



***DM Interface***  
***16x16***  
***Control Unit***  
***Handbook***

***Type: LGDM16***

*Issue 3.*

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## PRE-INSTALLATION NOTES

### **Unpacking.**

On receipt, inspect the package and contents for signs of damage. If damage has occurred, advise the carrier and/or suppliers immediately. Inspect the contents to confirm that all items are present and undamaged. If any items are missing or damaged, contact the supplier immediately. It is advisable that the original carton is retained as this forms the safest transport container in the event that a unit has to be returned for any reason.

### **Servicing.**

This unit should not require general servicing. Any repair work should only be undertaken by Luminite Electronics Ltd.

### **Moisture.**

Do not expose the internal electronics of this unit to moisture i.e. take care during installation not to allow rain or damp into the product.

### **Box Contents.**

1 x GENESIS Relay unit LGDM16  
1 x RS485 cable

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## **INTRODUCTION.**

The LGMT434 masthead transceiver receives the data from the PIR detectors and passes it to the LGDM16 interface unit in the form of RS232 text messages. The LGDM16 then converts the data into the Dedicated Micros protocol on RS485 to provide 16 alarm and 16 tamper outputs.

Between one and four LGDM16 interface units can be connected to a single masthead receiver to provide up to 64 alarm and tamper commands that can be interfaced to a DS2.

There are four UNIT groups from 1-16, 17-32, 33-48 & 49-64 which means that up to four LGDM16's may be connected together to provide all 64 outputs if required. The front panel display shows information on alarms, faults and tampers which are held in the log.

A LEARN feature allows the LGDM16 to learn up to 16 transmitters. The transmitters call in periodically and are monitored. If they fail to call in, a tamper will occur.

## **FEATURES:**

16 alarm and 16 tamper outputs on RS485. Equivalent to two RAM modules.  
RS232 text output can be connected to the DS2 for text insertion and/or key word activation.

Global tamper N/C relay.

Low battery indication and N/C relay.

Missing call in indication and N/C relay.

Event log for tampers, low battery & missing call-ins.

Audible bleeper.

Manual system test facility.

## **POSITIONING.**

For convenience, place this product close to the DS2. The two data cables are 1 metre long.

The Masthead receiver is usually high up on the roof and can be up to 25 metres away from the LGDM16 interface unit.

## **WIRING TO THE MASTHEAD**

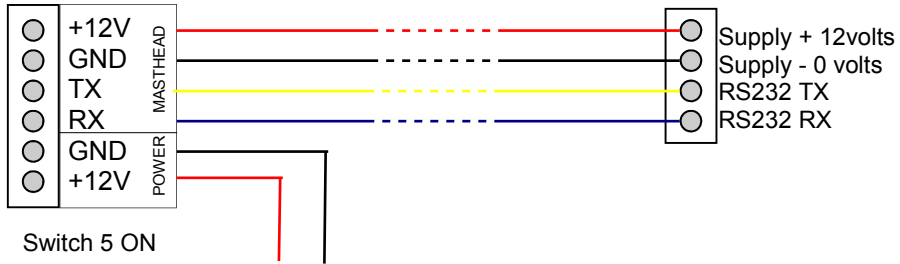
Provide a regulated 12 volts DC @ 500mA and connected it to the POWER terminals as shown. This will power both the masthead and the relay unit.

Now run a four core alarm or CAT5 cable from the relay unit to the masthead as shown. This cable takes power to the masthead and also carries data in both directions.



**1 X LGDM16 unit:**

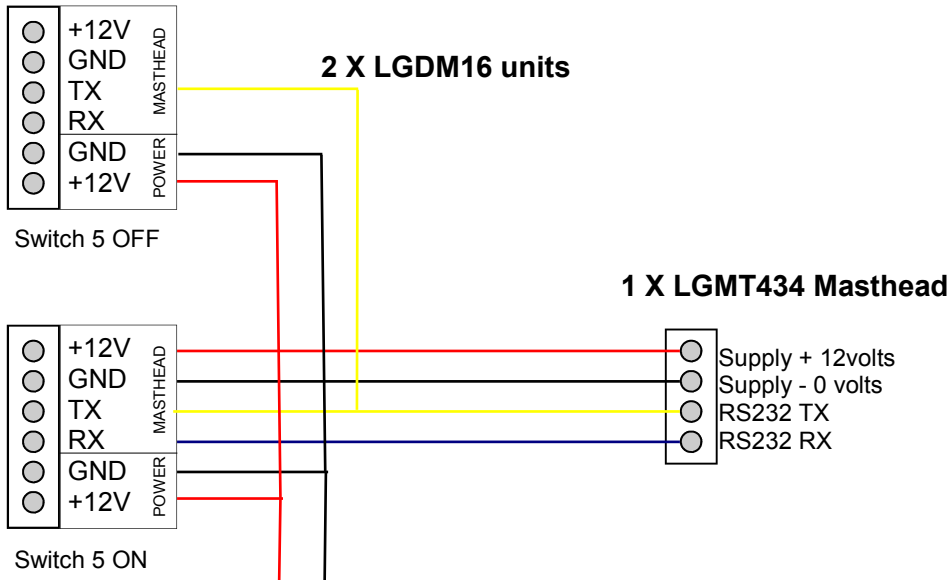
**1 X LGMT434 Masthead:**



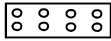
**12 volt supply @ 500m/a**

**CONNECTING TWO OR MORE UNITS TOGETHER**

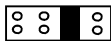
Connect +12V, GND and TX from the first unit to the same terminals on the second unit. DO NOT CONNECT RX to the second unit. Up to four units can be connected together in this way. For the first unit where RX is connected to the Masthead, set switch 5 to ON. For all the other units that do not have RX connected, set switch 5 to OFF. Now connect the RAM simulation modules together using two wires from terminals A & B of the first module to A & B of the second. See diagram on page 4.



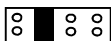
4 3 2 1 Module #



1+2



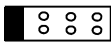
3+4



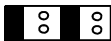
5+6



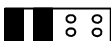
7+8



9+10



11+12



13+14



15+16

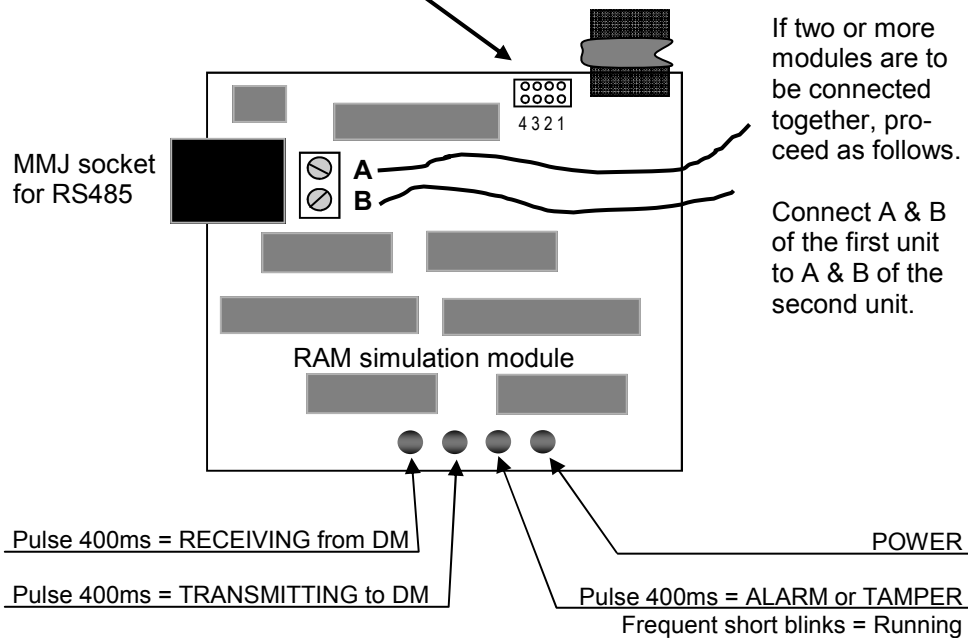
### RAM simulation jumper settings

This PCB680 module simulates two DM RAM modules and can be set up in the same manor as the RAM module by setting the jumpers appropriately. The default setting is as modules 1 & 2. Module 1 provides 1-16 alarms and module 2 provides the corresponding tampers from 1-16. Two or more DM16's may be connected together to provide up to 64 alarms and 64 tampers. See diagram below and on previous page.

### Connecting to the DS2

Using the RS485 cable supplied, plug one end into the MMJ socket as shown below and the other end into the DS2 RAM input socket. The RS485 cable can be looped through DM RAM modules if required as long as the module settings are all different from the LGDM16 settings.

Set the DM to N/O (normally open) contacts.





### LEARNING THE PIR'S OR TRANSMITTERS:

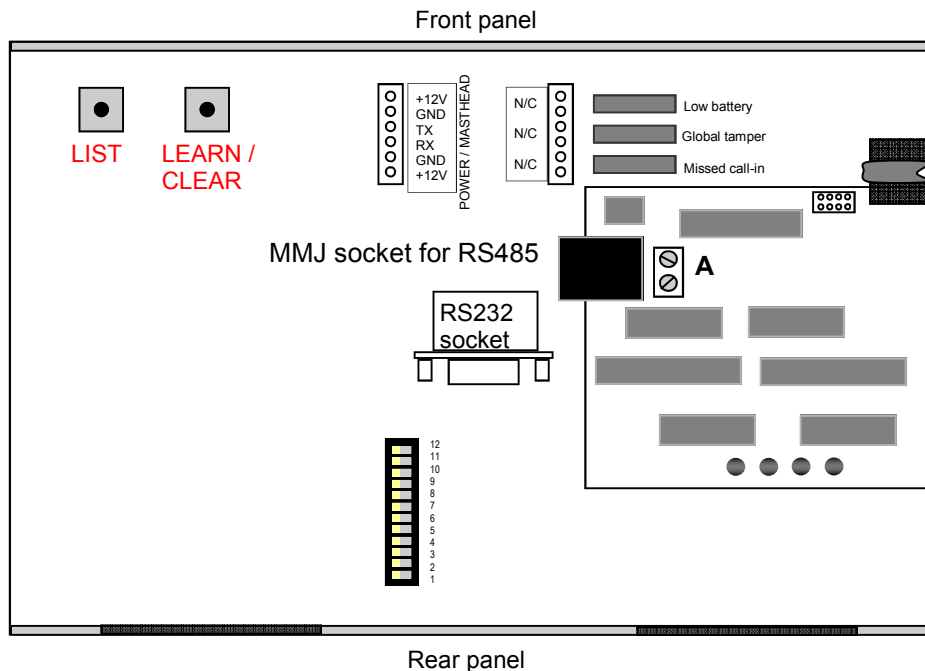
Press and hold the **LEARN** button for at least ten seconds until the message CL is displayed on the front display. This has flushed the memory. Now press the **LEARN** button once and the letter L will show on the display. The LGDM16 is now in learn mode and will stay in this mode for **10** minutes.

The Genesis PIR's will call in every one to two minutes to inform the system that they are still operational. Each one that calls in will be logged on the system. This is indicated by a long bleep and the display will show how many devices have been learned. A short bleep indicate that either the unit number has already been learned or that the unit number is out of the selected range.

Learn mode will stop automatically after 10 minutes or may be manually stopped by pressing the **LEARN** button again.

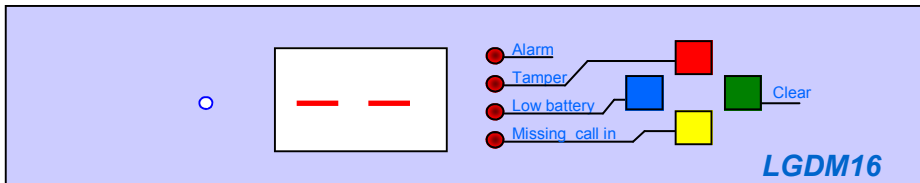
To list the learned unit numbers, momentarily press the **LIST** button. The learned unit numbers will show in turn on the display. When all the numbers have displayed the unit reverts to normal operation.

If it is necessary to **CLEAR** the memory for any reason, simply press and hold the **LEARN** button for ten seconds until a long bleep is heard. The unit can now be put into learn mode again.



## DISPLAY AND INFORMATION BUTTONS.

**ALARM.** Each DETECTION ALARM that is received will show the unit number on the display and also light the alarm led.



### TAMPER.

If a tamper is received the appropriate tamper contact will open circuit. Press the RED button to list all the unit numbers that have reported tampers. Once the tamper is cleared, the PIR or transmitter will send a CLEAR command which will cancel the displayed message and close the contact. If the lid is removed from this control unit it will open the global tamper relay contacts but not show on the front display.

**LOW BATTERY.** When any of the PIR's or transmitters call in with a battery level of **75%** or less, the low battery relay will open circuit and the low battery indicator will also light on the front panel. Press the BLUE button to list all the unit numbers that are 75% or under. These messages will clear and the contact close when the PIR's or transmitters send a higher than 75% battery level. Low battery faults can also operate the appropriate individual tamper relay by selecting switch 11. (see function switches page 7).

**MISSING CALL-IN.** A call-in timer will run for each unit number logged on the system. If a PIR or transmitter fails to call in within this time, the global MISSED CALL IN relay will go open circuit and the missing call in led will light. Press the YELLOW button to list all the unit numbers that have not called in. These messages will clear and the contact close when the PIR's or transmitters call in again. Missing call in's can also operate the appropriate individual tamper relay by selecting switch 12. (see function switches page 7).

### CLEAR BUTTON.

To clear any of the three tampers or faults, press the appropriate display button and the clear button simultaneously.



**# FUNCTION SWITCHES:**

12	Add Missed call to Tamper,	OFF..No,	ON..Yes
11	Add Low Battery to Tamper,	OFF..No,	ON..Yes
10	Add Shock to Tamper,	OFF..No,	ON..Yes
09	Add Cloak to Tamper	OFF..No,	ON..Yes
08	Alarm Length	OFF..2sec	ON..10seconds
07	Alarm Beep,	OFF..No,	ON..Yes
06	Text Output, OFF..Direct-out from Masthead, ON..Short Messages		
05	Enable Masthead detection,	OFF..No,	ON..Yes
04	Group Selection - Low		
03	Group Selection - High		
02	Contact status (open or closed)	OFF..N/O	ON..N/C
01	DebugMode ( Leave as OFF)		



**GROUP SELECTION TABLE:**

#03 | #04 | Group

OFF	OFF	01..16
OFF	ON	17..32
ON	OFF	33..48
ON	ON	49..64

**TYPICAL SETTINGS:**

- 1 & 2 OFF. These switches NOT used and must be left OFF.
- 3 & 4 OFF unit codes 1-16 etc. See Group Selection Table.
- 5 ON Detects that masthead is connected and functioning.
- 6 ON Use short messages for video insertion but use the Direct Out from Masthead if connecting to a compatible third party product that uses the Luminite protocol.
- 7 ON As required
- 8 OFF Required for this product.
- 9 ON Cloak is considered as a tamper and should be added.
- 10 ON Shock is considered as a tamper and should be added.
- 11 OFF There is a general relay output for low battery and it is possible although not advisable to activate the associated tamper.
- 12 OFF There is a general relay output for missed call but it is possible but not advisable to activate the associated tamper.

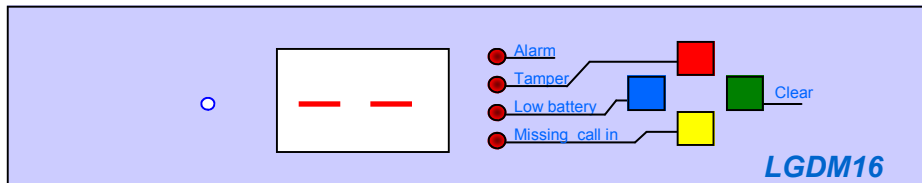
## TESTING.

Once all the relays are connected to the alarm inputs it is advisable to test each circuit.

To put the LGDM16 into test mode, proceed as follows.

Disconnect the power supply. Press and hold either the LIST or LEARN button while re-connecting the power supply. UT (user test) will be displayed on the front panel.

Now press either the BLUE or GREEN button on the front panel to operate the individual alarms. Blue moves forward and the green backwards. The alarm number will show on the front display and the alarm messages will be passed to the DS2.



## RS232 TEXT OUTPUT.

This 9 pin serial socket can be used to output text messages of all alarm events including low battery information, tampers and missed call ins. Plug this into the DS RS232 socket and set the DS to overlay the text on to a video picture, preferably a blank input.

You can also use the RS232 port to communicate directly with the masthead in order to change settings and upload names for each unit number. The masthead will transmit these names to the walk test instrument or pager.

A special free terminal is available for download from the Luminite web site [www.luminite.co.uk](http://www.luminite.co.uk) which simplifies this operation. NB: You can use standard terminals to view information but you will not be able to write to the masthead using them. To view this text on a standard terminal, set 8 bits parity, 1 stop bit and a baud rate of 19200.

## ERROR MESSAGES:

- E1 RS485 module missing or not connected
- E2 No communication with masthead
- E3 Unit group different to learned unit codes



**ENGINEERS NOTES:**

## **Luminite Genesis product range**

Wireless PIR's	15m x 90 deg	LGWP1520
Wireless PIR's	40m x 1 deg	LGWP4004
Wireless PIR's	12m Horizontal curtain	LGWP12HC
Masthead/Repeater		LGMT434
Masthead Relay Unit		LGMRU4x4
Relay Expansion Module		LGREM4x4
Walk Test Instrument		LGWT434
16 way relay unit		LGRU16
Relay module		LGRM8
16 way DM interface unit		LGDM16
16 way relay unit with end of line resistor		LGRU16ELR 3 versions
Relay module with end of line resistor		LGRM8ELR 3 versions
Optional antenna		AE434
Transmitter module		LGTX434
Wired PIR detectors (RS485)	15m x 90 deg	LGRS1520
Wired PIR detectors (RS485)	40m x 1 deg	LGRS4004
Wired PIR detectors (RS485)	12m horizontal	LGRS12HC
RS485-RS232 Adapter		LGA485

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