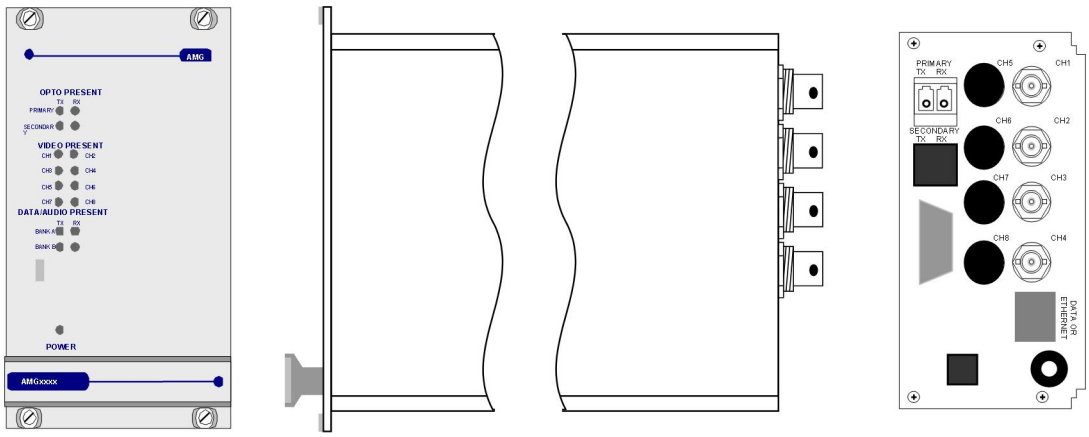
AMG3741G-DR-SF Instruction Manual

4 Channel Video Insert Unit for a Dual Redundant Single Fibre Ring



The **AMG3741G-DR-SF** is a rackmount four channel video insert unit designed to transmit 4 video signals onto a singlemode optical fibre ring with Dual Redundant operation.

The **AMG3741G-DR-SF** is designed to be powered using an **AMG2003** standalone power supply.

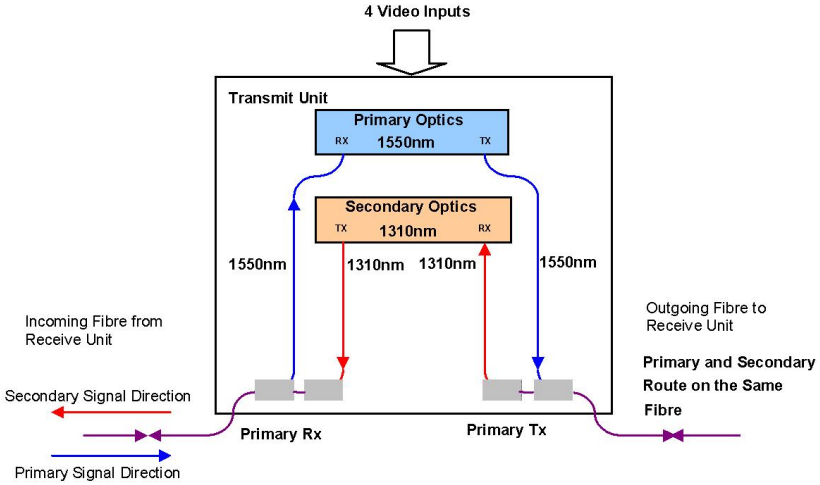
The **AMG3741G-DR-SF** is designed to operate with an **AMG3782N-DR-SF** or rackmount equivalent **AMG3782GN-DR-SF** eight channel video receive unit. The receive unit will 'drop off' up to eight video channels which are being transmitted around the fibre ring from up to eight single channel or equivalent number of multi-channel insert units.

Contents

Introduction

Unit Functional Schematic

The **AMG3741G-DR-SF** transmits up to 4 video to the **AMG3782GN-DR-SF**.



The **AMG3741G-DR-SF** transmits and receives the optical signals from both primary and secondary optical channels. These optical channels are transmitted on the same optical fibre in opposite directions, operating at different wavelengths. The primary channel operates on 1550nm and the secondary channel on 1310nm

The **AMG3741G-DR-SF** receives and drops off a data signal transmitted from an **AMG3782GN-DR-SF** receiver. It then inserts video and a data signal onto the outgoing optical signal. In normal operation the video and data signals are transmitted on the primary output and the data received from the primary input. The secondary optical input is independent and is regenerated on the secondary output.

At the **AMG3782GN-DR-SF** receiver if the primary input signal is not present, the unit will shut down the secondary output to inform the **AMG3741G-DR-SF** that the primary signal route is not OK. The **AMG3741G-DR-SF** will then send out the video and data signals on its secondary output in the opposite direction. As the primary input at the **AMG3782GN-DR-SF** is not present the data signal will now be taken from the secondary optical input, thus maintaining integrity of the data transmission.

Video Input Channel Configuration

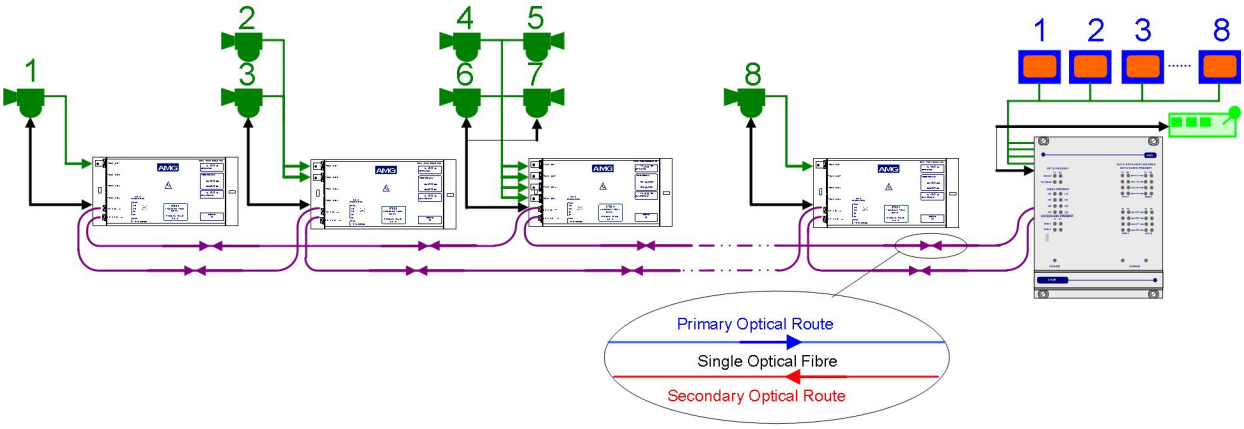
At the **AMG3741-DR-SF** or rackmount **AMG3741G-DR-SF** insert unit, video signals present at the BNC inputs can be inserted on one to eight video channels transmitted on the optical fibre. The first video channel number of each insert unit is set by the rotary switch on the front panel of the unit.

It is normal to set each insert unit to a different channel number. If the same number is used twice, an insert unit connected 'down stream' on the primary optical route will 'over-write' any coincident video channels coming from the previous insert unit and those video signals will be lost.

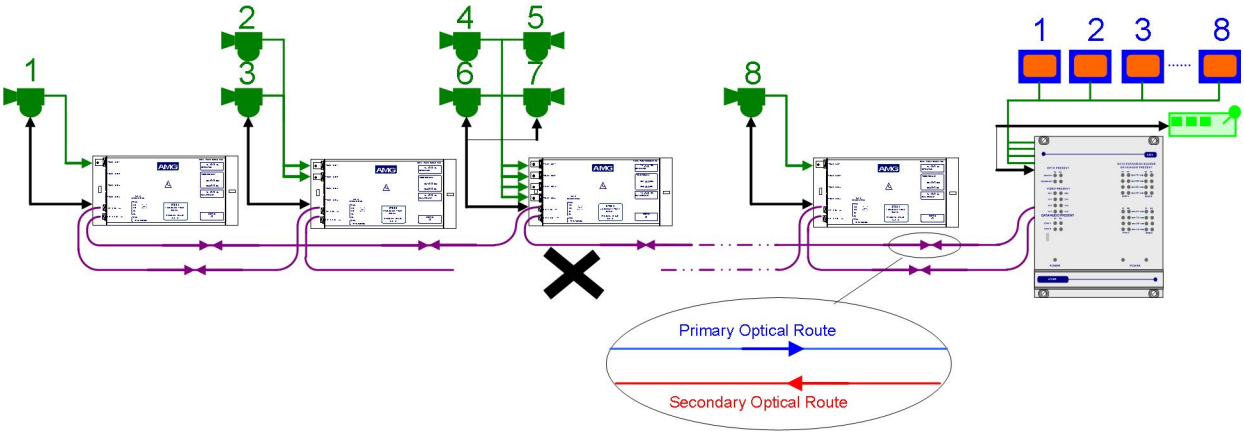
The switch channel numbers 1 to 8, correspond to video channels 1-8. Unused switch channel numbers 0 & 9 duplicate video channel selections 1 & 8 respectively. i.e. setting switch to position 0 or 1 selects video channel 1 and setting switch to position 8 or 9 selects channel 8.

Optical Connections

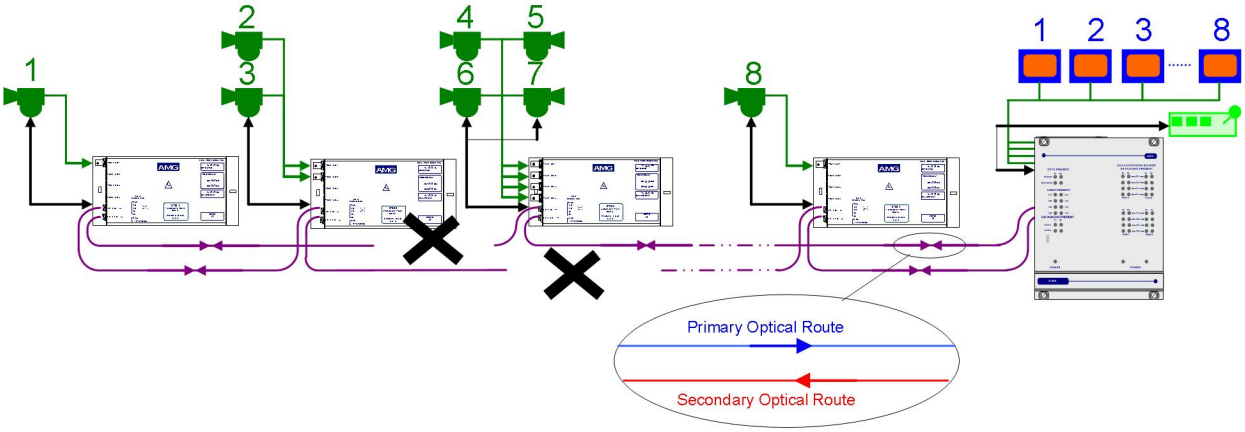
The **AMG3741-DR-SF** or rackmount **AMG3741G-DR-SF** is designed to be connected in a ring or point to point system. In a ring system, single, dual and four channel insert units respectively can be combined to make up an 8 channel video transmission system as illustrated below.



If a fibre link is broken, operation of the ring continues by making use of the secondary optical fibre route as below:



If multiple breaks occur, operation is maintained will all the units still physically connected to the receiver. For the scenario shown below camera signals and control would now be lost from cameras 1, 2 and 3 as there is now no physical connection between the transceivers and the receiver. However operation of cameras 4,5,6,7 and 8 remains fully functional.



Connections

Video Input Connections

Connector .....75 ohm BNC Socket.
Input Impedance .....75 ohm terminated.
Input Level .....1 volt p-p nominal
Frequency Response.....10Hz to 5.75MHz min.
No of channels 4

Optical Connections

PRIMARY OPTO OUT
Connector .....LC/PC
Primary Optical Launch Power .....-5dBm
Wavelength 1550nm

Secondary Optical Sensitivity .....-22dBm
Wavelength 1310nm

PRIMARY OPTO IN
Connector .....LC/PC
Primary Optical Sensitivity .....-22dBm
Wavelength 1550nm

Secondary Optical Launch Power .....-5dBm
Wavelength 1310nm

Power Connection

Connector Type .....2.1mm screw lock long power jack – centre positive
Connector Partno.....Switchcraft S761K, AMG G16125-00
Supply Voltage.....13.5 to 18.0 Volts DC.
Maximum Power .....10 Watts

Front panel Indicators

Power LED

Power	Green	-	unit powered
	Off	-	no power applied to unit

Video Input LED's

Video Present CH1-4	Green	-	video signal present on input BNC
	R/G	-	channel present but no video on I/P BNC

Fibre Optic LED's

Primary Opto Sync TX	Green	-	optical channel transmitting
	Off	-	optical channel not transmitting
Primary Opto Sync RX.....	Green	-	optical channel receiving
	R/G	-	optical channel receiving but not sync.
	Off	-	optical channel not transmitting
Secondary Opto Sync TX	Green	-	optical channel transmitting
	Off	-	optical channel not transmitting
Secondary Opto Sync RX.....	Green	-	optical channel receiving
	R/G	-	optical channel receiving but not sync.
	Off	-	optical channel not transmitting

Physical Information

Dimensions

Height.....3U Plug-in
Width.....14HP
Depth .....170mm excluding connectors
Weight.....750grams

Mounting Details

The unit is designed to be mounted within a 2005 Subrack on standard card guides. Note the AMG standard racks are supplied with guide rails every 7HP. In order to fit this unit in the subrack, 2 sets of card guides have to be removed by pulling gently on the card guides.

Removal / replacement from / to the Case

Note: - The AMG Unit PCB's are static sensitive. Handle with proper care and use normal electrostatic discharge (ESD) procedures. Use properly grounded protection (for example, wrist straps) when handling the PCB.

To remove units from the case to access the data expansion boards and the daughter boards, remove the 4 fixing screws on the rear panel and slide the PCB's out of the case.
Ensure that the fibres do not snag or get trapped.

To replace the PCB's into the case, slide the PCB's gently into the case aligning the boards with the appropriate slots. Ensure that the fibre do not snag or get trapped.

Safety

AMG Optical Fibre Products use Class 1 laser systems in accordance with EN 60825-2:2000.

It is always advisable to follow good practice when working with optical fibre systems. This includes:

- Do not stare with unprotected eyes or with any unapproved collimating device at fibre ends or connector faces, or point them at other people.
- Use only approved filtered or attenuating viewing aids

For other safety issues and advice on good practice associated with optical fibre systems, please see EN 60825-2:2000 or your local safety officer.

Maintenance and Repair

There are no user serviceable parts within AMG products. See unit data sheet for full specification.

In case of problem or failure, please call your local support centre or contact: **AMG Systems Ltd.** at 3 The Omega Centre, Stratton Business Park, Biggleswade, Beds., SG18 8QB, UK.

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