



APPLICATION

TOPDRIVE® VFD (EMC) ROZ1-K (AS) cable has been specially designed for Variable Frequency Drive Motors and installations where it is necessary to limit the effects of electromagnetic interference (EMI). This is a flexible cable for fixed installations, for variable speed motors or pumps.

CONSTRUCTION

Conductor

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

Protective Conductor

The ground conductor is divided into three conductors; the equivalent cross-section is approximately 50% of the section of the phase conductor. For 4G cables, ground conductor has the same cross-section as the phase conductors.

Insulation

Cross-linked polyethylene type XLPE according to IEC 60502-1, type HF XLPE 90°C according to IEC 60092-360.

The standard identification of insulated conductors is the following:

3 x +3 G Grey + Brown + Black + Green/Yellow (3 G) (from 6 mm² onwards)

4 G Grey + Brown + Black + Green/Yellow (up to 4 mm²)

Assembly of cores

For 3x+3G cables, the three phase conductors are cabled helically with the three protective conductors distributed in the interstices. For 4G cables, the three phase conductors and protection conductor are cabled helically.

Screen

Aluminium-polyester tape screen helically placed over the insulated conductors. Over the tape there is a tinned copper braid screen. The tape and the braid act as a double screen to cut out all of the electromagnetic interference, with a minimum total section of 10% of the phase conductor, ensuring a total shielding coverage.

Outer sheath

Polyolefin LSHF outer sheath, type ST8 according to IEC 60502-1 and type SHF1 according to IEC 60092-360. black colour. The ripcord allows you to tear the outer sheath without damaging the screen.

STANDARDS / COMPLIANCE



According to

IEC 60502-1 / IEC 60092-353



Standards and approvals

BUREAU VERITAS / DNV-GL / ABS /

LLOYD'S REGISTER / RoHS / CE



CPR (Construction Products Regulation)

C_{ca}-s1a, d1, a1

CHARACTERISTICS



Electrical performance

Low voltage: 0,6/1 kV



Thermal performance

Maximum service 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.

Fire non-propagation according to EN 60332-3 / IEC 60332-3 and EN 50399.

Reaction to fire CPR: C_{ca}-s1a, d1, a1 according to EN 50575.

LSHF (Low Smoke Halogen Free) according to EN60754-1 / IEC 60754-1

Low smoke emission according to EN 61034 / IEC 61034:

Light transmittance > 80%.

Low corrosive gases emission according to EN 60754-2 / IEC 60754-2.



Mechanical performance

Minimum bending radius: 10x cable diameter.

Impact resistance: AG2 Medium severity.



Environmental performance

Chemical & Oil resistance: acceptable.

UV Resistant according to EN 50618.

Water resistance: AD5 Jets.



Installation conditions

Open Air.

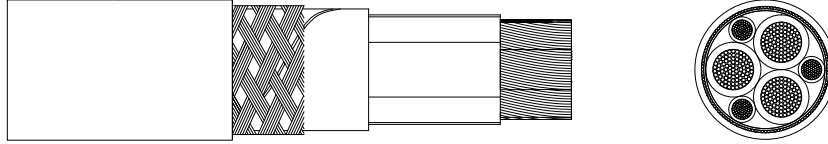
Buried.

In conduit.



TOPDRIVE[®] VFD (EMC) ROZ1-K (AS) 0,6/1 kV

DIMENSIONS & ADMISSIBLE INTENSITIES



Cross-section (mm ²)	Diameter under the braid (mm)	Outer diameter (mm)	Weight (Kg/km)	Open air (A) ¹	Buried (A) ²	R20°C (Ω/km)	Voltage drop (V/A · km) ³
3 x 6 + 3 G 1,5	10,5	15	390	63	58	3,30	8,41
3 x 10 + 3 G 1,5	11,1	15,6	510	86	77	1,91	4,87
3 x 16 + 3 G 2,5	14,0	18,9	750	115	100	1,21	3,08
3 x 16 + 3 G 6	16,9	22,2	915	115	100	1,21	3,08
3 x 25 + 3 G 4	16,9	22,3	1.135	149	129	0,780	1,98
3 x 25 + 3 G 6	16,9	22,3	1.185	149	129	0,780	1,98
3 x 35 + 3 G 6	19,5	24,9	1.495	185	155	0,554	1,41
3 x 50 + 3 G 10	22,7	28,1	2.035	225	183	0,386	0,984
3 x 70 + 3 G 10	26,2	31,1	2.565	289	225	0,272	0,693
3 x 70 + 3 G 16	26,2	31,6	2.790	289	225	0,272	0,693
3 x 95 + 3 G 16	30,1	35,5	3.450	352	270	0,206	0,525
3 x 120 + 3 G 16	33,3	39,5	4.320	410	306	0,161	0,410
3 x 120 + 3 G 25	33,3	39,4	4.550	410	306	0,161	0,410
3 x 150 + 3 G 25	38,4	44,8	5.445	473	343	0,129	0,328
3 x 185 + 3 G 35	41,6	48,4	6.675	542	387	0,106	0,270
3 x 240 + 3 G 50	49,2	56,3	8.765	641	448	0,0801	0,204
3 x 300 + 3 G 50	54,5	62,1	10.650	741	502	0,0641	0,163
4 G 1,5	6,9	11,4	185	26	27	13,30	33,9
4 G 2,5	7,7	12,2	230	36	35	7,98	20,3
4 G 4	9,2	13,7	300	49	46	4,95	12,6
4 G 6	10,6	15,1	385	63	58	3,30	8,41
4 G 10	12,7	17,2	560	86	77	1,91	4,87

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 0,7m depth with soil thermal resistivity of 2,5 K·m/W and 20°C of ground temperature.

³ At maximum service temperature and $\cos\phi=1$.

In all cases it is 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	0,8	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.