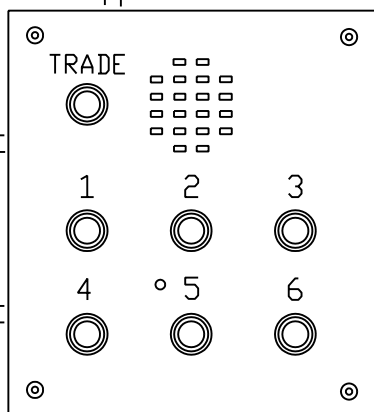


SENTRY 1 FUNCTIONAL SYSTEM

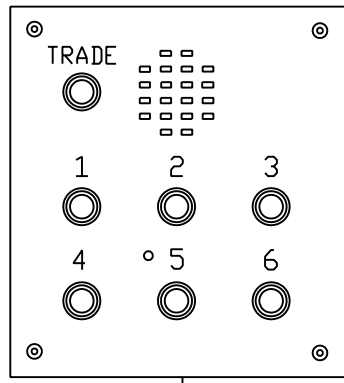
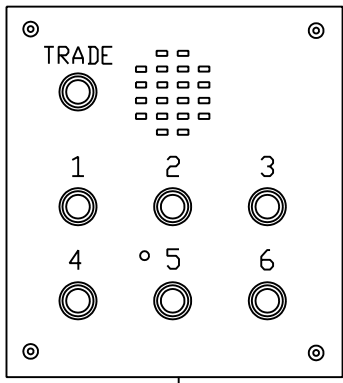


CONTENTS

PAGE 2	-	BLOCK DIAGRAM
PAGE 3-5	-	INTRODUCTION & DESCRIPTION
PAGE 6	-	SENTRY 1 PCB DIAGRAM
PAGE 7-		SENTRY 1 PCB CONNECTIONS
PAGE 8	-	ISOLATION PCB DIAGRAM
PAGE 9	-	ISOLATION PCB DESCRIPTION
PAGE 10	-	INSTALLATION & TESTING
PAGE 11	-	TELEPHONE CHART
PAGE 12	-	ACCESSORIES DIAGRAM
PAGE 13	-	WIRING DIAGRAM (VR PANEL)
PAGE 14	-	WIRING DIAGRAM (ISOLATION)
PAGE 15	-	WIRING DIAGRAM (3 DOOR)
PAGE 16	-	WIRING DIAGRAM (VIDEO)
PAGE 17	-	TROUBLE SHOOTING GUIDE
PAGE 18	-	VR PANEL LAYOUTS
PAGE 19	-	USER INSTRUCTIONS (925MSL)
PAGE 20	-	USER INSTRUCTIONS (940ST)

DOOR 1

DOOR 2



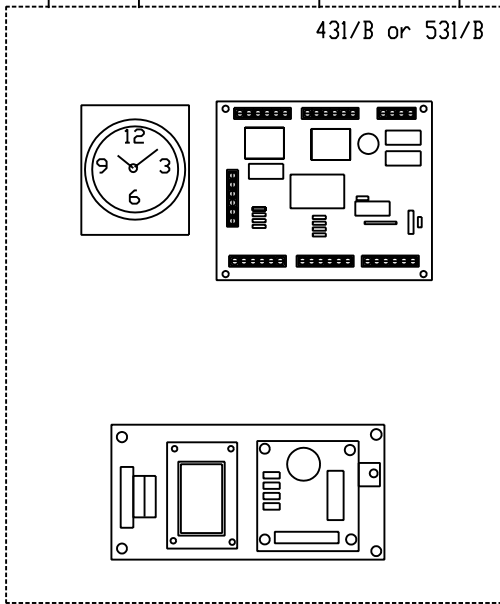
$$8 + n + b + c$$

$$8 + n + b + c$$



$$2 + a$$

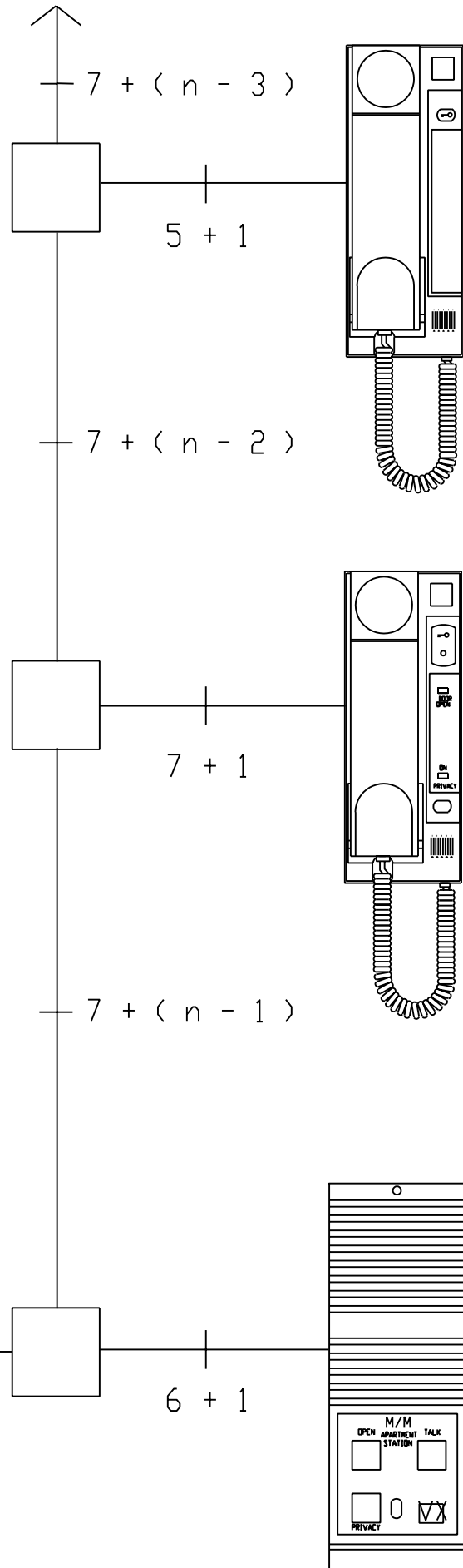
$$2 + a$$



431/B or 531/B

$$7 + n$$

$$6 + 1$$



924S
524S
524MS

940ST
926ST
940MS2L
926MS2L
526ST

500MM
924MSL
524SL

KEY :-

n = NUMBER OF BUTTONS

a = 2 EXTRA WIRES IF THE DOOR IS MONITORED

b = 2 EXTRA WIRES FOR A BUSY LIGHT

c = 2 EXTRA WIRES FOR A FIREMAN SWITCH

SENTRY 1 CONTROL UNIT

Introduction

The information in this manual is intended as an installation and commissioning guide for the sentry 1 system. This manual should be read carefully before the installation commences. Any damage caused to the equipment due to faulty installations where the information in this manual has not been followed is not the responsibility of VIDEX security UK LTD.

Description

The sentry 1 system can be used as a one or two door audio or video system. The system comprises of the functional door panels (with the required number of buttons), a control cabinet, a lock release for each door and the required number of handsets. The following optional extras can also be used with the sentry 1 system :-

- Fireman's switch
- Busy light
- Codelock
- Sentrykey
- Push to exit
- Door monitoring
- Extension speaker
- Extension strobe
- Battery discharge cut off PCB
- Isolation PCB
- Video
- VproX proximity system

The sentry 1 system is a two door functional door entry system which can be expanded to control more doors with the use of additional sentry 1 control PCB's (One required for every two doors).

The Door panel can consist of any number of buttons. The vandal resistant or Brass door panels can be used with this system. The door panel will also include a diode board which is used to indicate to the control PCB which door the call has come from. The door panel can also be extended to include optional extras (i.e. codelock, sentrykey, video etc).

The 431/B control consists of a 24 hour analogue time clock, a 1 amp PSU and the sentry 1 control PCB all within a lockable cabinet. (There is also room within the cabinet for a back up battery (max - 12V 7AH).

The 531/B control cabinet contains the same items as the 431/B, but is IP55 rated.

There is a large range of compatible audio Handsets the system will work with, these are listed in this manual.

Videophones are available with door open button and spare services button. Other options may be available on request.

The heart of the system is the sentry 1 control PCB, which has the following features :-

- ✓ 12V DC operation
- ✓ Voltage free contacts for the lock outputs. (Double pole 5A 30VDC)
- ✓ Timed calltone, speak time and lock open time :-

CALLTONE LENGTH		
SW1	SW2	TIME
ON	OFF	1 SECONDS
OFF	ON	2 SECONDS
OFF	OFF	4 SECONDS
ON	ON	8 SECONDS

SPEECH LENGTH		
SW3	SW4	TIME
ON	OFF	16 SECONDS
OFF	ON	32 SECONDS
OFF	OFF	60 SECONDS
ON	ON	120 SECONDS

LOCK OPEN TIME		
SW5	SW6	TIME
ON	OFF	2 SECONDS
OFF	ON	8 SECONDS
OFF	OFF	16 SECONDS
ON	ON	40 SECONDS

- ✓ Timeclock input
- ✓ Trade button input
- ✓ Busy light output
- ✓ Engaged output (for use with multiple door systems)

Additionally, if video is required on the system an ART893/20 power supply will be required. This power supply will supply a 20V DC output to both the videophones and the camera and will be fitted within the control cabinet.

Operation :-

A call will be activated by a visitor pressing the desired flat number on the door panel. A timed call tone will be heard at the occupants telephone. The videophone will also switch on at this point for the flats with the video facility). A reassurance call tone will also be heard at the door panel to indicate the system has been activated. If the occupant does not answer the telephone, the call will clear down. If the occupant does answer the telephone, the call tone will stop as soon as the handset is lifted. A two way conversation can now take place (This will time out after the preset time). If the occupant does not want to let the caller into the building, the handset would be put back on its cradle. If the occupier does want to let the caller into the building, the lock button would be pressed and the door would open for the preset time. The lock button will not work at any other time.

The trade buttons only works when the time clock is active. At this time when a trade button is pressed the door will open for the preset time.

A busy light would be used when more than one door panel is connected to the system. The busy light will illuminate when a call is activated at any door panel.

The Sentry 1 PCB incorporates four LED's which are used to indicate what state the PCB is in. These LED's are labeled D10, D11, D12, D13. They relate to the following functions :-

D10	:	When this is illuminated, the system is awaiting a call.
D11	:	When this is illuminated, the system is busy.
D12	:	When this is illuminated, the call is from door one.
D13	:	When this is illuminated, the call is from door two.

The Sentry 1 PCB includes a link option (JPR1) which when in position A, the system will only allow one call to be activated at anyone time. The system must time out before another call can be registered. When the link is in position B the system will allow another button to be pressed with out waiting for the system to time out. (The link should only be fitted in position B when the system is being tested or being used as a one door system).

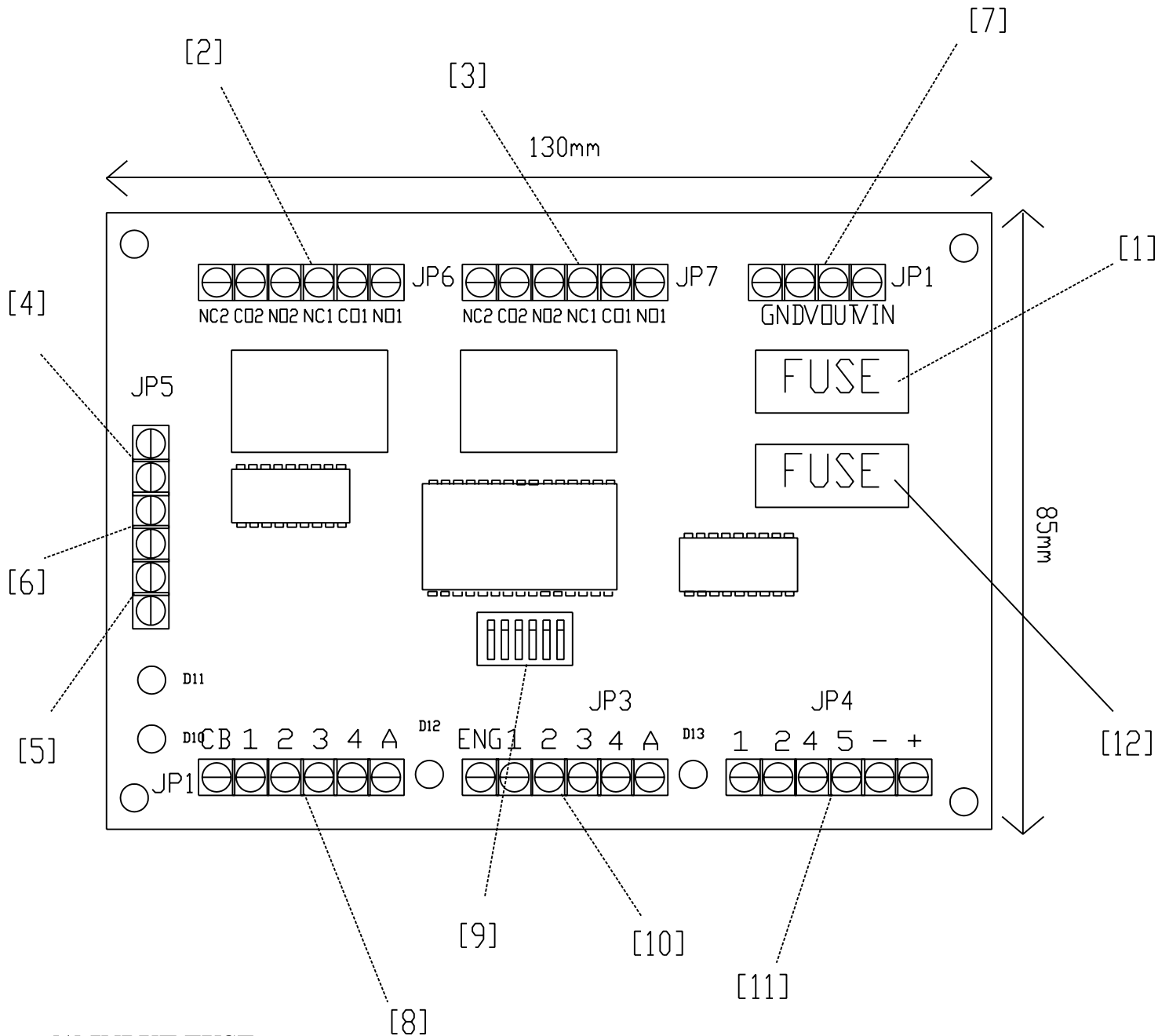
VIDEX run training courses for engineers who have not installed the sentry 1 system before.

Technical help is also available on 0191 224 3174 during office hours (**8:30 - 12:30 and 1:30 - 5:00**).

Technical specification :-

Working voltage	:	12V DC
Current (Quiescent)	:	24mA
Current (During a call)	:	195mA
Current (During door open)	:	165mA (Not including lock)

SENTRY 1 PCB



[1] INPUT FUSE

[7] POWER CONNECTION

[2] LOCK RELAY 1 CONNECTIONS

[8] DOOR 1 AMP CONNECTIONS

[3] LOCK RELAY 2 CONNECTIONS

[9] DIP SWITCH (TIMING)

[4] TRADE BUTTON DOOR 1 CONNECTIONS

[10] DOOR 2 AMP CONNECTIONS

[5] TRADE BUTTON DOOR 2 CONNECTIONS

[11] PHONE COMMONS CONNECTIONS

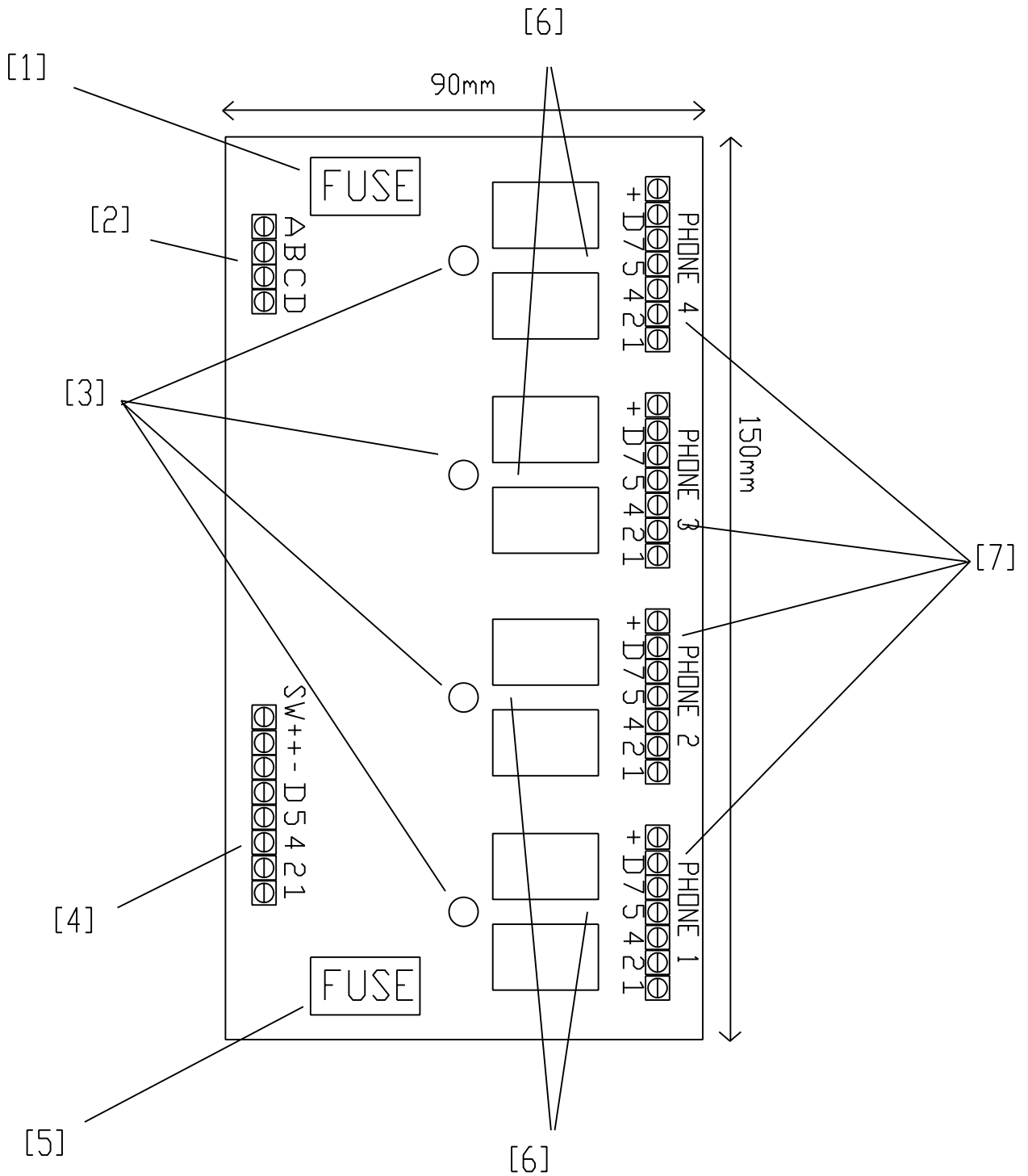
[6] TIMECLOCK INPUT

[12] CALL TONE FUSE

Connections :-

JP1	-	VIN	+ 12 VOLTS SUPPLY
	-	VOUT	+ 12 VOLTS OUT
	-	GND	NEGATIVE SUPPLY
	-	GND	NEGATIVE SUPPLY
JP2	-	CB	BUTTON COMMONS
	-	1	RECEIVE SPEECH (DOOR ONE)
	-	2	TRANSMIT SPEECH (DOOR ONE)
	-	3	SWITCHED + 12 VOLTS, AMP SUPPLY
	-	4	NEGATIVE AMP SUPPLY
	-	A	TRIGGER FROM DOOR ONE
JP3	-	ENG	ENGAGED OUTPUT (HIGH WHEN ENGAGED)
	-	1	RECEIVE SPEECH (DOOR TWO)
	-	2	TRANSMIT SPEECH (DOOR TWO)
	-	3	SWITCHED + 12 VOLTS, AMP SUPPLY
	-	4	NEGATIVE AMP SUPPLY
	-	A	TRIGGER FROM DOOR TWO
JP4	-	1	TRANSMIT SPEECH PHONE CONNECTION
	-	2	RECEIVE SPEECH PHONE CONNECTION
	-	4(T)	CALLTONE TO PHONES
	-	5(P)	LOCK TRIGGER FROM PHONES
	-	7(-)	NEGATIVE TO PHONES
	-	+12V	12 VOLTS SUPPLY TO PHONES
JP5	-	TC1	TRADE BUTTON FOR DOOR ONE
	-	TC1	TRADE BUTTON FOR DOOR ONE
	-	TC2	TRADE BUTTON FOR DOOR TWO
	-	TC2	TRADE BUTTON FOR DOOR TWO
	-	TC3	TIME CLOCK CONNECTION
	-	TC3	TIME CLOCK CONNECTION
JP6	-	NO1	NORMALLY OPEN 1 (LOCK, DOOR 1)
	-	CO1	COMMON 1 (LOCK, DOOR 1)
	-	NC1	NORMALLY CLOSED 1 (LOCK, DOOR 1)
	-	NO2	NORMALLY OPEN 2 (LOCK, DOOR 1)
	-	CO2	COMMON 2 (LOCK, DOOR 1)
	-	NC2	NORMALLY CLOSED 2 (LOCK, DOOR 1)
JP7	-	NO1	NORMALLY OPEN 1 (LOCK, DOOR 2)
	-	CO1	COMMON 1 (LOCK, DOOR 2)
	-	NC1	NORMALLY CLOSED 1 (LOCK, DOOR 2)
	-	NO2	NORMALLY OPEN 2 (LOCK, DOOR 2)
	-	CO2	COMMON 2 (LOCK, DOOR 2)
	-	NC2	NORMALLY CLOSED 2 (LOCK, DOOR 2)

ISOLATION PCB



[1] +12V PROTECTION FUSE

[2] SELECT INPUTS

[3] LED INDICATION

[4] COMMON PHONE INPUT CONNECTIONS

[5] DOOR MONITOR LED PROTECTION FUSE

[6] ISOLATION RELAYS

[7] OUTPUT CONNECTIONS TO PHONES

4 WAY ISOLATION PCB

Description :-

- One PCB required for every four handsets.
- Isolates the speech, lock and call lines with the use of relays.
- protects the +12v supply and door monitoring line with fuses.
- There are LED's on the isolation PCB to indicate which phone has been enabled.
- All connections are via plugs.

Operation :-

The selects from the call buttons all go to a separate outputs on JP6 (either A,B,C or D). When one of these outputs goes high (i.e. with a call to that output), a thyristor on the isolation PCB is triggered, which in turn energises the relays for that handset. Each of the four outputs on the isolation PCB have two relays which reconnects the connections on JP1 with the connections on that phone output (either JP2, JP3, JP4 or JP5). The thyristor is held on by the voltage on the SW+ terminal on JP1. This voltage is only there when a call is in progress.

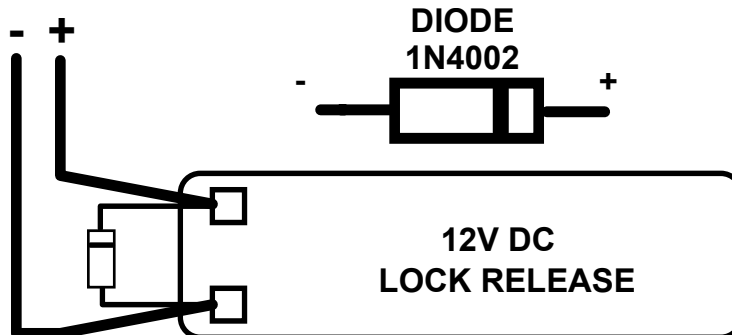
Technical specification

Number of users	:	4
Input voltage	:	12VDC
Current (Quiescent)	:	0mA
Current (During call)	:	47.6mA

Installation

The wiring diagrams in the manual should be followed carefully. heavy duty conductors on wiring diagrams are shown heavily outlined, These wires should be doubled up.

Lock release back EMF protection : A diode must be fitted across the terminals on the lock release to suppress back EMF voltages. The diagram below shows the polarity of the diode when fitted to the release.



Cable size and type : When running cables for any intercom system, these cables must be installed separately from the mains cables. All multipair cables should be to CW1308 specification. (0.5mm twisted pair telephone cable). Max resistance = 10 Ohm.

Lock release wires should be doubled up. Max resistance = 3 Ohm

The cables sizes above can be used for distances up to 100m. On distances above 100m the cable sizes should be increased to keep the overall resistance of the cable below the RESISTANCES indicated above.

Safety Note : The earth wire from the cabinet lid should be connected to the cabinet base and then to the earth connection in the building. This should be checked for continuity.

Testing the installation :-

Check all the connections have been made correctly and then power up.

Call all the apartments in turn. Check for call tone to the apartment, speech in both directions and lock release.

If the volume of speech needs to be adjusted, this can be done by adjusting the presets on the rear of the amplifier at the door panel. (Repeat the above for door two).

If the call tone volume needs adjusting this can be done at each handset (Jumper marked VOL).

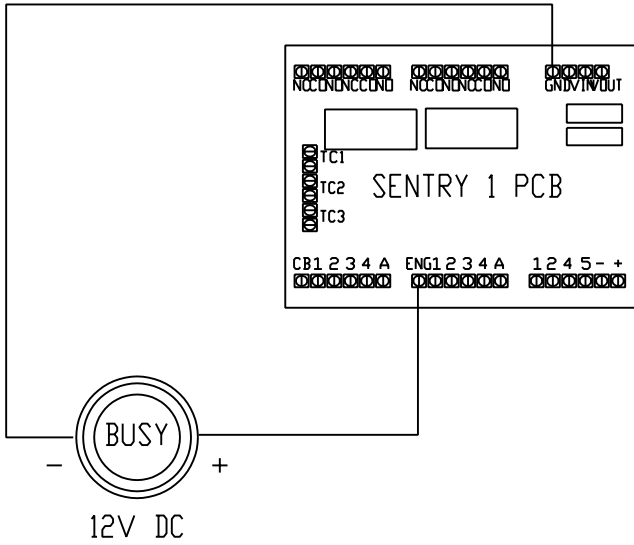
Check the fireman switch (If fitted).

Set the time clock on, off times. Check the trade button only works when the time clock is on.

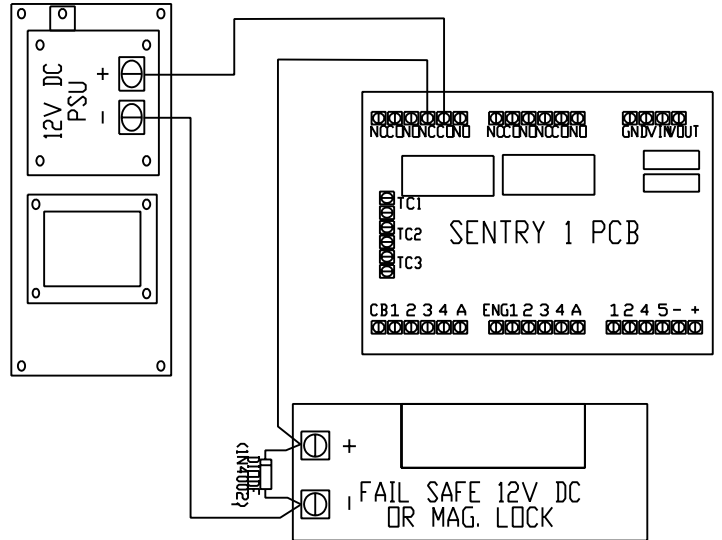
THE FOLLOWING HANDSETS ARE COMPATIBLE WITH THE SENTRY 1 SYSTEM

TYPE	TRANSMIT SPEECH	RECEIVE SPEECH	CALLTONE	LOCK RELEASE	NEGATIVE	SELECT	SUPPLY	DOOR MONITOR
524S	1	2	4H OR 4L	5	7	6	N/A	N/A
524MS	1	2	4H OR 4L	5	7M	6	N/A	N/A
524SL	1	2	4H OR 4L	5	7	6	N/A	D
524MSL	1	2	4H OR 4L	5	7M	6	12V MUTE LED	N/A
526ST	1	2	T	P	[-]	6	+12V	D
924S	1	2	T	P	[-]	6	N/A	N/A
924MSL	1	2	T	P	[-]	C	+12V	N/A
940MS2L	1	2	T	P	[-]	C	+12V	D
940ST	1	2	T	P	[-]	C	+12V	D
500MM	1	2	T	P	[-]	C	+12V	N/A

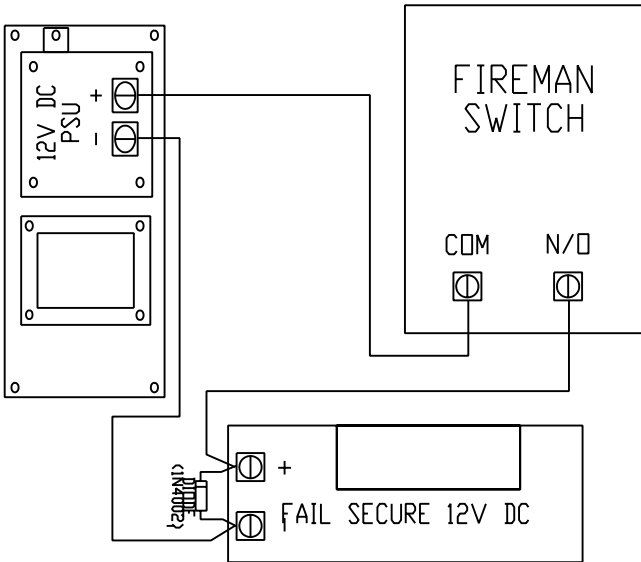
BUSY LAMP



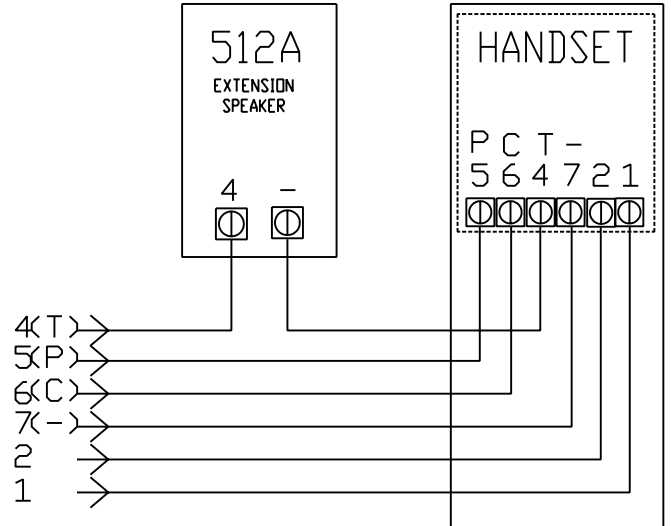
FAIL SAFE LOCK RELEASE



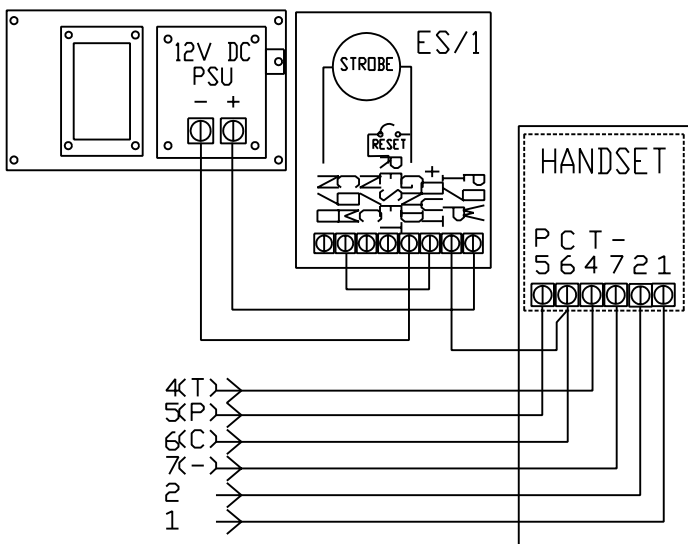
FIREMAN SWITCH



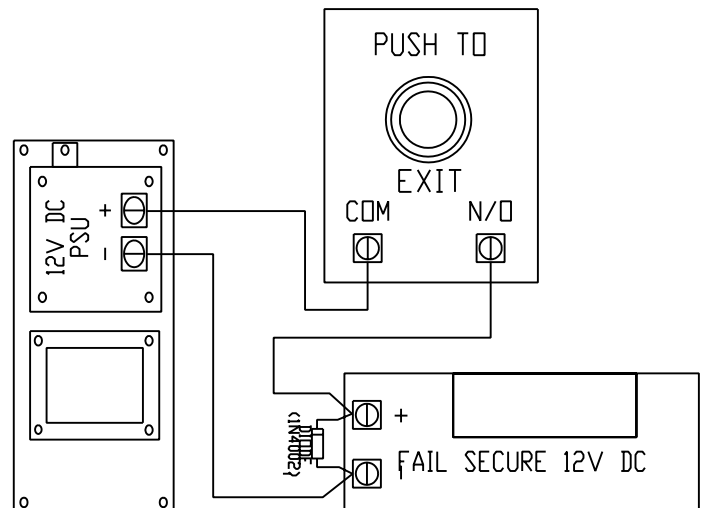
EXTENSION SPEAKER

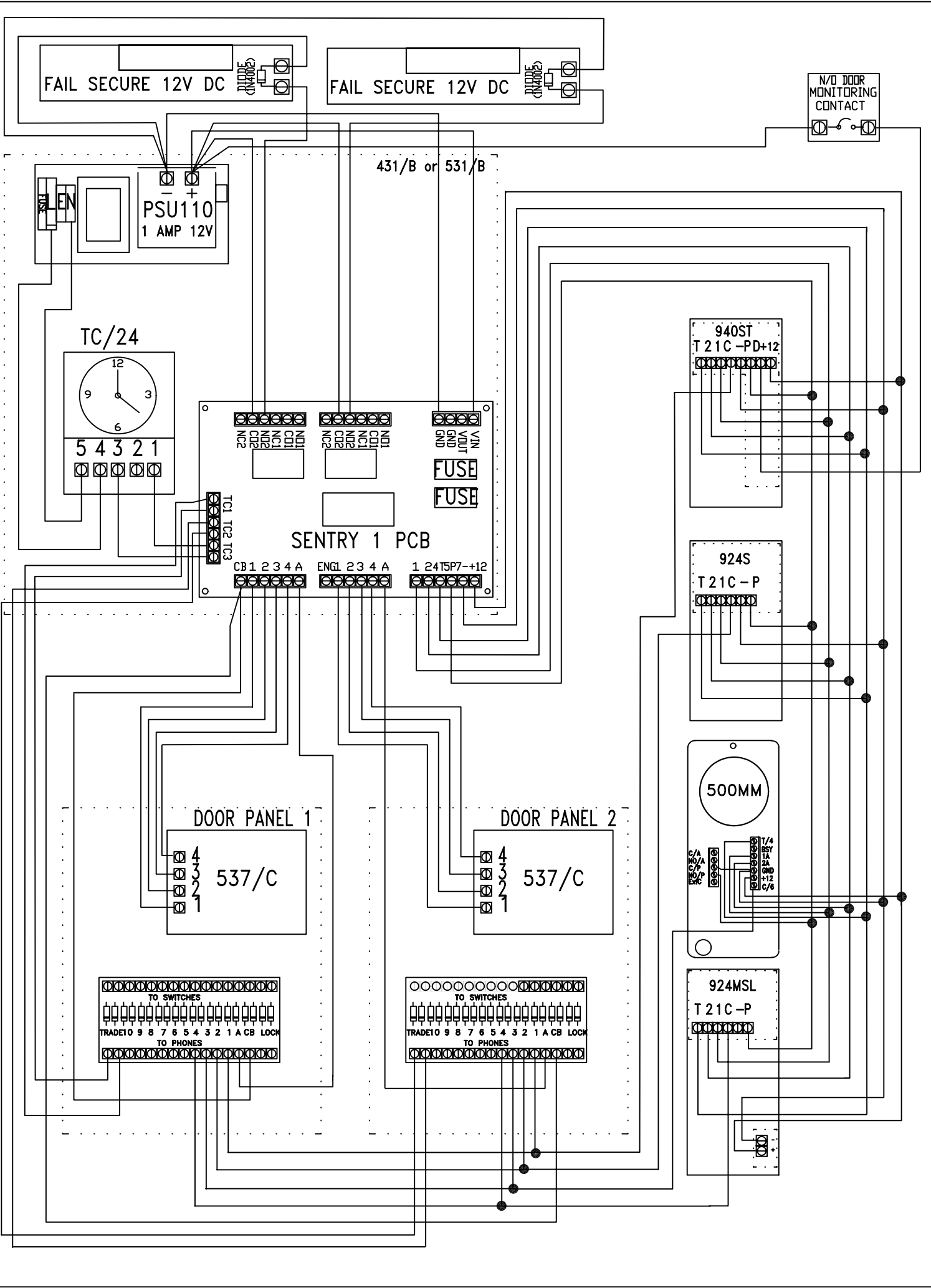


EXTENSION STROBE



PUSH TO EXIT





FAIL SECURE 12V DC

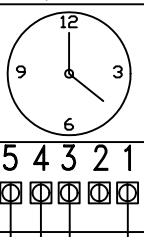
FAIL SECURE 12V DC

N/O DOOR MONITORING CONTACT

PSU110
1 AMP 12V

431/B or 531/B

TC/24



SENTRY 1 PCB

940ST
T 21C -PD+12

924S
T 21C -P

DOOR PANEL 1

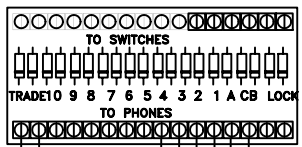
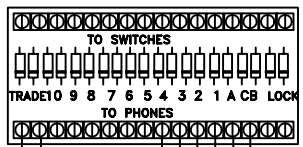
537/C

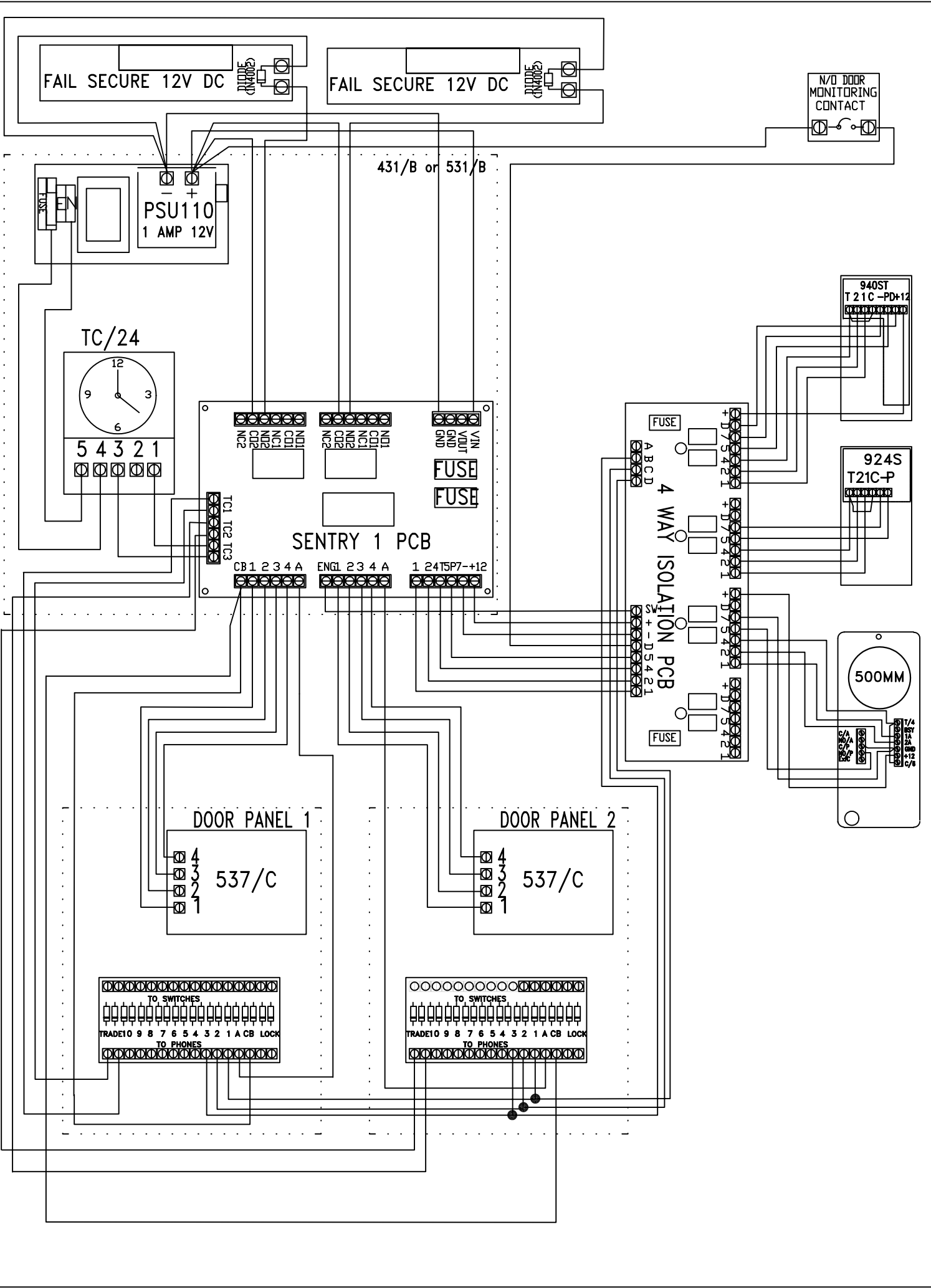
DOOR PANEL 2

537/C

500MM

924MSL
T 21C -P





FAIL SECURE 12V DC

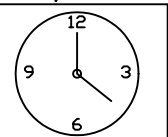
FAIL SECURE 12V DC

N/O DOOR MONITORING CONTACT

PSU110
1 AMP 12V

431/B or 531/B

TC/24



NDI NC1 NC2
ENGI EN1 EN2
CB CB1 CB2 CB3 CB4

SENTRY 1 PCB

1 2 3 4 A ENGI 2 3 4 A 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 T5P7-+12

FUSE
FUSE

FUSE

FUSE

FUSE

4 WAY ISOLATION PCB

940ST
T 21C -PD+12

924S
T21C-P

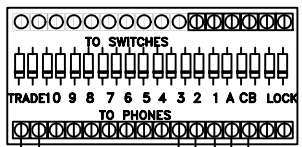
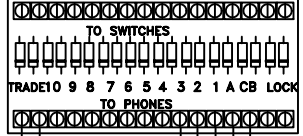
500MM

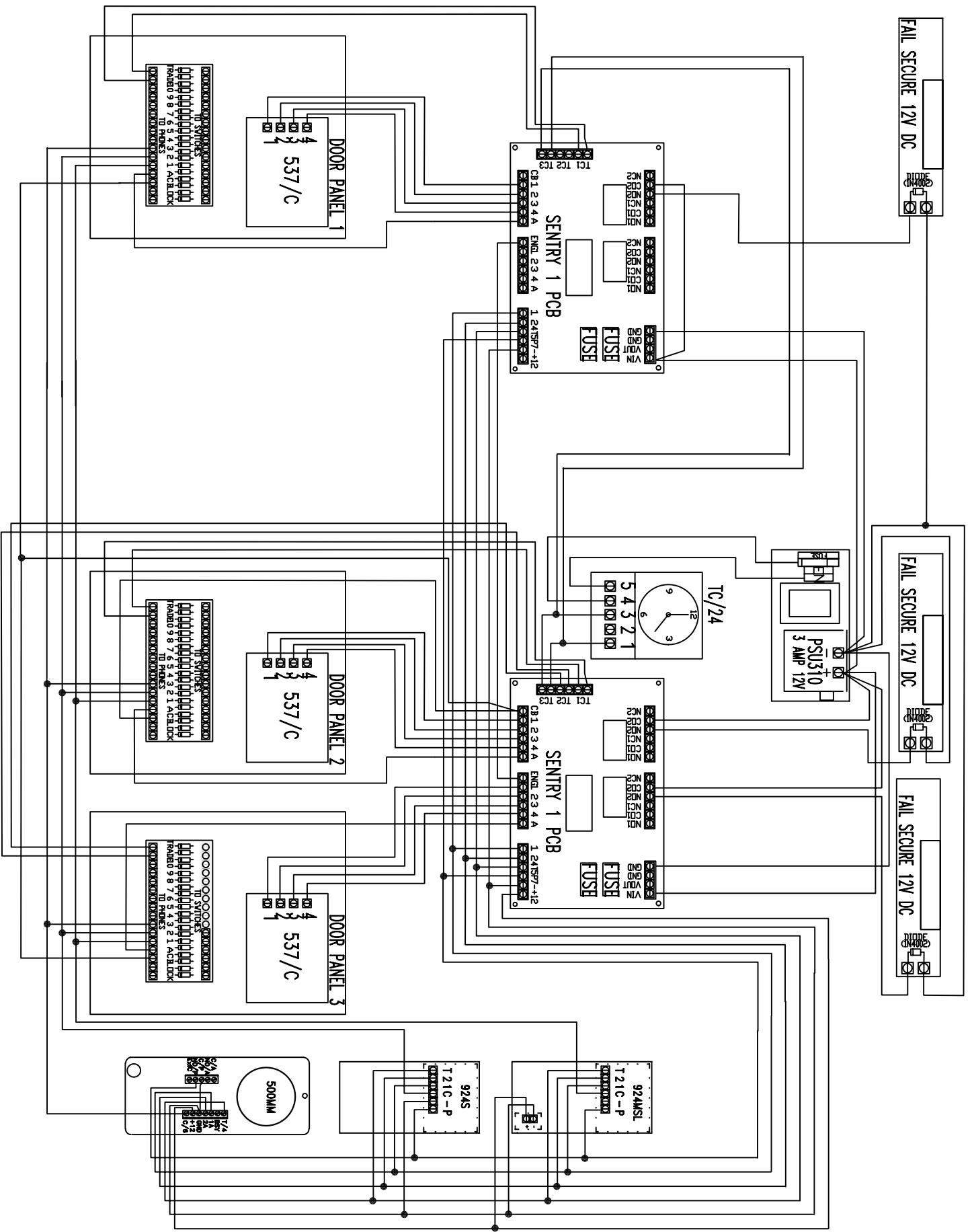
DOOR PANEL 1

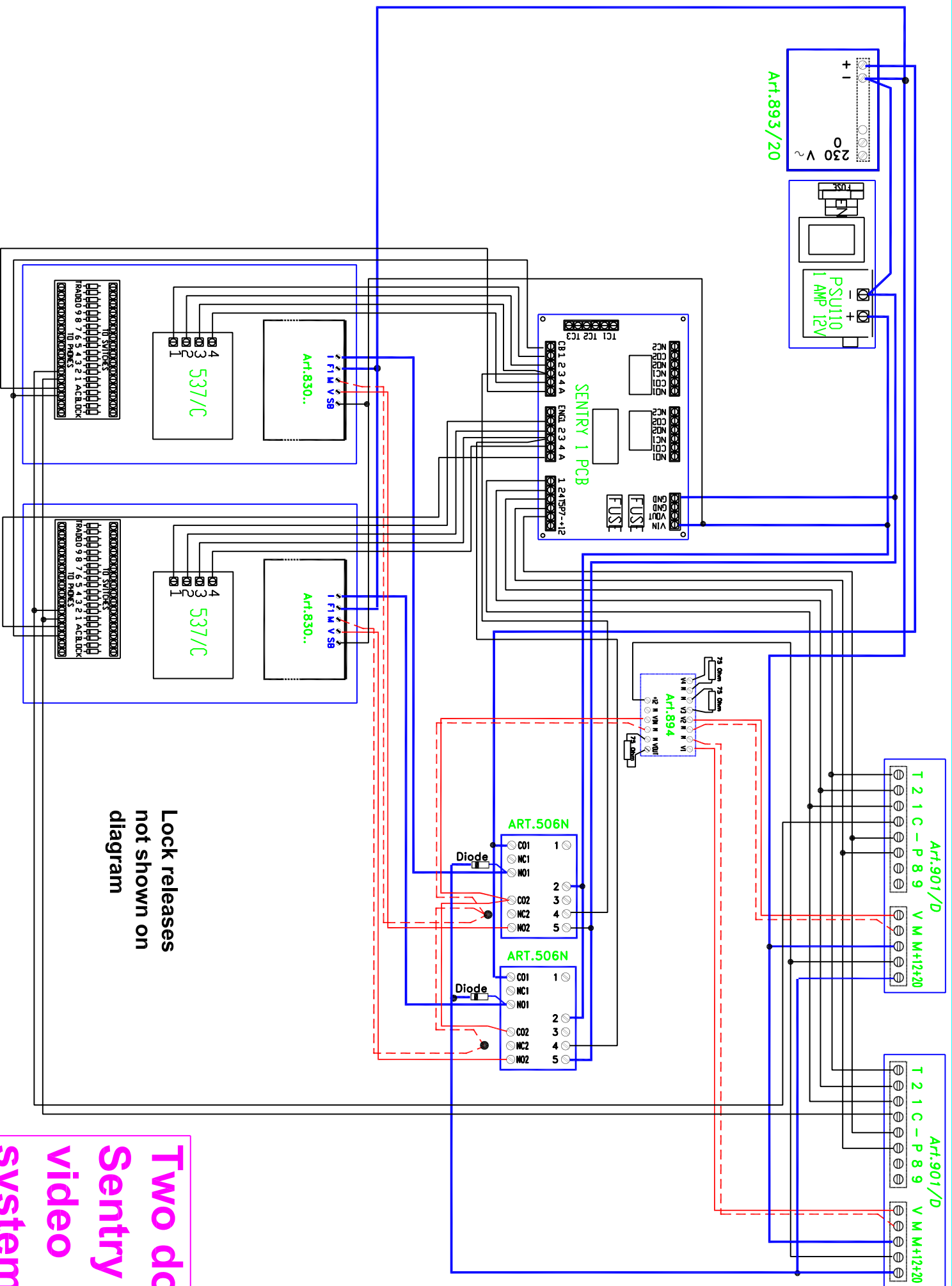
537/C

DOOR PANEL 2

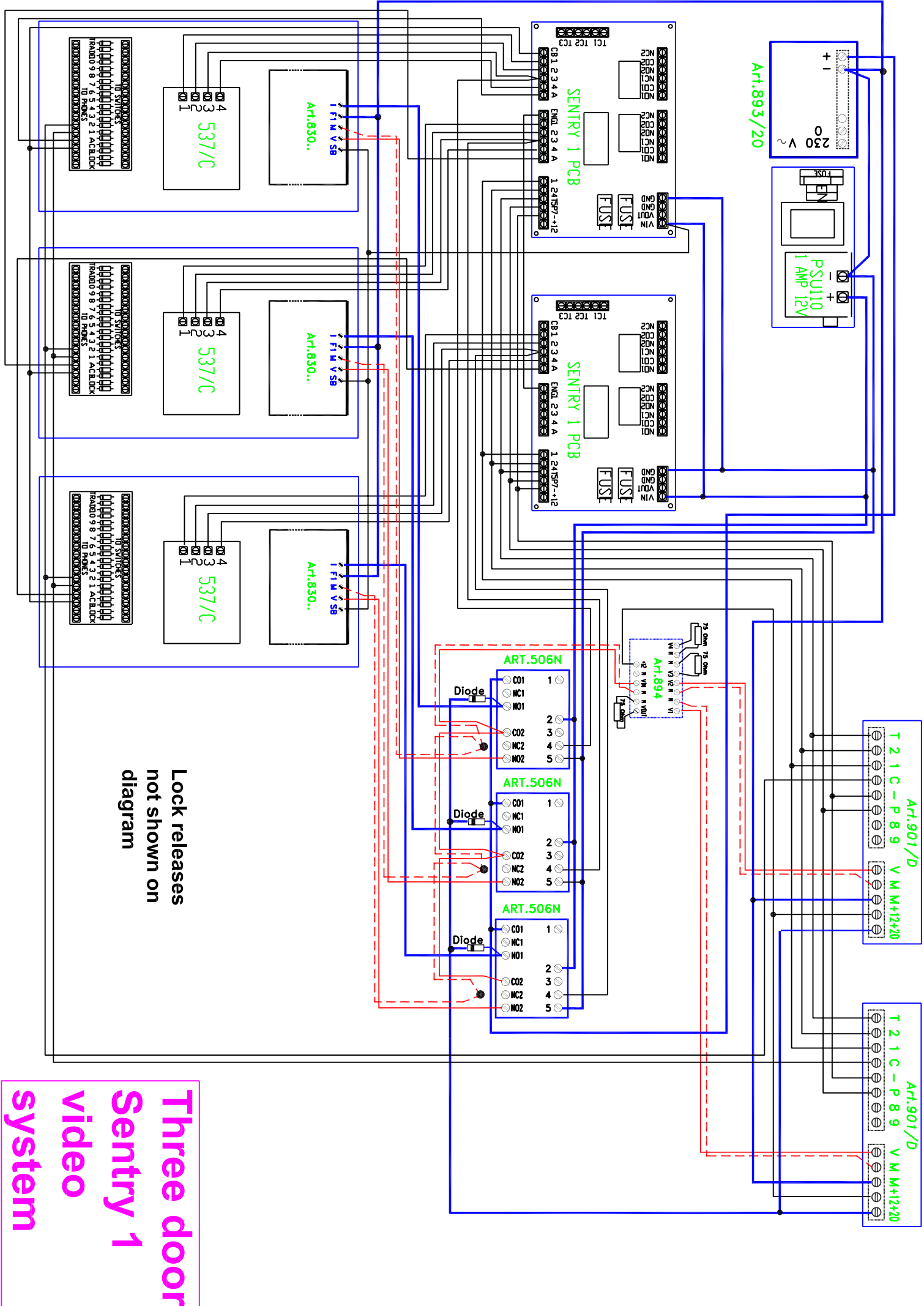
537/C







Two door
Sentry 1
video
system



Lock releases
not shown on
diagram

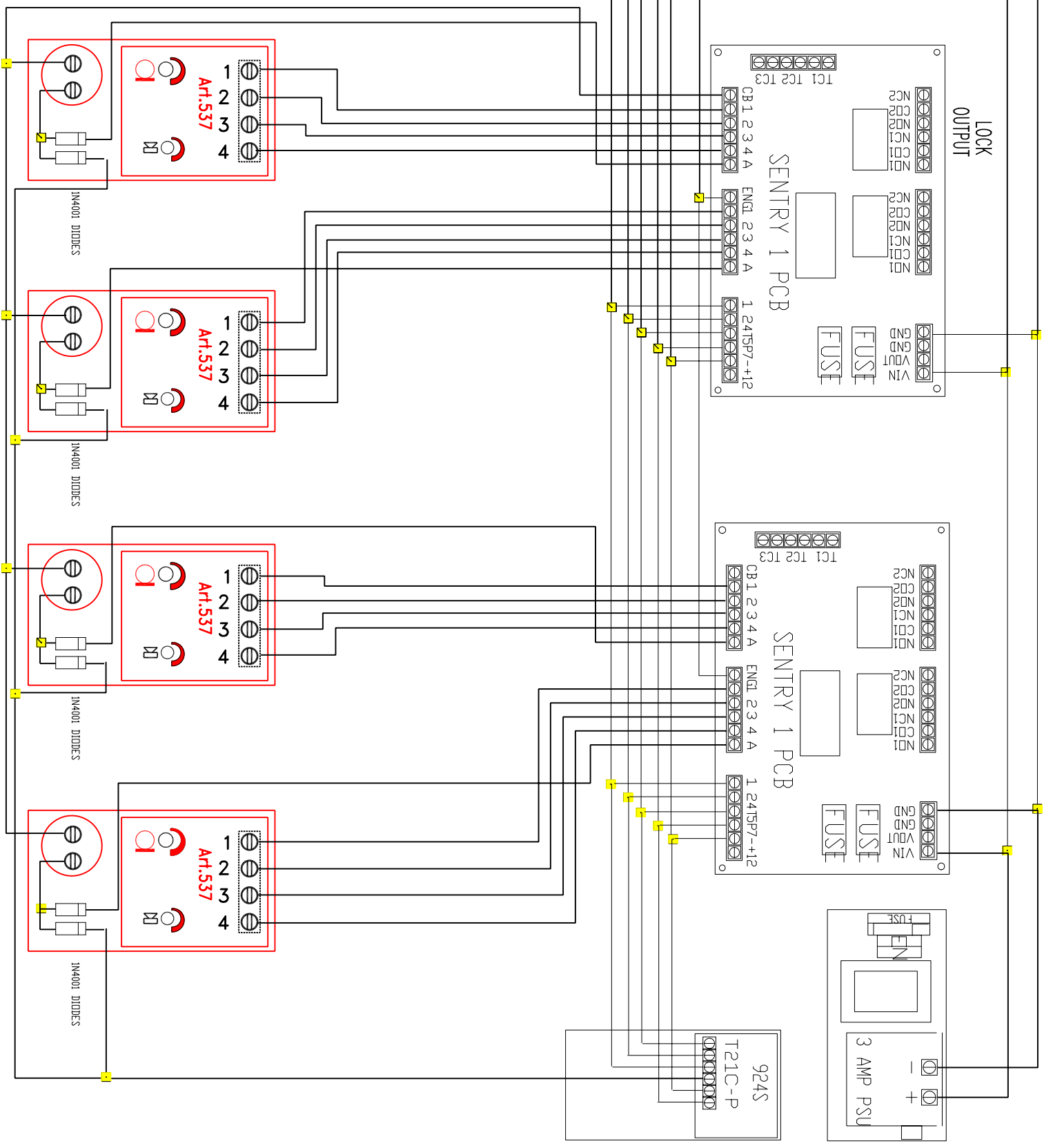
**Three door
Sentry 1
video
system**

GND

Vin

NEXT SENTRY 1

ENG
-(7)
5(P)
4(T)
2
1



TROUBLE SHOOTING GUIDE

When trouble shooting a large system, it will be easier to break the system down to a manageable size. The simplest way to do this is to remove all but one handset. Doing this, you can confirm the door panel and control cabinet are free from faults. Once this has been confirmed you can reconnect the handsets in small sets, testing after each set to see if the fault has re-appeared.

No speech from door panel : Check terminal 2 on the amplifier for continuity back to the sentry 1 PCB. Check terminal 2 on the handset for continuity back to the sentry 1 PCB.

No speech from handset : Check terminal 1 on the amplifier for continuity back to the sentry 1 PCB. Check terminal 1 on the handset for continuity back to the sentry 1 PCB.

Handset beeps only once : Check the voltage across terminals 3 & 4 on the door amplifier. This voltage will be 12V DC when a call is activated.

Handset rings for only 1 second : Check terminal 1 of the amp for continuity back to the sentry 1 PCB. Check terminal 1 of the handset for continuity back to the sentry 1 PCB.

Phone does not stop ringing when handset is lifted : Check terminal 2 on handset for continuity back to the sentry 1 PCB.

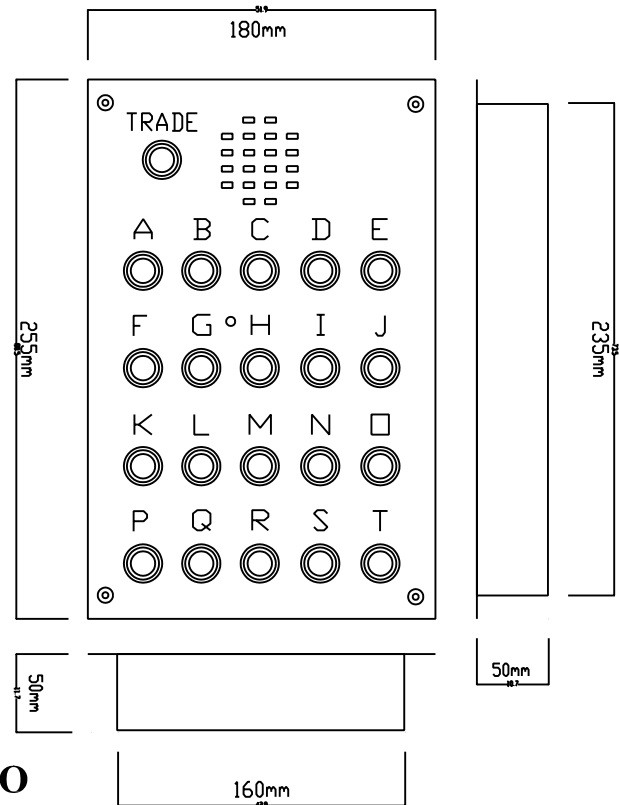
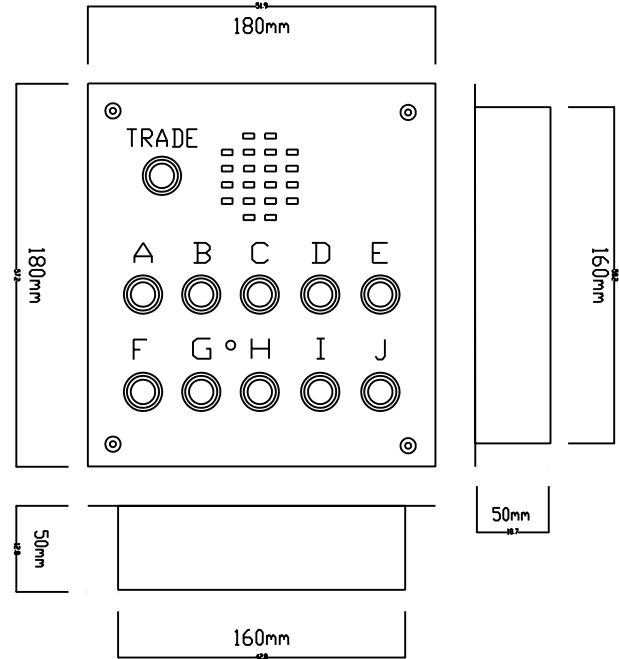
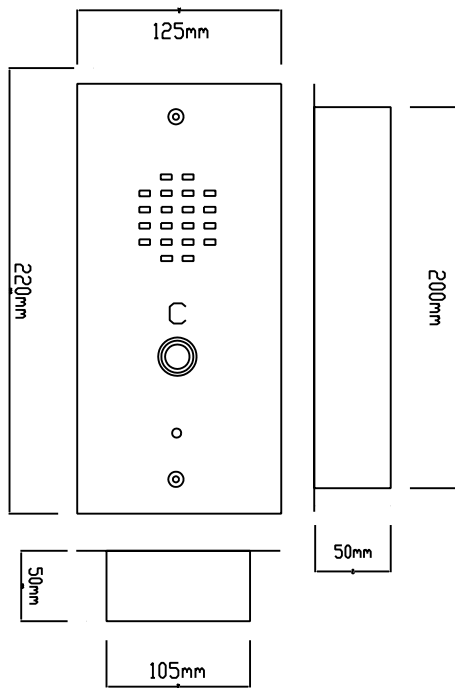
Lock will not operate : Check the relay is activating on the sentry 1 PCB (If it is not, check terminal 5 on the handset for continuity back to the sentry PCB). Check the voltage across the release when the relay is activated).

Lock operates as soon as the handset is lifted : There is a short between terminals 5 and 2 on the handset cables.

When any button is pressed nothing happens : Check the CB connection on the sentry 1 PCB (The voltage on this terminal should be +12V DC). Also check this at the door panel.

No calltone to the handset (speech and lock ok) : Check terminal 4(T) on the handset for continuity back to the sentry 1 PCB.

Hum on the speech lines : Check the intercom cables are not running close to any high voltage or mains cables.



1 BUTTON = C

2 BUTTON = B, D

3 BUTTON = A, C, E

4 BUTTON = B, D, G, I

5 BUTTON = A, C, E, G, I

6 BUTTON = A, C, E, F, H, J

7 BUTTON = A, B, C, D, E, G, I

8 BUTTON = A, B, C, D, E, G, H, I

9 BUTTON = A, B, C, D, E, F, G, I, J

10 BUTTON = A, B, C, D, E, F, G, H, I, J

11 BUTTON = A, C, E, F, H, J, K, M, O, Q, S

12 BUTTON = A, C, E, F, H, J, K, M, O, P, R, T

13 BUTTON = A, C, E, F, H, J, K, M, O, P, Q, S, T

14 BUTTON = A, C, E, F, H, J, K, M, O, P, Q, R, S, T

15 BUTTON = A, B, C, D, E, F, G, H, I, J, K, L, M, N, O

16 BUTTON = A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, R

17 BUTTON = A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, Q, S

18 BUTTON = A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, R, T

19 BUTTON = A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, S, T

20 BUTTON = A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T

VIDEX

USER INSTRUCTIONS

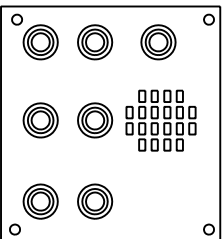


SENTRY 1
FUNCTIONAL
(924MSL
TELEPHONE)

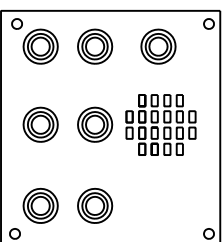
VXWVD10072

CALLING AN APARTMENT

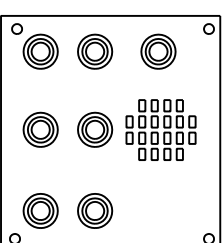
PRESS THE FLAT NUMBER YOU WISH TO CALL AND WAIT. AN AUDIBLE TONE WILL BE HEARD FROM THE DOOR PANEL



WHEN THE TENANT ANSWERS, SPEECH MAY TAKE PLACE

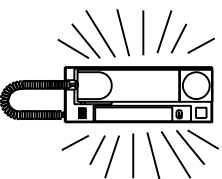


IF THE TENANT GRANTS YOU ACCESS, AN AUDIBLE TONE WILL BE HEARD AND YOU MAY ENTER THE BUILDING. BE SURE TO CLOSE THE DOOR BEHIND YOU.

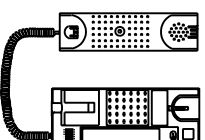


ANSWERING A CALL

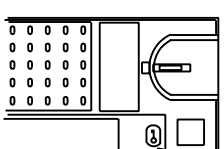
WHEN A CALL IS PLACED TO YOUR APARTMENT, AN AUDIBLE TONE WILL BE HEARD FROM THE HANDSET.



PICKUP THE HANDSET AND SPEAK TO THE CALLER



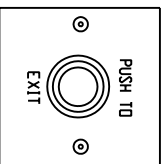
IF YOU WISH TO LET THE CALLER GAIN ACCESS, PRESS THE 'DOOR OPEN' BUTTON ON THE HANDSET. IF YOU DO NOT WISH TO LET THE CALLER GAIN ACCESS, SIMPLY HANG UP.



DOOR OPEN BUTTON

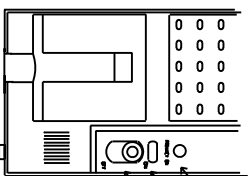
EXITING THE BUILDING

TO EXIT THE BUILDING, PRESS THE 'PUSH TO EXIT' BUTTON. THE DOOR WILL OPEN AND YOU MAY EXIT THE BUILDING.



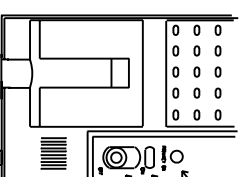
USING THE NUISANCE SWITCH

WHEN THE SWITCH IS IN THE UP POSITION, THE RED LIGHT IS OFF AND YOU CAN RECEIVE CALLS FROM THE DOOR PANEL(S). TO SWITCH THE PHONE OFF, PUSH THE SWITCH DOWN.



RED LIGHT OFF
WHITE SWITCH IN THE UP POSITION

WHEN THE SWITCH IS IN THE DOWN POSITION, THE RED LIGHT IS ON AND WILL NOT RECEIVE CALLS FROM THE DOOR PANEL(S). WHEN YOU WANT TO RECEIVE CALLS AGAIN, PUSH THE SWITCH UP.



RED LIGHT ON
RED SWITCH IN THE DOWN POSITION

CALLING AN APARTMENT

PRESS THE FLAT NUMBER YOU WISH TO CALL AND WAIT. AN AUDIBLE TONE WILL BE HEARD FROM THE DOOR PANEL

WHEN THE TENENT ANSWERS, SPEECH MAY TAKE PLACE

IF THE TENENT GRANTS YOU ACCESS, AN AUDIBLE TONE WILL BE HEARD AND YOU MAY ENTER THE BUILDING. BE SURE TO CLOSE THE DOOR BEHIND YOU.

TIONAL
(940ST
TELEPHONE)

VXWD10073

ANSWERING A CALL

WHEN A CALL IS PLACED TO YOUR APARTMENT, AN AUDIBLE TONE WILL BE HEARD FROM THE HANDSET.

PICKUP THE HANDSET AND SPEAK TO THE CALLER

IF YOU WISH TO LET THE CALLER GAIN ACCESS, PRESS THE 'DOOR OPEN' BUTTON ON THE HANDSET. IF YOU DO NOT WISH TO LET THE CALLER GAIN ACCESS, SIMPLY HANG UP.

DOOR OPEN BUTTON

EXITING THE BUILDING

TO EXIT THE BUILDING, PRESS THE 'PUSH TO EXIT' BUTTON. THE DOOR WILL OPEN AND YOU MAY EXIT THE BUILDING.

USING THE NUISANCE SWITCH

WHEN THE RED LIGHT IS OFF YOU CAN RECEIVE CALLS FROM THE DOOR PANEL(S). TO SWITCH THE PHONE OFF, PRESS THE SWITCH ONCE.

RED LIGHT OFF
SWITCH

WHEN THE RED LIGHT IS ON YOU WILL NOT RECEIVE CALLS FROM THE DOOR PANEL(S). WHEN YOU WANT TO RECEIVE CALLS AGAIN, PRESS THE SWITCH ONCE.

RED LIGHT ON
SWITCH

NOTE: IF THE NUISANCE SWITCH IS NOT SWITCHED OFF, IT WILL SWITCH OFF AFTER A PRESET TIME.