PDS Solar Pump Controller

【PDS23】Three-phase Asynchronous Motors Controller

PDS23 solar pump controller is developed by saj –electric independently. It is a dedicated pump controller that is especially for the power supply of solar panel. PDS23 solar pump controller adopts Max Power Point Tracking and proven motor drive technology to maximize power output from solar modules. This product supports both DC and AC power inputs. When solar power is insufficient, the controller can be switched to a backup AC power supply such as a generator or battery. PDS23 solar pump controller provides fault detection, motor soft start, and debugging etc. It is designed to provide these features with the plug and play and easy installation.

■ Flexibility
◎ Compatible with any IEC three-phase asynchronous motors
◎ Compatible with popular solar arrays
◎ Grid main supply optional

■ Smartness
◎ Self-adaptive maximum power point tracking technology with up to 99% efficiency
◎ Automatic regulation of pump flow
◎ Self-adaptation to the drive used in the installation

■ Cost effectiveness
◎ Plug-and-play system design
◎ Embedded pump functions
◎ Battery-free for most applications
◎ Effortless maintenance

■ Reliability
◎ 10-year market proven experience of leading motor and pump drive technology
◎ Soft start feature to prevent water hammer and increase system life
◎ Smart IGBT module integrated to simplify system design, reduce board space, simplify the manufacturing process and thus
◎ Built-in overvoltage, overload, overheat and dry-run motor protection

■ Remote Monitoring
◎ Standard RS485 interface equipped for each solar pump controller
◎ Optional GPRS/Wi-Fi/Ethernet RJ45 modules for remote access
◎ Spots value of solar pump parameters monitoring available from anywhere
◎ History of solar pump parameters and events lookup support
◎ Android/iOS monitoring APP support

■ Datasheet

Controller Model	PDS23-2SR75	PDS23-2S1R5	PDS23-2S2R2	PDS23-4T2R2	PDS23-4T004	PDS23-4T5R5	PDS23-4T7R5	PDS23-4T011
Input Data								
PV Source								
Max Input Voltage(Voc) [V]	450			800				
Recommended voltage, at mpp	280VDC~360VDC			500VDC~700VDC				
Recommended PV array power [kW]	0.9-1.2	1.8-2.4	2.7-3.5	2.7-3.5	4.8-6.4	6.6-8.8	9.0-12.0	13.2-17.6
Alternate AC Generator								
Input voltage	220/230/240V AC(±15%), Single Phase			380/400/415/440VAC(±15%), Three Phase				
Max Amps(RMS) [A]	8.2	14. 0	23. 0	5. 8	10. 5	14.6	20.5	26.0
Power and VA capability [kVA]	1.5	3.0	4.0	4. 0	5.9	8.9	11.0	17.0
Output Data								
Output Power,rated [kW]	0.75	1.5	2.2	2. 2	4	5.5	7.5	11
Output Voltage, rated	220-240VAC, Three Phase			380/400/415/440VAC,Three Phase				
Max Amps(RMS) [A]	4.0	7.0	9.6	5. 1	9.0	13. 0	17.0	25.0
Output Frequency	0-50Hz/60Hz							
Protection								
Surge protection	Integrated							
Overvoltage protection	Integrated							
Undervoltage protection	Integrated							
Locked pump protection	Integrated							
Open circuit protection	Integrated							
Short circuit protection	Integrated							
Overheated protection	Integrated							
Dry run protection	Integrated							
Communication								
MODBUS communication card	Optional, RS-485 isolated							
General Data								
Ambient Temperature Range	-20℃~60℃, >45℃,Derating as required							
Cooling Method	Fan Cooling							
Ambient Humidity	≤ 95%RH							
Dimensions(H*W*D) [mm]	186*126*171	248*160*183		186*126*171	248*160*183		322*208*192	
Gross Weight [kg]	2.8	4.2		2.8	4.2		9.0	
Standard Warranty [month]	18							
Certificates	IEC/EN 61800-5-1,IEC/EN 61800-2:2004,IEC/EN 61800-3:2004,CE							

Note: 1. According to the light conditions, in different regions, the PV array power can be 1.2-1.6 times to the pump power.
2. Use the deep well pump or the output power cord for a long occasion, the controller needs to reduce the amount of use.

Datasheet

Controller Model	PDS23-4T015	PDS23-4T18R5	PDS23-4T022	PDS23-4T030	PDS23-4T037	PDS23-4T045	PDS23-4T055	PDS23-4T075	PDS23-4T093	PDS23-4T110	PDS23-4T132	PDS23-4T160	PDS23-4T200	PDS23-4T220	PDS23-4T250	PDS23-4T280	PDS23-4T315	PDS23-4T355	PDS23-4T400
Input Data																			
PV Source																			
Max Input Voltage(Voc) [V]	800									800									
Min Input Voltage, at mpp [V]	500VDC~700VDC									500VDC~700VDC									
Recommended PV array power [kW]	18.0-24.0	22.2-29.6	26.4-35.2	36.0-48.0	44.0-59.2	54.0-72.0	66.0-88.0	90.0-120.0	112.0-149.0	132.0-176.0	159.0-211.0	192.0-256.0	240.0-320.0	264.0-352.0	300.0-400.0	336.0-448.0	378.0-504.0	426.0-568.0	480.0-640.0
Alternate AC Generator																			
Input voltage	380/400/415/440VAC(±15%), Three Phase									380/400/415/440VAC(±15%), Three Phase									
Max Amps(RMS) [A]	35.0	38.5	46.5	62.0	76.0	92.0	113.0	157.0	180.0	214.0	256.0	307.0	385.0	430.0	468.0	525.0	590.0	665.0	785.0
Power and VA capability [kVA]	21.0	24.0	30.0	40.0	57.0	69.0	85.0	114.0	134.0	160.0	192.0	231.0	250.0	280.0	355.0	396.0	445.0	500.0	565.0
Output Data																			
Output Power,rated [kW]	15	18	22	30	37	45	55	75	93	110	132	160	200	220	250	280	315	355	400.0
Output Voltage, rated	380/400V415/440VAC,Three Phase									380/400V415/440VAC,Three Phase									
Max Amps(RMS) [A]	32.0	37.0	45.0	60.0	75.0	91.0	112.0	150.0	176.0	210.0	235.0	304.0	377.0	426.0	465.0	520.0	585.0	650.0	725.0
Output Frequency	0-50Hz/60Hz									0-50Hz/60Hz									
Protection																			
Surge protection	Integrated									Integrated									
Overvoltage protection	Integrated									Integrated									
Undervoltage protection	Integrated									Integrated									
Locked pump protection	Integrated									Integrated									
Open circuit protection	Integrated									Integrated									
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Overheated protection	Integrated									Integrated									
Dry run protection	Integrated									Integrated									
Communication																			
MODBUS communication card	Optional, RS-485 isolated									Optional, RS-485 isolated									
General Data																			
Ambient Temperature Range	-20℃~60℃, >45℃,Derating as required									-20℃~60℃, >45℃,Derating as required									
Cooling Method	Fan Cooling									Fan Cooling									
Ambient Humidity	≤ 95%RH									≤ 95%RH									
Dimensions(H*W*D) [mm]	322*208*192	432*285*228			549*385*265			660*473*307		880*579*375			983*650*377			1203*800*400			
Gross Weight [kg]	9.0	17.2	17.2	17.6	42.0			71.0		169.0	169.0	171.0	197.0	220.0	220.0	290.0			
Standard Warranty [month]	18									18									
Certificates	IEC/EN 61800-5-1,IEC/EN 61800-2:2004,IEC/EN 61800-3:2004,CE									IEC/EN 61800-5-1,IEC/EN 61800-2:2004,IEC/EN 61800-3:2004,CE									

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Solar puming system diagram