

## Outdoor RMU enclosure

### Bosecker BOS series for Siemens 8DJH 11/22 kV RMU's



#### 1. Introduction

The Bosecker series of enclosure are Type Tested outdoor stainless steel enclosures for use with Siemens 8DJH series Ring Main Units.

The enclosures are internal arc classified:

- IAC A (authorised personnel) Front, Lateral and Rear
- IAC B (unrestricted accessibility including public) Front, Lateral and Rear

Type tested to IEC 62271-202, these enclosures ensure maximum safety for network operating staff as well as the general public.

IAC B specification is **critical** for all network switching assets accessible to the public – especially where switching is undertaken remotely or autonomously.

Three sizes of enclosure are available to suit different switch configurations.



Figure 1. Bosecker enclosure.

#### 2. Design & installation philosophy

An arc fault can generate explosive forces. To mitigate this, the Bosecker enclosure provides a series of vents behind its external gills. Any pressure build up in the enclosure is routed via internal baffles reducing the force and intensity of a discharge to the external environment. An integral key to this performance is the provision of clear free space at the bottom of the enclosure – this is why the enclosure has an underground chamber. Special waterproofing and cable sealing features are provided to reduce the ingress of water, so as to not reduce the effectiveness of this void.

The underground chamber is stainless steel, suitable for direct burial. Installation is simple and cost effective as the enclosure does not require additional concrete plinths or other arrangements.

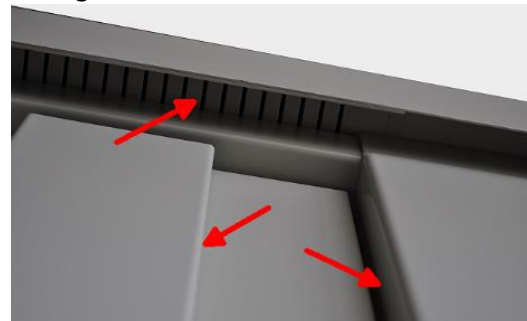


Figure 2. Safely vents via roof and side panels.



Figure 3. Cable seals preserve watertight chamber.

### 3. Features

Bosecker enclosures feature:

- Removable doors
- Removable roof - allowing RMU to be dropped in from above
- Multiple point door locking mechanism with hidden, lockable door access (barrel type lock)
- Removable lower access panel - to assist in cable entry into RMU
- Can be delivered to site with/without RMU installed
- Document pouch & operator handle rack
- Internal earth bar
- Mounting holes ready to for direct installation of 8DJH RMU

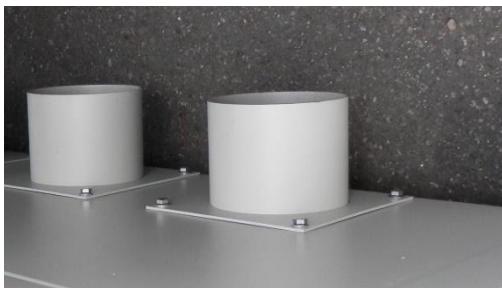


Figure 4. Fitting for cable seals at lower enclosure entry point.



Figure 5. External locking mechanism.



Figure 6. Internal multiple point lock mechanism.

### 4. Recommended Installation Procedure

The site should be prepared with the area excavated and with compacted base course layer provided. The enclosure can then be placed at site and the cables routed into the enclosure. After installing the cable seals, the area around the enclosure can be backfilled. The backfilling and loose compacting of area around the enclosure provide adequate seismic stability to the Ring Main Unit.

The enclosure is to be buried at a depth of approximately 900 mm.

## Technical Data

The same lugs which are provided to fix the enclosure to the delivery pallet can also be used to lift the enclosure (without RMU) to its final position, or the RMU lifting lugs can be fitted to the enclosure to lift both. Detailed installation instructions are provided with the delivery.

### 5. Technical Specifications

External Material	Stainless Steel Grade 1.4301 (= AISI 304)
Paint finish	2 pack PU/Acrylate solvent based paint system
Colour	RAL7032 Pebble Grey
IP rating	IP23D/IP34D
Weight	450 to 550 kg
Height	1450 mm above grade, when installed 900 mm deep
Depth (external)	1154 mm
Width (external)	1674, 1983, 2370 mm
Electrical	Up to 24 kV, 20 kA-1s, 630 A, 50 Hz

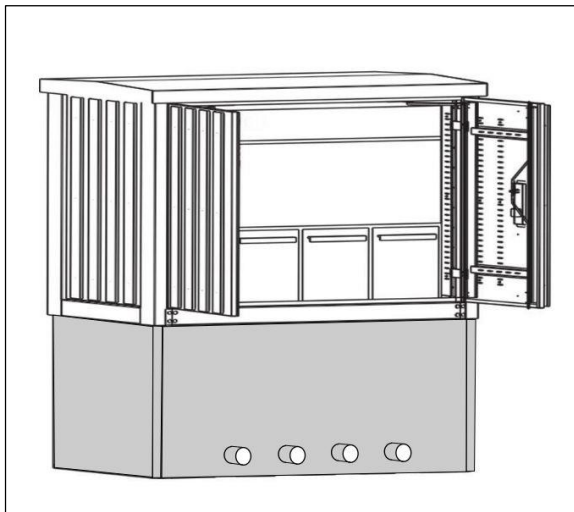


Figure 7. General arrangement. Cable entry customisable.

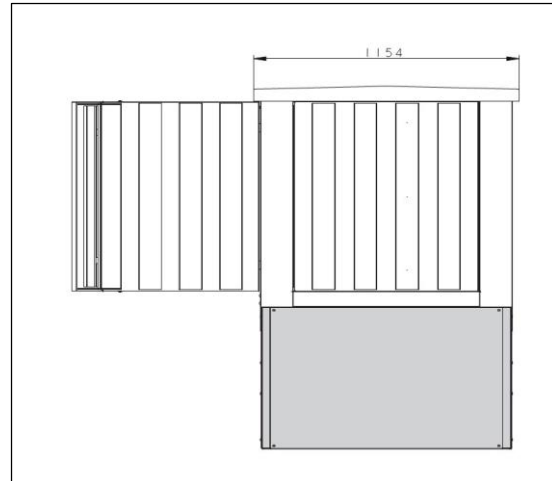


Figure 8. End elevation.

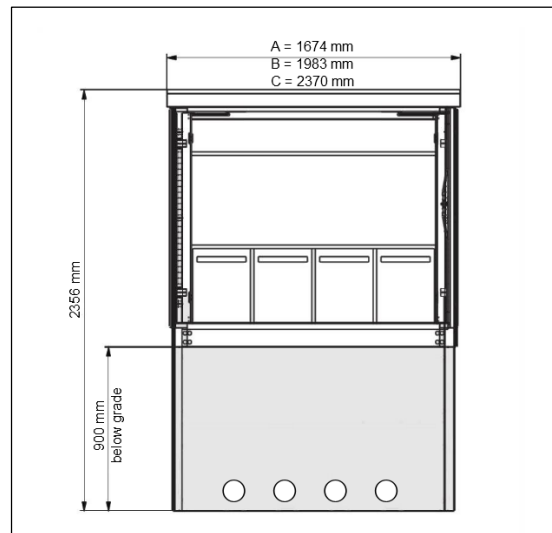


Figure 9. Front elevation.

## 6. Siemens 8DJH RMU

Siemens 8DJH Ring Main Unit is suitable for 11/22 kV applications. RMU's are 630 A rated, and optionally extensible left and right. The switching mechanism is sealed for life, providing a maintenance free service life. Circuit breakers and disconnectors can be motorised and automated.

Panel types include:

- Ring switch
- Transformer fused feeder
- Circuit breaker
- Bus section
- Metering unit

Please refer to Siemens 8DJH documentation for further details.



Figure 10. SIPROTEC 7SJ80 automation and 8DJH 'RRL' configuration.

## 7. Automation & Protection

A withdrawal type automation cubicle is available for housing automation/control equipment. This can be equipped to specific requirements. Space is available for:

- Protection relay
- Batteries
- Battery charger
- RTU & Radio
- Heater

HV Power recommend SIPROTEC Protection relays (SIPROTEC 5 and the SIPROTEC Compact series). Overcurrent and Differential relays are available. Simpler self-powered relays are also available if required. Where advance automation functions are required, HV Power recommend the Siemens CMIC Controller. HV Power supports MODBUS, DNP and IEC 61850 protocols.

Horstmann and other voltage and short circuit indicators are available.



Figure 11. Automation cubicle opened.

## 8. Example panel configurations

Bosecker enclosure dimensions (mm):

Type	External Width	Internal Width	Suggested depth below grade	Resultant height above grade	Overall height	Depth of enclosure (external)	Weight
A (BOS1100)	1674	1410	900	1450	2352	1153	450 kg
B (BOS1101)	1983	1720					500 kg
C (BOS1105)	2370	2107					550 kg

Siemens 8DJH panel dimensions:

Standard Modules <sup>[1]</sup> :	Type	Width (mm)
Ring switch	R	310
Transformer feeder	T	430
Circuit breaker	L	430
Billing metering panel	M	840
Bus section	S or H <sup>[2]</sup>	430
Automation cubicle	A	350

[1] Refer to 8DJH catalog for full details on modules. A range of other modules are available

[2] Other bus section options available ranging from 500 to 620 mm width

Example combinations:

Pattern	Type A Enclosure		Type B Enclosure		Type C Enclosure	
	With	Without	With	Without	With	Without
RRT	Yes	Yes	Yes	Yes	Yes	Yes
RRRT	No	Yes	Yes	Yes	Yes	Yes
TRRT	No	No	No	Yes	Yes	Yes
RRL	Yes	Yes	Yes	Yes	Yes	Yes
RLL	No	Yes	Yes	Yes	Yes	Yes
RLLL	No	No	No	Yes	Yes	Yes
RLLLL	No	No	No	No	No	Yes
RMLL	No	No	No	No	No	Yes
RMRR	No	No	No	No	Yes*	Yes

\*This combination is supported but is 13mm wider than front door opening.

## 9. Order codes

Order codes are generated to detail a customer's selected enclosure, specifying:

- Enclosure size
- Lower cable entry details (gland size, location, quantity etc)
- RMU configuration
- Automation cubicle design

*Information is subject to change without notice.*