Internal view shown

The **PL-8** is part of the Allen & Heath **PL Series** of wall plates and remote controllers available for the **iDR-4** and **iDR-8** audio mix processor systems. It is a small module comprising two circuit cards. This can be locally mounted in a single unit wall box using the standard UK, EU or US face plate supplied.

The **PL-8** provides four contact closure switch inputs and four transistor logic outputs for external equipment control. Their function is programmed using the iDR System Manager software. The combination of switch input and logic output makes the **PL-8** ideal as a multi-function remote controller in installed systems. The unit can interface to a variety of devices including alarm systems, room divider switching, paging controls, event triggers and various custom switches and indicators.

Control can be distributed where it is needed. The **PL-8** interfaces via the Allen & Heath PL-Anet serial network. Multiple **PL-8** units can be daisy-chained using CAT5 cable along with other PL-Anet devices such as the **PL-3** and **PL-4** wall plates, **PL-6** fader controller and so on. For information on the full range of **PL** products available visit our web site http://www.allen-heath.com.
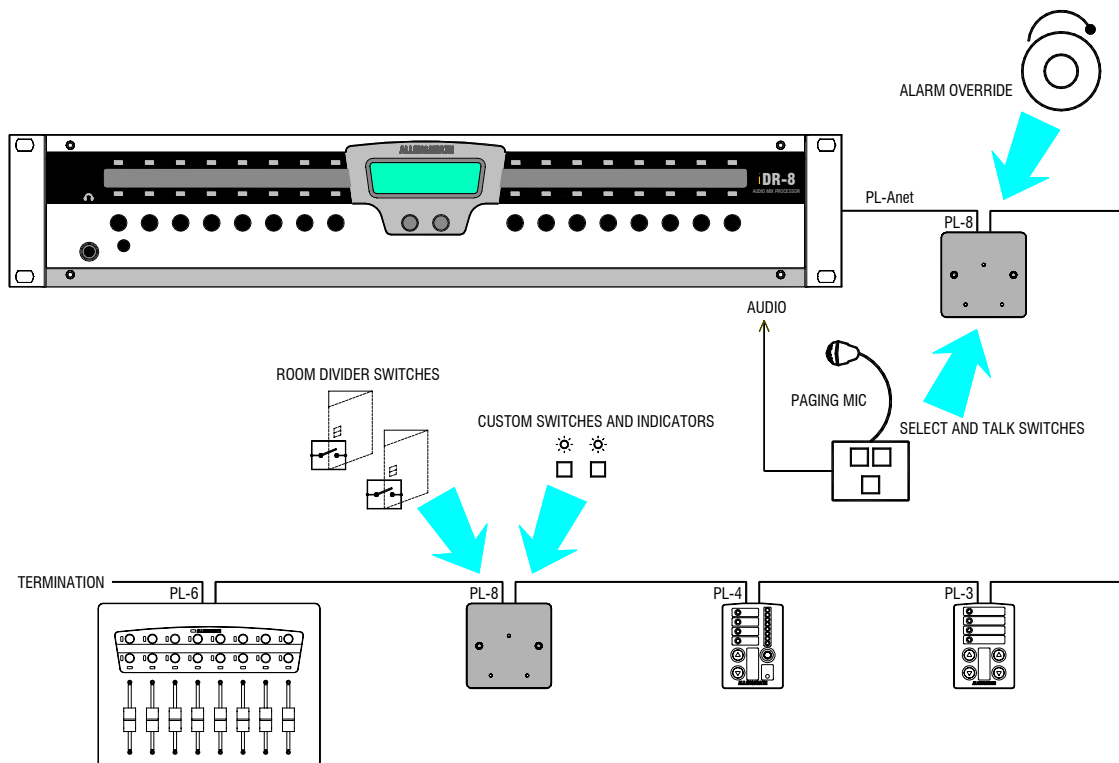
The Application The diagram above shows an example of a remote control network using an **iDR-8**. The **iDR-4** could also be used. Various **PL** devices are installed in different parts of the building, for example **PL-3** and **PL-4** wall plates for room volume control and source select, **PL-6** fader panel for remote mixing in a conference room, and **PL-8** units for distributed remote control. The **PL-8** could be wired to a fire alarm system to automatically mute the system or override it with a pre-recorded evacuation announcement, to simple wall plate switches for local volume control or event configuration changes, to paging panels for zone select and talk switching, to room divider panel microswitches to automatically reconfigure the system when rooms are combined, to control or be controlled by equipment such as video players and jukeboxes, for interactive local sound in museums, theme parks, and so on. The devices are daisy-chained together using CAT5 cable. The last unit in the chain requires a terminator (provided).

IMPORTANT:

Note: PL-8 Units manufactured prior to November 2004 were fitted with 5way terminal blocks with a single ground terminal, rather than the 7way version used on later models as described below. If you require any more information on the earlier models, please contact Allen & Heath technical support.
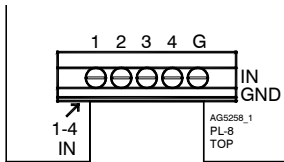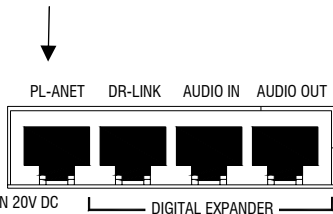

PL-8 early type connector block.

⚠ Observe the local standards which may apply to the installation regarding the grade of cable and installation methods.

⚠ To ensure operator safety ensure that any exposed metal face plates and surfaces are correctly bonded to ground. Do not install the equipment where it is subject to moisture, heat or vibration.

⚠ Connect this equipment to the Allen & Heath PL-Anet port only. Do not connect it to Ethernet, DR-Link or other RJ45 ports.

⚠ When wiring to custom components and external equipment care must be taken to ensure each part operates within its specified capability. This work should be carried out by competent installation personnel only.

⚠ Before powering up the system make sure all the wiring is inspected and continuity tested. This is important as wiring errors may result in damage to the equipment.
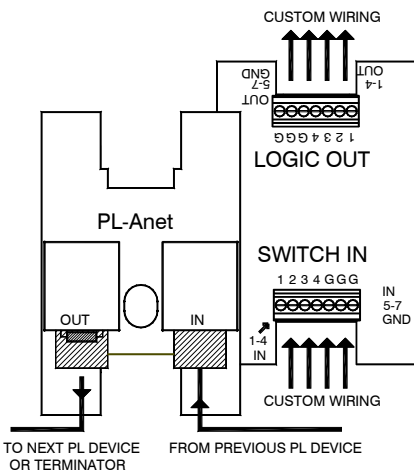

PL-Anet is the proprietary Allen & Heath system for daisy chaining remote controllers. It is an RS485 serial connection that uses CAT5 STP cable to communicate between devices over long distances. An RJ45 connector is used. PL-Anet only works with Allen & Heath **PL** devices. The port provides +20V DC to power the connected devices. The **iDR-8** port is shown here.

Number of devices The maximum number of **PL** devices that can be connected depends on their type and the distances involved. You can connect up to 15x **PL-8** units on a single PL-Anet branch, and up to 23 if you are using the optional **PL-9** PL-Anet hub. Fewer may be connected if long distances or additional **PL** types are involved. It is important that you check the possibilities first by referring to the PL Combinations Calculator spreadsheet available from the Allen & Heath web site.

Description the **PL-8** comes supplied with two PCB assemblies attached to a brushed aluminium wall plate. This enables it to be mounted into a standard single gang wall backing box. A UK, EU (European) or US (American) size plate together with fixing screws is provided according to which version has been ordered.

The top PCB houses the circuit which interfaces to the **iDR** PL-Anet control network. Connection is made using two RJ45 type sockets, one to receive PL-Anet, the other to pass it on to the next **PL** device in the chain. If this is the last device in the chain then the terminator plug provided must be plugged in.

The lower PCB houses the screw terminal blocks which are used to wire to switches, indicators, relays and other custom controls within the installation. One block connects to up to four switches, the other provides up to four logic outputs.
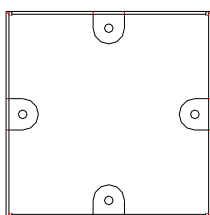

UK single backing box

part number AA5220

UK
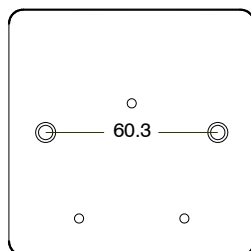
72 x 72 x 35 mm

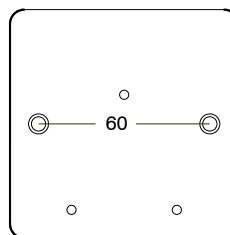Order code **PL-8/UK**

Plate part number AA5276
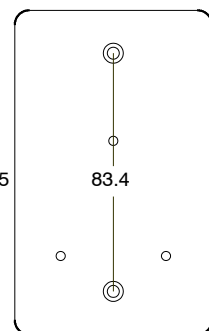
UK

86   60.3

86 mm

Order code **PL-8/EU**

Plate part number AA5275

EU

80   60

80 mm

Order code **PL-8/US**

Plate part number AA5277

**US**

113.5   83.4

69 mm

PL-8 User Guide   AP5270 issue 3

Installing the PL-8

Mount the assembly into a single gang backing box located in a wall or suitable furniture. If necessary, it may be installed in a hidden location such as a ceiling void or cupboard as it is not necessary for the operator to have access to the module. Minimum recommended internal box depth is 32mm. We recommend that you provide enough space in the cavity behind the box to allow a service loop for the wiring to the module.

⚠ Grounding metal plates

Ensure that the metal face plate is correctly grounded to ensure safety. The plate should be connected to a local safety ground. Use a ground wire or physical contact with a grounded back box. The same applies to any exposed metal surfaces used within the system.
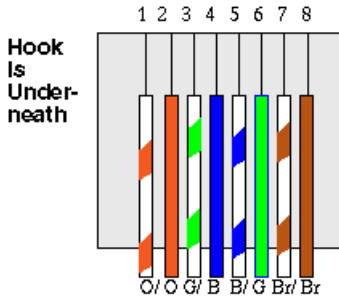
PL-Anet wiring

Use flame retardent CAT5 STP (shielded twisted pair) cable terminated with RJ45 connectors. Do not use UTP cable. We recommend the multi-stranded rather than solid conductor type. The connection follows the EIA/TIA 568B wiring colour scheme. Ensure all ports and cables in the system are wired to this scheme.
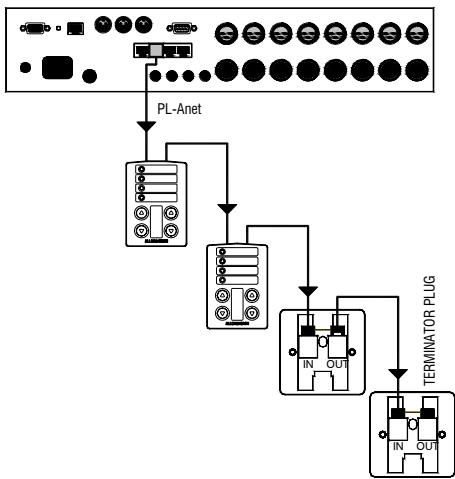
Connecting to an iDR unit

The **iDR** unit communicates with the **PL-8** using the PL-Anet port. This serial connection can be daisy chained through several **PL** wallplates as shown. Make sure you plug the PL-Anet IN and OUT sockets correctly.

End of chain termination

As with any RS485 system, the last **PL** device needs to have a terminating resistor fitted to its output port. Each **PL-8** is shipped with a terminator plug already fitted in its PL-Anet output socket. Leave this fitted only if the unit is the last in the chain.

Programming the controls

iDR System Manager software version V3.1 or later is required. Check the Allen & Heath web site for the latest software. Ensure that the **iDR** PL-Anet port is active. Its green 'active' LED should be lit. If not, use the iDR System Manager software Communications Option menu to activate the port. Plug in the PL-Anet cable. The iDR System Manager screen should display icons for each PL device it recognises. If you do not have the **iDR** available you can configure the software off line. Refer to the Help file for details on programming the PL functions.

Diagnostics

If a fault is suspected check the two diagnostics LEDs on the underside of the **PL-8** connector PCB. Both the red and green LEDs should be lit once communication with the **iDR** is established. If a fault is found, first check for correct wiring. If further assistance is required contact Allen & Heath technical support.
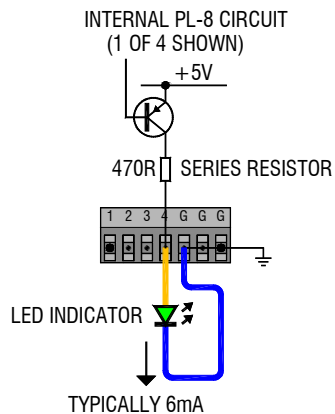
Wiring terminals

Phoenix type screw terminal connectors are used for connecting the external switches and logic to the **PL-8.** Make sure the wire ends are carefully stripped and inserted into the terminals. Tighten the screws using a small slotted screwdriver. To ensure interference-free operation we recommend you use shielded cable.
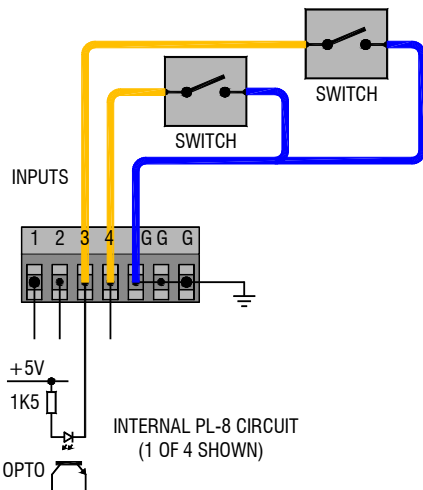
Wiring the switch closure inputs

The 7way input terminal block provides 4 switch input connections. Pins 5 to 7 'G' are used as the common switch ground. One wire can feed this ground to a bank of switches. Two switches are shown wired in the diagram here.

The switch works by linking its connector pin to any ground ('G') pin. Use a contact closure such as a momentary press switch, microswitch or relay to do this. Low current switches may be used. We recommend good quality sealed components for reliable operation.

The input pin is fed from the internal +5V reference supply through a 1k5 ohm resistor. It uses an opto-coupler to isolate the **PL-8** from the connected equipment. Approximately 1.2mA minimum current flows when connected to ground. Combined switch and cable resistance should not exceed 1k ohm for the switch to activate.

INTERNAL PL-8 CIRCUIT
(1 OF 4 SHOWN)

+5V

470R SERIES RESISTOR

LED INDICATOR

TYPICALLY 6mA

Wiring the logic outputs

The 7way output terminal block provides four logic output connections. Pins 5 to 7 'G' are used as the common return ground. One wire can feed this ground to a bank of indicators or other devices.

The output works by switching the internal +5V reference supply through a 470 ohm resistor to the pin. This presents a positive voltage when the output is turned on, and an open circuit when it is turned off. The switching is done using a transistor. The resistor limits the current to a maximum 10mA to ensure the connected equipment does not draw more than the **PL-8** can provide.

The output may be used in many ways to satisfy a range of interfacing applications. It is important that the installer has a good working knowledge of interfacing circuits. Incorrect application may result in damage to the equipment. Typical applications include powering an LED indicator and switching solid state (low current) relays.

Specification

In/Out Connectors:

Phoenix 7way screw terminal blocks
For permanent bare wire connection

Switch Inputs:

4x opto-isolated switch closure inputs
+5V DC through series 1k5 ohm resistor
Switch closure connects pin to ground
Maximum current when switched = 1.2mA
Maximum switch+cable resistance = 1k ohm
Switch types: Momentary action
                  Microswitch
                  Relay contact
                  Custom interface

Logic Outputs:

4x transistor logic outputs
Uses internal PL-Anet supply
ON = +5V DC through series 470 ohm resistor
OFF = open circuit
Output voltage depends on current drawn
Maximum current per output (shorted) = 10mA
Output capability: LED indicator
                      Solid state relay
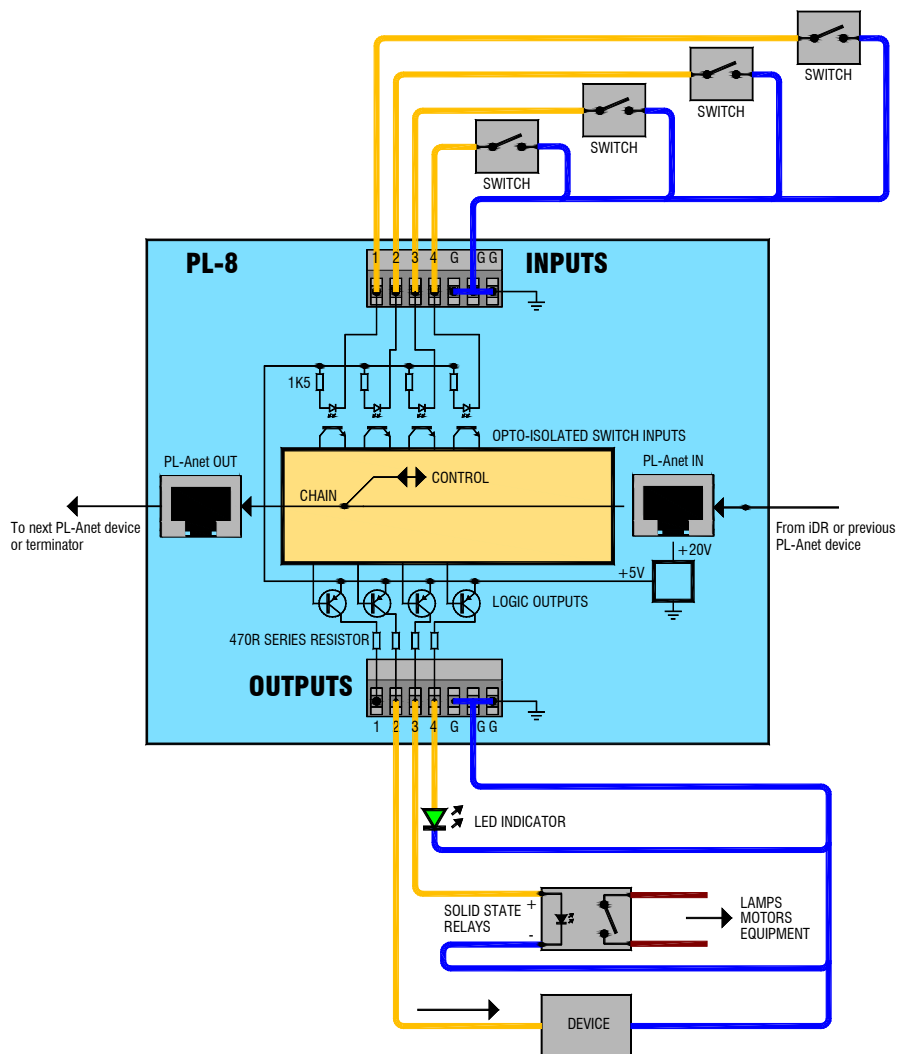   Custom interface

Communication:

RS485 based PL-Anet serial port
RJ45 input and output connectors
Maximium 15x addresses per PL-Anet branch

Configuration:

iDR System Manager software V3.1 or greater
Refer to the software Help file
Separately configure switches and outputs
Input switch function: Volume up/down
                        Mute on/off
                        Patch recall
                        Monitor select
Logic output function: Static on/off
                        Mute status
                        Soft switched
                        Patch recalls
                        Scheduled events

Power Supply:

Internal +5V DC from PL-Anet 20V supply
Minimum PL-Anet voltage at **PL-8** = 11V
Maximum logic output = 40mA (all shorted)

PL-8

INPUTS

1K5

OPTO-ISOLATED SWITCH INPUTS

PL-Anet OUT

CHAIN   CONTROL

PL-Anet IN

To next PL-Anet device or terminator

From iDR or previous PL-Anet device

+20V

+5V

LOGIC OUTPUTS

470R SERIES RESISTOR

OUTPUTS

1 2 3 4 G G G

SWITCH

LED INDICATOR

SOLID STATE RELAYS

LAMPS MOTORS EQUIPMENT

DEVICE

This product complies with the European Electromagnetic Compatibility directives 89/336/EEC & 92/31/EEC.

NOTE: Any changes or modifications to the equipment not approved by Allen & Heath could void the compliance of the equipment. Whilst we believe the information in this guide to be reliable we do not assume responsibility for inaccuracies. We also reserve the right to make changes in the interest of further product development.