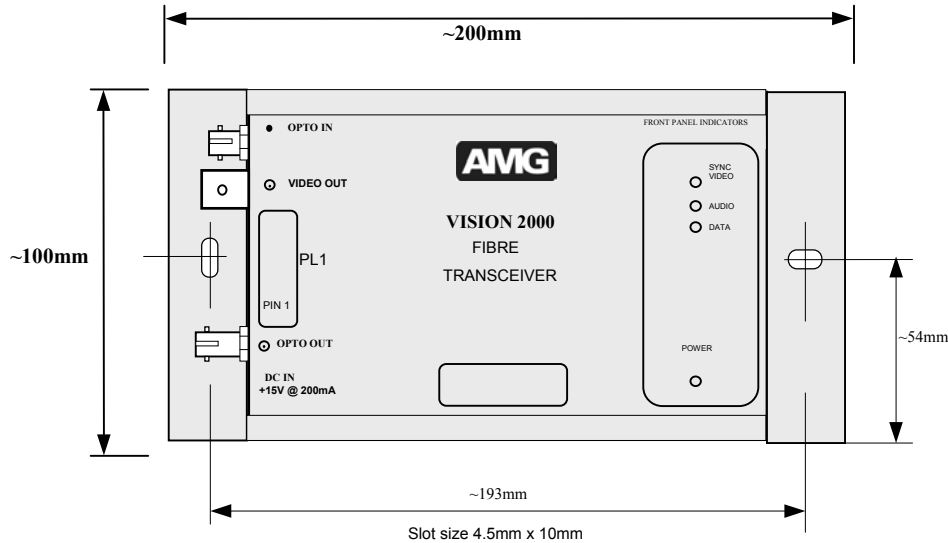




# AMG2231L Instruction Sheet

## AMG2231L Long Distance Standalone Video Receive + Bi-directional Audio & Data RS422/485



### Video Connection

Connectors ..... 75 ohm BNC Socket.  
Output Impedance ..... 75 ohm terminated.  
Output Level..... 1 volt p-p nominal.  
Frequency Response..... 10Hz to 6MHz min.

### Optical Connection

Connectors..... ST Style (2 off)  
Opto-In Receiver Sensitivity  
High Gain ..... -17dBm to -30dBm nominal.  
Low Gain..... -9dBm to -22dBm nominal.  
(Unless otherwise specified units will be shipped in the low gain range)  
(for adjustment see below)  
Wavelength..... 1300nm nominal.

### Data Connection

Connector ..... Push-in connector strip - 11 way  
(Solid conductors  $0.5\text{mm}^2$  (20 awg) can be connected by simply push fitting into the appropriate connection hole. Smaller conductors and wires (up to  $0.5\text{mm}^2$ , 20 awg) are inserted into the connection space whilst depressing the orange lever. Wire or conductors should be stripped back to a length of 11mm. Use a small screwdriver to depress the orange lever to release the connection.)

Pinout ..... See Below – Note Pins number from the bottom of the unit

<b>Pin No.</b>	<b>Function</b>	
1 <b>(bottom)</b>	Audio Input	
2	Audio Ground	
3	Audio Output (+)	
4	Audio Output (-)	
5	Power Ground	
6	Auxiliary Power Input ( +15v to +18v dc )	
<b>Data Interface</b>	<b>RS485 (2 wire)</b>	<b>RS485/422 (4 wire)</b>
7	Data Ground	Data Ground
8	Data I/O (A)	Data In (A)
9	Data I/O (B)	Data In (B)
10	Data I/O (A)	Data Out (A)
11	Data I/O (B)	Data Out (B)

**Power Connection**

Supply..... +15 volts d.c. to +18 volts d.c. at 200mA  
 Connection ..... Rear connector strip,  
 Pin 5 Gnd, Pin 6 +ve Supply

**Mounting Details**

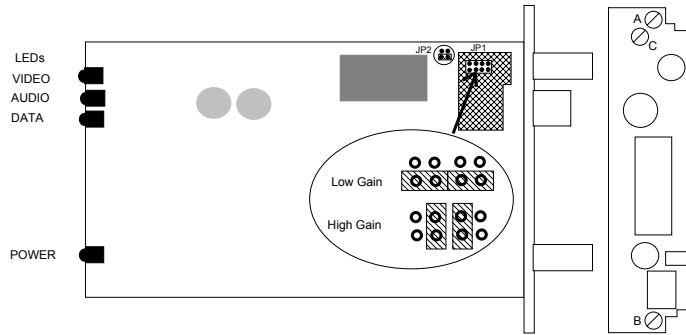
See Drawing Above

**Indicators**

Power..... Green – lit when unit powered  
 Video Sync ..... Green – lit when video signal present on optical input.  
 Audio Sync ..... Green – lit when audio channel present.  
 (Note: this does not indicate the presence of actual audio)  
 Data Sync ..... Green – lit when data channel present.  
 (Note: this does not indicate the presence of actual data)

**Gain Range Setting**

If required the receiver gain range can be adjusted by changing jumper positions on the PCB. The high gain setting is for long distances over small fibres, and the low gain setting for larger diameter fibres over short distances. Units are shipped in the low gain setting unless otherwise instructed. The circuit board assembly is removed by removing screws A and B on the rear panel of the plug-in and sliding the assembly out of the case. Screw C should not be removed under any circumstances. See above for typical power levels for each range.



### RS422/485 Configuration

Due to the number of options for RS422 and RS485 operation the AMG2231 has to be configured by the use of jumper JP3 on the PCB.

In common with the majority of other equipment manufacturers, the RS485/422 electrical input circuitry provides a bias which holds the input in a logic zero state when the bus connected to it is in a tri-state condition. The output at the other end of the fibre optic link will only transmit this logic zero condition for 5µs before itself going to a tri-state condition. The bias on the input ensures that pin 9 is positive with respect to pin 8 when driven with a tri-state condition. It is important to align this bias condition to any third party equipment attached to the AMG2231.

**RS485 2 wire** - The data out transmitter is controlled by the presence of data coming in from the optical fibre. The transmitter is normally off. Incoming data on the optical fibre will turn on the transmitter and it will be held on until all the data has been transmitted. When the transmitter is enabled the receiver is disabled.

**RS422 4 wire** operation has two modes of operation as follows:

**Point-to-Point** - In this mode the data out transmitters and the data in receivers are permanently enabled.

**Multi-drop** - The data out transmitter is controlled by the presence of data coming in from the optical fibre as per RS485 operation.

**120 ohm termination** - If the line is required to be terminated then a jumper should be fitted between pins 1 and 2 of JP 3.

**Factory Default** - unless requested to the contrary, AMG2231L product is shipped from the factory as RS485 2 wire.

The jumper settings for the AMG2231L are as illustrated:

