

HLYZC-40.5

Prefabricated Substation E-House

up to 40.5 kV · IP55 / IK10 · 9000 × 3200 × 3300 mm



Prefabricated Substation E-House

HLYZC-40.5 · up to 40.5 kV · IP55 / IK10 · one module

Overview

The HLYZC E-House is a walk-in steel enclosure that leaves the factory with its switchgear, auxiliary transformer, protection, lighting, air conditioning and fire detection already installed and wired. Design, assembly and routine checks are done under factory conditions; the module is then lifted onto its foundation as one piece. On site the work left is the incoming and outgoing cables and the earthing connection.

The enclosure is designed for switchgear up to 40.5 kV. The typical build shown in this manual is a 10 kV collector house for a solar plant with energy storage — eight KYN28-12 panels on a 630 A busbar plus one reserved position — but the same shell is fitted out to the project single-line diagram.

Where It Is Used

- Solar and wind plants — collector switchgear, SVG and storage feeders in one house
- Mining, oil and gas, chemical and process plants — MV distribution close to the load
- Utility and industrial substations where a civil switchroom would take too long to build
- Sites with a short construction window: the house is built while the foundation is poured

HLYZC E-House — as delivered



Fig. 1 — Corrugated steel shell, equipment doors and hazard signage

Highlights

- **One module** — lifted and transported complete; no site assembly of the shell
- **IP55 shell, IK10 impact protection** — sealed against dust and driven rain
- **Factory-fitted systems** — HVAC, lighting, fire detection, CCTV and service power are installed and wired before dispatch
- **Two ways out** — push-bar escape doors at both ends, openable from outside with a handle
- **Segregated cabling** — cables run in layers by type and voltage under a raised floor
- **Reserved capacity** — a spare panel position is left in the standard layout

Enclosure

Steel shell, insulated walls, pitched roof

- Welded steel frame with a corrugated steel outer skin; the whole shell is one lifting unit
- Composite wall: corrugated steel sheet, rock-wool core, inner decorative panel — fire resistance, thermal insulation and sound attenuation in one build-up
- Pitched roof on beams, sealed and coated; drip rails welded above every door
- Raised floor with cable void, 700 × 700 mm manhole for the cable entry, insulating mat 10 mm in the operating aisle
- Four double-leaf equipment doors on the rear wall, sized to each panel group; inspection door with a stainless-steel padlock
- Escape doors with push bars at both ends of the front wall, hazard signs on the doors

Technical Data

Factory rated values

Type	HLYZC-40.5
Rated voltage of equipment	up to 40.5 kV
Rated frequency	50 Hz
Degree of protection	IP55 – GB/T 4208-2017 / IEC 60529
Impact protection	IK10 – IEC 62262
Overall size, standard build	9000 × 3200 × 3300 mm (L × W × H)
Eaves height	2850 mm
Roof overhang	9100 × 3300 mm

Auxiliary Systems

Fitted and wired at the factory — standard build

Climate control	Packaged industrial AC unit 7.5 kW; 2 axial fans 80 W; dehumidifier 90 L
Ventilation	Washable louvre and mesh screen; dusk switch for external lighting
Lighting	LED luminaires 40 W; emergency lights; exit signs; 4 floodlights outside
Fire detection	3 smoke detectors, sound-and-light alarm, manual call point, fire display panel
Monitoring	2 CCTV cameras
Service power	Auxiliary distribution box and power box; 2 service sockets

Delivery

- Switchgear, auxiliary transformer and auxiliary systems installed and wired in the house
- Factory routine checks on the complete module: wiring, interlocks, lighting, HVAC, fire detection and switchgear operation
- Transported as one module by road and sea; oversized loads engineered on request
- On site: set on the foundation, connect the incoming / outgoing cables and the earthing, energise — commissioning takes days, not weeks

Why the house is built in the factory

Every connection is made under a roof by the people who built the panels, and checked before the house leaves. Site labour, weather risk and the construction window all shrink to the cable pull.

Typical Scheme — 10 kV Collector House, Single Line Diagram

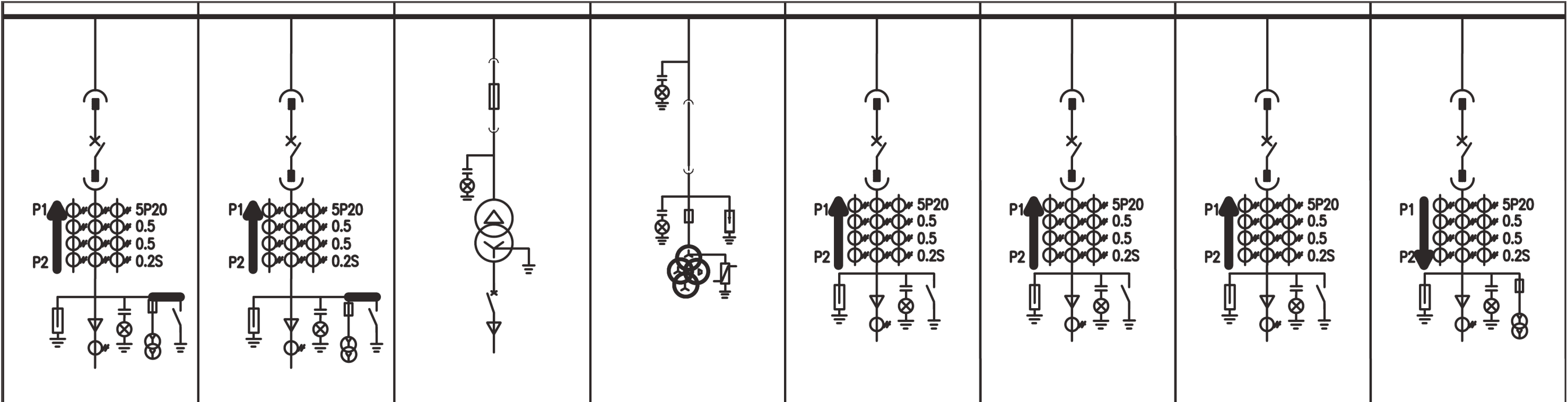


Fig. 2 — AH101 – AH104: incoming feeders, station transformer, VT panel AH105 – AH108: PV, storage and SVG incomers, outgoing feeder

Panel Schedule

KYN28-12 metal-clad switchgear, 630 A busbar TMY-3 × (80 × 6)

Panel	Function	W × D × H	CT ratio
AH101	Incoming feeder 1	800 × 1500 × 2300	300 / 5
AH102	Incoming feeder 2	800 × 1500 × 2300	300 / 5
AH103	Station transformer 80 kVA	1200 × 1500 × 2300	—
AH104	Voltage transformer	800 × 1500 × 2300	—
AH105	PV incomer	800 × 1500 × 2300	300 / 5
AH106	Energy-storage incomer	800 × 1500 × 2300	600 / 5
AH107	SVG incomer	800 × 1500 × 2300	300 / 5
AH108	Outgoing feeder	800 × 1500 × 2300	300 / 5

* One 800 mm position is reserved at the end of the row. Panel dimensions are for reference; the approved drawing is issued with the order.

Main Equipment

Ratings of the typical build

Circuit-breaker	Vacuum, 630 A / 31.5 kA, withdrawable
Current transformers	5P20 / 0.5 / 0.5 / 0.2S; zero-sequence CT 50 / 1 A
Voltage transformers	10 / 0.1 kV, class 0.2, with 3P winding
Surge arresters	17 / 45 kV, one set per feeder
Station transformer	SC(B)14-80 kVA, 10.5 / 0.4 kV, Dyn11
Protection and metering	Feeder relay, multifunction meter, energy meter
Feeder cables	8.7 / 15 kV XLPE, 3 × 150 mm ²

* Component makes are selected per project; ratings are those of the standard build shown above.

General Arrangement — Plan, 9000 × 3200 mm

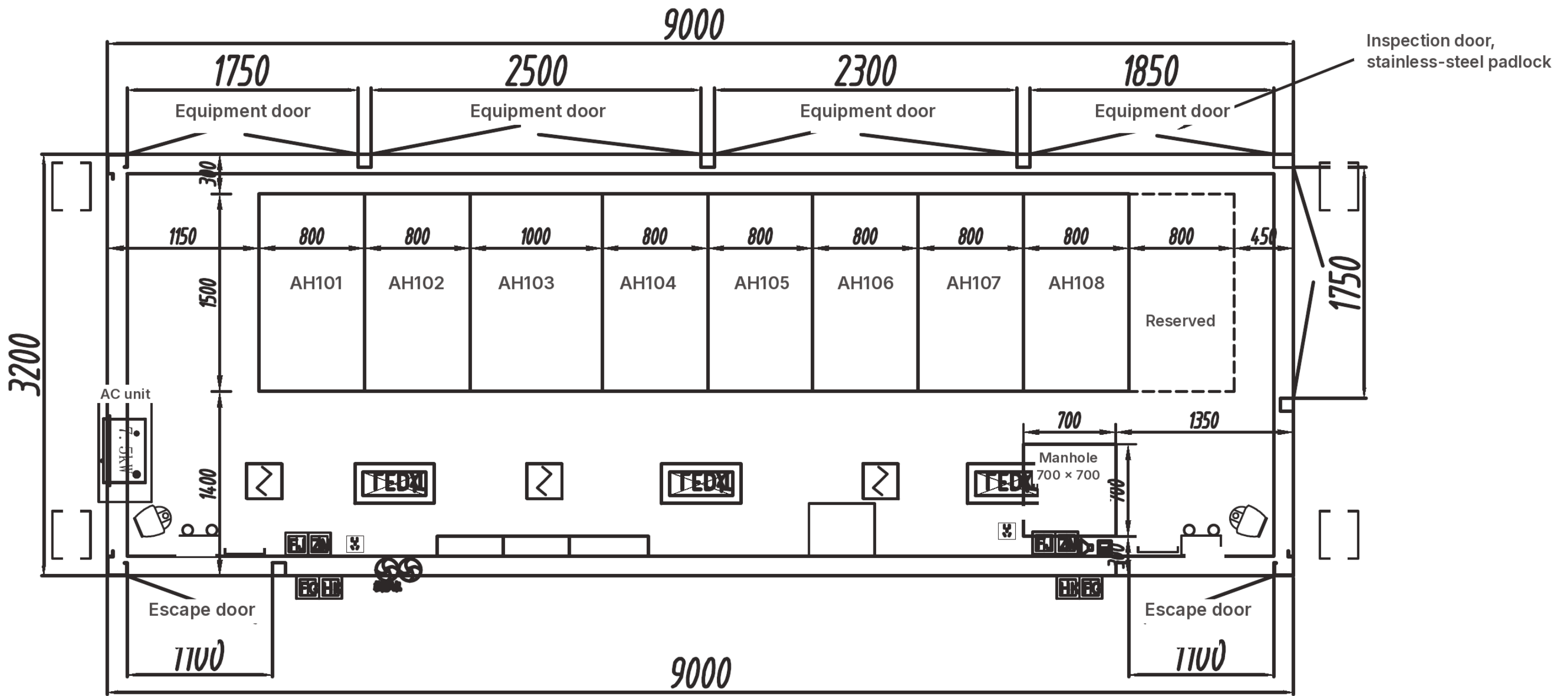


Fig. 3 — Equipment doors on the rear wall face each panel group

Escape doors at both ends of the front wall; end door 1750 mm

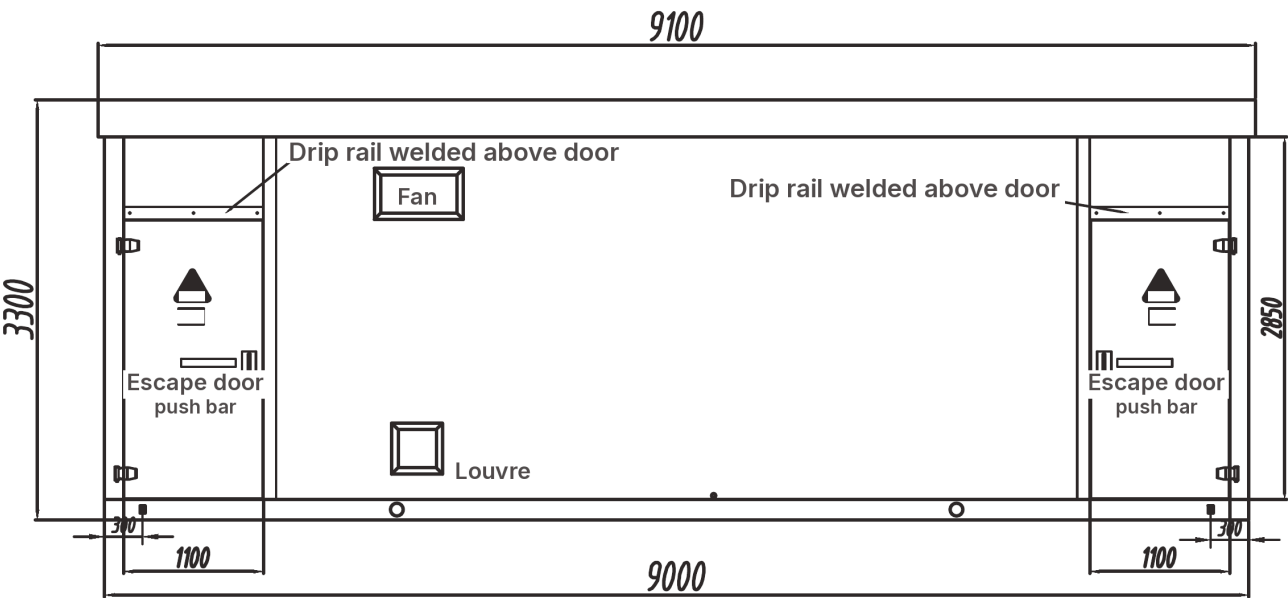
Reading the Plan

- Panel row 300 mm off the rear wall; 1400 mm operating aisle in front, free of fixed equipment
- Manhole 700 × 700 mm in the aisle floor for the cable entry

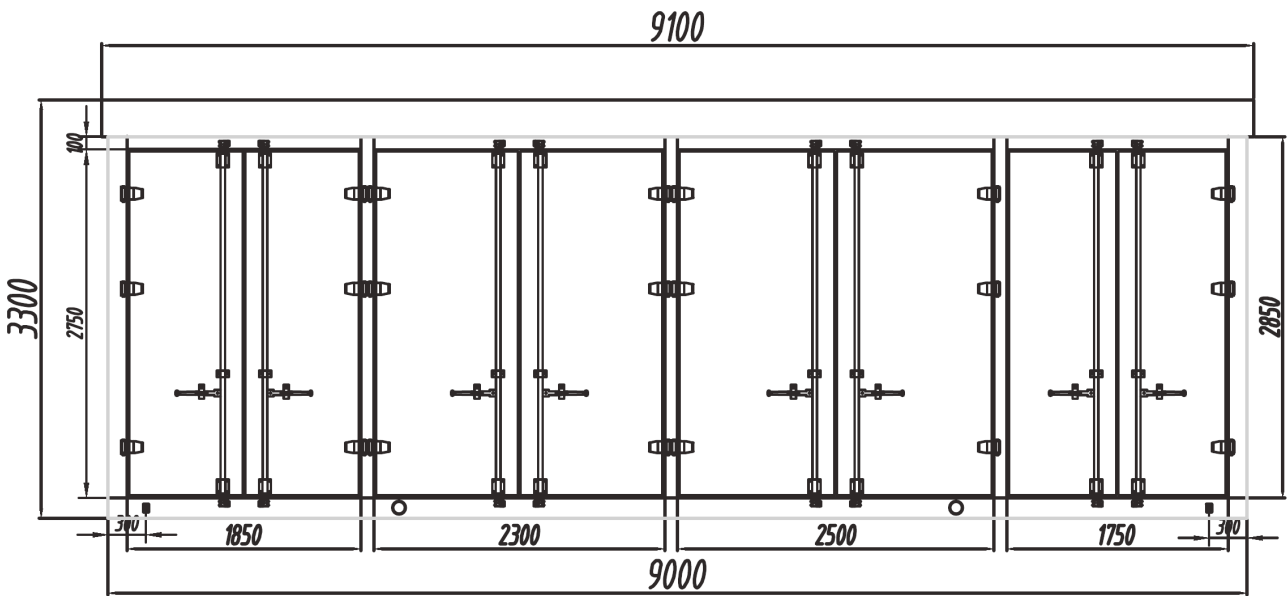
Along the Front Wall

- AC unit at the left end; dehumidifier, fans, fire panel and auxiliary boxes on the front wall
- Emergency lights, exit signs and service sockets at both ends

Elevations — Front and Rear



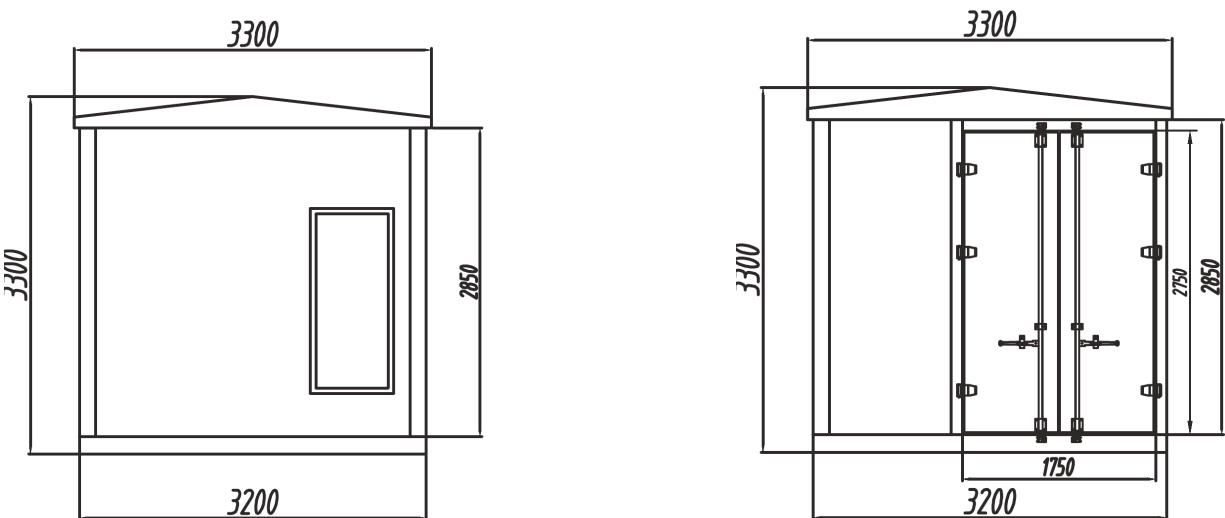
Front — escape doors, fan and louver



Rear — four double-leaf equipment doors

Fig. 4 — Overall height 3300 mm, eaves 2850 mm, door height 2750 mm

Elevations — End Views



Left end — AC unit

Right end — double door 1750 mm

Fig. 5 — Width 3200 mm, roof 3300 mm over the walls

What to Specify

Send this with the enquiry

- Single-line diagram and the list of panels to be housed; spare positions wanted
- Voltage level, busbar rating and short-circuit level of the switchgear
- Site data: ambient range, altitude, humidity, wind, snow and seismic requirements
- Transport route limits — single or double deck, maximum module length
- Auxiliary requirements: HVAC capacity, fire-protection class, SCADA and CCTV interface
- Standards and approvals required in the destination market

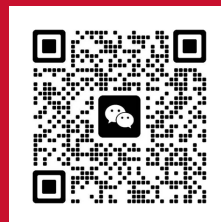
The ownership of the version belongs to Jiangxi HARRL Group Co., Ltd. and all rights are reserved to the extent permitted by law. Due to product development and technical improvements, the actual products sold may differ from those shown in this brochure, and the company reserves the relevant right.



Web: harrlgroup.com
Email: sales@harrlgroup.com
Tel / WhatsApp: +86 183 7998 3771
Address: No. 388 Quanshun Road, Nanchang County,
Nanchang, Jiangxi, China



Scan for WhatsApp



Scan for WeChat