Technical designation for low voltage electrical cables

Harmonized cables (300/500 V, 450/750 V & 1000 V)

The system consists of a sequence of symbols, each of which, depending on the position, has a previously established meaning. The elements that compose the designation indicate the essential characteristics of the product and they are arranged in the following order: relationship to Standards (Harmonized, national...); rated voltage; construction of the cable (generally in a radial sequence and starting from the insulation material); material and form of conductors; number and cross-sectional area of conductors.

| ELEMENTS OF THE CABLE DESIGNATION EXAMPLES: | 1 | 2 | 3 | |
|--|-----|-----|----|----------------|
| Relationship of standards HAccording to harmonized European standards. ESAccording to national code (e.g. ES = Spain). Non-harmonized cable. | Н | Н | H | |
| Rated voltage 1 1000/1000 V AC (Uo/U - this rated voltage is limited to PV-cables 05 | 05 | 05 | 07 | |
| Aislamientos BEthylene-propylene rubber or equivalent synthetic elastomer (90°C). REthylene-propylene rubber or equivalent synthetic elastomer. SSilicone-rubber. VPolyvinyl chloride (PVC). V2Polyvinyl chloride (PVC) for a conductor temperature of 90°C. ZCrosslinked polyolefin-compound for cable with low smoke and non-corrosive gases in the case of fire (halogen-free). Z1Thermoplastic polyolefin-compound for cable with low smoke and non-corrosive gases in the case of fire (halogen-free). Z2. Crosslinked polyolefin-compound for photovoltaic cables with low smoke and non-corrosive gases in the case of fire (halogen-free). | v | v | v | |
| Inner sheath (this layer is only on cables with metal coverings) VPolyvinyl chloride (PVC). Z1Thermoplastic polyolefin-compound for cable with low smoke and non-corrosive gases in the case of fire (halogen free). | v | | | |
| Metal coverings (shield or screen) OTape shield/screen. C4Copper braid (or tinned copper) shield/screen over assembled cores (without inner sheath). NOTE: It is common to use a polyester or polyester/aluminium tape under the braid. In some cases, e.g. H05VVC4V5-K, the screen (and additional tape) is placed over a non-metallic inner sheath. | C4 | Ī | | |
| Non-metallic sheathing material NPolychloroprene-rubber or equivalent material. Silicone-rubber. VPolyvinyl chloride (PVC). V2Polyvinyl chloride (PVC) for a conductor temperature of 90 °C. V5PVC (special oil resistant). ZCrosslinked polyolefin-compound for cable with low smoke and non-corrosive gases in the case of fire (halogen-free). Z5Thermoplastic compound EVM-1 for cable with non-corrosive gases in the case of fire for EV charging cable (halogen-free). | V5 | v | | |
| Material of the conductor No symbol No symbol It means that the conductor is made of copper. Form of the conductor -U Rigid, round conductor, solid (single wire) (class 1 according to standards UNE-EN 60228; IEC 60228). -R Rigid, round conductor, stranded (class 2 according to standards UNE-EN 60228; IEC 60228). -F -F -F lexible conductor for mobile services (class 5 according to standards UNE-EN 60228; IEC 60228). -K -F -F </td <td>-K</td> <td>-F</td> <td>-R</td> <td></td> | -K | -F | -R | |
| Number of cores 1, 2, 3, 4, 5 | 3 | 3 | 1 | k⊷ ve no |
| Multiplication symbol or sign XSign "X" where a green/yellow core is not included. GSymbol "G" where a green/yellow core is included. | G | G | x | |
| Nominal cross-sectional area 0,5 / 0,75 / 1 / 1,5 / 2,5 / 4 / 6 / 10 / 16 / 25 / 35 / 50 / 70 / 95 / 120 / 150 / 185 / 240 Nominal cross-sectional area of the conductors in mm ² . | 2,5 | 1,5 | 10 | |
| EXAMPLE 1 BARRYFLEX SHIELD H05VVC4V5-K 3G2,5 mm² EXAMPLE 2 BARRYFLEX-MAN H05VV-F 3G1,5 mm² | | | | |
| EXAMPLE 3 BARRY H07V-R 1X10 mm ² | | | | |

In the technical designation of a cable, it is not necessary to include all the fields indicated in the previous positions, but only those strictly required to reflect its construction structure and essential characteristics.
 The symbols used in the cable designation for an insulation or oversheath material are generic. The specific material used in the cable in question will be detailed in the product's technical data sheet.



U₀/U ≥ 0,6 / 1 kV

The system consists of a sequence of symbols, each of which, depending on the position, has a previously established meaning. The elements that compose the designation indicate the essential characteristics of the product and they are arranged in the following order: construction of the cable (generally in a radial sequence and starting from the insulation material towards the outer layers); material and form of conductors; rated voltage; number and cross-sectional area of conductors.

| | ELEMENTS OF THE CABLE DESIGNATION EXAMPLES: | 1 | 2 | 3 |
|--------|--|---------------------------|-----------------------|-----------------|
| | Insulation DEthylene propylene (EPR) or similar. RCrosslinked polyethylene (XLPE). SSilicone-based thermostable compound. VPolyvinyl chloride (PVC). XCrosslinked polyethylene (XLPE). Applicable only to certain cables with aluminum conductor (e.g. XZ1 (S) 0.6/1 kV AL). | R | v | x |
| | Shield / screen C4Copper braid (or tinned copper) shield/screen, usually over assembled cores. It is common to use a polyester or polyester/aluminium tape under the braid. | | C4 | |
| | Inner sheath (this layer is only included if the cable has an armour) VPolyvinyl chloride (PVC). Z1Thermoplastic polyolefin-compound for cable with low smoke and non-corrosive gases in the case of fire (halogen free). | Z1 | | |
| | Armour F or FADouble tape. Steel (multicore cable) or aluminium (single-core cable) tapes. M or MARound wire. Steel (multicore cable) or aluminium wires (single-core cable). F3 / FA3Corrugated tape. Tinned steel (multicore cable) or aluminium tape (single-core cable). | м | | |
| | Oversheath NElastomeric polychloroprene compound or similar (e.g., SE1-type rubber). Z1Thermoplastic polyolefin-compound for cable with low smoke and non-corrosive gases in the case of fire (halogen-free). (Except in the Barrynax RZ 0.6/1 kV model (UNE 21030-2), in which the "Z" symbolises that the set of cables is twisted in a visible bundle) Z1Thermoplastic polyolefin-compound for cable with low smoke and non-corrosive gases in the case of fire (halogen-free). | Z1 | v | Z1 |
| | Form of the conductor Without symbol Rigid, round conductor, solid (single wire) (class 1 according to standards UNE-EN 60228; IEC 60228). Without symbol Rigid, round conductor, stranded (class 2 according to standards UNE-EN 60228; IEC 60228). -F Flexible for mobile services (class 5 according to UNE-EN 60228; IEC 60228). -K Flexible for fixed installations (class 5 according to standards UNE-EN 60228; IEC 60228). | -К | -К | |
| | Number of cores 1, 2, 3, 4, 5 Number of cores in the cable. | 5 | 4 | 1 |
| | Multiplication symbol or sign XSign "X" where a green/yellow core is not included. GSymbol "G" where a green/yellow core is included. | G | x | x |
| | Nominal cross-sectional area 1,5 / 2,5 / 4 / 6 / 10 / 16 / 25 / 35 / 50 / 70 / 95 / 120 / 150 / 185 / 240 / 300 / 400 / 500 / 630 Nominal cross-sectional area of conductors in mm ² . | 16 | 6 | 240 |
| | Material of the conductor Without symbol It means that the conductor is made of copper. AI It means that the conductor is made of aluminium. | | | AI |
| | | | | |
| Nota 🖇 | High-Safety (AS) and Reinforced High-Safety (AS+) cables (AS+)Reinforced High-Safety Cable (+): Cable with intrinsic fire resistance and a minimum classification of reaction to fire of C_{ca}-s1b,d1,a1 (e.g., SZ1-(AS+), Mica RZ1-K 0.6/1 kV PH120 (AS+)). (AS)High-Safety Cable: Cable with a minimum classification of reaction to fire of C_{ca}-s1b,d1,a1 (e.g., H07Z1-K TYPE 2 (AS), RZ1-K (AS) 0.6/1 kV). (S) | ·K 0.6/1 (Z1 (S) 0.4 | (V PH12(6/1 kV AI |) .). |
| Nota 🛪 | High-Safety (AS) and Reinforced High-Safety (AS+) cables (AS+) | -K 0.6/1 (Z1 (S) 0.1 | (V PH12(6/1 kV AI |). |
| lota | High-Safety (AS) and Reinforced High-Safety (AS+) cables (AS+) | -K 0.6/1 (Z1 (S) 0.4 | (V PH12(6/1 kV AI |) .). |