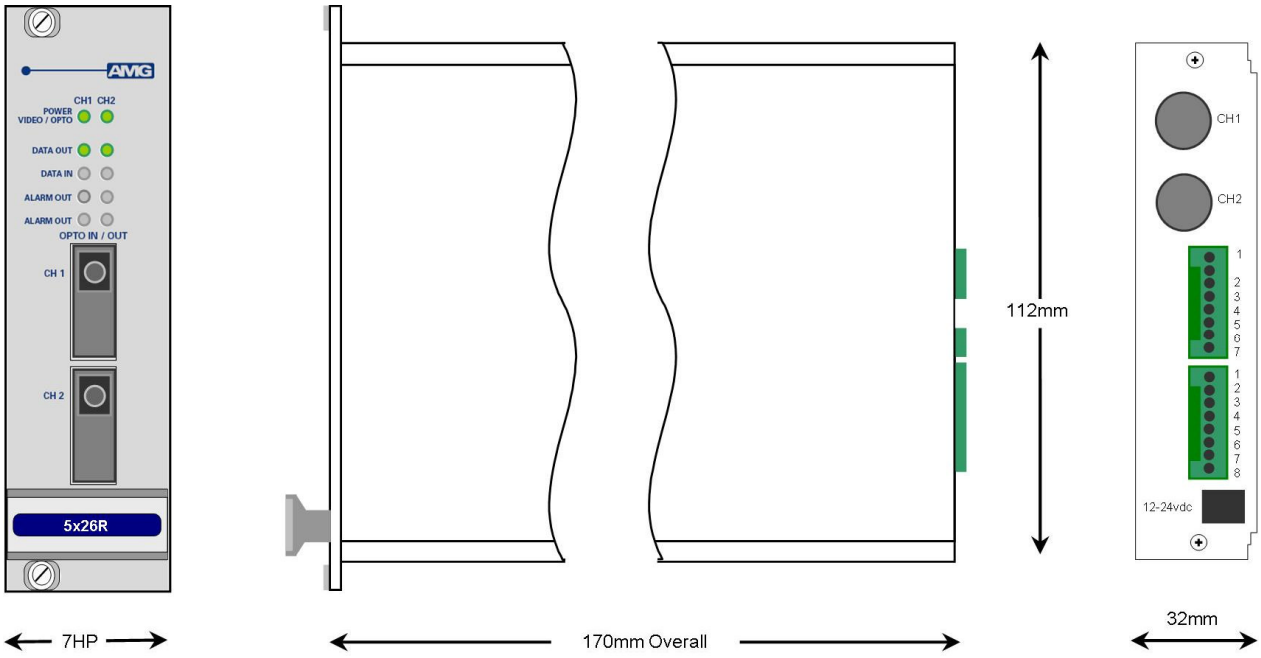
Dual System with 2x Independent Channels each of :

[Receive Unit with one Bi-directional Data Channel and two Uni-directional Alarms for a Multimode Fibre Link]



The **AMG5426R** is a **DUAL** rackmount data receive unit which provides two independent channels, each designed to receive 2 uni-directional alarms and transmit and receive 1 data signal over one Multimode optical fibre.

The **AMG5426R** is designed to plug into an **AMG2009** or **AMG2015** subrack, which in turn fits into a 19" rack system.

The **AMG5426R** is designed to operate with two **AMG5415** single channel or one **AMG5425** / **AMG5425R** dual channel transmit units in a point to point configuration. The R suffix in the partno. indicates a rackmount configuration.

Contents

Introduction

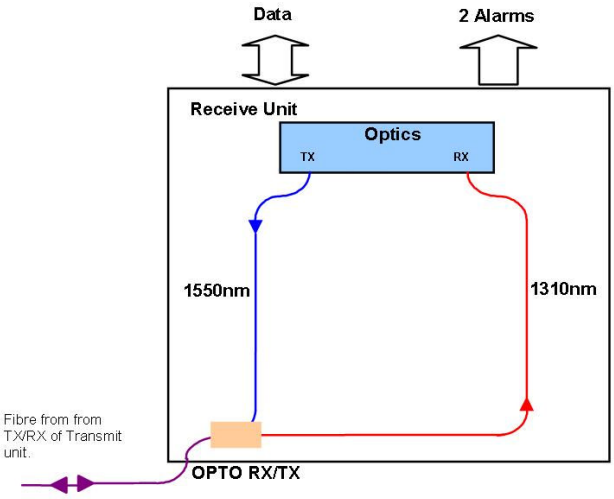
Unit Functional Schematic

The **AMG5426R** provides two independent, receive channels.

Each channel receives 1 data and 2 uni-directional alarm signals from up to two **AMG5415** transmit units.

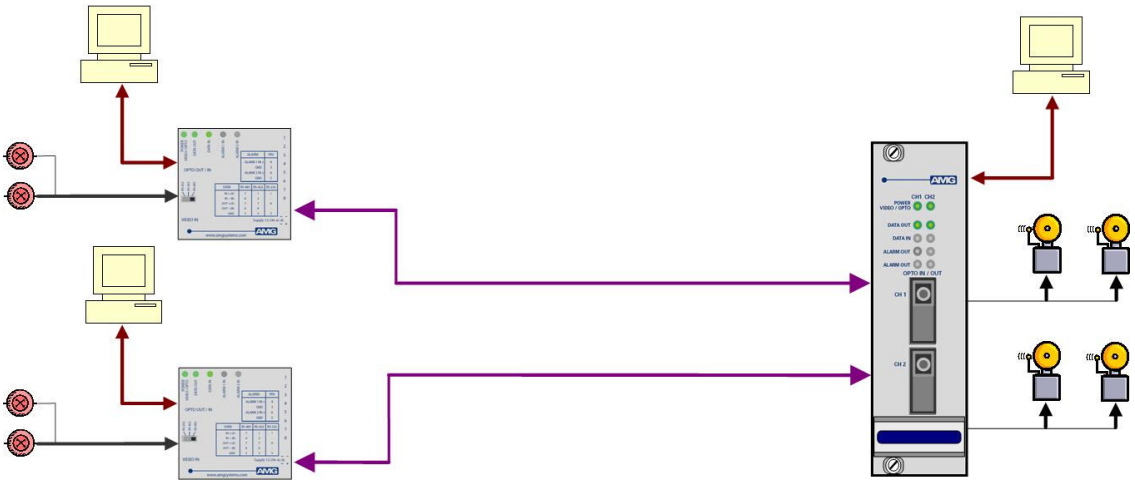
It also transmits 1 data signal to each **AMG5415**.

The schematic diagram shows one of the two available channels of the **AMG5426R**



Optical Connection

The **AMG5426R** connections are illustrated in the following example which shows two **AMG5415** single channel transmit units together with an **AMG5426R** configured as a dual channel point to point system.



Connections

Optical Connections Multimode

No. of Optical Connections.....1 per channel
Optical Fibre .....Multimode 50/125 or 62.5/125**
Connector .....SC/PC

Minimum Optical Launch Power.....-10dBm
Transmit Wavelength.....1550nm

Minimum Optical Sensitivity.....-30dBm
Receive Wavelength.....1310nm

Minimum Optical Dynamic Range .....20dB.

**Note: the transmission distance is limited by the bandwidth of the Multimode optical fibre. The optical data rate is 155Mbits/s, which may restrict operation to a maximum fibre length of 7km, although in most cases the units will operate successfully over longer fibre lengths. It is advisable however for distances greater than 7km, to have the optical fibre tested.

Power Connection

Power supply .....From plug in connection on the AMG2009 or AMG2015 subrack
Power consumption .....2.5 Watts max.

Data and Alarm Channel Connections

No. of Data Channels .....1 per channel.
No. of Alarm Outputs .....2 per channel.

Connectors .....Removable 8-pin, 2.5mm, Screw Terminal
Connector Partno.....Phoenix 1881383

Data Interfaces .....RS-232, RS-422 or R-S485. Selected by slide switch inside enclosure. *See appropriate section on how to remove the case for access to the data switches

RS-485 – Switch Position - Top
RS-422 – Switch Position - Middle
RS-232 – Switch Position - Bottom

Alarm Output.....Solid-state Relay, maximum 150mA at 125Vac/dc, Ron < 6.5Ω

Front Panel Indicators

Power / Opto LED

Power / Opto.....	Green	-	Unit powered, Opto sync.
	Red	-	Unit powered, no Opto sync.
	Off	-	No power applied to unit

Low Speed Data LEDs

Data Present IN (RS485 or RS422)	Green	-	logic zero (+V, -V) present on IN+, IN-
	Red	-	logic one (-V,V+) present on IN+, IN-
	Off	-	tri-state off or no connection on IN+, IN-
Data Present IN (RS232)	Green	-	logic zero (+V) present on input IN+
	Red	-	logic transitions present on input IN+
	Off	-	logic one (-V) present on input IN+

IN corresponds to the data signals being transmitted onto the optical fibre.

Data Present OUT (RS485 or RS422)	Green	-	logic zero (+V,-V) present on OUT+, OUT-
	Red	-	logic one (-V,+V) present on OUT+, OUT-
	Off	-	tri-state off or no connection on OUT+, OUT-
Data Present OUT (RS232)	Green	-	logic zero (+V) present on OUT+
	Red	-	logic transitions present on OUT+
	Off	-	logic one (-V) present on OUT+

OUT corresponds to the data signals being received from the optical fibre.

Alarm LEDs

Channel 1

ALARM 1 OUT.....	Green	-	Alarm ON / Contacts closed.
	Off	-	Alarm OFF / Contacts open.
ALARM 2 OUT.....	Green	-	Alarm ON / Contacts closed.
	Off	-	Alarm OFF / Contacts open.

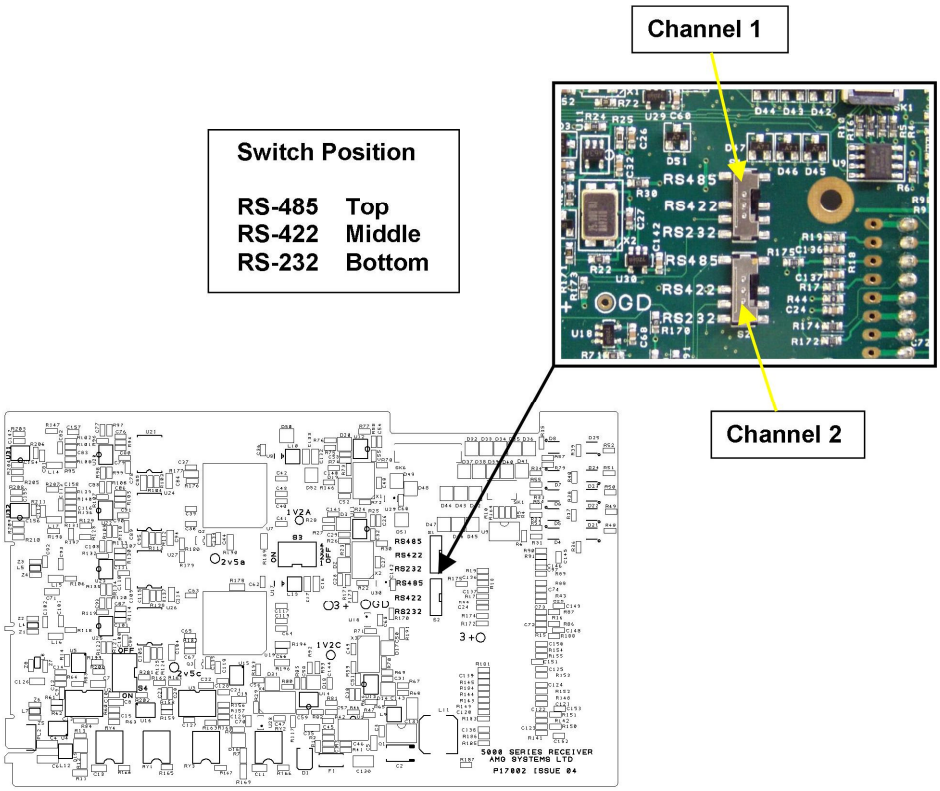
Channel 2

ALARM 1 OUT.....	Green	-	Alarm ON / Contacts closed.
	Off	-	Alarm OFF / Contacts open.
ALARM 2 OUT.....	Green	-	Alarm ON / Contacts closed.
	Off	-	Alarm OFF / Contacts open.

Data and Alarm Channel Configuration

The **AMG5426R** sends and receives data to/from up to two **AMG5415** single channel or one **AMG5625** or **AMG5625R** rackmount equivalent dual channel transmit units. Each physical data interface RS-485, RS-422 or RS-232 is individually selectable by the user with the corresponding slide switch mounted on the main PCB inside the enclosure.

2 uni-directional alarms are also provided for each video channel, each of which can receive an on/off signal from an **AMG5415** and are typically used to convey contact closure status. Each alarm output uses a Solid-state relay, with a maximum load current of 150mA at 125Vac/dc and Ron < 6.5Ω.



Data Channel Configuration

Each low speed data channel provides an RS-232, RS-422 (full duplex, four wire) or RS-485 (half duplex, two wire) interface defined by the corresponding mode switch inside the enclosure. Every data channel as shipped from the factory is set up for RS-485 operation unless otherwise requested.

The data input for both the RS-485 and the RS-422 modes detects a tri-state input condition by monitoring the differential voltage level across the input. A differential level below 600mV positive or negative will be detected as a tri-state condition. A level above 600mV positive or negative will be detected as a logic 1 or logic 0 respectively. It is important therefore to terminate the RS-485 bus or the RS-422 input bus using 120Ω if a pre-bias is present on the RS-485 or RS-422 bus.

A large number of third party equipment manufacturers apply a pre-bias on their RS-485 bus. This pre-bias is applied by pulling one arm of the RS-485 bus high (+5 volts) and the other arm low (0 volts) using high value resistors within the third party equipment. In order to ensure that the AMG equipment detects a tri-state condition, then these resistors should have a value above 5kΩ. If the third party bias resistors are less the 750Ω the bus can be multiple terminated as required to ensure that a tri-state level is detected.

The system detects a tri-state input condition on the data channel bus when in RS-485 or RS-422 mode.

Data Interface Connections

Data Channels 1 and 2.

Connector Pin No.	Data Channel		
	RS-485 [switch top]	RS-422 [switch middle]	RS-232 [switch bottom]
1		IN + (A)	IN
2		IN - (B)	
3	GND	GND	GND
4			
5			
6			
7	IN/OUT + (A)	OUT + (A)	
8	IN/OUT - (B)	OUT - (B)	OUT

Note: (A) or (B) in brackets in the above table refers to RS-485 / RS-422 data specification.

Alarm Channel Configuration

The **AMG5426** provides 2 uni-directional alarm outputs per channel.

Each alarm output provides a set of contacts from a solid state relay.

Alarm Output 1 : provides a pair of normally open, volt-free contacts.

Alarm Output 2 : provides a normally open, switched contact to Ground (0V / GND).

Alarm Interface Connections

Channels 1 & 2

Connector Pin No.	Alarm Interface	
	Alarm 1	Alarm 2
1		
2		
3		ALARM 2 GND
4		ALARM 2 OUT +
5	ALARM 1 OUT -	
6	ALARM 1 OUT +	
7		
8		

Physical Information

Dimensions

Height.....112mm
Width.....170mm (excluding connectors)
Depth 7HP
Weight.....600grams

Mounting Details

The AMG unit is supplied with a clip-on mounting bracket which should be attached to a panel or wall using 2 off 4.0mm screws, see diagram on page 1 for dimensions. The unit is clipped into the mounting bracket, and is then held firmly in position.

Removal / replacement from / to the Case

Note: - The AMG unit PCB is 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 out of the case.

To remove the PCB from the case for example to access a Low Speed Data mode switch, remove the 2 fixing screws on the rear panel and slide the PCB sufficiently out of the case to enable access to the switch.

To replace the PCB into the case, slide the PCB gently into the case, if necessary aligning the board with the appropriate slots.

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.

Phone	+44 (0) 1767 600 777
Technical Support	+44 (0) 1767 604 491
Email	techsupport@amgsystems.com