HONI ELECTRICAL PROTECTION

Single-Phase AC/DC Protection Cabinet

Fiche technique - Coffret de protection AC/DC monophasé

Item	Description
Document No.	HN-FR-ACDC-1P-32A-2DC-1000V-SPEC
Model / Version	HONI ACDC-1P-32A-2DC-1000V-FR24W / Rev. A
Application	Single-phase AC side + two DC PV/protection circuits for power conversion cabinet applications
Customer market	France / EU
Manufacturer	Wenzhou HONI Electric Co., Ltd.
Date	2026-06-06
Important scope note: This document is prepared for the single-phase cabinet shown in the attached product photo and wiring drawing. It does not describe a three-phase cabinet. Final production shall be based on the approved single-phase drawing, locked BOM and order-specific labels.	

Reference product appearance / Apparence produit de référence

1. Product identification / Identification du produit

Parameter	Specification
Product name	Single-phase AC/DC protection cabinet / Coffret de protection AC/DC monophasé
Proposed model	HONI ACDC-1P-32A-2DC-1000V-FR24W
Cabinet configuration	24-module enclosure, 2 rows, DIN-rail-mounted protective devices
Rated AC side	230 V AC single-phase, 50/60 Hz, 32 A nominal circuit rating
Rated DC side	2 independent DC circuits, each 32 A, max. system voltage 1000 V DC
Typical use	AC/DC protection and isolation for PV or power conversion applications requiring separate AC and DC protective devices
Installation environment	Indoor or sheltered outdoor installation according to enclosure IP rating, cable-gland selection and local installation rules
French customer note: NF C 15-100 is treated as the local installation reference in France. It is not a substitute for product conformity assessment. The installer remains responsible for final installation design, cable sizing, earthing system and protective coordination.	

2. Application and system boundary / Application et limites du système

The cabinet is designed as a pre-assembled protection and isolation unit for a single-phase AC circuit and two DC circuits. It combines overcurrent protection, residual-current protection on the AC side, surge protection, DC fusing and DC isolation in one labelled enclosure.

- AC side: input/output single-phase L, N and PE; overcurrent protection by 2-pole MCB; residual-current protection by Type B RCCB; AC surge protection by Type 2 SPD.
- DC side: two PV/DC circuits, each with PV+ and PV- fuse protection, Type 2 DC SPD and 2-pole DC load-break isolator.
- PE/common earthing: all AC and DC surge protective devices shall be bonded to the PE terminal/bar with verified continuity.
- This cabinet does not replace the inverter manufacturer instructions, upstream grid protection requirements, or the installer's final risk assessment.

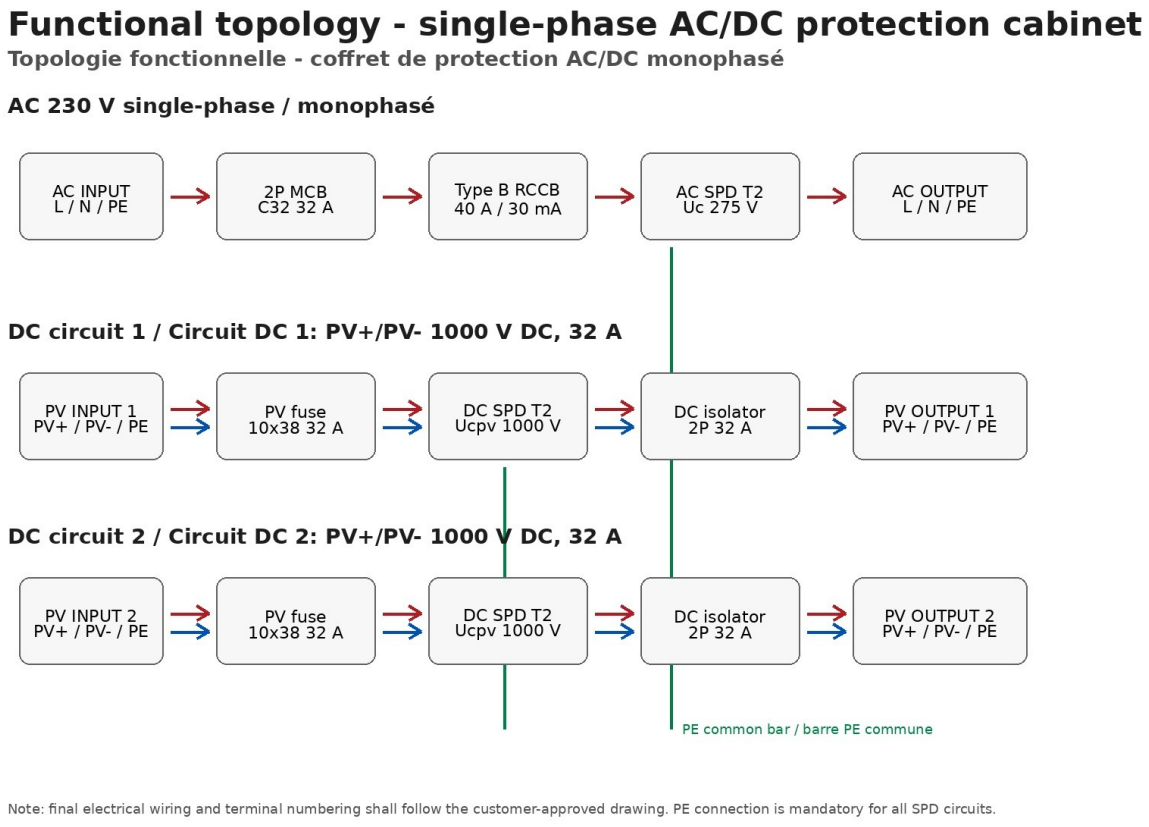
3. Main electrical ratings / Caractéristiques électriques principales

Item	Rating / Requirement
AC rated voltage	230 V AC, single-phase L/N
AC frequency	50/60 Hz
AC rated current	32 A cabinet circuit rating; component ratings shall not be lower than the approved BOM
AC protection	2P C32 MCB + Type B RCCB 40 A / 30 mA + Type 2 AC SPD
DC rated voltage	Max. 1000 V DC for cabinet circuit; DC switch may carry a higher component marking, subject to BOM
DC rated current	32 A per DC circuit
Number of DC circuits	2 inputs / 2 outputs, each PV+ and PV- protected
Earthing	Dedicated PE terminal/bar; PE continuity test required
Enclosure	24-module distribution enclosure; final IP rating subject to enclosure label and cable-gland installation
Operating temperature	-25 °C to +60 °C target range, subject to component datasheets and derating
Mounting	Wall-mounted enclosure; DIN rail mounted internal devices
Cable entry	Through suitable IP-rated cable glands selected by cable diameter and installation environment

4. Internal protective devices / Appareils de protection internes

Device	Model / series	Main rating	Function
AC MCB	HONI HB232-C32 or approved equivalent	2P, C curve, 32 A, 230/400 V AC	AC overcurrent and short-circuit protection for single-phase circuit
Type B RCCB	HONI HB202B-40	2P, Type B, 40 A, IΔn 30 mA, 230/240 V AC	Residual-current protection suitable for applications where smooth DC residual current may occur
AC SPD	HONI HNS3L-T2	Type 2, Uc 275 V AC, In 10 kA, Imax 20 kA, Up ≤1.3 kV	AC transient overvoltage protection
PV/DC fuse holder	HONI PV-32	10×38, 1000 V DC, max. 32 A	PV+/PV- string fuse protection
DC SPD	HONI HS2D-40	Type 2, Ucpv 1000 V DC, In 20 kA, Imax 40 kA, Up <4.0 kV	DC transient overvoltage protection
DC isolator	FSD6-50/2 or approved equivalent	2P, 32 A, DC load-break isolator, component marking up to DC1500 V	Manual isolation of each DC circuit
Terminal block	Approved terminal set	L/N/PE and PV+/PV-/PE, sized for 32 A circuit	Field wiring connection and PE bonding
BOM control: Component models, ratings and quantities must match the approved order BOM. Any replacement requires written approval and an updated routine test record.			

5. Functional topology / Topologie fonctionnelle



Clean functional diagram prepared from the supplied product photo and wiring drawing. Final wiring shall follow the approved electrical drawing.

6. Terminal marking and wiring requirements / Marquage des bornes et câblage

Terminal area	Marking	Requirement
AC INPUT	L, N, PE	Incoming single-phase AC supply. Verify upstream disconnection before wiring.
AC OUTPUT	L, N, PE	Outgoing protected single-phase AC circuit.
PV INPUT 1	PV+, PV-, PE	Incoming DC circuit 1 from PV/source side.
PV OUTPUT 1	PV+, PV-, PE	Outgoing DC circuit 1 to inverter/load side.
PV INPUT 2	PV+, PV-, PE	Incoming DC circuit 2 from PV/source side.
PV OUTPUT 2	PV+, PV-, PE	Outgoing DC circuit 2 to inverter/load side.
PE terminal/bar	PE	Mandatory bonding point for AC SPD, DC SPD, enclosure and field protective conductor.

- Use ferrules for flexible conductors where required by the terminal datasheet and installer practice.
- Recommended conductor range for 32 A circuits: AC 4-10 mm² copper and DC 4-6 mm² PV cable, subject to cable length, ambient temperature, installation method and local rules.
- Final tightening torque shall follow the component terminal marking/datasheet; production shall record torque sampling or 100% torque verification according to the quality plan.
- All DC polarity labels shall be physically checked before packaging: PV+ must not be interchanged with PV-.
- Cable glands must maintain the declared enclosure IP rating after installation.

7. EU / France compliance framework / Cadre de conformité UE / France

Reference	Use in this specification
2014/35/EU Low Voltage Directive	Applicable to electrical equipment within the defined voltage limits. Cabinet ratings fall within the LVD voltage scope.
2011/65/EU RoHS, as amended	Material restriction control for electrical/electronic equipment and components supplied to the EU market.
CE technical file / EU DoC	Manufacturer shall maintain technical documentation and issue EU Declaration of Conformity when applicable.
EN IEC 61439-1 / EN IEC 61439-2	Reference for low-voltage switchgear/controlgear assemblies and routine verification approach.

EN 61008-1 + EN 62423	Reference for Type B residual current operated circuit-breaker without integral overcurrent protection.
EN 60898-1 or EN 60947-2	Reference for AC miniature circuit-breaker / circuit-breaker according to selected component certificate.
EN 61643-11	Reference for AC low-voltage surge protective devices.
EN 61643-31	Reference for surge protective devices connected to the DC side of photovoltaic installations.
EN 60269-6	Reference for fuse-links/fuse-holders for photovoltaic applications.
EN 60947-3	Reference for switch-disconnectors and load-break switches.
EN 60529	Reference for IP degree of protection of enclosure.
NF C 15-100	French low-voltage installation reference. Installer shall verify project-specific compliance.
Compliance wording: This specification is not itself a certificate. France/EU shipment should be supported by EU Declaration of Conformity, component certificates/test reports where applicable, routine test record, final photos, label artwork and installation instructions.	

8. Production inspection and routine test plan / Plan de contrôle et essais de routine

No.	Inspection / Test	Acceptance requirement	Record
1	Incoming material check	Check model, rating, certification marking and visual condition of each device against locked BOM.	100% or AQL per QC plan
2	Mechanical assembly check	DIN rail fixation, enclosure condition, gasket, door operation, device alignment, blanks and terminal covers.	100%
3	Wiring and polarity check	Verify AC L/N/PE, DC PV+/PV-, PE bonding, terminal numbering and wiring colour consistency.	100%
4	Protective earth continuity	Measure PE continuity between PE terminal/bar, SPD PE connection and enclosure bonding point.	100%
5	Insulation resistance	Verify insulation resistance for AC and DC circuits according to internal test procedure and component limitations.	100%
6	Dielectric / withstand test	Perform where required by assembly standard and internal control plan, with SPD/RCD handling according to component requirements.	Per procedure
7	RCD functional test	Test Type B RCCB with calibrated instrument. Record trip at IΔn / 5IΔn as applicable for AC test mode and project requirement.	100%
8	MCB and DC isolator operation	Manual ON/OFF operation, handle position, locking function if applicable, contact status check.	100%
9	SPD status check	Verify AC and DC SPD visual indicators are normal before packaging.	100%
10	Final photographic record	Take internal layout photo, terminal photo, label photo and packing photo for traceability.	100%

9. Nameplate, labels and traceability / Plaque signalétique, étiquettes et traçabilité

Label item	Content requirement
Main nameplate	HONI model, AC rating, DC rating, IP rating, serial/batch number, manufacturer, CE mark where applicable, warning symbols.
AC labels	AC INPUT, AC OUTPUT, L, N, PE, 230 V AC, 32 A.
DC labels	PV INPUT, PV OUTPUT, PV+, PV-, PE, 1000 V DC max., 32 A per circuit.
Warning label	Disconnect AC and DC supplies before opening. DC circuits may remain live when PV source is exposed to light.
Traceability code	Suggested format: HN-ACDC1P-FR-YYMMDD-B###-S###.
QR/document code	Optional QR link to PDF wiring diagram, routine test report and EU DoC for the shipment batch.
Suggested batch code example: HN-ACDC1P-FR-260606-B001-S001 = HONI AC/DC single-phase France version, production date 2026-06-06, batch 001, cabinet serial 001.	

10. Export packing and delivery documents / Emballage export et documents de livraison

- Each cabinet shall be packed with foam or equivalent protection to prevent handle/device damage during transport.

- Moisture protection and carton strength shall be selected according to sea/air shipment method.
- Each carton shall show model, quantity, gross/net weight, carton number and handling marks.
- Recommended document package: commercial invoice, packing list, EU Declaration of Conformity, routine test report, wiring diagram, user/installation notice, component certificate list, final inspection photos and batch traceability sheet.
- For French customer delivery, provide product warnings and key installation notes in English and French where practical.

11. Safety notices / Avis de sécurité

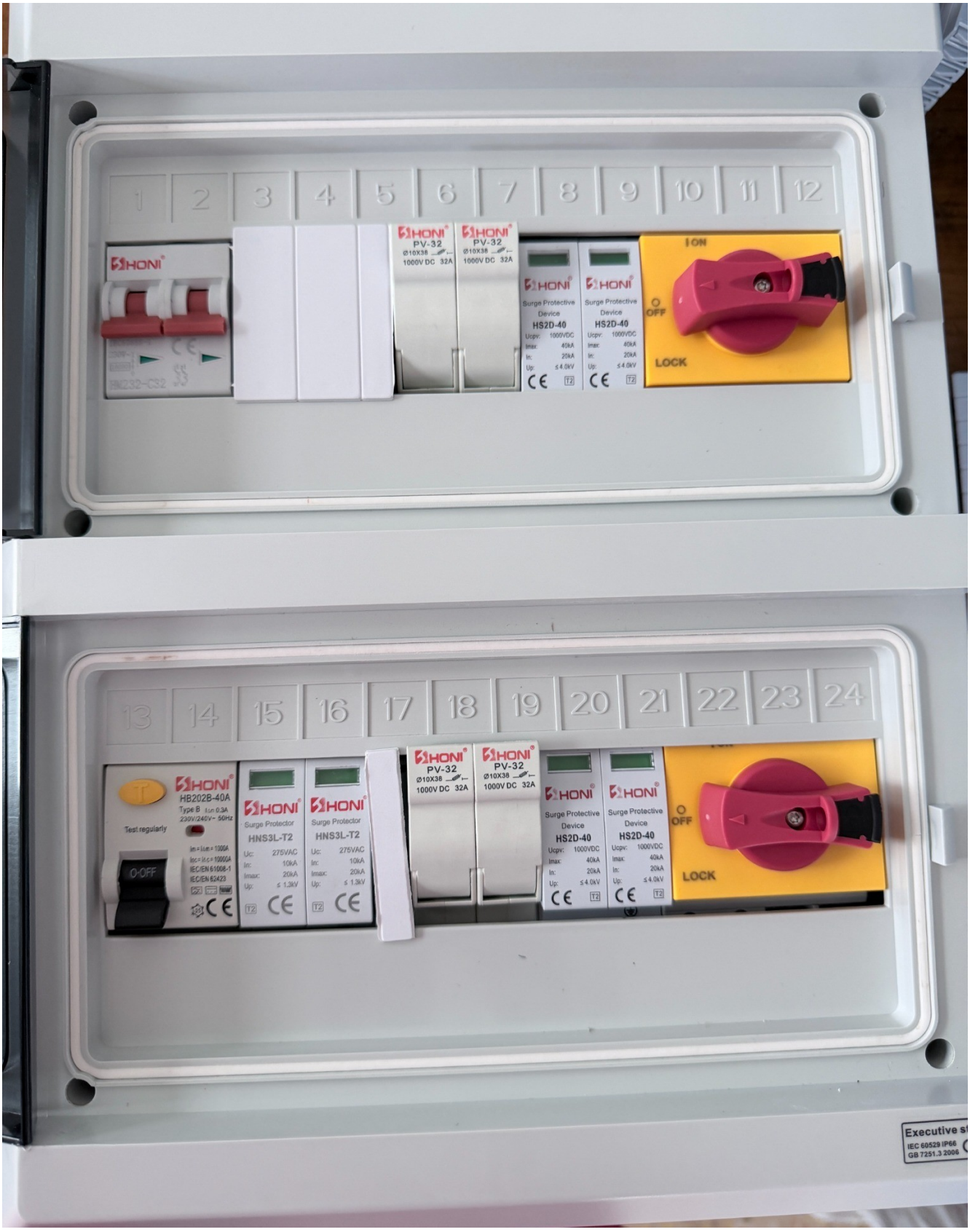
Topic	Notice
Electrical work	Installation, inspection and maintenance must be carried out only by qualified electrical personnel. / L'installation, le contrôle et la maintenance doivent être réalisés uniquement par du personnel qualifié.
DC hazard	PV/DC circuits may remain energized even after AC disconnection. / Les circuits PV/DC peuvent rester sous tension même après la coupure AC.
Isolation	Disconnect and lock both AC and DC supplies before opening the enclosure. / Couper et verrouiller les alimentations AC et DC avant ouverture du coffret.
Verification	Confirm absence of voltage with a suitable measuring instrument before touching terminals. / Vérifier l'absence de tension avec un appareil adapté avant de toucher les bornes.
Polarity	Reverse polarity may damage equipment and create fire/electric shock risk. / Une inversion de polarité peut endommager l'équipement et créer un risque d'incendie ou de choc électrique.
Earthing	Protective earth connection is mandatory. / Le raccordement à la terre de protection est obligatoire.

12. Items to confirm before production / Points à confirmer avant fabrication

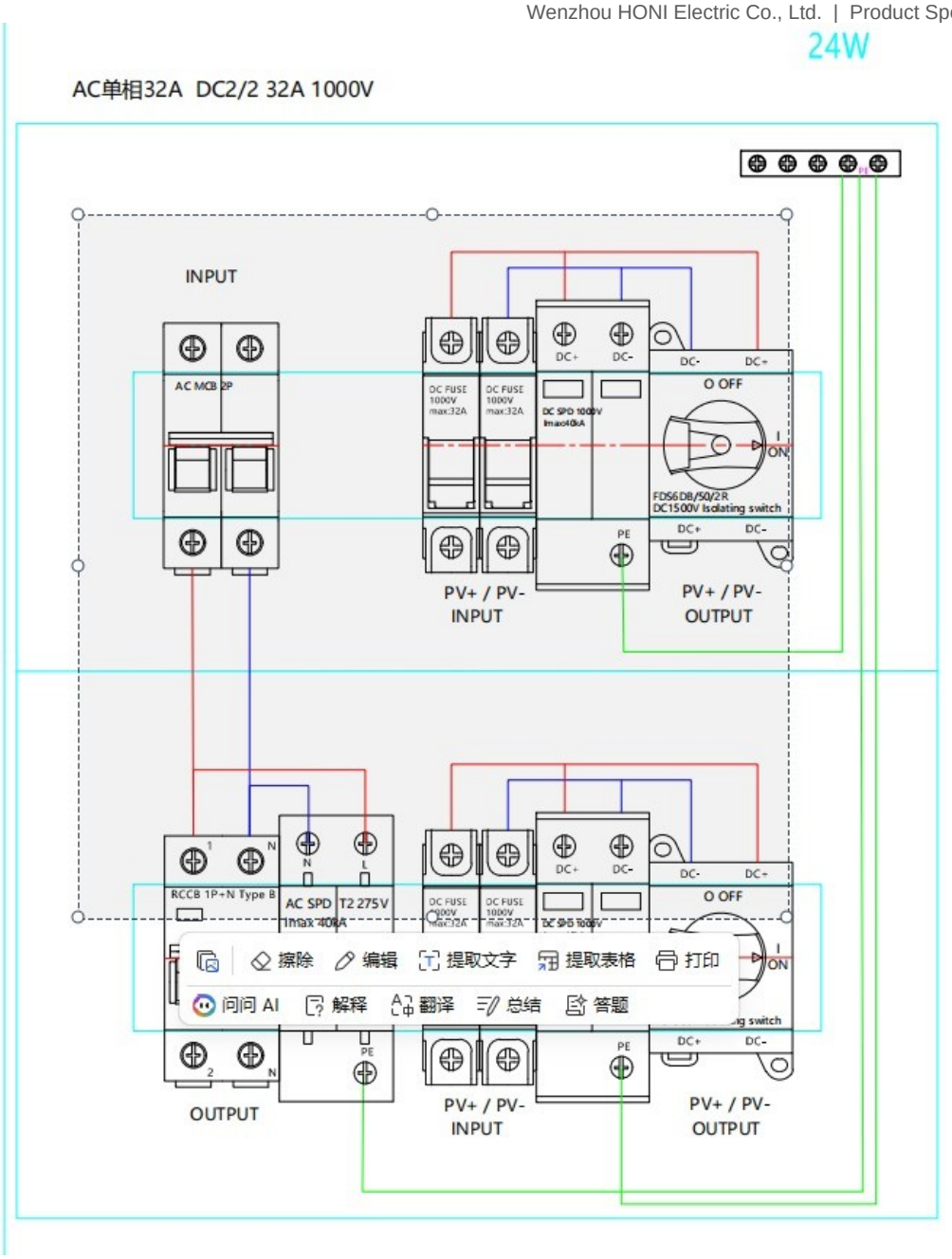
1. Confirm final model name and customer reference printed on the nameplate.
2. Confirm inverter/load equipment, DC maximum voltage, DC maximum current and number of circuits/MPPT inputs.
3. Confirm earthing system and installation environment in France: TT/TN, indoor/outdoor, ambient temperature and cable entry position.
4. Confirm whether Type B RCCB 40 A / 30 mA is required by the customer's project design and inverter instructions.
5. Confirm final AC MCB breaking capacity and upstream protective coordination.
6. Confirm final enclosure IP rating after cable glands and accessories are selected.
7. Approve final wiring drawing, terminal numbering, labels and BOM before mass production.

Appendix A - Supplied reference photo and drawing / Annexe A - Photo et schéma fournis

The following images are used only as order reference materials. The final production version shall follow the customer-approved drawing and locked BOM.



A1. Supplied product display photo / Photo d'affichage du produit fournie



A2. Supplied single-phase AC/DC wiring drawing / Schéma AC/DC monophasé fourni

Appendix B - Shipment routine test record template / Annexe B - Modèle de rapport d’essai

Field	Record
Order No.	
Model	HONI ACDC-1P-32A-2DC-1000V-FR24W
Batch No.	
Serial No.	
Inspector	
Date	

Test item	Result	Record / remark
BOM and label check	Pass / Fail	
Visual and mechanical assembly	Pass / Fail	
AC L/N/PE wiring verification	Pass / Fail	
DC PV+/PV- polarity verification circuit 1	Pass / Fail	
DC PV+/PV- polarity verification circuit 2	Pass / Fail	
PE continuity measurement	Pass / Fail	Measured value: _____
Insulation resistance AC	Pass / Fail	Measured value: _____
Insulation resistance DC circuit 1	Pass / Fail	Measured value: _____
Insulation resistance DC circuit 2	Pass / Fail	Measured value: _____
RCD functional trip test	Pass / Fail	Measured time/current: _____
AC SPD indicator normal	Pass / Fail	
DC SPD indicators normal	Pass / Fail	
MCB and DC switches operation	Pass / Fail	
Final photo archived	Pass / Fail	Photo file No.: _____
Packaging and documents	Pass / Fail	

Inspector signature: _____ QC approval: _____ Customer inspection: _____