

# NS1 Installation Guide

## INTRODUCTION

Thank you for using NS1 for your access control application. NS1 is a powerful access control system which can be used for single door access, as well as for connection to any type of on-line access control system.

NS1 units can also be mounted in an RS485 network without the necessity of an external access control system.

NS1 as a single door unit offers many possibilities such as:

- Access control
- Unlock option
- Day/Nightlock option (manual or automatic switching)
- Long range reader (up to 45cm)
- Optional use of PIN keypad
- Using an external relay (to prevent potential tampering)
- NS1 Manage software for stand-alone PC programming, event logging and user database maintenance

## REFERENCES

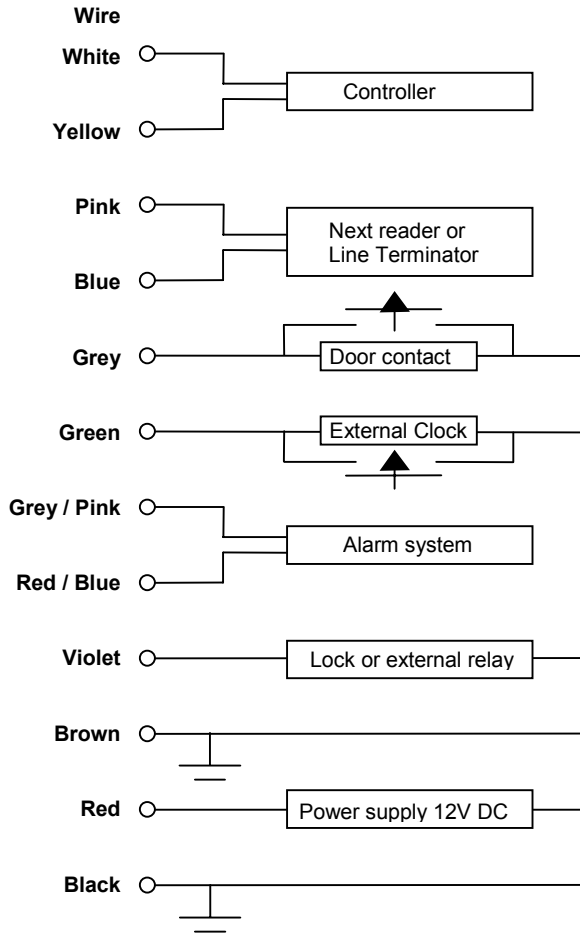
Master card usage is described in the NS1 User Guide (TD1168).

## CONNECTIONS

The NS1 uses 12 wire E111235 AWM STYLE 2560 60°C 30V low voltage computer cable. The connections are indicated below.

Wire	Stand-alone	Magstripe (ABA)	Wiegand
Brown	Extra Ground		
Violet	Relay out (O.C)		
Black	Ground		
Red	Power (+11.5 ... +12.5V DC)		
Yellow	RS-485B in +		
Blue	RS-485B out -		
White	RS-485A in +		
Pink	RS-485A out -		
Grey	IO-1 Door contact input	\ RDP output	DATA 0
Green	IO-2 Ext. Night lock/Rex input	\ RCP output	DATA 1
Grey/Pink	IO-3 Forced entry output	\ CLS output	STROBE
Red/Blue	IO-4 Night lock enabled output	\ Access input	\ LED

Figure 1 (below) gives a graphical representation of the connections.



**NOTES:**

1. The relay output is a 1A / 30V open collector.
2. With the NS1 only DC locks can be used when directly connected to the NS1.

Figure 1 NS1 Connections

## NS1 OPERATING LEVELS

The NS1 Proximity Reader has two operating levels:

- **Installer Level.** On this level the NS1 can be configured by the Installer. This level is also used to do typical Installer options.
- **User Level.** On this level typical user options can be set, such as adding and voiding user cards, setting the door open time, etc.

This Quick Guide explains the most frequently used Installer settings that can be used to configure the NS1. Please refer to the **NS1 User Guide (TD1168)** for user related settings.

The programming steps mentioned in this Quick Guide represent a limited number of programming functions that can be performed by the Installer on an NS1. Please refer to the NS1 Master Manual (TD0099) for all the possibilities.

## NS1 LEDS

The NS1 is provided with seven LEDs which serve as status indicators. Figure 2 illustrates their function.

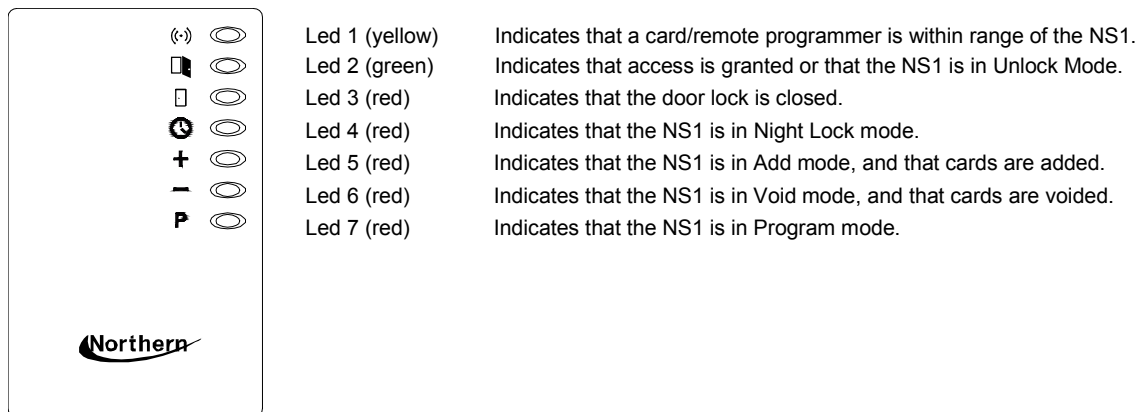
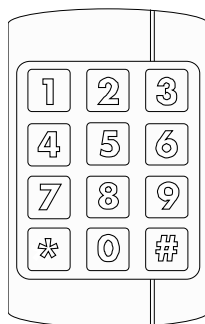


Figure 2 LED indicators NS1

## PROGRAMMING DEVICE



A remote programmer can be used to configure the NS1 and do settings in the NS1 by bringing it into the RF field of the NS1.

A programmed function may look like as follows:



The blank "n" in the function indicates an optional number.

 An Installer Remote Programmer can set all functions of the NS1.

In this Quick Guide, configuring the NS1 Proximity Reader is described by means of a Remote Programmer. However, there are other ways. Northern also offers the possibility of programming the NS1 Proximity Reader through the **NS1 Manage** PC software.

If you have to install this application, please refer to the installation instructions of the NS1 Manage manual (TD0099).

## CONFIGURING THE NS1

The following steps describe how to configure the NS1.

### 1. Wake up the NS1 from sleep mode.

When powering up the NS1 for the first time, the NS1 is in the Installer sleep mode.


 This programmer will automatically become the Installer Remote Programmer. It is recommended to identify the Remote Programmer as the Installer by labelling it such.

Figure 3 indicates how to wake up the NS1.

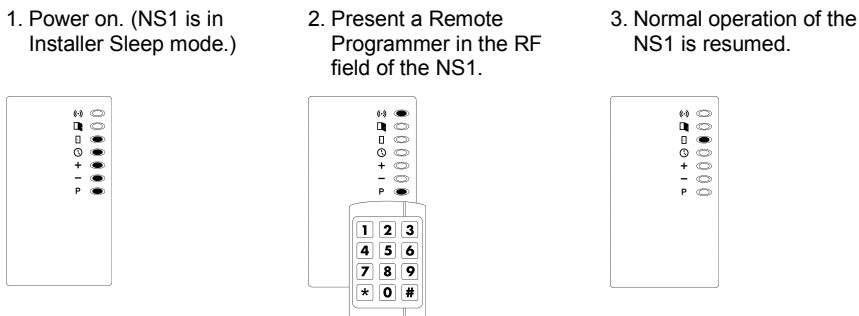


Figure 3 Waking up the NS1

### 2. Set the Lock Type (23\*).

Different lock types can be set by entering the key sequence corresponding with the lock type. See the following table for information.

Lock Type	Key sequence	Description
Normally open	23*0*	The settings “normally open” and “normally closed” are used when a lock is directly connected to the NS1.
Normally closed	23*1*	
Coded signal	23*2*	Coded signal is used to trigger an external relay on the Connection Unit (article NS1CU). The external relay offers a higher level of security.

The default value is 23\*0\*. To set another value, take the steps indicated in Figure 4.

1. Enter Program mode by presenting Installer Remote Programmer.
2. Enter the choice for the Lock Type, where “n” is 1 or 2.
3. Normal operation of the NS1 is resumed.



Figure 4 Setting Lock Type

### 3. Set Open Time-out (11\*).

Whenever access is granted, the relay of the NS1 will be activated during a certain number of seconds, called the Open Time-Out.

This period of time can be adjusted from 1 to 255 seconds. The default value is 2 sec, meaning that after presenting the tag to the NS1 reader, you have 2 seconds to open the door. If you want to use the default value, skip this step and proceed with the next.

To use a setting other than the default one, perform the steps indicated in Figure 5.

1. Enter Program Mode by presenting Installer Remote Programmer.
2. Enter Open Time-out period.
3. Normal operation of the NS1 is resumed.



Figure 5 Setting Open Time-out Period

### 4. Set Close Time-out (12\*).

The NS1 has a special timer that is intended to check whether the gate or door has been closed within a specific period of time.

This period of time is adjustable from 0 to 255 seconds. The default value is “0”, meaning that the function is disabled. If you want to use the default value, skip this step and proceed with the next.



I/O 1 of the NS1 should be connected to ground or to ground via the door switch when using this option.

To use a setting other than the default one, perform the steps indicated in Figure 6.

1. Enter Program mode by presenting Installer Remote Programmer.
2. Enter Close Time-out period.
3. Normal operation of the NS1 is resumed.

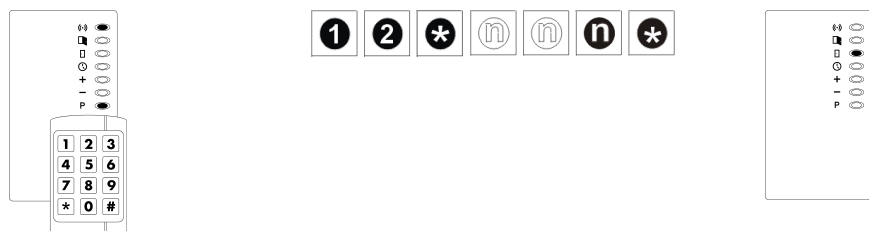


Figure 6 Setting the Close Time-out Period

## 5. Set Egress (20\*).

Setting egress allows the connection of a push button mounted inside a building to grant passage when exiting. When set, this option will disable the external Night Lock control which uses the same I/O 2 input. Egress is low active, i.e. access is granted when I/O 2 is connected to GND for a short while.

The default option is 20\*0\*, meaning that this function is disabled. If you want to use the default value, skip this step and proceed with the next.

To use a setting other than the default one, perform the steps indicated in Figure 7.

1. Enter Program mode by presenting the Installer Remote Programmer.
2. Enter Egress option.
3. Normal operation of the NS1 is resumed.

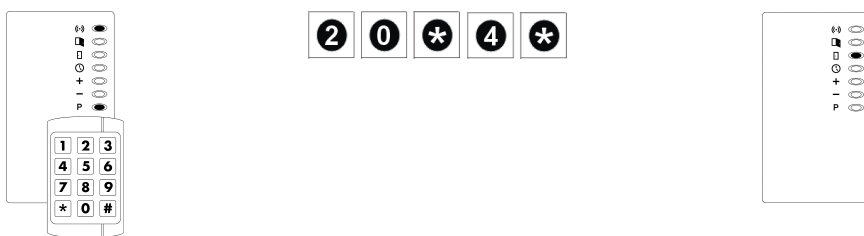



Figure 7 Setting Egress Option

## 6. Set NS1 from Installer level to User level.

 To prevent tamper alarms, make sure the NS1 cover is in place. If for any reason you need to go back to the installer level, just present the Installer Remote Programmer in the RF field of the NS1 and enter 0\*1\*.

To set the User level, perform the steps indicated in Figure 8.

1. Enter Program mode by presenting the Installer Remote Programmer.
2. Press 0\*0\*.
3. The NS1 goes to User Sleep mode. Switch the power OFF.

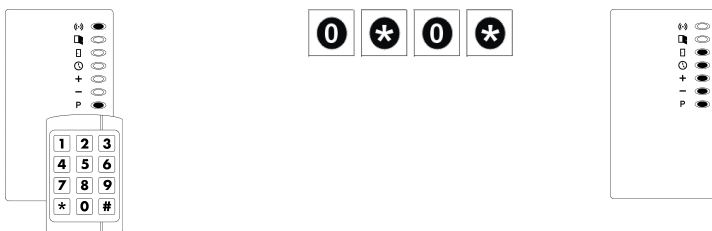


Figure 8 Set User Level

## SECURITY

For safety precautions the user is strongly advised to keep records of the functions and ID numbers of all tags and the name of the users. In case of loss, the specific tags can be voided from memory by entering the specific number using the Remote Programmer.

### Privacy

The **NS1** is provided with a 'Protect mode' by which any (Remote) programming attempt will be blocked, except the user programmer.

### Forced Entry

If a forced entry situation occurs, a continuous alarm will sound. If required, a burglar alarm can be triggered. This option will only activate when a door contact is connected, and the Close Time-out is not set to zero. The alarm can be deactivated by repeating the programming procedure for setting the Close Time-out to zero. The **NS1** also has an anti-tamper switch and alarm.

### Tamper Protection

The NS1 is equipped with an anti-tamper switch and alarm. And because it is both compact and it employs RF technology, it can be mounted behind any material except metal, with a maximum thickness of 5 cm (2") for additional tamper protection.

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