

IP Outdoor Intercom Stations

NRO xx2 Series



Features and Functions

- Robust IP outdoor intercom station for use in harsh industrial environments
- Degree of protection IP66
- Ethernet interface with PoE power supply
- Intercom station versions available with two Ethernet interfaces for redundant network connection
- LCD display for indicating status information and user navigation
- Configurable and programmable user controls: dial keypad and momentary rocker switch
- Designed for use with industrial gloves
- Visual indication of call or busy status via LEDs
- Adjustable speaker volume and microphone sensitivity
- One internal potential-free relay contact

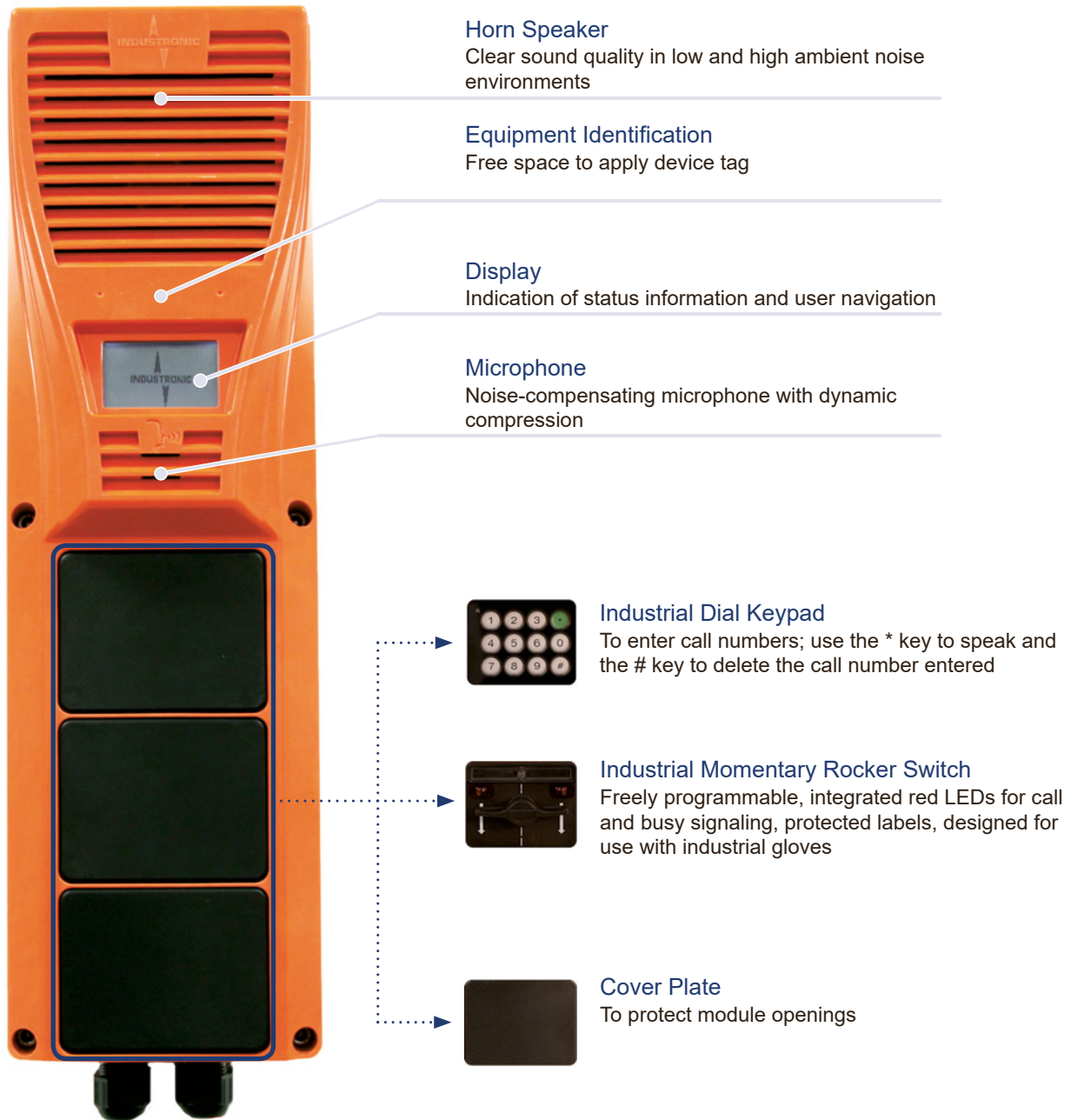
The weather-proof IP outdoor (harsh environment) intercom station of the NRO xx2 series for the INTRON-D *plus* communication and public address system from INDUSTRONIC is used in extreme environments as typically found in the Oil & Gas and the Chemical & Pharmaceutical sector as well as in the Steel industry. The rugged design allows for clear and reliable communication at any time, whether you operate the intercom station in extreme cold or heat or in dirty and dusty environments.

The robust two-part housing is made of glass-fiber reinforced polyester. The compact interior is equipped with a horn speaker that ensures highest intelligibility even in high ambient noise areas and a noise-compensating microphone with dynamic compression. Furthermore the IP outdoor intercom station has a LCD display which provides different types of information, e.g. the called number or the number of the calling subscriber.



User Controls

The different modular user controls allow for customization according to customer and project-specific needs at any time. The housing can be configured with one dial keypad, up to three momentary rocker switches or a combination of both.



Degree of Protection IP 6 6

IP (International Protection)

1. Digit	2nd Digit
6 Dust tight and complete protection against contact with live parts	6 Protected against high pressure water jets from any direction

2nd digit - Protection against the ingress of water

1st digit - Protection against solid foreign objects and contact with live components

Flexible and Easily Expandable

For complex communication needs, the intercom stations of the NRO series can each be expanded with up to 3 modular expansion units of the NOAK 001 type allowing for the implementation of up to 21 programmable momentary rocker switches, giving the customer the utmost in customization.

The intercom stations of the NRO series can be expanded with various external components. An optional 30-W booster amplifier installed in the intercom housing enables the use of an external speaker. Based on project or specification needs, you can connect a flashing warning beacon and/or a foot switch. Furthermore, you can either connect a headset or a hand-held microphone.



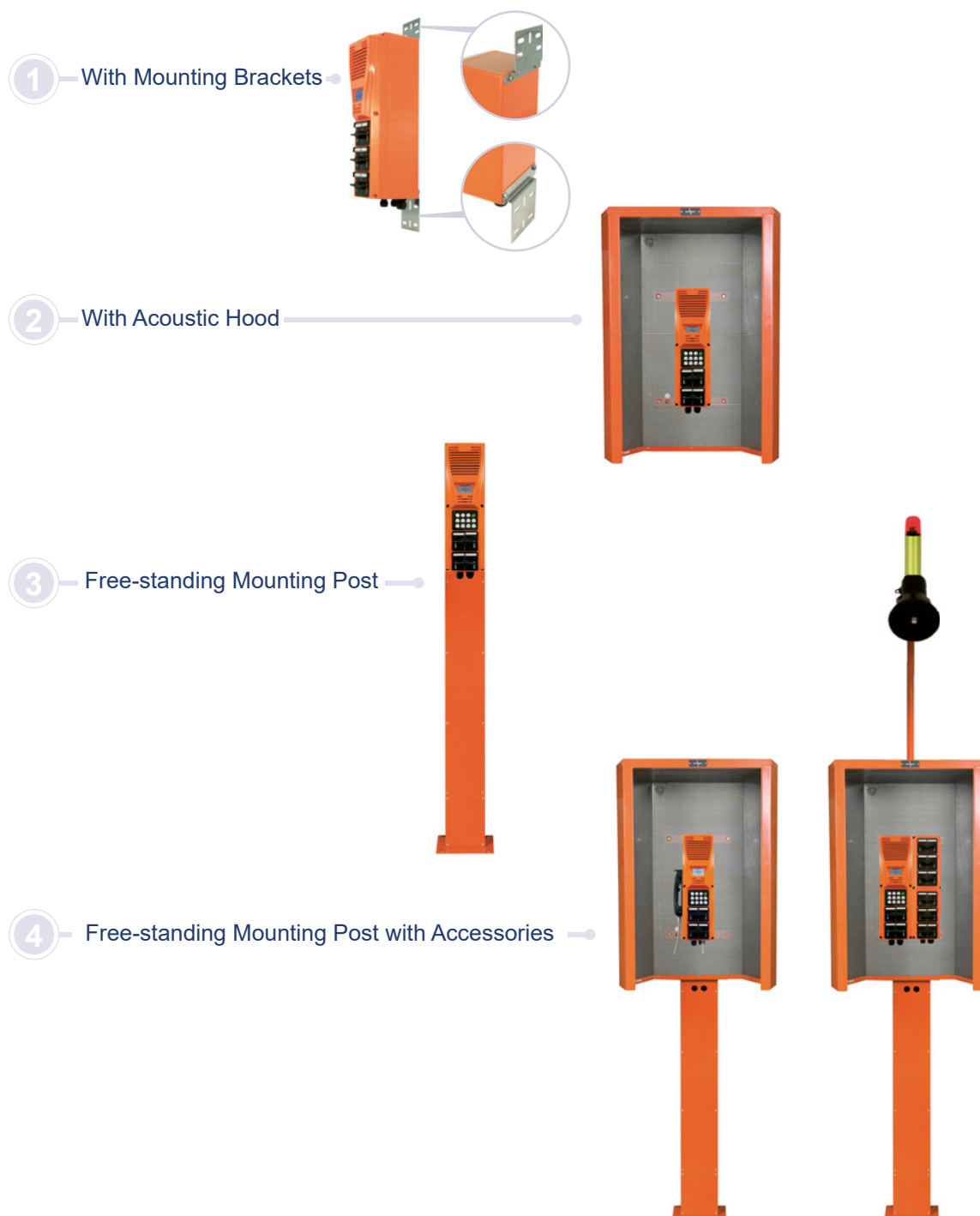
* For NRO xx2/DE type only

Multi-faceted Mounting Options and Robust Mechanical Accessories

To make best use of your intercom station, you can mount it to steel I-beams or to internal and external walls. Using the mounting brackets available in the 1 AMW 05 mounting kit, you can easily mount and ideally align it.

In areas, where you cannot directly mount the intercom station to a wall (e.g. for gates or entrance areas), a free-standing mounting post that is bolted to the ground can be supplied. If required, you can also mount additional acoustic or visual signaling devices to it.

In high ambient noise areas, acoustic hoods provide adequate noise insulation to ensure clear communication at any time.



Illustrations similar

Series Overview

NRO xx2 Series



6 NRO 002/D

NRO 002/D	Up to three momentary rocker switches, one Ethernet interface, degree of protection IP66, PoE, -40 °C to +70 °C (-40 °F to +158 °F)
W x H x D	141 mm x 484 mm x 171 mm (5.55" x 19.06" x 6.73")
Weight	Approx. 5 kg (approx. 11.02 lbs)
Accessories	See "Intercom Expansion Units and Accessories NRO Series", on page 9



4 NRO 012/D

NRO 012/D	One dial keypad, up to two momentary rocker switches, one Ethernet interface, degree of protection IP66, PoE, -40 °C to +70 °C (-40 °F to +158 °F)
W x H x D	141 mm x 484 mm x 171 mm (5.55" x 19.06" x 6.73")
Weight	Approx. 5 kg (approx. 11.02 lbs)
Accessories	See "Intercom Expansion Units and Accessories NRO Series", on page 9



4 NRO 012/DH

NRO 012/DH	One dial keypad, up to two momentary rocker switches, one Ethernet interface, permanently installed handset, degree of protection IP66, PoE, -25 °C to +70 °C (-13 °F to +158 °F)
W x H x D	190 mm x 484 mm x 171 mm (7.48" x 19.06" x 6.73")
Weight	Approx. 6 kg (approx. 13.23 lbs)
Accessories	See "Intercom Expansion Units and Accessories NRO Series", on page 9

NRO xx2/DE Series with Connector for External Accessories



6 NRO 002/DE

NRO 002/DE Up to three momentary rocker switches, one Ethernet interface, connector for one hand-held microphone or headset, degree of protection IP66, PoE, -40 °C to +70 °C (-40 °F to +158 °F)*

W x H x D 141 mm x 484 mm x 171 mm (5.55" x 19.06" x 6.73")

Weight Approx. 5 kg (approx. 11.02 lbs)

Accessories See "Intercom Expansion Units and Accessories NRO Series", on page 9 and "Further Accessories for NRO xx2/DE Series", on page 12

*Operating temperature range can change depending on the accessories connected



4 NRO 012/DE

NRO 012/DE One dial keypad, up to two momentary rocker switches, one Ethernet interface, connector for one hand-held microphone or headset, degree of protection IP66, PoE, -40 °C to +70 °C (-40 °F to +158 °F)*

W x H x D 141 mm x 484 mm x 171 mm (5.55" x 19.06" x 6.73")

Weight Approx. 5 kg (approx. 11.02 lbs)

Accessories See "Intercom Expansion Units and Accessories NRO Series", on page 9 and "Further Accessories for NRO xx2/DE Series", on page 12

*Operating temperature range can change depending on the accessories connected

NRO 1x2 Series with Two Ethernet Interfaces



4 NRO 112/DB

NRO 112/D	One dial keypad, up to two momentary rocker switches, two Ethernet interfaces, optionally with permanently installed handset, degree of protection IP66, PoE, -40 °C to +70 °C (-40 °F to +158 °F)
W x H x D	141 mm x 484 mm x 171 mm (5.55" x 19.06" x 6.73") With handset: 190 mm x 484 mm x 171 mm (7.48" x 19.06" x 6.73")
Weight	Approx. 5 kg (approx. 11.02 lbs)
Accessories	See "Intercom Expansion Units and Accessories NRO Series", on page 9



6 NRO 102/DB

NRO 102/D	Up to three momentary rocker switches, two Ethernet interfaces, degree of protection IP66, PoE, -40 °C to +70 °C (-40 °F to +158 °F)
W x H x D	141 mm x 484 mm x 171 mm (5.55" x 19.06" x 6.73")
Weight	Approx. 5 kg (approx. 11.02 lbs)
Accessories	See "Intercom Expansion Units and Accessories NRO Series", on page 9

Technical Data

Mechanical Data	<ul style="list-style-type: none"> Width x height x depth 141 mm x 484 mm x 171 mm (5.55" x 19.06" x 6.73") With handset: 190 mm x 484 mm x 171 mm (7.48" x 19.06" x 6.73") Cable glands 3 x M20 or 2 x M20 for intercom stations of type NRO xx2/DE and /DH (cable diameter: 5 mm to 13 mm (0.20" to 0.51")) 1 x M25 (cable diameter: 8 mm to 17 mm (0.31" to 0.67")) Weight Approx. 5 kg (approx. 11.02 lbs) With handset: approx. 6 kg (13.23 lbs) Color RAL 2004 (Pure Orange)
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Electrical Data			
• Power supply Powered Device (PD)	PoE according to IEEE 802.3bt, Type 4, Class 7		
• Typical power consumption	5 W		
• Max. power consumption (without feed line losses)	NRO xx2	8 W	
	Warning beacon 24 WBL 01/RD	+ 10 W	
	Booster amplifier 30 NABA 001	+ 40 W	
	3 x expansion unit 6/12 NOAK 001	+ 2 W	
• Max. sound pressure level (distance 30 cm (0.98 ft))	115 dB		
• Frequency range	200 Hz to 16,000 Hz (+/-3 dB)		
• Speaker	15 W / 8 Ohms		
• Output power booster amplifier	30 W / 330 Ohms		
• Relay contact (change-over contact)	1 A, 60 VDC, 60 W (resistive load)		

Network Requirements				
• Power over Ethernet (PoE) according to IEEE 802.3af/at/bt				
• Requirements Power Source Equipment (PSE)				
	PSE	Intercom station	with warning beacon	with booster amplifier
	Class 3 (15 W)	x		
	Class 4 (30 W)	x	x	
	Class 6 (60 W)	x		x
	Class 6 (60 W)	x	x	x (speaker max. 15 W)
	Class 7 (75 W)	x	x	x
• IPv4 network				
• Support of UDP, SCTP, RTP and 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				
• 200 kBit/s basic bandwidth and 200 kBit/s per active audio channel				

Interfaces	
• 1 x RJ45 port 10/100 MBit/s (LAN + PoE) or IDC terminal	
	for intercom stations of type NRO 1x2: 2 x RJ45 port 10/100 MBit/s (LAN + PoE) or IDC terminal
• 1 x 2-pole, pluggable screw terminal for 100-V additional speaker, 0.2 mm ² to 2.5 mm ²	
• 1 x 3-pole, pluggable screw terminal for input/foot switch, 0.2 mm ² to 2.5 mm ²	
• 1 x 4-pole, pluggable screw terminal for expansion unit of type NOAK 001, 0.2 mm ² to 2.5 mm ²	
• 1 x 5-pole, pluggable screw terminal for relay/warning beacon, 0.2 mm ² to 2.5 mm ²	
• 1 x 12-pin circular connector for headset or hand-held microphone for intercom stations of type NRO xx2/DE	
• 1 x Mini USB service port	

Environmental Requirements and Standards	• Relative humidity (non-condensing)	Max. 95 %
	• Degree of protection	IP66
	• Max. ambient noise level	110 dB
	• EMC	IEC/EN 61000-6-2 IEC/EN 61000-6-4

Intercom Expansion Units and Accessories NRO Series

Expansions



Type	6 NOAK 001
Description	Expansion unit with three momentary rocker switches, degree of protection IP66, -40 °C to +70 °C (-40 °F to +158 °F), connect up to 3 expansion units to an IP outdoor intercom station
Type number	302-130-600



Type	12 NOAK 001
Description	Expansion unit with six momentary rocker switches, degree of protection IP66, -40 °C to +70 °C (-40 °F to +158 °F), connect up to 3 expansion units to an IP outdoor intercom station
Type number	302-130-700

Electrical Accessories



Type	30 NABA 001
Description	100-V booster amplifier for installation into IP outdoor intercom stations, quiescent current consumption 25 mA, max. current consumption 1.6 A, output power 30 W / 400 Ohms
Type number	302-150-200



Type	24 WBL 01/RD
Description	Warning beacon for industrial applications, red dome, degree of protection IP54 (vertical mounting), 24 VDC
Type number	070-000-061/RD



Type	1 FS 21
Description	One-pedal foot switch, degree of protection IP65
Type number	013-010-002



Type	Terminal set
Description	1 x 3-pole screw terminal to connect a foot switch and 1 x 5-pole screw terminal for a relay contact (e.g. to connect a warning beacon)
Type number	202-652-212



Type	PoE injector 90 W Single Port
Description	PoE injector for indoor use according to IEEE 802.3bt, 90 W, Single Port, wide-range input 90 VAC to 264 AC
Type number	309-040-200

Mechanical Accessories



Type	1 SH 05/OG
Description	Weather-proof protective hood made of polyethylene
Type number	070-100-100/OG Other types of protective hoods are available upon request.




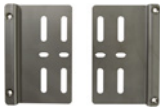
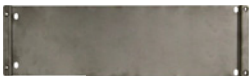

Type	2 SSH 16/OG
Description	Acoustic hood made of stainless sheet steel (V2A), ambient noise reduction of up to 30 dB
Type number	070-200-200/OG Other types of acoustic hoods are available upon request.





Type	18 DSO 05/OG
Description	Free-standing post for mounting of digital outdoor (harsh environment) intercom stations, cable entry at the bottom
Type number	212-342-100






Description	Mounting pole for installation of additional speaker and warning beacon, Pure Orange (RAL 2004)
Type number	212-341-300/OG

	Type 1 AMW 05
	Description Mounting brackets for wall mounting of outdoor intercom stations or used as mounting adaptor to replace the intercom stations of type 3 AV 17, 3 A 32 or third-party devices, incl. fastening material
	Type number 212-237-000
	Type 1 AMW 05/AXA
	Description Mounting adaptor to replace the intercom stations of type AXA/..A 501, ..AD 501, incl. fastening material
	Type number 212-237-100
	Type 1 AMW 05/0X3
	Description Mounting adaptor to replace the intercom stations of type DA / DX including the 0x4 series, incl. fastening material
	Type number 212-237-200
	Type Mounting plate NRO + NOAK
	Description Mounting plate for wall mounting or for mounting one IP outdoor intercom station and one expansion unit of type NOAK 001 inside an acoustic hood of type 2 SSH 16, incl. fastening material
	Type number 212-237-300

Further Accessories for NRO xx2/DE Series

	Type 3 HMI 05/L15
	Description Hand-held microphone with integrated pre-amplifier and mounting bracket, 3 push buttons
	Type number 301-014-300/L15
	i Operating temperature range of the intercom station changes to -20 °C to +60 °C (-4 °F to +140 °F) when operated with the above
	Type 1 DHU 003
	Description Headset with flexible microphone, one cord-mounted Push-to-Talk button
	Type number 301-434-300
	i Operating temperature range of the intercom station changes to -20 °C to +55 °C (-4 °F to +131 °F) when operated with the above

Series Overview Chart

Type				Booster Amplifier	Handset*	External Components	2nd Ethernet Port	Type Number
0 NRO 012/DBH	x		2	x	x			302-071-001/DBH
0 NRO 012/DH	x		2		x			302-071-001/DH
2 NRO 002/D		1	2					302-071-200/D
2 NRO 002/DB		1	2	x				302-071-200/DB
4 NRO 012/D	x	2						302-071-401/D
4 NRO 012/DB	x	2		x				302-071-401/DB
4 NRO 012/DBE	x	2		x		x		302-071-401/DBE
4 NRO 012/DBH	x	2		x	x			302-071-401/DBH
4 NRO 012/DE	x	2				x		302-071-401/DE
4 NRO 012/DH	x	2			x			302-071-401/DH
4 NRO 112/D	x	2					x	302-071-411/D
4 NRO 112/DB	x	2		x			x	302-071-411/DB
4 NRO 112/DBH	x	2		x	x		x	302-071-411/DBH
4 NRO 112/DH	x	2			x		x	302-071-411/DH
6 NRO 002/D		3						302-071-600/D
6 NRO 002/DB		3		x				302-071-600/DB
6 NRO 002/DBE		3		x		x		302-071-600/DBE
6 NRO 002/DE		3				x		302-071-600/DE
6 NRO 102/D		3					x	302-071-610/D
6 NRO 102/DB		3		x			x	302-071-610/DB

* Operating temperature range of the NRO intercom stations changes to -25 °C to +70 °C (-13 °F to +158 °F)

D = with LCD display

B = with booster amplifier

H = with handset

E = with expansion option

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