Cabling Audio Systems

1) Cabling should be Star Configuration (Topology). ie. Each Handset cable should go back to a junction box or central cabinet and NOT looped from one Handset to the next. This is purely for maintenance reasons.

2) It is recommended that 1mm diameter conductors are used from the power supply to the (+) POSITIVE and (-) NEGATIVE of the speaker unit.

3) It is recommended that 1mm (preferably 1.5mm) diameter conductors are used for the lock circuit.

4) Standard BT telephone cable is recommended (0.4mm per conductor) for reasons of higher quality audio reproduction and because the pairs are twisted thereby providing a powerful defence against interference.

5) Standard alarm cable can also be used although there is a greater risk of interference. Special care must be taken to ensure clean and neat terminations.

6) All low voltage cabling must be run totally separated from high/mains voltage cables.

Please note that far better results are achieved using thicker conductors than combinations of thinner conductors.

Star Topology

Junction Box
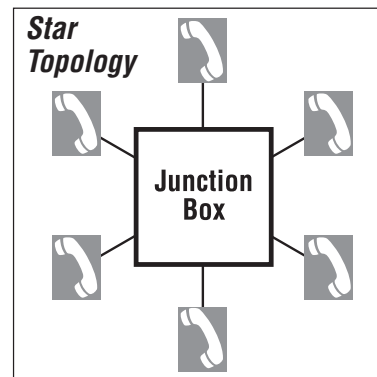
Power

Power the MIHP/6 Speaker using a 12V DC power source.

Amperage draw is dependent upon consumption characteristics of the locking used, the lengths of cable runs, the number of handsets required to switch on simultaneously etc. As a general guide, allow 1 Amp per door. If unsure, please contact Noralsy.

Standby for Audio Systems

Simply add 12V battery to 12V DC power supply.

General Wire Diameter Guidlines – per conductor

Distance Metres	Call/Speech/Release CA, 2, 1, 9, 6 mm
50	*0.4*
100	*0.8*
200	*1.0*
300	*1.6*

For greater distances, please contact Noralsy for advice.

General Information

Standardisation of Terminal Numbering

Place Noralsy unit on a flat surface with PCB facing skywards. View terminal blocks from the outside looking in. Terminal No. 1 is always the first on the left of every terminal block strip.

View Side-On PCB Facing Up

Direction of View

View Side-On PCB Facing Up

Any Noralsy

Door Controller
Control Unit
Speaker Unit
Access Pass Reader/Receiver
Keypad
Call Decoder
Module

View Side-On PCB Facing Up

View Side-On PCB Facing Up

NACD

ACCESS • DOOR ENTRY • SECURITY

Audio Entry

INSTALLATION INSTRUCTIONS

MIHP/6 SPEAKER

Single Entrance

Multiple Entrances with Automatic Switching

With

Fail Secure Locking

Fail Safe Locking

Automation

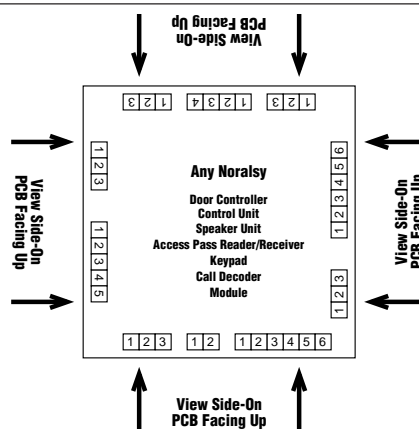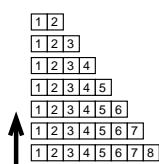**Keypad**

Access Control

What do you want Today?™

NORALSY™
MASTERING ACCESS CONTROL™

Audio Entry Functional Systems

NACD

ACCESS • DOOR ENTRY • SECURITY

DELETING USER CODES
As all User Codes are stored in Slots, it is easy to delete a code from the keypad:

Enter the Master Code and wait for the beeps.
After a beep enter on the keypad:

01 A or *
Slot No. ⎯⎯⎯| |⎯⎯ Delete Command

or

17 A or *
Slot No. ⎯⎯⎯| |⎯⎯ Delete Command

To delete the User Code stored in Slot 01   To delete the User Code stored in Slot 17
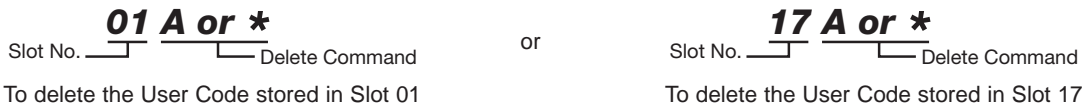
A rapid series of beeps indicates that you have deleted successfully.
Now press B or # to escape from programming.
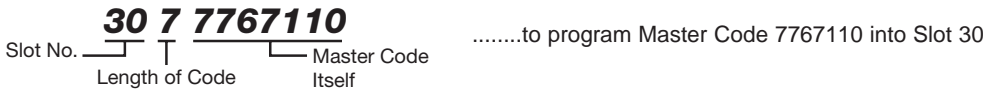
OVERWRITING / CHANGING USER CODES
You do not have to delete a User Code in order to change it. By programming a new User Code into a Slot that is currently in use, you automatically erase the old User Code.

Enter the Master Code and wait for the beeps.
After a beep enter on the keypad:

01 6 700028
Slot No. ⎯⎯⎯| |⎯Length of Code |⎯⎯ User Code
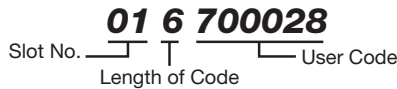
The new User Code in Slot 01 is 700028. Whatever was in Slot 01 before has been erased.

Note: You change the Master Code in exactly the same way.

30 7 7767110   ....to program Master Code 7767110 into Slot 30
Slot No. ⎯⎯⎯| |⎯Length of Code |⎯⎯ Master Code Itself

Now press B or # to escape from programming.

LATCHING RELAY
The code stored in Slot 28 acts as the "ON" for Latching Relay no. 3.
The code stored in Slot 29 acts as the "OFF" for Latching Relay no. 3.

If you do not store a different code in Slot 29 to that stored in Slot 28, entering the code stored in Slot 28 will act first as "ON" and then as "OFF", then "ON" etc.

EMERGENCY CODE
The code stored in Slot 27 operates both Relay no. 1 and Relay no. 2 at the same time.

ANTI-TAMPER
An anti-tamper circuit (terminals 11 + 12 of J1) provides a normally closed contact, once the keypad is secured to the wall.

AUTOMATIC TIME-OUT - whenever programming accessed via Master Code
If you do not press B or # to escape from programming, the keypad will automatically revert to normal mode after 20 seconds.

Noralsy™ Keypad 30 codes / 3 Relays

Single Door Installation
26 user codes / relay nos 1 & 2 in parallel.

Jumper Setting
COMMON - NOR

For Fail Safe Locking
move jumper to:
COMMON - INV
(+ wire relays 1 & 2
in series)

SW5
SW1 SW2 SW3
INV
NOR

J1 + - 1 2 3 4 5 6 7 8 9 10 11 12

EX1

Alarm Circuit (NC)

POWER SUPPLY
12V DC
+12v +
0v −
L
E
N

EX1 = Exit Button

D1

12V DC
ELECTRIC
RELEASE

ELEC/INST/K301

Noralsy™ Keypad 30 codes / 3 Relays

Automation Control
13 user codes / relay no.1 , 13 user codes / relay no. 2.

SW5

Jumper Setting
COMMON - NOR

SW1 SW2 SW3
INV
NOR
RV1   RV2   RV3

CUT OUT
When power OFF

J1 + - 1 2 3 4 5 6 7 8 9 10 11 12

EX1 activates Relay 1.
EX2 activates Relay 2.
(EX = Exit Button)

EX1

EX2

Alarm Circuit (NC)

To Automation Control Equipment No.2

To Automation Control Equipment No.1

POWER SUPPLY
12V DC
+12v +
0v −

Gate/Barrier Automation Control No. 1 = Main Gate (for example)
Gate/Barrier Automation Control No. 2 = Pedestrian Gate (for example)

Cut-out varistor RV1 or RV2 if its corresponding relay
is controlling an automation system.

Latching relay no. 3 (terminals 9-10) can be used to
hold open an automated gate/barrier etc.
In this instance only, cut-out varistor RV3.

ELEC/INST/K304

Noralsy™ Keypad 30 Codes / 3 Relays

NACD
ACCESS • DOOR ENTRY • SECURITY

TOP POINTS TO REMEMBER

- Master (Engineer) Code is always stored in Slot 30.
- User Codes are stored in Slots 01, 02, 03, 04..........26.
- Relay no. 1 is controlled by the User Codes stored in Slots 01 - 13.
- Relay no. 2 is controlled by the User Codes stored in Slots 14 - 26.
- The code stored in Slot Number 27 activates Relay no. 1 & Relay no. 2 simultaneously.
- The code stored in Slot Number 28 turns Latching Relay no. 3 "ON".
- The code stored in Slot Number 29 turns Latching Relay no. 3 "OFF".

TIP - WHEN YOU ARE IN PROGRAMMING

Enter the numbers in quick succession after a beep. Do not wait more than 2-3 seconds in between entering numbers. If you have correctly programmed, you will hear a rapid series of beeps.

SET-UP ON INSTALLATION

Wire up according to appropriate electrical schematic for your installation, then power up the keypad. Flick Programming Switch SW5 and wait for the keypad to start beeping every 3 seconds.

STEP 1

Decide Now......for how many seconds do you want the door to open:

After a beep enter

Set Timer Command → **00 05 05**
Relay No. 1
Relay No. 2

Example
05 Seconds

NOTE:
Relays can be programmed between 01 – 99 seconds.

The 2no. digits shown as underlined set the door open time in seconds for relay no.1. The last 2no. digits set the door open time for relay no.2. A rapid series of beeps indicates that you have programmed successfully.

You must set the relay/lock command time for relay no. 2 even if you are not using relay no. 2. If you have linked relays 1 & 2 together, you must set the same open times for both.

STEP 2

Now set the Master Code of your choice.

This is the code that allows you to access programming mode without having to open up the keypad and flicking switch SW5.

The Master Code is always stored in Slot 30.

The Master Code can be any length of digits/characters/symbols - minimum 3, maximum 8.

After a beep enter on the keypad:

30 4 2901
Slot No.
Length of Code
Master Code Itself
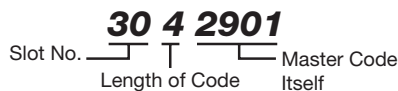
if you want your Master Code to be 2901

This is an example only.
SET THE MASTER CODE OF YOUR CHOICE

A rapid series of beeps indicates that you have programmed successfully.

STEP 3

Turn off programming switch SW5.

STEP 4   PROGRAMMING/ADDING USER CODES

User codes can be any length of digits/characters/symbols - minimum 3, maximum 8.

User codes are stored in Slots 01-26. Example: 01, 02, 03… 26.

Enter the Master Code you set in STEP 2 and wait for the beeps.

After a beep enter on the keypad:

01 3 494
Slot No.
Length of Code
User Code
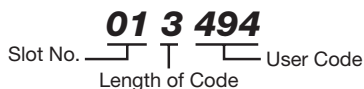
..............to program User Code 494 into Slot 01

A rapid series of beeps indicates that you have programmed successfully.

02 4 5519
Slot No.
Length of Code
User Code
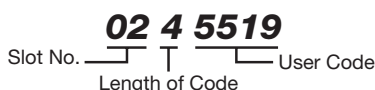
.............to program User Code 5519 into Slot 02

A rapid series of beeps indicates that you have programmed successfully.

Now press B or # to escape from programming.

14

Noralsy Speaker MIHP/6

NORALSY™
MASTERING ACCESS CONTROL™

Speech & Audio Settings
ELEC/INST/300

Speaker MIHP/6

1. **Turn P3 clockwise to zero = No speech from panel to handset.**

2. **Adjust P2 clockwise so that speech level at panel is at an acceptable level. Do not increase beyond this point.**

3. **Adjust P3 *fractionally* anti-clockwise to "turn on" microphone.**

Removing jumper reduces gain of microphone

J5   J4

J8

+ ⊘) **P3**   **+** (⊘ **P2**

RV1

+ (⊘ **P1**

Potentiometers

12V DC Power Input

+	−
1	2

J1

1	2	3	4	5

J2

INV   NOR

1	2

J3

J9
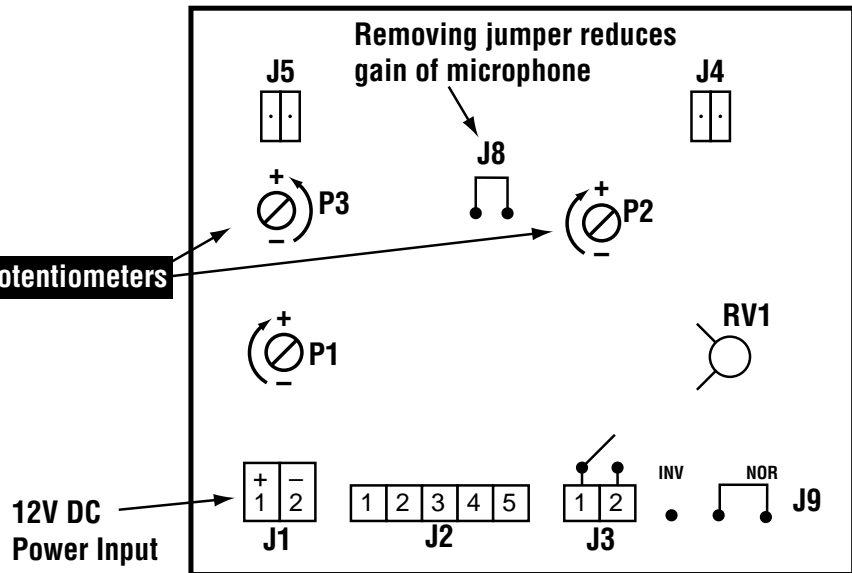
P2 = For adjusting speech/sound level down to the external panel.

P3 = For adjusting speech/sound level up to the handset(s).

J4 = Prewired/connected to speaker (if not connected simply plug in).

J5 = Prewired/connected to microphone (if not connected simply plug in).

J8 = On short runs especially, removing the jumper reduces the gain of the microphone.

Adding a Trades-Button controlled via a Time Clock

ELEC/INST/300B

+ ⊘) **P3**   **+** (⊘ **P2**

Speaker MIHP/6

+ (⊘ **P1**

J1

+	−
1	2

1	2	3	4	5

J2

1	2

J3

TIME CLOCK   **TR**

TR = Trades-Button (Normally open contact)

3

NACD
ACCESS • DOOR ENTRY • SECURITY
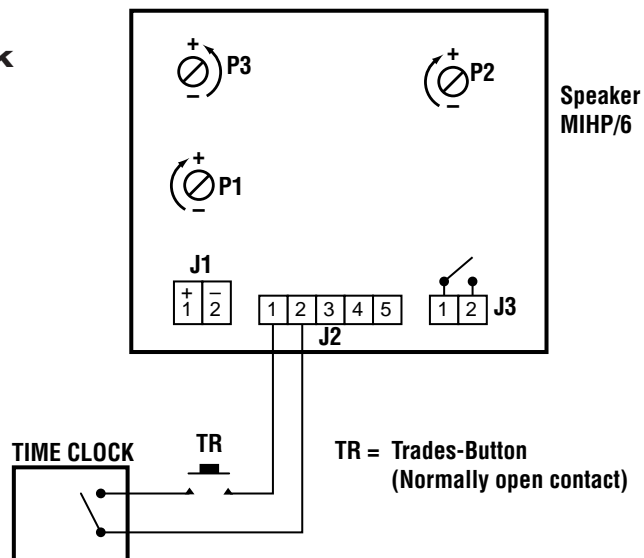
Jumper Settings J9 for Relay J3

ELEC/INST/300A

Speaker MIHP/6

If controlling an automation system, see note.

Common - NOR = Relay closes (makes circuit) when door release button on handset or internal exit button is pressed. This setting is used when operating a fail secure (locked) - power to unlock electric release.

Fail Secure (N.O.)

Common - INV = Relay opens (breaks) circuit when door release button on handset or internal exit button is pressed. This setting is used when operating a fail safe (open) - power to lock electro-magnet or electric release.

Fail Safe (N.C.)

Potentiometer

12V DC Power Input

J1 J2 J3

P1 = For adjusting relay J3 operating time (output time) to lock or automation equipment.

RV1 = Cut out **only** if relay J3 is connected directly to an automation system.

If your fail safe locking requires an Emergency Break Glass exit device ref. **EMEX** (normally closed contact) in order to comply with relevant fire and safety regulations, please fit as shown.

POWER SUPPLY

+12v

0v

J3

EMEX   **Varistor**

Magnet or Fail Safe Release
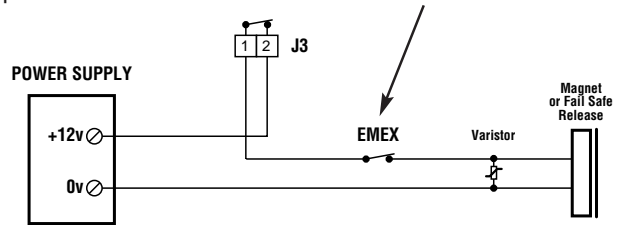
Protection Varistor or Diode

The use of a varistor or diode protects electrical equipment from transient voltage spikes.

Varistor

Fit the varistor close to the AC or DC release or the DC magnet.

Varistor is polarity insensitive.

AC or DC release   or   Electro Magnet
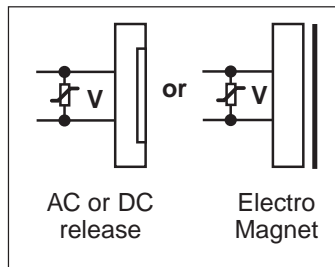
Diode

Fit the diode ref. IN4001 close to the DC release or electro-magnet.

Respect polarity of the diode. Incorrect fitting of a diode will cause a short circuit.

K = Cathode +   A = Anode –

D   K   A

DC release Fail Secure or Fail Safe   or   Electro Magnet

Noralsy™ Keypad
30 Codes / 1 Relay

TOP POINTS TO REMEMBER

1. Up to 29 user entry codes available at any one time.
2. Codes are stored in slots numbered 01, 02, ...05 and 07, 08......30.
3. **Master Code = Programming code and must be stored in Slot 06.**
4. Each code can be any mix of digits/letters from 3 to 8 in length.

TIP - WHEN YOU ARE PROGRAMMING
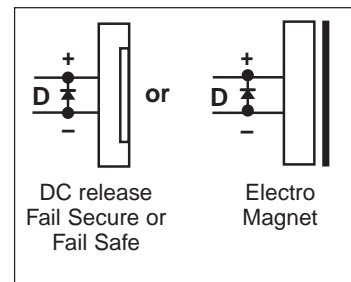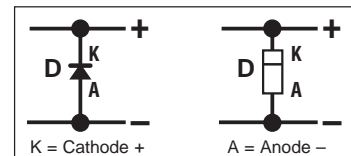
Enter the numbers in quick succession after a beep. Do not wait more than 2-3 seconds in between entering numbers as this will confuse the keypad. If you have correctly programmed, you will hear a rapid series of beeps.

SET-UP ON INSTALLATION

Wire up according to appropriate electrical schematic for your installation, then power up the unit.
Flick the programming switch SW1 and wait for unit to start beeping every 3 seconds.
SET THE MASTER CODE.   IT MUST BE STORED IN SLOT 06.

Example: You want the following MASTER CODE: 74AB6

After a beep enter on the keypad:

06	**5**	**74AB6**
Master Code Slot Number	Length of Code	Master Code Itself

If you have correctly entered the Master Code you will hear 2no. series of rapid beeps.
Turn off Programming Switch SW1. You can now effect all programming simply by entering the Master Code and waiting for the programming beeps.

SETTING USER DOOR ENTRY CODES

Enter the Master Code onto the keypad and wait for the beeps.

Example: you want the following codes: A94   = 3 digits
                                                                  564B52   = 6 digits

After a beep enter on the keypad:

01	**3**	**A94**
Slot Number	Length of Code	Code Itself
02	**6**	**564B52**
Slot Number	Length of Code	Code Itself

NOTE CAREFULLY: No codes into slot no. 06 as this is for the Master Code !
                          (Unless, of course, you want to change the Master Code).
Press B to escape from programming.

DELETING USER DOOR ENTRY CODES

As all door entry codes are stored in slot numbers 01 - 05 and 07 - 30, it is easy to delete a code from the system.
NOTE CAREFULLY - Do not delete slot no. 06 unless you are going to input a new Master Code whilst still in programming mode !
Example - Your codes are:

A94	for Mr Smith	stored in Slot 01
564B52	for Staff use	stored in Slot 02

To delete Mr Smith's code - A94 - from the system simply:
Enter the Master Code onto the keypad and wait for the beeps.

After a beep enter on the keypad:

01	**A**
Slot Number	Delete Command

Press B to escape from programming.
Note 1. You do not have to know the actual code itself which needs to be deleted, only the slot in which it is stored.
Note 2. Capacity is never reduced as a result of deleting codes. You can always add or change codes.

SETTING LOCK OPEN TIME

Enter the Master Code onto the keypad and wait for the beeps.

Lock open time can be set at **0.2** seconds or **01 - 99** seconds.

After a beep enter:	00 00	for 0.2 seconds (automation control)
	00 05	for 05 seconds
	00 10	for 10 seconds
	00 19	for 19 seconds etc

Press B to escape from programming.

If you do not press B to escape from programming, the keypad automatically reverts to normal mode after 20 seconds.
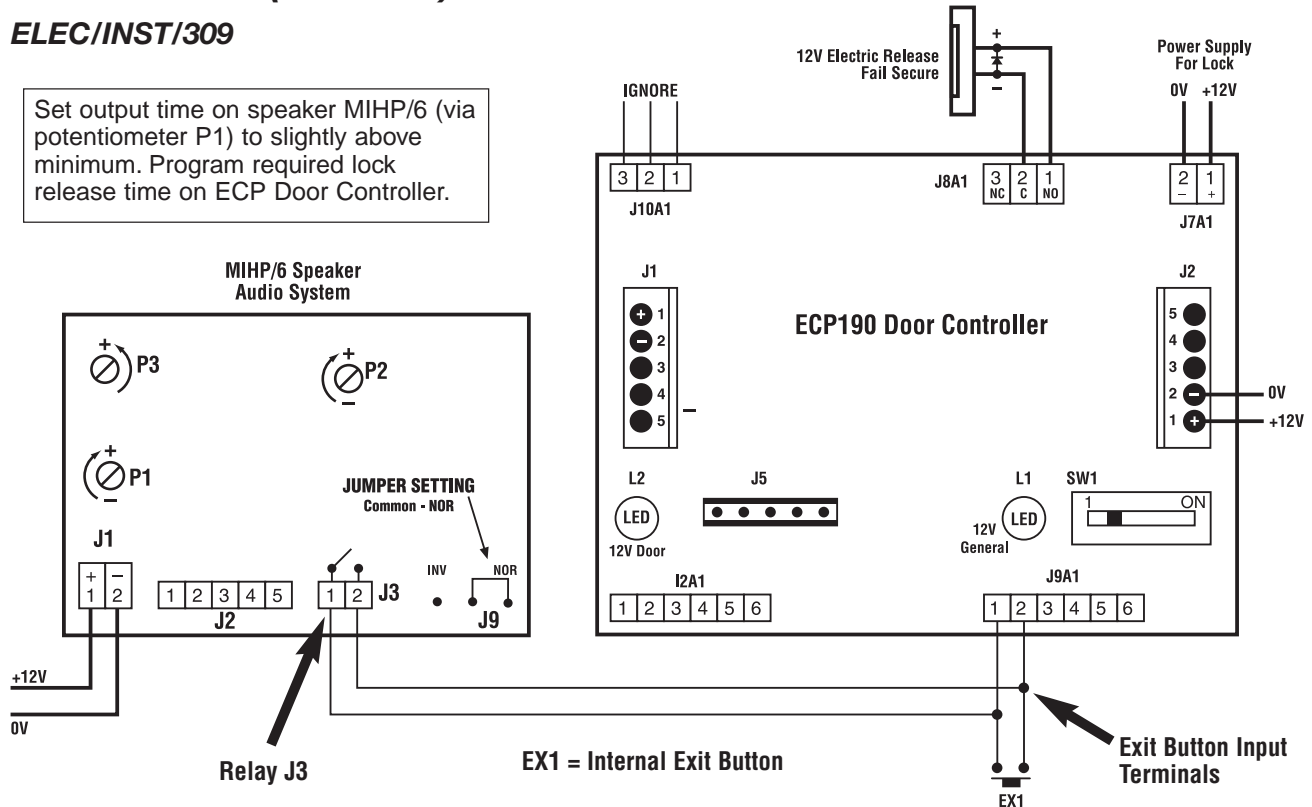
PROX   CODE   I.R.   RADIO   TKEY   CARD
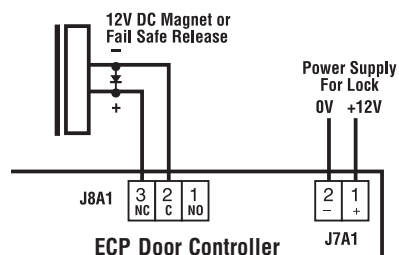
Fail Secure (Locked) – Power to Unlock

ELEC/INST/309

Set output time on speaker MIHP/6 (via potentiometer P1) to slightly above minimum. Program required lock release time on ECP Door Controller.

12V Electric Release Fail Secure

IGNORE

Power Supply For Lock
0V +12V

3 2 1
J10A1

J8A1   3 NC 2 C 1 NO

2 1
− +
J7A1

MIHP/6 Speaker Audio System

P3   P2

P1

ECP190 Door Controller

J1
+ 1
− 2
3
4
5

J2
5
4
3
2 − 0V
1 + +12V

JUMPER SETTING
Common - NOR

L2
LED
12V Door

J5

L1   SW1
12V General
LED

1 ON

J1
+ 1 − 2

J2
1 2 3 4 5

J3
1 2

INV   NOR

J9

I2A1
1 2 3 4 5 6

J9A1
1 2 3 4 5 6

+12V

0V

Relay J3

EX1 = Internal Exit Button

EX1

Exit Button Input Terminals

Relay J3 used as a N.O. Volt Free change-over relay to trigger relay (lock) output of ECP Door Controller (Door Controller/Control Unit from 3rd party) via standard internal exit button terminal connections.

Fail Safe (Open) – Power to Lock

ELEC/INST/310

12V DC Magnet or Fail Safe Release

Power Supply For Lock
0V +12V

J8A1   3 NC 2 C 1 NO

2 1
− +
J7A1

ECP Door Controller

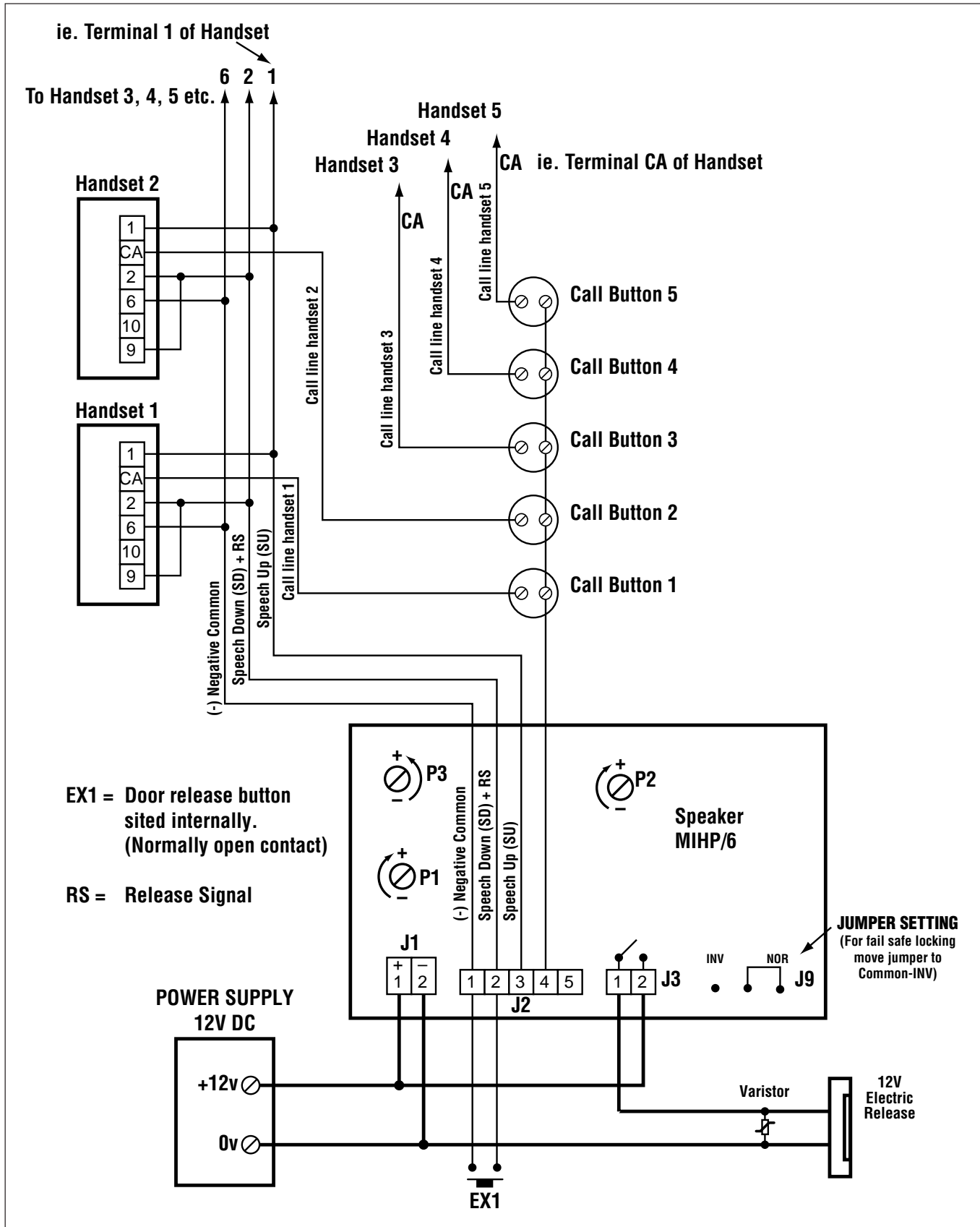## Automation Control / Volt Free

ELEC/INST/311
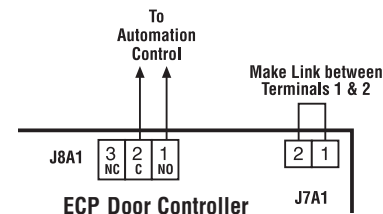
Set output time on speaker MIHP/6 (via potentiometer P1) to slightly above minimum and program output time on ECP Door Controller to 01 seconds. Program output time accordingly if more time is required to trigger automation system.

To Automation Control

Make Link between Terminals 1 & 2

J8A1   3 NC 2 C 1 NO

2 1

ECP Door Controller   J7A1

ie. Terminal 1 of Handset

6 2 1

To Handset 3, 4, 5 etc.

Handset 5
Handset 4
Handset 3   CA   ie. Terminal CA of Handset

CA

CA

CA

Handset 2

1	
CA	
2	
6	
10	
9	

Call line handset 5
Call line handset 4
Call line handset 3
Call line handset 2

Call Button 5

Call Button 4

Call Button 3

Handset 1

1	
CA	
2	
6	
10	
9	

Call line handset 1

Call Button 2

Call Button 1

(-) Negative Common
Speech Down (SD) + RS
Speech Up (SU)

EX1 = Door release button sited internally. (Normally open contact)

RS = Release Signal

+P3
−

(-) Negative Common
Speech Down (SD) + RS
Speech Up (SU)

+P2
−

Speaker MIHP/6

+P1
−

JUMPER SETTING
(For fail safe locking move jumper to Common-INV)

J1

+	−
1	2

POWER SUPPLY 12V DC

1	2	3	4	5

J2

INV   NOR

| 1 | 2 | J3
|---|---|

J9

+12v ⊘

0v ⊘

Varistor

12V Electric Release

EX1
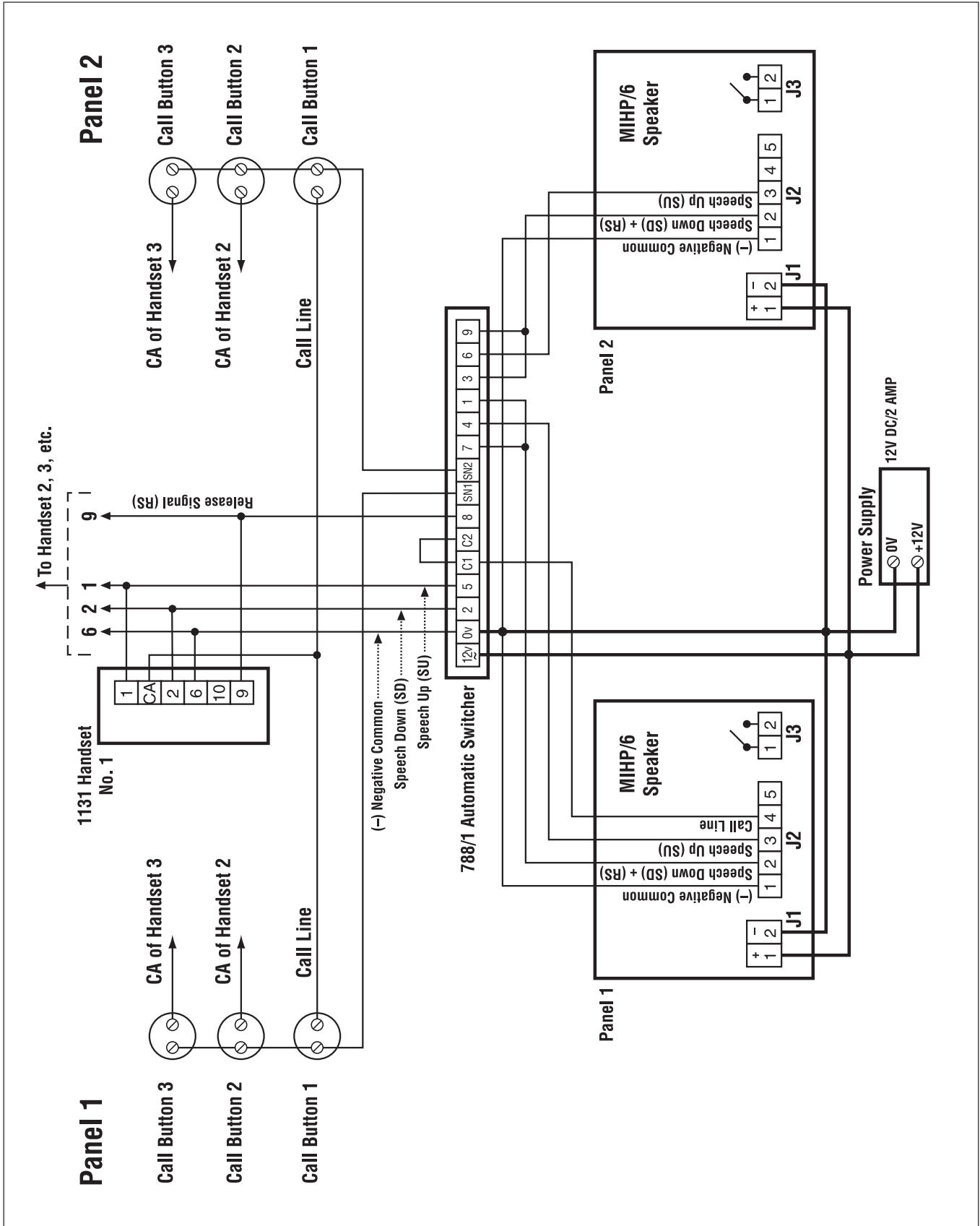
ELEC/INST/303

Automation Control / Volt Free
MIHP/6 Speaker Audio System

Set output time on speaker MIHP/6 (via Potentiometer P1) to slightly above minimum.

Adjust accordingly if more time is required to trigger automation system.

+ P3
+ P2

Speaker MIHP/6

+ P1

CUT OUT
When power off

RV1

JUMPER SETTING
Common-NOR

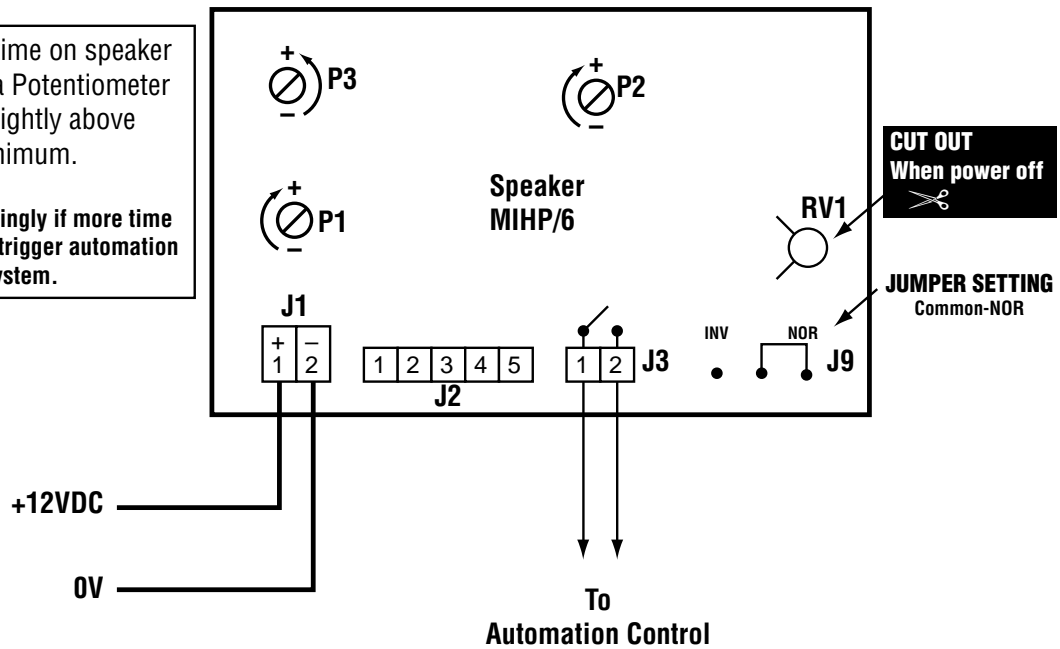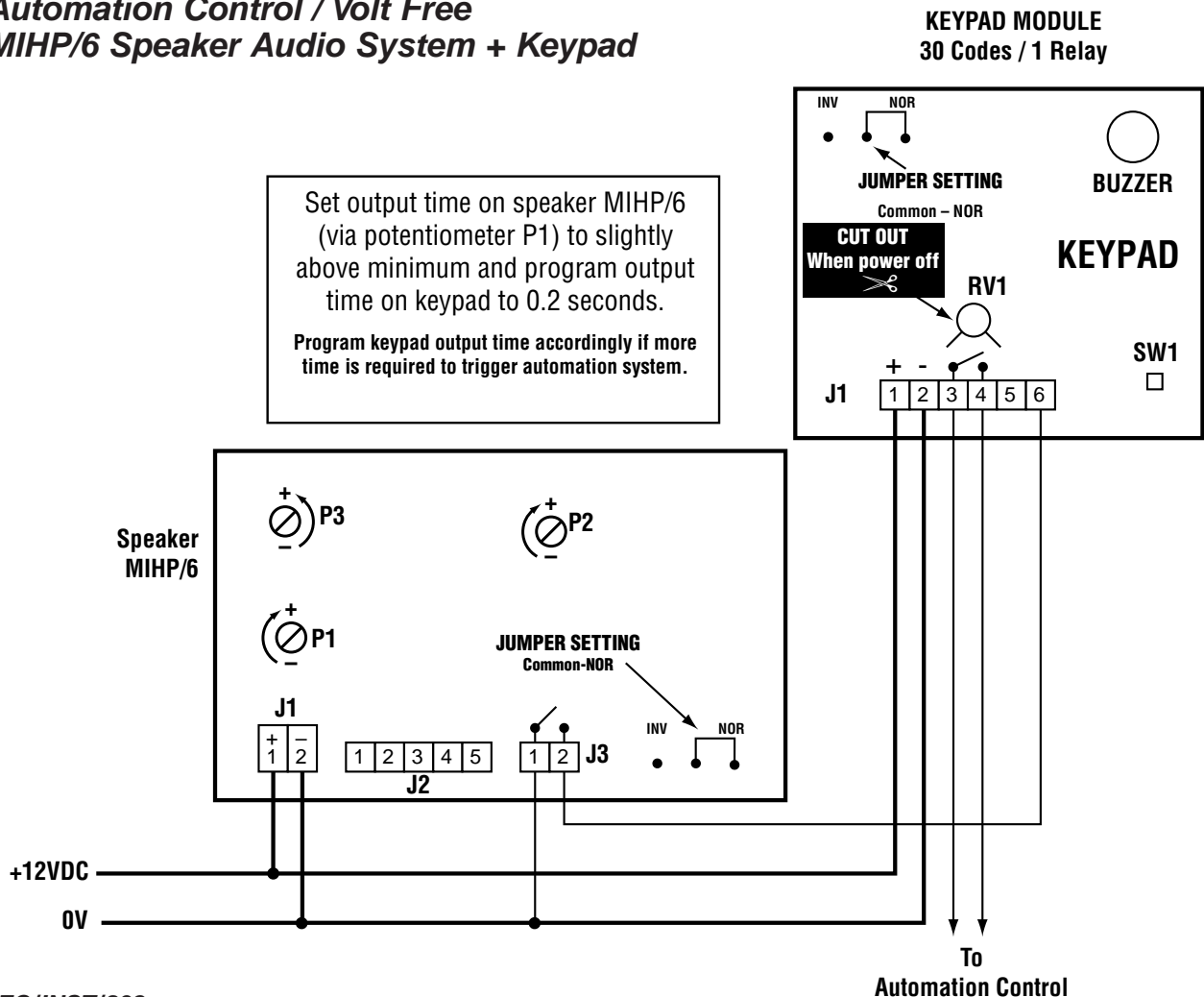J1
+ 1   − 2

J2
1 2 3 4 5

1 2   J3

INV   NOR
J9

+12VDC

0V

**To
Automation Control**

ELEC/INST/307

Automation Control / Volt Free
MIHP/6 Speaker Audio System + Keypad

**KEYPAD MODULE
30 Codes / 1 Relay**

INV   NOR

JUMPER SETTING
Common – NOR

BUZZER

CUT OUT
When power off

RV1

KEYPAD

Set output time on speaker MIHP/6 (via potentiometer P1) to slightly above minimum and program output time on keypad to 0.2 seconds.

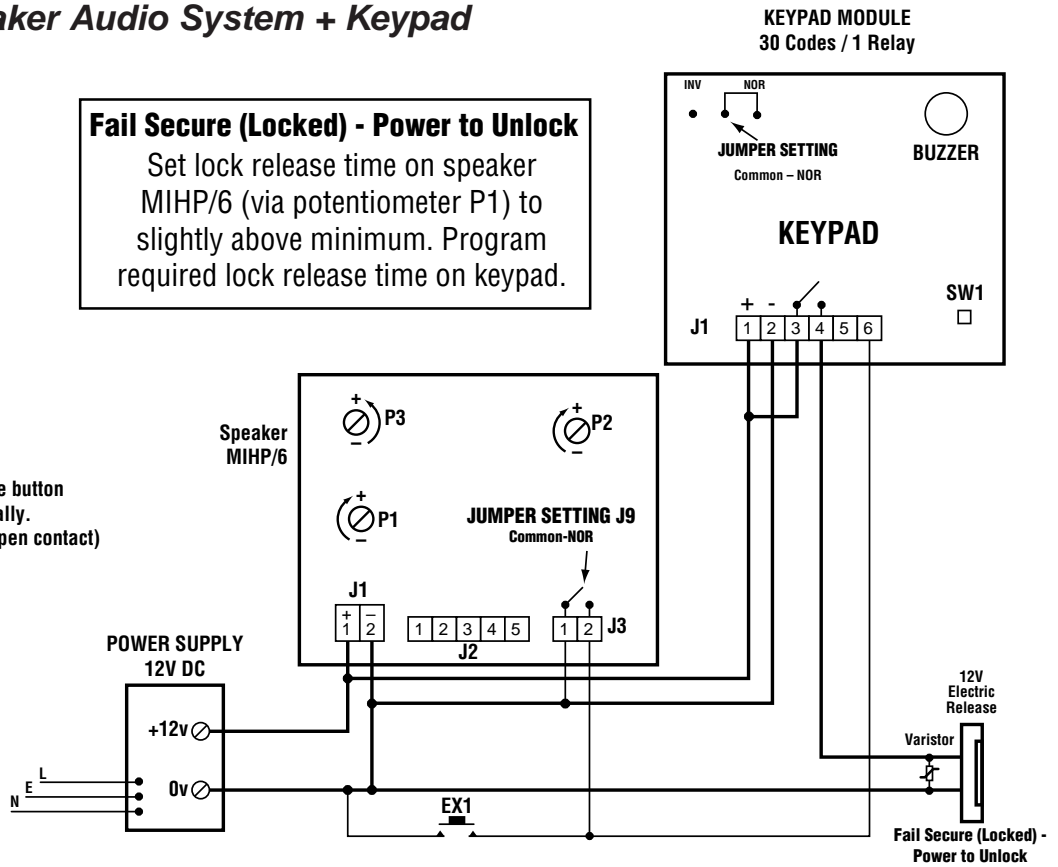**Program keypad output time accordingly if more time is required to trigger automation system.**

SW1

J1
+ - 1 2 3 4 5 6

+ P3
+ P2

Speaker MIHP/6

+ P1

JUMPER SETTING
Common-NOR

J1
+ 1   − 2

J2
1 2 3 4 5

1 2   J3

INV   NOR

+12VDC

0V

**To
Automation Control**

ELEC/INST/308

11

Fail Secure Locking
MIHP/6 Speaker Audio System + Keypad

KEYPAD MODULE
30 Codes / 1 Relay

Fail Secure (Locked) - Power to Unlock

Set lock release time on speaker MIHP/6 (via potentiometer P1) to slightly above minimum. Program required lock release time on keypad.

INV   NOR
JUMPER SETTING
Common – NOR

BUZZER

KEYPAD

SW1

J1   + -
1 2 3 4 5 6

Speaker
MIHP/6

P3   P2

EX1 = Door release button
sited internally.
(Normally open contact)

P1   **JUMPER SETTING J9**
Common-NOR

J1
+ −
1 2   1 2 3 4 5   1 2 J3
J2

**POWER SUPPLY
12V DC**

+12v

L   E
N

0v

EX1

12V
Electric
Release

Varistor

**Fail Secure (Locked) -
Power to Unlock**

ELEC/INST/305

Fail Safe Locking
MIHP/6 Speaker Audio System + Keypad

KEYPAD MODULE
30 Codes / 1 Relay

Fail Safe (Open) - Power to Lock

Set lock release time on speaker MIHP/6 (via potentiometer P1) to slightly above minimum. Program required lock release time on keypad.

INV   NOR
JUMPER SETTING
Common – INV

BUZZER

KEYPAD

SW1

J1   + -
1 2 3 4 5 6

Speaker
MIHP/6

P3   P2

EX1 = Door release button
sited internally.
(Normally open contact)

P1   **JUMPER SETTING J9**
Common-NOR

J1
+ −
1 2   1 2 3 4 5   1 2 J3
J2

**POWER SUPPLY
12V DC/1AMP**

+12v

L   E
N

0v

EX1

12V DC
Magnet
or
Fail Safe Release

Varistor

**Fail Safe (Open) -
Power to Lock**

ELEC/INST/306

10
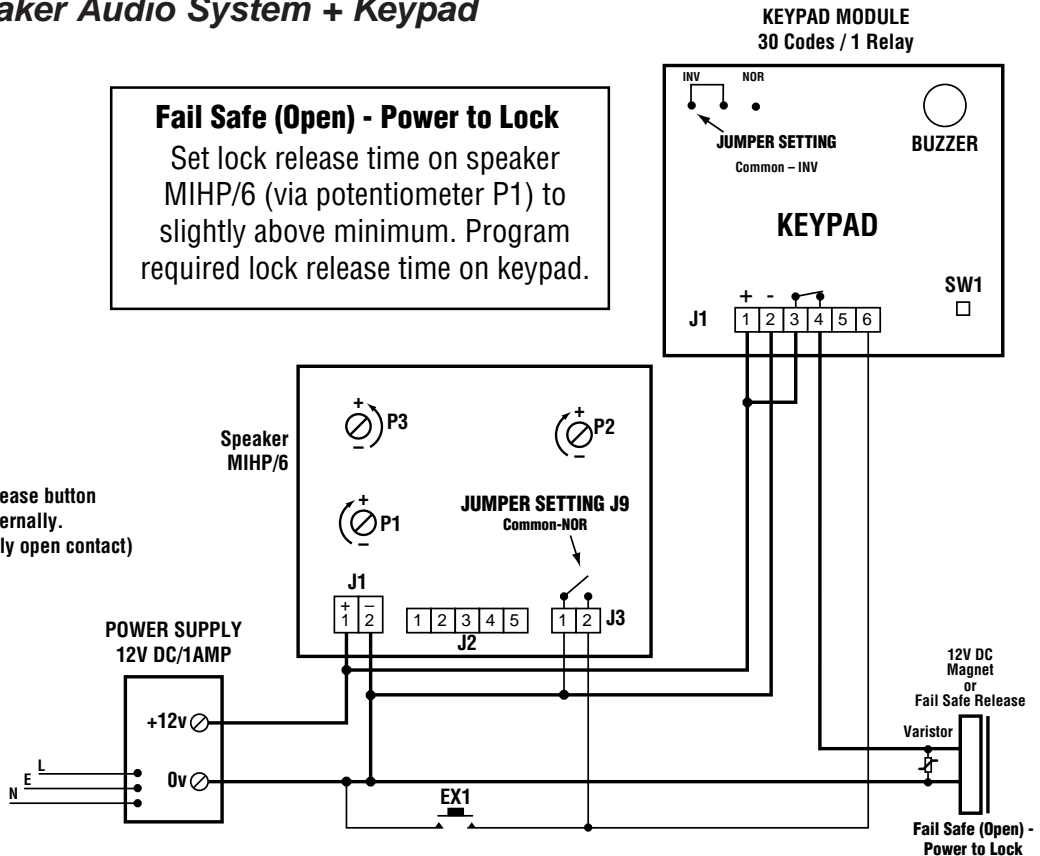
Noralsy Speaker MIHP/6

Audio Entry 3 or 4 Entrances
Automatic Switching

ELEC/INST/304

NORALSY™
MASTERING ACCESS CONTROL™
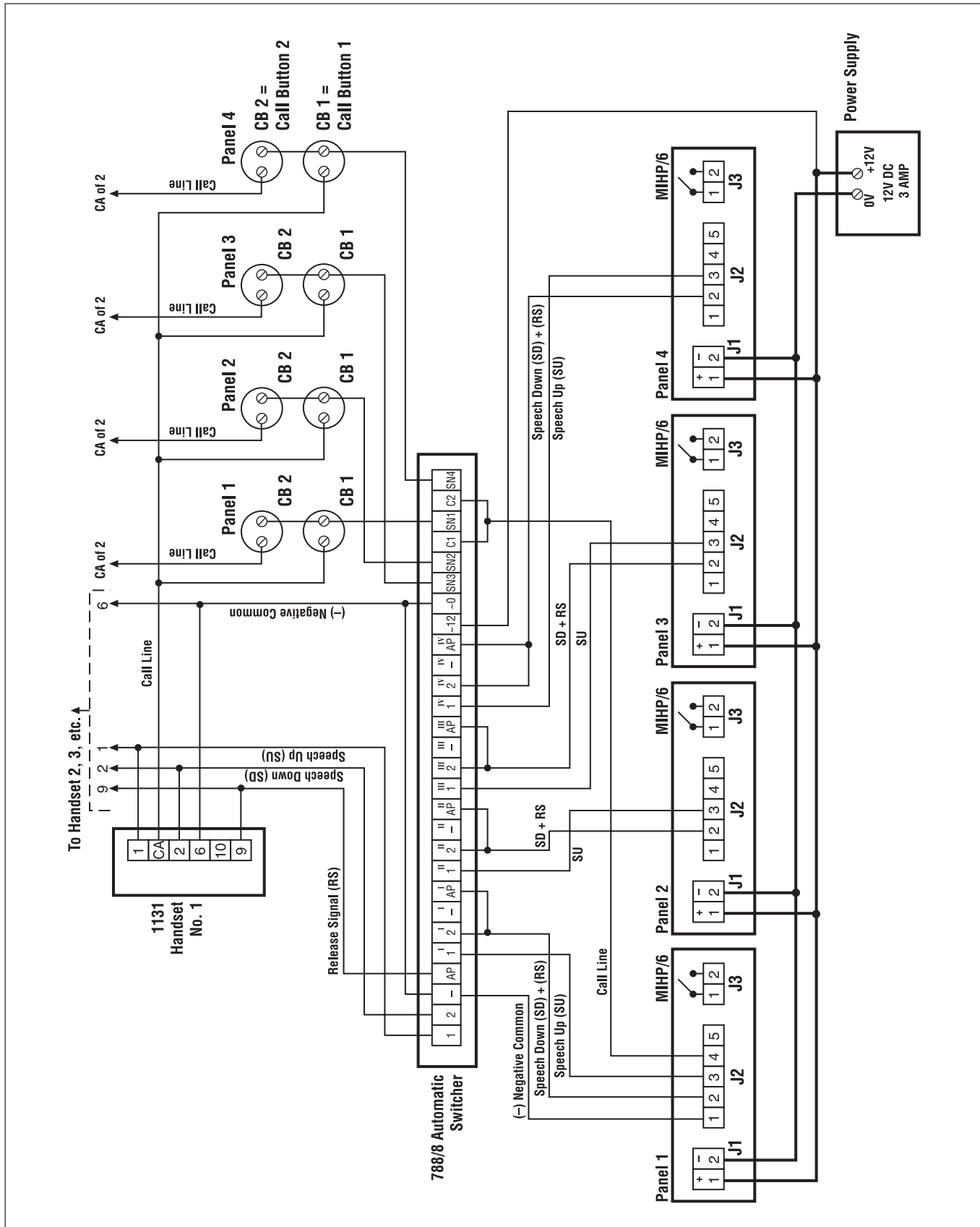
ELEC/INST/304X
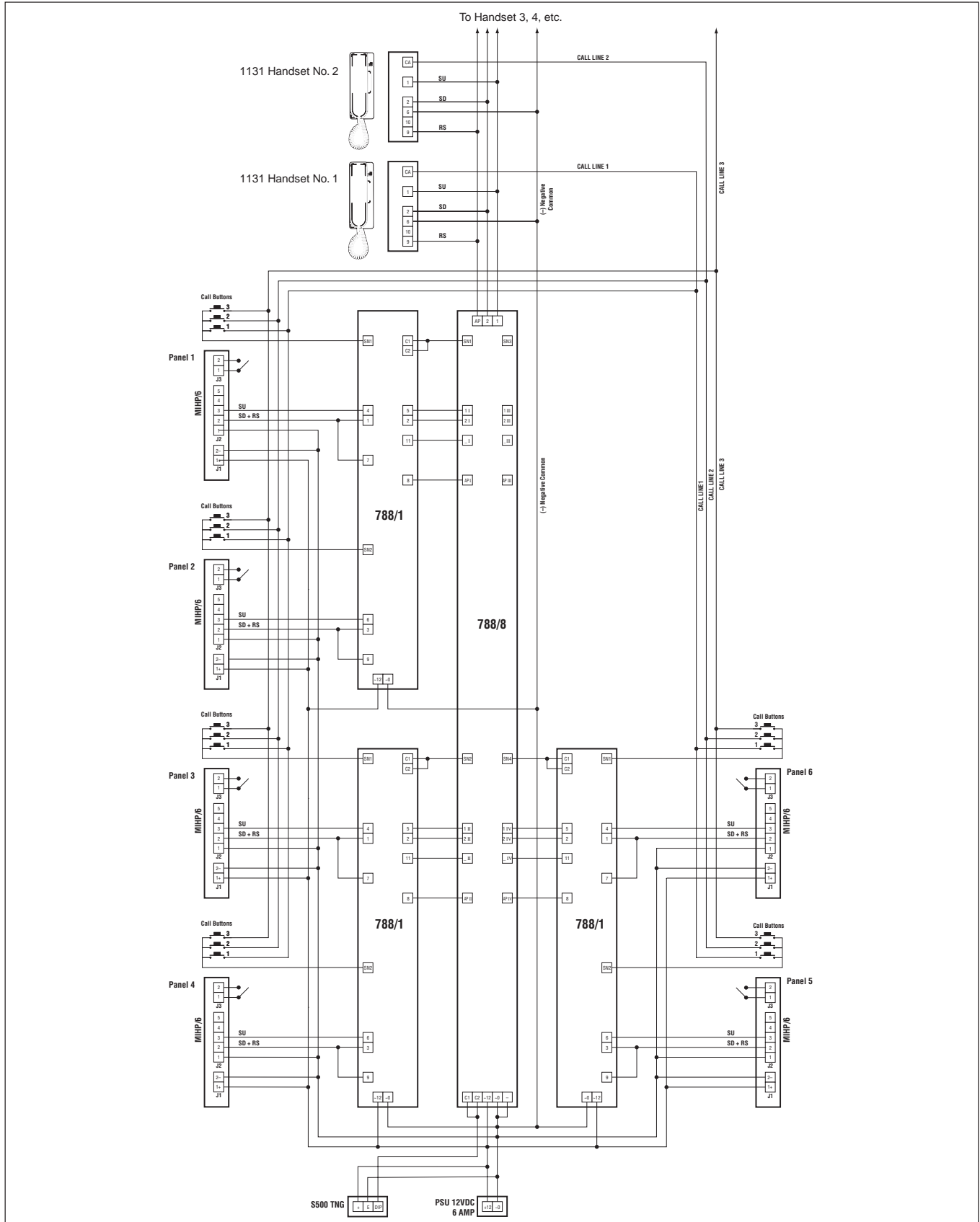
Noralsy Speaker MIHP/6
Audio Entry 7 or 8 Entrances
Automatic Switching

ELEC/INST/304Y

NORALSY™
MASTERING ACCESS CONTROL™

To Handset 3, 4, etc.

1131 Handset No. 2

CALL LINE 2

CA
SU
SD
RS

1131 Handset No. 1

CALL LINE 1

CA
SU
SD
RS

(−) Negative Common

CALL LINE 3

Call Buttons
3
2
1

Call Buttons
3
2
1

Panel 1

MIHP/6

SU
SD + RS

Panel 8

MIHP/6

SU
SD + RS

788/1

788/1

Call Buttons
3
2
1

Call Buttons
3
2
1

Panel 2

MIHP/6

SU
SD + RS

Panel 7

MIHP/6

SU
SD + RS

788/8

Call Buttons
3
2
1

Call Buttons
3
2
1

Panel 3

MIHP/6

SU
SD + RS

Panel 6

MIHP/6

SU
SD + RS

788/1

788/1

Call Buttons
3
2
1

Call Buttons
3
2
1

Panel 4

MIHP/6

SU
SD + RS

Panel 5

MIHP/6

SU
SD + RS

S500 TNG

PSU 12VDC
8 AMP