by ELAN HOME SYSTEMS

PVIA-4

FOUR ZONE VIA! WALL PLATE

VIA!

PVIA-4

9 VDC
Z•CUBE
SENSE
INPUTS

1   2

3   4

+16VDC
POWER

1   2

IR
OUT

3   4

ALL

SYS
SENSE

TO SC-4

VIDEO
IN

1   2   3   4
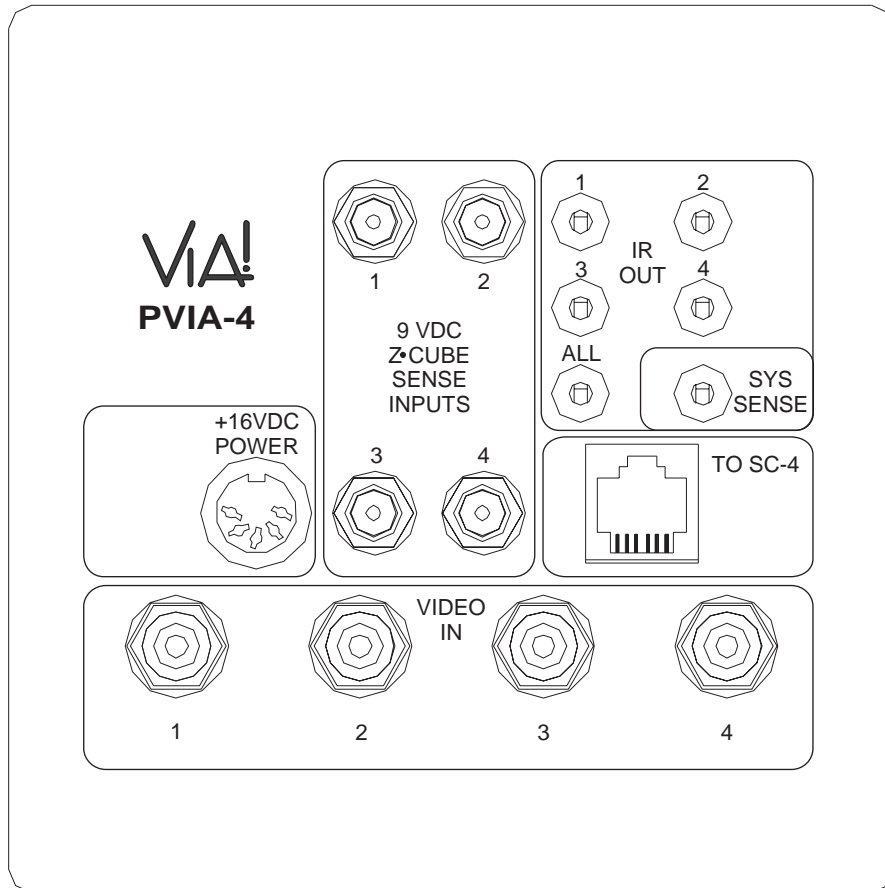
APPLICATIONS & INSTALLATION
MANUAL

TABLE OF CONTENTS

Limited Warranty

INTRODUCTION

The PVIA-4 is a double-gang wall plate that will supply power and route data and video signals to four VIA! Touch Panels. It can be used in any type of system application:
- Standalone
- ELAN Z•Series
- ELAN HD Series

FEATURES

- Four VIA-specific IR output ports allow independent control of zone-specific sources.

- The IR "ALL" port lets you control housewide sources from any VIA! touch panel connected to the PVIA-4

- Four Z•CUBE 9VDC Sense Inputs detect source power ON/OFF status

- Four RCA-to-F Video barrel connectors make for easy routing of video signals to each VIA! touch panel

- Rear panel CAT-5 punchdown connectors and a silk-screened PC board make for quick and easy connections of VIA! touch panels

- Rear panel CROSSLINK punchdown connectors allow for easy interface to ELAN Z• and HD Series Precision Panels (PZ6/PHD12)

- 16VDC / 4 Amp power supply included

- SC-4 READY!
  Upon release of the ELAN SC-4 RS232 System Controller, the PVIA-4 will be ready to interface via a front panel RJ45 jack and System Sense mini jack.
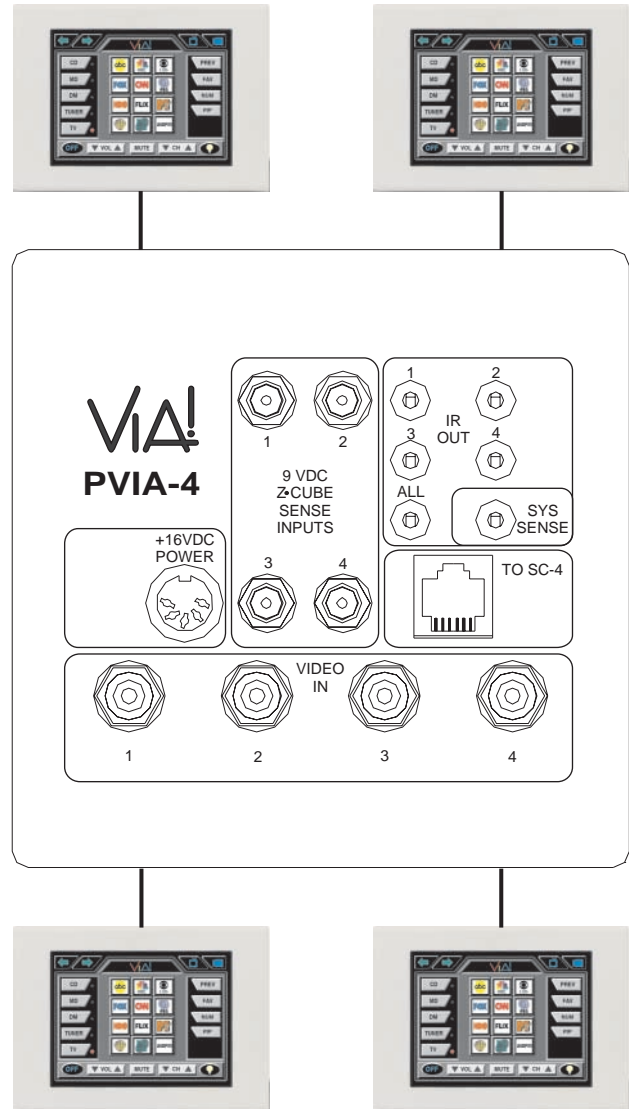
ADDITIONAL REFERENCE MATERIALS

The following manuals contain additional pertinent information regarding the design, wiring and programming of VIA! systems:

- PVIA-1 Installation & Applications Manual
- PVIA-10 Installation & Applications Manual
- VIA64 Installation Manual
- VIATOOLS Programming Manual
- Z880 Video Controller Installation Manual
- PZ6 Installation Manual
- PHD12 Installation Manual

FRONT VIEW

VIA!

PVIA-4

9 VDC Z•CUBE SENSE INPUTS — 1 2 3 4

IR OUT — 1 2 3 4

ALL

SYS SENSE

+16VDC POWER

TO SC-4

VIDEO IN — 1 2 3 4

VIA-SPECIFIC IR OUTPUT PORTS (4)

IR "ALL" PORT

SYSTEM SENSE INPUT

+16VDC POWER INPUT

SC-4 INTERFACE PORT (RJ45)

COMPOSITE VIDEO INPUTS (4)

REAR VIEW

XLINK

ST1
ST2
ST3
ST4
Z485 + −
SIR
GND

IR

IR1 G
IR2 G
IR3 G
IR4 G

VIA1 — V+ G V+ G 485+ 485− IR ST

VIA2 — V+ G V+ G 485+ 485− IR ST

VIA3 — V+ G V+ G 485+ 485− IR ST

VIA4 — V+ G V+ G 485+ 485− IR ST

PWR — − 1 + − 2 + − 3 + − 4 +

Z-BUS
1 INT
2 EXT

GROUND CONN

CROSSLINK PUNCHDOWN CONNECTOR

Z-BUS/SC-4 JUMPERS

IR CROSSLINK PUNCHDOWN CONNECTOR

VIA! PANEL PUNCHDOWN CONNECTORS (4)

POWER TERMINAL CONNECTION BLOCK

DC GROUND/ EARTH GROUND JUMPER

WIRE RUNS

CAT5

RG59 or RG6 coaxial cable

Minimum 18 AWG 2-conductor stranded wire

PVIA-4

Maximum wire run lengths when using the following cables to provide power to the VIA64 Touch Panel:

18 AWG Stranded	16 AWG Stranded	14 AWG Stranded
225 ft.	**360 ft.**	**575 ft.**

REFER TO THE VIA64 INSTALLATION MANUAL FOR FURTHER AND MORE DETAILED WIRE RUN INFORMATION

VIA! TOUCH PANEL RJ45 PIN OUT

ELAN C45P RJ45 to Pigtails Interface Cable

twisted pairs

RJ45 PIN-OUT

VIA!

WHITE/BR	8	+16V	+
BROWN	7	GND	-
WHITE/GR	6	+16V	+
GREEN	5	GND	-
WHITE/OR	4	485+	+
ORANGE	3	485-	-
WHITE/BL	2	IR OUT	
BLUE	1	HD SENSE	

12345678
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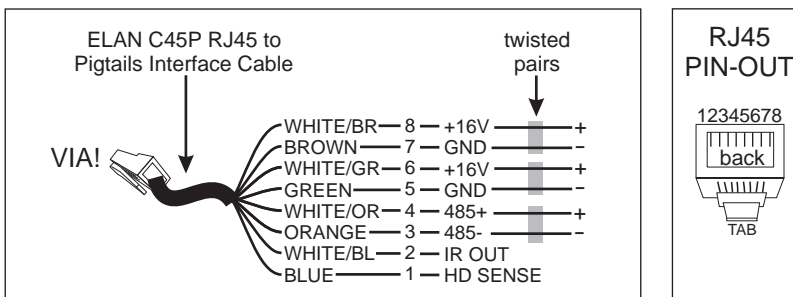
Z-BUS JUMPERS

Located on the back of the PVIA-4 are two jumpers labeled "Z-BUS". In an ELAN Z System, these jumpers determine how data is being transmitted from VIA! touch panels to the Z630 PreAmp Contoller. Unless using an ELAN SC-4 RS232 System Controller, these jumpers should remain in the Factory Default EXT position.

Z-BUS

1 ● ● INT ← SC-4 Position - both jumpers on top two pins

2 ● ● EXT ← No SC-4 - both jumpers on bottom two pins (Factory Default - shown)

GROUND JUMPERS

Located on the back of the PVIA-4 is a jumper labeled "GROUND". In the Factory Default position the PVIA-4's DC ground is isolated. Should you experience any ground hum in the system, this jumper can be moved to the CONN position. This connectes the DC Ground of the PVIA--4 to the AC Earth Ground of the outlet that the power supply is plugged into.

GROUND
CONN ● ■■ ← Isolated DC Ground - jumper on the two right pins (Factory Default)

GROUND
CONN ■■ ● ← AC/DC Grounds Connected - jumpers on the two left pins

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VIA! TOUCH PANEL TO PVIA-4 CONNECTIONS
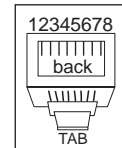
WIRING DIAGRAM 1: VIA! TO PVIA-4 (ZONE 1 CONNECTIONS SHOWN)

min. 18/2 stranded wire for power

Out-Video-In Sys Local + -

VIA64 BOTTOM VIEW

WHITE/BR	8	+16V (NC)	V+
BROWN	7	GND (NC)	G
WHITE/GR	6	+16V (NC)	V+
GREEN	5	GND	G
WHITE/OR	4	V485+	485+
ORANGE	3	V485-	485-
WHITE/BL	2	IR OUT	IR
BLUE	1	HD SENSE	ST

PVIA-4 VIA 1 Punchdown Connector

- 1
+
- 2
+
- 3
+
- 4
+

PVIA-4 PWR Punchdown Connector

WIRING DIAGRAM 2: RETROFIT APPLICATION - VIA! <110FT. FROM PVIA-4

The diagram below shows the use of the remaining two CAT-5 twisted pairs providing power to the VIA! touch panel. Although this works just fine for VIA! panels located *within 110 feet of the PVIA-4*, we recommend that this wiring scenario only be used in Retrofit applications where the 2-conductor power wire run is not available. For Retrofit applications where the VIA! panel is more than 110 feet from the PVIA-4, the VIA! panel can be powered locally using ELAN's 16V/1.2A plug-in power supply connected to the POWER +/- terminals on the VIA! panel.
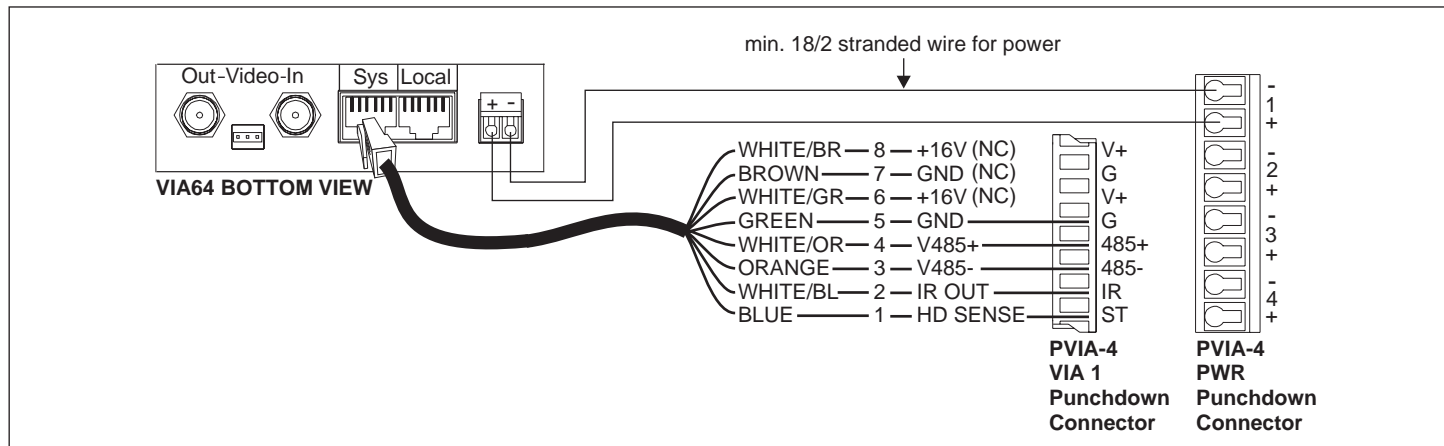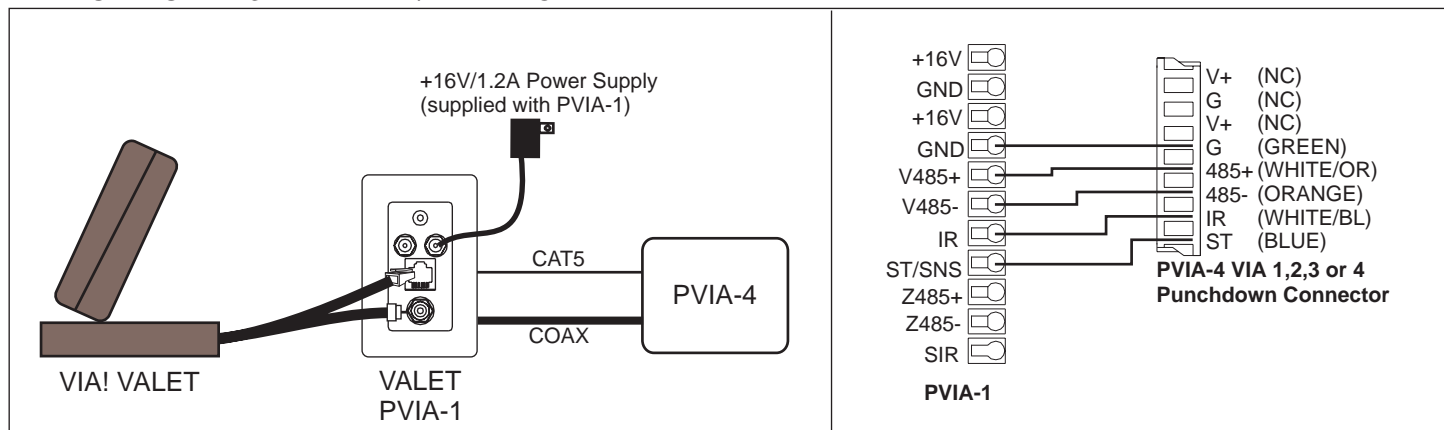
Out-Video-In Sys Local + -

VIA64 BOTTOM VIEW

WHITE/BR	8	+16V	V+
BROWN	7	GND	G
WHITE/GR	6	+16V	V+
GREEN	5	GND	G
WHITE/OR	4	V485+	485+
ORANGE	3	V485-	485-
WHITE/BL	2	IR OUT	IR
BLUE	1	HD SENSE	ST

PVIA-4 VIA 1,2,3 or 4 Punchdown Connector
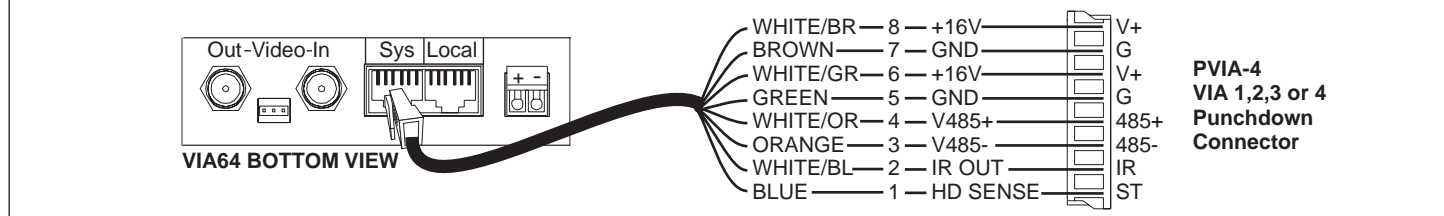
WIRING DIAGRAM 3: VIA! VALET/PVIA-1 TO PVIA-4

+16V/1.2A Power Supply
(supplied with PVIA-1)

VIA! VALET

VALET PVIA-1

CAT5

COAX

PVIA-4

+16V	
GND	
+16V	
GND	
V485+	
V485-	
IR	
ST/SNS	
Z485+	
Z485-	
SIR	

PVIA-1

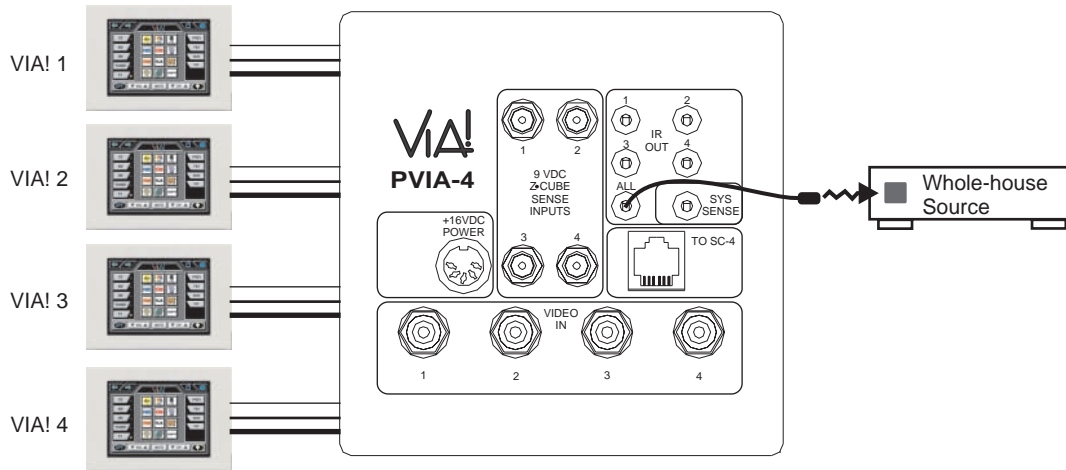| V+ | (NC) |
G	(NC)
V+	(NC)
G	(GREEN)
485+	(WHITE/OR)
485-	(ORANGE)
IR	(WHITE/BL)
ST	(BLUE)

PVIA-4 VIA 1,2,3 or 4 Punchdown Connector

NOTE:
Do not connect the +16V and GND between the PVIA-1 and the PVIA-10 as the VIA! Valet is being powered locally by its own power supply.

PVIA-4 STAND-ALONE APPLICATIONS

SINGLE-SOURCE AUDIO

VIA! 1

VIA! 2

VIA! 3

VIA! 4

PVIA-4

9 VDC Z-CUBE SENSE INPUTS

+16VDC POWER

IR OUT

ALL

SYS SENSE

TO SC-4

VIDEO IN

Whole-house Source

MULTI-ZONE AUDIO

ZONE 1 VIA!1

ZONE 2 VIA!1

ZONE 3 VIA!1

ZONE 4 VIA!1

PVIA-4

9 VDC Z-CUBE SENSE INPUTS

+16VDC POWER

IR OUT

ALL

SYS SENSE

TO SC-4

VIDEO IN

Zone 1 Source

Zone 2 Source

Zone 3 Source

Zone 4 Source

Whole-house Source
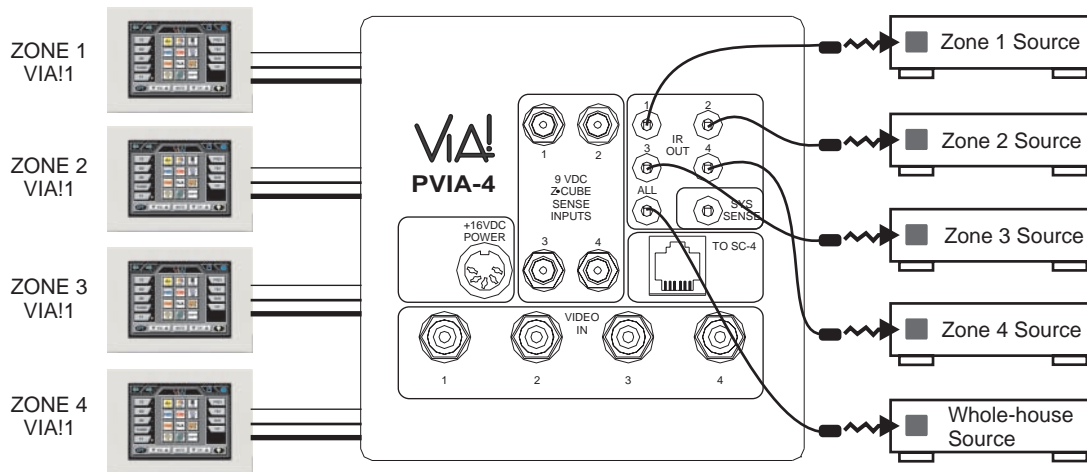
MULTI-SOURCE VIDEO SWITCHING USING THE Z 880 8x8 VIDEO CONTROLLER
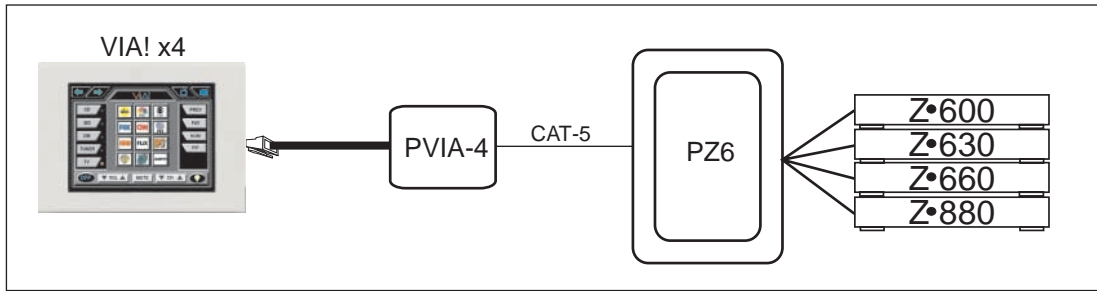
VIA! 1

VIA! 2

VIA! 3

VIA! 4

PVIA-4

9 VDC Z-CUBE SENSE INPUTS

+16VDC POWER

IR OUT

ALL

SYS SENSE

TO SC-4

VIDEO IN

SAT1

SAT2

DVD1

DVD2

CABLE

Z•880

CCTV Cameras

PVIA-4 TO PZ6 Z•SERIES PRECISION PANEL CONNECTIONS

Located on the back of the PVIA-4 are two punchdown connectors labeled XLINK and IR. These "crosslink" connectors are used to route data transmitted by the VIA! touch panels to the ELAN Z•630 PreAmp Controller by way of corresponding punchdown connectors found on the back of the PZ6 Z•Series Precision Panel (labeled TO VIA PLATE and TELCO).

There are four connections that need to made between the PVIA-4 and the PZ6: **485+, 485-, IR and GND**. The IR connections on the PZ6 "TO VIA PLATE" punchdown connector are ZONE-SPECIFIC (i.e. IR1= Z•630 ZONE 1), so make sure that each VIA! panel coming from the PVIA-4 is connected to the correct Z•630 Zone. (i.e. Zone 1 VIA! to IR1, Zone 2 VIA! to IR2, etc.). You can use either of the GND punchdown positions on the PZ6 "TELCO" connector to terminate the GND wires coming from the PVIA-4.
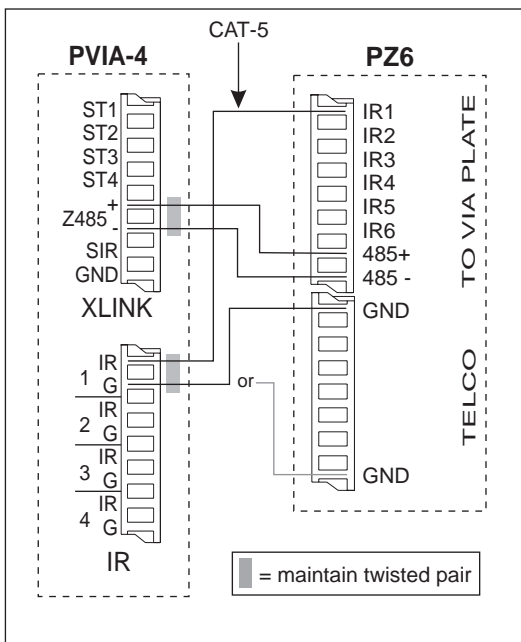
NOTE: Each position on a punchdown connector will accept up to two wires.

If more than two wires need to be punched down into a position a pigtail will need to be created, tying the wires together so that no more than two wires are punched down.

The diagram below shows the Ground wires of four VIA! touch panels. Two are being punched down to each of the GND punchdown positions on the PZ6 TELCO connector.
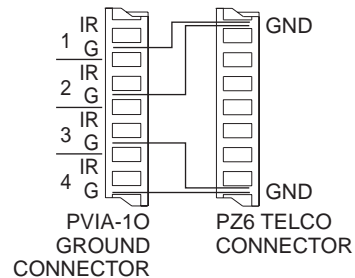
NEVER CONNECT THE +16V FROM THE PVIA-4 TO THE PZ6 PRECISION PANEL OR THE Z630 PREAMP CONTROLLER. THIS WILL RESULT IN DAMAGE TO THE Z630. ONLY THOSE CONNECTIONS SHOWN ABOVE SHOULD BE MADE.

PVIA-4 TO PHD12 HD SERIES PRECISION PANEL CONNECTIONS
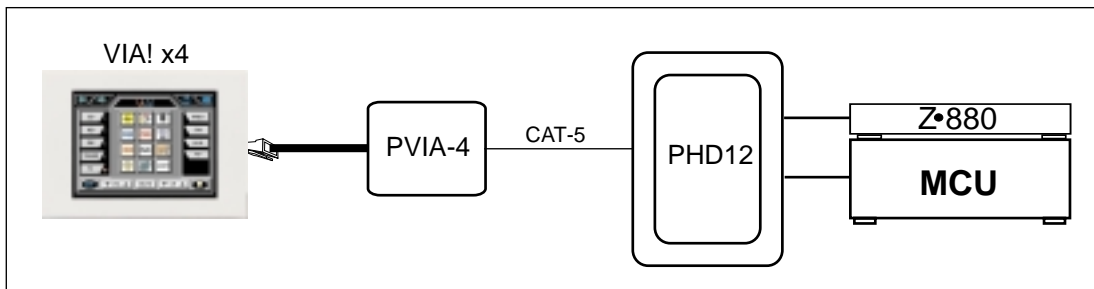
VIA! x4

PVIA-4 — CAT-5 — PHD12 — Z•880 **MCU**

Located on the back of the PVIA-4 are two punchdown connectors labeled XLINK and IR. These "crosslink" connectors are used to route data transmitted by VIA! touch panels to the ELAN HD Series MCU by way of corresponding punchdown connectors found on the back of the PHD12 HD Series Precision Panel (labeled VIA! 1-4, VIA! 5-8 and VIA! 9-12).

The punchdown connectors on the PHD12 are ZONE-SPECIFIC (i.e. STAT1/IR1= HD ZONE 1), so make sure that each VIA! panel coming from the PVIA-4 is connected to the correct HD Zone.

A third connection, GROUND, must also be made for each VIA! panel. Use the GND position on the PHD12's ZONE punchdown connectors (as show in the diagram below) for this termination.

ZONE 1 CONNECTIONS SHOWN

CAT-5

PVIA-4

ST1
ST2
ST3
ST4
Z485 +
−
SIR
GND

XLINK

PHD12

STAT1
IR1
STAT2
IR2
STAT3
IR3
STAT4
IR4

VIA! 1-4

IR
1 G
IR
2 G
IR
3 G
IR
4 G

IR

IR1
STATUS1
+12V
GND
IR13
STATUS13
+12V
GND

ZONE 1/13

▌ = maintain twisted pair

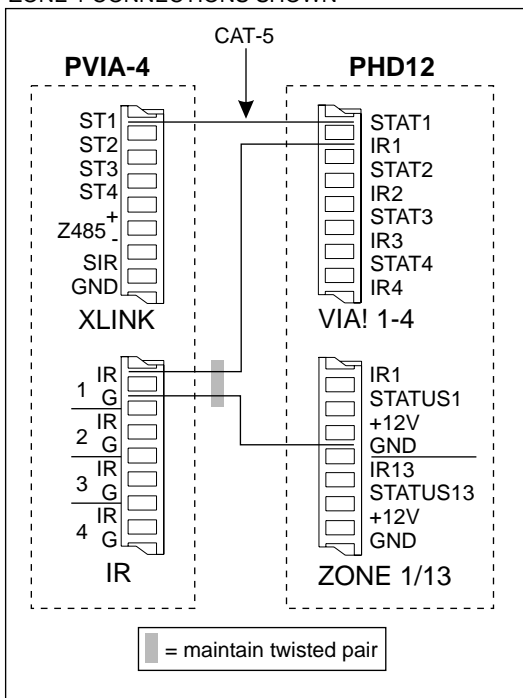**NOTE:** Each position on a punchdown connector will accept up to two wires. If more than two wires need to be punched down into a position a pigtail will need to be created, tying the wires together so that no more than two wires are punched down.

The diagram below shows a VIA! ground wire from the PVIA-4 being punched down to the same position on the PHD12 Zone connector as two ZPADS in the same zone. The ZPAD ground wires have been tied together so that only two wires need to be punched down.

Z•PAD   Z•PAD

GND   GND

IR
1 G
IR
2 G
IR
3 G
IR
4 G

PVIA-4
IR/GROUND
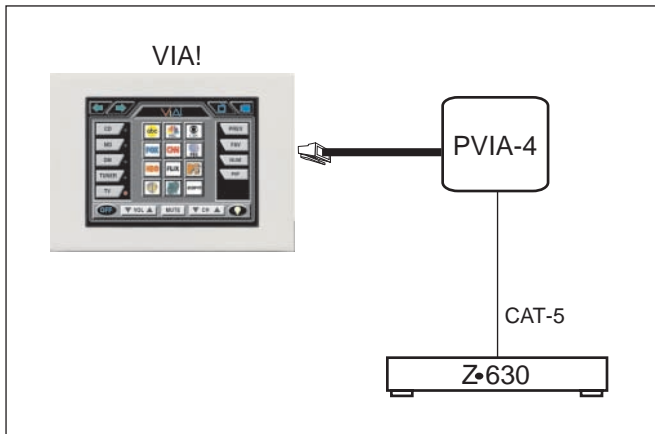CONNECTOR

PHD12 ZONE
CONNECTOR

NEVER CONNECT THE +16V FROM THE PVIA-4 TO THE PHD12 PRECISION PANEL OR THE HDC1010 DUAL ZONE CARD. THIS WILL RESULT IN DAMAGE TO THE HDC1010, THE MCU OR BOTH. ONLY THOSE CONNECTIONS SHOWN ABOVE SHOULD BE MADE.
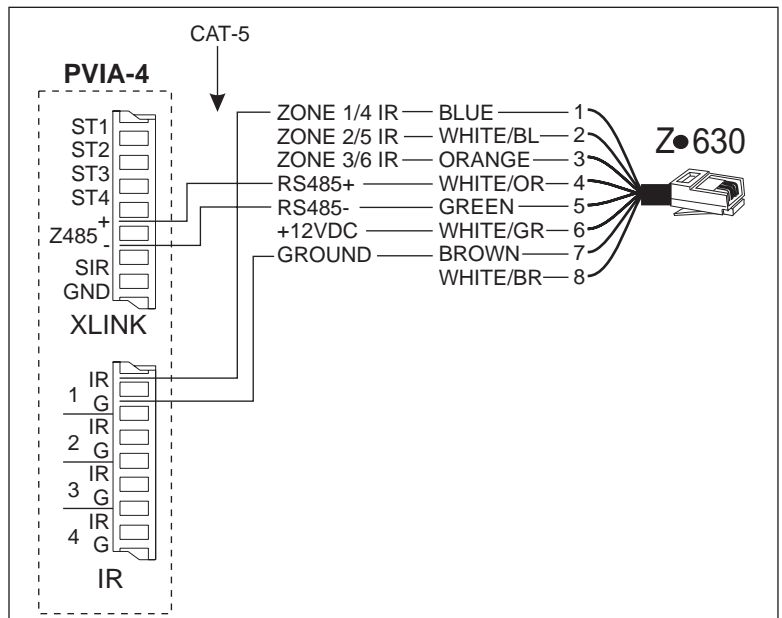
PVIA-4 TO Z•630 PREAMP CONTROLLER CONNECTIONS (NO PZ6)

Refer to the text on page 6 (PVIA-4 to PZ6 Z•Series Precision Panel Connections) for detailed information on the PVIA-4 "XLINK" and "IR" punchdown connectors.
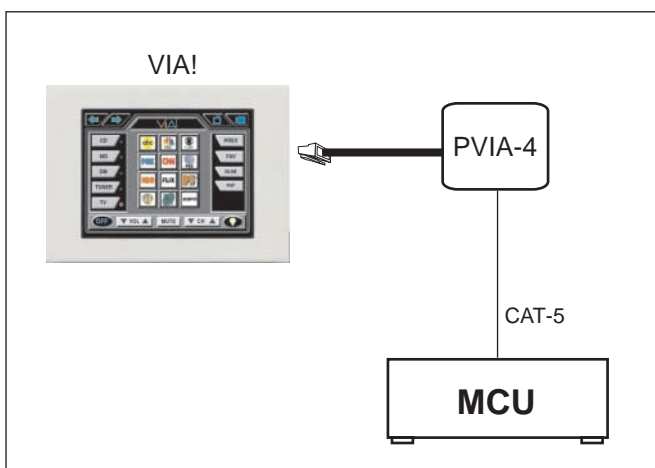
ZONE 1 OR 4 CONNECTIONS SHOWN

PVIA-4

CAT-5

XLINK			
ST1	ZONE 1/4 IR	BLUE	1
ST2	ZONE 2/5 IR	WHITE/BL	2
ST3	ZONE 3/6 IR	ORANGE	3
ST4	RS485+	WHITE/OR	4
Z485 +	RS485-	GREEN	5
Z485 -	+12VDC	WHITE/GR	6
SIR	GROUND	BROWN	7
GND		WHITE/BR	8

Z•630

IR
1 IR / G
2 IR / G
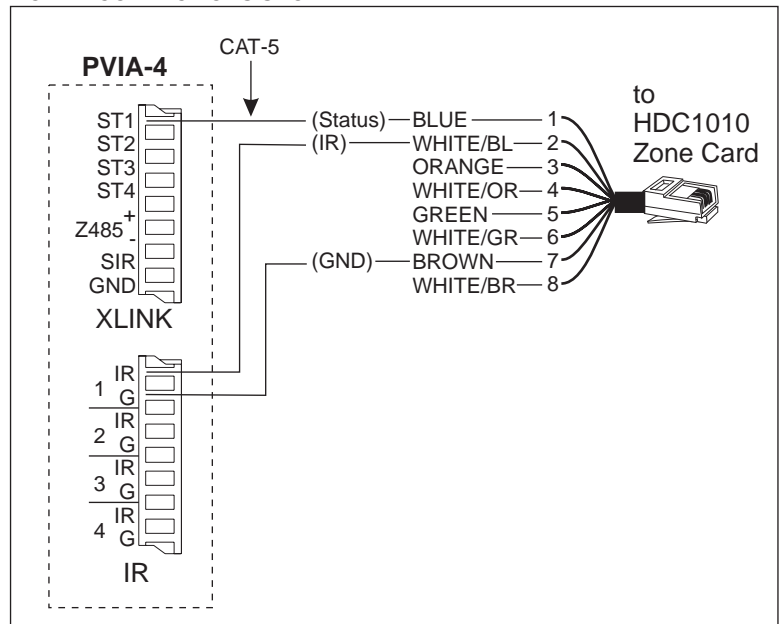3 IR / G
4 IR / G

VIA!

PVIA-4

CAT-5

Z•630

PVIA-4 TO HD SERIES MCU CONNECTIONS (NO PHD12)

Refer to the text on page 7 (PVIA-4 to PHD12 HD Series Precision Panel Connections) for detailed information on the PVIA-4 "XLINK" and "IR" punchdown connectors.

ZONE 1 CONNECTIONS SHOWN

PVIA-4

CAT-5

XLINK			
ST1	(Status)	BLUE	1
ST2	(IR)	WHITE/BL	2
ST3		ORANGE	3
ST4		WHITE/OR	4
Z485 +		GREEN	5
Z485 -		WHITE/GR	6
SIR	(GND)	BROWN	7
GND		WHITE/BR	8

to HDC1010 Zone Card

IR
1 IR / G
2 IR / G
3 IR / G
4 IR / G

VIA!

PVIA-4

CAT-5

MCU

⚠ **NEVER CONNECT THE +16V FROM THE PVIA-4 TO THE HD SERIES MCU OR Z630 PREAMP CONTROLLER. THIS WILL RESULT IN DAMAGE TO THESE UNITS. ONLY THOSE CONNECTIONS SHOWN HERE SHOULD BE MADE.**
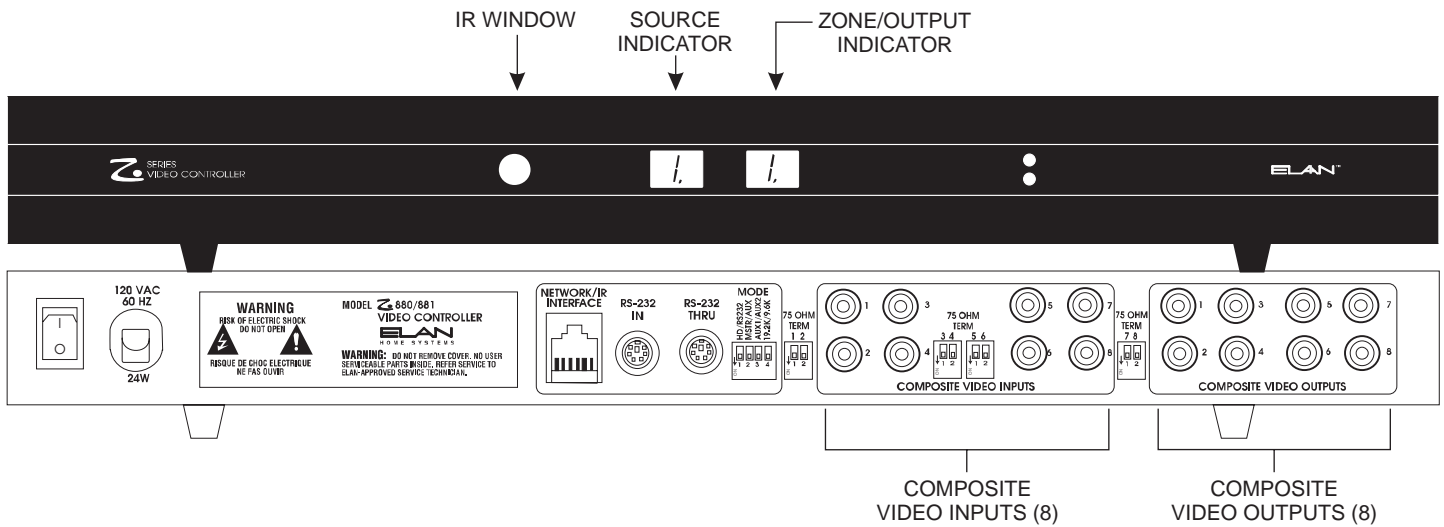
PVIA-4 VIDEO CONNECTIONS

The PVIA-4 has four RCA-to-F video barrel connectors that make it easy to route composite video signals to every VIA! panel in the system. Using a composite video switcher, such as ELAN's Z•880 allows each VIA! panel in the system to independently view multiple video sources.
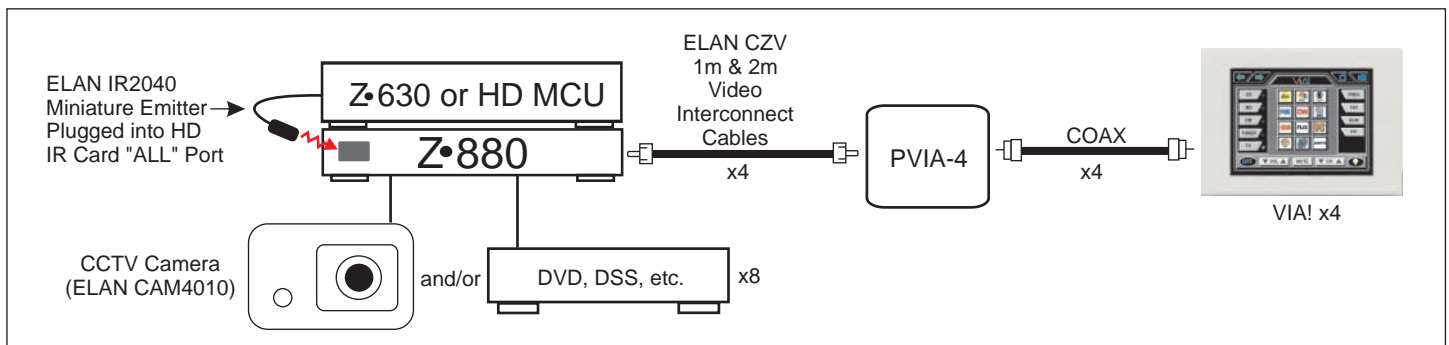
VIDEO IN

1 2 3 4
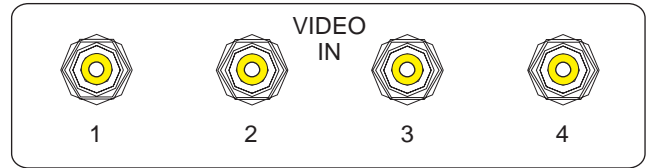
Z•880 VIDEO CONTROLLER

The ELAN Z•880 VIDEO CONTROLLER is an 8x8 composite video switcher that can easily be integrated into any VIA! system, allowing you to view up to eight video sources on a VIA! touch panel. Z•880 IR commands are available as one of the pre-programmed IR library files in VIATOOLS programming software, making VIA! panel setup quick and easy. Eight composite video outputs allow you to view any of the sources independently on up to eight VIA! touch panels. If that's not enough, a second Z•880 can be added, allowing you to view the eight video sources on up to 16 VIA! touch panels. *Refer to the Z•880 Installation Manual and the VIATOOLS programming manual for further information.*

IR WINDOW   SOURCE INDICATOR   ZONE/OUTPUT INDICATOR

COMPOSITE VIDEO INPUTS (8)   COMPOSITE VIDEO OUTPUTS (8)

8X8 VIDEO SWITCHING INTO AN ELAN Z• OR HD SERIES SYSTEM USING A Z•880

ELAN IR2040 Miniature Emitter Plugged into HD IR Card "ALL" Port

Z•630 or HD MCU

Z•880

ELAN CZV 1m & 2m Video Interconnect Cables x4

PVIA-4

COAX x4

VIA! x4

CCTV Camera (ELAN CAM4010)   and/or   DVD, DSS, etc.   x8

Z•880 RJ45 Jack IR Connections

The diagram above shows the Z•880 being controlled by a miniature IR emitter plugged into the "ALL" port of a Z•630 or HD Series MCU. An alternative to this method would be to connect the ALL port directly to the Z•880's NETWORK/ IR INTERFACE RJ45 jack, eliminating the need for the miniature emitters. See the diagram to the right for connections.

IR Receive —— BLUE ——— 1
Ground —— WHITE/BL — 2
ORANGE —— 3
WHITE/OR — 4
GREEN ——— 5
WHITE/GR — 6
BROWN ——— 7
WHITE/BR — 8

Z•880

RJ45 PIN-OUT

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TAB