

Luna — 7028-RC Series

1RU Shallow Router

Control Panels

Data Sheet

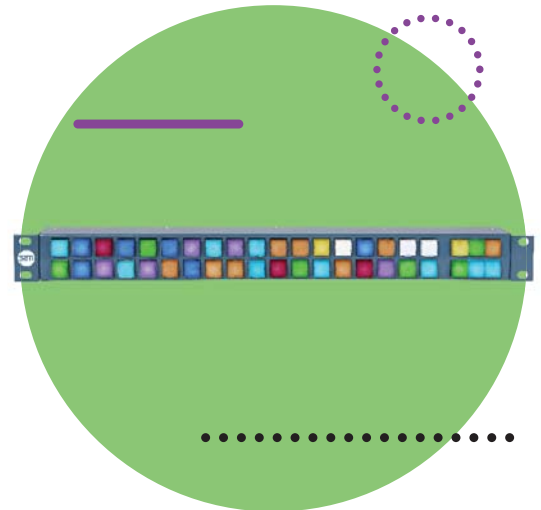
The Luna range of shallow panels has been designed to meet the exacting requirements for hardware control panels used in simple or complex routing systems.

All panels are configured using proprietary 'RC' software launched via an applet addressed from a PC web browser.

The range consists of six 1RU panels (three LED & three LCD). All types can be configured for X-Y or BPX operational modes.

- Lightweight ergonomic design
- Rack Mounting depth of 50mm (2")
- Fast Ethernet connection to router
- 12 GPIO ports
- Independent key allocation
- Programmable key color backlights
- Independent Source & Destination Up/Down paging Keys
- Rotary control paging on LCD types
- LCD text options
- Dual 12V DC inputs with external converter(s) for mains supply.
- Network port is POE (Power-Over-Ethernet) enabled.

'RC' shallow panels are independently configured over an IP network. A configuration file can be stored and copied to other panels (of the same type) or indeed loaded to a new panel when exchanging a faulty unit.



7028xxxRC - 1RU



78-Key LED X-Y/BPX - 7028000RC

42-Key LED X-Y/BPX - 7028100RC

24-Key LED X-Y/BPX - 7028201RC

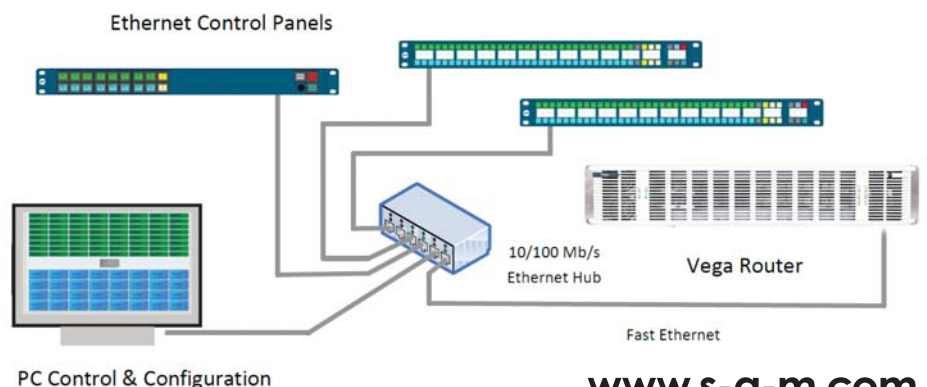
39-Key LCD X-Y/BPX + Rotary Control Knob - 7028251RC

21-Key LCD X-Y/BPX + Rotary Control Knob - 7028351RC

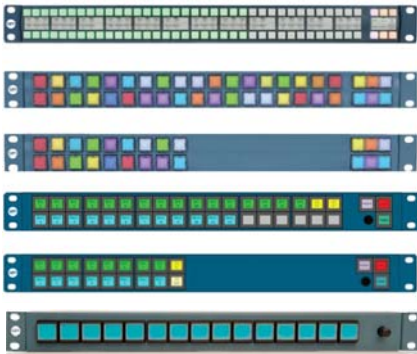
15-Key LCD X-Y/BPX + Rotary Control Knob - 7028071RC.



7028100RC



Configuration via Web Browser

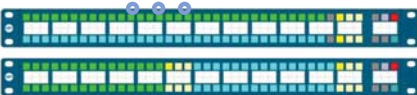


Configuration of 'RC' panels is implemented via a PC web browser. The panel applet will render on entering a default IP address. The panel address can be changed to your system requirements from the main configuration panel and the IP address of the router entered. Facility also exists to upgrade the panel configuration software over the internet should additional features be added. A set of intuitive menus allow you to custom build the panel layout to your specific needs. Once the layout has been determined, source and destination keys can be mapped to the appropriate ports on the router. For LCD panels porting of source and destination names is automatic as soon as connection is established with the router controller. Changes to the panel configuration can be made whilst a system is operational by reactivating the applet.

7028xxxRC shallow control panels are compatible with Nucleus2 (246x) controllers as used in the **Sirius 800** range of routers. They are also the recommended panel types for use with the **Vega** Asymmetric router (see example system on front page). Connection to a router for all 'RC' panel types is IP Ethernet only (either directly or via a hub) over standard CAT5/6 cabling using RJ45 connectors. All the panels feature dual 12V DC inputs with external converters for mains supply.

For the **7028000RC** panel printed legends are fitted between the two key rows under clear covers once the panel configuration has been defined. A legend template for this purpose is available for download from the router control panel section of our website. The **7028100RC** & **7028201RC** LED panels use individual printed legends fitted to each key cap. The LCD panels will port source and destination names once connected to the router and display them according to the text format chosen.

Fully Flexible Source/Destination Key Positioning



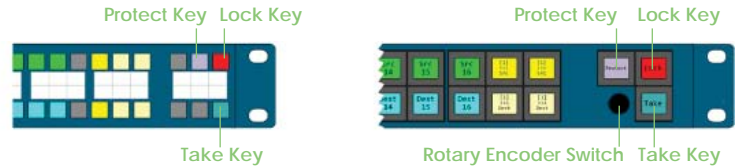
'RC' panels provide 'free-form' key function and positioning with the exception of just 3 which are fixed (see next page). All of the remaining keys can be independently configured as source (SRC), destination (DST) or paging keys (optional). Panels not requiring paging can use the additional keys as SRC or DST. Shown on the right is an LCD panel in X-Y mode using a horizontal SRC/DST key layout and another with a vertical layout. In the horizontal layout, for instance, it may be that an operator would prefer the DST keys to be in the top row with the SRC keys below. This is simple to configure in the RC panel range.

Example Schemes:

Positions of the 'Protect', 'Lock' and 'Take' keys (or buttons) are fixed on all panel types. If either or both the Protect and Take keys are disabled during configuration they will not display. Backlight illumination of the 'Lock/Unlocked' key can be configured as Red, Green or Amber for either status.

The LCD panel types include a Rotary Encoder Switch for 'paging' as an alternative to (or in conjunction with) the 'Page Up' and 'Page Down' keys. Pressing the rotary encoder swaps its operating mode between source and destination paging.

Fixed Keys & Rotary Encoder Switch (LCD only)

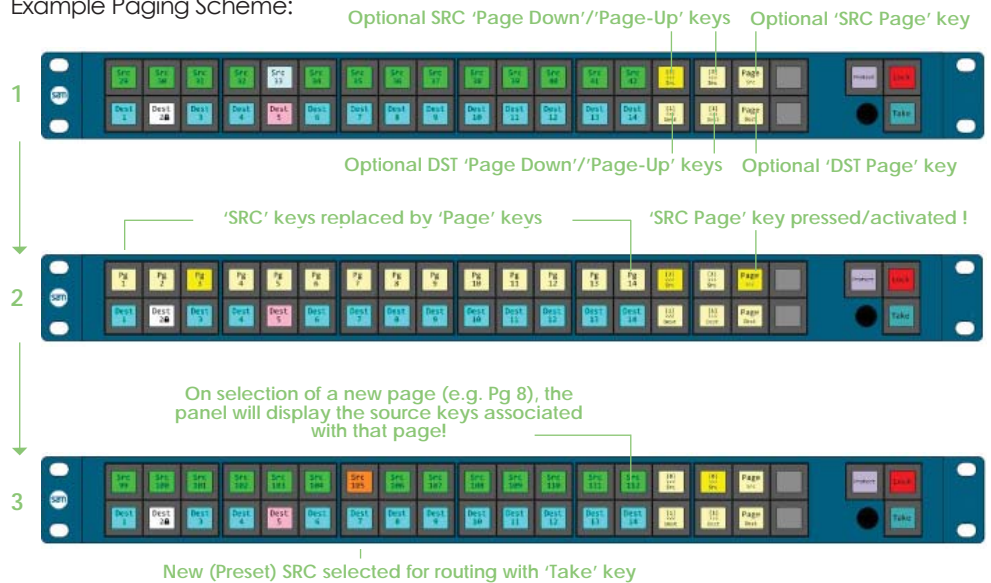


Paging - Optional 'Page Up', 'Page Down' and/or 'Page Mode' keys

Optional keys that can be used with or without the 'Page Up' and 'Page Down' keys are the 'SRC Page' and 'DST Page' keys. On pressing the 'SRC Page' key, for instance, all the displayed SRC keys will change to display an array of dedicated page keys. On selecting a new page the display will revert to the new set of SRC keys associated with that page.

The number of pages (and their names) can be set during configuration. Each page can be compiled from any of the router sources and in any order. Individual sources can appear multiple times on different pages. The equivalent is true for destination pages.

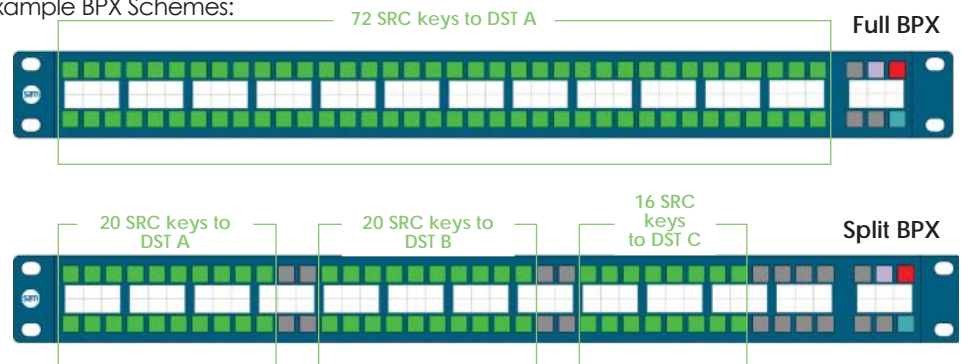
Example Paging Scheme:



Button per Crosspoint (BPX) operation

All 'RC' panel types can be configured for X-Y or BPX (Button per Crosspoint) modes of operation. In BPX mode each key can be individually assigned to a destination allowing either full panel schemes or any combination and number of 'Split BPX' configurations. The example Split BPX panel shown to the left has been configured for 3 groups of BPX source keys assigned to destinations A, B and C.

Example BPX Schemes:



Other 'RC' Series Panel Features

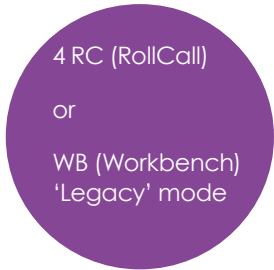
Custom Key Color and Brightness
All keys/buttons are backlit with RGB LEDs (LED & LCD panels). During configuration the color and brightness for each functional key type and state can be customized depending on user preference. Alternatively factory preset value can be selected for each key type.

Illumination of 'Blank' Keys and Text insertion on LCD types
Assigned but unused keys can remain illuminated. Key color and brightness can be customized (as above) and LCD keys may include custom text.

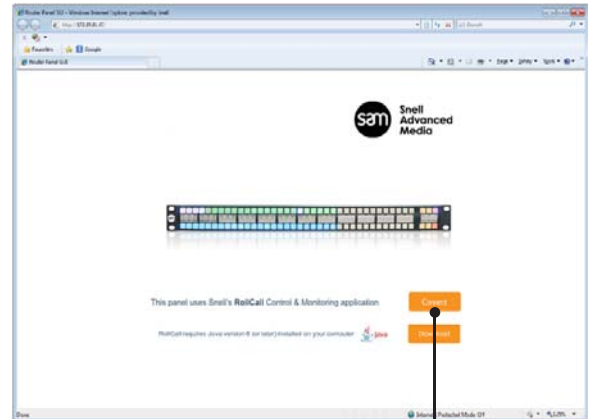
'Joystick' Override via GPI Port
Twelve GPI 'override' inputs are available on all panel types. During panel configuration each GPI is assigned a source for routing (on GPI activation) to the currently selected destination.

Dual Mode

Some of the 1RU 7028xxxRC panels can be configured to work in either RC (RollCall) or WB (Workbench) operational mode.



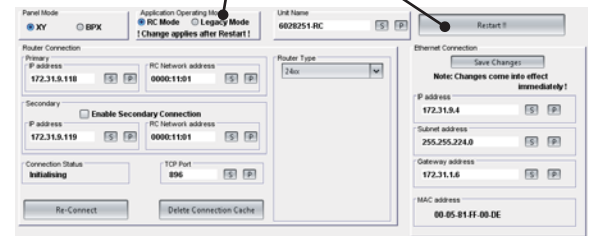
The required mode can be selected very easily by the method outlined below.



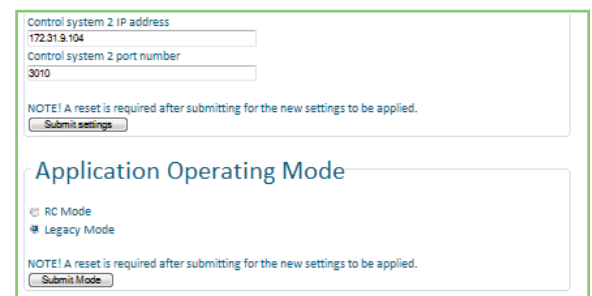
Use your PC network browser to launch panel applet and select 'Connect'!

When existing (default) mode is RC (RollCall), then configuration window below is displayed.

To enable WB (Workbench) mode select the 'Legacy Mode' radio button and select 'Restart'.



Access the panel again via the applet and the WB (Workbench) configuration window below will now replace the RC (RollCall) configuration window. To revert back select the 'RC Mode' radio button and then select 'Submit Mode'.



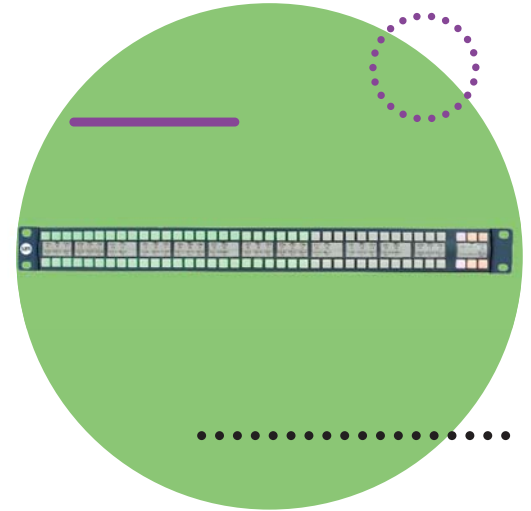
Luna — 7028-RC Series Shallow Router Control Panels in Workbench 'Legacy' Mode

Data Sheet

The four 7028xxxRC Router Control Panels described in the remainder of this document are 'Dual mode'.

They can operate in RC (Rollcall) or WB (Workbench) 'Legacy' mode.

Selecting between the desired mode is described on the opposite page.

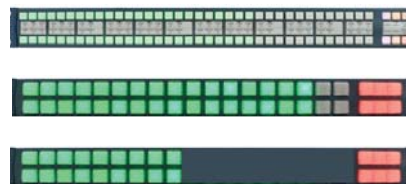


Workbench 'Legacy' Mode

- Lightweight ergonomic design
- Ethernet or multi-drop RS485 serial connection to router
- 12 GPIO ports
- Multiple configuration modes

When configured for operation in Workbench 'Legacy' mode the 1RU 7028xxxRC panels depicted above are compatible with the Nebula, Nucleus (2450), 2330 and Nucleus2 (246x) range of router controllers.

7028xxxRC Series for Workbench



78-Key LED X-Y /BPX - 7028000RC






42-Key LED X-Y /BPX - 7028100RC

24-Key LED X-Y /BPX - 7028201RC

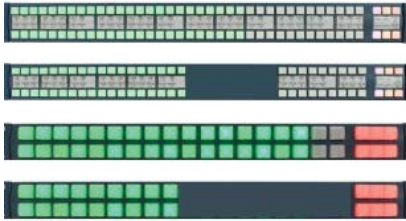
After the panel configuration has been defined printed legends are fitted either below or inside each key cap (dependent on panel type) for all the active keys. Legend Key templates for each panel type are available for download from the router control panel section of our website.

There are 16 alternative operational modes to choose from including X-Y and BPX panel formats. All Key LED illumination colors are as per the table.

Panel Key Colors (all panel types)

Key	Inactive	Selected
Source	Green 	White <input type="checkbox"/>
Destination	Cyan 	White <input type="checkbox"/>
Level	Yellow 	White <input type="checkbox"/>
Lock	Orange 	Red <input checked="" type="checkbox"/>
Protect	Orange 	Red <input checked="" type="checkbox"/>

Workbench 'Legacy' Mode



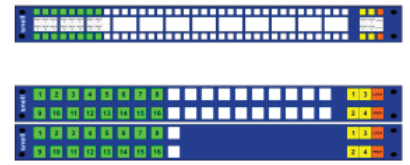
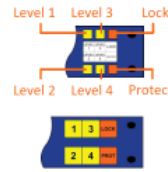
When configured for operation in **Workbench 'Legacy' mode** the 1RU **7028xxxRC** panels depicted above are compatible with the Nebula, Nucleus (2450), 2330 and Nucleus2 (246x) range of router controllers.

There are 16 optional panel modes available. The desired mode is selected using the configuration switches on the rear of the panel. The outline images and key descriptions for modes 1 to 8 are shown to the right. Note that not all modes are supported for all panel types.

The routers controller's database is configured using Workbench C&M software to map source and destination keys to the appropriate router input and output ports.

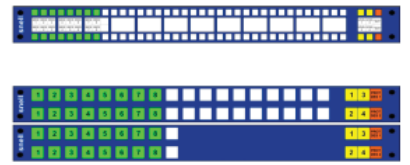
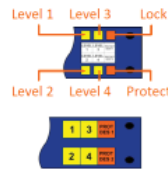
Mode 1

16-Way BPX



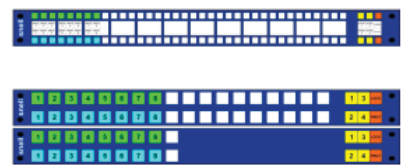
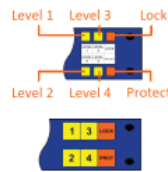
Mode 2

Dual 8 Split BPX



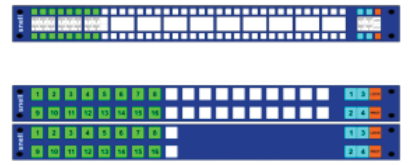
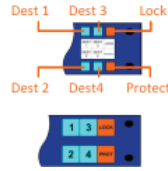
Mode 3

8 x 8 X-Y



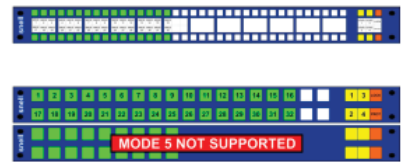
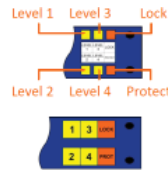
Mode 4

16 x 4 X-Y
(No Level Keys)



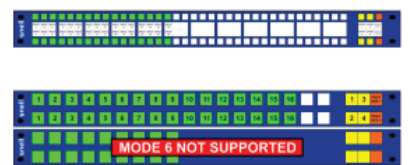
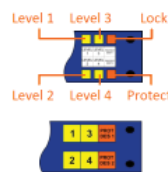
Mode 5

32-Way BPX



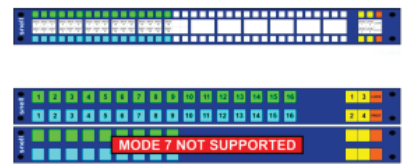
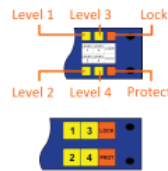
Mode 6

Dual 16 Split BPX



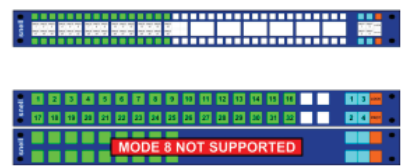
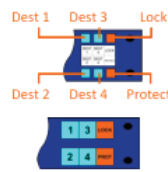
Mode 7

16 x 16 X-Y



Mode 8

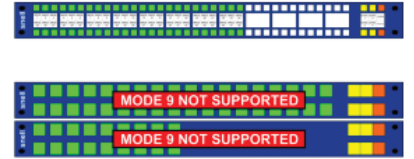
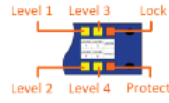
32 x 4 X-Y
(No Level Keys)



Workbench 'Legacy' Mode

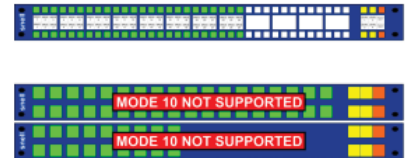
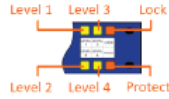
Mode 9

48-Way BPX



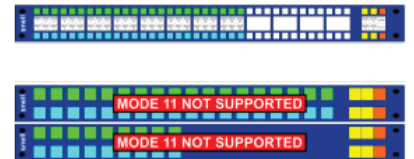
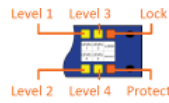
Mode 10

Dual 24
Split BPX



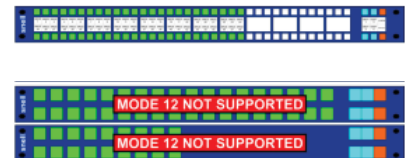
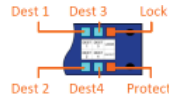
Mode 11

24 x 24 X-Y



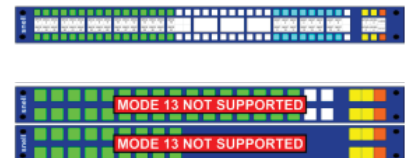
Mode 12

48 x 4 X-Y
(No Level Keys)



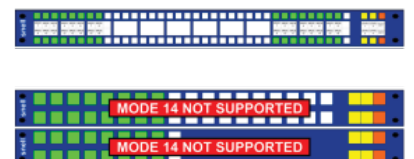
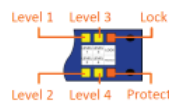
Mode 13

36 x 16 X-Y



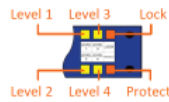
Mode 14

Dual 16 + 16 BPX



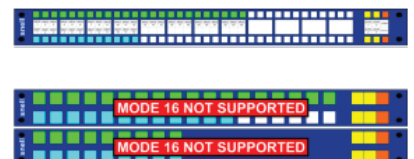
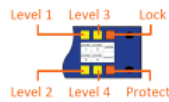
Mode 15

16 x 16 X-Y



Mode 16

24 x 12 X-Y



Ordering Information

7028000RCSB
1RU 78-Key LED Control Panel

7028100RCSB
1RU 42-Key LED Control Panel

7028201RCSB
1RU 24-Key LED Control Panel

7028251RCSB
1RU 39-Key LCD Control Panel with Rotary Encoder Knob

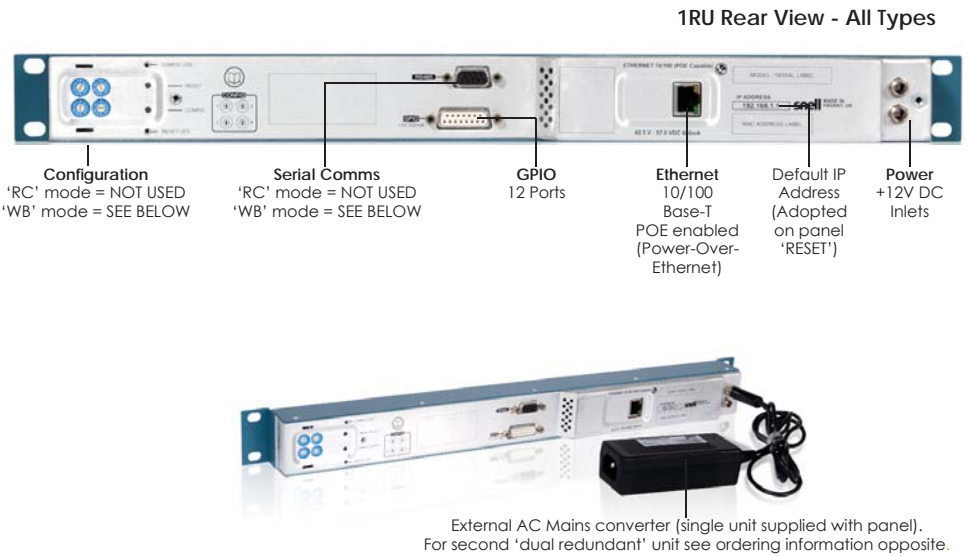
7028351RCSB
1RU 21-Key LCD Control Panel with Rotary Encoder Knob

7028071RCSB
1RU 15-Key LCD Control Panel with Rotary Encoder Knob

INSY-PSU-EXT

External AC mains adapter
Single unit supplied with panel
(Additional unit must be ordered if dual redundant operation is required).

Technical Specification



Ethernet Control		GPIO (All types)	
Physical Layer Standards	Ethernet 10/100 Base-T Mb/s	Physical Layer	+12V, 0.2A output
Protocol	TCP-IP	Connector	15-way D female/screw lock
Connector	RJ45 (x1)		
Serial Port Control (WB Workbench only)		Configuration (WB Workbench only)	
1RU Panel types: 7028000RC, 7028100RC & 7028201RC only			
Physical Layer Connector	RS485 9-way D female/screw lock (x2) Select Hi-Z ('Loop-thro') or Terminate. Set via IP applet.	Rotary Hex Switch 1	RS485 Address
		Rotary Hex Switch 2	Key Configuration
		Rotary Hex Switch 3	Key Brightness
		Rotary Hex Switch 4	RS485/Ethernet Select
Resets			
CONFIG Switch & LED	Restores Factory IP Address		
RESET Switch & LED	Panel Reset		
Physical		Environmental	
Mounting Height	1RU	Operating Temp.	0°C ≤ T _{AMB} ≤ 40°C
Height 1RU	43.6mm	Maintained Spec.	0°C ≤ T _{SPEC} ≤ 30°C
Width	448mm	Storage Temp.	-20°C ≤ T _{STORAGE} ≤ 80°C
Depth	50mm (behind mounting face)	Relative Humidity	5% - 95% (non-condensing)
Weight	<1kg (2.2lb) max. (all types)	Cooling	Natural Convection
Power		Compliance	
Connector	DC Jack or RJ45 (POE)	EMC - Emmissions	EN55103-1 (EU), FCC Part 15 (USA)
Voltage (DC Jack)	+12V DC +/-10%	EMC - Immunity	EN55103-2 (EU)
Voltage (POE on RJ45)	+42.5V to +57V DC	Safety	EN60950 (EU), UL1419 (USA)
DC input power	13W max	Hazardous Material	RoHS-6 (UK) - Complies with EU Directive