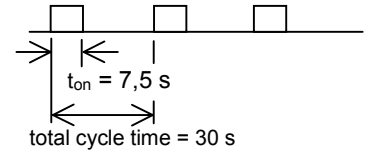
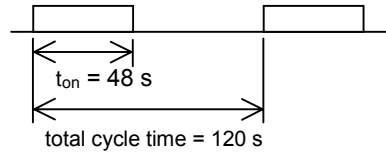




Continuous dissipation / short time dissipation / total cycle time / duty time / duty cycle factor / overload factor

Resistors are used on most applications for short time dissipation and not for continuous dissipation. Below you find a method how to work out the admissible continuous dissipation out of the short time dissipation by means of the duty cycle factor(dcf) and the overload factor(olf). If the duty cycle factor ist unknown, it can be calculated as follows:

Duty cycle factor (dcf) = duty time (ton) / total cycle time



dcf1 = 48sec. / 120sec. = 0,4 = 40%

dcf2 = 7,5sec. / 30sec. = 0,25 = 25%

Please notice: The maximum of the total cycle time is 120 s – shorter times are possible. Total cycle times for motors are often longer than 120 s! For longer times please ask us.

The continuous and the short time dissipation can be worked out by comparing the known duty cycle factor(dcf) with the following diagramm or table. So you get the overload factor(olf).

overload factor (olf) in dependence of duty cycle factor (dcf) (total cycle time = 120s)

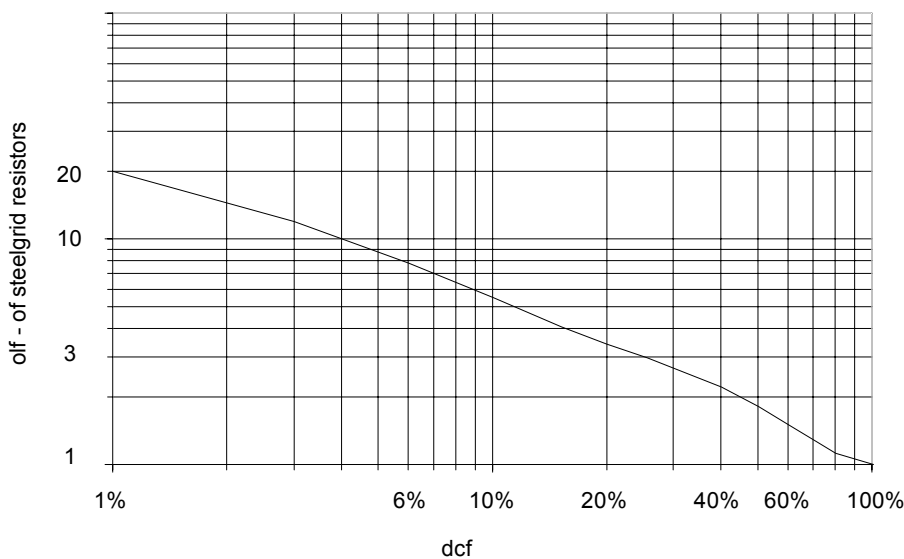


Table with 2 rows (dcf, olf) and 10 columns (1%, 3%, 6%, 15%, 25%, 40%, 60%, 80%, 100%)

The continuous and the short time dissipation can be calculated as follows:

short time dissipation = continuous dissipation x olf continuous dissipation = short time dissipation / olf

Example: Wanted - continuous dissipation Known - resistor with a short time dissipation of 50 kW for 30 s and a total cycle time of 120 s

- => Duty cycle factor(dcf): 30 s : 120 s x 100% = 25%
=> Overload factor(olf) at 25% from table = 3,0
=> Continuous dissipation = 50 kW : 3,0 = 16,7 kW
=> A resistor with a continuous dissipation of 16,7 kW or more is required!