

OSM/EE DECISION SHEET

Category	Standard:	Clause	Document no.
MEAS	EN 61010-1:2010 + A1:2019	6.3	OSM-EE 25/3
Subject		Key words	Meeting
Limit values for ACCESSIBLE parts		Ripple, DC voltage	Strasbourg 9-10 April 2025
Question			
In clause 6.3 there are specified limits for accessible circuits. There is no clear definition what is still considered as DC voltage – what level of ripple is allowed on DC voltage. There is the following definition about ripple in Table 17 and Table 18. The peak value ($\hat{U}$) applies to non-sinusoidal a.c. and to d.c. with ripple exceeding 10 %, and is provided for convenience. The r.m.s. value of the maximum available current shall be determined as that value is related to heating. Question: When evaluating the limit of accessible voltage, what level of ripple is allowed on signal in order to still apply DC limits?			
Decision			
Signal is considered as a DC when RMS ripple does not exceed 10% of average (DC) value. See definition from EN 61140:2016.			
Explanatory notes			
Definition from EN 61140:2016, clause 7.5.2.1: NOTE 1 Ripple-free is conventionally defined as an r.m.s. ripple voltage of not more than 10 % of the d.c. component. Maximum values for non-sinusoidal a.c. voltage are under consideration. Definition from EN IEC 62368-1:2024, clause 3.3.14.1 is different from EN 61140. DC voltage: voltage having a peak-to-peak ripple not exceeding 10 % of the average value Note 1 to entry: Where peak-to-peak ripple exceeds 10 % of the average value, the requirements related to peak voltage are applicable.			