DRN Enerji - Strong Team.

The power of humanity, for the benefit of humanity DRN ENERJİ. Since its inception losing nothing she continues to rise on the stairs of success.

Mission
In transformer production: with solutions, in the interests of human life and quality of life. Provide the most adequate service with universal solutions, providing maximum benefit from information and science with reliable infrastructure and establishing proper maintenance.

Vision
In production all products and services applicable to the energy sector, known in the launch and sale,the primary choice is the most common leading platform.

Our values
We are customer oriented. To understand our customers, we anticipate the needs of your requests and strive to quickly develop solutions. In every corner of Turkey, regardless of the place and circumstances in which we provide service closest to your place.

Concentrated on the solution.
"We can not!" We do not have such logic "How can we provide a solution?" This is our logic. Listening to our customers and informed technical staff, we produce quick and practical solutions according to their needs and requirements.

We are radical and reliable.
Our many years of experience and understanding of business,
always helping to keep our customers and business partners, we are proud that we bring smiles as a brand, from the first days with trepidation for many years

We are modest, honest, sincere,
We make every effort to be simple and straightforward.
We prefer to make an impression on our clients not for the sake of appearances, but sincerely from the heart.

We are forecasted, progressive, innovative
Seeking to provide the best service to our customers,
we all develop every day.
Thanks to the innovations we bring, we make life easier for our customers.
We would like to thank all the friends, employees and customers who brought us to today.

With dignity.

Rated Voltage

High Voltage - Rated Voltage

Voltage class	Rated voltage	Maximum system voltage	Test voltage / effective value 50 Hz. 1 minute.	Test voltage / voltage level of a lightning pulse of 1.2 / 50 microsecs.
	KV	KV	KV	KV
3N	3.3	3.6	10	40
	5,5; 6; 6.3; 6.6	7.2	20	60
10N	10; 10.5; 11	12	28	75
	15; 15.8	17.5	38	95
20N	20; 22	24	50	125
30N	30; 31.5 33;34.5	36	70	170

Low voltage – rated voltage distribution transformers

Voltage class	Rated voltage	Maximum system voltage	Test voltage / effective value 50 Hz. 1 minute.	Test voltage / voltage level of a lightning pulse of 1.2 / 50 microsecs.
	KV	KV	KV	KV
1N	400; 415; 420 В или другое желаемое напряжение	1.1	3	-

Low voltage in power transformers depends on demand

routine and special tests of oil transformers

Routine tests applied to each transformer

- Measurement of winding resistance
- Determining the speed test and groups of compounds
- Measurement of no-load current and losses
- Loss measurement under load
- Short circuit voltage measurement,
- Test the induced voltage,
- Applied test voltage.

types of tests

- applied for a fee
- Test for increasing the temperature of the oil and windings

Lightning strike test.

Special tests

- Sound level measurement
- Measurement of insulation resistance,
- measurement of partial discharge,
- measurement of harmonics,
- leak test
- Measurement of venous capacity.

Short circuit voltage

In standard transformers, the short-circuit voltage is% 4,% 4.5,% 5, and% 6.
Other short-circuits voltage values are not binding.

Stage changes

Voltage change at high voltage. To obtain the desired voltage on the low voltage side, the high voltage side is adjusted. This on-load tap-changer device is controlled from the outside.
The crane replacement operation may be on the order of ±% 5; ±% 2 x 2.5 and possibly another change. the same application is performed while working transformer with on-load tap-changer units.

Connection groups

Groups of compounds in accordance with the nominal values are given below.

- Connection group Dyn 6 or Dyn11: 25 - 2500 KV; LOW VOLTAGE-400V
  HIGH VOLTAGE up to - 36 KV or
- Group of compounds Yzn 6 or Yzn 11: 25-160 KV; LOW VOLTAGE-400V;
  HIGH VOLTAGE up to - 36 KV.
- Connection group Dyn 6 or Dyn11: 200 - 2500 KV; LOW VOLTAGE-400V
  HIGH VOLTAGE up to - 36 KV.

Other connection groups match the client request.

Frequency

Transformers are rated at 50 Hz. This is also done in accordance with the frequency at the place of use.

Noise.

The transformer noise parameter is the noise power. Measurements are made in accordance with IEC 551 '.

Unstable download

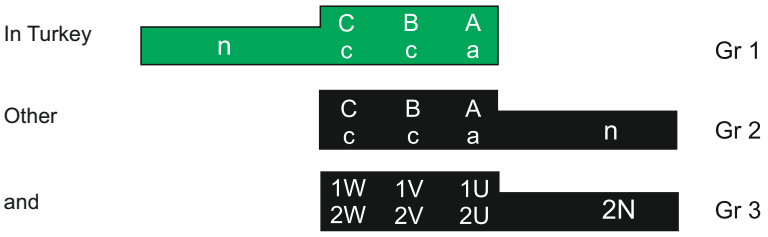
In conjunction with a star or zigzag, the star point is taken from the low voltage side. The star and star connection is charged with a rated current. Technical tables can be selected from any compound. From the Yyn 0 or Yyn 6 connection group, the star point can be loaded using gr 10 of rated current.

Production Processes

By voltage
Transformers% 5 may operate continuously with excessive warning.

Working height
Transformers; they operate with a nominal capacity of up to 1000 m above sea level. The rated power for each height of height 500 m after this height is reduced by % 2. The gap between the sleeves and sleeves between the sleeves is increased to % 1.25 m for every 100 m at elevations above 1000 m.

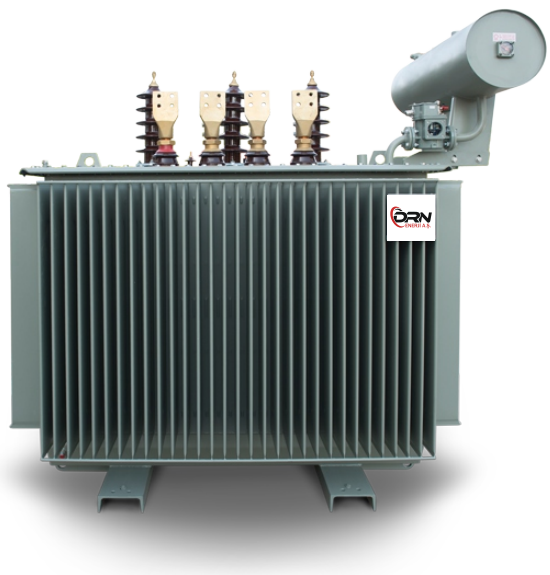
Arrangement of sleeves
Porcelain bushings comply with DIN 42430 and DIN 42531 standards. When viewed from a low voltage, various options can be made as requested.

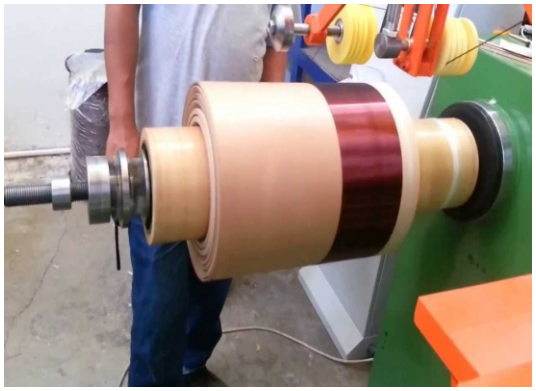


Temperature rise
Transformers are designed in such a way so that they do not exceed the allowable temperature increase in national and international standards and transformers under normal operating conditions.
Transformer oil temperature rise 60 K
winding temperature increase. 65K

Operating conditions
Working height, 1000 m above sea level,

Coolant temperature:
Maximum temperature 40 C
Average daily day: 30 C
Annual Average 20 C





Core

All cores sealed on both sides are cold rolled and oriented the crystals are made from small loss sheet. The core of the yoke and the foot has a circular cross section obtained from the folded sheets. The cutting angle of the sheet is 45. The thickness of silicon steel sheets is 0.23 mm; 0.27 mm and 0.30 mm. The design of the core is made by applying sufficient pressure with steel clamps on the lift sheets. When the core assembly is completed, it should be raised to a vertical position.

Windings And Isolation

Low Voltage Winding

Generally, the low voltage winding is located next to the core. During production, copper, aluminum, or aluminum foil, aluminum material is used. The winding design is based on axial forces in short circuit conditions. To keep the radial forces under control, the winding insulation is made of press material. 400 KVA (- 440 V), to which the transformer windings are wound layer type coils. Power above 500 kVA (-440 V) is a foil wrapper.

High Voltage Winding

Prespan cylinders are covered with round or paper flat conductors with enameled cylinders as winding. Distribution transformers usually use high voltage winding, sheath winding. Insulation between the floors is provided by insulating paper with high quality electrical resistance. Thus, the winding shows the necessary resistance to lightning strikes.

Winding Insulation

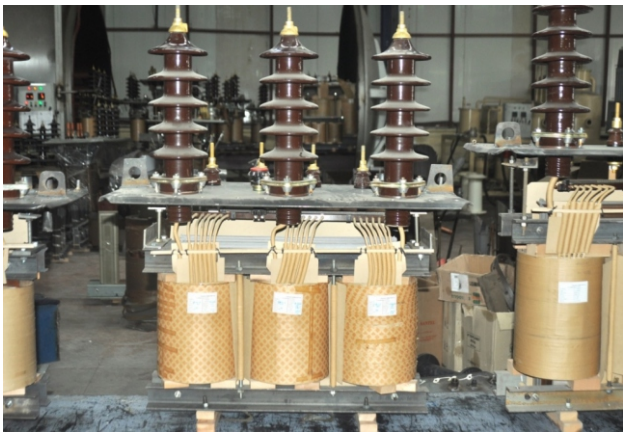
In transformers, winding insulation is provided by high-quality insulating materials and oil cooling channels.Insulating materials, presses and kraft paper are intended for this purpose. The insulation between the core and the winding is made in the form of an oil press.

Assembling the core of the coil.
The core and the windings, with steel profiles, are under pressure from the upper and lower yokes. Between these clips and windings In order not to interfere with the oil channel Durable printed parts are used.

recovery and oil filling
After the assembly of the core coil is completed, it is dried in vacuum in a special drying oven. The active part of the transformer is placed in the transformer tank. Oil; a special transformer is filled with oil under vacuum. After a certain time, the transformer goes into test.

On tolerance ICE

loss to idle	+%005
load loss	+%05
total losses	+%00
Short circuit voltage (Experimental stages)	±%00
Idle current (average of three phases)	+%10
Conversion rate	±%0.5
Noise level	Lack of tolerance



Distribution transformers

Boiler

The walls of the Transformer boiler are made of steel wave. The wall thickness is 1.50 mm or 1.50 mm.The boiler oil drain valve and wheel holder are located on the underside. Wheels, transformer, can be rotated 90 to run in both directions. Upon completion of the boiler installation, a leak test is applied to the boiler sources.

Cap

It is mounted with steel mercury, a nut, a rundal and a cap gasket on the top of the cap. There are systems such as low-voltage and high-voltage bushings, oil expansion tank, valves for filling the thermometer oil valves on the cover. The on-load tap-changer is also located on the cover. Magnetic oil is installed in the expansion tank with flanges, nuts and bolts. In the case of sealed transformers, an oil level indicator is installed on the cover.

Power Transformers

The boiler and lid are made of hot rolled steel sheet. The boiler is designed and manufactured in such a way as to withstand the internal pressure and vacuum of 1 bar. And in the production of caps in welding, they have been tested for tightness using liquid penetrant and internal pressure. Thus, before cleaning the surface, the welds are sealed and their weak points are determined. For flange installations, nitrile and neoprene seals are used to seal the oil. In the high bushes flowing through the cover, in these parts of the cover an anti-magnetic sheet is used to reduce the vortex sources.

Construction of boilers and covers

Surface Protection

Cleaning the surface of the tank, the cover and oil, rust and various impurities using steel granules. Surface cleaning in accordance with Swedish standard SA 21 2, depending on the quality of the surface the internal surfaces of the boiler, the lid and the oil expander are painted with epoxy paint Our standard paint color is RAL 7035; our standard paint thickness is 140 microns. Other colors, colors and thicknesses are optional depending on the client's request. Also in our production is hot galvanizing boilers, covers and expansion tanks.

Quality control.

Management of input data and technological processes in transformational products for obtaining and detailing these results are the most important step of our business. Production, quality control, standards compliance, control and testing instructions are made for multipurpose use. Details of these procedures and instructions are presented to our customers in the Quality Manual. Quality control procedures are carried out by a manufacturing company and a quality control expert.

Quality Policy

For us, the satisfaction of our customers, the most valuable dimensions that we have in our quality. Delivery of our products and services to the buyer are also important.

Development

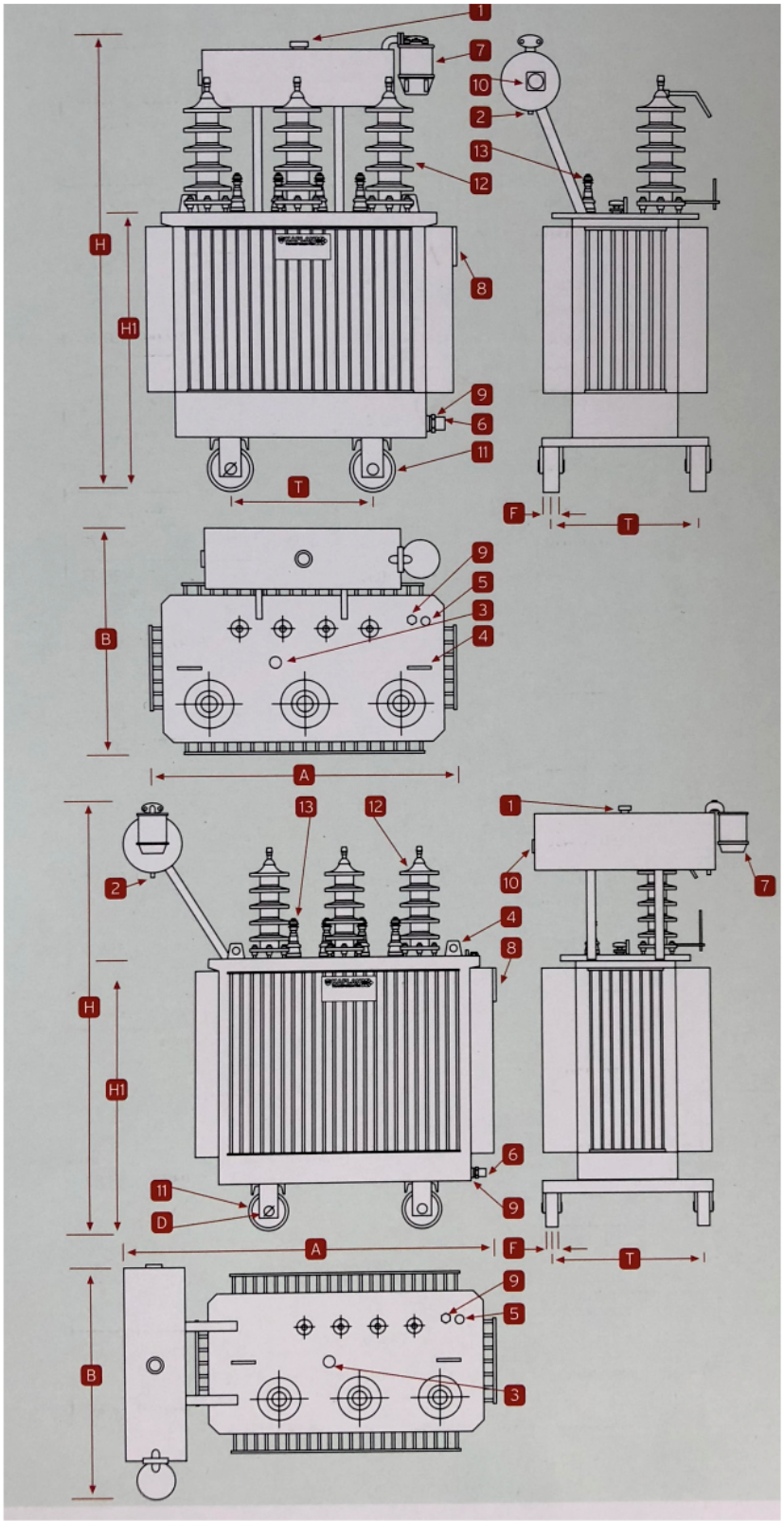
Transformer Technology Development The vision of DRN TRAFO is paramount to this subject. Especially with its infrastructure, young people in this sector have religiosity, which is open to rapid development.

The test

All of our products are subject to the accuracy of all routine checks that are required by national and international standards at every stage of our production. Also type tests and special tests are performed depending on the request of the buyer. Putin tests are carried out in accordance with the recommendations of IEC or other production standards.

Rated power	Vector Group	Emp Voltage	LOSSES WITH LOADING AT THE IDLE		Idle current	Noise Level	Leng ht	Widt h	Heid ht	Height Of Cover	Oil Weig ht	Total Weig ht	Installation Full Load		Full Product Load	
KB	-	%	W	W	%	Db(A)	mm	mm	mm	mm	kr	Kr	Pf=0.8	Pf=1.0	Pf=0.8	Pf=1.0
25/6.3-15	Dyn	4	850	140	2.4	53	800	700	1110	700	80	370	3.98	3.42	95.29	96.20
25/30	Dyn	4.5	880	160	3.0	50	880	750	1250	730	120	420	4.50	3.56	95.06	96.01
40/6.3-15	Dyn	4	960	160	2.3	53	820	700	1130	700	90	400	3.85	2.45	96.62	97.28
40/30	Dyn	4.5	980	190	2.9	50	900	750	1290	740	140	470	4.25	2.52	96.47	97.16
50/6.3-15	Dyn	4	1100	190	2.2	55	850	700	1180	750	100	440	3.77	2.26	96.88	97.48
50/30	Dyn	4,5	1250	230	2,7	52	950	800	1320	770	160	490	4,26	2,57	96,43	97,13
63/6,3-15	Dyn	4	1280	225	2,1	56	880	720	1200	770	120	470	3,70	2,09	97,10	97,67
63/30	Dyn	4,5	1250	260	2,6	53	980	820	1340	790	180	530	4,03	2,07	97,09	97,66
80/6,3-15	Dyn	4	1500	280	2,1	58	900	720	1220	790	135	500	3,63	1,94	97,29	97,86
80/30	Dyn	4,5	1750	320	2,4	54	930	820	1350	810	200	600	4,13	2,26	96,87	97,48
100/6,3-15	Dyn	4	1750	320	2,0	59	950	720	1250	820	160	620	3,57	1,81	97,48	97,97
100/30	Dyn	4,5	1950	380	2,2	56	1050	820	1380	830	220	800	4,01	2,03	97,17	97,72
125/6,3-15	Dyn	4	2050	360	1,9	60	980	800	1270	840	180	700	3,52	1,71	97,65	98,11
125/30	Dyn	4,5	2400	420	2,0	57	1050	830	1410	860	240	920	4,00	2,00	97,26	97,79
160/6,3-15	Dyn	4	2350	460	1,8	62	1100	850	1310	870	240	930	3,43	1,54	97,85	98,27
160/30	Dyn	4,5	2550	520	1,9	59	1120	890	1430	880	260	960	3,83	1,68	97,96	98,12
200/6,3-15	Dyn	4	2850	650	1,8	63	1140	860	1340	900	250	980	3,41	1,49	97,86	98,28
200/30	Dyn	4,5	3500	580	1,8	60	1180	900	1470	920	290	1020	3,91	1,84	97,51	98,00
250/6,3-15	Dyn	4	3250	650	1,6	65	1450	700	1450	950	340	1250	3,33	1,37	98,09	98,46
250/30	Dyn	4,5	3500	780	1,7	62	1500	700	1550	960	370	1290	3,72	1,49	97,90	98,32
315/6,3-15	Dyn	4	3900	770	1,5	66	1500	850	1520	990	350	1350	3,30	1,1	98,18	98,54
315/30	Dyn	4,5	5150	850	1,6	63	1550	850	1580	1020	390	1450	3,76	1,55	97,93	98,34
400/6,3-15	Dyn	4	4600	930	1,5	68	1580	850	1450	950	390	1610	3,24	1,22	98,30	98,64
400/30	Dyn	4,5	4900	1020	1,6	65	1600	850	1650	1050	430	1650	3,62	1,32	98,15	98,52
500/6,3-15	Dyn	4	5500	1100	1,4	69	1700	950	1700	1120	430	1650	3,22	1,17	98,38	98,70
500/30	Dyn	4,5	6750	1250	1,5	66	1700	1000	1750	1160	450	1700	3,69	1,44	98,04	98,43
630/6,3-15	Dyn	4	6500	1300	1,4	70	1700	950	1850	1300	520	2250	3,17	1,11	98,48	98,78
630/30	Dyn	4,5	6650	1450	1,5	67	1700	1000	1850	1340	640	2350	3,51	1,15	98,42	98,73
800/6,3-15	Dyn	6	8500	1500	1,3	71	1900	900	1900	1330	630	2600	3,90	1,28	98,33	98,66
800/30	Dyn	6	8700	1750	1,4	67	1980	950	2000	1350	740	2750	4,57	1,39	98,28	98,62
1000/6,6-15	Dyn	6	10500	1700	1,2	73	2050	1200	2030	1320	650	3050	4,47	1,22	98,47	98,77
1000/30	Dyn	6	10500	2000	1,3	68	2080	1150	2050	1400	640	3250	4,47	1,22	98,47	98,77
1250/6,3-15	Dyn	6	13000	2100	1,2	74	2100	1300	2050	1340	820	3600	4,46	1,21	98,51	98,80
1250/30	Dyn	6	13000	2250	1,3	69	2100	1300	2070	1380	840	3700	4,46	1,21	98,51	98,80
1600/6,3-15	Dyn	6	17000	2600	1,1	76	2100	1320	2100	1500	950	4200	4,48	1,24	98,49	98,79
1600/30	Dyn	6	17000	2800	1,2	71	2100	1350	2150	1520	1000	4300	4,48	1,24	98,49	98,79
2000/6,3-15	Dyn	6	21000	3200	1,0	77	2250	1280	2200	1530	1100	5050	4,47	1,22	98,51	98,80
2000/30	Dyn	6	21000	3200	1,1	72	2300	1320	2280	1580	1200	5300	4,47	1,22	98,51	98,80
2500/6,3-15	Dyn	6	2400	3600	0,9	78	2350	1350	2300	1600	1250	5700	4,41	1,14	98,64	98,91
2500/30	Dyn	6	24000	3600	1,0	73	2400	1450	2280	1650	1350	5800	4,41	1,14	98,64	98,91

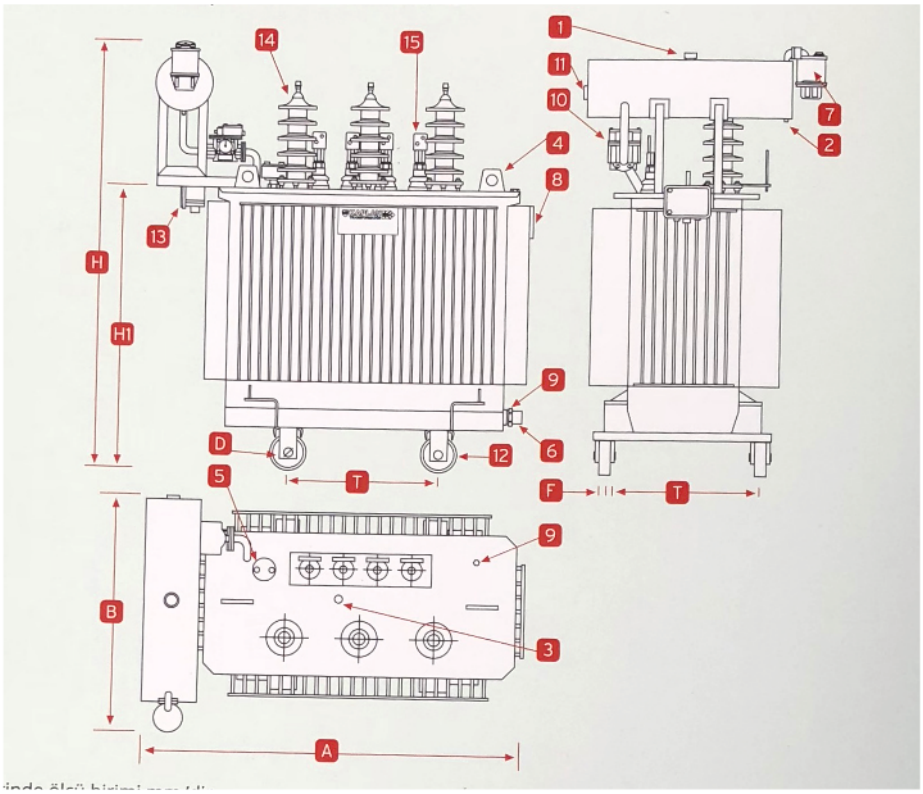
Three phase 25-2500 kV oil expansion tank.



25 - 200 KV
1 Nozzle for filling oil
2 Oil drain plug
3 Switch idling
4 lifting ears
5 pocket thermometer
6 Oil drain valve
7 air dryer
8 nameplates
9 Grounding terminals
10 oil level
11 wheels
12 High-voltage bushings
13 low voltage bushings.

250 - 400 KB
1 Nozzle for filling oil
2 Oil drain plug
3 Switch idling
4 lifting ears
5 pocket thermometer
6 Oil drain valve
7 air dryer
8 nameplates
9 Grounding terminals
10 oil level
11 wheels
12 High-voltage bushings
13 low voltage bushings.

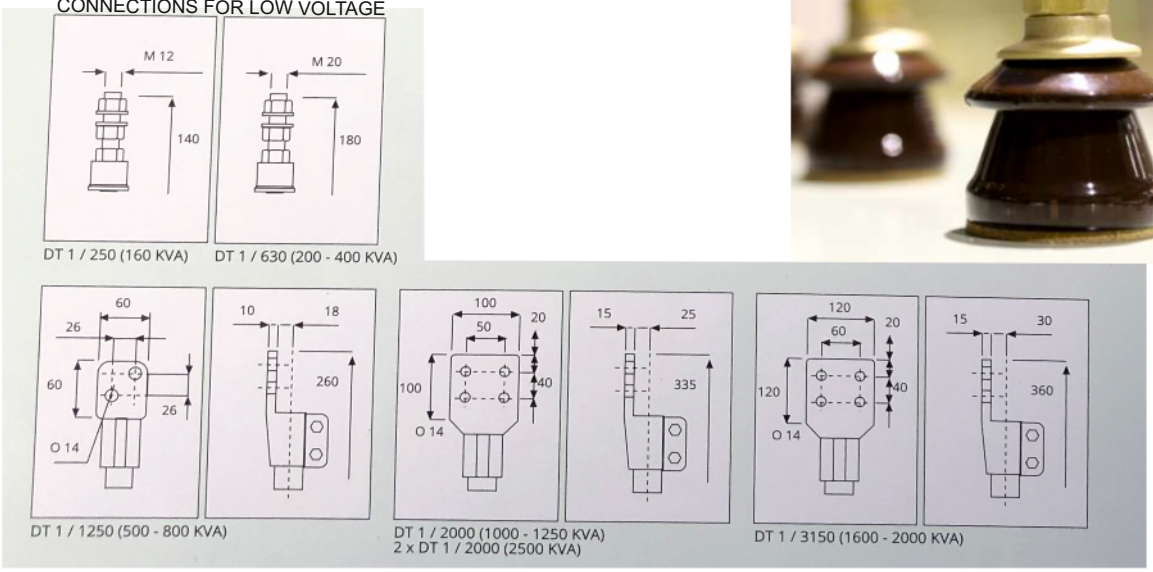
500 - 2500 KB
1 Nozzle for filling oil
2 Oil drain plug
3 Switch idling
4 lifting ears
5 pocket thermometer
6 Oil drain valve
7 air dryer
8 nameplates
9 Grounding terminals
10 Buchholz Relay
11 oil level
12 wheel
13 terminal box.
14 high voltage bushes
15 low voltage bushings.



1,2,3,4,5 Unit number - mm.

KB	25-400	500-800	1000-1600	2000-2500
T	520	670	820	1070
0D	125	160	200	200
F	50	50	70	70

CONNECTIONS FOR LOW VOLTAGE



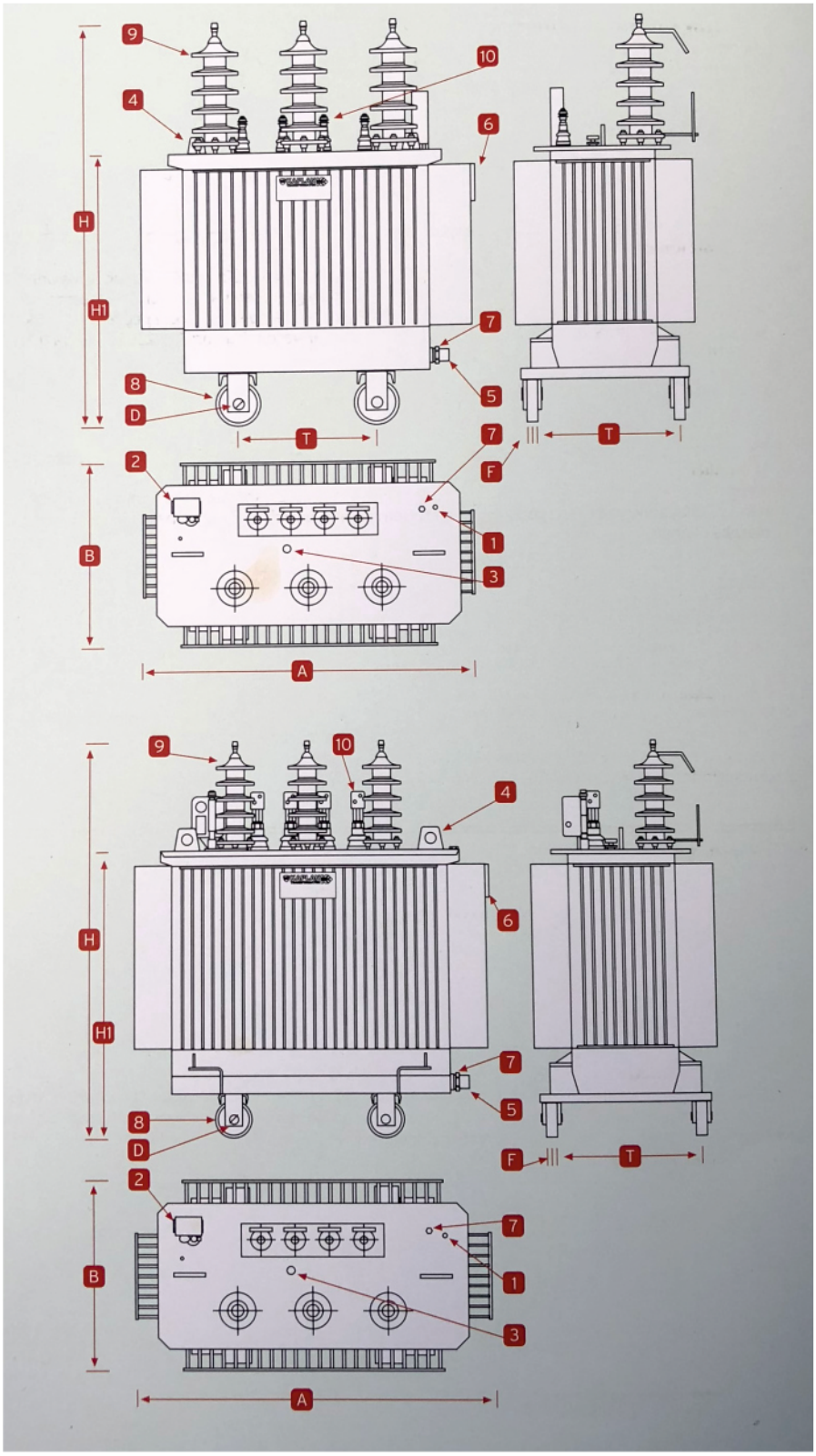
DRN ENERJİ A.Ş.

Three phases 25-2500 KV Transformers with oil expansion tank

Rated power	Vector Group	Emp Voltage	Losses With Loading At The Idle		Idle current	Noise Level	Lenght	Width	Height	Height Of Cover	Oil Weight	Total Weight	Installation Full Load		Full Product Load	
KV	-	%	W	W	%	Db(A)	mm	mm	mm	mm	Kg	Kg	Pf=0.8	Pf=1.0	Pf=0.8	Pf=1.0
25/6.3-15	Dyn	4	850	140	2.4	53	800	750	1010	700	100	390	3.98	3.42	95.29	96.20
25/30	Dyn	4.5	880	160	3.0	50	880	800	1150	730	140	420	4.50	3.56	95.06	96.01
40/6.3-15	Dyn	4	960	160	2.3	53	820	800	1030	700	110	440	3.85	2.45	96.62	97.28
40/30	Dyn	4.5	980	190	2.9	50	900	850	1190	740	160	470	4.25	2.52	96.47	97.16
50/6.3-15	Dyn	4	1100	190	2.2	55	850	800	1080	750	120	450	3.77	2.26	96.88	97.48
50/30	Dyn	4,5	1250	230	2,7	52	950	800	1220	770	180	500	4,26	2,57	96,43	97,13
63/6,3-15	Dyn	4	1280	225	2,1	56	880	820	1120	770	130	470	3,70	2,09	97,10	97,67
63/30	Dyn	4,5	1250	260	2,6	53	980	850	1240	790	190	530	4,03	2,07	97,09	97,66
80/6,3-15	Dyn	4	1500	280	2,1	58	900	820	1120	790	150	520	3,63	1,94	97,29	97,82
80/30	Dyn	4,5	1750	320	2,4	54	930	850	1250	820	210	600	4,13	2,26	96,87	97,48
100/6,3-15	Dyn	4	1750	320	2,0	59	950	820	1160	820	160	650	3,57	1,81	97,48	97,97
100/30	Dyn	4,5	1950	380	2,2	56	1050	850	1300	830	220	800	4,01	2,03	97,17	97,72
125/6,3-15	Dyn	4	2050	360	1,9	60	980	820	1180	840	200	690	3,52	1,71	97,65	98,11
125/30	Dyn	4,5	2400	420	2,0	57	1080	850	1310	860	240	910	4,00	2,00	97,26	97,79
160/6,3-15	Dyn	4	2350	460	1,8	62	1100	850	1220	870	220	930	3,43	1,54	97,85	98,27
160/30	Dyn	4,5	2550	520	1,9	59	1120	890	1330	880	240	990	3,83	1,68	97,96	98,12
200/6,3-15	Dyn	4	2850	650	1,8	63	1140	860	1240	900	240	960	3,41	1,49	97,86	98,28
200/30	Dyn	4,5	3500	580	1,8	60	1180	900	1380	920	280	1030	3,91	1,84	97,51	98,00
250/6,3-15	Dyn	4	3250	650	1,6	65	1200	850	1360	950	350	1220	3,33	1,37	98,09	98,46
250/30	Dyn	4,5	3500	780	1,7	62	1250	850	1450	960	380	1250	3,72	1,49	97,90	98,32
315/6,3-15	Dyn	4	3900	770	1,5	66	1250	860	1390	990	370	1340	3,30	1,31	98,18	98,54
315/30	Dyn	4,5	5150	850	1,6	63	1300	860	1450	1020	390	1400	3,76	1,55	97,93	98,34
400/6,3-15	Dyn	4	4600	930	1,5	68	1350	860	1450	1030	400	1590	3,24	1,22	98,30	98,64
400/30	Dyn	4,5	4900	1120	1,6	65	1450	860	1510	1040	440	1670	3,62	1,32	98,15	98,52
500/6,3-15	Dyn	4	5500	1100	1,4	69	1550	900	1550	1120	430	1630	3,22	1,17	98,38	98,70
500/30	Dyn	4,5	6750	1250	1,5	66	1580	950	1600	1160	470	1750	3,69	1,44	98,04	98,43
630/6,3-15	Dyn	4	6500	1300	1,4	70	1570	900	1750	1300	570	2270	3,17	1,11	98,48	98,78
630/30	Dyn	4,5	6650	1450	1,5	67	1600	950	1810	1340	640	2350	3,51	1,15	98,42	98,73
800/6,3-15	Dyn	6	8500	1500	1,3	71	1650	900	1750	1330	630	2650	3,90	1,28	98,33	98,66
800/30	Dyn	6	8700	1750	1,4	67	1750	960	1850	1350	740	2800	4,57	1,39	98,28	98,62
1000/6,6-15	Dyn	6	10500	1700	1,2	73	1750	1240	1830	1320	670	3100	4,47	1,22	98,47	98,77
1000/30	Dyn	6	10500	2000	1,3	68	1780	1150	1850	1400	740	3200	4,47	1,22	98,47	98,77
1250/6,3-15	Dyn	6	13000	2100	1,2	74	1860	1280	1850	1340	850	3650	4,46	1,21	98,51	98,80
1250/30	Dyn	6	13000	2250	1,3	69	1900	1300	1900	1380	880	3720	4,46	1,21	98,51	98,80
1600/6,3-15	Dyn	6	17000	2600	1,1	76	1800	1280	1900	1500	920	4120	4,48	1,24	98,49	98,79
1600/30	Dyn	6	17000	2800	1,2	71	1850	1320	1950	1520	1050	4400	4,48	1,24	98,49	98,79
2000/6,3-15	Dyn	6	21000	3200	1,0	77	1850	1280	1900	1530	1100	4870	4,47	1,22	98,51	98,80
2000/30	Dyn	6	21000	3200	1,1	72	1920	1320	1980	1580	1200	5100	4,47	1,22	98,51	98,80

Low voltage, rated voltage 400V

25 - 200 KVA
1 Nozzle for filling oil
2 pocket thermometer
3 idle switch
4 lifting ears
5 Oil drain plug
6 nameplates
7 Grounding terminals
8 wheels
9 High-voltage bushings
10 low voltage bushings.



500 - 2500 KVA
1 Nozzle for filling oil
2 pocket thermometer
3 idle switch
4 lifting ears
5 Oil drain plug
6 nameplates
7 Grounding terminals
8 wheels
9 High-voltage bushings
10 low voltage bushings.

Relay Tight Protection (DGPT2)
preferably in hermetic structures. relay gas discharge. shows the temperature of the oil and the heat pressure in the boiler. Used in transmitters larger than 500 square meters. Relay gas discharge. pressure in the boiler, and oil temperature for each of them there are two access contacts

Buchholz Relay
Inside the device in cases of electrical failure Protecting the transformer. when gas is released in insulating materials. When passing through the relay, it accumulates in the chamber and pushes the float down, or in case of unexpected failures, the oil enters the tank and starts the clutch. The relay has two independent contacts for disconnection and alarm. It; 5 A, 250 VAC or 0.2 A, 250VDC.

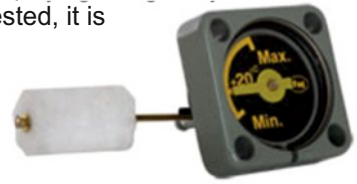
Moisture dryer.
connected with oil expansion tank, when the oil changes volume, capturing moisture in the air passing through it prevents moisture from entering the oil. The size of the dryer is used depending on the amount of oil and air.

Pressure Relief Valve
Hermetic structures are preferred. Protects the transducer tank in case of a sudden increase in pressure. The assembly is made on the lid when the valve of the boiler is installed. It is subjected to internal pressure. The valve opens and the oil is drained. This prevents the boiler from breaking apart, compensating for the pressure at its level. Then turns off automatically. If you want you can use the contact.

Contact thermometer oil temperature
The transformer has maximum oil values, and can be reset using the button below. Oil temperature can be read up to 120 s. There are two adjustable contacts. The electric values of microlight 5a, 250 VAC or 0.2A.

Alcohol Thermometer
Alcohol thermometer is used only for monitoring the temperature of the transformer oil and without contactless.

Magnetic Oil Level Indicator
Shows the oil level in the oil expansion tank. Changing transformer oil shows the oil level on the display with a float with a magnetic receiver. The installation of the magnetic oil level sensor depends on the diameter of the expansion tank. When requested, it is used to indicate the level of contact.



Devices Protection and Indicator	name	Standard Description	KVA																			
			25	50	63	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500		
Low Voltage Tires	4	DIN42530	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
High Voltage Tires and Drives	3	DIN 42531	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Connect Tires	3		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
Idle Switch																						
High Voltage5 Position	1		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
High Voltage3-11 Position			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
On-load tapchanger	1		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
Buchholz relay	1	pressurized solution	x	x	x	x	x	x	x	x	x	x	x	+	+	+	+	+	+	+		
pocket thermometer	1		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Alcohol Thermometer	1		+	+	+	+	+	+	+	+	+	+	+	x	x	x	x	x	x	x		
contact thermometer oil temperature	1		x	x	x	x	x	x	x	x	x	x	x	+	+	+	+	+	+	+		
Pressure Relief Valve	1	sealed design	+	+	+	+	+	+	+	+	+	+	+	+	x	x	x	x	x	x	X	
sealed relay protection (DGPT2)	1	sealed design	.	.	.	.	.	.	.	.	.	.	.	.	+	+	+	+	+	+	+	
Contactless oil level	1		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
contact oil level	1		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
Moisture dryer.	1	pressurized solution	x	x	x	x	x	x	x	x	x	x	x	+	+	+	+	+	+	+		
drain valve		DIN 42551A22	+	+	+	+	+	+	+	+	+	+	+	+	+	.	.	.	.	.		
drain valve	1	DIN 42551A31	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	+	+	.		
drain valve		DIN 42551A40	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+		
wheels	4		x	x	x	x	x	x	x	x	x	x	+	+	+	+	+	+	+	+		
lifting ears	2		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
a nozzle for filling oil	1		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Earth terminals	2		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
signplate	1		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
radiator boiler	1		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
Wave boiler	1		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
terminal box			x	x	x	x	x	x	x	x	x	x	x	+	+	+	+	+	+	+		
Low-high voltage cable boxes			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
galvanized hot immersion			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			

Standard design (+) Additional design (x) not applicable (.)

Compensation panels of all types are made in accordance with the type and specification TEDAŞ.

All standard power distribution panels are made in accordance with the type and specification of TEDAŞ.

Automation Panels

All external power panels are made according to the TEDAŞ type and specification.

All automation power panels are made according to the TEDAŞ type and specification.

DRN ENERJİ A.Ş.

Concrete Case Compact Type Average, Low Tension Distribution Centers Transformer.

Common areas of use
- Substation
- Distribution centers
- Industrial centers
- Wind power stations, solar power stations.

General functions
- Resistant to adverse environmental conditions
- Basic unit of tanks. 36 kv 1x240 mm² suitable for the smallest bending radius of the cable.
- Because of the monoblock structure in the event of a change of place, they can be sent with lekkost.
- Shape size and color and is compatible with the environment. The user can change the color.

Special areas of use
- Pumping stations
- Alarm centers
- Gsm centers
- Generator cabs
- Compensation facilities

Security
- Resistance to earthquakes documented ortadogu teknicheskim university.
- Internal arc experiments made separately depending on access a and access b. Safe to use in public places

Type Definitions

DBK-A: Transformer stations used by MME type cells
DBK-B: Transformer stations used by RMU
DBK-D: Distribution Centers MME or RMU
DBK-T: Low Voltage and Medium, Low Voltage Panels distribution substations.
DBK-J: Generator Center

Advantage

- Short lead time
- Quick and easy assembly
- space utilization
- easy carrying
- Long term use
- Various colors

Specifications

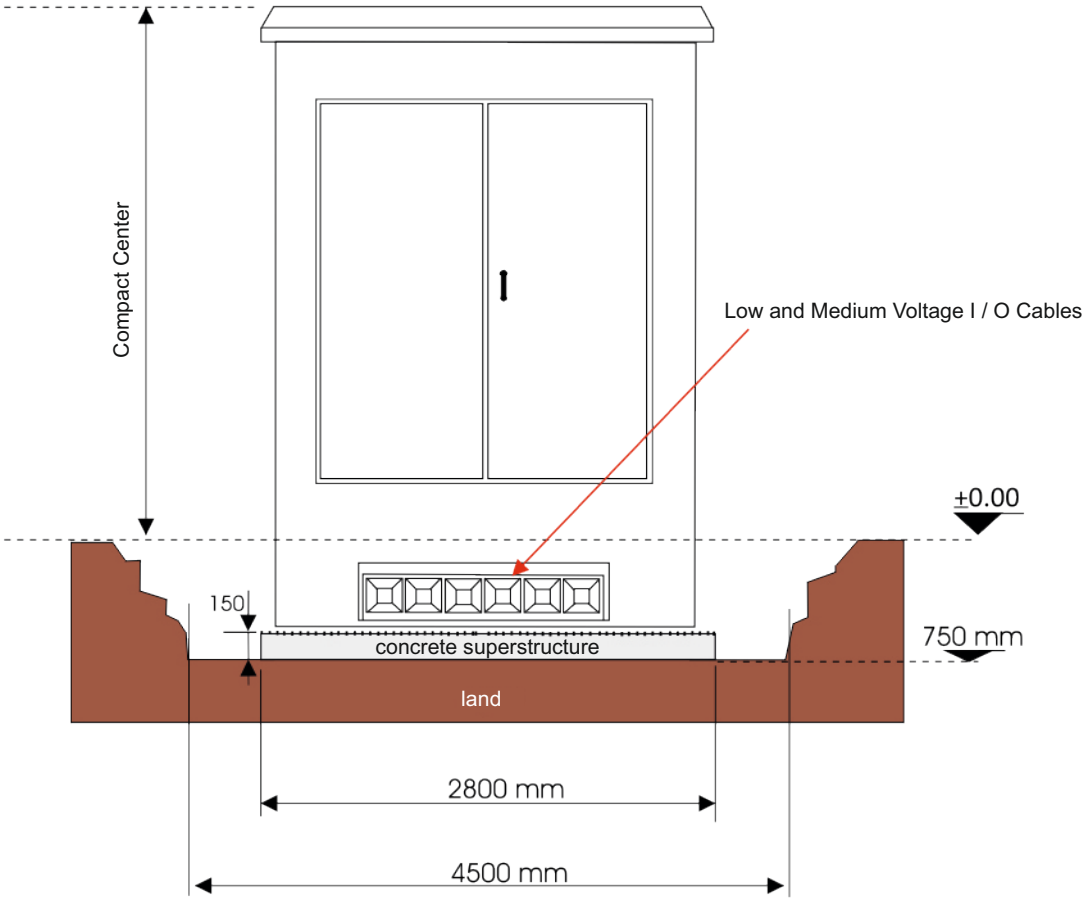
Rated Voltage (kv)	36 KV
Rated Maximum Power	1000 KVA; 1600 κVA
Body Class	10
Internal Arc Resistance	(AB)16 Ka-1 min
Degree Of Protection	IP 23D
Application Standards	TS EN 62271-202

Structural Features

- Class C15 TS EN 206-1 e is used in the production of ready-made concrete and ribbed steel fittings suitable for TS 708e.
- Side walls with the main part of the roof tank are made in the form of a monoblock
- The roof is removable. Main components can enter and exit the roof when necessary.
- Doors and ventilation panels are electrostatically powder coated on a 2 mm galvanized sheet.
- Doors and ventilation panels are made of alloy steel rivets, to prevent rusting.

IMPORTANT NOTE

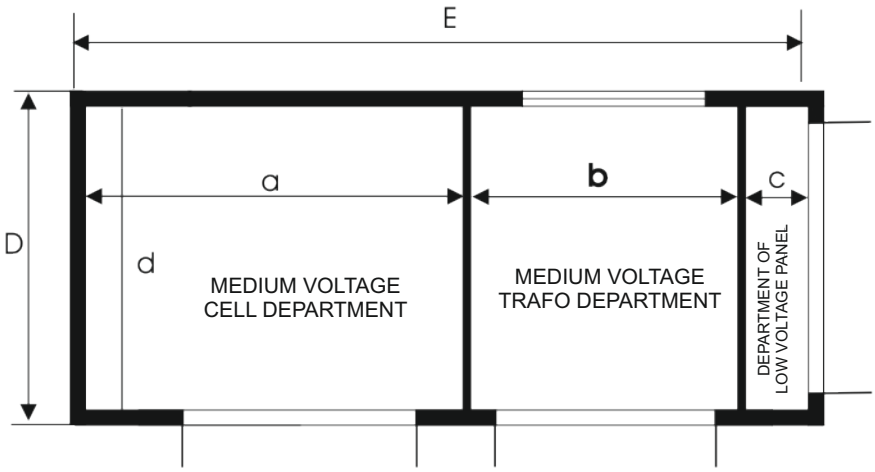
MME cells;
100 mm behind
800 mm in front, placed
in the pavilion to the distance left.
internal arc tests were performed
in accordance with this location

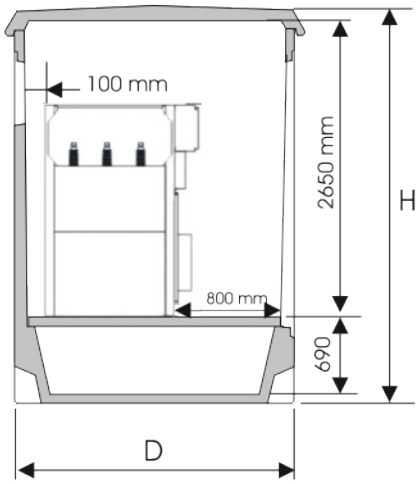


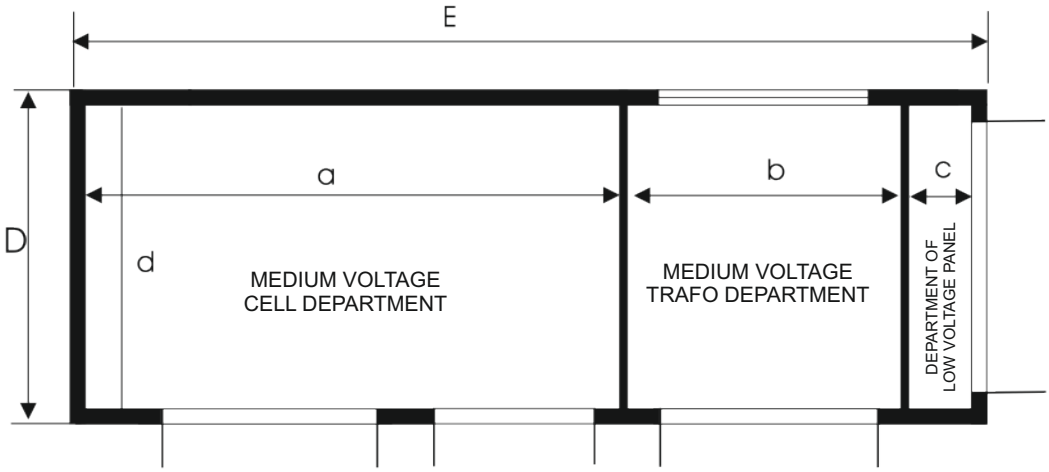
- Considering the level of flooding, excavations are made.
- Grounding is done
- Leveling the ground to the ground pouring concrete C45 with a thickness of about 150 mm (The concrete surface should be smooth and level)
- The concrete surface has a thickness of about 2-3 cm, covered with 0.3 sand, forming an intermediate surface.
- Concrete pavilion on the prepared soil, is placed in accordance with the instructions in the pavilion.
- External low and medium voltage cable connections are made, cable in / out
- Holes sealed in a waterproof manner.
- The equipotential grounding inside the pavilion with the grounding busbar is the grounding of the network connection (see the example of grounding)
- The contact center is being improved.

IMPORTANT NOTE:
In areas of high humidity and humidity It is recommended to take additional measures for ventilation. (example For a medium voltage cell section on the door and rear wall, install shutters, etc.)

Types And Sizes





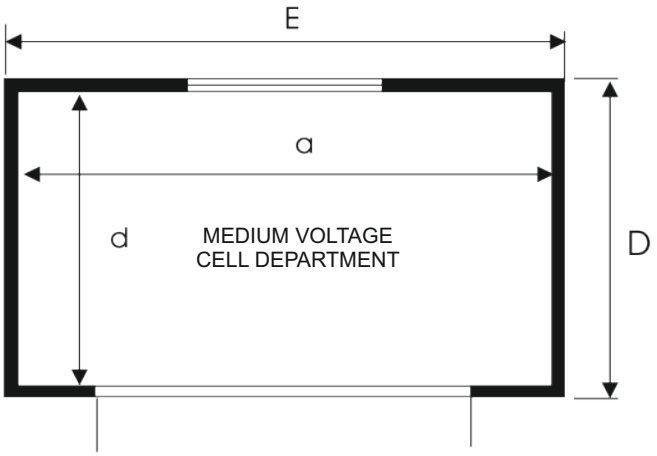


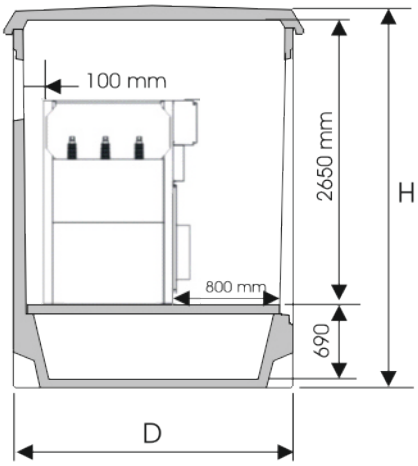
DBK-A 7300
Applied for the
lateral type

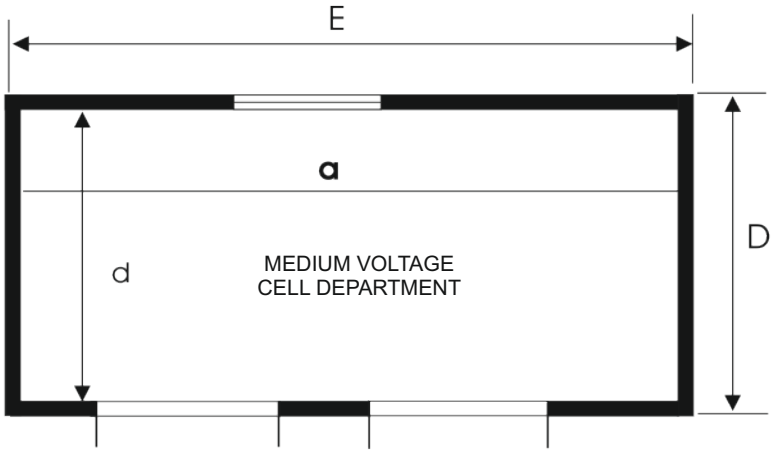
Type Designation	Transformer Power	E	D	H	a	b	c	d	TEDAŞ-MYD/ 2000-036.B
DRN-A 4700	1000	4700	2500	3500	2110	1700	550	2300	- -
DRN-A 5350	1000	5350	2500	3500	2760	1700	550	2300	TİP-1A
DRN-A 6000	1000/1600	6000	2500	3500	3410	1700	550	2300	TİP-1B, TİP-1C
DRN-A 6450	1000/1600	6450	2500	3500	3860/3310	1700/2250	550	2300	TİP-1D
DRN-A 7030	1000/1600	7030	2500	3500	4440/3890	1700/2250	550	2300	- -
DRN-A 7300	1000/1600	7300	2500	3500	4710/4160	1700/2250	550	2300	- -

DESCRIPTION: Those written in small letters "Inside-inside", the capital letters "Outside-outside" shows dimensions. Dimensions - mm.

DBK-D Tipler





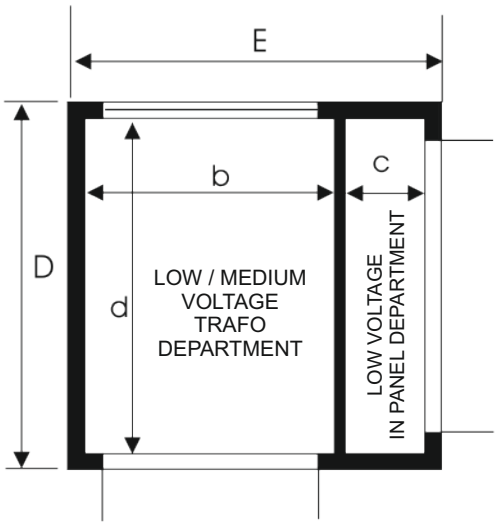


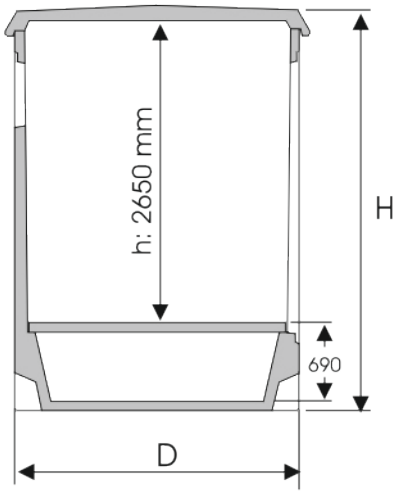
Top type (with double lid)
-DBK-D 5350
-DBK-D 6000
-DBK-D 6450
-DBK-D 7030 and
-DBK-D 7300 if applicable applicable for other types.

Type Designation	Transformer Power	E	D	H	a	b	c	d	TEDAŞ-MYD/ 2000-036.B
DBK-D 2550	- -	2550	2500	3500	2330	- -	- -	2300	- -
DBK-D 3100	- -	3100	2500	3500	2890	- -	- -	2300	- -
DBK-D 3650	- -	3650	2500	3500	3440	- -	- -	2300	- -
DBK-D 4250	- -	4250	2500	3500	4030	- -	- -	2300	TİP-2A / H, TİP2B/H
DBK-D 4700	- -	4700	2500	3500	4480	- -	- -	2300	- -
DBK-D 5350	- -	55350	2500	3500	5130	- -	- -	2300	- -
DBK-D 6000	- -	6000	2500	3500	5780	- -	- -	2300	- -
DBK-D 6450	- -	6450	2500	3500	6230	- -	- -	2300	- -
DBK-D 7030	- -	7030	2500	3500	6810	- -	- -	2300	- -
DBK-D 7300	- -	1300	2500	3500	7080	- -	- -	2300	- -

DESCRIPTION: Those written in small letters "Inside-inside", the capital letters "Outside-outside" shows dimensions. Dimensions mm

DBK-T Types



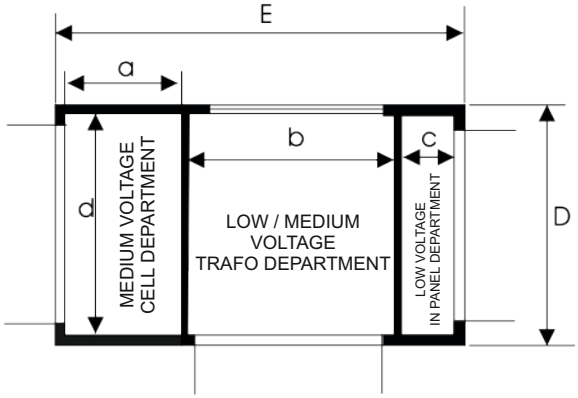


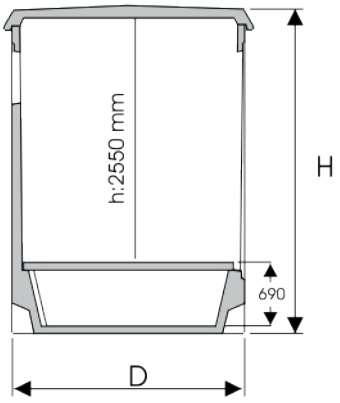
Type Designation	Transformer Power	E	D	H	a	b	c	d	TEDAŞ-MYD/ 2000-036.B
DBK-T 2550	1000	2550	3520	3500	- -	1700	550	2300	TİP-2A/T
DBK-T 3100	1600	3100	3520	3500	- -	2250	550	2300	TİP-1B/T
DBK-T 3650	1600	3560	3520	3500	- -	2250	1100	2300	- -

DESCRIPTION: Those written in small letters "Inside-inside", the capital letters "Outside-outside" shows dimensions. Dimensions mm.

DBK-T Types.

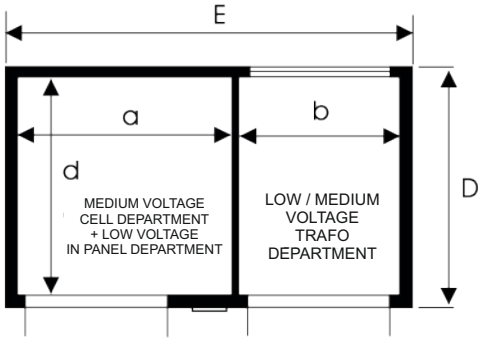
▪with external control

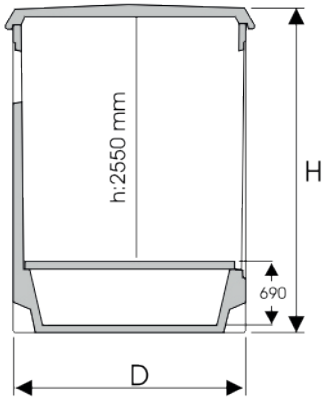




Types with external control									
Type Designation	Transformer Power	E	D	H	a	b	c	d	TEDAŞ-MYD/ 2000-036.B
DBK-B 3800.D	1000	3800	2500	3400	1200	1700	560	2300	EK-1A
DBK-B 4250.D	1600	4250	2500	3400	1200	2200	560	2300	EK-1D

▪ With internal management

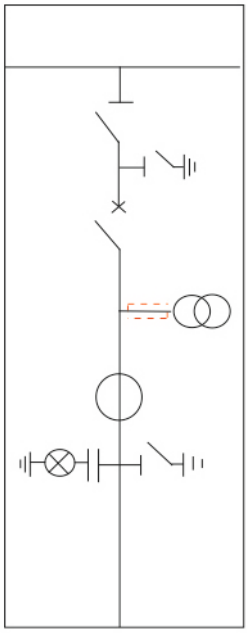




Internal Management									
Type Designation	Transformer Power	E	D	H	a	b	c	d	TEDAŞ-MYD/ 2000-036.B
DBK-B 4250.I	1000	4250	2500	3400	2270	1700		2300	EK-1B
DBK-B 4700.I	1600	4700	2500	3400	2170	2250		2300	EK-1E
DBK-B 5350.I	1000	5350	2500	3400	3370	1700		2300	EK-1C

DESCRIPTION: Those written in small letters "Inside-inside", the capital letters "Outside-outside" shows dimensions. Dimensions mm.

Measuring and living cell clamshell (voltage transformer current transformer):



SP (vc)

Sales of medium voltage electricity, it is designed for use in feeders. There are current and voltage transformers as measuring transformers in the cell.

As a switching element in the cell, in accordance with the request of the buyer;
- Rotary separator or grounding blade separator with SF6 insulated ground,
- SF6 or vacuum cutter,
- Ground switch can be used for short circuit.

At the request of the BUYER;
- Manometric installation of gas separators SF6,

Surge suppressor in the cell,

Quite possible

Specifications:

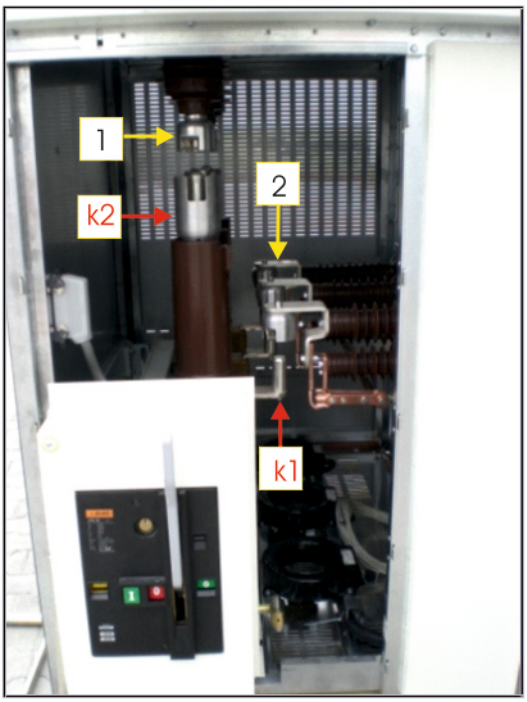
Rated current: 630/1250 A,
Rated short-term current: 16; 25 kA / 1s
Other specifications comply with specifications for MME type cells.

Dimensions (mm)	
Width	1000*;1150**;1400***
Depth	1400
Height	2250

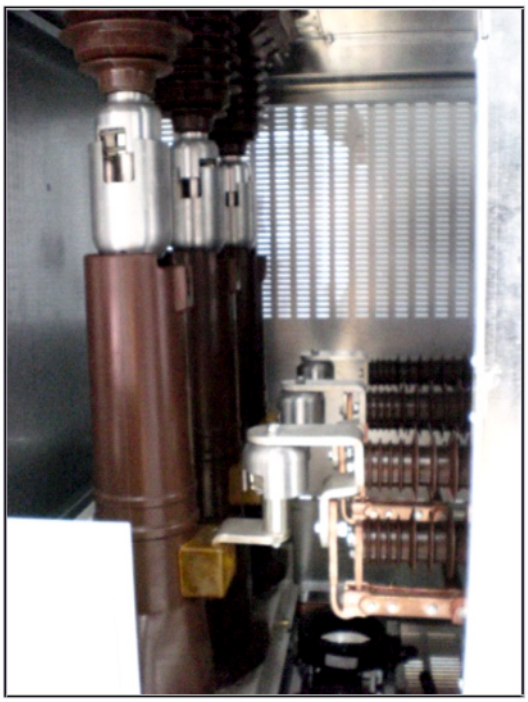
Description

*: Toroidal current transformer in the cell, voltage transformer (Without insurance)
**: In case of using current transformer and transformer voltage (without fuse) in the cell
***: In case of using current transformer and transformer Voltage (insured) in the cell.

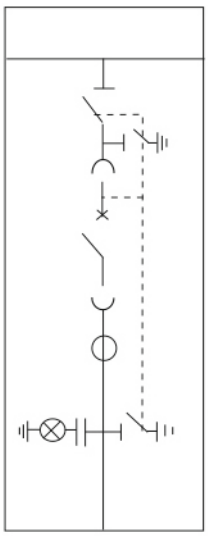
Elevator cutting cell:



CUTTER NOT connected to main circuit



CUTTER connected to main circuit



SP (vc)

SP(a)	MME-24	MME-36
G	-	1000
D	-	1400
Y	-	2250

CUTTER I / O Terminals On-line contacts "Interlaced" are connected. Separator in cell assembly, Sf6 gas separator. Lower disconnector terminals (1) "STILL", I / O terminal cutter (k1, k2) Xx "MOVING" in the contact position

The cutter, located in the mechanism with the help of a lever moving upwards, provides the main scheme

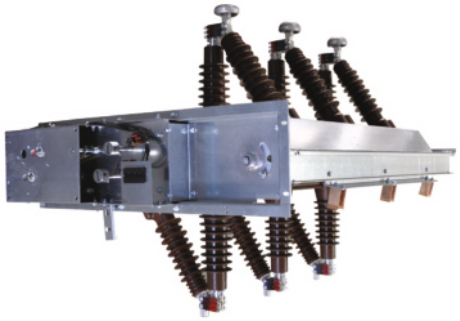
Specifications:

Rated current: 6380/1250 A,
Rated short-time current: 25 kA / 1 s

Benefits: Very fast switch change, less power failure

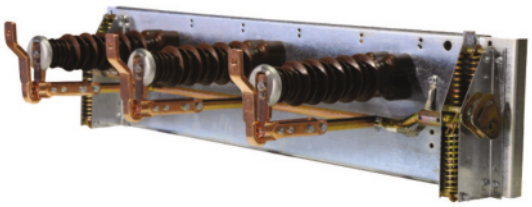
Type Sign	DA
Manufacturer	DRN
Rated Voltage (kV)	12: 17,5: 24: 36
Current Conductive (A)	630: 1250
Rated Short-Time Current	- 16Ka - 1 c - 20Ka - 1 c
Mechanical Resistance Class	M1 (idle 1000 times closing and opening)
Insulation Medium	Air
Detailed Standards	TS EN 62271-102

Rotating Separator



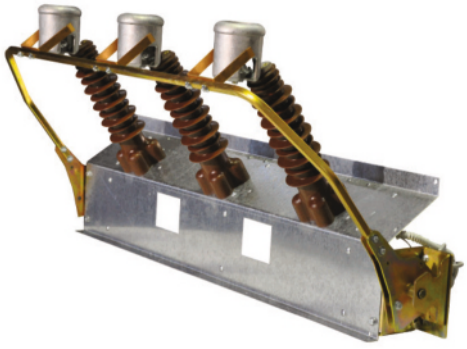
Type Sign	TA
Manufacturer	DRN
Rated Voltage (kV)	12: 17,5: 24: 36
Rated Short-Time Current	16 KA 1 c
Rated Short Circuit Overcurrent Current (cup)	40
Class	5 short circuit current at rated E 2
Detailed Standards	TS EN 62271-102
MME Applications	terminals medium voltage cable on the input / output cell with a switch (terminals) in the I / O cell with a separator medium voltage cable ties (terminals)

Zazemnye Separators



Type Sign	DA
Manufacturer	DRN
Rated Voltage (kV)	36
Rated Short-Time Current	1 ka – 1c
Rated Short Circuit Overcurrent Current (cup)	2.5
Class	5 short circuit current at rated E 2
Detailed Standards	TS EN 62271-102
MME Applications	Load breaker + fuse connection in the transformer protection cell medium voltage fuse on the bottom (load) side

Grounding Disconnectors



Type Sign	ETK/EGK	EVK
Manufacturer	DRN	
Rated Voltage (kV)	12: 17,5: 24: 36	12: 24: 36
Current Carrying Current (A)	630: 1250	630: 1250*
Short Circuit Breaking Current	16: 20*	16: 20*
Rated Short-Time Current	16/20* Ka c	- 16Ka -1 c - 20ka 1 c
Capacitive Current Switching Class	C2	C2
Duty Cycle	A-0.3 with KA -3 min KA	
Type Of Gas Seal	Hermetic Pressure	- -
Electrical Resistance Class	E1/E2**	
Detailed Standards	TSEN 62271- 100	

** Applicable to 12KV, 17.5KV and 24KV*
*** For cutters used in cable networks.*

Circuit Breakers

Gas Cutter
SF6 (ETK)

Vacuum Cutter
(EVK)

Manufacturer	DRN	
Type Sign	EGYA-36	EGYA-24
Rated Voltage (kV)	36	24
Current Carrying Current (A)	630	630
Type Load Disconnectors	General Purpose	General Purpose
Rated Short-Time Current	16/25 * K sec	20ka 1 sec
Electrical Resistance Class	E2	E2
Mechanical Strength Class	M1	
Insulating Environment	Sf6 Gas	
Type Of Gas Leak	A Sealed Pressure	
Detailed Standards	TSEN 62265- 1	

E3: 100 times at rated current of active load off / cut, rated short circuit current shut down 5 times
M1: Idle 1000 times process on / off

Sf6 Charge Disconnector With Grounding Blade

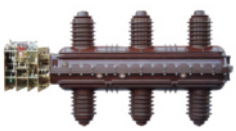
EGYA-36

EGYA-24

Earthing Switch	
Class	E2
Detailed Standarts	TSEN 62271- 102

Manufacturer	DRN
Type Sign	EGA
Rated Voltage (kV)	36 ; 24
Current Carrying Current (A)	630; 1250
Rated short - time current	16 ka - 1 sec; 20 ka -1 sec; 25k -1 sec
Mechanical Strength Class	M1 (: Idle 1000 times process on / off)
Insulating Environment	Sf6 Gas
Type Of Gas Leak	A Sealed Pressure
Detailed Standards	TSEN 62271- 102

Sf6 Gas Separator With Grounding Knife



EGA-36

EGA-24

Earthing Switch	
Class	E0
Detailed Standarts	TSEN 62271- 102

Automatic load feeder (total)	Unit		
Rated voltage	Kv	36	12: 17: 24
Rated withstand voltage			
•Between the interfacial phase and neutral	Kv factor	70	50
•separation range	Kv factor	80	60
Rated withstand voltage			
•Between the interfacial phase and neutral	kV peak	170	125
•separation range	kV peak	195	145
mention frequency	hz	50/60	50/60
Nominal frequency Rated normal current (main bus)	A	630	630
Rated short-term current (ground circuit and circuit)	KA factor	16: 21*	21
Rated short circuit time	Sek	1; 3*	1: 3*
Peak withstand current	kV peak	40; 50*	50
Gas pressure (absolute)	Bar(MPa)	1,4 (0,140)	1,4(0,140)
Minimum working pressure	Bar (MPa)	1,3 (0,130)	1,3(0,130)
Inner arc class (AC)		A(FL)16/1 c	A(FL)20/1 c

Load disconnector			
Type load disconnector		general purpose, three position, three-pole (open-closed-soil)E2	
Electrical resistance class		M1	
Mechanical resistance class		630	
estimated flow	A	16; 21*	21
Rated short-term current (ground circuit and circuit)	KA factor	40: 50*	50
Peak withstand current	κA peak	3	
Number of phases		50/60	
Nominal frequency	hz	60	
Rated short-circuit breaking current (6G) A	A	35	
Ground fault at idle and rated	A		
line length A current (16b)			

Ground Disconnector			
Rated short-time current	KA factor	16; 21*	21
Rated short circuit time	sek	1; 3*	1; 3*
Short circuit breaking current	κA peak	40	50
Electrical resistance class		E2	E2
Mechanical resistance class		M1	M1

Normal operating conditions	
Ambient temperature	
Most	+40C°
Average (24 hours)	+35C°
Lower	-25C°
Relative humidity	Maximum %95

- On request

Vacuum Feeder Circuit Breaker (Common)	Unit		
Rated voltage	Kv	36	12: 17: 24
Rated withstand voltage			
•Between phase to phase neutral	Kv factor	70	50
•separation range	Kv factor	80	60
Rated withstand voltage			
•Between phase to phase neutral	kV peak	170	125
•separation range	kV peak	195	145
Nominal frequency	hz	50/60	50/60
Rated normal current (main bus)	A	630	630
Rated short-term current (ground circuit and circuit)	Kv factor	16	21
Rated short circuit time	sek	1; 3*	1: 3*
Peak withstand current	kV peak	40	50
Gas pressure (absolute)	Bar (MPa)	1,4 (0,140)	1,4(0,140)
Gas pressure (absolute)	Bar (MPa)	1,3 (0,130)	1,3(0,130)
Inner arc class (AC)		A(FL)16/1 c	A(FL)20/1 c

Vacuum cutter	Unit		
Rated voltage	KV	36	24
rated normal current	A	630	630
Rated short-circuit breaking current	KA factor	16	21
Номинальный ток короткого замыкания	kV peak	40	50
Rated short-term current (ground circuit and circuit)	KA factor	16	21
Rated short circuit time	sek		1: 3*
duty cycle		O-0.3 sec-CO 3 min-CO	
время резки	мs	Approximately 45-50	
Closing time	мs	Approximately 65-70	
applying phase between poles (cutting)	мs	Less than 5 miles / hour	
Detailed standards		TSEN 62271- 10	
Engine		220 VAC	
turn on the coil turn off		24VDC 48VDC	

Separator	Unit		
Type		general purpose, three-position, three-pole (open-closed-soil)	
Rated current	A	630	
Nominal frequency	hz	50/60	
Rated short-time current	KA factor	16 21*	21
Rated short circuit time	sek	1;3*	1;3*
Peak withstand current	kV peak	40; 50	50
Mechanical strength class			M1

A Grounding Disconnect			
Rated short-time current	KA factor	16; 21*	21
Rated short circuit time	sek	1;3*	1;3*
Short circuit breaking current	kV peak	40	50
Electrical resistance class		E2	
Mechanical strength class		M1	

Normal operating conditions	
Ambient temperature	
most	+40C°
Average (24 hours)	+35C°
lower	-25C°
Relative humidity	Maximum% 95

*On request

Depending on the development of national and international standards and new designs Products in this catalog are subject to change without notice.

DRN ENERJİ A.Ş.

Specifications

Feed feeder for switch disconnector (common)	Unit		
Rated voltage	Kv	36	12: 17: 24
Rated withstand voltage			
•Between the interfacial phase and neutral	Kv factor	70	50
•separation range	Kv factor	80	60
Rated withstand voltage			
•Between the interfacial phase and neutral	кv peak	170	125
•separation range	кv peak	195	145
mention frequency	hz	50/60	50/60
Nominal frequency Rated normal current (main bus)	A	630	630
Rated short-term current (ground circuit and circuit)	Kv factor	16: 21*	21
Rated short circuit time	c	1; 3*	1: 3*
Peak withstand current	кv peak	40; 50*	50
Gas pressure (absolute)	Бар (MPa)	1,4 (0,140)	1,4(0,140)
Minimum working pressure	Бар (MPa)	1,3 (0,130)	1,3(0,130)
Inner arc class (AC)		A(FL)16/1 c	A(FL)20/1 c
Nominal Transfer Current / Cutting Current	A	400/470	600

Load disconnector			
Type load disconnector		General purpose, three - position, three - pole (open - closed - soil)	
Electrical resistance class		E2	
Mechanical resistance class		M1	
estimated flow	A	630	
Rated short-term current (ground circuit and circuit)	KA factor	16; 21*	21
Peak withstand current	кA peak	40: 50*	50
Nominal frequency	гц	50/60	
Number of phases		3	

Grounding Clamp (Welding)	KB	36	12: 17: 24
Rated short-time current	KA factor	16; 21*	21
Rated short circuit time	c	1; 3*	1; 3*
Short circuit breaking current	кA	40	50
Electrical resistance class		E2	E2

Earth clamp (load)			
Rated short-time current	KA factor	1	1
Rated short circuit time	C	1	1
Short circuit breaking current	кA peak	2,5	2,5
Electrical resistance class		E2	E2

Normal operating conditions	
Ambient tempera turemost	+40C°
Average (24 hours)	+35C°
lower	-25C°
Relative humidity	Maximum %95

*On request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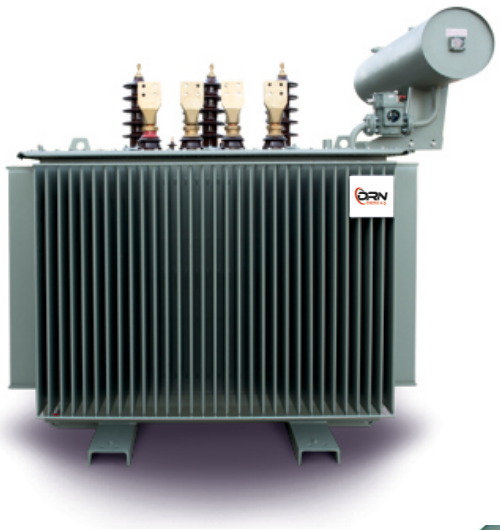
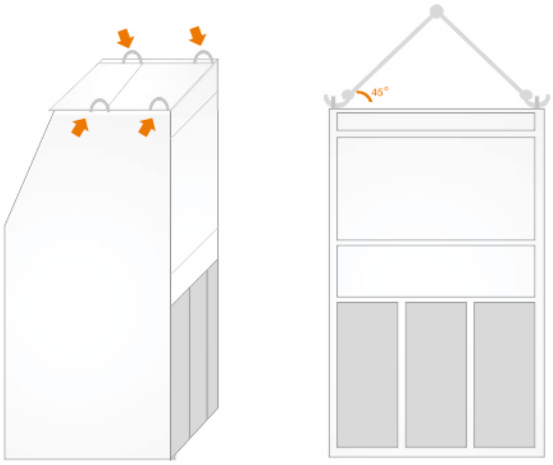


Drnring partition, loading, loading and unloading;

- Lifting hooks or this should be done with
- forklift truck with pallet.

Lifting and transportation using a loader



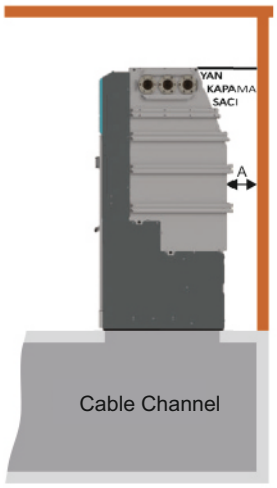
Lifting and transport by crane

Care must be taken to ensure that lifting and transport are balanced. Without packaging dragging or sliding transport should not be made

drnring aggregates until the installation is completed;
In a dry and ventilated place should be sealed in its own packaging,
It should not be exposed to direct sunlight or rain.
It must be at least -25 ° C.

Installing drnring blocks inside a building:

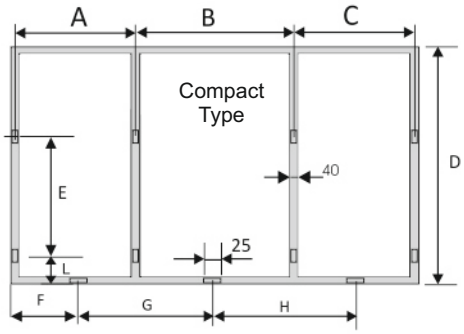
When placing drnring blocks inside a building, consider the following dimensions.
The accessible side must be covered with the side cover supplied with the product.

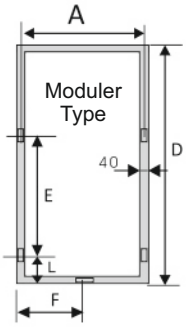


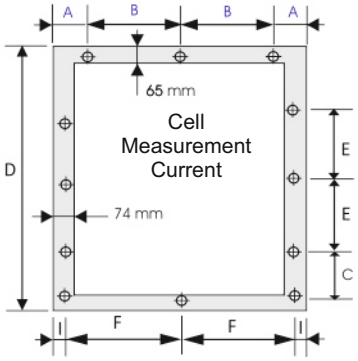
A = 100 mm

C ≤50 mm

Fixing drnring blocks to the floor:



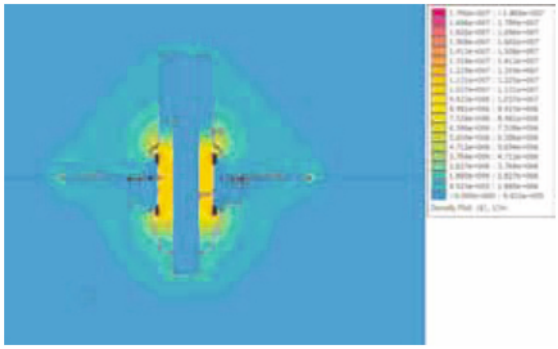


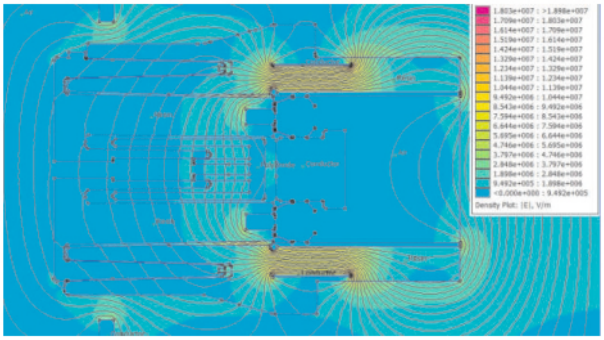


The drnring blocks are fixed to the floor with M12 bolts from the anchor holes in the base.
The table below shows the distances from the anchor hole depending on the product.

		A	B	C	D	E	F	G	H	L		
SSF	36KB	376	457	400	879	450	209	416	427	135	3 FEEDER	For elooring 36 KS A=510mm D=879mm E=450mm F=275mm L=135mm
	24KB	338	417	400	763	450	189	377	427	135		
S	36KB	360	-	-	879	450	200	-	-	135	1 FEEDER	
	24KB	350	-	-	763	450	195	-	-	135		
F	36KB	400	-	-	879	450	220	-	-	135		
	24KB	400	-	-	763	450	220	-	-	135		
B	36KB	410	-	-	879	450	225	-	-	135		
	24KB	410	-	-	763	450	225	-	-	135		
Mh	36KB	104	417	173	1050	300	521	-	-	54		
	24KB	104	417	173	860	200	521	-	-	54		
Vh	36KB	104	396	173	1050	300	446	-	-	54		
	24KB	104	396	173	860	200	446	-	-	54		

Products drnring Designed: Research R & D and mechanical structures, automated structures (CAD) the distribution of electric fields was studied by the finite element method.





The production and quality control of the units are carried out in accordance with the requirements of the quality control system ISO 9001: 2000.
All parts for production are controlled by Tunability related quality control. Blocks are monitored. Each completed drnring block is sent after routine testing.

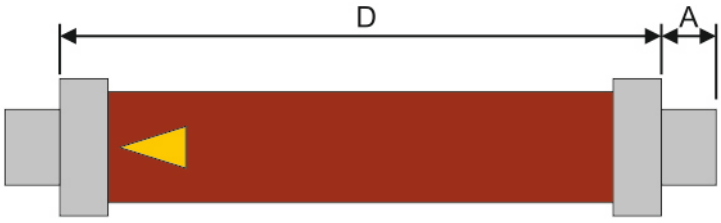
The boiler filled with Sf6 gas, "Sealed pressure" is sealed to atmosphere

All units in production are 100% tested for leakage using helium control gas.

Leakage is measured with a helium spectrometer. Gas S-6 is filled after evacuating the boiler to about 1 mbar.

Combined stainless steel surfaces and compaction measures taken
Gas leakage rate is minimized. It does not require gas additives for 25 years.

VOLTAGE	DIMENSIONS	
	A	D
17,5 KV	33	367
24KV	33	442
36KV	33	537
Dimensions in mm		



Rated voltage (KV)	36KV							24KV					
Rated power (KVA)	250	400	630	800	1000	1250	1600	250	400	630	800	1000	1250
% Uk	4,5			6				4,5			6		
İNTERTEKNİK (Tipi: ACT)	10	16	20	20	25	31,5	40/50	16	20	31,5	31,5	31,5	50
EFO (type of BID)	10	16	20	20	250	30	40/50	16	20	30	30	40	50

Rated voltage (KV)	17,5KV				
Rated power (KVA)	250	400	630	800	1000
% Uk	4			6	
İNTERTEKNİK (Tipi: ACT)	20	25	40	31,5	50
(type of BID)	20	30	40-5	50	50

Load disconnector - in insurance compounds; Medium-size fuse fuses must be used in accordance with IEC 60282-1.

RMU for use at voltage levels of 17.5 kV and below MV fuses, use of fuse adapter must be placed in fuse holders.

ATTENTION ... !

•Transformer overload and / or an excessive increase in the temperature of the fuse can lead to an unintended temperature rise in fuses and enclosures. In such cases, the fuse body or case must not damage the RIMU. Load disconnector - insurance Thermal protection MV fuses must be used.

•Contact ELKOTGS for medium voltage fuses to be used in medium-low voltage transformers with different power, voltage and% Uk.

Voltage Detection System (GAD;)
- Compliance with TS EN 61243-5.
- Compliance with IP 54 protection class,
- LCD display or indicator lights,
- Easy to recycle phase sequences of cells sequenced by phase comparator,
- Voltage display interface for continuous monitoring integrated with RMU.

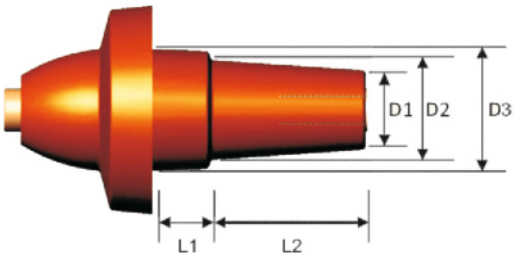
NOTE. Optional you can also use the display interface of the plug-in.

Internal arc force and pressure safety disc (BED);

The stainless steel boiler is reinforced with special reinforcements. On the back of the bottom of the tank, filled with SF, are pressure safety discs (BED).

In the event of an unexpected increase in pressure in the boiler, the BED will be opened to prevent the boiler from breaking and damaging the environment.

The discharge of hot and compressed gas from the back side to the cable channel prevents damage to the cable heads in the cable section.



Transient insulators;

For drnring medium voltage cable glands,
Conical epoxy resin insulators are used.

With capacitive voltage couplers embedded in adapter isolators, voltage information is provided for voltage measuring devices.

Ur (kv)	Ir (A)	D1 (mm)	D2±0,2 (mm)	D3±0,2 (mm)	L1 (minimum mm)	L2 (mm)	Contact Type	interface type
12-24	250	31	32,5	48,5	9	48	sliding	A
36	250	46±0,2	56	70	11	90±0,2	sliding	B
12-24-36	400*	46±0,2	56	70	11	90±0,2	sliding	B*
12-24-36	630*	46±0,2	56	70	11	90±0,2	bolted	C*

NOTES:
1. Dimensions taken from TSE EN 50181.
2. The junction terminals, indicated by the symbol (*), are used if Units not specified otherwise.

The drnring Cable Connections The total voltage connecting cable located on the front side is made in the departments.

Each feeder has a separate cable connection section.

Connection with cable head type T;

Contact Type: Bolt
Rated current: 630 A
Interface: C

Connection with cable head type L;
Type of contact: sliding (plug)
Rated current: 250-400 A
Interface: B

Adjustable cable support:

ATTENTION ... !

Used cable heads;
- Must have type test reports in accordance with the relevant standard.
- Installation must be carried out by qualified personnel in accordance with the manufacturer's instructions.
- Total voltage. The metal shield of the cable must be connected to the ground rod.

Access To Chapters, Lock And Standards Compliance

Gas insulated SF6 Drnring devices provide a high level of safety and operator safety.
Sequential sequences unsuitable it does not allow to run and access.

	Protection class	Accessibility and locking
Main busbar and switching section	IP 67	Unapproachable
Cable connection section	IP 2X	AVAILABLE. The cover has a mechanical lock. If the moving contact of the switch-disconnector, the grounding incoming / outgoing medium voltage cable does not fit in the GROUND position, the COVER does not open.
High voltage insurance department	IP 3X	AVAILABLE, The cover has a mechanical lock. Both sides of high voltage fuses if there is no grounding, ensuring access to the section COVER WILL NOT OPEN. Soil separators cannot be interrupted until the compartment cover is closed.
Department of mechanization	IP2X	However, you can access it with a tool.

	Standards	Reset and Types			
Drnring	TS EN 62271-200	Splitter	Service continuity	Inner arc	
		PM	LGS 2A	36 KB	A(FL)16KA/1c
				24 KB	A(FL)20KA/1c
Load connector	TS EN 60265-1	Common goal MI, E3			
Load connector + fuse box	TSEN 62271-105				
Cutter	TSEN 62271-100	M1, E1			
Ground switch	TSEN 62271-102	M1, E2			
Voltage detection system	TSEN 61243-5	- Indication of the presence of voltage in the system VPIS - Voltage detection system (VDSİ) (optional)			
Wire Insulators	TSEN 50181	Outside the cone			

Drnring devices comply with TEDAŞ-MYD / 95-002.C specifications.

Intended function and drnring number. SF6 gas-insulated functional unit (medium voltage cell), special main busbar is assembled using connecting equipment. The main bus connectors are made from the side of the cells, as seen in the figure.

Equipment providing the main busbar assembly;

- Finished Products
- Provides voltage, short circuit and cell current rating,
- Type experiments were performed.

In a combination of two cells;

- Transitional sleeves (Figure 1)
- Shielded bus isolator (Figure 2)
- A tire is used (Figure 3).

Figure 1

Figure 2

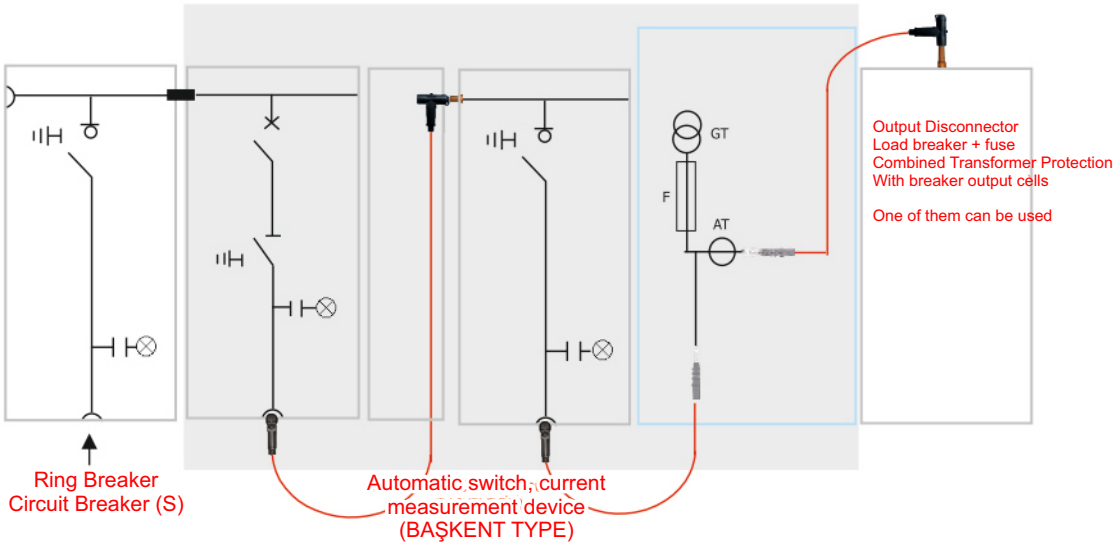
Figure 3

Figure 4

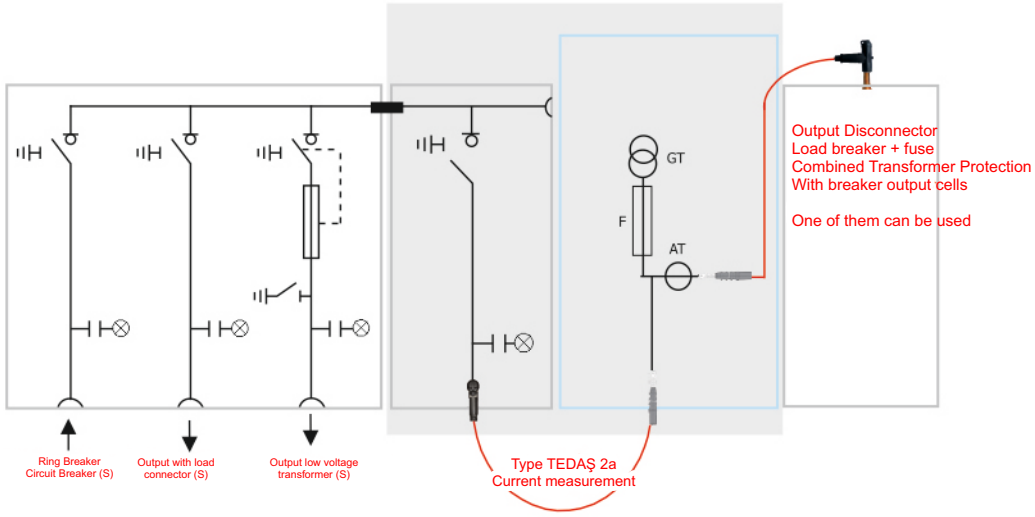
Main busbar joints, if a cell is not installed on the side close with plugs (Fig. 4).

NOTE. The equipment shown in the illustrations refers to the main equipment for mounting busbars used at a voltage level of 36 kV.

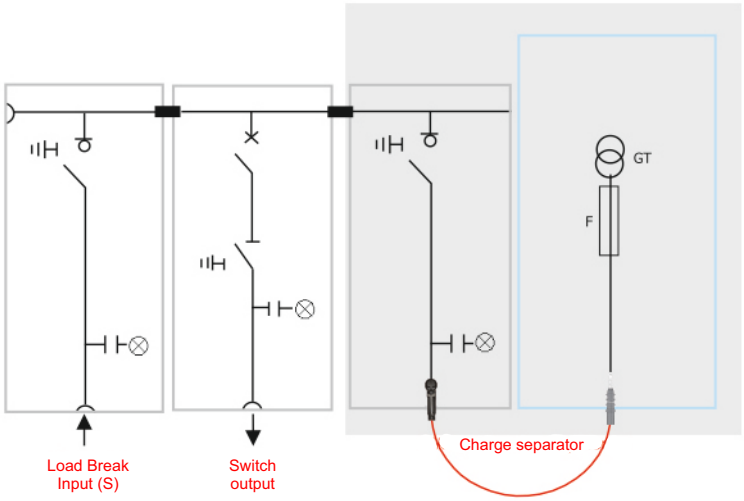
Example: 1 TEDAŞ TYPE OF CURRENT VOLTAGE



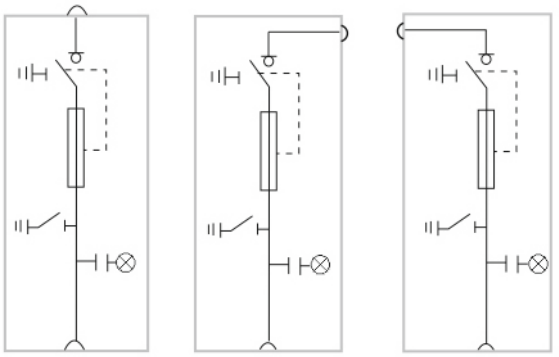
Example: 2



Example: 3

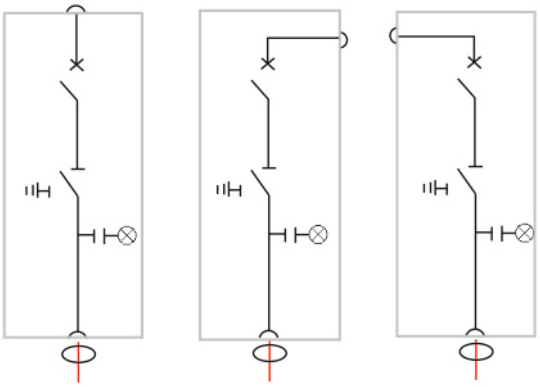


Transformer switchgear with disconnector loads + fuse box:



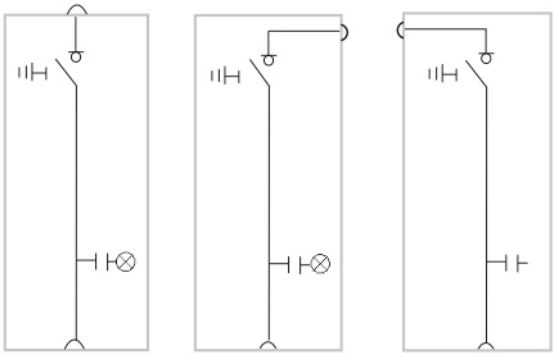
From above From the left From the right

Overload protection / transformer protection Cell:



From above From the left From the right

Output switchgear with disconnector load:



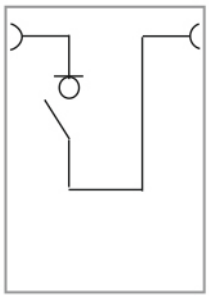
From above From the left From the right

NOTE. From the top to the main busbar, the cell height is 300 mm,
With RIGHT or LEFT contact with the main busbar width of the cell 300 mm should be added

NOTE: connected to the top or sideways “Type is made with cable head. On cell “T”, the connection type is EXTERNAL CONICAL, INTERFACE “C” The screw is located in PLATE WELDING.

Appearance **Single-line diagram** **Sizes**

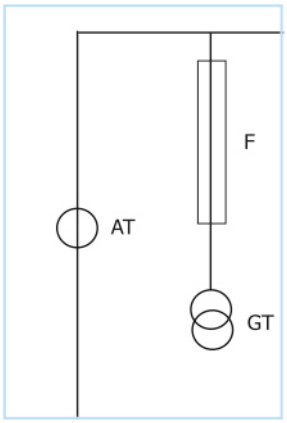
Load disconnector separation / duplication of busbars (KS)



KS	36 Kv	24 Kv
WIDTH	600 mm	600 mm
DEPTH	600 mm	860 mm
HEIGHT	1800 mm	1735 mm

Note: For cutters duplicate cells, contact our company

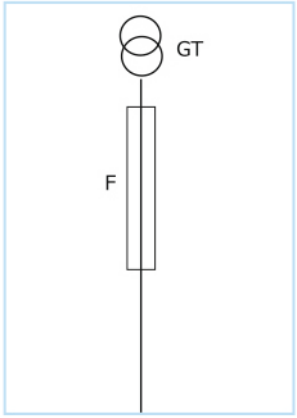
Volt-Ampere-Measurement (Mh) TEDAŞ Type 2 A



Mh	36 Kv	24 Kv
WIDTH	1150 mm	1150 mm
DEPTH	1050 mm	860 mm
HEIGHT	2100 mm	1735 mm

Air isolation

Voltage Measurement (Vh)



Vh	36 Kv	24 Kv
WIDTH	1000 mm	1000 mm
DEPTH	1050 mm	860 mm
HEIGHT	2100 mm	1735 mm

Air isolation

Drnring designed for use in medium voltage power distribution networks, Compatible with SF6 GAS and integrated into modular metal closed switching and control devices.

Switching equipment, tires and all other high-voltage conductors are resistant to corrosion, resistant to the effects of SF6 gas; chrome-nickel steel (stainless steel) is located inside the boiler. Sealed to atmosphere using hermetic pressure method.

▪Completely closed it is not affected by adverse environmental conditions, such as moisture, dust, pollution.

▪It does not require maintenance

▪Isolation and arc suppression are carried out in the gas environment Sf6

▪No SF6 gas additive required for at least 25 years

▪Is a finished product. Can be put into operation in a short time.

▪Resistant to internal background.

▪Operator safety is maximized by mechanical interlocks between switching devices and accessible sections suitable for remote monitoring and control.

Main types use:

▪Distribution networks

▪Compact type underground and above-earth low-medium voltage substations

▪Wind power plants

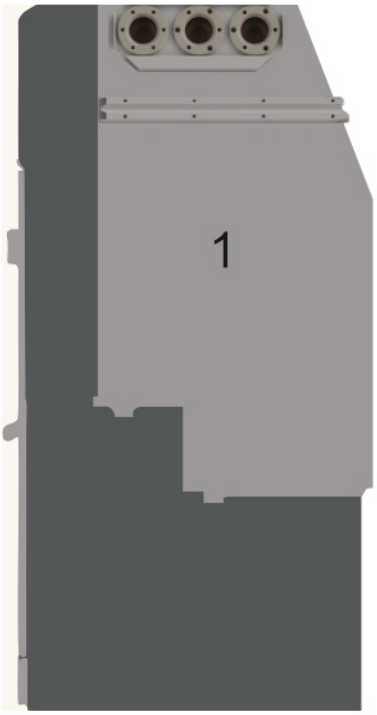
▪Small industrial facilities resorts, hotels, shopping centers.

▪Resorts hotels shopping centers

▪Business centers.

▪Industrial pollution zones.

▪Humidity, humidity and humidity of the lake, sea and streams.



Side view of an expandable compact unit

- Main busbar and switching equipment main section busbar switching, in which it is 1
- Medium voltage cable connections Cable connection 2
- High voltage fuse with low voltage fuses 3
- Operating mechanisms department of the mechanism 4
- Measuring equipment Low-voltage section 5

Compact RMU Expandable compact non-expandable compact, available in two types.

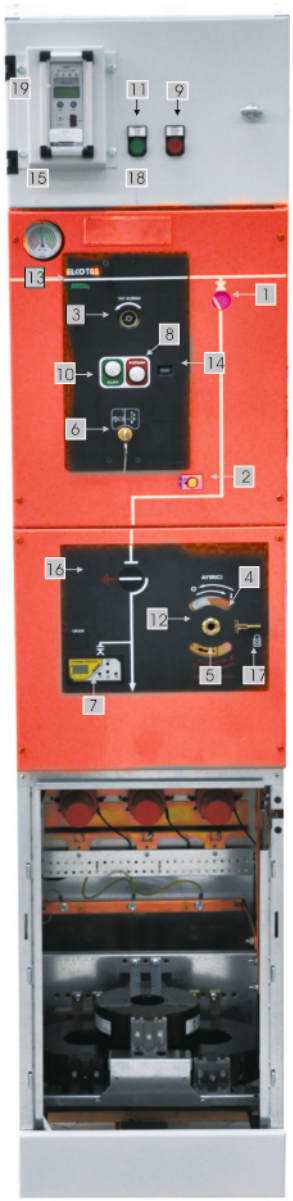
Expandable compact compact types at the time of ordering the expansion side.

- With the right expandable compact
- With the left expandable compact or
- expandable compact on both sides

It should be noted.

Marking
drnring 36: Non-expandable compact unit (for voltage level 36 kV)
drnring 36: Shows an expandable compact unit (for a voltage level of 36 kV).

NOTE: Standard production in compact types is a non-expandable “SSF” block. expandable types, main busbar connections on the expansion side. Closed with a stub for shipping.



Control and monitoring panel

1 Switch position indicator

2 Wired On / Off switch (UKAK)

3 Charging spring breakers Connector for pens

4 Operating separators Connector for pens

5 Soil knife lever control lever

6 Blocking switch

7 Voltage detection circuit indicator

8 Switch off button (mechanical)

9 Button to turn off the switch (electric)

10 On / off switch (mechanical)

11 Switch on / off switch (electric)

12 Joint operating handle for separator and soil knives

13 Spring board / spring idle position indicator

14 Mechanical counter

15 SF6 gas manometer

16 Separator position indicator

17 Scheme of padlock

18 Feeder marking stock for labels

19 Overcurrent relay

separator / ground separator control lever

spring switch setting lever

Optional equipment

- Painted side / sides
- Removable type detection circuit voltage (plug type)
- Remote cable opening and closing system (UKAK)
- Removable cable heads
- Contact and / or sealed gas pressure gauge SF6.

ATTENTION

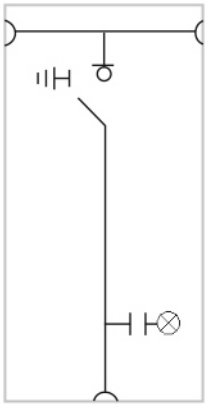
The diameters of the two pins on the separator / ground control lever differ from each other. The thick pin (1) is a common socket for a thin pin (2) for the disconnecting switch for the load and ground.

To maneuver the pins must simultaneously enter the slot. Do not force him if he does not enter.
Inverting please try again.

Types and sizes

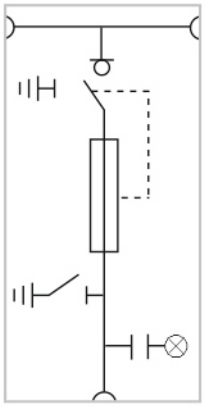
Appearance **Single-line diagram** **Sizes**

Input / output load switch disconnector (S)



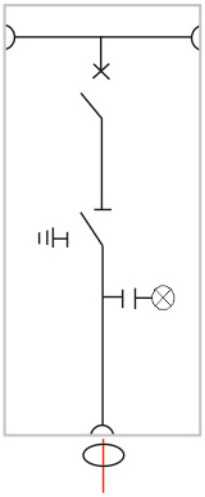
S	36 KV	24 KV
WIDTH	450 mm	400 mm
DEPTH	970 mm	860 mm
HEIGHT	1800 mm	1735 mm

Load connector + fuse box (F):



F	36 Kv	24 Kv
WIDTH	490 mm	450 mm
DEPTH	970 mm	860 mm
HEIGHT	1800 mm	1735 mm

Inlet / outlet vacuum switch (B):

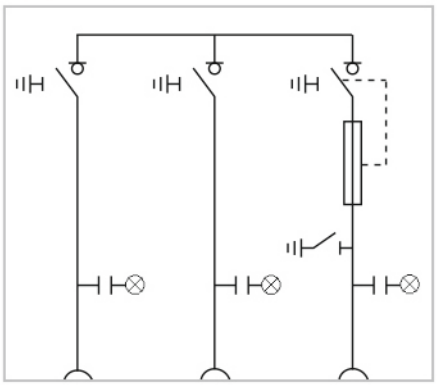


B	36 KB	24 KB
WIDTH	500 mm	500 mm
DEPTH	970 mm	860 mm
HEIGHT	1800 mm	1735 mm

Without control cabinet

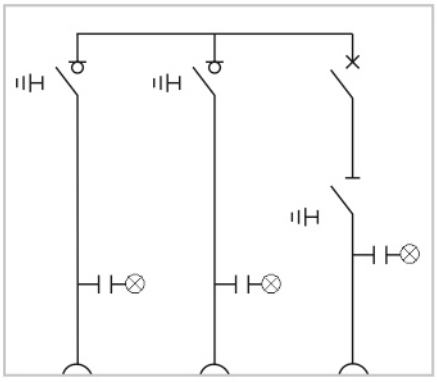
Appearance **Single-line diagram** **Sizes**

Non-Expandable Compact (Type: SSF)



SSF	36 Kv	24 Kv
WIDTH	1320 mm	1205 mm
DEPTH	970 mm	860 mm
HEIGHT	1800 mm	1735 mm

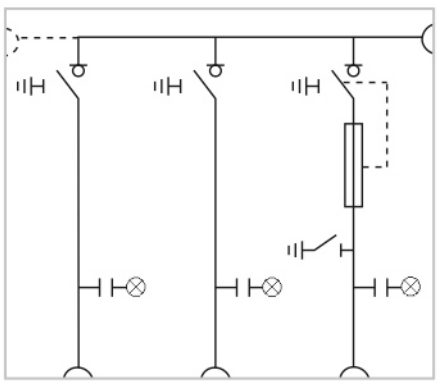
Non-Expandable Compact (Type: SSB)



SSB	36 KB	24 KB
WIDTH	1360 mm	1215 mm
DEPTH	970 mm	860 mm
HEIGHT	1800 mm	1735 mm

Without control cabinet

RIGHT / LEFT Expandable Compact

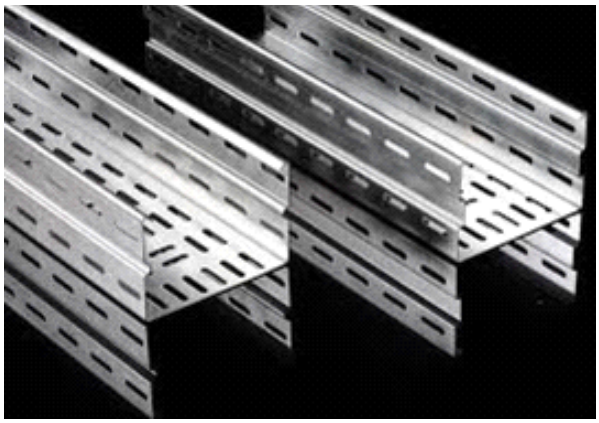


SSF	36 KB	24 KB
WIDTH	1350 mm	1205 mm
DEPTH	970 mm	860 mm
HEIGHT	1800 mm	1735 mm

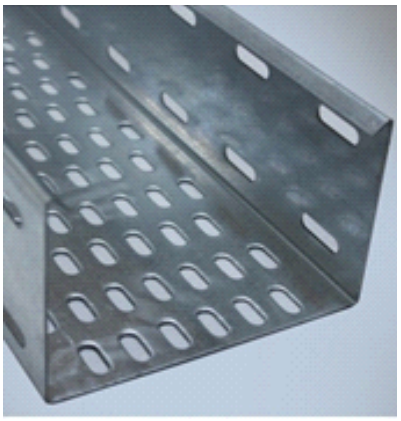
On both sides for extensible types and SSB, SSSF and SSFF types, please contact us.

Galvanized, hot dip method cable channels and accessories available in our production.
All kinds of special production is made.

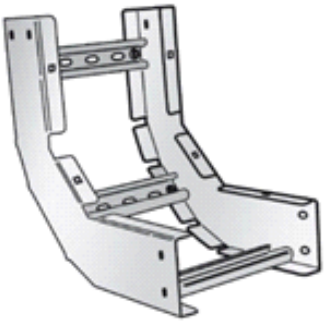
Cable tray normal type



Durable cable tray

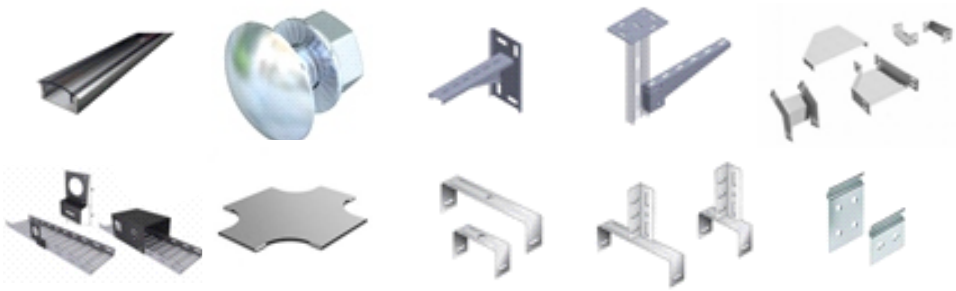


Cable ladder



Underground Cable Trays

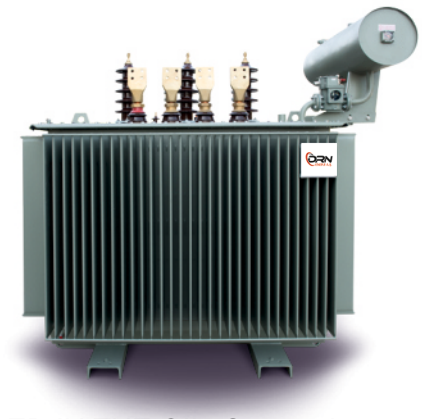
Fasteners for cable trays



Types of cable racks

DRN ENERJİ A.Ş.

Strong Team



IMMERSED IN THE OIL. System input up to 36 kV Distribution transformers 25-2500 KVA oil expansion ank and sealed power transformers.

DRN Energy, transformer production of three and single-phase, oil used both inside and at ambient temperatures up to 50 ° C. Designed for continuous operation (ambient temperature 40 ° C). Our product portfolio Power distribution transformers 25-2500 KVA those marked, Buck for oil expansion; It is produced in the form of hermetic type 250-2000 kVA. Power transformers with a rated capacity of up to 25,000 kVA under load or "RPN Control Panel" are within the scope of our production.

In addition, the following transformers and reactors are manufactured in special types or designs of our customers.

- *Sealed Transformers*
- *Plastic sleeve transformers*
- *Cable transformers*
- *Transformers -Oto*
- *Up to 15,000 KVA Furnace Transformers*
- *Staging transformers*
- *Rectifier current transformers*
- *Rotary transformers*
- *A series of reactors that limit the short circuit current,*
- *Shunt reactors*