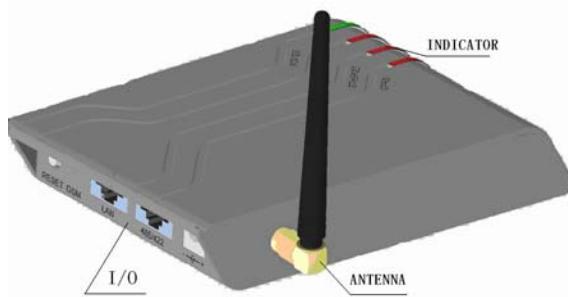


PV GPRS DATA LOGGER

TK-G10-01/08/16/08S/16S Instruction

1. General

TAOKE GPRS data logger of PV plants collects the operation data, including inverter, radiation, meter data, etc. by RS-485/422, and sends these data to website via GPRS and ethernet so that user can check the power station running status by logging on to internet website.



2. Scope of supply

This logger will be delivered with the following components:

1. TK-G10 PV GPRS data logger
2. Power adapter 220VAC input ,12VDC /1A output
3. Manual
4. CD disk
5. Wall plug and screw

3. Technical data

Product parameters	Tech-Specifications
Power supply	220V AC /12V DC
Static power consumption	<2W
Active power consumption	<8W
Indication for status	4(top)+3(rear) LEDs
Internet Connection	GPRS+Ethernet
Support frequency band	GSM900/1800/850/1900
Ethernet connection	10BASE-T/100BASE-TX
Ethernet interface	RJ45-CAT5
PV device(inverter etc.) connection	RS485/422
RS485/422 baudrate	1200~38.4K bps
RS485/422 cable length	Maxim 1000m
RS485/422 interface	RJ45
Data collection interval	5~30min(optional)
Operation temperature	-10~55°C(14~131°F)
Protection type	IP21(In-door use only)
Installation	Desktop or Wall-mounting
L × W × H	135×85×25mm
Configuration	Via computer

4. Ordering information

TK-G10-×××

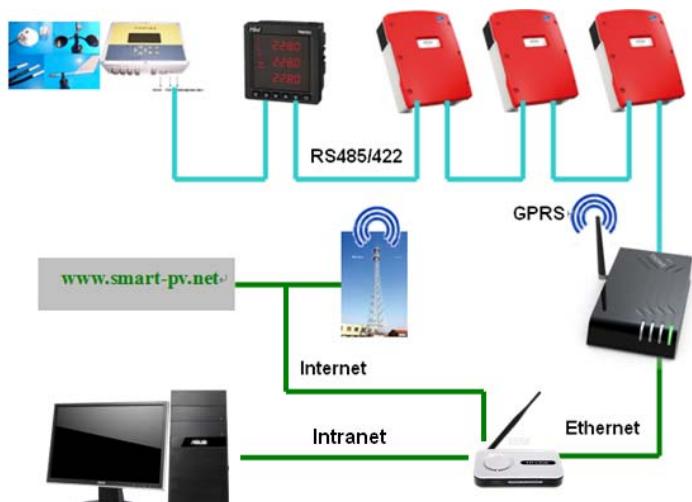
Sending data via ethernet to intranet server added
Max. number PV devices(inverters,meters,etc.)
Sending data via GPRS and ethernet to internet server

5.I/O illustration



- \leftarrow +: DC power socket
 485/422: RS-485/422 socket
 LAN: Ethernet socket
 GSM: GSM indicator
 RESET: Key for reset to "IP address allocated via DHCP automatically"

6. Installation

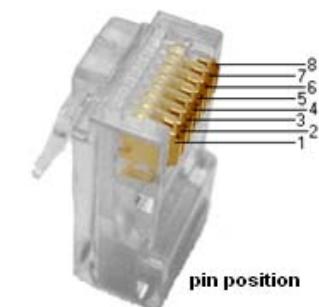


Field connection diagram

PV GPRS data logger should be installed where dry and ventilation are required in-door. It can be installed by desktop or wall-mounting. Please check the GSM signal by GSM mobile before installation. DO NOT install inside metal box or near by big metal material. Adjust and fasten the logger antenna with hand.

NOTE:DO NOT use spanner etc. tool to overdrive the antenna. Connection the logger via "RS485/422" socket to the PV devices, including inverter, meter, sensor (radiation, temperature etc) etc., and wiring among each other with CAT5 cable.

RJ45 Pinouts/ Color of wire	RS422	RS485
1	NC	NC
2	NC	NC
3/white green	R+	
4/Blue	T+	485+(A)
5/White blue	T-	485-(B)
6/Green	R-	
7/ Brown	GND	GND
8	GND	GND



RS-422/485 foot pin and CAT5 wire correspondence of logger

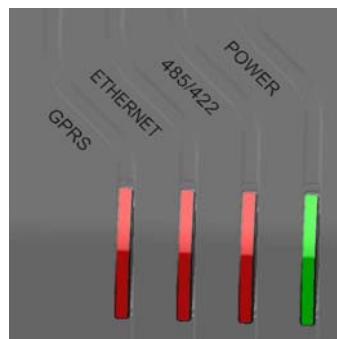
The logger can also deliver data via ethernet. The logger is set to identify network via DHCP automatically. Connection the logger via "LAN" socket to a network router with network cable, the LED-ETHERNET flashes quickly. When the LED is steady on, the IP address is allocated. If the LED flashes slowly after one minute, the IP address is not allocated automatically. You can set a fix IP address via computer. Read the "Logger set tool User Manual" and use the "Logger set tool.exe" in the disk.

If you want to reset "IP address allocated via DHCP automatically", pull out the DC plug, press the reset key and

plug in at the same time. The 4 LEDs on top are flashing. When all the LEDs are steady on, release the key.

NOTE: Each logger connected to a network has got its own IP address. This address can not be used twice and can not be allocated to another logger, computer, etc. appliance. When the 'ETHERNET' indicator is steady on, but there is no data on website or you can not search the logger via computer with "Logger set tool.exe". If the logger is set a fix IP address, you have set a wrong IP address or the IP address is allocated twice. If the logger is allocated IP address via DHCP automatically, the IP address is allocated twice.

7.Led illustration



POWER:steady on when power supply is normal.

485/422:Off,no data is collected.
flash 150ms when collection.

Steady on, all the data is collected correctly.

500ms On/500ms Off, some data can not be collected.

ETHERNET:Off,cable not connected to a router or a computer.
Steady on,the IP address is allocated.

500ms On/500ms Off: obtaining IP address automatically.

500ms On/2500ms Off: IP address can not be allocated.

GPRS:Off, GPRS not linked.

steady on, the GPRS is linked.

500ms On/500ms Off, linking GPRS.

100ms On/100ms Off 5 times, 600ms Off, no SIM card

inner simlock or the lock get loose



GSM: Off,GSM not work.

500ms On/2500ms Off, the network is linked.

500ms On/500ms Off, linking the network.

LAN: The two LEDs Off, ethernet is no linked.

The two LEDs blinking. ethernet is linked.

NOTE: IF the LED of 'GSM' is always linking the network, which the LED flash 500ms on/500ms off a few seconds, and reset. The signal strength of GSM is very weak so the SIM card is illegal.

8.SIM card PIN and APN

IF there is SIM card PIN and APN, the PIN and APN should be set to the logger beforehand. Read the "Logger set tool User Manual" and use the "Logger set tool.exe" in the disk.

Trouble shooting

LED	Symptom	Description
'GPRS'	is off after 'GSM' is linked	The APN is not set or wrong.
'POWER'	on ,then '485/422' on ,then 'ETHERNET ' on, then 'GPRS' on,—such revolve, and 'GSM' is off.	The PIN is not set beforehand or is set wrong. And the logger is locked, unless the PIN is set again.
'POWER'	and '485/422' on at the same time 'ETHERNET ' and 'GPRS' off, then 'POWER' and '485/422' off at the same time 'ETHERNET ' and 'GPRS' on—such cycle, and 'GSM' is off.	The PUK is locked. IF the PIN is set wrong 3 times, the PUK will be locked. You should contact SIMCARD seller.

9. Trouble shooting

Symptom	Analysis	Handling
'Power' indicator off	DC power not connects in or get loose	Reconnecting power after checking the circuit.
	Power adaptor malfunction	Replace power adaptor.
'RS485/422' indicator off or flash	Wiring not connects or get loose	Check cable among the logger and PV devices.
	PV device malfunction	Check PV device.
	Parameters' wrong	Contact installing personnel.
'ETHERNET' indicator off or flash	Network disconnecting when the indicator is off	Check the "LAN" socket, if the two LEDs are not blinking , check if the cable get loose.
	The IP address is something wrong when the indicator flash	If the two LEDs of "LAN" socket are blinking, the IP address is set wrong, or this address is allocated twice.
'GPRS' indicator off or flash 'GSM' indicator off or flash(500ms on/500ms off)	Antenna is nor fastened	Check the antenna.
	No GSM signal(ALFT) or the signal is weak	Check the signal(ALFT) with other GSM mobile phone.
	GSM module is abnormal	Disconnecting power for about 15s, power on again to see if blinking of "GSM" is normal.
	SIM card is abnormal	Check the SIM card.
	APN is wrong or illegal	Check APN.
	GSM/GPRS unit does not work or abnormal	Contact installing personnel after the previous 5 steps.

NOTE

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment must be installed and operated with minimum distance 20cm between the radiator and your body.

Inner this equipment, there is a transmitter module-SIM900, which is manufactured by SIMCOM and is FCC passed. The FCC ID can you read on the top of the module, which is assembled in the

bottom left of the PCB inner logger box.

The FCC ID of the transmitted is UDV-0912142009007.



The antenna used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter, except in accordance to FCC multi - transmitter product procedures.