

S O L A N Z O

VOLTA

SERIES — SOLAR PUMPING INVERTER

Engineered for Solar. Designed for Water.**0.75-355**

KW POWER RANGE

1-475

HP MOTOR RANGE

IP66/65/54

PROTECTION CLASS

0.75-200

KW STANDARD MODELS

>200-355

KW CUSTOM CABINET

VOLTA TECHNOLOGY PLATFORM**SolarTrack™**

MPPT with >99% tracking efficiency

AquaLogic™

Well & tank water-level management

MultiGuard™

Full DC, AC, thermal & hydraulic protection

VoltaLink™

RS485 communication & remote monitoring

ThermaFlow™

Sealed thermal design

1 PRODUCT OVERVIEW

The Solanzo Volta Series is a dedicated solar pumping inverter family for direct photovoltaic operation of AC water pumps. The platform combines high-efficiency maximum power point tracking, variable-frequency motor control, water-level management, system protection and communication functions in a sealed enclosure architecture rated IP66 up to 45 kW, IP65 to 90 kW and IP54 above.

During operation, the inverter continuously evaluates available PV power and regulates pump frequency to match the available solar energy. This allows stable water production throughout changing irradiance conditions while reducing dependence on battery storage in conventional daytime pumping systems.

Five coordinated platforms — V1, V2, V3, the V3 high-power range and the VX cabinet series — cover pump duties from 0.75 kW residential and agricultural systems up to 355 kW municipal and industrial installations, all under a single control and protection philosophy.



VOLTA WALL-MOUNTED ENCLOSURE — IP66





Every Volta inverter integrates the complete control chain required for autonomous solar water pumping: solar energy capture, motor drive control, hydraulic supervision and system protection are engineered as one coordinated platform rather than as separate add-on devices.

CORE ENGINEERING FUNCTIONS

- **Direct PV-to-pump energy conversion** — solar array power is converted and applied to the pump motor without intermediate battery storage.
- **SolarTrack™ MPPT** — maximum power point tracking with >99% tracking efficiency across varying irradiance.
- **Variable-frequency pump speed regulation** — motor speed follows available solar power for stable, continuous water output.
- **Automatic solar start / stop and recovery** — the inverter starts at sufficient irradiance, sleeps at low light and resumes automatically.
- **Well low-level and dry-run protection** — pumping stops before the motor runs without water.
- **Tank-full automatic stop** — delivery ends when the storage tank reaches its upper level.
- **Optional pressure-sensor control** — pressure-based regulation for closed-pipeline duties.
- **VoltaLink™ RS485 communication** — local or remote integration with optional monitoring.
- **Integrated DC, AC, thermal and hydraulic protection** — coordinated by the MultiGuard™ protection suite.
- **Sealed enclosure architecture** — IP66 for ratings up to 45 kW, IP65 for 55-90 kW and IP54 for higher ratings, across wall-mounted and cabinet designs.

TYPICAL APPLICATIONS

- **Deep-well and borehole pumping** — reliable water lifting where grid power is absent or unreliable.
- **Agricultural irrigation** — daytime pumping matched to solar availability and crop demand.
- **Community and rural water supply** — autonomous village and settlement water systems.
- **Livestock watering** — unattended tank filling for grazing stations.
- **Greenhouse irrigation** — controlled delivery to storage or direct distribution.
- **Storage-tank filling** — automatic management of elevated and rooftop tanks.
- **Water transfer and distribution** — boosting and transfer between reservoirs and networks.
- **Municipal and commercial pumping** — utility-scale solar pumping stations.
- **Remote off-grid water systems** — fully independent installations without grid connection.
- **High-capacity industrial pumping** — engineered VX cabinet solutions above 200 kW.

WHY SOLAR-DIRECT PUMPING

No Batteries

PV power drives the pump directly; storage tanks replace battery banks

Zero Fuel Cost

Pumping energy is supplied entirely by the solar array

Low Maintenance

Solid-state drive with sealed enclosure and automatic protection

Off-Grid Autonomy

Fully automatic daily operation without grid supply or operator attendance

SYSTEM PRINCIPLE



2 MODEL NOMENCLATURE

Volta model codes identify the platform, rated power, output phase configuration and mechanical format in a single designation. The code allows the correct inverter platform to be selected directly from the pump motor voltage and power requirement.

Code Element	Definition	Example
SVS	Solanzo Volta Series	SVS-V3-22T
V1	220-240 VAC single-phase pump platform	SVS-V1-2K2S
V2	220-240 VAC three-phase pump platform	SVS-V2-1500T
V3	380-415 VAC three-phase pump platform	SVS-V3-55T
VX	High-power industrial cabinet platform	SVS-VX-315T-C
750 / 1500	Rated power in watts	750 W / 1500 W
2K2 / 5K5 / 18K5	Decimal kW coding	2.2 / 5.5 / 18.5 kW
22 / 100 / 315	Rated power in kW	22 / 100 / 315 kW
S	Single-phase output	SVS-V1-750S
T	Three-phase output	SVS-V3-22T
C	Cabinet configuration	SVS-VX-315T-C

PLATFORM OVERVIEW

The V1 platform addresses single-phase pump motors at 220-240 VAC for residential and light agricultural duty. V2 provides three-phase output at 220-240 VAC where that voltage class is required. The V3 platform is the main 380-415 VAC three-phase range covering standard and high-power ratings, while the VX series delivers project-engineered cabinet solutions for the largest pumping systems.

Rated power is expressed in watts for the smallest models (750, 1500), in decimal kW coding for intermediate ratings (2K2, 5K5, 18K5) and in whole kilowatts for the higher ratings (22, 100, 315). Output phase is indicated by the S (single-phase) or T (three-phase) suffix, and C designates the floor-standing cabinet configuration of the VX series.

READING A MODEL CODE — WORKED EXAMPLE

Model	Element	Meaning	Interpretation
SVS-V3-55T	SVS	Series	Solanzo Volta Series solar pumping inverter
	V3	Platform	380-415 VAC three-phase pump platform
	55	Power	55 kW rated output power
	T	Output	Three-phase motor output
SVS-VX-315T-C	VX ... C	Cabinet	315 kW three-phase rating in floor-standing project cabinet



3 V1 SINGLE-PHASE PLATFORM — 220-240 V

The V1 platform provides a dedicated single-phase output stage for compatible AC pump motors between 0.75 kW and 3.7 kW. It operates from a PV array with a working window of 250–450 VDC and an optimum MPPT range of 290–430 V, making it suitable for compact residential, livestock and small irrigation systems.

Model	Power (kW)	HP	DC Min. (V)	DC Max. (V)	MPPT Range (V)	AC Output	Rated Current (A)	Frequency (Hz)	IP
SVS-V1-750S	0.75	1	250	450	290–430	220–240 V, 1Φ	5	0–50/60	IP66
SVS-V1-1500S	1.5	2	250	450	290–430	220–240 V, 1Φ	8.5	0–50/60	IP66
SVS-V1-2K2S	2.2	3	250	450	290–430	220–240 V, 1Φ	12	0–50/60	IP66
SVS-V1-3K0S	3.0	4	250	450	290–430	220–240 V, 1Φ	16	0–50/60	IP66
SVS-V1-3K7S	3.7	5	250	450	290–430	220–240 V, 1Φ	20	0–50/60	IP66

V1 PLATFORM CHARACTERISTICS

- Dedicated output architecture for compatible single-phase AC pump motors
- Integrated SolarTrack™ MPPT control
- Soft acceleration and variable-frequency pump control
- Well and tank level sensor inputs
- Optional pressure-feedback control
- RS485 communication interface

4 V2 THREE-PHASE PLATFORM — 220-240 V

The V2 platform supplies controlled three-phase output at 220–240 VAC for pump motors of that voltage class. It shares the V1 DC input window — 250–450 VDC with a 290–430 V MPPT range — allowing identical PV string design across both low-voltage platforms.

Model	Power (kW)	HP	DC Min. (V)	DC Max. (V)	MPPT Range (V)	AC Output	Rated Current (A)	Frequency (Hz)	IP
SVS-V2-750T	0.75	1	250	450	290–430	220–240 V, 3Φ	3.0	0–50/60	IP66
SVS-V2-1500T	1.5	2	250	450	290–430	220–240 V, 3Φ	5.5	0–50/60	IP66
SVS-V2-2K2T	2.2	3	250	450	290–430	220–240 V, 3Φ	8.0	0–50/60	IP66

Maximum MPPT efficiency: >99%. Maximum inverter conversion efficiency: ≥98% under nominal operating conditions.

V1 / V2 APPLICATION NOTES

- Both platforms share the same 250–450 VDC input window, allowing one PV string design across single- and three-phase low-voltage models.
- Typical duties include household supply, small farms, livestock points and garden irrigation.
- Compact C1 enclosure with vertical wall mounting keeps installation footprint small.
- Level-sensor inputs and optional pressure feedback enable fully automatic water management without external controllers.



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V3 THREE-PHASE PLATFORM — 380-415 V

The V3 platform is the principal three-phase range of the Volta Series, covering pump motors from 2.2 kW to 37 kW in standard enclosure sizes. The higher DC operating window — 460–750 VDC with a 500–720 V MPPT range — permits longer PV strings and smaller array cabling for the same installed power.

Model	Power (kW)	HP	DC Min. (V)	DC Max. (V)	MPPT Range (V)	AC Output	Rated Current (A)	Frequency (Hz)	IP
SVS-V3-2K2T	2.2	3	460	750	500-720	380-415 V, 3Φ	7.2	0-50/60	IP66
SVS-V3-3K7T	3.7	5	460	750	500-720	380-415 V, 3Φ	10	0-50/60	IP66
SVS-V3-5K5T	5.5	7.5	460	750	500-720	380-415 V, 3Φ	13	0-50/60	IP66
SVS-V3-7K5T	7.5	10	460	750	500-720	380-415 V, 3Φ	18	0-50/60	IP66
SVS-V3-11T	11	15	460	750	500-720	380-415 V, 3Φ	24	0-50/60	IP66
SVS-V3-15T	15	20	460	750	500-720	380-415 V, 3Φ	30	0-50/60	IP66
SVS-V3-18K5T	18.5	25	460	750	500-720	380-415 V, 3Φ	39	0-50/60	IP66
SVS-V3-22T	22	30	460	750	500-720	380-415 V, 3Φ	45	0-50/60	IP66
SVS-V3-30T	30	40	460	750	500-720	380-415 V, 3Φ	60	0-50/60	IP66
SVS-V3-37T	37	50	460	750	500-720	380-415 V, 3Φ	75	0-50/60	IP66

V3 models use controlled three-phase U/V/W motor output with dedicated PE grounding and are intended for compatible 380-415 VAC pump motors.

V3 DESIGN NOTES

- ▶Full SolarTrack™ MPPT, AquaLogic™ level control and MultiGuard™ protection integrated as standard.

▶Rated for continuous full-load operation within the specified environmental envelope.
- ▶Bottom-entry sealed cable glands preserve the IP66 protection degree at all terminations.

▶Vertical wall mounting with external fan-assisted heat-sink cooling (enclosure families C1-C4).

TYPICAL V3 DUTIES

Borehole Supply Deep-well extraction for farms and communities	Irrigation Pivot, drip and sprinkler systems up to 37 kW	Tank Filling Automatic transfer to elevated storage	Distribution Pressure-boosted delivery within solar hours
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6 V3 HIGH-POWER PLATFORM — 380-415 V

The V3 high-power range extends the 380-415 V platform to 200 kW, serving large-scale agricultural schemes, municipal supply and industrial water systems. These models retain the same control, protection and interface architecture as the standard V3 range, providing consistent operation across the entire Volta family.

Model	Power (kW)	HP	DC Min. (V)	DC Max. (V)	MPPT Range (V)	AC Output	Rated Current (A)	Frequency (Hz)	IP
SVS-V3-45T	45	60	460	750	500-720	380-415 V, 3Φ	91	0-50/60	IP66
SVS-V3-55T	55	75	460	750	500-720	380-415 V, 3Φ	112	0-50/60	IP65
SVS-V3-75T	75	100	460	750	500-720	380-415 V, 3Φ	150	0-50/60	IP65
SVS-V3-90T	90	120	460	750	500-720	380-415 V, 3Φ	180	0-50/60	IP65
SVS-V3-100T	100	135	460	750	500-720	380-415 V, 3Φ	200	0-50/60	IP54
SVS-V3-110T	110	150	460	750	500-720	380-415 V, 3Φ	220	0-50/60	IP54
SVS-V3-132T	132	175	460	750	500-720	380-415 V, 3Φ	260	0-50/60	IP54
SVS-V3-160T	160	215	460	750	500-720	380-415 V, 3Φ	310	0-50/60	IP54
SVS-V3-185T	185	250	460	750	500-720	380-415 V, 3Φ	360	0-50/60	IP54
SVS-V3-200T	200	270	460	750	500-720	380-415 V, 3Φ	390	0-50/60	IP54

HIGH-POWER APPLICATION NOTES

- Suited to deep-well extraction, large pivot and drip irrigation networks and high-volume transfer duties.
- Higher-rated models mount in the C4 and C5 enclosure families with increased heat-sink capacity.
- PV arrays are typically configured as multiple parallel strings within the 500-720 V MPPT window.
- Motor cable sizing and routing should account for rated currents up to 390 A.

TYPICAL HIGH-POWER DUTIES

Municipal Supply Utility water stations and booster duty	Large Irrigation Estate-scale pivot and drip networks	Bulk Transfer High-volume movement between reservoirs	Industrial Process Continuous duty process-water supply
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ENCLOSURE ASSIGNMENT & PROTECTION DEGREE

Power Band	Enclosure Family	Protection Degree	Mounting
0.75-45 kW	Volta C1-C4	IP66	Vertical wall mounting
55-90 kW	Volta C4	IP65	Vertical wall mounting
100-110 kW	Volta C4	IP54	Vertical wall mounting
132-200 kW	Volta C5	IP54	Vertical wall mounting
>200-355 kW	Volta VX	IP54	Floor-standing project cabinet



7 VOLTA VX INDUSTRIAL CABINET SERIES

Above 200 kW, the Volta VX series provides floor-standing cabinet solutions engineered to the requirements of each project. Cabinet systems combine the Volta drive platform with project-specific input switchgear, output protection, cooling and interface provisions, enclosed in an IP54 cabinet architecture.

Typical Model	Power (kW)	HP	DC Operating Range (V)	Max. DC (V)	AC Output	Rated Current (A)	Cooling	IP
SVS-VX-220T-C	220	295	540-760	800	380-415 V, 3Φ	415	Closed-loop forced air	IP54
SVS-VX-250T-C	250	335	540-760	800	380-415 V, 3Φ	470	Closed-loop forced air	IP54
SVS-VX-315T-C	315	420	540-760	800	380-415 V, 3Φ	590	Closed-loop forced air	IP54
SVS-VX-355T-C	355	475	540-760	800	380-415 V, 3Φ	660	Closed-loop forced air	IP54

VX models represent typical configurations. Final power rating, cooling arrangement and interface equipment are confirmed during project engineering.

CABINET ENGINEERING SCOPE

- Closed-loop forced-air cooling or heat-exchanger architecture maintains internal conditions within the sealed cabinet.
- DC operating window of 540-760 V with 800 V maximum permits utility-scale array configurations.
- Configurable input section, motor protection and instrumentation per project specification.
- Full MultiGuard™ protection, VoltaLink™ communication and optional remote monitoring retained.
- Project-engineered construction: each VX cabinet is dimensioned for the site power, cable routing and environmental conditions.
- Bottom or top cable entry configurations available to suit the installation layout.
- Supplied with factory test documentation and project wiring diagrams for site commissioning.
- Suited to permanent pumping stations, water utilities and large irrigation schemes.

TYPICAL VX SYSTEM SCOPE

Cabinet Section	Typical Content
DC Input Section	PV array combiner terminals, DC isolation and Type II surge-protection coordination
Inverter Section	Volta drive platform with SolarTrack™ MPPT and variable-frequency motor control
Output Section	Motor output terminals, disconnect and protection equipment rated for the installation
Control Section	Level, pressure and communication terminals; HMI and status indication on the cabinet door





8 CONTROL, PROTECTION & COMMUNICATION

Volta inverters coordinate solar input, motor output and hydraulic condition through a unified control layer. Each function is implemented in the inverter firmware and selectable sensor inputs, requiring no external controllers for standard solar pumping duty.

Function	Technology / Interface	Description
Solar Control	SolarTrack™ MPPT	>99% maximum power point tracking efficiency; automatic adaptation to changing irradiance.
Motor Control	Variable-frequency drive	Controlled acceleration, frequency regulation and pump-speed adjustment.
Well Protection	AquaLogic™ well-level input	Stops pump when low-water condition is detected; automatic recovery when normal conditions return.
Tank Control	AquaLogic™ tank-level input	Stops pump when storage tank reaches the full level.
Pressure Control	Optional pressure input	Supports pressure-based operation where configured.
Communication	VoltaLink™ RS485	Local or remote integration through supported communication functions.
Remote Monitoring	Optional GPRS	Remote operating-status monitoring and control where configured.

DISPLAY & LOCAL INTERFACE

- Integrated LCD / HMI display for commissioning and operating data
- Run, Alarm and Fault status indication
- PV input voltage display
- Output voltage, current and frequency display
- Pump operating status and fault-code indication

OPERATING MODES

Mode	Behaviour
Solar-Direct Pumping	Pump frequency follows available PV power; the inverter starts automatically at sufficient irradiance and sleeps at low light.
Level-Controlled Pumping	AquaLogic™ well and tank inputs govern start/stop; pumping stops on low well level or full tank and resumes automatically.
Pressure-Controlled Pumping	Optional pressure sensor feedback maintains pipeline pressure where configured.
Monitored Operation	VoltaLink™ RS485 and optional GPRS provide operating status, production data and fault reporting to local or remote supervision.



MULTIGUARD™ PROTECTION

The MultiGuard™ suite supervises the complete energy path — PV input, power stage, motor output, thermal condition and hydraulic state — and coordinates protective shutdown and automatic recovery without operator intervention.

Protection Area	Functions
PV / DC Input	DC under-voltage, DC over-voltage, reverse-polarity protection and DC surge-protection coordination.
Inverter Output	Over-current / overload supervision and output short-circuit protection.
Motor / Phase	Phase-loss and abnormal motor operating protection on three-phase models.
Thermal	Internal temperature monitoring and over-temperature shutdown.
Hydraulic	Dry-run / low-well-level protection, tank-full shutdown and automatic recovery logic.
System	Protective-earth terminal, fault indication and controlled restart logic.

9 ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

All Volta enclosures are engineered for outdoor pumping environments and carry IP66 protection up to 45 kW, IP65 for 55–90 kW ratings and IP54 above. Thermal design separates the sealed electronics chamber from the external heat-sink path, maintaining component temperature without exposing internal circuits to dust or moisture.

Parameter	Specification
Operating Temperature	-10°C to +60°C
Relative Humidity	15–95% RH, non-condensing
Operating Altitude	Below 4,000 m; derating recommended above 1,000 m
Protection Degree	IP66 up to 45 kW; IP65 for 55–90 kW; IP54 for ratings above 90 kW
Mounting	Vertical wall mounting for C1–C5; floor-standing cabinet for VX
Cable Entry	Bottom-entry sealed cable-gland arrangement
Cooling — C1 to C5	Sealed electronics chamber with external fan-assisted heat-sink cooling
Cooling — VX	Closed-loop forced-air cabinet cooling / heat-exchanger architecture

SERVICE & MAINTENANCE

- Keep the external heat-sink and fan surfaces free of dust and obstruction.
- Inspect cable-gland seals periodically to preserve the enclosure protection degree.
- Verify sensor and communication wiring connections during scheduled service.
- No routine internal maintenance is required under normal operating conditions.





ENCLOSURE FAMILIES

Standard Volta ratings are housed in five wall-mounted enclosure families, C1 through C5, scaled to the power range and cooling requirement of each model. VX ratings are supplied in project-specific floor-standing cabinets of equivalent protection degree.

Platform	Power Range	Motor Range	W × H × D	Weight	Protection
Volta C1	0.75–3.7 kW	1–5 HP	390 × 420 × 175 mm	10 kg	IP66
Volta C2	5.5–15 kW	7.5–20 HP	440 × 480 × 205 mm	20 kg	IP66
Volta C3	18.5–37 kW	25–50 HP	520 × 580 × 250 mm	32 kg	IP66
Volta C4	45–110 kW	60–150 HP	680 × 800 × 360 mm	62 kg	IP66/65/54
Volta C5	132–200 kW	175–270 HP	800 × 1000 × 420 mm	95 kg	IP54
Volta VX	>200–355 kW	>270–475 HP	Project-specific cabinet	Project-specific	IP54

Dimensions and weights are nominal for the standard enclosure families. VX cabinet dimensions are defined per project.

MECHANICAL DESIGN NOTES

- ▶ Vertical wall mounting with top and bottom mounting ears; M8 fixings for the standard families.
- ▶ Bottom-entry sealed cable-gland arrangement for PV input, motor output, sensors and communication.
- ▶ Sealed electronics chamber with external fan-assisted heat-sink cooling (C1–C5).
- ▶ Closed-loop forced-air or heat-exchanger cooling in VX cabinet construction.

Protection degree is IP66 for ratings up to 45 kW, IP65 for 55–90 kW and IP54 for ratings above 90 kW, across wall-mounted and cabinet enclosures.



VOLTA C-FAMILY WALL-MOUNTED ENCLOSURE

SCOPE OF SUPPLY & OPTIONS

- ▶ Volta solar pumping inverter in the selected platform and rating
- ▶ Mounting hardware and bottom-entry cable-gland set
- ▶ Installation, wiring and commissioning documentation
- ▶ Options: well and tank level sensors, pressure sensor
- ▶ Options: GPRS remote-monitoring module
- ▶ Options: DC isolator and Type II DC surge-protection device



10 PV ARRAY ENGINEERING & SELECTION

For solar-direct pumping systems, recommended PV array capacity is generally 1.3–1.5 times the rated pump motor power. Final string design shall also remain within the permitted inverter DC operating window under all expected site temperatures.

Pump Power (kW)	Motor Power (HP)	Recommended PV (kWp)
0.75	1	0.98–1.12
1.5	2	1.95–2.25
2.2	3	2.86–3.30
3	4	3.90–4.50
3.7	5	4.81–5.55
5.5	7.5	7.15–8.25
7.5	10	9.75–11.25
11	15	14.30–16.50
15	20	19.50–22.50
18.5	25	24.05–27.75
22	30	28.60–33.00
30	40	39.00–45.00

Pump Power (kW)	Motor Power (HP)	Recommended PV (kWp)
37	50	48.10–55.50
45	60	58.50–67.50
55	75	71.50–82.50
75	100	97.50–112.50
90	120	117.00–135.00
100	135	130.00–150.00
110	150	143.00–165.00
132	175	171.60–198.00
160	215	208.00–240.00
185	250	240.50–277.50
200	270	260.00–300.00

STRING-DESIGN REQUIREMENTS

- Keep operating string voltage within the specified MPPT range.
- Keep maximum cold-weather string open-circuit voltage below the inverter maximum DC voltage.
- Select DC cable, isolator and surge-protection ratings for the actual string voltage and current.
- Provide protective earthing and equipotential bonding throughout the pumping system.
- Separate power wiring from sensor and RS485 wiring where practical.
- Use suitable cable glands and sealing components to preserve the enclosure protection degree.

11 PUMP & MOTOR SELECTION

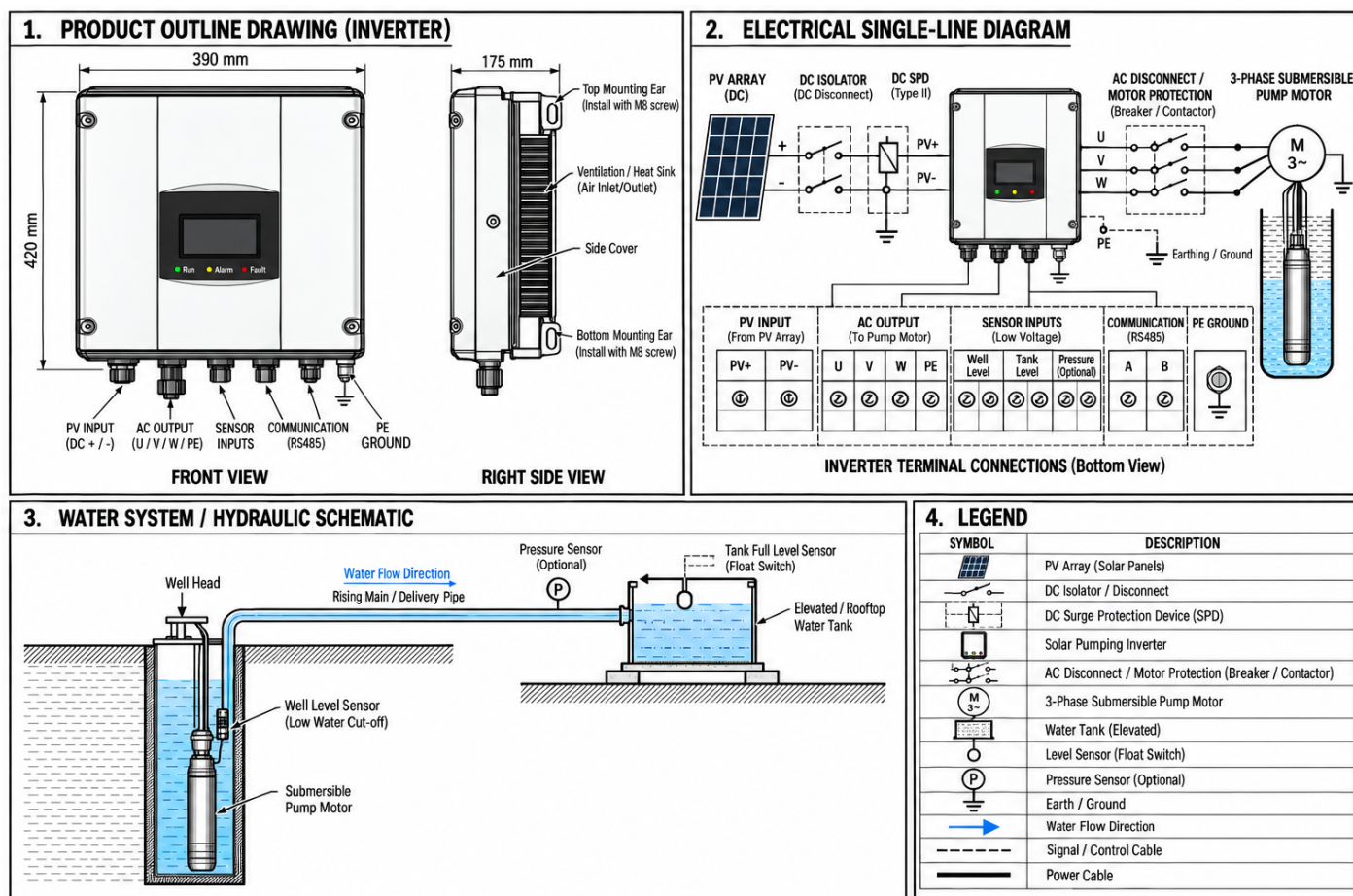
Inverter selection shall match the pump motor rated power, voltage, phase configuration and operating current. Hydraulic pump selection shall be based on the required flow, total dynamic head, borehole conditions, pipeline losses and daily water demand.

Selection Check	Engineering Requirement
Motor Power	Inverter rating equal to or greater than the selected compatible pump motor rating.
Motor Voltage	Match V1, V2, V3 or VX output-voltage class.
Motor Phase	Use S models for compatible single-phase pumps; T models for three-phase pumps.
Motor Current	Rated motor current shall remain within inverter output-current capability.
Hydraulic Duty	Select pump from the manufacturer curve at the required flow and total dynamic head.
PV Array	Size array for both inverter DC-voltage limits and required pumping energy.



12 TYPICAL ELECTRICAL & HYDRAULIC CONNECTION

Typical arrangement showing PV array, DC isolation, surge protection, inverter, motor protection, submersible pump, well-level control, tank-level control, optional pressure sensing and protective earthing.



Drawing shows: (1) product outline and mounting dimensions, (2) electrical single-line diagram with inverter terminal connections, (3) water system / hydraulic schematic, (4) legend of symbols.

13 INSTALLATION & COMMISSIONING

Step	Commissioning Requirement
1	Verify inverter model, motor voltage, phase and rated current.
2	Verify PV array maximum open-circuit voltage and MPPT operating voltage.
3	Install DC isolator, Type II DC SPD, motor-side isolation/protection and protective earthing.
4	Connect PV+, PV-, U/V/W or single-phase output, PE, sensors and RS485 as applicable.
5	Confirm correct motor rotation / phase sequence before normal pumping operation.
6	Verify well-level and tank-level sensor logic.
7	Test dry-run, tank-full, over-temperature and fault-recovery functions.
8	Confirm stable pumping operation across the expected solar operating range.

INSTALLATION CONDITIONS

- ▶ Install vertically with the specified cooling clearances.
- ▶ Do not obstruct ventilation or external heat-sink surfaces.
- ▶ Protect cables from mechanical damage and maintain proper bend radius.
- ▶ Maintain enclosure sealing at all cable entries and unused openings.
- ▶ Avoid corrosive gases, oil mist, flammable atmosphere and excessive dust accumulation.
- ▶ Provide suitable external over-current and surge protection for the actual project.

14 DESIGN & COMPLIANCE REFERENCE

Item	Reference
Ingress Protection	IP66 / IP65 / IP54 in accordance with IEC 60529 enclosure principles
Drive Safety	Design reference: EN/IEC 61800-5-1
EMC	Design reference: EN/IEC 61800-3
Low-Voltage / Electrical Safety	CE / LVD design framework
System Installation	Final installation shall comply with applicable national and project electrical requirements

15 ORDERING INFORMATION

Specify the required Volta platform, rated power, motor voltage and phase, pump motor current, PV array voltage window, required sensors, communication options and site conditions. Volta VX cabinet solutions are engineered according to project power, protection, cooling and interface requirements.

16 PRODUCT STATEMENT

Solanzo continuously develops its products and may update technical characteristics, mechanical details and available functions without prior notice. System design and final model selection shall be based on the selected inverter model, pump motor nameplate, PV module data and project operating conditions.

