

Control Cables, 600V 90°C for Tray Cable



Description

Multi - conductor cable for Tray Cable use, insulation and jacket in PVC flame retardant, polyester tape wrapping the core.

Construction

Conductor

Soft copper cable Class B stranding, (7 strands) Sizes 14, 12 and 10 AWG.

Insulation

PVC flame retardant, operating temperature 90°C.

Core

Individually insulated conductors, twisted together, with a polyester tape helically applied over core.

Jacket

PVC flame retardant for use in Tray Cable (TC) black colored sunlight - resistant, with rip cord for easy installation.

Characteristics

Operation temperature

90° C in continuous operation, 130° C in overload (100 hours cumulative in 12 consecutives months and no more than 500 hours in cable lifetime) and 180° C in short circuit conditions.

Operating Voltage

600 V.



Electrical

RESISTENCE	SIZE		
	14 AWG	12 AWG	10 AWG
D.C. Electrical Resistance at 20° C (ohm/km)	8,44	5,32	3,34
Insulated resistance at 15,6° C (Mohm-Km)	169	142	118

Identification Method

Colored insulated conductors, by annexed table (Page 15)

Uses and Applications

Applications

Control Cables are used in power signals, for measurements and equipment protection, remote measurement and remote control, supervision and data recording.

Installation

Insatallation in ducts, raceways, ad tray cable.

Standards and Specifications

Conductors

ASTM B3, ASTM B8

Insulated Conductor

UL 83

Completed Cable

UL 1277, ICEA S-73-532

Tests

UL 1277, UL 1581, ICEA S-73-532

Installation

NEC Article 340 Tray Cable (TC), Class 1 Division 2.

Options

Conductor

Soft Tinned copper conductor. Flexible stranding Class K (0.254 mm strands).

Sizes

Sizes in mm².

Insulation

Insulation Type THHN (PVC-Nylon), XLPE, NH FR (Non Halogen Flame Retardant), by NEC (NTC 2050).

Shielding

Shield in Aluminum polyester tape with drain conductor. Copper tape, braided copper wires, or copper tape in combination with copper wires.

Aarmor

Galvanized steel armor wires, Aluminum or steel tape interlocked.

Jacket

Type LS (Low Smoke) Jacket, NH FR type (Non halogen flame retardant).

Certifications

UL 1277. File E217128.

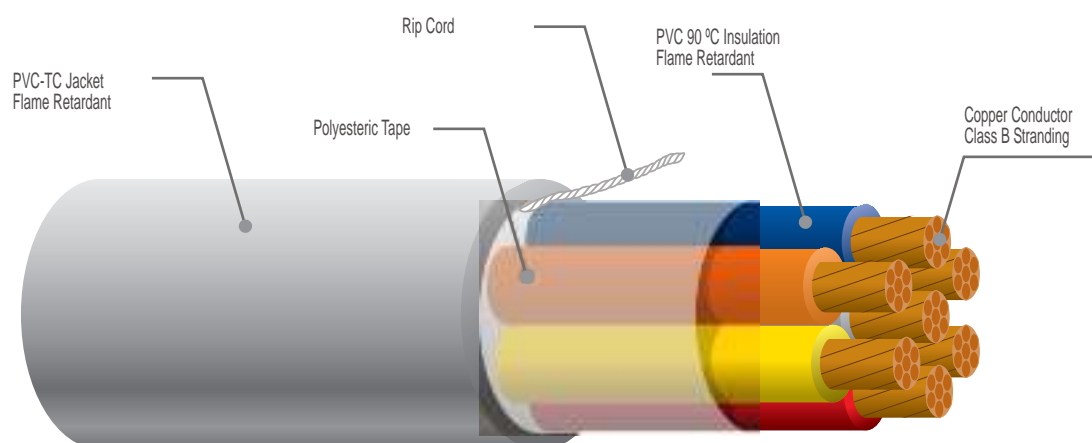
Underwriters Laboratories Inc. Standard for Safety ELECTRICAL POWER AND CONTROL TRAY CABLES.

Packing

Wooden Reels

Note: Optional constructions and other configurations not specified herein are available upon request.

Control Cables, for TC 600V 90°C



Size 14 AWG

Nominal Insulation Thickness: 0,80 mm

SINGLE CONDUCTORS	JACKET THICKNESS	MAXIMUM PULLING TENSION	MINIMUM BENDING RADIUS	AMPACITY	EXTERNAL DIAMETER	TOTAL WEIGHT
No. x AWG	mm	kgf	mm	A	mm	kg/km
2 x 14	1.14	29	37	20	9.27	114
4 x 14	1.14	57	43	16	10.67	167
7 x 14	1.14	102	51	14	12.66	263

Size 12 AWG

Nominal Insulation Thickness: 0,80 mm

SINGLE CONDUCTORS	JACKET THICKNESS	MAXIMUM PULLING TENSION	MINIMUM BENDING RADIUS	AMPACITY	EXTERNAL DIAMETER	TOTAL WEIGHT
No. x AWG	mm	kgf	mm	A	mm	kg/km
2 x 12	1.14	46	41	25	10.21	149
4 x 12	1.14	93	47	20	11.81	226
7 x 12	1.52	162	59	18	14.85	390

Size 10 AWG

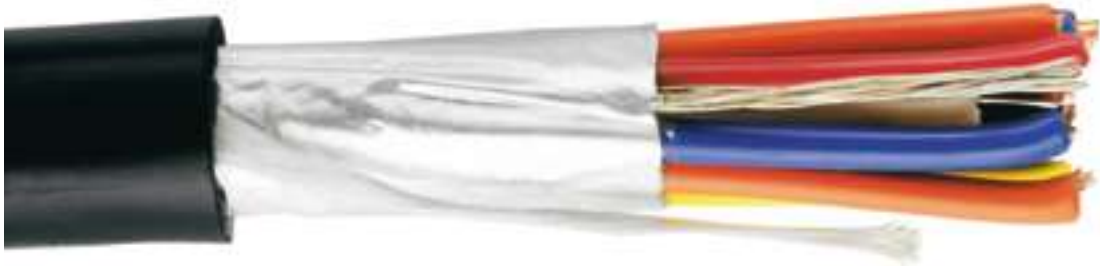
Nominal Insulation Thickness: 0,80 mm

SINGLE CONDUCTORS	JACKET THICKNESS	MAXIMUM PULLING TENSION	MINIMUM BENDING RADIUS	AMPACITY	EXTERNAL DIAMETER	TOTAL WEIGHT
No. x AWG	mm	kgf	mm	A	mm	kg/km
4 x 10	1.14	74	53	24	13.23	316

INSTRUMENTATION CABLES

ITC & PLTC 300/600V 105°C

For Tray Cable and Power Limited Systems ITC & PLTC



Instrumentation Cable for Tray Cable, individual conductors with overall shield.

Multi-conductor cable. Copper conductor, PVC insulation, and shield in aluminum polyester tape with drain conductor. External PVC jacket.

Description

Instrumentation Cable for Tray Cable, paired conductors with individual and overall shield.

Multi-paired Cable. Copper conductor, PVC insulation, two paired conductors, with individual shield in aluminum polyester tape with drain wire. Pairs twisted together and an overall shield in aluminum polyester tape with drain wire and external PVC jacket.

Construction

Conductor

Soft copper cable Class B stranding, (7 strands) Sizes 16 and 18 AWG.

Insulation

PVC flame retardant. Operating temperature 105°C.

Core Construction

Single conductors paired individually shielded with aluminum polyester tape with drain wire in tinned copper size 20 AWG. Covering of shield 100%, Pairs are then cabled.

Overall Shield

Aluminum polyester tape with drain wire in tinned copper size 20 AWG. Covering of shield 100%.

Jacket

Flame retardant PVC, for Tray Cable use gray colored, sunlight resistant, with rip cord for easy installation.

Characteristics

Operation Temperature
105°C

Operation Voltage
300/600V by UL 2250, UL 13 and NEC (NTC 2250) / MIL-W-16878

Electrical

PARAMETERS	SIZE	
	18 AWG	16 AWG
D.C. Electrical Resistance at 20° C (ohm/km)	21,4	13,5
Nominal Capacitance (nF/Km)	172	196
Nominal Inductance (mH/Km)	0,31	0,29

Identification Method

Single conductors: Colored insulated conductors, by annexed table (Page 15).

Pairs: Colored, by annexed table (Page 15).

Uses and Applications

Application

Instrumentation cables are used in systems supervising and/or control.

Handling of low power electrical signals, for data transmission to controller monitors in switchboards and generally in control systems.

Installation

Installation in ducts, raceways and tray cables.

Standard and Specifications

Conductors

ASTM B3, ASTM B8, ASTM B33, ASTM B174

Completed Cable

UL 2250, UL 13, MIL-W-16878

Tests

UL 2250, UL 1581

Installation

NEC Articles 725 (ITC), 727 (PLTC), Class 1 Division 2.

Options

Conductor

Soft Tinned copper conductor. Flexible stranding Class K (0.254 mm strands).

Sizes

20 AWG

Insulation

Insulation Type THHN (PVC-Nylon).

Core construction

Triads with individual shield.

Armor

Galvanized steel armor wires, Aluminum or steel tape interlocked.

Communications Conductor

Soft copper wire size 24 o 22 AWG PVC insulated and cabled with single conductor or pairs.

Jacket

Type LS (Low Smoke) Jacket, NH FR type (Non halogen flame retardant).

Certifications

UL 2250. File E240314. Underwriters Laboratories Inc. Standard for Safety INSTRUMENTATION TRAY CABLE

Packing

Wooden Reels.

Note: Optional constructions and other configurations not specified

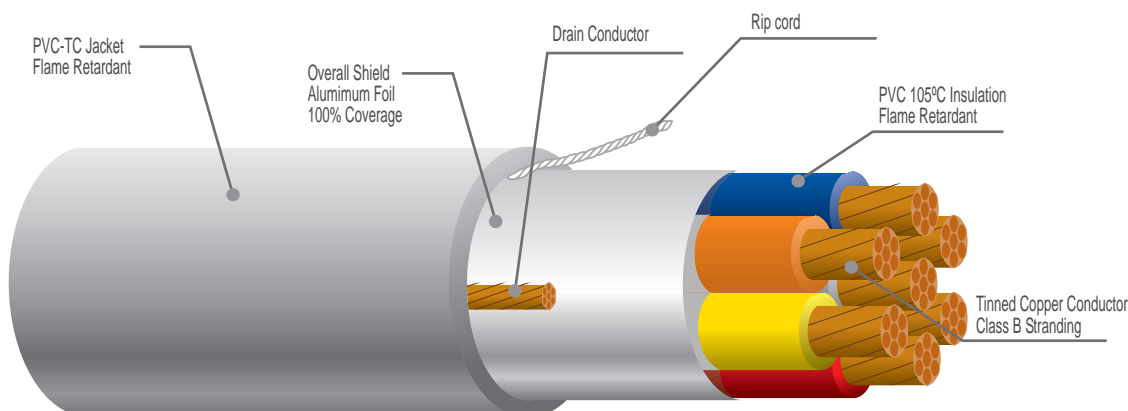
INSTRUMENTATION CABLES

ITC & PLTC 300/600V 105°C



ITC-IOS-S

Instrumentation Cables for Tray Cable use
Single conductors and Overall Shield



Size 16 AWG

Nominal Insulation Thickness: 0,42 mm

SINGLE CONDUCTORS	JACKET THICKNESS	EXTERNAL DIAMETER	MAXIMUM PULLING TENSION	MINIMUM BENDING RADIUS	TOTAL WEIGHT
No.	mm	mm	kgf	mm	kg/km
2	0.89	6.56	22	66	66
3	1.02	6.91	31	69	78
4	1.02	7.77	40	78	101
6	1.02	9.12	59	91	145
9	1.27	11.04	86	110	208

Size 18 AWG

Nominal Insulation Thickness: 0,42 mm

SINGLE CONDUCTORS	JACKET THICKNESS	EXTERNAL DIAMETER	MAXIMUM PULLING TENSION	MINIMUM BENDING RADIUS	TOTAL WEIGHT
No.	mm	mm	kgf	mm	kg/km
2	0.89	5.96	15	60	52
3	0.89	6.27	21	63	60
4	0.89	6.78	27	68	73
6	1.02	8.22	38	82	108
9	1.02	9.44	55	94	144
18	1.27	12.74	107	127	271

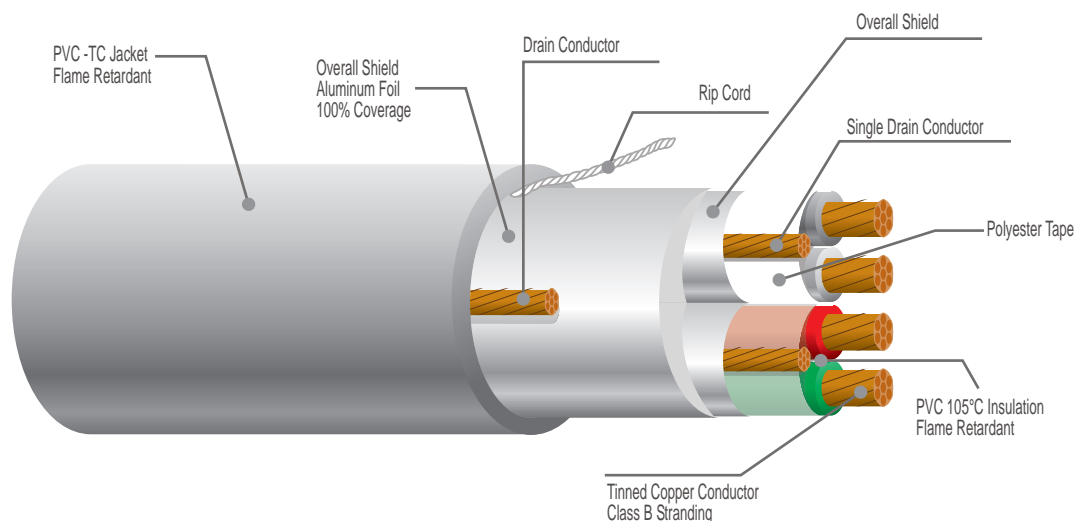
INSTRUMENTATION CABLES

ITC & PLTC 300/600V 105°C

Tipo ITC-I0S-P

Intrumentation Cables for Tray Cable use

Paired conductors, Individual and Overall Shield



Size 16 AWG

Nominal Insulation Thickness: 0,42 mm

PAIRS	JACKET THICKNESS	EXTERNAL DIAMETER	MAXIMUM PULLING TENSION	MINIMUM BENDING RADIUS	TOTAL WEIGHT
No.	mm	mm	kgf	mm	kg/km
2	1.27	12.05	48	121	167
4	1.27	13.40	92	134	230

Conductor 18 AWG

Nominal Insulation Thickness: 0,42 mm

PAIRS	JACKET THICKNESS	EXTERNAL DIAMETER	MAXIMUM PULLING TENSION	MINIMUM BENDING RADIUS	TOTAL WEIGHT
No.	mm	mm	kgf	mm	kg/km
2	1.27	10.88	34	109	134
4	1.27	12.06	64	121	180

IDENTIFICATION METHOD FOR CONTROL AND INSTRUMENTATION CABLES



Control Cables and Instrumentation Cables
with Single Conductors

Color coded conductors with trace colored, by ICEA S-73-532

CONDUCTOR No.	BASE COLOR	TRACE COLOR	CONDUCTOR No.	BASE COLOR	TRACE COLOR
1	Black	—	10	Yellow	Black
2	Red	—	11	Brown	Black
3	Blue	—	12	Black	Red
4	Orange	—	13	Blue	Red
5	Yellow	—	14	Orange	Red
6	Brown	—	15	Yellow	Red
7	Red	Black	16	Brown	Red
8	Blue	Black	17	Black	Red
9	Orange	Black	18	Red	Blue

instrumentation cables with paired conductors

Conductor A Base colored, Conductor B colored with trace colored, by ICEA S-73-532 and S-82-552

PAIR No.	CONDUCTOR A	CONDUCTOR B Base/Trace	PAIR No.	CONDUCTOR A	CONDUCTOR B Base/TraCE
1	White	White/Black	3	White	White/Blue
2	White	White/Red	4	White	White/Orange