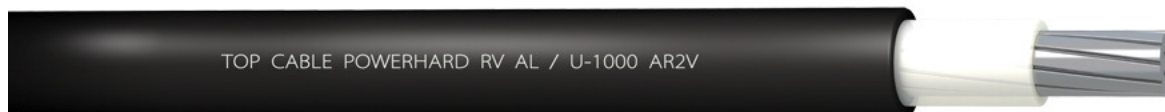


POWERHARD® AL RV AL / U-1000 AR2V

Aluminium cable for power transmission.

ACCORDING TO: UNE-HD 603-5N / NF C 32-321 / IEC 60502-1



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APPLICATION

Powerhard® RV AL/ U-1000 AR2V cable is suitable for all types of underground networks for public power distribution, as well as low voltage connexions in industrial plants, urban networks, buildings, etc.

Due to its rigidity, its use is recommended in installations with a simple configuration where a flexible cable is not needed.

- Industrial use.
- Distribution network.

CONSTRUCTION

Conductor

Aluminium class 2 according to EN 60228 and IEC 60228.

Insulation

Cross-linked polyethylene type DIX-3 according to HD 603, type XLPE according to IEC 60502-1 and compound insulation according to NF C 32-321.

The standard identification of insulated conductors according to HD 308, is the following:

1 x	Natural
2 x	Blue + Brown
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

Outer sheath

Flexible PVC type DMV-18 according to HD 603, type ST2 according to IEC 60502-1 and compound outer sheath according to NF C 32-321. 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).



Fire performance

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

Category C2 according to NF C 32-070.

Reaction to fire CPR: E_{ca} according to EN 50575.

Reduced halogen emission. Chlorine < 15%.



Mechanical performance

Minimum bending radius: 5x cable diameter.

Impact resistance: AG3 High severity (<= 5J).



Environmental performance

Chemical & Oil resistance: Good.

UV Resistant according to UNE 211605 and NF C 32-321.

Water resistance: AD8 Submersion.



Installation conditions

Open Air.

Buried.

In conduit.

STANDARDS / COMPLIANCE



According to

UNE-HD 603-5N / NF C 32-321 / IEC 60502-1



Standards and approvals

AENOR / NF-USE / RoHS / CE

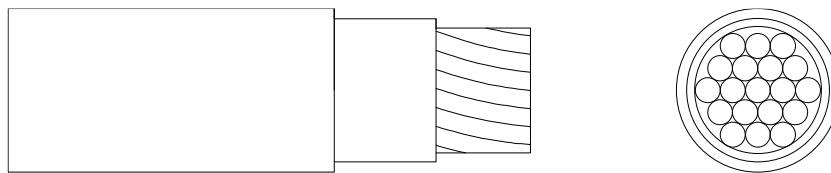


CPR (Construction Products Regulation)

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DIMENSIONS & ADMISSIBLE INTENSITIES



Cross section (mm²)	Diameter (mm)	Weight (kg/km)	Open air (A) ¹	Buried (A) ²	Voltage drop (V/A · km) ³
1 x 16	8,5	95	92	76	4,894
1 x 25	10,5	145	121	98	3,075
1 x 35	11,2	170	150	117	2,224
1 x 50	12,9	225	184	139	1,642
1 x 70	14,6	290	237	170	1,135
1 x 95	16,3	395	289	204	0,820
1 x 120	17,7	465	337	233	0,648
1 x 150	19,9	590	389	261	0,527
1 x 185	21,5	700	447	296	0,420
1 x 240	24,8	930	530	343	0,320
1 x 300	26,6	1.080	613	386	0,256
1 x 400	30,0	1.395	740	445	0,199
1 x 500	34,1	1.740	856	505	0,155
1 x 630	38,4	2.225	996	575	0,120
1 x 800	43,3	2.835	1.168	660	0,0940
3 x 70	30,6	1.255	211	170	1,135
3 x 95	33,2	1.570	257	204	0,820
3 x 95 + 1 x 50	35,0	1.725	257	204	0,820
3 x 120	37,3	1.980	300	233	0,648
3 x 1 x 120	38,1	1.410	296	174	0,648
3 x 150	40,7	2.385	346	261	0,527
3 x 1 x 150	42,8	1.790	342	195	0,527
3 x 150 + 1 x 70	43,7	2.685	346	261	0,527
3 x 150 + 1 x 95	43,7	2.770	346	261	0,527
3 x 185	45,2	2.945	397	296	0,420
3 x 1 x 185	46,3	2.130	393	222	0,420
3 x 240	51,2	3.800	470	343	0,320
3 x 1 x 240	53,4	2.825	466	257	0,320
3 x 1 x 240 + 1 x 95	56,3	3.220	466	257	0,320
3 x 300	56,4	4.590	543	386	0,256
3 x 1 x 300	57,2	3.275	539	289	0,256
3 x 1 x 300 + 1 x 150	60,4	3.875	539	289	0,256
3 x 300 + 1 x 150	59,4	5.030	543	386	0,256
3 x 1 x 400 + 1 x 150	68,4	4.845	651	336	0,199
4 x 35	25,2	840	135	117	2,224
4 x 50	28,6	1.075	164	139	1,642
4 x 70	33,4	1.500	211	170	1,135
4 x 95	36,9	1.915	257	204	0,820
4 x 120	41,2	2.390	300	233	0,648

POWERHARD[®] AL

RV Al / U-1000 AR2V

Cross section (mm ²)	Diameter (mm)	Weight (kg/km)	Open air (A) ¹	Buried (A) ²	Voltage drop (V/A · km) ³
4 x 1 x 120	42,7	1.880	296	174	0,648
4 x 150	45,3	2.935	346	261	0,527
4 x 185	50,5	3.830	397	296	0,420
4 x 1 x 185	51,8	2.835	393	222	0,420
4 x 240	57,2	4.950	470	343	0,320
4 x 1 x 240	59,6	3.765	466	257	0,320
4 x 1 x 300	64,1	4.370	539	289	0,256

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/mm ²	299	211	173	134	94	77	67	60	55

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	0,8	0,76

CORRECTION FACTORS FOR SOIL THERMAL RESISTIVITY

Direct buried cables						
0,5 K·m/W	0,7 K·m/W	1 K·m/ W	1,5 K·m/W	2 K·m/ W	2,5 K·m/W	3 K·m/ W
1,88	1,62	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.