

Technical data

VACUTAP® VM®, VM 300, VMS®. On-load tap-changer

2332907/06 EN



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1 Introduction

This technical file contains detailed information about the technical properties of the product. Basic information is given in the "Technical Data (TD 61) - General Section".

1.1 On-load tap-changer designations

Each type of on-load tap-changer is available in a number of models, offering a different number of phases, maximum rated through-current, highest voltage for equipment U_m , selector size and basic connection diagram. The designation of a particular on-load tap-changer model therefore depends on these features, hence ensuring an unmistakable and non-interchangeable on-load tap-changer designation.

1.1.1 Example of on-load tap-changer type designation

On-load tap-changer VACUTAP® VM III 650 Y-72,5 / C-10 19 1W R.

Type designation	VACUTAP® VM III 650 Y-72,5 / C-10 19 1W R
VACUTAP® VM®	On-load tap-changer type
III	Number of phases
650	Maximum rated through-current I_m in A and number of equipped sectors (last digit) for single-phase on-load tap-changers
Y	Use with neutral point
72.5	Highest voltage for equipment U_m (in kV)
C	Selector size
10 19 1W R	Basic connection

Table 1: Example of designation of on-load tap-changer

1.1.2 Number of positions and basic connection

The selector can be adapted to a large extent to the required number of positions and tap winding connection. The basic connections differ in terms of selector division, number of operating positions, number of mid-positions, change-over selector model and type of potential connection.

Example: 10 19 1 WR

Designation of basic connection	10 19 1 WR
10	Contact circle pitch of selector
19	Maximum number of operating positions
1	Number of mid-positions

Designation of basic connection	10 19 1 WR
W	Change-over selector model: W = reversing change-over selector G = coarse tap connection
R	Type of potential connection: R = attached tie-in resistors S = tie-in switches and tie-in resistors on board P = tie-in switches with attached tie-in resistors

Table 2: Example of designation of basic connection

1.2 On-load tap-changer models

You will find an overview of the on-load tap-changer models in the Type overview [▶ Section 4.1, Page 28] section.

1.3 Basic connections

Below you will find some examples of the on-load tap-changer's basic connections with designation of selector connection contacts in accordance with MR standard. You will find the connections that can actually be made in the section "Permitted voltage stresses".

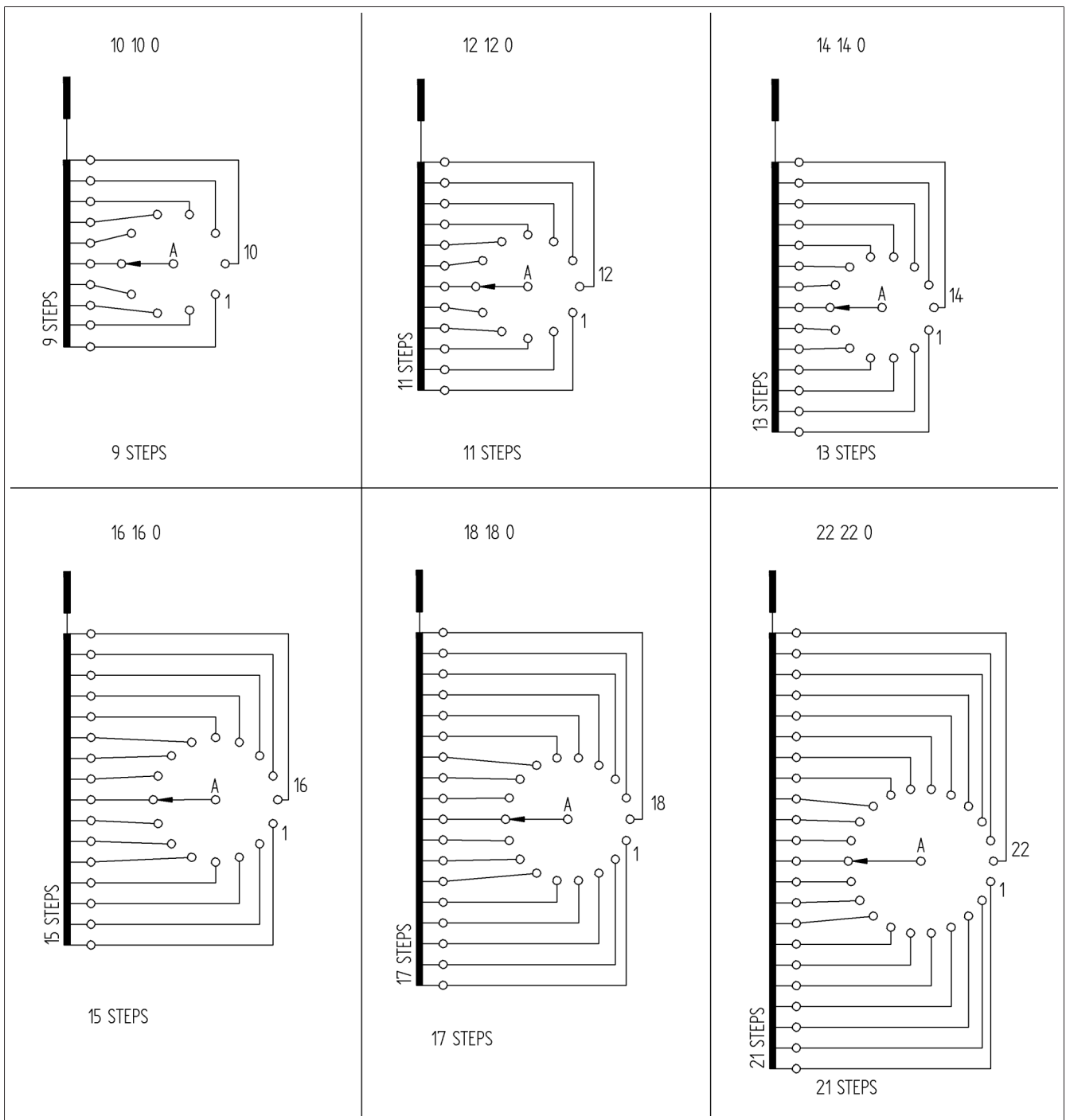


Figure 1: Basic connections without change-over selector, VACUTAP® VM® I II III and VACUTAP® VMS® III, selector size C

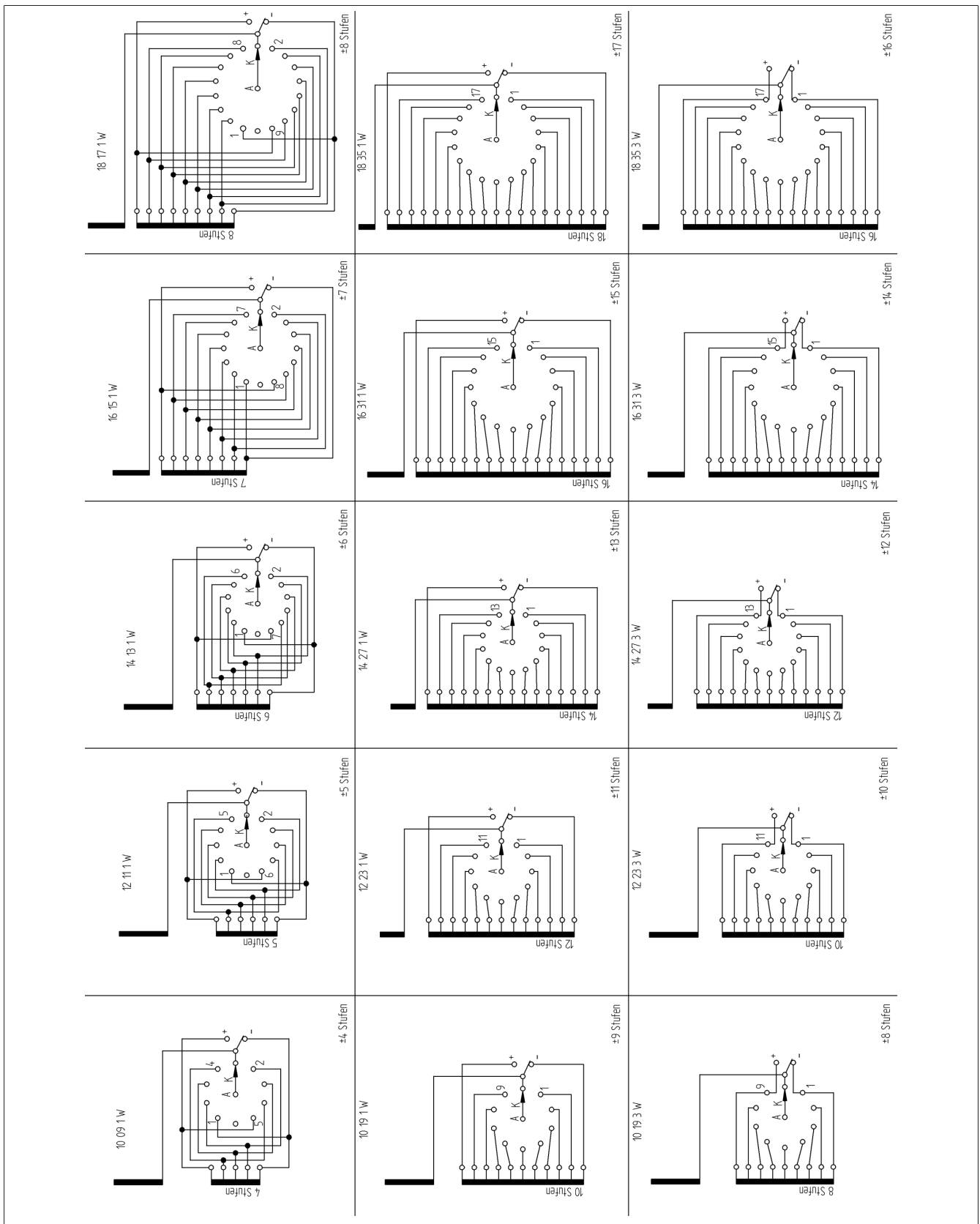


Figure 2: Basic connections for reversing change-over tap selector connection, VACUTAP® VM® I III and VACUTAP® VMS® III, selector size C

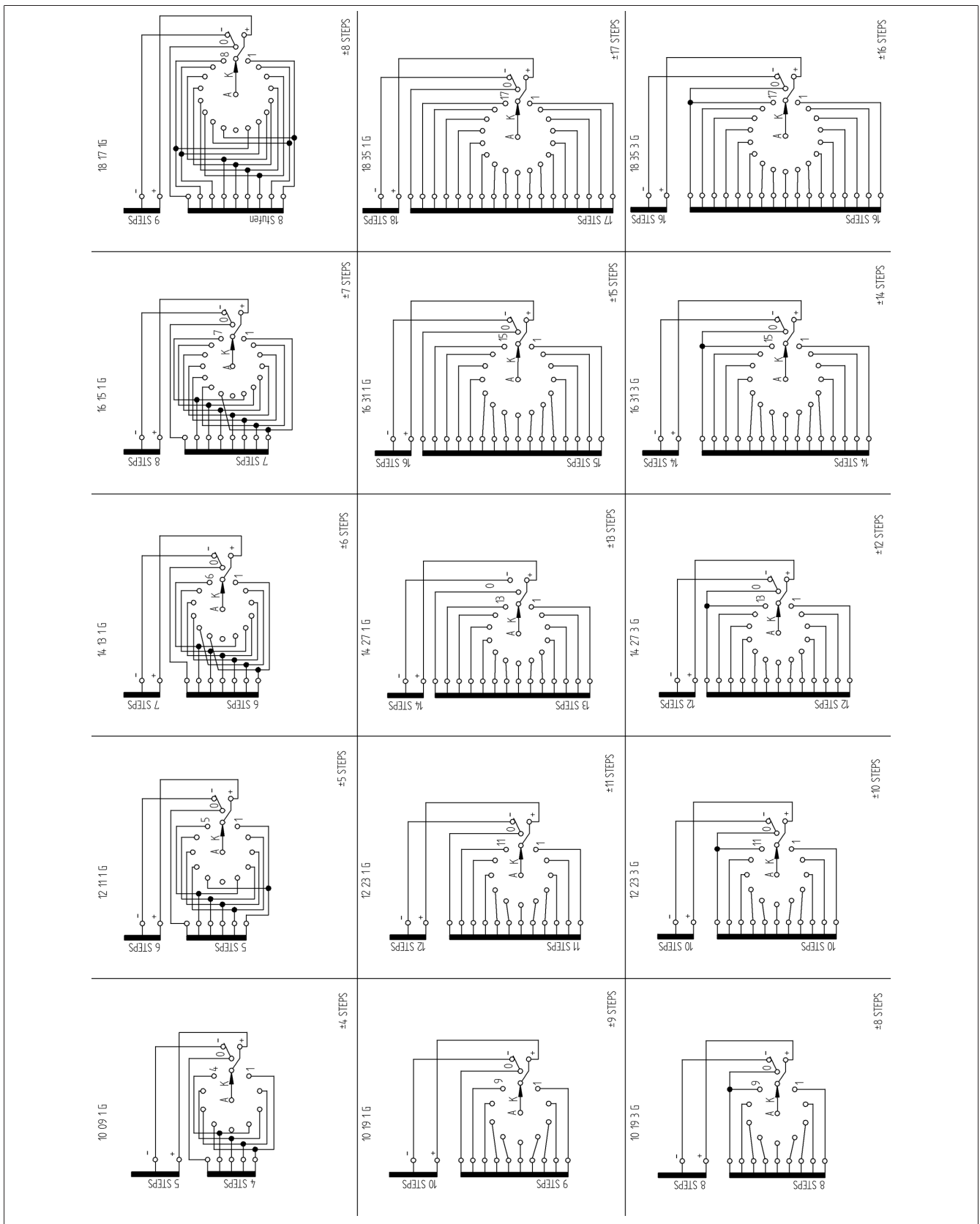


Figure 3: Basic connections for coarse tap selector connection, VACUTAP® VM® I III and VACUTAP® VMS® III, selector size C

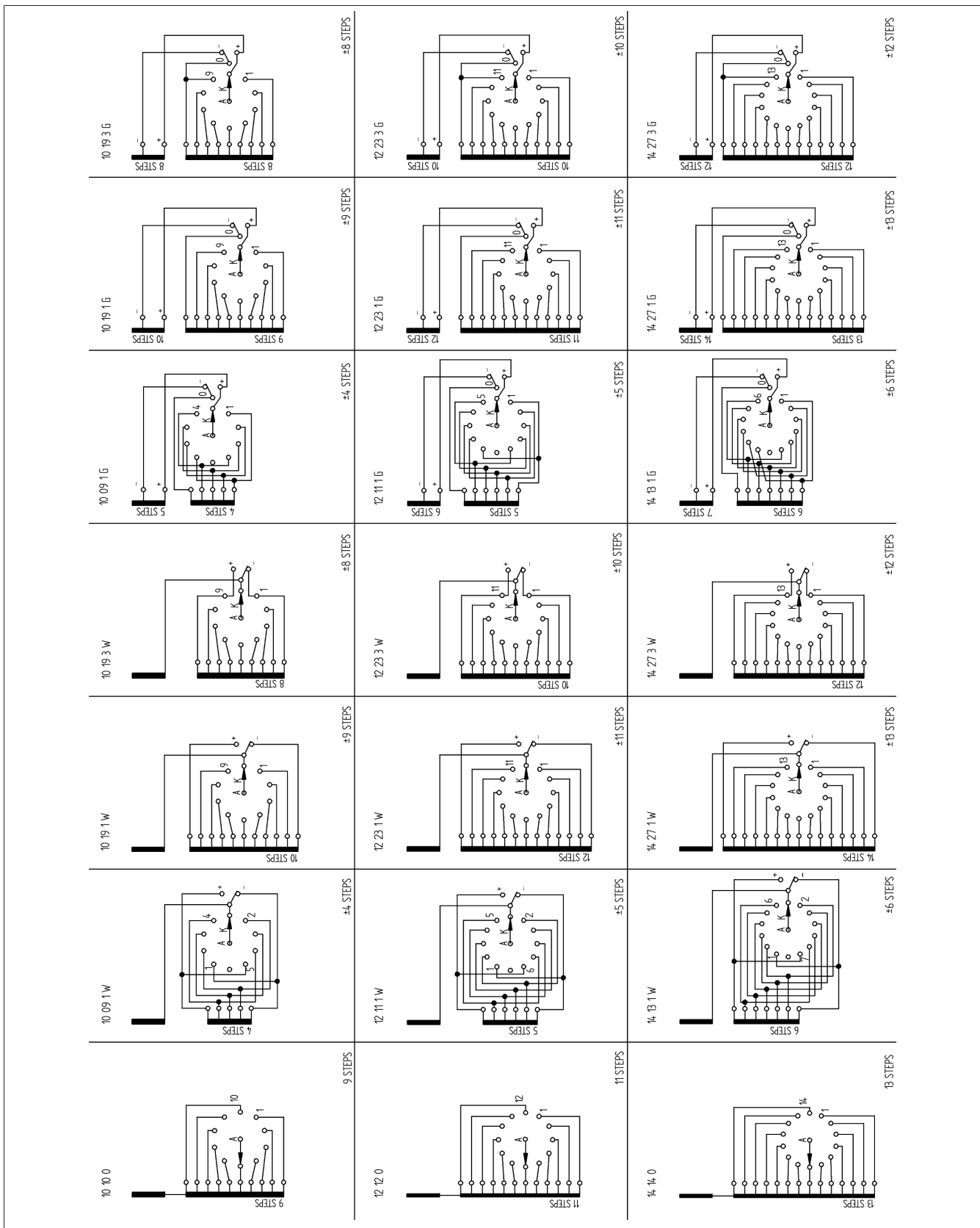


Figure 4: Basic connections, VACUTAP® VM 300 and VACUTAP® VMS® III, selector size B

2 Technical data

2.1 On-load tap-changer properties

Electrical data for VACUTAP® VM

On-load tap-changer	VM I 351	VM I 501	VM I 651	VM I 802	VM I 1002	VM I 1203	VM I 1503
Max. rated through-current I_{rm} [A]	350	500	650	800	1 000	1 200	1 500
Rated short-time current [kA]	4.2	5	6.5	8	10	12	15
Rated duration of short-circuits [s]	3						
Rated peak withstand current [kA]	10.5	12.5	16.25	20	25	30	37.5
Max. rated step voltage U_{irm} [V] ¹⁾	3 300						
Step capacity P_{stN} [kVA]	1 155	1 625	1 625	2 600	2 600	3 500	3 500
Rated frequency [Hz]	50...60						

Table 3: Electrical data for VACUTAP® VM I

On-load tap-changer	VM II 352	VM II 502	VM II 652
Max. rated through-current I_{rm} [A]	350	500	650
Rated short-time current [kA]	4.2	5	6.5
Rated duration of short-circuits [s]	3		
Rated peak withstand current [kA]	10.5	12.5	16.25
Max. rated step voltage U_{irm} [V] ¹⁾	3 300		
Step capacity P_{stN} [kVA]	1 155	1 625	1 625
Rated frequency [Hz]	50...60		

Table 4: Electrical data for VACUTAP® VM II

On-load tap-changer	VM III 350 Y	VM III 500 Y	VM III 650 Y
Max. rated through-current I_{rm} [A]	350	500	650
Rated short-time current [kA]	4.2	5	6.5
Rated duration of short-circuits [s]	3		
Rated peak withstand current [kA]	10.5	12.5	16.25
Max. rated step voltage U_{irm} [V] ¹⁾	3 300		
Step capacity (P_{stN}) [kVA]	1 155	1 625	1 625
Rated frequency [Hz]	50...60		

Table 5: Electrical data for VACUTAP® VM III

¹⁾ The maximum rated step voltage may be exceeded by 10% due to overexcitation of the transformer if the step capacity is limited to its rated value.

Electrical data for VACUTAP® VM 300

On-load tap-changer	VM I 301 / VM II 302 / VM III 300 Y
Max. rated through-current I_{rm} [A]	300
Rated short-time current [kA]	4
Rated duration of short-circuits [s]	3
Rated peak withstand current [kA]	10
Max. rated step voltage U_{irm} [V] ¹⁾	3 300
Step capacity P_{stN} [kVA]	990
Rated frequency [Hz]	50...60

Table 6: Electrical data for VACUTAP® VM 300

¹⁾ The maximum rated step voltage may be exceeded by 10% due to overexcitation of the transformer if the step capacity is limited to its rated value.

Electrical data for VACUTAP® VMS®

On-load tap-changer	VMS III 400 Y	VMS III 650 Y
Max. rated through-current I_{rm} [A]	400	650
Rated short-time current [kA]	4	6.5
Rated duration of short-circuits [s]	3	
Rated peak withstand current [kA]	10	16.25
Max. rated step voltage U_{irm} [V] ¹⁾	1 300	
Step capacity (P_{stN}) [kVA]	520	845
Rated frequency [Hz]	50...60	

Table 7: Electrical data for VACUTAP® VMS® III, selector size C

On-load tap-changer	VMS III 400 Y
Max. rated through-current I_{rm} [A]	400
Rated short-time current [kA]	4
Rated duration of short-circuits [s]	3
Rated peak withstand current [kA]	10
Max. rated step voltage U_{irm} [V] ¹⁾	1 300
Step capacity (P_{stN}) [kVA]	520
Rated frequency [Hz]	50...60

Table 8: Electrical data for VACUTAP® VMS® III, selector size B

¹⁾ The maximum rated step voltage may be exceeded by 10% due to overexcitation of the transformer if the step capacity is limited to its rated value.

Mechanical data for VACUTAP® VM

Number of operating positions	Without change-over selector: maximum 18 With change-over selector: maximum 35 With multiple coarse change-over selector: maximum 107
Number of equipped sectors	1...3
Selector sizes	B, C, D, DE (not with multiple coarse change-over selector)
Dimensions	See dimensional drawings
Weight	
Displacement and oil volume	

Table 9: Mechanical data for VACUTAP® VM I III III

Mechanical data for VACUTAP® VM 300

Number of operating positions	Without change-over selector: maximum 14 With change-over selector: maximum 27
Number of equipped sectors	1...3
Selector sizes	B
Dimensions	See dimensional drawings
Weight	
Displacement and oil volume	

Table 10: Mechanical data for VACUTAP® VM I 301 / VM II 302 / VM III 300 Y

Mechanical data for VACUTAP® VMS®

Number of operating positions	Without change-over selector: maximum 18 With change-over selector: maximum 35
Number of equipped sectors	3
Selector sizes	C
Dimensions	See dimensional drawings
Weight	
Displacement and oil volume	

Table 11: Mechanical data for VACUTAP® VMS® III, selector size C

Number of operating positions	Without change-over selector: maximum 14 With change-over selector: maximum 27
Number of equipped sectors	3
Selector sizes	B
Dimensions	See dimensional drawings
Weight	
Displacement and oil volume	

Table 12: Mechanical data for VACUTAP® VMS® III, selector size B

2.2 Permissible ambient conditions

Air temperature during operation	-25°C...+50°C
Temperature of the insulating fluid in operation	-25°C...+105°C (up to +115°C when the transformer is in emergency operation)
Transport temperature, storage temperature	-40°C...+50°C
Drying temperatures	See installation and commissioning instructions, "Mounting" chapter
Compressive strength	See technical data TD 61 – General section
Insulating fluid	<ul style="list-style-type: none"> – Unused insulating oils derived from petroleum products¹⁾ in accordance with IEC60296 and ASTM D3487 (equivalent standards on request) – Unused insulating oils derived from other virgin hydrocarbons in accordance with IEC60296, or blends of these oils with petroleum products¹⁾ in accordance with IEC60296, ASTM D3487 or equivalent standards on request – Alternative insulating fluids, such as natural and synthetic esters or silicone oils, on request. <p>¹⁾ Gas-to-liquid oils (GTL oils) are understood in this context as petroleum products</p>
Installation height of the oil conservator	See technical data TD 61 – General section
Installation height above sea level	See technical data TD 61 – General section

Table 13: Permissible ambient conditions

2.3 Step capacity diagrams

2.3.1 Step capacity diagram for network application for VACUTAP® VM and VM 300

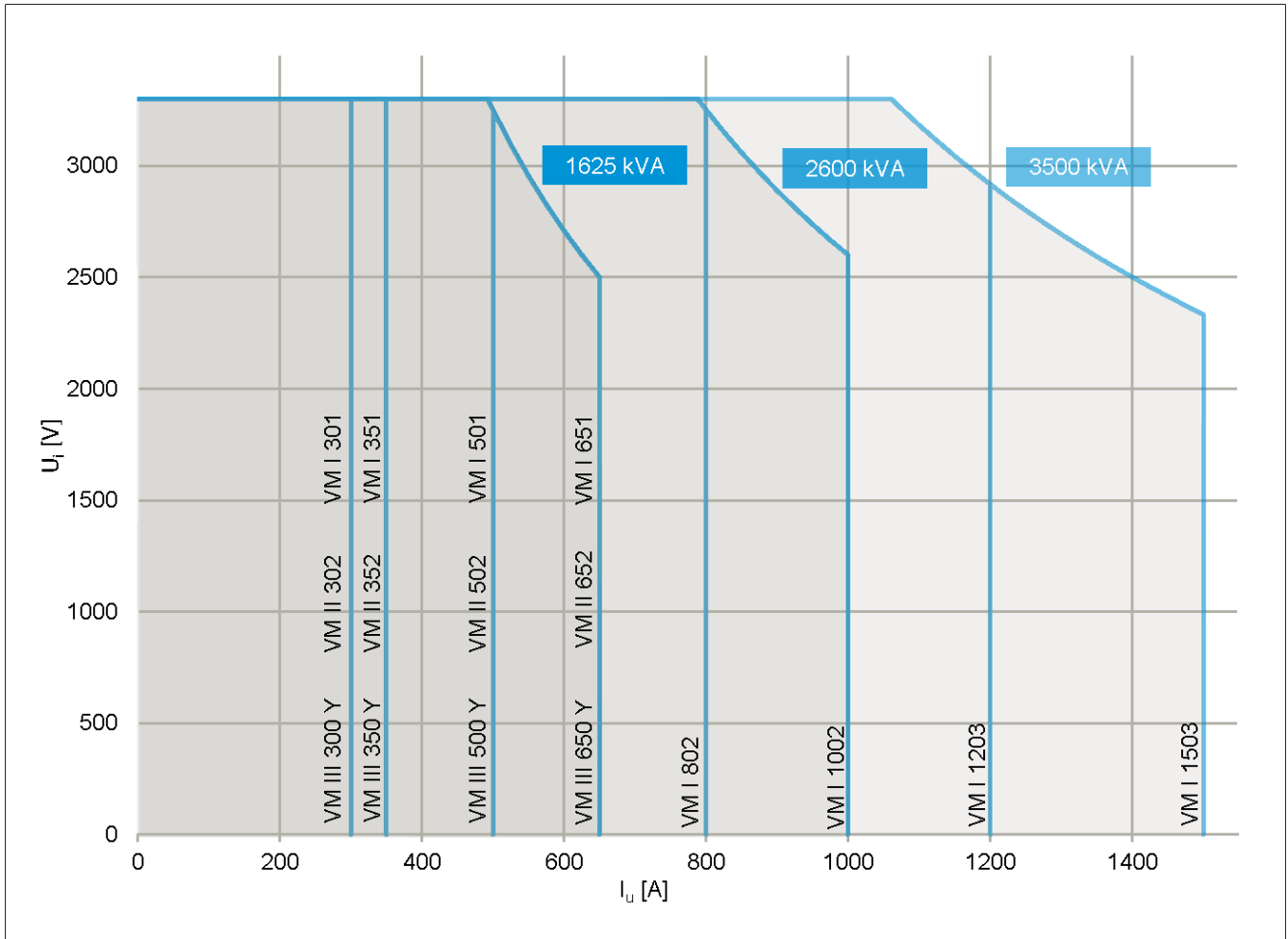


Figure 5: Step capacities (rated step voltage U_r with rated through-current I_r)

2.3.2 Step capacity diagram for electrical arc furnace operation for VACUTAP® VM® and VM 300

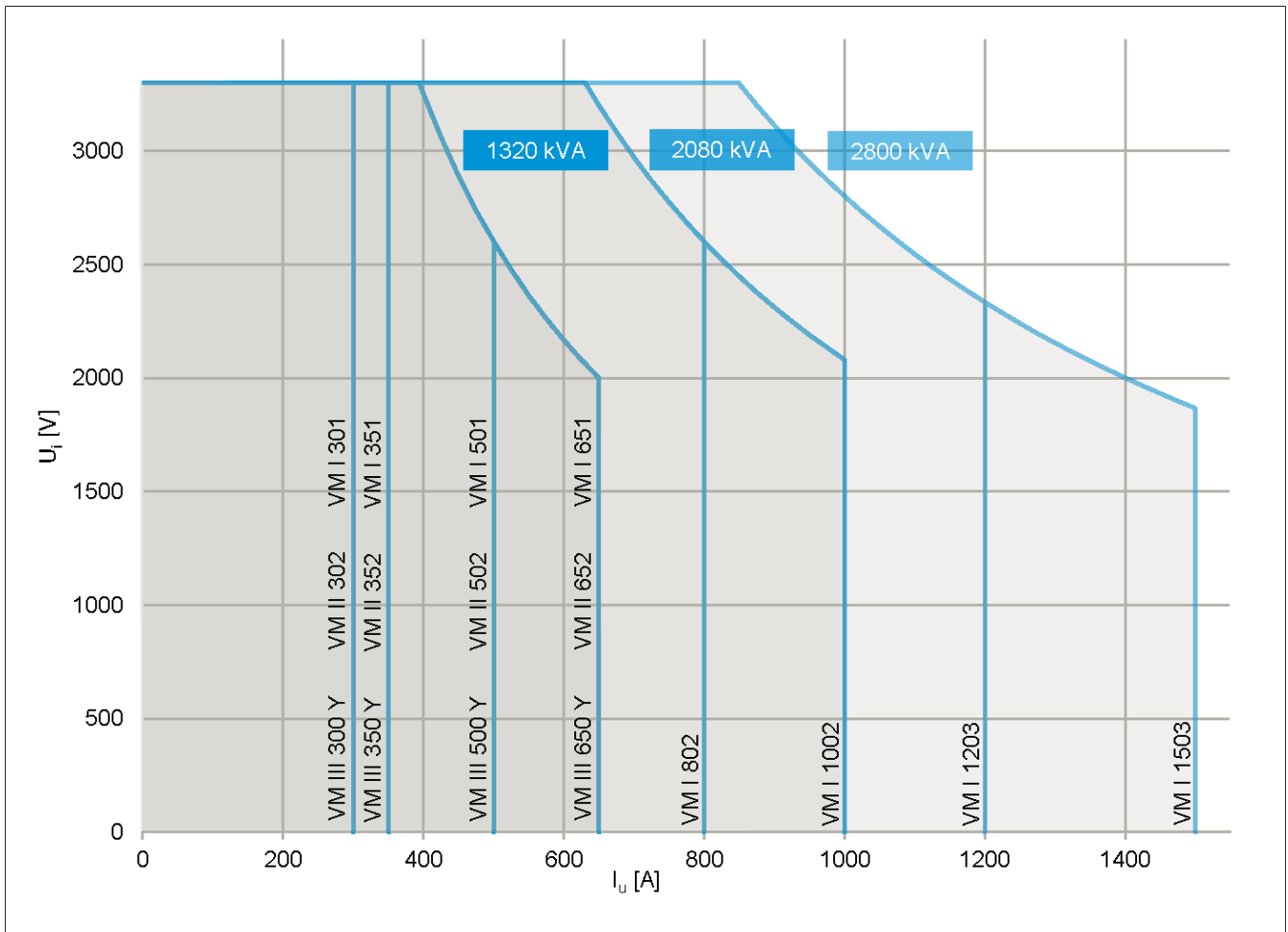


Figure 6: Step capacities (rated step voltage U_r , with rated through-current I_r)

2.3.3 Step capacity diagram for network application for VACUTAP® VMS III

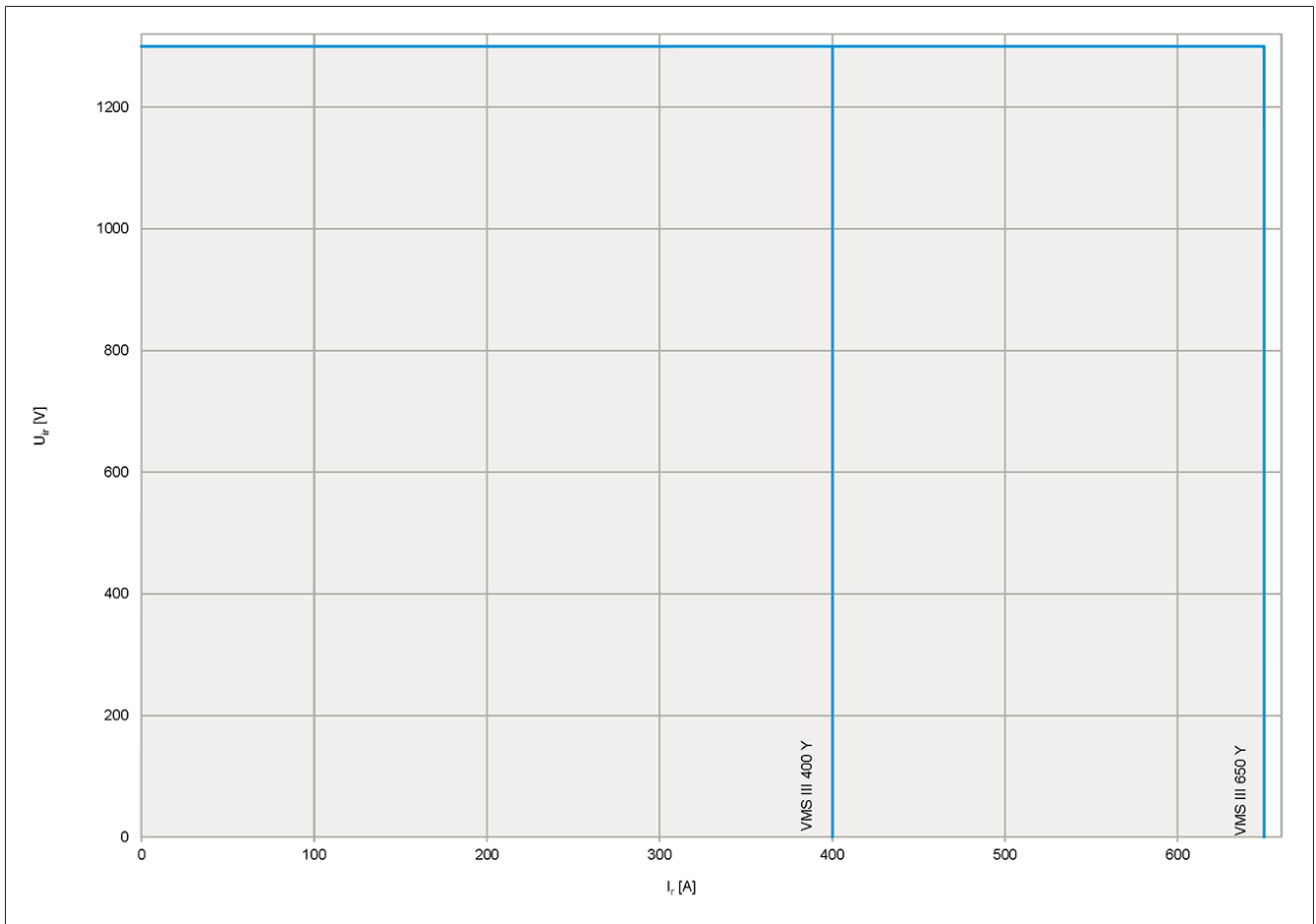


Figure 7: Step capacities (rated step voltage U_r with rated through-current I_r)

2.4 Permitted voltage stresses

This section describes the permitted voltage stresses on the on-load tap-changer.

When selecting the on-load tap-changer, you must check that the highest stresses do not exceed the related rated withstand voltages at the insulation distances.

2.4.1 Insulation distances without multiple coarse change-over selector

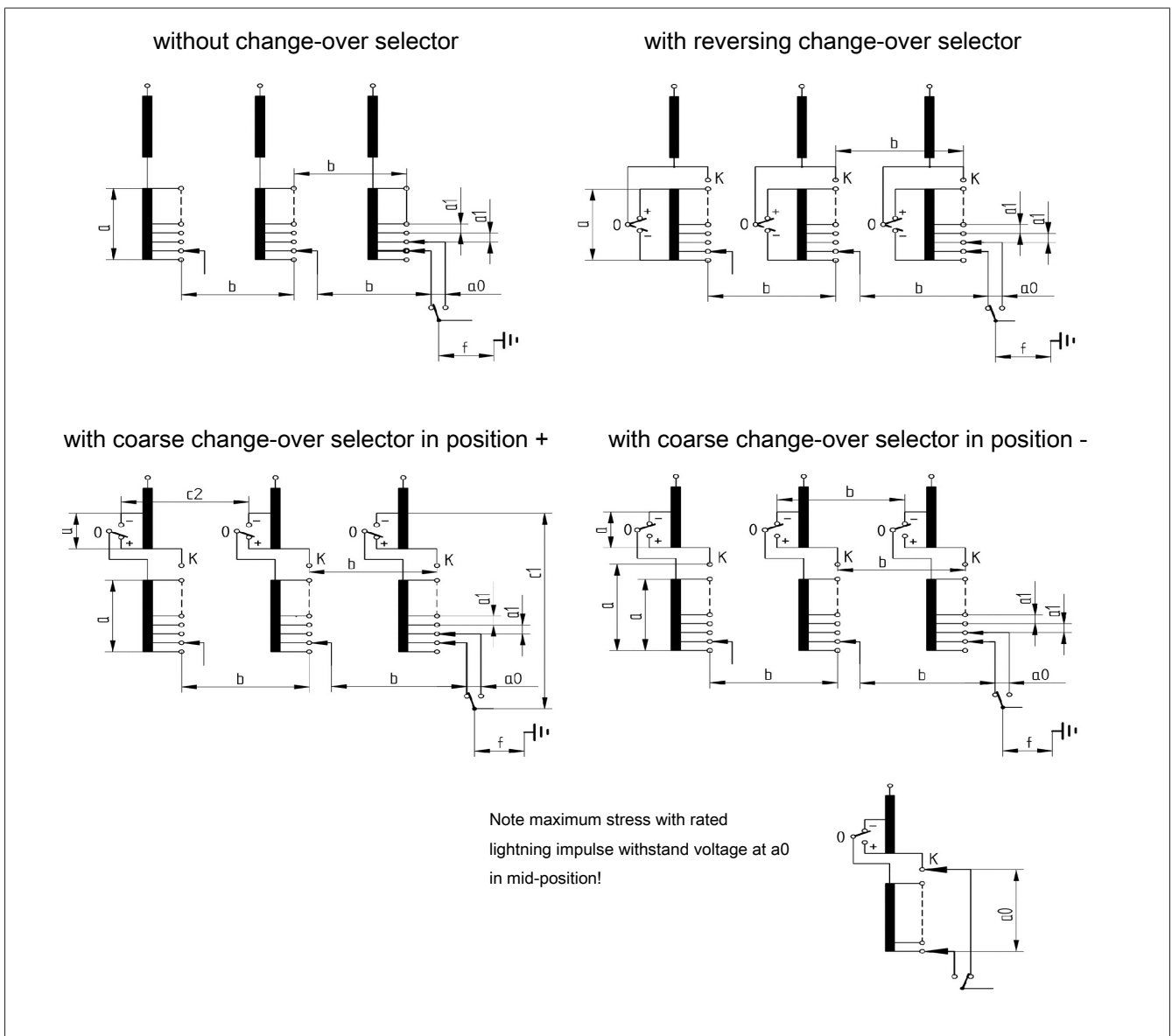


Figure 8: Insulation distances

a0	Between selected and preselected tap on the diverter switch
a1	Between tap selector contacts of the winding of one tap position (connected or not connected)
a	Between beginning and end of a tap winding and, for a coarse winding model, also between beginning and end of a coarse winding. Note for coarse tap selector connection in position (-) of the change-over selector: Especially when stressed with impulse voltage, the permissible withstand voltage "a" between the end of a coarse winding connected with the K tap selector contact and the tap selector contact at the end of the tap winding of the same phase must be adhered to.
b	between the tap selector contacts of different phases and between change-over selector contacts of different phases, which are connected with the beginning/end of a tap winding or with a tap selector contact
f	between diverter switch output terminal and ground
Additionally for coarse tap selector connection in position (+) of the change-over selector:	
c1	from one change-over selector contact (-) to take-off lead of the same phase
c2	between change-over selector contacts (-) of different phases

Abbreviations for the rated insulation level:

LI	Full wave lightning impulse (kV, 1.2/50 μ s)
LIC	Chopped wave lightning impulse (kV, 1.2/50/3 μ s)
SI	Switching impulse (kV, 250/2500 μ s)
AC	Applied voltage (kV, 50 Hz, 1 min)

Rated insulation level on diverter switch

Insulation distance f				
U_m ¹⁾	LI	LIC	SI	AC
72.5	350	385	-	140
123	550	605	460	230
170	750	825	620	325
245 ²⁾	1 050	1 155	850	460
300 ²⁾³⁾	1 050	1 155	850	460

Table 14: Rated insulation level on diverter switch

¹⁾ In accordance with IEC 60214-1: highest effective value for phase-to-phase voltage in a three-phase system for which an on-load tap-changer is designed with respect to its insulation.

²⁾ VACUTAP® VMS® only up to $U_m=170$ kV

³⁾ Only single-phase on-load tap-changers

Rated insulation level of the inner insulation on the selector,
VACUTAP® VM® I II III, selector sizes B, C, D, DE and
VACUTAP® VMS® III, selector size C, without multiple coarse change-
over selector

The admissible maximum operating voltage on the individual selector distances corresponds to half the value of the values listed below for applied voltage (AC).

Insulation distance		Selector size			
		B	C	D	EN
a0	LI	150 ²⁾			150 ²⁾
	LIC	165 ²⁾			165 ²⁾
	SI	100 ²⁾			100 ²⁾
	AC	20			20
a1	LI	150			150
	LIC	165			165
	SI	100			100
	AC	30			30
a	LI	265	350	490	550
	LIC	295	385	540	605
	SI	175	230	320	360
	AC	50	82	105	120
b1 ¹⁾	LI	265	350	490	550
	LIC	295	385	540	605
	SI	175	230	320	360
	AC	50	82	146	160
c1	LI	485	545	590	660
	LIC	535	600	650	725
	SI	315	355	385	430
	AC	143	178	208	230
c2 ¹⁾	LI	495	550	590	660
	LIC	545	605	650	725
	SI	325	360	385	430
	AC	150	182	225	250

Table 15: Rated insulation level of inner insulation on the selector

¹⁾ not applicable to single-phase on-load tap-changer

²⁾ varistor response voltage at 1.2/50 µs lightning impulse: starting at 45 kV
 $(U_{100\%}(t)_{\text{standardized}} \neq U_{75\%}(t)_{\text{standardized}})$, residual voltage at 3 kA peak withstand current: 56 kV

Rated insulation level of the inner insulation on the selector, VACUTAP® VM 300 and VACUTAP® VMS® III, selector size B, without multiple coarse change-over selector

The admissible maximum operating voltage on the individual selector distances corresponds to half the value of the values listed below for applied voltage (AC).

Insulation distance		Selector size B
a0	LI	150 ¹⁾
	LIC	165 ¹⁾
	SI	100 ¹⁾
	AC	20
a	LI	300
	LIC	330
	SI	195
	AC	70
b	LI	300
	LIC	330
	SI	195
	AC	70
c1	LI	400
	LIC	440
	SI	260
	AC	120
C2	LI	400
	LIC	440
	SI	260
	AC	120

Table 16: Rated insulation level of inner insulation on the selector

¹⁾ varistor response voltage at 1.2/50 µs lightning impulse: starting at 45 kV ($U_{100\%}(t)_{\text{standardized}} \neq U_{75\%}(t)_{\text{standardized}}$), residual voltage at 3 kA peak withstand current: 56 kV

2.4.2 Insulation distances with multiple coarse change-over selector

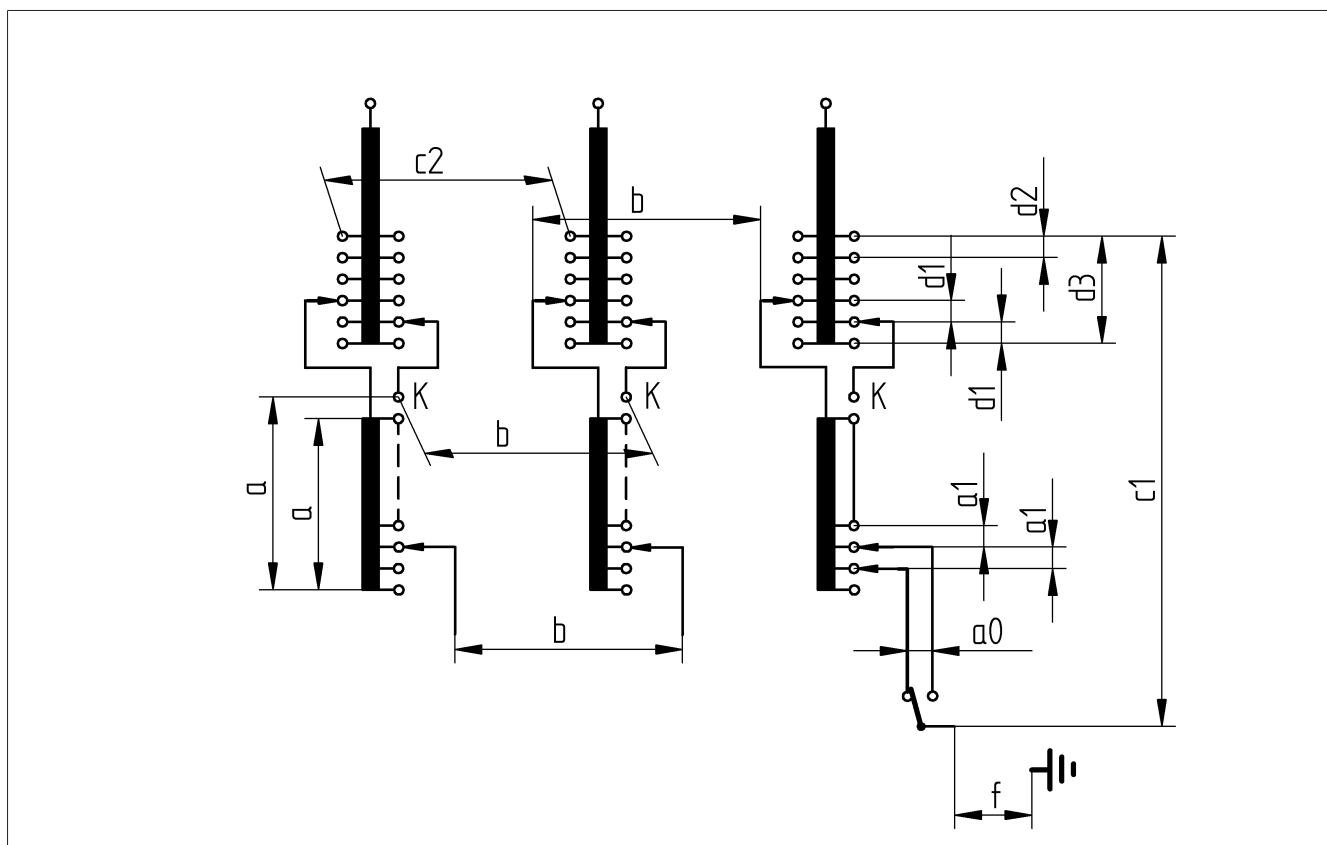


Figure 9: Insulation distances for VACUTAP® VM® I III, selector sizes B, C, D, with multiple coarse change-over selector

a0	Between selected and preselected tap on the diverter switch
a1	Between tap selector contacts of the winding of one tap position (connected or not connected)
a	between beginning and end of a tap winding and between the connected K contact and any points of the tap winding of the same phase
b	between the tap selector contacts of different phases and between the connected K contact of one phase and any points of the tap winding of another phase
c1	between any coarse tapplings of one phase to the diverter switch output terminal of the same phase
c2	between identically-named, unconnected coarse tapplings of different phases
d1	between connected and adjacent coarse tap contacts in one phase
d2	between unconnected, adjacent coarse tap contacts in one phase
d3	between beginning and end of all coarse tap connections of one phase
f	between diverter switch output terminal and ground

Insulation distance f see Rated insulation level on diverter switch.

Rated insulation level of the inner insulation on the selector with multiple coarse change-over selector, VACUTAP® VM® I II III, selector sizes B, C, D

The admissible maximum operating voltage on the individual selector distances corresponds to half the value of the values listed below for applied voltage (AC).

Insulation distance		Selector size		
		B	C	D
a0	LI	150 ²⁾		
	LIC	165 ²⁾		
	SI	100 ²⁾		
	AC	20		
a1	LI	150		
	LIC, SI	Values on request		
	AC	30		
a	LI	265	350	450
	LIC, SI	Values on request		
	AC	50	82	105
b ¹⁾	LI	265	350	450
	LIC, SI	Values on request		
	AC	50	82	146
c1	LI	455	525	590
	LIC, SI	Values on request		
	AC	127	165	210
c2 ¹⁾	LI	455	525	590
	LIC, SI	Values on request		
	AC	127	165	215
d1	LI	265	350	450
	LIC, SI	Values on request		
	AC	50	82	105
d2	LI	350	450	450
	LIC, SI	Values on request		
	AC	82	105	105
d3	LI	350	450	490
	LIC, SI	Values on request		
	AC	82	105	120

Table 17: Rated insulation level of inner insulation on the selector with multiple coarse change-over selector

¹⁾ not applicable to single-phase on-load tap-changer

²⁾ varistor response voltage at 1.2/50 µs lightning impulse: starting at 45 kV ($U_{100\%}(t)_{\text{standardized}} \neq U_{75\%}(t)_{\text{standardized}}$), residual voltage at 3 kA peak withstand current: 70 kV

2.4.3 Realizable connections

Realizable connections with associated selector sizes, VACUTAP® VM® I II III

The connections listed below can also be realized for change-over selectors with reversing change-over selectors and 3 mid-positions (3W) and for change-over selectors with coarse tap connection and 3 mid-positions (3G).

Without change-over selector		With reversing change-over selector		With coarse change-over selector	
Tap-change operation	Selector size	Tap-change operation	Selector size	Tap-change operation	Selector size
10050	B/C/D/DE	10071W	B/C/D/DE	10071G	B/C/D/DE
10060	B/C/D/DE	10081W	B/C/D/DE	10081G	B/C/D/DE
10070	B/C/D/DE	10091W	B/C/D/DE	10091G	B/C/D/DE
10080	B/C/D/DE	12101W	B/C/D/DE	12101G	B/C/D/DE
10090	B/C/D/DE	12111W	B/C	12111G	B/C
10100	B/C/D/DE	14111W	D/DE	14111G	D/DE
12110	B/C/D/DE	14121W	B/C	14121G	B/C
12120	B/C/D/DE	14131W	B/C	14131G	B/C
14130	B/C/D/DE	16121W	D/DE	16121G	D/DE
14140	B/C/D/DE	16131W	D/DE	16131G	D/DE
16150	B/C/D/DE	16141W	B/C/D/DE	16141G	B/C/D/DE
16160	B/C/D/DE	16151W	B/C	16151G	B/C
18170	B/C/D/DE	18151W	D/DE	18151G	D/DE
18180	B/C/D/DE	18161W	B/C	18161G	B/C
22190	B/C/D/DE	18171W	B/C	18171G	B/C
22200	B/C/D/DE	10191W	B/C/D/DE	10191G	B/C/D/DE
22210	B/C	12231W	B/C/D/DE	12231G	B/C/D/DE
22220	B/C	14271W	B/C/D/DE	14271G	B/C/D/DE
		16311W	B/C/D/DE	16311G	B/C/D/DE
		18351W	B/C/D/DE	18351G	B/C/D/DE

Table 18: Realizable connections for VACUTAP® VM® I II III

Realizable connections for VACUTAP® VMS® III, selector size C

The connections listed below can also be realized for change-over selectors with reversing change-over selectors and 3 mid-positions (3W) and for change-over selectors with coarse tap connection and 3 mid-positions (3G).

Connection without change-over selector	Connection with reversing change-over selector	Connection with coarse change-over selector
10050	10071W	10071G
10060	10081W	10081G
10070	10091W	10091G
10080	12101W	12101G
10090	12111W	12111G

Connection without change-over selector	Connection with reversing change-over selector	Connection with coarse change-over selector
10100	14121W	14121G
12110	14131W	14131G
12120	16141W	16141G
14130	16151W	16151G
14140	18161W	18161G
16150	18171W	18171G
16160	10191W	10191G
18170	12231W	12231G
18180	14271W	14271G
	16311W	16311G
	18351W	18351G

Table 19: Realizable connections for VACUTAP® VMS® III, selector size C

Realizable connections for VACUTAP® VM 300 and VACUTAP® VMS® III, selector size B

The connections identified with ¹⁾ can also be realized for change-over selectors with reversing change-over selectors and 3 mid-positions (3W) and for change-over selectors with coarse tap connection and 3 mid-positions (3G).

Connection without change-over selector	Connection with reversing change-over selector	Connection with coarse change-over selector
10100	10091W	10091G
12120	12111W	12111G
14140	14131W	14131G
	10191W ¹⁾	10191G ¹⁾
	12231W ¹⁾	12231G ¹⁾
	14271W ¹⁾	14271G ¹⁾

Table 20: Realizable connections for VACUTAP® VMS® III, selector size B

3 Special designs

3.1 Bridges for parallel connection of selector planes

For current division on the connection contacts of 2 selector planes only for on-load tap-changers VACUTAP® VM I 802/1002 and of 3 selector planes only for on-load tap-changers VACUTAP® VM I 1203/1503.

Bridges on the selector connection contacts are mandatory if the tap winding has been wound in two or more branches and each of these branch taps is connected to the contacts of the selector.

This measure reliably prevents the following:

- Introduction of equalizing currents into the current paths of selector and diverter switch
- Commutating arc on movable selector contact bridges
- Overvoltage between adjacent selector connection contacts connected in parallel

3.2 On-load tap-changer combination for delta connection

Single-phase on-load tap-changers can be combined with two-phase on-load tap-changers to set the voltage of transformer windings in a delta connection. This two-column on-load tap-changer combination is known as "VM III K" ("K" for the German "Kombination").

The following on-load tap-changer combinations are available:

- VM I 301 with VM II 302
- VM I 351 with VM II 352
- VM I 501 with VM II 502
- VM I 651 with VM II 652

You must provide the tap windings for this as shown below:

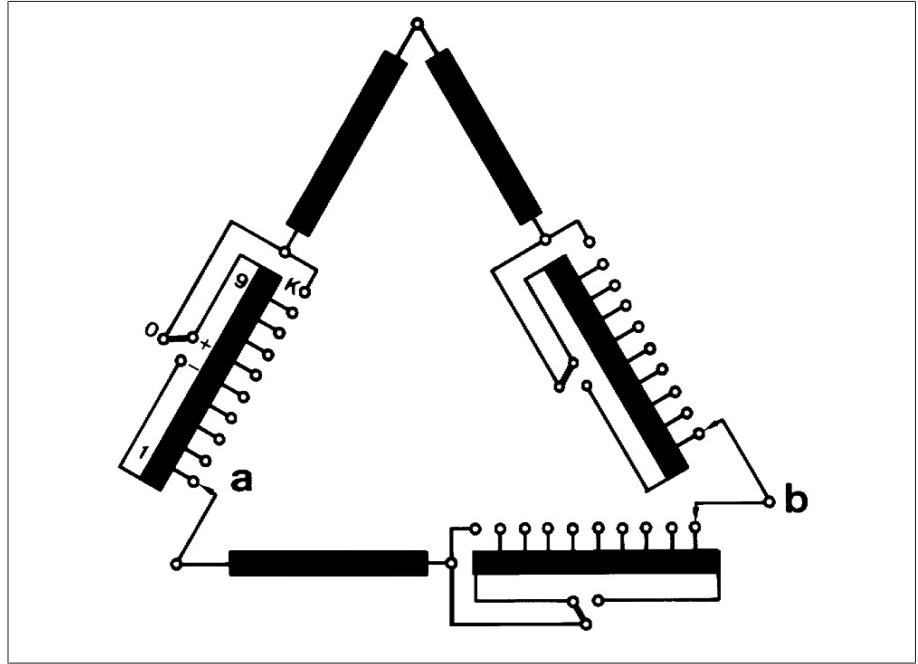


Figure 10: On-load tap-changer combination VM III K for delta connection VM I 351/VM II 352 (a = VM I 351, b = VM II 352)

3.3 On-load tap-changer VACUTAP® VM III 650 Y...VM I 1503 with multiple coarse change-over selector (up to maximum 5 coarse tap connections)

Extremely fine voltage setting requires a great number of operating positions which sometimes can only be achieved with a multiple coarse tapping arrangement.

For instance, 107 operating positions can be obtained by using a coarse 5-tap winding and a tapped winding with 18 taps.

The multiple coarse change-over selector is attached to both sides of the tap selector.

The on-load tap-changers are available for $U_m = 72.5$ up to max. 300 kV and for 2...5 coarse tap connections (selector sizes B, C and D).

3.4 Two-phase on-load tap-changer

VACUTAP® VM II 302/352/502/652

The on-load tap-changer VM II 302/352/502/652 can be supplied as a two-phase on-load tap-changer for single-phase centerpoint tap-change connections with the same technical data as on-load tap-changer VM III 300 Y, VM III 350 Y, VM III 500 Y oder VM III 650 Y.

3.5 On-load tap-changer for Y connection with open neutral point

If on-load tap-changers have an open neutral point, **only current transformers** may be connected to the open neutral point. Otherwise impermissible overvoltages arise at the neutral point.



Reactors must not be connected.

Connection of three oil vessel outputs (= open neutral point)	VACUTAP VM III 300/350/500/650 Y	
Current transformer connection and neutral point formation outside on-load tap-changer	A) Test voltages permitted between the oil vessel output contacts	
	- Rated lightning impulse withstand voltage	< 140 kV (1.2/50 µS) ¹⁾
	- Rated short-duration power frequency withstand voltage	1 kV (50 Hz, 1 min)
	B) Permissible maximum operating voltage between oil vessel output contacts	1 kV (50...60 Hz)
¹⁾ varistor response voltage at 1.2/50 µs lightning impulse: > 1.4 kV, residual voltage at 1000 A (8/20 µs) peak withstand current: < 3 kV, maximum permissible energy load of the varistor < 100 J		

Table 21: Permissible test voltages and operating voltages for VACUTAP® VM III 300/350/500/650 Y

4 Drawings

4.1 Type overview

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DATE	NAME	DOCUMENT NO.
DFTR. 13.07.2018	BUTERUS	SED 1663609 000 04
CHKD. 16.07.2018	WILHELM	SCALE
STAND. 16.07.2018	PRODASTSCHUK	CHANGE NO. 1086956

	WITHOUT CHANGE-OVER SELECTOR	WITH REVERSING CHANGE-OVER SELECTOR	WITH COARSE CHANGE-OVER SELECTOR	WITH MULTIPLE COARSE CHANGE-OVER SELECTOR (MG) ONLY SIZE B, C AND D	INSTALLATION LENGTH h IN MM																																												
M III 350 Y *) M III 500 Y *) M III 600 Y					<table border="1"> <thead> <tr> <th rowspan="2">U_m [kV]</th> <th colspan="4">SELECTOR SIZE</th> </tr> <tr> <th>B</th> <th>C</th> <th>D/DE</th> <th>D</th> </tr> </thead> <tbody> <tr> <td>72,5</td> <td>1894</td> <td>1856</td> <td>2069</td> <td>2031</td> <td>2524</td> <td>2486</td> </tr> <tr> <td>123</td> <td>2024</td> <td>1986</td> <td>2199</td> <td>2161</td> <td>2654</td> <td>2616</td> </tr> <tr> <td>170</td> <td>2154</td> <td>2116</td> <td>2329</td> <td>2291</td> <td>2784</td> <td>2746</td> </tr> <tr> <td>245</td> <td>2254</td> <td>2216</td> <td>2429</td> <td>2391</td> <td>2884</td> <td>2846</td> </tr> </tbody> </table>	U _m [kV]	SELECTOR SIZE				B	C	D/DE	D	72,5	1894	1856	2069	2031	2524	2486	123	2024	1986	2199	2161	2654	2616	170	2154	2116	2329	2291	2784	2746	245	2254	2216	2429	2391	2884	2846							
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*) NOT AVAILABLE AS MULTIPLE COARSE CHANGE-OVER SELECTOR (MG)

DIMENSION
IN mm
EXCEPT AS
NOTED



ON-LOAD TAP-CHANGER OILTAP® M / VACUTAP® VM®, VMS®-C
M-SELECTOR SIZE B/C/D/DE
SURVEY OF MODELS

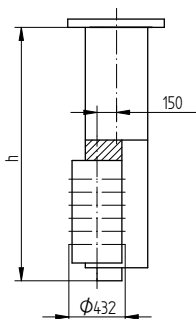
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MATERIAL NUMBER
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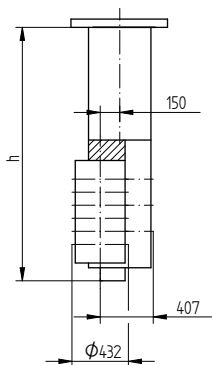
SHEET
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WITHOUT
CHANGE-OVER SELECTOR



WITH
CHANGE-OVER SELECTOR



INSTALLATION LENGTH h IN MM

VMS III 400 Y

U _m [kV]	SELECTOR SIZE B
72,5	1942
123	2072
170	2202

DATE	NAME	DOCUMENT NO.
11.07.2018	BUTERUS	SED 6185260 001 00
CHKD. 16.07.2018	WILHELM	CHANGE NO.
STAND. 16.07.2018	PRODASTSCHUK	1086956
		SCALE
		-

DIMENSION
IN mm
EXCEPT AS
NOTED



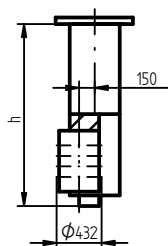
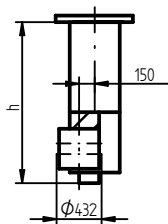
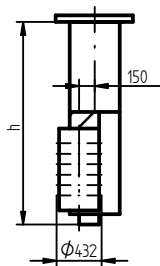
ON-LOAD TAP-CHANGER VACUTAP® VMS®
 SELECTOR SIZE B
 SURVEY OF MODELS

SERIAL NUMBER

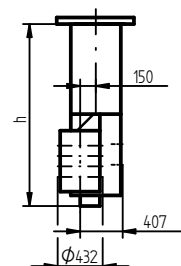
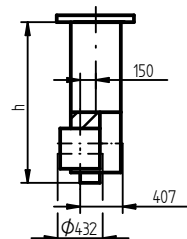
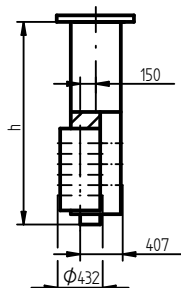
MATERIAL NUMBER	SHEET
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without
change-over selector



with
change-over selector



Installation length h in mm

VM III 300 Y

U _m [kV]	Selector size B
72,5	1942
123	2072
170	2202
245	2302

VM I 301

U _m [kV]	Selector size B
72,5	1542
123	1672
170	1802
245	1902

VM II 302

U _m [kV]	Selector size B
72,5	1742
123	1872
170	2002
245	2102

DATE	NAME	DOCUMENT NO.
22.01.2016	RAEDLINGER	SED 24:16819 001 01
25.02.2016	TKBIRKMANN	CHANGE NO.
25.02.2016	PRODASTSCHUK	1072100
		SCALE
		-

DIMENSION
IN mm
EXCEPT AS
NOTED



ON-LOAD TAP-CHANGER VACUTAP® VM 300
 SELECTOR SIZE B
 SURVEY OF MODELS

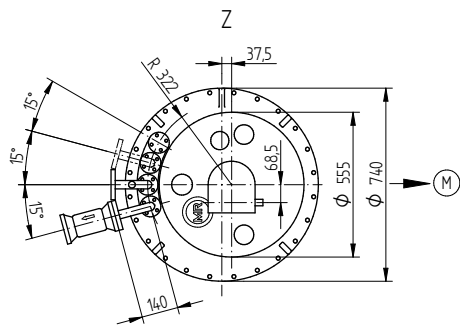
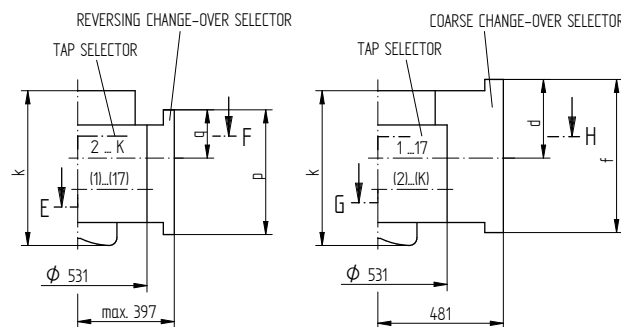
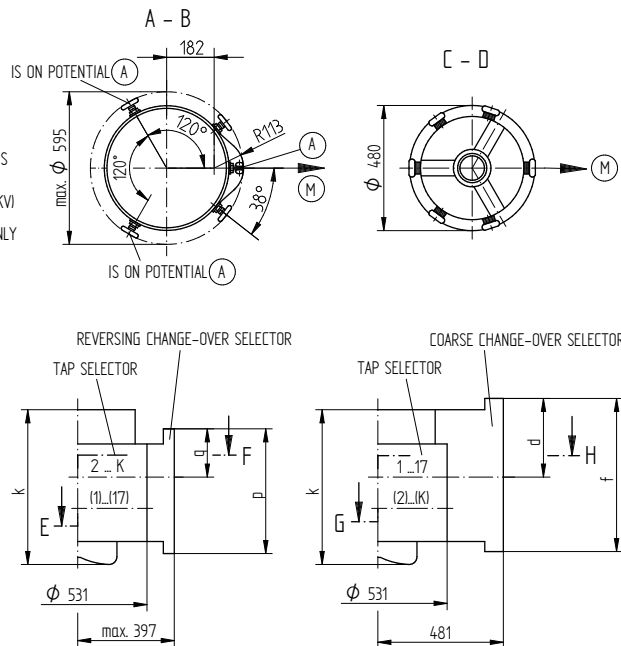
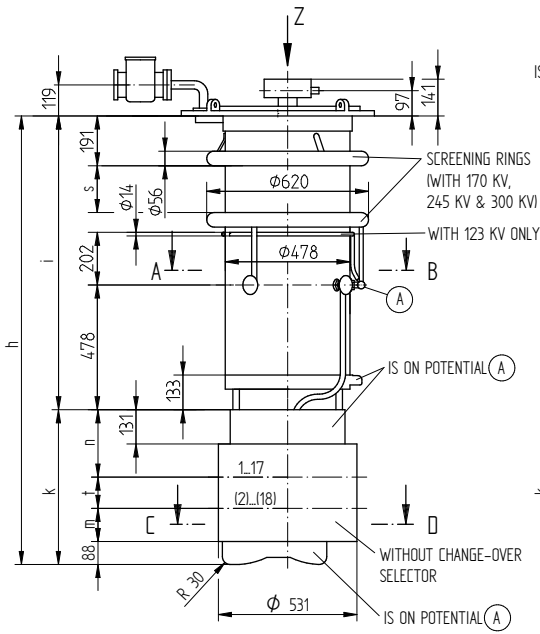
SERIAL NUMBER

MATERIAL NUMBER
7658351E

SHEET
1/1

4.2 Dimensional drawings

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E - F
REFER TO 723590

G - H
REFER TO 723590

FOR INHERENT DRAWINGS REFER TO 898012

- (A) ON-LOAD TAP-CHANGER TAKE-OFF LEAD
- (M) DRIVE SIDE OF SELECTOR

FOR BINDING DESIGNATIONS OF TERMINALS AND PHASES REFER TO THE CONNECTION DIAGRAM OF THE ON-LOAD TAP-CHANGER.

SELECTOR SIZE	B					C					D / DE					
	U _M [KV]	72,5	123	170	245	300	72,5	123	170	245	300	72,5	123	170	245	300
DIMENSIONS [MM]	h	1514	1644	1774	1874	2026	1589	1719	1849	1949	2101	1784	1914	2044	2144	2296
	i	996	1126	1256	1356	1508	996	1126	1256	1356	1508	996	1126	1256	1356	1508
	s	-	-	267	367	520	-	-	267	367	520	-	-	267	367	520
	k	518					593					788				
	n	233					258					323				
	m	102					127					192				
	t	95					120					185				
	q	160					185					250				
	p	403					478					673				
	d	276.5					301.5					366.5				
f	512					587					782					
OIL VOLUME [DM ³]	130	150	170	190	210	130	150	170	190	210	130	150	170	190	210	
DISPLACEMENT [DM ³]	193	218	238	258	278	193	218	238	258	278	195	220	240	260	280	
WEIGHT [KG]	280	285	290	295	300	290	295	300	305	310	300	305	310	315	320	

DATE	NAME	DOCUMENT NO.
18.12.2015	RAEDLINGER	SED 2312716 001 01
01.12.2015	TKBIRKMAN	CHANGE NO.
01.12.2015	PRODASTSCHUK	1069171
DFTR.	SCALE	1:10

DIMENSION IN mm EXCEPT AS NOTED



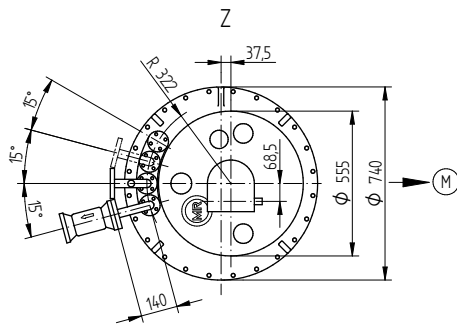
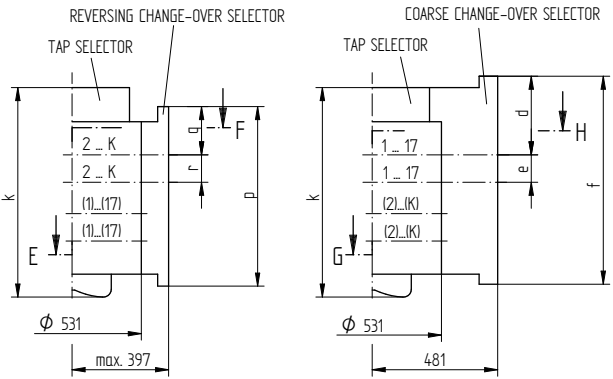
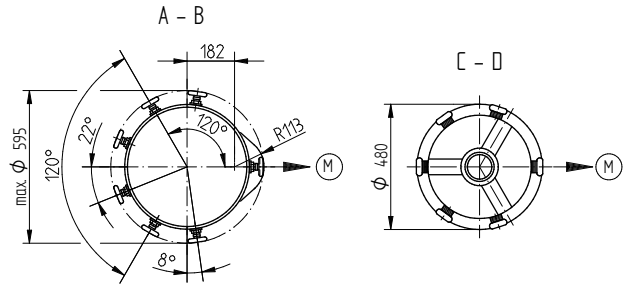
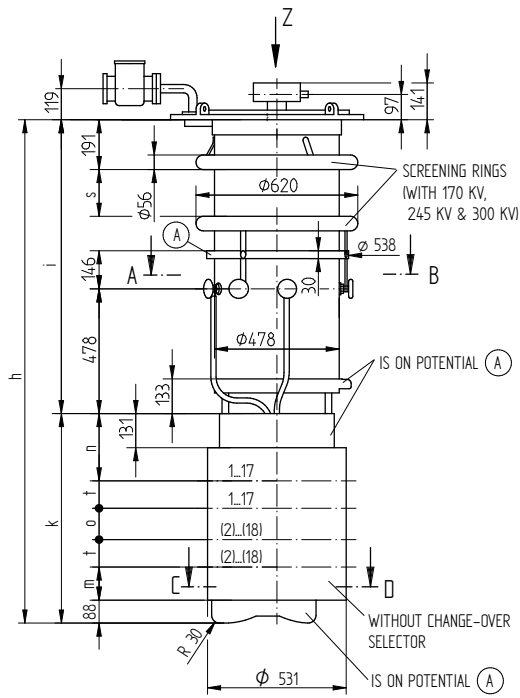
ON-LOAD TAP-CHANGER VACUTAP® VM
 VM I 351/501/651 - B/C/D/DE - 0/W/G
 DIMENSION DRAWING

SERIAL NUMBER

MATERIAL NUMBER
7462211E

SHEET
1/1

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E - F
REFER TO 723590

G - H
REFER TO 723590

FOR INHERENT DRAWINGS REFER TO 898012

- (A) ON-LOAD TAP-CHANGER TAKE-OFF TERMINAL
- (M) DRIVE SIDE OF SELECTOR

FOR BINDING DESIGNATIONS OF TERMINALS AND PHASES REFER TO THE CONNECTION DIAGRAM OF THE ON-LOAD TAP-CHANGER.

SELECTOR SIZE	B					C					D / DE				
U_m [KV]	72,5	123	170	245	300	72,5	123	170	245	300	72,5	123	170	245	300
h	1724	1854	1984	2084	2236	1799	1929	2059	2159	2311	1994	2124	2254	2354	2506
i	996	1126	1256	1356	1508	996	1126	1256	1356	1508	996	1126	1256	1356	1508
s	-	-	267	367	520	-	-	267	367	520	-	-	267	367	520
k	728					803					998				
n	233					258					323				
o	95					120					185				
m	102					127					192				
t	105					105					105				
r	105					105					105				
q	160					185					250				
p	613					688					883				
e	105					105					105				
d	276,5					301,5					366,5				
f	722					797					992				
OIL VOLUME [DM ³]	130	150	170	190	210	130	150	170	190	210	130	150	170	190	210
DISPLACEMENT [DM ³]	196	221	241	261	281	196	221	241	261	281	199	224	244	264	284
WEIGHT [KG]	310	315	320	325	330	320	325	330	335	340	330	335	340	345	350

DATE	NAME	DOCUMENT NO.
18.12.2015	RAEDLINGER	SED 2312691 001 02
01.12.2015	TKBIRKMAN	CHANGE NO.
01.12.2015	PRODASTSCHUK	1069171
		SCALE
		1:10

DIMENSION IN mm EXCEPT AS NOTED



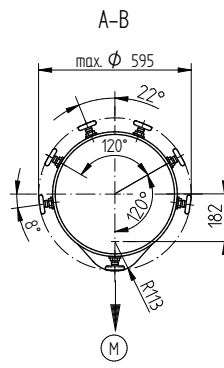
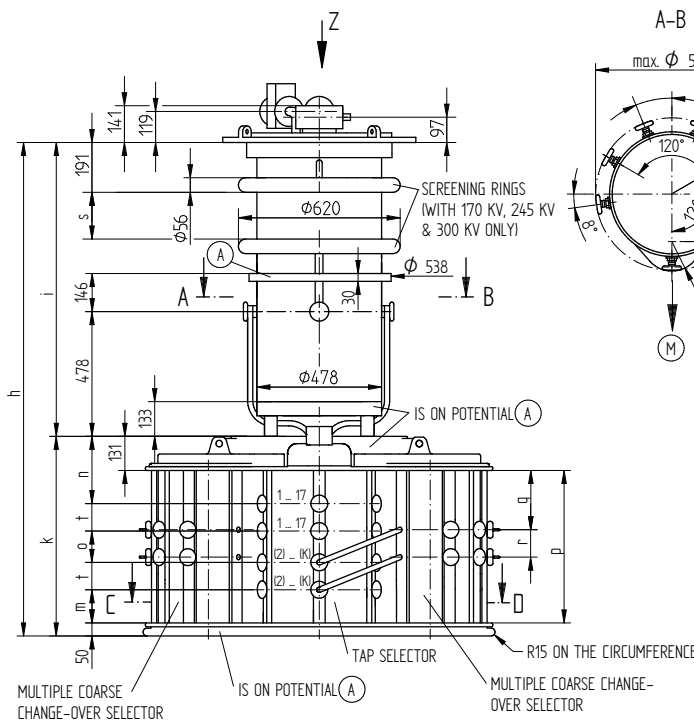
ON-LOAD TAP-CHANGER VACUTAP® VM
 VM I 802/1002 - B/C/D/DE - O/W/G
 DIMENSION DRAWING

SERIAL NUMBER

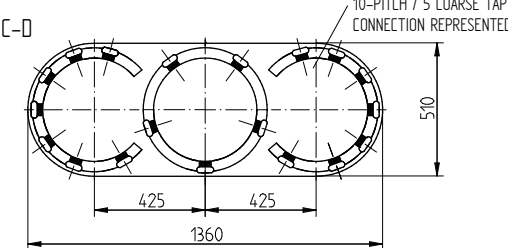
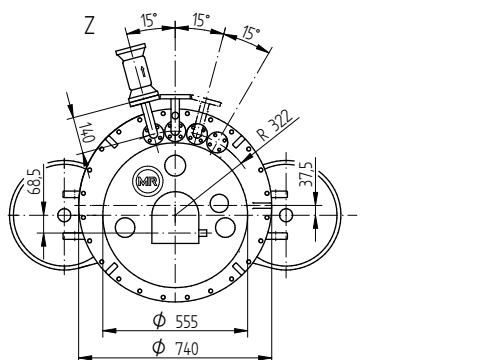
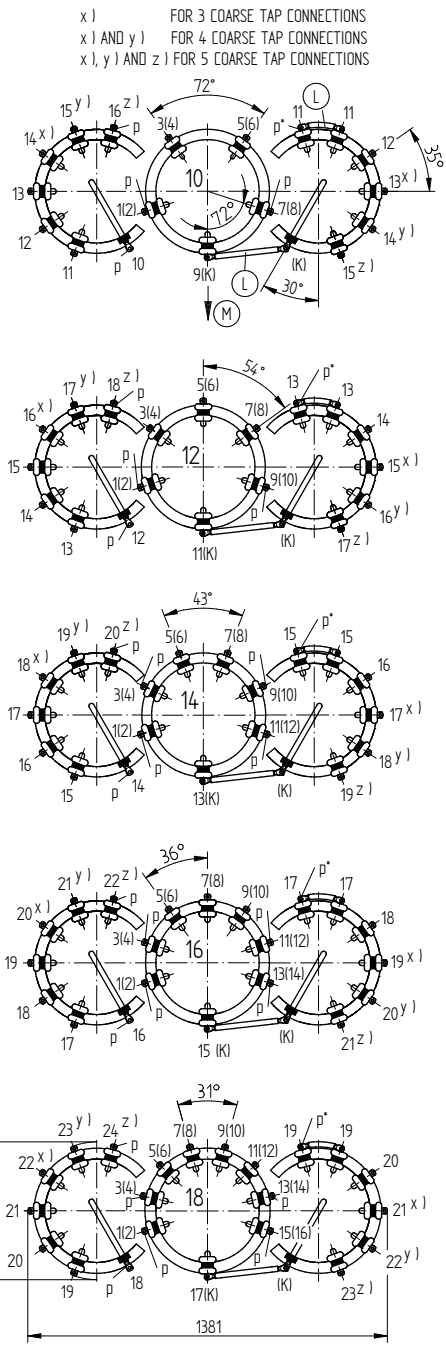
MATERIAL NUMBER
7462222E

SHEET
1/1

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ARRANGEMENT OF SELECTOR CONTACTS, 2-5 COARSE TAP CONNECTIONS (PLAN VIEW)



DOCUMENT NO.	SED 23/15/141 001 02		SCALE	1:10
NAME	RAEDLINGER	TKBIRKMAN	CHANGE NO.	1069171
DATE	18.12.2015	01.12.2015	01.12.2015	
DFTR.				
CHKD.				
STAND.				

p = CONNECTION MIN. 3 MM PAPER INSULATED
 p' = CONNECTION ALREADY 3 MM PAPER INSULATED BY MR

FOR BINDING DESIGNATIONS OF TERMINALS AND PHASES REFER TO THE CONNECTION DIAGRAM OF THE ON-LOAD TAP-CHANGER.

- (A) ON-LOAD TAP-CHANGER TAKE-OFF TERMINAL
- (L) CONNECTING LEAD
- (M) DRIVE SIDE OF SELECTOR

SELECTOR SIZE	B					C					D					
U_M [KV]	72,5	123	170	245	300	72,5	123	170	245	300	72,5	123	170	245	300	
DIMENSIONS [MM]	h	1686	1816	1946	2046	2198	1761	1891	2021	2121	2273	1956	2086	2216	2316	2468
	i	996	1126	1256	1356	1508	996	1126	1256	1356	1508	996	1126	1256	1356	1508
	s	-	-	267	367	520	-	-	267	367	520	-	-	267	367	520
	k	-	-	690	-	-	-	-	765	-	-	-	-	960	-	-
	n	-	-	233	-	-	-	-	258	-	-	-	-	323	-	-
	o	-	-	95	-	-	-	-	120	-	-	-	-	185	-	-
	m	-	-	102	-	-	-	-	127	-	-	-	-	192	-	-
	t	-	-	105	-	-	-	-	105	-	-	-	-	105	-	-
	r	-	-	105	-	-	-	-	105	-	-	-	-	105	-	-
	q	-	-	189,5	-	-	-	-	227	-	-	-	-	324,5	-	-
	p	-	-	509	-	-	-	-	584	-	-	-	-	779	-	-
	OIL VOLUME [DM ³]	130	150	170	190	210	130	150	170	190	210	130	150	170	190	210
DISPLACEMENT [DM ³]	200	225	245	265	285	200	225	245	265	285	200	225	245	273	293	
WEIGHT [KG]	410	415	420	425	430	420	425	430	435	440	430	435	440	445	450	

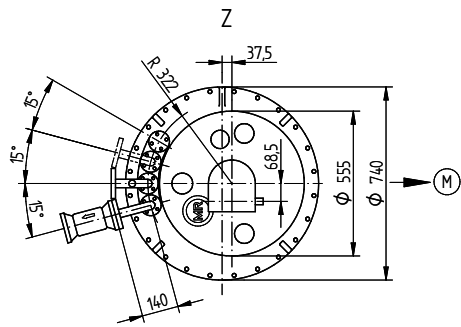
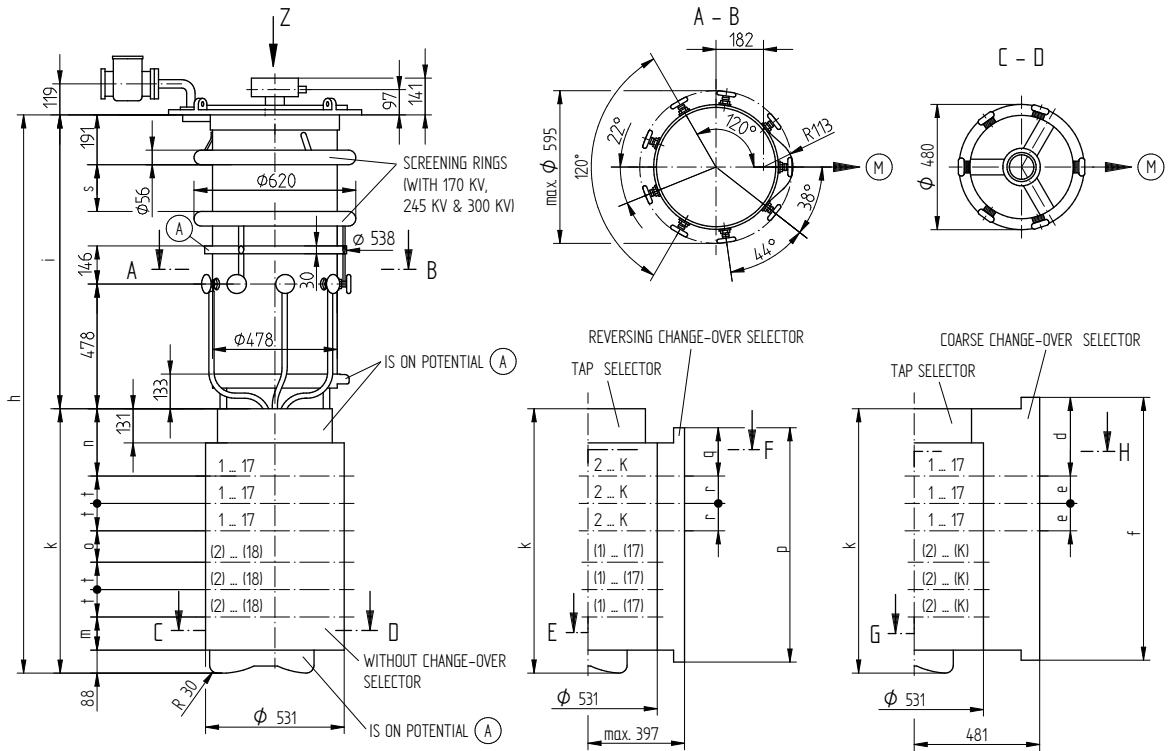
DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VM
 VM I 802/1002 - B/C/D WITH MULTIPLE COARSE C.-O. SELECTOR
 DIMENSION DRAWING

SERIAL NUMBER	
MATERIAL NUMBER	SHEET
7462282E	1/1

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E - F
 REFER TO 723590

G - H
 REFER TO 723590

FOR INHERENT DRAWINGS REFER TO 898012

- (A) ON-LOAD TAP-CHANGER TAKE-OFF TERMINAL
- (M) DRIVE SIDE OF SELECTOR

FOR BINDING DESIGNATIONS OF TERMINALS AND PHASES REFER TO THE CONNECTION DIAGRAM OF THE ON-LOAD TAP-CHANGER.

SELECTOR SIZE	B					C					D/DE					
	72,5	123	170	245	300	72,5	123	170	245	300	72,5	123	170	245	300	
U_m [KV]	72,5	123	170	245	300	72,5	123	170	245	300	72,5	123	170	245	300	
DIMENSIONS [MM]	h	1934	2064	2194	2294	2446	2009	2139	2269	2369	2521	2204	2334	2464	2564	2716
	i	996	1126	1256	1356	1508	996	1126	1256	1356	1508	996	1126	1256	1356	1508
	s	-	267	367	367	520	-	267	367	367	520	-	267	367	367	520
	k		938						1013					1208		
	n		233						258					323		
	o		95						120					185		
	m		102						127					192		
	t		105						105					105		
	r		105						105					105		
	q		160						185					250		
	p		823						898					1093		
	e		105						105					105		
	d		276.5						301.5					366.5		
f		932						1007					1202			
OIL VOLUME [DM ³]	130	150	170	190	210	130	150	170	190	210	130	150	170	190	210	
DISPLACEMENT [DM ³]	200	225	245	265	285	200	225	245	265	285	204	229	249	269	289	
WEIGHT [KG]	350	355	360	365	370	360	365	370	375	380	375	380	385	390	395	

DATE	NAME	DOCUMENT NO.
18.11.2015	RAEDLINGER	SED 2313229 001 01
01.12.2015	TKBIRKMAN	CHANGE NO.
01.12.2015	PRODASTSCHUK	1069171
		SCALE
		1:10

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VM
 VM I 1203/1503 - B/C/D/DE - O/W/G
 DIMENSION DRAWING

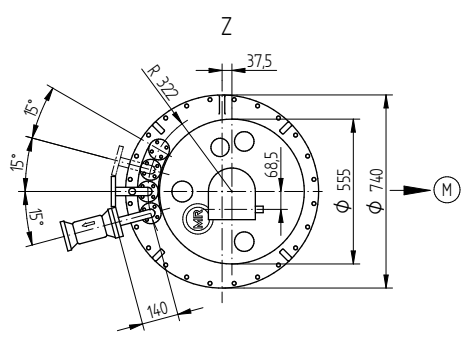
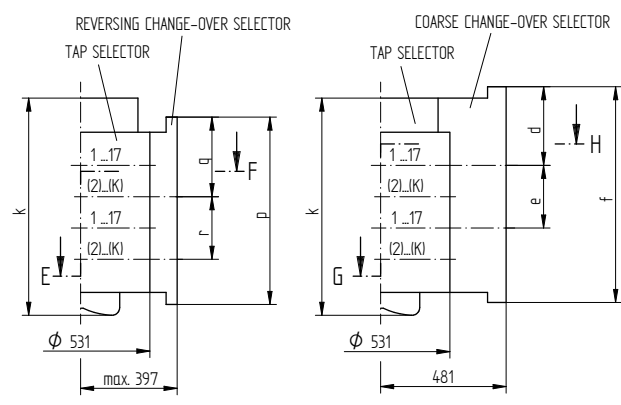
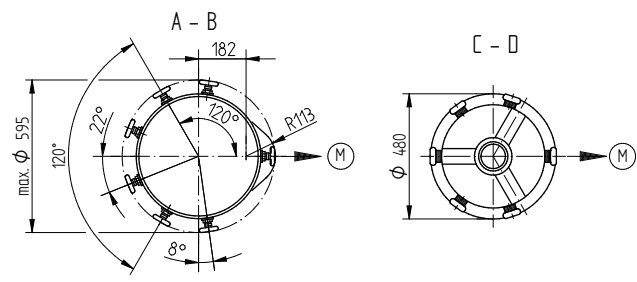
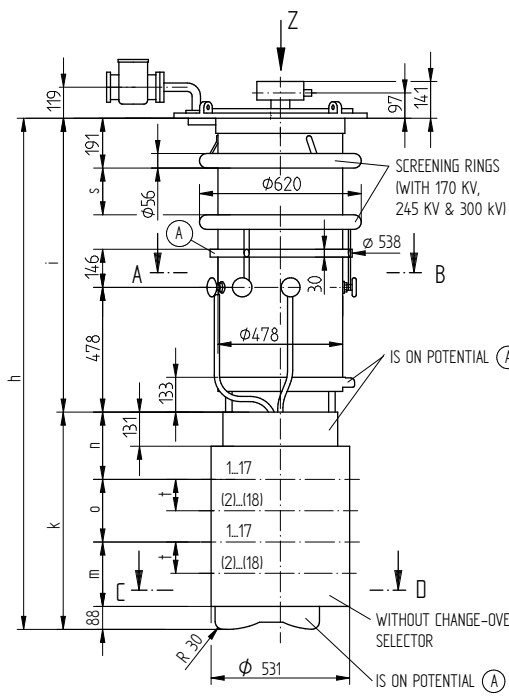
SERIAL NUMBER

MATERIAL NUMBER
 7462231E

SHEET
 1/1

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DATE	NAME	DOCUMENT NO.
DFTR. 18.11.2015	RAEDLINGER	SED 2310512 001 01
CHKD. 01.12.2015	TKBIRKMAN	CHANGE NO.
STAND. 01.12.2015	PRODASTSCHUK	1069171
	SCALE	1:10



E - F
REFER TO 723590

G - H
REFER TO 723590

FOR INHERENT DRAWINGS REFER TO 898012

- (A) ON-LOAD TAP-CHANGER TAKE-OFF TERMINAL (NEUTRAL)
- (M) DRIVE SIDE OF SELECTOR

FOR BINDING DESIGNATIONS OF TERMINALS AND PHASES REFER TO THE CONNECTION DIAGRAM OF THE ON-LOAD TAP-CHANGER.

SELECTOR SIZE	B					C					D / DE					
	72,5	123	170	245	300	72,5	123	170	245	300	72,5	123	170	245	300	
U_m [kV]	72,5	123	170	245	300	72,5	123	170	245	300	72,5	123	170	245	300	
DIMENSIONS [MM]	h	1704	1834	1964	2064	2216	1829	1959	2089	2189	2341	2154	2284	2414	2514	2666
	i	996	1126	1256	1356	1508	996	1126	1256	1356	1508	996	1126	1256	1356	1508
	s	-	-	267	367	520	-	-	267	367	520	-	-	267	367	520
	k	-	-	708	-	-	-	-	833	-	-	-	-	1158	-	-
	n	-	-	233	-	-	-	-	258	-	-	-	-	323	-	-
	o	-	-	190	-	-	-	-	240	-	-	-	-	370	-	-
	m	-	-	197	-	-	-	-	247	-	-	-	-	377	-	-
	t	-	-	95	-	-	-	-	120	-	-	-	-	185	-	-
	r	-	-	190	-	-	-	-	240	-	-	-	-	370	-	-
	q	-	-	255	-	-	-	-	305	-	-	-	-	435	-	-
	p	-	-	593	-	-	-	-	718	-	-	-	-	1043	-	-
	e	-	-	190	-	-	-	-	240	-	-	-	-	370	-	-
	d	-	-	276,5	-	-	-	-	301,5	-	-	-	-	366,5	-	-
f	-	-	702	-	-	-	-	827	-	-	-	-	1152	-	-	
OIL VOLUME [DM ³]	130	150	170	190	210	130	150	170	190	210	130	150	170	190	210	
DISPLACEMENT [DM ³]	196	221	241	261	281	196	221	241	261	281	199	224	244	264	284	
MAX. WEIGHT [KG]	310	315	320	325	330	320	325	330	335	340	330	335	340	345	350	

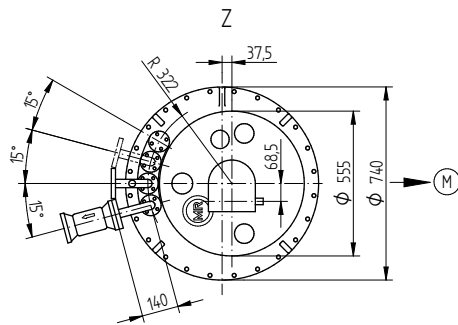
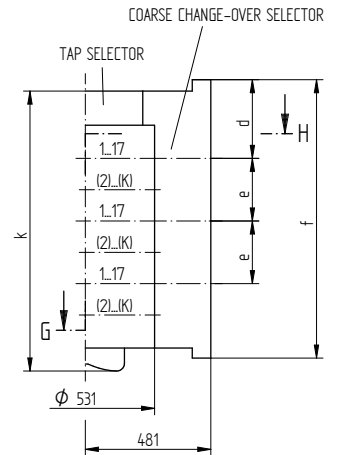
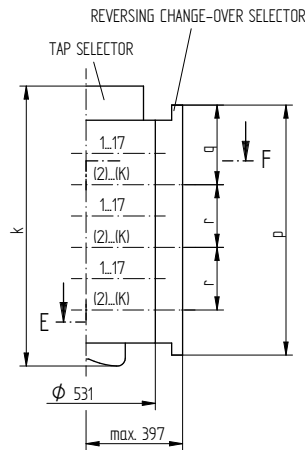
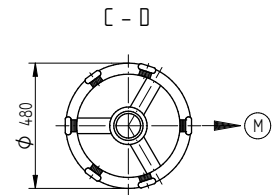
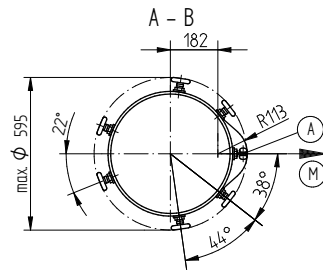
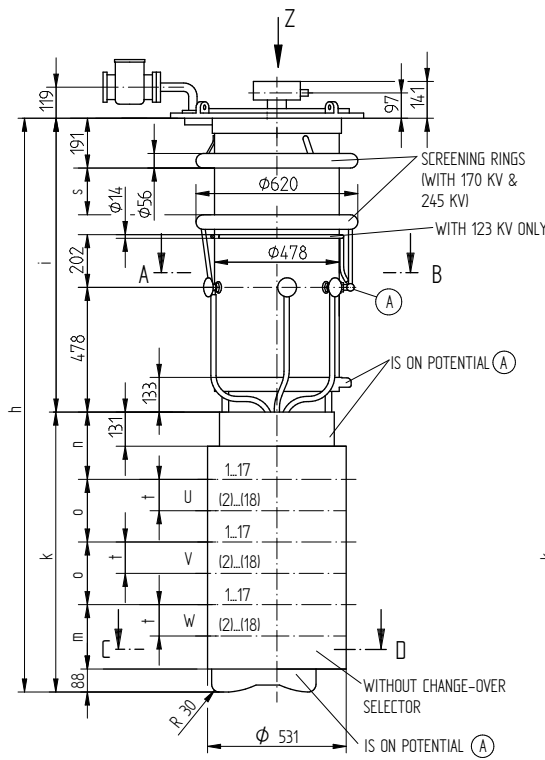
DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VM
 VM II 352/502/652 - B/C/D/DE - O/W/G
 DIMENSION DRAWING

SERIAL NUMBER	
MATERIAL NUMBER	SHEET
7462201E	1/1

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E - F
REFER TO 723590

G - H
REFER TO 723590

FOR INHERENT DRAWINGS REFER TO 898012

(A) ON-LOAD TAP-CHANGER TAKE-OFF LEAD (NEUTRAL)

(M) DRIVE SIDE OF SELECTOR

FOR BINDING DESIGNATIONS OF TERMINALS AND PHASES REFER TO THE CONNECTION DIAGRAM OF THE ON-LOAD TAP-CHANGER.

SELECTOR SIZE	B				C *)				D / DE				
	72,5	123	170	245	72,5 ¹⁾	123 ¹⁾	170 ¹⁾	245	72,5	123	170	245	
U _m [kV]													
DIMENSIONS [MM]	h	1894	2024	2154	2254	2069	2199	2329	2429	2524	2654	2784	2884
	i	996	1126	1256	1356	996	1126	1256	1356	996	1126	1256	1356
	s	-	-	267	367	-	-	267	367	-	-	267	367
	k	-	898	-	-	-	-	1073	-	-	-	1528	-
	n	-	233	-	-	-	-	258	-	-	-	323	-
	o	-	190	-	-	-	-	240	-	-	-	370	-
	m	-	197	-	-	-	-	247	-	-	-	377	-
	t	-	95	-	-	-	-	120	-	-	-	185	-
	r	-	190	-	-	-	-	240	-	-	-	370	-
	q	-	255	-	-	-	-	305	-	-	-	435	-
	p	-	783	-	-	-	-	958	-	-	-	1413	-
	d	-	276.5	-	-	-	-	3015	-	-	-	366.5	-
e	-	190	-	-	-	-	240	-	-	-	370	-	
f	-	892	-	-	-	-	1067	-	-	-	1522	-	
OIL VOLUME [DM ³]	130	150	170	190	130	150	170	190	130	150	170	190	
DISPLACEMENT [DM ³]	199	224	244	264	199	224	244	264	207	232	252	272	
MAX. WEIGHT [KG]	350	355	360	365	360	365	370	375	375	380	385	390	

*) VMS® AVAILABLE ONLY IN THESE VERSIONS

DATE	12.07.2018	NAME	BUTERUS	DOCUMENT NO.	SED 2310153 001 02
DFTR.	16.07.2018	CHKD.	WILHELM	CHANGE NO.	1086956
STAND.	16.07.2018	PRODASTSCHUK		SCALE	1:10

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VM®, VMS® - DIMENSION DRAWING
 VM III 350/500/650 Y - B/C/D/DE - O/W/G
 VMS III 400/650 Y - C - O/W/G

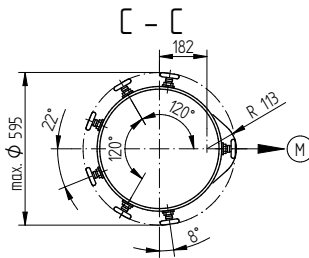
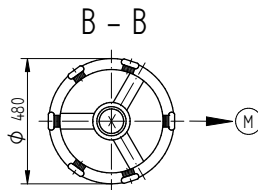
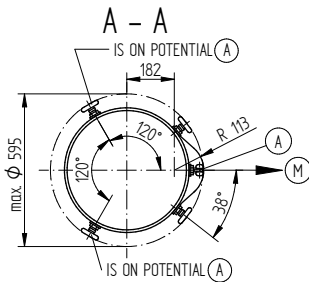
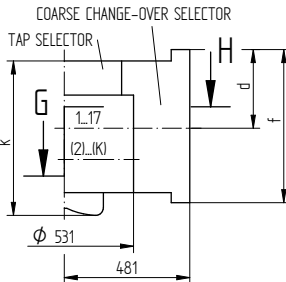
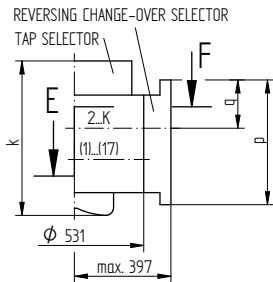
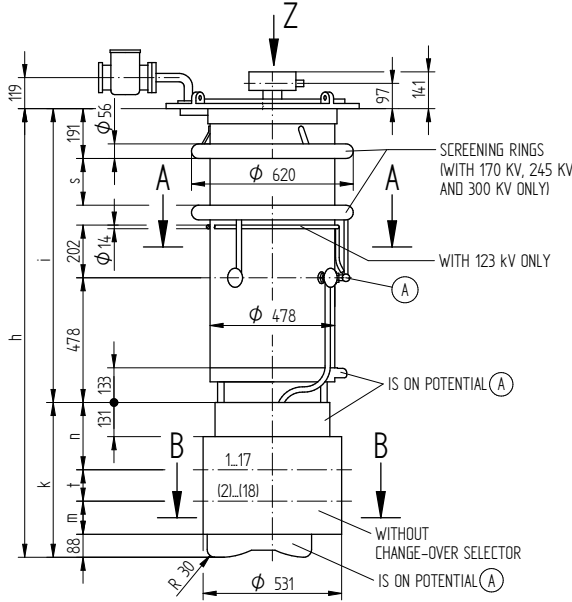
SERIAL NUMBER

MATERIAL NUMBER 7462192E SHEET 1/1

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VM I 351 / 501 / 651 - 0 / W / G

SELECTOR SIZE		B					C					D/DE					
Um IN KV		72.5	123	170	245	300	72.5	123	170	245	300	72.5	123	170	245	300	
DIMENSIONS IN MM	h	1514	1644	1774	1874	2026	1589	1719	1849	1949	2101	1784	1914	2044	2144	2296	
	i	996	1126	1256	1356	1508	996	1126	1256	1356	1508	996	1126	1256	1356	1508	
	s	-	267	367	520	-	267	367	520	-	267	367	520	-	267	367	520
	k	-	-	518	-	-	-	-	593	-	-	-	-	-	788	-	-
	n	-	-	233	-	-	-	-	258	-	-	-	-	-	323	-	-
	m	-	-	102	-	-	-	-	127	-	-	-	-	-	192	-	-
	t	-	-	95	-	-	-	-	120	-	-	-	-	-	185	-	-
	q	-	-	160	-	-	-	-	185	-	-	-	-	-	250	-	-
	p	-	-	403	-	-	-	-	478	-	-	-	-	-	673	-	-
	d	-	-	2765	-	-	-	-	3015	-	-	-	-	-	3665	-	-
f	-	-	512	-	-	-	-	587	-	-	-	-	-	782	-	-	
OIL VOLUME	DM³	130	150	170	190	210	130	150	170	190	210	130	150	170	190	210	
DISPLACEMENT	DM³	193	218	238	258	278	193	218	238	258	278	195	220	240	260	280	
WEIGHT	KG	280	285	290	295	300	290	295	300	305	310	300	305	310	315	320	



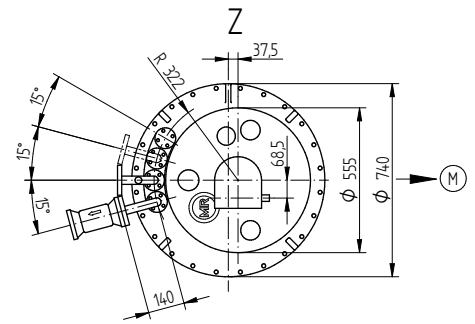
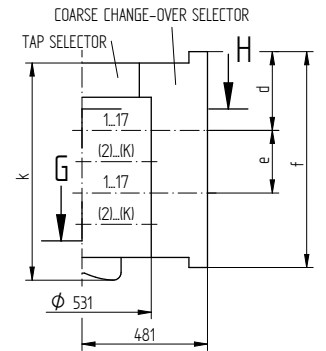
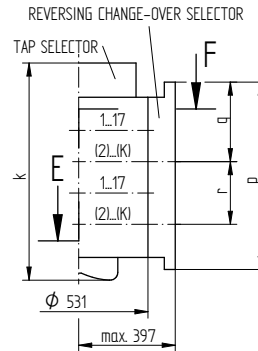
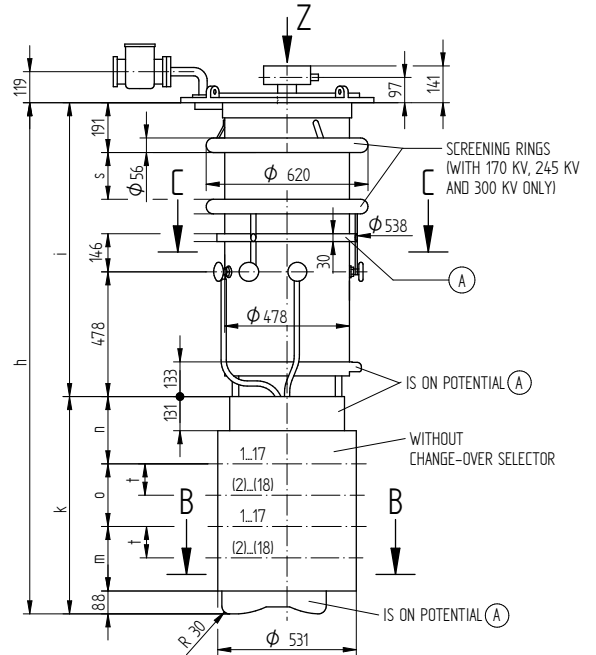
FOR INHERENT DRAWINGS REFER TO 898012

- (A) ON-LOAD TAP-CHANGER TAKE-OFF LEAD
- (M) DRIVE SIDE OF SELECTOR

FOR BINDING DESIGNATIONS OF TERMINALS AND PHASES REFER TO THE CONNECTION DIAGRAM OF THE ON-LOAD TAP-CHANGER.

VM II 352 / 502 / 652 - 0 / W / G

SELECTOR SIZE		B					C					D/DE					
Um IN KV		72.5	123	170	245	300	72.5	123	170	245	300	72.5	123	170	245	300	
DIMENSIONS IN MM	h	1704	1834	1964	2064	2216	1829	1959	2089	2189	2341	2154	2284	2414	2514	2666	
	i	996	1126	1256	1356	1508	996	1126	1256	1356	1508	996	1126	1256	1356	1508	
	s	-	267	367	520	-	267	367	520	-	267	367	520	-	267	367	520
	k	-	-	708	-	-	-	-	833	-	-	-	-	-	1158	-	-
	n	-	-	233	-	-	-	-	258	-	-	-	-	-	323	-	-
	o	-	-	190	-	-	-	-	240	-	-	-	-	-	370	-	-
	m	-	-	197	-	-	-	-	247	-	-	-	-	-	377	-	-
	t	-	-	95	-	-	-	-	120	-	-	-	-	-	185	-	-
	r	-	-	190	-	-	-	-	240	-	-	-	-	-	370	-	-
	q	-	-	255	-	-	-	-	305	-	-	-	-	-	435	-	-
p	-	-	593	-	-	-	-	718	-	-	-	-	-	1043	-	-	
e	-	-	190	-	-	-	-	240	-	-	-	-	-	370	-	-	
d	-	-	2765	-	-	-	-	3015	-	-	-	-	-	3665	-	-	
f	-	-	702	-	-	-	-	827	-	-	-	-	-	1152	-	-	
OIL VOLUME	DM³	130	150	170	190	210	130	150	170	190	210	130	150	170	190	210	
DISPLACEMENT	DM³	196	221	241	261	281	196	221	241	261	281	199	224	244	264	284	
WEIGHT	KG	310	315	320	325	330	320	325	330	335	340	330	335	340	345	350	



E - F / G - H

REFER TO 723590

DATE	NAME	DOCUMENT NO.
DFTR. 18.11.2015	RAEDLINGER	SED 2315008 001 02
CHKD. 01.12.2015	TKBIRKMAN	SCALE 1:10
STAND. 01.12.2015	PRODATSCHUK	CHANGE NO. 1069171

DIMENSION IN mm EXCEPT AS NOTED



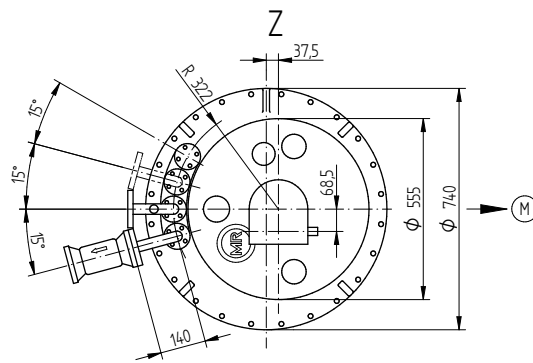
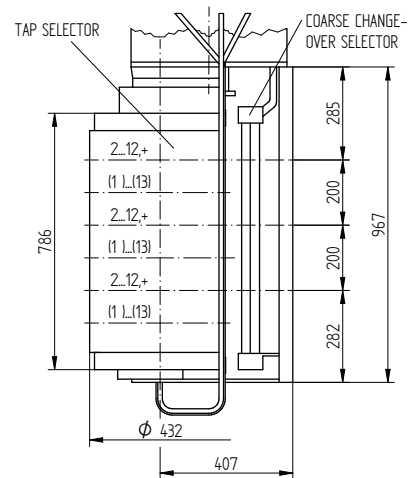
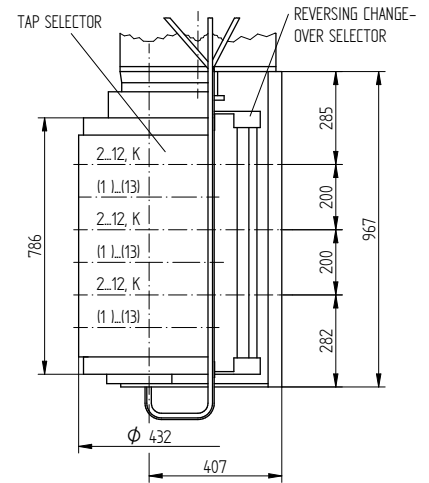
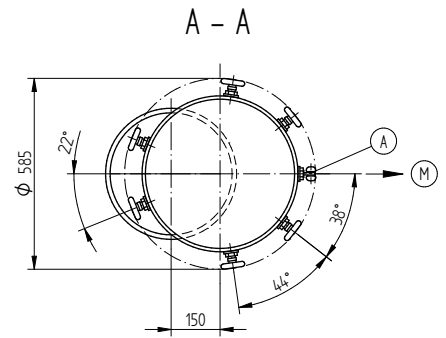
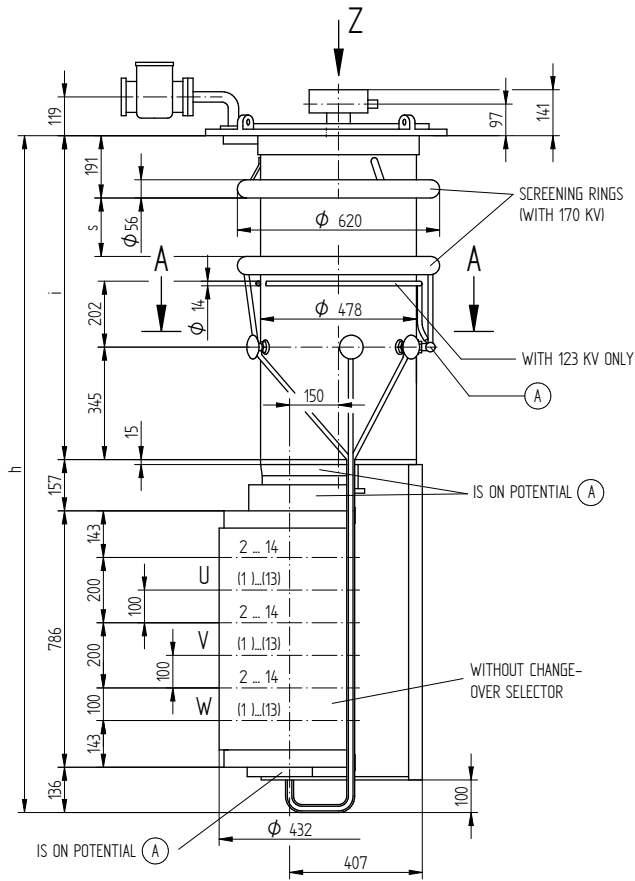
ON-LOAD TAP-CHANGER VACUTAP® VM
VM III 350/500/650 K-B/C/D/DE-0/W/G
DIMENSION DRAWING

SERIAL NUMBER

MATERIAL NUMBER
746224-2E

SHEET
1/1

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DATE	NAME	DOCUMENT NO.
11.07.2018	BUTERUS	SED 6011085 001 00
16.07.2018	WILHELM	CHANGE NO.
16.07.2018	PRODASTSCHUK	1086956
DFTR.	SCALE	18
CHKD.		
STAND.		

FOR INHERENT DRAWINGS REFER TO 898026

(A) ON-LOAD TAP-CHANGER TAKE-OFF LEAD (NEUTRAL)

(M) DRIVE SIDE OF SELECTOR

FOR BINDING DESIGNATIONS OF TERMINALS AND PHASES REFER TO THE CONNECTION DIAGRAM OF THE ON-LOAD TAP-CHANGER.

SELECTOR SIZE	B		
U_M [KV]	72,5	123	170
DIMENSIONS [MM]	h	1942	2072
	i	863	993
	s	-	267
OIL VOLUME [DM ³]	130	150	170
DISPLACEMENT [DM ³]	190	220	240
MAX. WEIGHT [KG]	280	285	290

DIMENSION IN mm EXCEPT AS NOTED



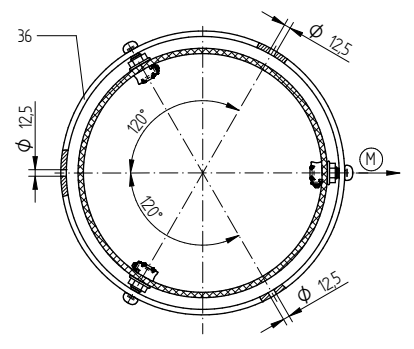
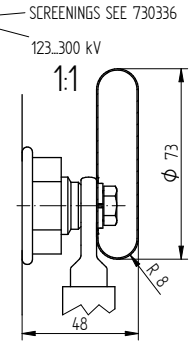
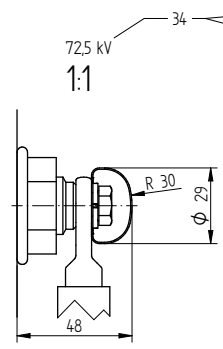
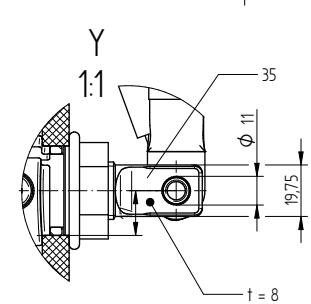
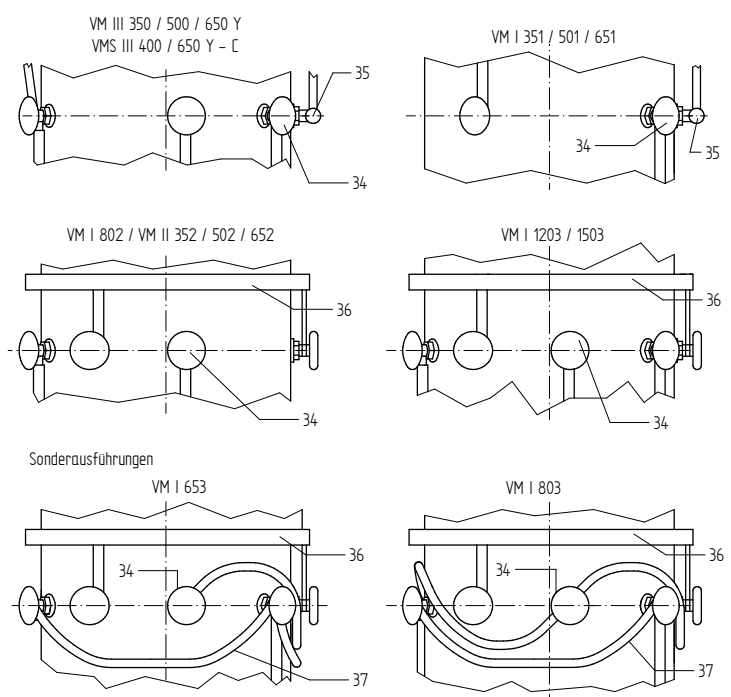
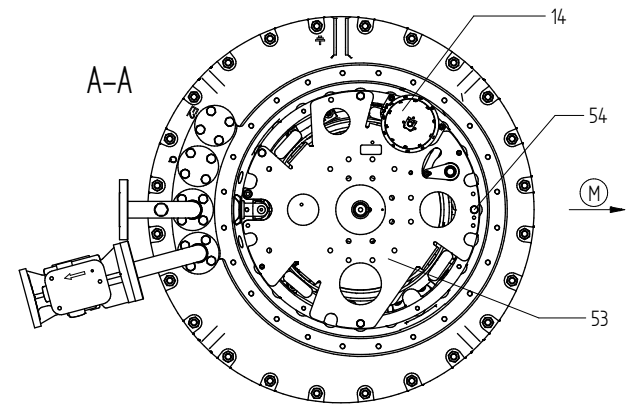
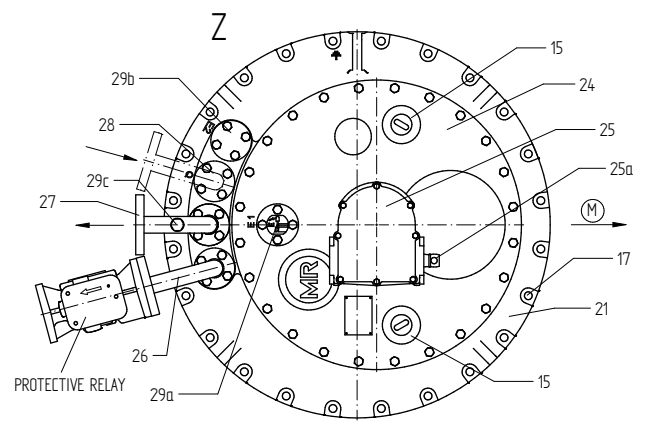
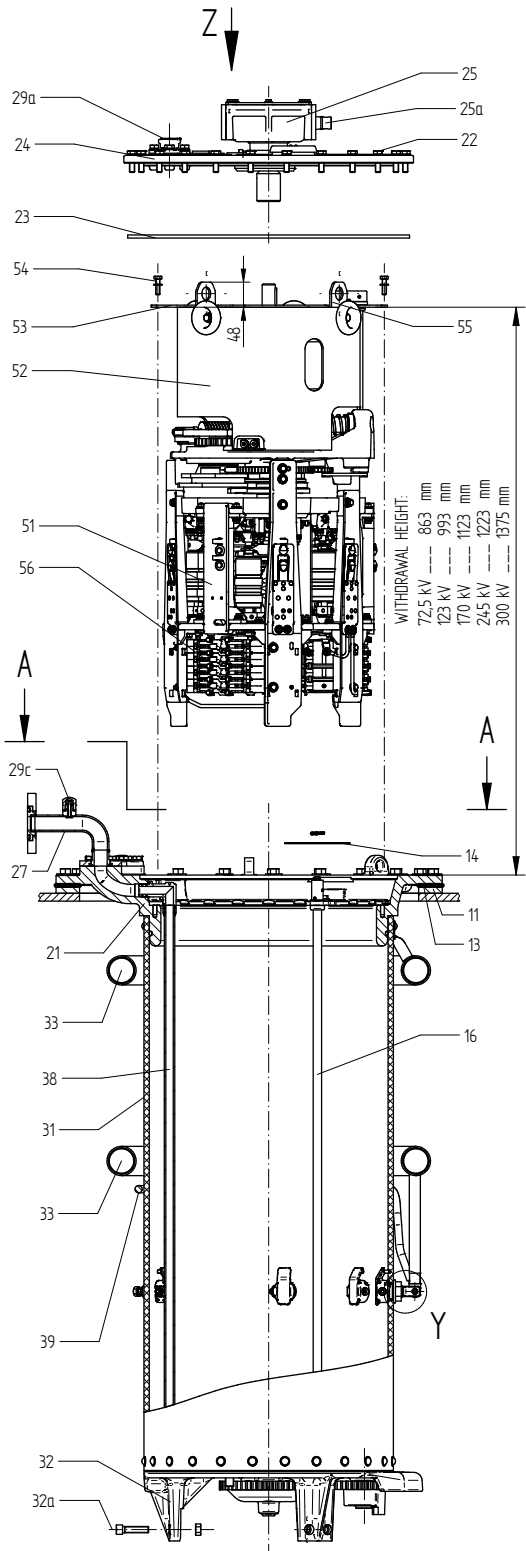
ON-LOAD TAP-CHANGER VACUTAP® VMS®
 VMS III 400 Y - B - 0/W/G
 DIMENSION DRAWING

SERIAL NUMBER

MATERIAL NUMBER
 101165600E

SHEET
 1/1

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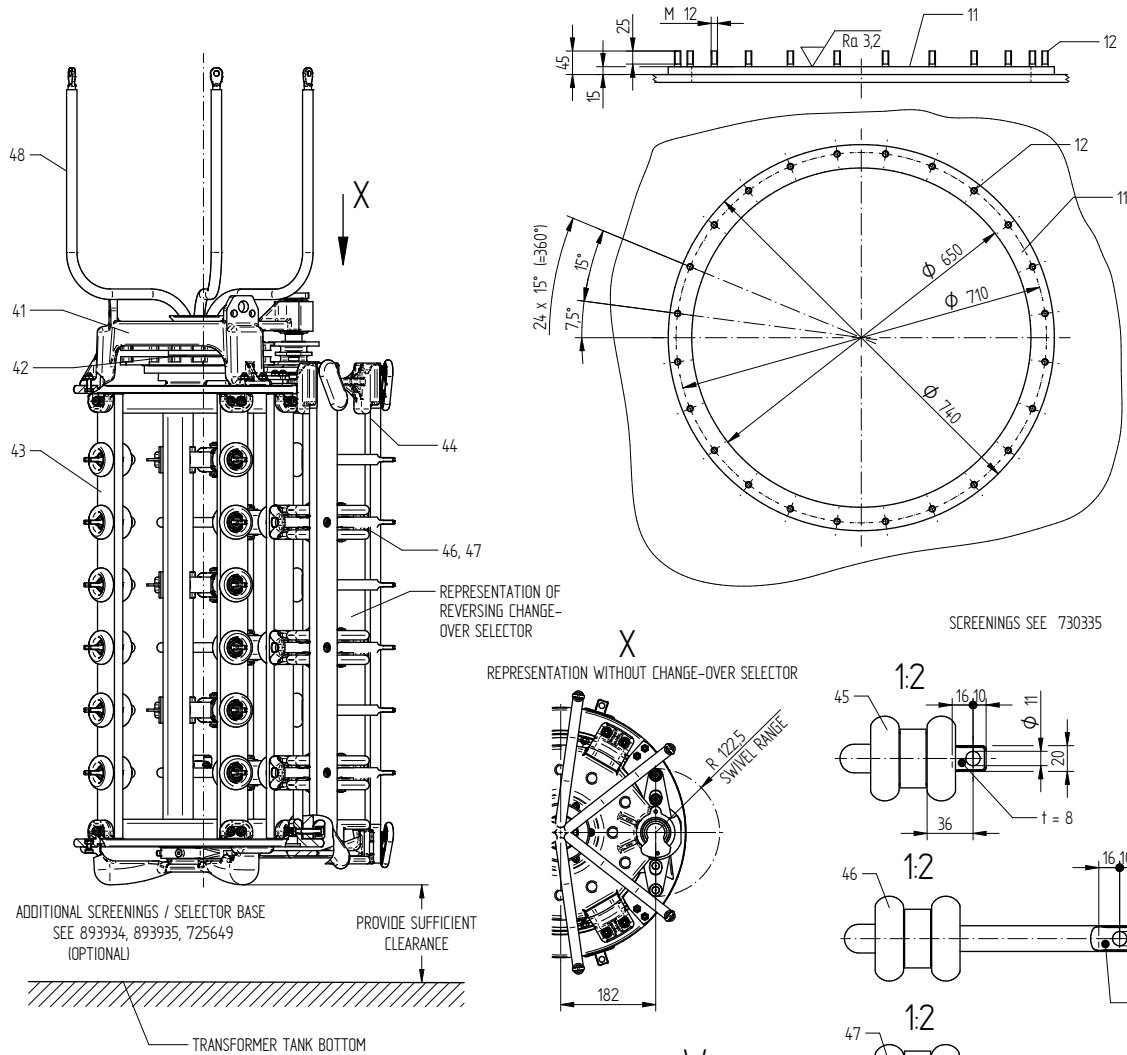
Datum	Name	Dokumentnummer
13.07.2018	BUTERUS	SED 231710 001 03
Gez. bepr.	Änderungsnummer	Maßstab
16.07.2018	WILHELM	1:1
Norm.	16.07.2018	PRODASTSCHUK
		1086956
		15

Maßangaben in mm, soweit nicht anders angegeben



ON-LOAD TAP-CHANGER VACUTAP® VM®, VMS®-C
 M-SELECTOR SIZE B/C/D/DE (CENTRIC DRIVE)
 INSTALLATION DRAWING

Serialnummer	
Materialnummer	Blatt
7462303E	1/2



- | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>11 MOUNTING FLANGE ON TRANSFORMER COVER
 12 FIXING BOLT M12
 13 ON-LOAD TAP-CHANGER HEAD GASKET
 14 TAP POSITION INDICATOR
 15 INSPECTION WINDOW
 16 DRIVE SHAFT FOR TAP POSITION INDICATOR
 17 THROUGH-HOLES 15mm IN DIAMETER</p> <p>21 ON-LOAD TAP-CHANGER HEAD
 22 COVER BOLT
 23 COVER GASKET
 24 ON-LOAD TAP-CHANGER HEAD COVER
 25 CENTRIC GEAR UNIT WITH DRIVE SHAFT 25a
 26 PIPE CONNECTING R FOR PROTECTIVE RELAY
 27 PIPE CONNECTING S FOR SUCTION PIPE
 28 PIPE CONNECTING Q FOR OIL RETURN PIPE (WITH OIL FILTER ONLY)
 29a AIR-VENT VALVE OF ON-LOAD TAP-CHANGER HEAD COVER
 29b BLEEDING FACILITY FOR TRANSFORMER OIL COMPARTMENT
 29c VENT SCREW FOR SUCTION PIPE</p> <p>(M) → DRIVE SIDE OF SELECTOR</p> <p>** NOT WITH MULTIPLE COARSE CHANGE-OVER SELECTOR</p> | <p>31 DIVERTER SWITCH OIL COMPARTMENT
 32 OIL COMPARTMENT BASE WITH SUPPORTING BOLT 32a
 33 SCREENING RINGS (WITH Um = 170 kV; 245 kV; 300 kV ONLY)
 34 OIL COMPARTMENT CONNECTION TERMINAL
 35 TERMINAL:
 VM III 350/500/650, VMS III 400/650: NEUTRAL CONNECTION
 VM I 351/501/651: TAKE-OFF TERMINAL
 36 ON-LOAD TAP-CHANGER TAKE-OFF RING (ONLY VM I 802/803/1203/1503)
 37 CONNECTING LEAD (ONLY VM I 653/803)
 38 SUCTION PIPE
 39 SCREENING RING (WITH Um = 123 kV ONLY)</p> <p>41 SELECTOR SUSPENSION
 42 SELECTOR GEAR
 43 TAP SELECTOR
 44 CHANGE-OVER SELECTOR
 45 SELECTOR CONNECTION CONTACT (SEE CORRESPONDING DIMENSION DRAWING)
 46 CHANGE-OVER SELECTOR CONNECTION CONTACT "K" OR "O" **
 47 CHANGE-OVER SELECTOR CONNECTION CONTACT "+" OR "-" **
 48 SELECTOR CONNECTING LEAD</p> <p>51 DIVERTER SWITCH INSERT
 52 SUPPORTING CYLINDER
 53 BASE PLATE
 54 FIXING BOLT
 55 EYEBOLT WITH THROUGH-HOLE 25 mm IN DIAMETER
 56 TRANSITION RESISTORS</p> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Datum	Name	Dokumentnummer
13.07.2018	BUTERUS	SED 231710 001 03
Gez. bepr.	WILHELM	Änderungsnummer
16.07.2018	PRODASTSCHUK	1086956
Norm.		15

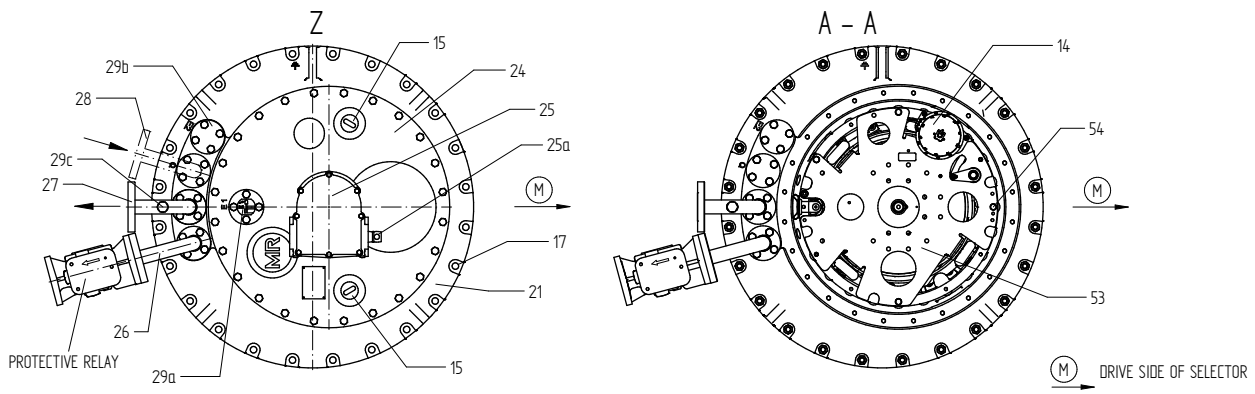
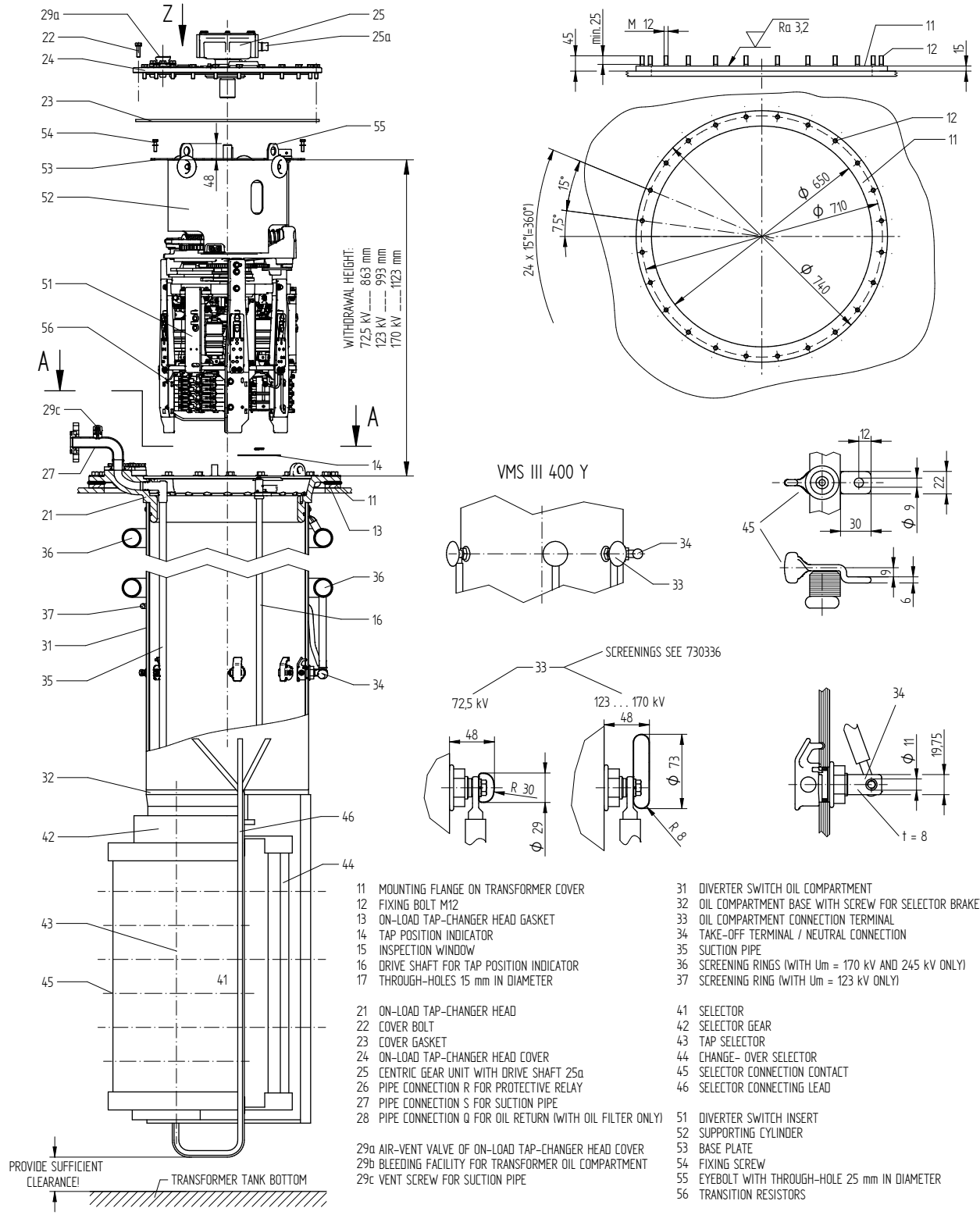
Maßangaben in mm, soweit nicht anders angegeben



ON-LOAD TAP-CHANGER VACUTAP® VM®, VMS®-C
 M-SELECTOR SIZE B/C/D/DE (CENTRIC DRIVE)
 INSTALLATION DRAWING

Serialnummer	
Materialnummer	Blatt
7462303E	2/2

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DOCUMENT NO.	SED 6018599 001 00		SCALE	1
NAME	BUTERUS	WILHELM	CHANGE NO.	1086956
DATE	11.07.2018	16.07.2018	PRODASTSCHUK	

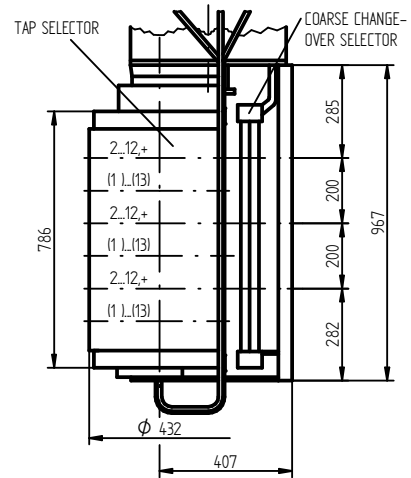
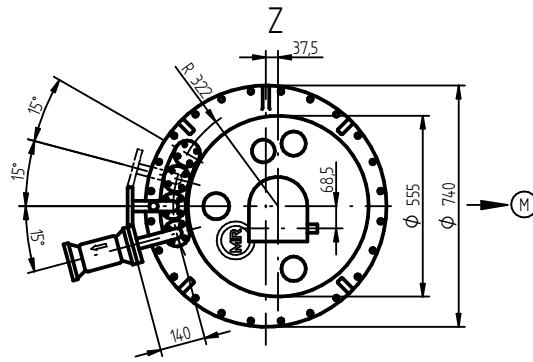
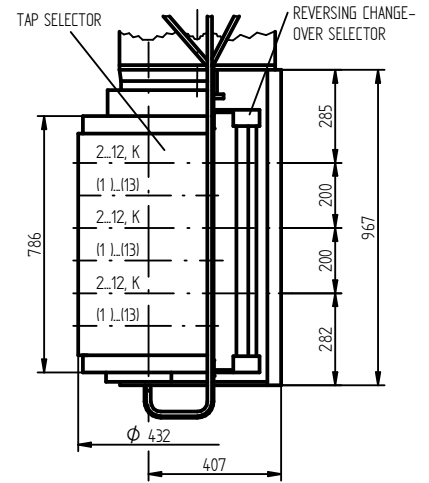
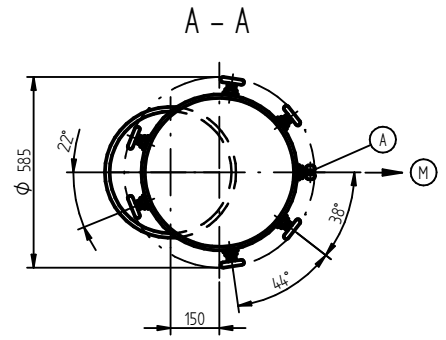
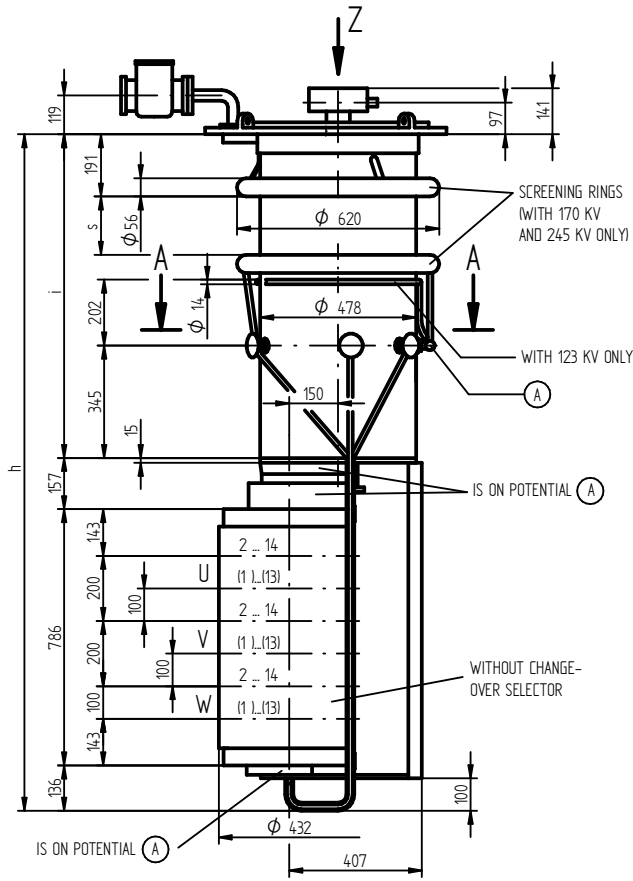
DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VMS®
 SELECTOR SIZE B (CENTRIC DRIVE)
 INSTALLATION DRAWING

SERIAL NUMBER	
MATERIAL NUMBER	SHEET
101170220E	1/1

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DATE	NAME	DOCUMENT NO.
18.11.2015	RAEDLINGER	SED 2532402 001 02
CHKD.	TKBIRKMAN	SCALE
01.12.2015	PRODASTSCHUK	18
STAND	01.12.2015	1069171

FOR INHERENT DRAWINGS REFER TO 898026

- (A) ON-LOAD TAP-CHANGER TAKE-OFF LEAD (NEUTRAL)
- (M) DRIVE SIDE OF SELECTOR

FOR BINDING DESIGNATIONS OF TERMINALS AND PHASES REFER TO THE CONNECTION DIAGRAM OF THE ON-LOAD TAP-CHANGER.

SELECTOR SIZE	B			
U_M [kV]	72,5	123	170	245
DIMENSIONS [MM]	h	1942	2072	2202
	i	863	993	1123
	s	-		267
OIL VOLUME [DM ³]	130	150	170	190
DISPLACEMENT [DM ³]	190	220	240	260
MAX. WEIGHT [KG]	280	285	290	295

DIMENSION IN mm EXCEPT AS NOTED



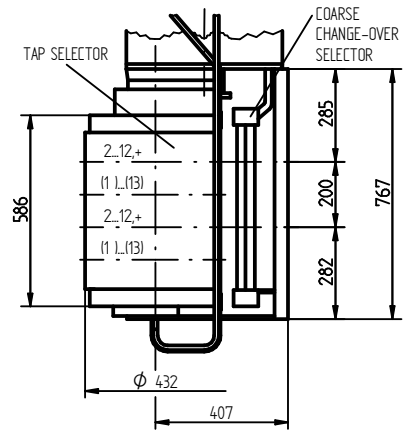
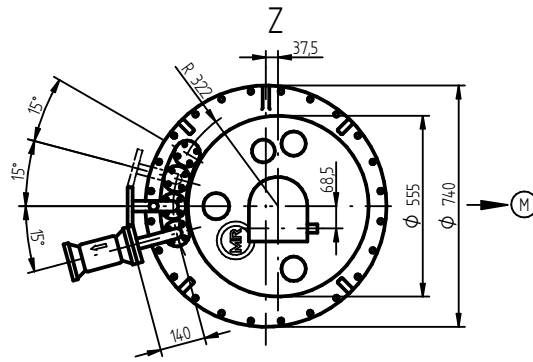
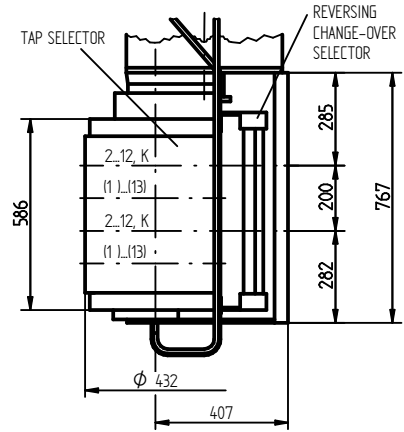
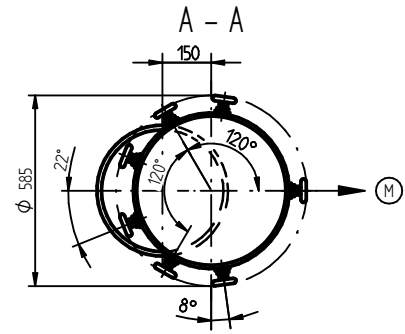
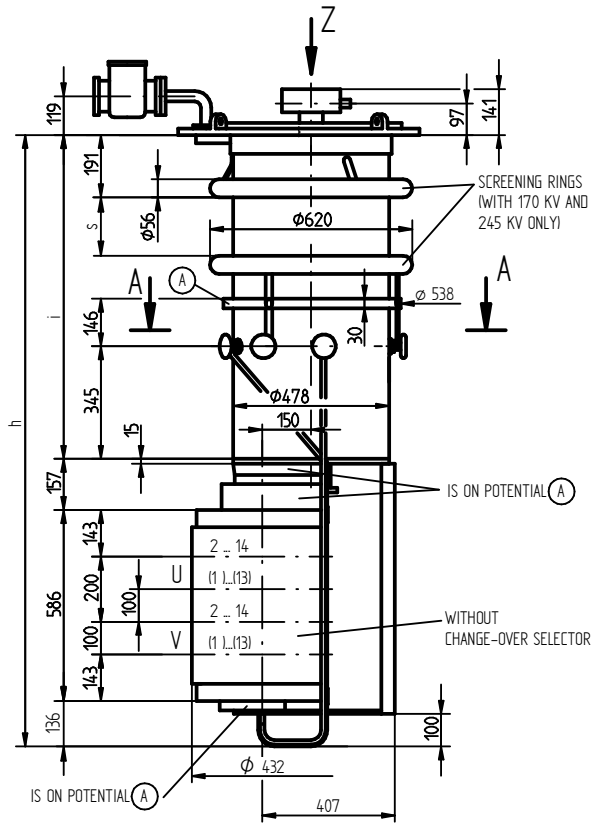
ON-LOAD TAP-CHANGER VACUTAP® VM®
 VM III 300 Y - B- 0/W/G
 DIMENSION DRAWING

SERIAL NUMBER

MATERIAL NUMBER
 7686982E

SHEET
 1/1

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DATE	NAME	DOCUMENT NO.
01.04.2016	RAEDLINGER	SED 2742981 001 02
CHKD. 11.04.2016	MENZELS	SCALE
STAND 11.04.2016	PRODASTSCHUK	18
		CHANGE NO. 1073378

FOR INHERENT DRAWINGS REFER TO 898026

(A) ON-LOAD TAP-CHANGER TAKE-OFF TERMINAL

(M) DRIVE SIDE OF SELECTOR

FOR BINDING DESIGNATIONS OF TERMINALS AND PHASES REFER TO THE CONNECTION DIAGRAM OF THE ON-LOAD TAP-CHANGER.

SELECTOR SIZE	B			
U _M [KV]	72,5	123	170	245
DIMENSIONS [MM]	h	1742	1872	2002
	i	863	993	1123
	s	-		267
OIL VOLUME [DM ³]	130	150	170	190
DISPLACEMENT [DM ³]	180	210	230	250
MAX. WEIGHT [KG]	260	265	270	275

DIMENSION IN mm EXCEPT AS NOTED



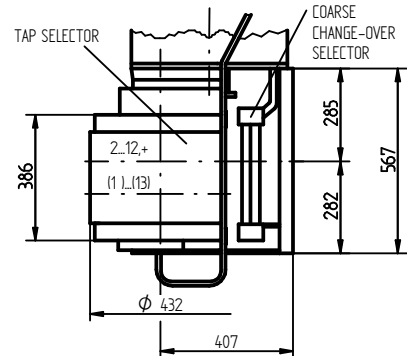
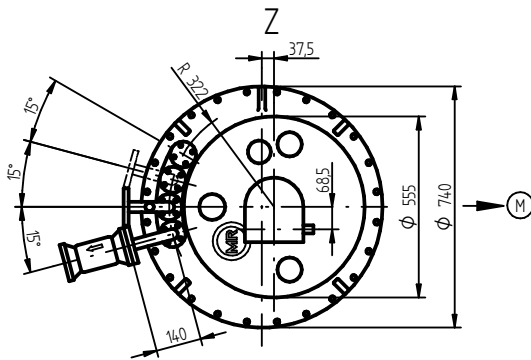
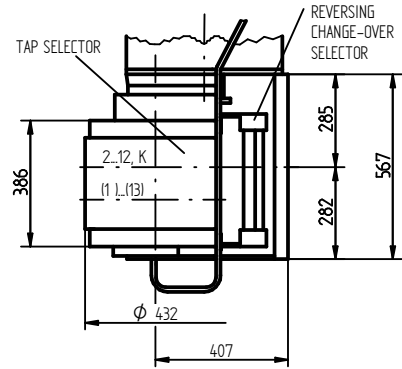
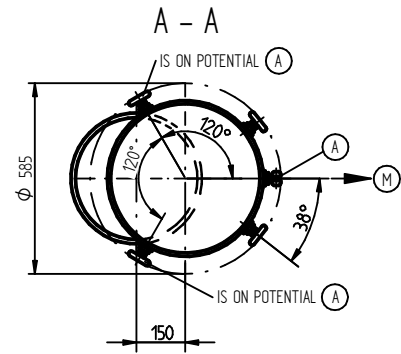
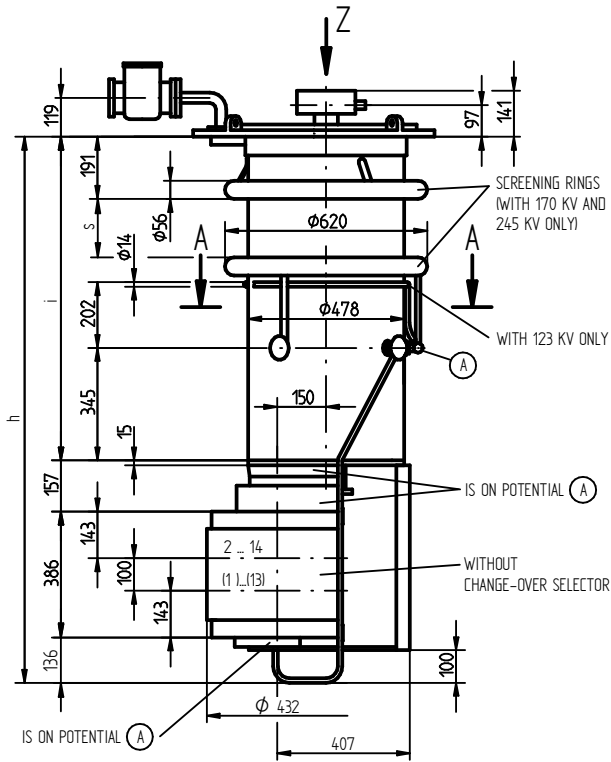
ON-LOAD TAP-CHANGER VACUTAP® VM®
 VM II 302 - B - 0/W/G
 DIMENSION DRAWING

SERIAL NUMBER

MATERIAL NUMBER
7692252E

SHEET
1/1

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FOR INHERENT DRAWINGS REFER TO 898026

- (A) ON-LOAD TAP-CHANGER TAKE-OFF LEAD
- (M) DRIVE SIDE OF SELECTOR

FOR BINDING DESIGNATIONS OF TERMINALS AND PHASES REFER TO THE CONNECTION DIAGRAM OF THE ON-LOAD TAP-CHANGER.

SELECTOR SIZE	B			
U_M [KV]	72,5	123	170	245
DIMENSIONS [MM]	h	1542	1672	1802
	i	863	993	1123
	s	—		267
OIL VOLUME [DM ³]	130	150	170	190
DISPLACEMENT [DM ³]	160	190	210	230
MAX. WEIGHT [KG]	240	245	250	255

DATE	NAME	DOCUMENT NO.
18.11.2015	RAEDLINGER	SED 2743003 001 01
CHKD.	TKBIRKMAN	SCALE
01.12.2015	PRODASTSCHUK	1:8
STAND	01.12.2015	1069171

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VM®
 VM 1 301 - B - 0/W/G
 DIMENSION DRAWING

SERIAL NUMBER

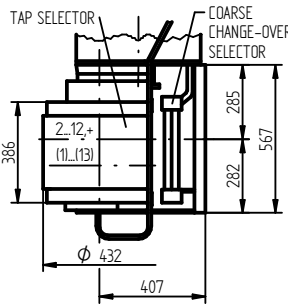
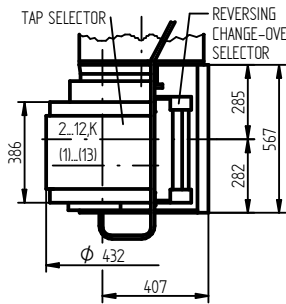
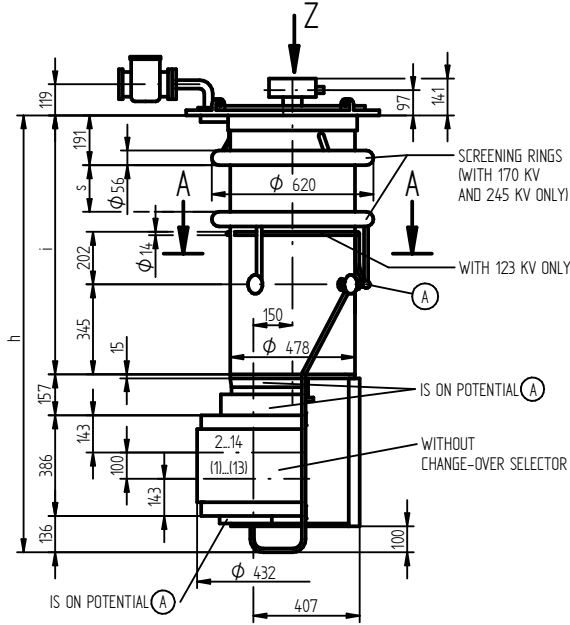
MATERIAL NUMBER
7692261E

SHEET
1/1

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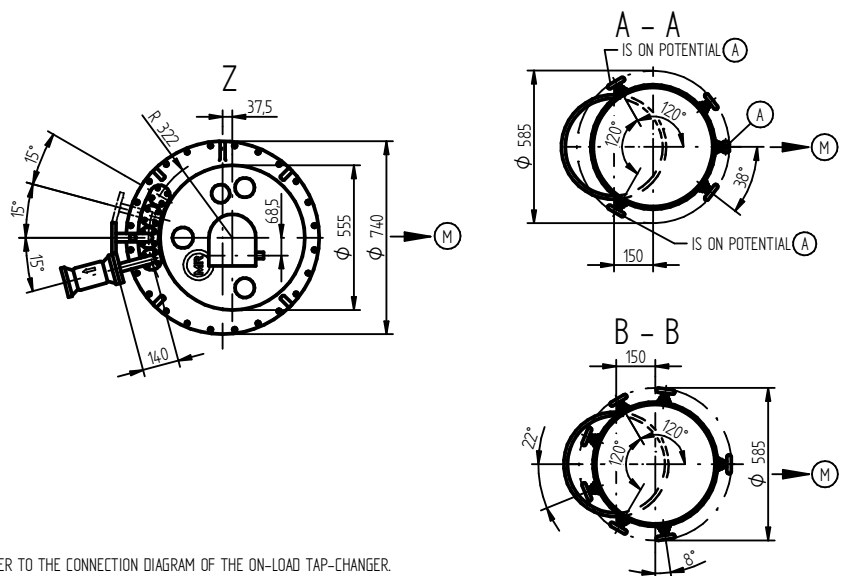
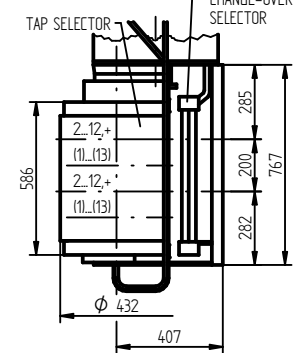
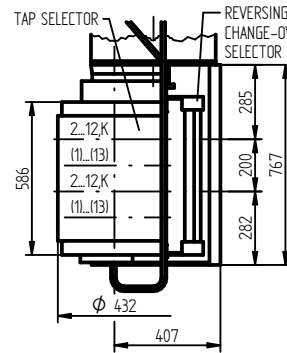
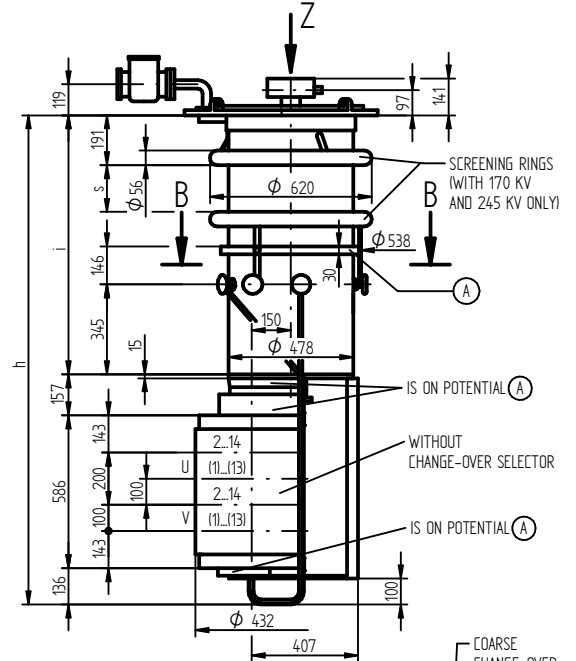
VM I 301 - 0 / W / G

SELECTOR SIDE		B			
Um [kV]		72.5	123	170	245
DIMENSIONS [MM]	h	1542	1672	1802	1902
	i	863	993	1123	1223
	s	-	-	267	367
OIL VOLUME [DM ³]		130	150	170	190
DISPLACEMENT [DM ³]		160	190	210	230
MAX. WEIGHT [KG]		240	245	250	255



VM II 302 - 0 / W / G

SELECTOR SIDE		B			
Um [kV]		72.5	123	170	245
DIMENSIONS [MM]	h	1742	1872	2002	2102
	i	863	993	1123	1223
	s	-	-	267	367
OIL VOLUME [DM ³]		130	150	170	190
DISPLACEMENT [DM ³]		180	210	230	250
MAX. WEIGHT [KG]		260	265	270	275



FOR INHERENT DRAWINGS REFER TO 898026

- (A) ON-LOAD TAP-CHANGER TAKE-OFF LEAD
- (M) DRIVE SIDE OF SELECTOR

FOR BINDING DESIGNATIONS OF TERMINALS AND PHASES REFER TO THE CONNECTION DIAGRAM OF THE ON-LOAD TAP-CHANGER.

DATE	NAME	DOCUMENT NO.
18.11.2015	RAEDLINGER	SED 2559763 001 02
01.12.2015	TKBIRKMAN	CHANGE NO.
01.12.2015	PRODASTSCHUK	1069171
		SCALE 1:10

DIMENSION IN mm EXCEPT AS NOTED



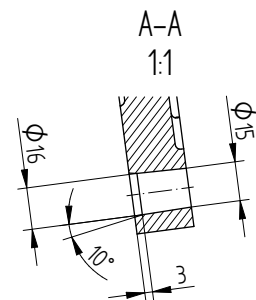
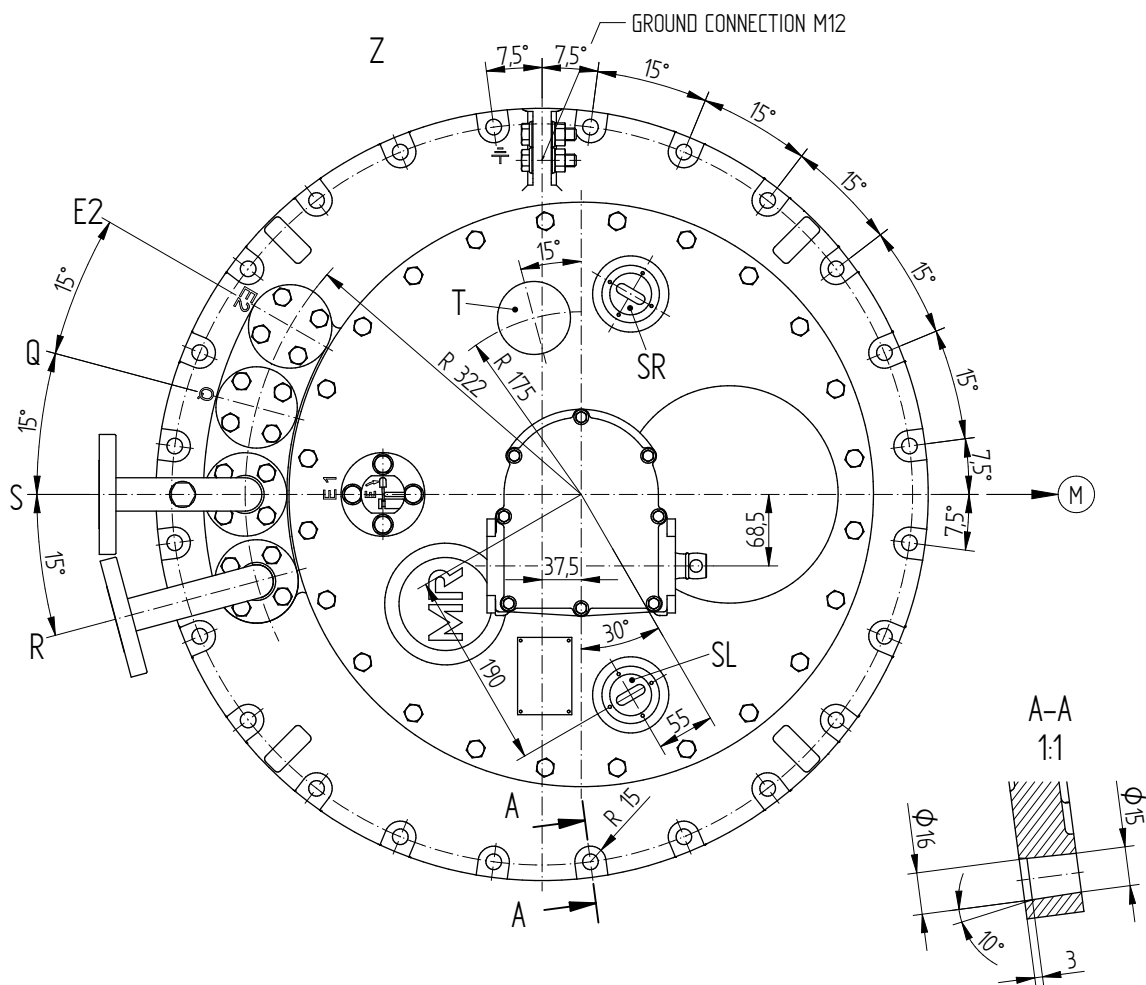
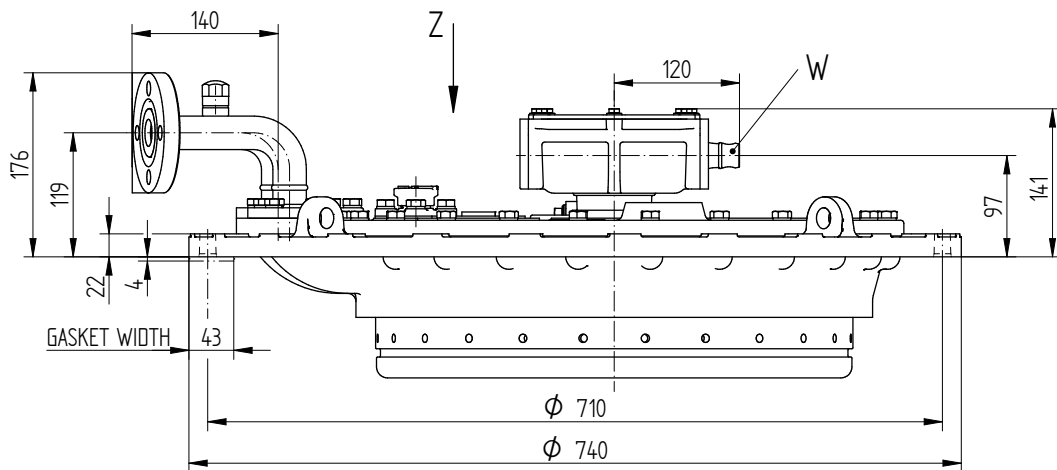
ON-LOAD TAP-CHANGER VACUTAP® VM®
 VM III 300 K - B - 0/W/G
 DIMENSION DRAWING

SERIAL NUMBER

MATERIAL NUMBER 7688512E SHEET 1/1

4.3 On-load tap-changer head

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- E1 = BLEEDING FACILITY FOR ON-LOAD TAP-CHANGER HEAD
 - E2 = BLEEDING FACILITY FOR SPACE UNDER THE HEAD OUTSIDE
 - THE TAP-CHANGER OIL COMPARTMENT (SAME PIPE CONNECTION AS R, S, Q OR BLEEDER SCREW CAN BE USED)
 - Q = CONNECTION FOR OIL RETURN PIPE OR TAP-CHANGE SUPERVISORY CONTROL
 - S = CONNECTION FOR SUCTION PIPE
 - R = CONNECTION FOR PROTECTIVE RELAY (EXCHANGEABLE WITH CONNECTION Q)
 - T = THERMOMETER BAG / TEMPERATURE SENSOR (OPTIONALLY)
 - SR = INSPECTION WINDOW, RIGHT
 - SL = INSPECTION WINDOW, LEFT
 - W = DRIVE SHAFT
 - (M) DRIVE SIDE OF SELECTOR
- CONNECTIONS SWIVELING
 DIMENSIONS AND SELECTION 899496: / 899497.

DATE	NAME	DOCUMENT NO.
DFTR. 11.07.2018	BUTERUS	SED 1661272 001 04
CHKD. 16.07.2018	WILHELM	SCALE 1:2,5
STAND. 16.07.2018	PRODASTSCHUK	CHANGE NO. 1086956

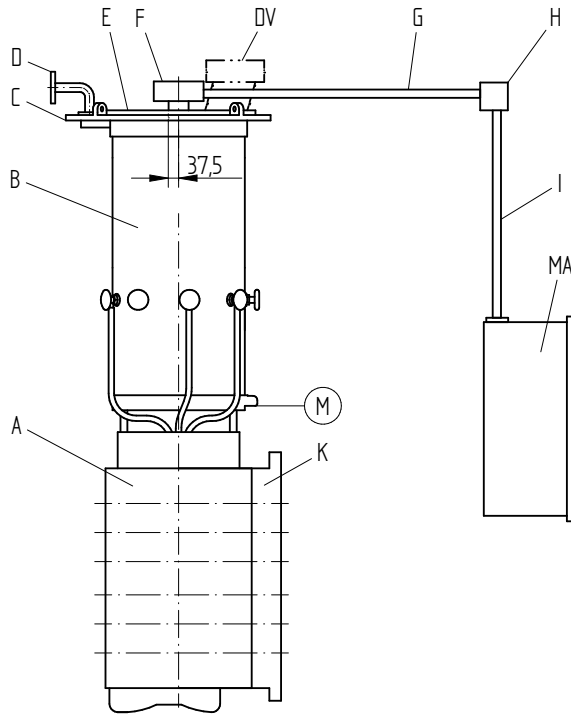
DIMENSION
 IN mm
 EXCEPT AS
 NOTED



ON-LOAD TAP-CHANGER
 OILTAP® M, MS, R, RM AND VACUTAP® VR®, VM®, VMS®
 ON-LOAD TAP-CHANGER HEAD, CENTRIC DRIVE

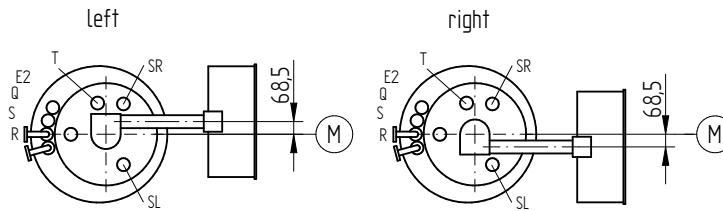
SERIAL NUMBER

MATERIAL NUMBER 893899FE
 SHEET 1/1

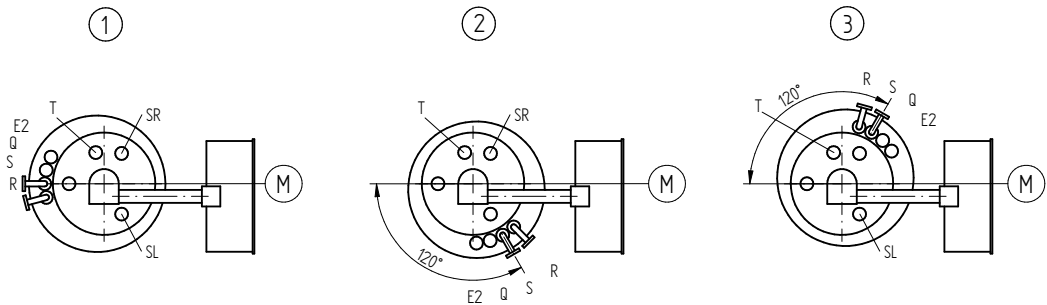


- A = selector
 - K = change-over selector
 - B = diverter switch oil compartment
 - C = on-load tap-changer head
 - D = pipe connections (R, S, Q, E2)
 - DV = pressure relief device
 - E = on-load tap-changer head cover
 - F = upper gear unit
 - G = drive shaft, horizontal
 - H = bevel gear
 - I = drive shaft, vertical
 - MA = motor-drive unit
 - (M) = drive side of selector
 - SR = inspection window on the right
 - SL = inspection window on the left
 - T = temperature sensor
- } represented
version
type M

Position of drive shaft of gear unit



Head variants



Swivel ranges

A considerable number of variants of the on-load tap-changer head are available for adapting the horizontal part of the drive shaft to the transformer tank.

The mounting position of the selector A and diverter switch oil compartment B is determined by the drive side of selector (M).

The on-load tap-changer head C together with its pipe connections D may be turned through 120 degrees clockwise or anti-clockwise. This results in the variants 1, 2 and 3.

The upper gear unit F can be turned continuously on its own axis. Table 720027: Lists the limitation of the swivel range for the particular head variant. The angle specifications refer to the center of rotation of the gear unit. Pay particular attention to the offset of the drive shaft.

DATE	11.07.2018	DOCUMENT NO.	SED 1063796 001 05
DATE	16.07.2018	NAME	BUTERUS
DATE	16.07.2018	NAME	WILHELM
DATE	16.07.2018	NAME	PRODASTSCHUK
CHG. NO.	1086956	SCALE	1

DIMENSION
IN mm
EXCEPT AS
NOTED



ON-LOAD TAP-CHANGER
OILTAP® MS, M, RM, R AND VACUTAP® VR®, VM®, VMS®
VARIANTS OF THE ON-LOAD TAP-CHANGER HEAD

SERIAL NUMBER

MATERIAL NUMBER
7200264E

SHEET
1/1

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DATE	NAME	DOCUMENT NO.
11.07.2018	BUTERUS	SED 1664686 001 04
16.07.2018	WILHELM	CHANGE NO. SCALE
16.07.2018	PRODASTSCHUK	1086956 1

SKETCH	HEAD VERSION COMPONENTS USED	LIMITATION OF THE SWIVEL RANGE
	DRIVE SHAFT RIGHT HEAD VERSION 1	-180° 0° 180°
	PIPE CONNECTION R	-168° 140°
	PIPE CONNECTION S	177°
	PIPE CONNECTION Q	162°
	PIPE CONNECTION E2	147° 174°
	PRESSURE RELIEF DEVICE DV	-150° -35°
	TEMPERATURE SENSOR T	96° 175°
INSPECTION WINDOW SL / SR	-64° SL -8° 56° SR 112°	
	DRIVE SHAFT RIGHT HEAD VERSION 2	-180° 0° 180°
	PIPE CONNECTION R	-48° -21°
	PIPE CONNECTION S	-63° -36°
	PIPE CONNECTION Q	-78° -51°
	PIPE CONNECTION E2	-93° -66°
	PRESSURE RELIEF DEVICE DV	-150° -35°
	TEMPERATURE SENSOR T	96° 175°
INSPECTION WINDOW SR	56° SR 112°	
	DRIVE SHAFT RIGHT HEAD VERSION 3	-180° 0° 180°
	PIPE CONNECTION R	72° 99°
	PIPE CONNECTION S	57° 84°
	PIPE CONNECTION Q	42° 69°
	PIPE CONNECTION E2	27° 54°
	PRESSURE RELIEF DEVICE DV	-150° -35°
	TEMPERATURE SENSOR T	96° 175°
INSPECTION WINDOW SL	-64° SL -8°	
	DRIVE SHAFT LEFT HEAD VERSION 1	-180° 0° 180°
	PIPE CONNECTION R	-162° 171°
	PIPE CONNECTION S	156°
	PIPE CONNECTION Q	141° 168°
	PIPE CONNECTION E2	126° 153°
	PRESSURE RELIEF DEVICE DV	35° 150°
	TEMPERATURE SENSOR T	34° 114°
INSPECTION WINDOW SL / SR	-112° SL -56° 8° SR 64°	
	DRIVE SHAFT LEFT HEAD VERSION 2	-180° 0° 180°
	PIPE CONNECTION R	-69° -42°
	PIPE CONNECTION S	-84° -57°
	PIPE CONNECTION Q	-99° -72°
	PIPE CONNECTION E2	-114° -87°
	PRESSURE RELIEF DEVICE DV	35° 150°
	TEMPERATURE SENSOR T	34° 114°
INSPECTION WINDOW SR	8° SR 64°	
	DRIVE SHAFT LEFT HEAD VERSION 3	-180° 0° 180°
	PIPE CONNECTION R	50° 78°
	PIPE CONNECTION S	35° 62°
	PIPE CONNECTION Q	21° 48°
	PIPE CONNECTION E2	6° 33°
	PRESSURE RELIEF DEVICE DV	35° 150°
	TEMPERATURE SENSOR T	34° 114°
INSPECTION WINDOW SL	-112° SL -56°	

- LIMITATION OF THE SWIVEL RANGE THROUGH PIPE CONNECTIONS R AND S
- LIMITATION OF THE SWIVEL RANGE THROUGH OPTIONAL EXISTING PIPE CONNECTIONS Q, E2 AND PRESSURE RELIEF DEVICE DV
- SWIVEL RANGE POSSIBLE, BUT THE TEMPERATURE SENSOR T AND THE INSPECTION WINDOW SL / SR ARE NOT VISIBLE

DIMENSION
IN mm
EXCEPT AS
NOTED



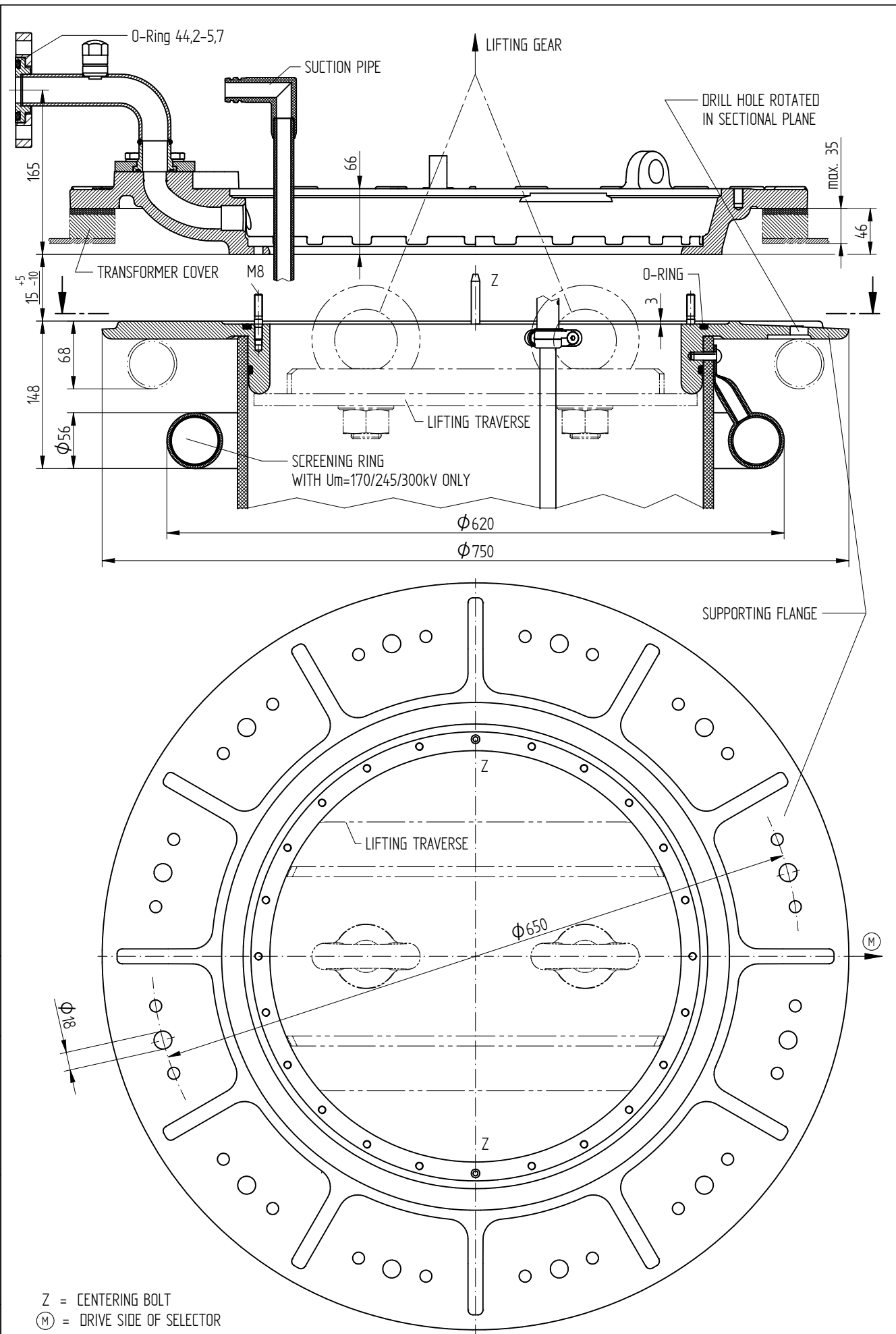
ON-LOAD TAP-CHANGER
OILTAP® MS, M, RM, R AND VACUTAP® VR®, VM®, VMS®
SWIVEL RANGE OF THE GEAR UNIT

SERIAL NUMBER

MATERIAL NUMBER	SHEET
7200276E	1/1

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DATE	NAME	DOCUMENT NO.
13.07.2018	BUTERUS	SED 1507378 000 04
16.07.2018	WILHELM	CHANGE NO. SCALE
16.07.2018	PRODASTSCHUK	1086956 1:2,5



Z = CENTERING BOLT
 M = DRIVE SIDE OF SELECTOR

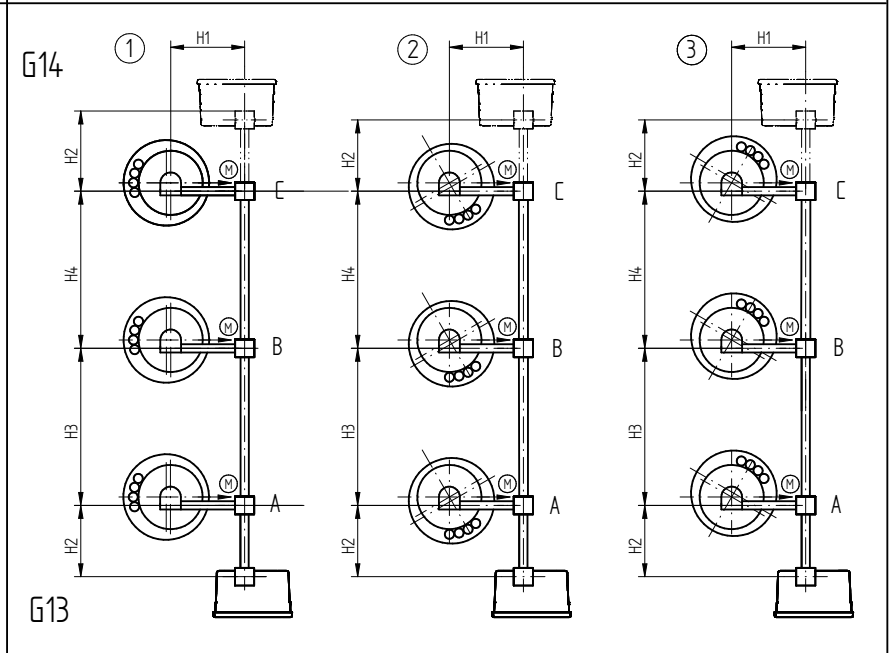
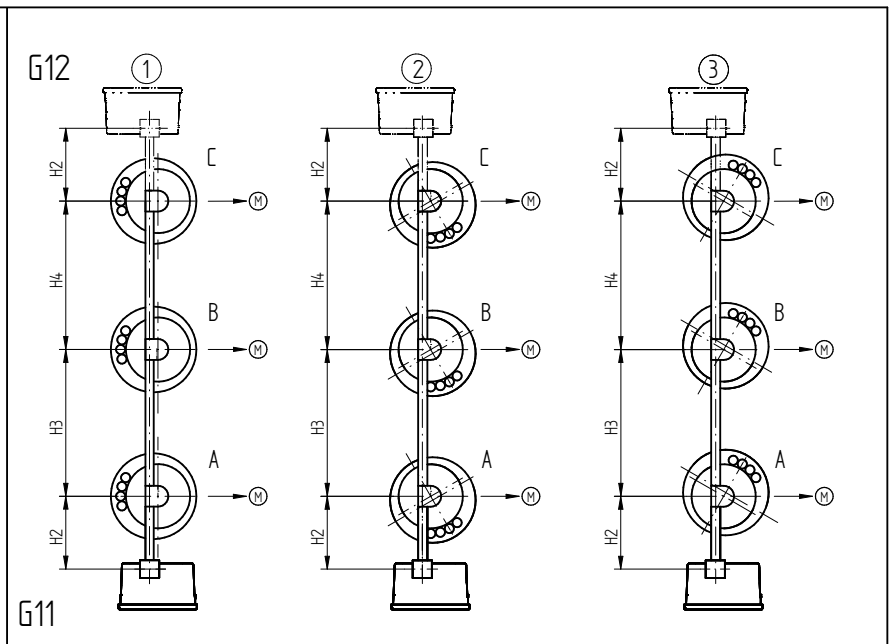
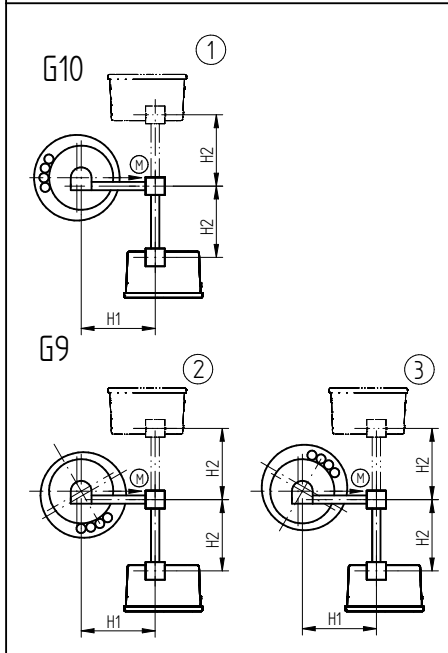
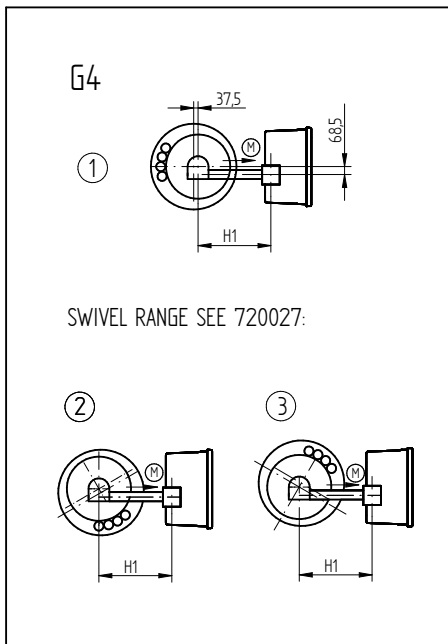
DIMENSION
 IN mm
 EXCEPT AS
 NOTED



ON-LOAD TAP-CHANGER
 OILTAP® M, R, RM, MS AND VACUTAP® VM®, VMS®
 SPECIAL DESIGN BELL-TYPE TANK INSTALLATION FOR Um UP TO 300 kV

SERIAL NUMBER	
MATERIAL NUMBER	SHEET
896762CE	1/1

DATE	NAME	DOCUMENT NO.
13.07.2018	BUTERUS	SED 1706827 001 05
16.07.2018	WILHELM	CHANGE NO.
16.07.2018	PRODASTSCHUK	1086956
CHKO.	SCALE	1



ARRANGEMENT	G4	G9, G10	G11, G12	G13, G14	
STANDARD DESIGN	■		■		
SPECIAL DESIGN		■		■	
MINIMUM DIMENSIONS ¹⁾ (DETERMINED FOR MECHANICAL REASONS; NECESSARY INSULATION SPACINGS NOT CONSIDERED!)	H1	535	545	-	545
	H2	-	323	515	323
	H3 ²⁾	-	-	840	840
	H4 ²⁾	-	-	840	840
NOTE: 1) FOR OLTCs WITH THE CHANGE-OVER SELECTOR ATTACHED Laterally, THE DIMENSIONS OF THE CHANGE-OVER SELECTOR AFTER INSTALLED IN POSITION HAVE TO BE TAKEN INTO ACCOUNT (SEE THE CORRESPONDING OLTC-DIMENSION DRAWING) 2) IN GENERAL DETERMINED BY THE INSULATION SPACING BETWEEN POLES A, B, C.					
INTERMEDIATE BEARING FOR	H1 >	2254	2309	-	2309
	H2 >	-	2259	2254	2259
	H3 >	-	-	2249	2259
	H4 >	-	-	2249	2259

① ② ③ - HEAD VERSION
 → (M) - DRIVE SIDE OF SELECTOR

DIMENSION IN mm EXCEPT AS NOTED



OLTC OILTAP® M, MS, RM, R / VACUTAP® VR®, VM®, VMS®
 HORIZONTAL DRIVE SHAFT, CENTRIC DRIVE (LIMIT DIMENSIONS)
 SELECTOR SIZE B/C/D/RC/RD/RDE

SERIAL NUMBER

MATERIAL NUMBER 893896DE
 SHEET 1/1

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DFTR.	DATE	NAME	DOCUMENT NO.
CHKD.	11.07.2018	BUTERUS	SED 1661250 001 03
STAND.	16.07.2018	WILHELM	CHANGE NO.
	16.07.2018	PRODASTSCHUK	1086956
			SCALE
			1:2,5

DIMENSION
 IN mm
 EXCEPT AS
 NOTED

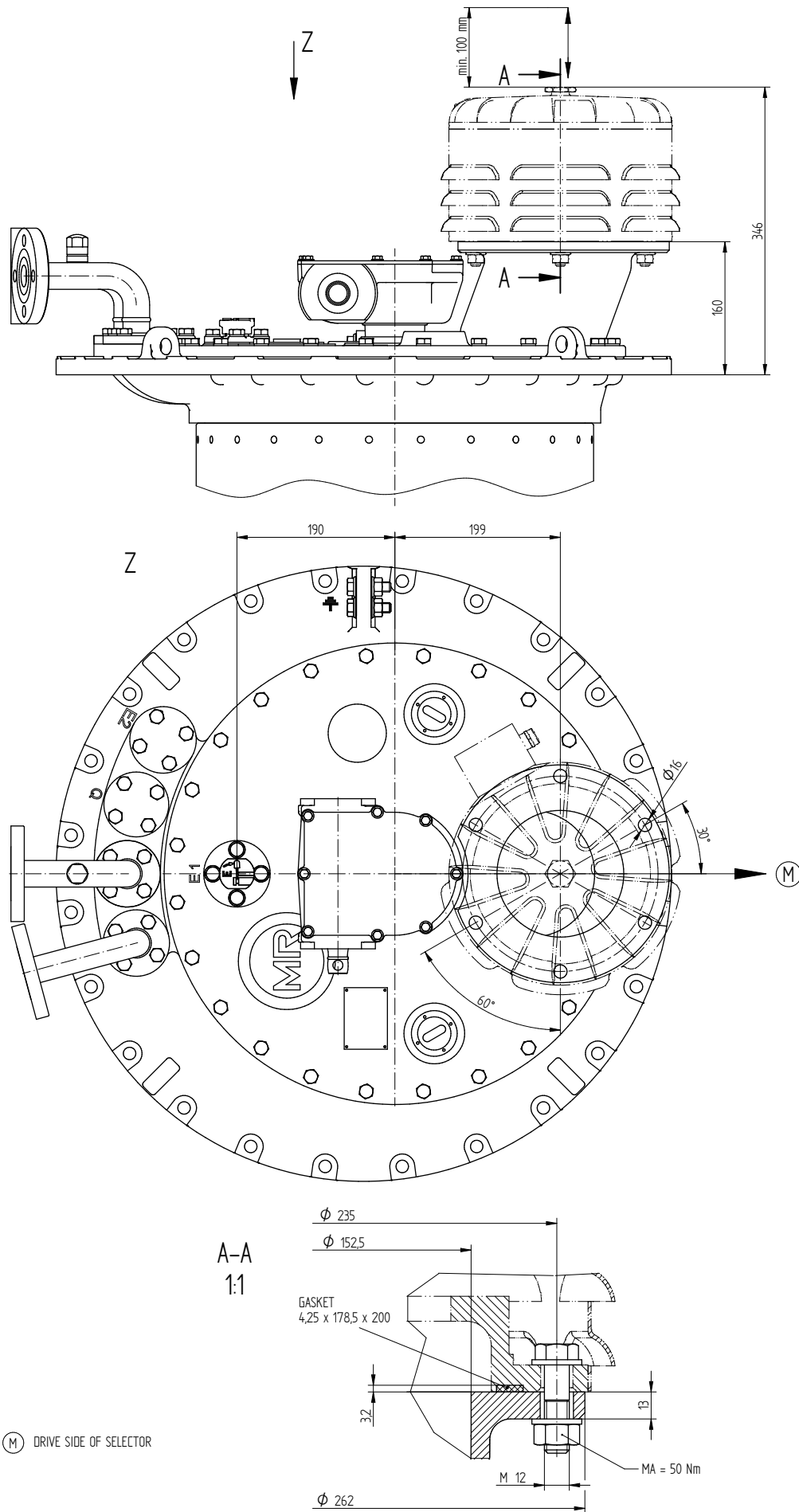


ON-LOAD TAP-CHANGER
 OILTAP® M, MS, R, RM AND VACUTAP® VR®, VM®, VMS®
 WITH MOUNTING FLANGE FOR PRESSURE RELIEF DEVICE

SERIAL NUMBER

MATERIAL NUMBER
 8951689E

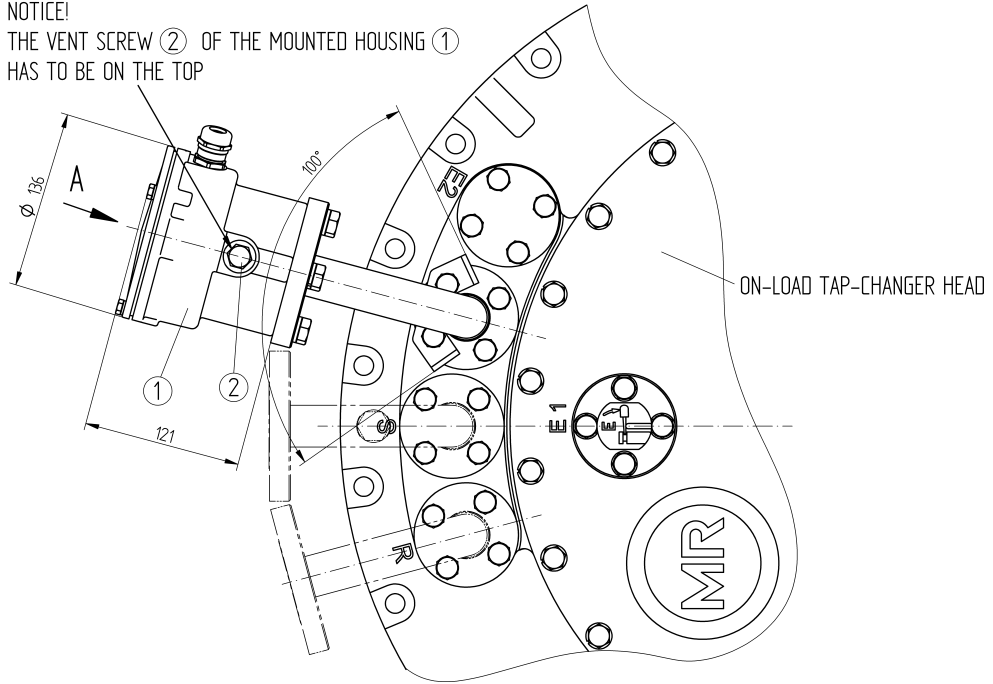
SHEET
 1/1



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PIPE CONNECTION WITH TAP-CHANGE SUPERVISORY CONTROL BUSHING WITHOUT OIL FILTER UNIT

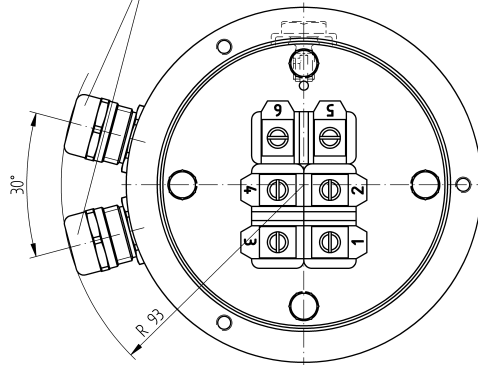
NOTICE!
 THE VENT SCREW ② OF THE MOUNTED HOUSING ① HAS TO BE ON THE TOP



A ↻ 1:1

REPRESENTED WITHOUT COVER

M20x1.5
 CLAMPING RANGE FOR CONNECTION CABLE:
 EXTERNAL DIAMETER: 7 - 13 mm



CONNECTION TERMINALS FOR TAP-CHANGE SUPERVISORY CONTROL

WIRING SEE CONNECTION DIAGRAM OF THE MOTOR-DRIVE UNIT

FUNCTION DIAGRAM FOR TAP-CHANGE SUPERVISORY CONTROL SEE MOTOR-DRIVE CONNECTION DIAGRAM

RATED CONTINUOUS CURRENT: 2A
 RATED VOLTAGE DC/AC (50HZ): 24V ... 250V
 DIELECTRIC STRENGTH: 1150V / 50HZ / 1 MIN.

DIELECTRIC TEST OF ALL VOLTAGE CARRYING TERMINALS TO GROUND:
 2000V AC , 50HZ , TEST-DURATION 1 MIN.

DATE	NAME	DOCUMENT NO.
03.11.2016	RAEDLINGER	SED 2425358 001 02
CHKD.	NERRETER	CHANGE NO.
04.11.2016	PRODASTSCHUK	1078202
STAND.		1:2

DIMENSION
 IN mm
 EXCEPT AS
 NOTED



ON-LOAD TAP-CHANGER VACUTAP® VM, VR
 PIPE CONNECTION WITH TAP-CHANGE SUPERVISORY CONTROL

SERIAL NUMBER

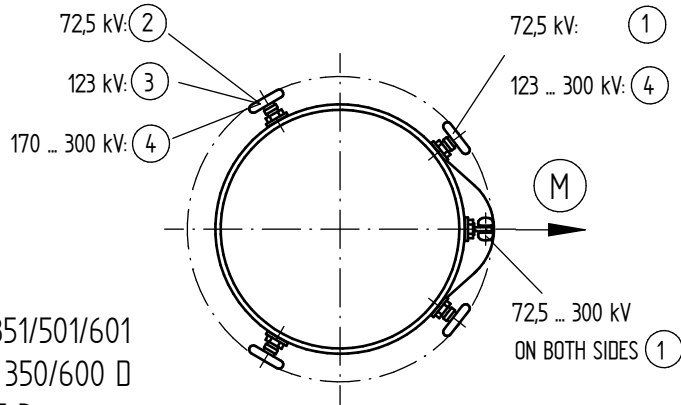
MATERIAL NUMBER
 7661612E

SHEET
 1/1

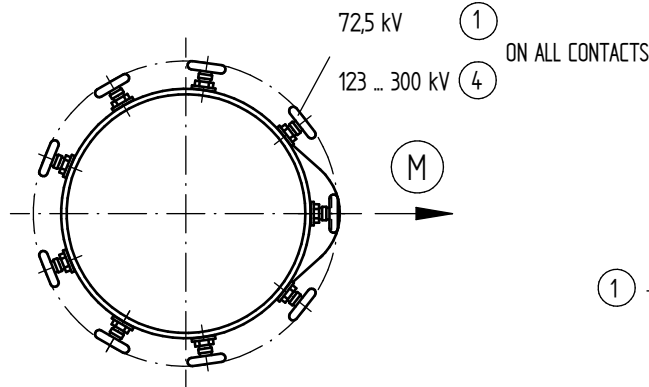
4.4 Oil compartment

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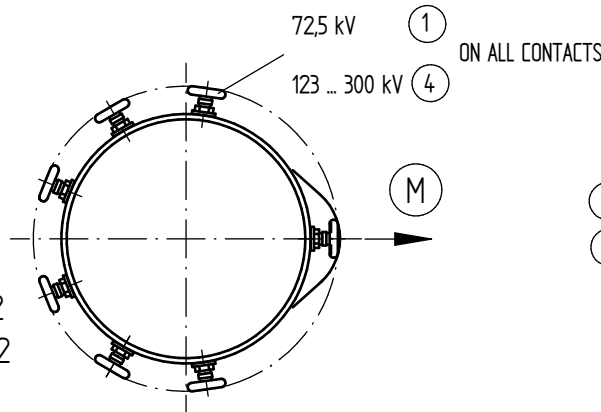
MI 351/501/601
 MIII 350/600 D
 POLE B
 VMI 351/501/651



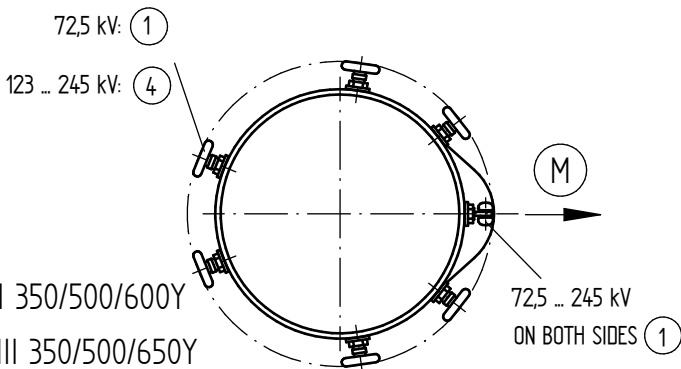
MI 603/803
 MI 1203/1503



VMI 653/803
 VMI 1203/1503

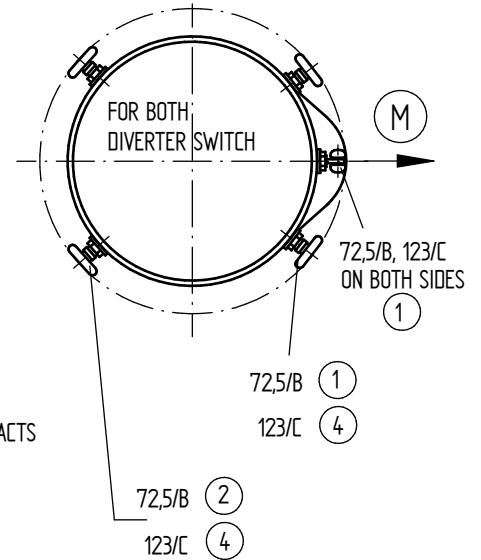


MI 502/602/802
 MII 352/502/602
 VMI 502/652/802
 VMII 352/502/652

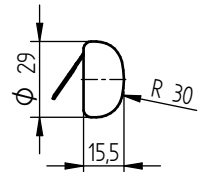


MIII 350/500/600Y
 VMIII 350/500/650Y
 VMSIII 400/650Y

MIII 350/500 D POLE A
 VMIII 350/500 D POLE A

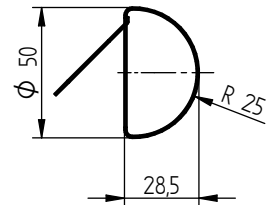


① - 056919 (UNCOATED)

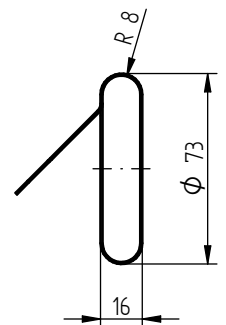
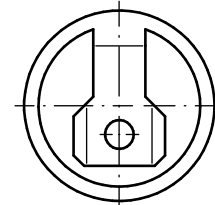


② - 016768 (UNCOATED)

③ - 067620 (COATED)



④ - 066845 (COATED)



WITH THE CURRENT TAKE-OFF RINGS SCREENING CAPS ① ARE USED TO ATTACH THE LOWER SCREENING RING (170 ... 300 kV)

DATE	DOCUMENT NO.
13.07.2018	SED 1668294_001 02
NAME	SCALE
BUTERUS	-
WILHELM	CHANGE NO.
PRODASTSCHUK	1086956
DATE	DOCUMENT NO.
16.07.2018	SED 1668294_001 02
NAME	SCALE
WILHELM	-
PRODASTSCHUK	CHANGE NO.
16.07.2018	1086956

DIMENSION
 IN mm
 EXCEPT AS
 NOTED



ON-LOAD TAP-CHANGER OILTAP® M / VACUTAP® VM®, VMS®
 SCREENINGS ON OIL COMPARTMENT TERMINALS

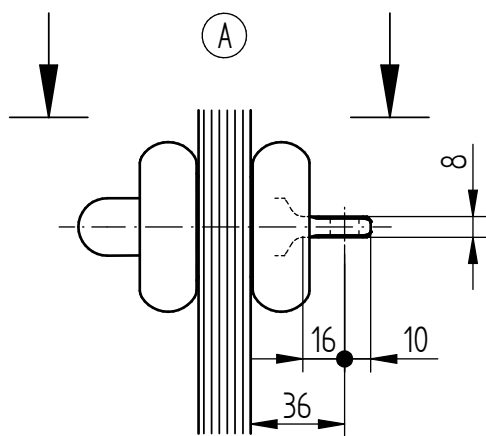
SERIAL NUMBER

MATERIAL NUMBER
 7303362E

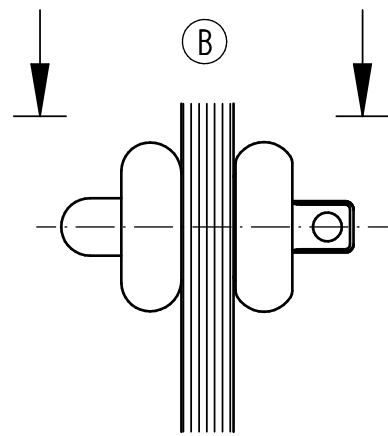
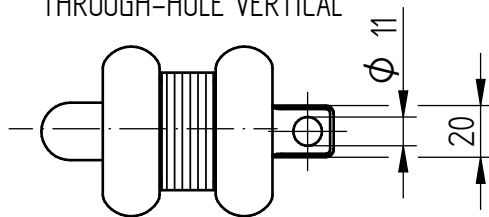
SHEET
 1 / 1

4.5 Selector

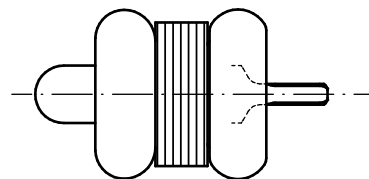
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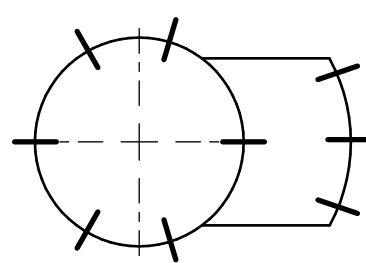
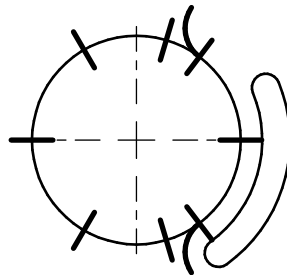
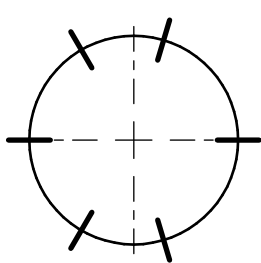
THROUGH-HOLE VERTICAL



THROUGH-HOLE HORIZONTAL



(A)

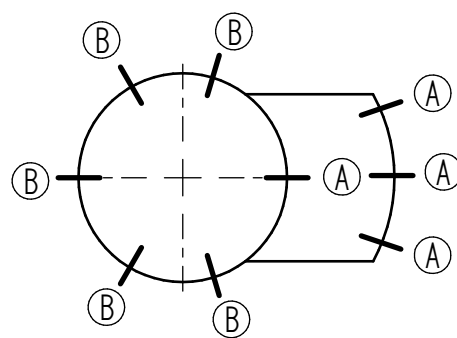
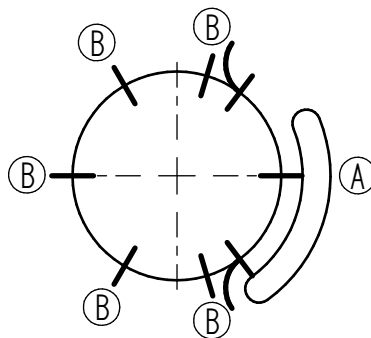
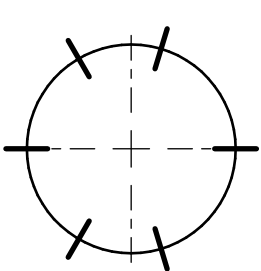


- M III 350 / 500 / 600Y - 0
- VM III 350 / 500 / 650Y - 0
- VMS III 400 / 650Y - C - 0
- M II 352 / 502 / 602 - 0
- VM II 352 / 502 / 652 - 0
- M I 351 / 501 / 601 - 0
- VM I 351 / 501 / 651 - 0

- M III 350 / 500 / 600Y - W
- VM III 350 / 500 / 650Y - W
- VMS III 400 / 650Y - C - W
- M II 352 / 502 / 602 - W
- VM II 352 / 502 / 652 - W
- M I 351 / 501 / 601 - W
- VM I 351 / 501 / 651 - W

- M III 350 / 500 / 600Y - G
- VM III 350 / 500 / 650Y - G
- VMS III 400 / 650Y - C - G
- M II 352 / 502 / 602 - G
- VM II 352 / 502 / 652 - G
- M I 351 / 501 / 601 - G
- VM I 351 / 501 / 651 - G

(B)



- M I 802 - 0
- VM I 802 - 0
- VM I 1002 - 0
- M I 1203 / 1503 - 0
- VM I 1203 / 1503 - 0

- M I 802 - W
- VM I 802 - W
- VM I 1002 - W
- M I 1203 / 1503 - W
- VM I 1203 / 1503 - W

- M I 802 - G
- VM I 802 - G
- VM I 1002 - G
- M I 1203 / 1503 - G
- VM I 1203 / 1503 - G

(A) + (B)

DATE	NAME	DOCUMENT NO.
13.07.2018	BUJERUS	SED 1706800 000 03
16.07.2018	WILHELM	CHANGE NO.
16.07.2018	PRODASTSCHUK	1086956
SCALE		1:2

DIMENSION
IN mm
EXCEPT AS
NOTED



OLTC OILTAP® M / VACUTAP® VM®, VMS®-C
 INSTALLATION POSITION OF SELECTOR CONNECTION CONTACTS
 M-SELECTOR SIZE B/C/D/E

SERIAL NUMBER

MATERIAL NUMBER
890477BE

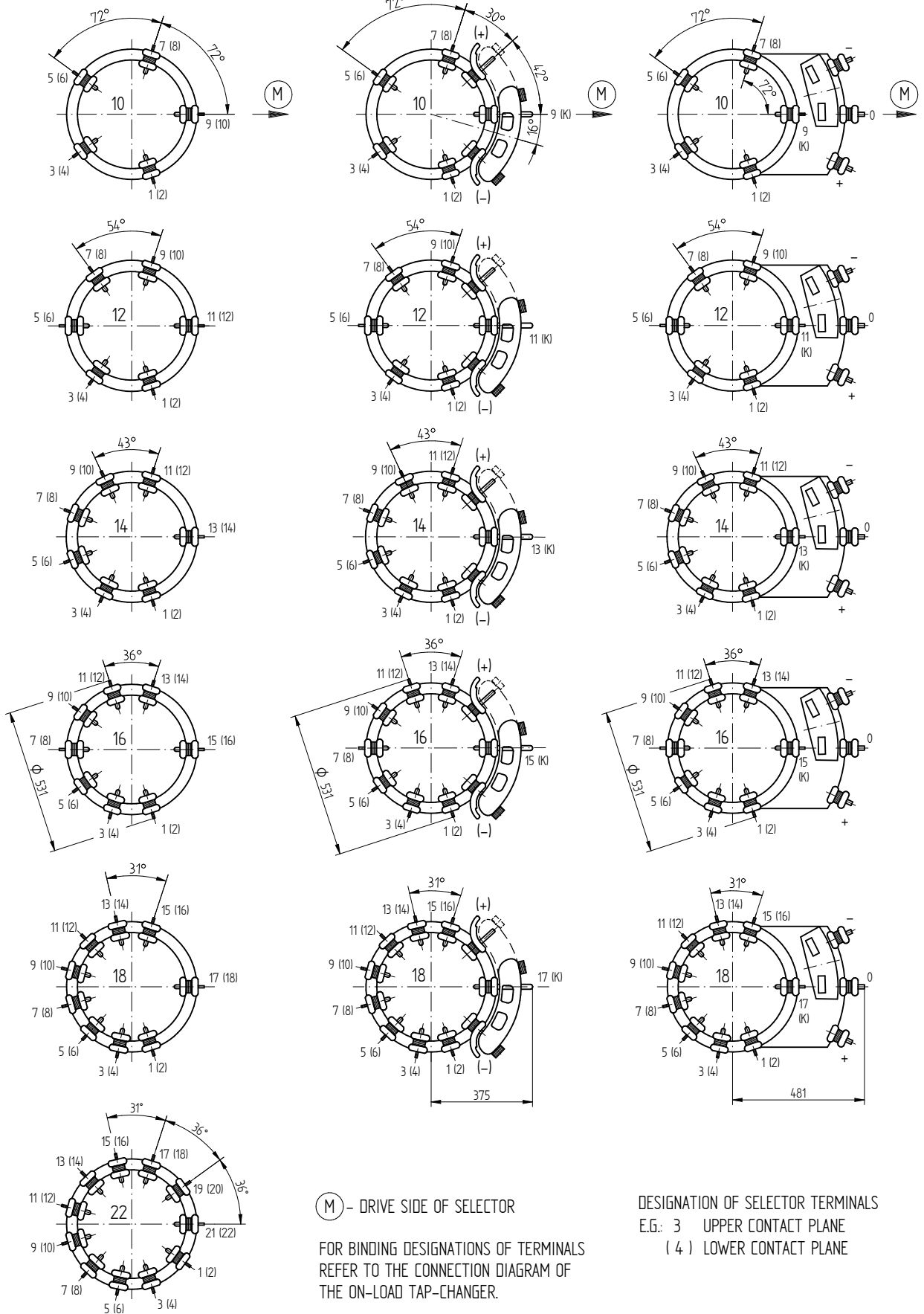
SHEET
1 / 1

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SELECTOR WITHOUT CHANGE-OVER SELECTOR:

SELECTOR WITH REVERSING CHANGE-OVER SELECTOR:
 REPRESENTATION APPLIES TO TYPES M/ VM®/ VMS®-C, VRC/ VRE III Y AND M/ VM®/ VRC/ VRE II.
 THE UPPER AND LOWER SELECTOR PLANE ARE INTERCHANGED IN TYPES M/ VM®/ VRC/ VRE I AND VRC I HD/ VRE I HD.

SELECTOR WITH COARSE CHANGE-OVER SELECTOR:



(M) - DRIVE SIDE OF SELECTOR

FOR BINDING DESIGNATIONS OF TERMINALS REFER TO THE CONNECTION DIAGRAM OF THE ON-LOAD TAP-CHANGER.

DESIGNATION OF SELECTOR TERMINALS
 E.G.: 3 UPPER CONTACT PLANE
 (4) LOWER CONTACT PLANE

DATE	13.07.2018	DOCUMENT NO.	SED 1050444 001 05
DFTR.	16.07.2018	NAME	BUTERUS
CHKD.	16.07.2018	CHANGE NO.	1086956
STAND.	16.07.2018	SCALE	1:10
		PRODASTSCHUK	

DIMENSION
 IN mm
 EXCEPT AS
 NOTED



OLTC OILTAP® M / VACUTAP® VM®, VMS®-C, VRC, VRE
 ARRANGEMENT OF CONTACTS AT SELECTOR
 M-SELECTOR SIZE B/C/D/DE - SELECTOR PITCH 10 ... 22

SERIAL NUMBER

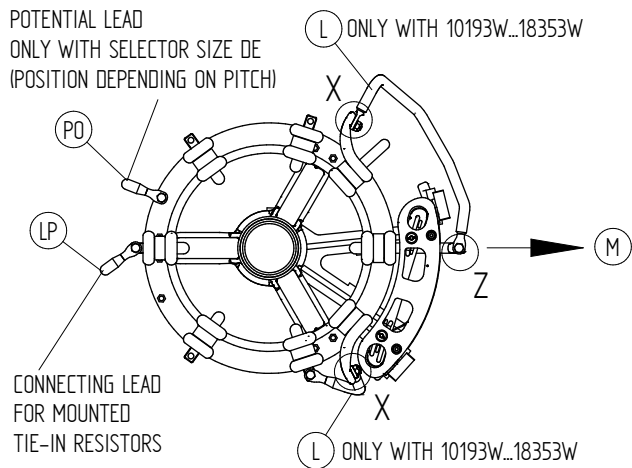
MATERIAL NUMBER
 8980136E

SHEET
 1/1

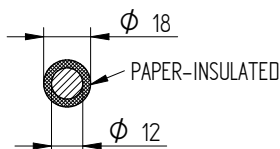
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REVERSING CHANGE-OVER SELECTOR

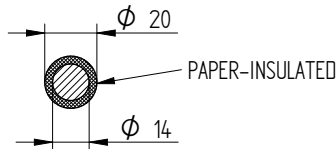
REPRESENTATION OF SELECTOR, 12-PITCH



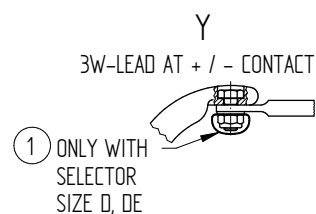
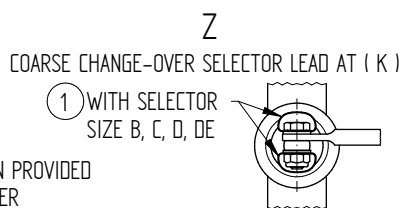
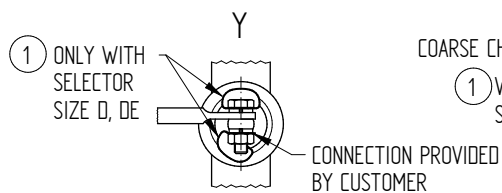
LEAD PROFILE (LP)



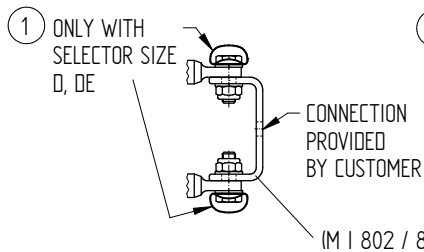
LEAD PROFILE (PO), (L) ONLY WITH SELECTOR SIZE DE



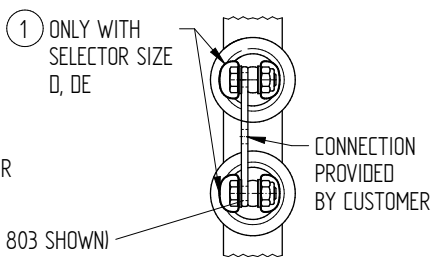
LEAD PROFILE (L) WITH SELECTOR SIZE B, C, D



PARALLEL BRIDGES ARRANGEMENT OF CONTACTS A



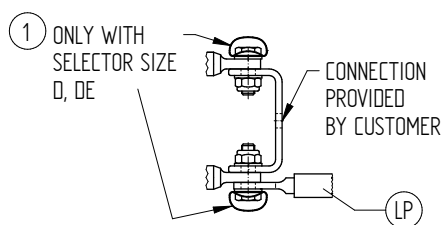
PARALLEL BRIDGES ARRANGEMENT OF CONTACTS B



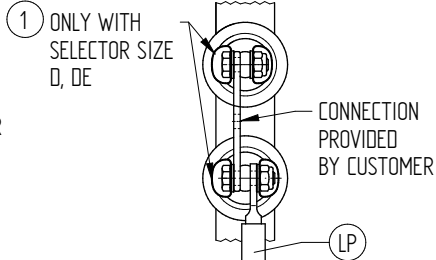
PARALLEL BRIDGES AT + / - CONTACT (WITH REVERSING CHANGE-OVER SELECTOR)



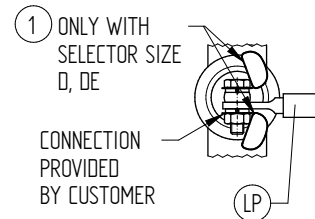
PARALLEL BRIDGES ARRANGEMENT OF CONTACTS A WITH (LP)



PARALLEL BRIDGES ARRANGEMENT OF CONTACTS B WITH (LP)



CONNECTION CONTACT (STANDARD) WITH (LP)



(M) DRIVE SIDE OF SELECTOR
(LP) (PO) (L) CONNECTING LEADS

NOTICE: WITH SELECTOR SIZE D AND DE SCREENING CAPS 1 ARE UNMOUNTED DELIVERED TO ATTACH THE LEADS, PROVIDED BY CUSTOMER, TO THE TAPINGS OF THE TAP WINDING.

DOCUMENT NO.	DATE	NAME	CHANGE NO.	SCALE
1668279 001 03	13.07.2018	BUTERUS		
1086956	16.07.2018	WILHELM		
	16.07.2018	PRODASTSCHUK		

DIMENSION IN mm EXCEPT AS NOTED



OLTC OILTAP® M, RM / VACUTAP® VRC/VRE, VM®, VMS®-C
SCREENINGS AT TAP SELECTOR AND CHANGE-OVER SELECTOR
M-SELECTOR SIZE B/C/D/DE

SERIAL NUMBER

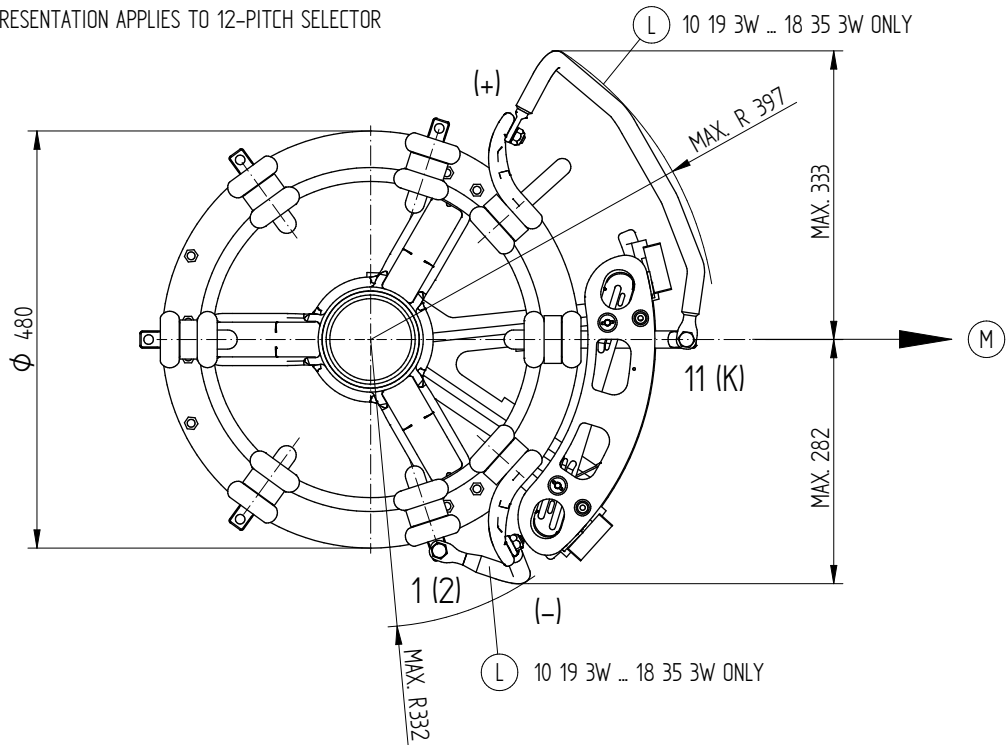
MATERIAL NUMBER 7303353E SHEET 1/1

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DATE	NAME	DOCUMENT NO.
DFTR. 13.07.2018	BUTERUS	SED 1474939 000 06
CHKD. 16.07.2018	WILHELM	CHANGE NO.
STAND. 16.07.2018	PRODASTSCHUK	1086956
		SCALE 1:3

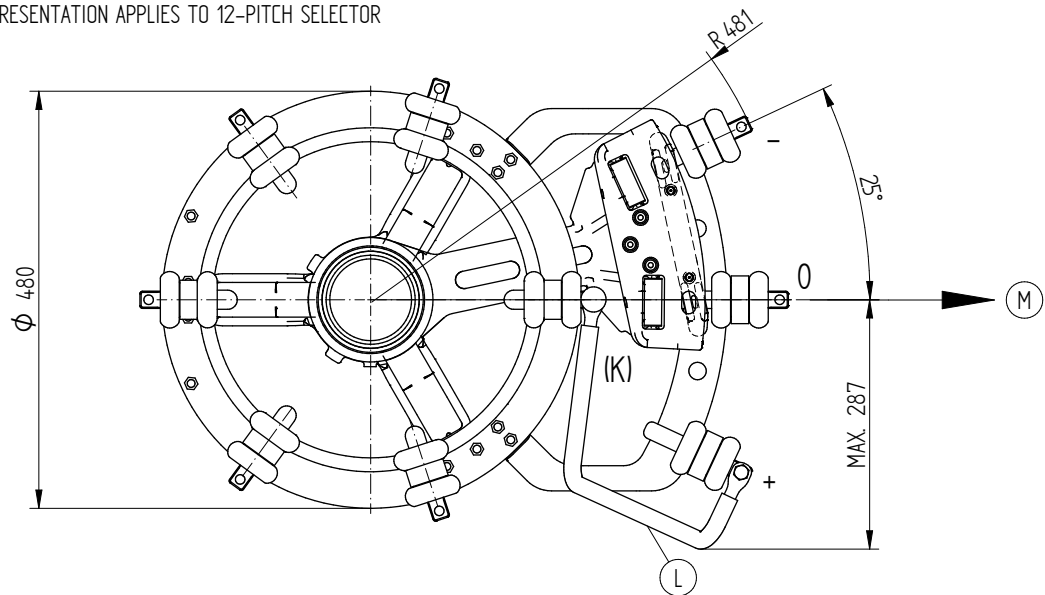
REVERSING CHANGE-OVER SELECTOR

E - F (TYPE M / VM / VMS-C) AND D - D (TYPE VRC / VRE / VRC I HD / VRE I HD / VRS / VRM)
 REPRESENTATION APPLIES TO 12-PITCH SELECTOR



COARSE CHANGE-OVER SELECTOR

G - H (TYPE M / VM / VMS-C) AND E - E (TYPE VRC / VRE / VRC I HD / VRE I HD / VRS / VRM)
 REPRESENTATION APPLIES TO 12-PITCH SELECTOR

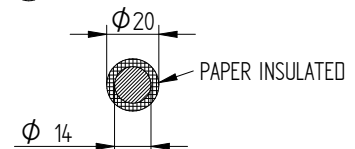
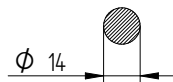


(L) SELECTOR SIZE B, C, D

(L) SELECTOR SIZE DE

(M) DRIVE SIDE OF SELECTOR

(L) CONNECTING LEADS



THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS

DIMENSION
 IN mm
 EXCEPT AS
 NOTED



OLT C OILTAP® M / VACUTAP® VM®, VMS®-C, VRC, VRE, VRS, VRM
 CONNECTING LEAD 3W AND 1G / 3G
 M-SELECTOR SIZE B/C/D/DE

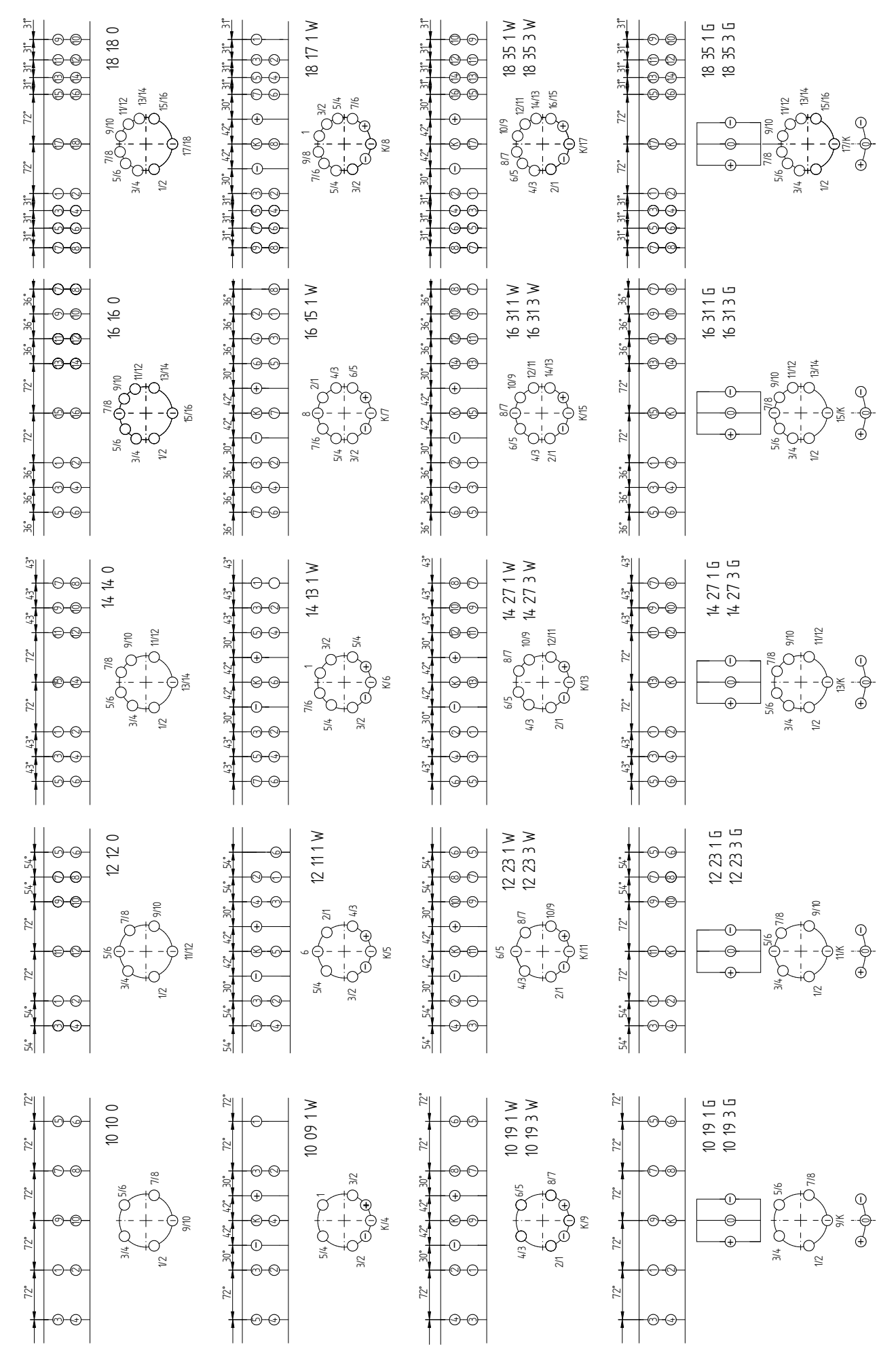
SERIAL NUMBER

MATERIAL NUMBER
 7235904E

SHEET
 1/1

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DATE	NAME	DOCUMENT NO.
19.08.2015	RAEDLINGER	SED 26/13347_001 01
21.08.2015	TKBIRKMANN	CHANGE NO.
24.08.2015	KLEYN	1066507
		SCALE
		-



DIMENSION
IN mm
EXCEPT AS
NOTED

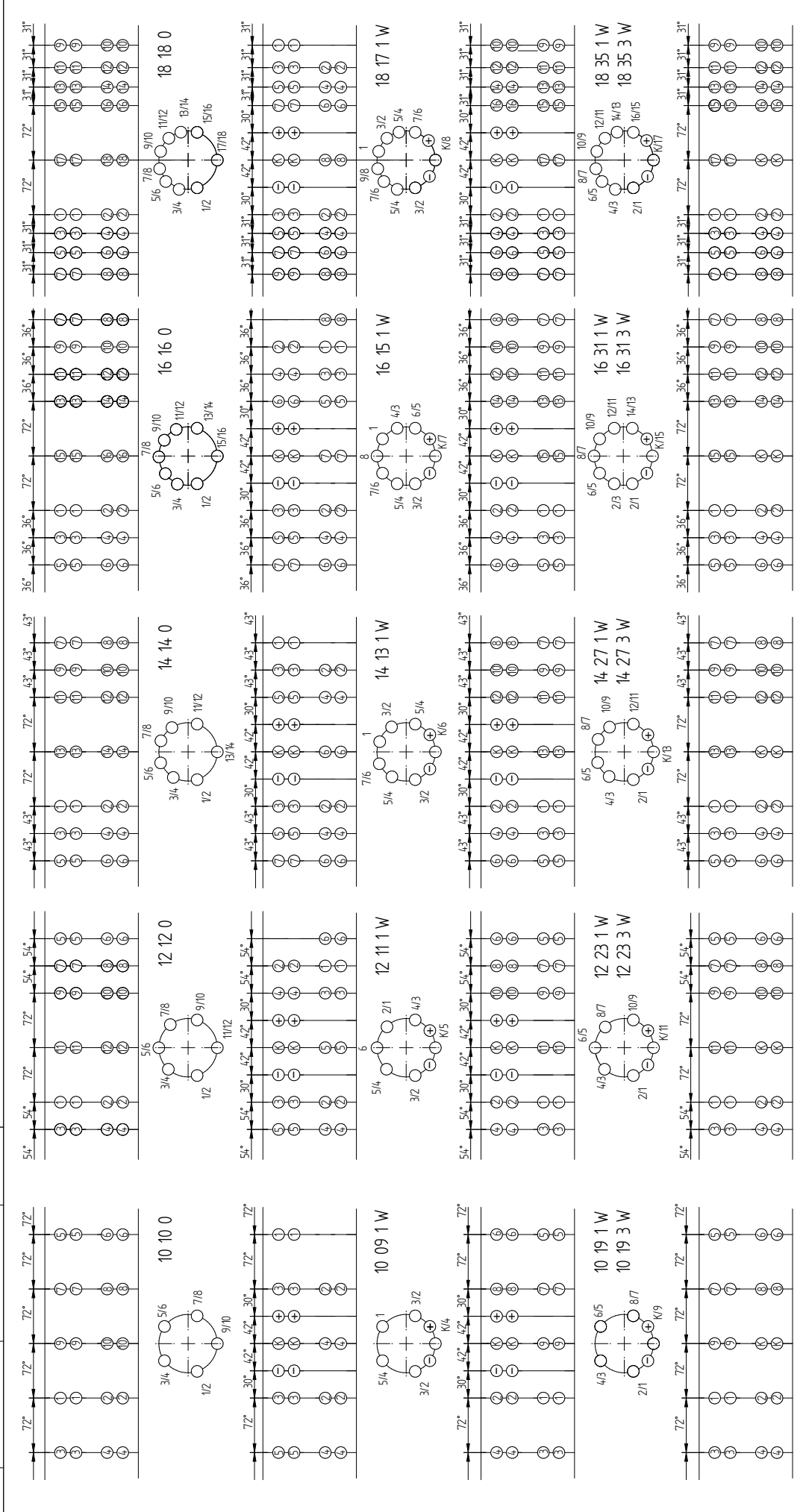


OLTC OILTAP® M | 351/501/601, RM | 601
 OLTC VACUTAP® VM | 351/501/651, VRC | 401/551/701, VRE | 701
 CONTACT ARRANGEMENT ON SELECTOR FOR SELECTOR SIZE B,C,D,DE

SERIAL NUMBER	
MATERIAL NUMBER	SHEET
8911088E	1/1

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DATE	NAME	DOCUMENT NO.
19.08.2015	RAEDLINGER	SED 2613129 001 01
21.08.2015	TKBIRKMAN	CHANGE NO.
24.08.2015	KLEYN	1066507
		SCALE
		-



DIMENSION
 IN mm
 EXCEPT AS
 NOTED

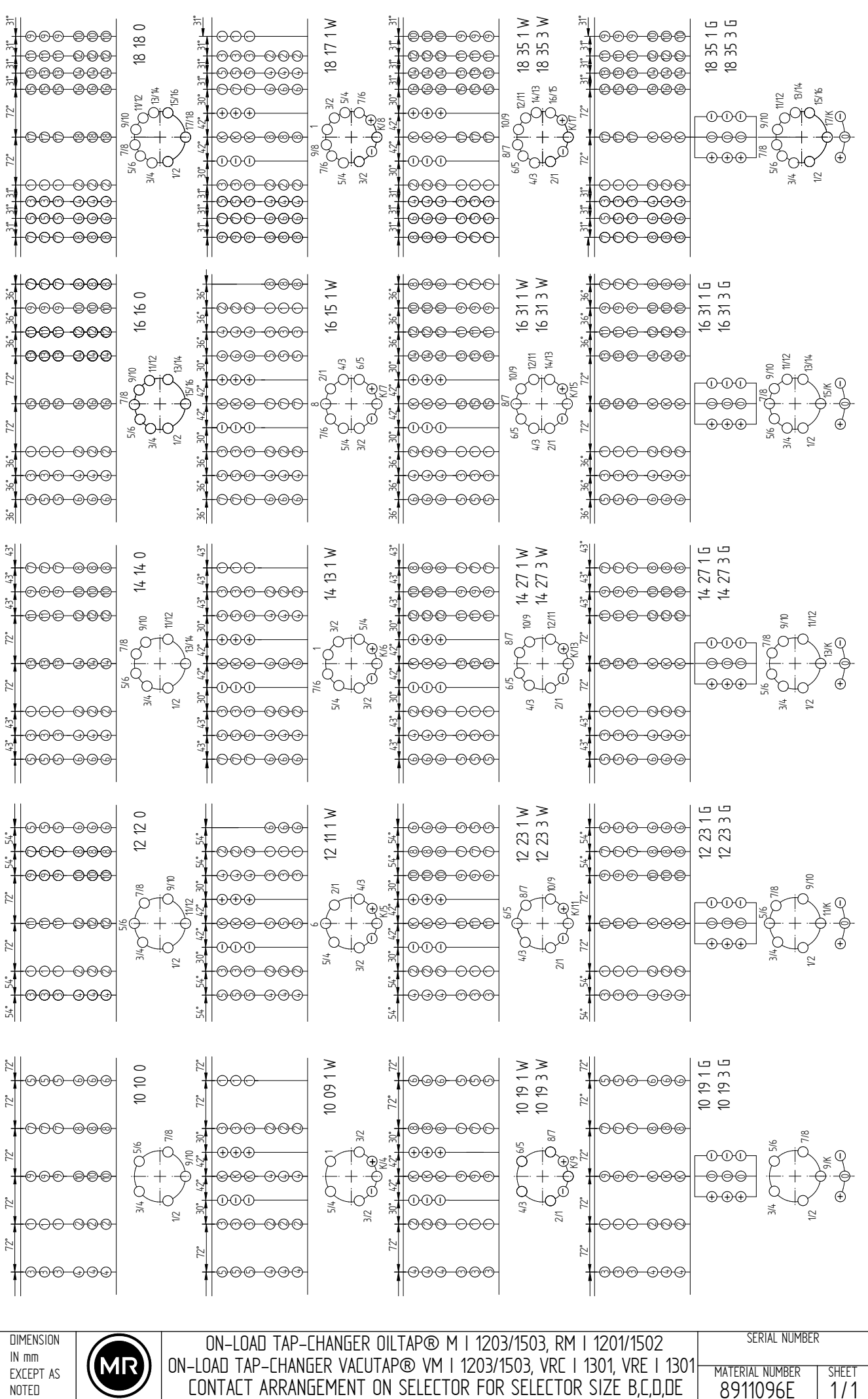


ON-LOAD TAP-CHANGER OILTAP® M | 802
 ON-LOAD TAP-CHANGER VACUTAP® VM | 802/1002, VRC | 1001, VRE | 1001
 CONTACT ARRANGEMENT ON SELECTOR FOR SELECTOR SIZE B,C,D,DE

SERIAL NUMBER	
MATERIAL NUMBER	SHEET
8911105E	1/1

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DFTR.	DATE	NAME	DOCUMENT NO.
CHKD.	19.08.2015	RAEDLINGER	SED 26/15953 001 01
STAND.	21.08.2015	TKBIRKMANN	CHANGE NO.
	24.08.2015	KLEYN	1066507
			SCALE
			-



ON-LOAD TAP-CHANGER OILTAP® M | 1203/1503, RM | 1201/1502
 ON-LOAD TAP-CHANGER VACUTAP® VM | 1203/1503, VRC | 1301, VRE | 1301
 CONTACT ARRANGEMENT ON SELECTOR FOR SELECTOR SIZE B,C,D,DE

SERIAL NUMBER	
MATERIAL NUMBER	SHEET
8911096E	1/1

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DATE	NAME	DOCUMENT NO.
DfTR. 13.07.2018	BUTERUS	SED 261976 001 02
CHKD. 16.07.2018	WILHELM	CHANGE NO.
SCALE		
STANDJ. 16.07.2018	PRODASTSCHUK	1086956

DIMENSION
IN mm
EXCEPT AS
NOTED

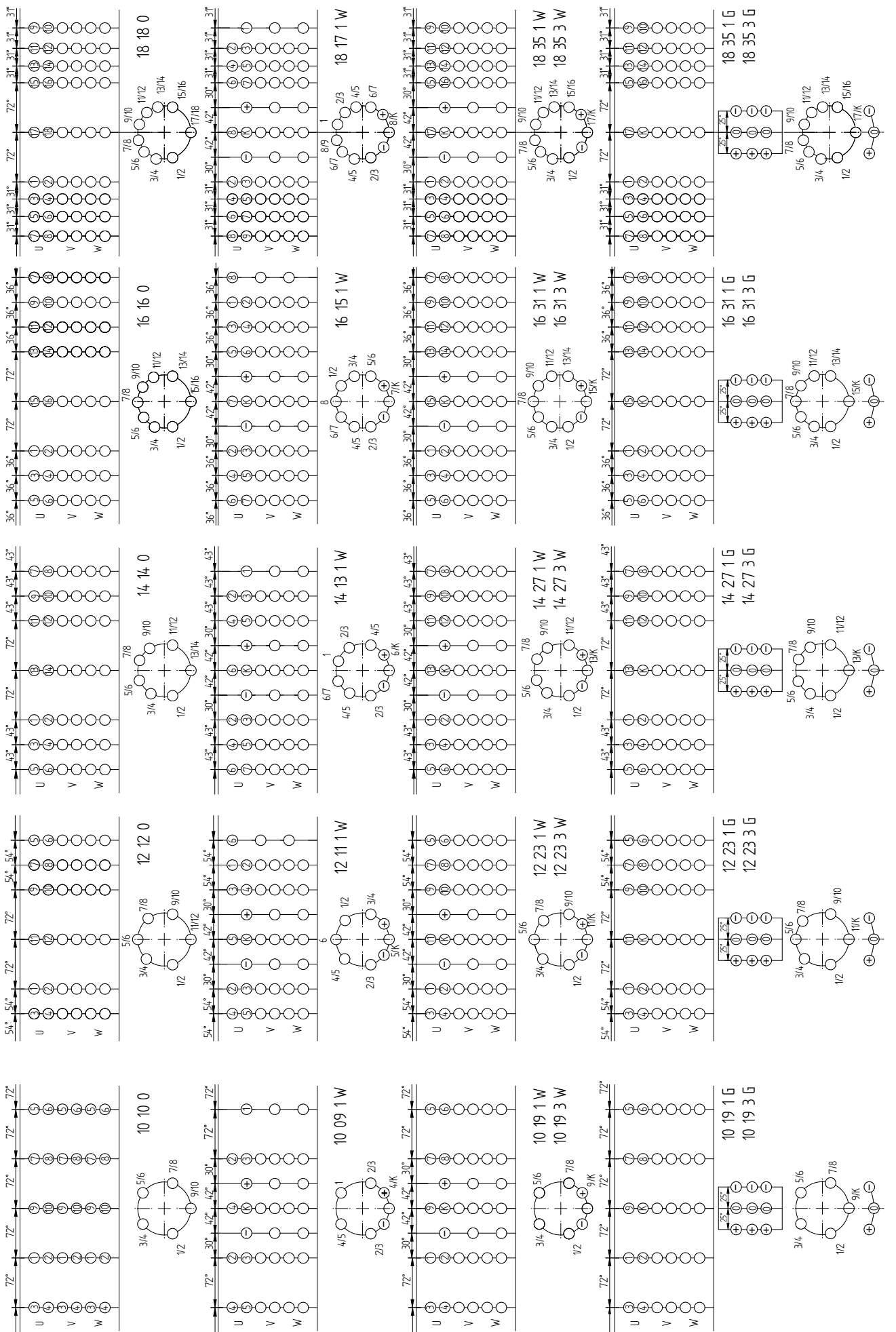


OLTC VACUTAP® VM® III 350/500/650, VMS® III 400/650 - C
VRC III 400/550/700, VRE III 700 / OILTAP® M III 350/500/600, RM III 600
CONTACT ARRANGEMENT M-SELECTOR SIZE B/C/D/DE

SERIAL NUMBER

MATERIAL NUMBER
8911076E

SHEET
1/1



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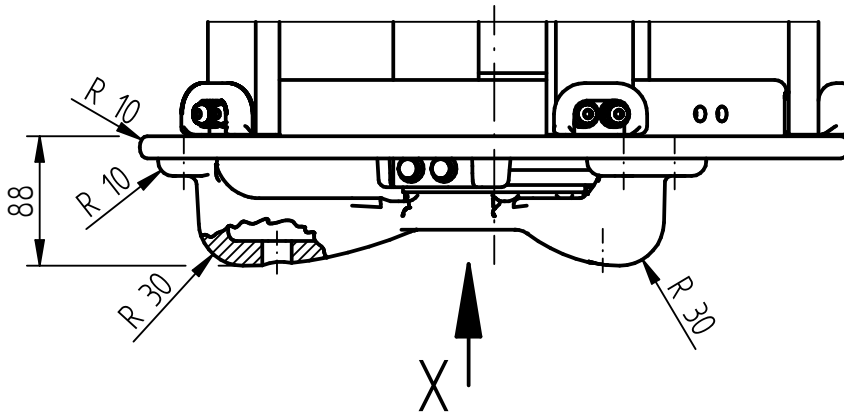
DATE	NAME	DOCUMENT NO.
DFTR. 13.07.2018	BUTERUS	SED 1708618 000 03
CHKD. 16.07.2018	WILHELM	CHANGE NO. SCALE
STAND. 16.07.2018	PRODASTSCHUK	1086956 15

DIMENSION
 IN mm
 EXCEPT AS
 NOTED



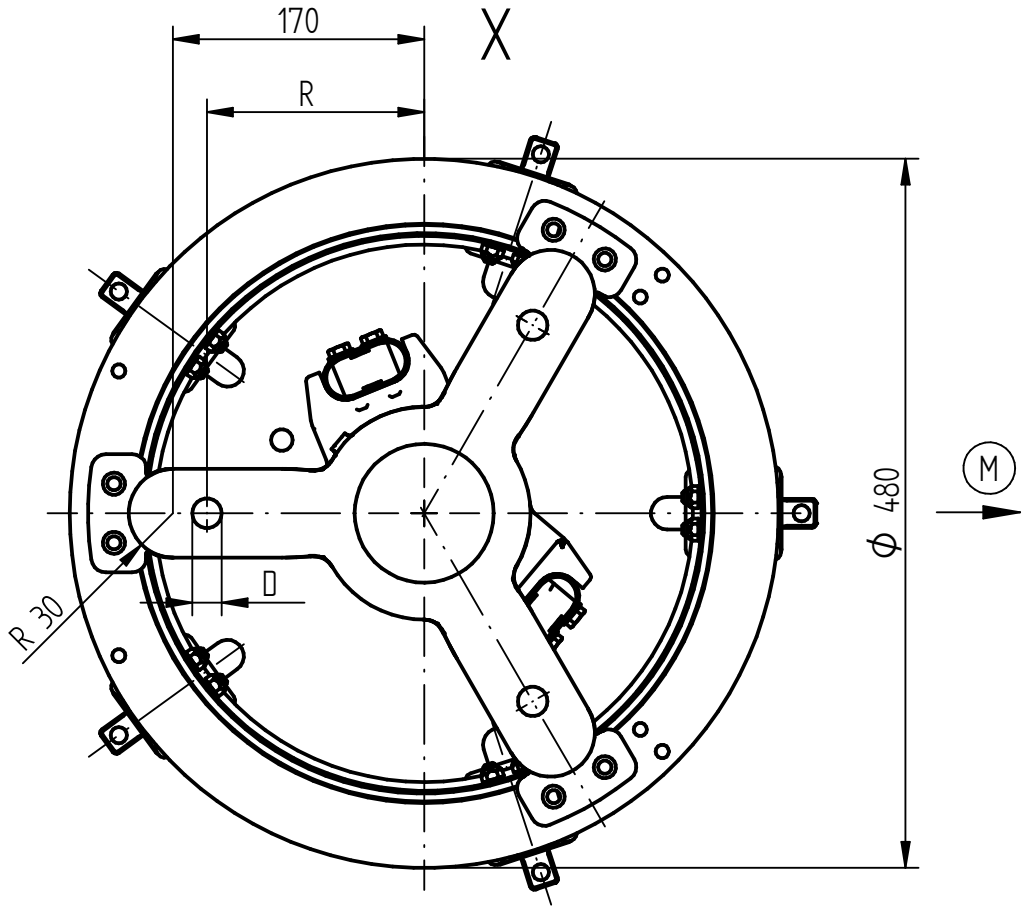
ON-LOAD TAP-CHANGER OILTAP® M / VACUTAP® VM®, VMS®-C
 SELECTOR BASE WITH HOLE Ø20 AND Ø13
 M-SELECTOR SIZE B/C/D/DE

SERIAL NUMBER	
MATERIAL NUMBER 7256494E	SHEET 1 / 1



(M) DRIVE SIDE OF SELECTOR

R	Ø	SELECTOR BASE
147	20	097251
160	13	097252



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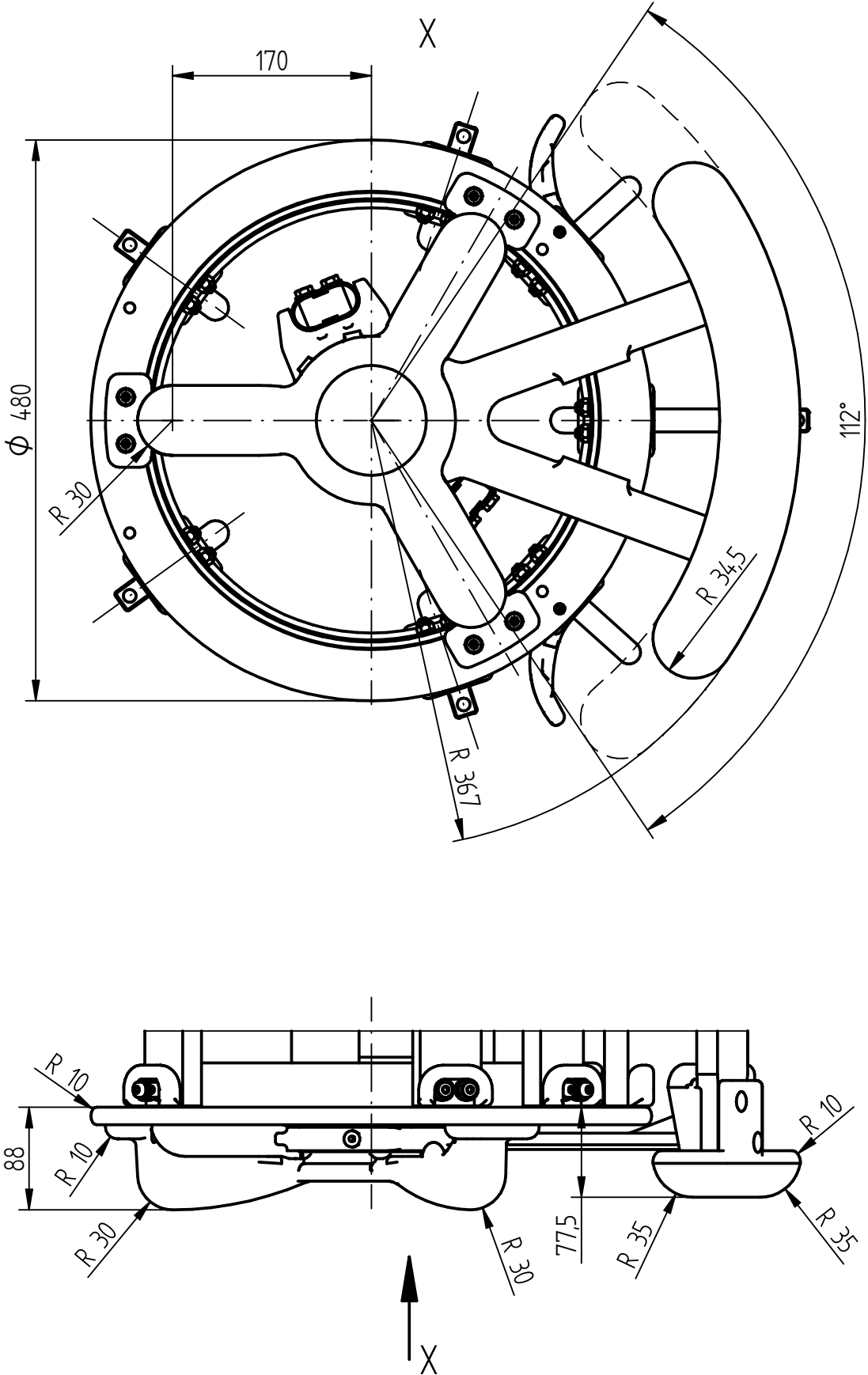
DATE	NAME	DOCUMENT NO.
DFTR. 13.07.2018	BUTERUS	SED 1708547 000 03
CHKD. 16.07.2018	WILHELM	CHANGE NO. SCALE
STAND. 16.07.2018	PRODASTSCHUK	1086956 15

DIMENSION
 IN mm
 EXCEPT AS
 NOTED



OLTC OILTAP® M / VACUTAP® VM®, VMS®-C, VRC, VRE
 ADDITIONAL SCREENING ON SELECT OR BASE - REVERSING COS
 M-SELECTOR SIZE B/C/D/DE

SERIAL NUMBER	
MATERIAL NUMBER 8939344E	SHEET 1 / 1



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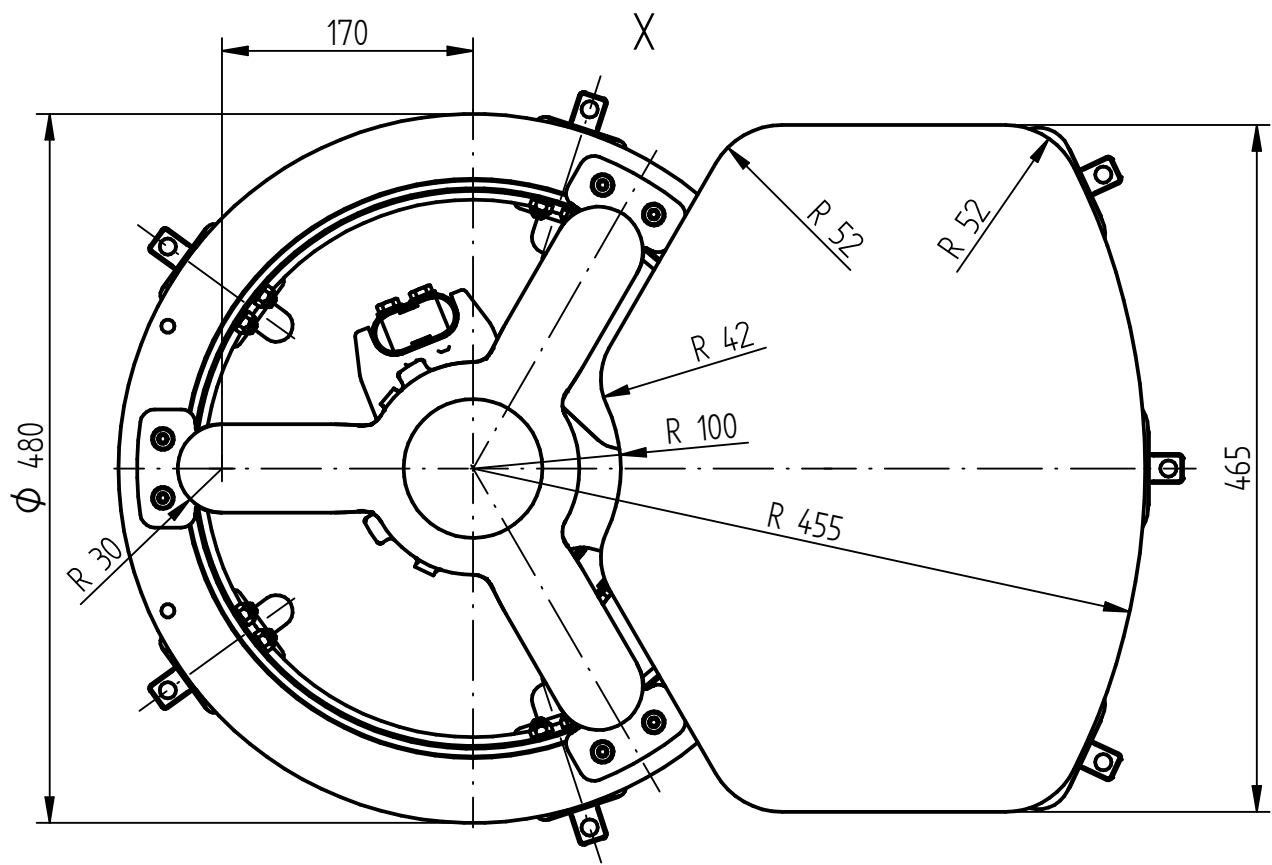
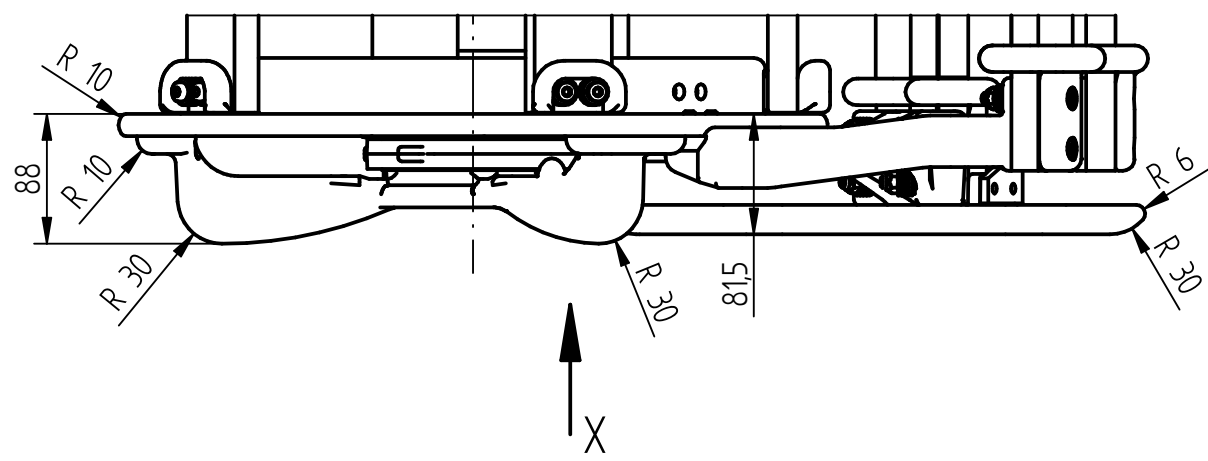
DATE	NAME	DOCUMENT NO.
DFTR. 13.07.2018	BUTERUS	SED 1708571 000 03
CHKD. 16.07.2018	WILHELM	CHANGE NO. SCALE
STAND. 16.07.2018	PRODASTSCHUK	1086956 15

DIMENSION
 IN mm
 EXCEPT AS
 NOTED



OLTC OILTAP® M / VACUTAP® VM®, VMS®-C, VRC, VRE
 ADDITIONAL SCREENING ON SELECTOR BASE - COARSE COS
 M-SELECTOR SIZE B/C/D/DE

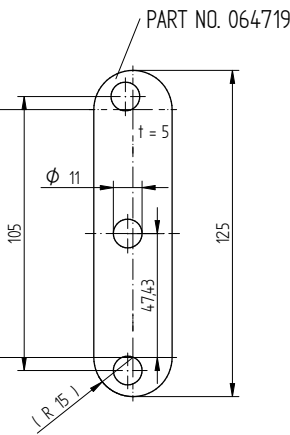
SERIAL NUMBER	
MATERIAL NUMBER 8939354E	SHEET 1 / 1



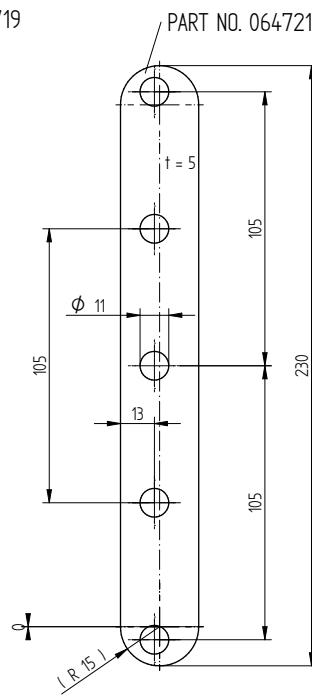
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ARRANGEMENT OF CONTACT B

M | 802 / 803
VM | 802 / 1002

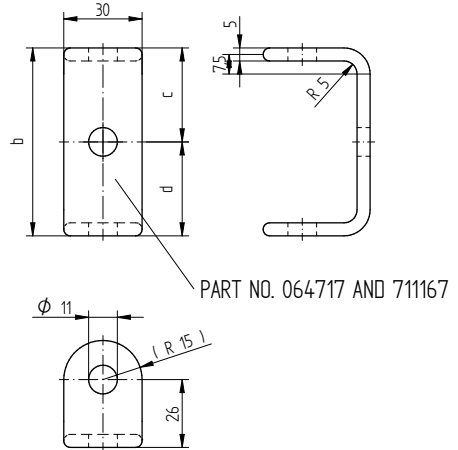


M | 1203 / 1503
VM | 1203 / 1503



ARRANGEMENT OF CONTACT A

M | 802 / 803 / 1203 / 1503
VM | 802 / 1002 / 1203 / 1503

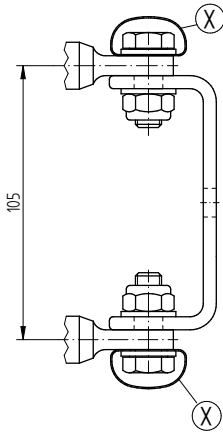


ARRANGEMENT OF CONTACT (see 890477:.)	PART NO.	DIMENSION b	DIMENSION c	DIMENSION d
A WITHOUT CONNECTING LEAD	064717	97	48,5	48,5
A WITH CONNECTING LEAD	711167	91	48,5	42,5

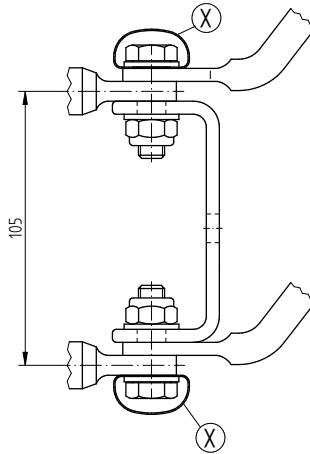
INSTALLATION OF PARALLEL BRIDGES FOR ARRANGEMENT OF CONTACT A WITHOUT AND WITH CONNECTING LEAD FOR 3W CONNECTION

M | 802 / 803
VM | 802 / 1002

WITHOUT
CONNECTING LEAD

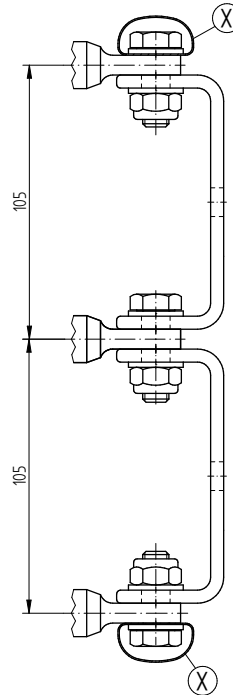


WITH CONNECTING LEAD

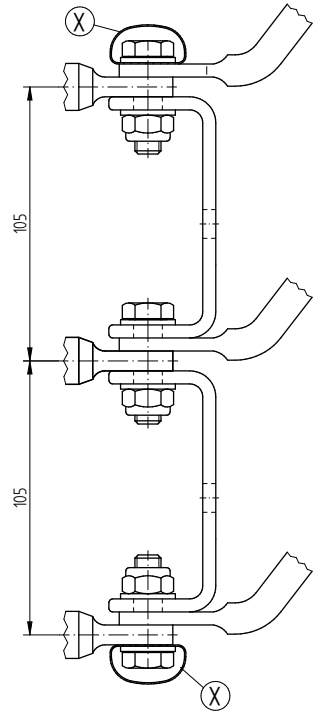


M | 1203 / 1503
VM | 1203 / 1503

WITHOUT
CONNECTING LEAD



WITH CONNECTING LEAD



(X) ONLY FOR SELECTOR SIZE D AND DE

PLEASE NOTE: PARALLEL BRIDGES ARE NOT INCLUDED IN THE STANDARD DELIVERY.

DATE	NAME	DOCUMENT NO.
18.01.2016	RAEDLINGER	SED 1050471 000 05
25.02.2016	TKBIRKMAN	CHANGE NO.
25.02.2016	PRODASTSCHUK	1072100
		SCALE 1:1

DIMENSION
IN mm
EXCEPT AS
NOTED



ON-LOAD TAP-CHANGER OILTAP® M | 802/803/1203/1503 AND
VACUTAP® VM | 802/1002/1203/1503 - SELECTOR SIZE B/C/D/DE
BRIDGES FOR PARALLEL CONNECTION OF SELECTOR CONN. CONT.

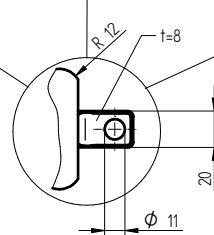
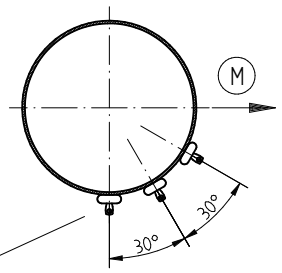
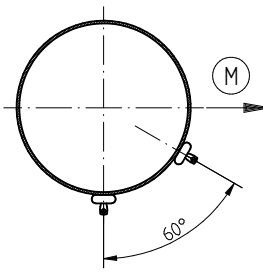
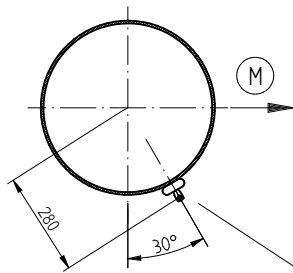
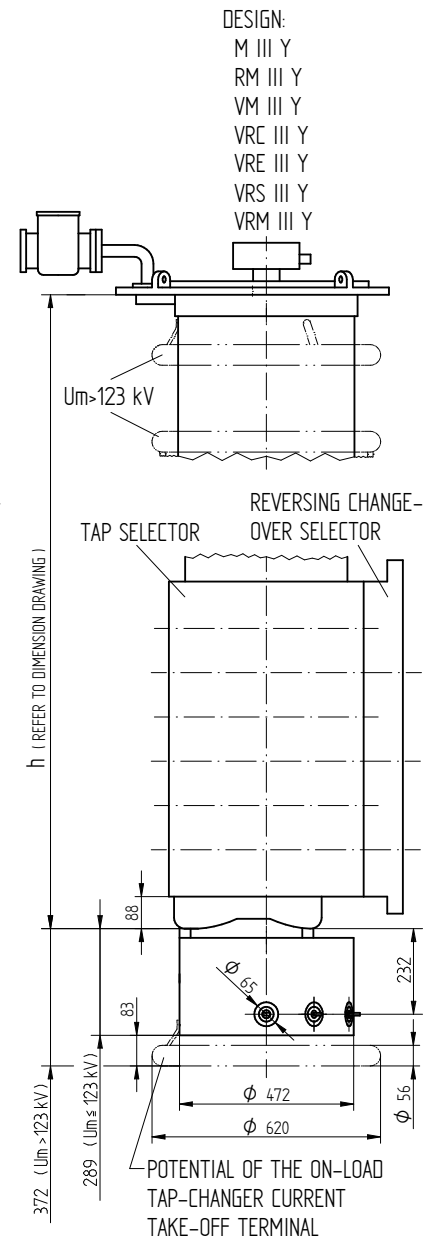
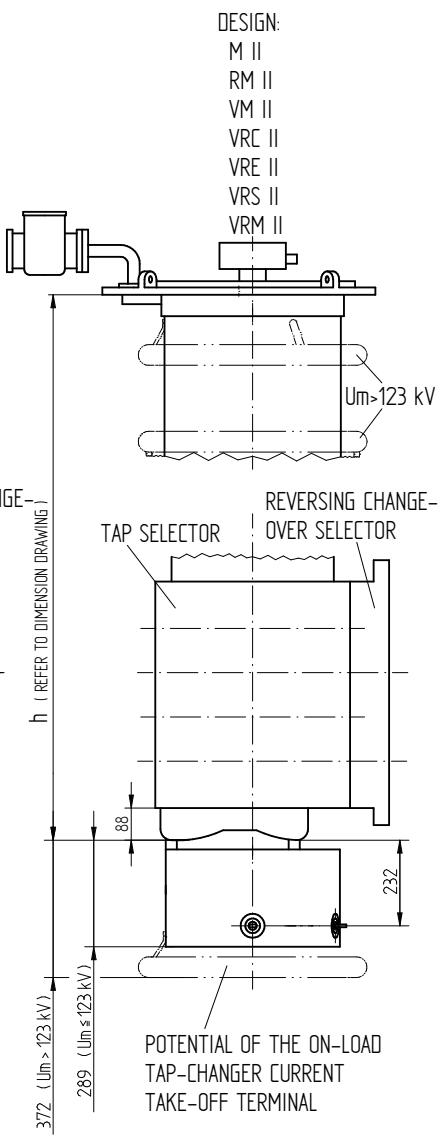
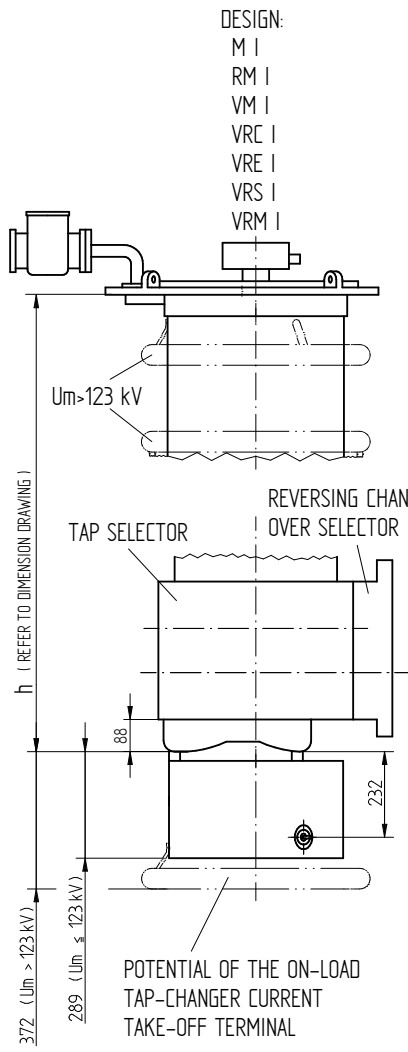
SERIAL NUMBER

MATERIAL NUMBER
8995984E

SHEET
1/1

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DATE	18.10.2016	DOCUMENT NO.	SED 1050468 001 07
DFTR.	19.10.2016	NAME	CTETPRAKTIK2
CHKD.	20.10.2016	CHANGE NO.	HILTNER
STAND.		SCALE	1:10
		PRODASTSCHUK	1077668



CONNECTION FOR EXTERNAL TIE-IN RESISTOR

(M) DRIVE SIDE OF SELECTOR

CONNECTING FROM TIE-IN SWITCH TO ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL IS CARRIED OUT BY MR THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES

NOT APPLICABLE TO VM I 301, VM II 302 AND VM III 300 Y

DIMENSION
 IN mm
 EXCEPT AS
 NOTED



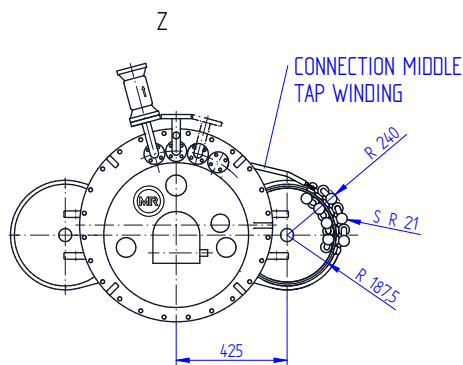
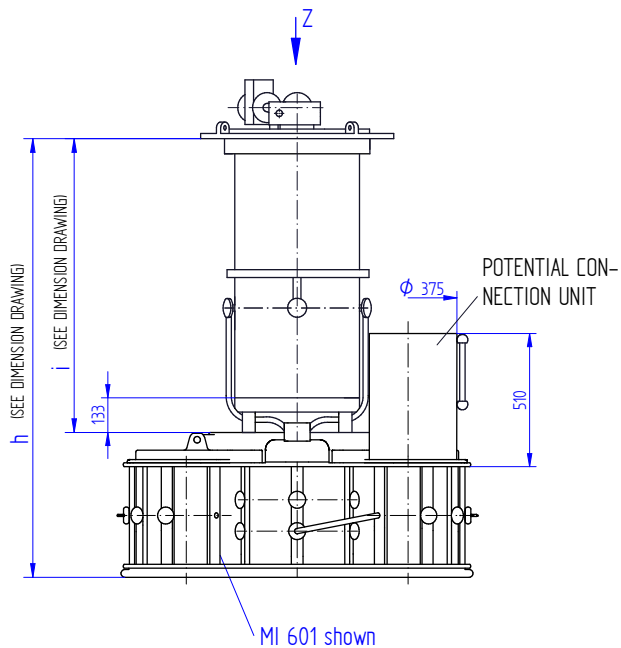
ON-LOAD TAP-CHANGER OILTAP®M, RM / VACUTAP® VM, VR
 M/RM/VM/VRC/VRE/VRS/VRM - REVERSING CHANGE-OVER SEL. - SIZE B/C/D/DE
 POTENTIAL CONNECTION UNIT WITH TIE-IN SWITCH WITHOUT TIE-IN RESISTORS

SERIAL NUMBER

MATERIAL NUMBER
 8988046E

SHEET
 1/1

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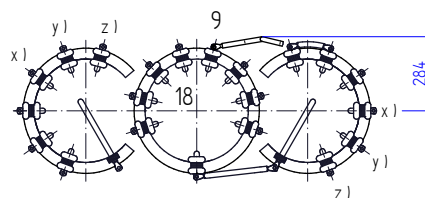
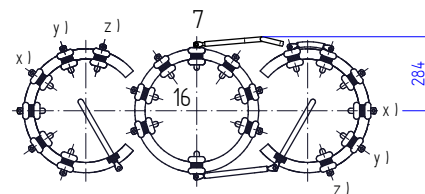
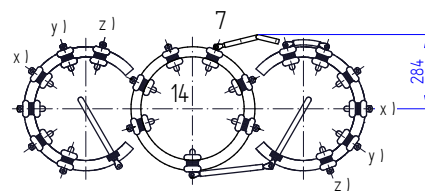
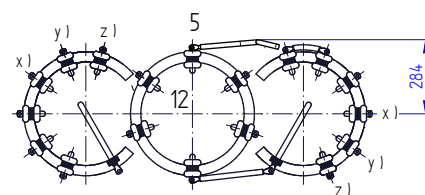
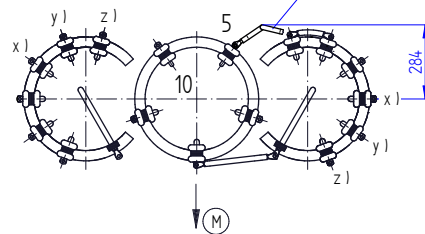
MAX. 7 RESISTOR ELEMENTS
(AS SHOWN)

ARRANGEMENT OF SELECTOR CONTACTS,
 2-5 COARSE TAP CONNECTIONS

(PLAN VIEW)

- x) FOR 3 COARSE TAP CONNECTIONS
- x) AND y) FOR 4 COARSE TAP CONNECTIONS
- x), y) AND z) FOR 5 COARSE TAP CONNECTIONS

CONNECTION MIDDLE TAP WINDING



FOR BINDING DESIGNATIONS OF TERMINALS AND PHASES REFER TO THE CONNECTION DIAGRAM OF THE ON-LOAD TAP-CHANGER.

(M) DRIVE SIDE OF SELECTOR

DOCUMENT NO.	19.04.2018	NAME	RAEDLINGER
DFTR.	25.04.2018	CHANGE NO.	HAUER
CHKD.	25.04.2018	SCALE	1:10
STAND.		PRODASTSCHUK	1087395

DIMENSION
 IN mm
 EXCEPT AS
 NOTED



ON-LOAD TAP-CHANGER OILTAP® M I AND VACUTAP® VM I, VRC I, VRS I, VRM I
 WITH MULTIPLE COARSE CHANGE-OVER SELECTOR
 MOUNTING OF TIE-IN RESISTORS - SELECTOR SIZE B/C/D

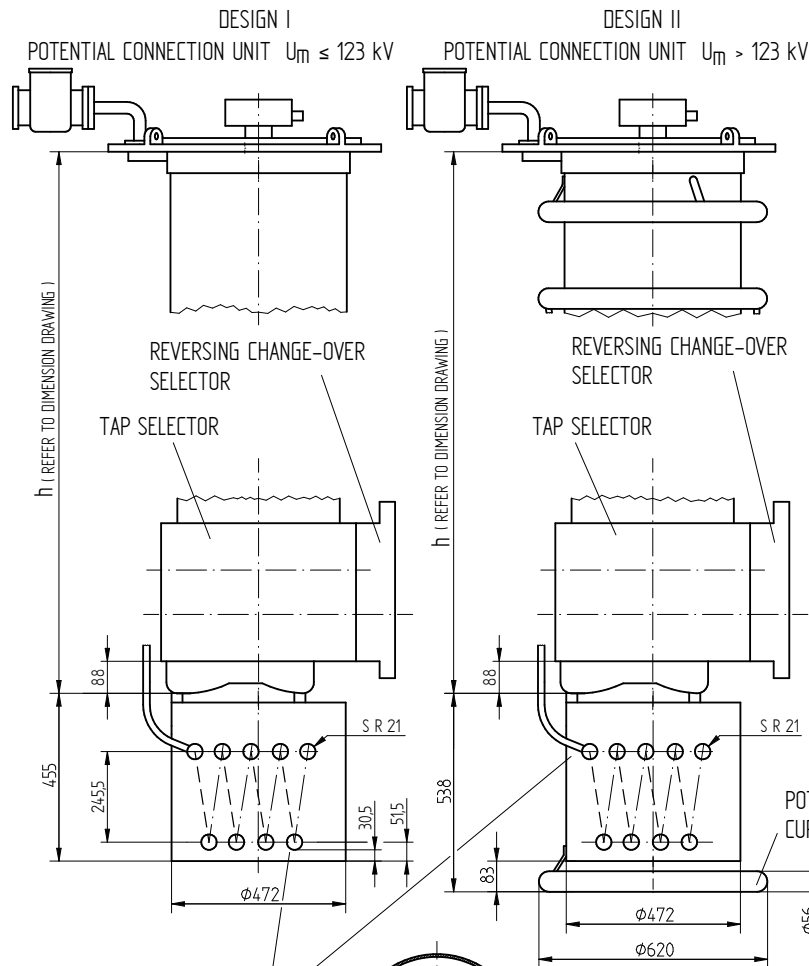
SERIAL NUMBER

MATERIAL NUMBER
 7197337E

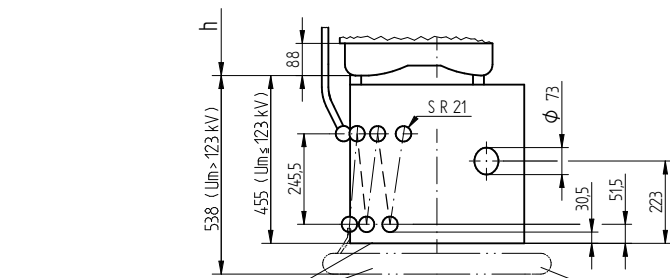
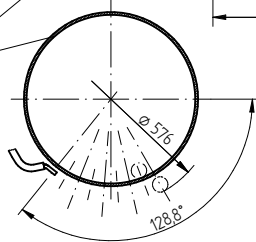
SHEET
 1/1

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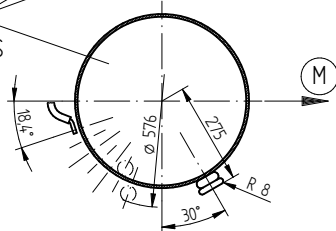
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CHKO.	19.10.2016	NAME	CTETPRAKTIK2
STAND.	20.10.2016	CHANGE NO.	HILTNER
		SCALE	1:10
			1077668
			PRODASTSCHUK



WITHOUT TIE-IN SWITCH
 FOR MAX. 8 RESISTOR ELEMENTS
 (AS SHOWN)

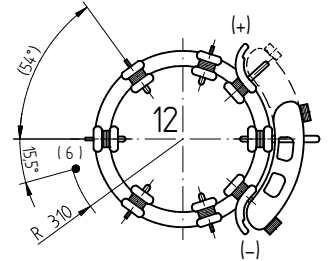
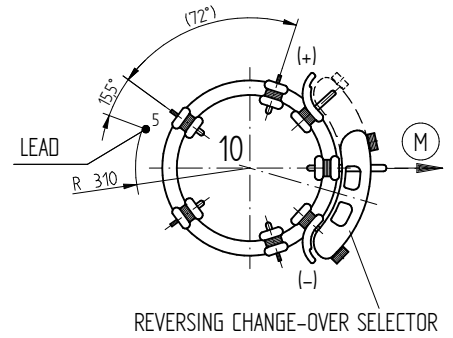


WITH TIE-IN SWITCH
 FOR MAX. 6 RESISTOR ELEMENTS
 (AS SHOWN)

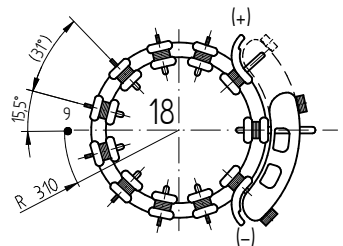
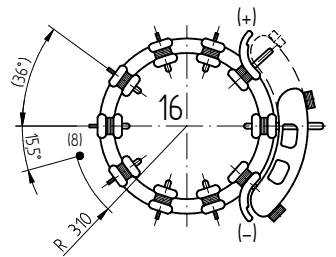
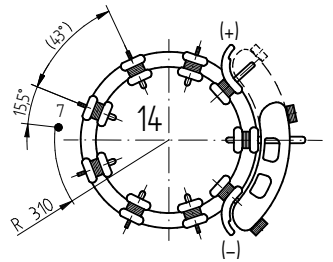


POTENTIAL OF THE MIDDLE
 OF THE TAP WINDING

ARRANGEMENT OF LEADS
 TIE-IN RESISTOR - SELECTOR
 FOR CONTACT LOCATION REFER TO
 RELEVANT DIMENSION DRAWING



POTENTIAL OF THE ON-LOAD TAP-CHANGER
 CURRENT TAKE-OFF TERMINAL



(M) DRIVE SIDE OF SELECTOR

THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES
 CONNECTIONS FROM THE TIE-IN RESISTOR TO THE SELECTOR AND TO THE ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL ARE CARRIED OUT BY MR

NOT APPLICABLE TO VM I 301

DIMENSION
 IN mm
 EXCEPT AS
 NOTED



ON-LOAD TAP-CHANGER OILTAP®M, RM / VACUTAP® VM, VR
 M/RM/VM/VRC/VRE/VRS/VRM I - REVERS. CHANGE-OVER SEL. - SIZE B/C/D/DE
 TIE-IN RESISTORS WITH/WITHOUT TIE-IN SWITCH

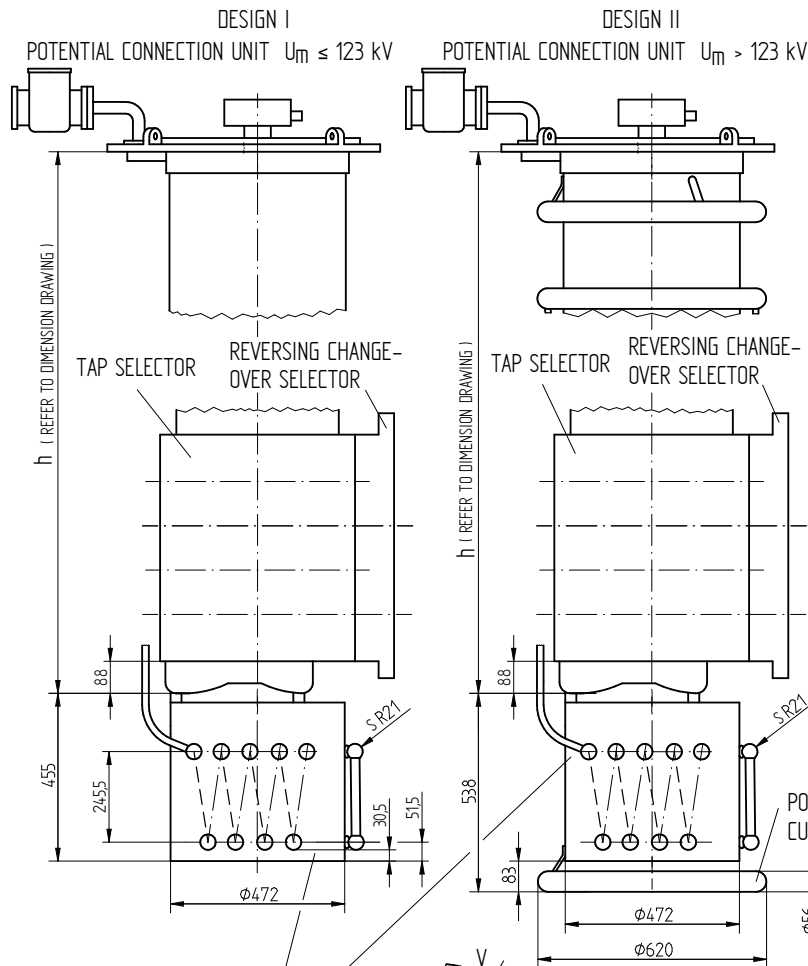
SERIAL NUMBER

MATERIAL NUMBER
 8986905E

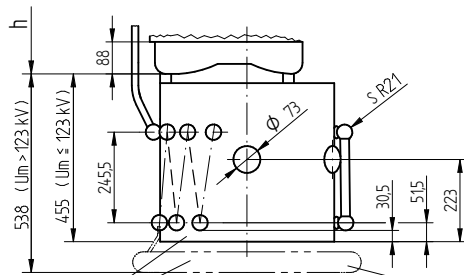
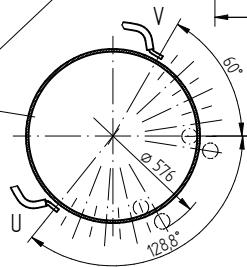
SHEET
 1/1

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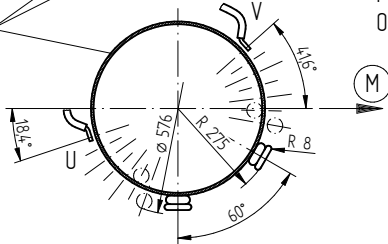
DATE	20.10.2016	DOCUMENT NO.	SED 1665189 000 05
DFTR.	20.10.2016	NAME	CTETPRAKTIK2
CHKD.	20.10.2016	CHANGE NO.	HILTNER
SCALE	1:10	SCALE	1:10
STAND.	20.10.2016	PRODASTSCHUK	1077668



WITHOUT TIE-IN SWITCH
 FOR MAX. 8 RESISTOR
 ELEMENTS PER PHASE
 (AS SHOWN)



WITH TIE-IN SWITCH
 FOR MAX. 6 RESISTOR
 ELEMENTS PER PHASE
 (AS SHOWN)

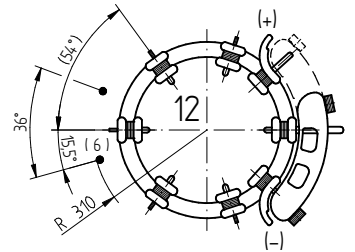
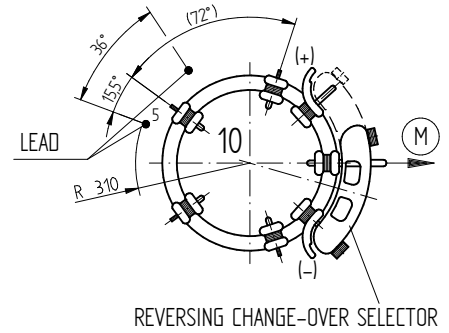


(M) DRIVE SIDE OF SELECTOR

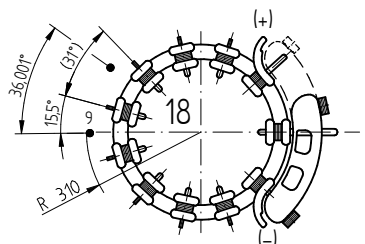
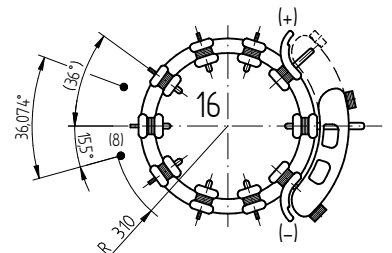
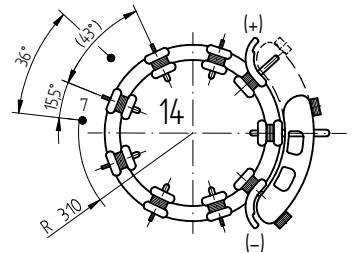
THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES
 CONNECTIONS FROM THE TIE-IN RESISTOR TO THE SELECTOR AND TO THE ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL ARE CARRIED OUT BY MR

NOT APPLICABLE TO VM II 302

ARRANGEMENT OF LEADS
 TIE-IN RESISTOR - PHASE
 FOR CONTACT LOCATION REFER TO
 RELEVANT DIMENSION DRAWING



POTENTIAL OF THE ON-LOAD TAP-CHANGER
 CURRENT TAKE-OFF TERMINAL



DIMENSION
 IN mm
 EXCEPT AS
 NOTED



ON-LOAD TAP-CHANGER OILTAP®M, RM / VACUTAP® VM, VR
 M/RM/VM/VRC/VRE/VRS/VRM II- REVERS. CHANGE-OVER SEL- SIZE B/C/D/DE
 TIE-IN RESISTORS WITH/WITHOUT TIE-IN SWITCH

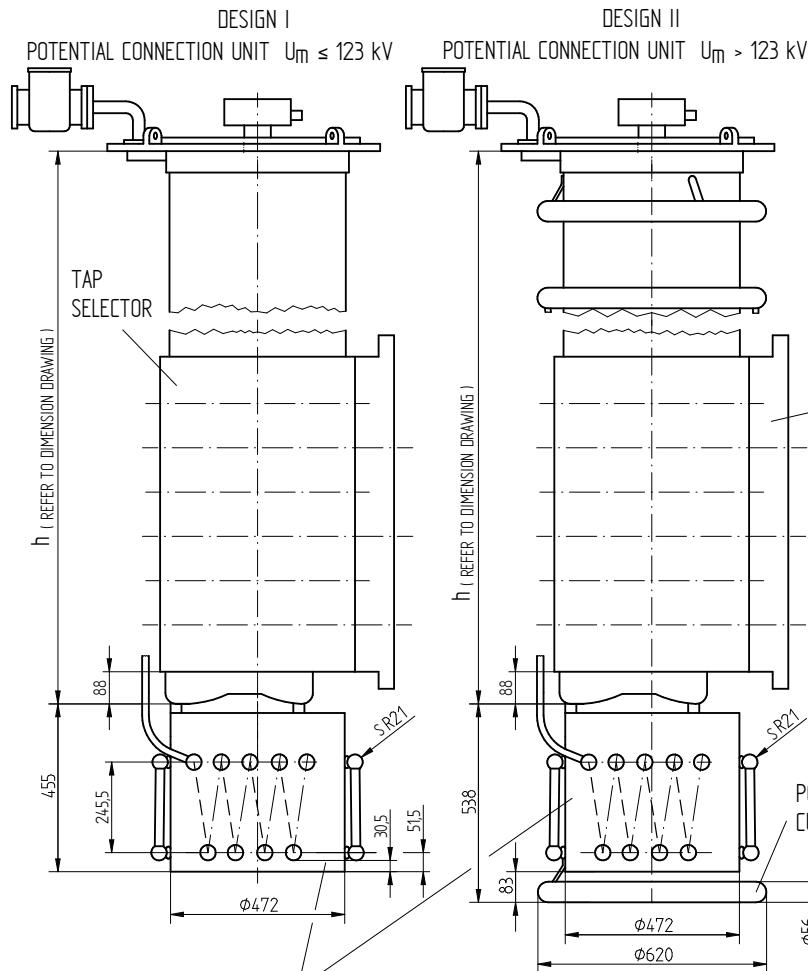
SERIAL NUMBER

MATERIAL NUMBER
 8986915E

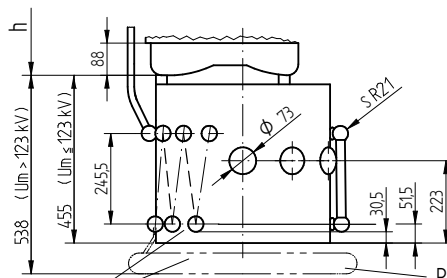
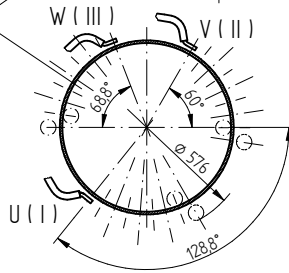
SHEET
 1/1

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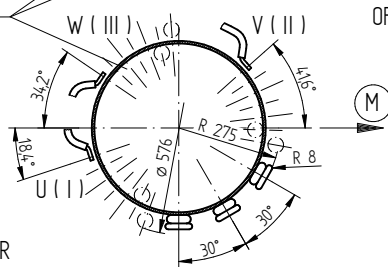
DATE	DOCUMENT NO.	NAME	SCALE
12.07.2018	SED 1665139 000 06	BUTERUS	1:10
CHKO. 16.07.2018	CHANGE NO.	WILHELM	
STAND. 16.07.2018	1086956	PRODASTSCHUK	



WITHOUT TIE-IN SWITCH
 FOR MAX. 8 RESISTOR
 ELEMENTS PER PHASE
 (AS SHOWN)



WITH TIE-IN SWITCH
 FOR MAX. 6 RESISTOR
 ELEMENTS PER PHASE
 (AS SHOWN)

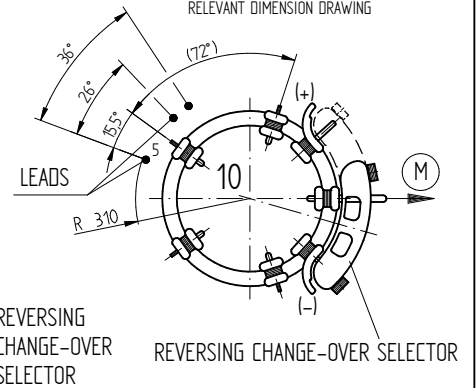


(M) DRIVE SIDE OF SELECTOR

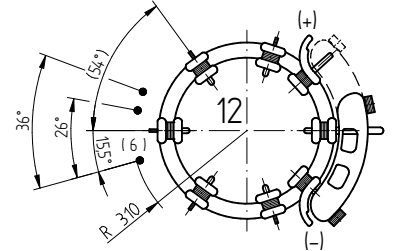
THE DETAILED CONNECTION DIAGRAM IS BINDING FOR THE DESIGNATION OF THE CONNECTION CONTACTS AND PHASES
 CONNECTIONS FROM THE TIE-IN RESISTOR TO THE SELECTOR AND TO THE ON-LOAD TAP-CHANGER CURRENT TAKE-OFF TERMINAL ARE CARRIED OUT BY MR

NOT APPLICABLE TO VMS III 400 Y - B

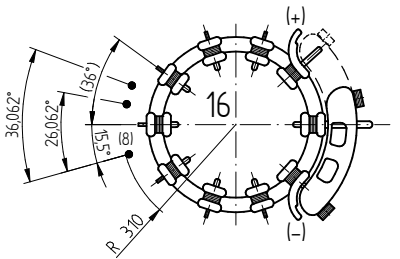
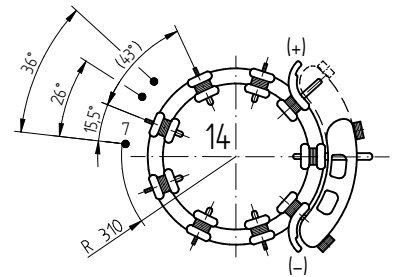
ARRANGEMENT OF LEADS
 TIE-IN RESISTOR - PHASE
 FOR CONTACT LOCATION REFER TO
 RELEVANT DIMENSION DRAWING



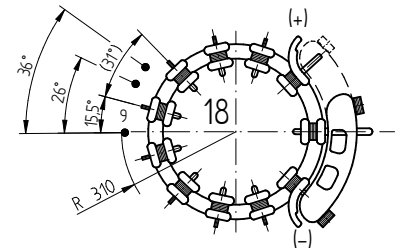
REVERSING
 CHANGE-OVER
 SELECTOR



POTENTIAL OF THE ON-LOAD TAP-CHANGER
 CURRENT TAKE-OFF TERMINAL



POTENTIAL OF THE MIDDLE
 OF THE TAP WINDING



DIMENSION
 IN mm
 EXCEPT AS
 NOTED



OLTC OILTAP® M, RM / VACUTAP® VM®, VMS®-C, VR®
 M/RM/VM/VMS/VRC/VRE/VRS/VRM III Y - REV. COS - M-SEL. SIZE B/C/D/DE
 TIE-IN RESISTORS WITH / WITHOUT TIE-IN SWITCH

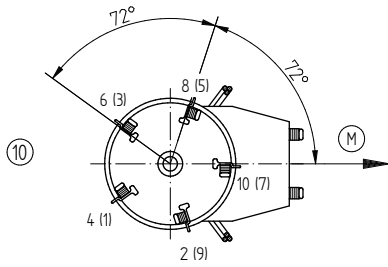
SERIAL NUMBER

MATERIAL NUMBER
 8986926E

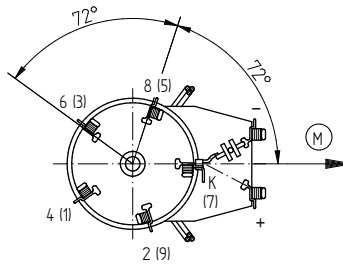
SHEET
 1/1

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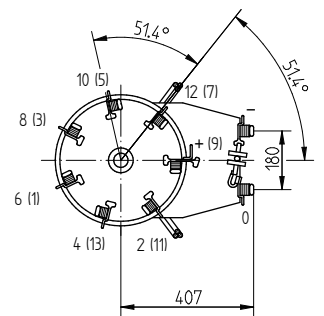
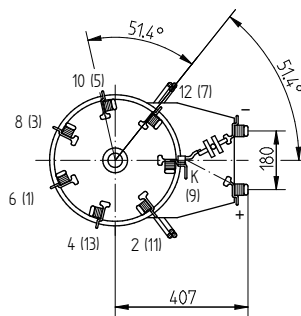
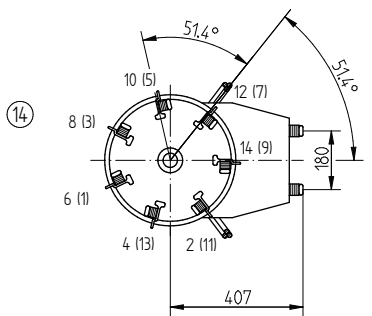
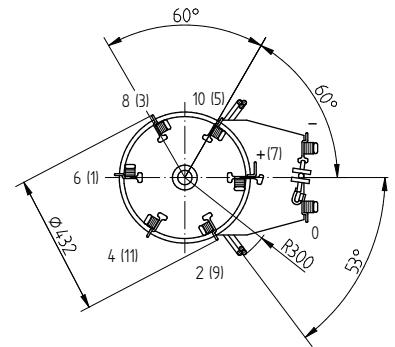
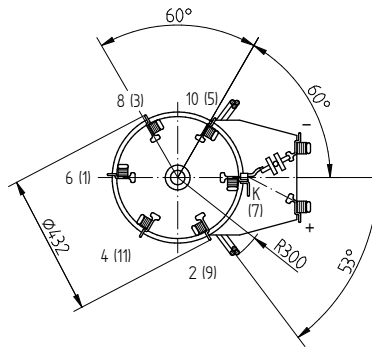
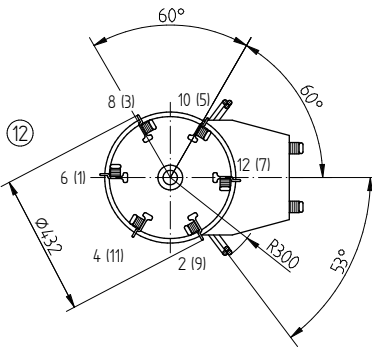
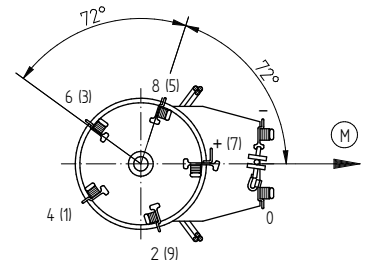
SELECTOR WITHOUT CHANGE-OVER SELECTOR



SELECTOR WITH REVERSING CHANGE-OVER SELECTOR



SELECTOR WITH COARSE CHANGE-OVER SELECTOR



DESIGNATION OF SELECTOR TERMINALS
 E. G.: 4 UPPER CONTACT PLANE
 (13) LOWER CONTACT PLANE

(M) DRIVE SIDE OF SELECTOR
 (10) (12) (14) SELECTOR PITCH

FOR BINDING DESIGNATIONS OF TERMINALS AND PHASES REFER TO THE CONNECTION DIAGRAM OF THE ON-LOAD TAP-CHANGER.

DATE	NAME	DOCUMENT NO.
DFTR. 11.07.2018	BUTERUS	SED 6181604-001 00
CHKD. 16.07.2018	WILHELM	SCALE
STAND. 16.07.2018	PRODASTSCHUK	1086956
		18

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER VACUTAP® VMS®
 ARRANGEMENT OF CONTACTS AT SELECTOR
 SELECTOR SIZE B

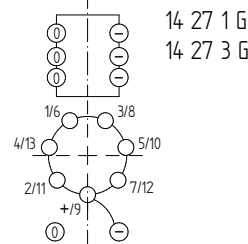
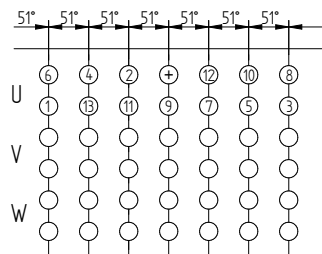
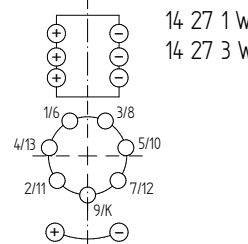
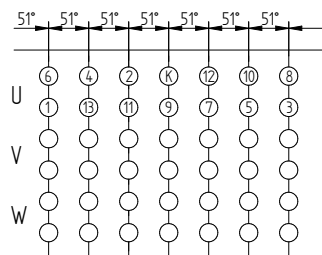
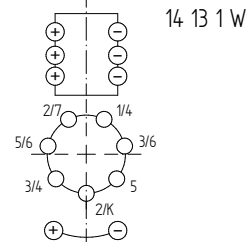
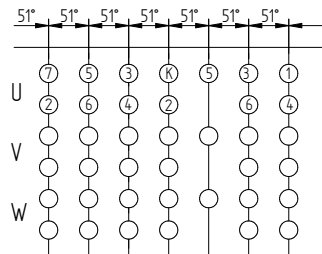
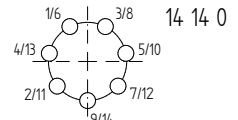
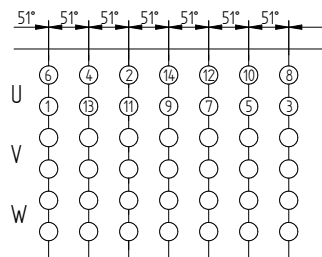
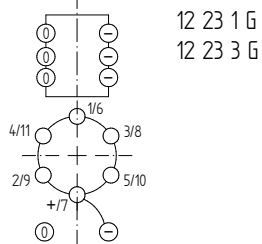
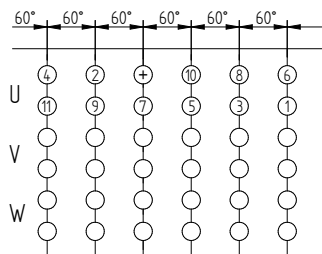
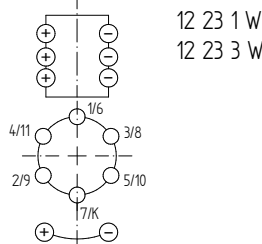
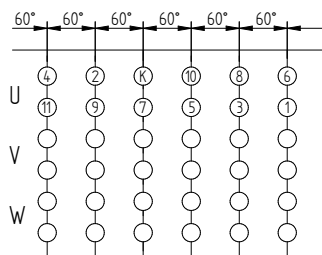
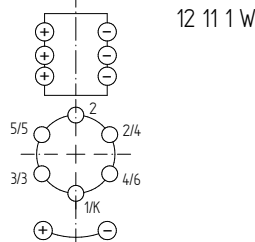
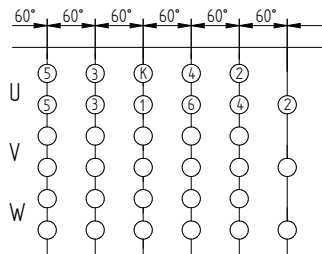
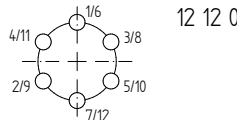
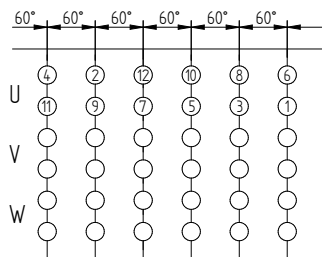
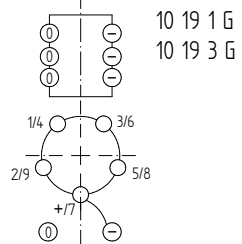
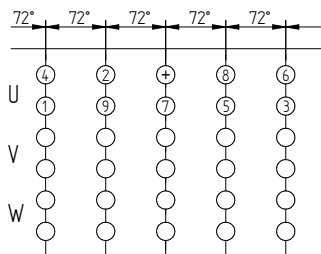
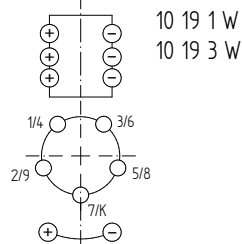
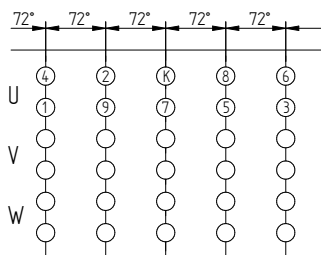
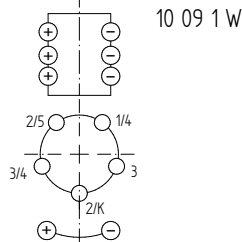
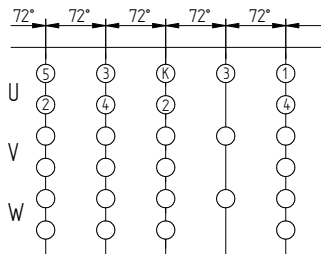
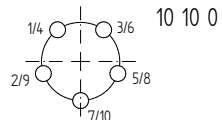
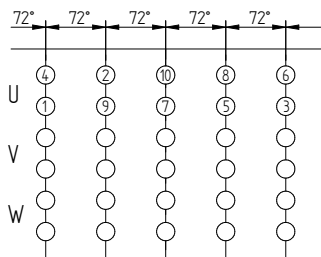
SERIAL NUMBER

MATERIAL NUMBER
101170250E

SHEET
1/1

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DATE	NAME	DOCUMENT NO.
DFTR. 11.07.2018	BUTERUS	SED 6181620 001 00
CHKD. 16.07.2018	WILHELM	SCALE
STAND. 16.07.2018	PRODASTSCHUK	CHANGE NO. 1086956



DIMENSION
IN mm
EXCEPT AS
NOTED



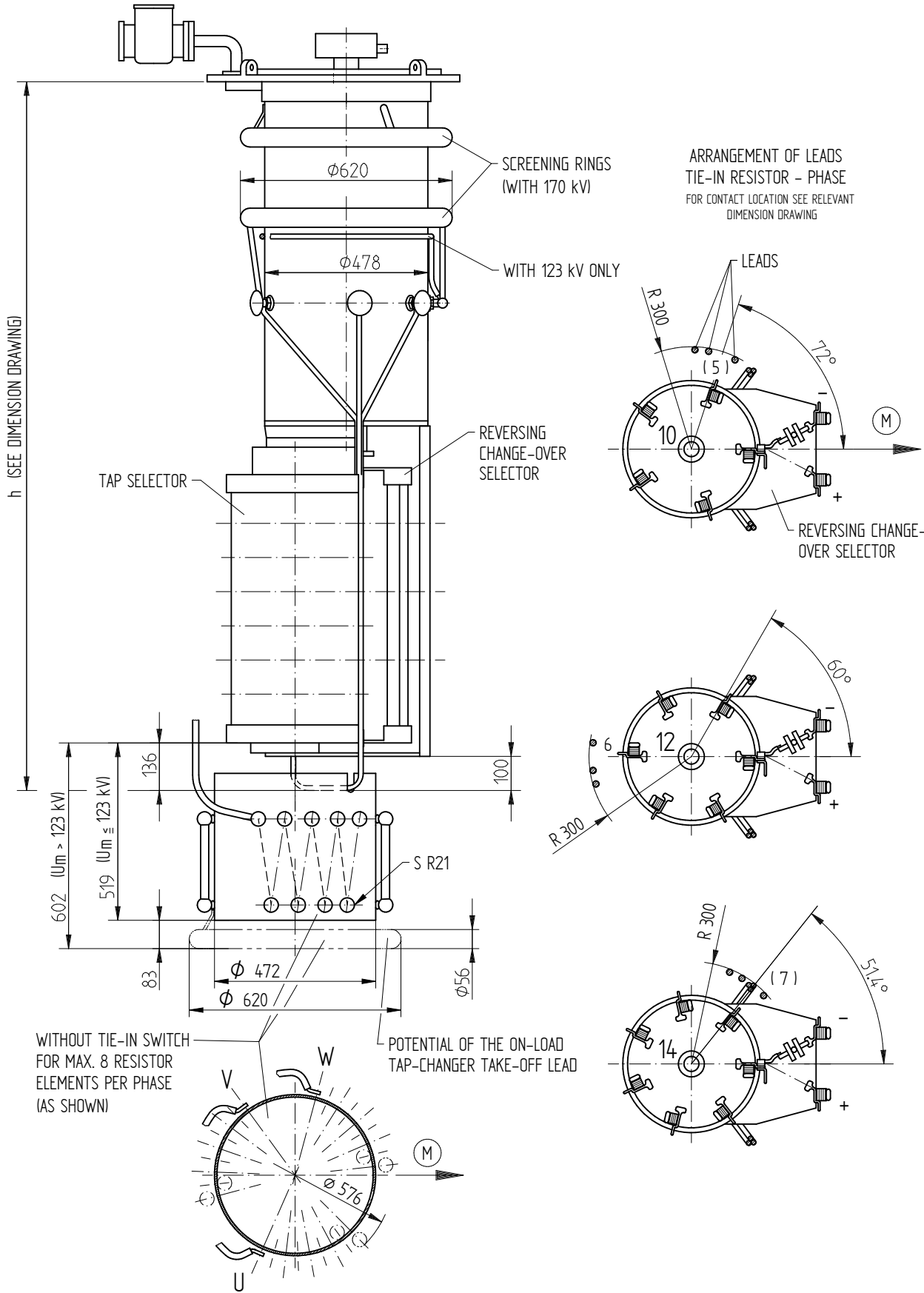
ON-LOAD TAP-CHANGER VACUTAP® VMS®
CONTACT ARRANGEMENT ON SELECTOR
SELECTOR SIZE B

SERIAL NUMBER

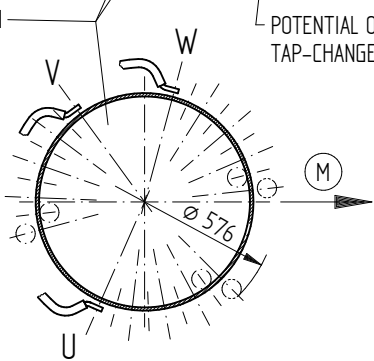
MATERIAL NUMBER
101170290E

SHEET
1/1

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WITHOUT TIE-IN SWITCH
 FOR MAX. 8 RESISTOR
 ELEMENTS PER PHASE
 (AS SHOWN)



(M) - DRIVE SIDE OF SELECTOR

THE CONNECTION DIAGRAM OF THE ON-LOAD TAP-CHANGER IS BINDING FOR THE DESIGNATION OF THE TERMINALS AND PHASES.

DATE	NAME	DOCUMENT NO.
11.07.2018	BUTERUS	SED 601874 001 00
16.07.2018	WILHELM	SCALE
16.07.2018	PRODASTSCHUK	1:8
CHG.	CHANGE NO.	1086956

DIMENSION
 IN mm
 EXCEPT AS
 NOTED



ON-LOAD TAP-CHANGER VACUTAP® VMS®
 VMSIII400Y - B - TIE-IN RESISTORS WITHOUT TIE-IN SWITCH
 DIMENSION DRAWING

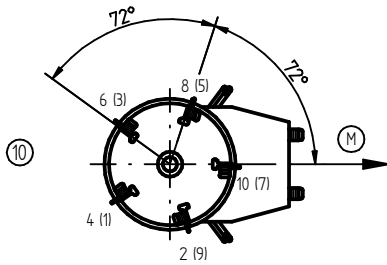
SERIAL NUMBER

MATERIAL NUMBER
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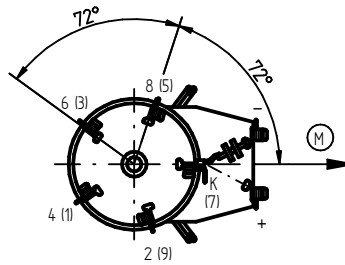
SHEET
 1/1

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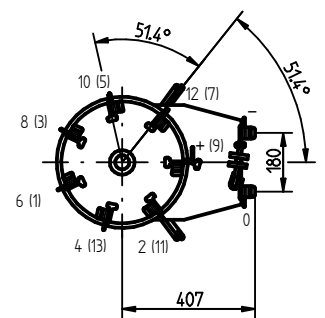
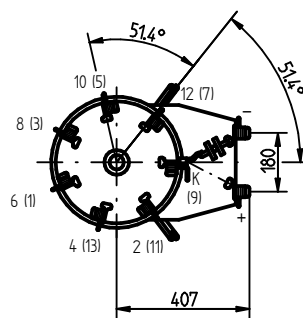
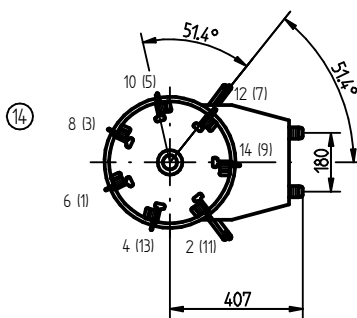
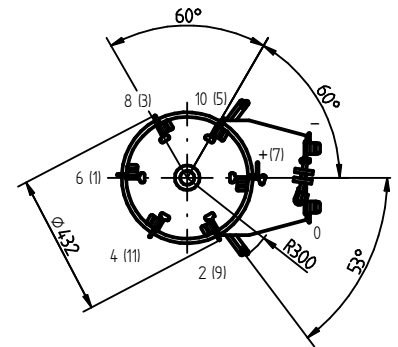
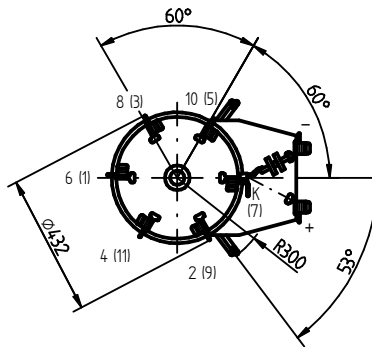
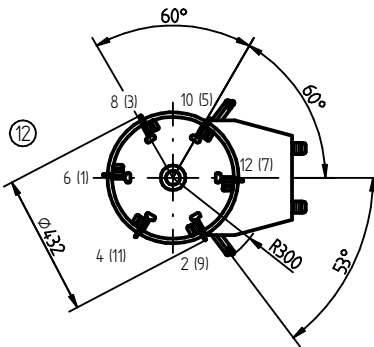
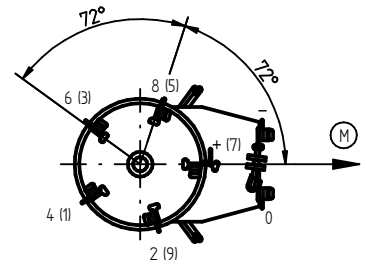
SELECTOR WITHOUT CHANGE-OVER SELECTOR



SELECTOR WITH REVERSING CHANGE-OVER SELECTOR



SELECTOR WITH COARSE CHANGE-OVER SELECTOR



DESIGNATION OF SELECTOR TERMINALS
 E. G.: 4 UPPER CONTACT PLANE
 (13) LOWER CONTACT PLANE

(M) DRIVE SIDE OF SELECTOR
 (10) (12) (14) SELECTOR PITCH

FOR BINDING DESIGNATIONS OF TERMINALS AND PHASES REFER TO THE CONNECTION DIAGRAM OF THE ON-LOAD TAP-CHANGER.

DATE	NAME	DOCUMENT NO.
26.01.2016	RAEDLINGER	SED 1050454-001 02
25.02.2016	TKBIRKMAN	SCALE
25.02.2016	PRODASTSCHUK	CHANGE NO. 1072100
		18

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER OILTAP® MS / VACUTAP® VM 300
ARRANGEMENT OF CONTACTS AT SELECTOR
SELECTOR SIZE B

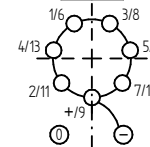
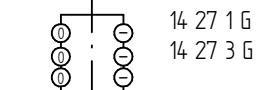
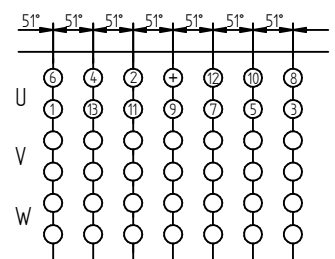
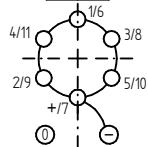
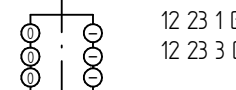
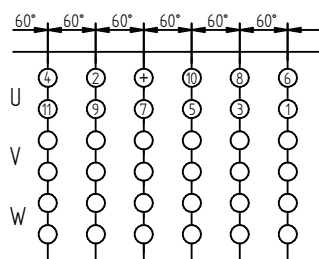
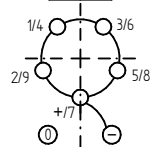
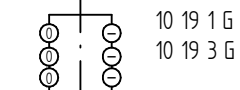
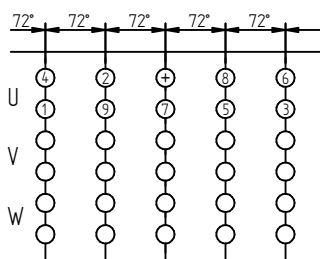
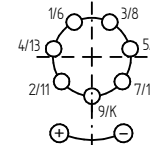
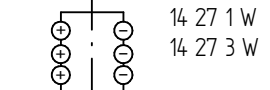
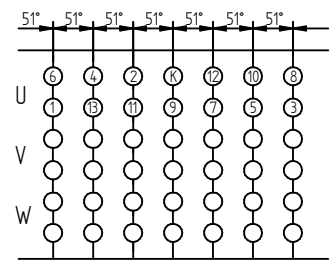
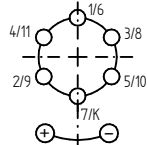
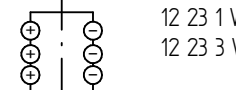
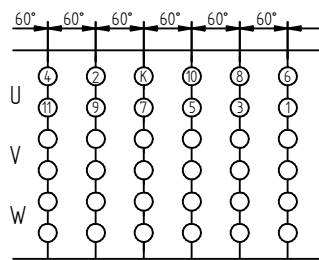
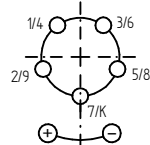
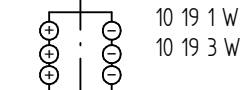
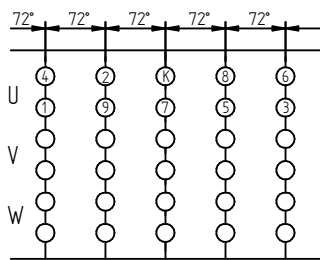
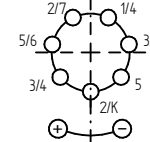
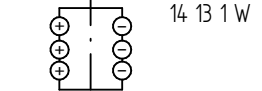
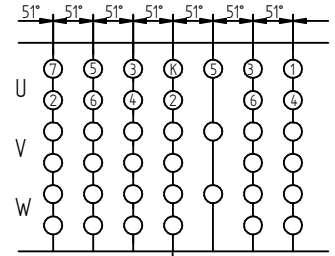
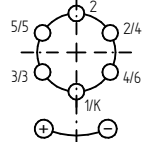
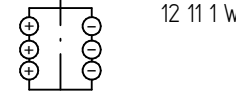
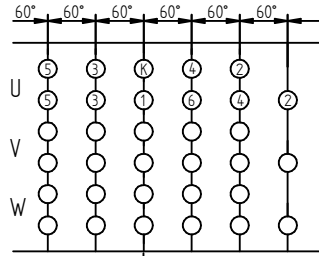
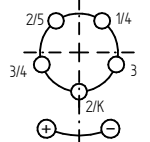
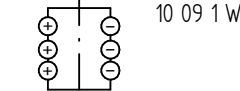
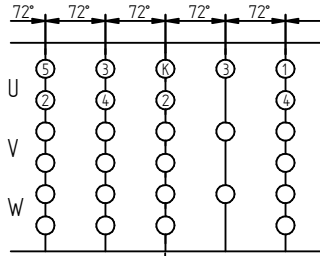
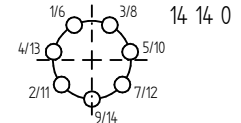
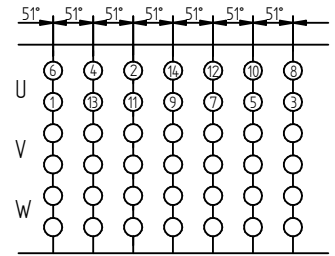
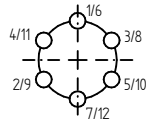
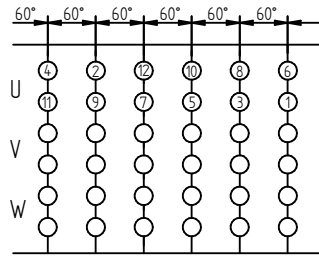
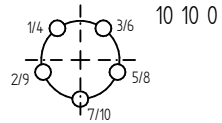
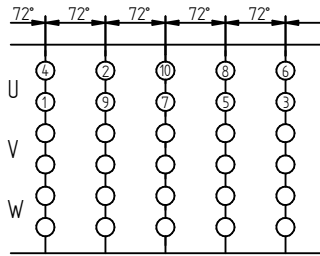
SERIAL NUMBER

MATERIAL NUMBER
8980414E

SHEET
1/1

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DATE	NAME	DOCUMENT NO.
26.01.2016	RAEDLINGER	SED 2617011 001 01
25.02.2016	TKBIRKMAN	SCALE
25.02.2016	PRODASTSCHUK	CHANGE NO.
		1072100



DIMENSION
 IN mm
 EXCEPT AS
 NOTED



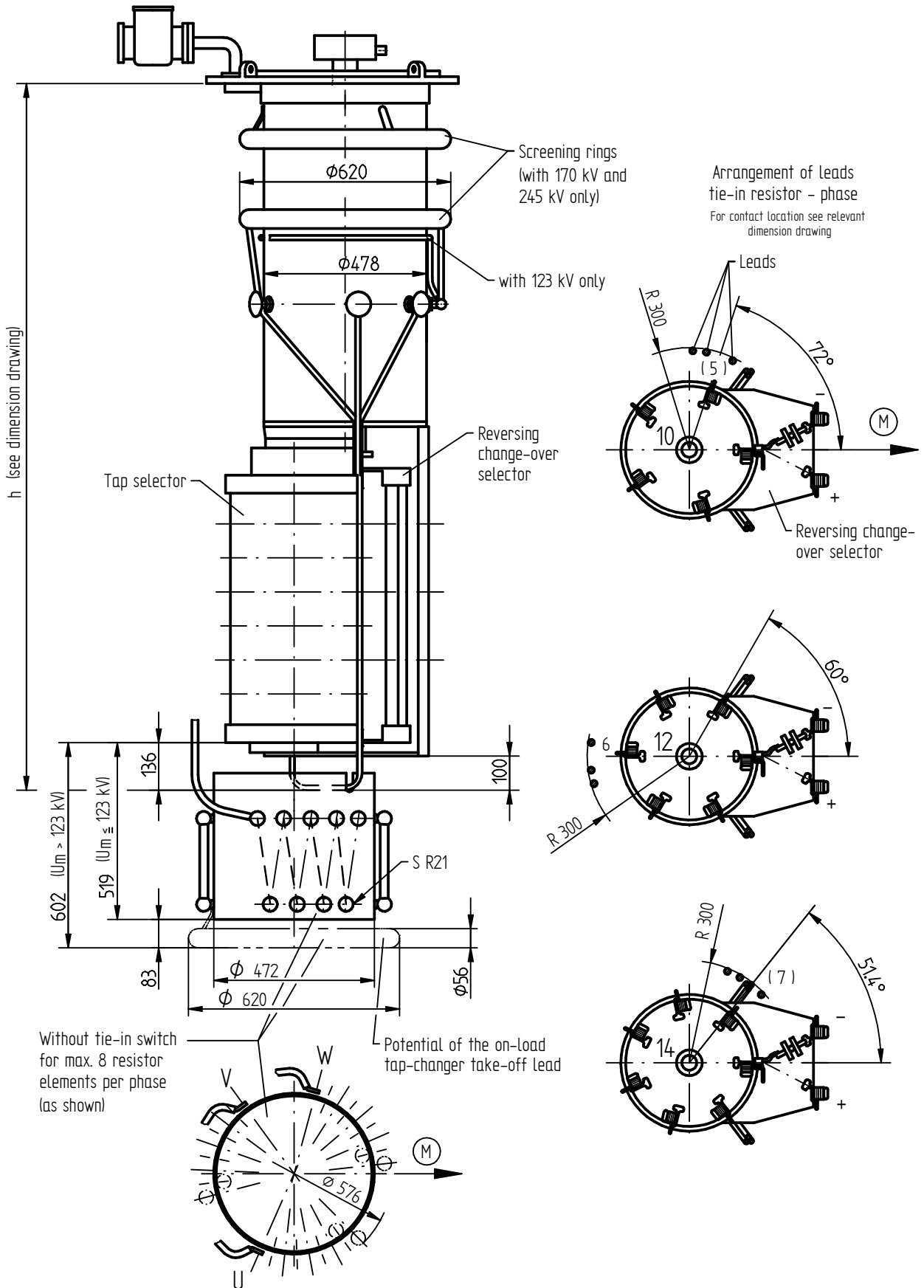
ON-LOAD TAP-CHANGER OILTAP® MS / VACUTAP® VM 300
 CONTACT ARRANGEMENT ON SELECTOR FOR SELECTOR SIZE B

SERIAL NUMBER

MATERIAL NUMBER
 8911145E

SHEET
 1/1

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Without tie-in switch for max. 8 resistor elements per phase (as shown)

Potential of the on-load tap-changer take-off lead

(M) - Drive side of selector

The connection diagram of the on-load tap-changer is binding for the designation of the terminals and phases.

DATE	NAME	DOCUMENT NO.
23.03.2016	RAEDLINGER	SED 1050467 001 04
CHKD. 11.04.2016	MENZELS	CHANGE NO.
STAND. 11.04.2016	PRODASTSCHUK	1073378
		SCALE
		1:8

DIMENSION IN mm EXCEPT AS NOTED



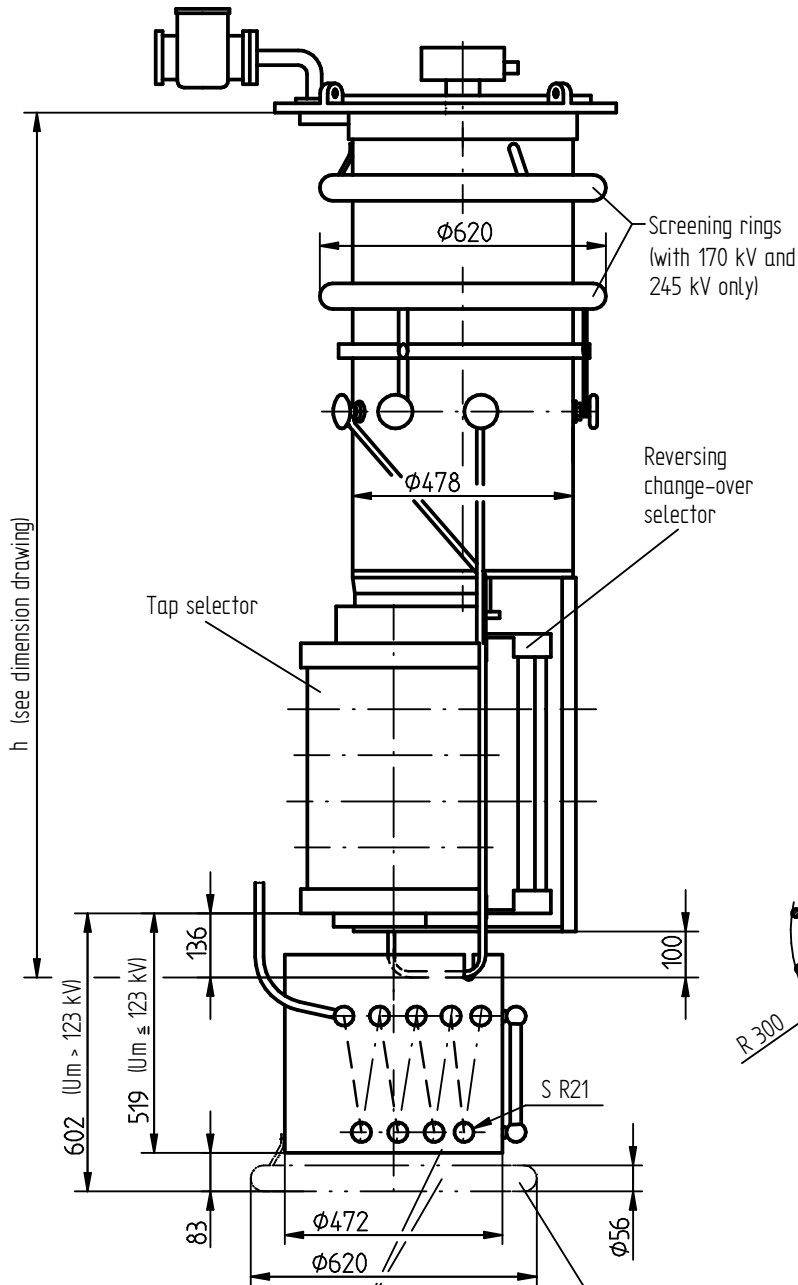
ON-LOAD TAP-CHANGER OILTAP® MS AND VACUTAP® VM®
 MS III / VM III 300 - SELECTOR SIZE B
 TIE-IN RESISTORS WITHOUT TIE-IN SWITCH

SERIAL NUMBER

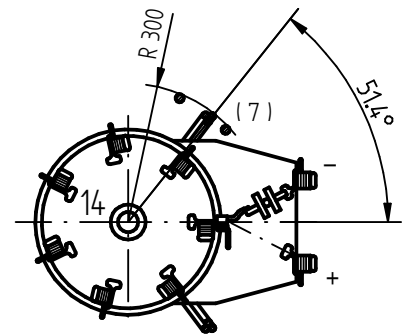
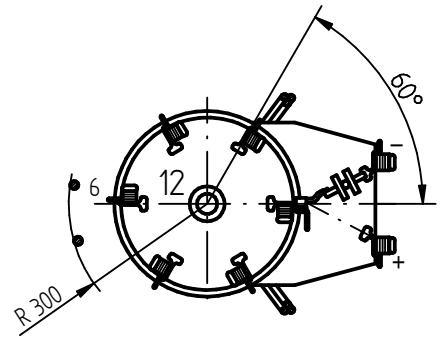
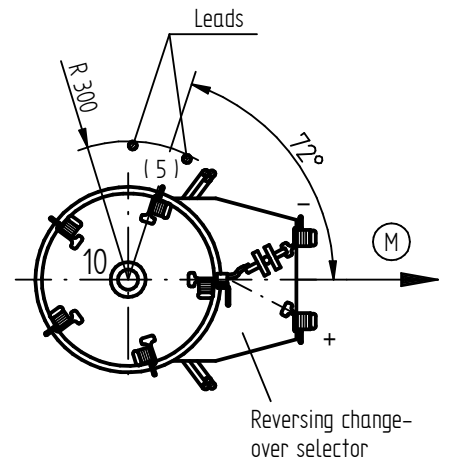
MATERIAL NUMBER
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SHEET
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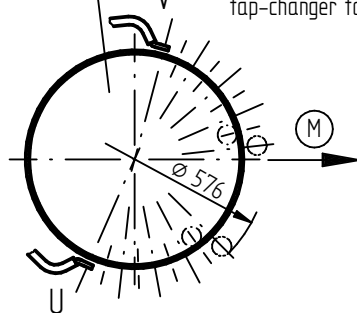


Arrangement of leads tie-in resistor - phase
 For contact location see relevant dimension drawing



Without tie-in switch for max. 8 resistor elements per phase (as shown)

Potential of the on-load tap-changer take-off terminal



(M) - Drive side of selector

The connection diagram of the on-load tap-changer is binding for the designation of the terminals and phases.

DATE	NAME	DOCUMENT NO.
23.03.2016	RAEDLINGER	SED 1050465 001 03
CHKO. 11.04.2016	MENZELS	SCALE 1:8
STAND. 11.04.2016	PRODASTSCHUK	CHANGE NO. 1073378

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER OILTAP® MS AND VACUTAP® VM®
 MS II / VM II 302 - SELECTOR SIZE B
 TIE-IN RESISTORS WITHOUT TIE-IN SWITCH

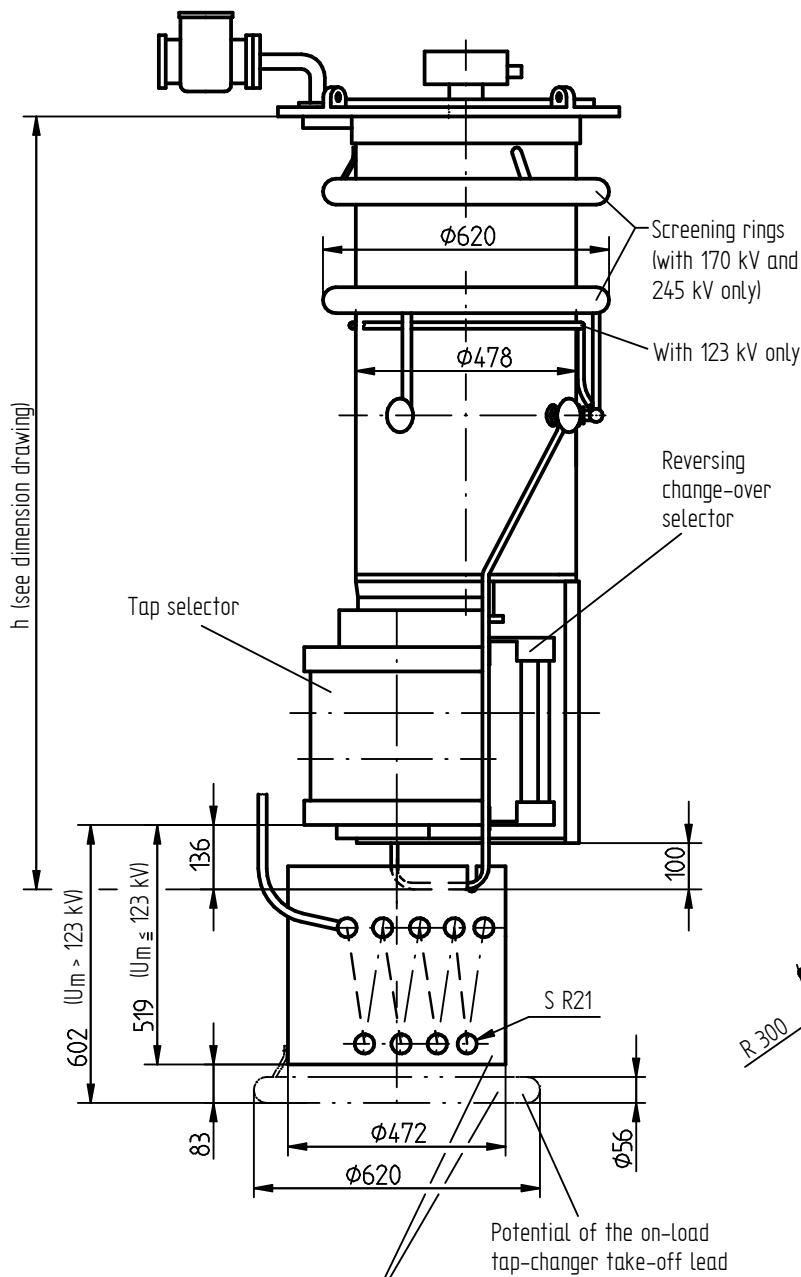
SERIAL NUMBER

MATERIAL NUMBER 8986944E

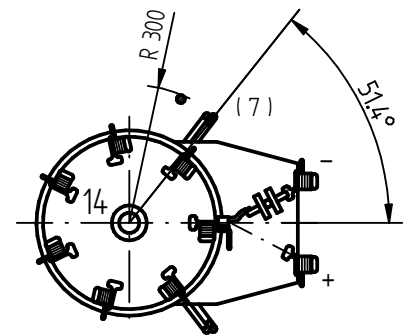
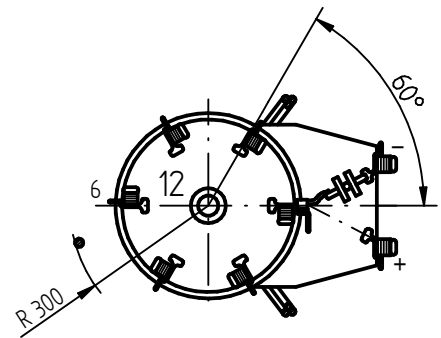
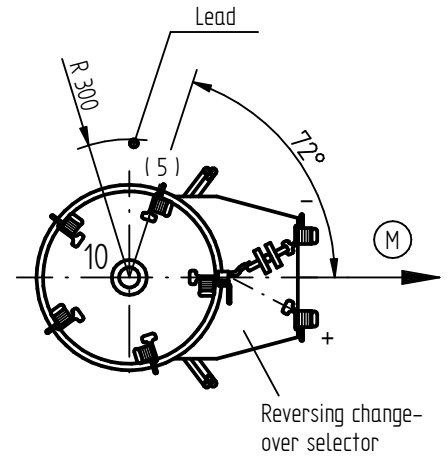
SHEET 1/1

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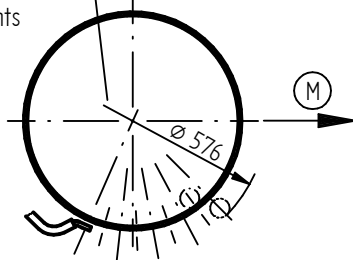
DATE	NAME	DOCUMENT NO.
22.03.2016	RAEDLINGER	SED 1050463 001 03
CHKO. 11.04.2016	MENZELS	CHANGE NO.
STAND. 11.04.2016	PRODASTSCHUK	1073378
		SCALE
		1:8



Arrangement of leads tie-in resistor - selector
 For contact location see relevant dimension drawing



Without tie-in switch for max. 8 resistor elements (as shown)



(M) - Drive side of selector

The connection diagram of the on-load tap-changer is binding for the designation of the terminals.

DIMENSION IN mm EXCEPT AS NOTED



ON-LOAD TAP-CHANGER OILTAP® MS AND VACUTAP® VM®
 MS I / VM I 301 - SELECTOR SIZE B
 TIE-IN RESISTORS WITHOUT TIE-IN SWITCH

SERIAL NUMBER

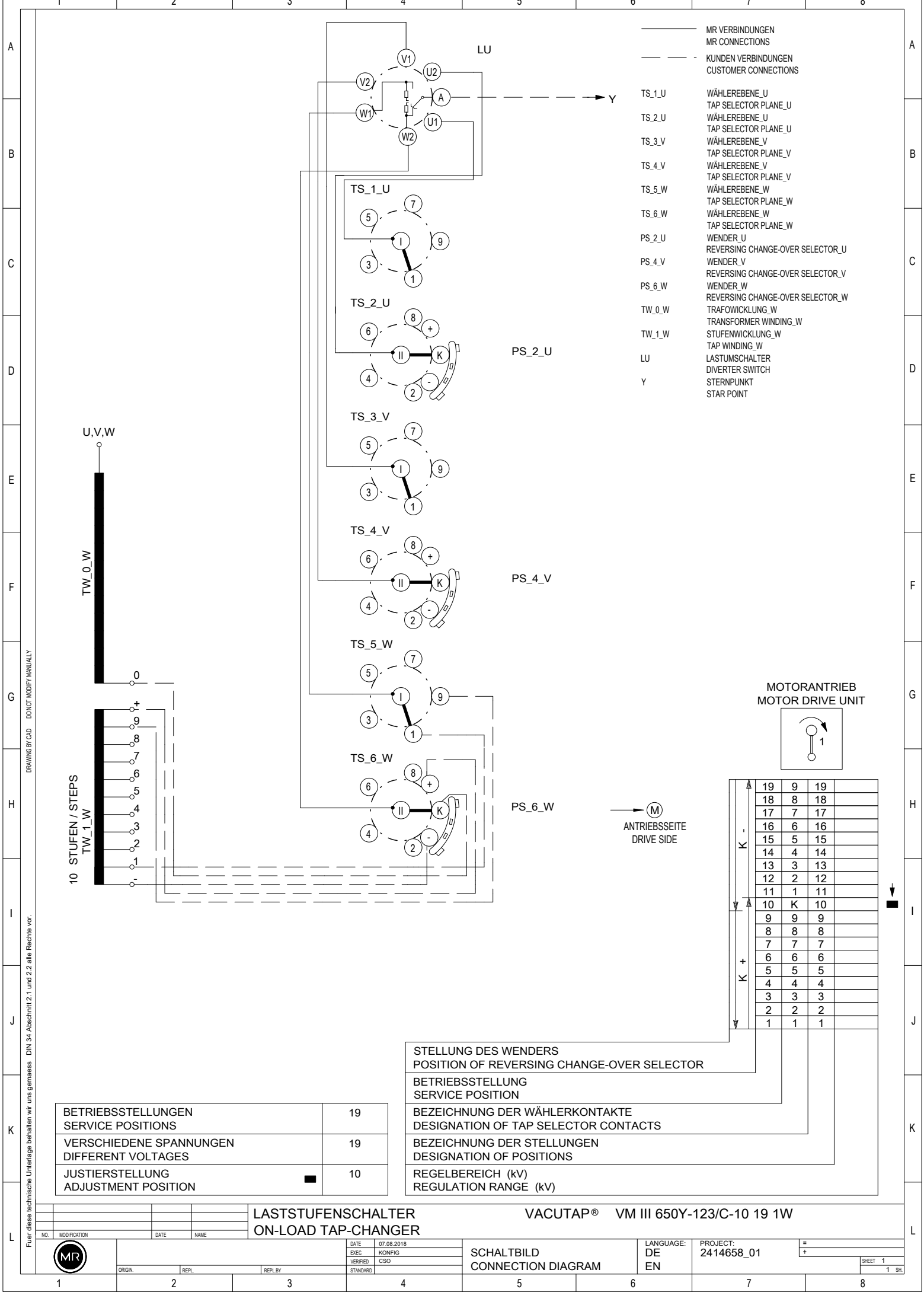
MATERIAL NUMBER 8986934E

SHEET 1/1

4.6 Connection diagrams (examples)

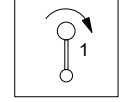
The connection diagrams contained herein are just examples.

The order-specific connection diagram is enclosed with the delivery.



- MR VERBINDUNGEN
MR CONNECTIONS
- KUNDEN VERBINDUNGEN
CUSTOMER CONNECTIONS
- TS_1_U WÄHLEREbene_U
TAP SELECTOR PLANE_U
- TS_2_U WÄHLEREbene_U
TAP SELECTOR PLANE_U
- TS_3_V WÄHLEREbene_V
TAP SELECTOR PLANE_V
- TS_4_V WÄHLEREbene_V
TAP SELECTOR PLANE_V
- TS_5_W WÄHLEREbene_W
TAP SELECTOR PLANE_W
- TS_6_W WÄHLEREbene_W
TAP SELECTOR PLANE_W
- PS_2_U WENDER_U
REVERSING CHANGE-OVER SELECTOR_U
- PS_4_V WENDER_V
REVERSING CHANGE-OVER SELECTOR_V
- PS_6_W WENDER_W
REVERSING CHANGE-OVER SELECTOR_W
- TW_0_W TRAFOWICKLUNG_W
TRANSFORMER WINDING_W
- TW_1_W STUFENWICKLUNG_W
TAP WINDING_W
- LU LASTUMSCHALTER
DIVERTER SWITCH
- Y STERNPUNKT
STAR POINT

MOTORANTRIEB
MOTOR DRIVE UNIT



19	9	19
18	8	18
17	7	17
16	6	16
15	5	15
14	4	14
13	3	13
12	2	12
11	1	11
10	K	10
9	9	9
8	8	8
7	7	7
6	6	6
5	5	5
4	4	4
3	3	3
2	2	2
1	1	1

(M) ANTRIEBSSEITE
DRIVE SIDE

STELLUNG DES WENDERS POSITION OF REVERSING CHANGE-OVER SELECTOR
BETRIEBSSTELLUNG SERVICE POSITION
BEZEICHNUNG DER WÄHLERKONTAKTE DESIGNATION OF TAP SELECTOR CONTACTS
BEZEICHNUNG DER STELLUNGEN DESIGNATION OF POSITIONS
REGELBEREICH (kV) REGULATION RANGE (kV)

BETRIEBSSTELLUNGEN SERVICE POSITIONS	19
VERSCHIEDENE SPANNUNGEN DIFFERENT VOLTAGES	19
JUSTIERSTELLUNG ADJUSTMENT POSITION	10

LASTSTUFENSCHALTER VACUTAP® VM III 650Y-123/C-10 19 1W
ON-LOAD TAP-CHANGER

NO.	MODIFICATION	DATE	NAME

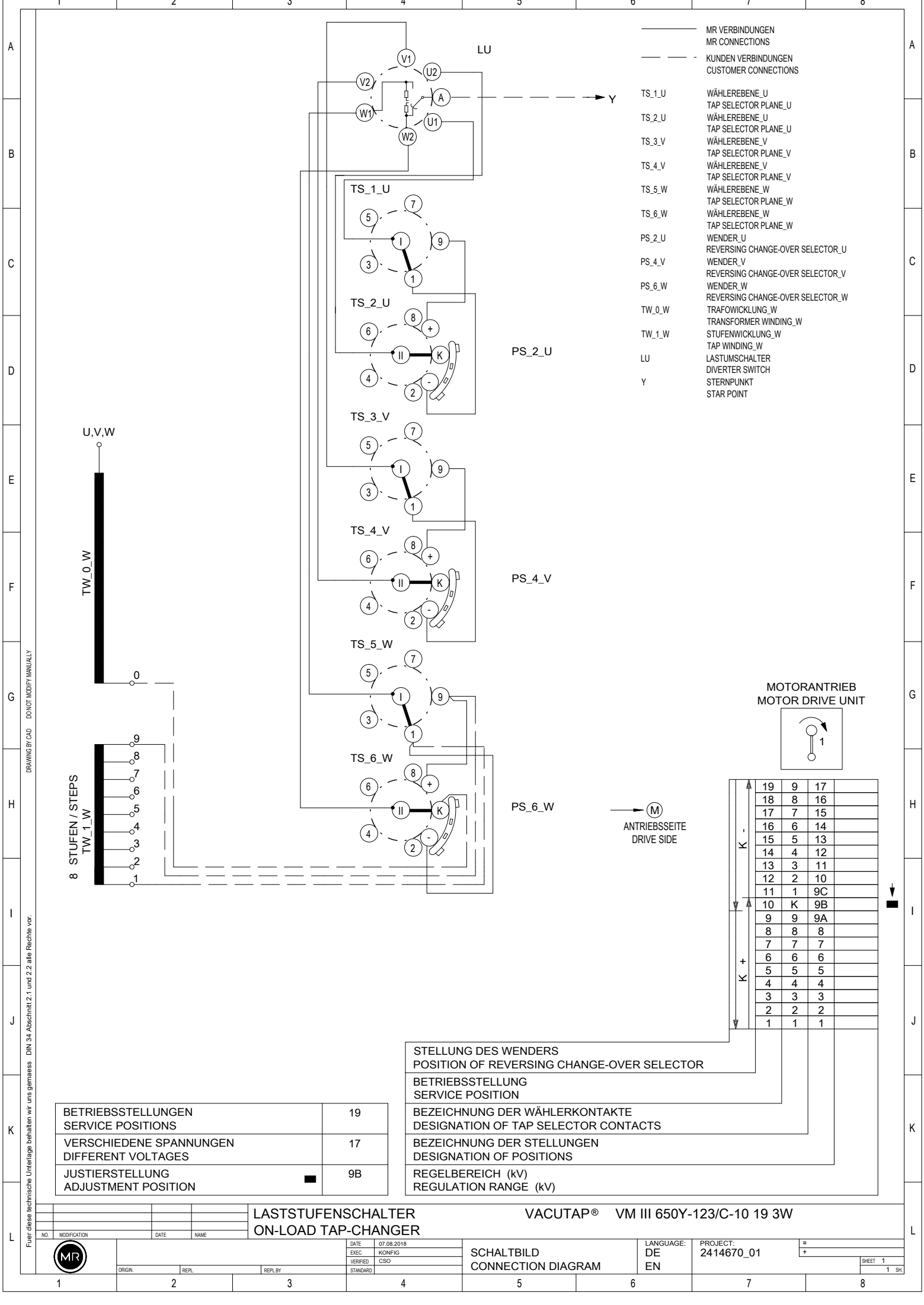
DATE	07.08.2018
ERIC	KONFIG
VERIFIED	CSO
STANDARD	

SCHALTBILD
CONNECTION DIAGRAM

LANGUAGE:	DE
EN	
PROJECT:	2414658_01

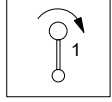
=	
+	
SHEET	1
1	SH

FÜR DIESE TECHNISCHE UNTERLAGE BEHALTEN WIR UNS GEMÄSS DIN 34 ABSCHNITT 2.1 UND 2.2 ALLE RECHTE VOR.
 DRAWING BY CAD DO NOT MODIFY MANUALLY



- MR VERBINDUNGEN
MR CONNECTIONS
- KUNDEN VERBINDUNGEN
CUSTOMER CONNECTIONS
- TS_1_U WÄHLEREbene_U
TAP SELECTOR PLANE_U
- TS_2_U WÄHLEREbene_U
TAP SELECTOR PLANE_U
- TS_3_V WÄHLEREbene_V
TAP SELECTOR PLANE_V
- TS_4_V WÄHLEREbene_V
TAP SELECTOR PLANE_V
- TS_5_W WÄHLEREbene_W
TAP SELECTOR PLANE_W
- TS_6_W WÄHLEREbene_W
TAP SELECTOR PLANE_W
- PS_2_U WENDER_U
REVERSING CHANGE-OVER SELECTOR_U
- PS_4_V WENDER_V
REVERSING CHANGE-OVER SELECTOR_V
- PS_6_W WENDER_W
REVERSING CHANGE-OVER SELECTOR_W
- TW_0_W TRAFOWICKLUNG_W
TRANSFORMER WINDING_W
- TW_1_W STUFENWICKLUNG_W
TAP WINDING_W
- LU LASTUMSCHALTER
DIVERTER SWITCH
- Y STERNPUNKT
STAR POINT

MOTORANTRIEB
MOTOR DRIVE UNIT



19	9	17	
18	8	16	
17	7	15	
16	6	14	
15	5	13	
14	4	12	
13	3	11	
12	2	10	
11	1	9C	
10	K	9B	
9	9	9A	
8	8	8	
7	7	7	
6	6	6	
5	5	5	
4	4	4	
3	3	3	
2	2	2	
1	1	1	

(M)
ANTRIEBSSEITE
DRIVE SIDE

STELLUNG DES WENDERS POSITION OF REVERSING CHANGE-OVER SELECTOR
BETRIEBSSTELLUNG SERVICE POSITION
BEZEICHNUNG DER WÄHLERKONTAKTE DESIGNATION OF TAP SELECTOR CONTACTS
BEZEICHNUNG DER STELLUNGEN DESIGNATION OF POSITIONS
REGELBEREICH (kV) REGULATION RANGE (kV)

BETRIEBSSTELLUNGEN SERVICE POSITIONS	19
VERSCHIEDENE SPANNUNGEN DIFFERENT VOLTAGES	17
JUSTIERSTELLUNG ADJUSTMENT POSITION	9B

LASTSTUFENSCHALTER VACUTAP® VM III 650Y-123/C-10 19 3W
ON-LOAD TAP-CHANGER

FÜR DIESE TECHNISCHE UNTERLAGE GELTEN DIE VORGESCHRIEBENEN MASSSTÄBE: DIN 34 ABSCHNITT 2.1 UND 2.2 ALLE RECHTE VOR.

NO.	MODIFICATION	DATE	NAME

DATE	07.08.2018
ERIC	KONFIG
VERIFIED	CSO
STANDARD	

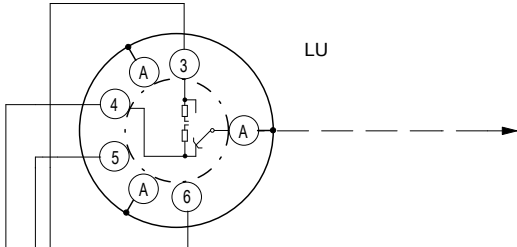
SCHALTBILD
CONNECTION DIAGRAM

LANGUAGE:	DE
EN	
PROJECT:	2414670_01

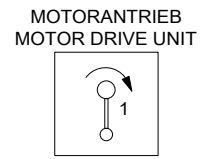
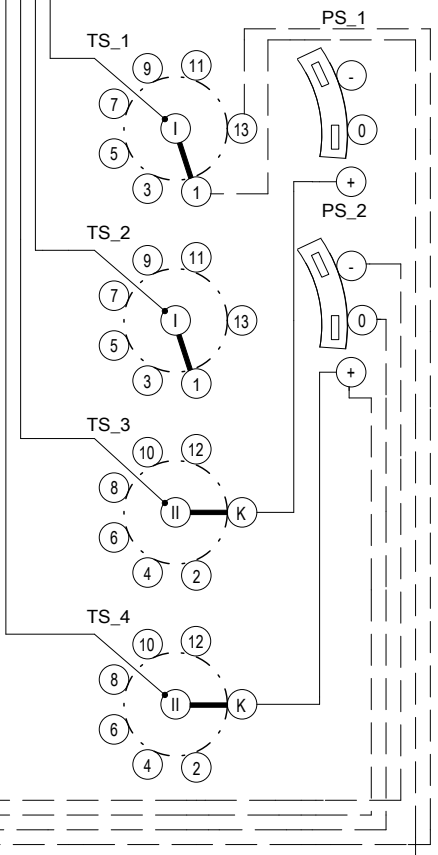
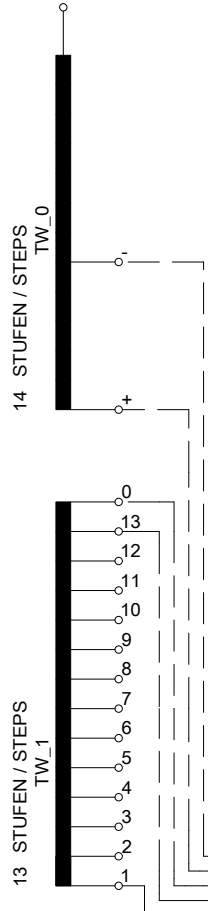
=	
+	
SHEET	1
1	SH

ACHTUNG
 PARALLELBRÜCKEN VON MR NICHT ANGEBAUT
 VON TS_1 (PS_1) NACH TS_2 (PS_2)
 VON TS_3 NACH TS_4

ATTENTION !
 PARALLEL BRIDGES ARE NOT INSTALLED BY MR
 FROM TS_1 (PS_1) TO TS_2 (PS_2)
 FROM TS_3 TO TS_4



- MR VERBINDUNGEN
MR CONNECTIONS
- KUNDEN VERBINDUNGEN
CUSTOMER CONNECTIONS
- TS_1 WÄHLEREBENE
TAP SELECTOR PLANE
- TS_2 WÄHLEREBENE
TAP SELECTOR PLANE
- TS_3 WÄHLEREBENE
TAP SELECTOR PLANE
- TS_4 WÄHLEREBENE
TAP SELECTOR PLANE
- PS_1 GROBWÄHLER
COARSE TAP SELECTOR
- PS_2 GROBWÄHLER
COARSE TAP SELECTOR
- TW_0 TRAFOWICKLUNG
TRANSFORMER WINDING
- TW_1 STUFENWICKLUNG
TAP WINDING
- LU LASTUMSCHALTER
DIVERTER SWITCH



27	13	27	
26	12	26	
25	11	25	
24	10	24	
23	9	23	
22	8	22	
21	7	21	
20	6	20	
19	5	19	
18	4	18	
17	3	17	
16	2	16	
15	1	15	
14	K	14	
13	13	13	
12	12	12	
11	11	11	
10	10	10	
9	9	9	
8	8	8	
7	7	7	
6	6	6	
5	5	5	
4	4	4	
3	3	3	
2	2	2	
1	1	1	

➔ (M)
 ANTRIEBSSEITE
 DRIVE SIDE

STELLUNG DES GROBWÄHLERS POSITION OF COARSE TAP SELECTOR
BETRIEBSSTELLUNG SERVICE POSITION
BEZEICHNUNG DER WÄHLERKONTAKTE DESIGNATION OF TAP SELECTOR CONTACTS
BEZEICHNUNG DER STELLUNGEN DESIGNATION OF POSITIONS
REGELBEREICH (kV) REGULATION RANGE (kV)

BETRIEBSSTELLUNGEN SERVICE POSITIONS	27
VERSCHIEDENE SPANNUNGEN DIFFERENT VOLTAGES	27
JUSTIERSTELLUNG ADJUSTMENT POSITION	14

LASTSTUFENSCHALTER VACUTAP® VM I 802-123/D-14 27 1G
ON-LOAD TAP-CHANGER

NO.	MODIFICATION	DATE	NAME



DATE	07.08.2018
ERIC	KONFIG
VERIFIED	CSO
STANDARD	

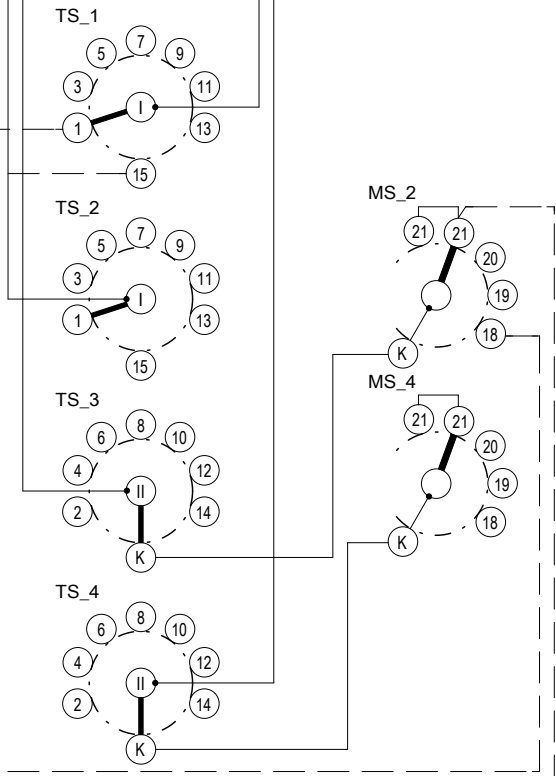
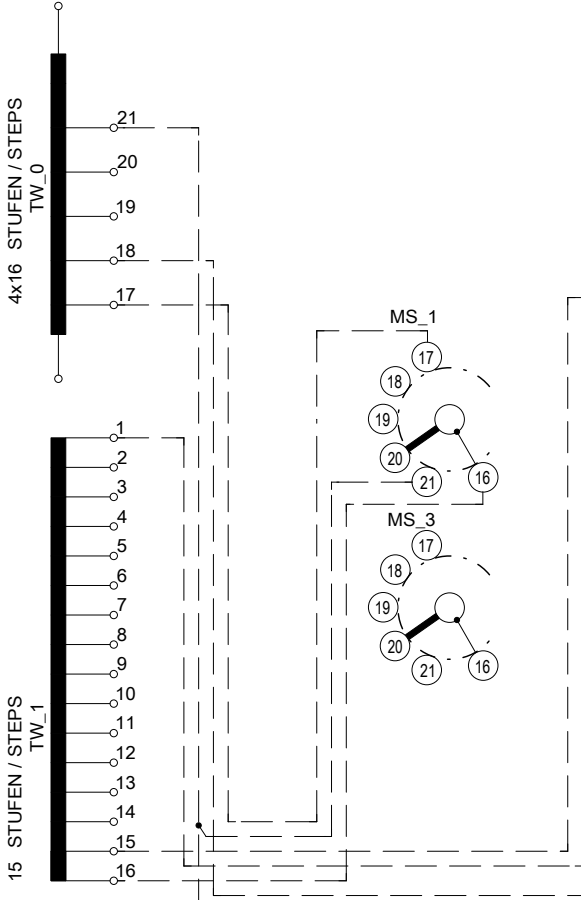
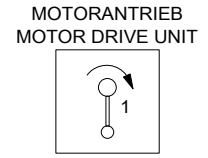
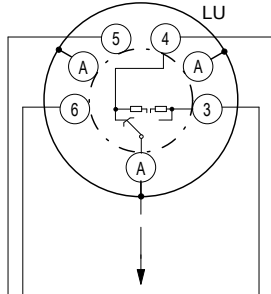
SCHALTBILD
 CONNECTION DIAGRAM

LANGUAGE:
 DE
 EN

PROJECT:
 2414631_01

FÜR DIESE TECHNISCHE UNTERLAGE BEHALTEN WIR UNS GEMÄSS DIN 34 ABSCHNITT 2.1 UND 2.2 ALLE RECHTE VOR.
 DRAWING BY CAD DO NOT MODIFY MANUALLY

- MR VERBINDUNGEN
MR CONNECTIONS
- - - KUNDEN VERBINDUNGEN
CUSTOMER CONNECTIONS
- TS_1 - TS_4 WÄHLEREBENEN
TAP SELECTOR PLANES
- MS_1 - MS_4 MEHRFACHGROBWÄHLER
MULTIPLE COARSE TAP SELECTOR
- TW_0 TRAFOWICKLUNG
TRANSFORMER WINDING
- TW_1 STUFENWICKLUNG
TAP WINDING
- LU LASTUMSCHALTER
DIVERTER SWITCH



79	15	79
78	14	78
77	13	77
76	12	76
75	11	75
74	10	74
73	9	73
72	8	72
71	7	71
70	6	70
69	5	69
68	4	68
67	3	67
66	2	66
65	1	65
64	K	64
63	15	63
62	14	62
61	13	61
60	12	60
59	11	59
58	10	58
57	9	57
56	8	56
55	7	55
54	6	54
53	5	53
52	4	52
51	3	51
50	2	50
49	1	49
48	K	48
47	15	47
46	14	46
45	13	45
44	12	44
43	11	43
42	10	42
41	9	41
40	8	40
39	7	39
38	6	38
37	5	37
36	4	36
35	3	35
34	2	34
33	1	33
32	K	32
31	15	31
30	14	30
29	13	29
28	12	28
27	11	27
26	10	26
25	9	25
24	8	24
23	7	23
22	6	22
21	5	21
20	4	20
19	3	19
18	2	18
17	1	17
16	K	16
15	15	15
14	14	14
13	13	13
12	12	12
11	11	11
10	10	10
9	9	9
8	8	8
7	7	7
6	6	6
5	5	5
4	4	4
3	3	3
2	2	2
1	1	1

ACHTUNG
PARALLELBÜCKEN VON MR NICHT ANGEBAUT
VON TS_1 NACH TS_2
VON TS_3 NACH TS_4
VON MS_1 NACH MS_3
VON MS_2 NACH MS_4

ATTENTION !
PARALLEL BRIDGES ARE NOT INSTALLED BY MR
FROM TS_1 TO TS_2
FROM TS_3 TO TS_4
FROM MS_1 TO MS_3
FROM MS_2 TO MS_4



STELLUNG DES GROBWÄHLERS POSITION OF COARSE TAP SELECTOR
BETRIEBSSTELLUNG SERVICE POSITION
BEZEICHNUNG DER WÄHLERKONTAKTE DESIGNATION OF TAP SELECTOR CONTACTS
BEZEICHNUNG DER STELLUNGEN DESIGNATION OF POSITIONS

BETRIEBSSTELLUNGEN SERVICE POSITIONS	79
VERSCHIEDENE SPANNUNGEN DIFFERENT VOLTAGES	79
JUSTIERSTELLUNG ADJUSTMENT POSITION	16

LASTSTUFENSCHALTER VACUTAP® VM I 802-123/C-16 79 1G
ON-LOAD TAP-CHANGER

NO.	MODIFICATION	DATE	NAME

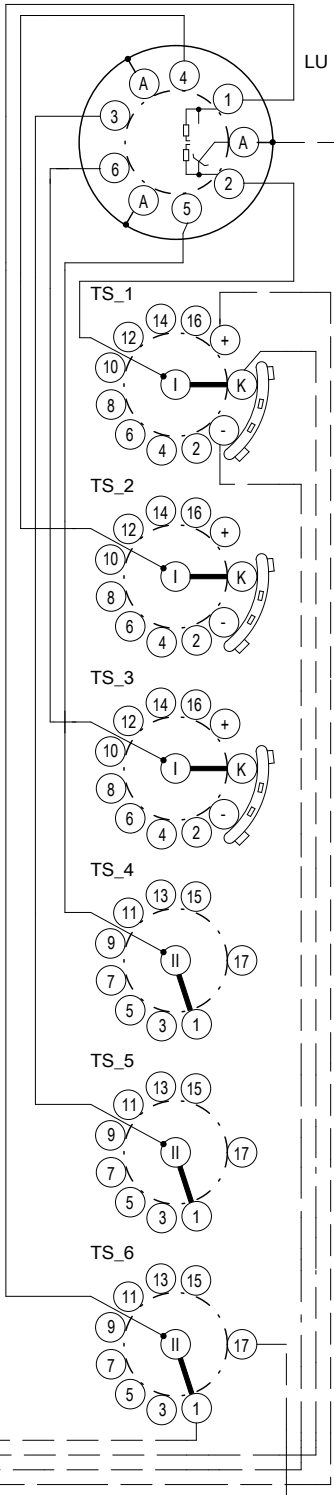
DATE	07.08.2018
ERIC	KONFIG
VERIFIED	CSO
STANDARD	

SCHALTBILD
CONNECTION DIAGRAM

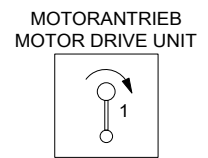
LANGUAGE:
DE PROJECT: 2407535_01
EN

ACHTUNG
 PARALLELBRÜCKEN VON MR NICHT ANGEBAUT
 VON TS_1 (PS_1) NACH TS_2 (PS_2) NACH TS_3 (PS_3)
 VON TS_4 NACH TS_5 NACH TS_6

ATTENTION !
 PARALLEL BRIDGES ARE NOT INSTALLED BY MR
 FROM TS_1 (PS_1) TO TS_2 (PS_2) TO TS_3 (PS_3)
 FROM TS_4 TO TS_5 TO TS_6



- MR VERBINDUNGEN
MR CONNECTIONS
- KUNDEN VERBINDUNGEN
CUSTOMER CONNECTIONS
- TS_1 WÄHLEREbene
TAP SELECTOR PLANE
- TS_2 WÄHLEREbene
TAP SELECTOR PLANE
- TS_3 WÄHLEREbene
TAP SELECTOR PLANE
- TS_4 WÄHLEREbene
TAP SELECTOR PLANE
- TS_5 WÄHLEREbene
TAP SELECTOR PLANE
- TS_6 WÄHLEREbene
TAP SELECTOR PLANE
- PS_1 WENDER
REVERSING CHANGE-OVER SELECTOR
- PS_2 WENDER
REVERSING CHANGE-OVER SELECTOR
- PS_3 WENDER
REVERSING CHANGE-OVER SELECTOR
- TW_0 TRAFOWICKLUNG
TRANSFORMER WINDING
- TW_1 STUFENWICKLUNG
TAP WINDING
- LU LASTUMSCHALTER
DIVERTER SWITCH



35	17	35
34	16	34
33	15	33
32	14	32
31	13	31
30	12	30
29	11	29
28	10	28
27	9	27
26	8	26
25	7	25
24	6	24
23	5	23
22	4	22
21	3	21
20	2	20
19	1	19
18	K	18
17	17	17
16	16	16
15	15	15
14	14	14
13	13	13
12	12	12
11	11	11
10	10	10
9	9	9
8	8	8
7	7	7
6	6	6
5	5	5
4	4	4
3	3	3
2	2	2
1	1	1

(M)
ANTRIEBSSEITE
DRIVE SIDE

STELLUNG DES WENDERS
POSITION OF REVERSING CHANGE-OVER SELECTOR

BETRIEBSSTELLUNG
SERVICE POSITION

BEZEICHNUNG DER WÄHLERKONTAKTE
DESIGNATION OF TAP SELECTOR CONTACTS

BEZEICHNUNG DER STELLUNGEN
DESIGNATION OF POSITIONS

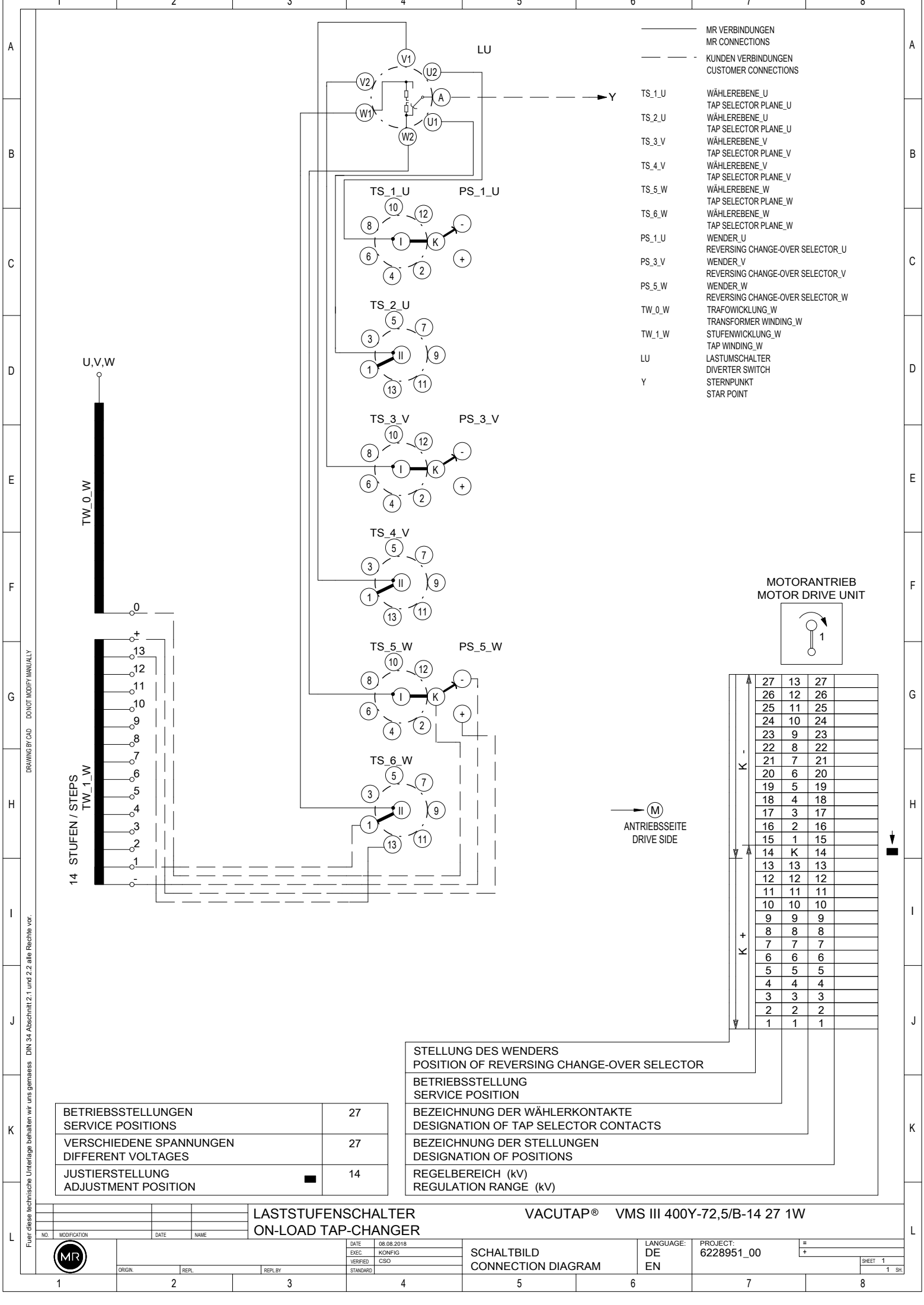
REGELBEREICH (kV)
REGULATION RANGE (kV)

BETRIEBSSTELLUNGEN SERVICE POSITIONS	35
VERSCHIEDENE SPANNUNGEN DIFFERENT VOLTAGES	35
JUSTIERSTELLUNG ADJUSTMENT POSITION	18

LASTSTUFENSCHALTER VACUTAP® VM I 1203-123/C-18 35 1W
ON-LOAD TAP-CHANGER

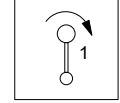
FÜR DIESE TECHNISCHE UNTERLAGE BEHALTEN WIR UNS GEMÄSS DIN 34 ABSCHNITT 2.1 UND 2.2 ALLE RECHTE VOR.
DRAWING BY CAD DO NOT MODIFY MANUALLY

MR	DATE	07.08.2018	SCHALTBILD CONNECTION DIAGRAM	LANGUAGE:	DE	PROJECT: 2414636_01	=
	ERIC	KONFIG		EN	+		
NO.	MODIFICATION	DATE	NAME	STANDARD	CSO		SHEET 1
1				4			1 SH



- MR VERBINDUNGEN
MR CONNECTIONS
- - - KUNDEN VERBINDUNGEN
CUSTOMER CONNECTIONS
- TS_1_U WÄHLEREBENE_U
TAP SELECTOR PLANE_U
- TS_2_U WÄHLEREBENE_U
TAP SELECTOR PLANE_U
- TS_3_V WÄHLEREBENE_V
TAP SELECTOR PLANE_V
- TS_4_V WÄHLEREBENE_V
TAP SELECTOR PLANE_V
- TS_5_W WÄHLEREBENE_W
TAP SELECTOR PLANE_W
- TS_6_W WÄHLEREBENE_W
TAP SELECTOR PLANE_W
- PS_1_U WENDER_U
REVERSING CHANGE-OVER SELECTOR_U
- PS_3_V WENDER_V
REVERSING CHANGE-OVER SELECTOR_V
- PS_5_W WENDER_W
REVERSING CHANGE-OVER SELECTOR_W
- TW_0_W TRAFOWICKLUNG_W
TRANSFORMER WINDING_W
- TW_1_W STUFENWICKLUNG_W
TAP WINDING_W
- LU LASTUMSCHALTER
DIVERTER SWITCH
- Y STERNPUNKT
STAR POINT

MOTORANTRIEB
MOTOR DRIVE UNIT



➔ (M)
ANTRIEBSSEITE
DRIVE SIDE

27	13	27	
26	12	26	
25	11	25	
24	10	24	
23	9	23	
22	8	22	
21	7	21	
20	6	20	
19	5	19	
18	4	18	
17	3	17	
16	2	16	
15	1	15	
14	K	14	
13	13	13	
12	12	12	
11	11	11	
10	10	10	
9	9	9	
8	8	8	
7	7	7	
6	6	6	
5	5	5	
4	4	4	
3	3	3	
2	2	2	
1	1	1	

DRAWING BY CAD DO NOT MODIFY MANUALLY



BETRIEBSSTELLUNGEN SERVICE POSITIONS	27
VERSCHIEDENE SPANNUNGEN DIFFERENT VOLTAGES	27
JUSTIERSTELLUNG ADJUSTMENT POSITION	14

STELLUNG DES WENDERS POSITION OF REVERSING CHANGE-OVER SELECTOR	
BETRIEBSSTELLUNG SERVICE POSITION	
BEZEICHNUNG DER WÄHLERKONTAKTE DESIGNATION OF TAP SELECTOR CONTACTS	
BEZEICHNUNG DER STELLUNGEN DESIGNATION OF POSITIONS	
REGELBEREICH (kV) REGULATION RANGE (kV)	

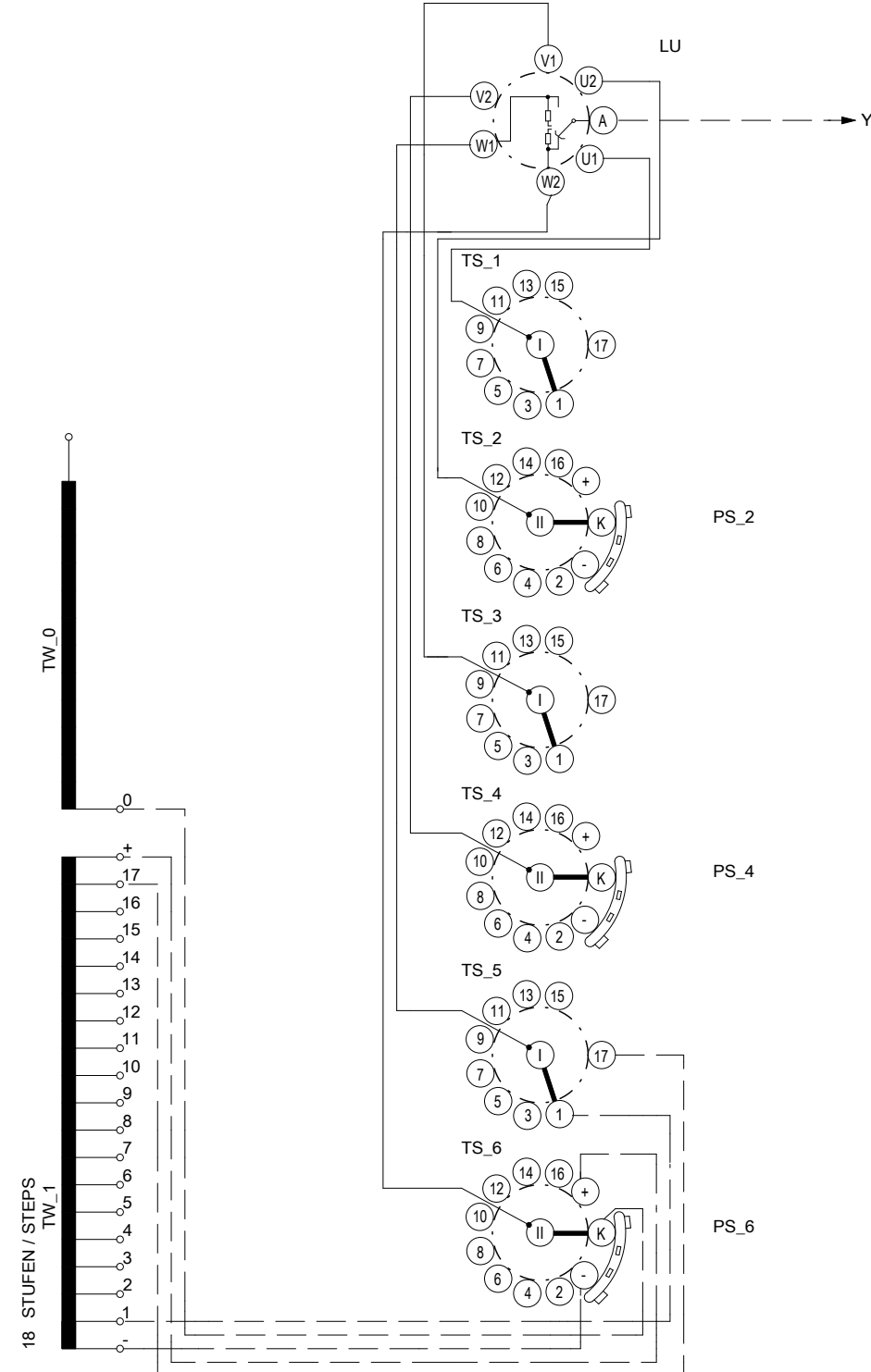
LASTSTUFENSCHALTER VACUTAP® VMS III 400Y-72,5/B-14 27 1W
ON-LOAD TAP-CHANGER

NO.	MODIFICATION	DATE	NAME

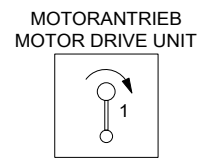
DATE	08.08.2018
DRAWN	KONFIG
CHECKED	CSO
VERIFIED	
STANDARD	

SCHALTBILD
CONNECTION DIAGRAM

LANGUAGE:	DE
EN	
PROJECT:	6228951_00



- MR VERBINDUNGEN
MR CONNECTIONS
- KUNDEN VERBINDUNGEN
CUSTOMER CONNECTIONS
- TS_1 WÄHLEREbene
TAP SELECTOR PLANE
- TS_2 WÄHLEREbene
TAP SELECTOR PLANE
- TS_3 WÄHLEREbene
TAP SELECTOR PLANE
- TS_4 WÄHLEREbene
TAP SELECTOR PLANE
- TS_5 WÄHLEREbene
TAP SELECTOR PLANE
- TS_6 WÄHLEREbene
TAP SELECTOR PLANE
- PS_2 WENDER
REVERSING CHANGE-OVER SELECTOR
- PS_4 WENDER
REVERSING CHANGE-OVER SELECTOR
- PS_6 WENDER
REVERSING CHANGE-OVER SELECTOR
- TW_0 TRAFOWICKLUNG
TRANSFORMER WINDING
- TW_1 STUFENWICKLUNG
TAP WINDING
- LU LASTUMSCHALTER
DIVERTER SWITCH
- Y STERNPUNKT
STAR POINT



35	17	35
34	16	34
33	15	33
32	14	32
31	13	31
30	12	30
29	11	29
28	10	28
27	9	27
26	8	26
25	7	25
24	6	24
23	5	23
22	4	22
21	3	21
20	2	20
19	1	19
18	K	18
17	17	17
16	16	16
15	15	15
14	14	14
13	13	13
12	12	12
11	11	11
10	10	10
9	9	9
8	8	8
7	7	7
6	6	6
5	5	5
4	4	4
3	3	3
2	2	2
1	1	1

(M) ANTRIEBSSEITE
DRIVE SIDE

18 STUFEN / STEPS
TW_1

TW_0

STELLUNG DES WENDERS
POSITION OF REVERSING CHANGE-OVER SELECTOR

BETRIEBSSTELLUNG
SERVICE POSITION

BEZEICHNUNG DER WÄHLERKONTAKTE
DESIGNATION OF TAP SELECTOR CONTACTS

BEZEICHNUNG DER STELLUNGEN
DESIGNATION OF POSITIONS

REGELBEREICH (kV)
REGULATION RANGE (kV)

BETRIEBSSTELLUNGEN SERVICE POSITIONS	35
VERSCHIEDENE SPANNUNGEN DIFFERENT VOLTAGES	35
JUSTIERSTELLUNG ADJUSTMENT POSITION	18

LASTSTUFENSCHALTER VACUTAP® VMS III 400Y-123/C-18 35 1W
ON-LOAD TAP-CHANGER

NO.	MODIFICATION	DATE	NAME

DATE	08.08.2018
ERIC	KONFIG
VERIFIED	CSO
STANDARD	

SCHALTBILD
CONNECTION DIAGRAM

LANGUAGE:	DE
EN	
PROJECT:	6228952_00

=	
+	
SHEET 1	1 SH

DRAWING BY CAD - DO NOT MODIFY MANUALLY

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THE POWER BEHIND POWER.