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## What is a Power Supply's IP Rating?

The popularity of outdoor electronics has brought the subject of a power supply's IP rating from almost obscurity to an everyday question. I frequently get asked about it by our sales people now, so I thought it would be nice subject to cover in our blog. In researching this blog article I even discovered something new myself.

**IP** is the acronym for **I**ngress **P**rotection and for power supplies the IP Rating Code consists of the letters "IP" and two numbers as defined below.

The first number indicates the power supply's protection level against the ingress of **solid objects** or **dust**.

**First Number for Solids or Dust**

<b>Level</b>	<b>Size of Object</b>	<b>Type of Object</b>
X	Test not made	Test not made
0	N/A	No protection
1	50mm or larger	Large body surfaces*
2	12.5mm or larger	Fingers
3	2.5mm or larger	Small tools
4	1mm or larger	Screws
5	Dust protected	-
6	Dust tight	-

\* Does not include deliberate body part contact

The second number indicates the power supply's protection against the ingress of **water** or **other liquids**.

**Second Number for Liquids**

<b>Level</b>	<b>Protected against</b>
X	Test not made
0	No protection
1	Water dripping vertically
2	Water dripping at an angle
3	Spray water up to 60° from vertical
4	Splashing water from any angle
5	Low pressure water jets
6	Strong spray jets, heavy seas (ship decks)
7	Temporary immersion (up to 1m)
8	Permanent immersion (deeper than 1m)

Most recently LED power supplies, or drivers as they are often referred to, have ratings of **IP66** or higher. Referring to the charts above, an IP66 rating means the unit has ingress protection from **Dust** and **Strong Jet Sprays of Water**.

These IP ratings also apply to the end system of course, and many of our customers utilize a NEMA enclosure to make their products meet a higher rating.



**TDK-Lambda's IP66 rated LED Driver ([ALC/ALV series](#))**

Posted by [Power Guy](#)