FREP XL INSTRUMENTATION CABLE

BICCCables

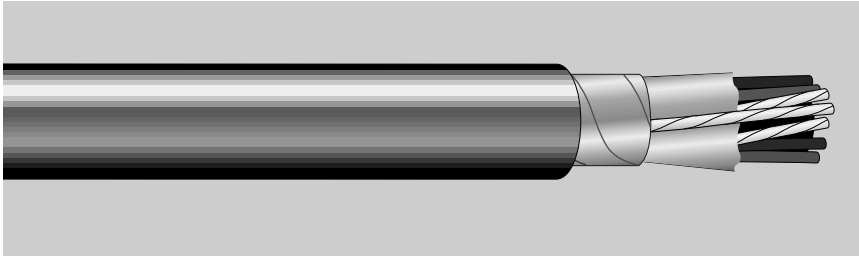
SPECIFICATION #FREP XL-I-0001

INSTRUMENTATION CABLE

SHIELDED PAIRS/ SHIELDED TRIADS

UL TYPE PLTC/ITC UL TYPE TC

300V/600V EPR/XL-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, triads or multiple conductor components.

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, heavy duty cross-linked chlorinated polyethylene (XL-CPE)

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

Features and Benefits

Temperature Ratings:
- UL.....90°C Dry; 75°C Wet
- ICEA.....90°C Dry or Wet

FREP XL Instrumentation Cable Listings:
- UL Type PLTC/ITC – 300 Volts
- UL Type TC – 600 Volts in conductor sizes #18 AWG – #12 AWG
- ICEA S-66-516 – 600 volts

Flame-Retardant EPR Insulation, UL Class XL and Type II in Accordance with ICEA S-68-516, (NEMA WC-8) 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 Heavy Duty Thermoset Jacket Provides:
- Resistance to "cold flow"
- Abrasion and chemical resistance
- Sunlight and weathering resistance
- High flexibility
- High tear resistance
- Enhanced flame resistance

FREP XL Instrumentation Cables:
- Are OSHA acceptable
- Meet the following Flame Tests:
  - IEEE 1202 (70,000 BTU/hr)/ CSA FT4
  - IEEE 383 (70,000 BTU/hr)
  - UL Subject 13 (70,000 BTU/hr)
  - UL 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 minimal smoke and halogen emission when burned and flame retardance.

May Be Installed:
- In free air, raceways or direct burial
- In wet or dry locations
- Permitted for use in Class I Division 2 industrial hazardous locations per NEC Article 501-4(b)
- In enclosed areas where personnel and/or sensitive electronic equipment would be exposed to toxic emissions in the event of a fire

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

SPECIFICATION #FREP XL-I-0001

OVERALL SHIELDED PAIRS/TRIADS – UL TYPE PLTC/ITC, 300V FREP XL

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)
FREP XL-S300TC-20-1PS	20 AWG 7/.0121	1	0.012	0.035	0.210	24
FREP XL-S300TC-20-1TS	**20 AWG 7/.0121**	**1TRI**	**0.012**	**0.035**	**0.220**	**36**
FREP XL-S300TC-20-2PS	20 AWG 7/.0121	2	0.012	0.040	0.312	43
FREP XL-S300TC-20-4PS	20 AWG 7/.0121	4	0.012	0.040	0.361	66
FREP XL-S300TC-20-6PS	20 AWG 7/.0121	6	0.012	0.050	0.437	99
FREP XL-S300TC-20-8PS	20 AWG 7/.0121	8	0.012	0.050	0.476	122
FREP XL-S300TC-20-12PS	20 AWG 7/.0121	12	0.012	0.050	0.552	168
FREP XL-S300TC-20-16PS	20 AWG 7/.0121	16	0.012	0.060	0.636	224
FREP XL-S300TC-20-20PS	20 AWG 7/.0121	20	0.012	0.060	0.662	265
FREP XL-S300TC-20-24PS	20 AWG 7/.0121	24	0.012	0.060	0.745	313
FREP XL-S300TC-20-36PS	20 AWG 7/.0121	36	0.012	0.060	0.841	439
FREP XL-S300TC-20-50PS	20 AWG 7/.0121	50	0.012	0.070	0.993	613
FREP XL-S300TC-18-1PS	18 AWG 7/.0152	1	0.015	0.035	0.238	31
FREP XL-S300TC-18-1TS	**18 AWG 7/.0152**	**1TRI**	**0.015**	**0.035**	**0.251**	**50**
FREP XL-S300TC-18-2PS	18 AWG 7/.0152	2	0.015	0.040	0.361	58
FREP XL-S300TC-18-4PS	18 AWG 7/.0152	4	0.015	0.050	0.445	102
FREP XL-S300TC-18-6PS	18 AWG 7/.0152	6	0.015	0.050	0.507	138
FREP XL-S300TC-18-8PS	18 AWG 7/.0152	8	0.015	0.050	0.554	172
FREP XL-S300TC-18-12PS	18 AWG 7/.0152	12	0.015	0.060	0.668	253
FREP XL-S300TC-18-16PS	18 AWG 7/.0152	16	0.015	0.060	0.745	321
FREP XL-S300TC-18-20PS	18 AWG 7/.0152	20	0.015	0.060	0.777	384
FREP XL-S300TC-18-24PS	18 AWG 7/.0152	24	0.015	0.060	0.878	455
FREP XL-S300TC-18-36PS	18 AWG 7/.0152	36	0.015	0.070	1.015	664
FREP XL-S300TC-18-50PS	18 AWG 7/.0152	50	0.015	0.070	1.163	890
FREP XL-S300TC-16-1PS	16 AWG 7/.0192	1	0.015	0.035	0.262	40
FREP XL-S300TC-16-1TS	**16 AWG 7/.0192**	**1TRI**	**0.015**	**0.040**	**0.287**	**70**
FREP XL-S300TC-16-2PS	16 AWG 7/.0192	2	0.015	0.050	0.427	85
FREP XL-S300TC-16-4PS	16 AWG 7/.0192	4	0.015	0.050	0.495	136
FREP XL-S300TC-16-6PS	16 AWG 7/.0192	6	0.015	0.050	0.567	187
FREP XL-S300TC-16-8PS	16 AWG 7/.0192	8	0.015	0.060	0.641	248
FREP XL-S300TC-16-12PS	16 AWG 7/.0192	12	0.015	0.060	0.749	349
FREP XL-S300TC-16-16PS	16 AWG 7/.0192	16	0.015	0.060	0.839	448
FREP XL-S300TC-16-20PS	16 AWG 7/.0192	20	0.015	0.060	0.875	540
FREP XL-S300TC-16-24PS	16 AWG 7/.0192	24	0.015	0.070	1.012	660
FREP XL-S300TC-16-36PS	16 AWG 7/.0192	36	0.015	0.070	1.147	942
FREP XL-S300TC-16-50PS	16 AWG 7/.0192	50	0.015	0.080	1.338	1296

Print: BICC CABLES XX/PR/TRI XXAWG SHIELDED (UL) TYPE PLTC 300V 105C SUN RES

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.

BICC Cables

SPECIFICATION #FREP XL-I-0001

INDIVIDUAL AND OVERALL SHIELDED PAIRS – UL TYPE PLTC/ITC, 300V FREP XL

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)
FREP XL-S300TC-20-2SPS	20 AWG 7/.0121	2	0.012	0.040	0.325	47
FREP XL-S300TC-20-4SPS	20 AWG 7/.0121	4	0.012	0.040	0.373	76
FREP XL-S300TC-20-6SPS	20 AWG 7/.0121	6	0.012	0.050	0.466	116
FREP XL-S300TC-20-8SPS	20 AWG 7/.0121	8	0.012	0.050	0.502	145
FREP XL-S300TC-20-12SPS	20 AWG 7/.0121	12	0.012	0.050	0.601	204
FREP XL-S300TC-20-16SPS	20 AWG 7/.0121	16	0.012	0.060	0.685	273
FREP XL-S300TC-20-20SPS	20 AWG 7/.0121	20	0.012	0.060	0.739	329
FREP XL-S300TC-20-24SPS	20 AWG 7/.0121	24	0.012	0.060	0.813	387
FREP XL-S300TC-20-36SPS	20 AWG 7/.0121	36	0.012	0.070	0.971	569
FREP XL-S300TC-20-50SPS	20 AWG 7/.0121	50	0.012	0.070	1.106	761
FREP XL-S300TC-18-2SPS	18 AWG 7/.0152	2	0.015	0.040	0.375	62
FREP XL-S300TC-18-4SPS	18 AWG 7/.0152	4	0.015	0.050	0.460	113
FREP XL-S300TC-18-6SPS	18 AWG 7/.0152	6	0.015	0.050	0.542	157
FREP XL-S300TC-18-8SPS	18 AWG 7/.0152	8	0.015	0.050	0.586	197
FREP XL-S300TC-18-12SPS	18 AWG 7/.0152	12	0.015	0.060	0.726	294
FREP XL-S300TC-18-16SPS	18 AWG 7/.0152	16	0.015	0.060	0.804	374
FREP XL-S300TC-18-20SPS	18 AWG 7/.0152	20	0.015	0.060	0.870	454
FREP XL-S300TC-18-24SPS	18 AWG 7/.0152	24	0.015	0.070	0.980	554
FREP XL-S300TC-18-36SPS	18 AWG 7/.0152	36	0.015	0.070	1.148	790
FREP XL-S300TC-18-50SPS	18 AWG 7/.0152	50	0.015	0.080	1.342	1099
FREP XL-S300TC-16-2SPS	16 AWG 7/.0192	2	0.015	0.050	0.441	90
FREP XL-S300TC-16-4SPS	16 AWG 7/.0192	4	0.015	0.050	0.510	148
FREP XL-S300TC-16-6SPS	16 AWG 7/.0192	6	0.015	0.050	0.604	208
FREP XL-S300TC-16-8SPS	16 AWG 7/.0192	8	0.015	0.060	0.674	276
FREP XL-S300TC-16-12SPS	16 AWG 7/.0192	12	0.015	0.060	0.812	393
FREP XL-S300TC-16-16SPS	16 AWG 7/.0192	16	0.015	0.070	0.921	522
FREP XL-S300TC-16-20SPS	16 AWG 7/.0192	20	0.015	0.070	0.997	633
FREP XL-S300TC-16-24SPS	16 AWG 7/.0192	24	0.015	0.070	1.099	749
FREP XL-S300TC-16-36SPS	16 AWG 7/.0192	36	0.015	0.080	1.322	1114
FREP XL-S300TC-16-50SPS	16 AWG 7/.0192	50	0.015	0.080	1.511	1499

Print: BICC CABLES XX/PR XXAWG SHIELDED (UL) TYPE PLTC 300V 105C SUN RES

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.

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

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)
FREP XL-S600TC-18-1PS	18 AWG 7/.0152	1	0.025	0.045	0.300	43
FREP XL-S600TC-18-1TS	**18 AWG 7/.0152**	**1TRI**	**0.025**	**0.045**	**0.316**	**54**
FREP XL-S600TC-18-2PS	18 AWG 7/.0152	2	0.025	0.045	0.462	77
FREP XL-S600TC-18-4PS	18 AWG 7/.0152	4	0.025	0.045	0.518	119
FREP XL-S600TC-18-6PS	18 AWG 7/.0152	6	0.025	0.060	0.632	183
FREP XL-S600TC-18-8PS	18 AWG 7/.0152	8	0.025	0.060	0.692	228
FREP XL-S600TC-18-12PS	18 AWG 7/.0152	12	0.025	0.060	0.810	317
FREP XL-S600TC-18-16PS	18 AWG 7/.0152	16	0.025	0.080	0.949	437
FREP XL-S600TC-18-20PS	18 AWG 7/.0152	20	0.025	0.080	0.989	518
FREP XL-S600TC-18-24PS	18 AWG 7/.0152	24	0.025	0.080	1.118	612
FREP XL-S600TC-18-36PS	18 AWG 7/.0152	36	0.025	0.080	1.266	858
FREP XL-S600TC-18-50PS	18 AWG 7/.0152	50	0.025	0.080	1.454	1148
FREP XL-S600TC-16-1PS	16 AWG 7/.0192	1	0.025	0.045	0.324	53
FREP XL-S600TC-16-1TS	**16 AWG 7/.0192**	**1TRI**	**0.025**	**0.045**	**0.342**	**68**
FREP XL-S600TC-16-2PS	16 AWG 7/.0192	2	0.025	0.045	0.506	97
FREP XL-S600TC-16-4PS	16 AWG 7/.0192	4	0.025	0.060	0.603	174
FREP XL-S600TC-16-6PS	16 AWG 7/.0192	6	0.025	0.060	0.692	237
FREP XL-S600TC-16-8PS	16 AWG 7/.0192	8	0.025	0.060	0.759	298
FREP XL-S600TC-16-12PS	16 AWG 7/.0192	12	0.025	0.080	0.932	453
FREP XL-S600TC-16-16PS	16 AWG 7/.0192	16	0.025	0.080	1.043	576
FREP XL-S600TC-16-20PS	16 AWG 7/.0192	20	0.025	0.080	1.087	688
FREP XL-S600TC-16-24PS	16 AWG 7/.0192	24	0.025	0.080	1.232	816
FREP XL-S600TC-16-36PS	16 AWG 7/.0192	36	0.025	0.080	1.398	1158
FREP XL-S600TC-16-50PS	16 AWG 7/.0192	50	0.025	0.080	1.609	1559

Print: "BICC CABLES FREP XL XX/PR/TRI XX AWG EPR/XL-CPE (UL) TYPE TC XHHW-2 CDRS DIR BUR SUN RES 600V" plus sequential footage mark.

INDIVIDUAL AND OVERALL SHIELDED PAIRS – UL TYPE TC 600V FREP XL

BICC Part Number	AWG and Stranding	Number of Pairs	Insulation Thickness (inches)	Jacket Thickness (inches)	Nominal O.D. (inches)	Net Weight (lbs/1000 ft)
FREP XL-S600TC-18-2SPS	18 AWG 7/.0152	2	0.025	0.045	0.473	85
FREP XL-S600TC-18-4SPS	18 AWG 7/.0152	4	0.025	0.060	0.586	153
FREP XL-S600TC-18-6SPS	18 AWG 7/.0152	6	0.025	0.060	0.693	210
FREP XL-S600TC-18-8SPS	18 AWG 7/.0152	8	0.025	0.060	0.751	260
FREP XL-S600TC-18-12SPS	18 AWG 7/.0152	12	0.025	0.080	0.948	401
FREP XL-S600TC-18-16SPS	18 AWG 7/.0152	16	0.025	0.080	1.050	504
FREP XL-S600TC-18-20SPS	18 AWG 7/.0152	20	0.025	0.080	1.137	605
FREP XL-S600TC-18-24SPS	18 AWG 7/.0152	24	0.025	0.080	1.254	710
FREP XL-S600TC-18-36SPS	18 AWG 7/.0152	36	0.025	0.080	1.474	1006
FREP XL-S600TC-18-50SPS	18 AWG 7/.0152	50	0.025	0.110	1.759	1455
FREP XL-S600TC-16-2SPS	16 AWG 7/.0192	2	0.025	0.045	0.516	105
FREP XL-S600TC-16-4SPS	16 AWG 7/.0192	4	0.025	0.060	0.637	191
FREP XL-S600TC-16-6SPS	16 AWG 7/.0192	6	0.025	0.060	0.757	265
FREP XL-S600TC-16-8SPS	16 AWG 7/.0192	8	0.025	0.060	0.821	332
FREP XL-S600TC-16-12SPS	16 AWG 7/.0192	12	0.025	0.080	1.037	509
FREP XL-S600TC-16-16SPS	16 AWG 7/.0192	16	0.025	0.080	1.151	646
FREP XL-S600TC-16-20SPS	16 AWG 7/.0192	20	0.025	0.080	1.248	779
FREP XL-S600TC-16-24SPS	16 AWG 7/.0192	24	0.025	0.080	1.378	918
FREP XL-S600TC-16-36SPS	16 AWG 7/.0192	36	0.025	0.080	1.624	1312
FREP XL-S600TC-16-50SPS	16 AWG 7/.0192	50	0.025	0.110	1.934	1886

Print: "BICC CABLES FREP XL XX/PR XX AWG EPR/XL-CPE (UL) TYPE TC XHHW-2 CDRS DIR BUR SUN RES 600V" plus sequential footage mark.

Dimensions and weights are nominal, subject to industry tolerance.

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 1998-09-30