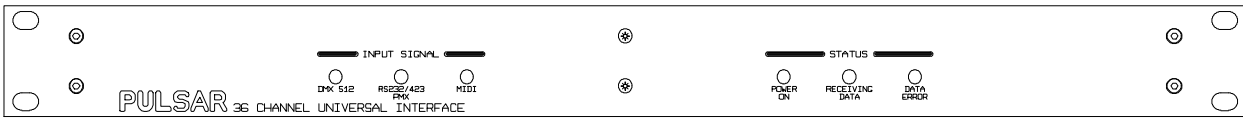


# UNIVERSAL INTERFACE



## SPECIFICATION

**27350 - 18Ch. UNIVERSAL INTERFACE**  
**27300 - 36Ch. UNIVERSAL INTERFACE**  
**1U x 19" Rack Mounting**

The *Universal Interface* decodes 18/36 channels of serial digital information, from a Pulsar Masterpiece for example, in **DMX512** or **RS232/423 (PulsarMultipleX)** formats OR from a synthesiser, in the **MIDI** format, into 18/36 channels of analogue 0-10 Volts. **MIDI** - The unit responds to Note/Velocity information, and from software V1.7, also responds to Continuous Controller information. It needs no mains connection as it receives its low voltage supply from the Pulsar Dimming or Switching Pack(s) which it would normally be used to control. These power packs then control lighting effects such as ordinary tungsten, neon, pinspots, motorised effects etc.

## FRONT PANEL

**INPUT SIGNAL INDICATORS** - The *Universal Interface* automatically senses whether the input is in **DMX512**, **RS232 (PMX)** or **MIDI** format and switches on the appropriate indicator LED. The input signal may be changed over while the unit is in use but obviously only one signal can be decoded at a time.

### STATUS INDICATORS

**Power On LED** - Shows that power is being received from the Dimmer or Switching packs.

**Receiving Data LED** - Shows that data is reaching the Interface.

**Data Error LED** - Shows that the Interface did not recognise the last received information.

## BACK PANEL CONNECTIONS

**POWER SUPPLY** - No mains connection is required. The *Universal Interface* needs 40mA at +16..25V DC. This is normally automatically supplied by its Dimmer or Switching Packs. If the Interface is to run solid state relays or similar current hungry devices, a Pulsar Power Supply Unit may be required - Pulsar Product No.25100.

**OUTPUTS** - 3/6 DIN sockets, 6 channels each, are provided on the back panel.

Pin 1 = Low Voltage Supply In (I <sub>g</sub> )	Pin 5 = Channel 3, 9, 15 etc.
Pin 2 = Earth / Ground	Pin 6 = Channel 4, 10, 16 etc.
Pin 3 = Channel 1, 7, 13 etc.	Pin 7 = Channel 5, 11, 17 etc.
Pin 4 = Channel 2, 8, 14 etc.	Pin 8 = Channel 6, 12, 18 etc.

See Lid printing for further Channel details.

**OUTPUT VOLTAGES** - 0V = OFF, +10V = FULL ON, Z<sub>out</sub> = 1K5. The Interface decodes 8 bit binary data and so provides 256 levels between 0v & 10v. The outputs are via isolating diodes, so they may feed the same Dimmer or Switching Packs as other controllers - the highest taking priority.

## BACK PANEL CONNECTIONS cont.

**MIDI INPUT SOCKET** - Standard **MIDI** (Musical Instrument Digital Interface) equipment can be connected to this 8 pin DIN socket to enable Keyboards, Sequencers, etc. to control Dimmer and Switching packs. For additional information on **MIDI**, please see **MIDI DIL SWITCH** below and the lid printing.

**MIDI THRU SOCKET** - This 8 pin DIN socket is provided so that the *Universal Interface* can be linked easily into the **MIDI** 'chain'. The signal out of the thru socket is a fully buffered copy of the **MIDI** input signal.

**DIGITAL IN/THRU, 5 PIN XLR CONNECTORS** - This input allows any Desk or Controller that sends **DMX512**, to have any 18/36 channels of the 512, decoded into 0-10V analogue signals. Alternatively, this input allows the Interface to be controlled from virtually any computer (with the appropriate software) or controller supporting **RS232/423 using the PMX protocol** e.g. Pulsar Masterpiece.

For people wishing to write their own software, PMX protocol details are available on request. For additional information see **ADDRESS DIL SWITCH** below and the lid printing.

The end of the **DMX line MUST ALWAYS be terminated** with a 100 ohm resistor connected between signal + and signal -. This resistor can conveniently be mounted in a 5 pin XLR plug which should be inserted in the last device on the **DMX** line. Errors on **DMX** can occur if the line isn't "terminated".

A termination is not required for **RS232 (PMX)**. Branching of the **PMX** cable is acceptable. **DMX** cables may also be used for **RS232/423 (PMX)** - see **Accessories** for suitable cables.

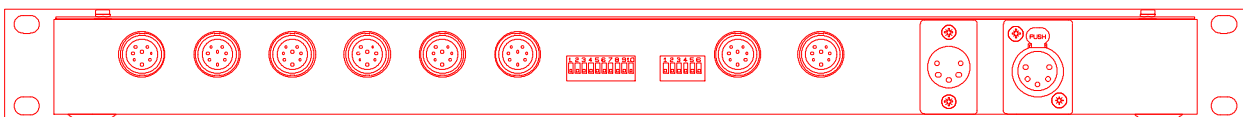
### PMX/DMX 512 In/Thru 5 Pin XLR Connectors

**Digital Control Signals:** The pin connections of the sockets are:

PMX SIGNAL AND LV SUPPLY	DMX SIGNAL AND LV SUPPLY
Pin 1 = $\frac{+}{-}$ Chassis Earth - Screen	Pin 1 = $\frac{+}{-}$ Chassis Earth - Screen
Pin 2 = Signal	Pin 2 = Signal -
Pin 3 = Signal Earth	Pin 3 = Signal +
Pin 4 = no connection	Pin 4 = no connection
Pin 5 = Low Voltage Supply Out male XLR only	Pin 5 = Low Voltage Supply Out male XLR only

### Note:

- Pins 4 and 5 are occasionally used by other manufacturers for data. We recommend the use of 2 core plus screen cable, leaving pins 4 and 5 open circuit, to connect to this type of equipment. However, the Low Voltage Supply on pin 5 of the male XLR is limited to cause no harm to such equipment.



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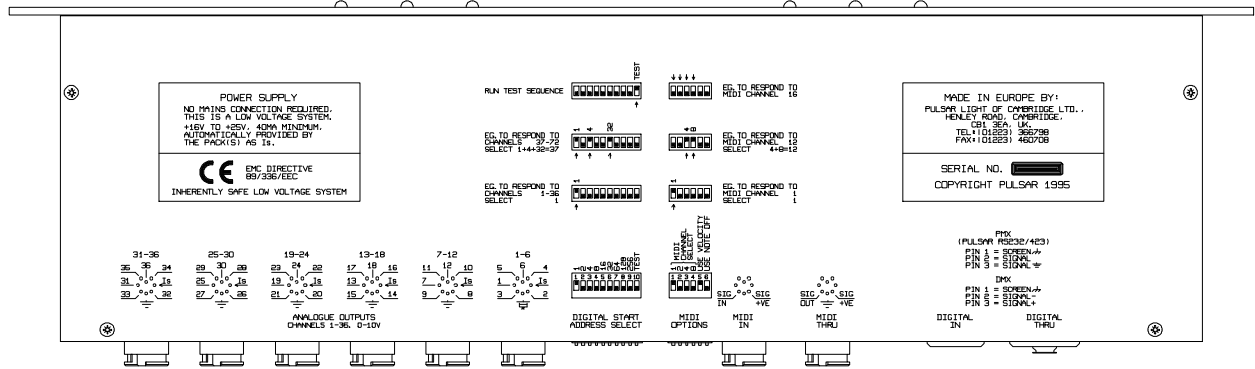
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## SWITCH SETTINGS

**MIDI OPTION DIL SWITCH** - The first four switches select the **MIDI** channel to which the *Universal Interface* will respond. See the lid printing. The number generated by the switch is shown here in brackets, the channel selected is the sum of the numbers generated.

Examples:

- Setting switch 1 (1) up selects channel 1,
- Setting switches 1 (1) and 3 (4) up selects channel 5 (1+4=5)
- Setting switches 2 (2) and 4 (8) up selects channel 10 (2+8=10)

All switches up selects channel 15 (1+2+4+8=15).  
All switches down is not recognised as 0 but as channel 16.

Setting **Switch No.5 "Use Velocity" UP** tells the Interface to respond to the "Velocity" or Data information sent by the controller (keyboard or sequencer), so the brightness of the lamp is controlled by the Velocity (volume) of the corresponding Note or the Data value if using Continuous Controller information.

Setting **Switch No.5 DOWN** tells the Interface to switch the lamp ON if the received Velocity or Data byte is equal to or greater than 50% (64 out of a 0-127 range) and OFF if it is less than this. Some keyboards only send a fixed Velocity value of 64, effectively turning the *Universal Interface* into a **MIDI** switch.

Setting **Switch No.6 "Use Note Off" UP** uses Note off information sent by **MIDI** controllers to switch lights off, e.g. if a red lamp corresponds to middle C, when middle C is played, the red lamp comes on. When the Note finishes then the red lamp will go off i.e. the Keyboard works in "Flash" mode. "Flash" mode does not work with Continuous Controller data.

Setting **Switch No.6 DOWN**, the Keyboard works in "Latch" mode i.e. the red lamp will come on with middle C but NOT go out when the Note finishes. To extinguish the red lamp, play middle C very gently, thus bringing the lamp down to almost zero. Continuous Controllers can bring the channel right down to zero.

Setting **Switch No.10 "Test" UP** will test the Front Panel LEDs, and cause a 'moving block' of three channels to build up then down, for testing outputs and packs etc.

**START ADDRESS DIL SWITCH** - this DIL switch determines which block of 18/36 channels the *Universal Interface* will respond to. The channel number of the first of the 18/36 channels is given by adding the numbers generated by each switch together - see lid printing for examples.

**MIDI ADDRESSING** - If using Note information, Middle C is Note No. 60 and if the start address of the Interface is 60, (switches 3, 4, 5, and 6 up), then 3 full octaves, (11/2 octaves for 18Ch) starting at middle C will control the Interface. If using Continuous Controller information, then control changes (Pitch wheel, Volume control, etc) sent by the Sequencer, Keyboard, Computer, etc) can control the block of 18/36 channels.

## OTHER INFORMATION

**STANDARDS** - The **Universal Interface** complies with the following International and National Standards:

**EMC** - EN50081-1, EN55022, EN50082-1

**Rack Mounting** - IEC297

**Index of Protection** - IP20

**CE Marking Directive 93/68/EEC** - The **Universal Interface** meets the EMC Directive 89/336/EEC.

This is a low voltage unit operating on +16...25VDC without a direct connection to the mains supply, it is therefore inherently safe as it operates on less than 75VDC as specified in the Low Voltage Directive 73/23/EEC.

**GUARANTEE** - 12 months from the date of original purchase. The guarantee is limited to parts and labour. The guarantee is void if the unit is misused or repairs are performed by unauthorised persons. In the unlikely event of a fault occurring, do not use without repair. Return the unit, with a description of the fault, to your supplier or direct to Pulsar for immediate attention.

## ACCESSORIES

The following products have been designed to work with and complement the Pulsar **Universal Interface**.

### Digital Control

Product No.	Controller
23000	48Ch. Masterpiece Control Desk
24000	108Ch. Masterpiece Control Desk
27500	Masterpiece Replay Unit

### Signal Processing

25100	Low Voltage Power Supply Unit - 120 / 240 Volt
21750.2	5M DMX Extension Lead (1 XLR-5 Plug, 1 Skt)
21750.3	10M DMX Extension Lead (1 XLR-5 Plug, 1 Skt)
21750.4	DMX Line Terminator Plug

Pulsar also manufacture a comprehensive range of Strobes, Dimming and Switching Packs, Stage Lanterns and Effect Spots. Please contact us to receive further details of these superb products!

## DIMENSIONS AND WEIGHTS

Code	Unit	Width	Height	Depth	Weight
		mm.	mm.	mm.	kgs.
27300	Universal Interface - 19"	483.0	44.0	128.0	2.4
	Universal Interface Inc. Plugs	483.0	44.0	210.0	-
	Console Cut Out	448.0	40.0	220.0	-
	Fixing Holes	465.6	31.8	-	-