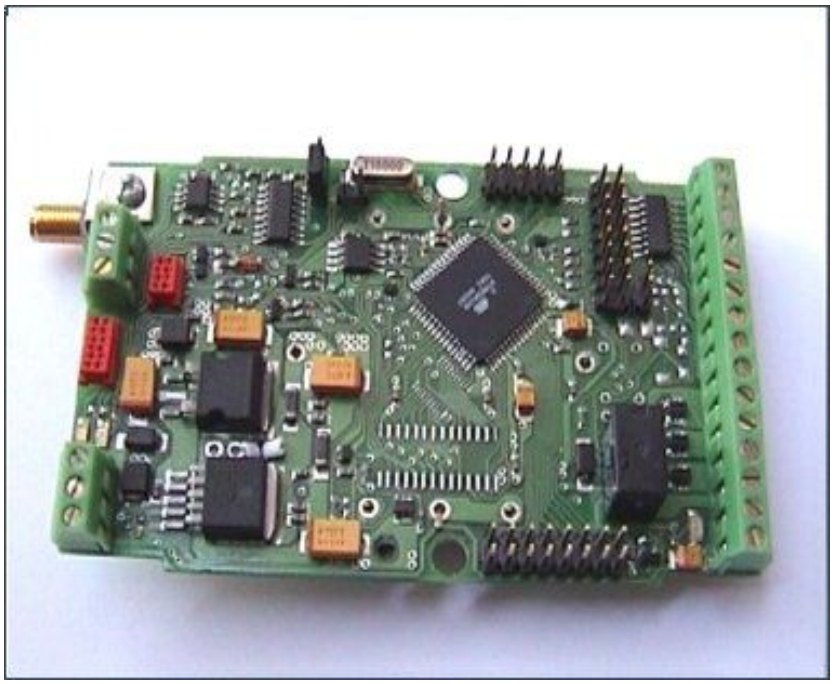


(

Remote Control Module
BieneRemote128GM-METEO
BieneRemote128GM-WS)
for ULTIMETER® Weather Station
(Peet Bros Co., www.peetbros.com)

with internal GSM modem

Board Rev.: GM128
Document Rev.: 1.2
Revision Date: 09.12.2006

www.bieneelectronics.com
info@bieneelectronics.com

Introduction

BieneRemote128GM-METEO (BieneRemote128GM-WS) is module with built-in GSM modem for meteo information monitoring with data logging function.
BieneRemote128GM-METEO designed to be used for Weather Station ULTIMETER 100 (Peet Bros. Company Inc. - http://www.peetbros.com) remote monitoring.

Features

- Communication via GSM
- GSM band -
  900/1800, 900/1800/1900, 850/900/1800/1900
- GSM receiver and transmitter - internal GSM modem Telit GM862-QUAD
- Embedded Software
- Meteo information with SMS
- Meteo information to FTP server
- Event notification via SMS
- GPRS Data Logger
- Remote control via SMS (turn equipment on and off at any location via GSM)
- Simple for installation via PC serial port or via SMS.

Applications

- Remote control
- Remote monitoring
- Remote telemetry

Technical Specification

BieneRemote128GM-METEO Hardware Specification

	BieneRemote128GM-METEO	
Communication	GSM850/900/1800/1900	
Command and data transmission	SMS, GPRS/FTP	
Internal GSM modem	Telit GM862-QUAD	
SIM card reader	Yes	
SIM card type	Phase 2 GSM11.14 - SIM 3V	
Firmware	Yes	
Weather Station Compatibel	ULTIMETER® 100 Weather Station (Peet Bros. Co., www.peetbros.com)	
Meteo information format	text	
Transfer meteo information to	SMS, FTP	
Digital inputs		
Number of digital inputs	4	
- Transistor digital input	4 ("0": 0...+1V; "1": +1.5…+12V without external limited resistor)	
- Events digital inputs	4	
Analog inputs		
Number of analog inputs	Without analog adapter #4A	With analog adapter #4A
	2	
- Input	0…+5V; 100Mom	0..+16V
- Battery control	No	Yes
- Protection	No	Yes
- Analog event inputs	2	
ADC resolution	10 bits	
Battery control	No	Yes (if Battery output connect to analog input 1)
Outputs		
Number of outputs	5	
- MOSFET Open Drain outputs	4 (MOSFET SST5NF20V, 20V max)	
- Relay outputs	1 (NO, NC, COM; 24VDC/1A max 120VAC/0.5A max)	
Data Source	Weather Station ULTIMATE 100	
Timing Interval	1 min	
Data port	RS232 port	
Baud rate	2400	
Weather data	From ULTIMETER® 100 Weather Station (Peet Bros Co.)	
Power Supply		
Required Power supply	External +12 VDC stabilized	
Power requirement	70mA typ, 800mA(rms) max, 2A peak during transmission	
Voltage regulator	Internal voltage regulator	
Power protection	Reverse-polarity and overvoltage protection	
Environmental Conditions		
Normal operational temp.range	-10…+55°C	
Extreme operational temp. range	-20…+70°C	
Physical parameter		
Board dimension	100x62mm	

BieneRemote128GM-METEO Firmware Specification

	BieneRemote128GM-METEO
Weather information	Wind Speed, Wind Direction, Temperature, Humidity, Rain
Meteo Data scan period (min)	1, 2,, 3, 4, 5, 10, 15, 20, 30
Data Logger length (records)	1, 2, 4, 8
Data Logger EEPROM size	128 records
Records size (max)	512 characters
Meteo info transfer with	SMS, GPRS/FTP
Digital signal alarming with	SMS
Analog signal alarming	SMS
Number of controlled outputs	5
Number of digital event inputs	4
Number of readable digital inputs	4
Number of analog event inputs	2
Number of readable analog data	2
Minimum levels	2
Maximum levels	2
Authorization cell phone numbers	4
Cell phone numbers for alarm SMS	4
SMS data format	Text message
SMS message format for analog data	In % from Reference level: 00 – 99

Remote programming by SMS or programming with serial cable from PC

To remote module programming, you need
- send SMS message.
- from PC via serial port

Weather text example:

ULTIMETER WEATHER REPORT
11/05/06 12:24P

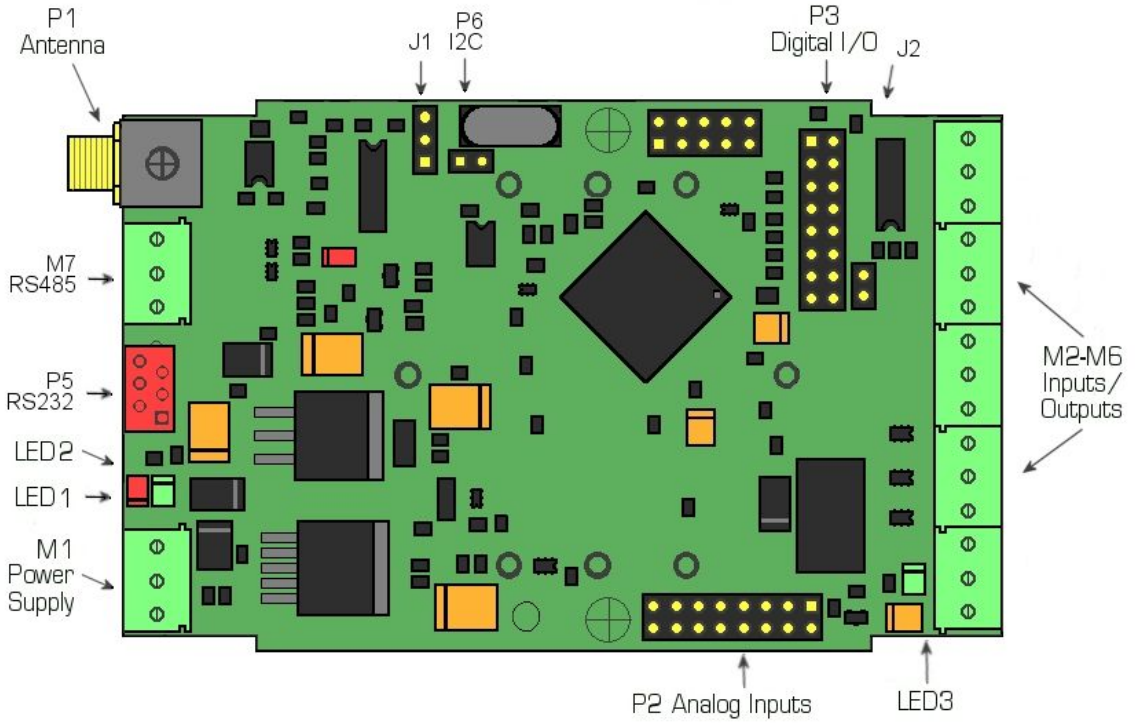
Wind	Cur	0.0MPH 340Deg, 1mAvg 0.0MPH, 1mPeak 0.0MPH 0Deg
	Hi	3.3MPH 340Deg
Wchill	Cur	49.8F, Lo 28.8F
Temp Out:	Cur	49.8F, Hi 50.0F, Lo 28.8F
Temp In:	Cur	67.9F, Hi 71.3F, Lo 66.5F

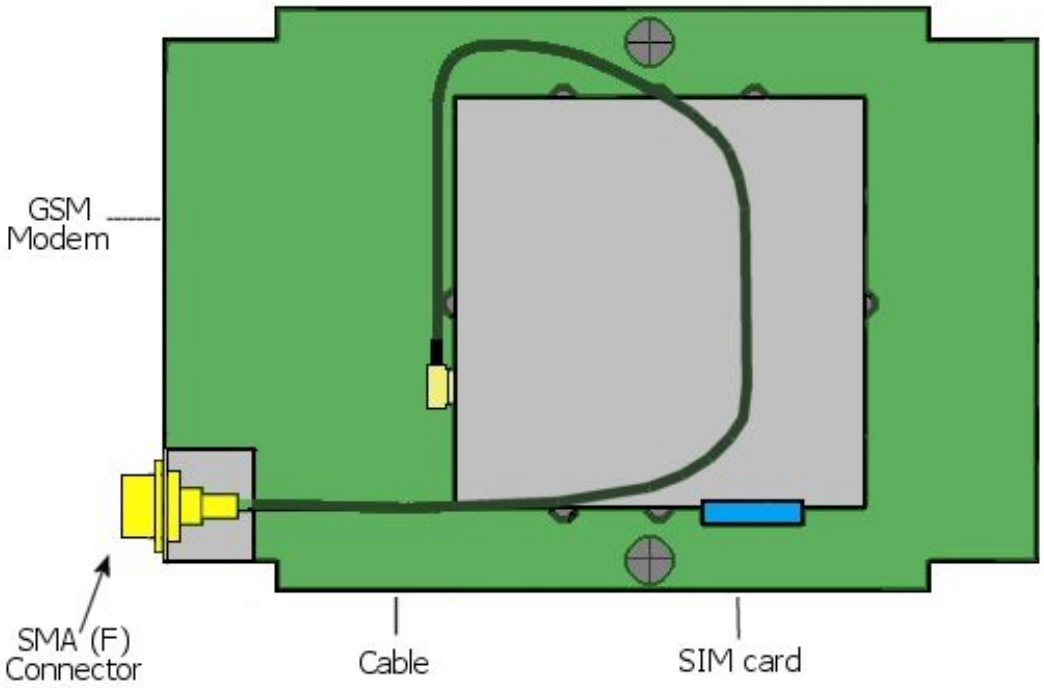
ULTIMETER WEATHER REPORT
11/05/06 12:24P

Wind:	Cur	0.0MPH 340Deg, 1mAvg 0.0MPH, 1mPeak 0.0MPH 0Deg
	Hi	3.3MPH 340Deg
Wchill:	Cur	49.8F, Lo 28.8F
Temp Out:	Cur	49.8F, Hi 50.0F, Lo 28.8F
Temp In:	Cur	67.9F, Hi 71.3F, Lo 66.5F
Hum Out:	Cur	48.8%, Hi 99.6%, Lo 47.2%
Hum In:	Cur	27.0%, Hi 34.3%, Lo 22.4%
Baro:	Cur	30.53inHg, Hi 30.58inHg, Lo 30.53inHg, 3hr chg -0.03inHg
Dewpt:	Cur	31.3F
Heatx:	Cur	49.8F
Rain:	Today	0.02in, Since 06/25/06: 8.06in

Hardware

The BieneRemote128GM module consists of the microprocessor, voltage regulator, inputs and outputs drivers, relay, built-in GSM modem with SIM-card holder, GSM antenna connector and connectors for external power supply and for input and output signals from external equipment connection.





Connectors

- Screw terminal block for power supply connection (M1)
- Screw terminal blocks for Inputs and Outputs connection (M2...M6)
- 2x8 pin header for analog inputs connection (P2)
- SMA female connector for GSM antenna connection (P1)
- Serial Port RS232 (P5)

Power Supply

- On-board voltage regulation
- Reverse-polarity protection
- Required Power supply: external power supply +12VDC/2A stabilized (2A peak)

Antenna

- External GSM (900/1900 or 900/1800/1900 or 850/900/1800/1900) antenna with SMA male connector

SIM Card

- Small SIM-card with 3V technology

LED indicators

- Module status indication - RED LED (LED1)
- GSM Modem status indication - GREEN LED (LED2)
- Relay output indication - GREEN LED (LED3)

Module LED indication (Red LED)

LED status	Modem status
Permanently off	Device off
Short blinking after power on and after 2 min periodic blinking	SIM card read process
Blinking	Module in work
Permanently on	Module work with modem

GSM Modem LED indication (Green LED)

LED status	Modem status
Permanently off	Device off
Fast blinking (period 1s, ton 0,5s)	Net search / Not registered / Turning off
Slow blinking (period 3s, ton 0,3s)	Registered full service
Permanently on	A call is active

Installation

Preparation of SIM card

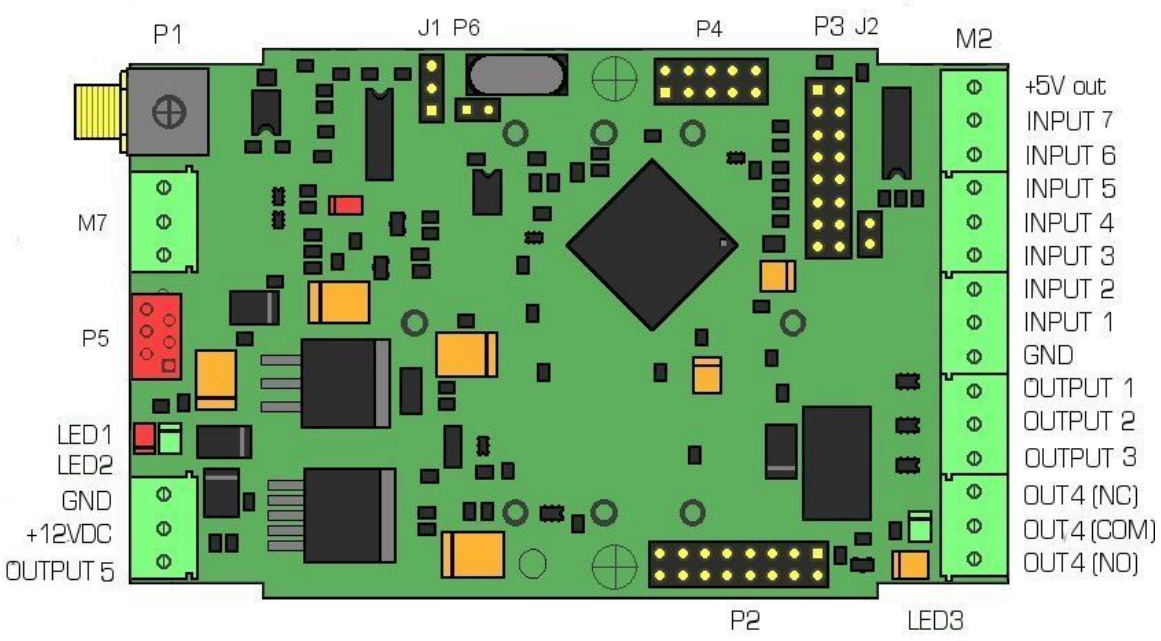
1. Delete any SMS messages from SIM.
2. Disable PIN code request so it will not prompt for a PIN code on turning on.
3. Write 7 authorized numbers to Phone Book (location 1,2,3…7) or write 999 to location 1 in SIM phone book (all numbers enabled)

Note:

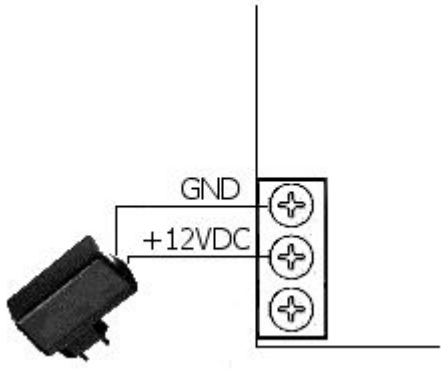
1. *The BieneRemote128GM can only be used with small SIM-cards with 3V technology.*
2. *For SIM card preparation you can use cell phone or external GSM modem.*
3. *SIM card change if power turn off.*

External devices connection

1. Screw terminal blocks (M1) - for power supply connection
2. Screw terminal blocks (M2-M6) - for controlled equipment inputs and outputs connection
3. 2x8 pin header (P2) - for analog signals connection
4. SMA female connector (P1) - for GSM antenna connection



Power Supply Connection

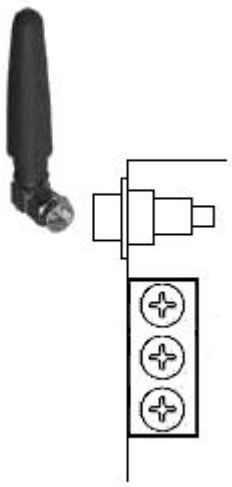


+12VDC stabilized Power Supply must be connected with screw terminal block.
We recommend use stabilized +12VDC/2A power supply (2A peak).
Power supply input has negative voltage and over voltage protection.

Antenna connection

External GSM antenna must be connected to SMA connector (P1).
Use only the 50Om antenna of the necessary frequency range: 900/1800Mhz or 900/1900Mhz or tree band antenna (900/1800/1900) or four-band antenna (850/900/1800/1900).

***Note**: It is very important that the antenna is installed on a location where the GSM-network coverage is sufficient. Please also check carefully that antennas are not installed nearby technical devices, cables etc which could influence the GSM-radiation.*



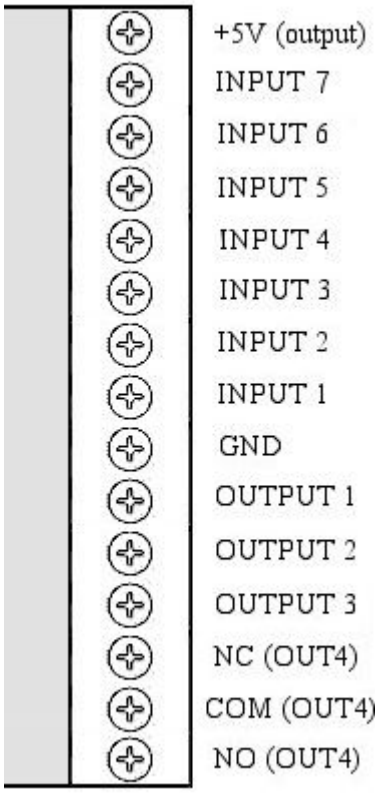
Inputs and Outputs connection

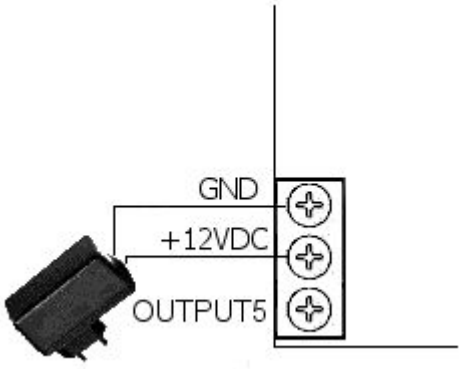
Digital inputs and outputs must be connected with screw terminals blocks.
Analog inputs must be connected with IDC16 flat cable connector.
Module has:
1. Transistor inputs
2. NO/NC relay output
3. MOSFET Open Drain outputs

Note: *See also "Inputs and Outputs schematic".*

Screw terminal blocs for Inputs and Outputs connection:

	Function	Description
1	+5V(output, 50mA max)	
2	INPUT 7 (optional)	Digital Transistor Input
3	INPUT 6	Digital Transistor Input
4	INPUT 5	Digital Transistor Input
5	INPUT 4	Digital Transistor Input
6	INPUT 3	Digital Transistor Input
7	INPUT 2	Digital Transistor Input
8	INPUT 1	Digital Transistor Input
9	GND	GND
10	OUTPUT 1	Open Drain Output
11	OUTPUT 2	Open Drain Output
12	OUTPUT 3	Open Drain Output
13	OUTPUT 4	Relay Output NC
14	OUTPUT 4	Relay Output Common
15	OUTPUT 4	Relay Output NO





2x8 pin header (P2) for analog inputs connection

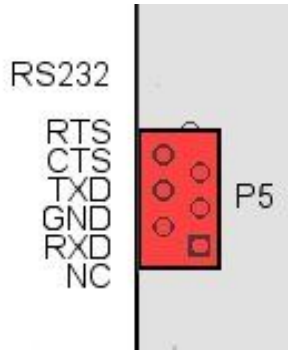
Pin	Function	
1	AVCC (+5V, 50mA max)	Output
2	AREF	Output
3	Analog Input 1	Input
4	Analog Input 2	Input
5		
6	GND	
7		
8	GND	

Note:
Microcontroller inputs not protected !
see " Microcontroller Inputs and Outputs Electrical Characteristics"

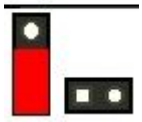
Serial Port

RS232 Serial Port

RS232 serial port used for direct PC serial port connection for module programming or monitoring.
RTS and CTS signals not used in this application.



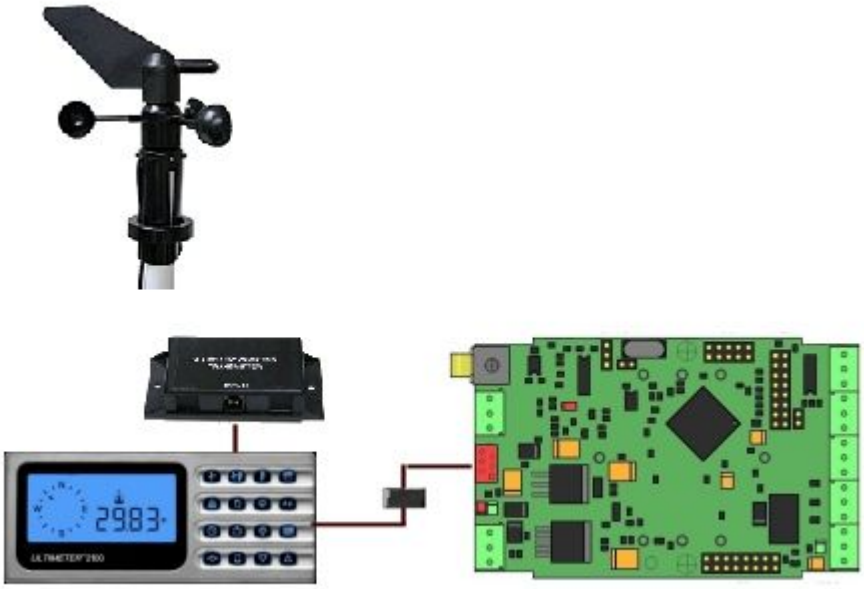
J1 - select RS232-RS485



- select RS232

Wather Station connection and jumper installation

Weather Station ULTIMETER 100 you can connected with serial cable to serial cable of ULTIMETER 100 (DB9 connector). Baud rate 2400 baud.



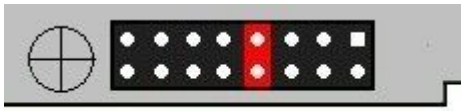
BieneRemote-WS include two Serial Cable
Serial Cable 1 – for PC connection (in programming/setting mode)
Serial Cable 2 – for ULTIMETER connection.

You can set two work mode:

programming/setting mode (you can connect to serial port Serial Cable 1 for from PC software programming/setting)

work mode (to serial port with Serial Cable 2 connected ULTIMETER weather station)

Programming mode

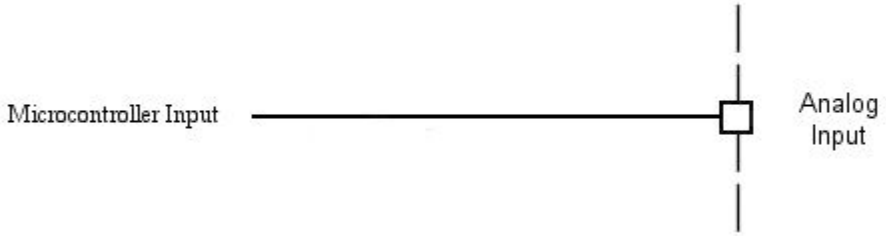


P2 pin header

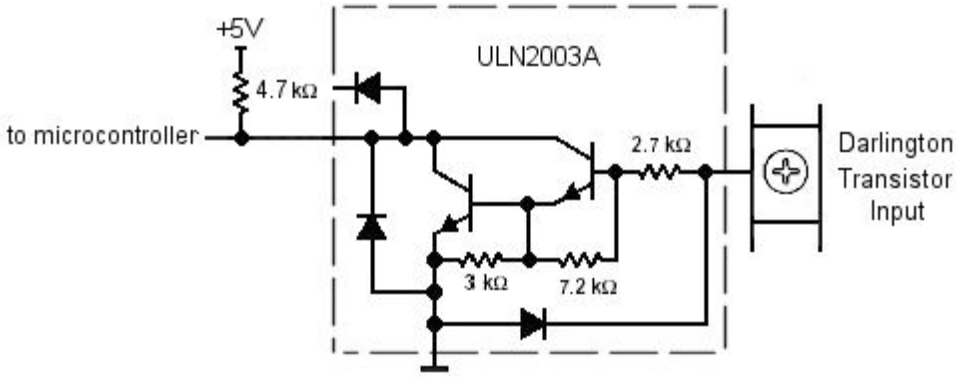
Input and Output Schematic

Inputs

0-5V Analog Inputs
Connector: Pin Header P2
Input type: CMOS
Input Voltage: 0 to VCC (+5V)
Max input voltage: -0.5V...VCC+0.5V
Protection: No
Input resistance: 100 Mom typ.
ADC resolution: 10-bit

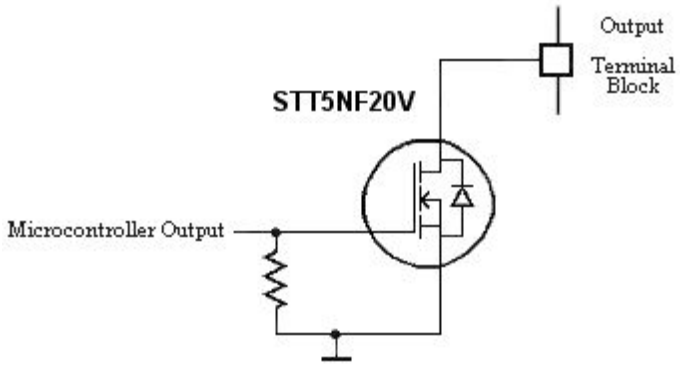


Digital Transistor Inputs
Connector: Screw terminal blocks M3, M4, M5
Inversion: yes
Protection: 2.7kOm serial resistor
Max input voltage: +12V without external limited resistor.
Free Input: logic "0"
Logic "0": 0V…+1V
Logic "1": +1.5V…+12V

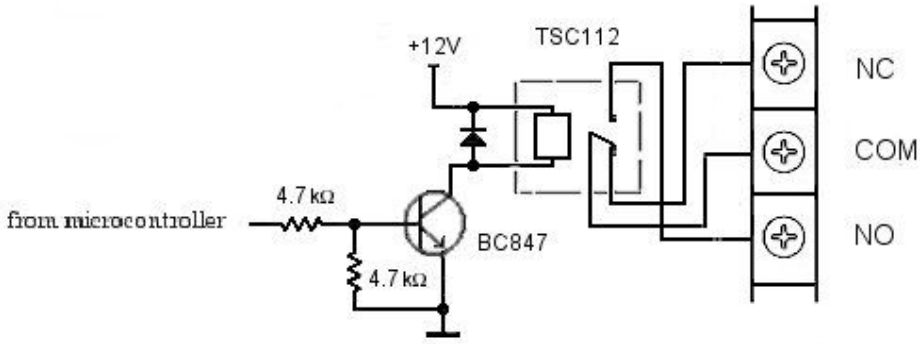


Outputs

MOSFET Open Drain Outputs
Connector: Screw terminal blocks M6, M7, M1
MOSFET transistor: STM STT5NF20V
Max. Voltage: 20V



Relay Outputs
Connector: Screw terminal blocks M7, M8
Outputs: NC (normal closed), NO (normal open), COM (common)
Relay: Tyco OEG TSC112, Omron G5V-1-12VDC or equivalent
Max. Voltage: 24VDC/1A; 120VAC/0.5A



Microcontroller Inputs and Outputs Electrical Characteristics

Absolute Maximum Ratings
Voltage on any Microcontroller Pin with respect to Ground: -0.5V to VCC+0.5V
DC Current per I/O Pin: 40 mA

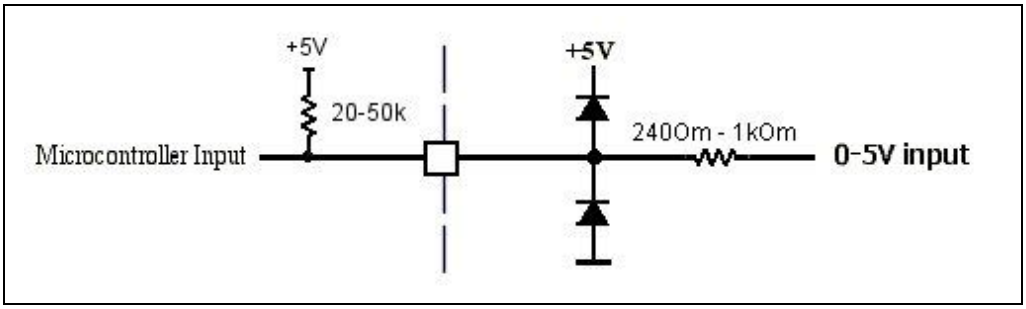
DC Characteristics
Input Low Voltage: -0.5V to 0.2VCC
Input High Voltage: 0.6VCC to VCC+0.5V
Output Low Voltage: 0.7V max (20mA)
Output High Voltage: 4.2V min (20mA)

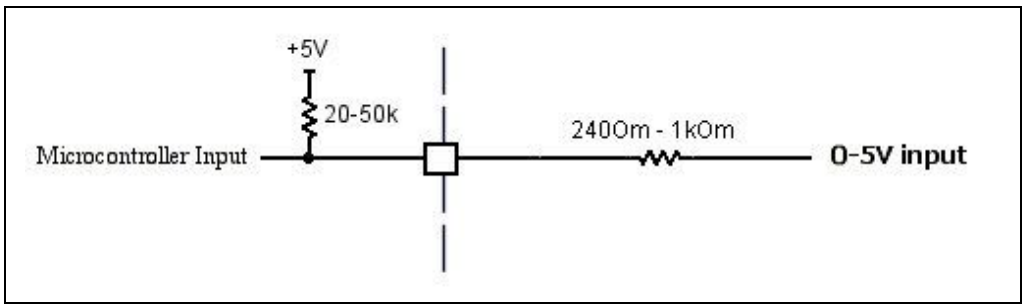
Microcontroller Input protection

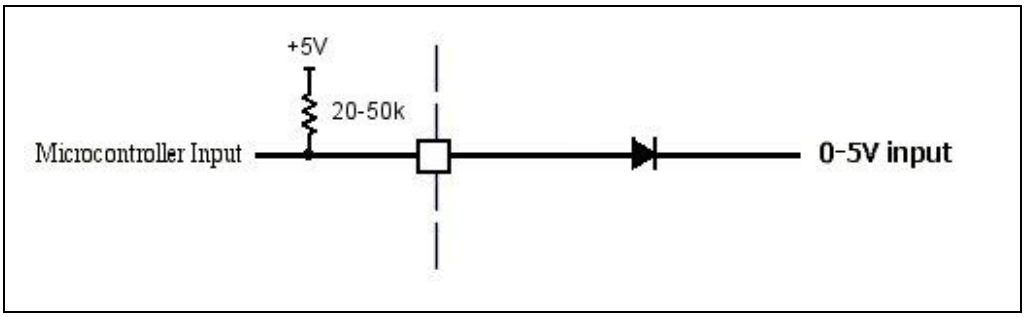
Supply Voltages Partially Switched Off

If BieneRemote module power supplies switched Off and connected sensors power supplies in On state, use current limiting resistors for microcontroller inputs and outputs protection.
For over current protection can use current limiting resistor. For over voltage protection can use diode.

Microcontroller Digital Inputs Protection

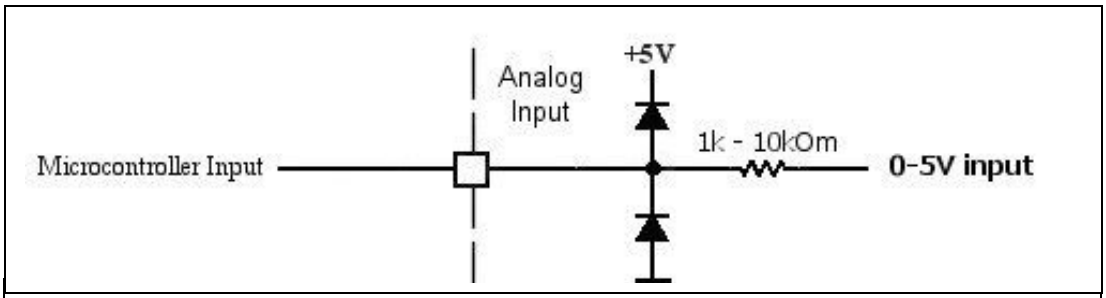


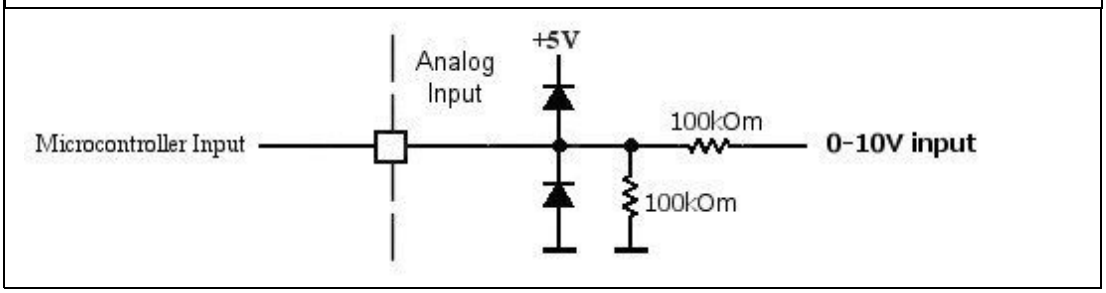


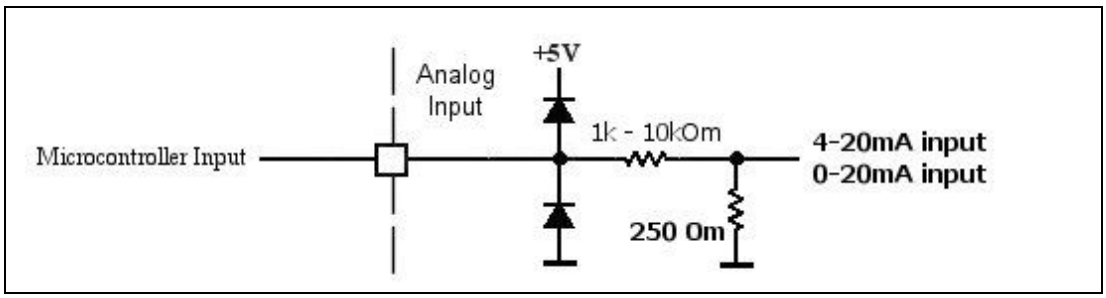


Note:
Not use microcontroller pin for digital signal connection. Use digital transistor inputs for digital signal connection. Digital transistor input connected to screw terminal blocks and also has serial resistor for protection.

Microcontroller Analog Inputs Protection





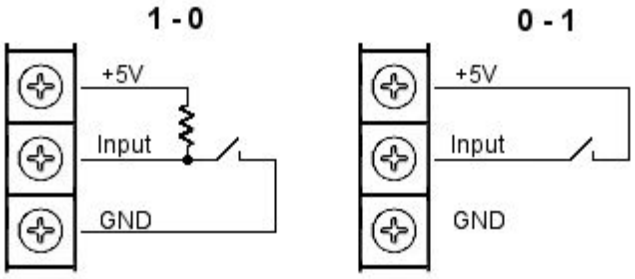


Note:

If you use microcontroller inputs for analog signal connection, use one of protection schematic. We recommended used Analog Adapter Board with analog signal protection and with screw terminal block. *See "Analog Adapter Board #4A*" or "*Temperature & Analog Adapter Board #PT1000*".

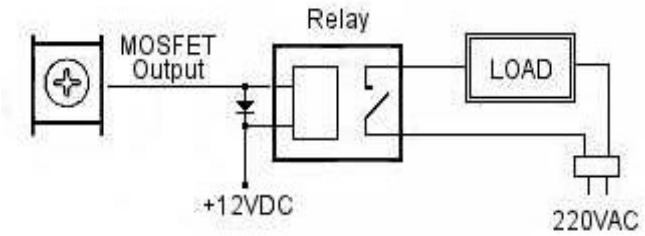
Connection Example

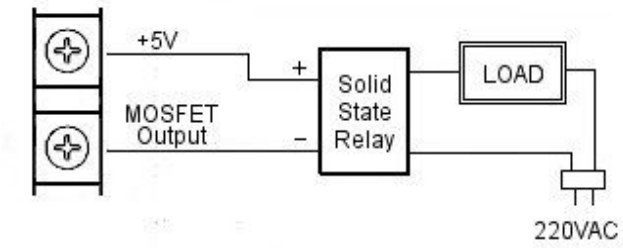
Connection example to Input Driver (Input 1-6 on terminal block)



Relay connection example to Output Driver (Output 1, 2 and 3 on terminal block)

Electromechanical relay and Solid-state-relay (SSR) connection.

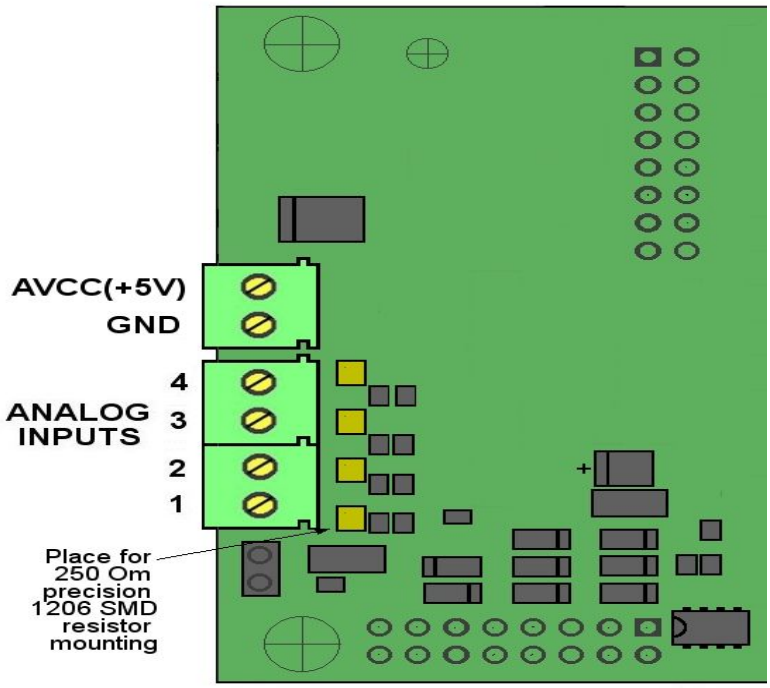


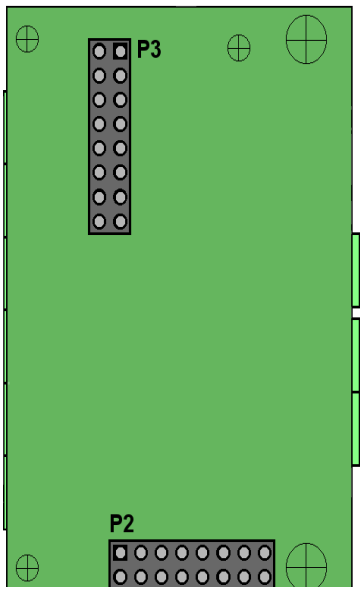


Analog Adapter Board #4A

Analog Adapter Board used for connection BieneRemote128GM-METEO module with up to two 0-16V analog signals.(input 1 for Battery Output connection – battery voltage level control)
Adapter has screw terminal blocks for analog signal connection. Each input has diode protection.
This board has schematic for 0…+16V (+5V reference) analog signal connection with diode protection.

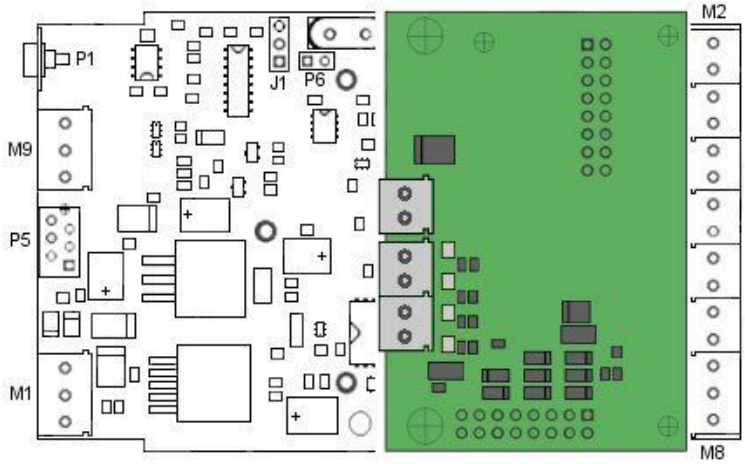
-



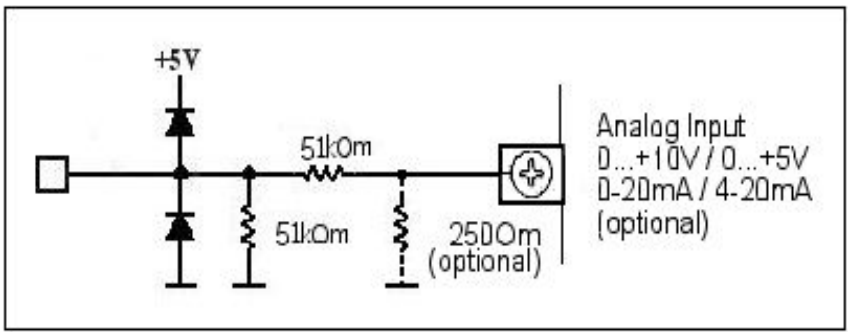


Adapter has two 2x8 sockets P2 and P3 for insertion in P2 and P3 2x8 pin header on BieneRemote128GM.
BieneRemote128GM with Analog adapter board connection show on figure below.

BieneRemote128GM with inserted Analog Adapter Board #4A



Analog input schematic:



Diode and serial resistor used for microcontroller analog input protection.
Input analog signal divide to 2.

BieneRemote16 and BieneRemote128 analog signal measurement.

Reference set to +5V.

0-10V: 0V – 0%; 12V – 75%; 16V – 99%

Module programming

For module programming:

1. SIM card preparation
2. Programming with send control SMS (see paragraph 'SMS Control Command List')
   or via RS232 serial cable with software on PC (see " Programming software ").

SIM card preparation

1. Delete any SMS messages from SIM.
2. Disable PIN code request so it will not prompt for a PIN code on turning on.
3. Write 4 authorized numbers to Phone Book (position 1,2,3,4)

Note:

1. *The BieneRemote128GM can only be used with small SIM-cards with 3V technology.*
2. *For SIM card preparation you can use cell phone or external GSM modem.*

Programming with SMS

See " SMS Control Command List "

Module work without programming. But if you will use data logger function, you can set GPRS and FTP setting. As optional you can use alarm SMS function and output control with SMS from your cell phone

1. Send SMS ***SETNR1*** from your cell phone to BieneRemote128GM (store your number)
   Setnr2 - for send SMS to two cell phone ...
2. You can set analog signal level

Programming via serial port

See " BieneRemote128GM-METEO setting up software "

Alarm SMS message in SIM card

Set phone numbers from which management is authorized (number in SIM phone book)

	Phone Book	
1	A1	<Phone number Nr1> 1)
2	A2	<Phone number Nr2> 1)
3	A3	<Phone number Nr3> 1)
4	A4	<Phone number Nr4> 1)

Note 1: full phone number with country code

Example - enable 3 phone numbers for BieneRemote management

	Phone Book	
1	A1	+3719106159
2	A2	+3716149759
3	A3	+3718398597

Example - enable all phone numbers (disable authorization numbers)

	Phone Book	
1	A1	99
2	A2	<Phone number2>

Outgoing numbers memory

You can send SMS command ***Setnr1*** from first cell phone.
You can send SMS command ***Setnr2*** from second cell phone.
...
You can send SMS command ***Setnn1 [number]*** from your cell phone; where number = full cell phone number with international code (for example, +37129106159).

	Cell phone / GSM modem / BR module
Nr.1	Phone number Nr.1
Nr.2	Phone number Nr.2
Nr.3	Phone number Nr.3
Nr.4	Phone number Nr.4

SMS text memory

Write with SMS command ***Settx*** and ***Setti*** or via serial port.

position	SMS text message
	External (up to 32 character)
01	*Digital input 1 0-1 events*
02	*Digital input 2 0-1 events*
03	*Digital input 3 0-1 events*
04	*Digital input 4 0-1 events*
05	
06	
07	
08	*Digital input 1 1-0 events*
09	*Digital input 2 1-0 events*
10	*Digital input 3 1-0 events*
11	*Digital input 4 1-0 events*
12	
13	
14	
15	*BATTERY VOLTAGE VERY LOW*
16	*BATTERY VOLTAGE LOW*
17	*BATTERY NORMAL*
18	
19	
20	*Analog input 2 minimum 2 level*
21	*Analog input 2 minimum 1 level*
22	*Analog input 2 normal*
23	*Analog input 2 maximum 1 level*
24	*Analog input 2 maximum 2 level*

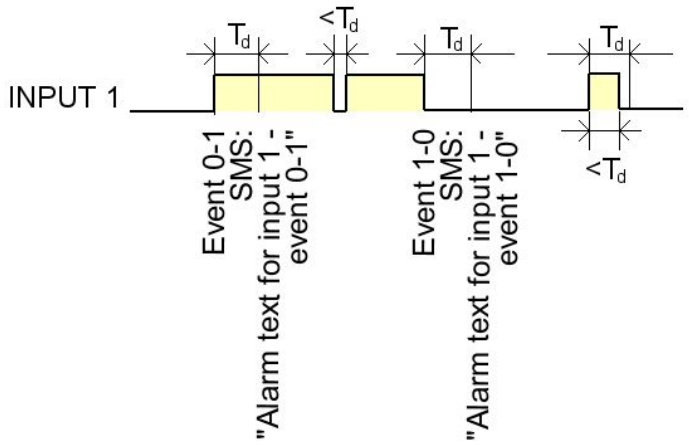
Outgoing numbers

	Cell phone
Nr.1	Phone number Nr.1
Nr.2	Phone number Nr.2
Nr.3	Phone number Nr.3
Nr.4	Phone number Nr.4

Digital and analog signal monitoring

Digital signal monitoring (0-1 and 1-0 events)

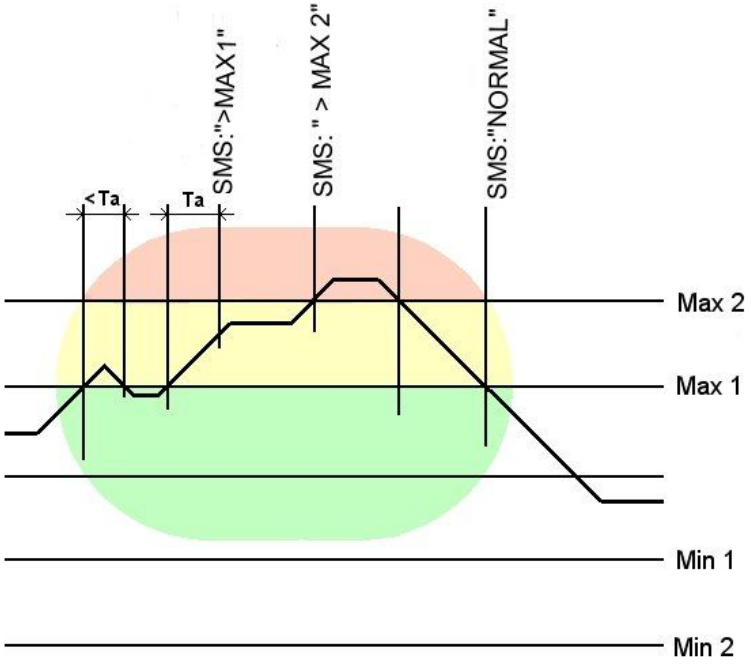
You can set different SMS notification message for 0-1 and for 1-0 events.
For example, 0-1 SMS message 'DOOR OPEN', 1-0 SMS message 'DOOR CLOSE'.



Analog signal monitoring

Can set 2 minimum level and 2 maximum level:
MINIMUM 2 < MINIMUM 1, MAXIMUM 2 > MAXIMUM 1

For analog signal monitoring
MINIMUM1 and MAXIMUM1 level**.**
MINIMUM2 and MAXIMUM2 level.



SMS Control Command List

Command *1)*	Function	Return Message	Description
METEO DATA			
Getmet	Get weather report	ULTIMETER WEATHER REPORT text	Request weather report.
Getmt	Get weather report	ULTIMETER WEATHER REPORT text	Request weather report.
DIGITAL			
Getst	Get Technical Status	INP= 0001 OUT=00000 Ref=+5V T4=0 SR=5 BL=4 SQ: 27,7 SMS: Enable Baud Rate: 2400 SMS filter: 11000	Get input state , output state, Output 4 pulse parameter (see Settn), Sample Rate (see Settn), Block length (see Settn), Alarm enable/disable, signal quality, Baude Rate (const) SMS filter
Setou1	Set Output 1	Technical Status	Set Output 1
Setou2	Set Output 2	Technical Status	Set Output 2
Setou3	Set Output 3	Technical Status	Set Output 3
Setou4	Set Output 4	Technical Status	Set Output 4 - relay ON
Setou5	Set Output 5	Technical Status	Set Output 5
Rstou1	Reset Output 1	Technical Status	Reset Output 1
Rstou2	Reset Output 2	Technical Status	Reset Output 2
Rstou3	Reset Output 3	Technical Status	Reset Output 3
Rstou4	Reset Output 4	Technical Status	Reset Output 4 - relay OFF
Rstou5	Reset Output 5	Technical Status	Reset Output 5
SettnD U L	Data logger sample rate (0..9); Output 4 impulse duration (0..9 = 0..18 sec); L records in data logger file (1,2,4,8)	Technical Status	Set Sample Rate (0 – disable data logger, 1 – 1min, 2 – 2min, 3 - 3min, 4 - 4min, 5 - 5min, 6 - 10min, 7 – 15min, 8 – 20min, 9 – 30 min); default – 1. Set Output 4 pulse duration = 2*U sec; default – 0 (no pulse): L - records in data logger file; default - 4
COMMON			
Seten	Alarm SMS enable	Technical Status	Set active mode - Alarm SMS enable
Setdi	Alarm SMS disable	Technical Status	Set passive mode - Alarm SMS disable
Rstrt	Restart Module		Restart Module
TEXT			
SettxNN [text]	Write alarm SMS text (external)	NN-[text]	Write alarm SMS text; NN = 01,02,03,..24 {text] up to 32 characters
GettxNN	Read alarm SMS text (external)	NN-[text]	Read alarm SMS text; NN = 01,02,03,..24 {text] up to 32 characters
OTHER SETTING			
Setmp ULTIMETER EDEDUE	Set other setting	MP: ULTIMETER EDEDUE	
Getmp		MP: ULTIMETER EDEDUE	

Command	Function	Return Message	Description
ANALOG			
Getan	Get Analog Data	A1=0 A2=0 / A1:10 20 80 80 A2:00 00 00 00 T1=21 T2=22 BATTERY 12,4 V	Get analog data (in %) and level (min2, min1, max1, max2) for 2 analog inputs Temperature in "C Battery voltage level (analog input 1)
AnlevN 00 00 00 00	Set level for analog input N, 2)	A1=00 A2=00 A1:00 00 00 00 A2: 00 00 00 00 T1=21 T2=22 BATTERY 12,4 V	Max Level 1 > 5 Max Level 2 > 10 if Max Level = 0 and Min Level = 0, then no alarm SMS message
Setbr B	Set Baud Rate; B = 1...7 (optional)	Baud Rate: 2400	Set Baud Rate for serial port (after command – restart module)
Setsf 10000	Set SMS filter	SMS filter 10000	Set meteo SMS filter 10000 – send only first SMS 11000 – send two SMS 11111 – send all SMS
Getsf	Get SMS filter	SMS filter 10000	
NUMBERS			
SetnrN	Set number N=1,2,3,..,7	Technical Status	Set cell phone for alarm notification Send this SMS from cell phone for alarm notification
ClrnrN	Clear number N=1,2,3,..,7	Technical Status	Clear cell phone for alarm notification
GetnrN	Read number N=1,2,3,..,7	+3715881456	Read stored notification numbers
Getpb	Read phone book	N1:99 N2:+3716149759 N3:+3715881419 N4:+3715881456 N5:+3715875473 N6: N7:	Read administration numbers (first 7 numbers from SIM phone book)
OTHER SETTING			
Setmp ULTIMETER EDEEUD	Set various setting	MP: ULTIMETER EDEEUD	ULTIMETER – start text E - Answer Enable D - GPRS error SMS Enable1 E – Store Output Enable: D – GPRS error SMS Enable2 U – Ultimeter Mode E – SMS Enable Flag
Getmp			

Note 1) *Not case sensitive. You can use GETST, Getst,*
Note 2) *If Max analog level = 00, then alarm for this level disable*
If Min analog level = 00, then alarm for this level disable

GPRS/FTP setting up

Command	Function	Return Message	Description
GPRS			
Setap [APN] Setap	Set APN or disable GPRS	APN: [APN]	Setap [APN] - APN - Access Point Name; without APN - disable Data Logging to GPRS (only SMS mode)
Getap	Get APN	APN: [APN]	Get Access Point Name
Setip [IP address]	Set IP address	IP address: 0,0,0,0	Set IP address (GPRS context); 0,0,0,0 means dynamic
Getip	Get IP address	IP address: 0,0,0,0	Get IP address (GPRS context)
Setid [User ID]	Set User ID	User ID: [user ID]	Authentication setting
Getid	Get User ID	User ID: [user ID]	Authentication setting
Setpw [Password]	Set Password	PASSWORD: [password]	Authentication setting
Getpw	Get Password	PASSWORD: [password]	Authentication setting
FTP			
Setft [URL]	Set URL	FTPURL: [URL]	Set URL address of FTP server
Getft	Get URL	FTPURL: [URL]	Get URL address of FTP server
Setaf (User Name]	Set User Name	UserName FTP: [User Name]	Set User Name
Getaf	Get User Name	UserName FTP: [User Name]	Get User Name
Setpf [“Password”,0] or Setpf [“Password”,1]	Set Password	Password FTP: [“password”,0] or Password FTP: [“password”,1]	Set authentication password for FTP. Password in “ ”. After password can set ,1 if the ftp-server needs a passive transfer. Default – active transfer.
Getpf	Get Password	Password FTP: [password]	Get authentication password for FTP
Setnm [User Name]	Set User Name	User Name: [user name]	Set authentication user name
Getnm	Get User Name	User Name: [user name]	Get authentication user name

SETTING UP GPRS Internet

APN (Access Point Name) - the logical name that selects the GGSN network connected
4. for example:
5. for LMT (Latvia) - internet or internet.lmt.lv
6. for Orange - orangeinternet
7. for Vodafone - internet

User ID and Password - authentication setting
Username and password may be are not required for Internet access

IP address - is the IP address associated with the terminal in the address space of the PDP.
IP address is assigned dynamically, or you can use a static IP address

SETTING UP FTP

URL - address of FTP server (for Data Logging files *.csv)
User Name - authentication user identification string for FTP
Password - authentication password for FTP. Password in “ ”. After password can set ,0 if the ftp-server needs a passive transfer, 1 – if passive transfer. Default – passive transfer.
For example:
“123”,1 if FTP server needs a passive transfer (recommend)

Output state (default)

	Output state (on microcontroller)	Output state on terminal block (BieneRemote16)
Output 1	0	1
Output 2	0	1
Output 3	0	1
Output 4	0	1 relay
Output 5	0	1

Not connected input state

	Input state (on microcontroller)	Input state on terminal blocks
Input 1	1	0
Input 2	1	0
Input 3	1	0
Input 4	1	0

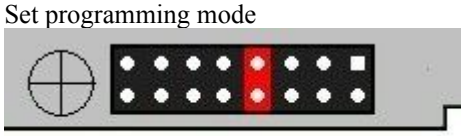
Active event on input

	Input state		Input state on terminal blocks	
Input 1	0-1	1-0	1-0	0-1
Input 2	0-1	1-0	1-0	0-1
Input 3	0-1	1-0	1-0	0-1
Input 4	0-1	1-0	1-0	0-1

BieneRemote128GM-METEO-U100 setting up software

With BR128GM-METEO.exe software and serial port cable you can:
setting up or testing BR128GM-METEO-U100 module:
change parameter (SMS text message, analog level), check default setting,
set band (GSM900/1800 or GSM900/1900 or GSM 850/1800 or GSM850/1900);
set cell phone numbers or other BieneRemote module numbers;
setting up GPRS and FTP parameter for data logging process via GPRS.
Baud Rate for communication with BR128GM module - **2400 Baud**.

Set programming mode



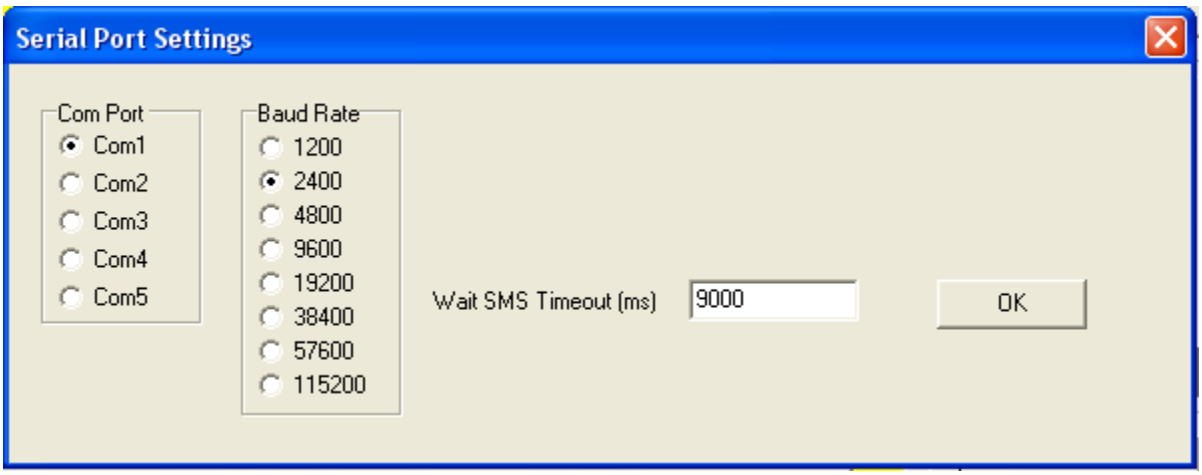
P2 pin header

SETTING UP PROCESS

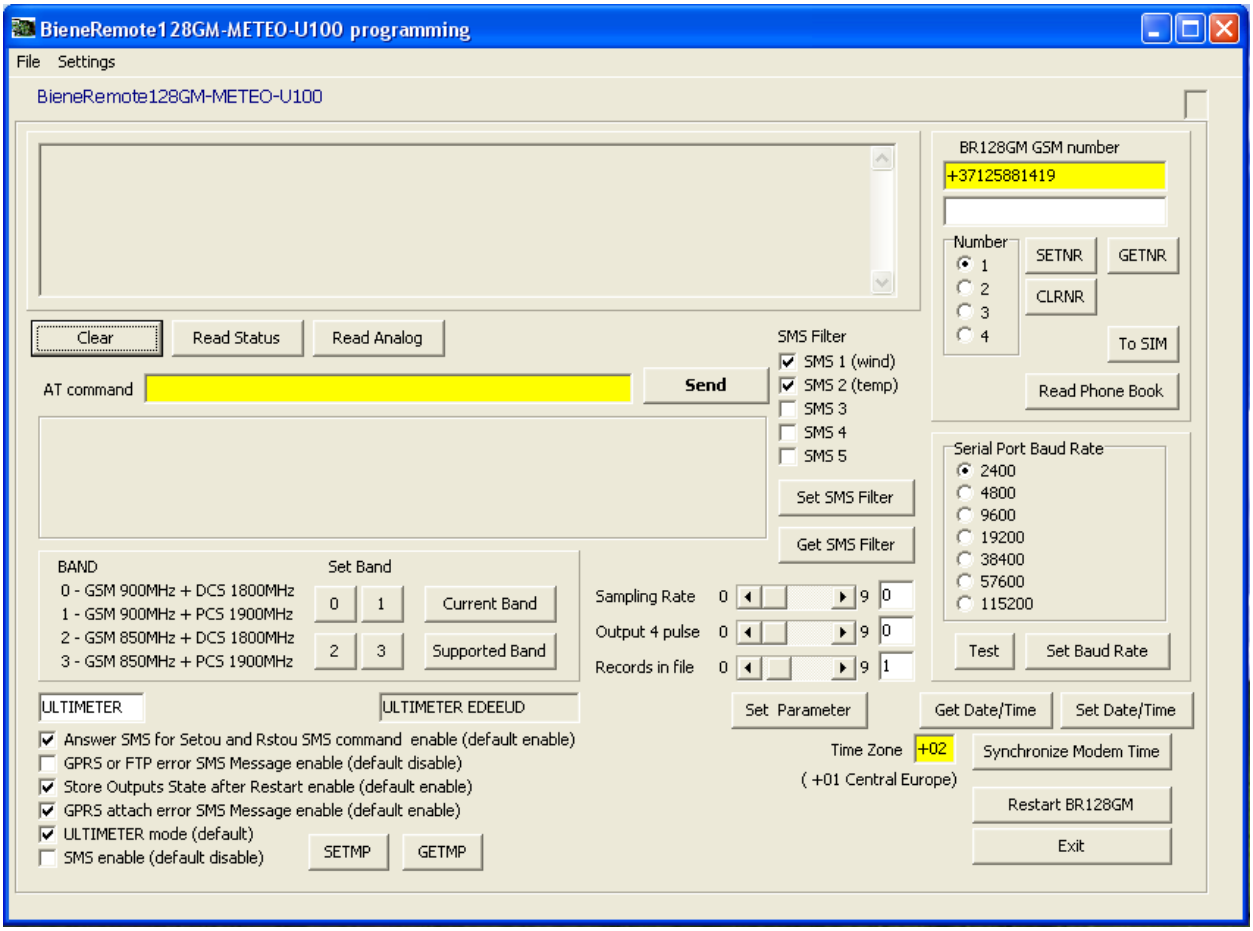
1. Turn Off computer
2. Connect BR128GM and computer with serial cable
3. Turn On computer
4. Run BR128GM-Pt1000 / -4A setting up software
5. Power On BR128GM
6. Wait message " Welcome to BR128GM-METEO-U100 programming"
7. You can programming BR128GM-METEO-U100 module

Serial port settings

SETTING UP SERIAL PORT
Baud Rate = 19200



Main windows



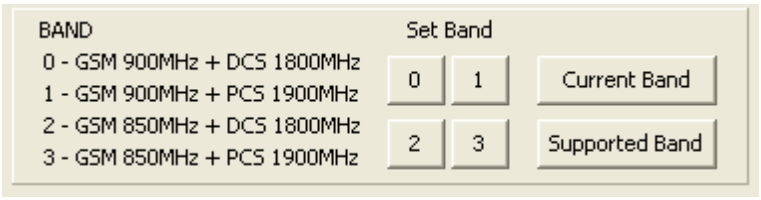
Menu

Setting,

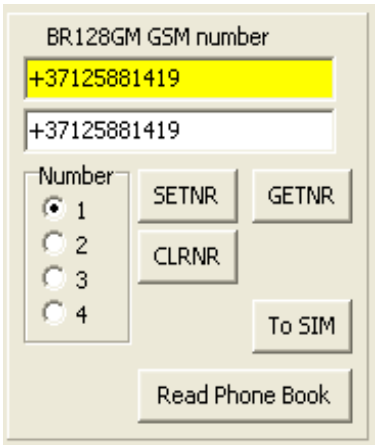
External SMS message,
Analog Setting,
GPRS/FTP setting,
Serial port setting,
Save setting

BAND

0,1,2,3 - GSM band setting up.
0 - GSM 900/1800 - for EUROPE, AFRICA, ASIA
1 - GSM 900/1900; 2: GSM 850/1800
3 - GSM 850/1900 - USA, CANADA, SOUTH and CENTRAL AMERICA



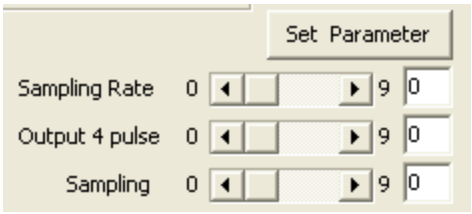
NUMBERS
Yellow: BR128GM number - remoted BR128GM module cell phone number
White: number for SETNR command (as Setnn SMS command)
Number (1..4), **SETNR, CLRNR, GETNR** - set, clear, get numbers to/from BR128GM.



To SIM – set number to SIM phone book
Read Phone Book – Read from SIM phone book

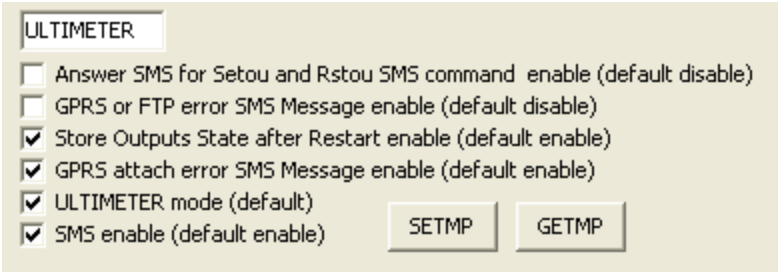
SET TIMEOUT

(Button SET PARAMETER - as SMS command Settn)
Set Output 4 pulse duration; if 0 – no pulse.
Set data logger sample rate; if 1 – 1 min; 2 – 2min; 3 – 3min; 4 – 4min; 5 – 5min; 6 – 10min; 7 – 15min; 8 – 20min; 9 - 30min
Set Data Logger Period; if 0 or 1 – 1 record in file, 2 – 2 records in file, 4 – 4 records in file, 8 – 8 records in file.



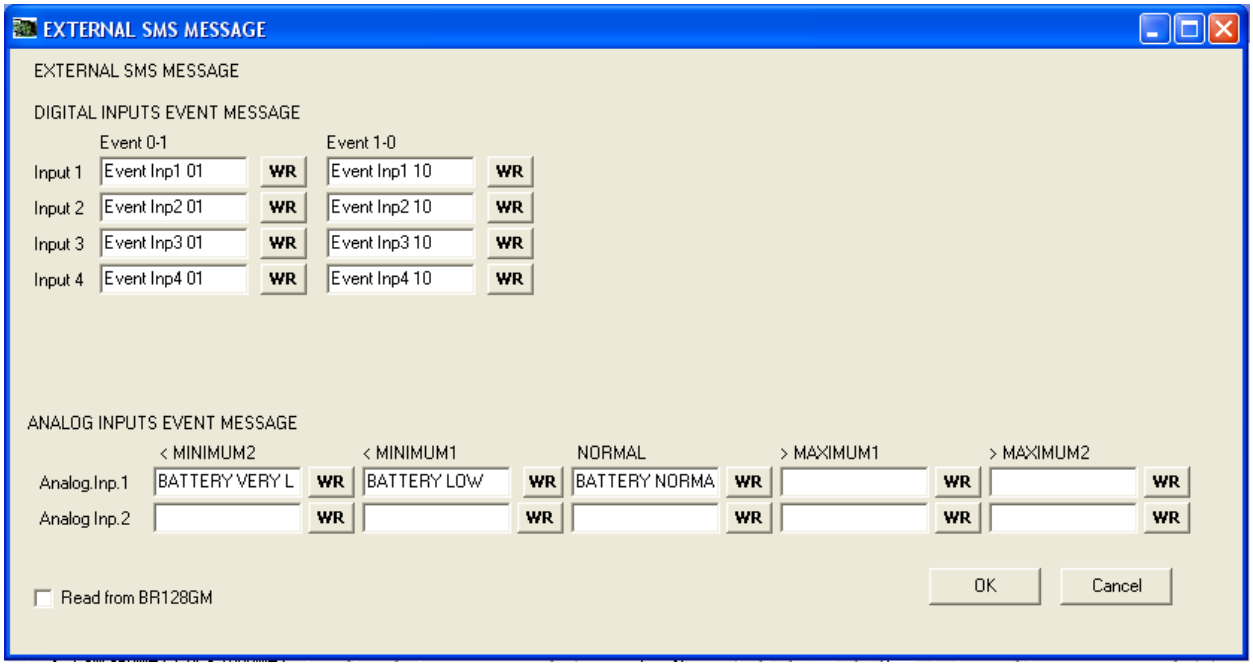
AT COMMAND
You can direct execute AT command (not all) to Telit GM862 GSM/GPRS modem

VARIOUS SETTING
ULTIMETER - text identificator
Answer SMS for SMS command Setou, Rstou; if enable, you receive answer from module; default – disable
GPRS or FTP error SMS message; if enable, you receive SMS, if FTP or GPRS error
Store Output State; if enable, after restart module outputs stored state before restart
GPRS attach error message; if enable, you receive SMS if GPRS attach error
ULTIMETER mode – enable for ULTIMETER version (default)
SMS enable (only for not ULTIMETER mode)

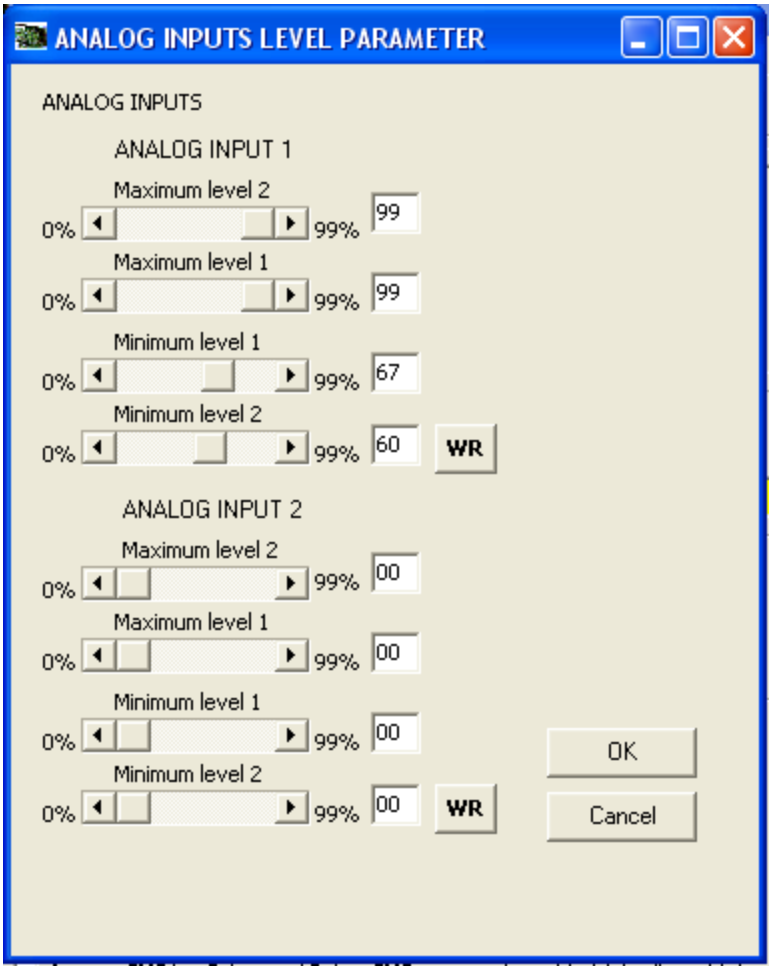


Set Date/Time button - set Date/Time (from PC date/time)
Get Date/Time button - get Date/Time
Synchronize Modem Time - not used in programming mode.

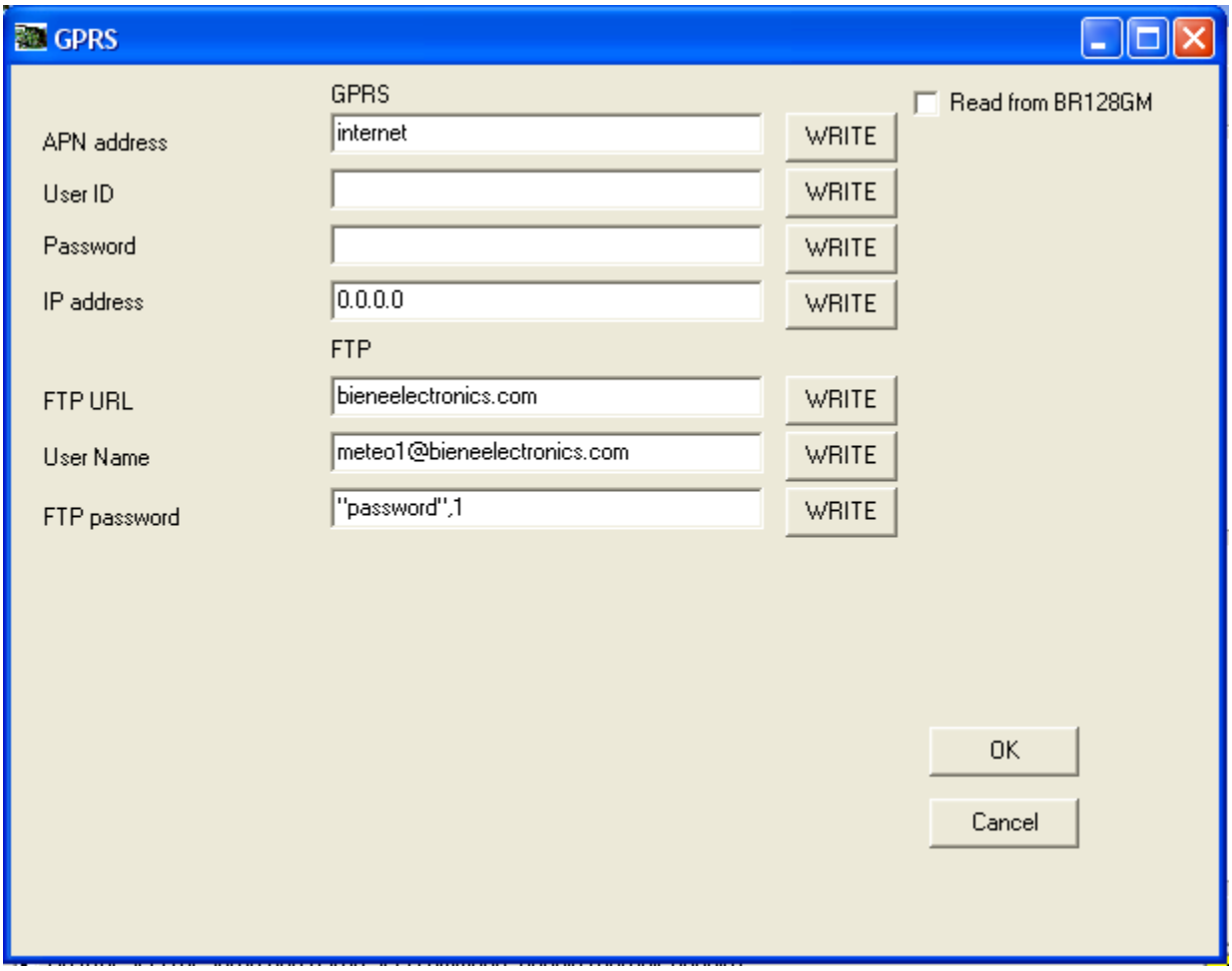
SET ALARM TEXT SMS



SET ANALOG LEVEL



GPRS/FTP SETTING



SETTING UP GPRS/FTP

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11. for Vodafone - internet

User ID and Password - authentication setting
Username and password may be are not required for Internet access

IP address - is the IP address associated with the terminal in the address space of the PDP.
IP address is assigned dynamically, or you can use a static IP address

Note: If APN if blank, GPRS mode disable

SETTING UP FTP

URL - address of FTP server (for Data Logging files *.csv)
User Name - authentication user identification string for FTP
Password - authentication password for FTP – in “”

Mechanical Specification

BieneRemote128GM PCB size: