

POWERHARD® F RVFV-K

Armoured cable with double steel or aluminium tape armour.

ACCORDING TO: IEC 60502-1 / UNE 21123-2



Eca

APPLICATION

Powerhard® F RVFV-K cable is especially suitable for fixed installations that may be subject to mechanical aggression. It is highly recommended for use in installations where the presence of rodents could imply a threat to the cable (such as warehouses, production plants and agricultural facilities). At the same time, its use is recommended for street lighting installations.

CONSTRUCTION

Conductor

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

Insulation

Cross-linked polyethylene type DIX-3 according to UNE-HD 603 and type XLPE according to IEC 60502-1.

The standard identification according to HD 308 is:

1 x	Natural
2 x	Blue + Brown
3 G	Blue + Brown + Green/Yellow
3 x	Brown + Black + Grey
3 x + 1 x	Brown + Black + Grey + Blue (reduced cross-section)
4 G	Brown + Black + Grey + Green/Yellow
4 x	Brown + Black + Grey + Blue
5 G	Brown + Black + Grey + Blue + Green/Yellow
6 or more	Black numbered + Green/Yellow

Separation sheath

PVC type DMV-18 according to UNE-HD 603 and type ST2 according to IEC 60502-1.

Armour

Double steel or aluminium tape armour.

Aluminium armour is used in single-core cables to avoid parasite currents that may overheat the cable.

Steel tape armour is used in multicore cables.

Outer sheath

Flexible PVC type DMV-18 according to UNE-HD 603 and type ST2 according to IEC 60502-1.

Black colour.

CHARACTERISTICS



Electrical performance

Low voltage: 0,6/1 kV.



Thermal performance

Maximum conductor temperature: 90°C.

Maximum short-circuit temperature: 250°C (max. 5 s).

Minimum service temperature: -40°C (fixed and protected installations).

Minimum installation and handling temperature: 0°C.



Fire performance

Flame non-propagation according to EN 60332-1 / IEC 60332-1.

Reaction to fire CPR: Eca, according to EN 50575.

Reduced halogen emission. Chlorine < 15%.



Mechanical performance

Minimum bending radius during installation: 10x cable diameter.

Impact resistance: AG4 High severity.

Rodent proof.



Environmental performance

Chemical & Oil resistance: Good.

UV Resistant according to UNE 211605.

Water resistance: AD7 immersion.



Installation conditions

Open Air.

Buried.

In conduit.

STANDARDS / COMPLIANCE



According to

IEC 60502-1 / UNE 21123-2



Standards and approvals

BUREAU VERITAS / RoHS / CE

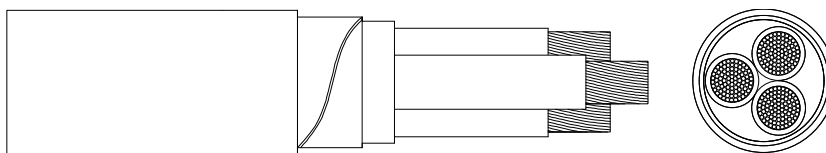


CPR (Construction Products Regulation)

Eca



DIMENSIONS & ADMISSIBLE INTENSITIES



Cross-section (mm ²)	Diameter (mm)	Weight (kg/km)	Open air (A) ¹	Buried (A) ²	Voltage drop (V/A · km) ³
1 x 16	14,6	375	124	100	3,08
1 x 25	15,9	465	161	129	1,98
1 x 35	16,1	530	200	155	1,41
1 x 50	17,7	685	242	183	0,984
1 x 70	19,5	895	310	225	0,639
1 x 95	21,2	1.115	377	270	0,525
1 x 120	23,0	1.375	437	306	0,410
1 x 150	24,8	1.665	504	343	0,328
1 x 185	26,9	1.980	575	387	0,270
1 x 240	29,9	2.535	679	448	0,204
1 x 300	32,5	3.100	783	502	0,163
1 x 400	37,6	4.110	940	592	0,123
1 x 500	41,3	5.220	1.083	670	0,097
2 x 1,5	12,3	225	26	27	33,9
2 x 2,5	13,2	270	36	35	20,3
2 x 4	14,1	320	49	46	12,6
2 x 6	15,7	420	63	58	8,41
2 x 10	17,1	530	86	77	4,87
2 x 16	18,6	690	115	100	3,08
2 x 25	21,1	925	149	129	1,98
3 G 1,5	11,6	220	26	27	33,9
3 G 2,5	12,5	270	36	35	20,3
3 x 4	13,6	335	49	46	12,6
3 x 6	14,7	415	63	58	8,41
3 x 10	17,1	595	86	77	4,87
3 x 16	19,3	815	115	100	3,08
3 x 25	21,9	1.110	149	129	1,98
3 x 35	24,6	1.455	185	155	1,41
3 x 50	28,6	1.990	225	183	0,984
3 x 70	31,4	2.630	289	225	0,639
3 x 95	37,9	3.780	352	270	0,525
3 x 120	41,3	4.640	410	306	0,410
3 x 150	46,5	5.735	473	343	0,328
3 x 185	51,5	6.915	542	387	0,270
3 x 16 + 1 x 10	20,2	920	115	100	3,08
3 x 25 + 1 x 16	22,9	1.285	149	129	1,98
3 x 35 + 1 x 16	25,3	1.625	185	155	1,41
3 x 50 + 1 x 25	29,9	2.265	225	183	0,984

Cross-section (mm ²)	Diameter (mm)	Weight (kg/km)	Open air (A) ¹	Buried (A) ²	Voltage drop (V/A · km) ³
3 x 70 + 1 x 35	34,2	3.050	289	225	0,639
3 x 95 + 1 x 50	39,4	4.290	352	270	0,525
3 x 120 + 1 x 70	43,1	5.375	410	306	0,410
3 x 150 + 1 x 70	48,2	6.510	473	343	0,328
3 x 185 + 1 x 95	53,8	7.910	542	387	0,270
3 x 240 + 1 x 120	61,3	10.165	641	448	0,204
4 G 1,5	12,4	250	26	27	33,9
4 G 2,5	13,2	310	36	35	20,3
4 x 4	14,7	400	49	46	12,6
4 x 6	16,2	505	63	58	8,41
4 x 10	18,3	710	86	77	4,87
4 x 16	20,7	985	115	100	3,08
4 x 25	24,2	1.380	149	129	1,98
4 x 35	26,2	1.785	185	155	1,41
4 x 50	31,4	2.490	225	183	0,984
4 x 70	37,1	3.720	289	225	0,639
4 x 95	41,2	4.680	352	270	0,525
4 x 120	46,5	5.890	410	306	0,410
4 x 150	51,6	7.265	473	343	0,328
4 x 185	57,0	8.735	542	387	0,270
4 x 240	64,5	11.245	641	448	0,204
5 G 1,5	13,1	285	26	27	33,9
5 G 2,5	14,3	355	36	35	20,3
5 G 4	16,1	470	49	46	12,6
5 G 6	17,5	590	63	58	8,41
5 G 10	20,0	840	86	77	4,87
5 G 16	23,0	1.185	115	100	3,08
5 G 25	26,1	1.660	149	129	1,98
5 G 35	29,3	2.190	185	155	1,41
5 G 50	35,2	3.050	225	183	0,984
5 G 70	40,8	4.485	289	225	0,639
5 G 95	45,7	5.720	352	270	0,525
5 G 120	51,7	7.215	410	306	0,410
5 G 150	57,3	8.835	473	343	0,328
5 G 185	63,2	10.620	542	387	0,270
5 G 240	71,7	13.705	641	448	0,204
6 G 1,5	14,0	320	26	27	29,5
6 G 2,5	15,6	415	36	35	17,7
6 G 4	17,4	540	49	46	11,0
7 G 1,5	13,8	330	26	27	33,9
7 G 2,5	15,3	425	36	35	20,3
7 G 4	17,2	565	49	46	12,6
10 G 1,5	16,0	420	26	27	33,9
10 G 2,5	17,3	540	36	35	20,3
12 G 1,5	16,8	465	26	27	33,9

Cross-section (mm ²)	Diameter (mm)	Weight (kg/km)	Open air (A) ¹	Buried (A) ²	Voltage drop (V/A · km) ³
12 G 2,5	18,8	620	36	35	20,3
12 G 4	21,8	850	49	46	12,6
14 G 1,5	18,2	530	26	27	29,5
14 G 2,5	20,2	700	36	35	17,7
16 G 1,5	18,7	575	26	27	29,5
16 G 2,5	20,7	760	36	35	17,7
19 G 1,5	19,3	630	26	27	33,9
19 G 2,5	22,5	845	36	35	20,3
19 G 4	24,6	1.170	49	46	12,6
24 G 1,5	21,2	740	26	27	33,9
24 G 2,5	23,5	1.000	36	35	20,3
24 G 4	29,1	1.460	49	46	12,6
27 G 1,5	22,4	805	26	27	33,9
27 G 2,5	25,8	1.110	36	35	20,3
37 G 1,5	24,6	995	26	27	33,9
37 G 2,5	28,1	1.395	36	35	20,3
61 G 1,5	30,4	1.515	26	27	33,9

¹ Reference method F for single-core and method E for multicore cables according to IEC 60364-5-52 in open air at 30°C ambient temperature.

² Reference method D2 according to IEC 60364-5-52. Directly buried at 0,7 m depth with soil thermal resistivity of 2,5 K·m/W and 20°C of ground temperature.

³ At maximum conductor temperature and cosφ=1.

In all cases are supposed a single-phase circuit.

SHORT-CIRCUIT CURRENT-CARRYING CAPACITIES

Time (s)	0,1	0,2	0,3	0,5	1	1,5	2	2,5	3
A/mm²	452	320	261	202	143	117	101	90	83

CORRECTION FACTORS FOR AIR TEMPERATURE

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

CORRECTION FACTORS FOR GROUND TEMPERATURE

Ground T. (°C)	10	15	20	25	30	35	40	45	50
Factor	1,07	1,04	1	0,96	0,93	0,89	0,85	0,80	0,76

CORRECTION FACTORS FOR SOIL THERMAL RESISTIVITY

Moisture degree of soil	Very damp	Slightly damp	Slightly dry	Dry	Very dry
Thermal Resist. (K·m/W)	1	1,5	2	2,5	3
Factor	1,50	1,28	1,12	1	0,90

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.