



# Eca

## APPLICATION

Topflex® MS Tri-rated H07V2-K cable has been designed for the internal wiring of electrical cabinets, switch boards and small electrical devices.

Due to its manufacturing characteristics, it can be used in conduit or in flexible motor ducts, transformers and other machinery in general.

- Industrial use.
- Electrical panel wiring.

## CONSTRUCTION

### Conductor

Electrolytic annealed copper, class 5 (flexible), according to EN 60228, IEC 60228 and BS 6360.

### Insulation

Flexible PVC, extra sliding, high service temperature type T13 according to EN 50363-3 and Class 43 UL 1581.

The special characteristics of the material ensure good easy-slide properties to the cable.

The standard identification of insulated conductors is the following:

|              |               |
|--------------|---------------|
| Blue         | RAL 5012      |
| Brown        | RAL 8003      |
| Black        | RAL 9005      |
| Red          | RAL 3000      |
| Green/Yellow | RAL 6018/1021 |
| Grey         | RAL 7000      |
| Dark Blue    | RAL 5010      |
| White        | RAL 9010      |
| Orange       | RAL 2003      |
| Violet       | RAL 4005      |
| Pink         | RAL 3015      |

## CHARACTERISTICS



### Electrical performance

Low voltage: According to EN (H05V2-K) 300/500 V  
According to EN (H07V2-K) 450/750 V  
According to BS (CK) 600/1000 V  
According to UL (AWM) 600 V  
According to CSA (TEW) 600 V



### Thermal performance

Maximum conductor temperature: 90°C according to EN and BS,  
105°C according to UL and CSA.  
Maximum short-circuit temperature: 160°C (max 5 s).  
Minimum service temperature: -40°C (fixed and protected installations).



### Fire performance

Flame non-propagation according to EN 60332-1 / IEC 60332-1 and VW-1, FT1 and FT2 according to UL 2556.  
Reaction to fire CPR: Eca according to EN 50575.



### Mechanical performance

Minimum bending radius: 5x cable diameter.



### Environmental performance

Chemical & Oil resistance: Acceptable.  
Water resistance: AD3 Sprays.



### Installation conditions

In conduit.



### Other

Meter by meter marking (from 10 mm² onwards).



### Packaging

These cables are supplied in reels, barrels or bulk drums.

| CROSS SECTION  | PACKAGING                             |
|----------------|---------------------------------------|
| 0,50-6 mm²     | 100 m reels (or barrels upon request) |
| 10-16 mm²      | 100 m reels or bulk drums             |
| 25 mm² onwards | bulk drums                            |

## STANDARDS / COMPLIANCE



### According to

EN 50525-2-31 / UL 758 / CSA C22.2 / BS 6231



### Standards and approvals

HAR / AENOR / UL LISTED / RoHS / CE



### CPR (Construction Products Regulation)

Eca



### DIMENSIONS & ADMISSIBLE INTENSITIES



Equivalences and designation applicable for every size and standard

| Section (mm <sup>2</sup> ) | AWG     | EN 50525-2-31 | BS 6231 | UL 758     | UL 2556    | CSA 22.2 |
|----------------------------|---------|---------------|---------|------------|------------|----------|
| 0,50                       | 22      | H05V2-K       | CK      | Style 1015 | FT1 - FT2  | Type TEW |
| 0,75                       | 20      | H05V2-K       | CK      | Style 1015 | FT1 - FT2  | Type TEW |
| 1                          | 18      | H05V2-K       | CK      | Style 1015 | FT1 - FT2  | Type TEW |
| 1,5                        | 16      | H07V2-K       | CK      | Style 1015 | FT1 - FT2  | Type TEW |
| 2,5                        | 14      | H07V2-K       | CK      | Style 1015 | FT1 - FT2  | Type TEW |
| 4                          | 12      | H07V2-K       | CK      | Style 1015 | FT1 - FT2  | Type TEW |
| 6                          | 10      | H07V2-K       | CK      | Style 1015 | FT1 - FT2  | Type TEW |
| 10                         | 8       | H07V2-K       | CK      | Style 1028 | FT2 - VW-1 | Type TEW |
| 16                         | 6       | H07V2-K       | CK      | Style 1283 | FT2 - VW-1 | Type TEW |
| 25                         | 4       | H07V2-K       | CK      | Style 1283 | FT2 - VW-1 | Type TEW |
| 35                         | 2       | H07V2-K       | CK      | Style 1283 | FT2 - VW-1 | Type TEW |
| 50                         | 1       | 07V2-K        | CK      | Style 1284 | FT2 - VW-1 | Type TEW |
| 70                         | 2/0     | 07V2-K        | CK      | Style 1284 | FT2 - VW-1 | Type TEW |
| 95                         | 3/0     | 07V2-K        | CK      | Style 1284 | FT2 - VW-1 | Type TEW |
| 120                        | 4/0     | 07V2-K        | CK      | Style 1284 | FT2 - VW-1 | Type TEW |
| 150                        | 250 MCM | 07V2-K        | CK      | Style 1284 | FT2 - VW-1 | ---      |
| 185                        | 350 MCM | 07V2-K        | CK      | Style 1284 | FT2 - VW-1 | ---      |
| 240                        | 450 MCM | 07V2-K        | CK      | Style 1284 | FT2 - VW-1 | ---      |
| 300                        | 550 MCM | 07V2-K        | ---     | Style 1284 | FT2 - VW-1 | ---      |
| 400                        | 750 MCM | 07V2-K        | ---     | Style 1284 | FT2 - VW-1 | ---      |

| Cross-Section (mm <sup>2</sup> ) | Diameter (mm) | Weight (kg/km) | Current (A) 2 cond. <sup>1</sup> | Current (A) 3 cond. <sup>1</sup> | Voltage drop (V/A · km) <sup>2</sup> |
|----------------------------------|---------------|----------------|----------------------------------|----------------------------------|--------------------------------------|
| 1 x 0,50                         | 2,5           | 10             | 12                               | 10                               | 99,5                                 |
| 1 x 0,75                         | 2,7           | 13             | 15                               | 13                               | 66,6                                 |
| 1 x 1                            | 2,8           | 15             | 18                               | 16                               | 49,9                                 |
| 1 x 1,5                          | 3             | 20             | 23                               | 20                               | 34,0                                 |
| 1 x 2,5                          | 3,5           | 30             | 31                               | 28                               | 20,4                                 |
| 1 x 4                            | 4             | 45             | 42                               | 37                               | 12,7                                 |
| 1 x 6                            | 4,6           | 65             | 54                               | 48                               | 8,45                                 |
| 1 x 10                           | 6,4           | 115            | 75                               | 66                               | 4,89                                 |
| 1 x 16                           | 8,1           | 180            | 100                              | 88                               | 3,10                                 |
| 1 x 25                           | 9,5           | 265            | 133                              | 117                              | 2,00                                 |
| 1 x 35                           | 10,6          | 355            | 164                              | 144                              | 1,42                                 |
| 1 x 50                           | 13,1          | 505            | 198                              | 175                              | 0,99                                 |
| 1 x 70                           | 14,8          | 685            | 253                              | 222                              | 0,696                                |
| 1 x 95                           | 16,6          | 890            | 306                              | 269                              | 0,527                                |
| 1 x 120                          | 17,8          | 1.115          | 354                              | 312                              | 0,412                                |
| 1 x 150                          | 20,2          | 1.400          | 393                              | 342                              | 0,330                                |
| 1 x 185                          | 21,9          | 1.675          | 449                              | 384                              | 0,270                                |
| 1 x 240                          | 24,3          | 2.180          | 528                              | 450                              | 0,205                                |
| 1 x 300                          | 27,7          | 2.790          | 603                              | 514                              | 0,164                                |
| 1 x 400                          | 31,6          | 3.650          | 725                              | 620                              | 0,124                                |

<sup>1</sup> Reference method B1 for 90°C insulation cables according to IEC 60364-5-52 in open air at 30°C ambient temperature.

<sup>2</sup> At maximum conductor temperature, cosφ=1 and single-phase circuit.

The voltage drop figures quoted are for one cable only. For other circuit arrangements they should be adjusted as follows: Single phase 50 Hz AC or 2-wire DC x 2. Three phase AC x 1,732.

### SHORT-CIRCUIT CURRENT-CARRYING CAPACITIES

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| Time (s)          | 0,1 | 0,2 | 0,3 | 0,5 | 1   | 1,5 | 2  | 2,5 | 3  |
|-------------------|-----|-----|-----|-----|-----|-----|----|-----|----|
| A/mm <sup>2</sup> | 316 | 223 | 182 | 141 | 100 | 82  | 71 | 63  | 58 |

### CORRECTION FACTORS FOR AIR TEMPERATURE

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| Air T. (°C) | 20   | 25   | 30 | 35   | 40   | 45   | 50   | 55   | 60   |
|-------------|------|------|----|------|------|------|------|------|------|
| Factor      | 1,08 | 1,04 | 1  | 0,96 | 0,91 | 0,87 | 0,82 | 0,76 | 0,71 |

Other correction factors (for grouping cables, for harmonic currents), that are not in this specification, can be applied. Further information can be found in IEC 60364-5-52.