

Frequency Converter Cable with the Rated Voltage upto and including 1.8/3kV

◆ Standard

Frequency Converter Cable with the Rated Voltage of 1.8/3kV and below is manufactured according to Q/320412HLC013.

◆ Application

Frequency converter cable (main-power input cable and electric equipment cable) is applied to the power transfer system of the frequency converter with the rated voltage upto and including 1.8/3kV. For its excellent shield, it can efficiently prevent electrostatic coupling, electromagnetic, electric wave, and conductive interference of power wire.

◆ Product Characteristics

- (1) Symmetrical shielded cable has advantages of anti-electrostatic coupling, anti-electromagnetic induction, anti-poor contact and anti-conductive loss, etc.
- (2) Symmetrical shielded cable may decrease the electromagnetic radiation in drive system and current and loss of bearings to ensure cable and other relevant equipment operating safely.
- (3) There is a proportion between shield and phase conductivity lead to play a PE protection role.
- (4) The sum of current in its shield is zero and no electromagnetic interference is generated when higher harmonic current exists in the circuit.
- (5) Compared to the common cable, symmetrical shielded cable has special symmetrical shielded property so as to be useful for power quality and safety and reliable operation, and prolong the operating life.

◆ Technical Data

Table 1

Nominal Cross Sectional Area of Neutral Conductor of Multicore Cable

Nominal cross sectional area of main conductor mm ²	Nominal cross sectional area of neutral conductor mm ²		
	4	3+1	3+3
4	4	2.5	1 (0.75)
6	6	4	1.5 (1)
10	10	6	2.5 (1.5)
16	16	10	4 (2.5)
25	25	10	4
35	35	16	6
50	50	25	10
70	70	35	10
95	95	50	16
120	120	70	25
150	150	70	35 (25)

185	185	95	35
240	240	120	50 (35)
300	300	150	50

Note: if necessary, produce according to the clients requirements.

Table 2

Structural Dimensions and Electrical Property of 0.6/1kV Cable

Nominal cross sectional area mm ²	Reference outer Dia. of conduct mm	Nominal thickness of PVC Insulated mm	Nominal thickness of XLPE Insulated mm	20°C Conductor DC resistance Ω/km	Rated operating temperature min. Insulated resistance MΩ·km		Reference Ampacity of cable A	
					PVC Insulated	XLPE Insulated	In air 40°C	In soil 25°C
4	2.25	1.0	0.7	4.61	0.0102	0.771	34	45
6	2.76	1.0	0.7	3.08	0.0088	0.654	43	57
10	4.03	1.0	0.7	1.83	0.0065	0.475	60	77
16	5.1	1.0	0.7	1.15	0.0053	0.387	83	105
25	6	1.2	0.9	0.727	0.0054	0.418	105	125
35	7	1.2	0.9	0.524	0.0047	0.365	125	155
50	8.3	1.4	1.0	0.387	0.0047	0.344	160	185
70	9.9	1.4	1.1	0.268	0.0040	0.320	200	225
95	11.5	1.6	1.1	0.193	0.0039	0.279	245	270
120	12.9	1.6	1.2	0.153	0.0036	0.272	285	310
150	14.5	1.8	1.4	0.124	0.0036	0.281	325	345
185	16.1	2.0	1.6	0.0991	0.0036	0.289	375	390
240	18.4	2.2	1.7	0.0754	0.0034	0.270	440	450
300	20.6	2.4	1.8	0.0601	0.0034	0.257	505	515

Table 3

Structural Dimensions and Electrical Property of 1.8/3kV Cable

Nominal cross sectional area mm ²	Reference outer Dia. of conduct mm	Nominal thickness of PVC Insulated mm	Nominal thickness of XLPE Insulated mm	20°C Conductor DC resistance Ω/km	Rated operating temperature min. Insulated resistance MΩ·km		Reference Ampacity of cable A	
					PVC Insulated	XLPE Insulated	In air 40°C	In soil 25°C
10	4.03	2.2	2.0	1.83	0.0119	1.099	60	77
16	5.1	2.2	2.0	1.15	0.0100	0.923	83	105
25	6	2.2	2.0	0.727	0.0088	0.814	105	125
35	7	2.2	2.0	0.524	0.0078	0.720	125	155

50	8.3	2.2	2.0	0.387	0.0068	0.627	160	185
70	9.9	2.2	2.0	0.268	0.0059	0.541	200	225
95	11.5	2.2	2.0	0.193	0.0052	0.476	245	270
120	12.9	2.2	2.0	0.153	0.0047	0.430	285	310
150	14.5	2.2	2.0	0.124	0.0043	0.388	325	345
185	16.1	2.2	2.0	0.0991	0.0039	0.354	375	390
240	18.4	2.2	2.0	0.0754	0.0034	0.314	440	450
300	20.6	2.4	2.0	0.0601	0.0034	0.283	505	515

Table 4

Correction factor of ampacity at different ambient temperature (reference)

Operating temperature (°C)	Air temperature (°C)									Soil temperature (°C)					
	10	15	20	25	30	35	40	45	50	10	15	20	25	30	35
70	1.41	1.35	1.29	1.22	1.15	1.08	1.00	0.91	0.81	1.15	1.11	1.05	1.00	0.94	0.88
90	1.26	1.22	1.18	1.14	1.09	1.04	1.00	0.94	0.89	1.11	1.07	1.04	1.00	0.96	0.92

◆ **Type and Name**

Type	Name
BPVVP(R)	PVC insulated PVC sheathed copper wire braided frequency converter (flexible) cable
BPVVP ₂₂ (R)	PVC insulated PVC sheathed copper wire braided steel tape armored frequency converter (flexible) cable
BPVVP ₂ (R)	PVC insulated PVC sheathed copper tape screened frequency converter (flexible) cable
BPVVP ₂₋₂₂ (R)	PVC insulated PVC sheathed copper tape screened steel tape armored frequency converter (flexible) cable
BPVVP ₁₂ (R)	PVC insulated PVC sheathed copper wire and copper tape composite screened frequency converter (flexible) cable
BPVVP ₁₂₋₂₂ (R)	PVC insulated PVC sheathed copper wire and copper tape composite screened steel tape armored frequency converter (flexible) cable
BPYJVP(R)	XLPE insulated PVC sheathed copper wire braided frequency converter (flexible) cable
BPYJVP ₂₂ (R)	XLPE insulated PVC sheathed copper wire braided steel tape armored frequency converter (flexible) cable
BPYJVP ₂ (R)	XLPE insulated PVC sheathed copper tape screened frequency converter (flexible) cable
BPYJVP ₂₋₂₂ (R)	XLPE insulated PVC sheathed copper tape screened steel tape armored frequency converter (flexible) cable
BPYJVP ₁₂ (R)	XLPE insulated PVC sheathed copper wire and copper tape composite screened frequency converter (flexible) cable
BPYJVP ₁₂₋₂₂ (R)	XLPE insulated PVC sheathed copper wire and copper tape composite screened steel tape armored frequency converter (flexible) cable
BPGZ2P(R)	Silicone rubber insulated Silicone rubber sheathed copper wire braided frequency converter (flexible) cable

BPGZ2P ₂₂ (R)	Silicone rubber insulated Silicone rubber sheathed copper wire braided steel tape armored frequency converter (flexible) cable
BPGZ2P ₂ (R)	Silicone rubber insulated Silicone rubber sheathed copper tape screened frequency converter (flexible) cable
BPGZ2P ₂₋₂₂ (R)	Silicone rubber insulated Silicone rubber sheathed copper tape screened steel tape armored frequency converter (flexible) cable

Note: To be added before the type of the flame retardant grade “ZR”.

◆ Scope of Application

Type	Number of cores	Scope of application
BPVVP(R)、BPVVP ₂₂ (R)、 BPVVP ₂ (R)、BPVVP ₂₂ (R)、 BPVVP ₁₂ (R) BPVVP ₁₂ (R) BPYJVP(R)、BPYJVP ₂₂ (R)、 BPYJVP ₂ (R)、BPYJVP ₂₂ (R)、 BPYJVP ₁₂ (R)、BPYJVP ₁₂ (R)	3	Suitable for connector wire between power input and frequency converter, the type with 22 can be used directly in the occasion where the mechanical force exist when installation
	3+3	
	3+1	
BPGZ2P(R)、BPGZ2P ₂₂ (R)、 BPGZ2P ₂ (R)、BPGZ2P ₂₂ (R)、 BPGZ2P ₁₂ (R)、BPGZ2P ₁₂ (R)	4	Only suitable for the connector wire of power input of frequency converter, the type with 22 can be used directly in the occasion where the mechanical force exist when installation

◆ Operation Property

- (1) Permitting long-term operating temperature of conductor: 90℃ for XLPE Insulated, 70℃ for PVC Insulated, 200℃ for Silicone rubber.
- (2) Permitting short-circuit temperature: not exceed 250℃ for XLPE Insulated, not exceed 160℃ for PVC Insulated, and the duration shall not exceed 5 seconds. Ambient temperature for installation: over 0℃, pre-heating if the temperature is below 0℃
- (3) The minimum bending radius for installation:
For flexible conductor cable, no less than 8 times of outer diameter;
For hard conductor cable, no less than 15 times of outer diameter.