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Abstract

The document describes the technical specifications and conditions of an MV Power Station, manufactured by SMA Solar Technology AG, which is ready for sale, never used, and currently stored by the manufacturer. The MV Power Station is an advanced solution designed for the next generation of 1500 VDC photovoltaic power plants, offering higher power density due to the new Sunny Central UP and Sunny Central Storage UP central inverters. This integrated unit, housed in a 20-foot container, ensures easy transportation, rapid installation, and commissioning. The MV Power Station and all its components have undergone rigorous testing to ensure maximum plant safety, optimal energy yields, and minimized operational risks. The system is designed to operate under various environmental conditions and can be delivered as a turnkey solution for installations worldwide. Additionally, the MV Power Station is ready for DC connections, making it ideal for modern photovoltaic power plant needs.

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1. Introduction

MV Power Station **4400** available for sale, this document describes the various characteristics and its current status. The subject of the opportunity is as follows:

General Data	
Manufacturer	SMA Solar Technology AG
Part N.	4400-S2
Quantity	7
Available from	November 2024
Country	Spain

Technical Data	
Condition	New
Year of construction	2024
Imput voltage	1500 V CC
Output power	4400 KVA CA
Rated frequency	50 Hz

2. Description of Supply

2.1 MV Power Station 4400

The SMA Medium Voltage Power Station offers the highest power density in a plug & play design, which is suitable for global use. Rely on the most robust, technically advanced and internationally certified hardware for power conversion in any climate. As one of the first truly global systems, it is the ideal choice for next generation PV power plants operating at 1500 VDC.

Delivered pre-configured within a 20' HC shipping container that easily converts into an installation-ready platform, the system is simple to transport and quick to assemble and commission. The SMA Medium Voltage Power Station combines the highest plant safety with maximum energy yield and minimized logistical and operating risk for large scale PV power plant projects.

2.2 Technical data

Parameter	Value
Model	MVPS 4400-S2
Manufacturer	SMA
Application	Solar power plant
Sunny central up	
Model	SC 4400 UP
DC side	
MPP voltage range VDC (at 25 °C / at 50 °C)	962 to 1325 V / 100 V
Min. DC voltage VDC, min / Start voltage VDC, Start	930 V / 1112 V
Max. DC voltage VDC, max	1500 V
Max. DC current IDC, max	4750 A
Max. short-circuit current IDC, SC	8400 A
Number of DC inputs	Busbar with 26 connections per terminal, 24 double pole fused (32 single pole fused)
Number of DC inputs with optional DC coupled storage	18 double pole fused (36 single pole fused) for PV and 6 double pole fused for batteries
Max. number of DC cables per DC input (for each polarity)	2 x 800 kcmil, 2 x 400 mm2
Available PV fuse sizes (per input)	200 A, 250 A, 315 A, 350 A, 400 A, 450 A, 500 A
Available battery fuse size (per input)	750 A
AC Side	
Nominal AC power at cos φ =1 (at 35°C / at 50°C)	4400 kVA
Nominal AC power at cos φ =0.8 (at 35°C / at 50°C)	3520 kW
Nominal AC current IAC, nom (at 35°C / at 50°C)	3850 A
Max. total harmonic distortion	< 3% at nominal power
Nominal AC voltage / nominal AC voltage range	630 V / 504 V to 756 V
AC power frequency / range	50 Hz / 47 Hz to 53 Hz
Min. short-circuit ratio at the AC terminals	>2
Power factor at rated power / displacement power factor adjustable	1 / 0.8 overexcited to 0.8 underexcited
Efficency	

Max. efficiency / European efficiency / CEC efficiency	98.8% / 98.7% / 98.5%
Protective Devices	
Input-side disconnection point	DC load break switch
Output-side disconnection point	AC circuit breaker
DC overvoltage protection	Surge arrester, type I & II
AC overvoltage protection (optional)	Surge arrester, class I & II
Lightning protection (according to IEC 62305-1)	Lightning Protection Level III
Degree of protection: electronics / air duct / connection area (as per IEC 60529)	IP54 / IP34 / IP34
Features	
DC connection	Terminal lug on each input (without fuse)
AC connection	With busbar system (three busbars, one per line conductor)
Communication	Ethernet, Modbus Master, Modbus Slave
Enclosure / roof color	RAL 9016 / RAL 7004
tandards and directives complied with	CE, IEC / EN 62109-1, IEC / EN 62109-2, AR-N 4110, IEEE1547, UL 840 Cat. IV, Arrêté du 23/04/08
EMC standards	IEC 55011, IEC 61000-6-2, FCC Part 15 Class A
Quality standards and directives complied with	VDI/VDE 2862 page 2, DIN EN ISO 9001
Transformer Output (AC) on the medium-voltage side	
Rated power at SC UP (at -25°C to + 35°C / 40°C optional 50°C)1)	4400 kVA
Rated power at SCS UP (at -25°C bis +25°C / 40°C optional 50°C)1)	3800 kVA
Charging power at SCS UP-XT (at -25°C bis +25°C / 40°C optional 50°C)1)	3950 kVA
Discharging power at SCS UP-XT (at -25°C bis +25°C / 40°C optional 50°C)1)	4400 kVA
Typical nominal AC voltages	10 kV to 35 kV
AC power frequency	50 Hz
Transformer vector group	Dy11
Transformer cooling methods	KNAN
Transformer no-load losses	Standard
Transformer short-circuit losses	Standard
Max. total harmonic distortion	< 3%
Power factor at rated power / displacement power factor adjustable	1 / 0.8 overexcited to 0.8 underexcited

Protective devices	
Input-side disconnection point	DC load-break switch
Output-side disconnection point	Medium-voltage vacuum circuit breaker
DC overvoltage protection	Surge arrester type I
Galvanic isolation	Yes
Internal arc classification medium-voltage control room (according to IEC 62271-202)	IAC A 20 kA 1 s
General Data	
Dimensions (W / H / D)	6058 mm / 2896 mm / 2438 mm
Weight	< 18 t
Self-consumption (max. / partial load / average)1)	< 8.1 kW / < 1.8 kW / < 2.0 kW
Self-consumption (stand-by)1)	< 370 W
Ambient temperature	-25°C to +45°C
Degree of protection according to IEC 60529	Control rooms IP23D, inverter electronics IP54
Environment	standard
Degree of protection according to	IEC 60721-3-4 (4C1, 4S2)
Maximum permissible value for relative humidity	95% (for 2 months/year)
Max. operating altitude above mean sea level	1000 m
Fresh air consumption of inverter	6500 m3/h
Features	
DC terminal	Terminal lug
AC connection	Outer-cone angle plug
Tap changer for MV-transformer	without
Shield winding for MV-Transformer	without
Station enclosure color	RAL 7004
Transformer for external loads	without
Industry standards (for other standards see the inverter datasheet)	IEC 60076, IEC 62271-200, IEC 62271-202, EN50588-1, CSC Certificate

3. Contractual Guarantees Overview

3.1 Performance bond

A Performance Bond is provided for 10% of the contract value, valid until product delivery. After delivery, the bond can be reduced to 5% of the contract value until commissioning is completed, but no later than 18 months from the delivery date. The reduction is subject to the activation of an additional 18-month warranty extension.

3.2 Warranty bond

A Warranty Bond is set at 5% of the contract value with a total duration of 5 years, divided into periods of 2+2+1 years. This guarantee covers any manufacturing defects or non-conforming performance for the entire contractual period.

3.3 Product warranty

The product is covered by a 63-month warranty starting from the delivery date. This warranty covers any defects related to the product itself and is effective from the date of receipt at the destination.

4. Scope of Supply

Position	Quantity	Description
1000	7	MV Power Station **4400 KVA**

Table 1: scope of supply.

4.1 Exclusions

Scope not explicitly listed in the Scope of Supply (Table 1) is excluded.
The following items are explicitly excluded:

Mechanical
Modification of any existing systems not explicitly cited.
Missing parts and components.
Electrical
Modification of existing systems not explicitly cited.
Civil
Land preparation
Temporary accesses and final accessing roads
Security plan and hardware.
Temporary accommodation
Finishing and fencing
First aid station and ambulances
Waste disposal facility

Table 2: exclusions from the Scope of Supply.

Project Management
Attainability of installation, commissioning and operation permits, or any other permit.
Assessment and acceptance of safety relevant issues.
Any study, engineering, documentation, or other service.
Additional works resulting from changes in laws or any other reasons, for which EECC is not responsible.
Building of Site Facilities of any kind (lights, water supply and treatment, heating, power supply, etc.).

Custom duties and taxes.
Engineering
Design and detailed engineering of existing equipment.

Table 3: exclusions from scope of Services.

4.2 Technical documentation

Following documents are part of the technical documentation (list is preliminary):

Pos.	Document	Available
1	General	
1.1	Document & drawing list	yes
1.2	Technical data sheet	yes
1.3	Component manuals	yes
1.4	Quality documentation	yes

Table 4: technical documentation