MSA
The Safety Company



Operating Manual

Chillgard 5000 Remote Display

Order No.: 10214065/01
CR 800000043779

MSAsafety.com

⚠ WARNING!

Read this manual carefully before using the device. The device will perform as designed only if it is used and maintained in accordance with the manufacturer's instructions. Otherwise, it could fail to perform as designed and persons who rely on this device for their safety could sustain serious personal injury or death.

The warranties made by MSA with respect to the product are voided if the product is not installed and used in accordance with the instructions in this manual. Please protect yourself and your employees by following the instructions.

Please read and observe the WARNINGS and CAUTIONS inside.

⚠ WARNING!

Make sure any personnel who will be installing, using, or maintaining this device have access to the user manual. If electronic access to the user manual (through the supplied Chillgard 5000 CD or MSA website) is not possible, print a copy of the manual and keep it in an accessible location near the device.

Failure to obey the following guidelines and/or incorrect installation, operation, servicing, or maintenance of the device can cause incorrect operation of the device. Personnel who rely on this product for their safety can sustain serious personal injury or death.

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Contents

1 MSA Permanent Instrument Warranty . . . 4
1.1 Warranty . . . 4
1.2 Exclusive Remedy . . . 4
1.3 Exclusion of Consequential Damage . . . 4
1.4 Liability Information . . . 4

2 Warnings and Cautions . . . 5

3 Description . . . 6
3.1 Identifying Your Unit . . . 7
3.2 Connection to the Chillgard 5000 . . . 9

4 Installation . . . 11
4.1 Warnings and Cautions . . . 11
4.2 Receiving, Unpacking, and Inspecting . . . 11
4.3 Mounting Guidelines . . . 12
4.4 Wiring and Grounding . . . 13
4.5 Electrical Power Supply Requirements . . . 14

5 Initial Setup . . . 15
5.1 Settings . . . 15
5.2 Attaching a Strobe . . . 16
5.2.1 Wiring the Strobe . . . 16
5.2.2 Testing the Functionality of the Strobe . . . 16

6 Maintenance . . . 17

7 Troubleshooting Guidelines . . . 17

8 Technical Data . . . 17

9 Ordering Information . . . 18
9.1 Accessories . . . 18
9.2 Spare Parts . . . 18

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1 MSA Permanent Instrument Warranty

1.1 Warranty

MSA, the Safety Company warrants that these products will be free from mechanical defect or faulty workmanship for a period of two (2) years from the date of delivery, provided it is maintained and used in accordance with MSA's instructions and/or recommendations.

This warranty does not apply to expendable or consumable parts whose normal life expectancy is less than one (1) year, such as, but not limited to, nonrechargeable batteries, filament units, filter, lamps, fuses, etc. MSA shall be released from all obligations under this warranty in the event that repairs or modifications are made by persons other than its own or authorized service personnel or if the warranty claim results from physical abuse or misuse of the product. No agent, employee, or representative of MSA has any authority to bind MSA to any affirmation, representation, or warranty concerning the goods sold under this contract. MSA makes no warranty concerning components or accessories not manufactured by MSA, but will pass on to the Purchaser all warranties of manufacturers of such components.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED, IMPLIED, OR STATUTORY, AND IS STRICTLY LIMITED TO THE TERMS HEREOF. SELLER SPECIFICALLY DISCLAIMS ANY WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE.

1.2 Exclusive Remedy

It is expressly agreed that the Purchaser's sole and exclusive remedy for breach of the above warranty, for any tortious conduct of the Seller, or for any other cause of action, shall be the repair and/or replacement at the Seller's option of any equipment or parts thereof, which after examination by the Seller is proven to be defective. Replacement equipment and/or parts will be provided at no cost to the Purchaser, F.O.B. Seller's Plant. Failure of the Seller to successfully repair any nonconforming product shall not cause the remedy established hereby to fail of its essential purpose.

1.3 Exclusion of Consequential Damage

The Purchaser specifically understands and agrees that under no circumstances will the Seller be liable to the Purchaser for economic, special, incidental, or consequential damages or losses of any kind whatsoever, including but not limited to, loss of anticipated profits and any other loss caused by reason of nonoperation of the goods. This exclusion is applicable to claims for breach of warranty, tortious conduct, or any other cause of action against the Seller.

1.4 Liability Information

MSA accepts no liability in cases where the device has been used inappropriately or not as intended. The selection and use of the device are the exclusive responsibility of the individual operator. Product liability claims, warranties, and guarantees made by MSA with respect to the device are voided if the device is not operated, serviced, and/or maintained in accordance with the instructions in this manual.

The warranties made by MSA with respect to the product are voided if the product is not used and serviced in accordance with the instructions in this manual. Please protect yourself and others by following them. We encourage our customers to write or call regarding this equipment prior to use or for any additional information relative to use or repairs.

2 Warnings and Cautions

The Chillgard 5000 Remote Display, hereafter also referred to as "the device", is an information module intended for indoor use in front of mechanical equipment rooms or commercial spaces where refrigerant equipment, such as centrifugal chillers, is used. The device is specified to support compliance with federal, state, and local safety codes that govern emissions.

⚠ WARNING!

Install, operate, and maintain the device in strict accordance with its labels, cautions, warnings, instructions, and stated limitations.

For any maintenance procedure provided in this manual, use only genuine MSA replacement parts. Repair or alteration of the Chillgard 5000 system beyond the scope of these maintenance instructions or by anyone other than authorized MSA service personnel can cause incorrect operation of the device. For a list of approved parts and how to order them, refer to Section 9 "Ordering Information".

The device is intended for indoor use only. Do not use the device for outdoor applications.

Never operate the device without a connection to positive ground. Failure to connect the device to positive ground can result in electrical shock. Electrical shock can cause damage to the device and injury to personnel.

Make sure the device is not located in areas that contain a flammable mixture of gas and air. Otherwise, an explosion can occur.

The device is not intrinsically safe. Do not use the device in areas classified as hazardous or locations where explosive concentrations of combustible gases or vapors can occur.

Failure to follow these warnings can result in serious bodily injury or death.

⚠ WARNING!

Make sure the device is installed in a clean, dry area that is protected from vibration, including but not limited to a chiller, and heat sources.

Do not paint the device. Paint deposits can prevent correct operation of the device.

Avoid any installation where condensation can collect. Condensation can enter the unit and cause electrical disturbance.

Install a circuit breaker for the incoming power connections of the device. Put the circuit breaker in a location that is easy to access and near the device. Clearly mark the circuit breaker as the disconnecting unit for the device.

Failure to follow these warnings can result in serious bodily injury or death.

US

3 Description

The Chillgard 5000 Remote Display, hereafter referred to as “the device”, is an information module which can communicate with the Chillgard 5000 Refrigerant Monitor and the Chillgard 5000 Ammonia Monitor (hereafter referred to as the “Chillgard 5000”). The device can be installed remotely from the main instruments, thus enabling remote visual and audio indication, alarm silence and latched alarm reset.

The device shows the same readings and alarm messages of the Chillgard 5000 and can therefore be used to report the gas readings of the monitored area outside of it. Best practice is to install the device outside the machinery room next to the entry door.

In case of an alarm, it is possible to acknowledge the audible alarm of the device, the Chillgard 5000 will remain in alarm. Refer to the Chillgard 5000 user instruction (P/N 10178535) to read more detail on alarm response.

The device will be shipped without a strobe, but offers the option to have a strobe installed afterwards. See accessories section of this manual.

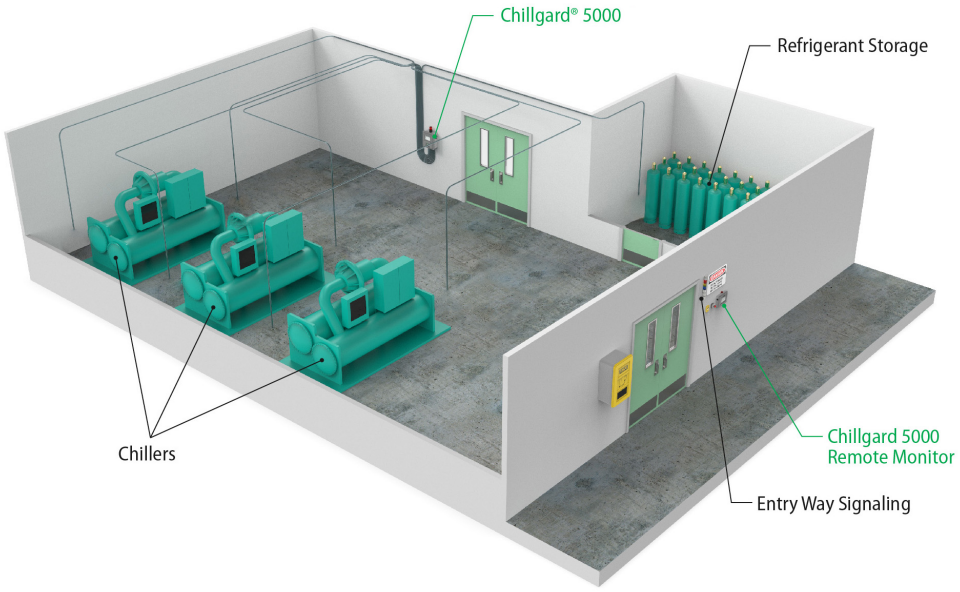


Fig. 1 Mounting location

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3.1 Identifying Your Unit

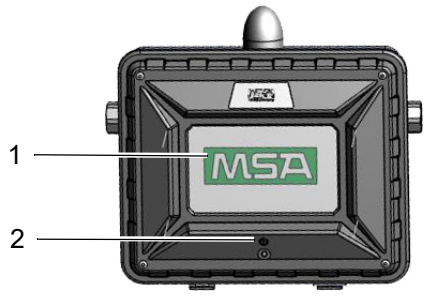


Fig. 2 Front of device

1 7" resistive touchscreen user interface

2 Power indicator

NOTE: Strobe not within scope of delivery (can be mounted later).

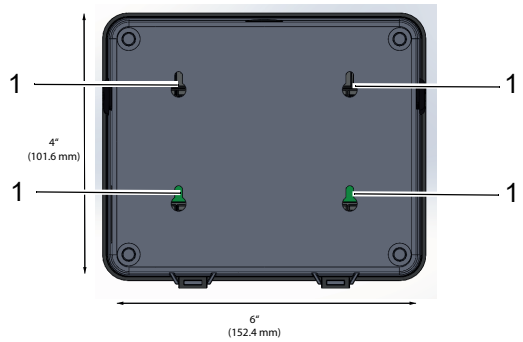


Fig. 3 Back of device

1 Mounting locations (4" x 6" / 101.6 mm x 152.4 mm)

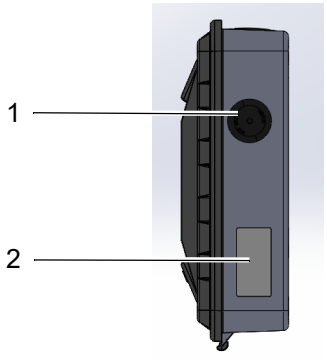


Fig. 4 Right side of device

1 1/2" conduit entry

2 Approval and serial number label

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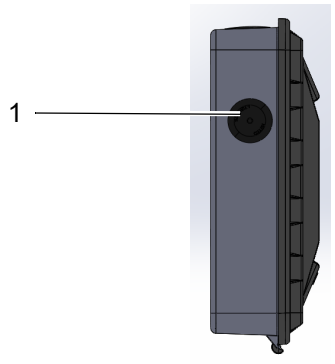


Fig. 5 Left side of device

1 1/2" conduit entry

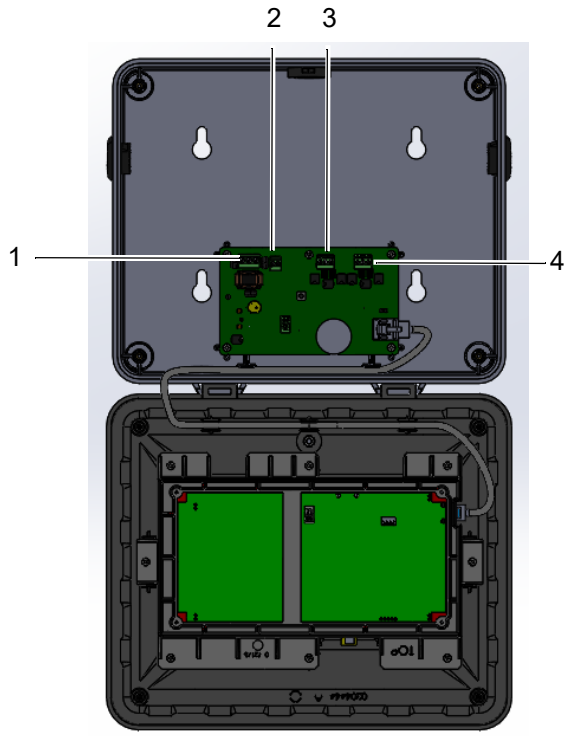


Fig. 6 Open device

1 Input power
2 Optional strobe
3 CAN-IN
4 CAN-OUT

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3.2 Connection to the Chillgard 5000

The Chillgard 5000 Remote Display acts as the slave device in the network. The Chillgard 5000 monitor initiates and controls all communications on the network.

There are two remote display outputs from the main unit. These will support two or more remote displays via daisy chaining.

NOTE: Refer to the Chillgard 5000 Operating Manual, PN 10178535, for more information on wiring and the connections to the Chillgard 5000 monitor.

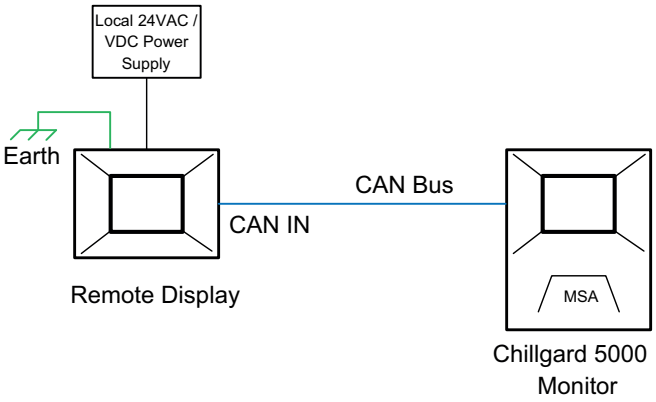


Fig. 7 Single remote display connection

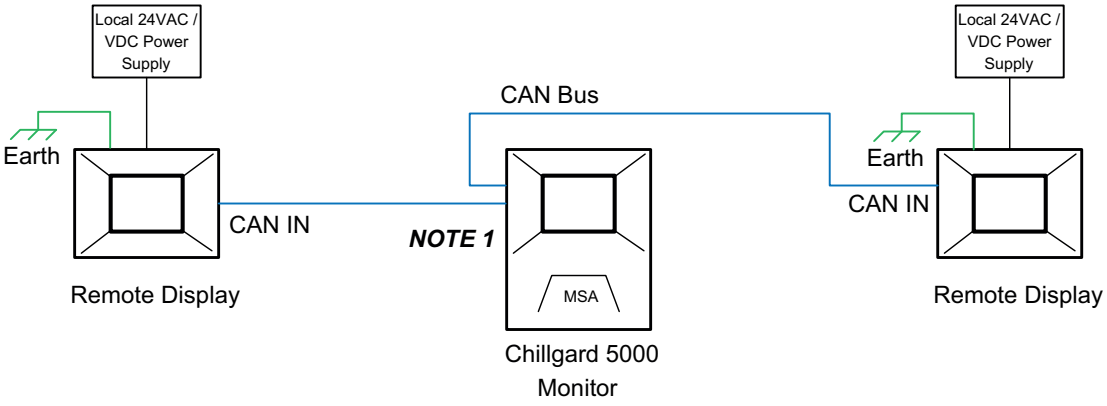


Fig. 8 Two remote displays using separate CAN bus runs

NOTE 1: If two Chillgard 5000 Remote Displays are configured using two CAN Bus connections as shown, jumper J5 must be removed from MIO board from Chillgard 5000 Monitor. Refer to the Chillgard 5000 Operating Manual, PN 10178535, for more information.

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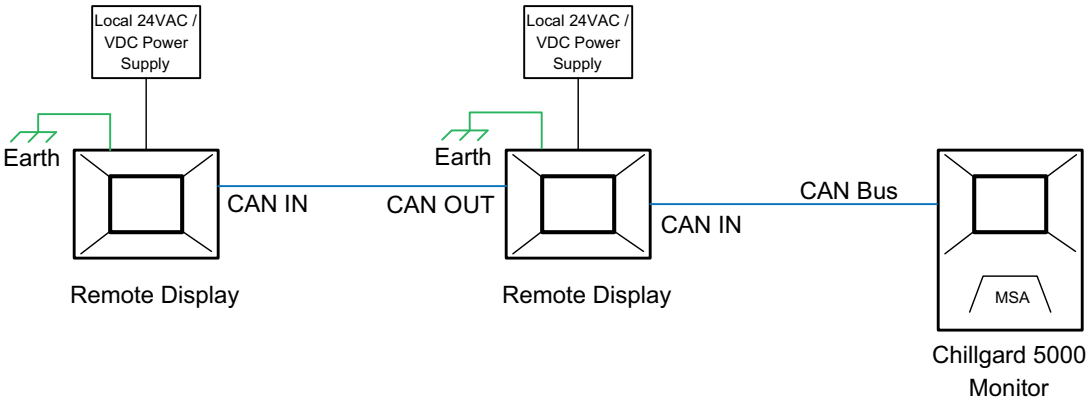


Fig. 9 Two remote displays using "Daisy Chain" configuration. CAN IN of the first remote display must be connected to the Chillgard 5000

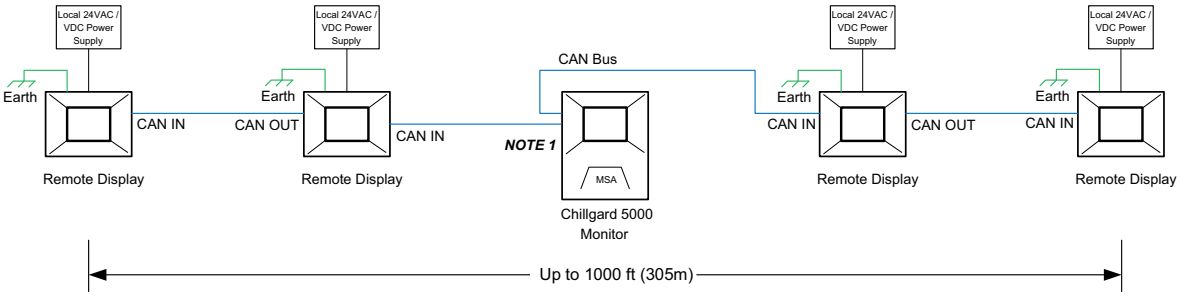


Fig. 10 Connecting four remote displays to a single Chillgard 5000 Monitor

NOTE 1: If two Chillgard 5000 remote displays are configured using two CAN Bus connections as shown, jumper J5 must be removed from MIO board from Chillgard 5000 Monitor. Refer to the Chillgard 5000 Operating Manual, PN 10178535, for more information.

NOTE: Before you connect the device to the Chillgard 5000, check the software revision in the About screen of the Chillgard 5000. For all Chillgard 5000 units with software revisions older than 1.18.xxx (1.17.xx, 1.16.xxx), call MSA Field Service for a software upgrade. The device does not operate with older versions.

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4 Installation

4.1 Warnings and Cautions

⚠ WARNING!

The device is intended for indoor use only. Do not use the device for outdoor applications.

A qualified electrician must do electrical wiring.

All wiring must comply with all applicable local electrical safety codes.

To prevent electrostatic discharge (ESD), connect an ESD wrist strap to the ESD connection point inside the device enclosure before doing work inside the enclosure. ESD can cause damage to the device.

Do not touch the electronic circuit boards.

Do not install or operate a device that has damage.

Disconnect all power sources before opening the device enclosure. Failure to do so can result in electrical shock. Electrical shock can cause damage to the device and injury to personnel.

Never operate the device without a protective ground. Operating the device without a protective ground can result in electrical shock. Electrical shock can cause damage to the device and injury to personnel.

The device is not intrinsically safe. Do not use the device in areas classified as hazardous or locations where explosive concentrations of combustible gases or vapors can occur.

Make sure the device is not located in areas that contain a flammable mixture of gas and air. Otherwise, an explosion can occur.

Locate the device next to the entry door of the area where the Chillgard 5000 is installed and where it is easily visible to personnel entering the area where the Chillgard 5000 is installed.

Failure to follow these warnings can result in serious bodily injury or death.

4.2 Receiving, Unpacking, and Inspecting

(1) Upon receipt of the device, inspect the shipping container for signs of damage. Report any damage to the carrier and record the information on the delivery receipt.

(2) Carefully remove the device from its shipping container to avoid causing damage to sensitive electrical components. If damage has occurred, file the appropriate claim with the shipping carrier immediately.

(3) Review all contents of the shipping container to make sure all of the following components are included:

a) Device

b) 2 Ferrites

c) Instruction manual CD

d) Protective foam

(4) Notify MSA of any shortages immediately.

(5) Keep the original packaging in case it is necessary to return the device for service.

(6) Open the enclosure.

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4.3 Mounting Guidelines

Do not mount the device directly to chiller, piping, or piping supports.

Mount the device:

- Next to the entry door of the area where the Chillgard 5000 is installed and where it is easily visible to personnel entering the area where the Chillgard 5000 is installed.
- Maximum distance of 1000 ft (305 m).
- To a rigid surface.
- In a vertical position.
- With the appropriate hardware. Make sure the hardware is suitable for the mounting surface and can withstand 40 lb (18 kg) without loosening or causing damage to the hardware or mounting surface. Use all four mounting holes provided on the device (See Fig. 3).
- Away from exposure to direct solar heating and other excessive heat sources.
- Away from wet or damp conditions.



Fig. 11 Mounting location

US

4.4 Wiring and Grounding

⚠ WARNING!

Ensure that grounding of the device is connected prior to starting the device.

Failure to follow this warning can result in serious bodily injury or death.

NOTICE

Installations that require conformity to the European EMC and LVD regulations must have a connection between the device and a nearby earth ground potential.

To achieve this connection, install a 1.5 mm^2 (16 AWG) or larger copper wire between the grounding lug terminal strip on the right side of the device and the grounding point (protective earth). The wire length cannot be longer than 2 m (6 ft).

The remote display Wiring Diagram (Fig. 12) gives the details of the wiring requirements for the device.

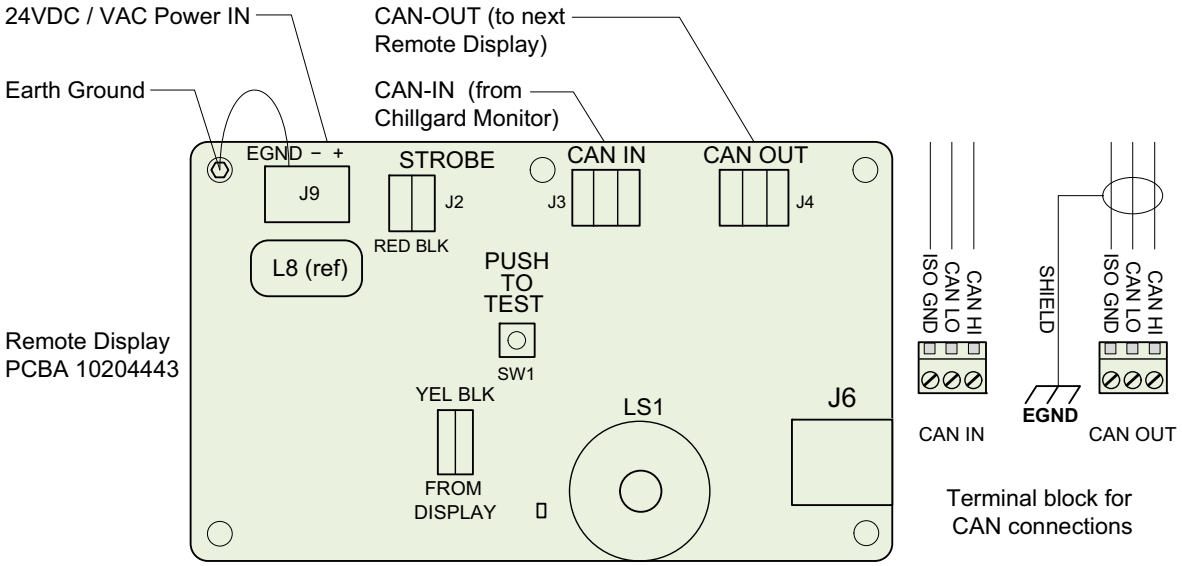


Fig. 12 Remote Display Wiring Diagram

NOTICE

Install enclosed ferrites with 2 turns on both of the power lines in order to meet local EMC regulations.

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4.5 Electrical Power Supply Requirements

⚠ WARNING!

A qualified electrician must do electrical wiring.

Wiring must comply with all applicable local electrical safety codes.

Make sure that the copper conductors used to connect to supply mains meet all local electrical safety codes.

Never operate the device without a protective ground. Operating the device without a protective ground can result in electrical shock. Electrical shock can cause damage to the device and injury to personnel.

To prevent electrical shock, the circuit board cover must be in place when power is on. Electrical shock can cause serious personal injury or death.

To prevent electrostatic discharge (ESD), connect an ESD wrist strap to the ESD connection point inside the device enclosure before doing work inside the enclosure. ESD can cause damage to the device.

Do not touch the electronic circuit boards.

Failure to follow these warnings can result in serious bodily injury or death.

The device uses a power supply that accepts inputs of 24 volts AC/DC, 50/60 Hz, 1 A (24 VA) minimum; 200 VA maximum.

Make sure the device is connected directly to the AC power source through a dedicated circuit breaker.

Use an approved 3-conductor wire (minimum 1.0 mm^2 / 18 AWG), rated 300 Vac at 221°F (105°C), to complete the AC power connection. Power is supplied by a Class 2 isolated supply.

Use only conduit hubs and hardware that are suitable for fiberglass enclosures.

Do the following procedure to connect electrical power:

(1) Disconnect electrical power.

(2) Install a circuit breaker for the incoming power connections of the device.

a) Put the circuit breaker in a location that is near the device and easy to access.

b) Clearly mark the circuit breaker as the disconnecting unit for the device.

(3) Open the enclosure.

(4) Remove the conduit plug.

(5) Install conduit hubs that are suitable for fiberglass enclosures through the conduit.

(6) Put the power wiring through the conduit.

(7) Connect the power wiring to the input terminals. Make sure the connectors are seated securely.

(8) Connect the power ground wire to the earth ground terminal.

(9) Close the enclosure.

(10) Supply electrical power to the device.

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5 Initial Setup

Remove the protective film from the touchscreen.



When power is supplied to the device, the green power indicator LED (Fig. 2) illuminates and the touchscreen shows a logo and a loading bar. The loading bar indicates the status of the initializing process.

If an error occurs during start-up, a pop-up identifies the specific problem.

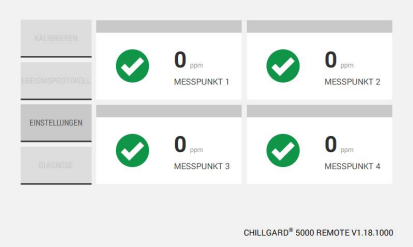
5.1 Settings



Screen shot "First view"

The device is a read only device. Only the settings listed below are adjustable:

- Brightness
- Strobe setup



Screen shot "Settings"

To adjust the brightness of the screen use the arrows up and down.



Screen brightness, Horn test)

The device comes without strobe, but with the audible horn activated. Before using the device, "Activate" to test the audible horn. In case of hearing a tone, go back to "inactivate".

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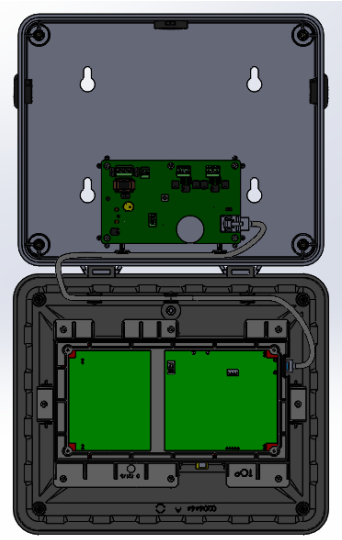
5.2 Attaching a Strobe

The device is delivered without a strobe. The strobe can be ordered as separate line item (PN 10207966).

MSA takes no warranty coverage for the device in case a different strobe is used.

5.2.1 Wiring the Strobe

NOTE: The lid of the device opens downwards. To open, four recessed-head screws need to be untightened.



Strobe connection (optional)

If the device is ordered with an optional strobe:

(1) Remove the knock-out plug in the top of the housing.

(2) Install the strobe with the foam gasket between the strobe body and the housing.

(3) Hand tighten the threaded lock ring on the inside of the housing.

(4) Plug the green two position connector into the PC board (Strobe) header as shown in Fig. 12.

(5) Close and secure the unit.

5.2.2 Testing the Functionality of the Strobe

(1) Press the push button on the PCB (See Fig. 12). Together with the audible tone, the strobe should give a visual signal.

(2) Go to the Settings. Hit "Activate". There should be an audible and visual signal.

If there is no audible or, after installation of the strobe, visual signal, contact MSA Safety Quality for repair/return.

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6 Maintenance

Under normal operating conditions, the device requires minimal maintenance. Wipe the device with a damp cloth if needed.

7 Troubleshooting Guidelines

Trouble	Solution
Unit will not turn on	Make sure that the device is wired properly.
Display failure	Ensure that the display is wired properly and SD card inserted.
Audio alarm failure	Ensure that the strobe is wired properly.
Strange messages	Call Customer Service.
Other	Call Customer Service.

8 Technical Data

Operating Temperature Range:	0 to 50 °C (32 to 122 °F)
Storage Temperature:	-20 to 50 °C (-4 to 122 °F)
Communications:	Outputs none Input: Power over CAN
Filed Wiring Terminals:	Wire gauge range 1.0-2.0 mm^2 (14-18 AWG)
Conduit entry:	1/2″ conduit on each side of unit
Housing material:	Fiberglass
Audible alarm:	Minimum 70 dB at 12″ distance
Power:	24V AC/DC
Distance from main unit:	max. 1000 ft/ 304 m
Humidity:	0 to 95% non-condensing
Dimensions:	11.3″ x 9.6″ x 3.1″
Weight:	4 lbs

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9 Ordering Information

Description	Part Number
Chillgard 5000 Remote Display	10204450

9.1 Accessories

Description	Part Number
Strobe kit	10207966

9.2 Spare Parts

Description	Part Number
Display spare	10174806
SD card	10206661
PCB board	10204443

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For local MSA contacts, please visit us at ***MSAsafety.com***

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