

# YASKAWA

## YASKAWA SOLAR PUMP DRIVE

### Loaded with Passion for Technology

0.1 kW – 30 kW



[www.yaskawaindia.in](http://www.yaskawaindia.in)

Certified for  
ISO9001 and  
ISO14001



JQA-2800



JQA-EM0498

# YASKAWA Solar Pump Drive

## Sourcing the Sun Solar Pumping System



## GA500 Solar Drive

**Compatibility**  
Compatible With Three Phase Induction Motors  
Compatible with PV Arrays and Grid Main Supply

**Operation**  
Regulates the Pump Flow automatically  
Minimizes Set Up Time  
Effortless Network Integration

**Flexibility**  
Stand-Alone Installation  
Designed for Harsh Environments  
Easy integration with IP cabinets

**Sustainable Design**  
Program without Power  
Embedded Motor Protection and Pump Functions  
Part of Yaskawa's compact drive range



- Uses World Class Versatile and Compact GA500 drive
- Suitable for Surface Mount and Submersible Pump with 3-Phase Induction Motors
- Wide range of capacity from 0.1 kW to 30 kW
- All day Run-Stop-Restart mode management
- Self Diagnosis and Protection Feature
- Protection against Dry Run of pump
- Easy Installation and Commissioning procedures

## Remote Monitoring

An Integrated, real time remote monitoring solution – used to Monitor, Control and Analyze various operational parameters from Solar VFDs which are installed in remote locations. All parameters and events are stored in the server database.

YASKAWA Drive Remote Monitoring Wizard is the latest addition to the advanced features available to our products, providing a complete system. We get the Real Time visualization of drive status & performance, faults & alarm notifications with timestamp and can monitor the trends of voltage, current & torque etc., with customizable user interface.

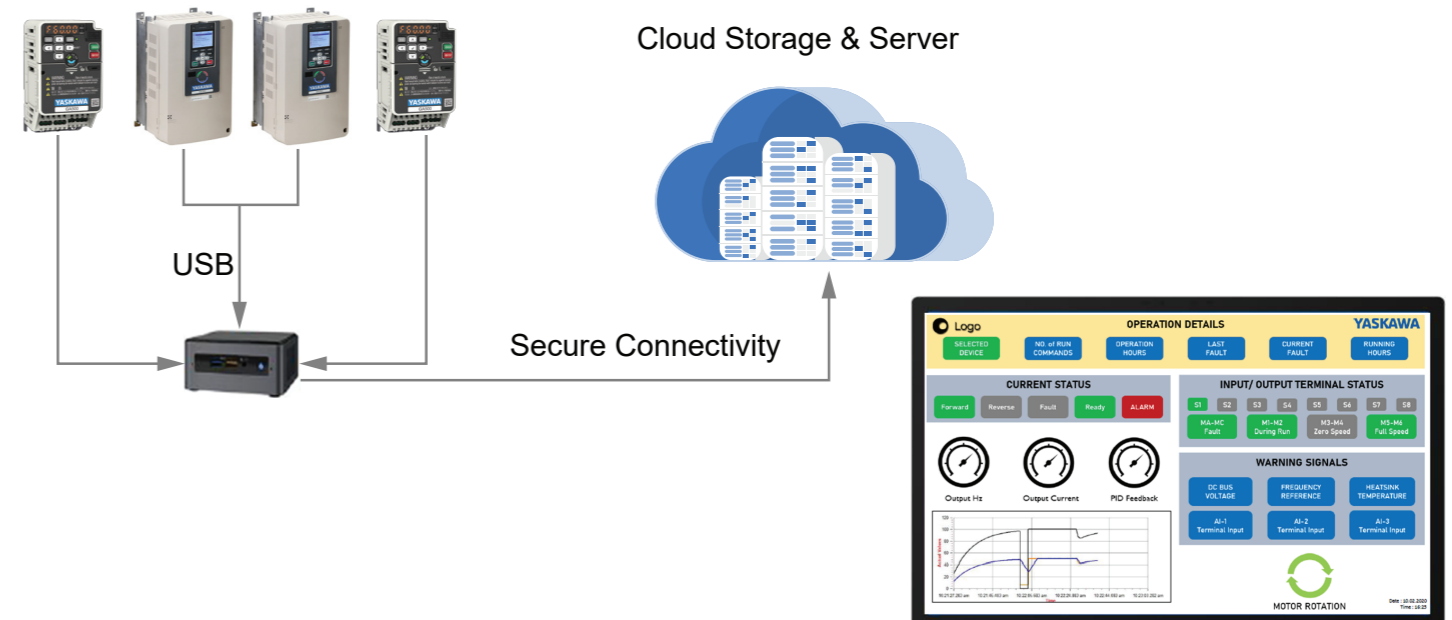
## GA500 Technical Specifications

Electrical Specification	
Pump Inverter type	V/F control with derived MPPT technology
Dual Supply (GRID/Solar)	Change-Over available
Input DC voltage (Voc)	299VDC for 200 Volt Class drives 620VDC for 400 Volt Class drives
Input DC current and Power	As per motor capacity
Min Frequency (Parameter)	0Hz (selectable setting range 0 to 120HZ)
Maximum Frequency (Parameter)	120 Hz (selectable setting range 0 to 120HZ)
Vibration	10 to less than 20Hz (9.8 m/s <sup>2</sup> ) max.
Output AC Voltage	190-240 V (-15%, +10%) for 3 phase 200V Class /380-480 V (-15%, +10%) for 3 phase 400V Class
Output AC Current	As per chart given
Motor Control Technology	V/F Control
MPPT Voltage	230 to 360 VDC for 200 Volt Class 460 to 620 VDC for 400 Volt Class
Under Voltage	160 VDC for 200 Volt Class Single Phase 190 VDC for 200 Volt Class Three-Phase 380 VDC for 400 Volt Class Three-Phase
Other Protection Features	Dry Run, Short Circuit, Open Phase in Input and Output side, Over Voltage, Low Voltage and Overload, Ground Fault
Ambient Temperature	-10°C to +60°C with deration
Relative Humidity	Max. 95% relative Humidity
Power Range	200 V Class, Three-Phase Input: 0.1 to 22 kW 200 V Class, Single-Phase Input: 0.1 to 4.0 kW 400 V Class, Three-Phase Input: 0.37 to 30 kW

## Testing & Regulatory Specifications

Certifications	IEC61508/CE/UL/cUL/RoHS
Remote Monitoring	Possible

## YASKAWA Drive Remote Monitoring Wizard



# Standard Specifications

## 200 V Class (Single-Phase)

Model CIPR-GA50 T □□□□□			B001	B002	B004	B006	B010	B012	B018	
Max. Applicable Motor Capacity kW	HD		0.1	0.2	0.4	0.75	1.5	2.2	3.7	
	ND		0.2	0.4	0.75	1.1	2.2	3	-	
Input	Rated Input Current A	HD	1.4	2.8	5.5	11	14.1	20.6	35	
		ND	2	5	7.3	13.8	20.2	24	-	
Output	Rated Output Current A	HD	0.8	1.6	3	5	8	11	17.6	
		ND	1.2	1.9	3.5	6	9.6	12.2	-	
Overload Tolerance		<ul style="list-style-type: none"> <li>• HD Rating: 150% of rated output current for 60 s</li> <li>• ND Rating: 110% of rated output current for 60 s</li> </ul> Note: Derating may be required for applications that start and stop frequently.								
Carrier Frequency		Derating the output current enables a maximum of 15 kHz to be set.								
Max. Output Voltage		Single-phase 200 to 240 V (Note: The maximum output voltage is proportional to the input voltage.)								
Max. Output Frequency		120 Hz								
Power	Rated Voltage/ Rated Frequency		<ul style="list-style-type: none"> <li>• Single-phase AC power supply 200 V to 240 V 50/60 Hz</li> <li>• DC power supply 270 V to 340 V</li> <li>• Total Voc should be less than 390VDC</li> </ul>							
	Allowable Voltage Fluctuation		-15% to 10%							
	Allowable Frequency Fluctuation		±5%							

## 200 V Class (Three-Phase)

Model CIPR-GA50 T □□□□□			2001	2002	2004	2006	2008	2010	2012	2018	2021	2030	2042	2056	2070	2082	
Max. Applicable Motor Capacity kW	HD		0.1	0.2	0.4	0.75	1.1	1.5	2.2	3	3.7	5.5	7.5	11	15	18.5	
	ND		0.2	0.4	0.75	1.1	1.5	2.2	3	3.7	5.5	7.5	11	15	18.5	22	
Input	Rated Input Current A	HD	0.7	1.5	2.9	5.9	7	7.5	11	15.6	18.9	24	37	52	68	96	
		ND	1.1	2.6	3.9	7.3	8.8	10.8	13.9	18.5	24	37	52	68	80	114	
Output	Rated Output Current A	HD	0.8	1.6	3	5	6.9	8	11	14	17.6	25	33	47	60	75	
		ND	1.2	1.9	3.5	6	8	9.6	12.2	17.5	21	30	42	56	70	82	
Overload Tolerance		<ul style="list-style-type: none"> <li>• HD Rating: 150% of rated output current for 60 s</li> <li>• ND Rating: 110% of rated output current for 60 s</li> </ul> Note: Derating may be required for applications that start and stop frequently.															
Carrier Frequency		Derating the output current enables a maximum of 15 kHz to be set.															
Max. Output Voltage		Three-phase 200 to 240 V (Note: The maximum output voltage is proportional to the input voltage.)															
Max. Output Frequency		120 Hz															
Power	Rated Voltage/ Rated Frequency		<ul style="list-style-type: none"> <li>• Three-phase AC power supply 200 V to 240 V 50/60 Hz</li> <li>• DC power supply 270 V to 340 V</li> <li>• Total Voc should be less than 390VDC</li> </ul>														
	Allowable Voltage Fluctuation		-15% to 10%														
	Allowable Frequency Fluctuation		±5%														

## 400 V Class

Model CIPR-GA50 T □□□□□			4001	4002	4004	4005	4007	4009	4012	4018	4023	4031	4038	4044	4060		
Max. Applicable Motor Capacity kW	HD		0.2	0.4	0.75	1.5	2.2	3	3.7	5.5	7.5	11.0	15.0	18.5	22		
	ND		0.4	0.75	1.5	2.2	3	3.7	5.5	7.5	11	15.0	18.5	22.0	30.0		
Input	Rated Input Current A	HD	1.2	1.8	3.2	4.4	6	8.2	10.4	15	20	29	39	50.5	59.7		
		ND	1.2	2.1	4.3	5.9	8.1	9.4	14	20	24	38	44	59.7	80.7		
Output	Rated Output Current A	HD	1.2	1.8	3.4	4.8	5.6	7.3	9.2	14.8	18	24.0	31.0	39	45		
		ND	1.2	2.1	4.1	5.4	7.1	8.9	11.9	17.5	23.4	31.0	38.0	44	60		
Overload Tolerance		<ul style="list-style-type: none"> <li>• HD Rating: 150% of rated output current for 60 s</li> <li>• ND Rating: 110% of rated output current for 60 s</li> </ul> Note: Derating may be required for applications that start and stop frequently.															
Carrier Frequency		Derating the output current enables a maximum of 15 kHz to be set.															
Max. Output Voltage		Three-phase 380 to 480 V (Note: The maximum output voltage is proportional to the input voltage.)															
Max. Output Frequency		120 Hz The frequencies that can be set vary depending on the control mode used.															
Power	Rated Voltage/ Rated Frequency		<ul style="list-style-type: none"> <li>• Three-phase AC power supply 380V to 480V 50/60 Hz</li> <li>• DC power supply 560VDC to 610VDC</li> <li>• Total Voc should be less than 780VDC</li> </ul>														
	Allowable Voltage Fluctuation		-15% to 10%														
	Allowable Frequency Fluctuation		±5%														