

SOLAR INVERTERS

ABB medium voltage compact skid

PVS-100/120-MVCS



The ABB medium voltage compact skid is a plug&play solution designed for large-scale solar power generation using PVS-100/120 high-power string inverters. It includes the medium voltage transformer, the medium voltage switchgear and all low voltage protections needed to connect the inverters to the transformer.

PVS-100/120-MVCS

The PVS-100/120-MVCS is an integrated product specifically engineered for decentralized solar plants realized with ABB "PVS-100/120" string inverters. The solution allows to connect up to 26 inverters for a maximum power of 3.1 MVA

The MVCS includes an optimized MV oil-immersed transformer, MV gas-insulated switchgear, all necessary LV protections and connections to attach the solar array and a set of available auxiliary services with independent auxiliary power.

Components are part of ABB's portfolio, ensuring the highest standards of quality, performance and durability.

This medium voltage compact skid is used to connect a PV power plant to a MV electricity grid easily and rapidly. To meet the PV power plant's demanded capacity, several ABB compact skids can be used and connected in any possible manner thanks to the versatility of the integrated ABB SafePlus MV switchgear.

The compact skid solution has dimensions suitable for transportation inside a closed 20 feet high cube shipping container. The standardized shipping dimensions ensure cost-effective and safe transportability to the site, even overseas. The solution's optimized cooling, filtering and high

environmental protection degree enable installations in a wide span of ambient conditions, from harsh desert temperatures to cold and humid environments. The ABB medium voltage compact skid is designed for at least 25 years of operation.

Highlights

- Designed for decentralized systems based on the 1000 Vdc string inverters PVS-100/120-TL
- Integrated low voltage distribution panel for a simplified and cost optimized Balance of System (BoS) without the need of additional recombiners
- Quick individual isolation of each feeder, even on-load, for easy and cost-effective maintenance, ensuring maximum uptime
- Individually-protected feeders, enabling separate inverters to be serviced without disrupting the rest of the units connected to the same cluster
- Optimized and very compact layout for integration of all components necessary for medium voltage connection
- Standardized shipping dimensions ensure reduced logistic costs
- Made in Europe product, compatible with most of the world-wide structural regulations and standards
- Vertically integrated product from ABB, guaranteed by ABB

ABB medium voltage compact skid

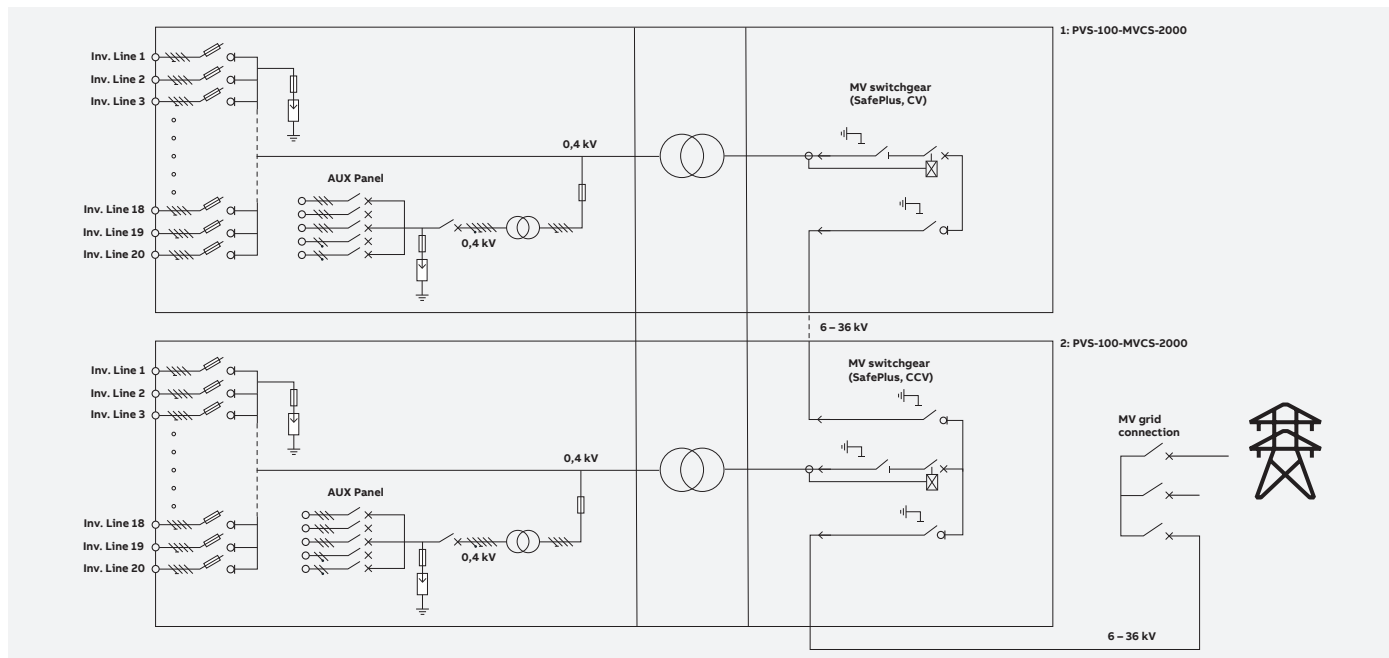
PVS-100/120-MVCS



Technical data and types

Type code	800	1000	1200	1400	1600	1800	2000	2200	2400	2600
Inverter	PVS-100-TL									
Number of inverters in parallel	8	10	12	14	16	18	20	22	24	26
Maximum rating in kVA	800	1000	1200	1400	1600	1800	2000	2200	2400	2600
LV distribution panel										
Number of fused protected feeders	8	10	12	14	16	18	20	22	24	26
Fuse rating of feeders	200 A									
Breakable on load	Yes									
Over voltage protection - replaceable surge arrester	Type 2 (Type 1+2 optional)									
MV transformer										
Transformer type	Oil immersed (ONAN)									
AC Power @ 30° C in kVA	800	1000	1200	1400	1600	1800	2000	2200	2400	2600
AC Power @ 40° C in kVA	800	1000	1200	1400	1600	1800	2000	2200	2400	2600
Low voltage level	400 V									
Medium voltage level range	≤ 36kV									
Rated frequency	50 Hz or 60 Hz									
Oil type	Mineral (vegetable optional)									
Tap changer	± 2 x 2.5%									
Winding material (primary / secondary)	Al / Al									
Eco efficiency optional	Yes									
MV switchgear										
Switchgear type	ABB SafePlus (SF ₆ -insulated)									
Rated current	630 A									
Configuration	Single (CV) or double feeder (CCV)									
Protection (up to 24 kV / up to 36 kV)	Circuit breaker (16 kA or 20 kA / 20 kA or 25 kA)									
Protection relay type	ABB REJ603 (others on request)									
Motorized optional	Yes									
Auxiliary supply										
Auxiliary transformer power	10 kVA (higher on request)									
Auxiliary transformer voltage	400 / 400-230 V									
Low voltage distribution panel for auxiliary functions	Yes									
Mechanical characteristics										
Dimensions (length x width x height) in mm	5700 x 2150 x 2500									
Weight approx. in ton	7	7	7	7	8	8	8	9	9	9
Environmental										
Operating temperature range	-25° C ... +60° C (with derating above 40° C)									
Operating altitude range	≤ 2000 m									
Relative humidity (non-condensing)	≤ 95%									
Environmental protection rating	IP 54									
Painting corrosion protection	C4 (C5M optional)									
Product compliance										
Conformity	IEC 60364, IEC 61936-1, IEC 60502-1									

ABB PVS-100-MVCS block diagram example



Technical data and types

Type code	960	1200	1440	1680	1920	2160	2400	2640	2880	3120
Inverter	PVS-120-TL									
Number of inverters in parallel	8	10	12	14	16	18	20	22	24	26
Maximum rating in kVA	960	1200	1440	1680	1920	2160	2400	2640	2880	3120
LV distribution panel										
Number of fused protected feeders	8	10	12	14	16	18	20	22	24	26
Fuse rating of feeders	200 A									
Breakable on load	Yes									
Over voltage protection - replaceable surge arrester	Type 2 (Type 1+2 optional)									
MV transformer										
Transformer type	Oil immersed (ONAN)									
AC Power @ 30° C in kVA	960	1200	1440	1680	1920	2160	2400	2640	2880	3120
AC Power @ 40° C in kVA	960	1200	1440	1680	1920	2160	2400	2640	2880	3120
Low voltage level	480 V									
Medium voltage level range	≤ 36kV									
Rated frequency	50 Hz or 60 Hz									
Oil type	Mineral (vegetable optional)									
Tap changer	± 2 x 2.5%									
Winding material (primary / secondary)	Al / Al									
Eco efficiency optional	Yes									
MV switchgear										
Switchgear type	ABB SafePlus (SF ₆ -insulated)									
Rated current	630 A									
Configuration	Single (CV) or double feeder (CCV)									
Protection (up to 24 kV / up to 36 kV)	Circuit breaker (16 kA or 20 kA / 20 kA or 25 kA)									
Protection relay type	ABB REJ603 (others on request)									
Motorized optional	Yes									
Auxiliary supply										
Auxiliary transformer power	10 kVA (higher on request)									
Auxiliary transformer voltage	480 / 400-230 V									
Low voltage distribution panel for auxiliary functions	Yes									
Mechanical characteristics										
Dimensions (length x width x height) in mm	5700 x 2150 x 2500									
Weight approx. in ton	7	7	7	7	8	8	9	9	10	11
Environmental										
Operating temperature range	-25° C ... +60° C (with derating above 40° C)									
Operating altitude range	≤ 2000 m									
Relative humidity (non-condensing)	≤ 95%									
Environmental protection rating	IP 54									
Painting corrosion protection	C4 (C5M optional)									
Product compliance										
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For more information please contact
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www.abb.com

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