Mercury 1x1 GSM Communicator

The Mercury 1 x 1 Communicator is a 1 Input 1 Output low cost SMS / GPRS communicator specifically designed for Gate drop call operation, and pump Water tank Control.

Capable of sending messages to other Mercury units for E.G Water level low, will send SMS to another Mercury to Switch on Pump and Water level OK to switch off Pump.

Drop Call Output can also be Latched for Switching on and off of Lights, Pumps. One call On , one call Off with return SMS's on status.

Features and Specifications.

- 1 x Digital input and 1 x 10 Amp Relay Output.
- SMS to up to 7 numbers. GPRS used for log report.
- Drop call Output 1 operation from up to 400 numbers for opening gates.
- Auto store of Drop call numbers no web interface or SMS's needed.
- New drop call number feature where users can dial the Mercury and if their number is not on drop call list the Mercury will answer the call, they can then dial 4 digit password that will add their number and open the gate to confirm. Password is easily changed by SMS.
- Stores all drop call operations during the day and Emails a list of the number and time used to up to 4 email addresses. This can be every day or the complete log sent twice per month.
- The Input can send two messages one for High and one for Low.
- The Input can be configured normally High or Normally Low.
- The Input can have a debounce time from 1 second to 9999 seconds.
- The Input can have a retrigger delay of from 1 Second to 9999 Seconds.
- Output 1 can be operated by SMS with different messages for on / off and pulse.
- Output can be programmed to switch On / Off or Pulse at various times of the day.
- Output pulse time length can be set.
- All functions can be controlled by SMS as well as the timers.
- 10 to 16 VDC low current operation.
- Automatic Low Battery SMS. Voltages can be set for Battery Low and OK.
- Battery Voltage can also be requested by SMS.
- Status Of Input and Output can be requested by SMS.
- Fully programmable over the air via SMS or from computer via EEPROM programmer.
- Free Programming Assistance.
- SIZE = 90mm x 65mm x 30mm

The Mercury can operate on Pre Paid or Contract SIM cards and when used on Pre Paid will SMS balance daily or can be set to SMS balances every from 1 to 30 days.

If Contract SIM is used the Mercury will SMS a Health Test also settable from every 1 to 30 days.

INPUT MESSAGE AND FUNCTIONALITY PROGRAMMING.

Input can handle 0 to 30 VDC

A Low is anything under 1 VDC and a High is anything above 3 VDC.

INPUT DEBOUNCE DELAY.

The input can be set to only react after a preset debounce time of between 1 and 9999 seconds, This is useful for when a delay is needed before the message is sent E.G Mains on and Off.
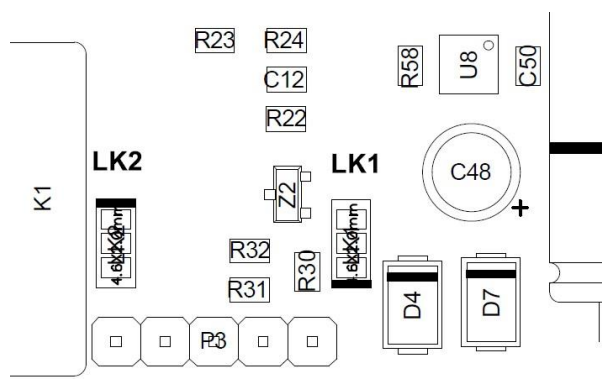
INPUT RETRIGGER DELAY.

The Input Retrigger delay can be set from 0001 which is no retrigger delay to 9999 seconds retrigger delay. The Retrigger delay is a delay that will stop multiple messages from being sent if the input should constantly change state. Once the input has changed and the Message has been sent then all further changes on this input will be ignored for the set period.

I.E. if you connect a wired Passive infra red detector to the input and set the time delay to 0300 = 5 minutes, the input will send the message when the passive is activated the first time but should there be continuous movement and the passive is activated continuously then the input will ignore the changes for 5 minutes, any change after the 5 minutes will result is another message been sent and the 5 minute timer once again stopping messages from being sent.

Using a solder link, LK1 the Input of the Mercury can be set to be normally high and have to be pulled down to send a message or normally low and then the input must be pulled high to send a message. The Default is that the Input is Low and Must be pulled High.

Always Remove Power before changing Link.

LK2 is used to change the relay from Normally Open to Normally Closed.

Input Messages and settings.

The input can send 2 messages, one for when it goes high and one for low, If only one is needed E.G Panic then the other is programmed with the Flags all set to 00000000.

Using the Flags the Input can be flagged to send only to specific numbers. E.G Input 1 to only Cell Number 2.

Battery Report.

The Mercury can send a message if the battery or power goes below or above a set value, the value is normally set to send a low battery at 10.8 VDC and will send a battery OK if the voltage Is above 12.5 VDC. The Message can also be changed to any text. Battery Laag etc. Also the Voltages can be programmed to any Low and High Voltage.

The Mercury will operate from 9 VDC to 20 VDC and must be supplied with at least 2 Amps for the GSM peaks, A good Power supply or charger with Battery is needed.

OUTPUT TIMERS and MESSAGES.

The Mercury has 1 Output that can either be commanded to change state, (Latching) or (Pulse Non Latching) by an SMS to the Mercury or by programming the Internal Timers.

The Open, Closed or Pulsed messages can be programmed.

The output has 2 closed, 2 open and 2 pulsed times that can be programmed. Once programmed these times will operate the relay everyday including weekends and holidays.

Relay Output is a Dry contact change over rated at 10 Amps this relay can also handle 220 VAC at 5 Amps.

DROPPED CALL Non Latch RELAY OPERATION.

The Mercury also has a dial in drop call function where up to 400 numbers can be programmed into the unit and if any one of those numbers calls the Mercury and the number is recognized the Mercury will activate the relay to pulse. This can be used to open gates and doors ETC.

On a drop call the Mercury will not SMS back to any number, however if a GPRS number is programmed into the Mercury it will store all drop call numbers and their times and GPRS them back to the GPRS Server number at 11 PM each night for record purposes. These records can then be emailed every day or on the 1st and 15th of the Month. NOTE: The Mercury must be sent a command to Store and send the Drop Call Numbers.

DROPPED CALL Latching RELAY OPERATION.

The Mercury can also be commanded to Latch the Relay on a drop call and then to unlatch the Relay on the next Drop Call, This will enable the customer to switch on Lights, Pumps or anything needing an on / off relay to operate it.

DROP CALL NUMBER PROGRAMMING.

When using the Mercury for Dropped call Gate or Door operation there are now 3 methods of programming the drop call number into the Mercury.

1.

- A. Any Cell Phone dialling the Mercury must have its Caller Line Identity switched on.
- B. If the Mercury does not recognise the number calling then it will answer the call and the calling cell phone can then enter a 4 digit password. If the password is correct the Mercury will drop the call and open the gate etc.

C. The Calling number will then be added to the drop call list and any future calls to the Mercury will be dropped and the gate will open.

D. The Password can be changed by sending the Mercury the following SMS.

#xxxx;#yyyy   where xxxx is the old password and yyyy the new password. Only use numbers.

2.

The Mercury will on receipt of an SMS Command start to log / Record all numbers calling it and if connected to a gate it will open the gate on the drop call. All these numbers will then be stored in the Mercury.

The command is to start recording is   #xxxxD1 Where xxxx is the password programmed into the Mercury.

The Mercury will stop Recording the numbers when it sends a 24 hour test or on receipt of the SMS command to stop recording.

The command to stop recording is   #xxxxD0

3.

The Third method is as follows. Up to 6 Numbers can be programmed into the Mercury at a Time. To do this yourself please use the following Format of an SMS and send to the Mercury.

#xxxxaddnum"+27831234567" for 1 number

or #xxxxdelnum"+27831234567;+27831234567;+27821234567" please note the " at the beginning and end of the numbers and also do not add a ; at the end of the last number.

To delete a number or numbers use below.

#xxxxdelnum"+27831234567" for 1 number

or #xxxxdelnum"+27831234567;+27831234567;+27821234567" please note the " at the beginning and end of the numbers and also do not add a ; at the end of the last number.

xxxx   is the password set.

Programming

All Programming is done Over the Air (SMS) or via an EEPROM programmer and free software.

Free programming is available for small qty users from the Manufacturer.

Once installed with a working SIM card the Mercury will automatically communicate with the Manufacturer�s control Room.

To Program the Mercury please call the control room on 012 6544837 or 0784568288.

Commands,   xxxx is the user password EG #4321I

Function Description	Function Char
Request Gprs Base Sms Base and SMSC numbers	#xxxxI
Request Cell 1 Cell2 Cell3 Cell 4 cell 5 cell 6	#xxxxJ
Request Passwords Units Own number	#xxxxK
Request GPRS settings	#xxxxM
Request Gprs Attach Status	#xxxxG?
Set Gprs as main method of comms with SMS fallback	#xxxxG1
Set SMS as the only Method of Comms Default	#xxxxG0
Request Health Rep time / Batt volts	#xxxxE
Request The status of Input 1	#xxxxa
Request Status of the Output	#xxxxR
Report Timer Values of Output 1	#xxxx*
Request Signal strenth	#xxxxT
Request Product Id and Software Version	#xxxxv
Output 1 Closed	#xxxxA1
Output 1 Open	#xxxxA0
Output 1 Pulsed	#xxxxA9
Airtime Request	#xxxxZ
Erase All Dropped Caller Numbers	#xxxxY
Request Date and Time	#xxxxt
Start to store drop calls	#xxxxD1
Stop Drop call Storage default	#xxxxD0
Input ON default	#xxxxO
Input OFF	#xxxxP
Log On	#xxxxL1
Log Off Default	#xxxxL0
Get Lat and Long	#xxxxF
Use drop call for Latch Unlatch with Message	#xxxxB1
Use Drop Cal for Pulse no Message, DEFAULT	#xxxxB0