

Iso-Gard® Line Isolation & Overload Monitor (LIOM) and Line Isolation Monitor (LIM) MLHG6 / MLHG6-AU



ISO-GARD®
Line Isolation Monitor



Installation and Reference Guide

This document is intended as a guide for the configuration and testing of the unit. The basic physical setup of the monitor is covered in the Setup Guide. This reference document includes typical display indications of the monitor unit and instructions for entering the menu settings. It also discusses operation and testing of the monitor.

For physical installation, including placement in a wall box and wiring the unit, refer to the *Line Isolation & Overload Monitor Setup Guide* for the LIOM (MLHG6) F2395.

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- This product must only be installed and serviced by appropriately qualified and/or licenced electrical personnel.
- Isolate the electrical supply before doing any work on this product.
- Ensure that the product has been correctly installed and tested for safe operation before reconnecting the electrical supply.
- The LIOM must be installed and enclosed in the wall box.

Failure to follow these instructions will result in death or serious injury.

Contents

Included and Orderable Parts 3

Technical Support and Product Information..... 5

For Your Safety 6

Wiring Diagrams 6

LIM Panel Display Normal Operation..... 8

LIM Panel Display Hazard (Alarm) 9

Displaying Measured Values 10

Navigating the Menu 11

Menu Structure 12

MAIN Menu 13

 1. VALUES 13

 2. HISTORY 14

 3. DATALOG..... 14

 4. SETTING..... 15

 SETTING / 1. GENERAL 16

 SETTING / 2. RELAY 17

 SETTING / 3. BUZZER..... 18

 SETTING / 4. HISTORY 18

 SETTING / 5. DATALOG..... 19

 SETTING / 6. INTERFACE (bus address) 19

 SETTING / 7. CLOCK..... 20

 SETTING / 8. PASSWORD 20

 SETTING / 9. FACTORY SETTING 20

 SETTING / A. SERVICE 20

 5. CONTROL..... 21

 CONTROL / 1. TEST (carrying out test via the menu)..... 21

 CONTROL / 2. COMMUNICATION TEST 21

 6. INFO..... 21

Periodic Testing 22

Detected Error Codes and Troubleshooting 23

Factory Settings 25

Electrical Specifications 27

Standards Complied..... 29

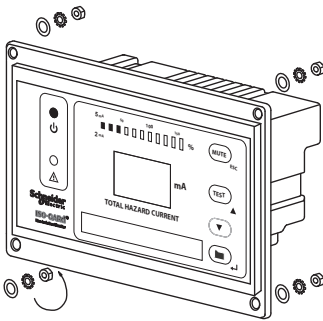
Included and Orderable Parts

The LIOM (MLHG6) is packaged as a kit that includes a display monitor (LIOM), a Backplate Assembly and a front panel. The LIOM must be installed in a Recessed Wall Box. One or two Remote Display Units can be added as an option.

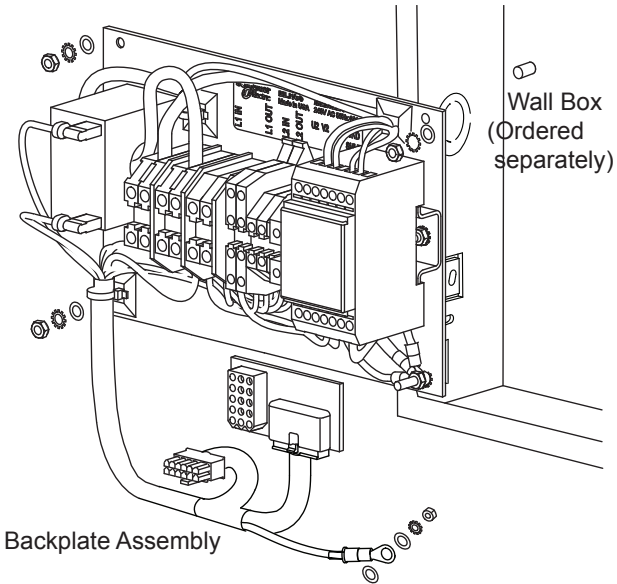
Line Isolation and Overload Monitor (LIOM)

Catalogue Number	Component or Accessory Name	Included in Kit	Ordered Separately
MLHG6	Line Isolation & Overload Monitor, Front Panel and hardware kit	Yes	Yes
	Backplate for LIOM and MLHG6-BP hardware kit	Yes	No
MLHG6B-AU	Recessed Wall box	No*	Yes
MLHG6RD-AU	Remote Display Unit (option) requires 147/2 Duplex Wall Box	No	Yes

* Order the Recessed Wall Box.



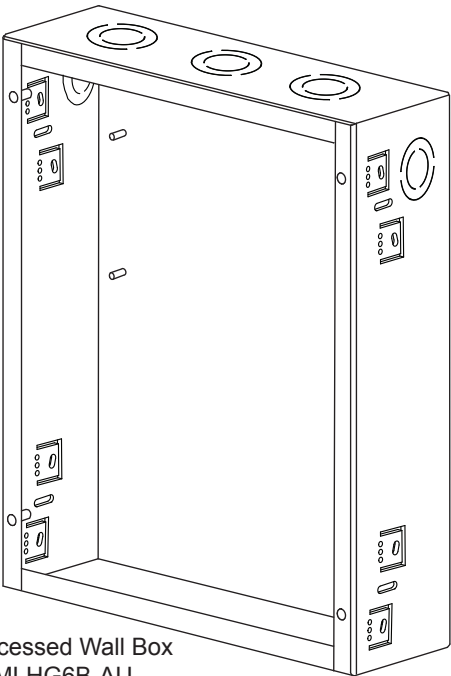
Line Isolation Monitor (LIM)



Backplate Assembly

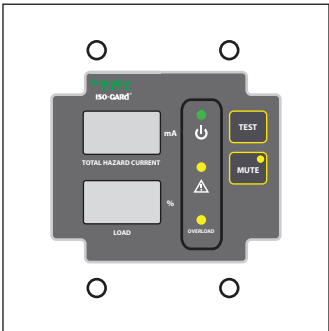
Wall Box for the LIOM

The LIOM's monitor and backplate assembly must be installed in the Recessed Wall Box.



Recessed Wall Box
MLHG6B-AU

Remote Display Unit (optional)



Technical Support and Product Information

For assistance with technical problems or warranty enquiries, contact your nearest Schneider Electric sales representative. Contact information is provided on the back cover of this document.

Product Information

You can access documents for this product on the Internet. Use either of the two methods below:

- Go to **<http://clipsal.com/trade>**, type **MLHG6** into the search bar in the top right hand corner and then select *Documentation* to see the full range of documentation available for the product.
- Go to **<http://clipsal.com/brochures>** and then select the type of document you want from the following options:

Case Studies
 Certificates (MSDS)
 Installation Instructions
 Operating Manuals
 Product Brochures
 Product Data Sheets
 Specifications
 Technical Data Catalogues

Then select the product reference, i.e. MLGH6.

You can view and print the PDF file using the Adobe Reader available at:

<http://www.adobe.com>.

Document Name	Component Model	Form Number
Recessed Wall Box for LIOM Instructions	MLHG6B-AU	F2418
Line Isolation & Overload Monitor Installation and Reference Guide (Downloadable as PDF)	MLHG6 MLHG6-AU	F2392
Line Isolation & Overload Monitor (LIOM) Setup Guide	MLHG6	F2395
Remote Display Unit Setup Guide	MLHG6RD-AU	F2397
Line Isolation Monitor (LIM) Setup Guide	MLHG6-AU	F2417
Test Simulator Module Application Note	MLHG6T-AU	F2394
Current Transformer Application Note	MLHG6CT-AU	F2396

For Your Safety

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- This product must only be installed and serviced by appropriately qualified and/or licenced electrical personnel.
- Isolate the electrical supply before doing any work on this product.
- Ensure that the product has been correctly installed and tested for safe operation before reconnecting the electrical supply.
- The LIOM must be installed and enclosed in the wall box.

Failure to follow these instructions will result in death or serious injury.

CAUTION

EQUIPMENT OPERATIONS HAZARD

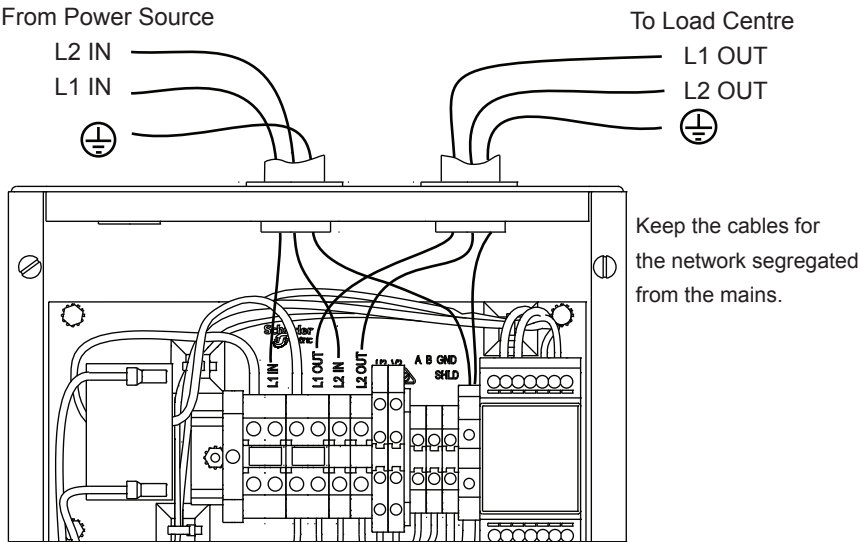
Only qualified maintenance personnel to modify menu settings.

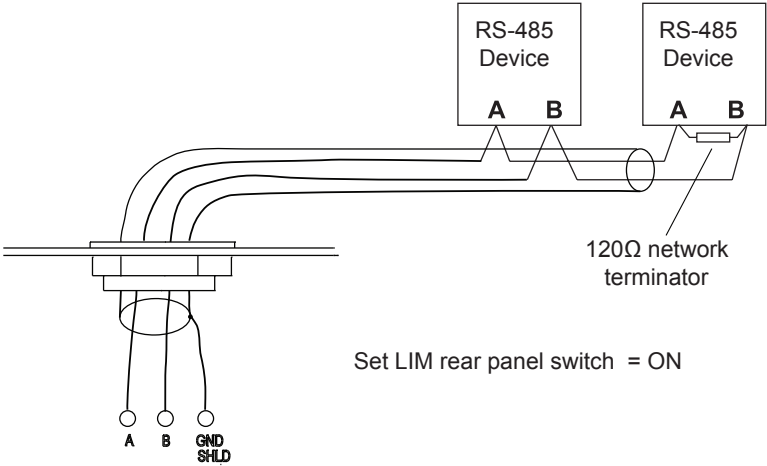
Failure to follow this instruction can result in injury or equipment damage.

If you have any questions regarding safe practices during installation or operation of the LIOM, please contact Technical Support, or your site safety officer.

Wiring Diagrams

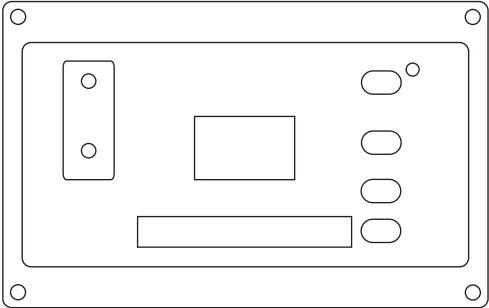
When installing the equipment, please refer to the setup and installation instructions provided with the components. Additional information is provided those documents.





RS-485 Bus Termination Switch
(on LIM rear panel)

☒ off ☐ on
R



LIM Panel Display Normal Operation

NOTICE

INSTALLATION HAZARD—OVERLOAD ALARM FACTORY SET TO 15A

Prior to initial operation, current value must be set to match transformer rating.

Failure to follow this instruction can result in equipment damage or reduced product performance.

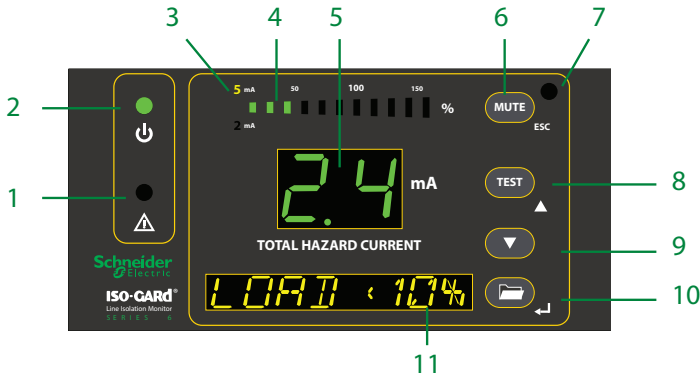


Figure Ref.	Panel Feature	Normal State
1	HAZARD LED (yellow)	Not illuminated.
2	NORMAL OPERATION LED (green)	Illuminated. Will be in the system normal condition when the displayed Total (Prospective) Hazard Current is below the 5mA response value.
3	Measuring range indicator light (yellow)	Illuminates when the 5mA THC response value has been activated.
4	LED bar graph	In a system normal condition, only the green bars are illuminated.
5	Seven-segment display of Total (Prospective) Hazard Current	Green in colour for the system normal condition.
6	MUTE button / ESC key	Moves to a higher level in the menu.
7	MUTE LED	Not illuminated in the system normal condition.
8	TEST button	Activates self-test. / UP key: Moves up in the menu and increases values.
9	DOWN key	Moves down in the menu and decreases values.
10	MENU key	Enters the main menu. / ENTER key: Confirms entries.
11	Digital display	Reads LOAD % in the normal condition. Displays menu options when in Menu mode.

LIM Panel Display Hazard (Alarm)

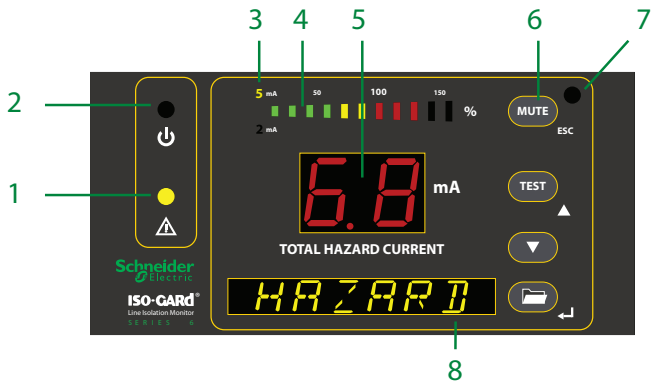


Figure Ref.	Panel Feature	Hazard (Alarm) State
1	HAZARD LED (yellow)	Flashes yellow.
2	NORMAL OPERATION LED (green)	Not illuminated.
3	Measuring range indicator light (yellow)	Indicates the 5mA trip level has been activated.
4	LED bar graph	In a system alarm condition, the red bars will be illuminated.
5	Seven-segment display of Total (Prospective) Hazard Current	Red in colour in a system alarm condition.
6	MUTE button / ESC key	Pressing the Mute button will silence the audible alarm and activate the yellow Mute LED.
7	MUTE LED	Will illuminate yellow after the Mute button has been pressed and the detected fault is still present on the system.
8	Digital display	Reads HAZARD.

Displaying Measured Values

The Total (Prospective) Hazard Current is displayed in real-time on the numeric display in the middle of the device. For retrieving other measured values, such as load current or impedance, refer to 'Main Menu, 1.VALUES.'






The following table lists the various types of alarms available and their corresponding indications.

THC Digital Indication	THC LED Bar Graph Indicator	Text Display	NORMAL OPERATION LED	HAZARD LED	Audible Alarm
< 3.6mA (5mA) < 1.4mA (2mA) (system normal condition)	green	LOAD %	on	off	off
3.6–4.9mA (5mA) 1.4–1.9mA (2mA) (system normal condition, with caution yellow LED bar graph)	green + yellow	LOAD %	on	off	off
≥ 5mA (5mA) ≥ 2mA (2mA) (alarm condition)	green + yellow + red	HAZARD	off	on	on
E.F. (either) (alarm condition) 1	green + yellow + red	HAZARD	off	on	on

1 E.F. = extreme fault; The detected THC has exceeded the maximum display value of 9.9 mA.

Navigating the Menu

Use these buttons and text display to change menu settings in Menu mode.

	ESC key: Jump to a higher level in the menu; discard entries
	UP key: Move up in the menu; increase values
	DOWN key: Move down in the menu; decrease values
	MENU: Enter Menu mode Enter: Select the next menu level; confirm entries
	Text display for Menu mode

Accessing the main menu

Hold the “MENU” button for at least one second. The device will enter into menu mode. The first item in the menu, “VALUES,” will appear. The number “1” will flash.

When initially energised, set the date to clear the message.

Entering the password prior to menu navigation

Many submenu options may be password protected. Passwords are entered as three digit numbers. The default password is **807**. When applicable, follow the below procedure to enter the password:

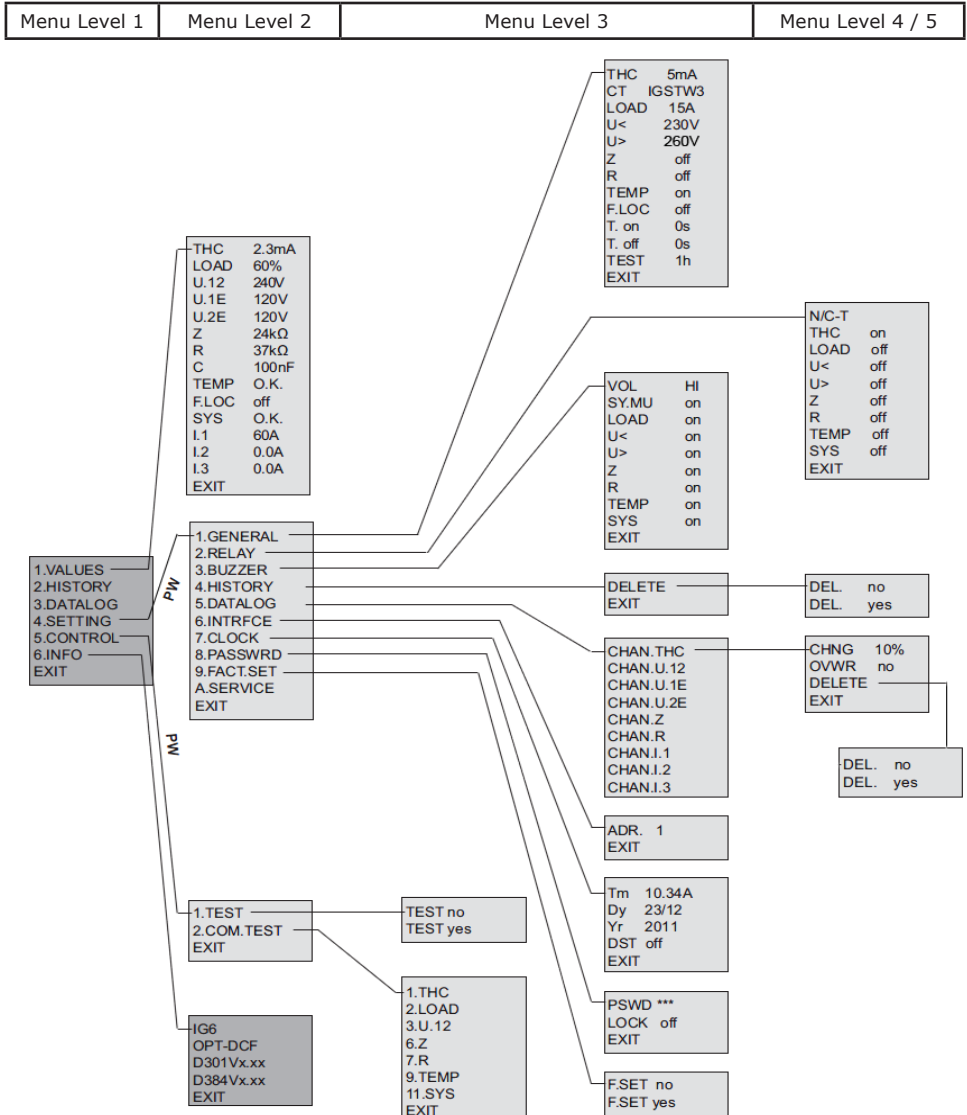
1. A flashing number illustrates which number is currently in focus.
2. Use the UP/DOWN arrow key to select the correct number.
3. Confirm with the ENTER button.
4. Repeat for the next numbers until the last number is confirmed.
5. Settings may now be modified until the menu is exited. Re-entering the menu will require a re-entry of the password.

When a parameter is changed and confirmed with the enter key, the change will have an immediate effect. The unit will continue to operate while settings are modified.

Exiting the menu

Press the ESC key to return to the last step in the menu. Repeat this step until the display has returned to the main screen. If the unit is idle in the menu for 5 minutes, the device will automatically return to the main screen.

Menu Structure



MAIN Menu

This menu indicates the values being read in real-time. To step back in the menu, press the Mute/ESC button.

MENU Level 1	Meaning
EXIT	
1. VALUES	Display all measured values in real-time
2. HISTORY	Display history of alarm messages
3. DATALOG	Data logging of selected parameters
4. SETTING	Change settings
5. CONTROL	Begin bus or device test
6. INFO	Display device information
EXIT	

1. VALUES

MENU Level 1	MENU Level 2	Meaning	Example
	EXIT		
1. VALUES	THC	Total (Prospective) Hazard Current	5ma
	LOAD	Max. load current [%]	60%
	U.12	Voltage between L1 and L2	240V
	U.1E	Voltage between L1 and ground	120V
	U.2E	Voltage between L2 and ground	120V
	Z	Isolation impedance	24kΩ
	R	Isolation resistance	37kΩ
	C	Leakage capacitance	100nF
	TEMP	Transformer temperature indication	O.K.
	F.LOC	Status of the location test generator	off
	SYS	Status of the device	O.K.
	I.1	Load current measured from CT	9A
	EXIT		

2. HISTORY

This option displays a record of time-stamped alarms. After opening the menu option, the most up-to-date alarm will appear. Pressing the UP and DOWN arrow keys will scroll through the various information available. Pressing ENTER will display additional information regarding the alarm.

MENU Lev 1	MENU Lev 2	MENU Lev 3	Meaning
		EXIT	
2. HISTORY	AL125. THC	START.THC	THC alarm with the consecutive number 125/ Start of the alarm:
		24 / 10/ 11	Date
		11.45 am	Time
		QUIT.THC	Mute of the alarm:
		24 / 10/ 11	Date
		11.45 am	Time
		END.THC	End of the alarm:
		25 / 10/ 11	Date
		9.30 am	Time
		MIN. 6.0mA	Minimum value of THC
		MAX. 9.9mA	Maximum value of THC
		EXIT	

3. DATALOG

Logging is provided for up to 300 data records.

MENU Lev 1	MENU Lev 2	MENU Lev 3	Meaning
		EXIT	
3. DATALOG	CHAN. THC	THC 2 mA	Last value change
		30 / 11/ 11	Date
		03.45 am	Time
		288.THC 4mA	2nd to last value
		15 / 09/ 11	Date
		11.14 am	Time
		—	—
		—	—
		—	—
		1.THC 1mA	First stored value
		25 / 10/ 09	Date
		9.30 am	Time
		EXIT	

4. SETTING

This is the MAIN SETTING menu. All changes to the device are made here.

 **CAUTION**

EQUIPMENT OPERATIONS HAZARD
Only qualified maintenance personnel to modify menu settings.
Failure to follow this instruction can result in injury or equipment damage.

MENU Lev 1	MENU Lev 2	Meaning
	EXIT	
4. SETTING	1. GENERAL	Change response values
	2. RELAY	Change relay operation
	3. BUZZER	Change audible alarm settings
	4. HISTORY	Erase history memory
	5. DATALOG	Set logging parameters
	6. INTERFACE	Change the LIOM bus address
	7. CLOCK	Change time and date
	8. PASSWORD	Enable/disable/change the password
	9. FACT.SET	Reset to factory defaults
	A. SERVICE	Only for manufacturer service
	EXIT	

SETTING / 1. GENERAL

Changes to the response values (THC, load monitoring, undervoltage, etc.) are made here. The additional alarms may be turned ON or OFF, along with any trip-level settings made.

MENU Lev 1	MENU Lev 2	MENU Lev 3	Meaning	Example
		EXIT		
4. SETTING	1. GENERAL	THC	Total (Prospective) Hazard Current: 2 mA / 5 mA	5mA
		CT	Current transformer type:	off / STW3*
		LOAD	Load current: off, 10–200A	15A
		U<	Undervoltage: off, 80–300V	230V
		U>	Overvoltage: off, 80–300V	260V
		Z	Isolation impedance: off, 10–200kΩ	off
		R	Isolation resistance: off, 20–200kΩ	off
		TEMP	Transformer temperature control: off / on (off = current output)	off
		F.LOC	Start and stop conditions for EDS systems: test current generator off / auto	off
		T.ON	Response delay: 0–99s	0s
		TOFF	Release delay: 0–99 s	0s
		TEST	Self test interval: 1–24h	1h
		EXIT		

* CT type 'STW3' refers to the Current Transformer type: MLHG6CT-AU.

SETTING / 2. RELAY

Settings related to the contact outputs are changed here. Each type of alarm may be set to trip the output contact. If an alarm is set to ON, it will change the state of the contact in the event of an alarm. If it is set to OFF, it will not change the state of the contact.

Additionally, the operation of the output relay may be changed here. The following denotes the options available and their meaning.

- N/C mode: Normally closed (energised) mode. The LIM will trip in the event of an alarm or a loss of power to the device.
- N/C-T mode: Normally closed (energised) mode with test enabled. The LIM will trip in the event of an alarm, a test, or a loss of power to the device.
- N/O mode: Normally open (de-energised) mode. The LIM will trip only in the event of an alarm.
- N/O-T mode: Normally open (de-energised) mode with test enabled. The LIM will trip in the event of an alarm or a test.

MENU Lev 1	MENU Lev 2	MENU Lev 3	Meaning	Example
		EXIT		
4. SETTING	2. RELAY	N/C-T	The contact will trip in the event of an alarm, a test, or a loss of power to the device	
		THC	Relay switches when a THC alarm occurs	on
		LOAD	Relay does not switch in the event of a LOAD alarm	off
		U<	Relay does not switch in the event of an undervoltage alarm off	
		U>	Relay does not switch in the event of an overvoltage alarm	off
		Z	Relay does not switch in the event of an insulation impedance alarm	off
		R	Relay does not switch in the event of an insulation resistance alarm off	
		TEMP	Relay does not switch in the event of a temperature alarm	off
		SYS	Relay does not switch in the event of a detected error	off
		EXIT		

SETTING / 3. BUZZER

Settings here relate to the audible alarm of the Isogard LIM. If a type of alarm is set to ON, it will activate the audible alarm when it goes into alarm. If it is set to OFF, the alarm will not activate the audible alarm.

MENU Lev 1	MENU Lev 2	MENU Lev 3	Meaning	Example
		EXIT		
4. SETTING	3. BUZZER	VOL	Audible alarm volume: High or Low	HI
		SY.MU	System mute: on/off	on
		LOAD	Audible alarm sounds in the event of an overload alarm	on
		U<	Audible alarm sounds in the event of an undervoltage alarm	on
		U>	Audible alarm sounds in the event of an overvoltage alarm	on
		Z	Audible alarm sounds in the event of an insulation impedance alarm	on
		R	Audible alarm sounds in the event of an insulation resistance alarm	on
		TEMP	Audible alarm sounds in the event of a temperature alarm	on
		SYS	Audible alarm sounds in the event of a detected error	on
		EXIT		

SETTING / 4. HISTORY

Selecting YES will erase the history of alarms on the device.

NOTE: Once the history is erased, it cannot be recovered.

MENU Lev 1	MENU Lev 2	MENU Lev 3	MENU Lev 4	Meaning
		EXIT		
4. SETTING	4. HISTORY	DELETE	DEL. yes / no	Erase history memory: yes or no
		EXIT		

SETTING / 5. DATALOG

This menu controls how often data is recorded in the history log of the LIM. The number of records is controlled by changing the minimum percentage difference between two values. When that threshold is reached or exceeded, data will be recorded.

Example: if the "CHNG" item is set to 10%, a difference between two values of 10% or greater will record an event to the history log.

MENU Level 1	MENU Level 2	MENU Level 3	Menu Level 4	Menu Level 5	Meaning
		EXIT			
4. SETTING	5. DATALOG	CHAN. THC	CHNG 10%		Change in limiting value: 5 - 100%
		CHAN. U.12	OVWR yes or no		Overwrite full memory; Overwrite is FIFO
		CHAN. U.1E	DELETE	DEL. yes or no	Delete data log: yes clears all data
		CHAN. U.2E	Not user adjustable		
		CHAN. Z			
		CHAN. R			
		CHAN. I.1			
		CHAN. I.2			
		CHAN. I.3			
			EXIT		

SETTING / 6. INTERFACE (bus address)

This menu controls the bus address of the LIM. In most cases, this option should be set to 1.

MENU Lev 1	MENU Lev 2	MENU Lev 3	Meaning	Example
		EXIT		
4. SETTING	6. INTRFCE	ADDR	Setting range: 1-90	Suggested value is 1
		EXIT		

SETTING / 7. CLOCK

Use this menu to change the time and date settings.

MENU Lev 1	MENU Lev 2	MENU Lev 3	Meaning	Example
		EXIT		
4. SETTING	7. CLOCK	Tm	Time: am / pm	10:34 A
		Dy	Day / Month	23 / 12
		Yr	Year	2013
		DST	Daylight saving time: auto/off (North America time zones only)	off
		EXIT		

SETTING / 8. PASSWORD

Use this menu to change password protection.

MENU Lev 1	MENU Lev 2	MENU Lev 3	Meaning	Example
		EXIT		
4. SETTING	8. PASSWRD	PSWD ***	Password range: 000-999 Factory setting: 807	
		LOCK	Password protection activate (on) or deactivated (off)	on
		EXIT		

SETTING / 9. FACTORY SETTING

Use this menu to reset the device to factory defaults.

MENU Lev 1	MENU Lev 2	MENU Lev 3	Meaning	Example
		EXIT		
4. SETTING	9. FACT.SET	F.SET	Keep current settings	no
			Restores settings to the factory defaults	yes
		EXIT		

NOTE: Once the device is reset to factory defaults, it cannot be restored to any previous state automatically. Any important changes to settings must be re-entered.

SETTING / A. SERVICE

This menu is intended for service by Schneider Electric only.

5. CONTROL

CONTROL / 1. TEST (carrying out test via the menu)

With this menu, all Remote Display units with bus capability are able to enforce a device self-test on the LIM.

MENU Lev 1	MENU Lev 2	MENU Lev 3	Meaning	Example
		EXIT		
5. CONTROL	1. TEST	TEST	Test deactivated	no
			Test activated	yes
		EXIT		

CONTROL / 2. COMMUNICATION TEST

This menu enables testing of the RS-485 communication bus between the LIM and other bus-compatible devices.

MENU Lev 1	MENU Lev 2	MENU Lev 3	Meaning
		EXIT	
5. CONTROL	2. COM.TEST	1.THC	Send THC alarm message via the bus
		2.LOAD	Send overload alarm message via the bus
		3.U.12	Send overvoltage alarm message via the bus
		6.Z	Send low impedance alarm message via the bus
		7.R	Send low resistance alarm message via the bus
		9.TEMP	Send over-temperature alarm message via the bus
		11.SYS	Send system alarm message via the bus
		EXIT	

6. INFO

This menu option displays important information regarding the hardware and software of the LIM.

MENU Level 1	MENU Level 2	Meaning
	EXIT	
6. INFO	MLHG6 MLHG6-AU	Device type
	OPT-DCF	Option of the device
	D301 V1.2X	Software version of measurement technique
	D384 V1.0X	Communication software version
	EXIT	

Periodic Testing

Local authorities require testing of 'Isolated Power Systems' prior to placing them into service and periodically thereafter. Schneider Electric recommends testing Isolated Power Systems not less than once every twelve months.

The testing should consist of resistive and capacitive testing to verify the proper functions of the LIM.

Schneider Electric further recommends pushing the Test button no less than once a month to verify proper operation of the visual and audible functions of the LIM.

Please contact your local Schneider Electric representative for more information.

Communication Tests

The Control / Communication Test menu enables testing of the RS-485 communication bus. The following alarm tests can be sent over the bus:

- 1.THCH Send THCH alarm message
- 2.LOAD Send overload alarm message
- 3.U.12 Send overvoltage alarm message
- 6.Z Send low impedance alarm message
- 7.R Send low resistance alarm message
- 9.TEMP Send over-temperature alarm message
- 11.SYS Send system alarm message

Alarm Messages

Alarm messages are created when one or more of the alarms become active. Depending on the type of device, these may be alarm values, a device's status, or an error message. These messages are controlled by the device in the system designated as the master.

Channel	Meaning
1	Total (Prospective) Hazard Current, in mA, Bad ground connection or Bad system connection
2	Transformer overload, in %, Short circuit at CT connection or Bad CT connection
3	Undervoltage between L1 and L2, in V or Overvoltage between L1 and L2, in V
6	Impedance ZF in k Ω
7	Resistance RF in k Ω
9	Transformer over-temperature
10	Ground fault location in operation
11	Internal detected error

Operating Status Messages

Operating status messages contain general status information about the system. These messages are continuously generated and are interpreted by the system device designated as the master.

Channel	Meaning
1	Total (Prospective) Hazard Current, in mA
2	Transformer overload, in %
3	Voltage between L1 and L2, in V
4	Voltage between L1 and L2, in V
6	Impedance ZF in kΩ
7	Resistance RF in kΩ
8	Leakage capacitance in nF

Detected Error Codes and Troubleshooting



HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- This product must only be installed and serviced by appropriately qualified and/or licenced electrical personnel.
- Isolate the electrical supply before doing any work on this product.
- Ensure that the product has been correctly installed and tested for safe operation before reconnecting the electrical supply.

Failure to follow these instructions will result in death or serious injury.

The LIM has the ability to detect and report power faults. The fault information is displayed and is also stored in data logs. Some faults are transient in nature and do not require repairs to the equipment or wiring. On the other hand, some faults are caused by damage to cords or equipment or a serious failure in the power supply to the LIM.

If for any reason you are unsure of the operational condition of the system keep unauthorised people away from the equipment and do the following:

- If the LIM reports a fault condition, the problem must be investigated and resolved as soon as possible by qualified persons.
- If possible, isolate or turn off the affected devices or circuits, but DO NOT turn off the LIM.
- Call for a qualified repair technician immediately. After repairs are made, the system must be thoroughly tested prior to use.

When troubleshooting the LIOM/LIM or associated equipment, do not open any covers or enclosures without proper Personal Protection Equipment (PPE). Any maintenance that requires exposure to electrical circuits must be performed by qualified personnel only. Lockout and tag the circuit breaker or breakers associated with the affected circuit.

Error Code	Meaning	Action	Result
ERROR 0.10	BAD CT CONNECTION CT interruption	Check the connection of the current transformer to the backplate.	The error code will automatically clear itself when the error is resolved.
ERROR 0.20	CT SHORT CIRCUIT Short circuit CT	Check the current transformer for a possible short circuit.	The error code will automatically clear itself when the error is resolved.
ERROR 0.30	BAD GROUND CONNECTION LIOM GND/GND2 monitoring	Ensure that both the LIOMGND and GND2 connections are not interrupted.	The error code will automatically clear itself when the error is resolved.
ERROR 0.40	BAD SYSTEM CONNECTION The system voltage does not fall within the threshold required, and one of the following has occurred: the system voltage is <85V or >265 V, or the nominal frequency at 50Hz is out of the tolerance range of $\pm 3\%$.	Ensure that L1 and L2 are properly connected to the system. Ensure that the voltage and frequency of the system being monitored fall within the limits of the LIM.	The error code will automatically clear itself when the error is resolved.
ERROR 2.10	NO MASTER No bus master exists. Even if RS-485 communication is not being used, the LIOM must be assigned an address of 1.	If the LIM is connected to a bus network, ensure there is one approved device on the network set to address 1. If RS-485 communication is not being employed, set the LIOM to address 1.	The error code will automatically clear itself when the error is resolved.
ERROR 2.20	RS-485 ERROR Bus error	Ensure that no two devices on the RS-485 network have the same bus address set. Check RS-485 wiring.	The error code will automatically clear itself when the error is resolved.
ERROR 8.80	BATTERY LOW The backup battery for the built-in clock is discharged.	Enter the main menu. Check the time and date settings, and reset them if required.	The error code will automatically clear itself when the error is resolved. The battery will recharge during normal operation.
ERROR ...	All other error codes	Contact your local Schneider Electric representative.	

Factory Settings

Parameter Description	Display	Value Range	Factory Setting
Total (Prospective) Hazard Current	GENERAL THC	2 mA, 5 mA	5 mA
Current Transformer Type	GENERAL CT	off, MLHG6CT-AU	MLHG6CT
Maximum Load Current	GENERAL LOAD	off, 10–200 A	15 A
Undervoltage	GENERAL U<	off, 80–300 V	230 V
Overvoltage	GENERAL U>	off, 80–300V	260 V
Isolation Impedance	GENERAL Z	off, 10–200 kΩ	off
Isolation Resistance	GENERAL R	off, 20–200 kΩ	off
Temperature Monitoring	GENERAL TEMP	off, on	off
Detected Fault Location	GENERAL F.LOC	off, auto	off
Response Delay ton	GENERAL T.on	0s–99s	0s
Release Delay toff	GENERAL T.off	0s–99s	0s
Test Cycle	GENERAL TEST	1h–24h	1h
Relay 1 Operation	RELAY	N/O, N/O-T, N/C, N/C-T	N/O-T
Relay 1 Alarm THC	RELAY THC	off, on	on
Relay 1 Alarm Overload	RELAY LOAD	off, on	on
Relay 1 Alarm Undervoltage	RELAY U<	off, on	on
Relay 1 Alarm Overvoltage	RELAY U>	off, on	on
Relay 1 Alarm Impedance	RELAY Z	off, on	on
Relay 1 Alarm Resistance	RELAY R	off, on	on
Relay 1 Alarm Temperature RELAY TEMP off, on on	RELAY TEMP	off, on	on
Relay 1 Alarm System	RELAY SYS	off, on	on
Audible Alarm Volume	BUZZER VOL	High, Low	High
System Mute	BUZZER SY.MU	off, on	on
Audible Alarm Overload	BUZZER LOAD	off, on	on
Audible Alarm Undervoltage	BUZZER U<	off, on	on
Audible Alarm Overvoltage	BUZZER U>	off, on	on
Audible Alarm Impedance	BUZZER Z	off, on	on
Audible Alarm Resistance	BUZZER R	off, on	on
Audible Alarm Temperature	BUZZER TEMP	off, on	on
Audible Alarm System	BUZZER SYS	off, on	on

(continued on next page)

Factory Settings (continued)

Parameter Description	Display	Value Range	Factory Setting
Data logger Channel THC Change	DATALOG CHAN.THCH	0–100%	10%
Data logger Channel THC Overwrite	DATALOG CHAN.THCH	no, yes	no
Data logger Channel U.12 Change	DATALOG CHAN.U.12	0–100%	10%
Data logger Channel U.12 Overwrite	DATALOG CHAN.U.12	no, yes	no
Data logger Channel U.1E Change	DATALOG CHAN.U.1E	0–100%	10%
Data logger Channel U.1E Overwrite	DATALOG CHAN.U.1E	no, yes	no
Data logger Channel U.2E Change	DATALOG CHAN.U.2E	0–100%	10%
Data logger Channel U.2E Overwrite	DATALOG CHAN.U.2E	no, yes	no
Data logger Channel Z Change	DATALOG CHAN.Z	0–100%	10%
Data logger Channel Z Overwrite	DATALOG CHAN.Z	no, yes	no
Data logger Channel R Change	DATALOG CHAN.R	0–100%	10%
Data logger Channel R Overwrite	DATALOG CHAN.R	no, yes	no
Data logger Channel I.1 Change	DATALOG CHAN.I.1	0–100%	10%
Data logger Channel I.1 Overwrite DATALOG CHAN.I.1 no, yes no	DATALOG CHAN.I.1	no, yes	no
Data logger Channel I.2 Change	DATALOG CHAN.I.2	0–100%	10%
Data logger Channel I.2 Overwrite	DATALOG CHAN.I.2	no, yes	no
Data logger Channel I.3 Change	DATALOG CHAN.I.3	0–100%	10%
Data logger Channel I.3 Overwrite	DATALOG CHAN.I.3	no, yes	no
Bus Address	INTRFC E ADR.	1–90	1(Master)
Daylight-Saving-Time Change	CLOCK DST	off, auto	off
Password	PASSWRD PSWD***	0–999	807
Password Status (Lock)	PASSWRD LOCK	off, on	on

Electrical Specifications

Category	Parameter	Value
Insulation Standard: IEC 60664-1/ UL1022		
	Rated insulation voltage	250 V
	Rated impulse voltage / pollution degree	2.5 kV / III
	Voltage test IEC61010-1 and UL1022	2.0kV
Supply Voltage		
	Supply voltage Vs	= Vn
	Power consumption	< 22 VA
Isolated Power System Being Monitored		
	Nominal voltage Vn	240 V
	Operating range of Vn	85–110%
	Rated frequency fn	50Hz
	Operating range of fn	±5%
Insulation and THC Monitoring		
	Response value: THC	2 mA / 5 mA
	Response tolerance	1.8–2 mA / 4.5–5 mA
	Hysteresis	20%
	Response value Z	10–200 kΩ
	Response tolerance	±15%
	Hysteresis	25%
	Response value R	20–200 kΩ
	Response tolerance	±15%
	Hysteresis	25%
	Response time tan	< 4 s
Measuring Circuit		
	Measuring voltage Vm	±48 V
	Measuring current Im (at ZF = 0 Ω)	< 32 μA
	Internal resistance	1.5 MΩ
	Monitor Hazard Current MHC 120V/240V	60 μA / 95μA
	EDS mode:	
	Monitor Hazard Current MHC	< 950 μA
	Test cycle/idle time	2 s / 4 s

(continued on next page)

Electrical Specifications (continued)

Category	Parameter	Value
Voltage Monitoring		
	Response value undervoltage (<U)	80–300V 230V
	Response value overvoltage (>U)	80–300V 260V
	Response tolerance	±3%
	Hysteresis	5%
Load Current Monitoring		
	Response value (LIOM)	10–45A
	Response value (LIM)	10–100A
	Response tolerance	±5%
	Hysteresis	4%
Temperature Monitoring		
	Response value (permanently set)	4 kΩ
	Release value	1.6 kΩ
	PTC resistor	DIN 44081 Maximum of six connected in series
Adjustable Time Delays (do not apply to THC alarm)		
	Response delay ton	0–99s
	Delay on release toff	0–99s
Inputs/Outputs		
	Operating uncertainty	±10%
	Output RI1, 12VDC COM	12 V / 200mA
	RI2, SAFE, HAZARD, TEST	maximum of 2x IG2000CBM
	Cable length	32.8 ft.
Serial Interface		
	Interface A-B / Protocol	RS-485 / proprietary bus
	Baud rate	9.6 kBit/s
	Cable length	3937 ft.
	Recommended cable (shielded, twisted pair, one end grounded)	J-Y(St)Y 2x0.8
	Terminating resistor	120Ω (0,25W) connectable via DIP switch
	Device address, communication bus	1–90

Standards Complied

Declarations of Conformity

Australian/New Zealand EMC & Electrical Safety Frameworks and Standards



Regulation	Standard	Title
Safety	AS/NZS3100	General safety requirements.
Performance	AS/NZS4510	Isolated electrical supply systems for medical use -- Design and performance requirements.
EMC	AS/NZS 61000-6-3	General EMC Emissions requirements.

NOTICE

EQUIPMENT DAMAGE/MODIFICATION

Do not change or modify this product without the express approval of Schneider Electric.

Failure to follow this instruction could void the user's authority to operate the equipment.

Notes

Customer care—Australia

We warrant this product for 2 years. For details, visit:
<https://www.schneider-electric.com.au/en/about-us/legal/terms-and-conditions.jsp>

Our goods also come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Schneider Electric (Australia) Pty Ltd

Customer Care: 1300 369 233

Email: customercare.au@schneider-electric.com

www.schneider-electric.com.au

Customer care—New Zealand

We warrant this product for 2 years. For details, visit:
<https://www.schneider-electric.co.nz/en/about-us/legal/terms-and-conditions.jsp>

Schneider Electric (NZ) Ltd

Customer Care: 0800 652 999

Email: sales@nz.schneider-electric.com

www.schneider-electric.com



Schneider Electric reserves the right to change specifications, modify designs and discontinue items without incurring obligation and whilst every effort is made to ensure that descriptions, specifications and other information in this catalogue are correct, no warranty is given in respect thereof and the company shall not be liable for any error therein.

© 2018 Schneider Electric.

Medilec is a trademark of Schneider Electric (Australia) Pty Ltd or its affiliated companies. Other trademarks are the property of their respective owners.

This material is copyright under Australian, New Zealand and international laws. Except as permitted under the relevant law, no part of this work may be reproduced by any process without prior written permission of and acknowledgement to Schneider Electric.