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Environmental Protection & Protection Classes **at ebm-papst**





Well Protected

Dust and water protection for your application

The IP ("Ingress Protection") protection class defines the protection of devices against the ingress of dust and water. The first digit indicates protection against solid particles, while the second digit defines protection against moisture, such as rain or splashing water.

Protection Levels for Contact and Foreign Object Protection

Description	Digit
Not protected	0
Protected against solid foreign objects larger than 50 mm	1
Protected against solid foreign objects larger than 12 mm	2
Protected against solid foreign objects larger than 2,5 mm	3
Protected against solid foreign objects larger than 1 mm	4
Dust-protected	5
Dust-tight	6

Protection Levels for Water Protection

Digit	Description
0	Not protected
1	Protected against dripping water
2	Protected against dripping water when tilted up to 15°
3	Protected against spraying
4	Protected against splashing
5	Protected against water jets
6	Protected against powerful water jets
7	Protected against immersion
8	Protected against continuous submersion
9	Protected against high-pressure and high-temperature water jets

Digit **IP54**

The first digit indicates protection **against contact and foreign objects.**

The second digit indicates **protection against water and moisture.**

The IP protection class is crucial to ensuring that a device is reliably protected against external influences, thereby maintaining its functionality and longevity in demanding environments.

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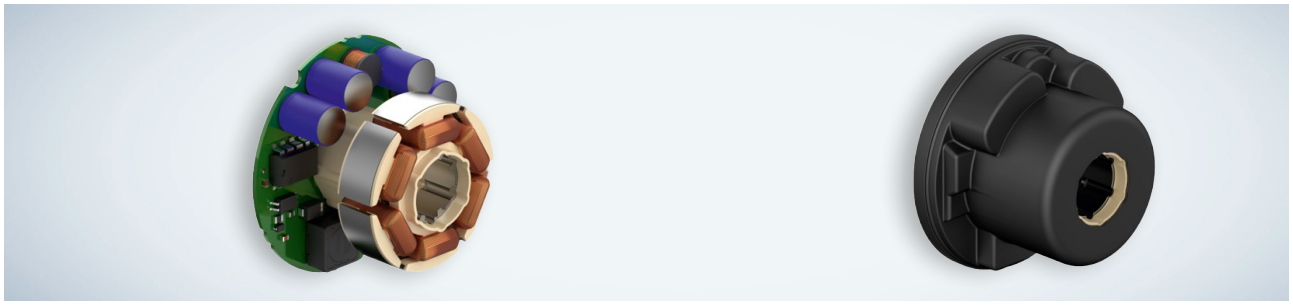
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IP68: *Maximum Protection for Challenging Environments*

IP68

The IP68 protection class provides maximum protection against dust and allows operation in environments with continuous water exposure.
Thanks to optional full encapsulation, our fans are also available with IP68 protection class, making them highly resistant to environmental influences while offering efficiency, a compact design, and low noise levels.
For outdoor applications such as mobile communication systems, charging stations, or digital signage, which are exposed to wind and weather, IP68 protection is essential.

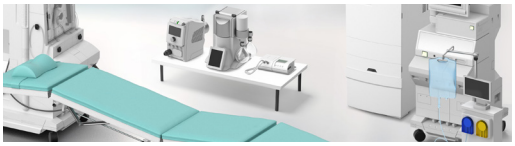




Examples of Other IP Protection Classes:

IP20:

For indoor applications in dry, clean environments
(e.g., medical technology, data centers, show lights).



IP54/55:

Suitable for areas with dust and splashing water,
e.g., refrigerated display cases that are regularly cleaned.



ATEX Directive

The European Union ATEX directive defines the requirements for equipment and protection systems used in explosive atmospheres.It ensures that devices can be safely used in environments where explosive gases, vapors, or dust may be present.

Explosive zones are categorized into:
Zone 0/20: Continuous hazard
Zone 1/21: Occasional hazard
Zone 2/22: Rare hazard

Devices are classified according to their maximum surface temperature into temperature classes (T1–T6) to prevent ignition hazards.

At the Hollenbach test center, fans and ventilators are tested under realistic conditions to ensure their suitability for demanding environments.