



MCR MULTI-CHANNEL REMOTE TRANSMITTER

REVISION – June 29, 2023

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GENERAL INFORMATION

Product Description

The InsitelG MCR remote monitoring system allows the user to monitor up to 20 process parameters remotely via any computer or mobile device with internet access. The MCR comes with cloud connectivity for up to three years included with no monthly fees. There is server redundancy with better than 99.9% server uptime and full encryption using standard SSL protocols. Initial configuration is accomplished by using a mobile device through an onboard, isolated Wi-Fi connection. The LPWA (low power, wide area) module will connect to the cloud over any available 4G/LTE network.

The user interface is easy to use and setup is simple. Trend graphing for up to 30 days worth of data points is available. High and low setpoints can be programmed so that operators are notified via text or email in the event of a process disruption. In the event that the MCR loses power it can send a notification alerting the operator that the unit is offline.



WARNING! – Hazardous if moisture or water collects inside the enclosure. Cover is to remain closed and circuit board must remain dry during normal operations.



WARNING! – Before opening, switch off the analyzer line power at the circuit breaker to avoid risk of shock. Line power is present on terminals even when the analyzer is switched off.



WARNING! – Circuit breaker meeting IEC-947-3 must be on line supply, in close proximity to equipment and shall be marked as the disconnecting device for the equipment.

When used in conjunction with the InsitelG multichannel analyzer, operators can check on dissolved oxygen, suspended solids, pH, and ORP (REDOX) levels. Up to eight sensors can be monitored in any combination. It is also possible to monitor the process temperature when utilizing a dissolved oxygen or pH sensor. The MCR connects to the InsitelG multichannel analyzer via a digital modbus signal, so only one three conductor signal wire is required to connect the two units. The MCR will automatically configure the cloud with the sensors connected to the analyzer.

In addition to the InsitelG modbus input, there are four isolated 4-20mA analog inputs that can accept third party devices such as level, pressure, and flow meters. The MCR can power the 4-20mA loop or the MCR can be configured so that the third party device is powering the loop.

There are also seven dry contact inputs that can be used for alarms, status, run times, and other on/off type events.

INSTALLATION

1. The MCR should be located convenient for a technician to install and maintain. A handrail mounting kit is available for the standard enclosure (see Drawing IIG01N110). This mounting kit is designed for a standard 2" handrail but can be adapted to square or angle handrails as well.



Use a QR reader app on a mobile device to
scan for the Analyzer Mounting video or
CLICK HERE

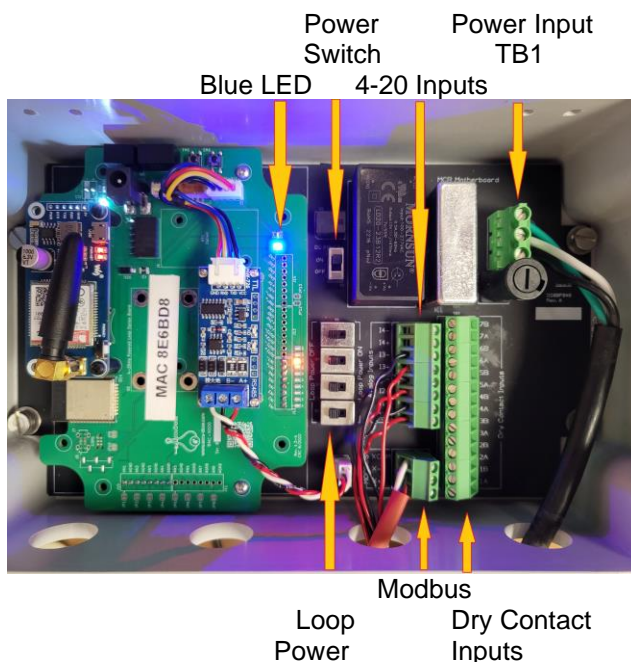


DO NOT! Locate the analyzer where it is likely to be damaged during unrelated or other periodic maintenance such as pressure washing catwalks.



DO NOT! Add conduit entries in areas that may cause moisture intrusion or electrical hazards.

2. Open the enclosure of the MCR. Pass all connection cables through water tight glands or ½" conduit in the bottom of the enclosure (gland and conduit are not supplied). Up to four analog inputs are connected to terminal block TB2 (see drawing IIG09R111). It is important to determine if the analog output of the device being connected is self-powered or needs loop power. If self-powered, then the corresponding "Loop Power" switch (S2, S3, S4, and S5) should be in the OFF position. If the device needs loop power, the switch should be in the ON position. Up to seven dry contact inputs can be connected to terminal block TB3 (see drawing IIG09R111). The connection for the modbus input from the InsitelG multi-channel analyzer is TB4



3. The power supply is a switching power supply that will accept 100 to 260 VAC, 50-60 hertz. Power connections should now be made to the terminal block labeled TB1. Turn power "on" by using switch S1 located in the upper center of the circuit board. Close and secure the enclosure.
4. Switch the circuit breaker on and the unit will now power up.
5. Once the MCR is turned on, the unit will initialize and start trying to connect to the cloud. This process will cause the Blue LED on the circuit board to blink. Once the MCR successfully connects to the cloud the blue LED stops blinking and remains "on". (The blue LED is viewable through the "Data Link" window on the front cover of the MCR.)
6. The first time the unit is powered up it could take a significant amount of time to find the best connection path – in rare cases this could be measured in hours



Note! – In "Normal Operation" the hinge cover is to remain tightly screwed closed. Under no circumstance is it necessary for the operator to open the enclosure during normal operation.

CREATE AN ACCOUNT

1. In order to gain access to the data that will eventually be stored to the cloud by your MCR, you first need to create a user account and set up some basic site identification information for this MCR on the cloud server. Your MCR does not need to be powered up as you complete this set up.
2. On your computer or mobile device go to <https://connect.insiteig.com>.
3. Scroll down to Create Account and click.

7:35 94%

Insite IG®

Login

Email Address

Password

[Forgot your password?](#)

Create Account

To create an account, please click the button below. You will need to have the information from one of

4. Under “User Information” enter the account Type, First Name, Last Name, and Email Address. Then make up your own password for this account and enter it in the Password Field, then again in the Confirm Password field
5. Make sure to write your password down.
6. .

11:49 89%

https://connect.in

User Information

Account Type
☒ Personal ☐ Business

First Name

Last Name

Email Address

Password

Confirm Password

7. Further down the same page under “Site Information” enter the Site Name, Address, Address 2, Country, City, and State

11:50 89%

Site Information

Site Name

Address

Address 2

Country
United States

City

State

- Continuing down the same page under “MCR Information” enter the Mac Address found on the white label printed on the MCR circuit board. Then enter 24680 for the serial number then click Create Your Account

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MCR Information

Enter your first device's info to register it to your new account. You will be able to add more later.

Mac Address

Serial Number

Create Your Account

INITIAL SETUP

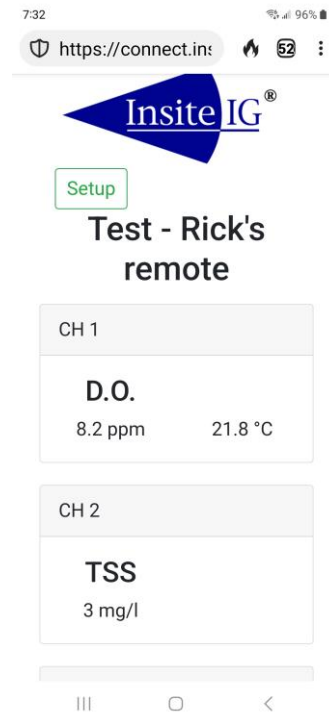
While many of the configuration settings within the MCR are adjustable over the internet, the initial setup of the MCR requires a local connection to the MCRs built-in Wi-Fi host port. This is most easily accomplished using either an Android or Apple smart phone or tablet device.

- Download and install the InsiteIG app from the appropriate app store
- The MCR will host a built-in Wi-Fi server for local connections and setup. Use the Wi-Fi settings feature of your smartphone or tablet to temporarily connect to this MCRs “network” while you complete the initial MCR setup. The MCR will appear on your device’s list of available Wi-Fi networks with a name that includes this MCRs MAC address (which is printed on a white label on the MCR circuit board). You may receive a warning that this network will not provide you with internet connectivity – this warning should be ignored, and

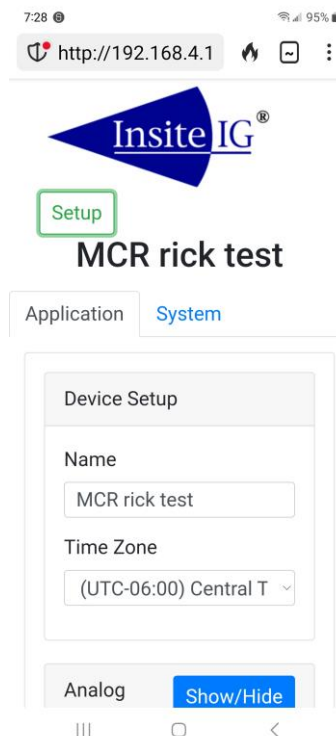


- you should make the connection..
3. Select Setup (the gears in the bottom, right) to connect directly to the MCR WIFI.

4. Select the Setup button in the top left



5. You should enter a unique name for this MCR(for example, Lift Station 17) and you should enter the time zone the MCR is in



6. Scrolling down will show the options that allow for configuration of the third party 4-20 analog inputs, the third party digital (dry contact) inputs, and configuring the modbus to communicate with the InsitelG Multi Channel Analyzer

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MCR rick test

Time Zone
(UTC-06:00) Central T

Analog Sensor Config Show/Hide

Digital Sensor Config Show/Hide

MODBUS Config Show/Hide

Save Device Config

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III □ <

7. If third party analog inputs are connected, select the Show/Hide for Analog Sensor Config

12:24 100%

Analog Sensor Config Show/Hide

Analog 1
Mode
Disabled

Analog 2
Mode
Disabled

Analog 3
Mode
Disabled

Analog 4
Mode
Disabled

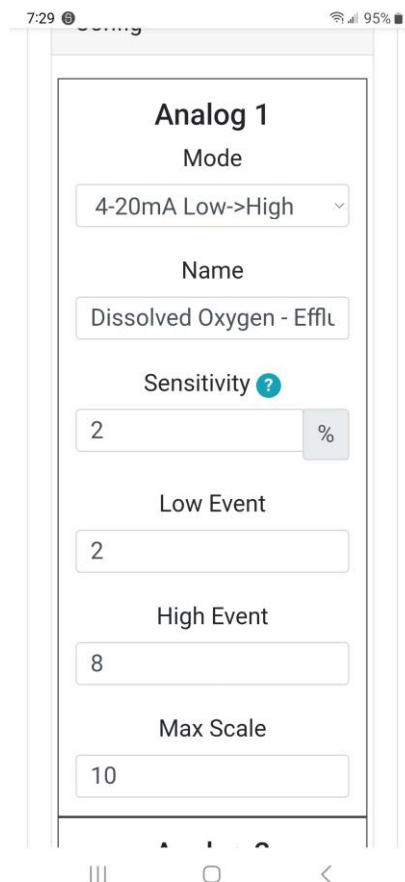
Digital Sensor Config Show/Hide

MODBUS Config Show/Hide

Save Device Config

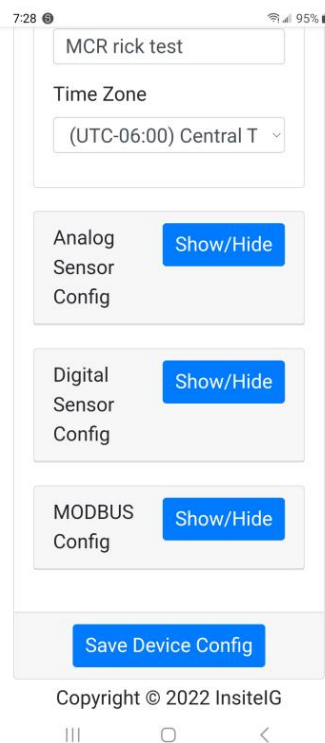
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8. Select the analog 1 Mode selection box and select 4-20 to activate this input. Give the signal a name that will identify the signal, for example “Sump I Level – Feet”. For clarity, it is important to include the unit of measure in the name. Sensitivity at 2% will work in almost all application. Set the Low and High Events (setpoints) at your alarm levels and then the Max Scale to a full scale (20mA) input. In the example above for a sump level the Low Event could be 2, the High Event could be 8, and the Max Scale could be 10. This setup would be for a 10 foot deep well that will alarm if the level goes below 2 or above 8. Decimal values are allowed. Repeat for analog 2 thru 4 as required. Press the Analog Sensor Config Show/Hide when done.

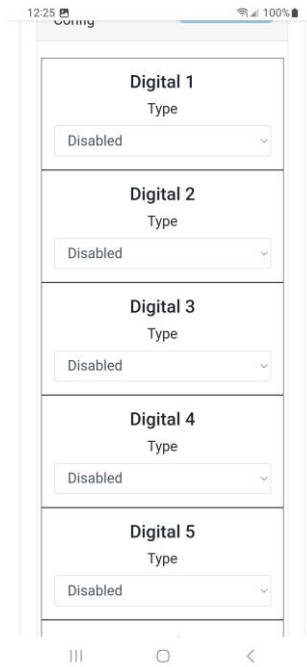


The screenshot shows the 'Analog 1' configuration screen. At the top, the title 'Analog 1' is displayed. Below it, the 'Mode' is set to '4-20mA Low->High'. The 'Name' field contains 'Dissolved Oxygen - Efflu'. The 'Sensitivity' is set to '2%' with a question mark icon. The 'Low Event' is set to '2', the 'High Event' is set to '8', and the 'Max Scale' is set to '10'. The screen has a standard Android navigation bar at the bottom.

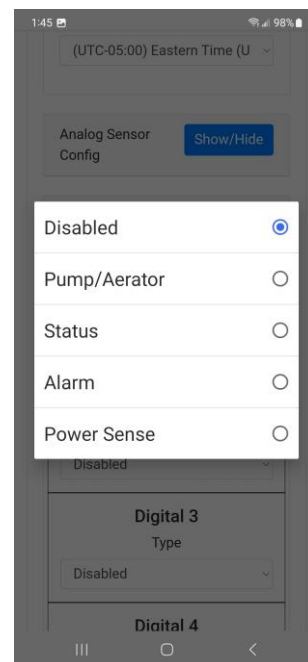
9. If third party digital (dry contact) inputs are connected to the MCR select the Hide/Show for digital sensor Config.



The screenshot shows the 'MCR rick test' configuration screen. At the top, the title 'MCR rick test' is displayed. Below it, the 'Time Zone' is set to '(UTC-06:00) Central T'. There are three buttons for configuration: 'Analog Sensor Config', 'Digital Sensor Config', and 'MODBUS Config', each with a 'Show/Hide' button next to it. At the bottom, there is a 'Save Device Config' button. The screen has a standard Android navigation bar at the bottom.



10. Select the input to configure choosing the general type. Pump/Aerator will count starts and run time. All others are on/off.



11. Select a name for the signal. Then select Input State. Configure the remaining digital inputs as required. Press the digital Sensor Config Show/Hide when finished.

The screenshot shows the 'Digital Sensor Config' screen. At the top, there is a 'Show/Hide' button. Below it, the screen is divided into two sections: 'Digital 1' and 'Digital 2'. Each section has a 'Type' dropdown menu, a 'Name' text input field, and an 'Input State' dropdown menu. For 'Digital 1', the 'Type' is set to 'Alarm', the 'Name' is 'Sump Level', and the 'Input State' is 'Active When Closed'. For 'Digital 2', the 'Type' is set to 'Pump/Aerator', and the 'Name' is 'Sump Pump'. The 'Input State' for 'Digital 2' is not visible. At the bottom, there are three icons: a hamburger menu, a circle, and a back arrow.

12. To configure the Modbus to communicate with an InsitelG Multi Channel analyzer select Show/Hide for Modbus Config.

The screenshot shows the 'Modbus Config' screen. At the top, there is a text input field containing 'MCR rick test'. Below it, there is a 'Time Zone' dropdown menu set to '(UTC-06:00) Central T'. Below the 'Time Zone' dropdown, there are three sections: 'Analog Sensor Config', 'Digital Sensor Config', and 'MODBUS Config'. Each section has a 'Show/Hide' button. At the bottom, there is a 'Save Device Config' button. Below the button, there is a copyright notice: 'Copyright © 2022 InsitelG'. At the very bottom, there are three icons: a hamburger menu, a circle, and a back arrow.

13. Select the type, Give the signal a descriptive name (for example, Aeration Train #1). Verify that the modbus address matches the address of the InsitelG Multi Channel Analyzer (default = 1). Finally, put in the low and high setpoint for each sensor up to eight. The low and high setpoints can be configured to give notification if exceeded. When finished select Show/Hide for the Modbus Config.

7:30 95%

☒ Enable MODBUS

MODBUS Input 1

Type
InsitelG MPA48

Name
MODBUS 1

Address ID
1

Alarms

Sensor 1		Sensor 2	
Low	High	Low	High
3	6	5	1

Sensor 3		Sensor 4	
Low	High	Low	High
5	9	6	1

Sensor 5		Sensor 6	
Low	High	Low	High

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14. After completing the analog, digital, and modbus configurations as required select Save Device Config.

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MCR rick test

Time Zone
(UTC-06:00) Central T

Analog Sensor Config [Show/Hide](#)

Digital Sensor Config [Show/Hide](#)

MODBUS Config [Show/Hide](#)

[Save Device Config](#)

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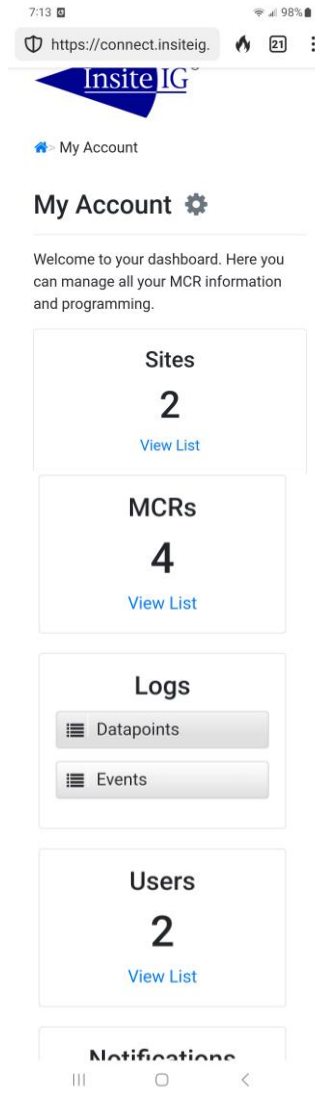
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REMOTE MONITORING

1. Run the InsiteIG app on your mobile device or go to connect.insite.com on your computer internet browser. If on a mobile device select CONNECT. Enter email and password.

2. Once the My Account page opens, You can monitor, add, and edit Sites, MCRs, Users, and notifications.

3. Based on how the Analog, Digital, and Modbus configuration was set earlier you can see logged events by selecting Events under the Logs heading. Also under the Logs heading you can view trend graph data for up to 30 days.



There are four classes of users with different levels of access:

- 1- Administrators are the owner of the account and can do anything, including create users and assign managers
- 2- Managers have access to any sites/MCRs that they've been allowed to see and can be set to receive MCR notifications
- 3- Users are the same as Managers, but cannot get notifications.
- 4- View-only users can only view MCRs, and cannot update config. If a view-only user tries they'll be prevented from doing so (they can still see the current config).

MAINTENANCE

The MCR does not require any periodic maintenance. However, it may be necessary to periodically clean the exterior of the MCR. This may be done with a soft brush, broom or low pressure water rinse.

DO NOT! Use hi-pressure water or a pressure washer to clean the MCR. It is likely to be damaged during pressure washing.

GUARANTEE AND REPAIR POLICY

The MCR is guaranteed for two years against defective materials and workmanship. It will be replaced or repaired free of charge during the guarantee period. Call the factory at 985-639-0006 for a return authorization number for traceability. Mark the package to the attention of the RMA number and address it to the factory at:

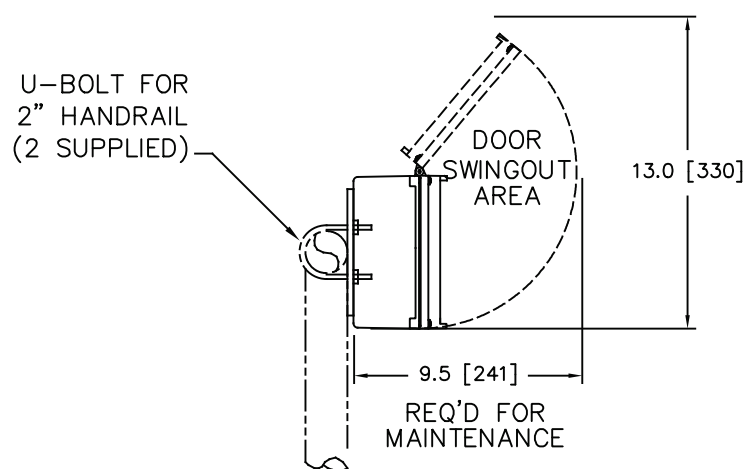
Insite IG
RMA ### - #####
80 Whisperwood Blvd.,
Slidell, LA 70458.

Freight to the factory is to be paid by the customer and items should be insured in case of damage or loss of shipment.

All shipments are insured. If you receive a damaged unit, please notify InsiteIG immediately at 985-639-0006.

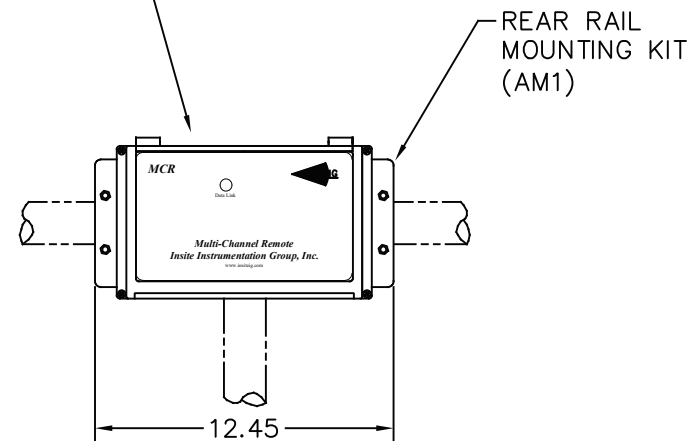
Repairs to the equipment not covered by the guarantee will be billed per standard service charges.

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



SIDE VIEW

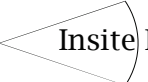
InsitelG Analyzer
MCR



PLAN VIEW

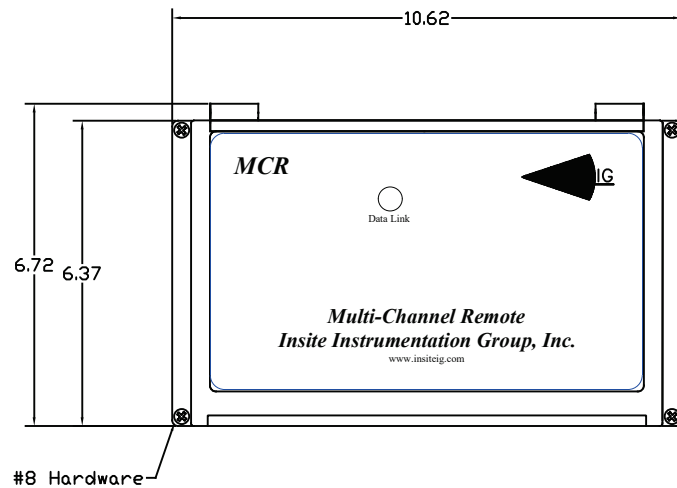
NOTES:

- CONSTRUCTION: NEMA 4X TYPE
ENCLOSURE MOUNTED ON .125"
PASSIVATED STAINLESS STEEL BRACKETS.
- APPROXIMATE WEIGHT: 7 LBS.

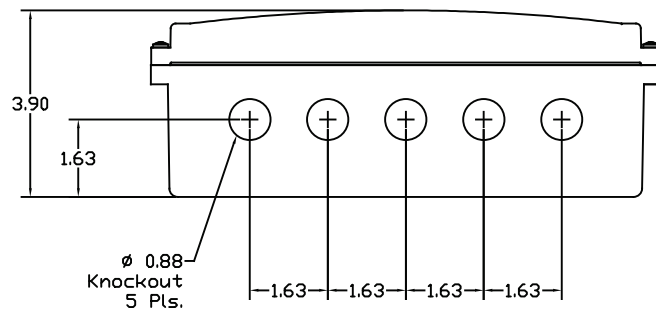
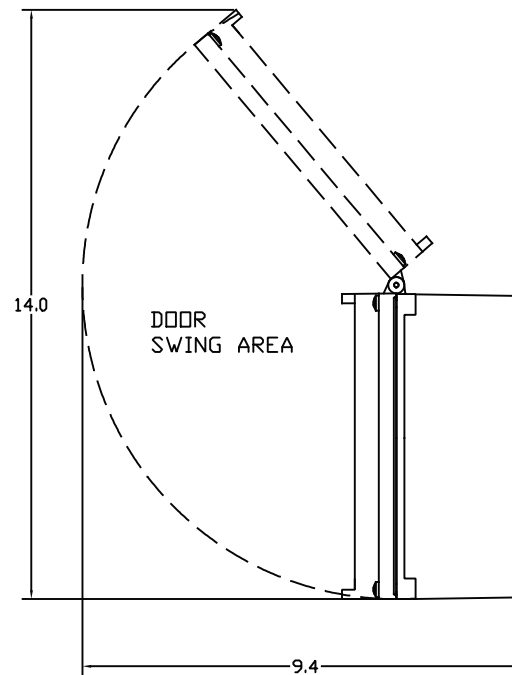
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES DECIMALS ANGULAR .XX ±.010 ° ±1° .XXX ±.005 DO NOT SCALE DRAWING		CONTRACT NO.		 80 Whisperwood Blvd. Suite 107 Slidell, LA 70458	
		DRAWN	DATE		
		D. RADLE	1/29/02		
		CHECK			
MATERIAL	—	DESIGN		TITLE HANDRAIL MOUNTING INSITE ANALYZER MCR	
FINISH	—	D. RADLE	1/29/02		
SPEC.		APPROVED		SIZE	DWG NO.
		CUSTOMER		C	IIG09N110
				SCALE	NTS
				SHEET 1 OF 1	

REV. 1
DWG. No IIG09N110

REVISIONS			
ZONE	LTR	DESCRIPTION	DATE APPROVED



Front View



Notes:


1. Construction: Polycarbonate + ABS (PC+ABS) with Flammability Classification V-0 or better; Enclosure Standard NEMA 4X, IP67, IP68
2. Approximate Weight: 4 LB.



In "Normal Operation" the hinged cover is to remain tightly screwed closed. Under no circumstance is it necessary for the operator to open the enclosure.



Warning! – Before opening; switch off the analyzer power at the circuit breaker to avoid risk of shock.

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES DECIMALS ANGULAR .XX ±.010 X° ±1° .XXX ±.005 DO NOT SCALE DRAWING	CONTRACT NO.		 80 Whisperwood Blvd. Suite 107 Slidell, LA 70458
	DRAWN	DATE	
	CHECK		TITLE InsiteIG MCR Analyzer OUTLINE & MOUNTING
	DESIGN		
	APPROVED		SIZE DWG NO. REV C IIG09N711 -
MATERIAL	CUSTOMER		SCALE NOTED SHEET 1 OF 2

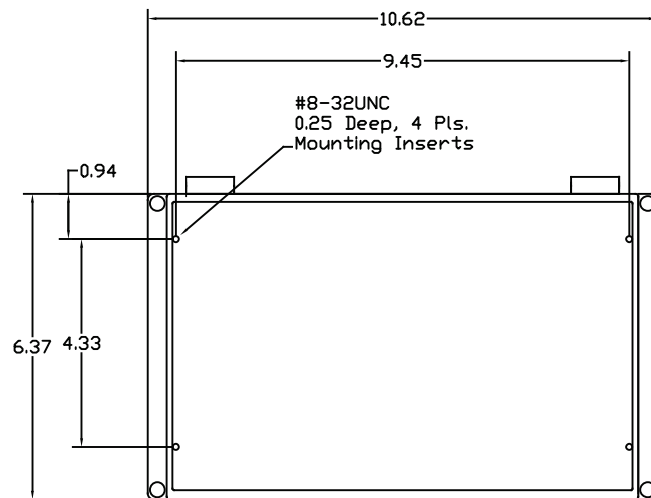
1

2

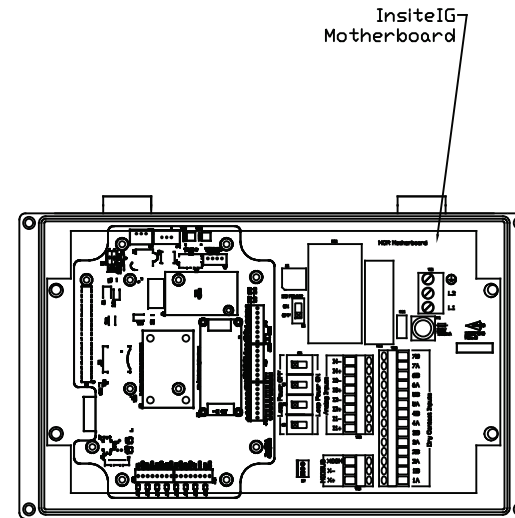
3

4

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



Rear View



Front View

(Cover Removed)

SIZE	DWG NO.	REV
C	IIG09N711	—
SCALE NTS	SHEET 2 OF 2	

