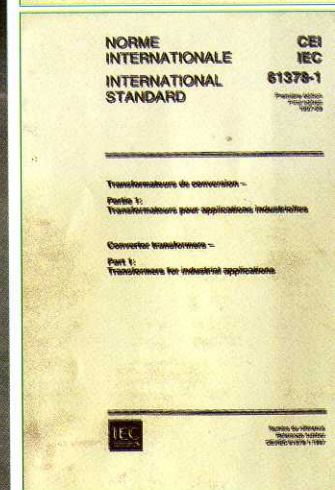
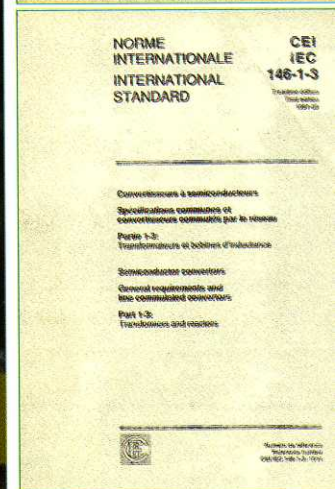
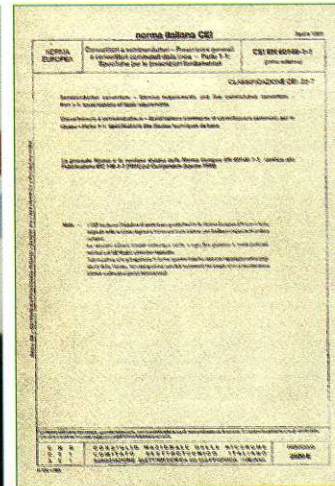




CONVERTER TRANSFORMERS

PRESENTATION

The company MF Trasformatori boasts twenty years of experience in the branch of the planning and the construction of transformers able to the interaction with semiconductor conversion groups for electrochemical appliances, industrial applications and for traction. The range of products includes oil, cast resin and class H transformers. It answers to all the exemplified duty classes from CEI norms.






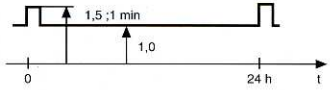
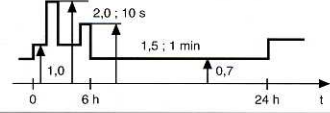
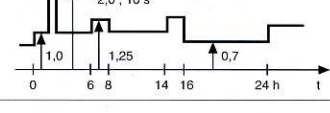
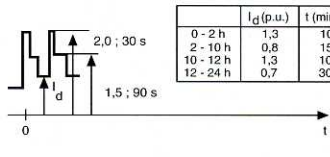
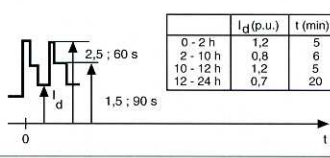
A PRACTICAL GUIDE FOR ORDERS

In order to carry out correctly the planning of a converter transformer they are necessary - beyond to the typical characteristics of a normal transformer - the following information:

- type of converter
- cycle of working
- harmonic of developed tension and current.

Here below are listed the tables of the duty classes, examples of cargo diagrams as guide for the choice of the aforesaid ones and the limits of overtemperature of the relative windings to the several classes and the structural modalities. The last table is devoid concerning the cast-resin transformers for which it is possible to obtain reliable results turning out on the base of the existing values.

Duty class	Rated current for converters and test conditions for assembles (value at/dn)
I	1,0 p.u. permanent
II	1,0 p.u. permanent 1,5 p.u. 1 min
III	1,0 p.u. permanent 1,5 p.u. 2 min 2,0 p.u. 10 s
IV	1,0 p.u. permanent 1,25 p.u. 2 h 2,0 p.u. 10 s
V	1,0 p.u. permanent 1,5 p.u. 2 h 2,0 p.u. 1 min
VI	1,0 p.u. permanent 1,5 p.u. 2 h 3,0 p.u. 1 min

Duty class	Specific application	Rated current for converters and test conditions for assembles (value at/dn)															
I	Electrochemical appliances																
II	Electrochemical appliances																
III	Industrial applications and traction substation: light duty																
IV	Industrial applications: heavy duty																
V	Traction substation and mines: mean duty	 <table border="1"> <thead> <tr> <th></th> <th>I_d (p.u.)</th> <th>t (min)</th> </tr> </thead> <tbody> <tr> <td>0 - 2 h</td> <td>1,3</td> <td>10</td> </tr> <tr> <td>2 - 10 h</td> <td>0,8</td> <td>15</td> </tr> <tr> <td>10 - 12 h</td> <td>1,3</td> <td>10</td> </tr> <tr> <td>12 - 24 h</td> <td>0,7</td> <td>30</td> </tr> </tbody> </table>		I_d (p.u.)	t (min)	0 - 2 h	1,3	10	2 - 10 h	0,8	15	10 - 12 h	1,3	10	12 - 24 h	0,7	30
	I_d (p.u.)	t (min)															
0 - 2 h	1,3	10															
2 - 10 h	0,8	15															
10 - 12 h	1,3	10															
12 - 24 h	0,7	30															
VI	Traction substation: heavy duty	 <table border="1"> <thead> <tr> <th></th> <th>I_d (p.u.)</th> <th>t (min)</th> </tr> </thead> <tbody> <tr> <td>0 - 2 h</td> <td>1,2</td> <td>5</td> </tr> <tr> <td>2 - 10 h</td> <td>0,8</td> <td>6</td> </tr> <tr> <td>10 - 12 h</td> <td>1,2</td> <td>5</td> </tr> <tr> <td>12 - 24 h</td> <td>0,7</td> <td>20</td> </tr> </tbody> </table>		I_d (p.u.)	t (min)	0 - 2 h	1,2	5	2 - 10 h	0,8	6	10 - 12 h	1,2	5	12 - 24 h	0,7	20
	I_d (p.u.)	t (min)															
0 - 2 h	1,2	5															
2 - 10 h	0,8	6															
10 - 12 h	1,2	5															
12 - 24 h	0,7	20															

