

# PV Box ST+ 2040

## Containerized plug and play power conversion system adapted to customer requirements and local standards up to 2MVA

The PV Box is a power conversion system. 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.

### Why choose PV Box ST+?



#### 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



#### 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

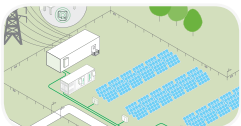
- Fully monitored solution
- Convenient and safe enclosure design for maintenance purposes
- Local Schneider Electric service and maintenance available in 100+ countries



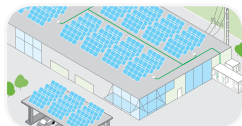
#### Easy to install

- 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



PV Box ST+ certified container ready for sea shipment



Combined heat (+50°C) & humidity (100%)

Device short name	PV Box ST+ 1620	PV Box ST+ 1890	PV Box ST+ 2040
<b>Electrical specifications</b>			
<b>DC input</b>			
Voltage range, MPPT	440 - 885 V (at PF=1)	510 - 885 V (at PF=1)	550 - 885 V (at PF=1)
Max. input voltage, open circuit	1000 V	1000 V	1000 V
Max. DC current	3 x 1280 A	3 x 1280 A	3 x 1280 A
<b>AC output</b>			
Nominal power	1620 kVA	1890 kVA	2040 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 range (PQ dispatch)	0 to 1 leading and lagging	0 to 1 leading and lagging	0 to 1 leading and lagging
<b>Equipment</b>			
Inverters	3 x XC 540	3 x XC 630	3 x XC 680
DC connection	3 x DC Box 6 input or 3 x DC Box 10 input (+/-)		
DC fuse range <sup>(1)</sup>	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		
<b>Optional content</b>			
Monitoring and control	Conext Control™ (by Schneider Electric) monitoring cabinet with secured power supply		
Automatic progressive reconnection <sup>(2)</sup>	MV circuit breaker motorization, configurable timer		
Auxiliary nominal power transformer	15 kVA / 400V		
DC input measurement	DC Box monitored		
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		
<b>External operating conditions</b>			
<b>Temperature</b>			
Standard temperature range	-10°C / +45°C <sup>(3)</sup>		
Other temperature ranges	Desert (-10°C / +50°C)		
<b>Pollution</b>			
Standard low polluted environment (Rural and suburban environment)	G4 filters		
Option polluted environment (desert, urban...) <sup>(4)</sup>	Internal filter box (G4 and F9 filters, fans, speed drives)		
Option saline environment	C5 paint		
<b>Other conditions</b>			
Max. relative humidity	100%		
Max. altitude above sea level <sup>(5)</sup>	2000 m		
Max. wind speed	180 km / h		
Max. snow load	250 kg / m <sup>2</sup>		
IP grade LV / MV compartment	IP54		
<b>General specifications</b>			
<b>Dimensions and weight</b>			
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 3.2 <sup>(6)</sup> ) x 12.19 m		
Weight approx. with standard content	< 26 tons		
<b>Material</b>			
Basement	Light basement to be done on site for PV Box		
Walls and roof	Standard 40" ISO high cube container with insulating layer		
<b>Cooling</b>			
LV and MV switchboard compartment <sup>(7)</sup>	Ensured by inverter fans		
Transformer compartment	Natural		
<b>Regulatory approvals</b>			
Electrical standards	IEC 62271-202, IEC 61439, IEC 62271-200, IEC 60076		
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.

<sup>(1)</sup>Fuses may be ordered separately. <sup>(2)</sup>To avoid simultaneous reconnection of every PV Boxes and for automatic opening and reclosing on grid voltage loss (grid requirement). <sup>(3)</sup>Derating: See Conext Core XC inverter application note. <sup>(4)</sup>For dust or sand (IEC 60721-2-5 (§4.2.4)) size<150 µm and concentration<2 mg / m<sup>3</sup>. <sup>(5)</sup>Power derating above 1000 m. Above 2000 m special requirements.

<sup>(6)</sup>In case of filter box option. <sup>(7)</sup>Extra fans in filter box only for polluted environment.