OCM1 SERIES TRANSFORMERS

OCM1 series transformers (single-phase, dry-type, multifunctional) rating 0.063-4.0 kV·A, with primary winding voltage from 115 to 660 V and with secondary winding voltage from 12 to 260 V, are intended for power supply of control circuits, of local lighting circuits, as well as of signalling and automation circuits.

Transformers are designed for indoor operation, under moderate, cold or tropical climatic conditions.

Transformers are resistant to impact loads of acceleration up to 8g and to vibratory loads within 10 to 60 Hz frequency range of maximum acceleration of 2g.

Transformers of 1.6, 2.5, 4.0 kV·A rating are installed in horizontal position and those of up to 1 kVA (inclusive) both in horizontal and vertical positions.

Transformers of the same type but of varying climatic versions are identical as to all electrical parameters, overall and mounting dimensions and differ only in protective coating.

Transformers employ a strip-wound split-type magnetic core of cold-rolled electrical steel.

Transformer coils are bobbin-type, made of copper wire with heat-resistant insulation. Assembled transformers are impregnated with wet-strong insulating varnish in a vacuum impregnator.

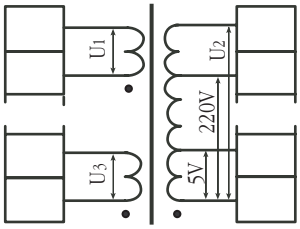
Transformer terminal clamps are set on insulating plastic blocks. Terminal clamps may be made of IP20 protection degree (with demountable covers). Transformers have reinforced insulation which provides better safety in maintenance and they feature enhanced resistance to network overvoltage.

As under a Customer's order the Plant may manufacture transformers with connections and voltages differing from those given in the Table below.

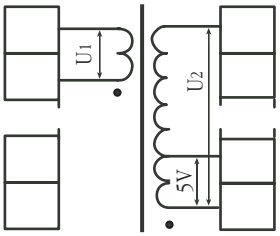
percentage

<table>
<tr><th rowspan="2">Transformer type</th><th colspan="2">No-load current</th><th colspan="2">Short-circuit voltage</th><th colspan="2">Efficiency</th></tr>
<tr><th>Rated</th><th>Tolerance limits</th><th>Rated</th><th>Tolerance limits</th><th>Rated</th><th>Tolerance limits</th></tr>
<tr><td>OCM1-0.063</td><td rowspan="2">24</td><td rowspan="13">+30</td><td>13.0</td><td rowspan="13">+20</td><td>83</td><td rowspan="13">-2</td></tr>
<tr><td>OCM1-0.1</td><td>9.0</td><td>87</td></tr>
<tr><td>OCM1-0.16</td><td>23</td><td>7.0</td><td>88.2</td></tr>
<tr><td>OCM1-0.25</td><td>22</td><td>5.5</td><td>90.2</td></tr>
<tr><td>OCM1-0.4</td><td>20</td><td>4.5</td><td>93.2</td></tr>
<tr><td>OCM1-0.63</td><td>19</td><td>4.0</td><td>93.5</td></tr>
<tr><td>OCM1-1.0</td><td rowspan="2">18</td><td rowspan="3">3.5</td><td rowspan="2">94.2</td></tr>
<tr><td>OCM1-1.0M</td></tr>
<tr><td>OCM1-1.6M</td><td>13</td><td>95.0</td></tr>
<tr><td>OCM1-2.5M</td><td>12</td><td rowspan="2">3.0</td><td>96</td></tr>
<tr><td>OCM1-4.0</td><td>13</td><td>96.5</td></tr>
</table>

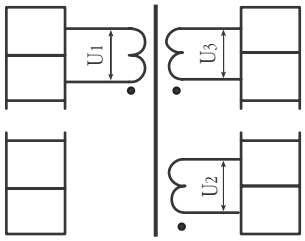
Triple - wound transformer with secondary winding taps

Transformer circuit digram	Transformer type	Secondary winding rated power, kV·A		Winding rated voltage,			Winding connection/ vector group
		U_2	U_3	of primary	of secondary		
				U_1	U_2	U_3	
	OCM1-0.1	0.075	0.025	220; 380; 660	110; 220	12; 24; 42; 110	1/1/1-0
	OCM1-0.16	0.100	0.060				
	OCM1-0.25	0.190					
	OCM1-0.4	0.340					
	OCM1-0.63	0.510	0.120				
	OCM1-1.0	0.880					
	OCM1-1.0M						
	OCM1-1.6M	1.350	0.250				
	OCM1-2.5M	2.250					

Double - wound transformer with secondary winding taps

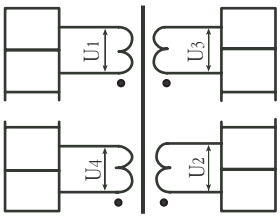
Transformer circuit digram	Transformer type	Secondary winding rated power, kV·A	Winding rated voltage, V		Winding connection/ vector group
			of primary	of secondary	
			U_1	U_2	
	OCM1-0.063	0.063	220; 380; 660	12; 14; 24; 29; 42; 56; 110; 130; 220; 260	1/1-0
	OCM1-0.1	0.100			
	OCM1-0.16	0.160			
	OCM1-0.25	0.250		24; 29; 42; 56; 110; 130; 220; 260	
	OCM1-0.4	0.400			
	OCM1-0.63	0.630		24; 42; 110; 220	
	OCM1-1.0	1.000		42; 110; 220	
	OCM1-1.0M				

Triple - wound transformer

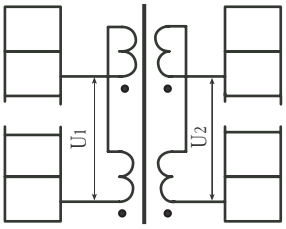
Transformer circuit digram	Transformer type	Secondary winding rated power, kV·A	Winding rated voltage, V			Winding connection/ vector group
			of primary	of secondary*		
			U_1	U_2	U_3	
	OCM1-0.063	0.063	220; 380; 660	14; 29; 56; 82		1/1/1-0/0
	OCM1-0.1	0.100				
	OCM1-0.16	0.160				
	OCM1-0.25	0.250		12; 14; 29; 56; 82		
	OCM1-0.4	0.400				
	OCM1-0.63	0.630		14; 29; 56; 82		
	OCM1-1.0	1.000				
	OCM1-1.0M					

* - two identical windings

Quadruple - wound transformer

Transformer circuit digram	Transformer type	Secondary winding rated power, kV·A			Winding rated voltage,V				Winding connection/ vector group
					of primary	of secondary			
		U_2	U_3	U_4	U_1	U_2	U_3	U_4	
	OCM1-0.1	0.025	0.050	0.025	220; 380; 660	110	29	12; 24; 42	1/1/1/1-0-0-0
	OCM1-0.16	0.075	0.060						
	OCM1-0.25	0.100	0.090	0.060					
	OCM1-0.4	0.190	0.150						
	OCM1-0.63	0.340	0.230						
	OCM1-0.63M								

Double - wound transformer

Transformer circuit digram	Transformer type	Secondary winding rated power, kV·A	Winding rated voltage, V		Winding connection/ vector group
			of primary	of secondary	
			U_1	U_2	
	OCM1-4.0	4.0	220; 380;	110; 220	1/1-0

OVERALL, MOUNTING DIMENSIONS

FIG. 1

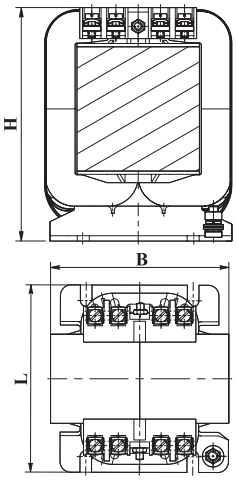
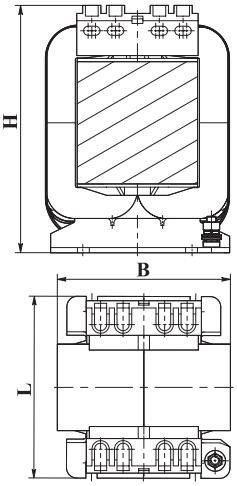
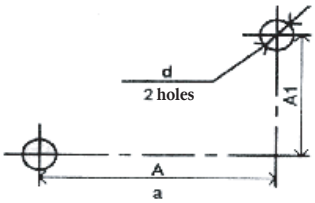
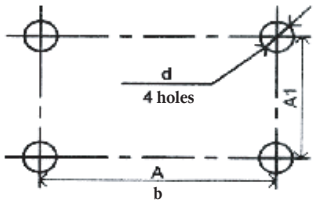


FIG. 2*







Arrangement of holes:

a - for 0.063 and 0.1 kV·A transformers

b - for other transformers

* - with terminal clamps of IP20 protection degree

Transformer type	B	L	H	L	H	A	A_1	d	Total mass, kg
		Fig.1		Fig.2					
	mm								
OCM1-0.063	85	70	90	80	100	52	58	5.5	1.24
OCM1-0.1		86		95			73	6.5	1.80
OCM1-0.16	105	90	107		120	60	78		2.70
OCM1-0.25		106	130	106	140		90		3.90
OCM1-0.4	135		140		145	80			5.50
OCM1-0.63	165	105	170	110	175	105	85		7.50
OCM1-1.0		148		148			125		13.00
OCM1-1.0M		115		120			95		10.50
OCM1-1.6M	183	155	215	-	-	152	100	8.5	14.30
OCM1-2.5M	230		235			170			21.00
OCM1-4.0		165	360			130	160	12	36.00