AUDIO & VIDEO CONTROL CABINETS
(2291A, 2291A4, 2291A8, 2291A12, 2291AB, 2291V, 2291V4, 2291V8, 2291V12 & 2291VB)

VIDEX

WARNING!
ISOLATE MAINS
BEFORE REMOVING
COVER

WARNING!
ISOLATE MAINS
BEFORE REMOVING
COVER
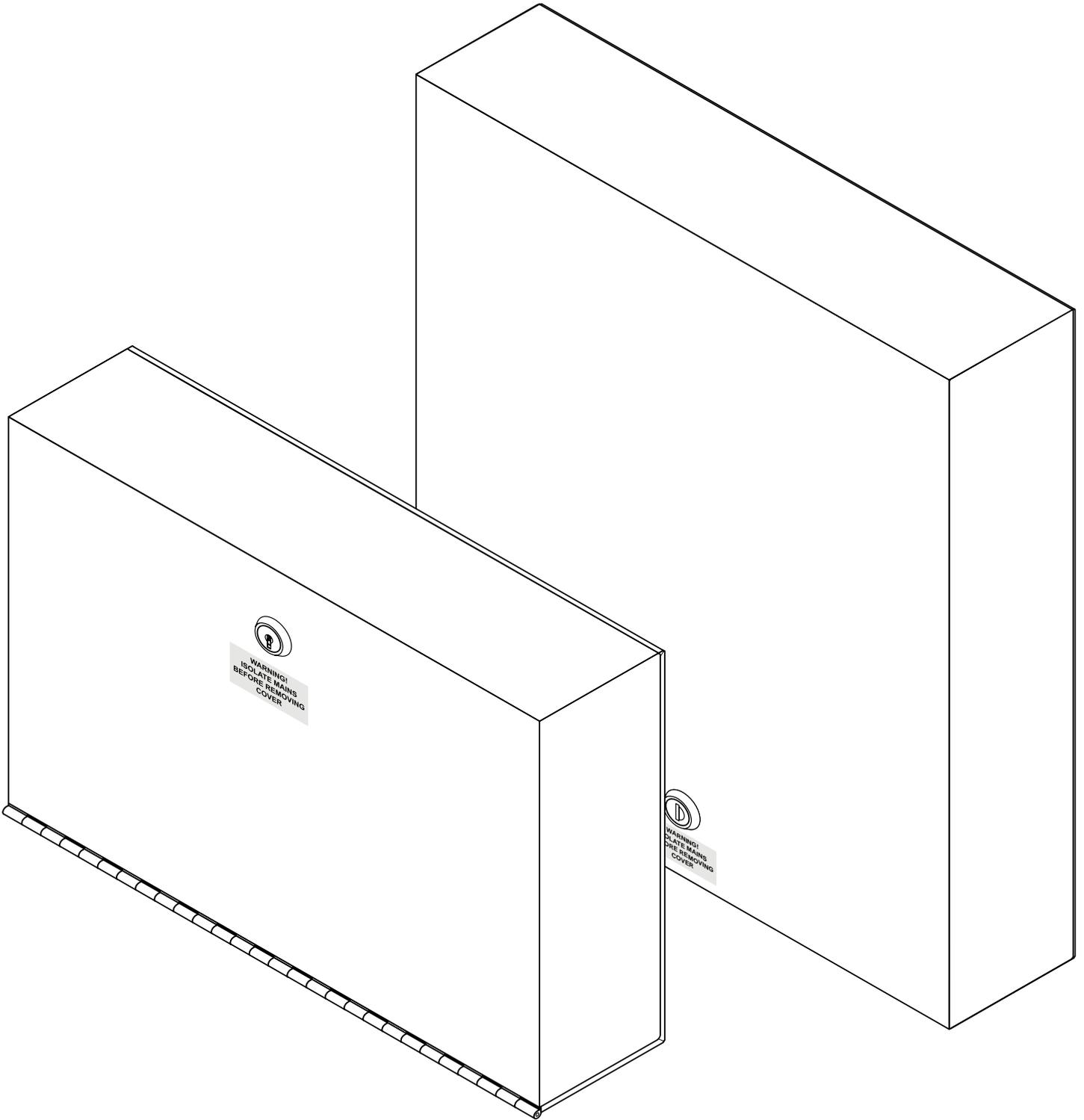
Technical Manual

⚠️ **WE RECOMMEND**
This equipment is installed by a Competent Electrician, Security or Communications Engineer.

VIDEX SECURITY LTD

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CE

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CONTENTS

MANUAL INTRODUCTION

The information in this manual is intended as an installation and commissioning guide for the following multiple entrance control cabinets: **2291A, 2291A4, 2291A8, 2291A12, 2291AB, 2291V, 2291V4, 2291V8, 2291V12 and 2291VB.** This manual should be read carefully before the installation commences. Any damage caused to the equipment due to faulty installation where the information in this manual has not been followed is not the responsibility of Videx Security Ltd.

It is recommended that the cabinet is installed by a competent electrician, security or communications engineer.

VIDEX run free training courses for engineers who are unfamilier or who have not installed these cabinets before. Technical help is also available on 0191 224 3174 during office hours *(8:30am - 5:00pm MON to FRI)* or via e-mail: ***tech@videxuk.com.***

A copy of this Technical Manual can also be downloaded from the Videx website: ***www.videxuk.com.***

SYSTEM INTRODUCTION

All multiple entrance control cabinets will either be a CAB1 or CAB2 lockable powder coated steel cabinet *(dependent on control equipment required)*. They are fitted with an unboxed 13.8Vdc, 5A switched mode power supply with battery back-up facility, BST/GMT time clock and a four entrance switching card *(for audio cabinets a VX123-A and for video cabinets a VX123-V)* as standard. Video cabinets will also be fitted with a 20Vdc Art.893N power supply.

The cabinets can also be supplied with or without isolation. Cabinets with isolation will be fitted with Art.2204N isolation cards from 4 way, 8 way up to 12 way isolation *(with video cabinets also including the Art.316l 4 way video islation cards)*.

Two additional cabinets, the **2291AB** and **2291VB,** will come fitted with the Art.2206N bus exchange device for two level systems.

Key Features Include:

- Control equipment housed in either a CAB1 or CAB2 lockable cabinet.

- Cabinets fitted with a 13.8Vdc, 5A PSU with battery back-up facility.

- Cabinets include an Art.701T BST/GMT time clock.

- Cabinets include 4 entrance switching card *(for audio VX123-A, for video VX123-V)*.

- Video cabinets also fitted with an Art.893N power supply.

- Isolation available in both audio and video cabinets: 4 way, 8 way and 12 way *(with the video cabinets fitted with appropriate video isolation)*.

- Block control cabinets *(both audio and video)* fitted with a bus exchange device the Art.2206N.

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CABINET DIMENSIONS AND COMPONENT LAYOUT

2291A (CAB2) Cabinet Dimensions

360mm

75mm

265mm

WARNING!
ISOLATE MAINS
BEFORE REMOVING
COVER

50mm 52mm 52mm 52mm 52mm 52mm 50mm

6x 20mm diameter knockouts for incoming and outgoing cables located on the top and bottom side of the cabinet

230 VOLTS
FUSE VALUE
T3.15A

12Vdc
7aH Battery

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Mode   Up   Down   Select
         ▲   ▼   On/Off

2x 13.5mm x 25mm knockouts for incoming and outgoing cables located on the base plate of the cabinet

INTERNAL CABINET LAYOUT

VIDEX
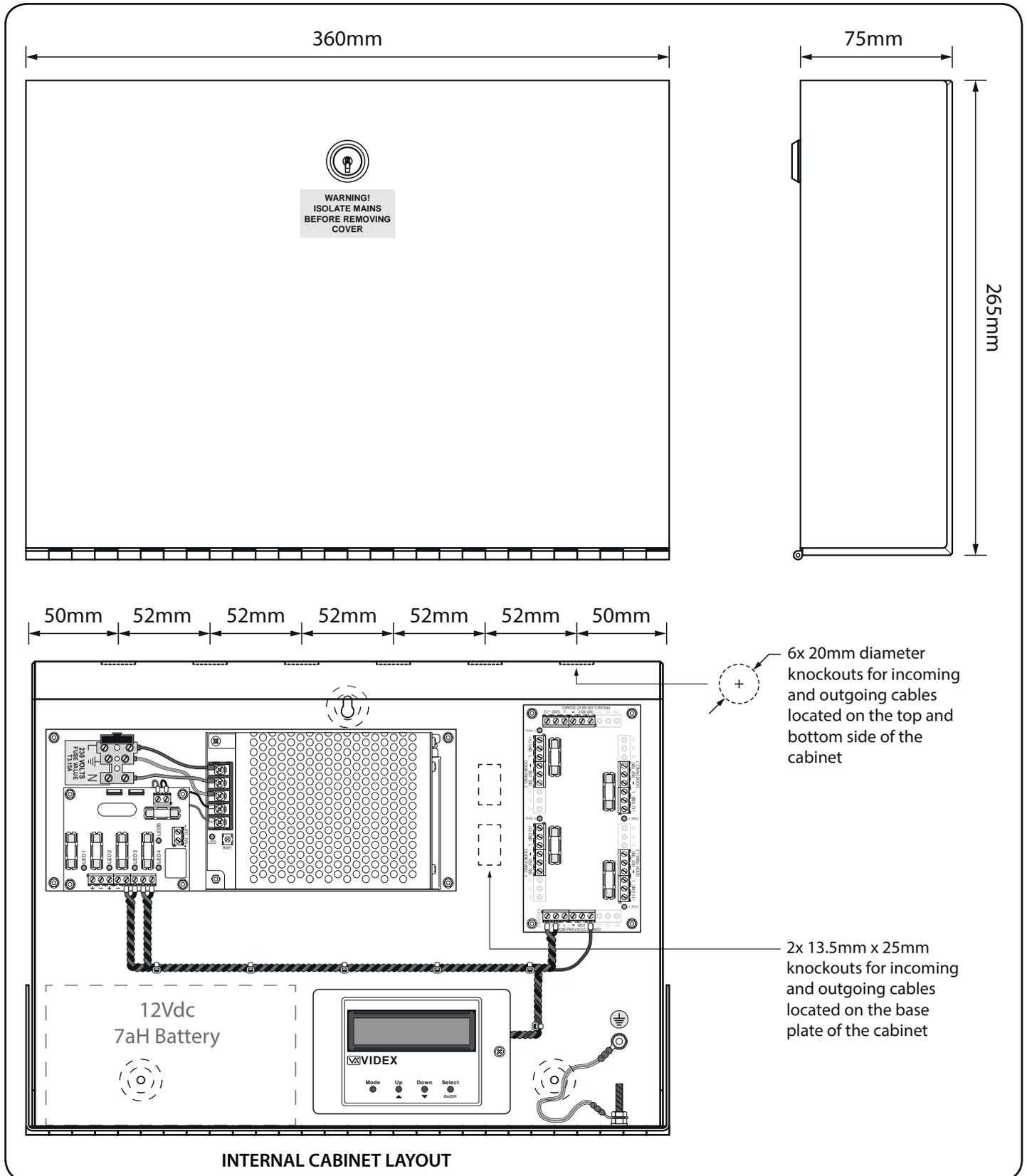
2291A4, 2291A8, 2291A12, 2291AB, 2291V, 2291V4, 2291V8, 2291V12 and 2291VB (CAB1) Cabinet Dimensions

360mm

75mm

455mm

**WARNING!
ISOLATE MAINS
BEFORE REMOVING
COVER**
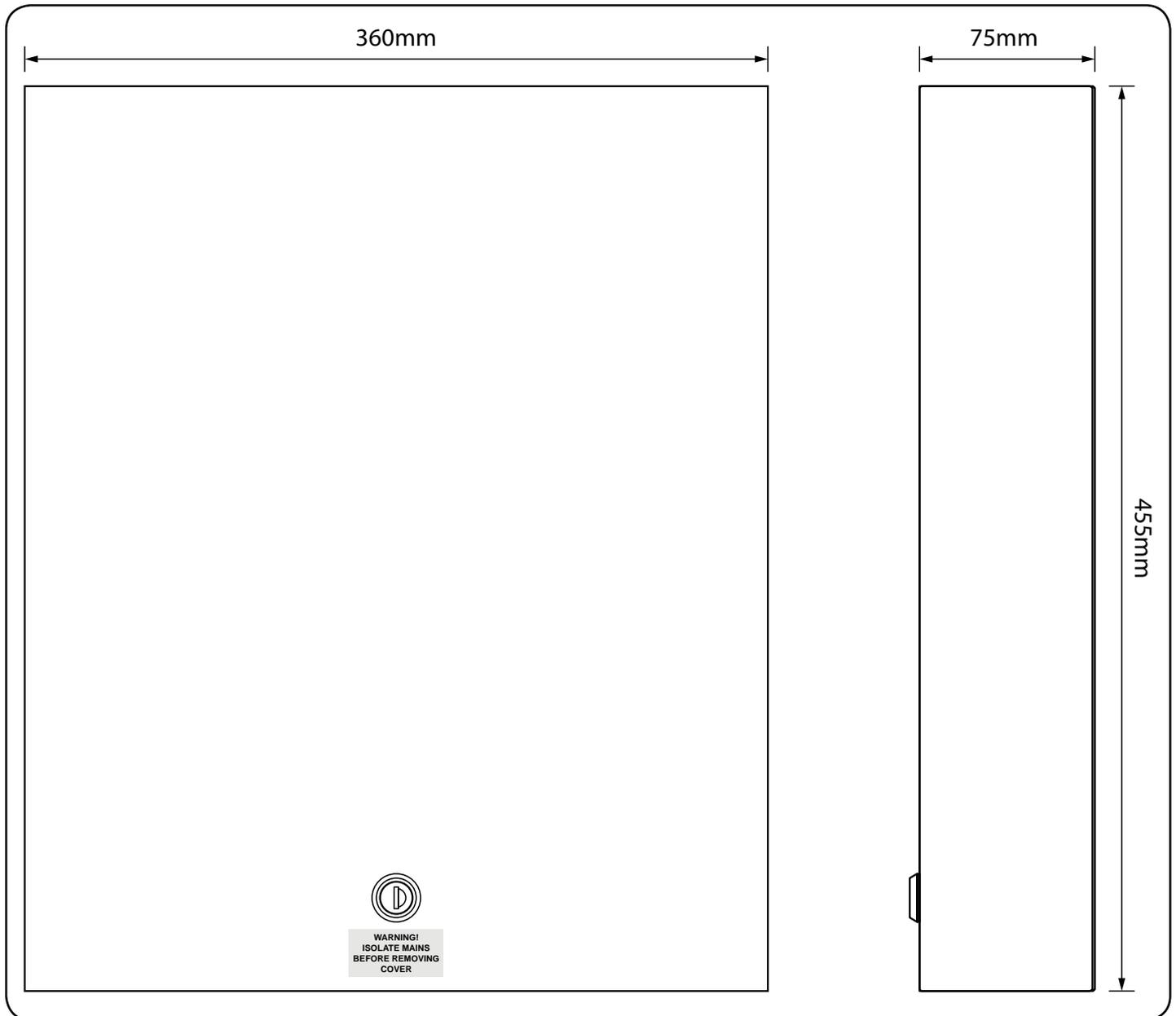
The cabinet layout shown on page 7 is for the 2291V12 video cabinet with 12 way isolation. All other cabinets *(with the exception of the 2291A, 2291AB and 2291VB cabinets)* follow the same component layout with video cabinets fitted with the Art.893N psu as well. Cabinet components are listed below and will come pre-wired.

CABINET	INTERNAL COMPONENTS
2291A4	UBPSU5.0 psu, Art.701T time clock, VX123-A 4 door switching card, 1x2204N isolation card.
2291A8	UBPSU5.0 psu, Art.701T time clock, VX123-A 4 door switching card, 2x2204N isolation card.
2291A12	UBPSU5.0 psu, Art.701T time clock, VX123-A 4 door switching card, 3x2204N isolation card.
2291V	UBPSU5.0 psu, Art.893N psu, Art.701T time clock, VX123-V 4 door switching card, no isolation.
2291V4	UBPSU5.0 psu, Art.893N psu, Art.701T time clock, VX123-V 4 door switching card, 1x2204N+316I video isolation card.
2291V8	UBPSU5.0 psu, Art.893N psu, Art.701T time clock, VX123-V 4 door switching card, 2x2204N+316I video isolation card.
2291V12	UBPSU5.0 psu, Art.893N psu, Art.701T time clock, VX123-V 4 door switching card, 3x2204N+316I video isolation card.

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INTERNAL CABINET LAYOUT

VIDEX

Mode   Up   Down   Select
          ▲   ▼   On/Off

13.5mm x 25mm
knockouts for
incoming cables

230 VOLTS
FUSE VALUE
T3.15A

VX123-R2

DOOR PANEL 4   DOOR PANEL 2
+12 GND L — BSY TRD SL V1 V2
FUSE 3   FUSE 1

DOOR 4   DOOR 3   DOOR 2   DOOR 1

FUSE 4   +12 GND L — BSY TRD SL V1 V2   FUSE 2   +12 GND L — BSY TRD SL V1 V2
DOOR PANEL 3   DOOR PANEL 1

GND +12

TRD BSY
OR NEXT

POWER SUPPLY
ART. 893N1

PRI. 230V ~0 50/60Hz
OUT. ⎓ 20VDC 1A
Made in Italy

-C +C - +D

230V~0

L   N

230 VOLTS
FUSE VALUE
T3.15A

12Vdc
7aH Battery

20mm diameter knockout
for incoming mains cable

VIDEX
REF.2204N

END OF LINE

ADDRESS

316l

V2 +20 0V

12V   D S1   S1   12V
                ACTIVE FAULT

12V   S1 D   0V +20 V2

316l

VIDEX
REF.2204N

END OF LINE

ADDRESS

V2 +20 0V

12V   D S1   S1   12V
                ACTIVE FAULT

12V   S1 D   0V +20 V2

316l

VIDEX
REF.2204N

END OF LINE

ADDRESS

S1   12V
ACTIVE FAULT

2291AB and 2291VB (CAB1) Cabinet Layout

INTERNAL CABINET LAYOUT

13.5mm x 25mm knockouts for incoming cables

12Vdc 7aH Battery

20mm diameter knockout for incoming mains cable

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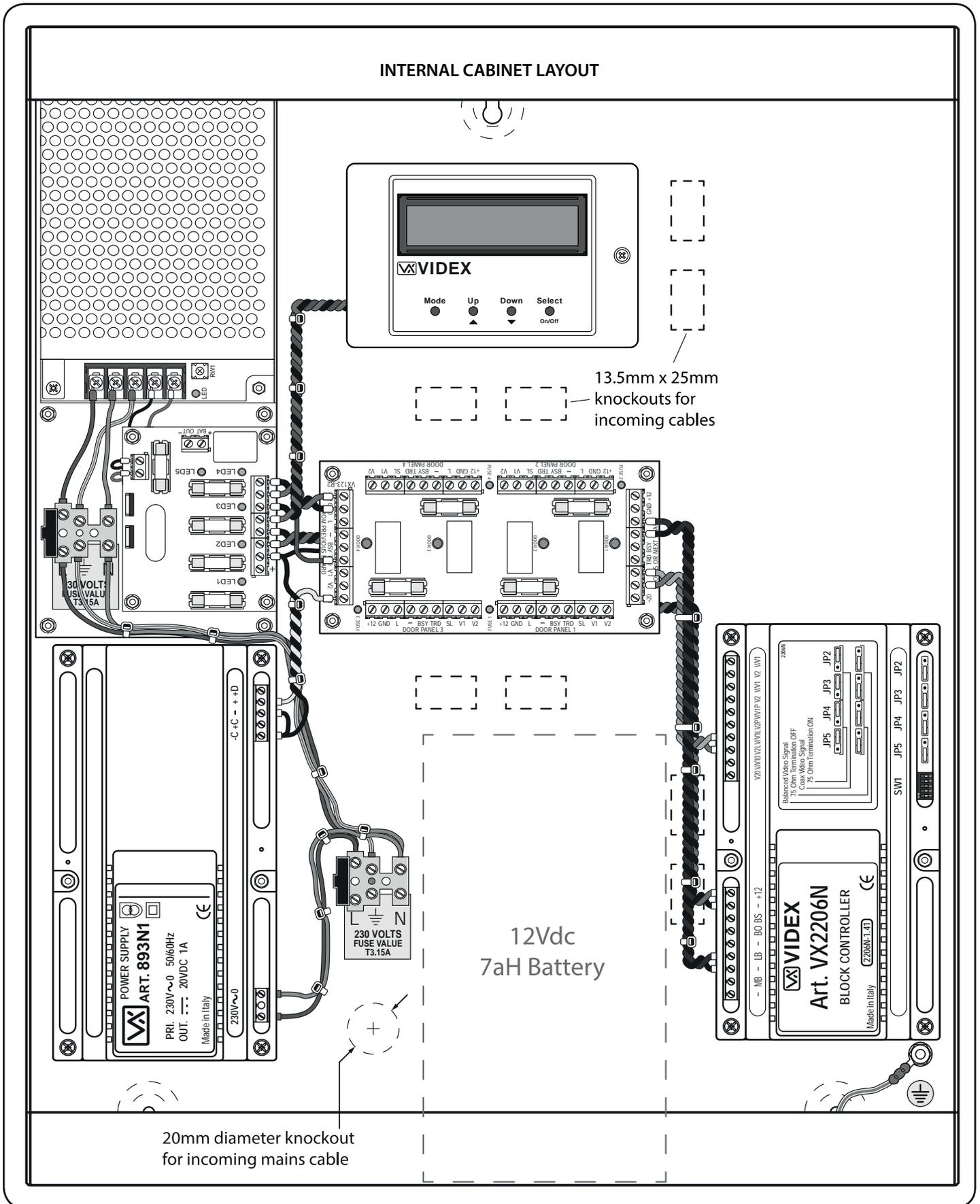
The 2291AB and 2291VB cabinets, shown on page 8, will have the same internal layout. The video cabinet will also include the Art.893N psu. Cabinet components are listed below and will come pre-wired.

CABINET	INTERNAL COMPONENTS
2291AB	UBPSU5.0 psu, Art.701T time clock, VX123-A 4 door switching card and Art.2206N block controller.
2291VB	UBPSU5.0 psu, Art.893N psu, Art.701T time clock, VX123-V 4 door switching card and Art.2206N block controller.

IMPORTANT NOTE: All cabinets described will come pre-wired internally, however it should be noted that external cabling/wiring to and from the cabinets components will still need to be made. Please refer to the technical wiring diagrams provided with the cabinet to make the necessary connections for the system required. For the mains connection to the cabinets please refer to pages 30 & 31. Various knockouts on the cabinets are provided to allow for the external cabling/wiring to be made to the internal components.

CABINET KNOCKOUTS

CAB2 Knockouts

The CAB2 has knockouts provided for external cabling to enter the cabinet to allow connections to be made to the internal components. There are twelve 20mm diameter knockouts provided, six along the top side and six along the bottom side of the cabinet. On the main base plate of the cabinet two 13.5mm x 25mm knockouts are provided, between the UBPSU5.0 psu and the VX123-A switching card, to allow for cabling to come in through the rear side of the cabinet if required *(refer to the internal cabinet layout on page 5)*. Below shows the location of the 20mm diameter knockouts that run along the top and bottom side of the CAB2.

| 50mm | 52mm | 52mm | 52mm | 52mm | 52mm | 50mm |

CAB1 & CAB2 TOP VIEW

6x 20mm diameter knockouts for incoming and outgoing cables located on the top and bottom side of the cabinet
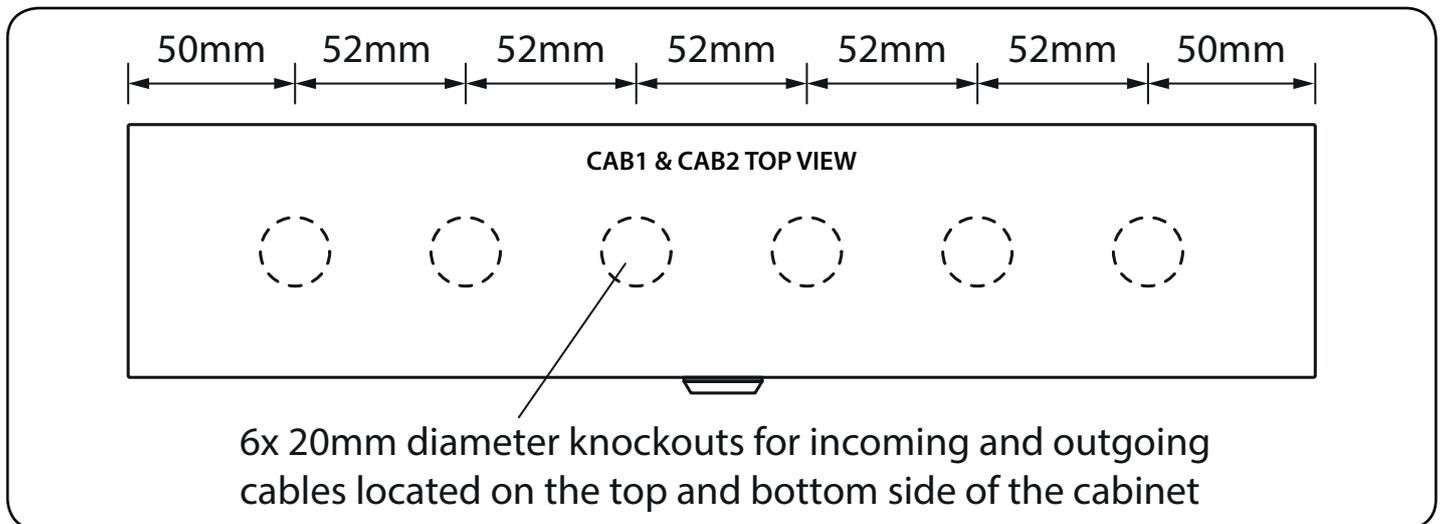
CAB1 Knockouts

The CAB1 has knockouts provided for external cabling to enter the cabinet to allow connections to be made to the internal components. There are 12x20mm diameter knockouts provided, six along the top side and six along the bottom side of the cabinet to allow cabling to come in from the top and bottom *(refer to the CAB1 top/bottom side knockout location above)*.

On the main base plate of the cabinet eight 13.5mm x 25mm knockouts are provided to allow external cabling to come in through the rear of the cabinet. These are located between the Art.701T time clock and the top isolation card, between the bottom of the time clock and the top of the VX123-A/VX123-V switching card, below the VX123-A/VX123-V switching card and to the left of the bottom isolation card. Also provided is a single 20mm diameter knockout approximately 40mm below the mains inline fuseholder to allow for the mains connections to be made from a switched fused spur *(also refer to the internal CAB1 layouts on page 7 and 8)*.

UBPSU5.0 POWER SUPPLY

The UBPSU5.0 power supply is a 5A unboxed PSU with a regulated output voltage of 13.8Vdc. There are four fused outputs that use 20mm glass 'quick blow' fuses. The standard fuse rating for each output is as follows: output1 *(LED1)*, output 2 *(LED2)*, output 3 *(LED3)* = 1A, output 4 *(LED4)* = 3.15A, however, these are interchangeable so that different fuse values can be used providing the overall current output rating **does not** exceed 5A. It also includes a battery back-up facility with a battery trickle charge fuse of 1A. The DC output terminals and battery trickle charge terminals are independently fused.

Each fused output and fused battery back-up connections includes a status LED to indicate when there is a fault with the output *(when the LED is ON this indicates the output is ok, when the LED is OFF this indicates the fuse is damaged or blown)*.

The battery back-up connection wires use insulated crimp connectors *(red = +pos, blue = -neg)* for easy connection to a 12Vdc battery. It is recommended that a 12Vdc, 7.0Ah valve regulated lead-acid type battery is used *(Videx part no. NP7-12)*.

The power supply has an inline fuseholder *(with pull-up latch for easy fuse replacement)* that is used to connect 230Vac mains input. The inline fuseholder also uses a 20mm glass 'quick blow' fuse with a current rating of T3.15A/250V.

IMPORTANT NOTE: The 230Vac mains input terminals on this PSU should be connected to the mains supply via a fused spur or preferably an all pole circuit breaker *(refer to pages 30 - 31)*.

UBPSU5.0 Dimensions
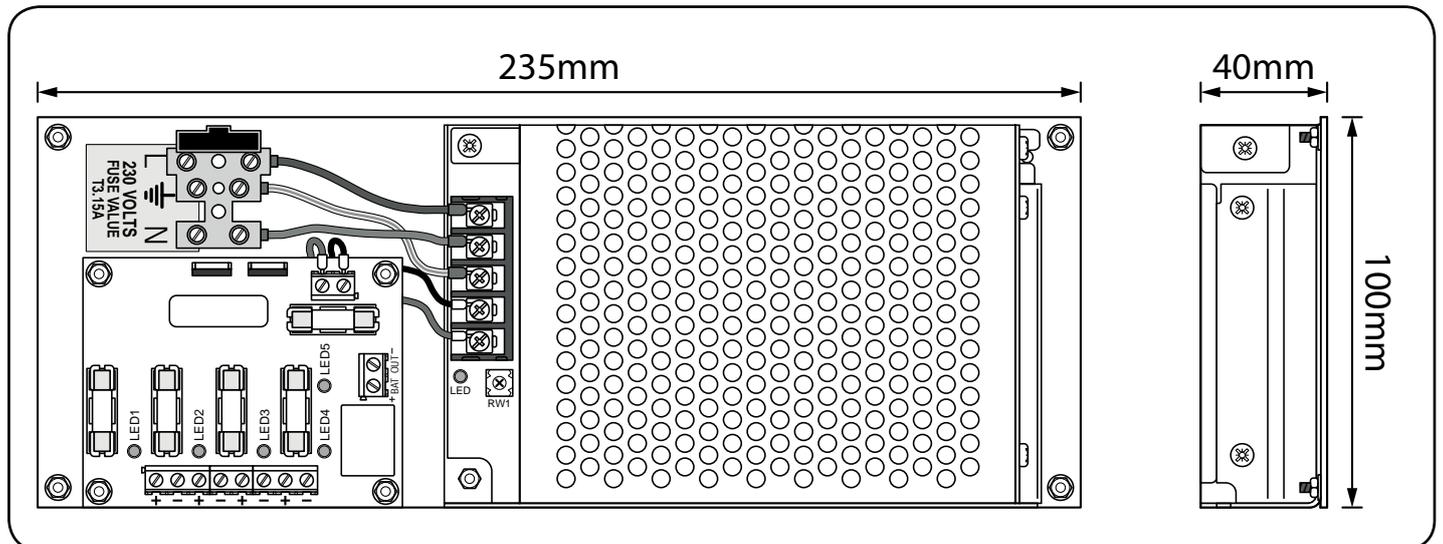
Terminal Connections

| Terminal		Function
+**Bat out**		Battery output +positive connection
-**Bat out**		Battery output -negative connection
+		*(4x)* 13.8Vdc output
-		*(4x)* 0V ground output
L		230Vac mains input *(live)*, fused current rating T3.15A/250V
E	⏚	Mains input *(earth)*
N		Mains input *(neutral)*

Technical Specifications

Input Voltage	: 230Vac @ 50/60Hz +6% -10%
Output Voltage	: 4x 13.8Vdc, +6% -10% *(regulated)*
Current	: 4x 1.25A, *(5A max.)*
PSU Dimensions	: 235mm *(L)* x 100mm *(W)* x 40mm *(D)*
Working Temp.	: -25°C +70°C

ART.893N POWER SUPPLY (for video cabinets only: 2291V, 2291V4, 2291V8 and 2291V12)

The Art.893N power supply will supply an output voltage of 20Vdc *(800mA continuous or a 1A surge)*. It is used to power videophones and camera modules or can be used as a 'booster' supply when more than 2 videophones are required in an apartment. This power supply only has an output voltage when either a -negative trigger is applied to the -C terminal or when a +positive trigger is applied to the +C terminal. At all other times the + and +D outputs are off. The +D is a 20Vdc output that is protected with an internal diode. A fused spur should always be used with this type of power supply. It is contained in a standard 9 module A type DIN box for mounting on a standard DIN rail.

IMPORTANT NOTE: The 230Vac mains input terminals on this PSU should be connected to the mains supply via a fused spur or preferably an all pole circuit breaker *(refer to pages 29 - 30)*.

Art.893N Dimensions
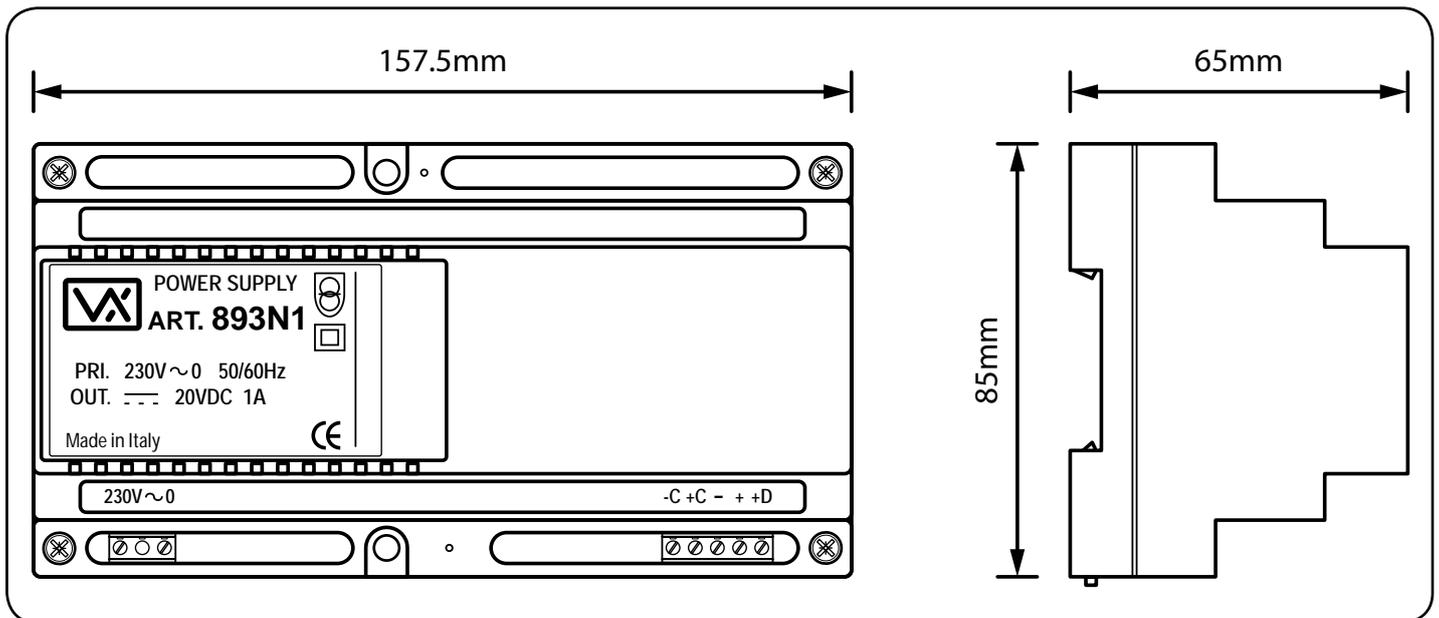
Terminal Connections

Terminal	Function
+D	Switched 20Vdc output *(diode protected, triggered on -C or +C, 800mA continuous, 1A max.)*
+	Switched 20Vdc output *(triggered on -C or +C, 800mA continuous, 1A max.)*
-	0V *(ground)*
+C	+positive trigger input *(from +8Vdc up to +30Vdc)*
-C	-negative trigger input *(from 0V up to +4Vdc)*
230V~	Mains input *(live)*
0V	Mains input *(neutral)*

Technical Specifications

Input Voltage	:	230Vac @ 50/60Hz +6% -10%
Output Voltage	:	20Vdc +6% -10% *(switched)*
Current *(continuous)*	:	800mA, *(surge 1A max.)*
Module Dimensions	:	157.5mm *(L)* x 105mm *(W)* x 65mm *(D)*
Working Temp.	:	-10ºC +50ºC

Art.701T BST/GMT Time Clock

The Art.701T is a digital time clock with BST/GMT automatic correction, back lit LCD display and trade button input. The time clock is already pre-wired within the cabinet from one of the 13.8Vdc fused outputs on the UBPSU5.0 PSU. It incorporates a dry contact 3A rated relay *(CO, NO and NC)*.

Includes six fully programmable ON/OFF times, they can be set for a single day of the week *(Mon - Sun)*, weekends *(WE)*, week days *(WD)* or all days *(AD)*. To disable an ON/OFF time simply set the ON time the same as the OFF time. In the event of a power failure the on board battery back-up will maintain the correct time and all the time bands that have been setup.

Programming Modes

Programming and setup of the time clock is carried out by using the four push buttons: MODE, UP, DOWN and SELECT *(on/off)* just below the LCD display and the two internal jumpers JP1 and JP2. The MODE button advances through the different programming modes starting with mode 1 which allows the editing of the time and date. Modes 2 – 7 allows the editing of the time bands. Mode 8 allows the editing of the relay time in trade mode only *(mode 8 will only appear on the display when the time clock is in trade mode this is done by setting jumper JP1 in the A position, also see notes below)*. The UP, DOWN buttons allow the information to be edited and the SELECT *(on/off)* button moves the cursor to the next input field on the display *(refer to the programming flow chart on page 14)*. If the time clock is inadvertently left in programming mode it will automatically revert to standby mode after a preset time.

Jumpers JP1 and JP2

Jumper JP1 sets the time clock in either trade mode *(JP1 in position A)* or time clock mode *(JP1 in position B)*. When in trade mode the on board relay is only triggered when the terminal inputs TR and - *(connected directly to a trade button on the intercom door panel)* are shorted together. The on board relay will trigger for the relay time set in mode 8 and will only be active during the time band/bands *(6 programmable time bands 1 - 6 are available)* setup in modes 2 - 7. When in time clock mode the on board relay is automatically triggered when the time clock enters the time band/bands set up in mode 2 - 7. The on board relay will switch from NO *(normally open)* to NC *(normally closed)*. Once the time clock reaches the end of the time period it will switch back from NC to NO. When the jumper JP1 is set to position B mode 8 will <u>not</u> be available in the programming menu.

Jumper JP2 enables or disables the time clock's BST/GMT correction feature. When JP2 is in position A the automatic British Summer Time correction feature is disabled. When JP2 is in position B the automatic British Summer Time correction feature is enabled *(the default position for JP2 is set to the B position)*.

Programming Flow Chart

DISPLAY

> Monday 15:20
> 15/02/02 GMT OFF

Press the **mode** button to edit the time and date.	TIME - 1<u>5</u>:20 DATE - 15/02/02
Press the **mode** button to edit the 1st **ON/OFF** time.	ON 1 - 1<u>0</u>:15 AD OFF 1 - 10:30
Press the **mode** button to edit the 2nd **ON/OFF** time.	ON 2 - 1<u>1</u>:00 Mo OFF 2 - 12:30
Press the **mode** button to edit the 3rd **ON/OFF** time.	ON 3 - 1<u>5</u>:45 WD OFF 3 - 17:20
Press the **mode** button to edit the 4th **ON/OFF** time.	ON 4 - 1<u>8</u>:15 We OFF 4 - 20:15
Press the **mode** button to edit the 5th **ON/OFF** time.	ON 5 - 1<u>9</u>:30 WE OFF 5 - 20:45
Press the **mode** button to edit the 6th **ON/OFF** time.	ON 6 - 1<u>0</u>:00 AD OFF 6 - 19:00
Press the **mode** button to edit the relay time.	RELAY TIME - 0<u>5</u>
Press the **mode** button to return to standby mode.	Monday 15:20 15/02/02 GMT OFF

The days of the week are abbreviated as shown below:

Monday	Mo
Tuesday	Tu
Wednesday	We
Thursday	Th
Friday	Fr
Saturday	Sa
Sunday	Su
Week Days	WD
Weekends	WE
All Days	AD

IMPORTANT NOTE: to reset the time clock completely, simply power up whilst pressing the UP (▲) button.

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Art.701T Dimensions

110mm | 30mm | 70mm

Mode | Up | Down | Select On/Off
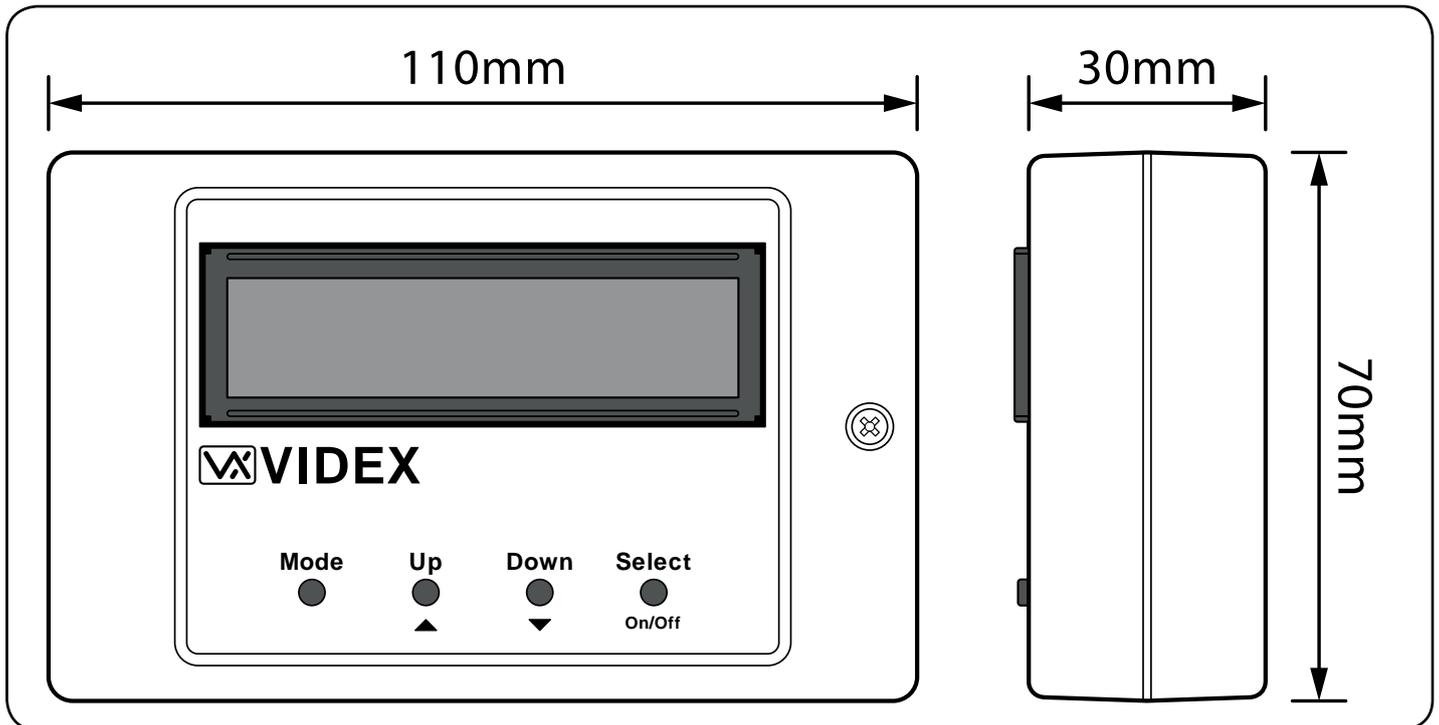
Terminal Connections

Terminal	Function	
+	12Vac or dc input	
-	0V *(ground)*	
-	0V *(switched 0V ground output for TR connection)*	Normally open going closed trade button connections
TR	Switched 0V trade button trigger *(from 0V ground output)*	
CO	Common connection on relay	
NO	Normally open connection on relay	
NC	Normally closed connection on relay	

Technical Specifications

Input Voltage	: 12Vac or 12Vdc, +6% -10%
Current *(standby, relay OFF)*	: 47mA
Current *(standby, relay ON)*	: 67mA
Battery Back-up	: Min. 3 days
Relay Contacts *(dry contacts)*	: 3A at 24Vdc, 3A at 120Vac
Time Bands Available	: 6 *(ON/OFF period 1 will switch OFF at the OFF time for that period regardless of manual override. ON/OFF periods 2-6 won't switch OFF at the OFF time for that period if override is pressed)*
Time Accuracy	: less than + or - 2 seconds drift per day
Trade Mode Relay Time	: From 1 second up to 99 seconds
Module Dimensions	: 110mm *(L)* x 70mm *(W)* x 30mm *(D)*
Jumpers (JP1 and JP2)	: JP1 *(A = Trade mode, B = Time clock mode)* JP2 *(A = BST/GMT correction disabled, B = BST/GMT correction enabled)*
Working Temp.	: -10ºC +50ºC

VX123-A / VX123-V AUDIO AND VIDEO 4 DOOR SWITCHING CARDS

Audio cabinets will include a VX123-A 4 door audio switching card and video cabinets will include the VX123-V 4 door video switching card.

Each switching card requires 12Vdc power and will be pre-wired from one of the 12Vdc outputs on the UBPSU5.0 psu. It has four fused *(fitted with a 1A, 20mm 'quick blow' fuse)* door input/output terminals that includes a status LED to indicate when there is a fault with the input/output *(when the LED is ON this indicates the input is ok, when the LED is OFF this indicates the fuse is damaged or blown)*. Each set of door input/output terminals include connections for the following:

- 12Vdc/GND power output to power each door panel *(fused connection on 12Vdc terminal)*.

- L/- databus connections from each door panel *(common 'through' connection)*.

- Busy connection from each door panel *(common 'through' connection)*.

- Trade output to each door panel *(common 'through' connection)*.

and for the VX123-V video switching card three additional terminal connections:

- SL switching signal from the door panel to switch the V1/V2 balanced video signal through the corresponding door input/output position on the switching card.

- V1/V2 balanced video input signal connection from door panels camera module *(switched connections)*.

Also included are common output connections to connect the card to audiophones/videophones or allow the card to be connected in series with another switching card should the system comprise of more than 4 doors *(for video systems using the VX123-V three additional 'through' connections are included: V1, V2 and +20V)*.

VX123-A / VX123-V Dimensions

VX123-A   VX123-V
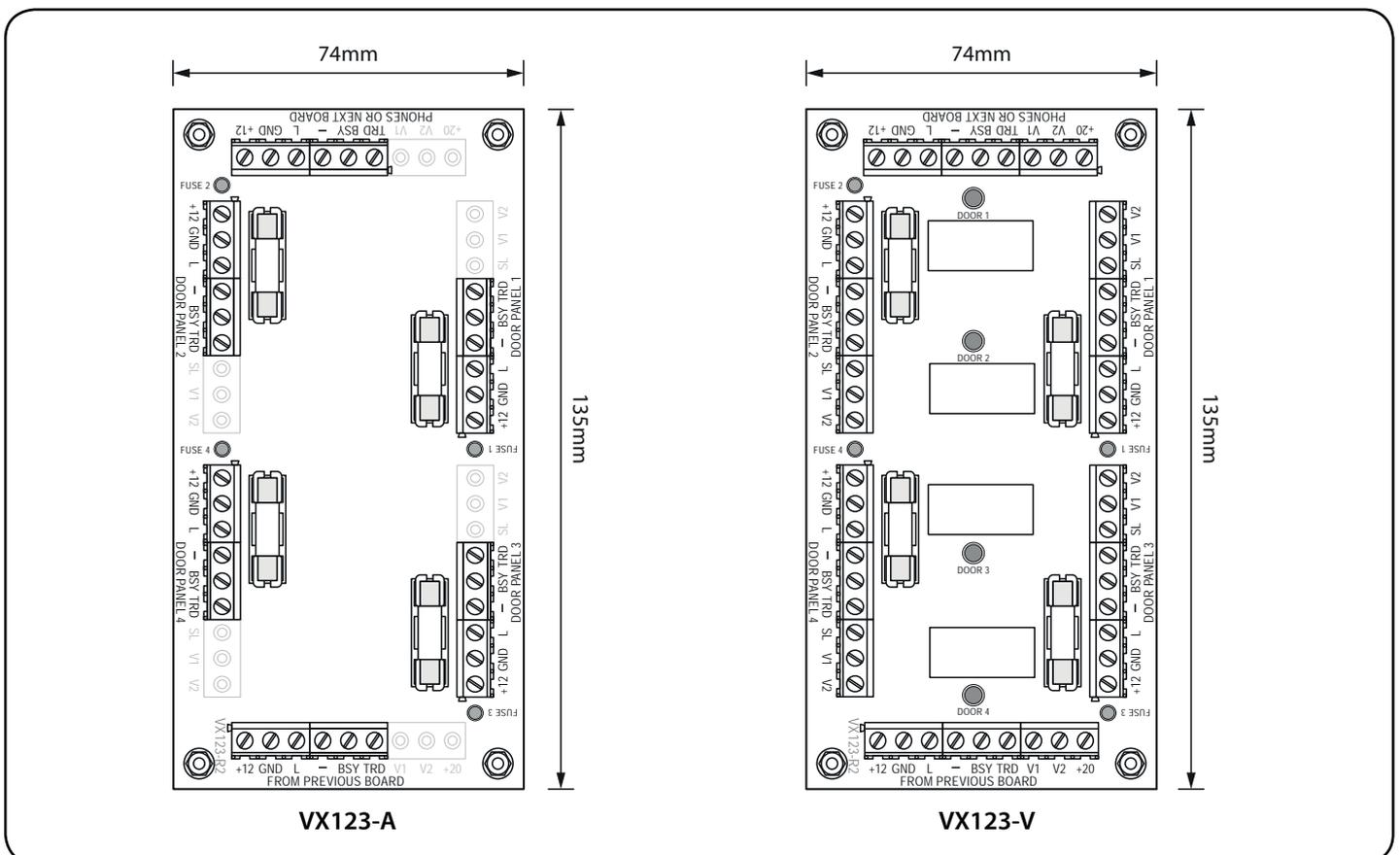
Terminal Connections

Switching Card 'through' Connections	
Terminal	**Function**
+12	12Vdc power input/output connection
GND	GND power input/output connection
L	BUS line data input/output
-	BUS line ground input/output
BSY	Busy signal connection
TRD	Trade signal input/output from Art.701T BST/GMT time clock
V1	Balanced video signal sync+
V2	Balanced video signal sync-
+20V	20Vdc power input/output for videophones

VR123-V video switching card only (V1, V2, +20V)

Switching Card Door Connections *(1 - 4)*	
Terminal	**Function**
+12	12Vdc power output connection to door panel
GND	GND power output connection to door panel
L	BUS line data input from door panel
-	BUS line ground input from door panel
BSY	Busy signal input from door panel
TRD	Trade signal output to door panel
SL	Switched low input from door panel
V1	Balanced video signal input sync+
V2	Balanced video signal input sync-

VR123-V video switching card only (SL, V1, V2)

Technical Specifications

Input Voltage	: 12Vdc, +5% -10%

VX123-A

Current *(standby)*	: 80mA *(max.)*
Current *(during call)*	: 150mA *(max.)*
Current *(speech live)*	: 240mA *(max.)*
Current *(during lock release)*	: 280mA *(max.)*

VX123-V

Current *(standby)*	: 80mA *(max.)*
Current *(during call)*	: 330mA *(max.)*
Current *(speech live)*	: 420mA *(max.)*
Current *(during lock release)*	: 450mA *(max.)*
Switching Card Dimensions	: 135mm *(L)* x 75mm *(W)*
Working Temp.	: -10°C +50°C

(PLEASE NOTE: the current ratings shown above correspond with the 12Vdc input power. The 20Vdc power connections for the VX123-V are 'through' connections only).

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ART.2204N 4 WAY ISOLATION CARD

Audio cabinets with isolation *(2291A4, 2291A8 and 2291A12)* will include 1, 2 or 3 Art.2204N 4 way isolation cards depending on which cabinet is being used. Video cabinets with isolation *(2291V4, 2291V8 and 2291V12)* will also include the Art.316I 4 way video isolation cards.

The Art.2204N will protect against shorts or faults on all connections to an apartment. Plug in connections are used for easy maintenance. There are 10 status LED's on each card. The green LED next to each output is used to identify when an output is in use *(green output LED indicates that the output is ON)*. The red LED next to each output indicates when there is a fault on the bus connection of that output. Next to the main input of the card is a red 12V fault LED which will indicate if there is a fault on the 12Vdc input and also a yellow S1 active LED to indicate when the S1 terminal connection is active.

The Art.2204N has a 6 way dip-switch which is used to address the isolation card *(up to ID.44, output 180, refer to the following table for addressing isolation cards)*. The address of the card must correspond with the address of the audio/videophone in the apartment. For example, output 1 of the first Art.2204N must be connected to a audio/videophone with address ID.1, output 3 must be connected to a audio/videophone with address ID.3, output 1 of the second Art.2204N must be connected to a audio/videophone with address ID.5 etc.

Art.2204N Addressing

Art.2204N Unit Address	Output No.				Dip-Switch
	1	2	3	4	
0	1	2	3	4	
1	5	6	7	8	
2	9	10	11	12	
3	13	14	15	16	
4	17	18	19	20	
5	21	22	23	24	
6	25	26	27	28	
7	29	30	31	32	
8	33	34	35	36	
9	37	38	39	40	
10	41	42	43	44	
11	45	46	47	48	

12	49	50	51	52	
13	53	54	55	56	
14	57	58	59	60	
15	61	62	63	64	
16	65	66	67	68	
17	69	70	71	72	
18	73	74	75	76	
19	77	78	79	80	
20	81	82	83	84	
21	85	86	87	88	
22	89	90	91	92	
23	93	94	95	96	
24	97	98	99	100	
25	101	102	103	104	
26	105	106	107	108	
27	109	110	111	112	
28	113	114	115	116	
29	117	118	119	120	
30	121	122	123	124	
31	125	126	127	128	
32	129	130	131	132	
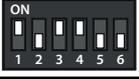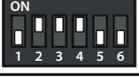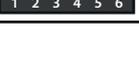
33	133	134	135	136	
34	137	138	139	140	
35	141	142	143	144	
36	145	146	147	148	
37	149	150	151	152	
38	153	154	155	156	
39	157	158	159	160	
40	161	162	163	164	
41	165	166	167	168	
42	169	170	171	172	
43	173	174	175	176	
44	177	178	179	180	

Art.2204N Operation

In standby the phones connected to the Art.2204N are disconnected from the main BUS. During a call the selected output on the card will be connected to the main BUS, the green LED next to the output will illuminate for the length of the call.

Technical Specifications

Input Voltage : 12Vdc, +5% -10%
Current (standby) : 11.5mA (max.)
Current (during call) : 65mA (max.)
Current (speech live) : 68mA (max.) — with 4 intercom phones connected
Current (during lock release) : 68mA (max.)
Isolation Card Dimensions : 120mm (L) x 80mm (W)
Working Temp. : -10°C +50°C

Art.2204N Dimensions
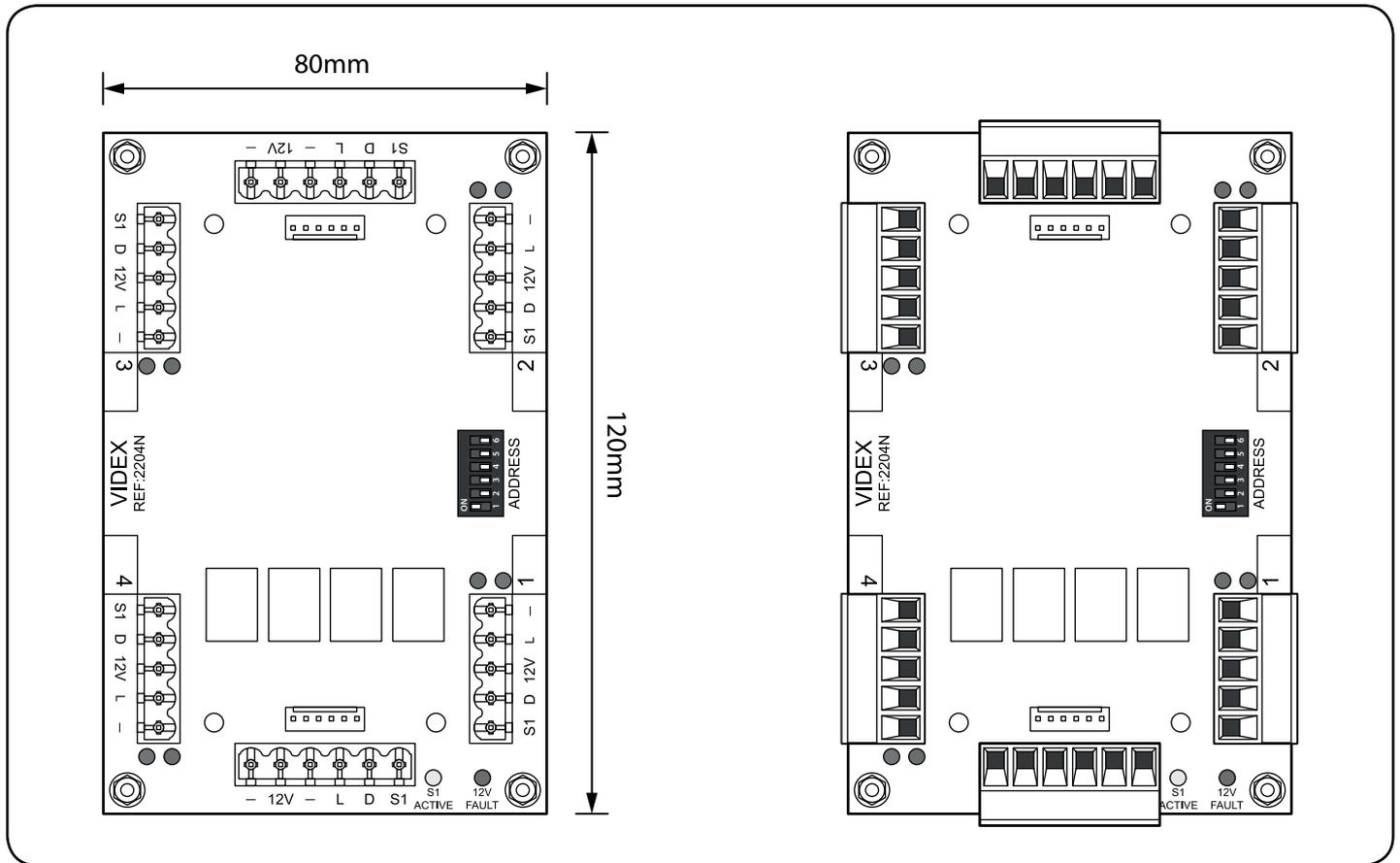
Terminal Connections

Isolation Card 'through' Connections	
Terminal	**Function**
-	GND power input/output connection
12V	+12Vdc power input/output connection
-	BUS line ground input/output
L	BUS line data input/output
D	Door Open LED input/output connection *(switched 12Vdc)*
S1	Spare service button connection from audio/videophone *(switched 0V)*
Isolation Card Output Connections *(1 - 4)*	
Terminal	**Function**
S1	Spare service button connection from audio/videophone *(switched 0V)*
D	Door Open LED input connection *(switched 12Vdc)*
12V	+12Vdc power output connection *(for audio/videophones that require 12Vdc input)*
L	BUS line data output
-	BUS line ground output

ART.316I 4 WAY VIDEO ISOLATION CARD

Video cabinets with the Art.2204N isolation cards *(2291V4, 2291V8 and 2291V12)* will also include an Art.316I 4 way video isolation card for each Art.2204N.

The Art.316I will protect against shorts or faults on the video connections *(+20V, 0V, V1 and V2)* to an apartment. The Art.316I is mounted on top of the Art.2204N isolation card it is associated with. Plug in connections are used for easy maintenance. There are 4 outputs to connect up to 4 videophones off one card and a set of 'through' terminal connections to link more than one Art.316I in series. Each output has a red status LED which indicates when there is a fault on the output. Two end of line jumpers are located between the 3rd and 4th output and are used to set the video termination. Only the last Art.316I in line needs to have both jumpers in the 'closed' position.

Art.316I Operation

In standby *(on video systems only)* a permanent 20Vdc will be present on all +20V inputs and outputs on the Art.316I. Once a call is made to the apartment the video signal V1 and V2 from the camera will be switched through the Art.316I to all the V1 and V2 outputs. The video image will only appear on the videophone that has been called.

Each of the four +20V outputs benefits from over current protection *(500mA max.)*. If a short appears on an output or a fault towards the videophone occurs then the +20V connection on that output will be disconnected from the main +20Vdc into the card which will allow the other outputs to continue working. The red LED next to the output will illuminate to indicate that there is a short or a fault on that output.

Art.316I Dimensions
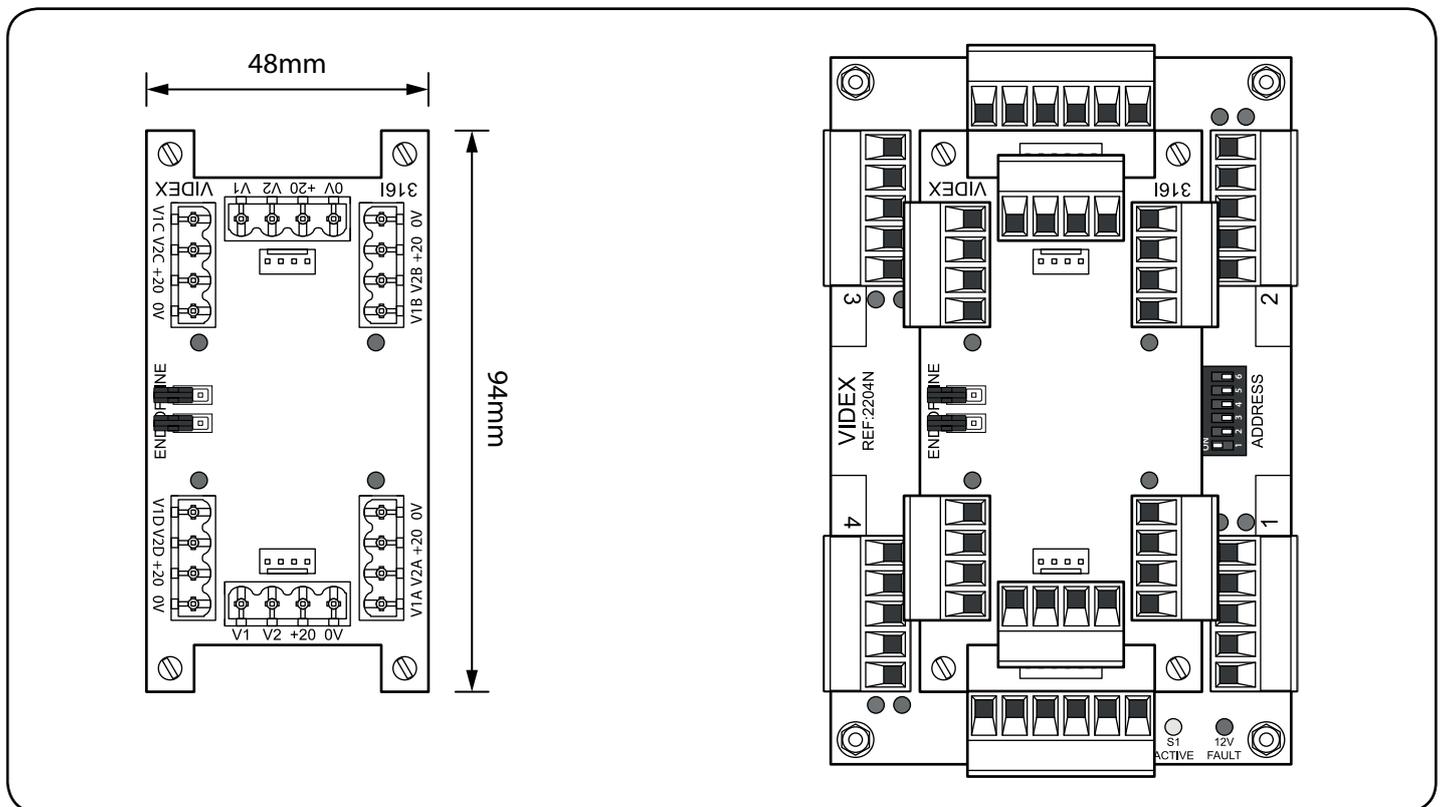
VIDEX

Terminal Connections

Isolation Card 'through' Connections	
Terminal	**Function**
V1	Balanced video signal sync+ from previous Art.316I, camera or control cabinet
V2	Balanced video signal sync- from previous Art.316I, camera or control cabinet
+20	20Vdc input/output from Art.893N psu, previous Art.316I or control cabinet
0V	0V input/output from Art.893N psu, previous Art.316I or control cabinet
Isolation Card Output Connections *(a, b, c and d)*	
Terminal	**Function**
V1	Balanced video signal sync+ to videophone
V2	Balanced video signal sync- to videophone
+20	+20Vdc power to videophone
0V	0V ground to videophone

Technical Specifications

Input Voltage   : 20Vdc, +5% -10%
Current *(standby)*   : 16mA *(max. on 20Vdc)*
Current *(during call)*   : 180mA *(max. on 20Vdc)*
Current *(per output)*   : 200 - 350mA *(500mA max.)*
Isolation Card Dimensions : 94mm *(L)* x 48mm *(W)*
Working Temp.   : -10ºC +50ºC

ART.2206N BUS EXCHANGE DEVICE

The Art.2206N bus exchange device will only be fitted in the **2291AB** and **2291VB** cabinets. It is a bus exchange device which allows the VX2200 digital system to be expanded up to 998 apartments. There are two applications in which this unit can be used.

The first application is on a system with both main entrances and sub/block entrances *(main entrances can call all apartments on a system and sub/block entrances can only call the apartments in their own block)*. For this application only one Art.2206N would be required for each block.

The second application is a single level system with up to 10 entrances whereby all entrances need to call all apartments and there are more than 180 apartments. In this application an Art.2206N would be required for every 180 apartments on the system and could be used to expand the system up to 998 apartments *(e.g. 500 apartments would require a minimum of three Art.2206N bus exchange devices)*.

The Art.2206N requires 12Vdc power and will be pre-wired in the cabinet directly from the 12Vdc output on the VX123-A/VX123-V switching card. There are three sets of databus connections: **bus out = BO, -** : for connection to the audio/videophones on the system; **local bus = LB, -** : for connections from the local entrance panels *(these databus connections will be pre-wired from the bus output on the VX123-A/VX123-V switching card)* : **main bus = MB, -** : connection from the main databus *(these bus connections will come directly from any main entrance panel and are not pre-wired)*. There is a busy terminal **BS** to connect to the local entrance panel **BS/BSY** connection. The video terminal connections; **V/V1, V2** : for connections from the main entrance panel and out to the next Art.2206N in line; **V/V1P, V2P** : amplified video signal output connections to the videophones of the block; **V/V1L, V2L** : video signal connections from the local entrance panel; **V/V1O, V2O** : video signal output to the videophones of the block.

Art.2206N Operation

In standby mode: the bus signal from the local entrance terminals **LB**, - are linked to the **BO,** - terminals *(bus out)*, while the video signal of the **V1/V1L** and **V2L** coming from the local entrances are sent to the video output terminals **V/V1O** and **V2O** *(video signal output to the videophones)*.

During the call: when a call is made from a main entrance, it sends serial data to communicate with the Art.2206N *(based on the Art.2206N's address)*. If **BS** (local busy) is high *(12Vdc = not busy)* on the Art.2206N, the call will be put through to the block and the system connects the **BO,** - terminals *(bus out)* with the main bus *(main bus entrance terminals MB, -)* and also connects the video outputs **V/V1O** and **V2O** to the main video signal input **V/V1** and **V2**, thereby connecting the main entrance with the apartment required. If the **BS** is low *(0V)* and the local entrance already has a call in progress then the main entrance will receive a busy signal and must wait until the call from the local entrance has finished.

If a call is made from the local entrance while the main entrance call is already in progress to that block, the local panel will get a busy signal and must wait for that call to end.

Programming using SW1 Dip-Switches

The Art.2206N programming and setup is carried out using the SW1 series of dip-switches. It consists of the following settings:

- **Unit Address** *(switches 1 - 4)*: The unit address, from 1 to 15, is set by using dip-switches 1 to 4 *(refer to the table below)*.

- **Operating Mode:** The operating mode is set using dip-switch 5 and there are two operating modes. The standard operating mode *(dip-switch 5 = OFF)* is used when a local block door panel is connected to the Art.2206N. The other operating mode *(dip-switch 5 = ON)* is used when there is no local block door panel connected and the system requires more than 180 users *(this mode can also be used on smaller systems with a single entrance)*.

Setting Unit Address (switches 1 - 4)

Unit Address (Block ID)	Dip-Switch No. (status)				Dip-Switch
	1	2	3	4	
1	ON	OFF	OFF	OFF	
2	OFF	ON	OFF	OFF	
3	ON	ON	OFF	OFF	
4	OFF	OFF	ON	OFF	
5	ON	OFF	ON	OFF	
6	OFF	ON	ON	OFF	
7	ON	ON	ON	OFF	
8	OFF	OFF	OFF	ON	
9	ON	OFF	OFF	ON	
10	OFF	ON	OFF	ON	
11	ON	ON	OFF	ON	
12	OFF	OFF	ON	ON	
13	ON	OFF	ON	ON	
14	OFF	ON	ON	ON	
15	ON	ON	ON	ON	
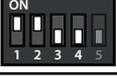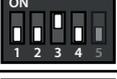
Setting Dip-Switch 5

Dip-Switch 5 (status)	Operating Mode	Dip-Switch
OFF	Standard operating mode with local block door panel connected.	
ON	No local block door panel and more than 180 users required.	

WIDEX VIDEX

Video Signal Mode using the Jumpers

The jumpers JP2, JP3, JP4 and JP5 are used for the video signal setup on the Art.2206N and consists of the following settings:

JP2 and JP3 sets up the video signal.

Jumper Position		Operating Mode
JP2	JP3	
● ▬	● ▬	Coax video signal *(V/GND)*
▬ ●	▬ ●	Balanced video signal *(non-coax, V1/V2)*

JP4 and JP5 sets up the video signal termination*.

Jumper Position		Operating Mode
JP4	JP5	
● ▬	● ▬	75Ω *(Ohm)* video signal termination enabled
▬ ●	▬ ●	75Ω *(Ohm)* video signal termination disabled

*When two or more Art.2206N devices are used on the same system and the video signal is connected between each Art.2206N in line then jumpers JP4 and JP5 must be set to the disabled position *(to the left)*. Only the last Art.2206N in line must have the jumpers set to the enabled position *(to the right)*.

IMPORTANT NOTE: Further information regarding operation, programming and setup for the Art.2206N can be found in the VX2200 technical manual **'Edition 2014, Version 1.2.**

Art.2206N Dimensions

VIDEX
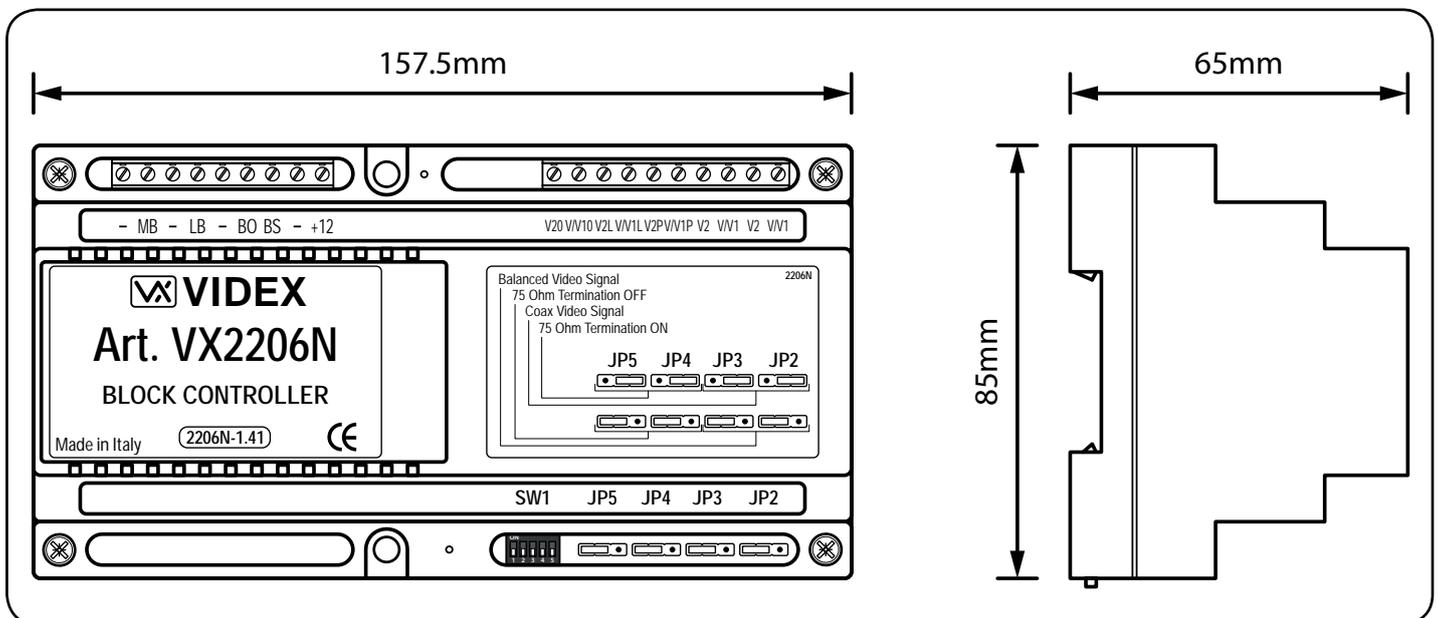
Terminal Connections

Terminal	Function
- MB	Main Databus input from any main door panel*(s)* towards the Art.2206N bus exchanger
- LB	Local Databus input from the block door panel towards the bus Art.2206N bus exchanger
- BO	Databus *(bus out)* output from the Art.2206N bus exchanger towards the audio and/or videophones in the block
BS	Busy signal input/output
-	0V power input *(ground)*
+12	12Vdc power input
V2O	Balanced video signal output V2 towards the videophones in the block
V/V1O	Balanced video signal V1 or composite video signal V *(see JP2, JP3 settings)* output towards the videophones in the block
V2L	Balanced video signal input V2 from the block door panel
V/V1L	Balanced video signal V1 or composite video signal V *(see JP2, JP3 settings)* input from the block door panel
V2P	Amplified balanced video signal output V2 towards the videophones in the block
V/V1P	Amplified balanced video signal V1 or composite video signal V *(see JP2, JP3 settings)* output towards the videophones in the block
V2	Balanced video signal input/output V2 to and from the main door panel*(s)*
V/V1	Balanced video signal V1 or composite video signal V *(see JP2, JP3 settings)* input/output to and from the main door panel*(s)*
V2	Balanced video signal input/output V2 to and from the main door panel*(s)*
V/V1	Balanced video signal V1 or composite video signal V *(see JP2, JP3 settings)* input/output to and from the main door panel*(s)*

Technical Specifications

Input Voltage   : 12Vdc +5% -10%
Current   : 100mA (max.)
Module Dimensions   : 157.5mm *(L)* x 105mm *(W)* x 65mm *(D)*
Working Temp.   : -10ºC +50ºC

VIDEX

MOUNTING THE CABINET

The CAB1 and CAB2 cabinets are suitable for fixed installations only and should only be fitted to solid walls. Where possible they should be located at a central point *(typically in a riser cupboard or small electrical room)*. The other components that make up the system *(e.g. audio/videophones and intercom door panels etc.)* can be cabled back to the cabinet. Remember the cabinet will need to be located close to a mains point.

Before fixing the cabinet to the wall it is recommended that the cabinet knockouts that will be required are removed first and suitable grommets fitted where necessary.

Removing the Cabinet Knockouts

IMPORTANT NOTE: Due care should be taken when removing the cabinet knockouts to avoid personal injury. Appropriate hand tools should be used and appropriate hand and/or eye protection used.

- First select the cabinet knockouts required *(refer to pages 5 - 9 for knockout locations)*.

- Next take a flat-head screwdriver and use the flat end to gently tap out and apply pressure to the knockout fixing *(see Fig.1A and Fig.1B)*.


knockout fixings   **Fig.1A**

tap out and apply pressure to the knockout fixing

flat-head screwdriver

knockout cover   **Fig.1B**
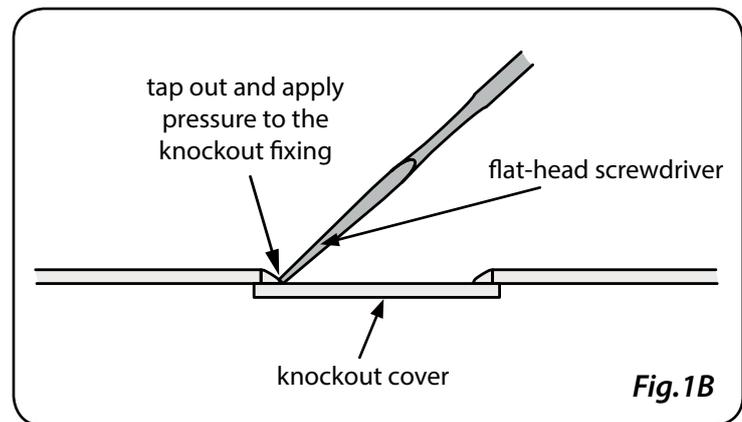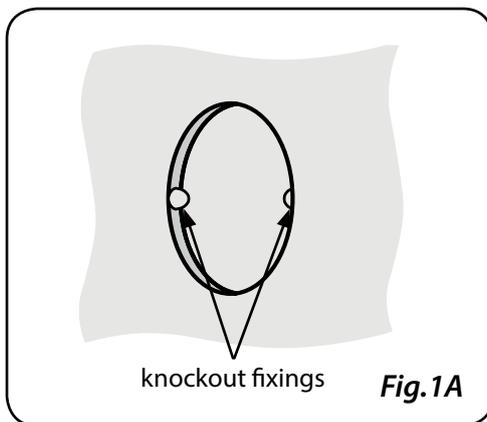
- Once the knockout fixing has been removed *(refer to Fig.2A)* push down on the knockout cover *(see Fig.2B)*.

knockout fixing removed   **Fig.2A**

push down on the knockout cover

Fig.2B
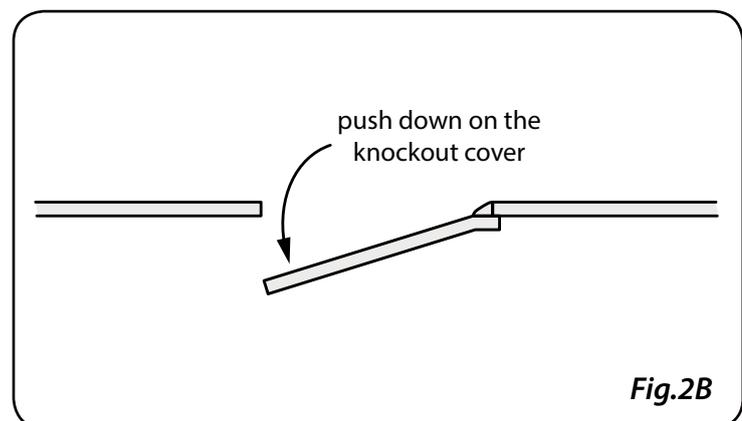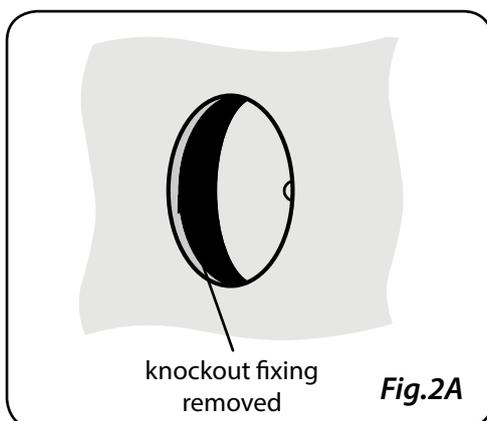
- Next take a set of pliers and grip the end of the knockout cover and ease it back and forth until the other knockout fixing fatigues and the knockout cover breaks away from the cabinet *(see Fig.3A and Fig.3B)*.

Fig.3A

Fig.3B
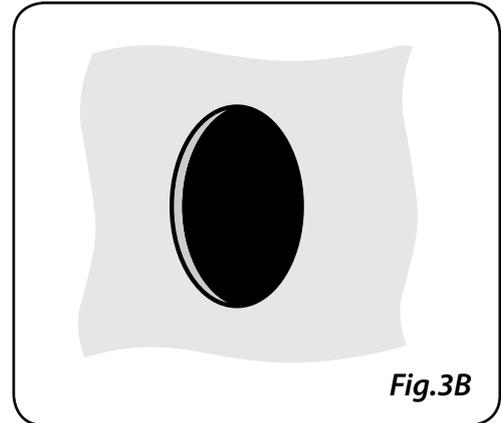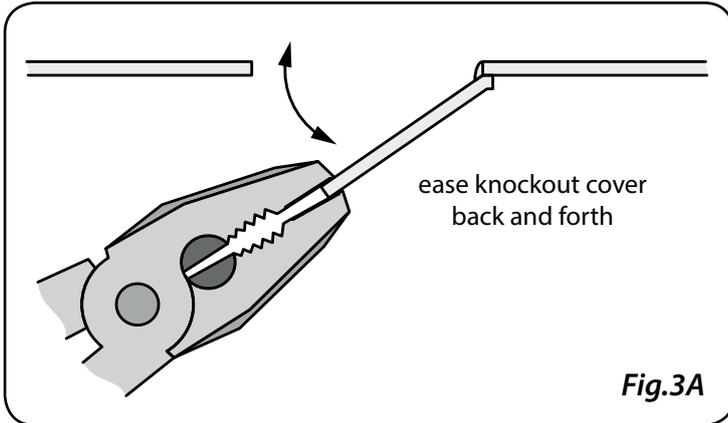
- If necessary file down and smooth out any rough edges on the knockout hole and then fit a suitable size grommet *(see Fig.4)*.

fit a suitable size grommet into the knockout hole

Fig.4
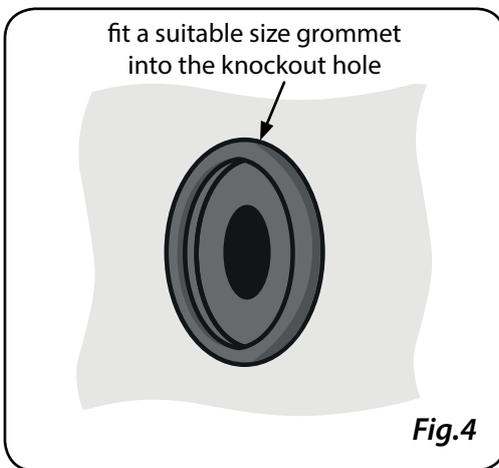
Fixing the Cabinet to a Solid Wall

The CAB1 and CAB2 cabinets have a single 7.5mm mounting hole on the base of the cabinet plate located at the top centre and two 5.5mm mounting holes located near the bottom left and right corners of the cabinet base *(see Fig.5A for the CAB1 and Fig.5B for the CAB2)*.

403 mm

mounting holes template

Fig.5A

260 mm

210 mm

mounting holes template

260 mm
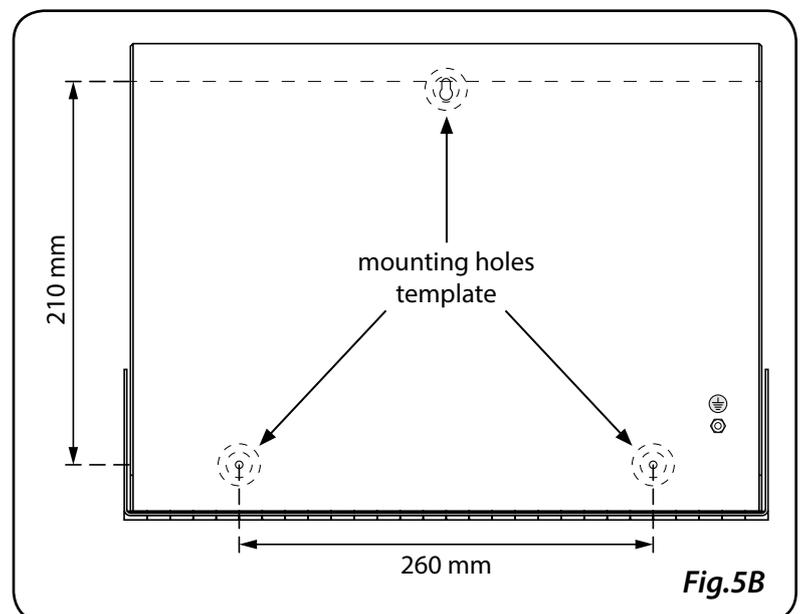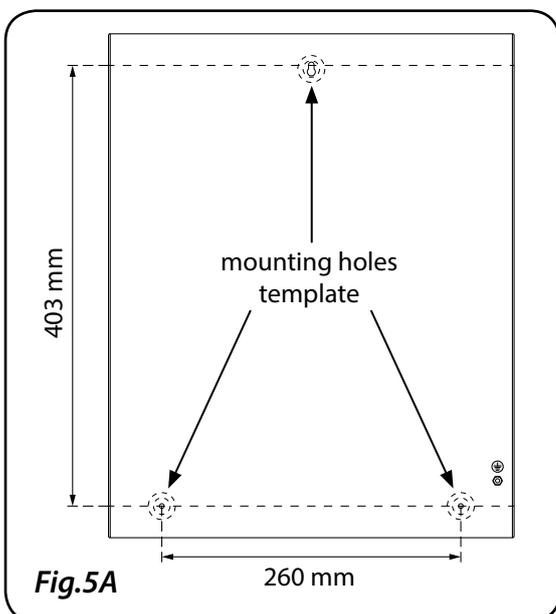
Fig.5B

CAB1 and CAB2 Mounting

For the CAB1, using the mounting holes template shown in Fig.5A, mark out the fixing hole positions on the wall where the cabinet is to be fixed.

For the CAB2, using the mounting holes template shown in Fig.5B, mark out the fixing hole positions on the wall where the cabinet is to be fixed.

There are two ways in which to mount the cabinet to the wall. This will depend on which cabinet knockouts are being used. The first option is to mount it directly to the solid wall. If mounting in this way then only the cabinet knockouts along the top and bottom of the cabinet can be used. The second option is to mount the cabinet off the wall on spacers thereby leaving a gap between the base plate of the cabinet and the wall. Mounting in this way will allow the knockouts on the rear of the cabinets to be used.

Option 1: Mounting directly to the wall

It is recommended that when mounting the cabinet directly to the wall the following are used: 3x flat head self-tapping countersunk masonry/concrete screws with a Ø5mm to Ø5.5mm *(diameter)* and between 40-50mm length. 3x expansion type rawl plugs *(for use in solid walls)* with a Ø5.5mm to Ø6mm *(diameter)* and between 35-40mm length. 6x M5 size flat metal washers *(2 washers per fixing position)*.

After the cabinet fixing positions have been marked out a Ø5.5mm to Ø6mm *(diameter)* masonry/concrete drill bit should be used to drill out the holes in the wall *(the diameter of the drill bit used will depend on the size of the rawl plug used)*. The rawl plugs can be pushed into the holes. The cabinet can then be fitted into position placing an M5 washer on either side of the cabinet base plate where the fixing hole is located and the self-tapping screw can be securely tightened into place *(refer to Fig.6A)*.

Option 2: Mounting off the wall

It is recommended that when mounting the cabinet off the wall the following are used: 3x flat head self-tapping countersunk masonry/concrete screws with a Ø5mm to Ø5.5mm *(diameter)* and between 50-60mm length. 3x expansion type rawl plugs *(for use in solid walls)* with a Ø5.5mm to Ø6mm *(diameter)* and between 35-40mm length. 3x nylon spacers with at least an internal diameter Ø6mm and between 10-15mm length. 6x M5 size flat metal washers *(2 washers per fixing position)*.

After the cabinet fixing positions have been marked out a Ø5.5mm to Ø6mm *(diameter)* masonry/concrete drill bit should be used to drill out the holes in the wall *(the diameter of the drill bit used will depend on the size of the rawl plug used)*. The rawl plugs can be pushed into the holes. The cabinet can then be fitted into position placing an M5 washer on either side of the cabinet base plate where the fixing hole is located. The nylon spacer should be placed between the washer and the rawl plug in the wall. The self-tapping screw can be passed through the fixing assembly and then securely tightened into place *(refer to Fig.6B)*.

Securing Cabinet Cables

Once the cabinets have been mounted to the wall the various incoming cables can be routed through the knockouts. In order to secure the cables and keep them tidy within the cabinet cable ties can be used. PVC/rubber cable grommets or nylon snap cable bushings can be used to keep the incoming cables secure to the cabinet knockout positions. For the circular knockouts a Ø20mm *(diameter)* grommet can be used and for the 13.5mm x 25mm knockouts PVC or nylon rectangular grommets can be used.

IMPORTANT NOTE: Any of the cabinet fixings mentioned above *(mounting screws, rawl plugs, grommets, cable ties, cable bushings and spacers etc.)* can be sourced from any high street hardware store/specialist e.g. Wickes, B&Q, Screwfix etc. or from similiar online websites. Videx **do not** provide these fixings.

Fig.6A

Fig.6B
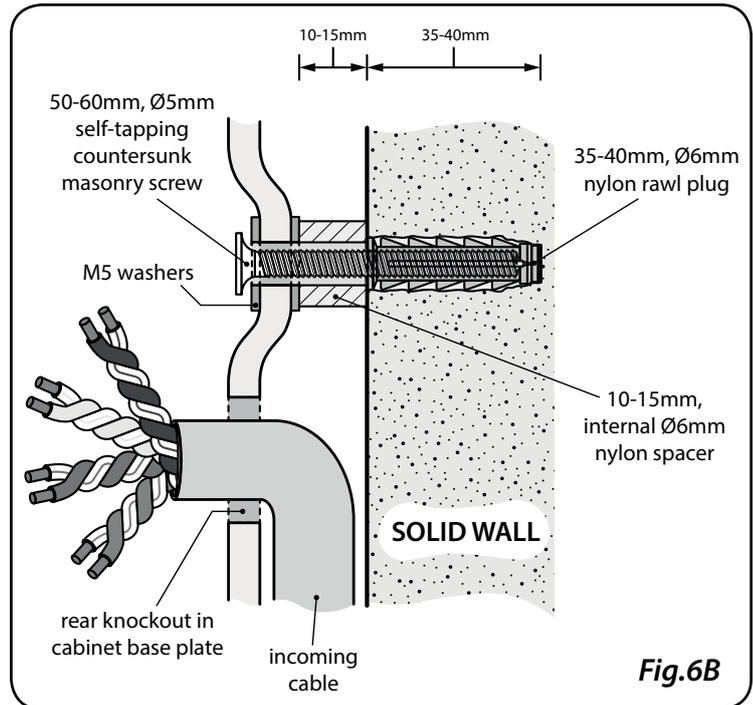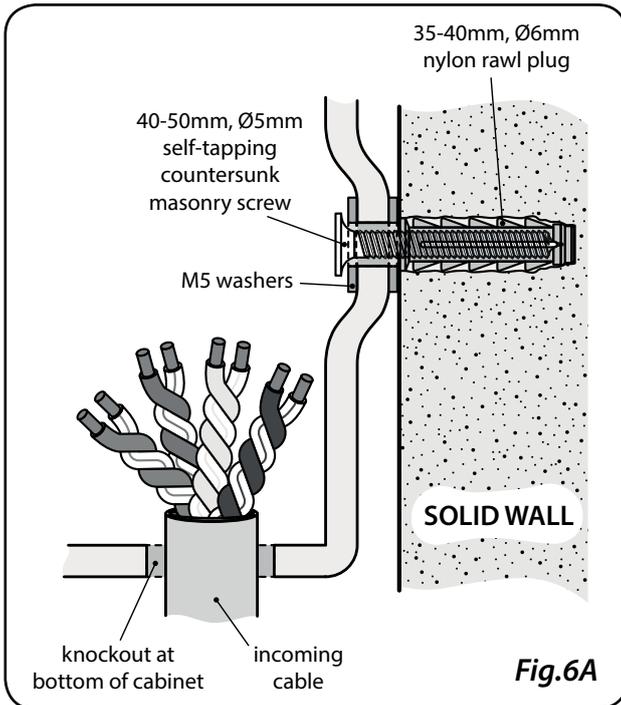
CONNECTION TO MAINS, SAFETY AND GUIDANCE NOTES

⚠️ ___IMPORTANT:___ *PLEASE READ THESE INSTRUCTIONS CAREFULLY BEFORE COMMENCING WITH THE INSTALLATION.*

Videx recommends that any cabling and Videx product be installed by a competent and qualified electrician, security installation speclialist or communications engineer.

DO NOT install any Videx product in areas where the following may be present or occur:

- Excessive oil or a grease laden atmosphere.

- Corrosive or flammable gases, liquids or vapours.

- Possible obstructions which would prevent or hinder the access and/or removal of the Videx product.

Mains Connection

The system **MUST** be installed in accordance with the current I.E.E regulations *(in particular I.E.E Wiring regulations BS7671)*, or the appropriate standards of your country, in particular Videx recommends:

- Connecting the system to the mains through an **all-pole circuit breaker** *(refer to Fig.7)* which shall have contact separation of at least 3mm in each pole and shall disconnect all poles simultaneously.

- That the **all-pole circuit breaker** shall be placed in such a way to allow for easy access and the switch shall remain readily operable.

- Ensuring that the mains supply *(Voltage, Frequency and Phase)* complies with the product rating label.

- Isolating the mains before carrying out any maintenance work on the system.

Mains

1 PHASE SUPPLY
(220 - 240Vac, 50/60Hz)

N

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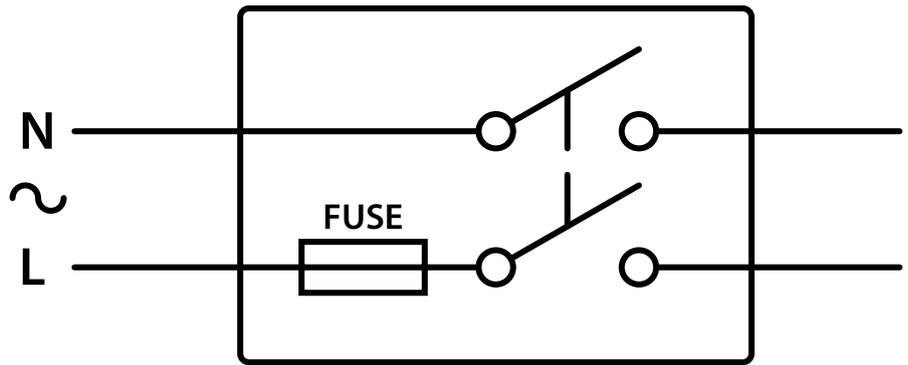
FUSE

SWITCHED FUSE SPUR

Fig.7

EARTHING THE CABINET

The earth connection on the cabinet's inline fuseholder should be connected to the earth stud on the cabinets base plate and then linked across to the earth stud on the cabinet's lid using the earth straps provided. The earth connection on the building can then be connected to either the earth stud on the cabinet's base plate or the earth terminal on the inline fuseholder *(see Fig.8)*.

earth stud on
cabinet base

incoming mains supply from fused spur including
the earth connection to the building's earth

earth stud on cabinet lid
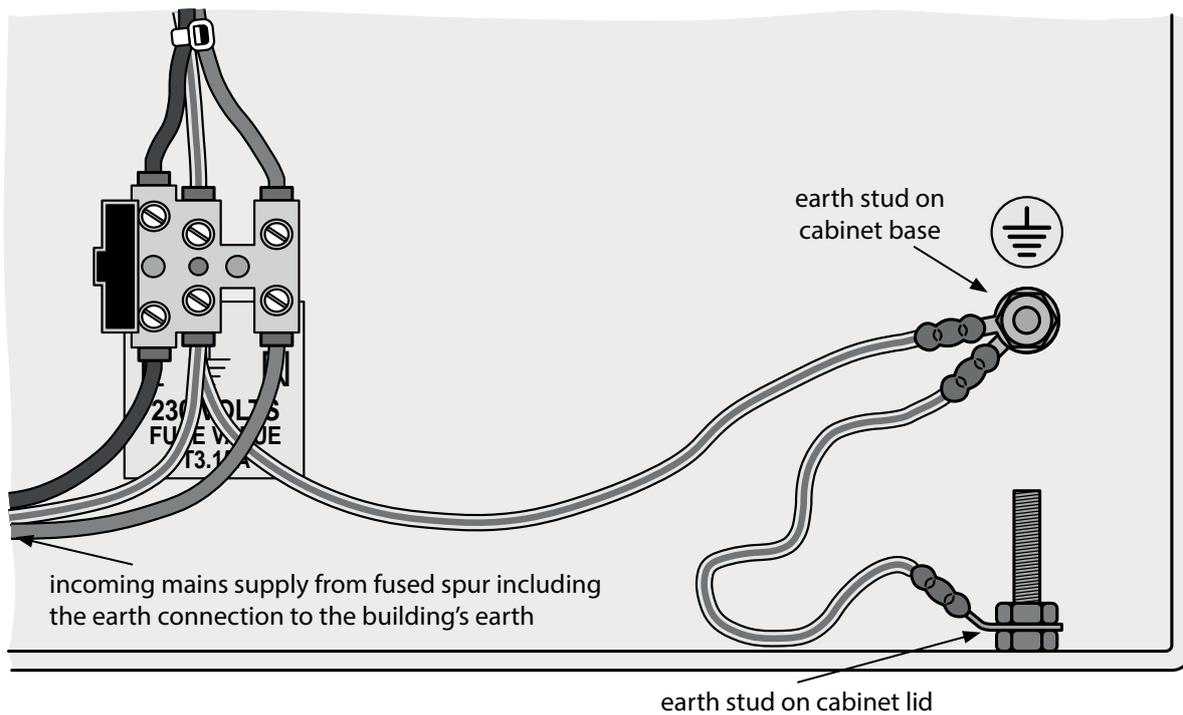
Fig.8

WIRING INTERNAL CABINET COMPONENTS

Before wiring any internal components of the cabinet please ensure that the mains power supply to the cabinet is switched OFF. The wiring of the internal components can be made following the technical wiring diagrams that are supplied with the system. Once all connections are made and checked within the cabinet and the connections from the cabinet to any external component *(e.g. door intercom panels, audiophones and videophones etc.)* have been made then the mains power can be switched back ON.

ADDITIONAL INFORMATION

Additional information regarding cabinet components can be found in the following technical documents and manuals:

- **VX2200 Technical Manual - Edition 2014, Version 1.2.**

Additional information regarding connection to mains supply voltage can be found in the following regulations:

- **I.E.E. Wiring Regulations BS7671.**

NOTES

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