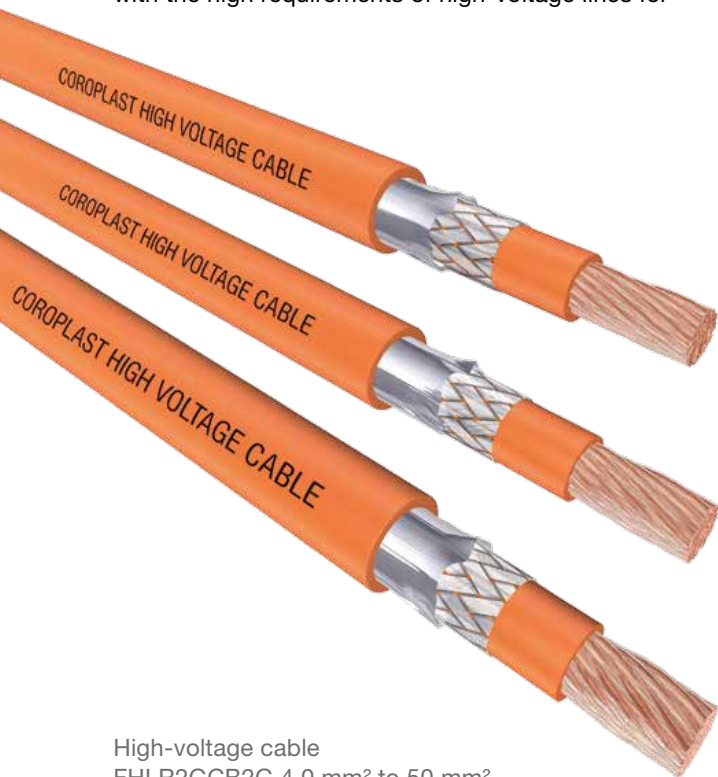


Silicone-insulated single-core high-voltage automotive cables, screened – copper

Application: Connection of HV batteries and electric motors

Single-core, screened automotive cables for high-voltage harnesses

After several years of research development work we succeeded in developing insulation materials that comply with the high requirements of high-voltage lines for



High-voltage cable
FHLR2GCB2G 4.0 mm² to 50 mm²

Optimised sizing of cable cross-sections

Coroplast HV cables are able to permanently withstand temperatures above 180 °C when energised. The higher-quality insulation material used by Coroplast enables wire cross-sections to be optimised.

The increased conductor temperature due to the permanent current load can be handled by using silicone materials. Coroplast is capable of calculating the conductor heating dependent on the operational ambient temperatures and the current loads for an optimised sizing of the

Cable construction in accordance with LV 216-2, ISO 6722 and ISO 14572

Construction of HV wiring systems for hybrid and electric vehicles

Operating temperature range in accordance with ISO 6722

–40 °C to +180 °C/3,000 h

–40 °C to +205 °C/240 h

road vehicles. Operating voltages of up to 600 Volt AC / 1,000 Volt DC are possible using the Coroplast silicone high-voltage lines.

Prototype cables for testing the future voltage class of 1,000 volts AC / 1,500 volts DC are available. The normative recognition of this voltage class is proactively supported by our company. The very good flexibility of Coroplast high-voltage cables is obtained through the simultaneously finely stranded and compact conductor constructions. Double screens with braided wires and metal foils are used because of the high EMC requirements. The current standards and specifications of the OEM (inter alia LV 216) are the basis for this design. Customer-specific details such as extruded longitudinal strips can also be incorporated. You can find a detailed overview of structural data of Coroplast high-voltage cables on the following page.

nominal conductor cross-sections. So-called derating-simulations are used to select the optimal cross-section, cutting costs, reducing weight and saving space.

Using the threshold value curves shown as examples on pages 45 to 48, the maximum permitted current load in the steady-state current supply condition can be identified depending on the ambient temperature. We can implement further derating simulations on short-time loads or defined current time profiles for you on request.

Please contact us.

High-voltage automotive cables 600 V AC / 1,000 V DC – single-core, screened

Conductor material: copper

Layout tables in accordance with LV 216-2

Silicone – high-voltage cables FHLR2GCB2G 1.5 mm² to 120 mm² (Standard cross-sections)

cross-section [mm ²]	Conductor				resistance at 20 °C [mΩ/m]	Core diameter [mm]	Screen wire diameter (max.) [mm]	Sheathing diameter [mm]	
	finely stranded		extra finely stranded						diameter
	(nom.) [mm]	(max.) [mm]	(nom.) [mm]	(max.) [mm]					(max.) [mm]
1.5	19 x 0.32		/		1.7	12.7	2.4 (- 0.2)	0.11	4.0 (- 0.5)
2.5	50 x 0.26		/		2.2	7.60	3.0 (- 0.3)		4.7 (- 0.5)
4.0	56 x 0.31		120 x 0.21		2.8	4.71	3.7 (- 0.3)	0.16	5.8 (- 0.5)
6.0	84 x 0.31		183 x 0.21		3.4	3.14	4.3 (- 0.3)		6.5 (- 0.5)
10	80 x 0.41		320 x 0.21		4.5	1.82	6.0 (- 0.6)		8.8 (- 0.6)
16	126 x 0.41		512 x 0.21		5.8	1.16	7.2 (- 0.6)		10.2 (- 0.6)
25	196 x 0.41		790 x 0.21		7.2	0.743	8.7 (- 0.6)	0.21	12.2 (- 0.6)
35	276 x 0.41		1,070 x 0.21		8.5	0.527	10.4 (- 0.7)		14.4 (- 0.6)
50	396 x 0.41		1,600 x 0.21		10.5	0.368	12.2 (- 0.7)		15.8 (- 0.6)
60	462 x 0.41		1,850 x 0.21		11.6	0.315	13.3 (- 1.2)		16.9 (- 0.6)
70	360 x 0.51		2,175 x 0.21		12.5	0.259	14.4 (- 1.4)		18.2 (- 0.8)
95	475 x 0.51		3,000 x 0.21		14.8	0.196	17.2 (- 1.4)	0.26	20.9 (- 0.8)
120	608 x 0.51		3,700 x 0.21		16.5	0.153	19.0 (- 1.4)		23.0 (- 0.8)

Silicone – high-voltage cables FHLR2GCB2G 2.0 mm² to 85 mm² (Intermediate cross-sections)

cross-section [mm ²]	Conductor				resistance at 20 °C [mΩ/m]	Core diameter [mm]	Screen wire diameter (max.) [mm]	Sheathing diameter [mm]	
	finely stranded		extra finely stranded						diameter
	(nom.) [mm]	(max.) [mm]	(nom.) [mm]	(max.) [mm]					(max.) [mm]
2.0	19 x 0.38		/		2.0	9.4	2.8 (- 0.3)	0.11	4.5 (- 0.5)
3.0	44 x 0.31		/		2.4	6.15	3.4 (- 0.3)		5.3 (- 0.5)
5.0	70 x 0.31		145 x 0.21		3.1	3.94	4.2 (- 0.3)	0.16	6.5 (- 0.5)
8.0	62 x 0.41		240 x 0.21		4.3	2.38	5.0 (- 0.3)		8.0 (- 0.5)
12	96 x 0.41		380 x 0.21		5.4	1.52	6.5 (- 0.6)		9.5 (- 0.6)
20	152 x 0.41		610 x 0.21		6.9	0.96	7.8 (- 0.6)		11.0 (- 0.6)
30	224 x 0.41		900 x 0.21		8.3	0.647	9.6 (- 0.7)	0.21	13.4 (- 0.6)
40	308 x 0.41		1,200 x 0.21		9.6	0.473	11.1 (- 0.7)		15.0 (- 0.6)
60	462 x 0.41		1,850 x 0.21		11.6	0.315	13.3 (- 1.2)		16.9 (- 0.6)
85	430 x 0.51		2,700 x 0.21		13.6	0.219	15.8 (- 1.4)		19.8 (- 0.8)