

**Rückwärtsverriegelung /
Anti-reverse interlocking**

Vorüber bis zum Anschlag
 schliessen! = Schalter
 Square forward locked until
 stop! = Drive released

Das Entfernen der Steckblende ist nur bei eingeschalteter Erde möglich.
The removal of front-cover is only possible with earthing-switch on.

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MV Switchgear for
Distribution Network Solutions

ga

Fully gas insulated compact (RMU) system

Up to 24 kV

IEC Standards

Reliable innovation. Personal solutions.

Preface

The first **ga** was launched in 1985 as the most robust and compact ring main unit (RMU) range for secondary distribution networks up to 24 kV.

Since then, **ga** system has been continuously evolving into a more extended range with higher ratings based on our customers' demands.

ga system is probably one of the most well-known gas insulated switchgear worldwide. Currently more than 385,000 **ga** functional units have been in service in more than 60 countries.

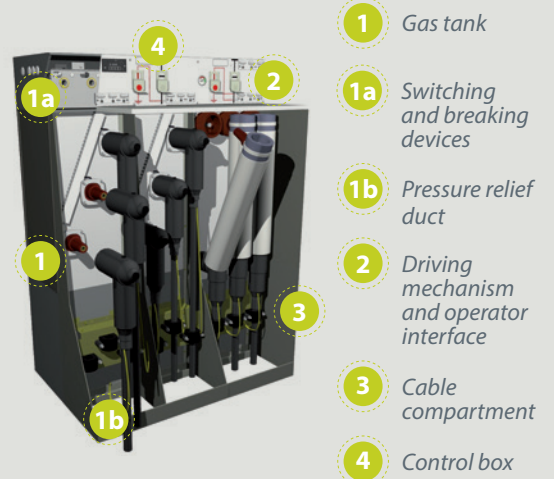
Standards

IEC

IEC 62271-1
IEC 62271-200
IEC 62271-100
IEC 62271-102
IEC 62271-105
IEC 61243-5
IEC 60265-1
IEC 60529



Design



- 1 Gas tank
- 1a Switching and breaking devices
- 1b Pressure relief duct
- 2 Driving mechanism and operator interface
- 3 Cable compartment
- 4 Control box

Safety

- » Internal arc tested (IAC AFL 20 kA 1s)
- » Optional passive & maintenance free arc absorber technology
- » All live components are inside a hermetically sealed gas tank
- » Anti-reverse, mechanical / electrical interlocks to prevent unsafe operations
- » Switch position and capacitive voltage presence indicators

Reliability

- » Fully insulated & sealed for life
- » Screened cable connectors
- » Completely designed in Germany
- » 100% routine tested at the factory

Efficiency

- » Compact design up to four functions per gas tank
- » Small size and light weight
- » Easy frontal access to install and to test MV cables and fuses
- » Customized protection & automation system (client specifications)

Sustainability

- » End-of-life management
- » Use of highly recyclable material
- » No use of SF₆ during installation
- » Extensible units to be extended with modular versions (gae)

Continuous innovation

- » Ambient temperature -5 / -25 °C
- » New modules for 24 kV 20 kA 4 s
- » Smart grid ready system

Technical data

General

Rated values	7.2-12-17.5-24 kV
	630 A
	20 kA 1-3 s
	50/60 Hz

Type-tested, factory-built, metal-encapsulated enclosed, single busbar
Indoor use up to 1000* m altitude

Ambient temperature
Standard -5°C to +40°C*

Loss of service continuity
LSC 2A

Partition class: PM

Internal arc class
IAC AFL 20 kA 1s

Functions

1ts1a1, 1ts1a2, 1k1ts-b, 3k, 2k1ts, 2k1lsf, 4k, 3k1ts, 2k2ts

(* Other conditions under consultation)

Family

<p>1ts1a1</p> <p>One transformer feeder panel and one connection</p>	<p>1ts1a2</p> <p>One transformer feeder and one cable connection with two sets of bushings</p>	<p>1k1ts-b</p> <p>One transformer and one cable feeders</p>
<p>3k</p> <p>Three cable feeders</p>	<p>2k1ts</p> <p>Two cable and one transformer feeders</p>	<p>2k1lsf</p> <p>Two cable feeders and one SF₆ circuit breaker</p>
<p>4k</p> <p>Four cable feeders</p>	<p>3k1ts</p> <p>Three cable and one transformer feeders</p>	
<p>2k2ts</p> <p>Two cable and two transformer feeders</p>		

Note: Standard cubicle is 1400 mm height, "C" version is 1050 mm height