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GSM DEVICES

**G-ULTRA
QUICK GUIDE**

G-ULTRA

1. What is G-ULTRA?

Built upon the bedrock of convenience established by the original G-SWITCH-22 GSM module, the G-ULTRA is a complete evolution of that device imbued with intelligence and packaged for use in a modern environment. The combination of a smart graphic user interface and a plethora of advanced features means that the G-ULTRA goes well beyond the scope of mere access automation and takes remote monitoring and control to an entirely new level.

2. Important Safety Instructions ⚠

1. Do not install this product near DOSS sensor inside gate motor housing or near the remote receiver.
2. Do not install this product near any sensitive electrical components.
3. All installation, repair, and service work to this product must be done by a suitably qualified person.
4. Do not in any way modify the components of the system.
5. Do not install the equipment in an explosive atmosphere: the presence of flammable gas or fumes is a serious danger to safety.
6. Do not leave packing materials (plastic, polystyrene, etc.) within reach of children as such materials are potential sources of danger.
7. Dispose of all waste products like packing materials, according to local regulations.
8. Centurion Systems (Pty) Ltd does not accept any liability caused by improper use of the product, or for use other than that for which the automated system was intended.
9. This product was designed and built strictly for the use indicated in this documentation. Any other use, not expressly indicated here, could compromise the service life/operation of the product and/or be a source of danger.
10. Anything not expressly specified in these instructions is not permitted.

📄 This icon indicates tips and other information that could be useful during the installation.

💬 This icon denotes variations and other aspects that should be considered during installation.

3. Glossary of Terms

Sticky Latches: The module's outputs can be configured to 'remember' their state between power cycles. For instance, if Output 2 was active, i.e. the relay in an energised state, and the power is removed, when power is reapplied Output 2 will return to the activated state. This functionality is referred to as a 'sticky latch' and can be enabled or disabled. Sticky latched don't apply to pulsed outputs and are enabled by default.

Filter Time: Filter Time determines how long an input event (rising or falling edge) must be present before it is recognised, i.e. an SMS or email is sent, or a missed call is initiated. The time is set in increments of one second and the default is 0.

Blanking Time: Blanking Time determines how long the unit will wait between events before it will recognise the next event.

Any Number Mode: When enabled, this useful feature allows any number to activate the module's outputs, irrespective of whether they are learned into memory. A typical application would be an event such as a wedding where many guests need to be given temporary access. Instead of manually learning in a 100 guests and then having to delete them again after the occasion, the administrator can simply enable Any Number Mode and disable it again afterward.

DTMF: Dual Tone Multi-Frequency signaling. This is used for telecommunication signaling over analogue telephone lines in the voice-frequency band between telephone handsets and other communication devices and the switching centre. This allows the user to press a number on his or her mobile handset to switch any of the outputs on the G-ULTRA.

Channel: An electrical gateway implemented as a physical terminal on the G-ULTRA that provides the external interface to Input or Output signals

4. Technical Specifications

Supply Voltage Range	11-24V DC
Maximum Current Draw	300mA @ 12V DC
Input/output Current Rating	50mA (Open Collector)
Relay Contact Current Rating	1A, 30V AC/DC (Resistive)
Input Sense Voltage Range	0-24V DC (0-1.6V Low-input State, 5V-24V High-input State)
SIM Card	Micro-format, Activated SIM Card Supplied (South Africa only) [1, 2]
Number of Configurable Input/output Channels	4
Number of Relays	2
Memory Capacity	• 5000 Event logs • 20 Access Profiles • 1 Custom Welcome SMS Message for New Access Numbers • 20 Custom Output Activation SMS Messages (From User to Device) • 30 Custom Input Notification SMS/Email Messages (From Device to User) • 100 Visitor Time-barring Windows (Windows are the periods between two dates) • 30 Generic Time-barring Windows (Windows are weekly recurring) • 10 Output Activation Schedules (Schedules are weekly recurring)

Memory Capacity (continued)	• 3 Daylight Saving Periods • 4 Input to Output Mapping Configurations
Model Options	**GSM 2G:** 850/900/1800/1900MHz (EDGE) **GSM 3G:** 900/2100MHz (EDGE) 900/2100MHz (UMTS) **GSM 3G PENTA:** 800/850/900/1900/2100MHz (UMTS)

1. May not be used in devices other than G-ULTRA (South Africa Only).
2. Remains the property of Centurion Systems (Pty) Ltd. (South Africa Only).
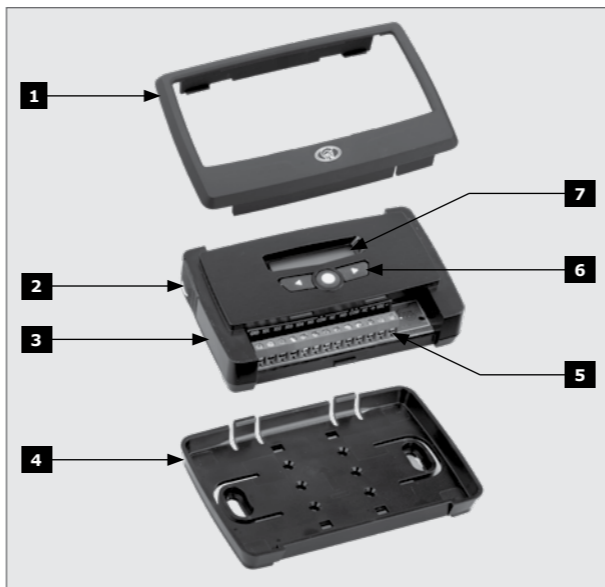
5. Product Identification

FIGURE 1

1. Fascia
2. External Antenna Cover
3. Main G-ULTRA Unit
4. Mounting Plate
5. Terminal Blocks
6. Navigation panel
7. LCD Screen

6. Product Dimensions

73.6mm
114.4mm
33mm

FIGURE 2

7. Functional Feature Highlights

Access Number Profiles
The access number configuration profiles eliminates the hassle of configuring input and output permissions and notifications every time that a new number is added.

Intelligent Gate Status Monitoring
With seamless integration with CENTURION gate motors, the G-ULTRA will let the user know when his or her gate has been left open, or is in any other state specified by the user through intelligent monitoring of the gate motor's status output. Adjustable Filter settings mean that the user can specify under which conditions they are notified about a particular gate status, for example if the gate has remained open for longer than 20 seconds.

Supplied with activated SIM card (South Africa only)
All G-ULTRA units are supplied with an activated Vodacom SIM card (South Africa only). Airtime can be purchased via G-WEB (South Africa only).

Monitoring and alerting
The device can be configured to monitor up to four separate electrical devices, such as a home alarm or even a water reservoir. It could send the user an SMS, give a missed call or even send an email, letting the user know if the house alarm is on or off or a reservoir is full or empty. When configured as inputs, the unit's four individually-configurable channels can be configured to react to Rising Edges, Falling Edges, or both, which makes it ideal for monitoring variable levels such as mains power. A single input can be used, for example, to send a notification to users when mains power has failed, and the same input can notify users once it comes back on, freeing up the other inputs to take care of monitoring duties for other devices.

Control
In addition to the four configurable channels, two extra relays are provided which can be used to remotely control electrical devices and appliances such as gate motors, alarms, geysers and lights, to name but a few possible applications. Outputs can be activated via missed, SMS text message or by pressing a number on his or her phone's touchpad.

Timed access control
(Weekly and Visitor) Set arrival and departure dates and times; guests will only be able to activate the device's outputs between these limits, affording the user maximum security and affording guests maximum convenience. As a special value-add developed specifically with B & B owners in mind, customised arrival and departure messages with welcoming messages, access instructions, etc., can be sent automatically to guests and visitors.

Alternatively set weekly recurring time-periods (for example 8am to 5pm, Monday to Friday) during which users will have access to the system.

Outside of the configured time-periods, access will be denied.

Add the ability to map inputs to outputs, customise the input and output notification messages and use the G-ULTRA in advanced applications. One has a powerful and convenient GSM-based monitoring and control solution. Up to 20 separate text messages with up to five scheduled outputs can be configured.

Time-barring windows can be configured to block notifications, activations or specific access numbers.

Quick device associations
Devices can be associated to a G-WEB profile in a matter of seconds by simply scanning a QR code with one's smartphone and a third-party universal QR scanner application.
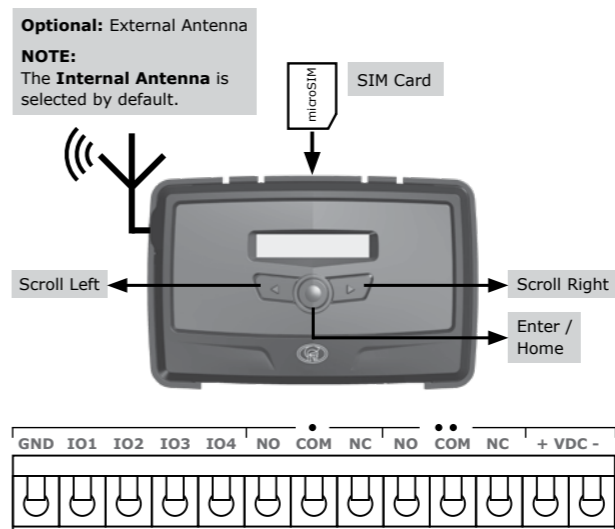
Easy access to diagnostics
This smart device provides intelligent feedback via a graphic user interface displaying status, system information and diagnostic messages for the complete ULTRA experience.

Smart hardware
An internal GSM antenna ensures healthier, more reliable network signal strength without the frustration of trying to find the optimal location to mount the unit. If one needs to fit the G-ULTRA in a metal enclosure, simply attach an external antenna to the onboard connector.

8. Device Layout and Wire Connections

Optional: External Antenna

NOTE:
The **Internal Antenna** is selected by default.

SIM Card
microSIM

Scroll Left
Scroll Right
Enter / Home

GND	IO1	IO2	IO3	IO4	NO	COM	NC	NO	COM	NC	+ VDC -

GND	Ground
IO1	Input / Output 1 (Default: Output)
IO2	Input / Output 2 (Default: Output)
IO3	Input / Output 3 (Default: Output)
IO4	Input / Output 4 / Gate Status Input (Default: Output)
NO	Relay 1 Normally-open
COM	Relay 1 Common
NC	Relay 1 Normally-closed
NO	Relay 2 Normally-open
COM	Relay 2 Common
NC	Relay 2 Normally-closed
+	Positive of Power Supply 12-24VDC
-	Negative of Power Supply

TABLE 2

9. LCD Interface

Table 3 below lists the information shown on the different screens found on the LCD interface. The left and right scroll buttons are used to toggle between the different screens.

	Home Screen
Vodacom	Network Name or Phone Number Applicable to Incoming / Outgoing SMS or Call.
📶	Network Signal Strength
🌐	Connected to Internet
(G)	Connected to G-WEB
⚠	Device has Error Condition

	Home Screen (Continued)
✉←	Incoming SMS
✉→	Outgoing SMS
📞	Incoming Phone Call Events
📞	Outgoing Phone Call Events
	IO Status Screen
	Input: Deactivated ("E" = Input event reached)
	Input: Activated (pulled to ground) ("E" = Input event reached)
	Output: Off
	Output: On (pulling to ground)
	Output Status Screen
	Relay X is Switched OFF and the Normally-Closed and Common Contacts are connected.
	Relay X is Switched ON and the Normally-Open and Common Contacts are connected. X= 1 or 2
	Voltage/Firmware/Date & Time Screen
12.1V / FW:1.0.1 / 21:21 / 1/1/17	• Supply Voltage • Firmware Version • Time • Date
	Phone Number Screen
0715493849	Device SIM Phone Number.
	Airtime Balance Screen
Your balance is R18	Press Enter to Refresh Airtime Balance from Network Provider.
	GSM Antenna Selected Screen
	Internal GSM Antenna Selected (default).
	External GSM Antenna Selected (connect own Antenna to SMA connector).
	Press Enter to change between Internal and External Antennas.
	Gate Status Screen
	Gate Closed
	Gate Opening
	Gate Open
	Gate Status Warning
	SIM Screen
SIM PIN: 0000✓	SIM pin OK
	SIM pin Wrong
	SIM Error
	IMEI Screen
G-ULTRA IMEI:8958 5849 5849 382	Displays the devices IMEI number

TABLE 3

10. Configurations

10.1. Removing the Mounting Plate and Fascia

To access the terminal blocks of the G-ULTRA, the back plate and fascia needs to be removed. Follow the instructions below to do this.

10.1.1. Removing the Mounting Plate

Gently pull the two clips at the back, backward to release the main G-ULTRA unit, and lift the unit out of the mounting plate.
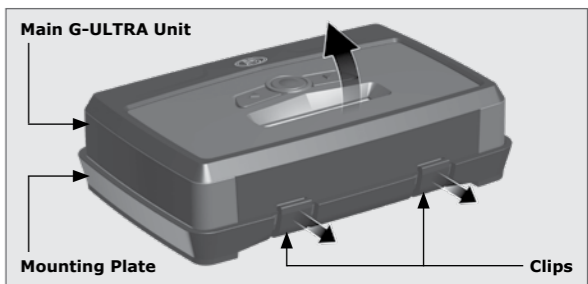

Main G-ULTRA Unit
Mounting Plate
Clips

FIGURE 3

10.1.2. Removing the Fascia

The fascia can be removed by inserting the tips of one's fingers into the slots (as shown in Figures 4 and 5), and pulling outward and upward. The fascia should pop off without effort.
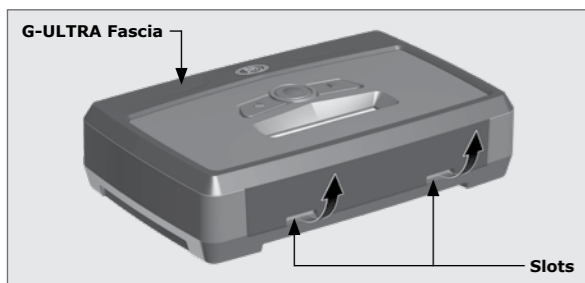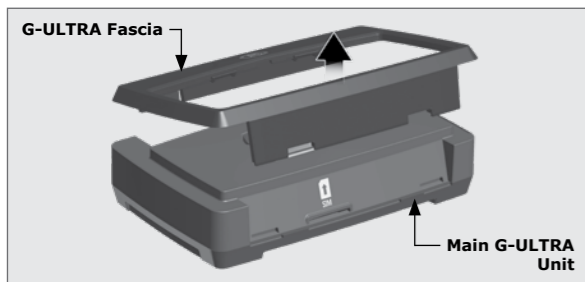

G-ULTRA Fascia

Slots

FIGURE 4

G-ULTRA Fascia

Main G-ULTRA Unit

FIGURE 5

Reverse the procedure under Section 10.1 to re-assemble the G-ULTRA.

10.2. Installation

10.2.1. Wall-mounting

The Mounting Plate is used to mount the G-ULTRA device to a wall. Use four screws with wall anchors(not supplied) to secure Mounting Plate.
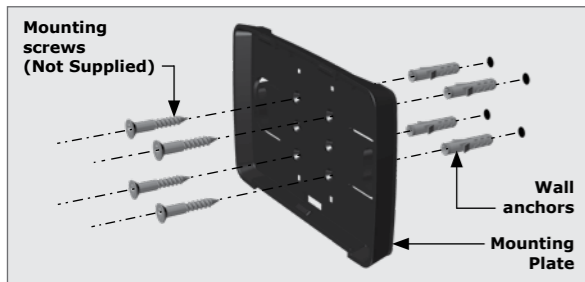

Mounting screws (Not Supplied)

Wall anchors

Mounting Plate

FIGURE 6

Clip the G-ULTRA main unit into the Mounting plate after it has been secured to the wall; a 'click' will be heard if done correctly.
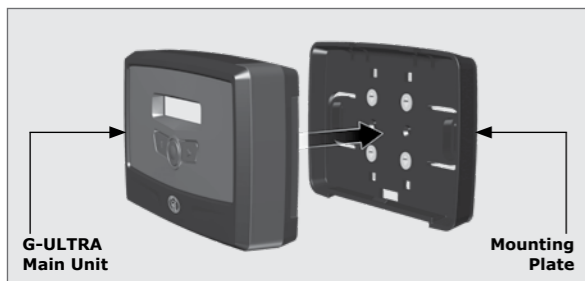

G-ULTRA Main Unit

Mounting Plate

FIGURE 7

10.2.2. DIN Rail-mounting

Should the G-ULTRA need to be mounted onto a DIN-rail, a DIN-rail mounting kit is available. Ask at Centurion Systems (Pty) Ltd for more information.

Secure the DIN-rail clips to the back of the mounting plate using four (4) screws.
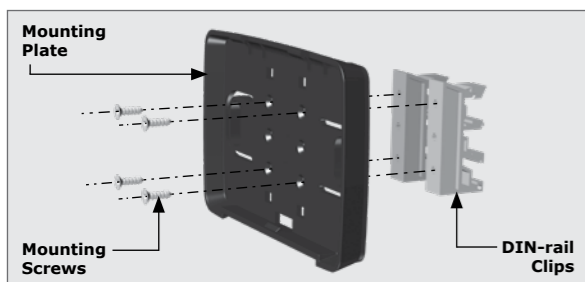

Mounting Plate

Mounting Screws

DIN-rail Clips

FIGURE 8

Position the bottom of the DIN-rail clips onto the rail, and clip the top end into position(A). A 'click' will be heard if it has been done correctly(B). Clip the G-ULTRA main unit into the Mounting plate after it has been secured to the wall; another 'click' will be heard if done correctly.
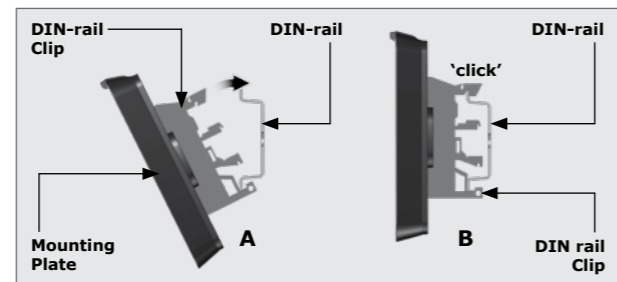

DIN-rail Clip

DIN-rail

DIN-rail

'click'

Mounting Plate

A

B

DIN rail Clip

FIGURE 9

To remove the unit from the DIN-rail, remove the G-ULTRA main unit from the mounting plate as described in Section 10.1. Insert a small flat screwdriver into the hole(s) shown in Figure 10, and gently pry the clips from the rail.
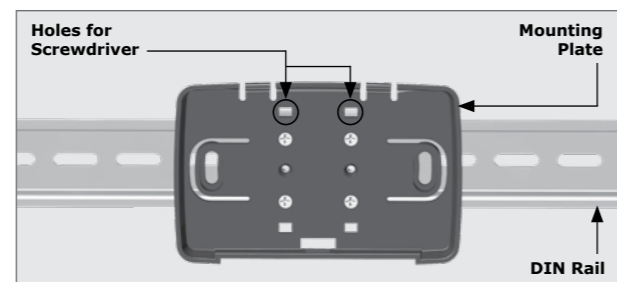

Holes for Screwdriver

Mounting Plate

DIN Rail

FIGURE 10

10.3. Configuration

1. Complete the wiring of the unit as per Section 8 and 10.4 of this document.
2. Power up the device and verify that the device connects to the G-WEB platform by referring to the LCD home screen.
3. Navigate your Internet browser to http://www.gweb.co.za (or www.g-web.com.au for Australia and New Zealand) and login to your existing profile or, alternatively, register a new profile.
4. On the My Devices page, select Add New G-ULTRA Device and follow the onscreen instructions to associate the device to your profile.
5. Configure the device with the desired settings using your online portal.

Quick Add:
To instantly associate a device to your online profile, scan the QR code using your mobile phone and any universal QR scanner mobile application.

10.3.1. G-WEB

All features – both basic and advanced – can be easily, and remotely, configured via the G-WEB online interface. By simply logging into G-WEB using any Internet-enabled device, one can add and delete devices, specify text for input and output notifications and activations, modify device characteristics and a plethora of other features, all from the comfort of one's home or office. G-WEB can be accessed by navigating to http://www.gweb.co.za (or www.g-web.com.au for Australia and New Zealand). Note that it will be necessary to register if you have not previously done so.

10.3.2. SMS Commands

The table below lists the optional basic SMS commands available on the G-ULTRA. All basic and advanced configurations can be done via the G-WEB online portal.

SMS Command	Description
P.XXXX[1].STATUS	**Device Status Request to** which the device will respond with the following information: • IMEI • I/O Status • Supply Voltage • Firmware Version • Signal Strength • Relay Status • Device date & time
P.XXXX.AP.Number	**Add New Phone Number** which will by default pulse Relay 1 by missed call
P.XXXX.DP.Number	**Delete a specific access number** from the G-ULTRA's memory
P.XXXX.OUT.Y.ON	**Switch output ON** where Y is the corresponding output number IO1 Y=1, IO2 Y=2, IO3 Y=3, IO4 Y=4, RELAY1 Y=5, RELAY2 Y=6
P.XXXX.OUT.Y.OFF	**Switch output OFF** where Y is the corresponding output number IO1 Y=1, IO2 Y=2, IO3 Y=3, IO4 Y=4, RELAY1 Y=5, RELAY2 Y=6

TABLE 4

1. XXXX = Device Default Password
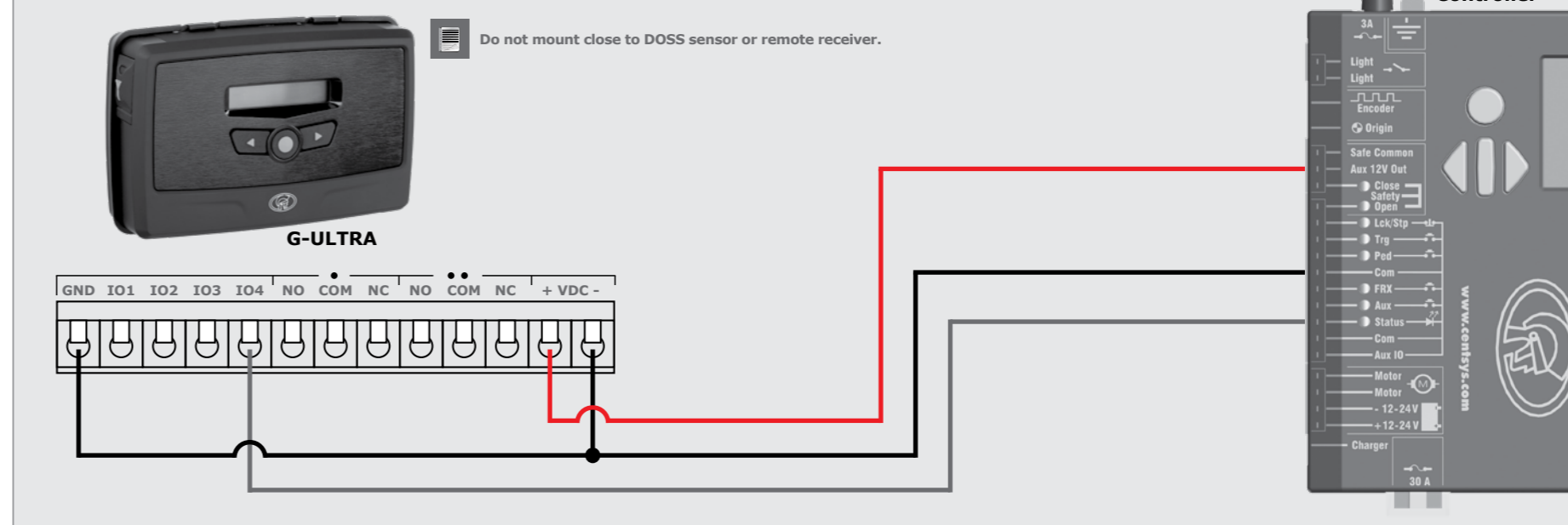

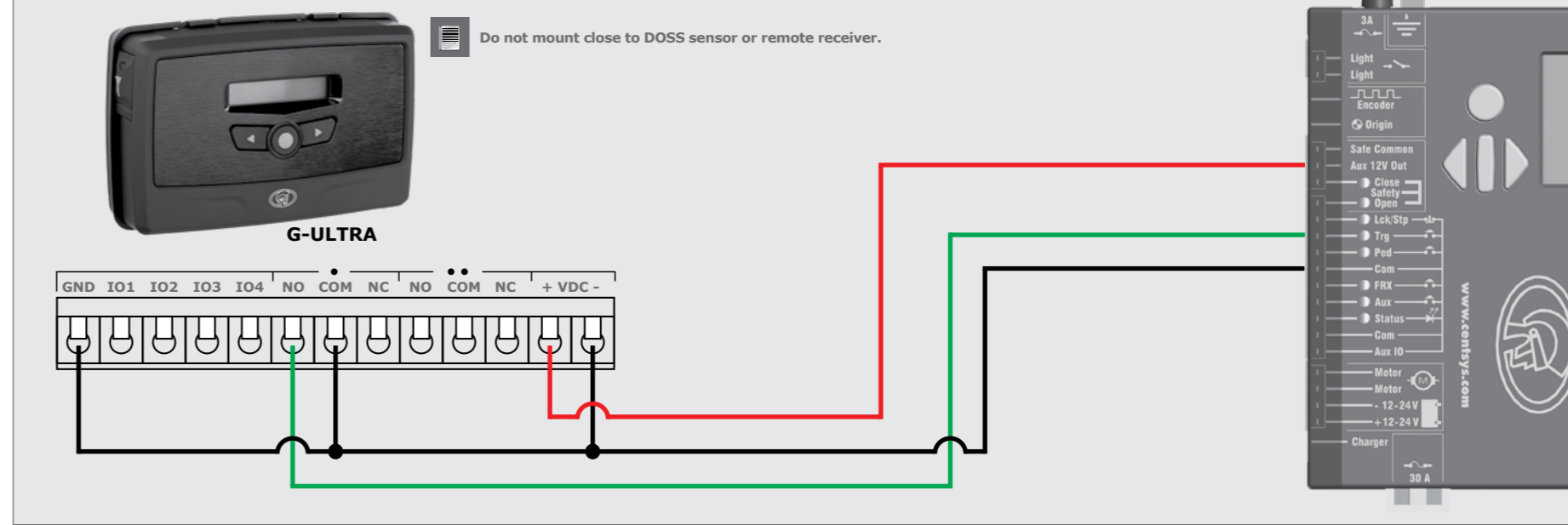## 10.4. Wiring Diagrams

Gate Status Monitoring

Do not mount close to DOSS sensor or remote receiver.

G-ULTRA

GND IO1 IO2 IO3 IO4 NO COM NC NO COM NC + VDC -

D-Series Controller

FIGURE 11

Trigger (Pulse)

Do not mount close to DOSS sensor or remote receiver.

G-ULTRA

GND IO1 IO2 IO3 IO4 NO COM NC NO COM NC + VDC -

D-Series Controller

FIGURE 12

Trigger - Pedestrian (Pulse)

Do not mount close to DOSS sensor or remote receiver.

G-ULTRA

GND IO1 IO2 IO3 IO4 NO COM NC NO COM NC + VDC -

D-Series Controller

FIGURE 13