

First additional letter

Additional letters that can be appended to classify only the level of protection against access to hazardous parts by persons

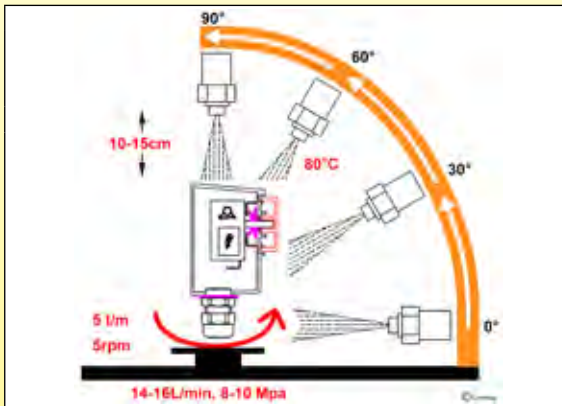
Letter	Protected against access to hazardous parts with
A	Back of hand
B	Fingers
C	Tools
D	Wires

Second additional letter

Further letters can be appended to provide additional information related to the protection of the device

Letter	Meaning
H	High voltage device
M	Device moving during water test
S	Device standing still during water test
W	Weather conditions

IP69K (DIN 40050-9)



Description
Specific ingress protection rating for high-pressure, high-temperature washing applications. Such enclosures must not only be dust tight (IP6X), but also able to withstand high-pressure and steam cleaning.
Test description
<ul style="list-style-type: none"> - Water volume: 14-16L liters per minute - Water temperature: 80°C - Pressure: 8-10 Mpa (80-100 bar) - Distance: 10 to 15cm from the tested device at angles of 0°, 30°, 60° and 90° for 30s each. The test device sits on a turntable that rotates once every 12s

Examples of ingress protection ratings requested by standards and applications

An IP protection rating may be required by specific standards such as NF15100 (domestic electrical installation rules), EN60335-xx (design rules for electrical appliances) and machine-specific standards. Hereafter are the main specifications extracted from these standards.

Bath rooms, swimming pools and assimilated	These rooms are divided in 4 area volumes: 0,1,2,3. These volumes and installation rules are described in the French standard NFC15100, International standard Cenelec HD384 and European standard IEC 60364.
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Areas	Minimal IP requirements	Electrical protection
0	All electric heaters are prohibited. Other equipments: Bathrooms: IPX7 Pools and similar: IPX8	SELV limited to 12V DC or 30V AC
1	All electric heaters are prohibited. Other equipments: Bathrooms: IPX4, but IPX5 if this volume can be subjected to water jets for cleaning in public baths. Pools and similar: IPX5	SELV limited to 12V DC or 30V AC
2	Bathrooms: IP24 mini heaters are authorized Other equipments: IPX3, but IPX5 if this volume can be subjected to water jets for cleaning in public baths. Indoors Pools: IP24 mini heaters authorized Other equipments: IPX2, but IPX5 if this volume can be subjected to water jets for cleaning. Outdoors Pools: IPX5	<ul style="list-style-type: none"> - Class 2 devices - Controls should not be accessible from the shower or bath. - Heaters must not be powered by a wall mounted socket. - Line must be protected by a 30 mA residual current circuit breaker
3	Bathrooms: IP21 mini heaters are authorized Other equipments: IPX1 Pools: Heaters authorized IP21 mini Other equipments: IPX1, but IPX5 if this volume can be subjected to water jets for cleaning. Outdoors Pools: IPX5	<ul style="list-style-type: none"> - Class 1 or Class 2 devices - Heaters must not be powered by a wall mounted socket. - Line must be protected by a 30 mA residual current circuit breaker

Saunas	Electrical equipment must have an IP 24 minimum protection rating
Under floor heating	The heating elements intended to be embedded in a concrete or other similar material must be IPX7
Electrical devices that are permanently outdoor	The degree of protection shall be at least IPX4.
Residential, Offices, Schools	Generally clean, dry and free from harmful deposits of dust, but some condensate may be present due to atmospheric conditions. Minimum protection is typically IP2X for dry conditions.
Control rooms/ Sub-Stations	Generally dry and free from harmful deposits of dust, but some condensate may be present due to atmospheric conditions. Where access is restricted to skilled or instructed persons, IP2X is the typical minimum requirement for dry conditions.
Commercial, Light Industrial	These premises may not be clean, but normally dry and free from harmful deposits of dust. Suitable minimum protection: <ul style="list-style-type: none"> - Where condensate is not present: IP2X - Where condensate may be present: IP21. - Equipment installed within range of fire sprinkler systems: IP22.

