



Medium Voltage Products

# ZN1 12 kV arc-proof air-insulated switchgear for primary distribution

# ZN1 – an innovative switchgear for power distribution requirements

ABB ZN1 primary distribution switchgear is designed to meet the specific needs of the Indian market, with key features such as a compact construction, low maintenance design and an internal arc withstand current rating of 26.3 kA for 1 second that is unique in this sector. The ZN1 range provides an access to the quality, reliability, safety, performance and high level of technical support associated with ABB's global brand.



## ZN1 Switchgear

ABB's medium voltage switchgear ZN1 contains our knowhow and expertise on air insulated switchgear, and is designed to meet the specific needs of our customers. ZN1 comes with the very best of design and quality built-in to deliver an ideal solution for a wide variety of power distribution needs.

### Key features

- Switchgear conforms to IEC 62271-200
- Designed for classification LSC2B - PM
- Designed for fast and easy installation
- Constructed using aluminium zinc coated steel and pre-galvanised sheets making it a highly reliable switchgear
- Extensible on both sides
- Encapsulated PTs with built in fuses
- Cable termination height of 600 mm
- Factory assembled integral gas duct
- Simple maintenance
- Compact and space saving solution with reduced footprints
- Fitted with conventional instrument transformers
- Can be offered with ABB's REF601, REJ601 and other numerical relays for intelligent protection solutions

### Safety

- Internal arc-proof construction conforming to the classification IAC AFLR up to 26.3kA, 1 sec
- Closed door rack-in and rack-out of circuit breaker ensuring full safety to the operating personnel
- Fitted with standard safety interlocks
- Provisions of padlocks on shutter, circuit breaker compartment doors, rack in handle insertion



## VInd – Vacuum circuit breaker

- Conforms to IEC 62271-100
- Floor rolling circuit breaker
- Continuous rated closing and tripping coils
- Modular circuit breaker mechanism for fast and easy maintenance
- Integral spring charging handle
- Suitable for E2, M2 & C2 (single capacitor bank) class applications
- In-built mechanical anti-pumping device



## Feeder protection and control REF601 / Feeder Protection REJ601

Relion® feeder protection and control REF601 / Feeder protection REJ601 are intended to be used for selective protection of feeders in utility and industrial power systems in primary distribution networks.

- Inrush detection for stability during transformer energizing
- Built-in Trip Circuit Supervision
- 100 events with date and time stamping
- Five fault records
- On-line current measurements in primary values and monitoring of binary inputs and binary outputs
- Built in testing function for binary outputs
- Universal auxiliary power supply
- Communication board with MODBUS RTU protocol (optional)
- Control of circuit breaker (local & remote only in REF601)

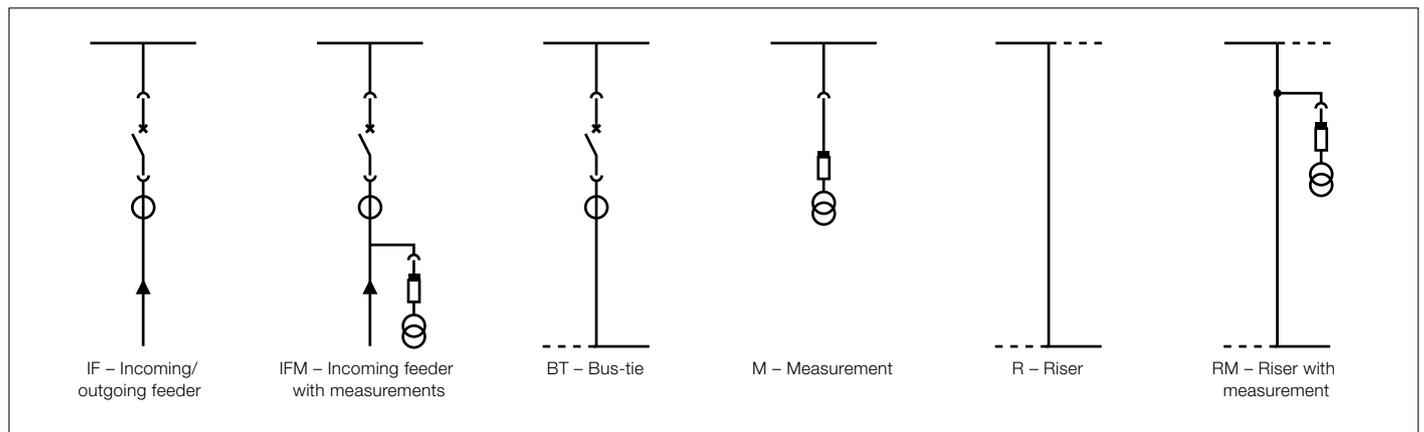
# ZN1 with single busbar system

## Technical data

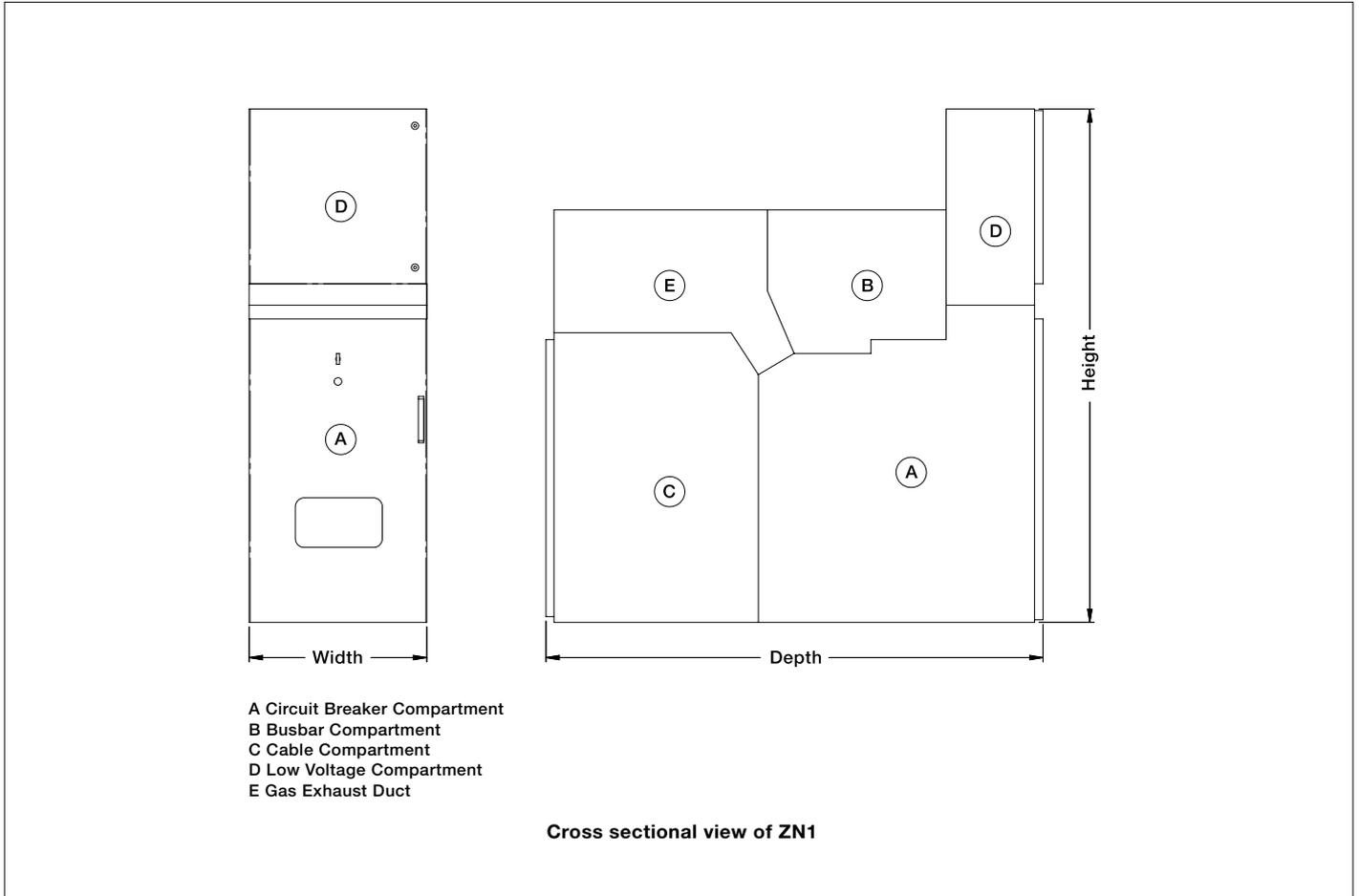
Switchgear		ZN1
Rated voltage	[kV]	12
Rated insulation voltage	[kV]	12
Rated power frequency withstand voltage	[kV 1 min]	28
Rated lightning impulse withstand voltage	[kV]	75
Rated frequency	[Hz]	50
Rated short time withstand current	[kA 3s]	26.3
Peak current	[kA]	65.75
Internal arc withstand current	[kA 1s]	26.3
Main busbar rated current	[A]	1250 - 2000
Branch connection rated current	[A]	1250
Internal Arc Classification to IEC 62271-200		IAC AFLR
Overall dimensions of basic cubicle	H [mm]	1755
	W [mm]	600
	D [mm]	1500 (without line PT) , 2050 (with line PT)
Clearance required on for maintenance on front	[m]	1.5
Clearance required on for maintenance on rear	[m]	1
Clearance required on for maintenance on sides	[m]	1
Cable connection height	[mm]	600
Paint shades [For front door and end covers only]		RAL7035 Light Grey (other shades on request)
Approximate weight	[Kg]	600



## Single line diagram of typical units



## Cross sectional view



## Classification of ZN1 according to IEC 62271-200

### Resistance to internal arc faults

Classification	IAC
Accessibility	
– Front	Type A
– Lateral	Type A
– Rear	Type A
Test current	26.3 kA
Test duration	1 sec

### Construction and design

Class of partition	PM
Service continuity category	LSC2B
Compartment accessibility	
– Busbar compartment	Tool-based
– Circuit breaker compartment	Interlock-based
– Low voltage compartment	Tool-based
– Cable compartment	Tool-based

# Contact us

## **ABB Limited**

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ABB Limited operates a process of continuous product development. We therefore reserve the right to change designs, dimensions and data without prior notice.

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