

GSM Commander Case Studies

Access Control

Case Study 1: Basic Access Control



Background information

A domestic driveway gate system is pre-existing, and currently use a remote control to open the gate. The gate system uses a remote control receiver to trigger the gate system. The receiver's output is in the form of a relay contact, and the COM and NO terminals are wired to the gate system. If a user presses the button on the remote, the remote receiver momentarily closes its contact, which signals the gate system to open the gate (and close again). The gate system has its own 12v battery backup.

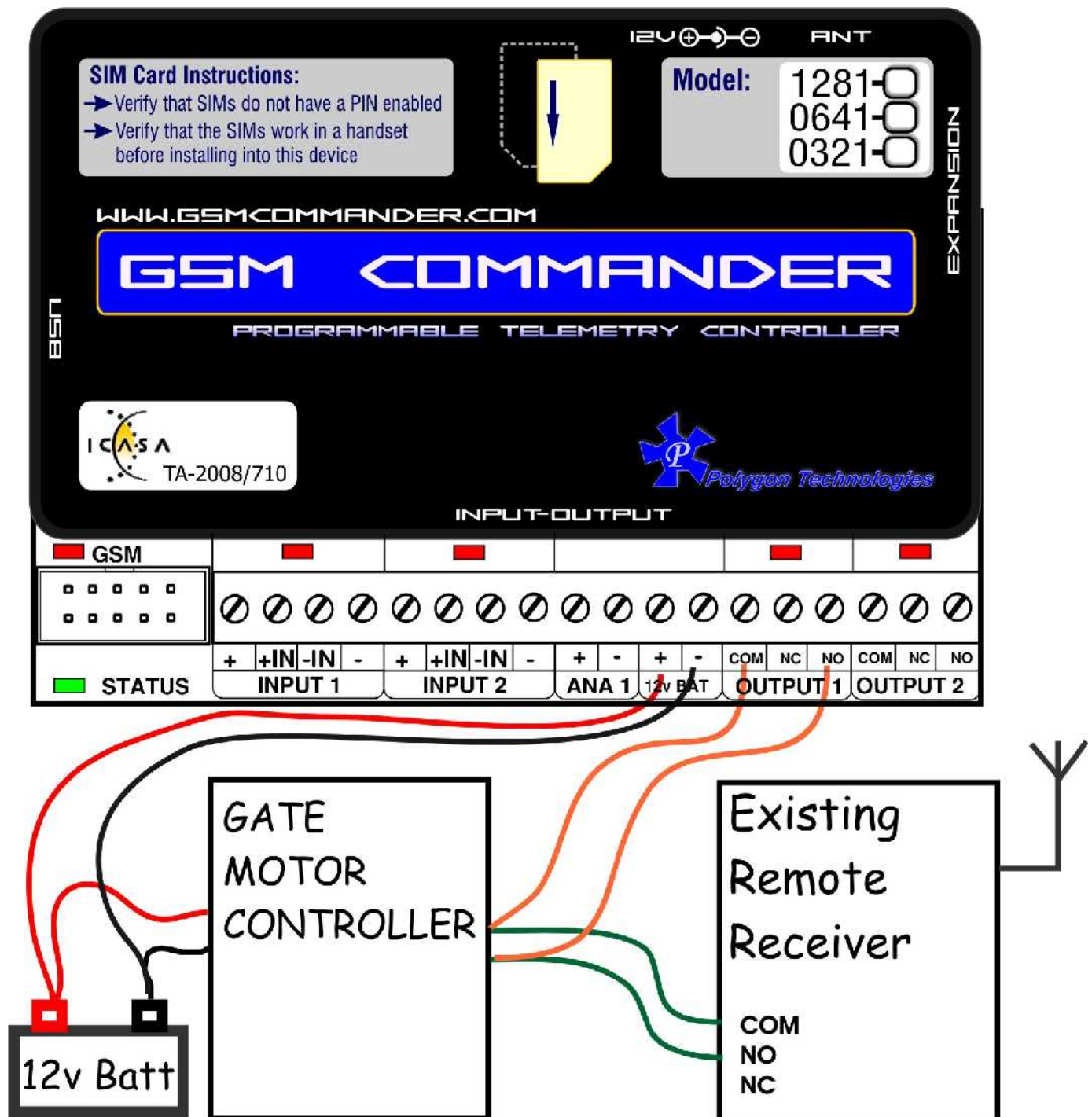
Goal

The GSMC unit must be installed and configured to open the gate when any of the 3 family members (Mom, Dad and their daughter Jenny) at the residence places a call to the unit. The unit should recognize the number, drop the call, and open the gate. The domestic worker (Precious) comes in on a Tuesday and a Thursday. She should be able to open the gate only on those days, and only during the times of 8-9 AM and 4-5 PM. When the domestic worker opens the gate, the unit should notify the lady of the house. If the daughter (Jenny) opens the gate after 11PM, the man of the house should receive a message. (Sorry Jenny!)

The unit should run from the 12V supply that is already at the gate, and should let the man of the house know if the battery voltage goes below 10v, or if the airtime is running low.

GSM Commander Wiring

The GSMC unit is installed inside the gate motor housing, where the gate controller circuitry is also located. The COM and NO terminals of output 1 is wired to the gate system, at the same physical terminals that are currently going to the COM and NO terminals on the remote receiver. Thus, if Output 1 is activated on the GSMC, it will have the same effect as if the button was pressed on the remote. The GSMC is powered from the 12v battery that is present inside the housing. The diagram below shows the wiring in detail.



GSM Commander Setup

The following statements were implemented. The statements speak for themselves, but we have included a bit of a commentary with each statement.

Name	Time Constraints	Behaviour Text
St1	None	IF VoiceCall is received from Dad (Hang up) THEN Activate Output 1 for 2 Sec
This statement will open the gate if "Dad" calls..		
St2	None	IF VoiceCall is received from Mom (Hang up) THEN Activate Output 1 for 2 Sec
This statement will open the gate if "Mom" calls.		
St3	None	IF VoiceCall is received from Jenny (Hang up) THEN Activate Output 1 for 2 Sec
This statement will open the gate if "Jenny" calls..		
St4	8:00-09:00 Tu,Th	IF VoiceCall is received from Precious (Hang up) THEN Activate Output 1 for 2 Sec
This statement will open the gate if "Precious" calls, but ONLY on a Tuesday and a Thursday, and ONLY between 8AM and 9AM..		
St5	None	IF VoiceCall is received from Precious (Hang up) THEN send "Precious opened the gate" to Mom.
This statement will notify "Mom" every time Precious opens the gate.		
St6	23:00-06:59 Every day	IF VoiceCall is received from Jenny (Hang up) THEN send "Jenny came in late!" via SMS To Dad
This statement will notify "Dad" if "Jenny" tries to open the gate after 11PM (Sorry Jenny!!)		
St7	None	IF Airtime goes below 21 units THEN send "Airtime running low" via SMS To Dad
This statement will notify "Dad" if airtime is running low		
St8	None	IF Battery voltage goes below 10.0V THEN send "The battery is running low" via SMS To Dad
This statement will notify "Dad" if there is a problem with the gate.		

Variations

Obviously the exact setup will depend on the installation. In cases where it is not required to limit certain numbers via time constraints, one could use a single statement to open the gate from any of the numbers that are shown in the list. This would be something like:

```
IF VoiceCall is received from any listed number THEN Activate Output 1 for 2 Sec
```

One could start adding all sorts of interesting behavior here. One may want an outside light to switch on 10 seconds before it opens the gate. (To illuminate any would-be driveway hijackers) Thus, if you are driving up to your house, you place a call to the unit, and it responds by switching on the light, and 10 seconds later, opens the gate. This can be done by using a trigger delay. Something like this would work (assuming the light was wired to Output 2)

```
IF VoiceCall is received from any listed number THEN Activate Output 2 for 60 Sec
```

This will switch on the light when a call is received

```
IF VoiceCall is received from any listed number THEN Activate Output 1 for 2 Sec  
[Delay 10s]
```

This will open the gate 10 seconds later..