FREP® Instrumentation, Shielded, EPR/CPE

600V, UL Type TC

Product Construction

Conductor:
- 18 AWG and 16 AWG tinned, annealed copper per ASTM B33
- Class B stranding per ASTM B8

Insulation:
- Flame-retardant Ethylene Propylene Rubber (EPR) type II
- Color coded: per ICEA Method 1; Pairs - black and white. Triads - black, white and red. One conductor in each pair or triad is printed alpha-numerically for easy identification

Shield:
Overall shielded pairs/triads
- Overall shield is Flexfoil® aluminum/polyester in contact with stranded tinned copper drain wire

Jacket:
- Flame-retardant thermoplastic Chlorinated Polyethylene (CPE)

Print:
- GENERAL CABLE® BICC® BRAND (WC) FREP XX/PS/TS XXAWG EPR/CPE SHIELDED UL TYPE TC 90°C EWT OR DRY 600V DIR BUR SUN RES MONTH/YEAR OF MFG SEQUENTIAL FOOTAGE MARK

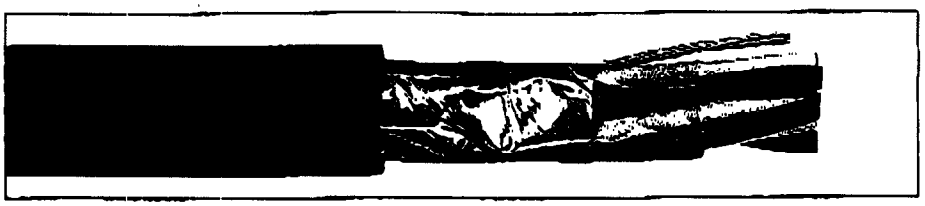
Options:
- Bare copper conductor
- Class C stranding
- Cross-Linked Polyethylene (XLPE) insulation
- FREP XL-flame-retardant, thermoset Chlorinated Polyethylene (XL-CPE) jacket
- FREP II-flame-retardant, thermoplastic Low-Smoke, Zero-Halogen (LSZH) polyolefin jacket
- FREP II-XL-flame-retardant, thermoset Low-Smoke, Zero-Halogen (XL-LSZH) polyolefin jacket
- FREP 300V-UL Type PLTC
- Other constructions available upon request

Applications:
- In free air, raceways, or direct burial in accordance with NEC
- In wet or dry locations
- Permitted for use in Class I Division 2 industrial hazardous locations per NEC Article 501-4(b) for UL Type TC cables

Features:
- Rated at 90°C wet or dry
- Excellent electrical, thermal and physical properties
- Excellent moisture resistance
- Excellent resistance to compression cuts
- Excellent flame resistance - burns to an ash; does not exhibit thermoplastic drip
- Low coefficient of friction for easy pulling
- Sunlight- and weather-resistant
- Excellent low temperature cold bend characteristics
- Meets cold bend test at -35°C

Compliances:
- UL Type TC - 600V
- ICEA S-82-552 - 600V
- IEEE 1202 (70,000 BTU/hr)/CSA FT4
- ICEA T-29-520 (210,000 BTU/hr)
- IEEE 383 (70,000 BTU/hr)
- UL Subject 1277 (70,000 BTU/hr)
- Meets EPA 40 CFR, Part 261 for leachable lead content per TCLP method
- OSHA acceptable

Packaging:
- Material cut to length and shipped out on non-returnable wood reels



CATALOG NUMBER	NO. OF PAIRS/ TRIADS	COND. (AWG) SIZE	COND. STRAND	MINIMUM AVG. INSULATION THICKNESS		MINIMUM AVG. JACKET THICKNESS		NOMINAL CABLE O.D.		COPPER WEIGHT		NET WEIGHT	
				INCHES	mm	INCHES	mm	INCHES	mm	lbs/ 1000ft	kg/km	lbs/ 1000ft	kg/km
OVERALL SHIELDED PAIRS/TRIADS 18 AWG CONDUCTORS													
287650	1	18	7/.0152	0.025	0.64	0.045	1.14	0.300	7.62	12.5	18.60	42	63
337000	1 TRI	18	7/.0152	0.025	0.64	0.045	1.14	0.316	8.03	17.6	26.19	53	79
337010	2	18	7/.0152	0.025	0.64	0.045	1.14	0.462	11.73	23.1	34.38	75	112
337020	4	18	7/.0152	0.025	0.64	0.045	1.14	0.518	13.16	43.9	65.33	117	174
337030	8	18	7/.0152	0.025	0.64	0.060	1.52	0.692	17.58	85.5	127.24	224	333
337040	12	18	7/.0152	0.025	0.64	0.060	1.52	0.810	20.57	127.1	189.15	312	464
294580	16	18	7/.0152	0.025	0.64	0.080	2.03	0.949	24.10	168.7	251.06	430	640
337050	20	18	7/.0152	0.025	0.64	0.080	2.03	0.989	25.12	210.3	312.67	510	759
337060	24	18	7/.0152	0.025	0.64	0.080	2.03	1.118	28.40	252.0	375.03	604	899
337070	36	18	7/.0152	0.025	0.64	0.080	2.03	1.266	32.16	376.8	560.75	849	1263
337080	50	18	7/.0152	0.025	0.64	0.080	2.03	1.454	36.93	522.5	777.58	1137	1692
OVERALL SHIELDED PAIRS/TRIADS 16 AWG CONDUCTORS													
314960	1	16	7/.0192	0.025	0.64	0.045	1.14	0.324	8.23	18.4	27.58	52	77
279690	1 TRI	16	7/.0192	0.025	0.64	0.045	1.14	0.342	8.69	26.4	39.23	66	98
283170	2	16	7/.0192	0.025	0.64	0.045	1.14	0.506	12.85	36.3	54.04	95	141
283180	4	16	7/.0192	0.025	0.64	0.060	1.52	0.603	15.32	69.2	103.00	171	254
337090	8	16	7/.0192	0.025	0.64	0.060	1.52	0.759	19.28	135.3	201.35	294	438
283190	12	16	7/.0192	0.025	0.64	0.080	2.03	0.932	23.67	201.8	300.31	446	664
337100	16	16	7/.0192	0.025	0.64	0.080	2.03	1.043	26.49	268.3	399.28	568	845
337110	20	16	7/.0192	0.025	0.64	0.080	2.03	1.087	27.61	334.8	498.25	680	1012
337120	24	16	7/.0192	0.025	0.64	0.080	2.03	1.232	31.29	401.3	597.21	807	1201
337130	36	16	7/.0192	0.025	0.64	0.080	2.03	1.398	35.51	600.8	894.11	1147	1707
337140	50	16	7/.0192	0.025	0.64	0.080	2.03	1.609	40.87	833.6	1240.56	1547	2302

Dimensions and weights are nominal; subject to industry tolerance.

Attn: Doug Bunch
Fax#: 865 241-5177

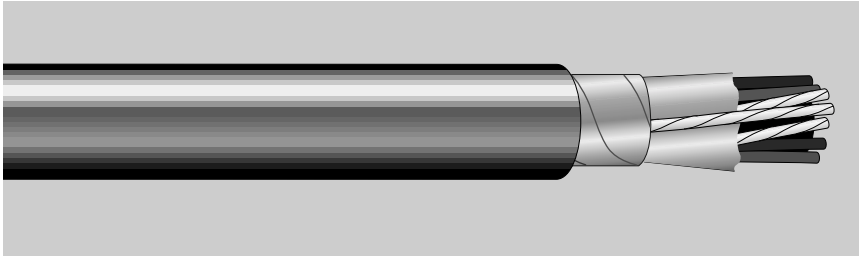
General Cable
Phone: (800) 338-0901
www.generalcable.com

UL LISTED BICC BRAND

INSTRUMENTATION CABLE

SHIELDED PAIRS/ SHIELDED TRIADS

UL TYPE TC 600V EPR/CPE



Description

Conductors:
Tinned, annealed copper per ASTM B33; Class B stranding per ASTM B8

Sizes:
#20 AWG through #16 AWG

Insulation:
Color coded, flame-retardant ethylene propylene rubber (EPR) Type II

Conductor Components:
Insulated single conductors are twisted into pairs or triads.

Color Code:
Per ICEA Method 1; Pairs – black and white. Triads – black, white and red. One conductor in each pair or triad is printed alpha-numerically for easy identification.

Cable Core:
Conductor components are cabled with non-hygroscopic, fillers as necessary, and an overall binder tape.

Shielding Systems:
For Overall Shielded Pairs or Triads–
Overall Shield:
Aluminum/polymer tape with tinned copper drain wire applied helically over cable core

For Individual and Overall Shielded Pairs or Triads–
Component Shield:
Aluminum/polymer tape with tinned copper drain wire applied helically over pairs, triads or multiple conductor components
Overall Shield:
Aluminum/polymer tape with tinned copper drain wire applied helically over cable core

Overall Jacket:
Flame-retardant thermoplastic chlorinated polyethylene (CPE)

Options:
- Bare copper conductors
- Duralox® aluminum interlocked armor

Features and Benefits

Temperature Rating:
- UL Type TC .....90°C

EPR/CPE Instrumentation Cable Listings:
- UL Type TC - 600 Volts in conductor sizes #18 AWG - #16 AWG
- ICEA S-82-552 - 600 Volts

Flame-Retardant EPR Insulation, UL Class XL and Type II in Accordance with ICEA S-82-552, Provides:
- Excellent electrical, thermal and physical properties
- Excellent moisture resistance
- Excellent resistance to crush, compression cuts, and heat deformation
- Excellent flame resistance
- Excellent low temperature cold bend characteristics (insulated conductors pass low temperature cold bend test at -50°C; completed cable passes at -35°C)

Flame-Retardant CPE Jacket Provides:
- Excellent flame resistance – burns to an ash; does not exhibit "thermoplastic drip"
- Low coefficient of friction for easy pulling
- Excellent thermal and mechanical properties
- Excellent balance of physical properties contributes to ease of installation
- Low heat deformation
- Sunlight and weather resistance
- UL Oil Resistant II

FREP 600V Instrumentation Cables:
- Are OSHA acceptable
- Meet the following flame tests:
  - IEEE 1202 (70,000 BTU/hr)/ CSA FT4
  - ICEA T-29-520 (210,000 BTU/hr)
  - IEEE 383 (70,000 BTU/hr)
  - UL Subject 1277 (70,000 BTU/hr)

Meets EPA 40 CFR, Part 261 for leachable lead content per TCLP method

Applications

For applications where high performance reliability is essential and where environmental factors require cable characteristics including flame-retardance, resistance to moisture, chemicals, thermal stability and physical durability.

May Be Installed:
- In free air, raceways, or direct burial
- In wet or dry locations
- At temperatures as low as -35°C
- Permitted for use in Class I Division 2 industrial hazardous locations per NEC Article 501-4(b) for UL Type TC cables

BICC Cables has made every effort to ensure the accuracy of the information provided in this catalog, however, we cannot be responsible for errors, omissions, or changes due to obsolescence. All data herein is subject to change without notice. Data and suggestions made in this catalog are not to be construed as recommendations to use any product in violation of any government law or regulations relating to any material or its use.
EFFECTIVE 1999-01-31

OVERALL SHIELDED PAIRS/TRIADS – UL TYPE TC 600V FREP

BICC Part Number	AWG and Stranding	Number of Pairs/Triads	Insulation Thickness (inches)	Jacket Thickness (inches)	Nominal O.D. (inches)	Net Weight (lbs/1000 ft)
T-87820(2PR/20)	20 AWG 7/.0121	2	0.025	0.045	0.410	61
T-87820(4PR/20)	20 AWG 7/.0121	4	0.025	0.045	0.470	92
T-87820(8PR/20)	20 AWG 7/.0121	8	0.025	0.060	0.630	180
T-87820(12PR/20)	20 AWG 7/.0121	12	0.025	0.060	0.740	242
T-87820(16PR/20)	20 AWG 7/.0121	16	0.025	0.060	0.825	338
T-87820(20PR/20)	20 AWG 7/.0121	20	0.025	0.080	0.900	395
T-87820(24PR/20)	20 AWG 7/.0121	24	0.025	0.080	1.015	464
T-87820(36PR/20)	20 AWG 7/.0121	36	0.025	0.080	1.150	652
T-87820(50PR/20)	20 AWG 7/.0121	50	0.025	0.080	1.315	862
T-87820(1PR/18)	18 AWG 7/.0152	1	0.025	0.045	0.300	42
T-87820(1TRI/18)	**18 AWG 7/.0152**	**1 TRI**	**0.025**	**0.045**	**0.316**	**53**
T-87820(2PR/18)	18 AWG 7/.0152	2	0.025	0.045	0.462	75
T-87820(4PR/18)	18 AWG 7/.0152	4	0.025	0.045	0.518	117
T-87820(8PR/18)	18 AWG 7/.0152	8	0.025	0.060	0.692	224
T-87820(12PR/18)	18 AWG 7/.0152	12	0.025	0.060	0.810	312
T-87820(16PR/18)	18 AWG 7/.0152	16	0.025	0.080	0.949	430
T-87820(20PR/18)	18 AWG 7/.0152	20	0.025	0.080	0.989	510
T-87820(24PR/18)	18 AWG 7/.0152	24	0.025	0.080	1.118	604
T-87820(36PR/18)	18 AWG 7/.0152	36	0.025	0.080	1.266	849
T-87820(50PR/18)	18 AWG 7/.0152	50	0.025	0.080	1.454	1137
T-87820(1PR/16)	16 AWG 7/.0192	1	0.025	0.045	0.324	52
T-87820(1TRI/16)	**16 AWG 7/.0192**	**1 TRI**	**0.025**	**0.045**	**0.342**	**66**
T-87820(2PR/16)	16 AWG 7/.0192	2	0.025	0.045	0.506	95
T-87820(4PR/16)	16 AWG 7/.0192	4	0.025	0.060	0.603	171
T-87820(8PR/16)	16 AWG 7/.0192	8	0.025	0.060	0.759	294
T-87820(12PR/16)	16 AWG 7/.0192	12	0.025	0.080	0.932	446
T-87820(16PR/16)	16 AWG 7/.0192	16	0.025	0.080	1.043	568
T-87820(20PR/16)	16 AWG 7/.0192	20	0.025	0.080	1.087	680
T-87820(24PR/16)	16 AWG 7/.0192	24	0.025	0.080	1.232	807
T-87820(36PR/16)	16 AWG 7/.0192	36	0.025	0.080	1.398	1147
T-87820(50PR/16)	16 AWG 7/.0192	50	0.025	0.080	1.609	1547

Print: BICC CABLES XX/PR/TRI XXAWG SHIELDED INSTRUMENTATION CABLE DIR BUR SUN RES 600V, sequential footage mark

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