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Connecting. Converting. Leading !

Document Name: USER MANUAL for Smart Alert.
Model SA M

INTRODUCTION

SMART ALERT (SA) is used for obtaining quick SMS alerts from field inputs. SA M polls Modbus slave devices through RS 485 interface and send an SMS containing Modbus data and alert messages for MODBUS. Additionally, SA MV Sends voice alert messages to voice reporting numbers and SA ME sends email alerts to preconfigured mail IDs

FEATURES

- 24V DC power supply.
- Built in GSM modem.
- Storage of total 10 SMS reporting and separate 10 voice reporting telephone numbers. (Each with 14 digits max)
- Modbus protocol over RS485 interface supported.
- Buzzer for audible status.
- Configuration via preformatted SMS.
- Dimensions : 119x 119 x 36 mm (Excluding connectors and antenna)

INSTALLING THE UNIT

Inserting/ Removing the SIM Card

To insert or remove the SIM Card, it is necessary to press the yellow SIM holder ejector button with sharp edged object like a pen or a needle. When this is done the SIM holder comes out a little, then pull it out and insert or remove the SIM Card. It is very important that the SIM is placed in the right direction for proper working.

Connecting External Antenna

Connect the external SMA antenna to the male antenna connector of the unit. The right Antenna should be used with the specified frequency otherwise it can affect the communication.

Power Supply – Screw type connector with +24V DC supply.

OPERATION

At power on, unit beeps twice and power LED glows steady. The unit checks for range and range LED 1 blinks while the unit gets the range. When the range is found, LEDs become steady. In good range, all 3 LEDs glow. In medium range, only 2 LEDs will glow and in low range, only 1 LED will glow.

If any Modbus slave Device is connected to SA M then, MODBUS parameter data of the slave device is periodically sent to all the reporting Numbers or alerts sent to reporting numbers either by SMS/Voice/Mail

SA M is Modbus Master. Total of 10 MODBUS queries can be configured and Maximum 50 parameters can be read using MODBUS. Function code 01,02,03 and 04 are supported.

Periodic Reporting Feature-
SA M Device continuously poll MODBUS data and will send an SMS of current value of all parameters defined by MODBUS query to reporting numbers if periodic reporting is enabled. The period of reporting is also configurable from 0001 ~ 1440 minutes. If this value is set to zero, periodic status reporting is disabled.

Alert message generation-
Low and high thresholds for analog inputs on MODBUS(function code 03 and 04) can be configured by sending SMS to the unit. When analog input's value goes below low threshold or goes above high threshold, unit will send alert SMS to reporting numbers.
If low or high thresholds are set to 0 then, if value of MODBUS register changes from 0 to 1 unit gives high alert .If MODBUS register value changes from 1 to 0 unit gives low alert.

SMS Features-
SA M will report the Modbus Alerts to maximum 10 SMS reporting numbers configured in unit. Both Low and High alert SMS sent to reporting numbers

Voice features-
SA MV will report the Modbus alerts to voice reporting numbers maximum 10. When MODBUS alert generated, SA MV will call the voice reporting number and pre-recorded voice will be played on mobile number. Periodic reporting feature is not available in SA MV and either LOW or HIGH alerts can be generated in SAMV. Both LOW and HIGH alerts for a single MODBUS parameter is not available.

Mail Features-
SA ME will report the Modbus alerts and periodic Modbus parameter data to maximum 10 mail Ids configured in unit. Both low and High alert mails sent to reporting mail IDs

Authentication Feature-
Configuration of unit can be done through any mobile number when authentication numbers are blank. Once finished configuration, user can enter authentication numbers. Once authentication numbers entered in the unit then any configuration change can be done using these two authenticated numbers only. These numbers can be changed at site.

At factory shipping time, default authentication numbers are kept blank.

When unit receives pre-formatted SMS messages, it acts per the message command. The configuration can be changed only through authenticated numbers if entered; whereas general status read can be done through any number.

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Reporting SMS No/Voice No/Mail ID Configuration

- **To set SMS reporting numbers**

  #1231#XX#XX#XX#XX#XX#XX#XX#XX#XX#XX*

  Where, XX is dialing number. Maximum length can be 14 digits for each number.

  Unit will send acknowledgement SMS as following: (Assuming 2 numbers are configured)

  Command: ***#1231#+910123456789#+919876543210****
  Acknowledgement: ***SMS Nos:***
  +910123456789
  +919876543210

- **To set voice reporting numbers(SAMV-For voice reporting)**

  #123V1#XX#XX#XX#XX#XX#XX#XX#XX#XX#XX*

  Where, XX is dialing number. Maximum length can be 14 digits for each number.

  Unit will send acknowledgement SMS as following: (Assuming 2 numbers are configured)

  Command: ***#123V1#+910123456789#+919876543210****
  Acknowledgement: ***Voice Nos:***
  +910123456789
  +919876543210

- **To set mail Ids**

  #123E1#XX#XX *
  #123E2#XX#XX *
  #123E3#XX#XX *
  #123E4#XX#XX *
  #123E5#XX#XX *

  Where, XX is mail ID. Maximum length can be 45 chars. for each mail ID.
  First 2 mail Ids can be configured by #123E1#...* command
  3 & 4 MAIL Ids can be configured by #123E2#...* command
  5 & 6 MAIL Ids can be configured by #123E3#...* command
  7 & 8 MAIL Ids can be configured by #123E4#...* command
  9 & 10 MAIL Ids can be configured by #123E5#...* command

'#' and '*' should not be entered in any mail ID

Unit will send acknowledgement SMS as following: (Assuming 2 mail ids are configured)

Command:	***#123E1#prachik@santelequip.com#san@gmail.com****
Acknowledgement:	***1 to 2-*** ***prachik@santelequip.com*** ***san@gmail.com***

Note: If user want to store more than 2 mail Ids then only use comands #123E2#.....*, #123E3#.....*, #123E4#.....*, #123E5#.....*.

*Its recommended to configure e-mail IDs sequentially. E-mail ID no. 1 should be configure first using command #123E1#...**

- **To Delete all Mail Ids**

#123DEL2*

This command will delete all the mail Ids stored in the unit.User can add new mail Ids again.

Command:	**#123DEL2***
Acknowledgement:	***Mail IDs Cleared***

MODBUS Configuration

- **To set MODBUS query frame**

To set Query1 to Query5
#123Q01#XX,YY,ZZ,AA *

To set Query6 to Query10
#123Q02#XX,YY,ZZ,AA *

And so on…

Where, XX = Device ID
YY= Function code,
ZZ = Start address
AA = Length of the query.

User have to set queries sequentially only.

E.g. #123Q01#01,03,100,20#02,04,145,10* will configure Query 1 and 2 where 01 is device ID, 03 is function code,100 is the start address and 20 will be the length for Query 1 and 02 is device ID, 04 is function code,145 is the start address and 10 will be the length for Query 2.

Command: #123Q01#01,03,100,20#02,04,145,10*
Acknowledgement: ***Queries:***
01,03,100,20
02,04,145,10

Note: If user want to store more than 5 queries then only use comand#123Q02#.....*and so on.Total 50 queries can be stored using #123Q01#..* to #123Q10#...* commands

- **To Delete all MODBUS Queries**

#123DEL1*

This command will delete all the queries stored in the unit.User can add new queries then.

Command: **#123DEL1***
Acknowledgement: ***MODBUS Queries Cleared***

- **To set No of MODBUS Inputs**

#123IP#05*

This command will set number of MODBUS Inputs(Parameters) to 5

Command: **#123IP#05***
Acknowledgement: ***No of Inputs on MODBUS:05***

- **To set MODBUS Polling Time**

#123QT#S02*

This command will set modbus scan time to 02 Seconds.
By defaulty the modbus scan time will be 05 seconds User can change it using above command.

Command: **#123QT#S02***
Acknowledgement: ***Polling Time 02 Seconds***

Note:Polling time can be in Minutes / Hours.

- **To set MODBUS Format for all MODBUS parameters.**

  #123W# XXXXXXXXXXXX *

  Where X will be 'I' or 'F or 'S' or 'L' or 'M'.
  I-Integer
  F-Float
  S-Swapped float
  L- unsigned Long integer
  M- unsigned long integer swapped

  This command will set format for MODBUS parameters to be scanned. It is mandatory to set format for all the parameters that are to be scanned using MODBUS query.

  Command: **#123W#IIIIFFFFIIFF***
  Acknowledgement: ***MODBUS FORMAT IS:*** **IIIIFFFFIIFF**

  Note:No of 'X' present in command = MODBUS parameters

- **To set Function codes for all Modbus parameters**

  #123K1#XX*

  Where X is the fumction code which can be '1'/'2'/'3'/'4'.

  Command: **#123K1#1111111111***
  Acknowledgement: ***Function codes:*** **1111111111**

  Note:No of 'X' present in command = MODBUS parameters

- **To set Bitwise/Registerwise selection for all Modbus parameters**

  If Modbus paramerter is processed bitwise, means evey bit of the Modbus register can generate the alert then B value to be used else R value is to be used .
  If Modbus paramerter is processed Registerwise then Modbus Register generates only one alert per parameter.

  #123K2#XX*

  Where X is the B/R either bitwise or registerwise.

  Command: **#123K2#RRRRRRRR***

Acknowledgement: ***Bitwise/registerwise selction of Modbus Para-***
RRRRRRRR

Note:No of 'X' present in command = MODBUS parameters

- **To set bits number if modbus parameter is it is defined as bitwise**

If Modbus Parameter is processed Bitwise then only select the bits en each parameter else this setting is not required

#123GXX#Y,Z*

Where X is bit number in modbus parameter number which is defined as bitwise .Y and z are bit numbers (00 to 15) in that modbus parameter

Command: **#123G01#00,04,08,15***
Acknowledgement: ***Bitwise configuration for parameter 01:***
00
04
08
15

- **To set no of Alerts/modbus parameter**

If Modbus Parameter processed Bitwise then maximum 16 alerts can be generated using a single Modbus parameter.this alert count is to be stored using this command.
Modbus Parameter processed Registerwise then maximum 01 alert can be generated using a single Modbus parameter

#123K3#X,X,X*

Where X is between 01 to 15 if modbus parameter is bitwise and 01 if modbus parameter is registerwise.

Command: **#123K3#01,01,01,01,01***
Acknowledgement: ***Alt/IP***
01
01
01
01
01

Note:No of 'X' present in command = MODBUS parameters

- **To set parameterwise alert generation selection--Low/High/Both**

Every Modbus parameter can generate either Low/high/or both High and Low alerts.
Function Code 03 and 04-
L - If Modbus parameter value goes below low threshold
H - If Modbus parameter value goes above high threshold
B - If Modbus parameter value goes above high threshold-high alert and if it goes below low threshold-low alert

Function code 01 02 03 04-
L - If Modbus parameter value changes from 1 to 0
H - If Modbus parameter value changes from 0 to 1
B - If Modbus parameter value changes from 0 to 1-high alert and if it changes from 1 to 0-low alert

#123K7#XX*

Where X is the L/H/B.L-Low to high alert H-High to low alert and -Both low and high alerts

Command: **#123K7#LHHLH***
Acknowledgement: ***Parameterwise Alert Generation Selection***
LHHLH

Note:No of 'X' present in command = MODBUS parameters.
'B' is not valid for SAMV-voice application.

- **To set MODBUS Threshold for MODBUS alert SMSs(Function code 03/04)**

Threshold values are required for Function code 03 and 04 if user wants to generate alert using low and high threholds.
Default values of thresholds are 0 so Modbus parameter generates alerts when parameter value changes from 1 to 0 and 0 to 1.
Threshold values need to be set as per the Modbus parameter format

#123TH1#20.0,80.0#10.3,78.9#12.7,90.9#25.3,40.5#15.0,67.8*

Format-Float/swapped float

The above command will set MODBUS thresholds for 5 analog inputs on MODBUS.

Command: **#123TH1#20.0,80.0#10.3,78.9#12.7,90.9#25.3,40.5#15.0,67.8***
Acknowledgement: **20.0, 80.0**
10.3, 78.9
12.7, 90.9
25.3, 40.5
15.0, 67.8

Note: 1digit after decimal point is necessary.Do not enter the thresholds as 20,80 etc.

Format -Integer/Long/swapped long

Command: #123TH1#20,80#10,78#12,90#25,40#15,67*
Acknowledgement: 20, 80
10, 78
12, 90
25, 40
15, 67

Maximum 50 parameters can be processed.
For 11 to 20 parameters use #123TH2#....*command.
For 21 to 30 parameters use #123TH3#....*command.
For 31 to 40 parameters use #123TH4#....*command.
For 41 to 50 parameters use #123TH5#....*command.

If threshold application not required then set thresholds to 0 to get alerts on 0 to 1 and 1 to 0 transition of modbus input

- **To set Text to report MODBUS alert SMSs**

Text can be 30 characters long Max. Please note characters '#' and '*' should not be part of SMS alert text.
Max value of XX is 50.

For Low to High modbus SMSs

#123ZHXX#Text*

Where XX is the Parameter number on MODBUS

Command: #123ZH01#Temperature sensor high*
Acknowledgement: Reporting Text: Temperature sensor high

For High to low Modbus SMSs

#123ZLXX#Text*

Where XX is the Parameter number on MODBUS

Command: #123ZL01#Temperature sensor low*
Acknowledgement: Reporting Text: Temperature sensor low

Periodic Reporting Feature Configuration(SA M and SA ME models only)

SA M and SA ME supports periodic reporting of Modbus data using custom SMS/Mail.
The format of custom SMS/Mail is configurable using SMSs.
This feature is disabled by default by setting the periodic interval to 0.

To enable the feature-
Set periodic interval to non zero value in minutes.
Select the configurable/customized periodic message
Select the Modbus parameters to be send in periodic message.

Custom message can report any 4 parameters in one SMS/mail. So if 6 parameters are selected then 2 custom messges sent to reporting nos. All 50 Modbus parameters can be reported using 13 messages .User can select the Modbus parameters to be send in custom message.

Custom SMS/Mail Format-
Device Information
Parameter 1 Text:Parameter 1 Value Parameter 1 unit
Parameter 2 Text:Parameter 2 Value Parameter 2 unit
Parameter 3 Text:Parameter 3 Value Parameter 3 unit
Parameter 4 Text:Parameter 4 Value Parameter 4 unit

In above custom message- Device Information text is configurable and is of 10 bytes, Parameter 1 to 4 text is configurable and is of 15 bytes, Parameter 1 to 4 unit is configurable and is 5 bytes. Parameter 1 to 4 value is the instataneous value at the time of sending periodic SMS

- **To set periodic interval**

#123HXXXX*

XXXX in the above format represents minutes which can take values from 0001 to 1440.

The current value of Modbus parameters is sent periodically to reporting numbers .

e.g. #123H0001* will set periodic reporting time to 1 minute. So, when this time is set through SMS, unit will send status message after every one minute.
Default Periodic minutes are set to 0000.

Unit will send acknowledgement SMS as described below:

Command: ***#123H0001****
Acknowledgement: ***Periodic Reporting minutes are set to:***

0001

Note: #123H0000* will disable the periodic status reporting.SAMV do not have this feature

- **To enable custom periodic SMS/Mail**

#123K4#XX*

Where X is the Y/N,First Y will enable the periodic SMS with custom text and second Y is to show value of parameter in alert message for function codes 03 and 04

Command:	**#123K4#YN***
Acknowledgement:	***Custom Message selected***
	Show value is alert message disable

- **To set parameters in custom periodic message**

By default all parameters are selected to report in customized SMS/Mail.
If user wants only selected parameters then he can choose the parameters using this message.

#123K5#X,X,X,X*

Where X is the parameter no 01 to 50.

Command:	**#123K5#01,02,03,04***
Acknowledgement:	**Para sel**
	01
	02
	03
	04

This messge will select only 4 parameters to be reported in periodic SMS/Mail.

- **To set parameter text in custom periodic message**

#123LXX#Text*

Where XX is 01 to 50

Command:	**#123L01#Temperature-***
Acknowledgement:	***Modbus custom text 01***
	Temperature-

Note: Text can be 15 bytes max # and * should not be part of text

- **To set parameter unit text in custom periodic message**

  #123LUXX#Text*

  Where XX is 01 to 50

  Command: **#123LU01#Kg***
  Acknowledgement: ***Modbus custom text unit01*** **Kg**

  Note: Text can be 5 bytes max # and * should not be part of text

- **To set device information text in custom periodic message**

  #123M9#Text*

  Command: **#123M9#Device 01***
  Acknowledgement: ***Reporting text for device :*** **Device 01**

  Note: Text can be 10 bytes max # and * should not be part of text

- **To set Date and Time**

  #123DT#DD/MM/YY#hh:mm:ss*

  Wher,DD-Date,MM-Month and YY-Year.hh-Hours,mm-Minutes and ss-Seconds
  Unit supports 24 Hour clock format.

  E.g #123DT#11/02/2016#15:51:45* will configure date as 11/02/2016 and Time as 15:51:45.

  Unit will send acknowledgement SMS as following:

  Command: **#123DT#11/02/2016#15:51:45***
  Acknowledgement: ***Date – 11/02/2016***
  Time – *15:51:45*

- **To set serial parameters of RS485 port**

  #123Y#AA,BB,CC,DD*

Where,AA is the baud rate for RS485 port. AA takes values as 1200,2400,4800,9600,19200,38400,57600 and 115200.
BB is the No of data bits which should be 8.
CC is the Parity bit,which takes values N-None,E-Even and O-Odd
DD is the stop bit,which takes values 1 or 2

E.g-#123Y#19200,8,O,2* will configure baud rate of RS485 as 19200, Data bits 8,Parity-odd and Stop bits-2
While dispatching the unit the default settings are 9600,8,N,1

Unit will send acknowledgement SMS as following:

Command:	***#123Y#9600,8,N,1****
Acknowledgement:	***Serial Parameters are-***
	Baud Rate-*9600*
	Data Bits-*8*
	Parity-*NONE*
	Stop Bits-*1*

Note:New settings will take effect when Unit restarts.

Voice Configuration(SAMV model only)

Maximum 50 voices can be recorded in SA MV device. Either Low or high alerts can be reported using voice messages.Evrey parameter have a unique voice prestored in unit which will be played back to reporting voice nos.

- **To Record Voice for voice reporting**

#123RECMXX*

Where XX is the voice message number and takes values from 01 to 50.

When user sends above command unit will dial the mobile number from which above SMS is received

After receiving the call the user can record the voice .Recording will continue for 9 seconds. After that call get disconnected automatically and a long beep is heard.

Note: If user wants to disconnects recording in between recording period of 7 seconds then he can cut the call, but user should wait for a long beep from unit ,that is heard after recording period completes.
If user wants new voice to be recorded, then again send the same SMS and record New voice for that channel. Old voice gets deleted and new one get saved in the unit.

- **To Playback recorded Voice for voice reporting**

#123PLAYMXX*

Where XX is the voice message number and takes values from 01 to 50.

When user sends above command unit will dial the mobile number from which above SMS is received

After receiving the call, the recorded voice for that channel is heard for 16 seconds. After that call get disconnected automatically.

Note: If user wants to disconnect Playback in between recording period of 16 seconds then he can cut the call ,but user should wait for a long beep from unit , that is heard after Playback period completes.

Mail Configuration(SAME model only)

By default gmail account SMTP settings are stored in unit. Modbus Alert or periodic message is reported using this mail account.

- **To set APN name**

#123J1#XX*

Where XX is the APN name of the service provider of sim card which is present in SAME unit.
APN name can be 20 chars max.
Unit will send acknowledgement SMS as following:

Command:	***#123J1#internet****
Acknowledgement:	***APN Name-internet***

- **To set Sender details**

#123J2#AA#BB#CC#DD*

Where,
AA is the username of sender which can be 20 chars max.
BB is the password of sender which can be 20 chars max
CC is the name of sender which can be 20 chars max
DD is the mail ID of sender which can be 40 chars max

Unit will send acknowledgement SMS as following:

Command:
#123J2#SantelequipAlert#San16telequip#SAME#SantelequipAlert@gmail.com*
Acknowledgement: ***Sender Details are-***
User name-*SantelequipAlert*

Password-*San16telequip*
Name-*SAME*
Address- *SantelequipAlert@gmail.com*

Note:Default sender details are same as shown above

- **To set SMTP server,port and security**

#123J3#AA#BB#CC*

Where,
AA is the SMTP server name,which can be 60 chars max
BB is the SMTP port,which can be 4 chars max
CC is the security which can be 0-NO SSL,1-SSL and 2-STARTTLS

Unit will send acknowledgement SMS as following:

Command:	***#123J3#smtp.gmail.com#465#1****
Acknowledgement:	***Server Details are-***
	Server-smtp.gmail.com
	Port-465
	Security-SSL

Note:Default server details are same as shown above

- **To set Mail subject**

#123J4#XX*

Where XX is the mail subject which can be 50 chars max
Unit will send acknowledgement SMS as following:

Command:	***#123J4#* MODBUS Email ***
Acknowledgement:	***Email Subject is-***
	MODBUS Email

Note:Default email subject is same as shown above

Authentication Configuration

Authentication configuration is not mandatory. If authentication numbers are blank then user can configure the unit using any mobile number. If authentication numbers are entered then only authenticated mobile number can change the configuration of unit.

- **To set authentication numbers**

#123A#XX#XX*

Where, XX is authentication number. Maximum length can be 14 digits for each number.

E.g. #123A#+910123456789#+919876543210* will configure +919871045611 as first authentication number and +919871045501 as second authentication number.

Unit will send acknowledgement SMS as following:

Command:	***#123A#+910123456789#+919876543210****
Acknowledgement:	***Authentication numbers are:***
	+910123456789
	+919876543210

NOTE: Authentication numbers must be stored along with country code. Maximum of 2 authentication numbers can be stored. If authentication numbers are blank then Unit can be configured using any mobile number.

After Configuration send #123Reboot* SMS to the gateway to reboot the gateway

SMS:	***#123Reboot***
Acknowledgement:	***Reboot message received***

SMS FORMATS TO READ CONFIGURATION

For reading the configuration, SMS can be sent from any number. i.e. it is not necessary that it should be authentication number only. The SMS formats are mentioned below.

- **To read authentication numbers**

When unit receives this SMS, it will reply with an SMS as follows:

Command:	***#123RA****
Acknowledgement:	***Authentication numbers are:***
	+910123456789
	+919876543210

- **To read the currently configured SMS reporting numbers**

When unit receives this SMS, it will reply with an SMS as follows: (Assuming only 02 SMS reporting numbers are configured.)

Command: ***#123R1****
Acknowledgement: ***SMS Nos:***
+910123456789
+919876543210

- **To read the currently configured Voice reporting numbers(SAMV model only)**
  When unit receives this SMS, it will reply with an SMS as follows: (Assuming only 02 voice reporting numbers are configured.)

Command: ***#123RV1****
Acknowledgement: ***Voice Nos:***
+910123456789
+919876543210

- **To read Date and Time**

Command: **#123RDT***
Acknowledgement: ***Date – 11/02/2016***
Time – ***17:53:23***

- **To read Serial parameters of RS485**

Command: ***#123RY****
Acknowledgement: ***Serial Parameters are-***
Baud Rate-*9600*
Data Bits-*8*
Parity-*NONE*
Stop Bits-*1*

- **To read periodic status reporting hours**

Command: ***#123RH****
Acknowledgement: ***Periodic Reporting minutes are set to:***
0001

- **To read MODBUS Query set**

If only 2 Queries are set then,

Command: ***#123RQ01****
Acknowledgement: ***Queries:***
01: 01,03,100,20
02:02,04,145,10

Command: ***#123RQ02****
Acknowledgement: ***Queries:***

- **To read MODBUS Polling Time**

Command: **#123RQT***
Acknowledgement: ***Polling Time 02 Seconds***

- **To read MODBUS Format**

Command: **#123RW***
Acknowledgement: ***MODBUS FORMAT IS:***
IIIIFFFFIIFF

- **To read No of MODBUS Inputs(Parameters)**

Command: **#123RIP***
Acknowledgement: ***No of Inputs on MODBUS:05***

- **To read function codes**

Command: **#123RK1***
Acknowledgement: ***Function Codes are:***
11111111

- **To read Bitwise/registerwise selection**

Command: **#123RK2***
Acknowledgement: ***Bitwise/registerwise selction of Modbus Para-***
RRRRRRRR

- **To read no of alerts per modbus parameter**

Command: **#123RK3***
Acknowledgement: ***Alt/IP***
01
01
01
01
01

- **To read customized periodic SMS enable/disable status(For SA M and SAME only)**

Command: **#123RK4***
Acknowledgement: **Cutom Message Selected**
Show value in Alert msg Disable

- **To read parameters in periodic reporting message(For SA M_ and SA ME only)**

Command: **#123RK5***
Acknowledgement: ***Para sel***
01
02
03
04

- **To read parameterwise alert generation selection-Low/High/Both**

Command: **#123RK7***
Acknowledgement: ***Parameterwise Alert Generation Selection***
LHHLH

- **To read MODBUS Thresholds(Function code 03/04)**

Command: **#123RTH1***
Acknowledgement: **20.0, 80.0**
10.3, 78.9
12.7, 90.9
25.3, 40.5
15.0, 67.8
To read parameter 11 to 20 thresholds-#123RTH2*
To read parameter 21 to 30 thresholds-#123RTH3*
To read parameter 31 to 40 thresholds-#123RTH4*
To read parameter 41 to 50 thresholds-#123RTH5*

- **To read MODBUS Alert SMS Text**

Command: **#123RZH01***
Acknowledgement: **Reporting Text: Temperature sensor high**

Command: **#123RZL01***
Acknowledgement: **Reporting Text: Temperature sensor low**

Similarly use #123RZHXX* and #123RZLXX* where XX-01 to 50

- **To read parameter Text in custom periodic message**

  Command: **#123RL01***
  Acknowledgement: **Modbus custom text 01**
  Temperatue-

- **To read parameter unit Text in custom periodic message**

  Command: **#123RLU01***
  Acknowledgement: **Modbus custom text unit01**
  kg

- **To read device information Text in custom periodic message**

  Command: **#123M9#Device 01***
  Acknowledgement: ***Reporting text for device :***
  Device 01

- **To read APN name**

  Command: **#123RJ1***
  Acknowledgement: **APN name-internet**

- **To read sender details**

  Command: **#123RJ2***
  Acknowledgement: ***Sender Details are-***
  User name-*SantelequipAlert*
  Password-*San16telequip*
  Name-*SAME*
  Address- *SantelequipAlert@gmail.com*

- **To read SMTP sever details**

  Command: **#123RJ3***
  Acknowledgement: ***Server Details are-***
  Server-smtp.gmail.com
  Port-465
  Security-SSL

- **To read email subject**

  Command: **#123RJ4***
  Acknowledgement: ***Email Subject is-***
  MODBUS Email

- **To read email ID 1 to 2**

  Command: **#123RE1***
  Acknowledgement: ***1 to 2 - prachik@santelequip.com san@gmail.com***

- **To read email ID 3 to 4**

  Command: **#123RE2***
  Acknowledgement: ***3 to 4- prachik@santelequip.com san@gmail.com***

- **To read email ID 5 to 6**

  Command: **#123RE3***
  Acknowledgement: ***5 to 6- prachik@santelequip.com san@gmail.com***

- **To read email ID 7 to 8**

  Command: **#123RE4***
  Acknowledgement: ***7 to 8- prachik@santelequip.com san@gmail.com***

- **To read email ID 9 to 10**

  Command: **#123RE5***
  Acknowledgement: ***9 to 10- prachik@santelequip.com san@gmail.com***

LED INDICATIONS

LED NAME	Meaning
Power	ON - Unit is powered on.
RTU-TX	Unit is transmitting MODBUS Query
RTU-RX	Unit received response from MODBUS slave device
RANGE	Indicates unit range.
	1 LED ON - Low rage.
	2 LEDs ON - Medium range.
	3 LEDs ON - Good range.

CONNECTOR DETAILS

- 3 Pin Howder connector for Power.

CONNECTOR NAME	DETAILS
Supply+ve (+)	Positive Supply-IN
Supply GND(-)	Supply GND
E	Earth

- 3 Pin Howder connector for RS485

CONNECTOR NAME	DETAILS
D+	RS 485 D+
D-	RS485 D-
GND	GND