



## 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 mm<sup>2</sup> onwards)

4 G Grey + Brown + Black + Green/Yellow (up to 4 mm<sup>2</sup>)

### 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<sub>ca</sub>-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<sub>ca</sub>-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

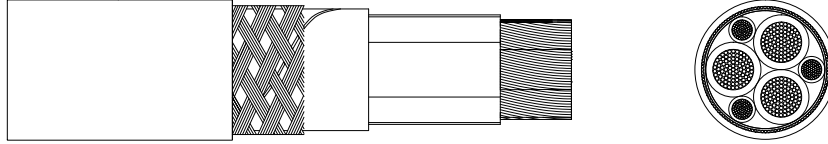
Open Air.

Buried.

In conduit.



## DIMENSIONS & ADMISSIBLE INTENSITIES



Cross-section (mm <sup>2</sup> )	Diameter under the braid (mm)	Outer diameter (mm)	Weight (Kg/km)	Open air (A) <sup>1</sup>	Buried (A) <sup>2</sup>	R20°C (Ω/km)	Voltage drop (V/A · km) <sup>3</sup>
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

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> At maximum service temperature and  $\cos\phi=1$ .

In all cases it is supposed a single-phase circuit.

## SHORT-CIRCUIT CURRENT-CARRYING CAPACITIES

<b>Time (s)</b>	0,1	0,2	0,3	0,5	1	1,5	2	2,5	3
<b>A/mm<sup>2</sup></b>	452	320	261	202	143	117	101	90	83

## CORRECTION FACTORS FOR AIR TEMPERATURE

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

## CORRECTION FACTORS FOR GROUND TEMPERATURE

<b>Ground T. (°C)</b>	10	15	20	25	30	35	40	45	50
<b>Factor</b>	1,07	1,04	1	0,96	0,93	0,89	0,85	0,8	0,76

## CORRECTION FACTORS FOR SOIL THERMAL RESISTIVITY

<b>Moisture degree of soil</b>	<b>Very damp</b>	<b>Slightly damp</b>	<b>Slightly dry</b>	<b>Dry</b>	<b>Very dry</b>
<b>Thermal Resist. (K·m/W)</b>	1	1,5	2	2,5	3
<b>Factor</b>	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.