

# Low voltage 0,1-30 kVA, IP23

## Type 3LT-23

Capsulated three-phase non short circuit proof transformer with power range up to 30 kVA. Designed and tested according to EN61558-2-4. Standard types supplied with separate primary and secondary windings. This generates "a new system" in which any earth faults are eliminated. Steel plate enclosure, degree of protection IP23.

### Applications:

This is an ideal design for transforming voltage up or down or for installations which require a galvanic partition between the primary and secondary voltage. Protects installations and equipment by generating "a new system" in which any earth faults are eliminated. E.g. electric motor, compressor, cooling plants, automatic washing machines, and to uphold IT or TN-S systems. Custom designed types with other voltages, frequencies, electrostatic shield between primary and secondary, regulations, tappings, transport wheels or other features are available upon request.

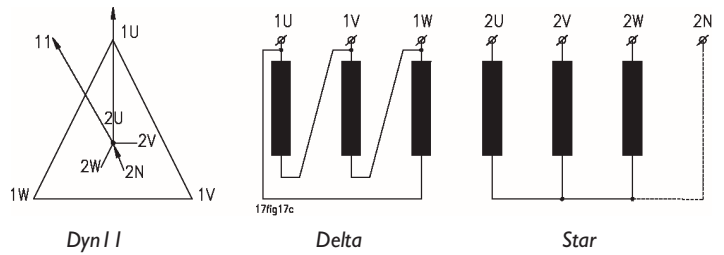


### Technical specifications

- Input voltage: 3x115 to 3x1000V
- Frequency: 47-63Hz
- Output voltage: 3x115 to 3x1000V
- Vector group: Dyn11 (standard)  
Dyn5, Ynd1, Ynd5
- According to: EN61558-2-4  
low voltage directive
- Test voltage: 3kV AC RMS
- Construction class: I
- Insulation class: B (130°C)  
F (155°C)
- Ambient temp. ( $t_0$ ): 40°C
- Degree of protection: IP23
- Type of termination: Terminal block

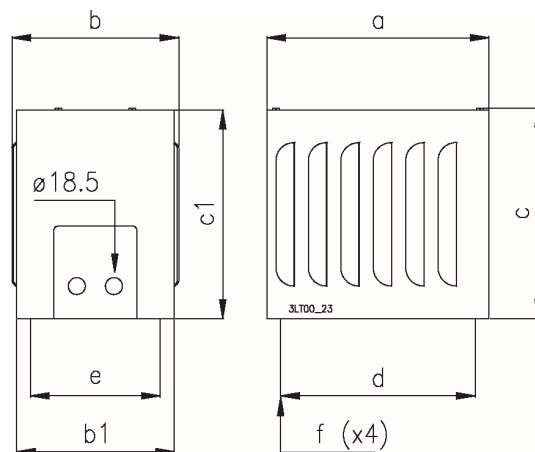
Can be supplied with Cu-bars termination depending on voltage/current.

### Standard vector group:



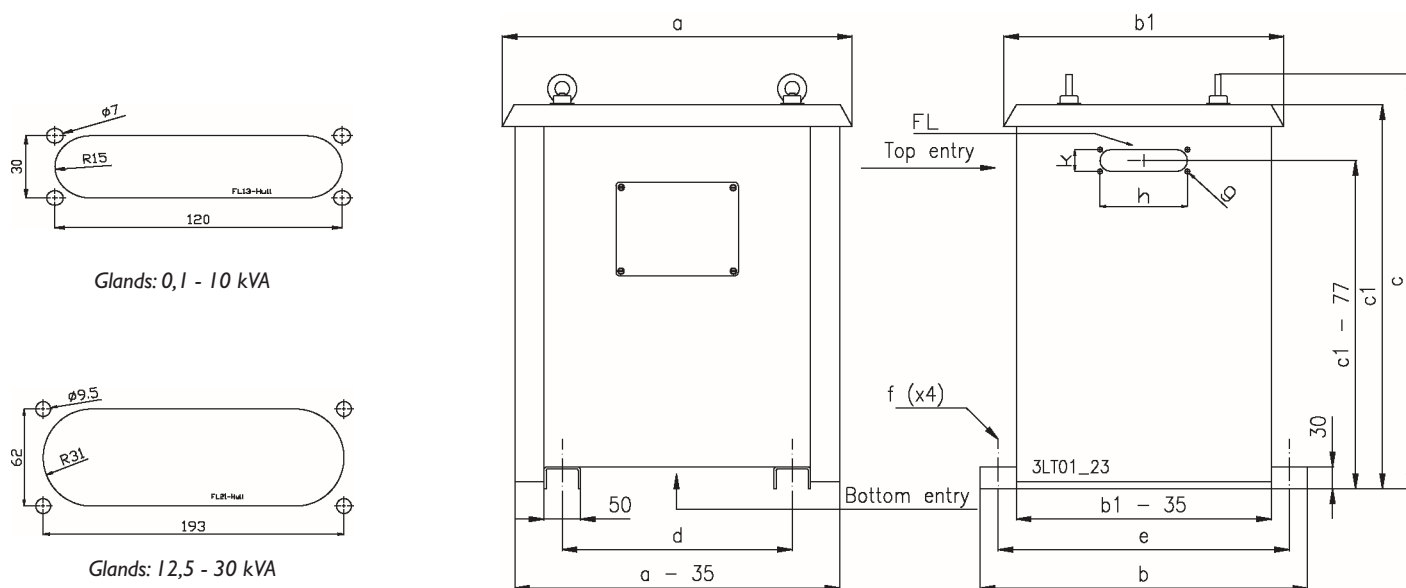
Noratel declare and guarantee that all transformers are designed according to the following standards; EN61558-2-4:1997, EN55014:1993 (EN55014-1:1997), EN61000-3-2:1995, EN61000-3-3:1995, EN55104:1995, (EN55014-2:1997), EN50081-1:1992, EN50082-2:1995 based on the following directives; L.V.D 73/23/EEC, 93/68/EEC, EMC 89/336/EEC, 91/263/EEC.

### Dimensions



3LT 0.1 - 3LT 0.80

## Dimensions



3LT 1.25 - 3LT 30.0

## Standard types 3LT-23

Power (kVA)	Type	Insulation class	Length	Width	Height	Dimensions (mm)					Weight (kg)
						a	b	c	b1	c1	
0,1	3LT 0.10	B	240	180	228	170	225	210	140	8.0	5,0
0,15	3LT 0.15	B	240	180	228	170	225	210	140	8.0	5,6
0,25	3LT 0.25	B	280	210	248	200	245	250	170	8.0	7,8
0,4	3LT 0.40	B	280	210	248	200	245	250	170	8.0	9,5
0,5	3LT 0.50	B	280	210	248	200	245	250	170	8.0	11,5
0,63	3LT 0.63	B	280	210	248	200	245	250	170	8.0	13,0
0,8	3LT 0.80	B	280	210	248	200	245	250	170	8.0	14,5
1,25	3LT 1.25	B	309	290	401	223	362	176	240	12.0	21,0
2	3LT 2.00	B	309	290	401	223	362	176	240	12.0	26,5
2,5	3LT 2.50	B	343	320	431	253	392	200	270	12.0	34,0
3	3LT 3.00	B	343	320	431	253	392	200	270	12.0	38,0
3,5	3LT 3.50	F	377	350	461	283	422	224	300	12.0	39,0
4	3LT 4.00	F	377	350	461	283	422	224	300	12.0	45,0
5	3LT 5.00	F	377	350	461	283	422	224	300	12.0	50,0
6,3	3LT 6.30	F	427	400	515	333	467	264	350	15.0	63,0
8	3LT 8.00	F	427	400	515	333	467	264	350	15.0	73,0
10	3LT 10.0	F	427	400	515	333	467	264	350	15.0	83,0
12,5	3LT 12.5	F	481	450	590	383	542	316	400	15.0	96,0
16	3LT 16.0	F	481	450	590	383	542	316	400	15.0	122
20	3LT 20.0	F	481	450	590	383	542	316	400	15.0	148
25	3LT 25.0	F	599	550	630	480	582	356	500	15.0	170
30	3LT 30.0	F	599	550	630	480	582	356	500	15.0	212

Standard types supplied with covers on top entry cable glands.

# Low voltage 40-2000 kVA, IP23

## Type 3LT-23

Capsulated three-phase non short circuit proof transformer with power range up from 40 to 2000 kVA. Designed and tested according to IEC60726/IEC60076. Standard types supplied with separate primary and secondary windings.

This generates "a new system" in which any earth faults are eliminated. Steel plate enclosure, degree of protection IP23.



### Applications:

This is an ideal design for transforming voltage up or down or for installations which require a galvanic partition between the primary and secondary voltage. Protects installations and equipment by generating "a new system" in which any earth faults are eliminated. E.g. electric motor, compressor, cooling plants, automatic washing machines, and to uphold IT or TN-S systems. Custom designed types with other voltages, frequencies, electrostatic shield between primary and secondary, regulations, tappings, transport wheels or other features are available on request.

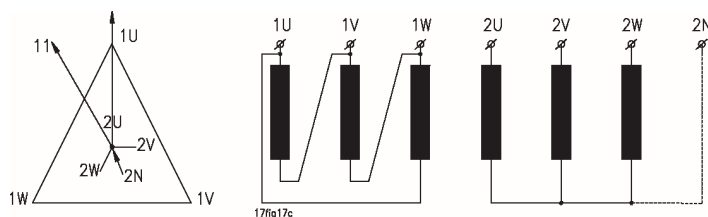
### Technical specifications

- Input voltage: 3x I 15 to 3x I 1000V
- Frequency: 47-63Hz
- Output voltage: 3x I 15 to 3x I 1000V
- Vector group: Dyn I I (standard)  
Dyn5, Ynd I, Ynd5
- According to: IEC60726/IEC60076  
D.N.V.
- Test voltage: 3kV AC RMS
- Construction class: I
- Insulation class: F (155°C) - standard  
H (180°C)
- Ambient temp. ( $t_a$ ): 45°C
- Degree of protection: IP23
- Type of termination: Cu-bars

Supplied with Al-bars for termination from

630 kVA with high currents.

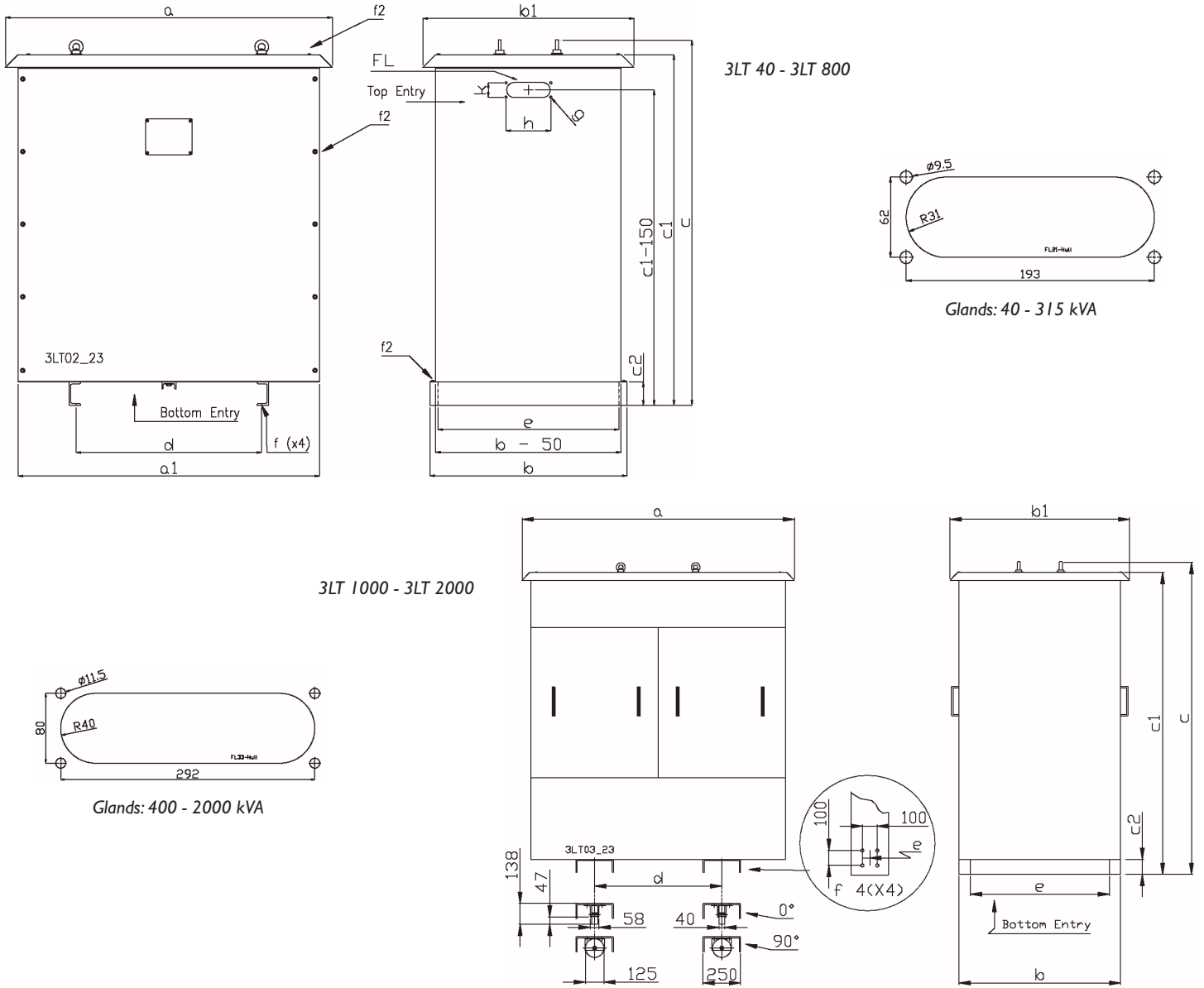
### Standard vector group:



### Accessories:

- Cable glands on primary/secondary [CG]
- Wheels for transport [WH]
- Temperature control units with alarm or trip [TC]
- PEN-link [PL]
- Top entry [TE]
- PT100 sensors [PT]
- RTD sensors [RTD]
- PTC sensors [PTC]
- Thermographic windows [TW]

Noratel declare and guarantee that all transformers are designed according to the following standards; IEC60726, IEC60076, D.N.V., EN55014:1993 (EN55014-1:1997), EN61000-3-2:1995, EN61000-3-3:1995, EN55104:1995, (EN55014-2:1997), EN50081-1:1992, EN50082-2:1995 based on the following directives; L.V.D 73/23/EEC, 93/68/EEC, EMC 89/336/EEC, 91/263/EEC.



Standard types 3LT-23

Power (kVA)		Type	Length <b>a</b>	Width <b>b</b>	Height <b>c</b>	Dimensions (mm)							Weight (kg)
<i>cl.F</i>	<i>cl.H</i>					<i>a1</i>	<i>b1</i>	<i>c1</i>	<i>c2</i>	<i>d</i>	<i>e</i>	<i>f</i>	
40	45	3LT 40.0	670	520	827	600	540	770	50	340	470	14	200
50	56	3LT 50.0	670	520	827	600	540	770	50	340	470	14	243
63	70	3LT 63.0	700	520	877	630	540	820	50	360	470	14	270
80	89	3LT 80.0	700	520	877	630	540	820	50	360	470	14	323
100	110	3LT 100	930	630	1057	840	670	1000	100	590	580	18	406
125	138	3LT 125	930	630	1057	840	670	1000	100	590	580	18	467
160	175	3LT 160	1050	700	1137	960	740	1080	100	590	650	18	605
200	220	3LT 200	1050	700	1137	960	740	1080	100	590	650	18	698
250	275	3LT 250	1210	800	1517	1100	860	1450	100	600	750	18	900
315	350	3LT 315	1210	800	1517	1100	860	1450	100	600	750	18	1014
400	440	3LT 400	1450	900	1557	1340	960	1490	100	760	850	18	1295
500	550	3LT 500	1450	900	1557	1340	960	1490	100	760	850	18	1426
630	700	3LT 630	1670	1050	1637	1560	1110	1570	100	880	1000	18	1736
800	888	3LT 800	1820	1080	2090	1700	1200	2015	100	850	850	4x11,0	2028
1000	1100	3LT 1000	1820	1080	2090	1700	1200	2015	100	850	850	4x11,0	3000
1250	1380	3LT 1250	1820	1080	2090	1700	1200	2015	100	850	850	4x11,0	3300
1600	1750	3LT 1600	2200	1080	2355	2080	1200	2265	100	850	850	4x11,0	3700
2000	2200	3LT 2000	2200	1080	2355	2080	1200	2265	100	850	850	4x11,0	5080

# Losses and short circuit currents

## 3-LT standard types

Type	FE-loss (W)	CU-loss (W)	$e_z$ (%)	$e_r$ (%)	$I_c$ ( $xI_{nc}$ )
<b>3LT</b>					
3LT 0.10	5	15	14,8	14,8	44
3LT 0.15	6	27	17,8	17,8	46
3LT 0.25	10	27	10,8	10,8	35
3LT 0.40	12	38	9,6	9,5	35
3LT 0.50	17	39	7,8	7,8	29
3LT 0.63	23	40	6,7	6,3	35
3LT 0.80	30	51	6,5	6,4	34
3LT 1.25	36	57	4,8	4,6	25
3LT 2.00	55	72	3,6	3,6	31
3LT 2.50	56	70	2,9	2,8	27
3LT 3.00	65	79	2,7	2,6	28
3LT 3.50	75	199	5,8	5,7	20
3LT 4.00	90	168	4,2	4,2	24
3LT 5.00	98	205	4,2	4,1	22
3LT 6.30	128	246	4,1	3,9	21
3LT 8.00	158	262	3,6	3,3	21
3LT 10.0	168	294	3,4	2,9	19
3LT 12.5	247	426	3,9	3,4	15
3LT 16.0	269	386	2,8	2,4	17
3LT 20.0	280	371	2,2	1,9	20
3LT 25.0	387	496	2,6	2,0	15
3LT 30.0	494	472	2,1	1,6	16
3LT 40.0	132	1126	3,6	2,8	12
3LT 50.0	172	954	2,8	1,9	12
3LT 63.0	191	1254	3,0	2,0	12
3LT 80.0	237	1298	2,7	1,6	11
3LT 100	258	1934	4,4	1,9	9
3LT 125	356	2497	3,7	2,0	8
3LT 160	378	2912	3,9	1,8	7
3LT 200	470	3355	3,8	1,7	7
3LT 250	640	3797	4,2	1,5	12
3LT 315	651	5156	4,3	1,6	12
3LT 400	786	6681	6,1	1,7	8
3LT 500	935	7212	5,2	1,4	7
3LT 630	1220	7649	3,9	1,2	7
3LT 800	1620	10287	4,5	0,8	10
3LT 1000	1950	8500	4,5	0,8	10
3LT 1250	2400	10000	5,0	0,8	10
3LT 1600	2520	12000	5,0	0,8	10
3LT 2000	3300	15000	5,5	0,7	10

Type	FE-loss (W)	CU-loss (W)	$e_z$ (%)	$e_r$ (%)	$I_c$ ( $xI_{nc}$ )
<b>3LTV</b>					
3LTV 0.25	10	30	13,5	12,1	34
3LTV 0.40	12	40	10,2	10	34
3LTV 0.50	15	44	9,55	8,78	29
3LTV 0.63	23	40	6,68	6,27	35
3LTV 0.80	25	48	6,47	6,06	33
3LTV 1.00	28	40	4,1	4	32
3LTV 1.60	42	46	2,88	2,84	38
3LTV 2.00	50	50	2,6	2,5	33
3LTV 2.50	60	60	2,34	2,4	33
3LTV 3.00	60	92	3,2	3,07	25
3LTV 3.50	75	90	2,65	2,57	31
3LTV 4.00	90	90	2,3	1,8	30
3LTV 5.00	100	105	2,3	2,1	27
3LTV 6.30	130	130	2,2	2,06	31
3LTV 8.00	150	150	2	1,89	32
3LTV 10.0	160	200	2,1	2	23
3LTV 13.0	220	190	1,8	1,5	24
3LTV 16.0	290	190	1,48	1,19	26
3LTV 20.0	310	240	1,5	1,2	23
3LTV 25.0	390	280	1,55	1,15	24
<b>3LTxxN</b>					
3LT 40.0N	321	1046	3,52	2,61	11
3LT 50.0N	431	1098	3,09	2,20	12
3LT 63.0N	404	1587	3,59	2,52	9
3LT 80.0N	622	1362	2,96	1,70	10
3LT 100N	673	1896	3,88	1,90	8
3LT 125N	797	2133	3,91	1,71	8
3LT 160N	901	3221	4,30	2,01	8
3LT 200N	1283	3500	5,10	1,72	7
3LT 250N	1590	3480	3,27	1,39	7

- All data for guidance, subject to change.