Leakage current and Residual Current Device (RCD)

The internal HF filter in electronic control gear with an earthing connection produces a 50 Hz leakage current via the earth conductor. Due to the high frequency operation of the lamp, the leakage current may be greatly dependent upon the spacing between the lamp and the earthed starting aid.

The leakage current that may occur during normal operation of the luminaire between each pole of the supply source and the body of the luminaire is nominated in AS/NZS and EN 60598. For fixed luminaires in protection class I the acceptable leakage current is 1 to 5mA per luminaire depending on the kVA input current of the luminaire. The standards do not take into account the inrush that may be present when electronic control gear is switched on and off.

The number of luminaires that may be connected to a residual current device (RCD) is restricted by the leakage current of the ECG and the rated fault current of the RCD, e.g. 30 mA.

Current peaks occur when lighting systems are switched on and off. These peaks are unavoidable. We therefore recommend using only surge-current-resistant short-delay RCDs that have been tested for surge strength of 250A. This will reduce or prevent the nuisance tripping as a result of the starting inrush current.