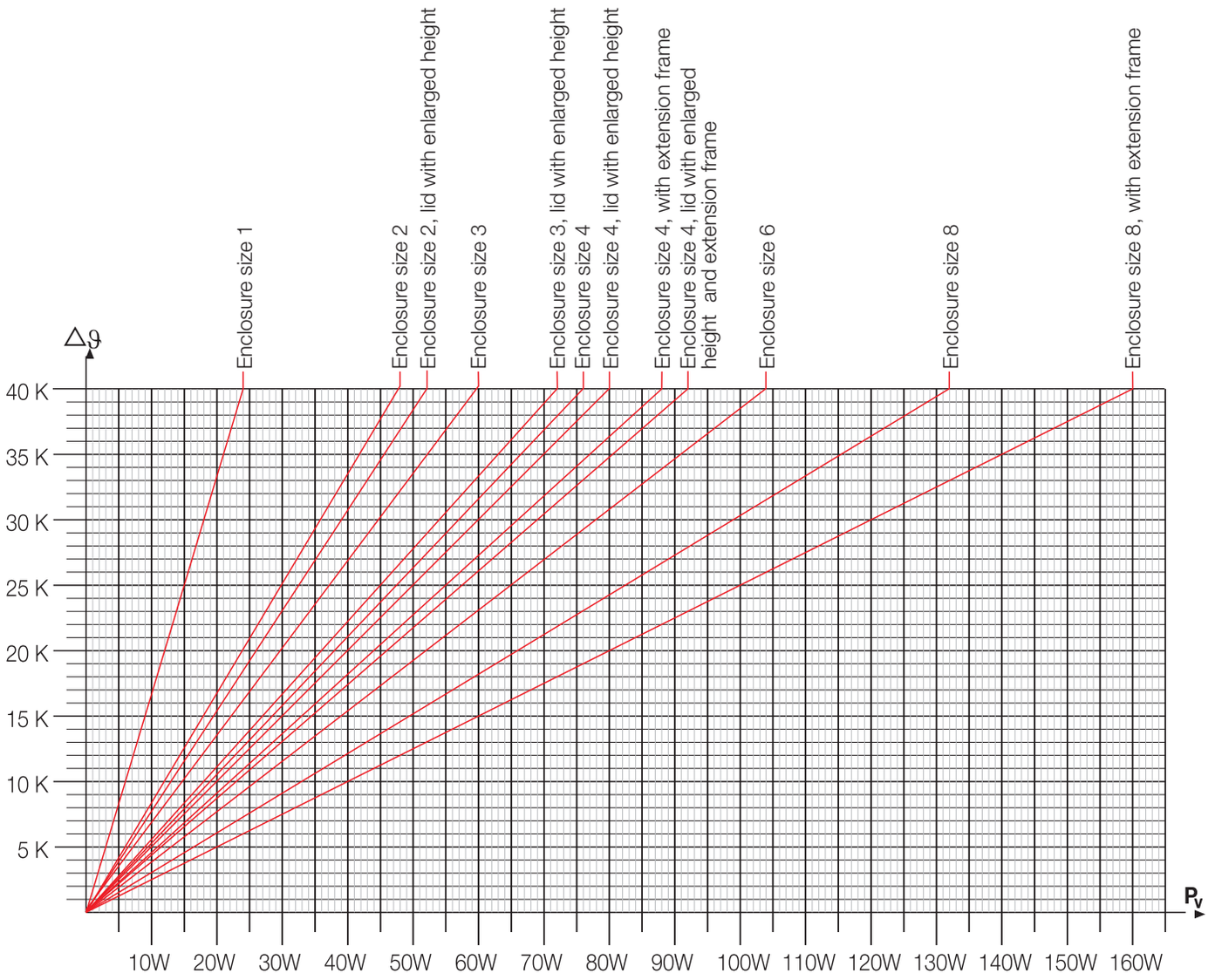
Temperature rise (Δϑ) with Mi-Distribution boards by power dissipation of electrical devices



Mi distribution boards enclosure sizes	dimensions (WxHxD) in mm	rated power dissipation P_V in watts per Kelvin assembled enclosures
enclosure size 1	300 x 150 x 170	0.6
enclosure size 2	300 x 300 x 170	1.2
enclosure size 2, lid with enlarged depth	300 x 300 x 214	1.3
enclosure size 3	300 x 450 x 170	1.5
enclosure size 3, lid with enlarged depth	300 x 450 x 214	1.8
enclosure size 4	300 x 600 x 170	1.9
enclosure size 4, lid with enlarged depth	300 x 600 x 214	2.0
enclosure size 4 with extension frame	300 x 600 x 255	2.2
enclosure size 4, lid with enlarged depth and extension frame	300 x 600 x 299	2.3
enclosure size 6	450 x 600 x 170	2.6
enclosure size 8	600 x 600 x 170	3.3
enclosure size 8 with extension frame	600 x 600 x 255	4.0

Note!

The maximally permissible operating temperature inside the enclosures (ϑ_{imax}) is determined by:

1st maximally permissible ambient temperature of the installed electrical devices (please consider data of the equipment manufacturers)

2nd category temperature of the internal wiring and the inserted cables

3rd temperature resistance of the enclosure materials and the cable entries etc.

Example: calculation of the maximum rated power dissipation (P_v)	
maximally permissible operating temperature inside the enclosure(s) (ϑ_{imax}):	e.g. 55 °C
ambient temperature of the enclosure(s) (ϑ_U):	25 °C
maximally permissible heating up inside the enclosure:	$\Delta\vartheta = \vartheta_{umax} - \vartheta_U$ = 55 °C - 25 °C = 30 K
maximum permissible power dissipation of the installed equipment inclusive wiring (P_v) in accordance with diagram:	enclosure size 3 (450 x 300 x 170 mm)
assembled enclosures:	P_v = 45 W

Example: calculation of the operating temperature inside the enclosure (ϑ_i)	
ambient temperature of the enclosure(s) (ϑ_U):	25 °C
rated power dissipation of the installed electrical equipment (P_V):	30 W
heating up inside the enclosures in accordance with diagram over:	$\Delta\vartheta$
enclosure size 3 (450 x 300 x 170 mm) assembled enclosures:	$\Delta\vartheta$ = 17 K; $\vartheta_i = \vartheta_U + \Delta\vartheta$ = 25 °C + 17 K = 42 °C

P_v = Power dissipation loss