



# PI500A-S/PI500-S series



Special Solar inverter  
for PV Water Pump




**Brief introduction:**

PI500A-S/PI500-S series solar inverter special for PV water pump adopts the high accuracy fast MPPT algorithms, tracking the PV array output by the maximum power point, driving the pump motor as much as possible to meet various pumping applications. The solar inverter special for PV water pump can support AC input besides support PV array DC input. When the PV array can not drive the motor or does not have output, it can also accept the grid DC input or other AC motor to supply the power to meet various emergency needs. PI500A-S/PI500-S/PI150-S series solar inverter special for PV water pump provides full protection, maximizing the life of motor and pump.

**Capacity range:**

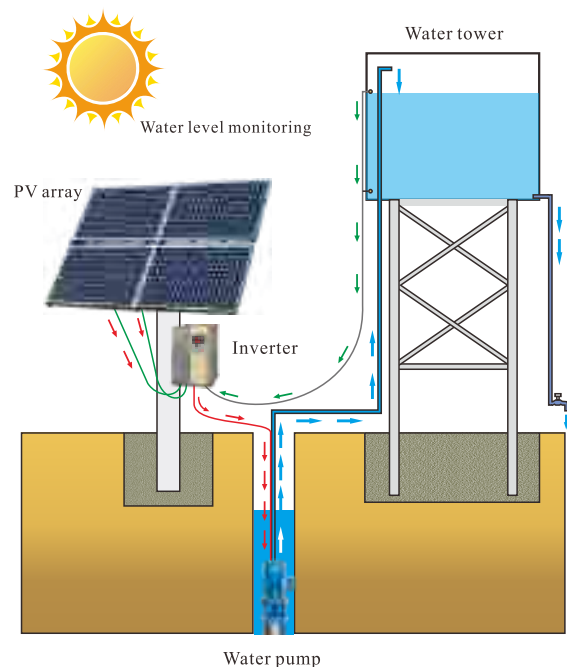
Power range: 0.4~400kW  
 Output frequency: 0~400Hz  
 Input voltage range:  
 1. DC150-450V, 1-phase AC220V  
 2. DC150-450V, 3-phase AC220V  
 3. DC250-800V, 3-phase AC380V  
 4. DC400-900V, 3-phase AC480V

**Technique Features:**

- Built-in high precision PV array maximum power point tracking MPPT algorithms
- Dry running mode monitoring, treatment
- Tank water level control
- Accept DC/AC input
- LED displays the real time situation and the parameter of system
- Based on RS485 real time remote control system
- Fast installation design, no need extra maintenance
- Built-in full protection and diagnostic mechanism
- With AC-DC automatic witching function
- Auto switch between DC and AC can be realized through auto switcher for PI500A-S and PI500-S solar inverters only.
- Built in communication function Rs485
- External GPRS device optional for remote monitoring and parameter setting

**Application filed:**

Agriculture irrigation, grassland animal husbandry, forest irrigation, municiple water, landscape fountain, fish pond, highway greening, coastal saltworks water supply and drainage, etc.



Nameplate instruction:

**POWTRAN**  
Inverter model ← MODEL PI500A-S 2R2G3

Output Power Spec. ← POWER 2.2kW

Input Source Spec. ← INPUT DC 250~800V/AC 3PH 380V

Output Spec. ← OUTPUT AC 3PH 0V~Vin 5.1A 0~400Hz

Bar code ← [Barcode]

Production Sequence No. ← ZPB1A0100001

Production Address ← DALIAN POWTRAN TECHNOLOGY CO., LTD.

PI 500A-S 2R2 G 3

Powtran Inverter

Serial Code: PI500A-S Series

Special model code: S:Solar pump

Input Voltage Level:  
 1. DC150-450V, 1-phase AC220V  
 2. DC150-450V, 3-phase AC220V  
 3. DC250-800V, 3-phase AC380V  
 4. DC400-900V, 3-phase AC480V

Product function code:  
 G:General Load

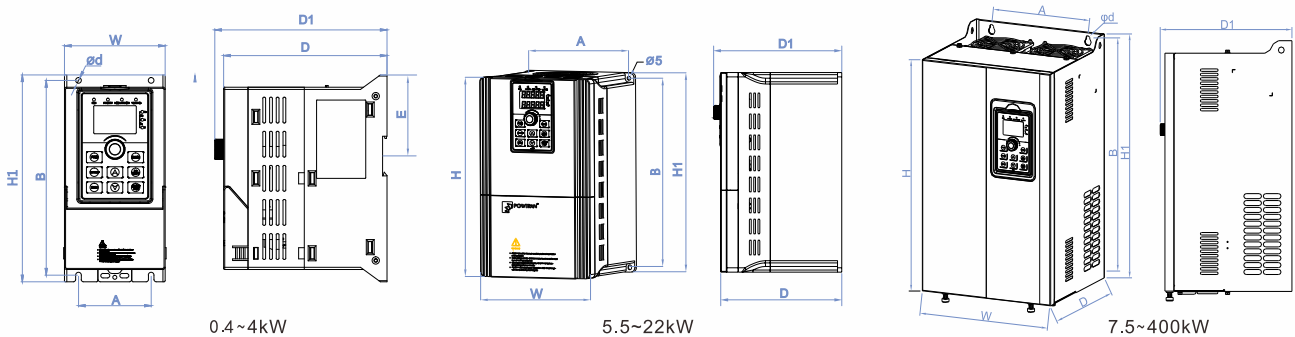
Rated output Power:  
 Example: 2R2:2.2kW  
 132:132kW

Recommended solar array configuration:

Inverter Power (kW)	Max. DC input current (A)	Open-circuit voltage degree of solar module									
		20±3V		30±3V		36±3V		42±3V			
		Module Power +/-5Wp	Modules per string x strings	Module Power +/-5Wp	Modules per string x strings	Module Power +/-5Wp	Modules per string x strings	Module Power +/-5Wp	Modules per string x strings	Module Power +/-5Wp	Modules per string x strings
0.75	4.2	30	29*1	-	-	-	-	-	-	-	-
1.5	6.1	60	30*1	--	-	-	-	-	-	-	-
2.2	7.1	90	30*1	-	-	145	18*1	175	15*1	-	-
4	16.5	85	28*2	200	22*1	140	17*2	160	15*2	-	-
5.5	23.9	-	-	-	-	195	17*2	220	15*2	-	-
7.5	30.6	-	-	215	21*2	175	17*3	200	15*3	300	15*2
11	39.2	-	-	200	22*3	195	17*4	220	15*4	-	-
15	49	-	-	205	22*4	200	18*5	240	15*5	300	15*4

\*Recommended DC input power is about 1.2~1.5times of motor rated power (for 3 phase, 380V inverters)

Technical Specifications:



## Specification and size

Model	Power (kW)	Input Voltage (V)	Current (A)	Dimension (H1*W*D1mm)	Installation Dimension (A*B*dmm)	N.W (KG)	
* PI500A-S 0R4G1	0.4	DC150-450V 1-phase AC220V±10%	2.5	185/90/154	65/174/Ø5	1.6	
* PI500A-S 0R7G1	0.75		4				
* PI500A-S 1R5G1	1.5		7				
* PI500A-S 2R2G1	2.2		10	185/90/174	65/174/Ø5	1.8	
* PI500A-S 004G1	4		16	260/120/190	90/250/Ø5	2.7	
* PI500A-S 5R5G1	5.5		25	**/170/201	155/276/Ø5	5.8	
* PI500A-S 7R5G1	7.5		32				
PI500-S 011G1	11		45	350/210/198	150/335/Ø6	9.5	
PI500-S 015G1	15		60	400/240/223	180/385Ø7	13	
PI500-S 018G1	18.5		75				
PI500-S 022G1	22		90	520/300/283	220/500/Ø10	41.2	
* PI500A-S 0R4G2	0.4		DC150-450V 3-phase AC220V±10%	2.5	185/90/154	65/174/Ø5	1.6
* PI500A-S 0R7G2	0.75			4			
* PI500A-S 1R5G2	1.5	7					
* PI500A-S 2R2G2	2.2	10		185/90/174	65/174/Ø5	1.8	
* PI500A-S 004G2	4	16		260/120/190	90/250/Ø5	2.7	
* PI500A-S 5R5G2	5.5	25					
PI500-S 7R5G2	7.5	32		300/190/198	140/285/Ø6	7.2	
PI500-S 011G2	11	45		350/210/198	150/335/Ø6	9.5	
PI500-S 015G2	15	60		400/240/223	180/385Ø7	13	
PI500-S 018G2	18.5	75					
PI500-S 022G2	22	90		520/300/283	220/500/Ø10	41.2	
PI500-S 030G2	30	110					
PI500-S 037G2	37	152					
PI500-S 045G2	45	176		575/355/328	250/555/Ø10	58	
PI500-S 055G2	55	210					
PI500-S 075G2	75	304		720/400/368	300/700/Ø10	73	
PI500-S 093G2	93	380		820/480/ 398	370/800/Ø11	108	
PI500-S 110G2	110	426					
PI500-S 132G2	132	465		980/705/418	550/945/Ø13	190	
PI500-S 160G2	160	520					
* PI500A-S 0R7G3	0.75	DC250-800V 3-phase AC380V±10%	2.5	185/90/154	65/174/Ø5	1.6	
* PI500A-S 1R5G3	1.5		3.8				
* PI500A-S 2R2G3	2.2		5.1				
* PI500A-S 004G3	4		9	185/90/174	65/174/Ø5	1.8	
* PI500A-S 5R5G3	5.5		13	260/120/190	90/250/Ø5	2.7	
* PI500A-S 7R5G3	7.5		17				

Model	Power (kW)	Input Voltage (V)	Current (A)	Dimension (H1*W*D1mm)	Installation Dimension (A*B*dmm)	N.W (KG)
* PI500A-S 011G3	11	DC250-800V 3-phase AC380V±10%	25	260/120/190	90/250/Ø5	2.7
* PI500A-S 015G3	15		32	280/168/180	153/265/Ø5	5.8
* PI500A-S 018G3	18.5		37			
* PI500A-S 022G3	22		45			
PI500-S 030G3	30		60	400/240/223	180/335/Ø7	13
PI500-S 037G3	37		75			
PI500-S 045G3	45		90	520/300/283	220/500/Ø10	41.2
PI500-S 055G3	55		110			
PI500-S 075G3	75		150			
PI500-S 093G3	93		176	575/355/328	250/555/Ø10	58
PI500-S 110G3	110		210			
PI500-S 132G3	132		253	720/400/368	300/700/Ø10	72.5
PI500-S 160G3	160		304	820/480/398	370/800/Ø11	108
PI500-S 187G3	187		340			
PI500-S 200G3	200		380			
PI500-S 220G3	220		426			
* PI500A-S 0R7G4	0.75		DC400-900V 3-phase AC480V±10%			
* PI500A-S 1R5G4	1.5	3.7				
* PI500A-S 2R2G4	2.2	5.0				
* PI500A-S 004G4	4	8		185/90/174	65/174/Ø5	1.8
* PI500A-S 5R5G4	5.5	11		260/120/190	90/250/Ø5	2.7
* PI500A-S 7R5G4	7.5	15				
* PI500A-S 011G4	11	22				
* PI500A-S 015G4	15	27		290/170/201	155/276/Ø5	5.8
* PI500A-S 018G4	18.5	34				
* PI500A-S 022G4	22	40				
PI500-S 030G4	30	55		400/240/223	180/385/Ø7	13
PI500-S 037G4	37	65				
PI500-S 045G4	45	80		400/280/223	180/385/Ø7	14
PI500-S 055G4	55	100		520/300/283	220/500/Ø10	42
PI500-S 075G4	75	130				
PI500-S 093G4	93	147		575/355/328	250/555/Ø10	58
PI500-S 110G4	110	180				
PI500-S 132G4	132	216		720/400/368	300/700/Ø10	73
PI500-S 160G4	160	259		820/480/398	370/800/Ø11	108
PI500-S 187G4	187	300				
PI500-S 200G4	200	328				
PI500-S 220G4	220	358				

Remark: PI500A-S 0.4-22KW Plastic shell, Keyboard with single display, PI500-S 30KW-220kW Iron shell, Keyboard with double display.

## Specification and size

Model	Power (kW)	Input Voltage (V)	Current (A)	Dimension (H1*W*D1mm)	Installation Dimension (A*B*dmm)	N.W (KG)
* PI500A-S 0R4G1S	0.4	DC150-450V 1-phase AC220V±10%	4	185/90/154	65/174/Ø5	1.6
* PI500A-S 0R7G1S	0.75		7	185/90/174	65/174/Ø5	1.8
* PI500A-S 1R5G1S	1.5		10			
* PI500A-S 2R2G1S	2.2		16	260/120/190	90/250/Ø5	2.7
* PI500A-S 004G1S	4		25	**/170/201	155/276/Ø5	5.8
* PI500A-S 5R5G1S	5.5		32			

Remark: PI500A-S G1S series solar inverters are suitable for single phase AC220V water pumps.

Note: It is recommended that the power of solar cell modules is 1.2 times or more than the solar inverter power.



## Performance Feature

1. They are suitable for POWTRAN PI500A-S and PI500-S solar inverter only;
2. There is no need to use electric switches, it can complete AC and DC automatic switching with our solar products;
3. There is no need to add interlock switches and contactors, help customer to save cost;
4. The switching voltage point can be adjusted by software parameter setting according to the actual situation on site, which is convenient for customer to use.



## Nameplate instruction:

POWTRAN  
Inverter model ← MODEL PV10-25-32

Output Power Spec. ← POWER 25A

Input Source Spec. ← INPUT DC 250~800V/AC 3PH 380V

Output Spec. ← OUTPUT 0~25A 0~400Hz

Bar code ← 

Production Sequence No. ← ZPB1A0100001

Production Address ← DALIAN POWTRAN TECHNOLOGY CO., LTD.



PV 10 -25 -3 2

POWTRAN Solar switch module

Serial Code PV10 Series

Rated output current 25: 25A

Product function code  
1: Single phase input  
2: Three phase input

Input Voltage Level:  
2: 220V  
3: 380V  
4: 480V

## Specification and size

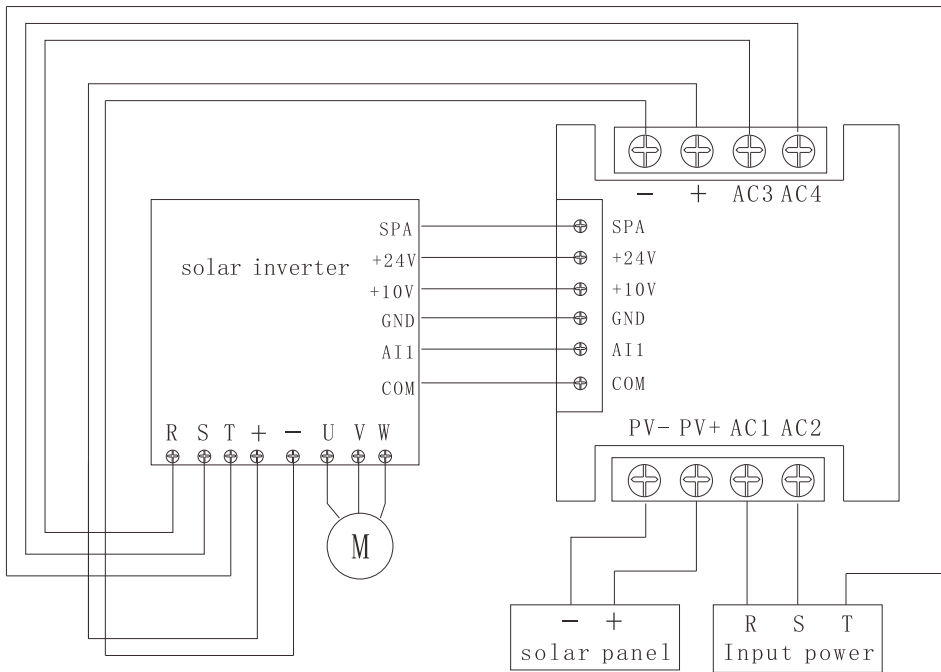
Solar switch module model	Rated output current (A)	Matching motor power (kW)	Inverter input current (A)
PV10-16-21	16	1.5	14
PV10-16-22	16	2.2	12
PV10-16-31	16	4	15
PV10-16-32	16	5.5	15
PV10-16-41	16	4	16
PV10-16-42	16	5.5	13
PV10-25-21	25	2.2	23
PV10-25-22	25	4	18
PV10-25-31	25	5.5	25
PV10-25-32	25	7.5	20
PV10-25-41	25	5.5	24
PV10-25-42	25	7.5	18

Note: Since the solar switch module is connected to the input terminal of the solar inverter, the actual situation of the single phase input shall prevail. The above selection is for reference only. Note that the long-term working current must be less than the rated current of the solar switch module.

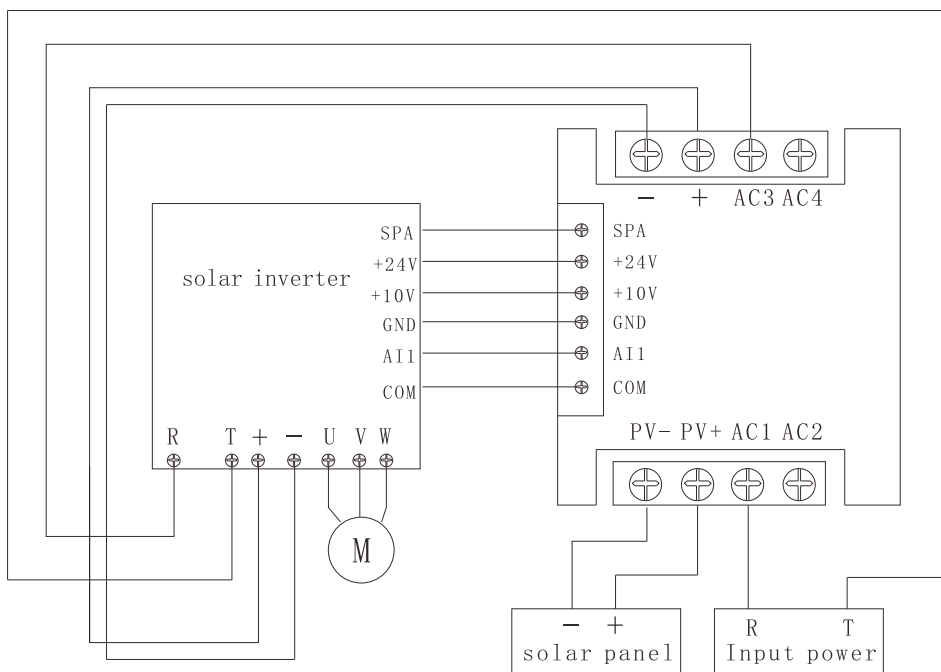
## Instructions

1. The PV+ and PV- of the solar switch module are connected to the positive and negative inputs of the corresponding photovoltaic.
2. The "+" and "-" of the solar switch module are connected to the corresponding solar inverter's "+" and "-"
3. The control board terminals SPA, 24V, 10V, GND, AI1, COM of the booster module are connected to the corresponding solar inverter SPA, 24V, 10V, GND, AI1, COM.

## Electrical wiring diagram of solar inverter and solar switching module (3-phase input)

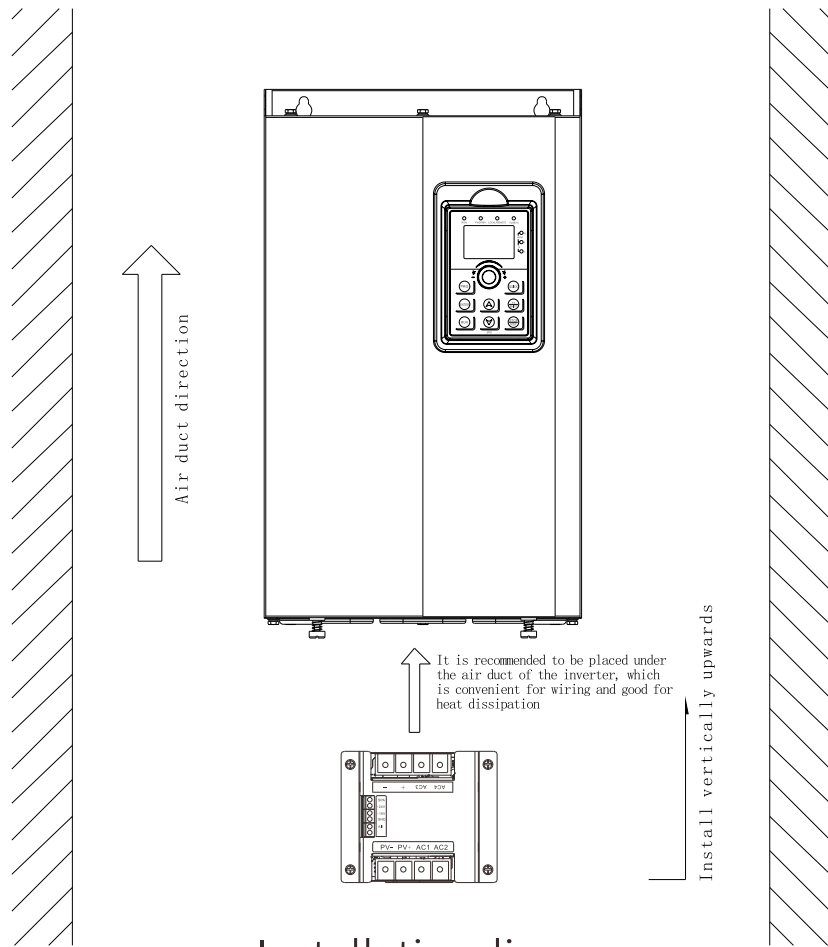


## Electrical wiring diagram of solar inverter and solar switching module (1-phase input)

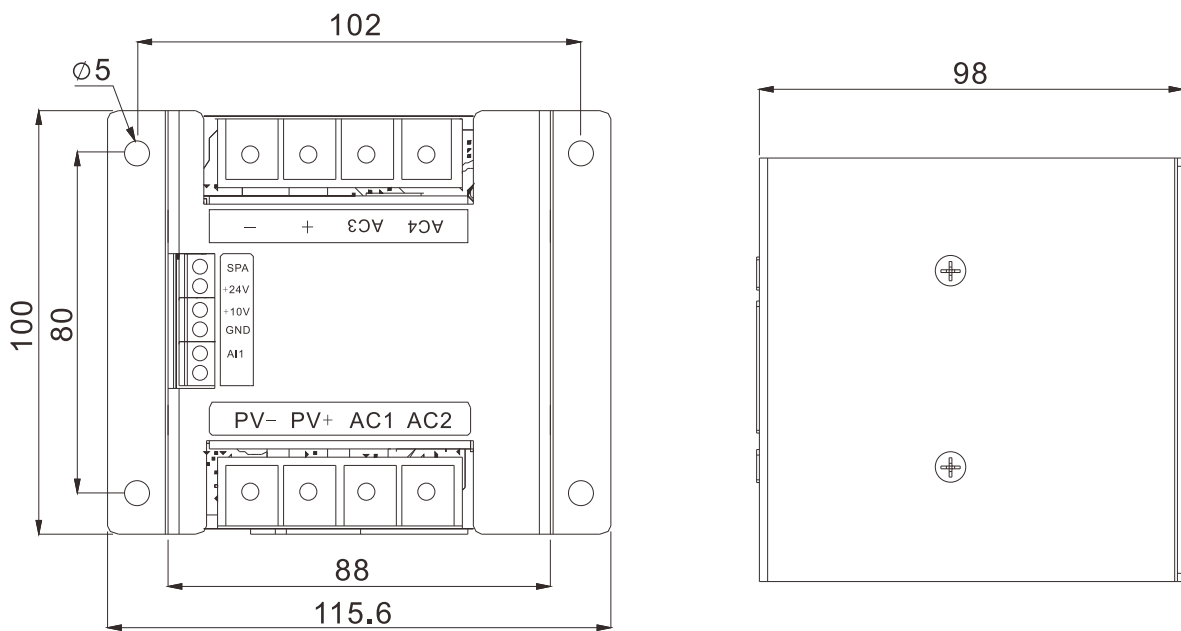




Installation size



Installation diagram



Shape and installation dimensions of 16-25A

# Specification 4G DTU Module

## Basic Function

Full netcom design, support three telecom operators APN  
 Stable and reliable, networking is simple and flexible  
 Provide TTL, RS232 and RS485 three communication interfaces  
 Embedded in the TCP/IP protocol stack, realize the transparent transmission of data between machines  
 Support point to point, center to multi-point data transmission  
 Data terminal support always-online working  
 Support automatic reconnection and restart function  
 Support SMS remote query, restart and configuration parameters  
 Wide voltage range(8V~28VDC)



## Technical Specification \ Dimension(unit : mm)

frequency band



GSM(2G)  
 WCDMA(3G)  
 FDD-LTE(4G)



GSM(2G)  
 TD-SCDMA(3G)  
 TD-LTE(4G)



FDD-LTE(4G)

Power: 8V~28VDC

Data rate: 300~115200bps(115200bps default)

Power dissipation:

Average current during communication: 40mA @+24V

Average idle current: 20mA @+24V

Operating temperature& humidity: -20~60°C(<95%)

Serial data interface: TTL/RS232/RS485

Dimension: 92\*64\*26mm



## Interface Definition

