

ACV30-PV

Solar-powered pumping cabinets

ACV30-PV: Complete solution for solar-powered pumping facilities

The **ACV30-PV** cabinets offer a fully finished solution for solar-powered pumping facilities that use pumps of up to 5.5 kW. Depending on the model, they can be mounted indoors or outdoors, and offer the option of isolated systems (powered solely by solar panels), systems with automatic switchover to the power generator or mains, and systems with manual switchover.

They incorporate the **CV30-PV** drive, which is specifically designed for solar-powered pumping, and depending on the model they also include the **BOOST MOD-320-PV** booster module, which significantly reduces the number of panels required. They are equipped with the necessary protection at the solar panel input (DC circuit breaker and over-voltage protector) and, where applicable, the AC input (circuit breaker and contactor). As the distance between the drive and the pump can be considerable, all models are fitted with an output ferrite in order to prevent potential pump breakdowns; moreover, for particularly long distances (usually over 100 metres), the option of cabinet-mounted sine-wave filters is available.

To ensure full control of the system, the cabinets also include a water level sensor and digital clock/timer. This can be used to protect the pump against dry operation, and to set the system's operating times. Without a doubt, it is a solution that offers installers tremendous convenience and reliability, owing to the fact that potential issues with mounting and configuration are reduced to a minimum.



Applications:

The main application of the **ACV30-PV** solar-powered pumping cabinets is agricultural irrigation, either via the accumulation of water in a tank or feeder pool for subsequent use or via direct irrigation from a well.

Other applications include domestic consumption in isolated areas, livestock water supply, fish farming, municipal and forestry irrigation, and desert control.



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Performances

- Simple to install and configure.
- Indoors or outdoors mounting.
- Isolated power supply or with automatic/manual switchover.
- Optional booster module.
- DC circuit breaker.
- AC circuit breaker for models with switchover to the generator or mains.
- DC over-voltage protector (Type II, 1,000 VDC).
- 24 VDC water level sensor + weights.
- Clock/timer for ON/OFF control.
- Control console and ON/OFF switch on the cabinet door (indoor mounting).
- Status indicator lights and ON/OFF switch on the cabinet door (outdoor mounting).
- Output ferrite.
- ATS automatic switchover module (>2.2 kW models with switchover).
- Optional cabinet-mounted sine wave filter, recommended for systems where the distance between the drive and the pump is over 100 metres.



Indoor mounting model

For added convenience, these models incorporate a control console mounted on the door of the cabinet. Thanks to this design feature, users do not need to open the cabinet in order to change the parameters or check the status of the system. Moreover, ample space has been set aside to incorporate additional control elements, in accordance with the needs of each facility.



Outdoor mounting model

For these models, the ON/OFF control and system status indicators are accessed via buttons on the door of the cabinet, thereby maintaining a high level of protection. The cabinet also includes a rain canopy to provide even more protection against inclement weather.



Dimensions



ACV30-PV Indoor mounting



ACV30-PV Outdoor mounting

Range

MODEL	CODE	MOUNTING	TYPE OF SYSTEM	BOOSTER	PUMP VOLTAGE (V)	MAXIMUM PUMP POWER (kW)
ACV30-015-S2 PV IAB	6B1BS000001	Indoor	Isolated	Yes	3 × 230	1.5
ACV30-022-4 PV IAB	6B1BS000002	Indoor	Isolated	Yes	3 × 400	2.2
ACV30-015-S2 PV IAD	6B1BS000003	Indoor	Isolated	No	3 × 230	1.5
ACV30-022-S2 PV IAD	6B1BS000004	Indoor	Isolated	No	3 × 230	2.2
ACV30-022-4 PV IAD	6B1BS000005	Indoor	Isolated	No	3 × 400	2.2
ACV30-055-4F PV IAD	6B1BS000006	Indoor	Isolated	No	3 × 400	5.5
ACV30-015-S2 PV IGB	6B1BS000007	Indoor	Automatic switchover to the generator	Yes	3 × 230	1.5
ACV30-022-S2 PV IGB	6B1BS000008	Indoor	Automatic switchover to the generator	Yes	3 × 230	2.2
ACV30-022-4 PV IGB	6B1BS000009	Indoor	Automatic switchover to the generator	Yes	3 × 400	2.2
ACV30-055-4F PV IGD	6B1BS000010	Indoor	Automatic switchover to the generator	No	3 × 400	5.5
ACV30-015-S2 PV IRB	6B1BS000011	Indoor	Automatic switchover to mains power	Yes	3 × 230	1.5
ACV30-022-S2 PV IRB	6B1BS000012	Indoor	Automatic switchover to mains power	Yes	3 × 230	2.2
ACV30-022-4 PV IRB	6B1BS000013	Indoor	Automatic switchover to mains power	Yes	3 × 400	2.2
ACV30-055-4F PV IRD	6B1BS000014	Indoor	Automatic switchover to mains power	No	3 × 400	5.5
ACV30-015-S2 PV IMB	6B1BS000015	Indoor	Manual switchover	Yes	3 × 230	1.5
ACV30-022-S2 PV IMB	6B1BS000016	Indoor	Manual switchover	Yes	3 × 230	2.2
ACV30-022-4 PV IMB	6B1BS000017	Indoor	Manual switchover	Yes	3 × 400	2.2
ACV30-055-4F PV IMD	6B1BS000018	Indoor	Manual switchover	No	3 × 400	5.5
ACV30-015-S2 PV EAB	6B1BS000019	Outdoor	Isolated	Yes	3 × 230	1.5
ACV30-022-4 PV EAB	6B1BS000020	Outdoor	Isolated	Yes	3 × 400	2.2
ACV30-015-S2 PV EAD	6B1BS000021	Outdoor	Isolated	No	3 × 230	1.5
ACV30-022-S2 PV EAD	6B1BS000022	Outdoor	Isolated	No	3 × 230	2.2
ACV30-022-4 PV EAD	6B1BS000023	Outdoor	Isolated	No	3 × 400	2.2
ACV30-055-4F PV EAD	6B1BS000024	Outdoor	Isolated	No	3 × 400	5.5
ACV30-015-S2 PV EGB	6B1BS000025	Outdoor	Automatic switchover to the generator	Yes	3 × 230	1.5
ACV30-022-S2 PV EGB	6B1BS000026	Outdoor	Automatic switchover to the generator	Yes	3 × 230	2.2
ACV30-022-4 PV EGB	6B1BS000027	Outdoor	Automatic switchover to the generator	Yes	3 × 400	2.2
ACV30-055-4F PV EGD	6B1BS000028	Outdoor	Automatic switchover to the generator	No	3 × 400	5.5
ACV30-015-S2 PV ERB	6B1BS000029	Outdoor	Automatic switchover to mains power	Yes	3 × 230	1.5
ACV30-022-S2 PV ERB	6B1BS000030	Outdoor	Automatic switchover to mains power	Yes	3 × 230	2.2
ACV30-022-4 PV ERB	6B1BS000031	Outdoor	Automatic switchover to mains power	Yes	3 × 400	2.2
ACV30-055-4F PV ERD	6B1BS000032	Outdoor	Automatic switchover to mains power	No	3 × 400	5.5
ACV30-015-S2 PV EMB	6B1BS000033	Outdoor	Manual switchover	Yes	3 × 230	1.5
ACV30-022-S2 PV EMB	6B1BS000034	Outdoor	Manual switchover	Yes	3 × 230	2.2
ACV30-022-4 PV EMB	6B1BS000035	Outdoor	Manual switchover	Yes	3 × 400	2.2
ACV30-055-4F PV EMD	6B1BS000036	Outdoor	Manual switchover	No	3 × 400	5.5

Technical specifications

MODEL		3x230 pumps	3x400 pumps
PHOTOVOLTAIC INPUT	Recommended DC input	200 ÷ 400 V	300 ÷ 750 V
	Recommended MPPT voltage	330 V	550 V
	Maximum DC voltage	440 V	800 V
	Starting voltage	200 V (80 V with booster)	300 V (80 V with booster)
	Minimum DC voltage	150 V (70 V with booster)	250 V (70 V with booster)
	DC protection	DC circuit breaker and overvoltage protector (Type II, 1,000 VDC)	
MAINS INPUT	Voltage	Single-phase 220 V (-15%) ÷ 240 V (+10%)	Three-phase 380 V (-15%) ÷ 440 V (+10%)
	Frequency	50/60 Hz Permitted range: 47 ÷ 63 Hz	
	AC protection	AC circuit breaker and contactor (for models with automatic switchover to the mains)	
OUTPUT	Rated voltage	Three-phase, 0 ÷ 100% of the input voltage.	
	Admissible overloads	150% for 1 min; 180% for 10 s; 200% for 1 s	
	Maximum distance	Install a sine wave filter if the distance between the drive and pump is > 100 m	
INPUT SIGNALS	Digital	5 programmable inputs, PNP or NPN logic. Selectable polarity, on/off delay times.	
OUTPUT SIGNALS	Relay	Drives ≤ 2.2 kW: 1 multifunction NO/NC switching output / Drives ≥ 4 kW: 2 multifunction NO/NC switching outputs Maximum 3 A / 250 Vac, 1 A / 30 Vdc	
	Analogue	Drives ≤ 2.2 kW: Not available / Drives ≥ 4 kW: 2 selectable outputs 0 ÷ 10 V / 0 ÷ 20 mA	
	Digital	Drives ≤ 2.2 kW: Not available / Drives ≥ 4 kW: 1 multifunction open collector output (50 mA / 30V)	
	Communication port	Drives ≤ 2.2 kW: 1 RS-485 Modbus RTU port + 1 RS-422 port / Drives ≥ 4 kW: 1 RS-485 Modbus RTU port	
OPERATION	Method	Indoor mounting: control console on the door of the cabinet and ON/OFF control via switch or clock/timer. Outdoor mounting: buttons on the door of the cabinet and clock/timer.	
	Pump protection	24 VDC water level sensor	25 VDC water level sensor
	Types of system	Isolated (powered solely by solar panels) Automatic switchover to the generator Automatic switchover to the mains Manual switchover (to the power generator or mains)	
SPECIFIC PROTECTIONS	Faults	Overvoltage, undervoltage, overcurrent, reverse polarity connection, communication failure with the booster module, broken hydraulic sensor.	
	Alarms	Weak light, underload, full tank.	
FILTERING	EMC filter	Drives ≤ 2.2 kW: Category C3 with easy connection as option / Drives ≥ 4 kW: Category C3 integrated	
GENERAL	Ambient temperature	- 10 ~ 50°C (1% derating per degree exceeding 40°C).	
	Degree of protection	Indoor and outdoor versions	
STANDARDS	Safety	EN 61800-5-1	
	Electromagnetic compatibility (EMC)	EN 61800-3 C3	
	Corporate certification	ISO 9001, ISO 14001, ISO 45001	

Information subject to change without notice.