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Solutions for Automation



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Energy Systems Solutions for the Industry

With an increasing demand for the final product, industrial processes have to be accurate, fast, and capable of checking quality to provide the desired result. Therefore, automatization can be found in every industrial environment, especially in those where repetitive, high volume, and consistent processes are occurring. To accomplish these tasks, energy and information are needed.

Our industry solution offers a competitive range of cables for energy and data transmission for the automation industry. We also offer many different accessories to help our clients attain their desired productivity goals.



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1 Communication Cable (Serie EMC)

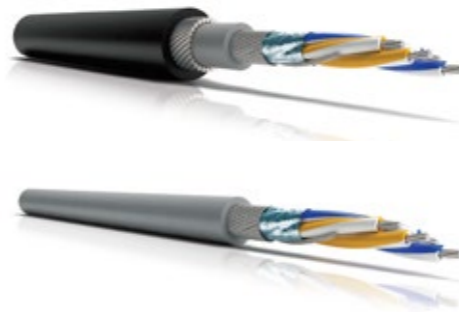
Electronic Multiconductor Cables are specially designed for use in recording studios and sound stages, broadcast and sound systems, voice communication, industrial equipment control, wiring of alarm & access control panels.



- Size 22AWG up to 16AWG
- Conductor 2 up to 4
- Voltage 300V & 600V
- Aluminum polyester foil shield
- Armored SWA, AIA, MC
- UL 1685 Article 725 PLTC-CL2 / Article 800 CM

2 Can Bus / RS-485 Cable (Serie ELC)

Designed specially to transmit information in high speed with low capacitance parameters. This cable is the perfect one to connect electronic devices and protect their sensitive signals. It is ideal to connect electronic devices and meets UL 1685, IEC, NOM, NMX, NTC, NEC and VDE standards. Optionally, we can manufacture it with CWC-MC or SWA armors to make it suitable to be directly buried and suitable for hazardous locations. Available for outdoor and indoor installations.



- Size 24AWG & 22AWG
- Conductor 1 pair up to 8 pairs
- Voltage 300V (CM)
- Aluminum polyester foil shield and tinned copper braid
- Armored SWA, AIA, MC
- UL 1685 Article 725 PLTC-CL2 / Article 800 CM



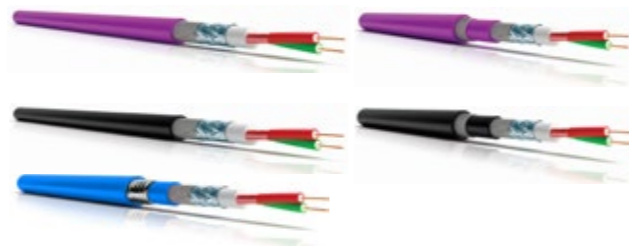
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3 Profibus Cables (Series EPD & EPA)

Suitable for use in DP and PA Profibus communication protocol in computers, industrial equipment, data transmission applications.



- Size 22AWG & 18AWG
- Solid or Stranded conductors
- Conductor 1 pair (Red & Green)
- Aluminum polyester foil shield and tinned copper braid
- Armored SWA, AIA, MC
- Purple, Blue, and Black jacket
- Voltage 300V
- UL 1685 Article 725 PLTC / 727 ITC

4 Data Highway Plus – Twinax Cables – (Series EDH, EDT, EDA & EDK)

Suitable for use in high speed communication systems between PLC processors and industrial interface gadgets, I/O devices, computers, and other industrial equipment which requires a high performance and reliable communication. Available in 78Ohm, 100Ohm, 124Ohm, and 150Ohm.



- Size 20AWG, 22AWG & 25AWG
- Stranded conductors, tinned or bared copper
- Conductor 1 pair
- Aluminum polyester foil shield, or Aluminum polyester foil shield and tinned copper braid
- Armored SWA, AIA, MC
- Voltage 300V, 30V, 60V
- UL, IEC



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5 Foundation Fielbus Cable – (Series EFF & EFB)

Fieldbus cables are used in measurement and control systems for connecting the field devices with the centre. The cables are usually used in the field. The demands made on fieldbuses in measuring and monitoring systems are defined in the standard IEC 61588-2. They can be manufactured in type A and B.



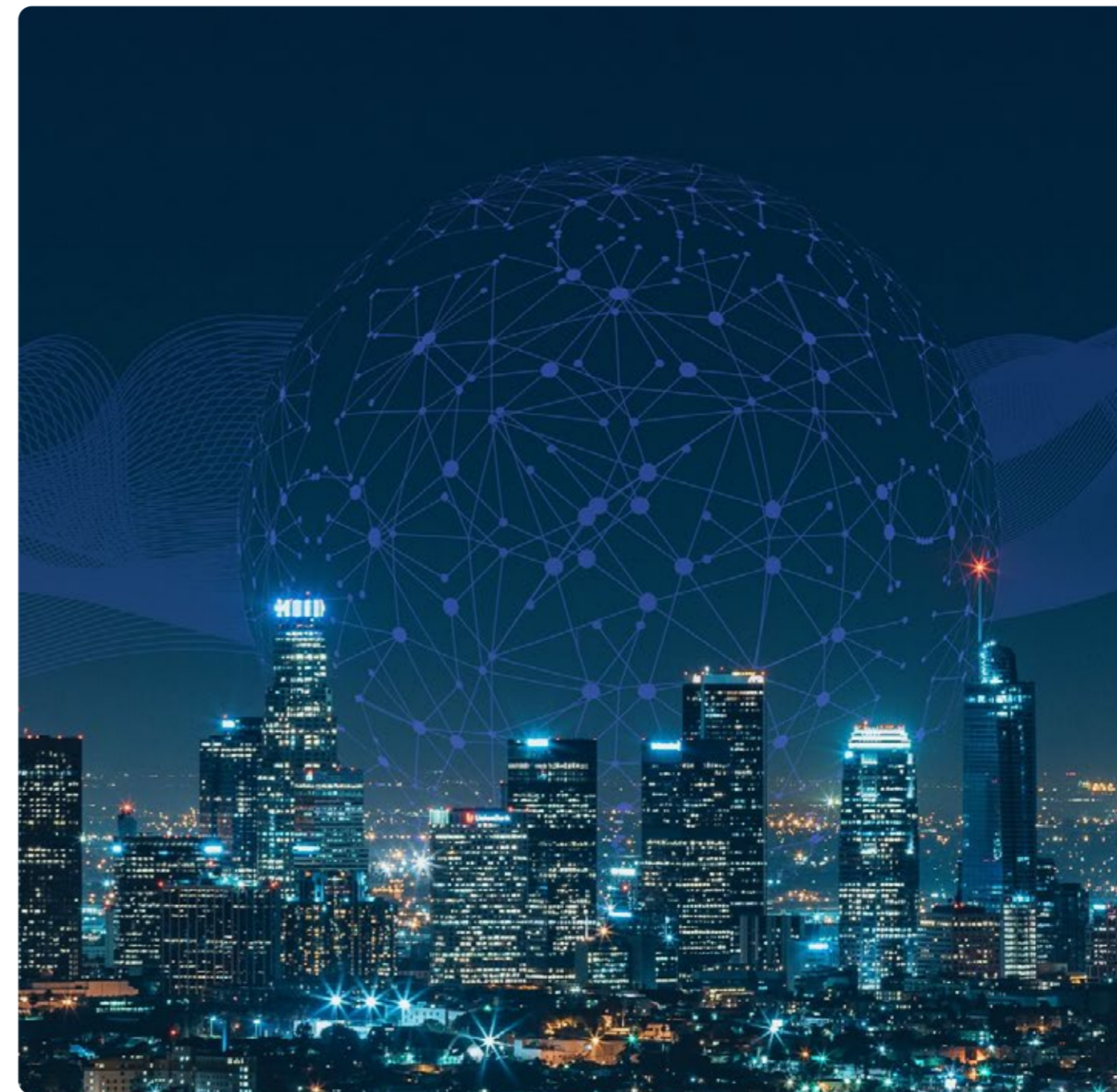
- Size 16AWG, 18AWG & 22AWG
- Stranded conductors, tinned or bare copper
- Conductor 1 pair up to 8 pairs
- Aluminum polyester foil shield, or Aluminum polyester foil shield and tinned copper braid
- Armored SWA, AIA, MC
- Voltage 300V, 30V, 60V
- UL 1685 Article 725 PLTC / 727 ITC / 800 Communications, IEC

6 DeviceNet, ControlNet, CC-Link communication (Series EDN, ECN, ECC)

Communication electronic cables have been designed to comply with the industrial requirements to configure a reliable network with different communication protocols such as DeviceNet, ControlNet and CC-Link. It is suitable to avoid noises and EMI under industrial environment.



- Size 20AWG, 18AWG & 15AWG
- Stranded conductors, tinned or bare copper
- Conductor 1 pair + 1 pair, Coaxial
- Aluminum polyester foil shield, or Aluminum polyester foil shield and tinned copper braid, Quadshield
- Armored SWA, AIA, MC
- Voltage 300V, 30V, 60V
- UL 1685 Article 725 PLTC / 727 ITC / 800 Communications, IEC



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6 Ethernet and LAN Cables (Serie T-U)

FTP, S-FTP, and UTP cables are mostly used for LAN networks. They can be used for voice, low-speed data, high-speed data, audio and paging systems, and building automation and control systems.

Can be manufactured in Cat 5, 5e, 6, and 6A. Also meet EIA and IEC and UL standards. Optionally, we can manufacture it with CWC-MC or Interlocked armors to make it suitable to be directly buried and suitable for hazardous locations. Available for outdoor and indoor installations.



Available sizes: 22,23,24 AWG
Available configurations: 4 pairs.

6 Continuous Flex drag chain cable

A range of highly flexible chain cables for constant moving applications. Suitable for the most modern of automated manufacturing systems, indoors and outdoors, and to meet the highest service life requirements.



7 Grounding system (Serie SC)

Copper grounding rods, grounding copper conductor and copper compression connectors along with exothermic welding offer the best option to electrically ground your system for safe operation.



Available sizes: 14 AWG up to 1000 MCM.
Available configurations: 1 conductor.



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Fire Alarm Cable (Series FPL, FPLR, FPLP) 8



The FPL, FPLP, FPLR cables are designed for use in connecting fire equipment, such as control panels, keypads, pull stations, sirens, strobes, smoke detectors, security systems, intercom systems and fire alarm systems.

Multiconductors FPL, FPLP, FPLR
Available sizes: 18 AWG up to 15 AWG.
Available configurations: 1 Pair.

Thermocouples Cables (Series TE, TG, TO, TK, TJ, TM, TS, TV, TT, TZ) 9

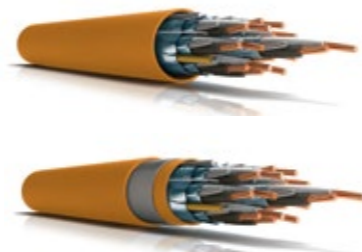


Thermocouples are used in applications that range from home appliances to industrial processes and even rockets, satellites and spacecrafts. When it comes to high temperatures, small size, fast response, high vibration or shock, most times thermocouples will provide accurate temperature measurements.

Available sizes: 24 AWG up to 12 AWG.
Available configurations: 1 up to 36 pairs.

10 Instrumentation (Series IP, IT, IX, IW.)

For use in instrumentation and process control applications where digital or discrete circuits will be required, UL listed as Type PLTC and ITC and approved for installation indoors or outdoors, aerially, in conduits, ducts and cable trays in circuits not exceeding 300 volts. May be used in NEC Class 1, Division 2 hazardous locations.



Available sizes: 20 AWG up to 12 AWG.
Available configurations: 1 up to 36 pairs.

11 Fiber Optic Cables (Serie T-K)

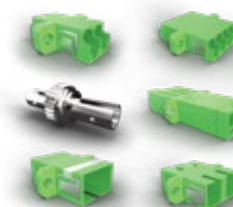
Optical Fiber Cables are used in industrial IT systems, especially when high data transmission speeds cannot be attained by conventional communication cables, they are IEC 60794 listed. Fiber optic cables can be used in environments where it is not possible to install electric cables due to explosion hazards or where strict EMC requirements are needed.



- **Single Mode:** OS1, OS2 – 8-9/125µm
 - **Multi Mode:** OM1, OM2, OM3, OM4, OM5 - 50/125 62.5/125µm
 - **Construction:** Indoor/Outdoor installation, Marine Application, ADSS, FIG-8
- Tight Buffer
 - Loose Tube
 - Direct Buried
 - Single Jacket/Non-Armor
 - Single Jacket/Single Armor
 - Double Jacket/Single Armor
 - Double Jacket/Double Armor

12 Optical Couplings/Adapters

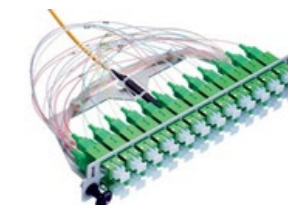
Implemented to allow optical light between connectors. Couplings Type LC, FC, SC, ST or E2000 Connectors (PC or APC).



- Bionic Connector.
- Standard Connector (SC)
- Ferrule Core Connector (FC)
- ST Connector (ST)
- SMA Connector
- Lucent Connector (LC)
- Plastic Fiber Optic Cable Connectors.
- Enterprise Systems Connection Connector (ESCON)
- E-2000

13 Fiber Optic Panels

For installation in ODF or Patch Panels. Capacity from 12 up to 96 optical ports; suitable to use with any EKABEL's adapter. Optional precharged.



14 Optical Patch Cords (Optical Jumpers)

Implemented in access networks and communication rooms for installation in cable trays. Singlemode or multimode fibers. Simplex or duplex patch cords. LC, FC, SC, ST or E2000 Connectors (PC or APC). Patch Cords can be produced from 1 meter up to 20 meters.



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15 Optical Patch Cords (Optical Pigtaills)

Installed in patch panels (ODF's) and termination / distribution optical boxes. Singlemode or multimode fibers. Simplex or duplex pigtaills. LC, FC, SC, ST or E2000 Connectors (PC or APC). Pigtaills can be produced from 0.5 meter up to 3 meters.



16 Optical Distribution Boxes and Domes

Implemented to match Fiber Optic outside Networks with Inside Networks. Ideally, to be installed in basements in buildings (industrial, commercial and residential buildings), malls and office centers. Installed on walls, concrete boxes or cabinets. Capacity up to 288 fibers 61158, ASI, CAN, as well as being UL/CSA approved.



17 Optical Boxes

Applied for optical network termination on end user (access). Installation in walls or cabinet. Capacity up to 12 optical ports. Could be installed in offices, commercial or residential buildings.



18 Cable Glands

Designed to fix the cables to the connection boxes providing impermeability in the circuit protecting it from external agents that can deteriorate internal connections and equipment inside cabinets.



Types

- Round or flat cable
- Teck type
- Type mc, aia, sia

Certificates

- Certificado UL, cUL, cULcs
- Certificado CSA
- Clase I, Div. 1, Grupos C, D
- Clase II, Div. 1 & 2, Grupos E, F, G
- Clase III
- Clase I, Div. 1, Grupos B, C, D
- Clase II, Div. 1, Grupos F, G
- Clase I, Div. 1, Grupos A, B, C, D
- Clase II, Grupos E, F, G
- ATEX, IECEX, cULus, CEPEL, NANIO CCV, NEPSI, CCOE, Bureau Veritas, DNV, ABS, Lloyds
- NEMA 6P (1/2" a 1-1/4" tamaño 1)
- NEMA 4 (1-1/4" tamaño 2 a 4")

Materials

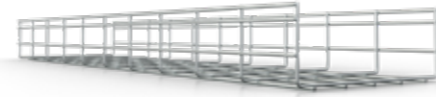
- Stainless steel, galvanized steel
- Aluminum, steel body, aluminum nut
- Nickel-plated brass, bronze
- Iron alloy
- Polyamide 6, thermoplastic polyester

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19 Cable Tray

EKABEL Cable trays are suitable for any environment and industry to provide mechanical protection and to support a large quantities of power, control, and instrumentation cables.



- **Materials:**
 - Galvanized steel
 - Aluminium
 - Stainless steel
 - Glass-fiber reinforced plastic
- **Types:**
 - Ladder
 - Solid or perforated bottom
 - Mesh
- **Standards:**
 - ANCE / UL / NEMA VE1/VE2 / IEC-61537

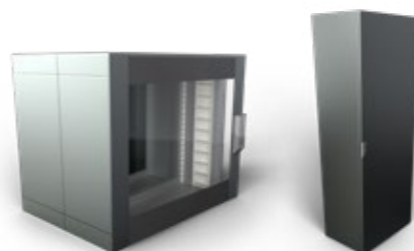
20 Cable Transit System

Cable transit system for cable management going through solid obstacles in potentially explosive zones, are designed for structures supporting mechanical loads by reducing mechanical stress and minimizing cracks. They are regulated by UL/NEMA or IEC 60079 where international certifications like ATEX apply.



21 VX SE free-standing enclosure system IP 66

The Rittal NEMA 12 3-Part EL wallmount enclosure is ideal for small networks or floor distribution in environments that require a high degree of security and a high industrial protection rating.



22 Explosion Proof Boxes

EKABEL Explosion proof boxes satisfy NEC and IEC standards. Our boxes are suitable to contain possible explosions originating within its enclosure, as well as preventing sparks from the inside to ignite vapors, gases, dust, or fibers in the air surrounding it; but also, it is suitable to withstand an external explosion, to preventing internal damages necessarily to shutdown and confine the affected area surrounding machinery and people.



Meet the temperature requirements of NEC.
The National Fire Protection Association (NFPA)
ATEX & IECEx by International Electrotechnical Commission (IEC)



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23 Cable Lugs and Splices

It is used as a stress relief for the connection of the electric cable. Thermocontractile terminals for medium voltage are designed to ensure the insulation and sealment of cables in a multiconductor with armour or covered cables and at the conductors terminals.



26 Power Distribution Unit (PDU)

Self-supported as a tower or rackable (depending on capacity or customer demands) with multiple outputs, electrically protected (if necessary), with the purpose of distributing electrical energy to critical loads within a room or rack.



24 UPS (Uninterruptible Power Supply)

E'kabel's portfolio contains double-conversion UPS from 1kVA to 1600kVA for general purposes, industrial or marine environment; suitable for rack mounting or self-supporting and capable of protecting your load against all types of electrical service disturbances. They are built under UL and IEC.



25 Generator sets

E'kabel's generator sets cover the three fuel technologies required in the market: diesel, gas, and gasoline; between 10 to 4000kVA, single-phase or three-phase connection and volta gerange as required by the customer.



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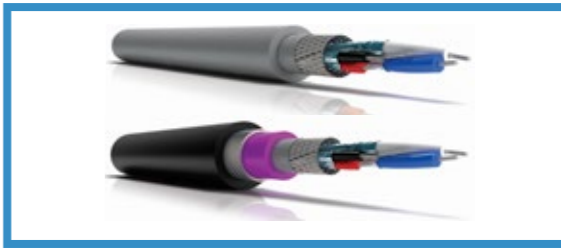

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System Name	Ekabel's Serie	Picture
Can Open/HART/ RS-485	ELC	1 Pair 24AWG TnCu PE Insulation / Foil + TnCu Braid Shield / PVC Jacket PLTC
		2 Pairs 24AWG TnCu PE Insulation / Foil + TnCu Braid Shield / PVC Jacket PLTC
		3 Pairs 24AWG TnCu PE Insulation / Foil + TnCu Braid Shield / PVC Jacket PLTC
		4 Pairs 24AWG TnCu PE Insulation / Foil + TnCu Braid Shield / PVC Jacket PLTC
		8 Pairs 24AWG TnCu PE Insulation / Foil + TnCu Braid Shield / PVC Jacket PLTC
		1 Pair 22AWG TnCu PE Insulation / Foil + TnCu Braid Shield / PVC Jacket PLTC
		1 Pair+1Con. 22AWG TnCu PE Insulation / Foil + TnCu Braid Shield / PVC Jacket PLTC
		2 Pairs 22AWG TnCu PE Insulation / Foil + TnCu Braid Shield / PVC Jacket PLTC
		3 Pairs 22AWG TnCu PE Insulation / Foil + TnCu Braid Shield / PVC Jacket PLTC
		4 Pairs 22AWG TnCu PE Insulation / Foil + TnCu Braid Shield / PVC Jacket PLTC
		1 Pair 22AWG TnCu PE Insulation / Foil + TnCu Braid Shield / PVC Jacket PLTC
		2 Pairs 22AWG TnCu PE Insulation / Foil + TnCu Braid Shield / PVC Jacket PLTC
		3 Pairs 22AWG TnCu PE Insulation / Foil + TnCu Braid Shield / PVC Jacket PLTC
		4 Pairs 22AWG TnCu PE Insulation / Foil + TnCu Braid Shield / PVC Jacket PLTC
DeviceNet	EDN	1-25 Pairs 24AWG TnCu PVC Insulation / Foil Shield / PVC Jacket CM
		1-15 Pairs 22AWG TnCu PVC Insulation / Foil Shield / PVC Jacket CM
		1-15 Pairs 20AWG TnCu PVC Insulation / Foil Shield / PVC Jacket CM
CC Link	ECC	3 Conductors 20AWG TnCu PE Insulation / Foil + TnCu Braid Shield / PVC Jacket PLTC & CM
		3 Conductors 20AWG TnCu PE Insulation / Foil + TnCu Braid Shield / PVC / SWA / PVC Jacket PLTC & CM





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System Name	Ekabel's Serie	Picture
ControlNet	ECN RG-6 (18AWG) CCS FOAM-PE Insualtion / Foil + TnCu Brd + Foil + TnCu Brd Shield / PVC Jacket 75 ohm RG-6 (18AWG) CCS FOAM-PE Insualtion / Foil + TnCu Brd + Foil + TnCu Brd Shield / PVC /SWA / PVC Jacket 75 ohm	
DataHighway (DH) & DataHighway Plus (DH+) Remote I/O	EDH 1 Pair 20AWG TnCu PE Insulation / Foil + TnCu Braid Shield / PVC Jacket 78 ohm EDT 1 Pair 20AWG TnCu PE Insulation / Foil + TnCu Braid Shield / PVC /SWA / PVC Jacket 78 ohm EDA 1 Pair 20AWG Cu+TnCu PE Insulation / Foil + TnCu Braid Shield / PVC Jacket 100 ohm EDK 1 Pair 25AWG TnCu FOAM PO Insulation / Foil Shield / PVC Jacket 124 ohm 1 Pair 22AWG TnCu FOAM PP Insulation / Foil Shield / PVC Jacket 150 ohm 1 Pair 22AWG TnCu FOAM PP Insulation / Foil Shield / PVC / SWA / PVC Jacket 150 ohm	
Device Net	EDB 1 Pair 15AWG + 1Pair 18AWG TnCu PP+PVC/NYL Insulation / Ind. Foil + OA TnCu Braid Shield / PVC Jacket PLTC 120 ohm EDN 1 Pair 15AWG + 1Pair 18AWG TnCu PP+PVC/NYL Insulation / Ind. Foil + OA TnCu Braid Shield / PVC / SWA / PVC Jacket PLTC 120 ohm	
Foundation Fieldbus (Type SP50 ISA/IEC)	EFF 1Pair 18AWG TnCu PE Insulation (Blue&Orange) / Foil Shield / PVC Jacket Orange PLTC FF Type A 1Pair 18AWG TnCu PE Insulation (Blue&Orange) / Foil Shield / PVC / SWA / PVC Jacket Orange PLTC FF Type A 2Pairs 18AWG TnCu PE Insulation (Blue&Orange) / Foil Shield / PVC Jacket Orange PLTC FF Type A 2Pairs 18AWG TnCu PE Insulation (Blue&Orange) / Foil Shield / PVC / SWA / PVC Jacket Orange PLTC FF Type A 4Pairs 18AWG TnCu PE Insulation (Blue&Orange) / Foil Shield / PVC Jacket Orange PLTC FF Type A	


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System Name	Ekabel's Serie	Picture
Foundation Fieldbus (Type SP50 ISA/IEC)	EFF	
	4Pairs 18AWG TnCu PE Insulation (Blue&Orange) / Foil Shield / PVC / SWA / PVC Jacket Orange PLTC FF Type A	
	8Pairs 18AWG TnCu PE Insulation (Blue&Orange) / Foil Shield / PVC Jacket Orange PLTC FF Type A	
	8Pairs 18AWG TnCu PE Insulation (Blue&Orange) / Foil Shield / PVC / SWA / PVC Jacket Orange PLTC FF Type A	
	1Pair 16AWG TnCu PE Insulation (Blue&Orange) / Foil Shield / PVC Jacket Orange PLTC FF Type A	
	1Pair 16AWG TnCu PE Insulation (Blue&Orange) / Foil Shield / PVC / SWA / PVC Jacket Orange PLTC FF Type A	
Modbus	EMP	
	3 Conductors 20AWG TnCu PE Insulation / Foil + TnCu Braid Shield / PVC / SWA / PVC Jacket PLTC & CM	
Profibus DP	EPD	
	1 Pair 22AWG Cu PE Insulation (Red&Green) / Foil + TnCu Braid Shield / PVC Jacket Purple CM	
Profibus PA	EPA	
	1 Pair 22AWG Cu PE Insulation (Red&Green) / Foil + TnCu Braid Shield / PVC / SWA / PVC Jacket Purple CM	
Profibus PA	EPA	
	1 Pair 18AWG Cu PE Insulation (Red&Green) / Foil + TnCu Braid Shield / PVC Jacket Black CM	
Profibus PA	EPA	
	1 Pair 18AWG Cu PE Insulation (Red&Green) / Foil + TnCu Braid Shield / PVC / SWA / PVC Jacket Black CM	

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System Name	Ekabel's Serie	Picture
Other Communications, Audio, & Instrument.	EMC 1 Pair 18AWG Cu PE Insulation (Red&Green) / Foil + TnCu Braid Shield / PVC Jacket Blue CM	
	1 Pair 18AWG Cu PE Insulation (Red&Green) / Foil + TnCu Braid Shield / PVC / AIA / PVC Jacket Blue CM	
	Multiconductor 24AWG TnCu PE, PP, PVC Insulation / Foil Shield / PVC Grey Jacket	
	Multiconductor 22AWG TnCu PE, PP, PVC Insulation / Foil Shield / PVC Grey Jacket	
	Multiconductor 20AWG TnCu PE, PP, PVC Insulation / Foil Shield / PVC Grey Jacket	
	Multiconductor 18AWG TnCu PE, PP, PVC Insulation / Foil Shield / PVC Grey Jacket	
	Multiconductor 16AWG TnCu PE, PP, PVC Insulation / Foil Shield / PVC Grey Jacket	
	Multiconductor 14AWG TnCu PE, PP, PVC Insulation / Foil Shield / PVC Grey Jacket Multiconductor 12AWG TnCu PE, PP, PVC Insulation / Foil Shield / PVC Grey Jacket	

Our Philosophy

360 Integration

When it comes to energy systems and connectivity networks, we've got you covered.

Our ability to integrate several products in a single proposal is the backbone of our service.

Borderless Logistics

Streamlined delivery is part of our signature service in order to meet client needs.

Brain HUB

Our team of top level engineers from around the world, with heavy expertise in the industries we serve, provides our clients expert advice on most challenging projects.

GLOBAL SERVICE TEAM
Experts devoted to help you.

TECHNOLOGY TRANSFERS
Specific training sessions in latest topics.

Flexibility

Our geographic expansion allows us to offer competitive advantages on both small and large projects.

Global reach with local support.

Quality Guarantee

Quality guarantee all our processes have ISO Certification 9001 granted by Bureau Veritas

ISO 9001

BUREAU VERITAS
Certification

CO20.00039/U



CONTACT INFORMATION

Venezuela

Telephone: +58 (212) 961-9512
ventas@ekabel.net

Colombia

Telephone: +57 1 432-2983
comercial.co@ekabel.net

United States

Telephone: +1 (832) 437-5798
sales@ekabel.net

Peru

Telephone: +51 (1) 399-3200
ventaspe@ekabel.net

Panama

Telephone: +507 310-0944
ventas.pa@ekabel.net

Spain

Telephone: +34 686-041-085
info.spain@ekabel.net

Chile

Telephone: +56 954 89 62 95
info@ekabel.net

Mexico

Telephone: +52 (55) 6650-1509
ventasmx@ekabel.net

Australia

Telephone: +61 39523-2277
sales.au@ekabel.net

Ecuador

Telephone: +59 396 901 1040
atc.ec@ekabel.net

