

AMG Vision™ 2000 Series - Commissioning Guide

10. Biasing Configuration

In the event that the biasing configuration of the system components is not available, all combinations of the RS485 and RS422 connections can be applied using the following table. One of these combinations will be correct.

Pin Combinations for AMG Vision™ 2000 Fibre Equipment					
RS485 2 WIRE					
DATA DIRECTION	CONTROL END	AMG EQPT	FIBRE LINK	AMG EQPT	CAMERA END
<----->	+	8 (10)	-----	8 (10)	+
<----->	-	9 (11)	-----	9 (11)	-
<----->	+	9 (11)	-----	9 (11)	+
<----->	-	8 (10)	-----	8 (10)	-
RS422 4 WIRE					
DATA DIRECTION	CONTROL END	AMG EQPT	FIBRE LINK	AMG EQPT	CAMERA END
:----->	+	8	-----	10	+
:----->	-	9	-----	11	-
:----->	+	8	-----	11	+
:----->	-	9	-----	10	-
:----->	+	9	-----	10	+
:----->	-	8	-----	11	-
:----->	+	9	-----	11	+
:----->	-	8	-----	10	-
<-----:	+	10	-----	8	+
<-----:	-	11	-----	9	-
<-----:	+	11	-----	8	+
<-----:	-	10	-----	9	-
<-----:	+	10	-----	9	+
<-----:	-	11	-----	8	-
<-----:	+	11	-----	9	+
<-----:	-	10	-----	8	-

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1. System 2000 Indicators - 2000 Chassis Mains on LED

ON - Indicates that the mains power is connected and within the chassis operating voltage 93 – 264 V AC @ 47 to 400 Hz. If the LED does not come on:

1. Check the input mains supply.
2. Check the fuse in the IEC connector and replace if necessary.
3. Check the output power rail is not shorted out.
4. Replace the power supply.

2. 2100 Series Indicators

Video Sync LED: **ON** - Indicates that the unit has received and **synchronised** to an incoming video signal.

Data LED: **ON** - Indicates that the unit is receiving the **Data Carrier** (It does not mean that the unit is receiving data).

Audio LED: **ON** - Indicates that the unit is receiving the **Audio Carrier** (It does not mean that the unit is receiving audio).

Power LED: **ON** - Indicates that the unit is connected and powered from the 2000 chassis 15V DC internal rail.

3. Video Only: AMG2321F/AMG2123/AMG2223 Video Transmitter & AMG2113/2111/2211/2213 Video Receivers

FAULT: No Video at the control room

Starting at the video output end of the link, is the Video Receivers power LED on?

YES Unit powered ok.

NO Check power is being supplied to unit. Check power supplies / mains.

Looking at the applicable channel: Is the Video Sync LED on?

YES Check Coax / Monitor.

If possible connect the incoming optical patchlead to the 'Opto In' of an alternative channel.

Does the video signal come out of this channel?

Yes Replace original video receiver.

No Check the camera signal (just putting out a black image?) Check connection / monitor again.

NO

Check that correct patchlead is connected to the 'Opto In' from the main fibre cable.

If possible connect the patchlead from the faulty camera to the 'Opto In' of an alternative channel.

Does the Video sync LED on this channel come on?

YES Replace original video receiver.

NO This means there is probably no video signal coming in on the fibre so either fibre problem or a transmitter problem. Confirm that the camera is producing a video signal.

To check the Receiver, connect the patchlead from a known working channel to the original Receiver channel.

Does the Video sync LED on this channel come on?

YES Receiver is ok!

4. At the Camera End of the Link

Is the Video TX Unit powered?

YES Unit powered ok.

NO Check power is being supplied to unit. Check power supplies / mains.

Is the camera producing a signal?

YES Check coax cable to camera.

NO Replace / Faulty camera.

Is the TX unit 'opto out' transmitting light? (Use Optical Power meter)

YES Check that correct patchlead is connected. Also the fibre infrastructure/continuity needs to be checked.

NO Replace Unit.

If possible, replace the unit with a known working Transmitter unit, if the video works then the original Transmitter needs replacing.

5. Video + Data: AMG226x/AMG216x/ Video + Data Units & AMG215x/225x Video + Data Units

FAULT: No Video

Starting at the video output end of the link, is the Unit power LED on?

YES Unit powered ok.

NO Check power is supplied to unit. Check power supplies / mains.

Is the Video Sync LED on?

YES Check Coax / Monitor.

If possible connect the incoming optical patchlead to the 'Opto In' of an alternative channel.

Does the video signal come out of this channel?

Yes Replace original video receiver.

No Check the camera signal (just putting out a black image?) Check connection / monitor again.

NO Is the Data Sync LED on?

Yes Check the camera signal & check connection / monitor again.

No Check that correct patchlead is connected to the 'Opto In' from the main fibre cable.

If possible connect the patchlead from the faulty camera to the 'Opto In' of an alternative channel.

Do the Video sync and Data sync LED's on this channel come on?

YES Replace original video receiver.

NO This means there is probably no video signal coming on the fibre, so either fibre problem or a transmitter problem. Confirm that the camera is producing a video signal.

To check the Receiver, connect the patchlead from a known working channel to the original Receiver channel.

Do the Video sync and Data sync LED's on this channel come on?

YES Receiver is ok.

6. At the Camera End of the Link

Is the Video Tx Unit powered?

YES Unit powered ok.

NO Check power is being supplied to unit. Check power supplies / mains.

Is the camera producing a signal?

YES Check coax cable to camera.

NO Replace / Faulty camera.

If applicable: Is the Video Sync LED on?

YES This means the camera is producing a signal and the Tx unit has sync'd to the video signal.

NO Check the camera signal & check connection / monitor again.

Is the Tx unit 'opto out' transmitting light? (using an Optical Power meter)

YES Check that correct patchlead is connected. Also the fibre infrastructure/continuity needs to be checked.

NO Replace Unit.

If possible, replace the unit with a known working Transmitter unit, if the video works then the original Transmitter needs replacing.

7. Video + Data

FAULT: Video OK but NO camera control

Primary reasons why this fault condition may occur:

- The fibre link – control to camera, may be faulty.
- The data interface connections may be incorrect.

The fibre carrying the video signal is ok, to check the second fibre – swap the fibre connections at both ends of the link. If the video signal is still ok, then both fibres provide continuity.

Data Interface Connections: The AMG System 2000 products offer a range of Data Interfaces:

1. Check that the wires into the AMG units have sufficient insulation stripped off and are not loose.
2. Confirm that the AMG units are fitted with the data interface required.
3. Check 'Interface Type' e.g. RS485/422.

Check the pinouts between the AMG units and "Control" equipment are correct. (Refer to Instruction sheets).

Note: When making data connections to AMG products, the following applies:

Data In Means data into the AMG unit from external transmission equipment.

Data Out Means data out of the AMG unit into the external transmission equipment.

8. RS485/422 Interface Configurations

Due to the number of options for RS485/422 operation using AMG units, the interfaces have to be configured by using jumper settings on the unit's PCB.

The factory default setting for the RS485/422 Interface is RS485 2-wire.

RS485 2 WIRE – All Jumpers on JP3 except 1:2 (1:2 is for 120Ω Termination)

The data out transmitter is controlled by the presence of data coming in from the optical fibre. The transmitter is normally off if no data is transmitted from the unit at the other end of the optical fibre link.

I.e. Data In A is biased low and Data In B is biased high. 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.

The delay between the end of the data transmission, the transmitter being disabled and the receiver being enabled is 5us.

RS422 4 WIRE – operation has two modes of operation as follows:

1. Point-to-Point

All Jumpers off JP3 (1:2 is for 120Ω Termination)

In this mode the data out transmitters and the data in receivers are permanently enabled. Uni-directional data systems (data from control to camera) can operate through either an RS442 or RS485 interface. However, it is recommended that RS422 point to point be used.

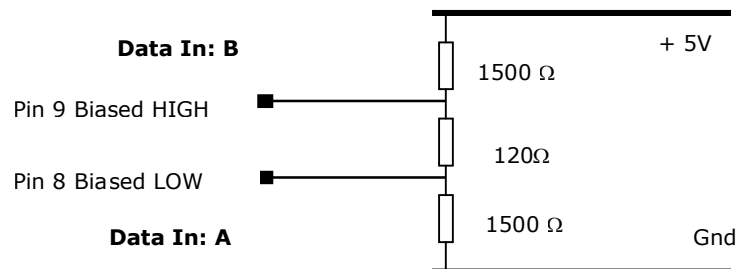
2. Multi-drop

All Jumpers off JP3 except 5:6 & 1:2 (1:2 is for 120Ω Termination)

The data out transmitter is controlled by the presence of data coming in from the optical fibre (as per RS485 operation). This allows the data at control end to be daisy chained.

9. RS485/422 Tri-State Interface

Internal biasing within the AMG equipment on the RS485/422 Input pins 8 & 9 holds the interface in a logic "0" state when idle. The biasing is as shown.



For connecting equipment with a logic ZERO idle state:

The DATA + or A pin should go to pin 8 **NOTE: Positive means high when logic "1" transmitted**
The DATA – or B pin should go to pin 9 **Negative means low when logic "1" transmitted**

The equipment to be connected will also have some internal biasing which again can be checked with a DVM. Assuming no data is being transmitted, prior to connecting it to the AMG equipment

Check the interface bias condition and align the polarities:

The positive biased pin should be connected to AMG pin 9.
The negative biased pin should be connected to AMG pin 8.