

PV Box ST

Containerized plug and play power conversion system adapted to customer requirements and local standards.



Product at a glance

In a PV plant installation, it operates between DC field and AC MV grid connection point. The PV Box performs the DC power concentration, the DC/AC conversion, and the AC voltage elevation to the grid voltage level. The PV Box protects maintenance staff and the installation against electrical faults, such as short-circuit and lightning. The optimized versions of the PV Box reduce the balance-of-systems costs, increase reliability, and improve construction lead times.

True bankability

- Warranty from a trusted partner with 180 years of experience
- World leader in industrial power drives, UPS and electrical distribution
- Strong service infrastructure worldwide to support your global needs

Higher return on investment

- Compressed construction lead-times through factory integrated solution
- Reduced transportation, off-loading and on-site labor costs
- Enhanced uptime thanks to qualified and reliable designs

Designed for reliability

- Industrialized solution according to Schneider Electric proven industrial processes
- Equipment and integration made in Schneider Electric factories
- Configurable to withstand severe weather conditions: continental, tropical and desertic environments
- Undergone extensive safety, quality and reliability risk mitigation
- Proven robust design through rigorous Custom Reliability Testing
- Type-tested solution according to IEC-62271-202 including Arc Flash Testing (IAC-A)

Flexible

- Vast choice of power and AC medium voltage levels
- Suitable for most environmental conditions and local standards
- Configurable to be optimized for specific project needs

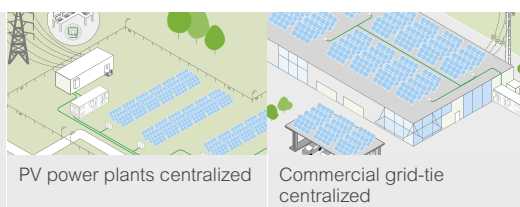
Easy to service

- Fully monitored solution
- Convenient and safe enclosure design for maintenance purposes
- Local Schneider Electric service and maintenance available in 100+ countries

Easy to install

- Standard 40 feet ISO certified container for ease of shipment worldwide
- Solution delivered pre-assembled, configured and tested to reduce on-site labor and project duration

Product applications



PV power plants centralized

Commercial grid-tie centralized

Device short name	PV Box ST 1080	PV Box ST 1260	PV Box ST 1360
Electrical specifications			
Input (DC)			
Voltage range, MPPT	440 - 800 V (at PF=1)	510 - 800 V (at PF=1)	550 - 800 V (at PF=1)
Max. input voltage, open circuit	1000 V	1000 V	1000 V
Max. DC current	2 x 1280 A	2 x 1280 A	2 x 1280 A
Output (AC)			
Nominal power	1080 kVA	1260 kVA	1360 kVA
Nominal voltage	up to 36 kV	up to 36 kV	up to 36 kV
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Power factor settable range (Ppf dispatch)	0 to 1 leading and lagging	0 to 1 leading and lagging	0 to 1 leading and lagging
Equipment			
Inverters	2 x XC 540	2 x XC 630	2 x XC 680
DC connection	2 x DC Box 6 input or 2 x DC Box 10 input (+/-)		
DC fuse range ^m	DC Box 6: 315 A, 350 A, 400 A / DC Box 10: 160 A, 200 A, 250 A		
Transformer type	Schneider Electric Minera oil type ONAN		
Transformer losses	C0Bk (according to EN 50464-1) or compliant with Ecodesign regulation (depending on geographies)		
Medium voltage switchgear U < 24 kV	Schneider Electric RM6 ring main unit type NE-DI with Sepam 10 protection relay		
Medium voltage switchgear 24 kV < U < 36 kV	Schneider Electric Flusarc ring main unit type CB-C with Sepam 10 protection relay		
Optional content			
Automatic progressive reconnection ⁿ	MV circuit breaker motorization, configurable timer		
Auxiliary power transformer	10 kVA / 400 V		
DC input measurement	DC Box monitored		
Monitoring and control	Conext Control monitoring cabinet with secured power supply		
Safety kit	Fire-extinguisher, insulated MV rod and gloves, insulating stool		
Service kit	Contacts on doors and smoke detector (available with Conext Control option)		
Service contract	Worldwide service team - consult your sales representative for service offer		
External operating conditions			
Temperature			
Standard temperature range	-10°C / +45°C ^o		
Other temperature ranges	Continental (-20°C / +45°C), Desert / Tropical (-10°C / +50°C)		
Pollution			
Standard low polluted environment (Rural and suburban environment)	G4 filters		
Option polluted environment (desert, urban...) ^o	Internal filter box (G4 and F9 filters, fans, speed drives)		
Option saline environment	C5 paint		
Other conditions			
Max. relative humidity	100% condensing		
Max. altitude above sea level ^o	2000 m		
Max. wind speed	180 km / h		
Max. snow load	250 kg / m ²		
IP grade LV / MV compartment	IP44 / IP 54		
IP grade transformer compartment	IP23		
General specifications			
Dimensions and weight			
During transportation (H x W x D)	2.90 x 2.44 x 12.19 m		
Assembled on site (H x W x D)	2.90 x 3.38 (or 3.28 ^o) x 12.19 m		
Weight approx. with standard content	19 tons		
Material			
Basement	Light basement to be done on site		
Walls and roof	Standard 40' ISO high cube container with insulating layer		
Cooling			
LV and MV switchboard compartment ⁿ	Ensured by inverter fans		
Transformer compartment	Natural		
Regulatory approvals			
Electrical standards	IEC 62271-202, IEC 61439, IEC 62271-200, IEC 60076		
Type-test certification	IEC 62271-202		
Internal arc classification (acc. to IEC 62271-202)	IAC-A		
General ventilation filters standard	EN779:2012		
Building standards	Eurocodes		
Specifications are subject to change without notice.			
^m Fuses may be ordered separately. ⁿ To avoid simultaneous reconnection of every PV Boxes and for automatic opening and reclosing on grid voltage loss (grid requirement).			
^o Derating: See Conext Core XC inverter application note. ^o For dust or sand (IEC 60721-2-5 (S4.2.4)) size < 150 µm and concentration < 2 mg / m ³ .			
^o Power derating above 1000 m. Above 2000 m special requirements. ^o In case of filter box option. ^o Extra fans in filter box only for polluted environment.			