T20 COMMANDS

Asia Grich

CONTENTS

Unit 3, No 21, 19th alley, southern Pirozan sq, Sheykh Bahaei St.

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The instructions of SMS COMMANDS

You can use this sms commands to remote control and configure RTU

SMS commands is valid when RTU is in working mode

You can execute this sms commands through RS232. But the point is that when the input command is made through RS232, the "%" has to be input ahead, while if it is sent via sms, no "%" or "< CR >" is needed.

Type	Format	Note
Config commands	%command<value><enter>	Return OK or ERROR
Inquire commands	%command<?><enter>	Return the result or ERROR

Setup control server phone

CS Setup Control server phone		
Write Command **CS<n>=[phone]**	*Parameters:* <n>: CS phone index, form 0~9 [phone]: a valid phone number or null string to delete	*Example:* **CS0=138000000000**
Read Command **CS?**	Query all CS phone number	
Delete Command **CS<n>**		

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Basic parameters

UB Setup RTU com port0 BPS		
Write Command **UB=<BPS>**	Parameters <BPS>: 300-115200 Default BPS is 9600BPS	*Example:* **UB=9600**
Read Command **UB=?**		

UP Setup RTU com port0 Parity		

Write Command
 	
UP=<Parity>
	Parameters
	<Parity>:
	    0: None (default)
	    1: Odd Parity
	    2: Even Parity
	    3: 0 Parity
	    4: 1 Parity
		Example:
		UP=0

Read Command **UP=?**		

SIGNALA Enable or Disable low signal Alarm		

Write Command
 	
SIGNALA=<En>
	Parameters
	<En>
	    0: Disable (default)
	    1: Enable
		Example:
		SIGNALA=1

Read Command **SIGNALA=?**		

RSILOW Setup the thread hold value of Signal Low Alarm		

Write Command
 	
RSILOW=<Signal>
	Parameters
	<Signal>
	    Normal Signal range is 10-30
	    0 or 99 means no signal at all
		Example:
		RSILOW=11

Read Command **RSILOW =?**	When signal low, RTU will make a sound alarm and try to send SMS	

DAS Enable or Disable Daily Report SMS at 10.pm everyday		

Write Command
 	
DAS=<En>
	Parameters
	<En>
	    0: Disable
	    1: Enable (default)
		Example:
		DAS=1

Read Command **DAS =?**		

PRTCS Send proof time request SMS to first valid CS number when power up		

Write Command
 	
PRTCS=<En>
	Parameters
	<En>:
	    0: Disable
	    1: Enable (default)
		Example:
		PRTCS=1

Read Command **PRTCS=?**		

PRTSP Send proof time request SMS to SP when power up		

Write Command
 	
PRTSP=<En>
	Parameters
	<En>:
	    0: Disable (default)
	    1: Enable
		Example:
		PRTSP=1

Read Command **PRTSP=?**		

SP Setup the SP phone number	
Write Command **SP=<phone>**	SP phone number is a phone that can automatic reply a SMS to any incoming SMS, RTU use it to update interior Clocker by the timestamp in SMS, the SMS contents is not important
Read Command **SP=?**	SP phone number can be RTU's simcard number. So it will send proof time sms to itself when power up and RTU will receive this sms. So RTU can take out the time stamp from the sms PDU. Note: if the RTU's simcard is changed, you must change the SP also.

RPLSUC Reply SMS for successfully executed SMS command		

Write Command
 	
RPLSUC=<En>
	Parameters
	<En>:
	    0: Disable
	    1: Enable (default)
		Example:
		RPLSUC=1

Read Command **RPLSUC=?**		

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RPLERR Reply SMS for incorrect executed SMS command		

Write Command
 	
RPLERR=<En>
	Parameters
	    <En>:
	        0: Disable
	        1: Enable (default)
		Example:
		RPLERR=1

Read Command **RPLERR=?**		

PW Setup RTU login Password		
Write Command **PW=<psd>**	Password is 6 characters string	*Example:* **PW=888888**
Read Command **PW=?**	Default password is 000000	

ID Setup RTU Device ID		
Write Command **ID=<id>**	Device ID is a 8 characters string Default ID is null	*Example:* **ID=00000001**
Read Command **ID=?**	ID is used in GPRS CWT_IO protocol	

PIN Setup RTU PIN code		
Write Command **PIN=<code>**	PIN code is 4 number	*Example:* **PIN=1234**
Read Command **PIN=?**		

PUK Setup RTU PUK code		
Write Command **PUK=<code>**	PUK code including 8 numbers	*Example:* **PUK=12345678**
Read Command **PUK=?**		

SMSC Setup the SMS message center service number		
Write Command **SMSC=<code>**		
Read Command **SMSC=?**	Default is NULL (can works well in most of area and country)	

DESC Setup the RTU description information		
Write Command **DESC=<string>**		*Example:* **DESC=room1**
Read Command **DESC=?**	Description is basic information about the device, etc, the address, the administrator and so on.	

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Alarm parameters

ARING Enable or Disable Alarm RING call function		
Write	*Parameters*	*Example:*
Command	<En>:	**ARING=1**
	0: Disable (default)	
ARING=<En>	1: Enable	
Read	If enable RING call, any alert will cause a	
Command	voice call to CS phone numbers.	
ARING=?		

ASC Enable or Disable Auto Answer Voice call from CS phones		
Write	*Parameters*	*Example:*
Command	<En>:	**ASC=1**
	0: Disable	
ASC=<En>	1: Enable (default)	
Read		
Command		
ASC=?		

AWB Enable or Disable description in Alarm SMS		
Write	*Parameters*	*Example:*
Command	<En>:	**AWB=1**
	0: Disable	
AWB=<En>	1: Enable (default)	
Read	Add the description and timestamp with alert	
Command	sms	
AWB=?		

UARTEVENT Enable or Disable Export events from UART		
Write	*Parameters*	*Example:*
Command	<En>:	**UARTEVENT=1**
	0: Disable (default)	
UARTEVENT=<En>	1: Enable	
Read		
Command		
UARTEVENT=?		

IOAT Setup alert sms resend times		
Write	*Parameters*	*Example:*
Command	<n>:	**IOAT=3**
	sms resend times	
IOAT=<n>	default is 1	
Read		
Command		
IOAT=?		

DRPTID Enable or Disable ID information in daily report SMS		
Write	*Parameters*	*Example:*
Command	<En>:	**DRPTID=1**
	0: Disable	
DRPTID=<En>	1: Enable (default)	
Read		
Command		
DRPTID=?		

DRPDEF Enable or Disable ARM/DISARM information in daily report SMS		
Write	*Parameters*	*Example:*
Command	<En>:	**DRPDEF=1**
	0: Disable	
DRPDEF=<En>	1: Enable (default)	
Read		
Command		
DRPDEF=?		

DRPBAT Enable or Disable Power Supply information in daily report SMS		
Write	*Parameters*	*Example:*
Command	<En>:	**DRPBAT=1**
	0: Disable	
DRPBAT=<En>	1: Enable (default)	
Read		
Command		
DRPBAT=?		

DRPMEM Enable or Disable description information in daily report SMS		

Write
Command
 	
DRPMEM=<En>
	Parameters
	<En>:
	    0: Disable
	    1: Enable (default)
		Example:
		DRPMEM=1

Read *Command* **DRPMEM=?**		

DRPRSI Enable or Disable GSM Signal information in daily report SMS		

Write
Command
 	
DRPRSI=<En>
	Parameters
	<En>:
	    0: Disable
	    1: Enable (default)
		Example:
		DRPRSI=1

Read *Command* **DRPRSI=?**		

DRPDIN Enable or Disable Alarm Wired Inputs information in daily report SMS		

Write
Command
 	
DRPDIN=<En>
	Parameters
	<En>:
	    0: Disable
	    1: Enable (default)
		Example:
		DRPDIN=1

Read *Command* **DRPDIN=?**		

DRPTMP Enable or Disable build in temperature information in daily report SMS		

Write
Command
 	
DRPTMP=<En>
	Parameters
	<En>:
	    0: Disable
	    1: Enable (default)
		Example:
		DRPTMP=1

Read *Command* **DRPTMP=?**		

Input and output parameters

IOTP Setup all inputs and outputs type		

Setup all I/O channels type
Write
Command
 	
IOTP=<$I_0I_1I_2I_3$><$O_0O_1O_2O_3$>
	Parameters
	<$I_0I_1I_2I_3$>
	Inputs type:
	  0: DISABLE
	  1: TO OPEN ALARM (EDGE)
	  2: TO OPEN ALARM(LEVEL)
	  3: TO CLOSE ALARM (EDGE)(default)
	  4: TO CLOSE ALARM(LEVEL)
		Example:
		IOTP=33331000

Setup single input type *Write* *Command* **IOTPI=<n>,<I_n>**	**<$O_0O_1O_2O_3$>** **Outputs type:** 0: DISABLE	*Example:* **IOTPI=0,2** Setup input0 type is 2

Setup single output type
Write
Command
 	
IOTPO=<n>,<O_n>
	1: GENERAL OUTPUT (default)
	  2: BUZZER
	  3: SNAPSHOOT
	  4: SIREN
	<n>: 0~3 (DI or DO index)
		Example:
		IOTPO=0,1
		
		Setup output0 type is 1

Read *Command* **IOTP=?**		

IOIP Disable inputs alarm		

Write
Command
 	
IOIP=<n/nn/…/nnnn>
	Parameters
	<n/nn/…/nnnn>:
	  1 digit to 4 digits
	  n: 0~3 (input index)
		Example:
		Disable input0 alarm
		IOIP=0

Read *Command* **IOIP=?**		Disable input2/3 alarm **IOIP=23**

IOIC Enable inputs alarm		

Write
Command
 	
IOIC=<n/nn/…/nnnn>
	Parameters
	<n/nn/…/nnnn>:
	  1 digit to 4 digits
	  n: 0~3 (input index)
		Example:
		IOIC=1
		IOIC=0123

Read *Command* **IOIC=?**		

DINURG Enable or Disable inputs "24 hours" option		

Write Command
 	
DINURG\<n\>,\<En\>
	Parameters
	\<n\>:
	    0~3 (input index)
	\<En\>:
	    0: Disable (default)
	    1: Enable
		Example:
		DINURG0,1
		
		Enable input0 "24 hours" option

Read Command **DINURG=?**		

DINSND Enable or Disable inputs "sound alarm" option		

Write Command
 	
DINSND\<n\>,\<En\>
	Parameters
	\<n\>:
	    0~3 (input index)
	\<En\>:
	    0: Disable
	    1: Enable (default)
		Example:
		DINSND=1,0
		
		Disable input1 "sound alarm" option

Read Command **DINSND=?**		

IOAS Setup alarm sms limit interval		

Write Command
 	
IOAS\<n\>,\<time\>
	Parameters
	\<n\>:
	    0~3 (Inputs index)
	\<time\>:
	    0~255 (min)
		Example:
		IOAS0,2

Read Command **IOAS\<n\>?**	Default is 0	

IOLS Setup sms resend interval when input is in alarm state		

Write Command
 	
IOLS\<n\>,\<time\>
	Parameters
	\<n\>:
	    0~3 (Inputs index)
	\<time\>:
	    0~255 (min)
		Example:
		IOLS0,2

Read Command **IOLS\<n\>?**	Default is 0	

DINDLY Setup timer for ensuring inputs alarm		

Write Command
 	
DINDLY\<n\>,\<time\>
	Parameters
	\<n\>:
	    0~3 (Inputs index)
	\<time\>:
	    0~65535 (sec)
		Example:
		DINDLY0,5

Read Command **DINDLY\<n\>?**	Default is 0	

S Setup digital inputs alarm sms content		

Write Command
 	
S\<nn\>=\<string\>
	Parameters
	\<nn\>:
	    00~03 (inputs alarm sms index)
	\<string\>:
	    Alarm sms
		Example:
		S00=sensor alarm

Read Command **S\<nn\>=?**		

S Setup digital inputs recover sms content		

Write Command
 	
S\<nn\>=\<string\>
	Parameters
	\<nn\>:
	    04~07 (inputs recover sms index)
	\<string\>:
	    Recover sms
		Example:
		S03=alarm recover

Read Command **S\<nn\>=?**		

I Setup inputs name		

Write Command
 	
I\<nn\>=\<string\>
	Parameters
	\<nn\>:
	    00~03 (inputs name index)
	\<string\>:
	    Name
		Example:
		I02=sensor

Read Command **I\<nn\>=?**		

O Setup outputs name		
Write *Command* **O<nn>=<string>**	*Parameters* <nn>: 00~03 (outputs name index) <string>: Name	*Example:* **O02=pump**
Read *Command* **O<nn>=?**		

IOIS Read inputs status	
Read *Command* **IOIS**	

IOOS Read outputs status	
Read *Command* **IOOS**	

IOOR Setup remember outputs status		
Write *Command* **IOOR=<En>**	*Parameters* <En>: 0: Disable (default) 1: Enable	*Example:* **IOOR=1**
Read *Command* **IOOR=?**		

IOHT Setup Persist timespan of siren		
Write *Command* **IOHT=<n>**	*Parameters* <n>: 0~255 (min)	*Example:* **IOHT=10**
Read *Command* **IOHT=?**	Default is 15 minutes	

<div style="background:#f5b301">Control outputs commands</div>

IOOH Control outputs on		
control *Command* **IOOH<nnnn>**	*Parameters* <nnnn>: 1 digit to 4 digits n: 0~3 (outputs index)	*Example:* Control ouput0 on: **IOOH0** Control ouput0/2/3 on: **IOOH023**

IOOL Control outputs off		
control *Command* **IOOL<nnnn>**	*Parameters* <nnnn>: 1 digit to 4 digits n: 0~3 (outputs index)	*Example:* **IOOL0** **IOOL0123**

IOOP Control outputs pulse		
control *Command* **IOOP<nnnn>**	*Parameters* <nnnn>: 1 digit to 4 digits n: 0~3 (outputs index) default pulse interval is 1 second, and the interval can be set by command IOPO	*Example:* **IOOP0** **IOOP0123**

IOPO Setup pulse interval		
Write *Command* **IOPO<sec>**	*Parameters* <sec>: 0~65535 (second)	*Example:* **IOPO5**
Read *Command* **IOPO?**		

IOOP Control outputs pulse with time		
control *Command* **IOOP<nnnn>,<sec>**	*Parameters* <nnnn>: 1 digit to 4 digits n: 0~3 (output index) <sec>: 0~65535 (second)	*Example:* Generate a 10 seconds pulse on output0: **IOOP0,10** Generate a 3 seconds pulse on output 0/2/3: **IOOP023,3**

IOOF Control all outputs by a command		

control
Command
 	
IOOF<$S_0S_1S_2S_3$>
	Parameters
	<$S_0S_1S_2S_3$>: 4 digits
	S_n:
	     0: output off
	     1: output on
		Example:
		Control output1/2 off
		and others on
		IOOF1001

AIN parameters

AIN*H Setup high point of the AIN normal range1		
Write Command **AIN<n>H=<Val>**	Parameters <n>: 0~3 (AIN index) <Val>: a float value	Example: **AIN0H=30.01**
Read Command **AIN<n>H=?**		

AIN*L Setup low point of the AIN normal range1		
Write Command **AIN<n>L=<Val>**	Parameters <n>: 0~3 (AIN index) <Val>: a float value	Example: **AIN0L=10.53**
Read Command **AIN<n>L=?**		

AIN*SC Setup the scale factor of AIN		
Write Command **AIN<n>SC=<Val>**	Parameters <n>: 0~3 (AIN index) <Val>: a float value	Example: **AIN0SC=62.00**
Read Command **AIN<n>SC=?**	Reference AIN value = AIN*[Scale Factor]-Offset	

AIN*ZE Setup the Offset value of AIN		
Write Command **AIN<n>ZE=<Val>**	Parameters <n>: 0~3 (AIN index) <Val>: a float value	Example: **AIN0ZE=12.00**
Read Command **AIN<n>ZE=?**	Reference AIN value = AIN*[Scale Factor]-Offset	

AIN*OS Setup AIN normal range1's lag value		

Write
Command
 	
AIN<n>OS=<lag>
	Parameters
	<n>:
	    0~3 (AIN index)
	<lag>: a float value
	    Default is 0
		Example:
		AIN0OS=2.00

Read *Command* **AIN<n>OS=?**		
Reference	When AIN value goes out of normal rang1, RTU will alarm. But will not return to normal state before AIN return into range **AINH-lag** and **AINL+lag**	

AIN*ST Setup AIN upload step value		

Write
Command
 	
AIN<n>ST=<val>
	Parameters
	<n>:
	    0~3 (AIN index)
	<lag>: a float value
	    Default is 0
		Example:
		AIN0ST=5.00

Read *Command* **AIN<n>ST=?**		

AIN*R Query AIN Normal range 1		
Execution *Command* **AIN<n>R**	*Parameters* <n>: 0~3 (AIN index)	

AIN*C Query Value of AIN		
Execution *Command* **AIN<n>C**	*Parameters* <n>: 0~3 (AIN index)	

ADS Query all AIN		
Execution *Command* **ADS**		

AINON Enable AIN		
Write *Command* **AINON=<n>**	*Parameters* <n>: 0~3 (AIN index)	*Example:* Enable AIN0 **AINON=0**
Read *Command* **AINON=?**		

AINOFF Disable AIN		
Write *Command* **AINOFF=<n>**	*Parameters* <n>: 0~3 (AIN index)	*Example:* Disable AIN1 **AINOFF=1**
Read *Command* **AINOFF=?**		

AINURG Setup AIN Urgency		

Write
Command
 	
AINURG=<n>,<En>
	Parameters
	<n>:
	    0~3 (AIN index)
	<En>:
	    0: Disable (default)
	    1: Enable
		Example:
		Enable AIN0 as urgent
		alarm
		
		AINURG=0,1

Read *Command* **AINURG=?**		

AINSND Setup AIN Sound Alarm		

Write
Command
 	
AINSND=<n>,<En>
	Parameters
	<n>:
	    0~3 (AIN index)
	<En>:
	    0: Disable
	    1: Enable (default)
		Example:
		Enable AIN0 sound
		alarm
		AINSND=0,1

Read *Command* **AINSND=?**		

AINTP Setup AIN type		

Write Command
 	
AINTP=\<n\>,\<type\>
	Parameters
	\<n\>:
	   0~3 (AIN index)
	\<type\>:
	   0: Voltage
	   1: Current (default)
		Example:
		AINTP=0,1

Read Command **AINTP=?**		

AINDRP Setup AIN value send with daily report sms		

Write Command
 	
AINDRP=\<S$_0$S$_1$S$_2$S$_3$\>
	Parameters
	\<S$_0$S$_1$S$_2$S$_3$\>:
	   4 AIN channels
	S$_n$:
	   0: Disable (default)
	   1: Enable
		Example:
		Enable AIN 0/1 daily report
		AINDRP=1100

Read Command **AINDRP=?**		

AINAS Setup the minimum time of twice AD alarm sms		

Write Command
 	
AINAS=\<min\>
	Parameters
	\<min\>:
	   0~255 (min), default is 0
	   0 means disable the function
		Example:
		AINAS=2

Read Command **AINAS=?**		

AINLS Setup interval of resend AD alarm state sms		

Write Command
 	
AINLS=\<min\>
	Parameters
	\<min\>:
	   0~255 (min), default is 0
	   0 means disable the function
		Example:
		AINLS=2

Read Command **AINLS=?**		

AINDLY Setup timespan of ensure AD alarm		

Write Command
 	
AINDLY=\<sec\>
	Parameters
	\<sec\>:
	   0~255 (second), default is 0
	   0 means disable the function
		Example:
		AINDLY=2

Read Command **AINDLY=?**		

A Setup the AIN channel's name		

Write Command
 	
A\<nn\>=\<string\>
	Parameters
	\<nn\>:
	   00~03 (AIN index)
	\<string\>:
	   Max 24 characters.
		Example:
		A00=temperature

Read Command **A\<nn\>=?**		

GPRS parameters

M2MEN Eable or disable GPRS transfer		

Write *Command*
 	
M2MEN=<En>
	Parameters
	<En>:
	    0: Disable
	    1: Enable (default)
		Example:
		M2MEN=0

Read *Command* **M2MEN=?**		

M2MAPN Setup GPRS APN		
Write *Command* **M2MAPN=<string>**	*Parameters* <string>: GPRS access point name	*Example:* **M2MAPN=cmnet**
Read *Command* **M2MAPN=?**		

M2MUID Setup GPRS user name		
Write *Command* **M2MUID=<string>**	*Parameters* <string>: GPRS user name, default is null	*Example:* **M2MUID=user**
Read *Command* **M2MUID=?**		

M2MPWD Setup GPRS user password		
Write *Command* **M2MPWD=<string>**	*Parameters* <string>: GPRS user password, default is null	*Example:* **M2MPWD=pwd**
Read *Command* **M2MPWD=?**		

M2MIDT Setup GPRS idle timeout		
Write *Command* **M2MIDT=<min>**	*Parameters* <min>: 0~65535 (minute) Default is 0	*Example:* **M2MIDT=20**
Read *Command* **M2MIDT=?**		

M2MCTO Setup TCP connection timeouts		
Write *Command* **M2MCTO=<sec>**	*Parameters* <sec>: 0~65535 (second) Default is 25	*Example:* **M2MCTO=25**
Read *Command* **M2MCTO=?**		

MODUID Setup modbus TCP unit id		
Write *Command* **MODUID=<id>**	*Parameters* <id>:	*Example:* **MODUID=2**
Read *Command* **MODUID=?**		

GDTUEN Eable or disable com data to GPRS server(DTU)		

Write *Command*
 	
GDTUEN=<En>
	Parameters
	<En>:
	    0: Disable (default)
	    1: Enable
		Example:
		GDTUEN=0

Read *Command* **GDTUEN=?**		

GMSGEN Enable or disable CWT_IO protocol		

Write
Command
 	
GMSGEN=<En>
	Parameters
	<En>:
	   0: Disable
	   1: Enable
		Example:
		GMSGEN=0

Read *Command* **GMSGEN=?**		

M2MDTSIP Setup GPRS server IP or domain name		
Write *Command* **M2MDTSIP<n>=<ip>**	*Parameters* <n>: 0~3 (server index) <ip>: server IP address or domain name	*Example:* **M2MDTSIP0=173.276 .78.90**
Read *Command* **M2MDTSIP=?**		

M2MDTSPT Setup GPRS server port		
Write *Command* **M2MDTSPT<n>=<port>**	*Parameters* <n>: 0~3 (server index) <port>: server port	*Example:* **M2MDTSPT0=3000**
Read *Command* **M2MDTSPT=?**		

M2MDTSPO Setup transfer protocol		

Write
Command
 	
M2MDTSPO<n>=<pt>
	Parameters
	<n>: 0~3 (server index)
	<pt>: Protocol type index
	   0: TCP
	   1: UDP
		Example:
		M2MDTSPO0=0

Read *Command* **M2MDTSPO=?**		

M2MDTSTP Setup server type		

Write
Command
 	
M2MDTSTP<n>=<st>
	Parameters
	<n>: 0~3 (server index)
	<st>: service type index
	   0: CWT_IO
	   1: GPRS DTU
	   2: Modbus TCP
	   3: WMMP (unused)
		Example:
		M2MDTSTP2=0

Read *Command* **M2MDTSTP=?**		

M2MDTSTO Setup data transfer timeouts		

Write
Command
 	
**M2MDTSTO<n>=<Socket
IdleTo>, <Server RepTo>,
<HeartTo>**
	Parameters
	<n>: 0~3 (server index)
	<Socket IdleTo>:
	       idle timeout (second)
	<Server RepTo>:
	       Respond timeout (ms)
	<HeartTo>:
	       Heart timeout (second)
		Example:
		M2MDTSTO=0

Read *Command* **M2MDTSTO=?**		

GPRS commands

M2MDRP Request upload state to server	
Execution Command **M2MDRP**	Data include DI, DO, AI, modbus etc.

M2MDIS Request upload all DI state to server	
Execution Command **M2MDIS**	

M2MDOS Request upload all DO state to server	
Execution Command **M2MDOS**	

M2MADS Request upload all AI data to server	
Execution Command **M2MADS**	

M2MREGS Request upload all local modbus registers to server	
Execution Command **M2MREGS**	

M2MITP Request upload build in temperature to server	
Execution Command **M2MITP**	

M2METP Request upload external DS18B20 temperature to server	
Execution Command **M2METP**	

M2MRTM Re-dial GPRS to connect server	
Execution Command **M2MRTM**	

M2MLIP Query local GPRS interface and IP address	
Execution Command **M2MLIP**	

Buzzer parameters

BUZEN Enable or disable buzzer sound alarm		

Write *Command*
 	
 BUZEN=<En>
	Parameters
	 <En>:
	    0: Disable
	    1: Enable (default)
		Example:
		 BUZEN=1

Read *Command* **BUZEN=?**	The sound alarm include interior buzzer and any output used as Siren or Buzzer	

BUZT Setup buzzer persist time when alarm		
Write *Command* **BUZT=<sec>**	*Parameters* <sec>: 0~255 seconds Default Time span is 60 seconds	*Example:* **BUZT=15**
Read *Command* **BUZT=?**		

BUZCLR Reset the interior buzzer sound	
Execution *Command* **BUZCLR**	

Interior temperature parameters

TMPH Setup high point of interior temperature normal range		
Write *Command* **TMPH=<Val>**	*Parameters* <Val>: -127~128	*Example:* **TMPH=30**
Read *Command* **TMPH=?**		

TMPL Setup low point of interior temperature normal range		
Write *Command* **TMPL=<Val>**	*Parameters* <Val>: -127~128	*Example:* **TMPL=10**
Read *Command* **TMPL=?**		

TMPB Setup temperature adjustments value		
Write *Command* **TMPB=<Val>**	*Parameters* <Val>: -127~128	*Example:* **TMPB=2**
Read *Command* **TMPB=?**		

TMPAS Setup the timespan of twice alarm sms		

Write *Command*
 	
 TMPAS=<min>
	Parameters
	 <min>:
	    0~255 (min), default is 0
	    0 means disable the function
		Example:
		 TMPAS=2

Read *Command* **TMPAS=?**		

TMPLS	Setup timespan of resend alarm sms	
Write Command **TMPLS=<min>**	Parameters <min>: 0~255 (min), default is 0 0 means disable the function	Example: **TMPLS=2**
Read Command **TMPLS=?**		

TMPNDLY	Setup timespan of ensure alarm status	
Write Command **TMPNDLY=<sec>**	Parameters <sec>: 0~255 (second), default is 0 0 means disable the function	Example: **TMPNDLY=2**
Read Command **TMPNDLY=?**		

TMPOS	Setup lags of temperature alarm range	
Write Command **TMPOS=<val>**	Parameters <val>: 0~255	Example: **TMPOS=2**
Read Command **TMPOS=?**		

TMPON	Enable temperature sensor alarm	
Execution Command **TMPON**		

TMPOFF	Disable temperature sensor alarm	
Execution Command **TMPOFF**		

TMPURG	Setup temperature sensor alarm is urgency 24 hours	
Write Command **TMPURG=<En>**	Parameters <En>: 0: Disable 1: Enable	Example: **TMPURG=1**
Read Command **TMPURG=?**		

TMPSND	Setup temperature sensor sound alarm	
Write Command **TMPSND=<En>**	Parameters <En>: 0: Disable 1: Enable	Example: **TMPSND=1**
Read Command **TMPSND=?**		

TMPIH	Setup interlock output pin of high point	
Write Command **TMPIH=<DO>**	Parameters <DO>: 0~n (output index) 255 is none	Example: **TMPIH=0**
Read Command **TMPIH=?**		

TMPIL	Setup interlock output pin of low point	
Write Command **TMPIL=<DO>**	Parameters <DO>: 0~n (output index) 255 is none	Example: **TMPIL=1**
Read Command **TMPIL=?**		

TMPR	Query temperature normal range	
Execution Command **TMPR**		

TMPC Query current temperature value	
Execution *Command* **TMPC**	

Interior battery parameters

BATEN Enable or disable power lost alarm		
Write *Command* **BATEN=<En>**	*Parameters* <En>: 0: Disable 1: Enable	*Example:* **BATEN=1**
Read *Command* **BATEN=?**		

POWDLY Setup time of ensure power alarm		
Write *Command* **POWDLY=<sec>**	*Parameters* <sec>: 0～65535 seconds Default is 5, 0 means disable the function	*Example:* **POWDLY=15**
Read *Command* **POWDLY=?**		

POW Query power status	
Execution *Command* **POW**	

Exterior temperature sensor parameters

ETEMPEN   Enable or Disable exterior temperature sensor

Write Command	Parameters	Example:

ETEMPEN\<n\>=\<En\>	\<n\>: 0~3 (temperature sensor index)
	\<En\>:
	  0: Disable
	  1: Enable
		ETEMPEN0=1

Read Command		
ETEMPEN\<n\>=?		

ETEMPH   Setup high point of exterior temperature normal range

Write Command	Parameters	Example:
ETEMPH\<n\>=\<Val\>	\<n\>: 0~3 (temperature sensor index) \<Val\>: -55～125	ETEMPH0=30
Read Command		
ETEMPH\<n\>=?		

ETEMPL   Setup low point of exterior temperature normal range

Write Command	Parameters	Example:
ETEMPL\<n\>=\<Val\>	\<n\>: 0~3 (temperature sensor index) \<Val\>: -55～125	ETEMPL0=10
Read Command		
ETEMPL\<n\>=?		

ETEMPB   Setup temperature adjustments value

Write Command	Parameters	Example:
ETEMPB\<n\>=\<Val\>	\<n\>: 0~3 (temperature sensor index) \<Val\>: adjustment value	ETEMPB0=2
Read Command		
ETEMPB\<n\>=?		

ETEMPAS   Setup the timespan of twice alarm sms

Write Command	Parameters	Example:

ETEMPAS\<n\>=\<min\>	\<n\>: 0~3 (temperature sensor index)
	\<min\>:
	  0~255 (min)
	  0 means disable the function
		ETEMPAS0=2

Read Command		
ETEMPAS\<n\>=?		

ETEMPLS   Setup timespan of resend alarm sms

Write Command	Parameters	Example:

ETEMPLS\<n\>=\<min\>	\<n\>: 0~3 (temperature sensor index)
	\<min\>:
	  0~255 (min)
	  0 means disable the function
		ETEMPLS0=2

Read Command		
ETEMPLS\<n\>=?		

ETEMPDLY   Setup timespan of ensure alarm sms

Write Command	Parameters	Example:

ETEMPDLY\<n\>=\<sec\>	\<n\>: 0~3 (temperature sensor index)
	\<sec\>:
	  0~255 seconds
	  0 means disable the function
		ETEMPDLY0=2

Read Command		
ETEMPDLY\<n\>=?		

ETEMPOS   Setup temperature alarm range lags

Write Command	Parameters	Example:
ETEMPOS\<n\>=\<val\>	\<n\>: 0~3 (temperature sensor index) \<val\>: 0~255	ETEMPOS0=2
Read Command		
ETEMPOS\<n\>=?		

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ETEMPURG Setup temperature sensor alarm is urgency 24 hours		
Write *Command* **ETEMPURG\<n\>=\<En\>**	*Parameters* \<n\>: 0~3 (temperature sensor index) \<En\>: 0: Disable 1: Enable	*Example:* **ETEMPURG0=1**
Read *Command* **ETEMPURG\<n\>=?**		

ETEMPSND Setup temperature sensor sound alarm		
Write *Command* **ETEMPSND\<n\>=\<En\>**	*Parameters* \<n\>: 0~3 (temperature sensor index) \<En\>: 0: Disable 1: Enable	*Example:* **ETEMPSND0=1**
Read *Command* **ETEMPSND\<n\>=?**		

ETEMPR Query all temperature channels normal range	
Execution *Command* **ETEMPR**	

ETEMPC Query all channels current temperature value	
Execution *Command* **ETEMPC**	

Interlock parameters

IOOC Setup outputs action	
Write *Command* **IOOC=\<nnnn\>\<xxxx\>**	*Parameters* \<nnnn\>: 0~3 Outputs' action when alert by "link with" \<xxxx\>: 0~3 Outputs' action when recover by "link with" n & x: 0: OPEN 1: CLOSE 2: CLOSE PULSE 3: CLOSE 300S 4: CLOSE 30S 5: CLOSE 60S 6: NONE
Read *Command* **IOOC=?**	

IOOA Setup link with	
Write *Command* **IOOA=\<n\>\<index\>**	*Parameters* \<n\>: 0~3 output index \<index\>: "link with" index
	0: NONE 3: 2 input alert 6: system power down 1: 0 input alert 4: 3 input alert 7: Server call 2: 1 input alert 5: Interior temp alert 8: humidity sensor
Read *Command* **IOOC=?**	

Example: config output0 on when input3 alert and output0 off when input3 recover

Linkage outputs

Output	When alert	When recover	Link with
No. 0	1: CLOSE	0: OPEN	3 INPUT ALERT
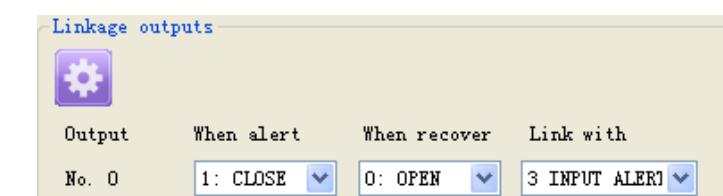
The sms command is:
IOOC16660666
IOOA04

Setup timers

mtimer Setup system timers		
Write Command **mtimer\<n>=\<HH>,\<MM>,\<action>**	*Parameters* \<n>: 0~5 (mtimer index) \<HH>: 0~24 (hour) \<MM>: 0~60 (minute) \<action>: 0~39	*Example:* Setup send daily report sms at 17:50 everyday **mtimer0=17,50,16**
Read Command **mtimer=?**		

mspan Setup minutes timers		
Write Command **mspan\<n>=\<min>,\<action>**	*Parameters* \<n>: 0~5 (mspan index) \<min>: 0~65535 (minute) \<action>: 0~39	*Example:* Setup send daily report sms every 30 minutes **mspan0=30,16**
Read Command **mspan=?**		

sspan Setup second timers		
Write Command **sspan\<n>=\<min>,\<action>**	*Parameters* \<n>: 0~5 (mspan index) \<min>: 0~65535 (second) \<action>: 0~39	*Example:* Setup send daily report sms every 30 seconds **sspan0=30,16**
Read Command **sspan=?**		

mdate Setup week timers		
Write Command **mdate\<n>=\<day>,\<HH>,\<MM>,\<action>**	*Parameters* \<n>: 0~6 \<day>: 0~6 (week day) \<HH>: 0~24 (hour) \<MM>: 0~60 (minute) \<action>: 0~39	*Example:* Setup send daily report sms at 18:34 Monday **Mdate0=0,18,34,16**
Read Command **mdate=?**		

Action index:

0: None	14: Pulse OC 3	28: Howl alarm
1: Disarm	15: Snapshot	29: Clocker
2: Arm	16: daily report sms	30: Enable buzzer
3: Driver OC 0 (output0 on)	17: Export state by uart0	31: Disable buzzer
4: Driver OC 1 (output1 on)	18: Upload state by sms	32: Upload din by gprs
5: Driver OC 2 (output2 on)	19: Exec user cmd0	33: Upload dout by gprs
6: Driver OC 3 (output3 on)	20: Exec user cmd1	34: Upload ain by gprs
7: OC 0 off	21: Exec user cmd2	35: Upload modbus by gprs
8: OC 1 off	22: Exec user cmd3	36: Upload graycode by gprs
9: OC 2 off	23: Exec user cmd4	37: Save samples to flash
10: OC 3 off	24: Exec user cmd5	38: Upload din counter
11: Pulse OC 0	25: Exec user cmd6	39: Din counter reset
12: Pulse OC 1	26: Upload state by gprs	
13: Pulse OC 2	27: Buzzer beep	

Setup User command

U Setup the User defined commands		
Write *Command* **U\<nn\>=\<string\>**	*Parameters* \<nn\>: 00: User defined command 0 01: User defined command 1 …… 05: User defined command 5 \<string\>: user defined command contents max 24 characters	*Example:* Use "abc" instead of command "IOOH0" **U00=abc**
Read *Command* **U\<nn\>=?**		

Y Setup the User defined commands mapped RTU commands		
Write *Command* **Y\<nn\>=\<string\>**	*Parameters* \<nn\>: 00: RTU command 0 01: RTU command 1 …… 05: RTU command 5 \<string\>: RTU command contents max 24 characters	*Example:* Use "abc" instead of command "IOOH0" **Y00=IOOH0**
Read *Command* **Y\<nn\>=?**		

System operation commands

PW Setup system password		
Write *Command* **PW=\<pad\>**	*Parameters* \<psd\>: 6 digits	*Example:* **PW=123456**
Read *Command* **PW=?**		

DAYRP   Query the RTU status (Daily report SMS)
Read *Command*   **DAYRP**

ARM/BF Arm the RTU system	
Execution *Command* **ARM**	

DISARM/CF Disarm the RTU system	
Execution *Command* **DISARM**	

RST Reset the RTU power	
Execution *Command* **RST**	

LOADF Load factory settings	
Execution *Command* **LOADF**	