



MX1144-DGR/B/H

GSM SMS ALARM & CONTROLLER

USER MANUAL

MX1144-DGR-rev1.06-1021

SAFETY INSTRUCTIONS

- This user manual contains important notices for installation, usage and safety instructions. Please read this manual carefully before you start using your device!
- Device is containing a radio transceiver operating on GSM 850/900/1800/1900 MHz bands.
- Do not use device in environments, exceeding temperature limits (device should operate not lower than -10⁰ C and not higher than +50⁰ C).
- Do not use device in chemical or other hazardous environments.
- Device is intended to use in dry and clean places. Do not use device in high humidity.
- Protect your device from dust, moisture, heat and water.
- Do not expose the device to strong vibrations and mechanical impacts.
- Do not attempt to repair device personally.

USE IN ACCORDANCE WITH THE REGULATION

- The use of this device in accordance with the regulation is sending SMS text messages and making phone calls after an alarm case and controlling remote devices via SMS and phone calls. Other usages are not permitted.
- Police, fire or healthcare emergency call lines are not permitted to call directly from this device. Do not configure emergency call numbers into this device.

BATTERY RECYCLING

- CR123A Lithium batteries are classified as recycled batteries. Please take your empty batteries to a nearest collection point.

BATTERY LIFE

- Battery life, announced by manufacturer, is calculated under normal operating conditions and normal frequency of usage.
- Battery life can vary against frequency of usage, quality of cellular service, environment conditions (temperature, humidity etc.), quality of used batteries and other effects.
- Manufacturer does not guarantee battery life of the device operation.

LIMITED LIABILITY

- The buyer must agree that Reporter devices will reduce the risk of theft, burglary, fire or other dangers and controls remote devices but do not guarantee any operation against such events.
- Manufacturer will not take any responsibility regarding personal or property or revenue loss while using devices.
- Manufacturer liability according to local laws does not exceed value of the purchased device.

1. DESCRIPTION

Reporter MX1144 is a user friendly and a reliable device which sends you SMS text messages and calls you in case of input alarm events, restorations, power failure (B versions) & restorations and periodically sends heartbeat messages. It also controls your remote devices via SMS, free phone call and DTMF phone calls.

It includes a lot of useful features like; detailed instant STATUS query, configurable SMS text messages, configurable input delays, user defined heartbeat periods, alarm call enable/disable, add/delete admins & users via SMS, relay activation method selection, LED indicators, replaceable antenna and batteries (B models), IP67 water & dust protected industrial enclosure.

MX1144-DGR has:

- 4 x Digital isolated inputs with +3...27 VDC wide range input voltage capacity
- 4 x 10A 230VAC high-capacity relays with volt-free NO/NC/COM pins
- Battery back-up feature for Power Failure feature (B version only)
- 8 admin nr capacity
- 20 user nr capacity for standard version / 1.000 user nr (H version only) for remote relay control purposes

Below list shows the alert events from your device:

- **Port1 High** : Text Message and (optional) phone call ring
- **Port1 Low** : Text Message and (optional) phone call ring
- **Port2 High** : Text Message and (optional) phone call ring
- **Port2 Low** : Text Message and (optional) phone call ring
- **Port3 High** : Text Message and (optional) phone call ring
- **Port3 Low** : Text Message and (optional) phone call ring
- **Port4 High** : Text Message and (optional) phone call ring
- **Port4 Low** : Text Message and (optional) phone call ring
- **Power Failure** : Detailed Text Message * and (optional) phone call ring
- **Power Restored** : Detailed Text Message *
- **Keep Alive** : Detailed Text Message *
- **Status** : Detailed Text Message *

* Detailed text message includes: All inputs status, all outputs status, Call mode selection, Alarm call configuration, Keep alive period and CSQ GSM signal level in dBi.

MX144-DGR/B/H can operate in below power options:

- External power & battery used together (B versions): In this case power failure function could be used as well as all other functions
- External power -only use: In this case Power failure function will not work. Others functions will remain working

Note that Reporter devices do not have "voice record" function, so phone calls are used for only ringing your mobile phone. There is no voice call.

Only a local 850/900/1800/1900 MHz GSM SIM card is required to operate the device. SMS and Call function is enough for SIM Card. Data or GPRS functions are not required.

Reporter devices switch to ultra-low power consumption mode in case of power failure. Further to this feature; device de-attaches itself from GSM network in standby, for saving battery life. If you try to call or

send SMS to device in standby mode, you will not be able to reach the device. It attaches to the network again once external power is restored.

All settings and registered admin & user numbers are saved in Reporter's own memory. So, settings will not be deleted if battery or SIM card is removed. Device will continue with new batteries or new SIM Card with the last saved settings & numbers.

2. USECASES

2.1. Remote Controlling

This device can be used to control electrically operated devices remotely via SMS Commands or Phone Calls. With the help of high capacity & operation configurable relays, you may Activate, Deactivate, Trigger or Time-Based Activate your remote devices. All Admins and Users can use these control functions.

Use cases might be such as:

- Irrigation systems
- Trigger Gate openers / barriers
- Control Lighting
- Control total electricity of your home/office/plant etc.
- Different kinds of motors and machines and much more...

As soon as integrated relay power is suitable (up to 10A / 240VAC), any kind of device/machine/system could be controlled with this device. In some cases where required switching power is higher than the device capacity; then it can still control those devices by some additional high capacity switching equipment (i.e. contactors).

2.2. Input Monitoring

Any kind of volt-free or +3V...+27VDC voltage ranged sensor/switch/device output could be connected to Reporter isolated inputs. Thus, Reporter will continuously check for any change on the inputs, and it will inform all Admins by SMS (optionally Free Phone Call) in case of changes on the inputs.

Use cases might be such as:

- Burglar alarm systems as a dialer
- Fire alarm systems as a dialer
- Door/window monitoring
- Any sensors like gas/smoke/earthquake monitoring
- Water level monitoring
- Flood monitoring
- Panic alarm monitoring
- Specific electronic devices/system monitoring and much more...

2.3. Power Failure / Restoration Monitoring

If batteries used; Reporter will inform you in case of power failures and restorations.

3. INSTALLATION

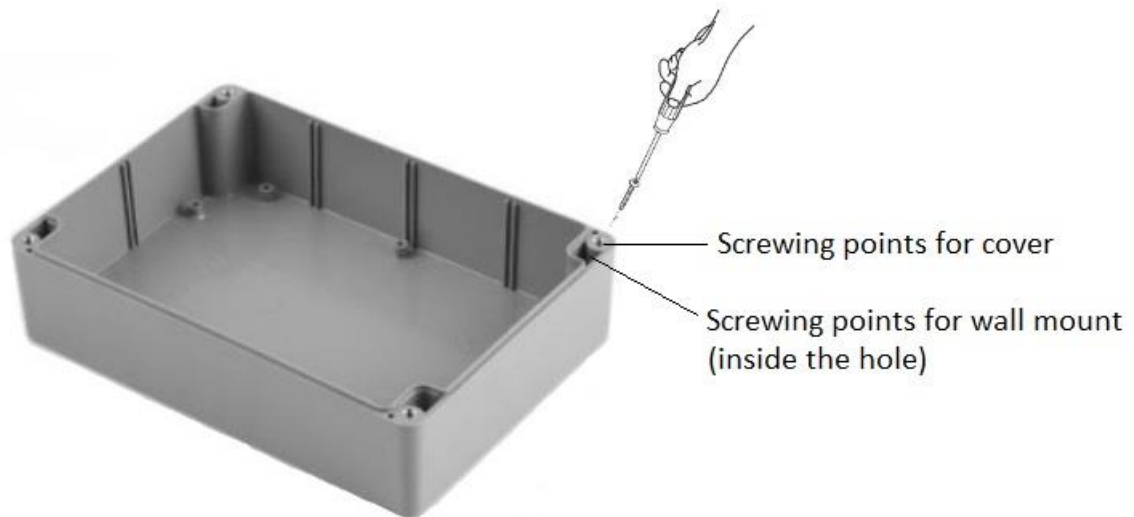
Package includes:

- 4 x screws for “Cover Fitting”
- 4 x screws & 4 x fixing plugs for “Wall Mount”

Firstly, unscrew the Cover Fitting screws and then open the top cover.

If you want to mount your device to the wall;

- Place device to the wall
- Point Wall Mount screwing holes (shown below) to the wall
- Drill the wall from pointed places
- Insert fixing plugs into the drilled points
- Screw in the wall mount screws from the screwing points of the device



4. GETTING STARTED

4.1. Insert SIM Card

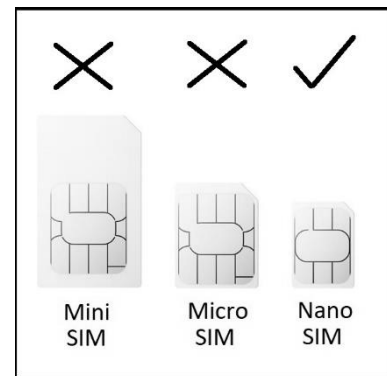
A local SIM card is required to operate the system.

Required SIM card size is NanoSIM (as seen in figure).

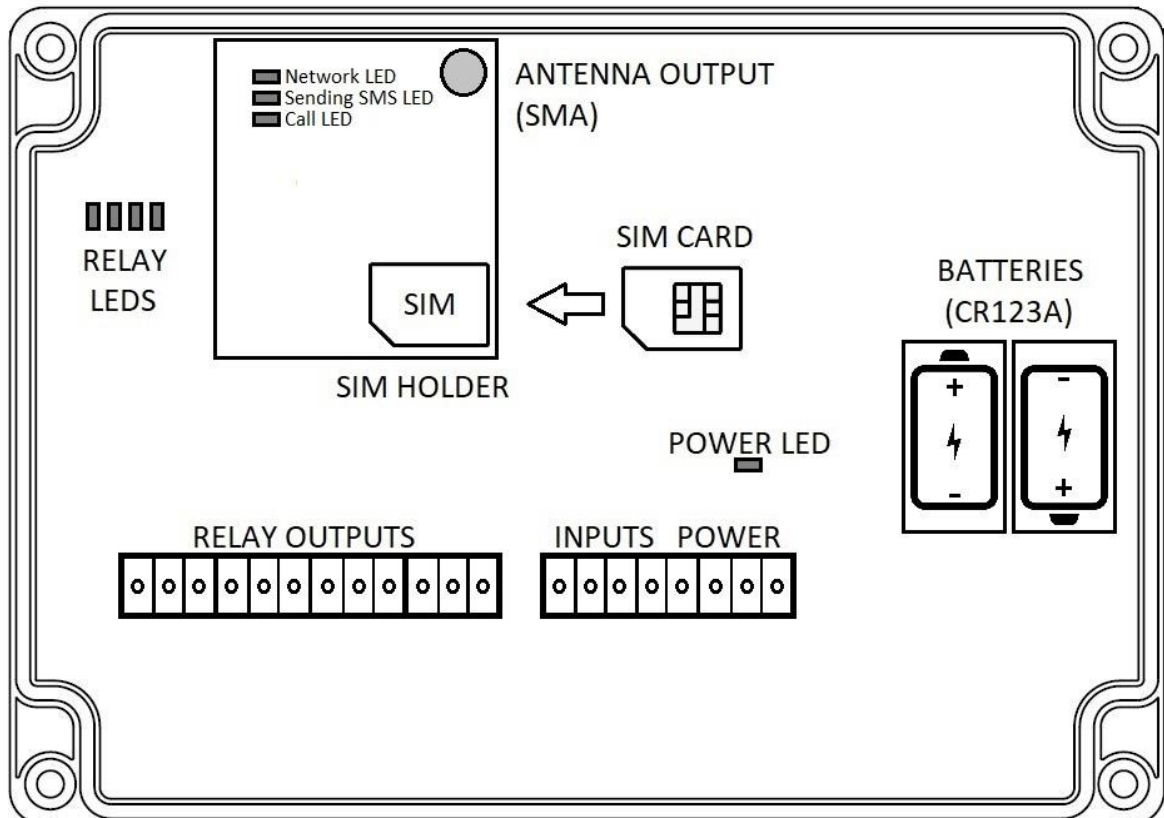
SMS and Call (if you require) services should be active on the SIM. However, Data/Internet/GPRS services are not required.

Before inserting the SIM card, try it with a mobile phone. And then:

- Disable PIN code protection
- Send an SMS to a mobile number for testing
- Call a mobile phone number for testing

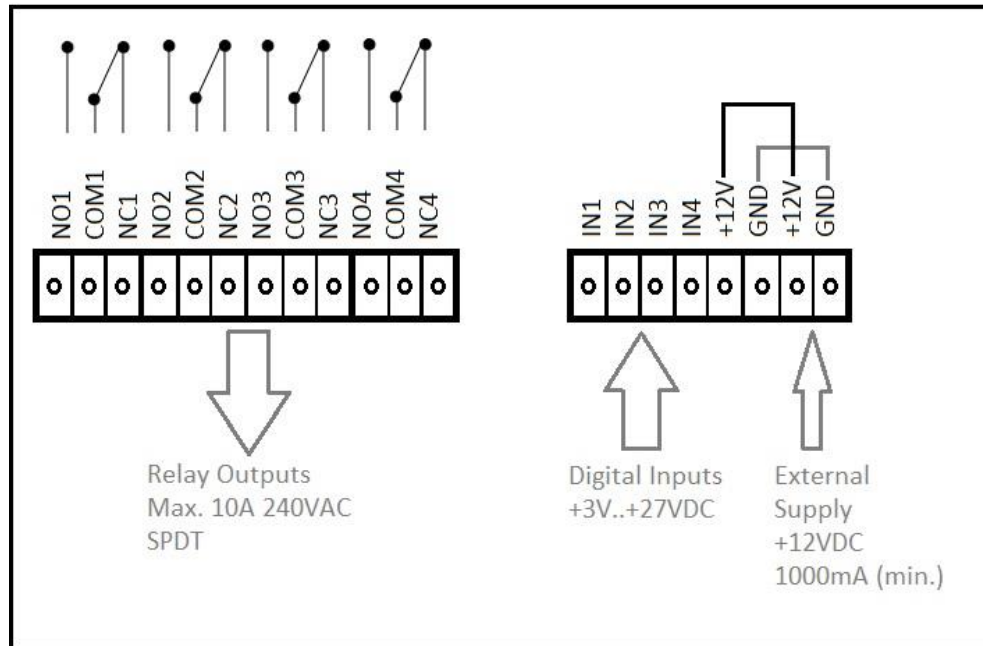


After above steps completed, open the screws. And insert SIM card into the device, by pushing it as shown in below figure.



4.2. Connect Inputs and Outputs on Ports

Note: Wires should pass into the holes of the bottom cover! Please check Wiring Diagram!



If you want to apply external powered lines to the inputs; make sure voltage levels are between +3V and +27V. It is also very important that you need to connect external device's GND line to Reporter GND terminal.

If your external equipment is volt-free (i.e. a button, switch, magnetic contact or volt-free relay output); in this case you may use Reporter's +12V line to supply your external equipment.

Reporter inputs are digital and isolated.

4.3. Insert Batteries (Optional)

Insert two pieces of CR123A or CR123 lithium batteries in case of power failure feature is required. Make sure you followed correct polarity of the batteries. You will see + / - indications on the board.

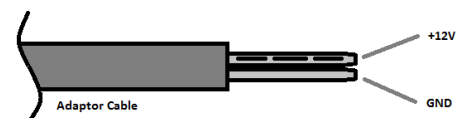
4.4. Connect Power

Note: Wires should pass into the holes of the bottom cover! Please check Wiring Diagram!

Connect 12V DC power supply into terminal block +12V (positive) and GND (negative/ground).

Two pieces of +12V and two pieces of GND pins are internally parallel.

Please note external power should be rated at +12VDV and current should be at least 1000 mA (1A).



5. DEVICE CONFIGURATION

Firstly, make sure "POWER LED" (Red one) is ON. This indicates that external power is ON.

Then check for "NETWORK STATUS LED".

- Off : Powered off
- Fast Blink : Not ready (registering to network)
- Slow Blink : Ready (registered to the network)

Once NETWORK STATUS LED starts blinking slowly; then you are ready to go to next steps.

Note: Device Configuration and Reset is only made by SMS commands. There is no other method.

Below is the table of SMS commands available:

DESCRIPTION	COMMAND	DEFAULT	RANGE	AUTHORISATION
Change Password	PASS:xxxx	1111	0000..9999	ADMIN
Add Admin	ADDA:xxxxxxxxxx			ADMIN
Add User	ADDU:xxxxxxxxxx			ADMIN
Delete Admin	DELA:xxxxxxxxxx			ADMIN
Delete User	DELU:xxxxxxxxxx			ADMIN
Alert Calls Activate	CALL:ON	OFF		ADMIN
Alert Calls Deactivate	CALL:OFF	OFF		ADMIN
Select MOD1 and Trigger Time(x)	MOD1:x	MOD1:2	1..99 secs	ADMIN
Select MOD2	MOD2	MOD1:2		ADMIN
Change SMS Text Messages	PATx:yyyyyyyyy#		1..32 chars	ADMIN
Set Input nr(x) Low-to-High Delay	INPHx:y	0	0..99 secs	ADMIN
Set Input nr(x) High-to-Low Delay	INPLx:y	0	0..99 secs	ADMIN
Set Keep Alive (Heartbeat) SMS Period	KA:x	0 (means disabled)	0..999 hours	ADMIN
Get Device Status Info	STATUS			ADMIN
Restore Factory Settings	RESET			ADMIN
Activate Relay nr(x)	RLYx:ON			ADMIN & USER
Deactivate Relay nr(x)	RLYx:OFF			ADMIN & USER
Time-based Activate Relay nr(x) for (y) secs	RLYx:y		0..99 secs	ADMIN & USER

SMS message format is:

Password<space>Command1<space>Command2<space>Command3.....

Examples:

- 1111 ADDA:+901234567890 // Adds an Admin
- 1111 PASS:4567 CALL:ON // Changes password to 4567 & activates calls
- 4567 ADDU:+441111111111 ADDU:+442222222222 // Adds two users by using last password
- 4567 RLY3:5 // Turns ON RLY3 for 5 secs and then turns OFF
- 4567 RLYALL:OFF // Turns OFF all relays

5.1. Register (Add) Admin Number(s)

Before adding an Administrator (Admin) please be aware of Admins and Users have different authorizations. Please decide which numbers to add as Admin and which to add User by the help of below information.

Admin numbers are authorized to make configurations, change & delete settings of the device, receive all alert notifications and control device outputs (relays) remotely.

User numbers can only control Relay Outputs via phone call or by sending SMS to the device.

Note-1: If there is no Admin registered yet, any number who knows default password may add itself as Admin.

Note-2: After first Admin is registered to the device; only an existing Admin may add another Admin.

Note-3: Total 8 people can be added as Admin.

Authorization : Admins only (or first number on first use)
Format : **Password<space>ADDA:Number**
Example : 1111 ADDA:+901234567890
Responses : *Process Succeed. // format & password is correct*
Process Failed! // format is wrong
Record Succeed. Memory Full // record done but now memory is full
Record Failed! Memory Full // cannot record because memory is full

5.2. Change Password

Authorization : Admins only
Format : **Password<space>PASS:NewPassword**
Example : 1111 PASS:6666
Responses : *Process Succeed. // format & password is correct*
Process Failed! // format is wrong

Note: New Password must be always different than "1111".

5.3. Register (Add) User(s)

Note: Total 20 (1.000 for /H models) people can be added as User.

Authorization : Admins only
Format : **Password<space>ADDU:Number**
Example : 1111 ADDU:+901234512345
Responses : *Process Succeed. // format & password is correct*
Process Failed! // format is wrong
Record Succeed. Memory Full // record done but now memory is full
Record Failed! Memory Full // cannot record because memory is full

5.4. Delete Admin

Authorization : Admins only
Format : **Password<space>DELA:Number**
Example : 1111 DELA:+901234511111

Responses : *Process Succeed. // format & pass is correct. Nr exists*
Process Failed! // format is wrong
Record Not Found! Process Failed // nr does not exist

5.5. Delete User

Authorization : Admins only

Format : **Password<space>DELU:Number**

Example : 1111 DELU:+90123452222

Responses : *Process Succeed. // format & pass is correct. Nr exists*
Process Failed! // format is wrong
Record Not Found! Process Failed // nr does not exist

5.6. Alert Calls Activate / Deactivate

Alert Call feature is used if you need a Phone Call to warn you after you receive alert SMS.

These Calls do not include a voice record. It's a free-call to ring your phone for around 45 seconds. Alert Calls are DISABLED (OFF) as factory default.

Authorization : Admins only

Format : **Password<space>CALL:ON**
Password<space>CALL:OFF

Examples : 1111 CALL:ON // enables phone calls
 1111 CALL:OFF // disables phone calls

Responses : *Process Succeed. // format & pass is correct*
Process Failed! // format is wrong

5.7. MOD1/MOD2 Selection (Relay Control by Phone Calls)

To control Relay Outputs by Phone Calls; Reporter has two different mode options.

Only one of them has to be selected. As factory default, MOD1 is selected:

- *MOD1 is only used to trigger RLY1 in a predefined period (default: 2 seconds). When you call device; it will reject the call after a few rings. Then it will Turn ON RLY1 for predefined period and it will Turn OFF RLY1 after this period. If this mode is selected MOD2 will be disabled.*
- *MOD2 is used to Turn ON & Turn OFF all available Relays individually via DTMF Call Dial Service. When you call device; it will pick up and wait you dial Relay Nr and dial " #/* " for ON/OFF. If this mode is selected MOD1 will be disabled.*

Authorization : Admins only

Format : **Password<space>MOD1:Period**
Password<space>MOD2

Examples : 1111 MOD1:6 // select MOD1, set trig. time to 6 secs
 1111 MOD2 // select MOD2

Responses : *Process Succeed.* // format & pass is correct
Process Failed! // format is wrong

5.8. Change SMS Text Message Contents

You can change Alarm SMS Text Message Contents according to your requirements. Thus, you will be able to rename Alarm words instead of remembering which input is connected to which equipment.

Note: Message Content is limited to 32 characters. Upper or lower case letters and digits are allowed to use. Only English letters are accepted according to ASCII.

Content index list is below:

PAT0 : Keep Alive
 PAT1...4 : Input1...4 Low-to-High change alert
 PAT9...12 : Input1...4 High-to-Low change alert (i.e. Input1 matches with PAT9)
 PAT17 : Device Activated (or power restored)
 PAT18 : Power Failed (/B versions only)
 PAT19 : Low Battery (/B versions only)

Authorization : Admins only

Format : **Password<space>PATx:AlarmText#**

Examples : 1111 PAT1:Office Door Opened# // Input1 High alarm content changed
 1111 PAT9:Office Door Closed# // Input1 Low alarm content changed

Responses : *Process Succeed.* // format & pass is correct
Process Failed! // format is wrong

5.9. Input Delay Configurations

As factory default, any instant change on input status will trigger an alert. In some cases, you might want to add a delay on a specific input change event up to 99 seconds. For example, if you don't want to receive alert notifications upon every door open/close event; you may set Input High and/or Input Low delays to i.e. 60 seconds. Thus, it will not trigger unnecessary alerts and create the alert in case it left open for at least 1 minute.

Reporter allows you to set these delays on each input individually.

Also, low-to-high and high-to-low events could be set individually as well.

Authorization : Admins only

Format : **Password<space>INPHx:Period**
Password<space>INPLx:Period

Examples : 1111 INPH2:60 // Input2 High alarm delay is 60 secs
 1111 INPL2:0 // Input2 Low alarm delay set to 0

Responses : *Process Succeed.* // format & pass is correct
Process Failed! // format is wrong

5.10. Set Heartbeat (Keep Alive) Interval Period

You may want to see device status automatically under some periods and make sure everything is working properly. Reporter's Heartbeat (or keep alive) feature makes this happen. As a factory default it is set to 0 hours (which means function is disabled). You may set this between 0...999 Hours (more than 40 days!).

Each keep alive message will include all inputs and outputs current status, mode selection, call activation, keep alive current interval setting and current GSM CSQ signal level.

Authorization : Admins only

Format : **Password<space>KA:Period**

Examples : 1111 KA:24 // Set keep alive for once per day
 1111 KA:0 // Disable keep alive messages

Responses : Process Succeed. // format & pass is correct
 Process Failed! // format is wrong

5.11. Restore Factory Defaults (RESET)

Resetting the device does not mean any performance change on this device. Reset only deletes all registered numbers and deletes all configurations & password settings. Thus, device will restore itself into factory settings.

Authorization : Admins only

Format : **Password<space>RESET**

Examples : 1111 RESET // reset device

Responses : Process Succeed. // format & pass is correct
 Process Failed! // format is wrong

6. CHECK DEVICE STATUS (STATUS QUERY)

Anytime, while device is external powered, you may send a Status Query SMS to Reporter. It will reply to you with detailed current I/O status, some settings and GSM signal level information.

Authorization : Admins only

Format : **Password<space>STATUS**

Examples : 1111 STATUS // ask status

Responses : INP1:OFF // INP1 is OFF (LOW)
 ...
 INP4:ON // INP4 is ON (HIGH)
 RLY1:OFF // RLY1 is OFF (LOW)
 ...
 RLY4:ON // RLY4 is ON (HIGH)
 MOD:1 // call mode is MOD1 (trigger mode)
 CALL:OFF // alert call feature is disabled
 KA:24 // keep alive period is 24 hours
 SIGNAL:26 // very good GSM signal (between 0..31)
 Process Failed! // format is wrong

7. CONTROL OUTPUTS (RELAYS)

There are three ways to control your relay outputs remotely:

- SMS
- Call Trigger (MOD1)
- Call & DTMF Dial (MOD2)

7.1. SMS Method

Authorization	:	Admins and Users
Format	:	Password<space>RLYx:ON (* where x is Relay nr) Password<space>RLYx:OFF (* where x is Relay nr) Password<space>RLYALL:ON Password<space>RLYALL:OFF Password<space>RLYx:Period (trigger in seconds)
Examples	:	1111 RLY1:ON // turn on RLY1 1111 RLYALL:OFF // turn off all relays 1111 RLY1:5 // turn on RLY1 for 5 sec. and then off
Responses	:	Process Succeed. // format & pass is correct Process Failed! // format is wrong

Call Trigger Method (MOD1)

MOD1 is only used to trigger RLY1 in a predefined period (default: 2 seconds).

When you call device; it will reject the call after a few rings. Then it will Turn ON RLY1 for predefined period and it will Turn OFF RLY1 after this period.

If this mode is selected MOD2 will be automatically disabled.

7.2. Call & DTMF Dial Method (MOD2)

MOD2 is used to Turn ON & Turn OFF all available Relays individually via DTMF Call Dial Service. When you call device; it will hang up and wait you dial Relay Nr and dial “ #/* ” for ON/OFF.

**** If your dials are not detected properly; please make sure you disabled VoLTE feature from your mobile phone settings (usually under Cellular->Options->Voice&Data->VoLTE). If you still have problems, please contact your GSM operator.*

If this mode is selected MOD1 will be automatically disabled.

Timeout is 30 seconds after last dial. Device hangs up the call after this period.

Dial Format	:	RlyNr# // turns on (activates) selected relay RlyNr* // turns off (deactivates) selected relay
Examples	:	1# // turns on RLY1 1#2#3*4# // turns on RLY1,2,4 and turns off RLY3 9# // turns on all relays 9* // turns off all relays

*You will hear **two beeps** if your command is executed successfully.*

8. TROUBLESHOOTING

TROUBLE	REASON	SOLUTION
Network LED is completely OFF	No power applied	Make sure you applied external power and check if power LED is ON
	Power failure	LED becomes of after power failure event
Network LED blinks fast, never blinks slowly	SIM card not inserted	Remove batteries and adaptor. Insert SIM card first and then power device.
	PIN code not disabled	Remove batteries, adaptor and then SIM card. Insert SIM card into a mobile phone. Disable SIM Card PIN protection from settings. Insert SIM card to your device first and then power device.
	Signal level not enough / No network	Change antenna / Change device location or try with another GSM operator until finding good signal level.
I don't receive replies to my SMS text messages	SIM card not activated or not enough credit (for prepaid cards)	Remove SIM and insert it in a mobile phone. Make sure SMS services are working properly
	Your mobile phone SMS services are working over internet	Disable "SMS Over Internet" feature from your mobile phone (I.e.: Disable iPhone iMessage / Xiaomi MiMessage)
I don't receive power failure SMS notifications	Version not suitable	Only B versions have this function
	Batteries not inserted or died	Insert/replace fresh batteries
Alarm occurred, I received SMS but I didn't receive a Call	Call feature not activated	Check Alert Calls Activate instructions
	SIM card Call service not activated	Contact SIM card provider
Alarm occurred, I received Call but didn't receive an SMS	Network signal was not enough on Reporter location or your own mobile phone's location.	Check signal level of Reporter. Sometimes SMS messages are delivered after some period of its sent, caused by GSM operators.
	Low credit on prepaid card	Check your credit (if prepaid cards used).
Admins receive SMS/Calls on alert events, but users don't	Alert notifications are only sent to Admins. Users can only control output relays	Alert notifications are only sent to Admins. Users can only control output relays
On MOD2; I dial correct output nr and then #/* but it doesn't turn on/off the target relay	VoLTE (Voice over LTE) or HDVoice is enabled	- Disable VoLTE from mobile phone settings
On MOD2; I can turn on/off relays but I don't hear beeps during the execution		- or switch off cellular network LTE/4G/5G during MOD2 dial - or try dialling ***86583*** - If above does not help contact your GSM network operator

9. TECHNICAL SPECIFICATIONS

MX1144-DGR/B/H - Technical Specifications	
Power Supply	<ul style="list-style-type: none"> • 12V 1000mA (min.) DC Power Supply (NOT included) • 2 x CR123A Lithium Batteries (B versions) (NOT included)
Battery Life	<ul style="list-style-type: none"> • More than 1 year under normal usage
Inputs	<ul style="list-style-type: none"> • 4 x Digital & isolated inputs with +3V...+27V range
Outputs	<ul style="list-style-type: none"> • 4 x SDPT relays 240VAC 10A max.
GSM Module	<ul style="list-style-type: none"> • 2G Quad band 850/900/1800/1900 MHz
Antenna	<ul style="list-style-type: none"> • 2dBi Replaceable SMA type antenna
Event Notifications	<ul style="list-style-type: none"> • SMS / Call: Input Change Events • SMS / Call: Power Up • SMS / Call: Power Failure (B versions only) • SMS for Low Battery • SMS for Keep Alive Messages • SMS for Status Query
Relay Control Modes	<ul style="list-style-type: none"> • SMS • Call Trigger (MOD1) • Call DTMF Dial (MOD2)
Admin / User Capacity	<ul style="list-style-type: none"> • 8 Admins • 20 Users (1.000 users for H versions)
Configurations via SMS	<ul style="list-style-type: none"> • Change password • Add & delete admins and users • Activate/deactivate alert Call function • Set call control modes • Set input delays • Set keep alive internal • Change alert SMS contents • Reset device
Security	<ul style="list-style-type: none"> • CallerID & Password
Operating Temperature	<ul style="list-style-type: none"> • -10 °C ~ + 50 °C
Dimensions	<ul style="list-style-type: none"> • 170 x 120 x 55 mm
IP Water & Dust Protection	<ul style="list-style-type: none"> • IP67
Package Content	<ul style="list-style-type: none"> • 1 x MX1144-DGR/B/H GSM Alarm & Controller Device • 1 x User Manual • 4 x Fixing Screws & Fixing Plugs

