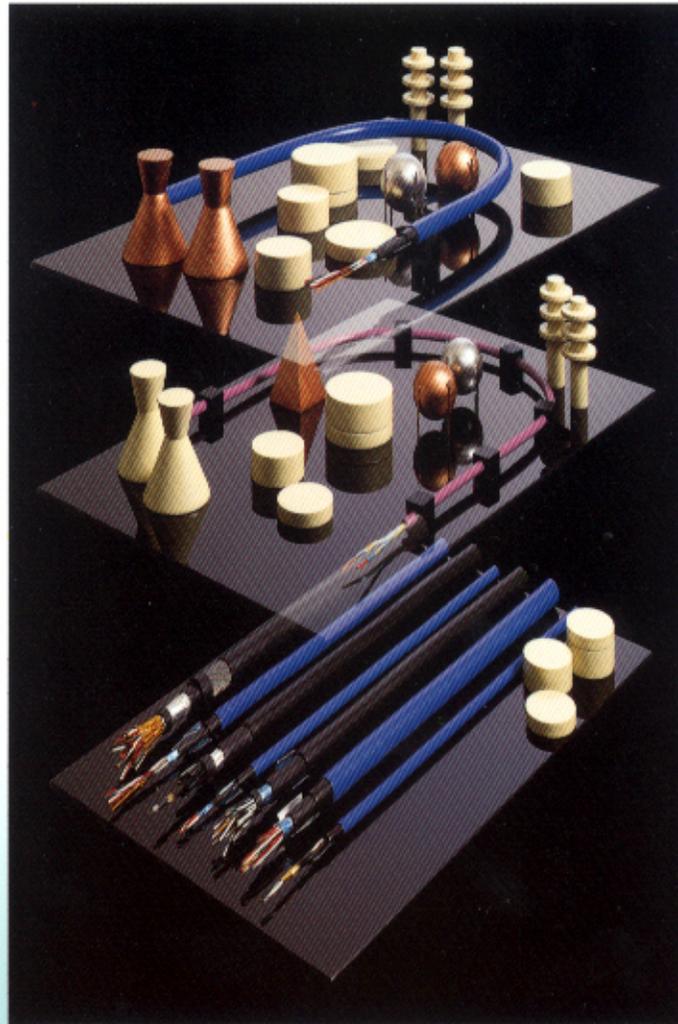


The CONTROL Solution

Instrumentation, Thermocouple Extension & Security Cables



t TELDOR
The Best Connection

www.teldor.com

Instrumentation and Control Cables

Conforming to NEC article 725 for Cable Tray Installation.

Instrumentation cables for transmission of analog and digital signals, designed for the process control industry, conforming to NEC article 725, Class 1 Division 2.

Cable Construction

Conductor:

Stranded Bare Copper per ASTM B-8 Class B (7 wires) - 20, 18, 16, 14, 12 and 10 AWG.

Insulation:

PVC (type 5 - BS 6746) 105 C rating.

Color Code of single wires: Black numbered.

Color code of pairs: White x Black (each pair numbered).

Color code of triads: White x Red x Black (each triad numbered).

Shielding:

Polyester-Aluminum tape providing 100% coverage with a TC stranded drain wire.

Options: Overall shield, individual shield and any combination of the above.

Outer Jacket:

Black, FR - UV resistant PVC (Type 9 - BS 6746).

Cable Marking: Per Request.

Additional blue PVC outer jacket available upon request for intrinsically safe systems.

Direct Burial Application and Harsh Environment Protection:

Served steel wire armor or corrugated steel armor + additional PVC jacket: for rodent protection

Bonded aluminum (200 micron) moisture barrier + additional FR/PE jacket: for gas and chemical resistance.

General Properties:

Voltage rating: 300 Volt rms, + 600 Volt rms.

Note: Cables with 600V rating, PVC insulated conductors, per ICEA S-82-552 ANSII/NEMA WC 5, WC 55, WC 57.

are available upon request.

Temperature rating: -30 C to +90 C

Min. Bend Radius: 10 x D (cable outside diameter)

Flame Test: IEEE 383 and IEC 60332-3c.

Electrical Properties of NEC 725 Control Cables

Conductor Resistance:

20 AWG : 35.9 Ω /Km max. @ 20 C

18 AWG : 22.0 Ω /Km max. @ 20 C

16 AWG : 13.9 Ω /Km max. @ 20 C

14 AWG : 9.5 Ω /Km max. @ 20 C

12 AWG : 6.4 Ω /Km max. @ 20 C

10 AWG : 3.6 Ω /Km max. @ 20 C

Test Voltage:

Core to core : 2000V ac min.

Core to shield: 1000V ac min.

Operating Voltage:

300V rms max.

Insulation Resistance:

PVC: 100 M Ω • Km min. @ 20 C

Thermocouple Extension Cables

Thermocouple extension cables for transmission of thermoelectric voltage from measuring junction, designed for the process control industry, conforming to ANSI MC 96.1 and to NEC article 725, Class 1 Division 2 for Cable Tray Installation.

Cable Construction

Thermocouples are paired and calibrated according to ANSI MC 96.1

Conductor:

Solid thermocouple alloy, types: EX, JX, KX, RX, TX
Cross sections: 20, 18 and 16 AWG.

Insulation:

PVC (type 5 - BS 6746) 105 C rating.
Color Code: As per ANSI MC 96.1. (BS 4937 - optional).

Shielding:

Polyester-Aluminum tape providing 100% coverage with a TC stranded drain wire.
Options: Overall shield, individual shield and any combination of the above.

Outer Jacket:

FR - UV resistant PVC (Type 9 - BS 6746)
Color: As per ANSI MC 96.1.
Cable Marking: Per Request.
Additional blue PVC outer jacket available upon request for intrinsically safe systems.

Direct Burial Application and Harsh Environment Protection:

Served steel wire armor or corrugated steel armor + additional PVC jacket: for rodent protection.
Bonded aluminum (200 micron) moisture barrier + additional FR/PE jacket: for gas and chemical resistance.

General Properties:

Voltage rating: 300 Volt rms.
Temperature rating: -30 C to +90 C.
Min. Bend Radius: 10 x D (cable outside diameter).
Flame Test: IEEE 383 & IEC 60332-3c.

Thermocouple Extension Wire Identification table

TELDOR CODE	ANSI TYPE	ALLOY IDENTIFICATION		ANSI COLOR CODE			TEMP. RANGE °C	LIMITS OF ERROR °C
		Positive Wire	Negative Wire	Positive Wire	Negative Wire	Overall Jacket		
1	EX	Chromel	Constantan	Purple	Red	Purple	0 - 200	+/-1.7
8	JX	Iron	Constantan	White	Red	Black	0 - 200	+/-2.2
3	KX	Chromel	Alumel	Yellow	Red	Yellow	0 - 200	+/-2.2
4	RX	Copper	Copper Alloy	Black	Red	Green	24 - 200	+/-6.6
9	TX	Copper	Constantan	Blue	Red	Blue	60 - 200	+/-1.0



Instrumentation and Control Cables Conforming to DIN/VDE

Instrumentation cables for transmission of analog and digital signals, designed for the process control industry, conforming to DIN /VDE.

Cable Construction

Conductor:

Stranded Bare Copper per IEC 228 Class 2 (7 wires) - 0.5 to 1.5 mm².

Insulation:

PVC (Y13 - VDE 0207) or PE (2YH1 - VDE 0207).

Color Code of single wires: Black numbered or colored per request.

Color code of pairs: White x Black (Each pair numbered).

Color code of triads: White x Red x Black (Each triad numbered).

Shielding:

Polyester-Aluminum tape providing 100% coverage with a TC stranded drain wire.

Tinned copper wire braid, providing 80% coverage.

Options: Overall shield, individual shield and any combination of the above.

Outer Jacket:

FR - UV resistant PVC (YM1 - VDE 0207) or PE (2YM2 - VDE 0207).

Color: Black or other upon request.

Cable Marking: Per Request.

Additional blue PVC outer jacket available upon request for intrinsically safe systems.

Direct Burial Application and Harsh Environment protection:

Served steel wire armor or corrugated steel armor + additional PVC jacket: for rodent protection.

Bonded aluminum (200 micron) moisture barrier + additional PE jacket: for gas and chemical resistance.

General Properties:

Voltage rating: 300V

Temperature rating : - 30 C to +70 C

Min. Bend Radius: 10 x D (cable outside diameter).

Flame test: VDE 0472 part 804 B and IEC 60332-3c.

Electrical Properties DIN/VDE Control Cables

Conductor Resistance:

0.5 mm² :38.9 Ω/Km max. @ 20 C

0.75 mm² :26.5 Ω/Km max. @ 20 C

1.0 mm² :18.2 Ω/Km max. @ 20 C

1.5 mm² :12.3 Ω/Km max. @ 20 C

Test Voltage:

core to core : 2000V ac min.

core to shield: 1000V ac min.

Operating Voltage:

300/500V rms max.

Insulation Resistance:

PVC: 100 MΩ•Km min. @ 20 C

PE : 5000 MΩ•Km min. @ 20 C

Instrumentation and Control Cables Conforming to BS 5308

Instrumentation cables for transmission of analog and digital signals, designed for the process control industry, conforming to BS 5308.

Cable Types:

**Part 1 - Type 1 (PE/PVC), Part 1 - Type 2 (PE/PE/SWA/PVC),
Part 2 - Type 1 (PVC/PVC), Part 2 - Type 2 (PVC/PVC/SWA/PVC),**

Cable Construction

Conductor:

Stranded Bare Copper per IEC 228 Class 5 (flexible) Cross sections: 0.5, 0.75, 1.0, 1.5 mm².
Stranded Bare Copper per IEC 228 Class 2 (7 wires) Cross sections: 20 AWG and 12 AWG

Insulation:

PVC (type TH - BS 6746) or PE (type 03 - BS 6234).
Color Code: Per BS 5308 or white x Black (numbered) upon request.

Shielding:

Polyester-Aluminum tape providing 100% coverage with a TC stranded 7x0.32 mm drain wire.
Options: Overall shield, individual shield and any combination of the above.

Outer Jacket:

FR - UV resistant PVC (TM1 - BS 6746) or PE (type 03 - BS 6234).
Color: Black or other upon request.
Cable Marking: per Request
Additional blue PVC outer jacket available upon request for intrinsically safe systems.

Direct Burial Application and Harsh Environment Protection:

Served steel wire armor or corrugated steel armor + additional PVC jacket: for rodent protection.
Bonded aluminum (200 micron) moisture barrier + additional PE jacket: for gas and chemical resistance.

General Properties:

Voltage rating: 300/500 Volt rms.
Temperature rating: -40 C to +70 C
Min. Bend Radius: 10 x D (cable outside diameter)
Flame Test: BS 4066 part 1 and IEC 60332-3c.

Electrical Properties BS 5308 Control Cables

Conductor Resistance:

0.5 mm² : 38.9 Ω/Km max. @ 20 C
0.75 mm² : 26.5 Ω/Km max. @ 20 C
1.0 mm² : 18.2 Ω/Km max. @ 20 C
1.5 mm² : 12.3 Ω/Km max. @ 20 C

Insulation Resistance:

PVC: 100 M Ω•Km min. @ 20 C
PE : 5000 M Ω•Km min. @ 20 C

Test Voltage:

Core to core : 1000V ac min.
Core to shield: 1000V ac min.

Operating Voltage:

300/500V rms max.



Special and Custom-Made Cables

In addition to the extensive program of standard cables, Teldor offers a large variety of special cables designed per customer request, including the following options:

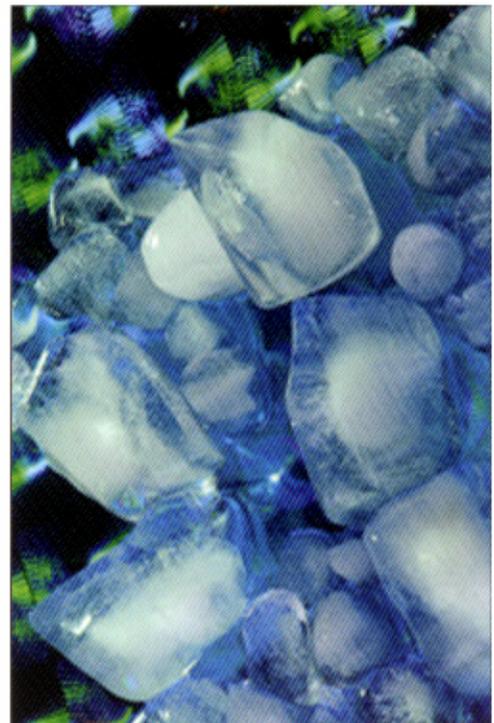
- Multi-Conductor shielded or unshielded TRAY CONTROL CABLES.
- ETFE (Tefzel) insulation, 150 C temperature rating.
- XLPE (Crosslinked Polyethylene) insulation, 90 C temperature rating.
- PE (Polyethylene) insulation, 70 C Temperature rating.
- Overall copper braid shield (coverage per request).
- Overall corrugated steel armor.
- Dry longitudinal water blocking tapes (no gel filling).
- TPU (Thermoplastic Polyurethane) jacket durable safe protection.
- Low voltage control cables 0.6 / 1.0 Kv Rating.
- NYY construction: PVC insulation, solid or Class 2 (7 wires) conductors according to IEC 60502.
- NYCY construction: PVC insulation, solid or Class 2 (7 wires) conductors, metallic screen of copper wires and copper tape according to IEC 502.
- N2XY construction: XLPE insulation, solid or Class 2 (7 wires) conductors according to IEC 60502.
- N2XCY construction: XLPE insulation, solid or Class 2 (7 wires) conductors, metallic screen of copper wires and copper tape according to IEC 60502.

All cables available with 1.0, 1.5, 2.5, 4.0, 6.0 or 10.0 mm² conductors.

ARCTIC CABLES

Applications:

Teldor also offers Arctic Instrumentation and Thermocouple Cables designed specially for cold weather applications. These cables are insulated and jacketed with specially formulated UV/FR/PVC compounds that render the cables suitable for arctic and sub-zero applications down to -55 C. The cables have high mechanical strength and excellent physical and electrical properties. The inner and the outer jackets are resistant to a wide range of chemicals including acids, alkalis, alcohols and fuels. The cables meet rigorous flame tests including IEC 60332 part 3 Category A and pass the Bending and Impact Test at Low Temp. according to IEC -60811-1-4



TelSec - TELDOR SECURITY CABLES

Custom-made electronic cables for perimeter intrusion detection and security systems

TELDOR has maintained close and productive cooperation with all major security and defense related organizations and companies both in Israel and throughout the world. Today, TELDOR offers a complete range of high quality security cables.



Over the years, TELDOR has developed numerous types of cables meeting the requirements of a vast range of security systems. These cables have 30 years of proven successful operation in extremely harsh outdoor environments including desert conditions, swamps, high UV radiation, humid and salty atmospheres, snow and high winds, ranging from the tropical climates of South America to the Siberian Arctic regions.

TelSec Cables are used world-wide in all state-of-the-art perimeter security systems.

They are designed for video motion detection and tracking systems, microphonic sensor cable systems, vibration detection systems, and taut-wire intrusion detection systems. The cables may also be integrated with CCTV surveillance and video assessment systems.

The TelSec Cables' efficiency has been consistently proven in actual performance, successfully detecting both criminal and sabotage intrusion, despite the sophisticated intrusion techniques utilized.

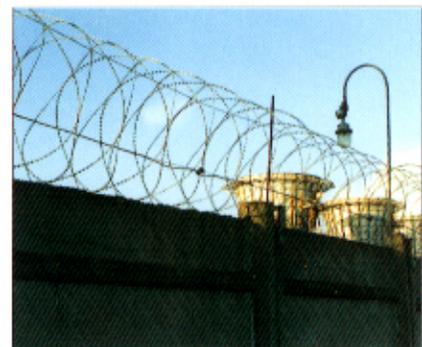
The TelSec program includes:

- Multipair and Multicore Control Copper Cables
- Flat Duplex Flexible Copper Cables
- High-Temperature ETFE insulated Control Copper Cables
- Shielded/Unshielded Cables
- Fiber-Optic Indoor/Outdoor Cables
- Electro-Optic Hybrid Indoor/Outdoor Cables
- Microphonic & Sensor Piezo-Electric Cables
- Unbalanced/Balanced HF/IF Cables



All cables are available in various outdoor constructions such as:

- Outdoor/UV Resistant Thermoplastic Jacket (PVC - PE - PU)
- Bonded PE/Aluminum Moisture-Barrier
- Served Steel Wire Armor for Rodent Protection
- Corrugated steel armor



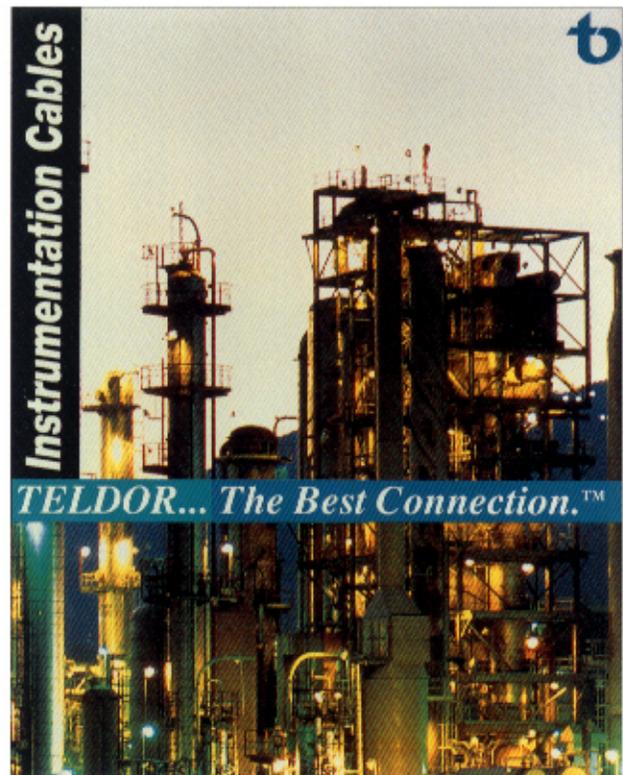
TELDOOR... The Best Connection™



TELDOR Product Range

Major Product Lines:

- Computer, LAN and Data Transmission cables
- Fiber Optic and Hybrid cables
- Instrumentation, Thermocouple and Process-Control cables
- Industrial BUS cables
- Electronic and Control cables
- TELSEC Security cables
- Microphone and Audio-frequency cables
- Telephone and Switchboard cables for Telecommunications
- High-frequency Coaxial cables
- Power and Lighting cables
- Fire and gas detection system cables



TELDOR Wires & Cables Ltd.,

TELDOR Wires & Cables Ltd. is a leading ISO-9001:2000 certified manufacturer of Hi-Tech, sophisticated cables.

Our product range includes:

Audio frequency & microphone cables, High frequency coaxial, triaxial and twinaxial cables, Instrument & thermocouple extension cables, BUS cables, Power cables, Telecom and switchboard cables for both digital and analog applications, TelSec cables for perimeter intrusion detection and security applications, Digicom cables for ISDN and Digital Telecommunication Systems and Fiber Optic cables.

TELDOR'S LAN & data transmission cable range includes:

The BASIC-Solution: 100 MHz Category 5 & 5E Cables

The GIGA-STAR Solution: 250 MHz Category 6 Cables

The GIGA-Solution: 600 MHz Category 7 Cables

The HI-GIGA Solution: 900 MHz Cables

The TERA-DOR Solution: 1200 MHz Cables

The FLEX-Solution: Patch, Jumpers and Work-area Cables.

The OPTILAN-Solution: Fiber Optic Cables for the Local Area Network

In this brochure we present Instrumentation, Thermocouple Extension, Security & Additional Special Cables. Please call us for more information on other products from our wide range of wires & cables. **TELDOR... The Best Connection™**



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