

# Outdoor load disconnectors Fla 15/60 GB R

**three-pole design**  
**rated voltage 25 and 38.5 kV**  
**rated current 400 and 630 A**



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ISO 9001  
ISO 14001  
BUREAU VERITAS  
Certification



## Fla 15/60 GB R outdoor load disconnectors

Outdoor design, load disconnectors of Fla 15/60 GB series have been developed by the DRIBO company as design version of the Fla 15/60 load disconnectors which prove its high reliability and operation safety since many years.

One of the advantages of this load disconnector series is the possibility of working of the staff under voltage, easy and quick mounting of overvoltage limiters onto the switching device, thus providing for a simplification of mounting the disconnector on the pole, and a better handling of the device due to its reduced weight.

The Fla 15/60 GB R load disconnectors are general-purpose switching devices, intended for installation on the top of pole, at branch-offs or for mounting below the power line.

The load disconnectors comply with requirements of the following standards: EN 62271-1 and EN 62271-103. Used insulators satisfy the fourth grade of contamination area.

The switching takes place in proven and tightly closed arc quenching chamber filled with SHELL transformer oil. Each arc quenching chamber contains about 0.5 l of oil.

No release of arc decomposition products occurs and, therefore, the Fla GB load disconnectors meet the most severe environmental requirements.

All current carrying components are made of silver plated electrolytical copper and constitute a loop-less current conduction path.

The cross-section of the conductors the current-carrying path consists of is sufficiently dimensioned. Appropriate contact pressures of the stainless steel springs are one of the prerequisites for a fault-free switching even after many years of load disconnector's operation under extreme operating conditions and also under hoarfrost loads.

The load disconnectors can be provided with supports made of cycloaliphatic resins with additives used to improve the material properties against the environmental impact (UV radiation, high temperature changes etc.). The material resistance has been verified by a long-term (during more than 30 years) period of disconnector usage.

The load disconnectors can be controlled either by manually operated drive mechanisms or remote controlled motor driven drives in outdoor design.

The load disconnectors can also be provided with encapsulated auxiliary switches (IP 44 protection degree), mounted straight on onto the frame. The auxiliary switches provide for a reliable indication of the closed and opened switching position.

The short-circuit capacity of the load disconnector is met with a high reserve.

The construction of the load disconnectors, the quality level of material used and care exercised in the production process, which is governed by the principles of the ISO 9001:2000 standard, is a guarantee for low operation and maintenance costs in the future.

**Under normal operating conditions it is not necessary for the load disconnectors to undergo a preventive maintenance during the period of twenty years for hand operated devices and ten years for motor operated devices (remote control).**

## Fla GB R outdoor load disconnectors

Nomenclature	Verbal description of the apparatus	Rated voltage U <sub>r</sub> kV	Pole height m	Ordering number	Approx. weight in kg
Fla 15/60 GB R	load disconnector for mounting on a concrete pole, on top / branching / below the power line	25	-	02000005R	97
Fla 15/60 GB R	load disconnector for mounting on a concrete pole, on top / branching / below the power line	38,5	-	04000005R	107
Set – top mounting	set consisting of drive mechanism and accessories, for mounting the load disconnector onto a pole top	25	10,5	00121005V	39,6
			12	00121205V	42,7
		38,5	10,5	00131005V	40,1
			12	00131205V	43,2
Set for branching-off	set consisting of drive mechanism and accessories, for mounting the load disconnector into a branch line	25	10,5	00121005O	38,1
			12	00121205O	41,2
		38,5	10,5	00131005O	38,6
			12	00131205O	41,7
Set for mounting below power line	drive mechanism for the Fla 15/60 GB R load disconnector, for mounting below the power line	-	10,5	00001005P	29,1
			12	00001205P	36,6

The set for top mounting (consisting of drive mechanism and accessories for mounting the load disconnector on the pole top) includes the following:

- sleeves for fixing the apparatus on concrete single-pole (designed for pole top)
- band-type inlets
- fork-type drawbars with guides (GB R)
- suspensions for strain insulators (6 pcs)
- complete drive mechanism for mounting on the concrete single-pole of 10.5 m or 12 m height (for load disconnector mounted on the pole top)

The set for branching-off (consisting of drive mechanism and accessories for mounting the load disconnecter into the branch line) includes the following:

- sleeves for fixing the apparatus on concrete single-pole
- band-type inlets
- fork-type drawbars with guides (GB R)
- suspensions for strain insulators (3 pcs)
- complete drive mechanism for mounting on the concrete single-pole of 10.5 m or 12 m height (for load disconnecter mounted below the power line)

The set for mounting below the power line (consisting of drive mechanism) includes the following:

- sleeves for fixing the apparatus on concrete single-pole
- complete drive mechanism for mounting on the concrete single-pole of 10.5 m or 12 m height (for load disconnecter mounted below the power line)

The sets for mounting onto the pole top and into the branch line do include accessories for rated currents of up to 400 A. Accessories rated for 630 A is supplied on request.

## Technical data

<b>Rated voltage</b>	<b>U<sub>r</sub></b>	<b>kV</b>	<b>25</b>	<b>38,5</b>
rated current	I <sub>r</sub>	A <sup>1)</sup>	400/630	400/630
rated short-time withstand current	I <sub>k</sub>	kA	20	20
rated peak withstand current	I <sub>p</sub>	kA	50	50
rated short-circuit making current	I <sub>ma</sub>	kA <sup>2)</sup>	18	11
rated breaking current - i cosφ 0.7, ind.	I <sub>load</sub>	A	630	400
rated breaking current of closed loop	I <sub>loop</sub>	A	400	400
rated breaking current of no-load transformer	I <sub>nltr</sub>	A	53	10
rated breaking current of no-load cable power line	I <sub>cc</sub>	A	20	20
rated breaking current flowing into earth connection	I <sub>ef1</sub>	A	56	40
mechanical service life			5000xCO	5000xCO

<sup>1)</sup> The 400 A and 630 A switching devices differ only in the accessories supplied. By default the accessories is rated for 400 A; accessories for 630 A is delivered on request.

<sup>2)</sup> For adequately quick manual operation

## Withstand voltages

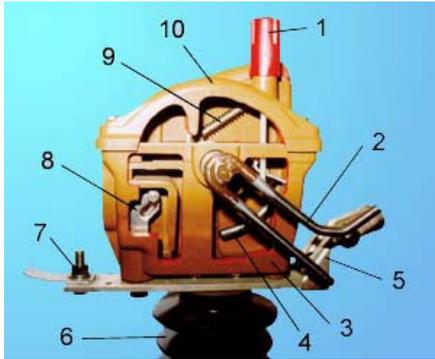
<b>rated voltage</b>	kV	25	38,5
<b>rated short-time withstand power frequency voltage / 1min. to be applied in both dry and wet environmental conditions</b>			
against the earth, across the poles and between disconnected contacts	kV	50	80
across the isolating distance	kV	60	90
<b>rated lightning pulse withstand voltage</b>			
against the earth, across the poles and between disconnected contacts	kV	125	180
across the isolating distance	kV	145	210

## Climatic conditions

highest temperature	°C	+ 40
lowest temperature	°C	- 30
highest relative humidity	%	100
highest wind pressure	Pa (m/s)	700 (34)
admissible hoar frost	mm	20
typical altitude	m a. s.	up to 1000

Usages in higher altitudes please consult with producer.

## Sectional view of the extinguishing chamber

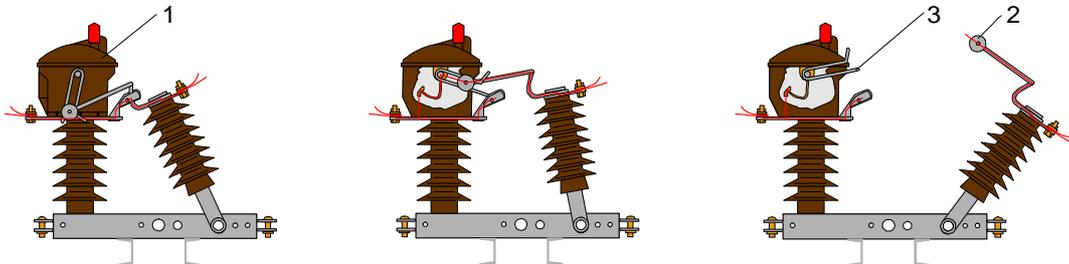


1. closure of the filling opening with the gauge and the air release valve
2. control lever (made of stainless steel)
3. bottom part of the extinguishing chamber (sectional view)
4. contact rod
5. main contact
6. supporting insulator
7. connecting clamp with a screw
8. auxiliary contact
9. snap-action mechanism
10. upper part of the extinguishing chamber (sectional view)

## Function description

Tried and tested oil extinguishing chambers, parallelly connected to the main circuit, are provided with a quick-action switching mechanism. The extinguishing chambers are of an adequately sturdy

structure ensuring that their tightness remains undamaged even under extreme service conditions. Each extinguishing chamber is filled with a quantity of about 0,5 l of Shell Diala D or Shell Fluid 4600 oil.

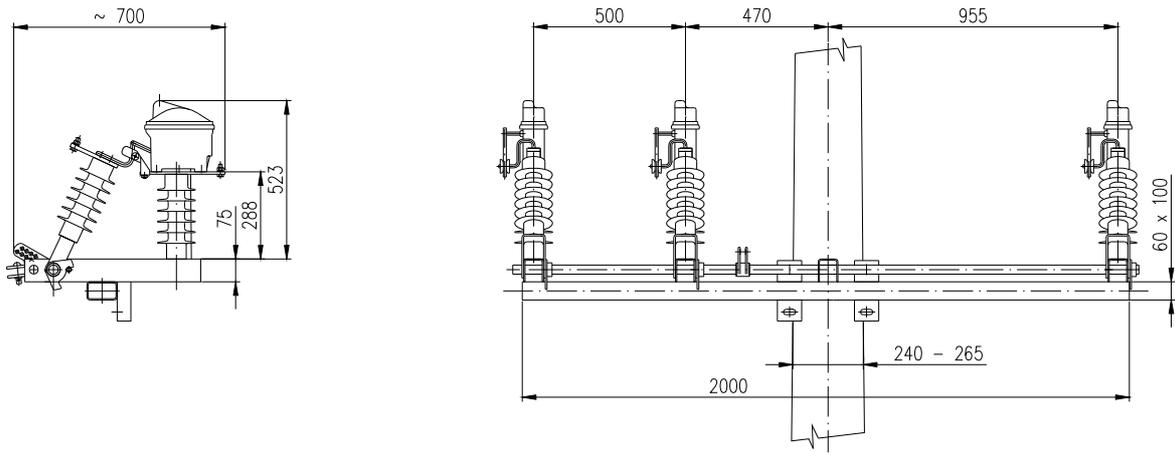


The above drawings show the current flow during switching in switched-on position, intermediate position and switched-off position of the disconnector. The contact arm mounted on the pendulum bearing is provided, on its end, with two rollers (2) their concave sides being inwards oriented. The extinguishing chamber (1) is controlled by the stainless-steel forked contact (3). When controlling the switch, the roller both during switching-on and switching-off positively entrains

the fork. The snap-action mechanism connected with the said fork acts on the contact system inside the chamber and closes or opens immediately the contacts of the extinguishing chamber independently on the speed of the hand control. When switching-off, first of all the main contacts are opened and only after having achieved the safety switching-off distance the contact system inside the extinguishing chamber is opened by the snap-action mechanism.

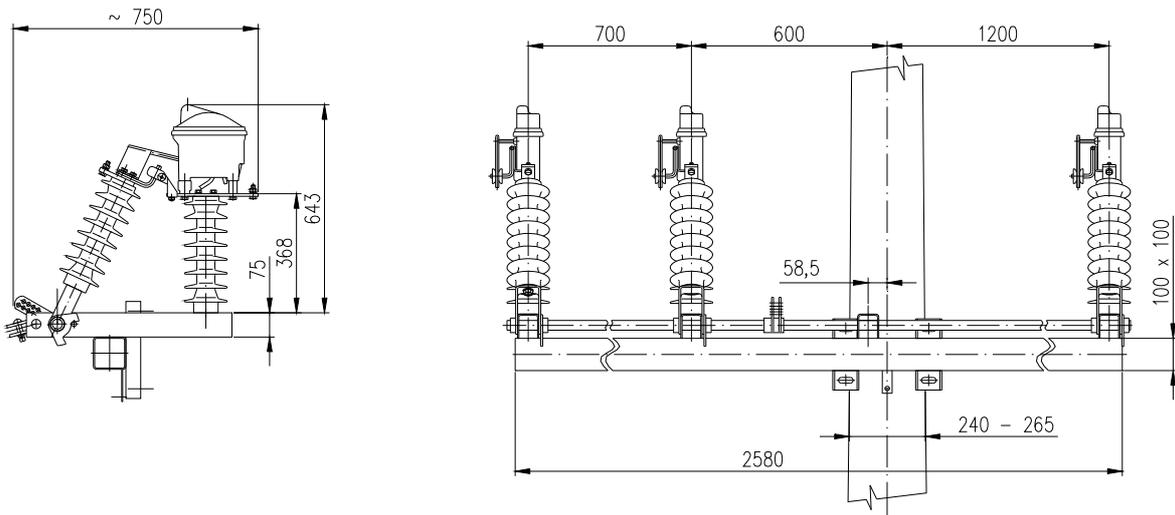
**Three-pole outdoor load disconnectors Fla 15/60 GB R for  $U_r$  of 25 kV**

**Fla 15/60 GB R**

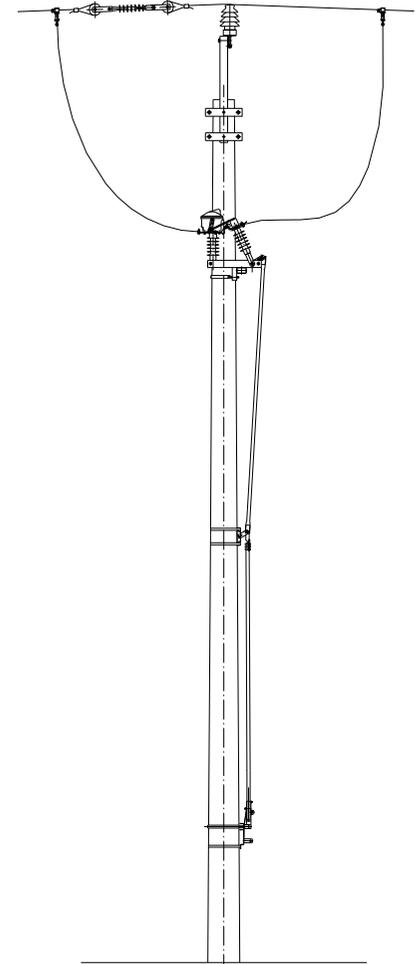
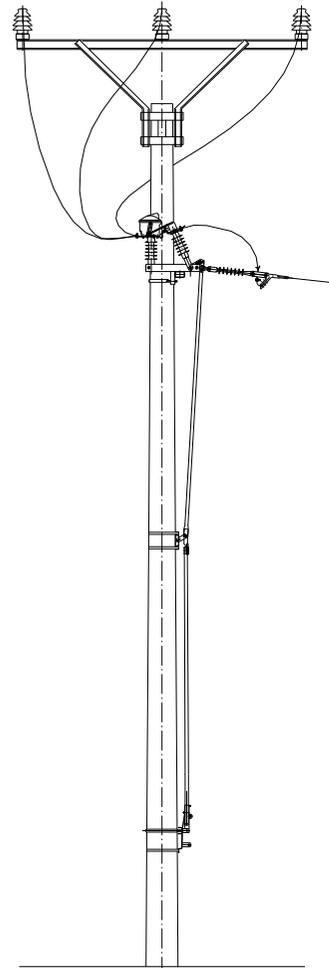
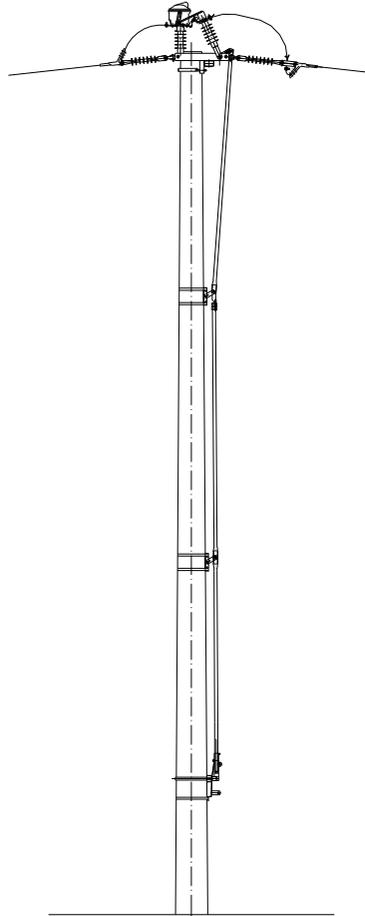
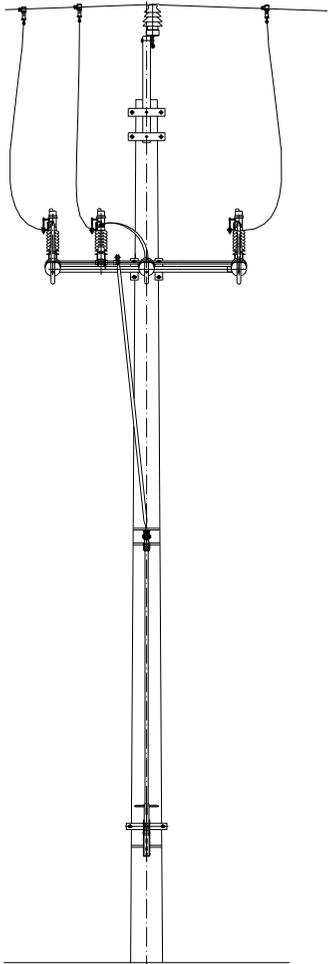


**Three-pole outdoor load disconnectors Fla 15/60 GB R for  $U_r$  of 38.5 kV**

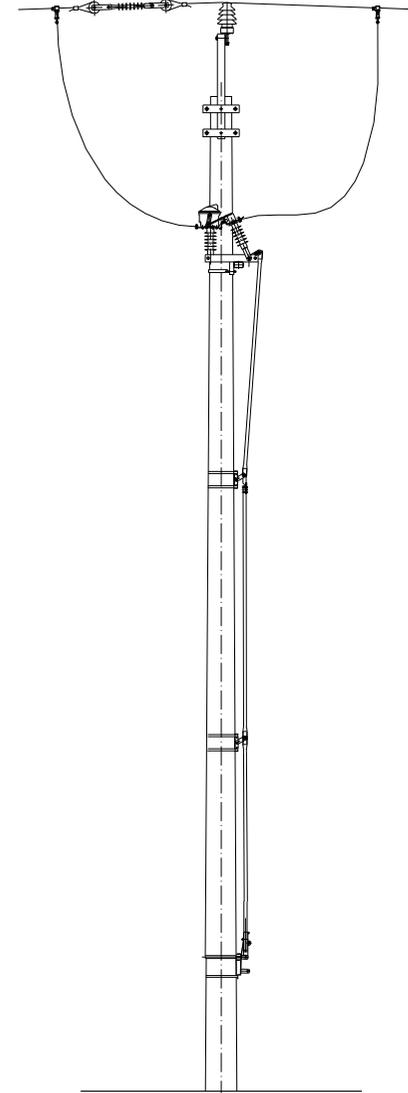
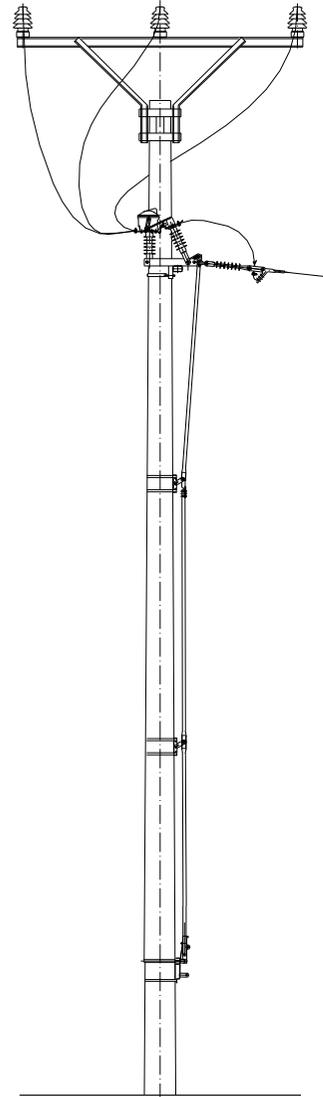
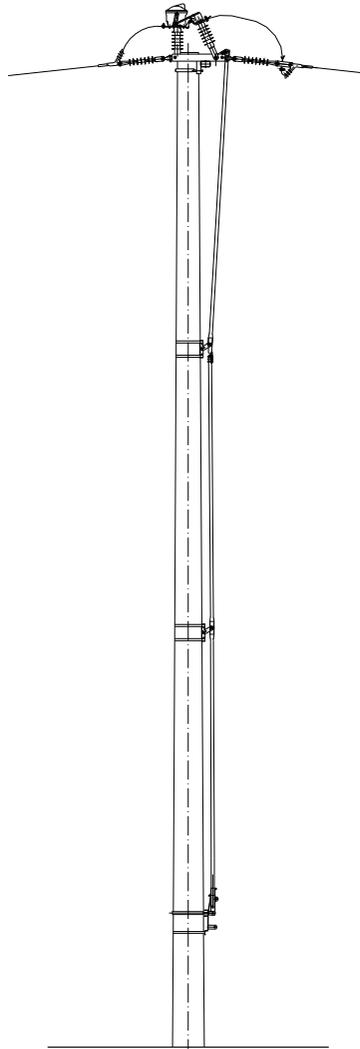
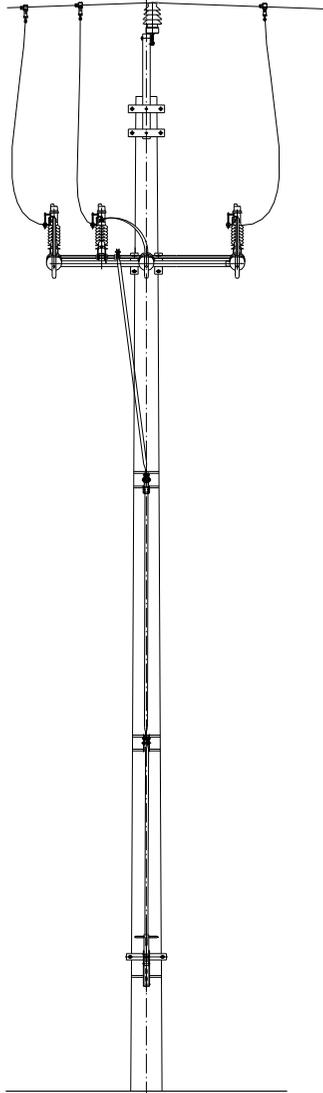
**Fla 15/60 GB R**



Drive mechanism installation for outdoor load disconnectors Fla 15/60 GB R mounted on a pole of 10.5 m height



Drive mechanism installation for outdoor load disconnectors Fla 15/60 GB R mounted on a pole of 12 m height



Specifications are subject to change without notice.

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