

Surge arrester ETITEC group CM T2+T3

EN/IEC/VDE: T2,T3 / II,III/C,D

Description

Compact single-phase Type 2 / Compact 3-phase Type 2

I_n : 20 kA

I_{max} : 40 kA

Location of Use: Sub-distribution Boards

Mode of Protection: L-PE, N-PE

IEC/EN Category: Class II+III / Type 2+3

Housing: Modular Design, Pluggable module (possible to replace)

Mounting: 35mm DIN rail

Compliance: IEC 61643-11:2011 EN 61643-11:2012+A11:2018

Fault indication: visual - red flag (false)

Remote signaling contact as an option (RC)

Type designation:

ETITEC CM T23 xxx/20 p+c RC

xxx - U_c voltage (max. AC operating voltage), must be above network voltage.

20 - 20kA (I_n at 8/20us)

p - number of poles with MOV

c - 0 for MOV at NPE pole, 1 for GDT (TT systems)

RC - remote contact (Change over contact) for fault signalisation

Advantages:

- space saving (reduces required space in distribution board by 50%)
- remote signalisation (RC version only)
- DIN rail mounting (EN 60715)
- varistor is the protective element
- metal snapper, new way of mounting on DINrail (easier, quicker)
- modular design
- IEC/EN 61643-11
- RoHS compliant
- connection up to 35mm²

ETITEC CM

Type	Code No.	I_n/I_{max} (8/20) [kA]	U_{oc} [kV]	U_c [V AC]	Network	Weight [g]	Packaging [pcs]
ETITEC CM T23 275/20 2+0	002440650	20/40	6	275	TNS	152	1/15
ETITEC CM T23 275/20 2+0 RC	002440651	20/40	6	275	TNS	157	1/15
ETITEC CM T23 275/20 4+0	002440652	20/40	6	275	TNS	281	1/8
ETITEC CM T23 275/20 4+0 RC	002440653	20/40	6	275	TNS	287	1/8
ETITEC CM T23 275/20 1+1	002440654	20/40	6	275	TT/TNS	207	1/15
ETITEC CM T23 275/20 1+1 RC	002440655	20/40	6	275	TT/TNS	212	1/15
ETITEC CM T23 275/20 3+1	002440656	20/40	6	275	TT/TNS	413	1/8
ETITEC CM T23 275/20 3+1 RC	002440657	20/40	6	275	TT/TNS	419	1/8
MOD.ETITEC CM T23 275/20	002440658	20/40	6	275	-	78,5	1/24
MOD.ETITEC CM T23 275/20 G	002440659	20/40	6	255	-	65,5	1/24

* RC -> remote signalisation. Note: I_n/I_{max} - defined per single pole



ETITEC CM T23 275 20 (4+0, 2p, TNC-S)

Single phase safety and insulating transformers IP00

Technical data:	
Frequency	50 Hz
Thermal class	B & F
Losses in the core sheets	1,3 - 1,5 W/kg
Insulation voltage	4000V between coils 2000V between coils and ground
Primary voltage	230 V/50 Hz 230 V +/- 15V 50 Hz - type EURO
Standard	EN 61558-2-4
Service type	Continuous
Protection index	IP00

Technical features chart of single phase safety and insulating transformers. Thermal class B

Fall secondary windings power (VA)	No-load losses ΔP (W)	Losses (short circuit) ΔP (W)	U_{cc} ($\cos \varphi=1$) (%)	Efficiency ($\cos \varphi=1$) (%)
30	2,4	3,9	9,9	79%
40	3	5,7	10	79%
50	2,9	7,1	10,6	80%
63	3,8	7,1	9,6	82%
75	4,3	9,4	9,2	82%
100	4,6	10,1	9,1	85%
150	5,7	16,2	7,5	85%
200	7,2	22	7,3	86%
250	8,9	23,7	6,5	87%
300	9,8	24	5,6	89%
400	11	27	5,3	90%
500	16,2	28,2	4,2	91%
630	18,9	43	4,3	90%
800	20	46	4,1	92%
1000	28	45	3,2	93%
1600	35	65	3,1	94%
2000	30	88	2,7	94%
2500	60	67	2,1	95%
3000	70	85	3	95%
4000	50	158	3,2	95%
5000	50	250	2,8	94%
6000	60	280	2,8	94%
8000	100	240	2,9	96%
10000	137	200	1,6	97%

Technical features chart of single phase safety and insulating transformers. Thermal class F

Fall secondary windings power (VA)	No-load losses ΔP (W)	Losses (short circuit) ΔP (W)	U_{cc} ($\cos \varphi=1$) (%)	Efficiency ($\cos \varphi=1$) (%)
40	3	7	12	75%
63	3,9	8	10,5	81%
100	4,9	11	9,5	84%
160	6,1	16,8	8,5	86%
200	7,7	23	8	85%
250	9,1	25	6,5	86%
300	10	25,4	6	88%
400	12,8	32,5	5,5	89%
500	16,5	35,5	4,8	90%
630	19,1	44,2	4,6	90%
1000	28,5	48	4,5	93%
1600	38	70	3,5	93%
2000	36	76	3,5	94%
2500	65	75	2,5	94%

Single phase safety and insulating transformers IP20 DIN rail mounted

Technical data	
Primary voltage	0 - 230V - 400V +/- 15V (50-60 Hz)
Thermal class	F
Cable section	10 mm ²
Protection	IP20
Fixing	on DIN rail
Standard	EN 61558-1
Service type	Continuous

Technical parameters for insulating transformers. Thermal class F. Fixed on DIN rail.				
Fall secondary windings power (VA)	No-load losses ΔP (W)	Losses (short circuit) ΔP (W)	Ucc (cos $\phi=1$) (%)	Efficiency (cos $\phi=1$) (%)
30	7,6	4,2	11,0	0,89
40	7,8	5,0	9,0	0,88
50	8,0	6,0	8,0	0,88
63	8,0	7,0	7,8	0,86
75	8,2	7,2	7,5	0,85
100	8,3	9,1	7,2	0,83
160	8,2	14,8	6	0,92
200	8,3	15,2	5,7	0,92
250	9,3	17	5,3	0,92
300	9,4	18,3	5,0	0,91

Generally about transformers

The transformers must be protected against possible overloads and short circuits. Our transformers belong to the non-short-circuit-proof type and so they must be protected using external fuses. Rated current of the suggested fuse is always indicated on our labels. However the protection can be also obtained using Miniature Circuit Breakers - ETIMAT. Selected protection of the input winding of the transformer must be chosen taking into account that at the starting phase of the transformer, a high value of inrush current is generated, a value that can reach 25 times the value of the input rated current, for about 10 milliseconds. Hence, time delay fuses (T or aM type) or MCB - ETIMAT having D or K characteristic must be used for a correct protection. The protection of the secondary side can be realized using fuses of F or gG type, or MCB - ETIMAT having B or C characteristic. Here below there is a table with all the suggested protection fuses for the input and output windings (all the values are in Ampere):

General rules for choosing a transformers protection

Fall secondary windings power (VA)	Rated value of aM or T fuse for secondary side protection (A)				Rated value of aM or T fuse for primary side protection (A)	
	Voltage U ₂ 24V	Voltage U ₂ 48V	Voltage U ₂ 110V	Voltage U ₂ 220V	Voltage U ₁ 230V	Voltage U ₁ 400V
30	1,25	0,63	0,315	0,16	0,5	0,5
50	2,0	1,0	0,4	0,2	1,0	0,5
75	3,15	1,6	0,63	0,315	1,0	1,0
100	4,0	2,0	1,0	0,5	1,0	1,0
150	6,0	3,15	1,25	0,63	1,0	1,0
200	8,0	4,0	2,0	1,0	1,0	1,0
250	10,0	6,0	2,0	1,0	2,0	1,0
300	12,0	6,0	2,5	1,25	2,0	1,0
400	16,0	8,0	4,0	2,0	4,0	2,0
500	20,0	10,0	4,0	2,0	4,0	2,0
630	25,0	12,0	6,0	3,15	4,0	2,0
800	32,0	16,0	6,3	4,0	4,0	4,0
1000	40,0	20,0	10,0	5,0	10,0	6,0
1600	63,0	32,0	12,0	6,0	10,0	10,0
2500	100,0	50,0	20,0	10,0	16,0	10,0

Transformer thermal class

Thermal class	Over temperature °C
A	75
E	90
B	95
F	115
H	140

The above over temperature values are referred to an ambient temperature of 25°C

Thermal class: The transformers have some level of power loss that causes a rising in the temperature of the metallic parts and of the windings. High temperatures cause deterioration of the materials and shorten the "average life" of the transformer itself. For this reason the international standards define some thermal classes, with a maximum over temperature value for each one. The thermal classes established by EN 61558 standard are.

Rated power:

It is the value resulting from the rated secondary winding voltage multiplied by the rated secondary current. In case of a n-phases transformers, it is the value corresponding to n times the result of rated secondary voltage multiplied by rated secondary current. If a transformer is used in a non-continuous work cycle, its power can be lower.