

Autoclass & dealing with 2-pair / 4-pair v100

145.2.7 PSE classification of PDs and mutual identification

Change 145.2.7 as follows:

If the PD connected to the PSE performs Autoclass (see 145.2.7.2 and 145.3.6.2), the PSE may set the minimum supported output power based on $P_{\text{autoclass}}$, the power drawn during the Autoclass measurement window. $P_{\text{autoclass}}$ shall be increased by at least $P_{\text{ac_margin}}$, as defined in Table 145–15, in order to account for potential increase in link section resistance due to temperature increase, up to the value defined in Table 145–11 of the Class assigned to the PD, and with a minimum power allocation of Class 1.

A PSE that measured $P_{\text{Autoclass_PD}}$ while providing power over 4 pairs, shall increase the power allocation by at least $P_{\text{ac_extra}}$, as defined in Equation (145–3a), during any time it provides power over 2 pairs thereafter.

Insert new Equation as follows:

$$P_{\text{ac_extra}} = \left\{ \left(\frac{P_{\text{Autoclass}}}{V_{\text{Port_PSE-2P min}}} \right)^2 \times \frac{R_{\text{Ch}}}{2} \right\}_w \quad (145-3a)$$

145.2.7.2 Autoclass (optional)

Split second paragraph of 145.2.7.2 into multiple paragraphs as appropriate and change as follows:

... $P_{\text{ac_margin}}$, defined in Table 145–15, is the minimum amount of power the PSE adds to $P_{\text{Autoclass}}$ in order to allocate enough power to cope with increases in the link section resistance due to temperature increase. $P_{\text{ac_extra}}$ is the minimum amount of additional power allocation (above $P_{\text{Autoclass}}$ and $P_{\text{ac_margin}}$) that a PSE allocates while providing power in 2-pair mode, when it performed the measurement of $P_{\text{Autoclass_PD}}$ in 4-pair mode. This extra allocation covers the additional losses incurred by the increase in link section resistance in 2-pair mode. $P_{\text{ac_extra}}$ does not apply for PSEs that performed the $P_{\text{Autoclass}}$ measurement in 2-pair mode.