



### Specifications:

#### Why use HAPAM disconnectors?

- \* More than 75 years of experience
- \* Durable and reliable design
- \* Over 30 000 disconnectors and earthing switches are in service in more than 80 countries throughout the world
- \* Virtually maintenance free

#### General

The pantograph disconnector consists of three poles. Each pole consists of one support insulator, one rotating insulator, the pantograph mechanism and a counter contact.

#### Insulators

The disconnectors can be equipped with insulators in accordance with IEC, ANSI or DIN specifications.

#### Pantograph mechanism

The pantograph mechanism is installed on the support insulator and transfers the movement of the rotating insulator to the arms of the pantograph disconnector. The mechanism is housed in an aluminium enclosure, protecting it against pollution and ice. The springs that compensate the weight of the pantograph arms are also installed in this housing.

Each pantograph is equipped with four aluminium arms to ensure a rigid construction with a very high short circuit rating. The main contacts are made of copper, with a silver plated surface. The counter contact is a horizontal copper bar, silver-plated, which has to be connected to the busbar system.

#### Earthing switch

HAPAM disconnectors may be equipped with earthing switches, which can be built-on to the pantograph disconnector. The earthing switch consists of an aluminium tube, provided with silver-plated contacts at both ends.

#### Drive mechanism

The disconnectors and/or earthing switches can be single-pole or three-pole operated by means of a motor-operated drive mechanism or a manual-operated drive mechanism.

In case only one drive mechanism is used for three-pole operation, the poles are interconnected by means of adjustable coupling rods.

The drive mechanism also houses the auxiliary contacts for position indication.

#### Testing

The disconnectors and earthing switches are designed and tested in accordance with latest IEC specifications. HAPAM maintains a quality assurance system according to ISO 9001, certified by KEMA.

### Installation

The disconnectors and earthing switches are pre-assembled and adjusted in our works as complete as possible. The construction is designed so that all disconnectors can be installed and adjusted at site very easily, without the need of any special tools. HAPAM provides clear installation instructions and assembly drawings.

### Maintenance

The disconnectors and earthing switches supplied by HAPAM are designed so as to ensure that they are virtually maintenance free.

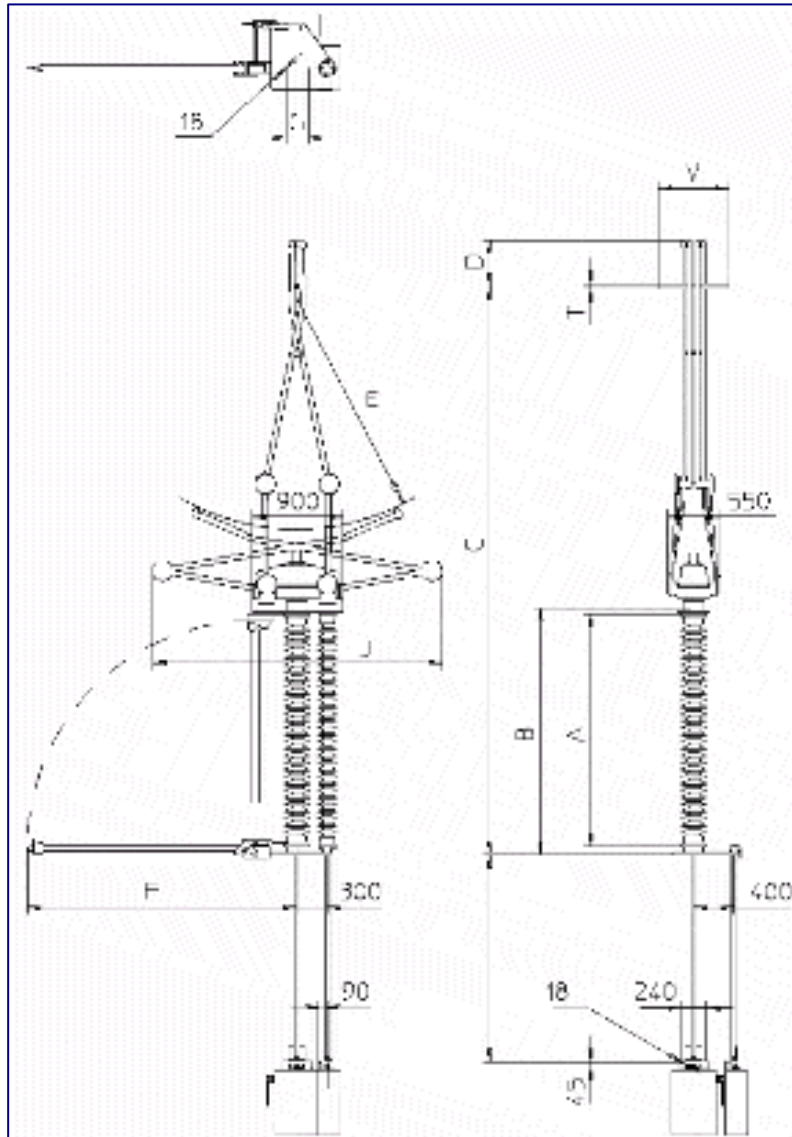
However, to warrant a long and trouble-free service period, we advise that a visual inspection of the contacts and bearing points be carried out at regular intervals.

### Technical Data:

Rated Voltage		123	145	170	245	300	362	420	550
<b>Lightning Impulse Withstand Voltage</b>									
- to earth	kV	550	650	750	1050	1050	1175	1425	1550
- across the isolating distance	kV	630	750	860	1200	1050	1175	1425	1550
						+170	+205	+240	+315
<b>Power frequency withstand Voltage</b>									
- to earth	kV	230	275	325	460	460	460	520	620
- across the isolating distance	kV	265	315	375	530	530	530	610	800
<b>Switching Impulse Withstand Voltage</b>									
- to earth	kV	-	-	-	-	850	950	1050	1175
- across the isolating distance	kV	-	-	-	-	700	800	900	900
						+245	+295	+345	+450
<b>Current and Short circuit ratings</b>									
		<ul style="list-style-type: none"> <li>• 3150 A - 125 kA peak - 50 kA/3sec.</li> <li>• 4000 A - 160 kA peak - 63 kA/3sec.</li> </ul>							

Dimensions (mm)		123	145	170	245	300	362	420	550
Voltage (kV)									
<b>A</b>		1220	1500	1700	2300	2650	3150	3650	4400
<b>B</b>		1370	1650	1760	2360	2710	3210	3710	4460
<b>C</b>		3480	4010	4245	5545	6495	6995	7895	9455
<b>D</b>		340	360	370	450	450	480	550	600
<b>E</b>		1250	1500	1750	2300	2900	2900	3200	3800
<b>F</b>		1595	1875	2065	2665	3015	3515	4015	4780
<b>G</b>		127	127	225	225	254	254	300	300
<b>J</b>		1890	2150	2370	2820	3365	3365	3930	4350
<b>T</b>		40	40	40	40	40	60	60	60
<b>V</b>		700	700	700	700	700	1000	1200	1200
<b>P &amp; H</b>		defined by substation layout							

Drawing:



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