

# PD inrush baseline v100

## Info (not part of baseline)

This baseline addresses MR 1277 which deals with the deficiencies of Clause 33's PD inrush section. Below is the text of Clause 145, modified to match with Clause 33.

### 33.3.7 PD power

**Insert new parameter into Table 33–18 as follows:**

Item	Parameter	Symbol	Unit	Min	Max	Additional information
5a	Inrush to PD current control delay	$T_{\text{Inrush\_PD}}$	ms	—	50	See 33.3.7.3.

**Replace 33.3.7.3 as follows:**

#### 33.3.7.3 Input inrush current

The PD inrush time duration is defined as beginning with the application of input voltage at the PI when  $V_{\text{PD}}$  crosses the PD power supply turn on voltage,  $V_{\text{On\_PD}}$  as defined in Table 33–18, and ends after  $T_{\text{delay}}$ .

The inrush current is the initial current drawn by the PD, which is used to charge  $C_{\text{Port}}$ . A PD may limit the inrush current below  $I_{\text{Inrush\_PD}}$  to allow for large values of  $C_{\text{Port}}$ .

The PSE limits the inrush current to  $I_{\text{Inrush}}$ , for at least  $T_{\text{Inrush\_PD max}}$ , as defined in Table 33–18.

PDs shall draw less than  $I_{\text{Inrush\_PD}}$  from  $T_{\text{Inrush\_PD max}}$  until  $T_{\text{delay min}}$ , when connected to a source that meets the requirements of 33.2.7.5. This delay is required so that the PD does not enter a high power state before the PSE has had time to change the available current from the POWER\_UP to the POWER\_ON limits. A PD can meet this requirement by either having  $C_{\text{Port}}$  charged within  $T_{\text{Inrush\_PD max}}$  or by limiting the input inrush current.

PDs with `pse_power_type` set to 1 shall conform to  $P_{\text{Class\_PD}}$  and  $P_{\text{Peak\_PD}}$  within  $T_{\text{Inrush\_PD max}}$  as defined in Table 33–18.

NOTE — PDs may be subjected to PSE POWER\_ON current limits during inrush when the PD input voltage reaches 99% of steady state or after  $T_{\text{Inrush\_PD max}}$ . PD requirements are impacted by PSE current limits. See 33.2.7.5 for details.