Jeddah cables COMPANY

A Company of Energya Cables Saudi Arabia

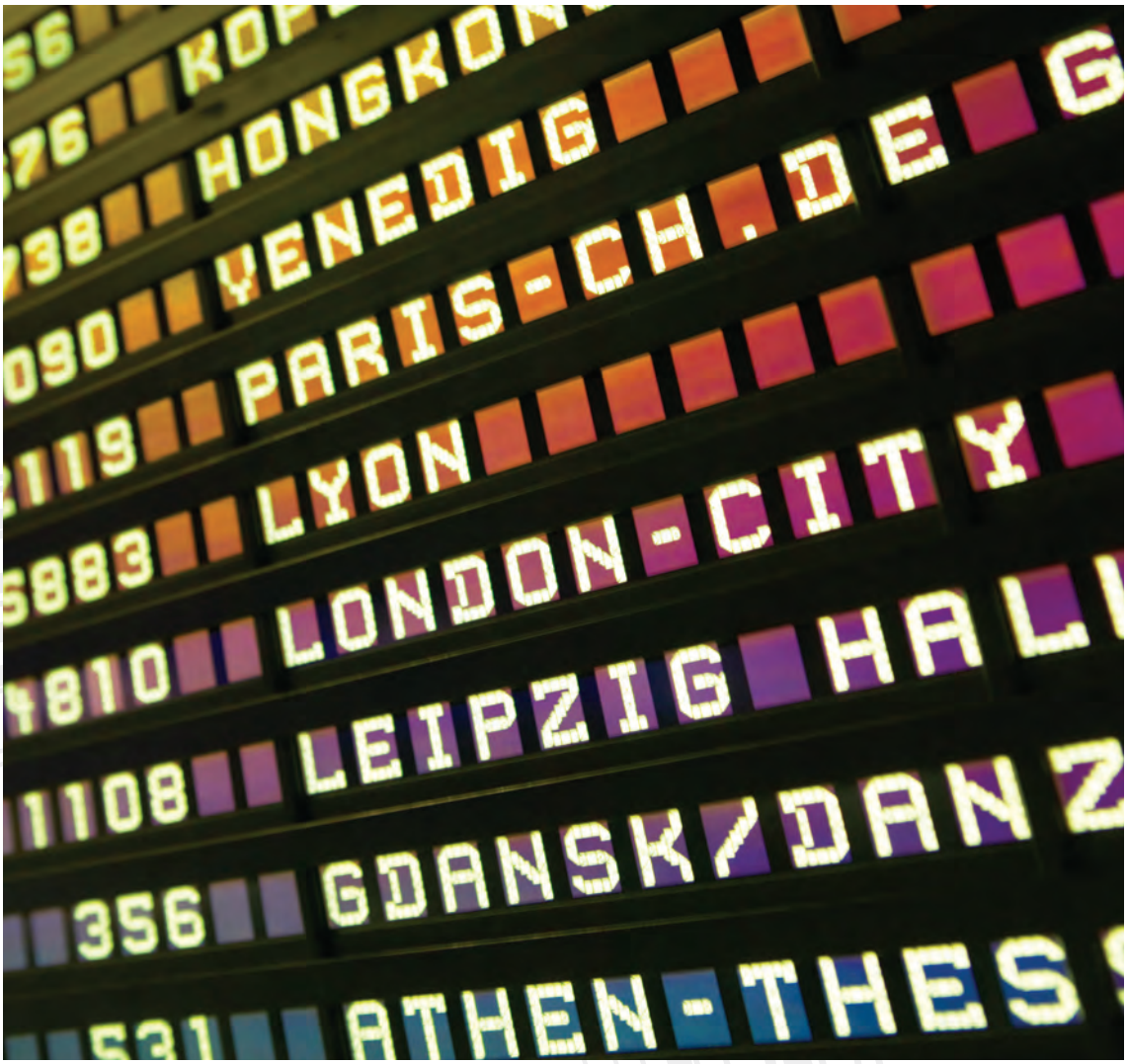
CONTROL CABLES

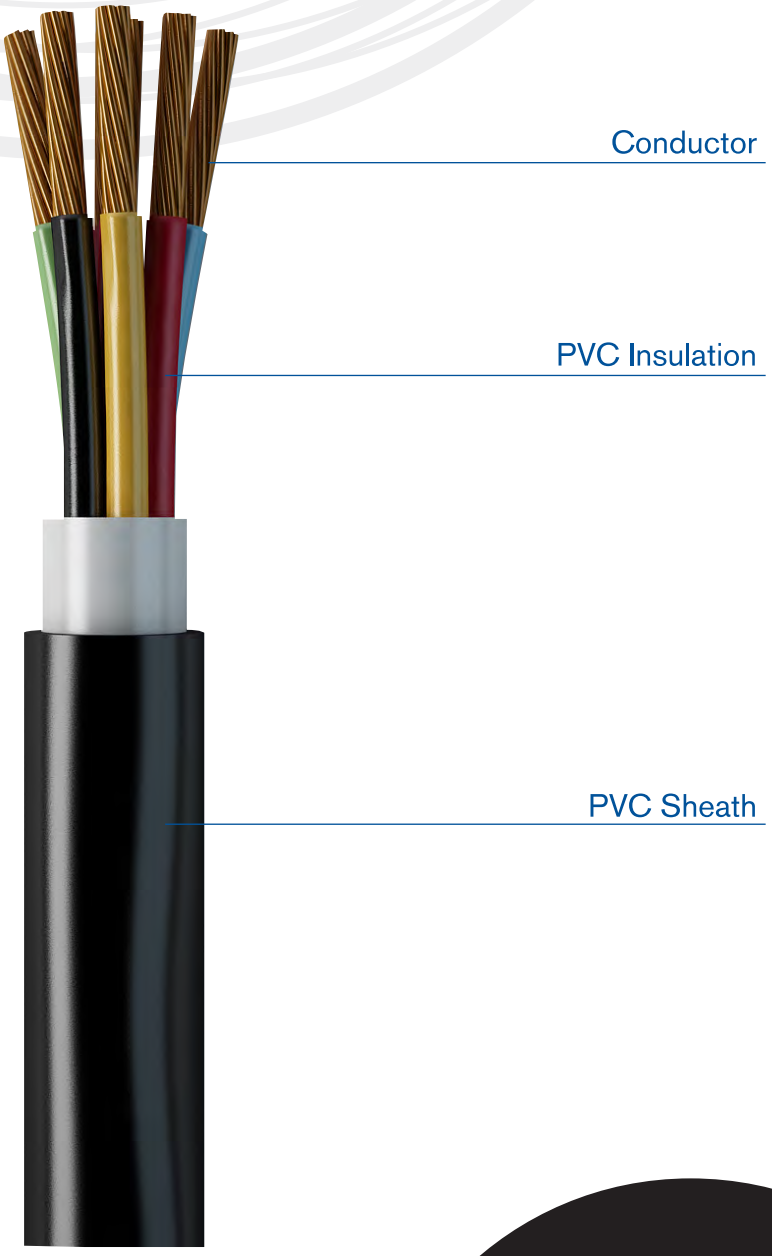
Introduction

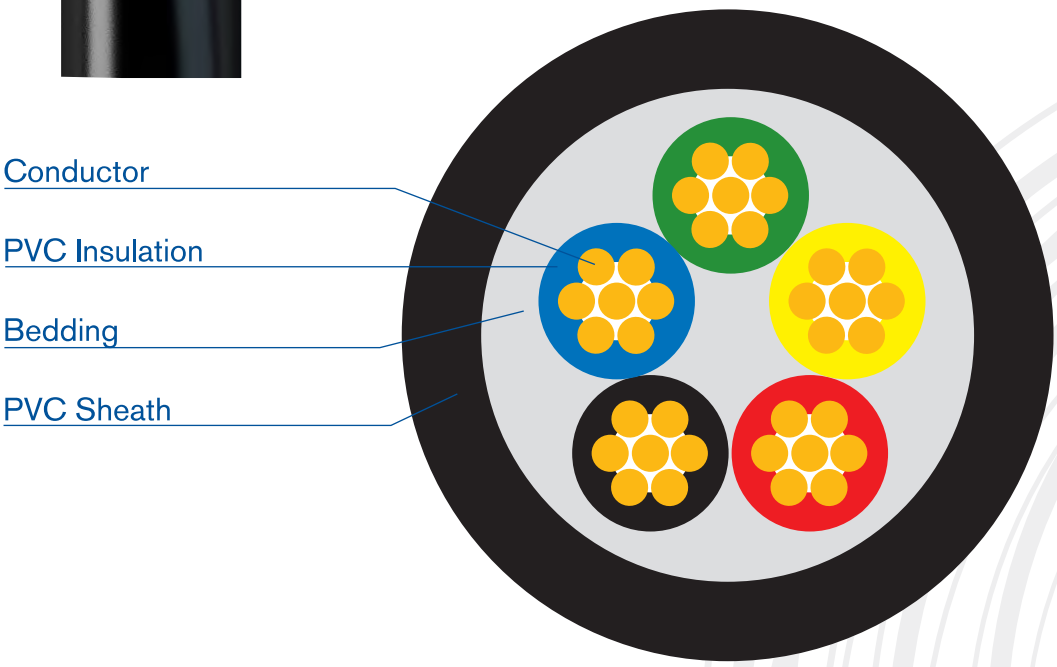
Control Cables are used for outdoor/indoor installations for transmitting signals and connecting control units in the industry, railways, and traffic signals. Control cables are usually made of multiple cores such as 7, 10, 12, 14, and 16 cores; and control cables may be armored or unarmored.

In this catalogue, we cover all technical aspects of Jeddah Cable Company Control Cables. We included design considerations such as number of cores, type of insulation material, insulation thickness, sheath material, and sheath thicknesses. Cables Electrical Parameters such as conductor DC resistance and current ratings are included as well.

Jeddah Cable Company Control Cables are manufactured based on international standards such as IEC 60502-1. We are also capable of manufacturing according to client requirements and needs.




Conductor
PVC Insulation
PVC Sheath


Conductor
PVC Insulation
Bedding
PVC Sheath

General Information

Standards

The cables described in this catalogue are all standard types, and their performances has been proved in operation. Construction and tests are in accordance with the recommendation of IEC publications where applicable.

Control cables in accordance to other standards (e.g. BS, VDE, NEMA) can be manufactured upon customer's request.

Variation in Production and Delivery Options

The provided data is approximate and subject to manufacturing tolerance
Delivery length tolerance is ± 5%

Jacket Marking

Standard embossed outer jacket marking consisting of:
1 - Name of manufacturer
2 - Type designation, size of conductor, rated voltage and standard.
3 - Continuous length marking every meter.
4 - Year of manufacture.

Laying Information

Minimum Bending Radius During Installation

During laying, the bending radius should not be smaller than values given below.
The radius depends on the outer diameter (D_0) of the cable.

PVC and XLPE insulated Cables

Conductor	Construction	Outer diameter (mm)	Min. Radius
Stranded Copper	Armoured or Unarmoured	Any	8 D_o

Electrical Parameters Of The Cables
DC Resistance of Conductor

The maximum DC resistance values of conductors at 20°C are as per "IEC 60228" standard.
DC resistances per unit length of the conductor at other conductor temperature is given by:

$$R = R_0 [1+ \alpha_{20°C} (t - 20°C)]$$

Where:
R = DC resistance at temperature t °C Ω/KM
R_0 = DC resistance at temperature 20°C Ω/KM (given in the relative tables for each type of cable)
t = Conductor temperature °C
$\alpha_{20°C}$ = Temperature coefficient at 20°C 1/°C
For copper conductor $\alpha_{20°C}$= 0.00393

Multicore cable

For outdoor and indooor installations in damp and wet locations

Type : CU / PVC / PVC
Standartd : IEC 60502-1
Rated Voltage : 0.6 / 1 KV
Conductor : Soft annealed stranded copper wires(or soild copper)
Insulation : PVC compound rated 70°C or 85°C (XLPE or LSHF)
Jacketing : PVC compound (or LSHF)

TECHNICAL INFORMATION

Nominal Cross Section	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx. overall Diameter	Approx. Cable Weight	Max DC Resistance at 20°C	CURRENT RATING		
						Laid Direct in ground	Laid in Ducts	Laid in Free Air
n x mm^2	mm	mm	mm	kg/km	ohm/km	A	A	A
5*1.5	0.8	1.8	12.9	235	12.10	25	22	19
7*1.5	0.8	1.8	13.1	280	12.10	22	20	17
10*1.5	0.8	1.8	16.3	365	12.10	19	18	16
12*1.5	0.8	1.8	16.7	435	12.10	18	16	15
14*1.5	0.8	1.8	18.3	450	12.10	16	15	13
16*1.5	0.8	1.8	19.3	530	12.10	15	14	13
19*1.5	0.8	1.8	19.4	610	12.10	14	13	11
24*1.5	0.8	1.8	22.6	725	12.10	12	11	11
30*1.5	0.8	1.8	23.9	865	12.10	11	11	9
37*1.5	0.8	1.8	25.7	1045	12.10	10	9	8
5*2.5	0.8	1.8	14.1	300	7.41	33	29	25
7*2.5	0.8	1.8	15.2	360	7.41	30	26	22
10*2.5	0.8	1.8	18.3	480	7.41	27	23	20
12*2.5	0.8	1.8	19.4	535	7.41	25	22	19
14*2.5	0.8	1.8	19.6	640	7.41	22	20	17
16*2.5	0.8	1.8	20.5	705	7.41	20	18	15
19*2.5	0.8	1.8	22.5	835	7.41	19	17	15
24*2.5	0.8	1.8	25.1	985	7.41	18	16	13
30*2.5	0.8	1.8	26.8	1220	7.41	16	14	12
37*2.5	0.8	1.9	29.9	1520	7.41	14	13	11
5*4	1.0	1.8	17.9	525	4.61	42	36	34
7*4	1.0	1.8	19.3	645	4.61	38	33	30
10*4	1.0	1.8	22.6	720	4.61	34	30	27
12*4	1.0	1.8	24.5	470	4.61	31	27	25
14*4	1.0	1.8	25	950	4.61	28	24	22
16*4	1.0	1.8	25.85	1140	4.61	27	23	21
19*4	1.0	1.8	28.4	1510	4.61	25	21	20
24*4	1.0	1.9	31.3	1580	4.61	22	19	17
30*4	1.0	2.0	34.2	1965	4.61	20	17	15
37*4	1.0	2.1	37.1	2510	4.61	18	16	14

Multicore cable

For outdoor installations in damp and wet locations

Type : CU / PVC / STA / PVC
Standartd : IEC 60502-1
Rated Voltage: 0.6 / 1 KV
Conductor : Soft annealed stranded copper wires(or solid copper)
Insulation : PVC compound rated 70°C or 85°C (XLPE or LSHF)
Bedding : PVC compound (or LSHF)
Armouring : Steel Tape
Jacketing : PVC compound (or LSHF)

TECHNICAL INFORMATION

Nominal Cross Section	Nominal Insulation Thickness	Nominal S.Tape Thickness	Nominal Sheath Thickness	Approx. overall Diameter	Approx. Cable Weight	Max DC Resistance at 20°C	CURRENT RATING		
							Laid Direct in ground	Laid in Ducts	Laid in Free Air
n x mm^2	mm	mm	mm	mm	kg/km	ohm/km	A	A	A
7*15	0.8	0.2	1.8	15.9	445	12.10	22	20	17
10*1.5	0.8	0.2	1.8	19.1	555	12.10	19	18	16
12*1.5	0.8	0.2	1.8	19.9	625	12.10	18	16	15
14*1.5	0.8	0.2	1.8	20.3	670	12.10	16	15	14
16*1.5	0.8	0.2	1.8	21.17	765	12.10	15	14	13
19*1.5	0.8	0.2	1.8	22.2	820	12.10	14	13	12
24*1.5	0.8	0.2	1.8	25.8	1020	12.10	12	12	11
30*1.5	0.8	0.2	1.8	27.1	1185	12.10	11	11	9
37*1.5	0.8	0.2	1.8	28.5	1330	12.10	10	9	8
5*2.5	0.8	0.2	1.8	16.1	460	7.41	33	29	25
7*2.5	0.8	0.2	1.8	17.2	535	7.41	30	26	22
10*2.5	0.8	0.2	1.8	19.9	820	7.41	27	23	20
12*2.5	0.8	0.2	1.8	21.4	858	7.41	25	22	19
14*2.5	0.8	0.2	1.8	22.3	880	7.41	22	20	17
16*2.5	0.8	0.2	1.8	24.5	1115	7.41	20	18	16
19*2.5	0.8	0.2	1.8	26.1	1170	7.41	19	17	15
24*2.5	0.8	0.2	1.8	28.1	1350	7.41	18	16	13
30*2.5	0.8	0.2	1.9	31.9	1915	7.41	16	14	12
37*2.5	0.8	0.2	1.9	31.9	1960	7.41	14	13	11
5*4	1.0	0.2	1.8	18.7	630	4.61	42	36	34
7*4	1.0	0.2	1.8	20.1	740	4.61	38	33	30
10*4	1.0	0.2	1.8	24.6	960	4.61	34	30	27
12*4	1.0	0.2	1.8	25.3	1120	4.61	31	27	25
14*4	1.0	0.2	1.8	26.5	1270	4.61	28	24	22
16*4	1.0	0.2	1.8	27.8	1390	4.61	27	23	21
19*4	1.0	0.2	1.8	29.2	1610	4.61	25	21	20
24*4	1.0	0.2	2.0	34.5	2030	4.61	22	19	17
30*4	1.0	0.2	2.0	36.4	2660	4.61	20	17	15
37*4	1.0	0.5	2.2	40.7	3250	4.61	18	16	14

Multicore cable

For outdoor installations in damp and wet locations

Type : CU / PVC / SWA / PVC
Standartd : IEC 60502-1
Rated Voltage: 0.6 / 1 KV
Conductor : Soft annealed stranded copper wires (or solid copper)
Insulation : PVC compound rated 70°C or 85°C (XLPE or LSHF)
Bedding : PVC compound (or LSHF)
Armouring : Steel Wires
Jacketing : PVC compound (or LSHF)

TECHNICAL INFORMATION

Nominal Cross Section	Nominal Insulation Thickness	Nominal S.Wire Diameter	Nominal Sheath Thickness	Approx overall Diameter	Approx Cable Weight	Max DC Resistance at 20°C	CURRENT RATING		
							Laid Direct in ground	Laid in Ducts	Laid in Free Air
nXmm²	mm	mm	mm	mm	kg/km	ohm/km	A	A	A
7*15	0.8	0.9	1.8	16.9	590	12.10	22	20	17
10*1.5	0.8	0.9	1.8	20.0	760	12.10	19	18	16
12*1.5	0.8	0.9	1.8	20.5	845	12.10	18	16	15
14*1.5	0.8	1.6	1.8	24.6	1140	12.10	16	15	14
16*1.5	0.8	1.6	1.8	25.8	1205	12.10	15	14	13
19*1.5	0.8	1.6	1.8	27.8	1365	12.10	14	13	12
24*1.5	0.8	1.6	1.8	29.1	1555	12.10	12	12	11
30*1.5	0.8	1.6	1.8	31.1	1735	12.10	11	11	9
37*1.5	0.8	1.6	1.9	17.1	2145	12.10	10	9	8
5*2.5	0.8	0.9	1.8	18.2	615	7.41	33	29	25
7*2.5	0.8	0.9	1.8	21.7	705	7.41	30	26	22
10*2.5	0.8	0.9	1.8	22.4	875	7.41	27	23	20
12*2.5	0.8	0.9	1.8	24.6	970	7.41	25	22	19
14*2.5	0.8	1.6	1.8	25.8	1430	7.41	22	20	17
16*2.5	0.8	1.6	1.8	26.9	1510	7.41	20	18	16
19*2.5	0.8	1.6	1.8	31.2	1615	7.41	19	17	15
24*2.5	0.8	1.6	1.9	32.1	2190	7.41	18	16	13
30*2.5	0.8	1.6	1.9	34.5	2450	7.41	16	14	12
37*2.5	0.8	1.6	2.0	19.7	2555	7.41	14	13	11
5*4	1.0	0.9	1.8	21.1	820	4.61	42	36	34
7*4	1.0	0.9	1.8	26.9	955	4.61	38	33	30
10*4	1.0	1.6	1.8	27.7	1490	4.61	34	30	27
12*4	1.0	1.6	1.8	28.8	1805	4.61	31	27	25
14*4	1.0	1.6	1.8	30.2	1805	4.61	28	24	22
16*4	1.0	1.6	1.8	31.8	2040	4.61	27	23	21
19*4	1.0	1.6	1.9	37.9	2260	4.61	25	21	20
24*4	1.0	2.0	2.1	37.7	2985	4.61	22	19	17
30*4	1.0	2.0	2.1	39.8	3560	4.61	20	17	15
37*4	1.0	2.0	2.2	42.4	3920	4.61	18	16	14

Conversion Table

Multiply	by	to obtain
WEIGHT - Imperial		
Ounces	28.3495	grams
Pounds (Av)	453.59	grams
Pounds (Av)	0.45359	kilograms
Tons (short)	907.19	kilograms
Tons (long)	1016.05	kilograms
WEIGHT - Metric		
Grams	0.03527	ounces
Grams	0.002205	pounds
Kilograms	35.274	ounces
Kilograms	2.2046	pounds
Kilograms	0.001102	tons (short)
Kilograms	0.0009842	tons (long)
MISCELLANEOUS - Imperial		
Pounds per 1000 feet	1.48816	kilograms per kilometer
Pounds per mile	0.28185	kilograms per kilometer
Pounds per square inch	0.0007031	kilograms per square millimeter
Pounds per square inch	0.07031	kilograms per square centimeter
Feet per second	18.288	meters per minute
Feet per second	1.09728	kilometers per hour
Mils per hour	1.60935	kilometers per hour
Ohms per 1000 feet	3.28083	ohms per kilometer
Ohms per mile	0.62137	ohms per kilometer
Decibels per 1000 feet	3.28083	decibels per kilometer
Decibels per mile	0.62137	decibels per kilometer
Decibles	0.1153	nepers
MISCELLANEOUS - Metric		
Kilograms per kilometer	0.67197	pounds per 1000 feet
Kilograms per kilometer	3.54795	pounds per mile
Kilograms per square millimeter	1422.34	pounds per square inch
Kilograms per square centimeter	14.2234	pounds per square inch
Grams per cubic cm	0.03613	pounds per cubic inch
Meters per minute	0.05468	feet per second
Kilometer per hour	0.91134	feet per second
Kilometer per hour	0.62137	miles per hour
Ohms per kilometer	0.3048	ohms per 1000 feet
Ohms per kilometer	1.6093	ohms per mile
Decibels per kilometer	0.3048	decibels per 1000 feet
Decibels per kilometer	1.6093	decibles per mile
TEMPERATURE		
°Fahrenheit	5/9 (°F)-32	°Celsius
°Celsius	9/5 (°C) + 32	°Fahrenheit

Multiply	by	to obtain
LENGTH - Imperial		
Mils	0.001	inches
Mils	0.0254	millimeters
Inches	1000	mils
Inches	25.40	millimeters
Inches	2.54	centimeters
Feet	30.48	centimeters
Feet	0.3048	meters
Feet (thousands of)	0.3048	kilometers
Yards	0.9144	meters
Mils	1.6093	kilometers
LENGTH - Imperial		
Millimeters	39.37	mils
Millimeters	0.03937	inches
Centimeters	0.3937	inches
Centimeters	0.032808	feet
Meters	39.37	inches
Meters	3.2808	feet
Meters	1.0936	yards
Kilometers	3280.83	feet
Kilometers	0.62137	mils
AREA - Imperial		
Square mils	1.2732	circular mills
Square mils	0.000001	square inches
Circular mils	0.7854	square mils
Circular mils	0.0000007854	square inches
Circular mils	0.00050657	square millimeters
Square inches	1000000	square mils
Square inches	1273240	circular mils
Square inches	645.16	square millimeters
Square inches	6.4516	square centimeters
Square inches	0.09290	square meters
Square inches	0.8361	square meters
AREA - Metric		
Square millimeters	1973.52	circular mills
Square millimeters	0.00155	square inches
Square centimeters	0.155	square inches
Square meters	10.7638	square feet
Square meters	1.19599	square yards
VOLUME - Imperial		
Cubic inches	16.38716	cubic centimeters
Cubic feet	0.028317	cubic meters
VOLUME - U.S.		
Quarts (liquid)	0.9463	cubic centimeters
Gallaons	3.7854	cubic meters
VOLUME - Metric		
Cubic centimeters	0.06102	cubic inches
Cubic meters	35.3145	cubic feet
Litres	1.05668	quarts (Liquid U.S.)
Litres	0.26417	gallons

Selection form: Control Cables

This form needs to be filled in order to help Jeddah Cables Company prepare the night quitation

Standard & Specification

- ☐ IEC
- ☐ BS
- ☐ Others _____

Cu Conductor

- Size (mm^2) _____
- Number of Cores _____

Insulation Type

- ☐ PVC
- ☐ XLPE
- ☐ Low Smoke Halogen Free (LSHF)

Armoring Type (if Any)

- ☐ Steel Wire Armor (SWA)
- ☐ Double Steel Tape Armor (STA)

Jacket Type

- ☐ PVC
- ☐ Low Smoke Halogen Free (LSHF)

Special Requirements _____

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