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## **6 Specification**

**31**



# 1 Introduction

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The 6700 series of 1U control panels are designed to operate with all current Pro-Bel control systems.

The basic 6700 hardware platform is used to provide a wide range of panel types including button per crosspoint (BPX) and multi-destination panels (X-Y). The compact design allows for as many as 54 buttons, allowing for example a 48 way, four level control panel or a 'split' design with two four level 16 way sections in one panel.

The features provided are:

- Support for all current Pro-Bel controllers including System 2, System 3, TM, and Gemini
- Full breakaway of audio and video
- Selectable tally colour
- Adjustable brightness for electro-luminescent back light
- Eight joystick overrides
- Dual RS485 ports for multi-drop connection
- Built in diagnostics

The button legend strip is easily fitted by sliding a laser printed transparency behind the panel display membrane.

The unit is powered from a single 5V power supply housed in a cradle attached at the rear of the panel.

The cradle is detachable allowing the PSU to be placed elsewhere if installation space is limited.

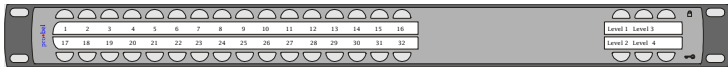
## 2 Panel types

### The 6700 series

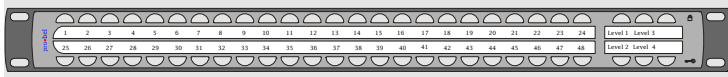
This comprehensive range of panels covers the requirements for button panels and, with some systems, provides multibus and limited X-Y capability. The following drawings detail the five panels types in the range. In addition, the 6708 panel is shown when used as an Aurora/System 3 status display control panel.



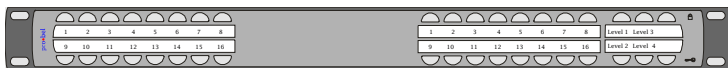
The 6709 16 way, four level panel



The 6705 32 way, four level panel



The 6706 48 way, four level panel



The 6707 dual 16 way, four level panel



The 6708 24x12 X-Y, four level panel



The System 3 status panel

Compatible with all current Pro-Bel control systems, the operation of each panel type is determined by the system configuration. The following table details the panel facilities offered with each type of controller.

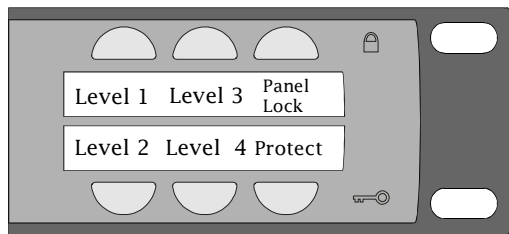
6709	System 2	TM	Aurora/ System 3	Freeway
16 Way BPX	✓	✓	✓	✓
Dual 8 way BPX	✓	✓	✓	✓
8 x 8 X-Y	✓	✓	✓	✓
16 X 4 X-Y	✓	✓	✓	✓
<b>6705</b>				
32 way BPX	✓	✓	✓	✓
Dual 16 way BPX	✓	X	✓	✓
16 x 16 X-Y	✓	✓	✓	✓
32 x 4 X-Y	X	X	✓	✓




<b>6706</b>	<b>System 2</b>	<b>TM</b>	<b>Aurora/ System 3</b>	<b>Freeway</b>
<b>48 Way BPX</b>	✓	X	✓	✓
<b>Dual 24 way BPX</b>	✓	X	✓	✓
<b>24 x 24 X-Y</b>	X	X	✓	✓
<b>48 x 4 X-Y</b>	X	X	✓	✓
<b>32 x16 X-Y</b>	X	X	✓	✓
<b>6707</b>				
<b>Dual 16 way BPX</b>	✓	✓	✓	✓
<b>16 x 16 X-Y</b>	✓	✓	✓	✓
<b>6708</b>				
<b>24 x 12 X-Y</b>	✓	✓	✓	✓


## Panel lock and destination protect

In some panel modes the buttons at the far right hand side of the panel are reserved for panel lock and destination protect. The padlock and key symbols associated with these functions are invisible until lit.



- Panel lock 

Panel lock prevents the panel from changing cross points while still allowing the tally to indicate the source currently selected. This protects the panel from inadvertent operation.

- Destination protect 

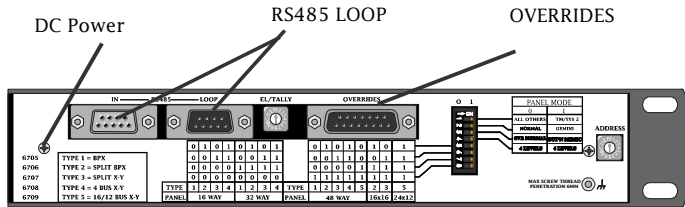
The protect button assigns protected status to the destination currently associated with the panel. This prevents any panel on the system from making selections to the protected destination.





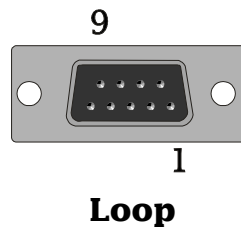
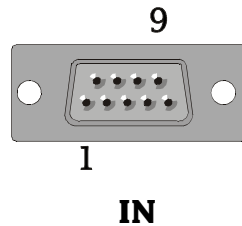
### 3 Installation

#### Connector I/O



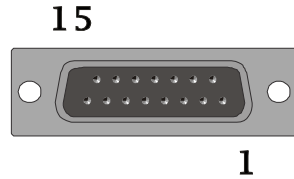
**RS485 9 way 'D' type**

Pin	Function
1	Chassis
2	TX-
3	RX+
4	GND
5	N/C
6	GND
7	TX+
8	RX-
9	Chassis



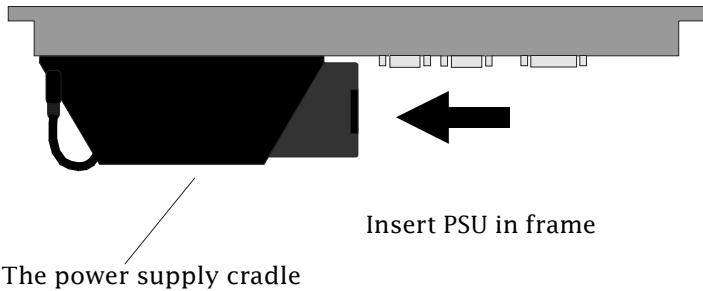
## Joystick overrides 15 way 'D' type

Pin	Function
<b>1</b>	Override 1
<b>2</b>	Override 2
<b>3</b>	Override 3
<b>4</b>	Override 4
<b>5</b>	Override 5
<b>6</b>	Override 6
<b>7</b>	Override 7
<b>8</b>	Override 8
<b>9</b>	GND
<b>10</b>	GND
<b>11</b>	GND
<b>12</b>	GND
<b>13</b>	GND
<b>14</b>	GND

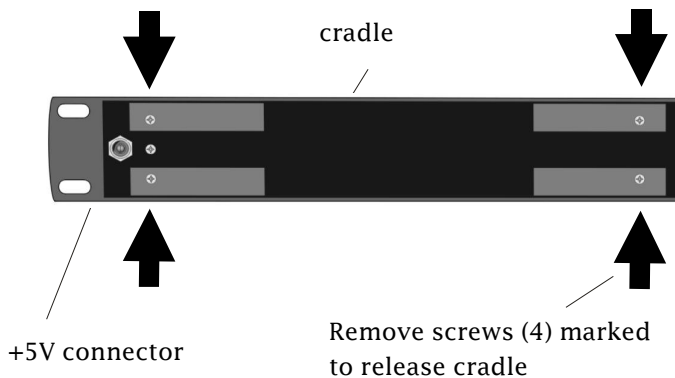


## Installing the power supply

The 6700 series of control panels are powered by a 5V d.c. PSU which may be fitted within a carrier frame, or cradle, screwed to the rear of the panel.



If there is insufficient space for the PSU cradle, it may be removed, and the PSU can then be mounted as required. To assist this, the PSU is supplied with a 1metre cable .







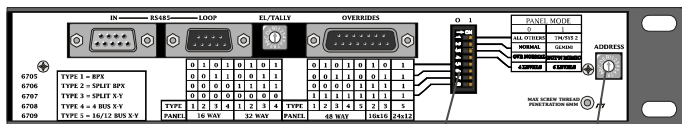


Panels are shipped set to position 5, green tally and EL brightness level 2.

## Selecting the control system

The rear panel legend details the switch settings for each panel type and operating mode. The panel modes are detailed as five types:

Panel mode	
Mode	Operation
1	Button per cross point
2	Split button per cross point
3	Split X-Y
4	4 bus X-Y
5	12/16 bus X-Y



Panel Mode

Panel address





## Setting the override input mode

The override input mode is set by switch 3.

Override Input Mode	
Switch 3 Position	Function
OFF	Normal Override Operation
ON	Remote Button Mimic Operation

### Normal override operation

This mode provides the normal joystick override operation where, when the input is grounded, the source/level assigned to that input is routed and when released the previously routed source is restored. If more than one joystick override input is active, the lowest number joystick override has priority - number 1 has highest priority, number 8 has lowest priority.

### Remote button mimic operation

This mode provides a way of remotely selecting one of the first eight buttons on the panel. When the input is grounded, the panel operates just like pushing one of the buttons on the panel. When the input is released it is just like taking your finger off the button.

Input 1 mimics button 1 through to input 8 that mimics button 8.

As this mode behaves like pressing buttons, the router levels it operates on, is dependent on how the control system is setup (controlled levels, levels active, source and destination associations etc).



Each control panel, when driven from either System 2 or TM has the following features:

<b>System 2 &amp; TM panel features</b>			
<b>Panel type</b>	<b>Level buttons</b>	<b>Panel lock</b>	<b>Dest protect</b>
<b>16 way BPX</b>	Y	N	N
<b>16 way split BPX</b>	Y	N	N
<b>16 way split X-Y</b>	Y	N	N
<b>16 way 4 bus X-Y</b>	N	N	N
<b>32 way BPX</b>	Y	N	N
<b>32 way split BPX</b>	N	N	N
<b>32 way split X-Y</b>	N	N	N
<b>32 way 4 bus X-Y</b>	N	N	N
<b>48 way BPX</b>	N	N	N
<b>48 way split BPX</b>	N	N	N
<b>48 way split X-Y</b>	N	N	N
<b>48 way 4 bus X-Y</b>	N	N	N
<b>48 way 32x16 X-Y</b>	N	N	N
<b>16x16 split BPX</b>	N	N	N
<b>16x16 split X-Y</b>	N	N	N
<b>24x12 X-Y</b>	Y	N	N





Switch 4 is used to determine whether the panel has 4 level buttons lock and protect buttons or 6 level buttons. Each control panel, when driven from either Aurora/System 3 or Freeway has the following features:

<b>Aurora/System 3 &amp; Freeway panel features</b>						
<b>Panel type</b>	<b>Switch 4 = OFF</b>			<b>Switch 4 = ON</b>		
	<b>Level buttons</b>	<b>Panel lock</b>	<b>Dest prot</b>	<b>Level buttons</b>	<b>Panel lock</b>	<b>Des pro</b>
16 way BPX	4	Y	1	6	N	N
16 way split BPX	4	Y	2	6	N	N
16 way split X-Y	4	Y	1	6	N	N
16 way 4 bus X-Y	0	Y	1	0	Y	Y
32 way BPX	4	Y	1	6	N	N
32 way split BPX	4	Y	2	6	N	N
32 way split X-Y	4	Y	1	6	N	N
32 way 4 bus X-Y	0	Y	1	0	Y	Y
48 way BPX	4	Y	1	6	N	N
48 way split BPX	4	Y	2	6	N	N
48 way split X-Y	4	Y	1	6	N	N
48 (42) way 4 bus X-Y *#	0	Y	1	6	N	N
48 way 32x16 X-Y	4	Y	1	6	N	N
16x16 split BPX	4	Y	2	6	N	N
16x16 split X-Y	4	Y	1	6	N	N
24x12 X-Y	4	Y	1	6	N	N





The EL/Tally switch controls background illumination brightness, however button colours are fixed as described below.

## Source button colours

Red	Green	Amber
Video only	Audio only	Video and Audio

## Level button colours

Red	Green	Blue	Off
Video selected	Audio selected	Video or Audio de-selected	Level not available

## Destination button colours

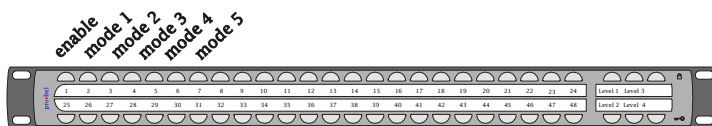
Magenta	Blue	Off
Destination selected	Destination de-selected	Destination not available





## 5 Panel self tests

Any panel in the 6700 series will enter a self test mode if no data is received for one second. Normal operation will be resumed once data recommences. Whenever data is not received by the panel, various self test modes may be entered by simultaneously pressing the enable and one of the mode buttons.



Note: On entering self-test, the panel reverts to mode 1

### Mode 1: button and LED test

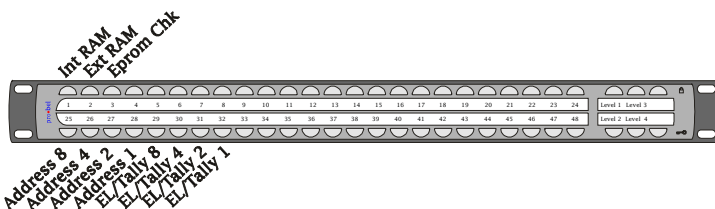
- Cyclic LED test. All LEDs relevant to the panel type selected illuminate in turn according to the chosen tally colour.
- Pressing a button cancels the cyclic LED test and flashes that button's LED. After a short time the panel will return to the cyclic LED test.

### Mode 2: all colour LED test

- A rapid cyclic LED test is performed illuminating each LED with all available colours
- Pressing a single button has no effect



## Mode 4: processor and rotary switch test



- The first three LEDs on the upper button row indicate EPROM sumcheck, internal processor ram test and external processor ram test. Green illumination indicates success and red indicates failure.
- LEDs 4 to 8 on the upper button row indicates the version of software fitted in the panel.
- The first eight LEDs on the bottom row are used to indicate the panel address and EL/Tally switch positions as binary values. Red is ON and green is OFF.
- Panel address is indicated as a binary value by the status of the address 8,4,2,1 LEDs. Red indicates ON(1), green is OFF(0).
- Similarly, the EL/Tally switch setting is indicated, as a binary value, by the status of the EL/Tally 8, 4, 2, 1 LEDs.

For example, panel address 1 is displayed by the address indicators 8,4,2,1 as green, green, green, red. Blue, blue, blue, red for EL/Tally 8, 4, 2, 1 would indicate switch position 1.





