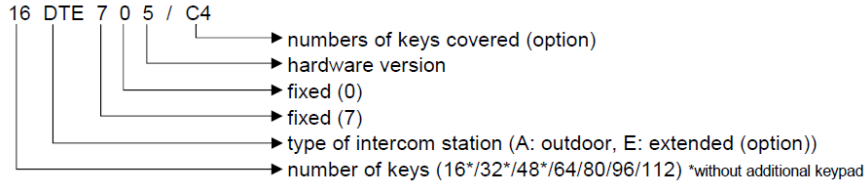
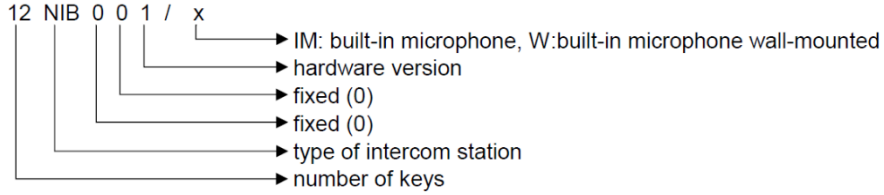
Equipment type	Description	Module	Article no.	SW	Location
Network-based call stations	Access Panel, Desktop intercom station with 7" color touch display, 36 mechanical keys with integrated signaling function, 3 function keys, handset, cover for 8 mechanical keys and redundant network interface	xx AP 712 [2]	302-053-600/C8	4.3.x	
PA Intercom Equipment	Digital outdoor intercom station incl. dial keypad with 12 keys, 2 momentary rocker switches, signaling, booster amplifier 25 W	x DAE 715/25 [2]	301-642-401/25	55.0.x	Enclosure: Class C (Open deck, masts, below floor plates in engine room) Temp: Class D (–25°C to 55°C)
	Digital explosion-proof intercom station incl. dial keypad with 12 keys, 2 momentary rocker switches, signaling, 25W booster amplifier	x DXE 715/25 [2]	301-651-401/25	52.0.x	
	Digital desktop intercom station with 15 membrane keys, cover for 6 keys, display,	xx DTM 010 [2]	301-471-100/C6	31	
	Digital desktop intercom station, modular design, with 16 membrane keys, signaling and cover for 4 keys	xx DT 705 [2]	301-615-100/C4	55.0.x	
Intercom Equipment	IP desktop intercom station, Basic with 12 direct keys with integrated signaling function, dial keypad, 4 function keys, network interface	12 NIB 001	302-055-100	4.2.x	
Interface Units	Digital Dual System interface for connection of one digital intercom unit to two INTRON-D plus or INTRON-X systems as a redundant system, in an aluminium Ex-proof housing	2 DDSIX 103	301-439-600	4	Enclosure: Class C (Open deck, masts, below floor plates in engine room) Temp: Class D (–25°C to 55°C)
	Digital Dual System interface for connection of one digital intercom unit to two exchange systems as a redundant system	2 DDSI 103	301-439-400	4	

[1] Actual configuration may vary based on requirements for individual installations. Only modules listed in certificate are approved for installation.
[2] See below for description of numbering and available options. Model listed in certificate is considered representative for all options.

Intercom equipment
AP

Number code



Intercom equipment	Number code
DAE	
DXE	
DTM	
DTE	
NIB	

Application/Limitation

1. The certificate is only valid for installations on non-EU/EEA/UK flag offshore units.
2. The INTRON-Z Public Address and General Alarm system shall operate on a dedicated IP network/LAN, consisting of components listed in this certificate. Interconnection to other networks is subject to separate case-by-case approval.
3. Power supply filter LGF-Filter FFU 1x12B-SB 02 shall be used for compliance with IEC 60945 9.2
4. Any PA functions which are not used for activation of emergency PA shall have a lower priority than GA.
5. When used as combined PA/GA system, minimum two independent speaker loops are required.
6. Access panels xx AP 712, when installed on the bridge and featuring more than 12 keys, shall be equipped with an external light source that allows for adjustable brightness.

Type Approval documentation

Tests carried out

- Environmental testing: DNV-CG-0339 (2021)
- Performance testing: Functional tests according to DNV Type Approval programs 848.22 for PA/GA systems,

Marking of product

The Manufacturer and Type Designation to be applied to the equipment in a clearly visible location. In addition the equipment shall be marked with the Type Approval certificate number, serial number, safe distance to magnetic compass, power consumption and/or supply voltage.

Periodical assessment

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.
The scope of the periodical/renewal assessment is to verify that the production quality conditions stipulated for the type approval are complied with and that no alterations are made to the product design or its components and/or materials without appraisal by the Society.

Manufactured by:

INDUSTRONIC®
Industrie-Electronic GmbH & Co. KG
Carl-Jacob-Kolb-Weg 1
97877 Wertheim/Germany