

Environment Protection Where It's Needed Most

Mechatronics offers IP rated AC, DC and EC fan solutions for applications that require protection against moisture, dust, and salt exposure. A wide range of economical protection options are available on standard models, from conformal coating to fully encapsulated IP rated motors.



Mechatronics IP68 Rated DC & EC fans

Mechatronics IP68 rated fans feature 2nd generation encapsulated and sealed motors for protection against water and dust. IP68 rated models are designed to handle complete submersion in water, and extended exposure to dust, significantly extending the service life where moisture, dirt, and salt is present. Sizes available from 60mm frame up to 172mm frame sizes and for power supplies ranging from 100-240VAC and 12-48VDC.

Ingress Protection (IP) Levels

What is ingress protection and what is the difference between IP54, IP55, IP57, or IP68 rated fans?

Ingress Protection (IP) ratings are defined by the international standard EN 60529 to identify levels of sealing effectiveness against intrusion from solids or liquids in mechanical or electrical enclosures. The first digit defines the protection level of an enclosure against solids and the second digit defines the protection level against liquids.



IP_X	Solids Protection Level
0	—
1	>50 mm
2	>12.5 mm
3	>2.5 mm
4	>1 mm
5	Dust protected
6	Dust tight

Example:
IP54 = Dust and Splashing Water Protected

IPX_	Liquids Protection Level
0	None
1	Dripping water
2	Dripping water when tilted at 15°
3	Spraying water
4	Splashing of water
5	Water jets
6	Powerful water jets
7	Immersion, up to 1 m depth
8	Immersion, 1 m or more depth

**IP Rated AC, DC, and EC Fans**

Mechatronics IP rated fans, blowers, and impellers come in frame sizes from 40 to 280mm. Environmental protection options ranging from 2nd generation encapsulation, parylene coating, enhanced conformal coating, and light conformal coating, provide cost effective and protective solutions tailored to application requirements.

**Encapsulation (IP55-IP68)**

Encapsulation is the process of injection moulding an epoxy compound that completely fills all cavities around the entire PCB and motor assembly before installation of the bearings, shaft assembly, and impeller. Additional protective adhesive is applied to the wire exit point on the encapsulated motor to prevent possible ingress. Encapsulation is designed to completely prevent water or dust contact with the fan PCB and motor assembly. Encapsulation does not prevent water and dust ingress to the shaft and bearing assembly in cases of extreme or prolonged exposure.

Parylene Coating (Up to IP56)

Parylene coating is a polymer applied by vapor deposition over the entire surface of the PCB and motor assembly before installation of the bearings and impeller, leaving a thicker uniform protective coating over all electrical components of the fan. Parylene coating is designed for protecting against heavy condensation and some dust, or lightly corrosive atmosphere. The time the PCB and motor assembly is exposed to the vapor deposition process can be extended to increase the thickness and protection levels of parylene coated parts.

Conformal Coating (Up to IP54)

Conformal coating is a polymer applied by dipping the PCB and motor assembly before installation of the bearings and impeller, leaving a thin protective coating over all electrical components. Conformal coating protects against light moisture exposure such as condensation, or light contamination by dirt and dust particulate. Additional layers or coating processes can be applied to increase the protection levels of conformal coated parts.