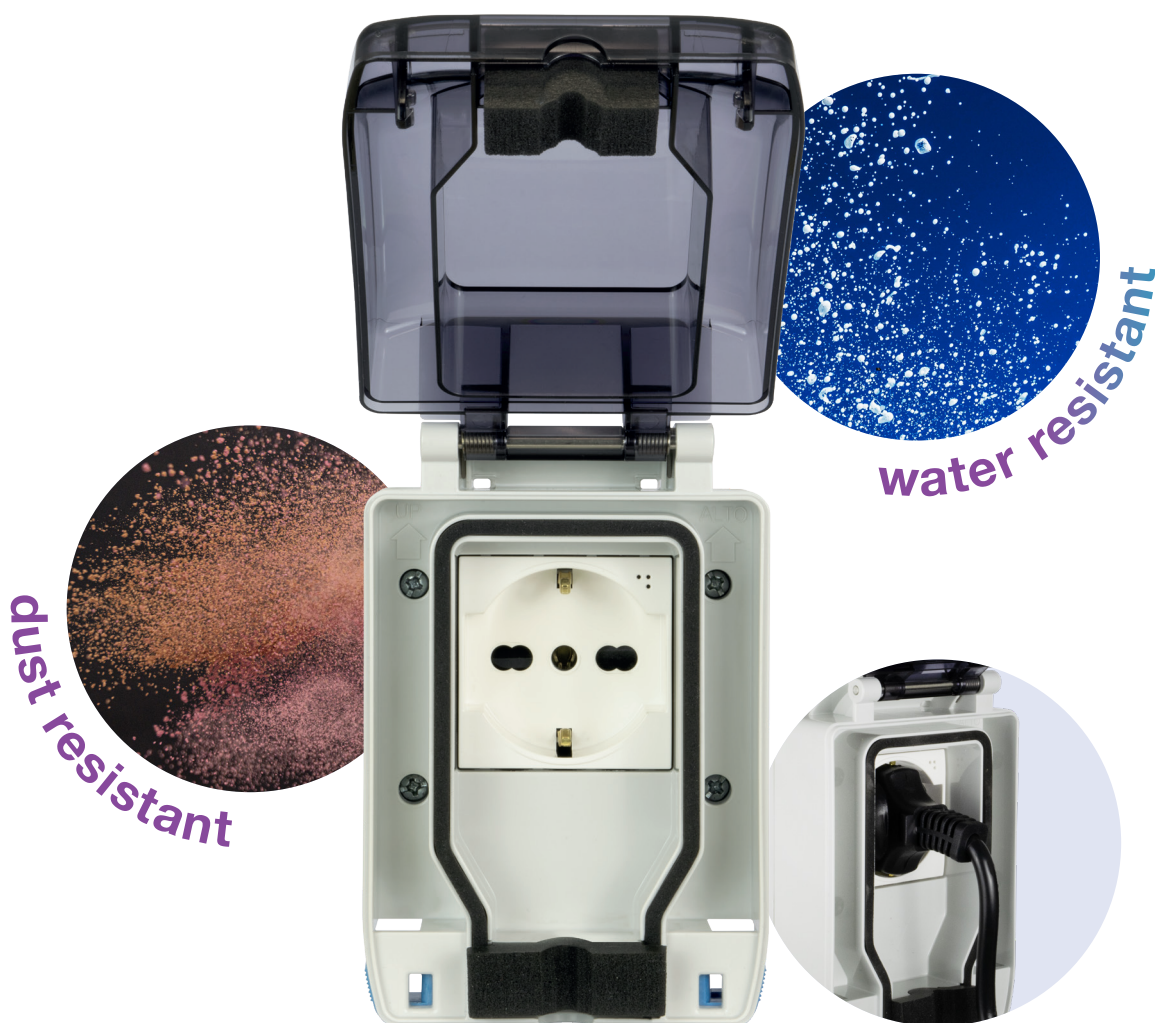




AVE SEAL S44

Enclosure with IP66 protection guaranteed
also with plug inserted



Sistema **Ave**
Seal System

AVE SINCE 1904 INNOVATION, QUALITY AND MADE IN ITALY



AVE S.p.A. is an Italian company leader in the production of electrical and electronic equipment, based in Rezzato (Brescia).

Founded in 1904, it is known for innovation and quality, with over 350 employees and a pre- and post-sales technical assistance network.

Recognized as "Historical Company of Italy", AVE exports to over 70 countries and offers more than 3,500 products in six main divisions, including Wiring Accessories, Home Automation, Security and Ventilation.



WATER AND DUST PROTECTION GUARANTEED EVEN WHEN PLUGGED IN

To meet the protection needs, AVE, first ever in the Italian market, offers a range destined to overturn the habits of the installer/consumer: a complete range of enclosures and solutions that guarantee the degree of protection even with the plug inserted and the door closed. The various solutions proposed by "AVE SEAL" allow the installation of the devices of all the built-in series of the Ave 44System.

The AVE SEAL range, an AVE patent that has already won numerous industry awards, makes available numerous installation solutions that guarantee the maintenance of the declared degree of protection even when the plug is inserted. In this brochure you will find illustrated the various application solutions obtainable with the AVE SEAL range.



AN AVE INNOVATION THAT COMPLIES WITH THE CEI EN 60529 (70-1) AND CEI EN 60670-1 (23-48) REGULATION

The CEI EN 60529 (70-1) and CEI EN 60670-1 (23-48) standards require that “the declared degrees of protection remain unchanged in ordinary service conditions”. It follows that socket enclosures must guarantee the degree of protection even “in ordinary service conditions” and therefore even with the plug of any electrical appliance inserted.

Unlike normal socket enclosures, Ave Seal does not lose the declared degree of protection when any plug is inserted inside it.

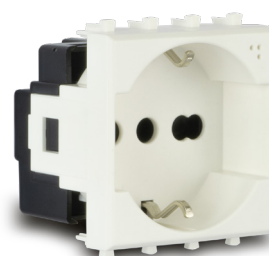


The IP66 enclosures guarantee a seal against atmospheric agents and dust. They are suitable for installation outside buildings, in basements or garages, where it is essential to have a safe power outlet.

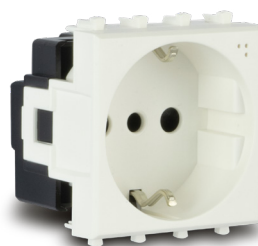
NEW WIRING ACCESSORIES 



IP66
ENCLOSURE
FOR PLUGGED IN
SOCKET



Domus¹⁰⁰
441090/15TS



Domus¹⁰⁰
441090TS

DEDICATED
CONNECTION
FOR **44SYSTEM**
DEVICES



WALL-MOUNTING INSTALLATION

The AVE SEAL 2-module self-supporting 44System enclosure (code 44ST02K) is joined by a line of wall-mounted boxes capable of offering solutions with IP66 protection rating (BP166, BP266 and BP155-66).



FLUSH-MOUNTING INSTALLATION 3 MOD.STANDARD

Adapter plate code 45STPK ensures the flush-mounted installation and allows the AVE SEAL 2-modules lid to be adapted to standard 3-modules rectangular boxes with 83.5 mm centre distance.



POLE MOUNTING INSTALLATION

The accessory code BG101AP ensures the installation along the pole and allows the AVE SEAL 2-modules enclosure to be applied directly on poles with a diameter of 35/40 mm up to 55/60 mm.



POLE HEAD INSTALLATION

The large range of pole head boxes ensure the installation on the top of the pole and cover the needs of the most demanding customers. The range offers solutions with IP56 protection rating (BG166, BG266).

WALL-MOUNTING installation

The new AVE SEAL, equipped with 2 modules 44System, makes the wall installation more versatile for applications that require a degree of protection against atmospheric and dusty agents. The self-supporting AVE SEAL enclosure (code 44ST02K) is joined by a line of wall boxes capable of offering solutions with IP66 protection degree (BP166, BP266 and BP155-66).

Enclosures



44ST02K

44ST02K

AVE SEAL enclosure with hinged door

- Color: RAL 7035 gray
- Wall installation with special box supplied
- Gasket between the cover and the box to ensure maximum watertightness (IP66) in wall installation
- Side safety buttons for opening the door
- Transparent technopolymer door (not subject to yellowing over time), shockproof with snap-on closure on the cover to prevent unwanted openings even in the presence of water jets
- Enclosure base arranged on 3 sides with foldable walls for cable and pipe entry Ø 20 mm and accessories; the 4th side is arranged with a foldable wall for cable and pipe entry Ø 16 mm and accessories
- Self-extinguishing material according to IEC 695-2-1 standards
- Glow - Wire Test: 650°C
- Accommodates 2 S44 modules
- Guaranteed IP66 protection level even with the plug inserted



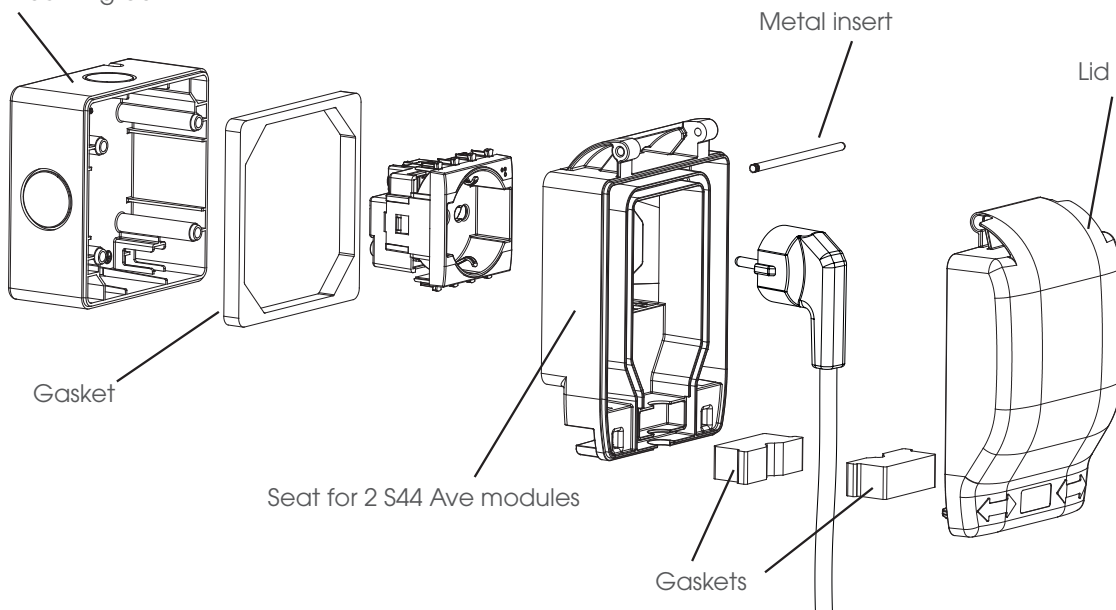
44ST590/15TS

44ST590/15TS

AVE SEAL enclosure with hinged door complete with Schuko socket (universal) 2P+T 10/16A 250V

- Color: RAL 7035 gray
- Wall installation with special box supplied
- Gasket between the cover and the box to ensure maximum watertightness (IP66) in wall-mounted installation
- Side safety buttons for opening the door
- Transparent technopolymer door (not subject to yellowing over time), shockproof with snap closure on the cover to prevent unwanted openings even in the presence of water jets
- Enclosure base arranged on 3 sides with foldable walls for cable and pipe entry Ø 20 mm and accessories; the 4th side is equipped with a foldable wall for cable and pipe entry Ø16 mm and accessories
- Self-extinguishing material according to IEC 695-2-1 standards
- Glow - Wire Test: 650°C
- Guaranteed protection degree IP66 even with plug inserted

Wall-mounting box



FOR SOCKETS PROTECTION

Transparent technopolymer lid (not subject to yellowing over time), shockproof with snap closure to prevent unwanted openings even in the presence of water jets.

Spring hinge for easy opening.

Space for standard AVE 44System product installation.

Base prepared with foldable walls for cable entry, pipes and AVE accessories.

Safety buttons for quick lid opening.

High-strength gasket between base and lid to ensure sealing even with plug inserted and cable sticking out.



WALL-MOUNTING installation

Lid



44SP42K

44SP42K

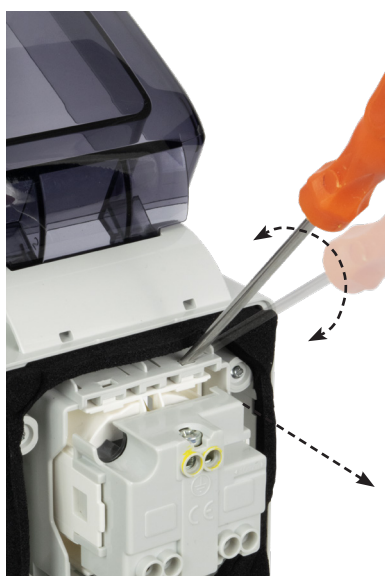
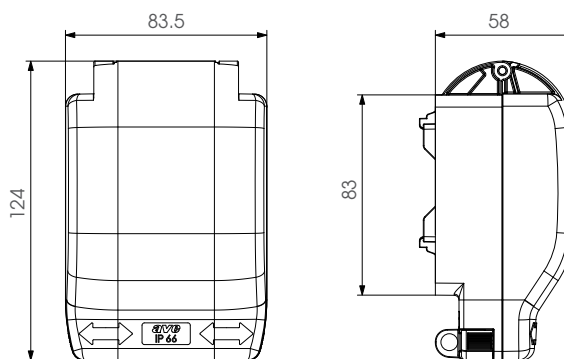
AVE SEAL lid with hinge

- Same features as the AVE SEAL IP66 enclosure code 44ST02K, but supplied without wall box
- Compatible for installation 2 modules S44
- IMQ mark

Note:

in case of use of the cover in combination with products with a lower IP protection degree than that of the cover itself, the assembly is downgraded to the IP degree of the product with the lower protection degree

AVE SEAL overall dimensions (in mm)



Back side rockers removal

Padlock accessory
supplied with the lid

The accessory for closing the AVE SEAL enclosure with a padlock is supplied. Thanks to it, it is possible to insert the padlock in the rear part of the enclosure and thus have an additional level of security in those environments that require it, for example commercial structures, accommodation facilities and condominiums.



FOR SOCKETS PROTECTION

Wall-mounting box

Common features

- Material: ABS color RAL 7035
- Glow-Wire Test: 650°C
- Possibility of horizontal or vertical installation
- Product consisting of a base and two adapter plates
- Supplied with screws for fixing the base-adapter plates
- Pre-cuts: n° 2 of Ø 24 mm on the left side, n° 2 of Ø 24 mm on the right side, n° 1 of Ø 24 mm and n° 1 of Ø 29 mm (for Ø 25 mm tubes) on the upper side, n° 1 of Ø 20 mm and n° 1 of Ø 29 mm (for Ø 25 mm tubes) on the lower side + n° 2 Ø 24 mm pre-cuts on the bottom of the box
- Pre-cuts in the center of the circle to facilitate the cut-out with a milling cutter
- Base prepared for mounting of earth terminal 45MM03
- Base prepared to accommodate separators for subdividing circuits with different voltages



BP166

BP166

Wall-mounting box for 2 AVE SEAL modules + blind plate

- Product consisting of a base, an adapter plate suitable for accommodating n° 1 cover 44SP42K not supplied with the box and a blind plate
- Possibility of installing CEE IP44/67 wall or flush-mounted sockets on the blind plate



BP266

BP266

Wall-mounting box for 4 (2+2) AVE SEAL modules

- Product consisting of a base and two adapter plates suitable for the installation of 2 lids 44SP42K not supplied with the box
- Guaranteed protection level IP56 even with plug inserted



BP155-66

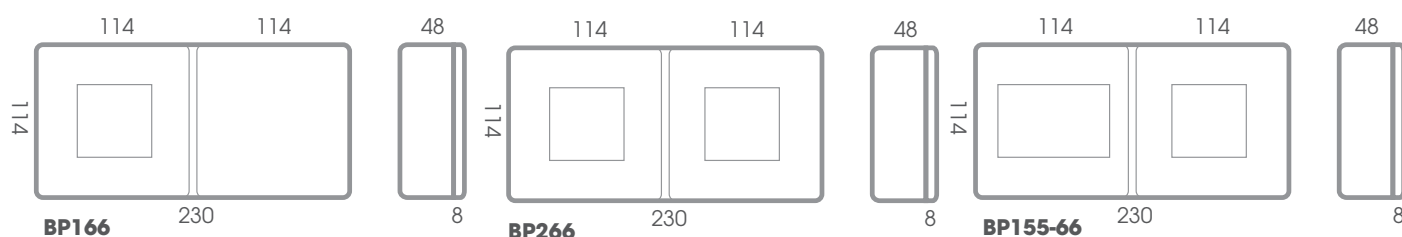
BP155-66

Wall-mounting box for 3 IP55 modules + 2 AVE SEAL modules

- Product consisting of a base and two adapter plates suitable for the installation of 1 lid 45SP43K and 1 lid 44SP42K not supplied with the box
- Guaranteed protection level IP55 with control devices** on one side and sockets on the other

*** or other modular devices that allow the door to be closed in ordinary service conditions*

Overall dimensions of wall box (in mm)



Installation examples



FLUSH-MOUNTING installation

IP55/66 with plug inserted

The adapter plate code 45STPK allows the flush-mounted installation and the AVE SEAL 2-modules lid to be adapted to standard 3-modules rectangular boxes with 83.5 mm centre distance.



44SP42K

44SP42K

AVE SEAL lid with hinged door

- Same features as the AVE SEAL IP66 enclosure code 44ST02K, but supplied without wall box
- Compatible for installation 2 modules S44

Note:

in case of use of the cover in combination with products with a lower IP protection degree than that of the cover itself, the assembly is downgraded to the IP degree of the product with the lower protection degree



45STPK

45STPK

- Material: ABS color RAL 7035
- Rectangular box fixing screws supplied and fixed to the plate
- Equipped with removable screw caps with the use of a tool
- To be completed with 1 44SP42K
- The AVE SEAL-plate-wall/tiles coupling guarantees the IP55 degree even with a plug inserted in installations on waterproof walls and tiles with irregularities and grooves up to 2 mm deep

Some situations of use:



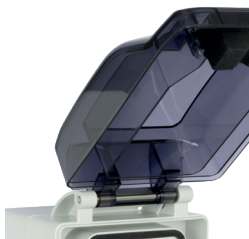
- Porch of houses near the garage to connect pressure washer, vacuum cleaner, compressor
- Balconies to power vacuum cleaner, Christmas tree lights
- External perimeter of houses to connect pressure washer, vacuum cleaner, compressor
- School bathrooms to connect small cleaning machines by staff
- Bathrooms of public places to power hot air generators

FOR SOCKETS PROTECTION

POLE MOUNTING installation

IP66 with plug inserted

The accessory code BG101AP allows the pole mounting installation and the AVE SEAL 2-modules enclosure to be applied directly on poles with a diameter of 35/40 mm up to 55/60 mm

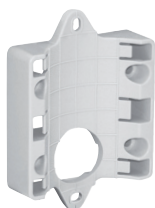


44ST02K

44ST02K

AVE SEAL enclosure with hinged door

- Color: RAL 7035 gray
- Wall installation with special box supplied
- Gasket between the cover and the box to ensure maximum watertightness (IP66) in wall installation
- Side safety buttons for opening the door
- Transparent technopolymer door (not subject to yellowing over time), shockproof with snap-on closure on the cover to prevent unwanted openings even in the presence of water jets
- Enclosure base arranged on 3 sides with foldable walls for cable and pipe entry Ø 20 mm and accessories; the 4th side is arranged with a foldable wall for cable and pipe entry Ø 16 mm and accessories
- Self-extinguishing material according to IEC 695-2-1 standards
- Glow - Wire Test: 650°C
- Compatible for installation 2 modules S44
- Guaranteed IP66 protection level even with the plug inserted

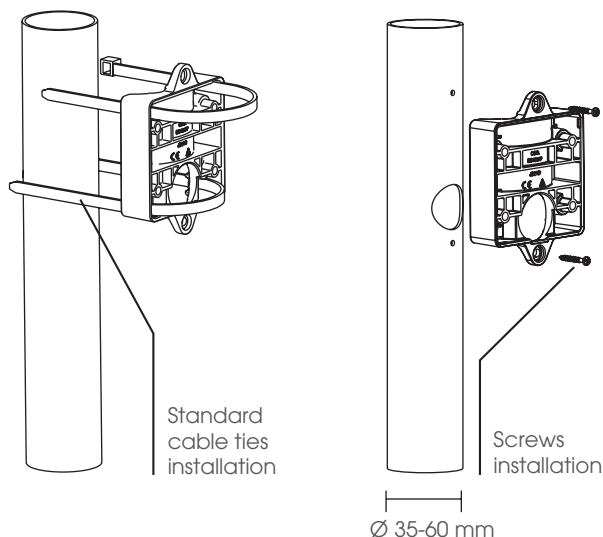


BG101AP

BG101AP

- Material: ABS color RAL 7035
- Can be installed on poles with a diameter of 55/60 mm (e.g. Ave code BG100) and with a diameter of 35/40 mm by means of standard cable ties not supplied
- Supplied with 4 self-tapping screws to fix the 44ST02K enclosure box to the accessory
- Equipped, in the higher and lower part, with external "ears" with slots for fixing on the pole. One slot is vertical and one is horizontal to facilitate alignment during installation
- Internal knurling for greater adherence to the pole
- 30 mm diameter hole on the bottom
- To be completed with 1 44ST02K
- The coupling accessory AVE SEAL pole mounting-enclosure guarantees the IP56 degree even with the plug inserted

Installation mode



Some situations of use:



- Gardens on lighting poles to power various users (electric grills, lawnmowers, lighting lamps, Christmas lights, umbrella lighting, stereos, piano bars, flying insect exterminators in gazebos, nativity scenes)
- Pools on the sides (outside zone 2) to power small electrical users

POLE HEAD installation

IP66 with plug inserted

Pole head installation is achieved thanks to the large range of pole head boxes that allow us to cover the needs of the most demanding customers. The range offers solutions with IP56 (BG166, BG266) and IP55 (BG155, BG255, BG155-66) protection ratings. The boxes must then be completed with the relevant IP56 or IP55 covers.

Common features

- 2 pole locking holes with relative screw guide groove, for a more immediate interception of the fixing hole
- Cable gland, for cables Ø 10-14 mm, located at the lower end
- 2 holes for mounting a possible metal hook
- Material: ABS color RAL 7035
- Installable on BG100 pole

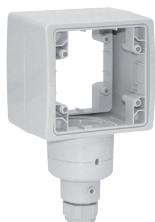


BG166

BG166

Pole-head box with 1 front IP56

- 1 front IP56 and 1 blind front
- To be completed with 1 44SP42K
- Guaranteed protection degree IP56 even with plug inserted
- IMQ mark



BG266

BG266

2-front pole-head box IP56

- 2 fronts IP56
- To be completed with 2 44SP42K
- Guaranteed IP56 protection level even with plug inserted
- IMQ mark



BG100

BG100

Insulating pole for pole head box

- External Ø 60mm
- Length 1 meter



45RD03

45RD03

Joint fitting for break-outs Ø 24 mm

FOR SOCKETS PROTECTION

AVE SEAL customizations

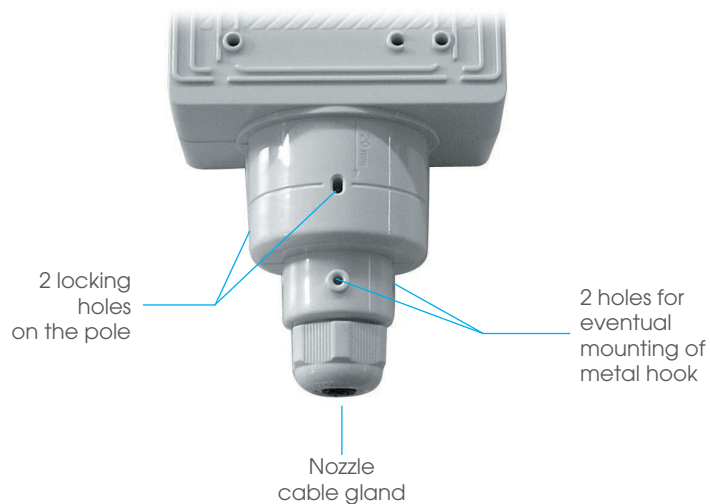


On request, the possibility of personalising the lid with the desired graphics



some examples of marking for the identification of the socket designed for charging category L electric vehicles

Box for pole head installation



Some situations of use:

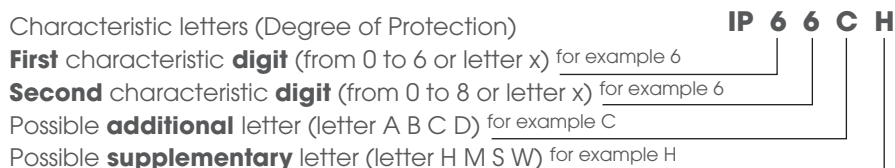


- Gardens for powering lawnmowers, hedge trimmers, stereos, TVs, piano bars, flying insect exterminators in gazebos
- Camping

PROTECTION DEGREES OF ENCLOSURES (IP CODE)

IP CODE STRUCTURE

The standard **CEI EN 60529 1997-06 (IEC529 ex CEI 70-1) + A1 2000-06 + A2 2014-12 “Degrees of protection of enclosures”** establishes a classification system of the degrees of protection of enclosures for electrical material, whose nominal voltage does not exceed 72.5 kV. This standard allows to indicate, through the IP (Degree of Protection) code, the level of protection of enclosures for electrical material, against access to dangerous parts inside the enclosure and against the penetration of foreign solid bodies and water. This standard does not consider protection against explosion risks or against environmental situations such as humidity, corrosive vapors, mold or insects. **In any case, the declared IP protection degree must be guaranteed in the “ordinary service conditions of the devices”.**



The **IP** degree can be indicated exclusively with the two characteristic digits, plus any additional letter to indicate the degree of protection for people against access to live parts and an additional letter to provide further specific product clarifications.

The IP degree of protection must always be read digit by digit and not globally. An enclosure designated with a certain degree of protection also implies compliance with the lower degrees of protection (with the exception of the second characteristic digit 7 and 8 which do not imply satisfaction of the requirements set for digits 5 or 6 unless it bears the double marking e.g. IPX6/IPX7). For example, an enclosure with degree of protection IP31 is suitable in an environment that requires a minimum degree of protection IP21 where, instead, an appliance with an enclosure with degree of protection IP30 cannot be used.

The first and second characteristic digits are mandatory. If the degree of protection corresponding to one of the digits is not specified (because it is not necessary or because it is not known), it is replaced with an X. The additional letter and the supplementary letter are optional and can therefore be omitted without being replaced.


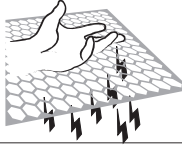
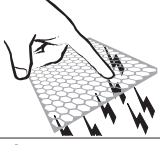
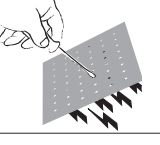
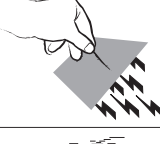
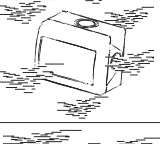
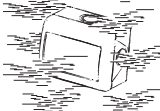
If an enclosure provides different degrees of protection for different installation solutions, the manufacturer must indicate in the instructions the degrees of protection corresponding to the different installation solutions.

The degrees of protection indicated by the manufacturers are valid under the conditions set out in the catalogues. Only assembly, installation and maintenance carried out according to the rules of the art guarantee the maintenance of the original degree of protection.

Considering that the presence of water on equipment and ducts has a negative effect (penetration, corrosive effects, etc.), it is advisable that equipment installed outdoors is equipped with a protective roof possibly integrated with side screens.

FIRST CHARACTERISTIC DIGIT

The first digit indicates simultaneously the protection of materials against the penetration of solid foreign bodies including dust, and the protection of people against contact with dangerous parts (see also “additional letter”)

IP		material protection	people protection	note
0X		no protection		
1X		protected against solid objects larger than 50 mm	protection against access with the back of the hand	They must not be able to completely penetrate parts of the human body, for example a hand, or solid bodies larger than 50 mm in diameter. (1)
2X		protected against solid objects larger than 12.5 mm	protection against one-finger access	Fingers or similar objects no longer than 80 mm or solid bodies with a diameter greater than 12.5 mm must not be able to penetrate completely. (1)
3X		protected against solid objects larger than 2.5 mm	protection against access with a tool	Wires with a diameter or thickness greater than 2.5 mm must not be able to penetrate or solid bodies (e.g. tools) with a diameter greater than 2.5 mm.
4X		protected against solid objects larger than 1 mm	protection against access with a wire	Wires or strips with a diameter or thickness greater than 1 mm must not be able to penetrate or solid bodies (e.g. thin tools) with a diameter greater than 1 mm.
5X		protected against dust (no harmful deposits)	protection against access with a wire	The penetration of dust is not totally excluded, but the quantity penetrated is not such and is not in such positions that it could harm the proper functioning of the material.
6X		totally protected against dust	protection against access with a wire	No dust penetration is permitted.

CONSIDERATIONS

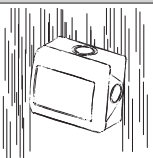
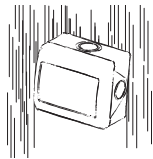
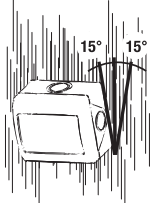
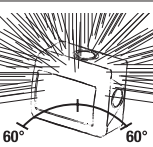
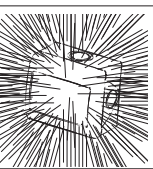
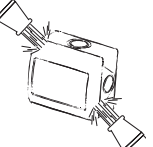
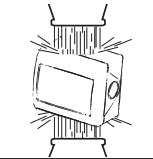
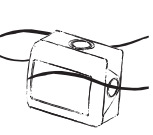
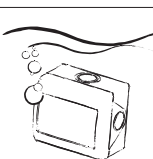
(1): the phrase “shall not completely penetrate” means that the entire diameter of the solid body (object gauge) may not pass completely through openings in the enclosure and must maintain an adequate distance from dangerous parts.

IP1X protection is only permitted for equipment intended to be protected by an enclosure or installed in locked places accessible only to trained persons. IP2X and IP3X protection are permitted for components installed in places accessible to untrained persons in ordinary environments characterized by the presence of small objects. IP4X protection, which represents the maximum degree of protection against the ingress of solid bodies, is used when the presence of wires, shavings, filings or other objects is expected. IP5X protection is suitable for occasionally dusty environments such as unpaved roads, steelworks, etc. Finally, IP6X protection is suitable for permanently dusty environments such as cement factories or deposits of powdery substances.

SECOND CHARACTERISTIC DIGIT

The second digit indicates the protection of the materials against harmful ingress of water.

Note: Tests are carried out with fresh water without surfactants

IP		material protection	note
X0		no protection	
X1		protected against vertically falling drops of water	Vertically falling water droplets shall not cause harmful effects.
X2		protected against drops of water falling with a maximum inclination of 15°	Vertically falling water drops shall not cause harmful effects when the enclosure is tilted at any angle up to 15° from its original position.
X3		protected against rain with a fall of up to 60°	Water falling in the form of rain, with a direction making an angle of up to 60° with the vertical, must not cause harmful effects.
X4		protected against splashes of water	Water sprayed onto the enclosure from all directions shall not cause harmful effects.
X5		protected against water jets	Water projected from a nozzle onto the casing from all directions shall not cause harmful effects.
X6		protected against powerful waves and jets of water	In the event of powerful waves or jets, water must not penetrate the enclosures in harmful quantities (e.g. piers or car washes).
X7		protected against the effects of temporary immersion	It must not be possible for water to penetrate in harmful quantities inside the casing when immersed under given conditions of pressure and duration.
X8		protected against the effects of submersion (1)	The material is suitable for submersion in water under the conditions specified by the manufacturer (e.g. submersible pumps or underwater lights).

(1): the IPX8 figure must be integrated with the maximum depth declared by the manufacturer.

ADDITIONAL LETTER (people protection)

Additional letters are used when the protection of persons against contact with dangerous parts is greater than that against the ingress of solid bodies expressed by the first characteristic digit. In other words, any additional letter indicates that the protection provided by an enclosure against access to dangerous parts is better than that indicated in the first digit. This greater protection may be provided, for example, by barriers, by openings of an appropriate shape or by distances inside the enclosure.

The additional letter is used only if:

- the effective protection against access to dangerous parts is greater than that indicated by the first digit;
- only the protection against access to dangerous parts is indicated and the first digit is therefore replaced by an X;




lett.	people protection	note
A	protection against access to dangerous parts with the back of the hand	Parts of the human body, for example a hand, or solid bodies larger than 50 mm in diameter must not be able to penetrate and an adequate distance from dangerous parts must be maintained.
B	protection against access to dangerous parts with a finger	Fingers or similar objects no longer than 80 mm or solid bodies with a diameter greater than 12 mm must not be able to penetrate and an adequate distance from dangerous parts must be maintained.
C	protection against access to dangerous parts with a tool	Wires with a diameter or thickness greater than 2.5 mm or solid bodies with a diameter greater than 2.5 mm must not be able to penetrate and an adequate distance from dangerous parts must be maintained.
D	protection against access to dangerous parts with a wire	It must not be possible to penetrate wires or strips with a diameter or thickness greater than 1 mm or solid bodies with a diameter greater than 1 mm and an adequate distance from dangerous parts must be maintained.

SUPPLEMENTARY LETTER (material protection)

Le lettere supplementari vengono utilizzate per fornire ulteriori informazioni particolari, relative al materiale. Possono essere poste dopo la seconda cifra caratteristica o dopo la lettera addizionale

lett.	material protection	note
H	high voltage equipment	Indicates that the enclosure is intended to contain equipment powered by voltages from 1 to 75 kV.
M	tested against the harmful effects due to the ingress of water with the equipment in motion	They are used for example for rotating machines to indicate that they have been tested with the rotor In Motion or Not in Motion. Their absence indicates that the degree of protection does not depend on whether parts of the equipment are in motion or not.
S	tested for harmful effects due to water ingress with equipment not in motion	
W	suitable for use in specified atmospheric conditions	Indicates weather protection verified by methods other than those used for the second characteristic digit, which are difficult to apply to large materials.

WHAT ARE THE ENVIRONMENTS IN WHICH AN IP PROTECTION DEGREE IS REGULATORY REQUIRED?



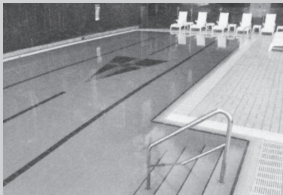
Type of environment		* Min. protection degree	Reference Norm
Ordinary 	areas within reach on a horizontal plane	IP4X o IPXXD	CEI 64-8/4 art. A.2.2
	areas not within reach	IP2X o IPXXB	CEI 64-8/4 art. A.2.4
	junctions and branches in distribution channels	IPXXB	CEI 64-8/5 comm. 526.1
	plug sockets in turrets or caps if cleaning operations are carried out where liquid spillage is expected	IP52	CEI 64-8/5 comm. 522.4
	floor turrets with horizontal insertion axis plug sockets	IP2X o IP4X	CEI 64-8/5 comm. 537.5.2
	floor turrets with vertically inserted sockets	IP5X	CEI 64-8/5 comm. 537.5.2
Bathrooms and showers 	zone 1 and 2	IPX4 o IPX5	CEI 64-8/7 art. 701.512.2
	zone 3	IPX5	CEI 64-8/7 art. 701.512.2
	areas within reach	IPXXB	CEI 64-8/7 art. 701.411.1.4.3
	areas subjected to water jets	IPX5	CEI 64-8/7 art. 703.512.2
	electrical equipment in general	IP33	CEI 64-8/7 art. 714.512.2.105
	underground components - heating	IPX7	CEI 64-8/7 art. 753.512.2.5
Valuable buildings of historical and/or artistic importance 	electrical systems with exposed pipes	IP4X	CEI 64-15 art. 7.1.2

* The degree of protection must be guaranteed in the ordinary operating conditions of the appliances

INSTALLATION EXAMPLES

La tabella allegata suggerisce alcuni esempi di quale grado di protezione utilizzare per i componenti elettrici in funzione dell'ambiente di installazione.

Le indicazioni riportate nella tabella possono tornare utili per non appesantire i costi degli impianti effettuando scelte di prodotti, in base ai luoghi di installazione, aventi gradi di protezione in eccesso rispetto a quelli previsti dalle norme.

Type of environment		* Min. protection degree	Reference Norm
Camping 	plug sockets and other electrical components exposed to the elements installed in a distribution board	IP44	CEI 64-8/7 art. 708.55.101.1
Construction sites 	Class II electrical components or with equivalent insulation	IPX4	Guida CEI 64-17 art. 6.3.2
	ASC executives	IP44	Guida CEI 64-17 art. 7.4
	plug sockets with plug inserted or with plug removed	IP44	Guida CEI 64-17 art. 8.1
	mobile plug sockets	IP66	Guida CEI 64-17 art. 8.2
	extension cords equipped with industrial-type plug sockets	IP66	Guida CEI 64-17 art. 8.4
	fixed and transportable lighting systems, portable lamps	IP44	Guida CEI 64-17 art. 9.1/2/3
Pools and fountains 	zone 0	IPX8 (x m)	CEI 64-8/7 art. 702.512.2
	zone 1	IPX5 o IPX4	CEI 64-8/7 art. 702.512.2
	zone 2 indoor swimming pools	IPX2	CEI 64-8/7 art. 702.512.2
	zone 2 outdoor swimming pools	IPX4	CEI 64-8/7 art. 702.512.2
	areas subjected to water jets	IPX5	CEI 64-8/7 art. 702.512.2

CEI BIBLIOGRAPHY

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- CEI 64-8: 2024 "Electrical systems with nominal voltage not exceeding 1000 V in alternating current and 1500 V in direct current"
- CEI 64-15: 2023 "Electrical systems in buildings of historical and/or artistic importance"
- CEI 64-17 Guide: 02/2010 1st edition "Guide to the execution of electrical systems on construction sites"

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