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Harbour INDUSTRIES

802-985-3311 U.S.

Founded in 1965, Harbour Industries vision was to fill the gap between the demand for high quality, high performance wire and cable and the supply available at the time. The military's stringent requirements for quality wire and cable shipped in a timely manner were the formative guidelines for today's Harbour. Attention to detail and a respect for the customer's needs have enabled Harbour to grow in markets that demand quality, consistency and availability.

For over 30 years, Harbour has stressed the importance of an efficient, productive manufacturing facility. A number of moves and property acquisitions have taken place including a new 25,000 square foot facility in Farnham, Quebec in 1985, a consolidation of the Vermont locations to the present 50,000 square foot facility in Shelburne and a 25,000 square foot expansion in 1996. These additions have allowed Harbour to broaden product lines while maintaining the same focus on high performance.

Harbour's mission statement is to remain competitive while developing new high performance, specialty wire and cable to service the military, aerospace, LAN, RF/Microwave, industrial and commercial markets. Harbour's reputation for quality, consistency and a strong technical orientation has resulted in many new products and customers.

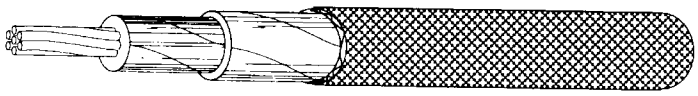
Designed specifically for use in harsh high temperature environments, Harbour's **Industrial Wire and Cables** use materials capable of withstanding heat, abrasion, and direct flame contact.

Industrial lead wire is available for power supply in appliances, industrial foodservice and equipment, consumer electronics and white goods. Composite cables provide power and instrumentation control for steel mills, commercial cooking and curing equipment and building control systems.

Harbour's industrial cables handle up to 1000 volts and operating temperatures to 1000 degrees Celsius. Constructions are available to withstand high levels of gamma radiation, direct flame, and extended periods of high temperature exposure. Harbour continues to develop materials and manufacturing processes to satisfy increasing demands of harsh, high temperature environments.

This catalog defines wire and cables Harbour manufactures to satisfy your industrial, appliance and harsh environment requirements.

TCGT UL/CSA Approved 250° C., 300 Volt



A. Center conductor - stranded, nickel plated copper
B. Insulation - PTFE tape, ceramic tape
C. Jacket - fiberglass saturated with high temperature finish

Applications

Internal wiring of appliances and domestic, commercial and industrial ovens. Also used in cooking, curing and drying equipment. Ideal for high temperature, harsh environments found in heaters, furnaces, ovens, and kilns.

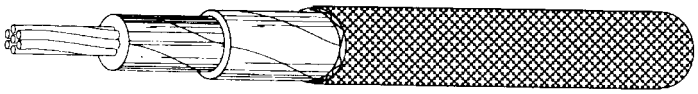
Listings

250° C. 300 volt: UL 5315, UL 5331; CSA: Class 1, Group A/B

Catalog Number	Size (AWG)	Stranding (No./AWG)	Insulation Thickness (mils)	Overall Diameter (inches)	Weight (lbs/1000 ft)	Part Number U.S.	Part Number Canada
TCGT300-24	24	7/32	20	.075	4	J4002	-
TCGT300-22	22	7/30	20	.085	5	J4001	6751
TCGT300-20	20	10/30	20	.091	7	J4003	6758
TCGT300-18	18	16/30	20	.100	10	J4004	6752
TCGT300-16	16	26/30	20	.113	13	J4005	6753
TCGT300-14	14	41/30	20	.127	18	J4006	6754
TCGT300-12	12	65/30	20	.148	28	J4007	6755
TCGT300-10	10	105/30	20	.170	37	J4008	6756
TCGT300-8	8	133/29	20	.217	63	-	6757

All figures referenced are nominal.

TCGT UL/CSA Approved
250° C., 600 Volt



A. Center conductor - stranded, nickel plated copper
B. Insulation - PTFE tape, ceramic tape
C. Jacket - fiberglass saturated with high temperature finish

Applications

Internal wiring of appliances and domestic, commercial and industrial ovens. Also used in cooking, curing and drying equipment. Ideal for high temperature, harsh environments found in heaters, furnaces, ovens, and kilns.

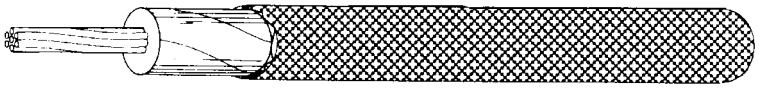
Listings

250° C. 600 volt: UL 5288; CSA: Class 1, Group A/B

Catalog Number	Size (AWG)	Stranding (No./AWG)	Insulation Thickness (mils)	Overall Diameter (inches)	Weight (lbs/1000 ft)	Part Number U.S.	Part Number Canada
TCGT600-20	20	10/30	30	.107	10	J1551	J102
TCGT600-18	18	16/30	30	.115	13	J1550	J103
TCGT600-16	16	26/30	30	.129	18	J1549	J104
TCGT600-14	14	41/30	30	.140	22	J1548	J105
TCGT600-12	12	65/30	30	.155	30	J1547	J106
TCGT600-10	10	105/30	30	.207	49	J1546	J107
TCGT600-8	8	133/29	30	.243	73	J1545	J108
TCGT600-6	6	133/27	43	.305	118	-	J109
TCGT600-4	4	133/25	43	.361	175	-	J110
TCGT600-2	2	133/23	43	.439	267	-	J111

All figures referenced are nominal.

MGT UL/CSA Approved
450° C., 300 Volt



A. Center conductor - stranded, 27% nickel plated copper
B. Insulation - composite mica/glass tape
C. Jacket - fiberglass saturated with high temperature finish

Applications

Internal wiring of appliances and domestic, commercial and industrial ovens. Also used in cooking, curing and drying equipment. Ideal for high temperature, harsh environments found in heaters, furnaces, ovens, and kilns.

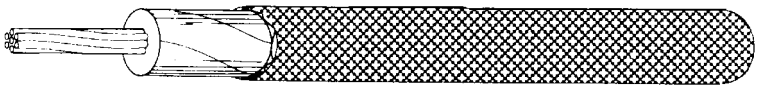
Listings

450° C. 300 volt: UL 5128; CSA: Class 1, Group A/B

Catalog Number	Size (AWG)	Stranding (No./AWG)	Insulation Thickness (mils)	Overall Diameter (inches)	Weight (lbs/1000 ft)	Part Number U.S.	Part Number Canada
MGT300-24	24	7/32	15	.069	4	J4002	-
MGT300-22	22	7/30	15	.075	5	J4001	J401
MGT300-20	20	10/30	15	.081	7	J4003	J402
MGT300-18	18	16/30	15	.090	9	J4004	J403
MGT300-16	16	26/30	15	.101	12	J4005	J404
MGT300-14	14	41/30	15	.117	18	J4006	J405
MGT300-12	12	65/30	15	.138	27	J4007	J406
MGT300-10	10	105/30	20	.180	38	J4008	J407
MGT300-8	8	133/29	20	.227	67	-	J408

All figures referenced are nominal.

MGT UL/CSA Approved
450° C., 600 Volt



A. Center conductor - stranded, 27% nickel plated copper
B. Insulation - composite mica/glass tape
C. Jacket - fiberglass saturated with high temperature finish

Applications

Internal wiring of appliances and domestic, commercial and industrial ovens. Also used in cooking, curing and drying equipment. Ideal for high temperature, harsh environments found in heaters, furnaces, ovens, and kilns.

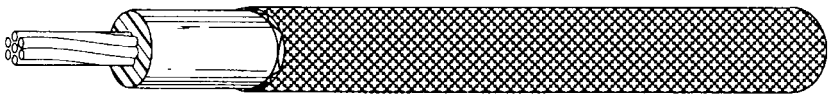
Listings

450° C. 600 volt: UL 5107; CSA: Class 1, Group A/B

Catalog Number	Size (AWG)	Stranding (No./AWG)	Insulation Thickness (mils)	Overall Diameter (inches)	Weight (lbs/1000 ft)	Part Number U.S.	Part Number Canada
MGT600-22	22	7/30	30	.095	9	J1534	J200
MGT600-20	20	10/30	30	.101	10	J1533	J201
MGT600-18	18	16/30	30	.111	13	J1532	J202
MGT600-16	16	26/30	30	.125	18	J1531	J203
MGT600-14	14	41/30	30	.136	22	J1530	J204
MGT600-12	12	65/30	30	.158	31	J1529	J205
MGT600-10	10	105/30	30	.200	44	J1528	J206
MGT600-8	8	133/29	30	.247	73	J1527	J207

All figures referenced are nominal.

UL SF-1/CSA SEW-1
200° C., 300 Volt



A. Center conductor - solid or stranded tin plated copper
B. Insulation - extruded silicone rubber
C. Insulation - fiberglass saturated with high temperature finish

Applications

Internal wiring of electrical equipment and appliances where temperatures do not exceed rated value and where moisture may be present.

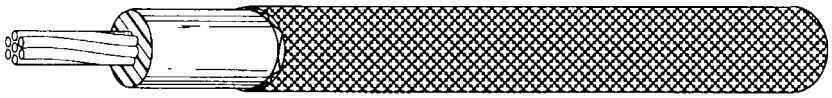
Listings

200° C., 300 volt: UL SF-1, UL 3122; CSA: SEW-1

Catalog Number	Size (AWG)	Stranding (No./AWG)	Insulation Thickness (mils)	Overall Diameter (inches)	Weight (lbs/1000 ft)	Part Number U.S.	Part Number Canada
SFSEW1-22	22	1/22	15	.070	4	-	7000
SFSEW1-20	20	1/20	15	.077	6	-	7001
SFSEW1-18	18	7/26	15	.094	9	-	7002
SFSEW1-16	16	7/.0192"	15	.103	11	-	7003

All figures referenced are nominal.

UL SF-2/CSA SEW-2
200° C., 600 volt



A. Center conductor - solid or stranded tin plated copper
B. Insulation - extruded silicone rubber
C. Insulation - fiberglass saturated with high temperature finish

Applications

Internal wiring of electrical equipment and appliances where temperatures do not exceed rated value and where moisture may be present.

Listings

200° C., 600 volt: UL SF-2, Various UL; CSA: SEW-2

Catalog Number	Size (AWG)	Stranding (No./AWG)	Insulation Thickness (mils)	Overall Diameter (inches)	Weight (lbs/1000 ft)	Part Number U.S.	Part Number Canada
SFSEW2-221	22	1/22	30	.100	5.8	-	7010
SFSEW2-201	20	1/20	30	.107	7.3	-	7011
SFSEW2-181	18	1/18	30	.115	10	-	7046
SFSEW2-187	18	7/26	30	.124	11	-	7012
SFSEW2-161	16	1/26	30	.126	14	-	7048
SFSEW2-167	16	7/.0192	30	.133	14	-	7013
SFSEW2-141	14	1/14	30	.139	21	-	7049
SFSEW2-147	14	7/.0242	30	.147	20	-	7015
SFSEW2-121	12	1/12	30	.156	29	-	7027
SFSEW2-1219	12	19/.0185	30	.164	27	-	7015
SFSEW2-101	10	1/10	45	.208	47	-	5590
SFSEW2-1019	10	19/.0234	45	.218	48	-	7016
SFSEW2-819	8	19/.0295	60	.286	79	-	7017
SFSEW2-619	6	19/.0372	60	.326	116	-	7018
SFSEW2-4133	4	133/25	60	.410	176	-	7019
SFSEW2-2133	2	133/23	60	.480	263	-	7020
SFSEW2-2259	2	259/26	60	.474	262	-	7026
SFSEW2-1259	1	259/25	80	.557	340	-	7021
SFSEW2-0259	1/0	259/24	80	.595	414	-	7022
SFSEW2-00259	2/0	259/23	80	.685	617	-	7023
SFSEW2-000259	3/0	259/22	80	.740	643	-	7024
SFSEW2-0000259	4/0	259/21	80	.806	790	-	7025

All figures referenced are nominal.

Harbour INDUSTRIES

UL 10086
200° C., 600 Volt

A. Center conductor - solid or stranded tin or silver plated copper[1]
B. Insulation - extruded ETFE

Applications
Internal wiring of electrical equipment and UL classified appliance wire service up to 200° C.

Listings
200° C., 600 volt: UL10086; CSA: Class 1 Group A/B

Catalog Number	Size (AWG)	Stranding (No./AWG)	Insulation Thickness (mils)	Overall Diameter (inches)	Weight (lbs/1000 ft)	Part Number U.S.	Part Number Canada
TZ10086-301S	30	1/30	10	.030	1	-	2400
TZ10086-307S	30	7/30	10	.032	1	-	2401
TZ10086-281S	28	1/28	10	.033	1	-	2402
TZ10086-287S	28	7/36	10	.035	1	-	2403
TZ10086-2819S	28	19/40	10	.035	1	-	2404
TZ10086-261T	26	1/26	10	.036	1.5	-	2405
TZ10086-261S	26	1/26	10	.036	1.5	-	2406
TZ10086-267S	26	7/34	10	.039	1.5	-	2407
TZ10086-2619S	26	19/38	10	.039	1.5	-	2408
TZ10086-241T	24	1/24	10	.040	2	-	2409
TZ10086-241S	24	1/24	10	.040	2	-	2410
TZ10086-247S	24	7/32	10	.044	2	-	2411
TZ10086-2419S	24	19/36	10	.043	2	-	2412
TZ10086-221T	22	1/22	10	.045	3	-	2413
TZ10086-221S	22	1/22	10	.045	3	-	2414
TZ10086-227S	22	7/30	10	.050	3	-	2415
TZ10086-2219S	22	19/34	10	.050	3	-	2416
TZ10086-201T	20	1/20	10	.052	4	-	2417
TZ10086-201S	20	1/20	10	.052	4	-	2418
TZ10086-207S	20	7/28	10	.058	5	-	2419
TZ10086-2019S	20	19/32	10	.058	5	-	2420

UL 10086 (continued)

Catalog Number	Size (AWG)	Stranding (No./AWG)	Insulation Thickness (mils)	Overall Diameter (inches)	Weight (lbs/1000 ft)	Part Number U.S.	Part Number Canada
TZ10086-181T	18	1/18	10	.060	6	-	2421
TZ10086-187T	18	7/26	10	.069	6.5	-	2422
TZ10086-1819S	18	19/30	10	.067	7	-	2423
TZ10086-161T	16	1/16	10	.071	9	-	2424
TZ10086-167T	16	7/.0192"	10	.078	10	-	2425
TZ10086-1619S	16	19/.0117"	10	.076	10	-	2426
TZ10086-141T	14	1/14	10	.084	14	-	2427
TZ10086-147T	14	7/.0242"	10	.092	15	-	2428
TZ10086-1419S	14	19/.0147"	10	.089	16	-	2429
TZ10086-121T	12	1/12	15	.111	23	-	2430
TZ10086-1219T	12	19/.0185"	15	.119	23	-	2431
TZ10086-1237S	12	37/.0133"	15	.123	24	-	2432
TZ10086-1019T	10	19/.0234"	15	.143	37	-	2433
TZ10086-1037T	10	37/.0167"	15	.145	34	-	2434
TZ10086-10105S	10	105/30	15	.154	36	-	2435
TZ10086-819T	8	19/.0295"	30	.201	63	-	2436
TZ10086-8133S	8	133/29	30	.220	65	-	2437
TZ10086-619T	6	19/.0372	30	.241	96	-	2438
TZ10086-6133S	6	133/27	30	.262	99	-	2439
TZ10086-4133T	4	133/25	30	.325	150	-	2440
TZ10086-2133T	2	133/23	30	.395	231	-	2441
TZ10086-1259T	1	259/25	45	.462	304	-	2442
TZ10086-01259T	1/0	259/24	45	.514	375	-	2443
TZ10086-02259T	2/0	259/23	45	.567	466	-	2444
TZ10086-03259T	3/0	259/22	45	.620	579	-	2445
TZ10086-04259T	4/0	259/21	45	.676	722	-	2446

[1]Suffix "S" on Catalog Number denotes silver plated copper; suffix "T", tin plated copper.

All figures referenced are nominal.

UL 10109
200° C., 300 Volt

A. Center conductor - solid or stranded tin or silver plated copper[1]
B. Insulation - extruded ETFE

Applications
Internal wiring of electrical equipment and UL classified appliance wire service up to 200° C.

Listings
200° C., 300 volt: UL10109; CSA: Class 1 Group A/B

Catalog Number	Size (AWG)	Stranding (No./AWG)	Insulation Thickness (mils)	Overall Diameter (inches)	Weight (lbs/1000 ft)	Part Number U.S.	Part Number Canada
TZ10109-301S	30	1/30	6	.022	1	-	2450
TZ10109-307S	30	7/38	6	.024	1	-	2451
TZ10109-281S	28	1/28	6	.025	1	-	2452
TZ10109-287S	28	7/36	6	.027	1	-	2453
TZ10109-2819S	28	19/40	6	.027	1	-	2454
TZ10109-261T	26	1/26	6	.028	1	-	2455
TZ10109-261S	26	1/26	6	.028	1	-	2456
TZ10109-267S	26	7/34	6	.031	1	-	2457
TZ10109-2619S	26	19/38	6	.031	1.5	-	2458
TZ10109-241T	24	1/24	6	.032	2	-	2459
TZ10109-241S	24	1/24	6	.032	2	-	2460
TZ10109-247S	24	7/32	6	.036	2	-	2461
TZ10109-2419S	24	19/36	6	.035	2	-	2462
TZ10109-221T	22	1/22	6	.037	2.5	-	2463
TZ10109-221S	22	1/22	6	.037	2.5	-	2464
TZ10109-227S	22	7/30	6	.042	3	-	2465
TZ10109-2219S	22	19/34	6	.042	3	-	2466
TZ10109-201T	20	1/20	6	.044	4	-	2467
TZ10109-201S	20	1/20	6	.044	4	-	2468
TZ10109-207S	20	7/28	6	.050	4	-	2469
TZ10109-2019S	20	19/32	6	.050	5	-	2470

UL10109 (continued)

Catalog Number	Size (AWG)	Stranding (No./AWG)	Insulation Thickness (mils)	Overall Diameter (inches)	Weight (lbs/1000 ft)	Part Number U.S.	Part Number Canada
TZ10109-181T	18	1/18	6	.052	6	-	2471
TZ10109-187T	18	7/26	6	.061	6	-	2472
TZ10109-1819S	18	19/30	6	.059	6	-	2473
TZ10109-161T	16	1/16	8	.067	9	-	2474
TZ10109-167T	16	7/.0192"	8	.074	9	-	2475
TZ10109-1619S	16	19/.0117"	8	.072	9	-	2476
TZ10109-141T	14	1/14	8	.080	14	-	2477
TZ10109-147T	14	7/.0242"	8	.088	14	-	2478
TZ10109-1419S	14	19/.0147"	8	.085	14	-	2479
TZ10109-121T	12	1/12	10	.101	22	-	2480
TZ10109-1219T	12	19/.0185"	10	.109	21	-	2481
TZ10109-1237S	12	37/.0133"	10	.113	22	-	2482
TZ10109-1019T	10	19/.0234"	10	.133	35	-	2483
TZ10109-1037T	10	37/.0167"	10	.135	32	-	2484
TZ10109-10105S	10	105/30	10	.144	34	-	2485
TZ10109-819T	8*	19/.0295"	30	.201	63	-	2488
TZ10109-8133S	8*	133/29	30	.220	65	-	2489
TZ10109-619T	6*	19/.0372	30	.241	96	-	2490
TZ10109-6133S	6*	133/27	30	.262	99	-	2491
TZ10109-4133T	4*	133/25	30	.325	150	-	2492
TZ10109-2133T	2*	133/23	30	.395	231	-	2493
TZ10109-1259T	1*	259/25	45	.462	304	-	2494
TZ10109-01259T	1/0*	259/24	45	.514	375	-	2495
TZ10109-02259T	2/0*	259/23	45	.567	466	-	2496
TZ10109-03259T	3/0*	259/22	45	.620	579	-	2497
TZ10109-04259T	4/0*	259/21	45	.676	722	-	2498

[1]Suffix “S”on Catalog Number denotes silver plated copper conductor; suffix ”T”, tin plated copper.

All figures referenced are nominal.

* Not CSA approved.

Harbour INDUSTRIES

Braidless Silicone Rubber
200° C., 300 Volt

A. Center conductor - solid or stranded tin plated copper
B. Insulation - extruded flame retardant silicone rubber

Applications
Internal wiring of electrical equipment and appliances where totally enclosed.

Listings
200° C., 300 volt: UL 3367; CSA: Class 1 Group A

Catalog Number	Size (AWG)	Stranding (No./AWG)	Insulation Thickness (mils)	Overall Diameter (inches)	Weight (lbs/1000 ft)	Part Number U.S.	Part Number Canada
BSR3367-24	24	1/24	15	.050	2	-	H143
BSR3367-22	22	1/22	15	.055	3	-	H144
BSR3367-20	20	1/20	15	.062	4	-	H145
BSR3367-18	18	7/26	15	.079	7	-	H146
BSR3367-16*	16	7/.0192”	15	.088	10	-	H147
BSR3367-14*	14	7/.0242”	15	.102	15	-	H148
BSR3367-12*	12	19/.0185”	15	.119	22	-	H149
BSR3367-10*	10	37/.0167”	15	.145	32	-	H150

* AWG size 16, 14, 12, and 10 are not UL 3367
All figures referenced are nominal.

Braidless Silicone Rubber
200° C., 600 Volt

A. Center conductor - solid or stranded tin plated copper
B. Insulation - extruded flame retardant silicone rubber

Applications
Internal wiring of electrical equipment and appliances where totally enclosed.

Listings
200° C., 600 volt: UL 3139; CSA: Class 1 Group A

Catalog Number	Size (AWG)	Stranding (No./AWG)	Insulation Thickness (mils)	Overall Diameter (inches)	Weight (lbs/1000 ft)	Part Number U.S.	Part Number Canada
BSR3139-24	24	1/24	45	.114	7	-	9010
BSR3139-22	22	1/22	45	.120	8	-	9011
BSR3139-20	20	1/20	45	.128	10	-	9012
BSR3139-18	18	7/26	45	.139	13	-	9013
BSR3139-16	16	7/.0192"	45	.148	17	-	9014
BSR3139-14	14	7/.0242"	45	.162	22	-	9015
BSR3139-12	12	19/.0185"	45	.179	31	-	9016

Larger AWG sizes, non-UL, available on request.
All figures referenced are nominal.

Braidless Silicone Rubber
200° C., 600 Volt

A. Center conductor - solid or stranded tin plated copper
B. Insulation - extruded flame retardant silicone rubber

Applications
Internal wiring of electrical equipment and appliances where totally enclosed.

Listings
200° C., 600 volt: UL 3530; CSA: Class 1 Group A

Catalog Number	Size (AWG)	Stranding (No./AWG)	Insulation Thickness (mils)	Overall Diameter (inches)	Weight (lbs/1000 ft)	Part Number U.S.	Part Number Canada
BSR3530-24	24	1/24	30	.080	4	-	H120
BSR3530-22	22	1/22	30	.085	5	-	H121
BSR3530-20	20	1/20	30	.092	7	-	H122
BSR3530-181	18	1/18	30	.100	9	-	H123
BSR3530-187	18	7/26	30	.109	10	-	H124
BSR3530-161	16	1/16	30	.111	12	-	H125
BSR3530-167	16	7/.0192"	30	.118	13	-	H126
BSR3530-141	14	1/14	30	.124	17	-	H127
BSR3530-147	14	7/.0242"	30	.132	18	-	H128
BSR3530-121	12	1/12	30	.141	26	-	H129
BSR3530-1219	12	19/.0185"	30	.149	28	-	H130
BSR3530-101	10	1/10	45	.193	44	-	H131
BSR3530-1019	10	19/.0234"	45	.203	45	-	H132
BSR3530-8	8	19/.0295"	60	.261	72	-	H133
BSR3530-6	6	19/.0372"	60	.301	107	-	H134
BSR3530-4	4	133/25	60	.385	163	-	H135
BSR3530-2133	2	133/23	60	.455	246	-	H136
BSR3530-2259	2	259/26	60	.449	246	-	H137
BSR3530-125a	1	259/25	80	.532	322	-	H138
BSR3530-1/0	1/0	259/24	80	.570	395	-	H139
BSR3530-2/0	2/0	259/23	80	.625	488	-	H140
BSR3530-3/0	3/0	259/22	80	.680	602	-	H141
BSR3530-4/0	4/0	259/21	80	.746	747	-	H142

All figures referenced are nominal.

Type SE

A. Conductor - stranded silver plated copper (SPC)
B. Insulation - extruded PTFE
C. Shield - silver plated copper braid, 90% minimum coverage
D. Jacket - extruded FEP

Applications

Electrical and electronic installations with ambient temperatures up to 200°C. and voltage requirements to 600 volts.

Catalog Number	Primary (AWG)	Stranding (No./AWG)	Primary OD (inches)	Shield OD (inches)	Cable OD (inches)	Weight (lbs)
1XE24-1936SE	24	19/36	.045	.059	.075	7
2XE24-1936SE	24	19/36	.045	.102	.118	13
3XE24-1936SE	24	19/36	.045	.109	.125	16
4XE24-1936SE	24	19/36	.045	.120	.136	19
1XE22-1934SE	22	19/34	.051	.095	.081	10
2XE22-1934SE	22	19/34	.051	.114	.130	15
3XE22-1934SE	22	19/34	.051	.122	.138	20
4XE22-1934SE	22	19/34	.051	.135	.151	25
1XE20-1932SE	20	19/32	.060	.074	.090	11
2XE20-1932SE	20	19/32	.060	.132	.148	20
3XE20-1932SE	20	19/32	.060	.141	.157	27
4XE20-1932SE	20	19/32	.060	.156	.180	35
1XE18-1930SE	18	19/30	.070	.084	.100	15
2XE18-1930SE	18	19/30	.070	.152	.176	28
3XE18-1930SE	18	19/30	.070	.163	.187	38
4XE18-1930SE	18	19/30	.070	.181	.205	47
1XE16-1929SE	16	19/29	.080	.091	.107	17
2XE16-1929SE	16	19/29	.080	.166	.190	33
3XE16-1929SE	16	19/29	.080	.178	.202	46
4XE16-1929SE	16	19/29	.080	.198	.222	59
1XE14-1927SE	14	19/27	.090	.109	.122	23
2XE14-1927SE	14	19/27	.090	.196	.220	45
3XE14-1927SE	14	19/27	.090	.210	.234	65
4XE14-1927SE	14	19/27	.090	.234	.258	82
1XE12-1925SE	12	19/25	.110	.127	.143	33
2XE12-1925SE	12	19/25	.110	.238	.262	68
3XE12-1925SE	12	19/25	.110	.256	.280	95
4XE12-1925SE	12	19/25	.110	.289	.309	126

Cable configurations of up to 10 primaries are also available.

All figures referenced are nominal.

Harbour INDUSTRIES

Types E, EE, ET

A. Conductor - silver plated copper (SPC) conforming to ASTM B-298 40 micro inches minimum silver plating, or nickel plated coppper (NPC) conforming to ASTM B-355 50 micro inches minimum nickel plating

B. Insulation - extruded PTFE

Applications

For use in internal wiring of electronic equipment and appliances. Nema HP-3, TFE lead wires have a low coefficient of friction which promotes easy handling. The insulation also resists hot soldering irons, is self extinguishing, non-flammable, has excellent chemical resistance and is suitable for immersion in gasoline, gasoline vapor and at 80° C. maximum, oil. PTFE insulation is not affected by weathering, ozone, or corrosive environments.

	Type E	Type EE	Type ET	Type EN	Type EEN	Type ETN
Voltage Rating	600	1000	250	600	1000	250
Temperature (°C.)	200	200	200	260	260	260
Conductor type	SPC	SPC	SPC	NPC	NPC	NPC
AWG Size & Stranding	**Insulation thickness (mils)/Overall diameter (inches)**					
30 1/30	10/.030	15/.040	6/.022	6/.022	15/.040	6/.022
30 7/38	10/.032	15/.042	6/.024	6/.024	15/.042	6/.024
28 1/28	10/.033	15/.043	6/.025	6/.025	15/.043	6/.025
28 7/36	10/.035	15/.045	6/.027	6/.027	15/.045	6/.027
28 19/40	10/.036	15/.046	6/.027	10/.036	15/.046	6/.027
26 1/26	10/.036	15/.046	6/.028	6/.028	15/.046	6/.028
26 7/34	10/.039	15/.049	6/.031	6/.031	15/.049	6/.031
26 19/38	10/.040	15/.049	6/.031	10/.040	15/.049	6/.031
24 1/24	10/.040	15/.050	6/.032	6/.032	10/.050	6/.032
24 7/32	10/.044	15/.054	6/.036	6/.036	10/.054	6/.036
24 19/36	10/.045	15/.055	6/.036	10/.045	15/.055	6/.036
22 1/22	10/.045	15/.055	6/.038	6/.038	10/.055	6/.038
22 7/30	10/.050	15/.060	6/.042	6/.042	10/.060	6/.042
22 19/34	10/.051	15/.061	6/.042	10/.051	15/.061	6/.042
20 1/20	10/.052	15/.062	6/.044	6/.044	10/.062	6/.044
20 7/28	10/.058	15/.068	6/.050	6/.050	10/.068	6/.050
20 19/32	10/.059	15/.069	6/.052	10/.059	15/.069	6/.052
18 1/18	10/.061	15/.071	-	-	10/.071	-
18 7/26	10/.069	15/.079	-	-	10/.079	-
18 19/30	10/.070	15/.080	-	10/.070	15/.080	-
16 19/29	10/.080	15/.089	-	10/.080	15/.089	-
14 19/27	10/.094	15/.105	-	10/.094	15/.105	-
12 19/25	10/.113	15/.124	-	10/.113	15/.124	-
10 37/26	10/.134	15/.139	-	-	15/.139	-
8 133/29	-	24/.209	-	-	24/.209	-

All figures referenced are nominal.

Types K, KK, KT

A. Conductor - tin plated copper (TPC) conforming to ASTM B-33
B. Insulation - extruded FEP

Applications

For use in internal wiring of electronic equipment and appliances. FEP lead wires have a low coefficient of friction which promotes easy handling. The insulation also resists hot soldering irons, is self extinguishing, non-flammable, has excellent chemical resistance and is suitable for immersion in gasoline, gasoline vapor, and at 80°C. maximum, oil. FEP insulation is not affected by weathering, ozone, or corrosive environments.

	Type K	Type KK	Type KT	Type KZ	Type KKZ	Type KKZT
Voltage Rating	600	1000	250	600	1000	250
Temperature (°C.)	200	200	200	260	260	260
Conductor Type	SPC	SPC	SPC	NPC	NPC	NPC
AWG Size & Stranding	**Insulation thickness (mils)/Overall diameter (inches)**					
30 1/30	10/.030	15/.040	6/.022	6/.022	10/.030	15/.040
30 7/38	10/.032	15/.042	6/.024	6/.024	10/.032	15/.042
28 1/28	10/.033	15/.043	6/.025	6/.025	10/.033	15/.043
28 7/36	10/.035	15/.045	6/.027	6/.027	10/.035	15/.045
28 19/40	10/.036	15/.045	6/.027	10/.036	15/.046	6/.027
26 1/26	10/.036	15/.046	6/.028	6/.028	10/.036	15/.046
26 7/34	10/.039	15/.049	6/.031	6/.031	10/.039	15/.049
26 19/38	10/.040	15/.049	6/.031	10/.040	15/.049	6/.031
24 1/24	10/.040	15/.050	6/.032	6/.032	10/.040	15/.050
24 7/32	10/.044	15/.054	6/.036	6/.036	10/.044	15/.054
24 19/36	10/.045	15/.054	6/.036	10/.045	15/.055	6/.036
22 1/22	10/.045	15/.055	6/.038	6/.038	10/.045	15/.055
22 7/30	10/.050	15/.060	6/.042	6/.042	10/.050	15/.060
22 19/34	10/..051	15/.060	6/.042	10/..051	15/.061	6/.042
20 1/20	10/.052	15/.062	6/.044	6/.044	10/.052	15/.062
20 7/28	10/.058	15/.068	6/.050	6/.050	10/.058	15/.068
20 19/32	10/.059	15/..069	6/.052	10/.059	15/..069	6/.052
18 1/18	10/.061	15/070	-	-	10/.061	16/.071
18 7/26	10/.069	15/.079	-	-	10/.069	16/.079
18 19/30	10/.068	15/.078	-	10/.070	15/.080	-
16 19/29	10/.076	17/..088	-	10/..080	15/..089	-
14 19/27	10/.092	18/.104	-	10/.094	15/.105	-
12 19/25	10/.113	18/.125	-	10/.113	15/.124	-
10 37/26	10/.131	18/.143	-	-	-	-
8 133/29	-	20/.205	-	-	-	-

All figures referenced are nominal.

Type STJ

A. Conductor - stranded silver plated copper (SPC)
B. Insulation - extruded PTFE
C. Shield - silver plated copper braid, 85% minimum coverage
D. Jacket - tape wrapped PTFE

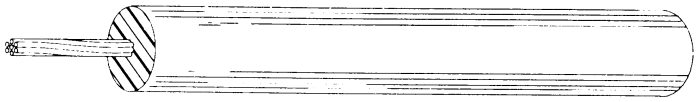
Applications

Electrical and electronic installations with ambient temperatures up to 200°C. and voltage requirements to 600 volts.

Catalog Number	Primary (AWG)	Stranding (No./AWG)	Primary OD (inches)	Shield OD (inches)	Cable OD (inches)	Weight (lbs)
1XE26-734STJ	26	7/34	.039	.055	.075	6
2XE26-734STJ	26	7/34	.039	.094	.114	10
3XE26-734STJ	26	7/34	.039	.107	.129	13
4XE26-734STJ	26	7/34	.039	.117	.139	16
1XE24-1936STJ	24	19/36	.045	.059	.075	7
2XE24-1936STJ	24	19/36	.045	.102	.118	13
3XE24-1936STJ	24	19/36	.045	.109	.125	16
4XE24-1936STJ	24	19/36	.045	.120	.136	19
1XE22-1934STJ	22	19/34	.051	.095	.081	10
2XE22-1934STJ	22	19/34	.051	.114	.130	15
3XE22-1934STJ	22	19/34	.051	.122	.138	20
4XE22-1934STJ	22	19/34	.051	.135	.151	25
1XE20-1932STJ	20	19/32	.060	.074	.090	11
2XE20-1932STJ	20	19/32	.060	.132	.148	20
3XE20-1932STJ	20	19/32	.060	.141	.157	27
4XE20-1932STJ	20	19/32	.060	.156	.180	35
1XE18-1930STJ	18	19/30	.070	.084	.100	15
2XE18-1930STJ	18	19/30	.070	.152	.176	28
3XE18-1930STJ	18	19/30	.070	.163	.187	38
4XE18-1930STJ	18	19/30	.070	.181	.205	47
1XE16-1929STJ	16	19/29	.080	.091	.107	17
2XE16-1929STJ	16	19/29	.080	.166	.190	33
3XE16-1929STJ	16	19/29	.080	.178	.202	46
4XE16-1929STJ	16	19/29	.080	.198	.222	59
1XE14-1927STJ	14	19/27	.090	.109	.122	23
2XE14-1927STJ	14	19/27	.090	.196	.220	45
3XE14-1927STJ	14	19/27	.090	.210	.234	65
4XE14-1927STJ	14	19/27	.090	.234	.258	82
1XE12-1925STJ	12	19/25	.110	.127	.143	33
2XE12-1925STJ	12	19/25	.110	.238	.262	68
3XE12-1925STJ	12	19/25	.110	.256	.280	95
4XE12-1925STJ	12	19/25	.110	.289	.309	126

Cable configurations of up to 10 primaries are also available.
All figures referenced are nominal.

Braidless Silicone Rubber
150° C., 10 to 50kV DC



A. Center conductor- solid or stranded tin-plated copper
B. Insulation- extruded silicone rubber

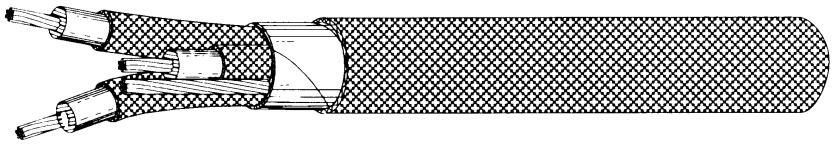
Applications
Internal wiring of electrical equipment and appliances where totally enclosed.

Listings
150° C., 10 to 50 kV DC: UL 3239

	Catalog Number	Size (AWG)	Stranding (No./AWG)	Insulation Thickness (mils)	Overall Diameter (inches)	Weight (lbs/1000 ft)	Part Number U.S.	Part Number Canada
10 kV	BSR3239-2210	22	7/30	40	.110	7	-	H300
	BSR3239-2010	20	10/30	40	.117	9	-	H301
15 kV	BSR3239-2215	22	7/30	45	.120	8	-	H302
	BSR3239-2015	20	10/30	45	.127	10	-	H303
	BSR3239-1815	18	16/30	45	.135	12	-	H304
	BSR3239-1615	16	26/30	45	.146	16	-	H305
	BSR3239-1415	14	41/30	45	.160	22	-	H306
	BSR3239-1215	12	65/30	45	.180	31	-	H307
	BSR3239-1015	10	105/30	45	.214	44	-	H308
20 kV	BSR3239-2220	22	7/30	50	.130	9	-	H311
	BSR3239-2020	20	10/30	50	.137	11	-	H312
25 kV	BSR3239-2225	22	7/30	62	.154	12	-	H313
	BSR3239-2025	20	10/30	62	.161	14	-	H314
	BSR3239-1825	18	16/30	62	.169	17	-	H315
	BSR3239-1625	16	26/30	62	.180	21	-	H316
	BSR3239-1425	14	41/30	62	.194	27	-	H317
50 kV	BSR3239-2240	22	7/30	97	.224	24	-	H323
	BSR3239-2040	20	10/30	97	.231	26	-	H324
	BSR3239-1840	18	16/30	97	.239	29	-	H325
	BSR3239-1640	16	26/30	97	.250	34	-	H326
	BSR3239-1440	14	41/30	97	.264	41	-	H327
	BSR3239-1240	12	65/30	97	.284	52	-	H328
	BSR3239-1040	10	105/302	97	.318	69	-	H329

All figures referenced are nominal.

Flameguard®
2&4 Hour Fire Rated 1000 Volt



A. Conductor - stranded nickel plated copper.
B. Insulation - high temperature silicone rubber
C. Jacket - heat resistant fiberglass with high temperature non-fraying finish
D. Drain wire - stranded nickel plated copper (optional)
E. Shield - aluminum/polyester (optional)
F. Overall jacket - heat resistant fiberglass with high temperature finish

Applications

For use in applications requiring continuing operation of critical electrical circuits and equipment in case of fire. Flameguard will maintain circuit integrity when exposed to direct flame for 2 hours.

Listings

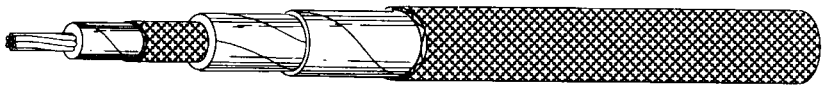
ULC listed to S101 flame test; CSA C22.2 No. 208-M1986 (FAS), FT4.

Series 5900 Unshielded cables

Catalog Number	Number of Conductors	AWG Size	Stranding (No./AWG)	Overall Diameter	Weight (lbs/1000 ft)	Part Number U.S.	Part Number Canada
FGU-182	2	18	7/26	.342	61	-	5901
FGU-183	3	18	7/26	.359	76	-	5910
FGU-184	4	18	7/26	.389	83	-	5913
FGU-185	5	18	7/26	.445	106	-	5906
FGU-162	2	16	7/24	.360	71	-	5909
FGU-163	3	16	7/.0192"	.378	88	-	5916
FGU-164	4	16	7/.0192"	.431	97	-	5918
FGU-165	5	16	7/.0192"	.468	124	-	5920
FGU-142	2	14	19/.0147"	.403	93	-	5922
FGU-143	3	14	19/.0147"	.445	125	-	5929
FGU-144	4	14	19/.0147"	.484	138	-	5931
FGU-145	5	14	19/.0147"	.527	168	-	5933
FGU-122	2	12	19/.0185"	.468	128	-	5903
FGU-123	3	12	19/.0185"	.493	161	-	5935
FGU-124	4	12	19/.0185"	.537	182	-	5937
FGU-125	5	12	19/.0185"	.622	239	-	5908
Series 5900 Shielded cables							
FGS-182	2	18	7/26	.347	58	-	5900
FGS-183	3	18	7/26	.364	75	-	5912
FGS-184	4	18	7/26	.394	90	-	5914
FGS-185	5	18	7/26	.485	118	-	5905
FGS-162	2	16	7/24	.364	68	-	5915
FGS-163	3	16	7/.0192"	.383	89	-	5917
FGS-164	4	16	7/.0192"	.436	108	-	5919
FGS-165	5	16	7/.0192"	.473	130	-	5921
FGS-142	2	14	19/.0147"	.428	91	-	5928
FGS-143	3	14	19/.0147"	.450	127	-	5930
FGS-144	4	14	19/.0147"	.489	154	-	5932
FGS-145	5	14	19/.0147"	.532	175	-	5934
FGS-122	2	12	19/.0185"	.473	128	-	5902
FGS-123	3	12	19/.0185"	.498	166	-	5936
FGS-124	4	12	19/.0185"	.542	204	-	5938
FGS-125	5	12	19/.0185"	.698	285	-	5907-SPEC

All figures referenced are nominal.

Heatguard
1000° C., 600 Volt



A. Center conductor - stranded 27% nickel plated copper
B. Dielectric - glass reinforced mica tape
fiberglass braid
glass reinforced mica tape
C. Jacket - fiberglass saturated with high temperature finish

Applications

Power and control instruments for industrial ovens, furnaces, overhead cranes, foundries, chemical plants, refineries and other harsh environments.

Listings

450° C. 600 volt: UL 5107; CSA Class 1, Group A
1000° C. rated for intermittent exposure, passes IEEE-383 vertical flame test.

Single conductor constructions

Catalog Number	Size (AWG)	Stranding (No./AWG)	Overall Diameter (inches)	Weight (lbs./1000 ft)	Part Number U.S.	Part Number Canada
HG22730	22	7/30	.146	13	-	6669
HG201030	20	10/30	.152	15	-	6670
HG181630	18	16/30	.164	18	-	6661
HG162630	16	26/30	.1173	22	-	6662
HG144130	14	41/30	.189	27	-	4006
HG126530	12	65/30	.204	36	-	5532
HG1010530	10	105/30	.266	56	-	5634
HG813329	8	133/29	.312	88	-	6666
HG613327	6	133/27	.366	126	-	6667
HG413325	4	133/25	.426	188	-	6668

Multiconductor constructions

Catalog Number	Size (AWG)	Stranding (No./AWG)	Number of Conductors	Overall Diameter (inches)	Weight (lbs./1000 ft)	Part Number U.S.	Part Number Canada
HG18162	18	16/30	2	.287	50	-	6660
HG18163	18	16/30	3	.304	58	-	6659
HG16262	16	26/30	2	.305	60	-	6663
HG16263	16	26/30	3	.323	68	-	5531
HG14412	14	41/30	2	.335	73	-	6664
HG14413	14	41/30	3	.356	93	-	6665

All figures referenced are nominal.

Harbour INDUSTRIES

Hartrex I & II
250° C.

A. Conductor - per customer specifications
B. Insulation - PEEK
C. Shield - optional
D. Jacket - PEEK (optional)

Applications

For high temperature and high abrasion resistance and where high levels of gamma radiation exist. Hartrex passes LOCA testing and exhibits no significant change in physical properties after exposure to 1000 Megarads of radiation. Insulation thicknesses of 10 to 20 mils are typical for radiation resistant wires. Hartrex insulation is insoluble in all common solvents and resistant to a wide range of organic and inorganic liquids. Hartrex releases low levels of smoke and toxic gases during combustion, is halogen free and has very good hydrolysis resistance.

Specific applications of Hartrex wire and cable include windings for transformers, small motors, pumps and similar equipment. Configurations are available from 30 to 12 AWG and wall thicknesses from 2 mils.

UL & CSA Hook up and Lead Wire Index

Insulation Material	UL Style	CSA Classification	AWG Size Range	Voltage Rating (Volts)	Temperature Rating (° C.)
PTFE	1164	Class I Group A/B FT1	30-10	300	150
	1180	Class I Group A/B FT1	28-10	300	200
	1198	Class I Group A/B FT1	30-10	600	150
	1199	Class I Group A/B FT1	28-10	600	150
	1212	-	30-20	N.S	80
	1213	Class I Group A/B FT1	30-10	N.S UL/150 CSA	105
	1659	Class I Group A/B FT1	30-10	600	250
	1815	-	30-10	300	250
FEP	1226	-	30-14	N.S.	80
	1227	-	30-10	N.S.	105
	1330	Class I Group A/B FT1	30-4/0	600	200(UL)/180(CSA)
	1331	-	30-4/0	600	150
	1332	Class I Group A/B FT1	30-10	300	200(UL)/180(CSA)
	1333	Class I Group A/B FT1	30-10	300	150
ETFE	1643	Class I Group A FT1	30-4/0	300	150
	1644	Class I Group A FT1	30-4/0	600	150
	1671	Class I Group A FT1	30-10	300	150
	10125	Class I Group A/B FT1	24-10	300	150
	10126	Class I Group A/B FT1	24-10	600	150
	10109	Class I Group A/B FT1	30-10	300	200
	10086	Class I Group A/B FT1	30-10	600	200
PFA	1709	Class Group A FT1	-	-	-
		Class Group A FT1	-	-	-
		Class Group A FT1	-	-	-
Silicone Rubber	SFF-1, 3068	SEWF-1	22-16	300	150
	SEW-1, 3122	SEW-1	22-16	300	200
	SFF-2,	-	-	-	-
	3069,3100,	-	-	-	-
	3101, 3278	SEWF-2	18-4/0	600	150
	SF-2, 3074,	-	-	-	-
	3075, 3172,	-	-	-	-
	3231	SEW-2	18-4/0	600	200
	3139	Class I, Group A/B FT1	24-4/0	600	200
	3367	Class I, Group A/B FT2	24-12	300	200
	3530	Class I, Group A/B FT2	24-4/0	600	200
Ceramic & Fiberglass	5315	Class I, Group A/B FT1	24-10	300	250
	5331	Class I, Group A/B FT1	22-8	300	250
	5288	Class I, Group A/B FT1	24-2	600	250
Mica & Fiberglass	5128	Class I, Group A/B FT1	24-2	300	450
	5107	Class I, Group A/B FT1	22-2	600	450

Additional UL and CSA styles are available. Call factory for more information.

All figures referenced are nominal.

Harbour INDUSTRIES

FEP UL Styles, CSA Class I Group A/B FT1

Applications

For use in internal wiring of electronic equipment and appliances. FEP is not affected by weathering, ozone or corrosive environments, resists hot soldering irons, is self extinguishing, and is non-flammable, has excellent chemical resistance and is suitable for immersion in gasoline, gasoline vapor and at 80° C. (UL) and 60° C. (CSA) maximum, oil.

	UL 1226*	UL 1227*	UL 1330	UL 1331*	UL 1332	UL 1333
Voltage Rating	N/A	N/A	600	600	300	300
Temperature (° C.)	80	105	200(UL) 180 (CSA)	150	200 (UL) 180 (CSA)	105
Conductor Type	TPC	TPC	TPC or SPC	TPC	TPC or SPC	TPC
AWG size & stranding	**Insulation thickness (mils) / Overall diameter (inches)**					
30 1/.0100"	10/.030	10/.030	20/.050	20/.050	15/.040	15/.040
30 7/.0040"	10/.032	10/.032	20/.052	20/.052	15/.042	15/.042
28 1/.0126"	10/.033	10/.033	20/.053	20/.053	15/.043	15/.043
28 7/.0050"	10/.035	10/.035	20/.055	20/.055	15/.045	15/.045
28 19/.0031"	10/.035	10/.035	20/.055	20/.055	15/.045	15/.045
26 1/.0159"	10/.036	10/.036	20/.056	20/.056	15/.046	15/.046
26 7/.0063"	10/.039	10/.039	20/.059	20/.059	15/.049	15/.049
26 19/.0040"	10/.039	10/.039	20/.059	20/.059	15/.049	15/.049
24 1/.2010"	10/.040	10/.040	20/.060	20/.060	15/.050	15/.050
24 7/.0080"	10/.044	10/.044	20/.064	20/.064	15/.054	15/.054
24 19/.0050"	10/.043	10/.043	20/.063	20/.063	15/.053	15/.053
22 1/.0253"	10/.045	10/.045	20/.065	20/.065	15/.055	15/.055
22 7/.0100"	10/.050	10/.050	20/.070	20/.070	15/.060	15/.060
22 19/.0063"	10/.050	10/.050	20/.070	20/.070	15/.062	15/.062
20 1/.0320"	10/.052	10/.052	20/.072	20/.072	15/.068	15/.068
20 7/.0126"	10/.058	10/.058	20/.078	20/.078	15/.068	15/.068
20 19/.0080"	10/.059	10/.059	20/.078	20/.078	15/.070	15/.070
18 1/.962"	15/.070	15/.070	20/.080	20/.080	15/.079	15/.079
18 7/.0159"	15/.079	15/.079	20/.089	20/.089	15/.077	15/.077
18 19/.0100"	15/.078	15/.078	20/.087	20/.087	15/.081	15/.081
16 7/.0192"	15/.088	15/.088	20/.098	20/.098	15/.088	15/.088
16 19/.0117"	15/.087	15/.087	20/.096	20/.096	15/.086	15/.086
14 7/.0242"	15/.102	15/.102	20/.112	20/.112	15/.102	15/.102
14 19/.0147"	15/.100	15/.100	20/.109	20/.109	15/.099	15/.099
12 19/.0185"	-	15/.119	20/.129	20/.129	15/.119	15/.119
12 37/.0133"	-	15/.123	20/.133	20/.133	15/.123	15/.123
10 37/.0157"	-	15/.145	20/.155	20/.155	15/.145	15/.145
8 19/.0295"	-	-	30/.201	30/.201	-	-
8 133/.0113"	-	-	30/.220	30/.220	-	-
6 19/.0372"	-	-	30/.241	30/.241	-	-
6 133/.0142"	-	-	30/.262	30/.262	-	-
4 133/.0179"	-	-	30/.325	30/.325	-	-
2 133/.0226"	-	-	30/.395	30/.395	-	-
1 259/.0179"	-	-	45/.462	45/.462	-	-
1/0 259/.0201"	-	-	45/.500	45/.500	-	-
2/0 259/.0226"	-	-	45/.555	45/.555	-	-
4/0 259/.0285"	-	-	45/.676	45/.676	-	-

*Not CSA approved.

All figures referenced are nominal.

ETFE UL Styles, CSA Approved

Applications

For use in internal wiring of electronic equipment and appliances.

	UL 1643	UL 1644	UL 1671	UL 10086	UL 10109	UL 10125	UL 10126
Voltage Rating	300	600	300	600	300	300	600
Temperature (° C.)	150	150	150	200	200	150	150
Conductor Type	TPC	TPC	TPC	TPC or SPC	TPC or SPC	TPC	TPC
AWG Size & stranding	**Insulation thickness (mils) / Overall diameter (inches)**						
30 1/.0100"	15/.040	20/.050	10/.030	10/.030	6/.022	-	-
30 7/.0040"	15/.042	20/.052	10/.032	10/.032	6/.024	-	-
28 1/.0126"	15/.043	20/.053	10/.033	10/.033	6/.025	-	-
28 7/.0050"	15/.045	20/.055	10/.035	10/.035	6/.027	-	-
28 19/.0031"	15/.045	20/.055	10/.035	10/.035	6/.027	-	-
26 1/.0159"	15/.046	20/.056	10/.036	10/.036	6/.028	-	-
26 7/.0063"	15/.049	20/.059	10/.039	10/.039	6/.031	-	-
26 19/.0040"	15/.049	20/.059	10/.039	10/.039	6/.031	-	-
24 1/.2010"	15/.050	20/.060	10/.040	10/.040	6/.032	6/.032	10/.040
24 7/.0080"	15/.054	20/.064	10/.044	10/.044	6/.036	6/.036	10/.044
24 19/.0050"	15/.054	20/.064	10/.044	10/.043	6/.035	6/.035	10/.043
22 1/.0253"	15/.055	20/.065	10/.045	10/.045	6/.037	6/.037	10/.045
22 7/.0100"	15/.060	20/.070	10/.050	10/.050	6/.042	6/.042	10/.050
22 19/.0063"	15/.060	20/.070	10/.050	10/.050	6/.042	6/.042	10/.050
20 1/.0320"	15/.062	20/.072	10/.052	10/.052	6/.044	6/.044	10/.052
20 7/.0126"	15/.068	20/.078	10/.058	10/.058	6/.050	6/.050	10/.058
20 19/.0080"	15/.069	20/.079	10/.059	10/.058	6/.050	6/.050	10/.058
18 7/.0159"	15/.079	20/.089	10/.069	10/.069	6/.061	6/.061	10/.069
18 19/.0100"	15/.078	20/.088	10/.068	10/.067	6/.059	6/.059	10/.067
16 7/0192"	15/.088	20/.098	10/.078	10/.078	8/.074	8/.074	10/.078
16 19/.0117"	15/.081	20/.097	10/.077	10/.076	8/.072	8/.072	10/.076
14 7/.0242"	15/.087	20/.112	10/.092	10/.092	8/.088	8/.088	10/.092
14 19/.0147"	15/.100	20/.110	10/.092	10/.089	8/.085	8/.085	10/.089
12 19/.0185"	-	20/.129	10/.109	15/.119	10/.109	10/.109	15/.119
10 37/.0157"	-	20/.155	10/.135	15/.145	10/.135	10/.135	15/.145
8 133/.0113"	-	30/.225	-	30/.220	30/.220*	-	30/.220
6 133/.0142"	-	30/.266	-	30/.262	30/.262*	-	30/.262
4 133/.0179"	-	30/.325	-	30/.325	30/.325*	-	30/.325
2 133/.0226"	-	30/.395	-	30/.395	30/.395*	-	30/.395
1 259/.0179"	-	45/.462	-	45/.462	45/.462*	-	45/.462
1/0 259/.0201"	-	45/.500	-	45/.500	45/.500*	-	45/.500
2/0 259/.0226"	-	45/.555	-	45/.555	45/.555*	-	45/.555
4/0 259/.0285"	-	45/.676	-	45/.676	45/.676*	-	45/.676

*Not CSA approved

All figures referenced are nominal.

Harbour INDUSTRIES

PFA UL Styles
CSA Class I Group A

Applications

For use in internal wiring of electronic equipment and appliances. PFA insulation allows higher wire density due to thin-wall constructions compared with conventional styles. PFA also exhibits superior dielectric properties with a low dissipation factor for rapid signal transmission even at high frequencies.

	UL 1709	UL 1710	UL 1726	UL 1727	UL 1858	UL 1859
Voltage Rating	300	600	300	600	300	600
Temperature (° C.)	200	200	250	250	150	150
Conductor Type	SPC or TPC	SPC or TPC	NPC	NPC	TPC	TPC
AWG size & stranding	**Insulation thickness (mils) / Overall diameter (inches)**					
30 1/.0100"	15/.040	20/.050	15/.040	20/.050	15/.040	20/.050
30 7/.0040"	15/.042	20/.502	15/.042	20/.502	15/.042	20/.502
28 1/.0126"	15/.043	20/.053	15/.043	20/.053	15/.043	20/.053
28 7/.0050"	15/.045	20.055	15/.045	20.055	15/.045	20.055
28 19/.0031"	15/.045	20/.055	15/.045	20/.055	15/.045	20/.055
26 1/.0159"	15/.046	20/.056	15/.046	20/.056	15/.046	20/.056
26 7/.0063"	15/.049	20/.059	15/.049	20/.059	15/.049	20/.059
26 19/.0040"	15/.049	20/.059	15/.049	20/.059	15/.049	20/.059
24 1/.2010"	15/.050	20/.060	15/.050	20/.060	15/.050	20/.060
24 7/.0080"	15/.054	20/.064	15/.054	20/.064	15/.054	20/.064
24 19/.0050"	15/.053	20/.063	15/.053	20/.063	15/.053	20/.063
22 1/.0253"	15/.055	20/.065	15/.055	20/.065	15/.055	20/.065
22 7/.0100"	15/.060	20/.070	15/.060	20/.070	15/.060	20/.070
22 19/.0063"	15/.060	20/.070	15/.060	20/.070	15/.060	20/.070
20 1/.0320"	15/.062	20/.072	15/.062	20/.072	15/.062	20/.072
20 7/.0126"	15/.068	20/.078	15/.068	20/.078	15/.068	20/.078
20 19/.0080"	15/.068	20/.078	15/.068	20/.078	15/.068	20/.078
18 1/.962"	15/.070	20/.080	15/.070	20/.080	15/.070	20/.080
18 7/.0159"	15/.079	20/.088	15/.078	20/.088	15/.079	20/.088
18 19/.0100"	15/.077	20/.087	15/.077	20/.087	15/.077	20/.087
16 19/.0117"	15/.086	20/.096	15/.086	20/.096	15/.086	20/.096
14 19/.0147"	15/.099	20/.109	15/.099	20/.109	15/.099	20/.109
12 19/.0185"	15/.119	20/.131	15/.118	20/.128	15/.119	20/.128
10 37/.0157"	15/.145	20/.155	15/.144	20/.154	15/.145	20/.154
8 133/.0113"	-	30/.220	20/.202*	30/.222	-	30/.222
6 133/.0142"	-	30/.262	20/.243*	30/.263	-	30/.263
4 133/.0179"	-	30/.325	30/.316*	30/.316	-	30/.316
2 133/.0226"	-	30/.395	30/.390*	30/.390	-	30/.390
1 259/.0179"	-	45/.462	45/.468*	45/.468	-	45/.468
1/0 259/.0201"	-	45/.500	45/.511*	45/.511	-	45/.511
2/0 259/.0226"	-	45/.555	45/.567*	45/.567	-	45/.567
4/0 259/.0285"	-	45/.676	45/.690*	45/.690	-	45/.690

*Not CSA approved

All figures referenced are nominal.

TFE UL Styles, CSA Class I Group A/B FT1

Applications

For use in internal wiring of electronic equipment and appliances. TFE lead wires have a low coefficient of friction which promotes easy handling. TFE insulation also resists hot soldering irons, is self-extinguishing, non-flammable, has excellent chemical resistance and is suitable for immersion in gasoline, gasoline vapor and at 80° C. maximum, oil.

	UL 1164	UL 1180	UL 1198	UL 1199	UL 1212	UL 1213	UL 1659
Voltage Rating	300	300	600	600	NR	150 CSA	600
Temperature (° C.)	150	200	200	200	80	105	250
Conductor Type	SPC	SPC	SPC	SPC	SPC	SPC	NPC
AWG Size & Stranding	**Insulation Thickness (mils) / Overall diameter (inches)**						
30 1/.0100"	15/.040	-	-	20/.050	10/.030	10/.030	20/.050
30 7/.0040"	15/.042	-	-	20/.502	10/.032	10/.032	20/.052
28 1/.0126"	15/.043	13/.039	-	20/.053	10/.033	10/.033	20/.053
28 7/.0050"	15/.045	13/.041	-	20.055	10/.035	10/.035	20.055
28 19/.0031"	15/.045	13/.041	-	20/.055	10/.035	10/.035	20/.055
26 1/.0159"	15/.046	13/.042	-	20/.056	10/.036	10/.036	20/.056
26 7/.0063"	15/.049	13/.045	15/.049	20/.059	10/.039	10/.039	20/.059
26 19/.0040"	15/.049	13/.045	15/.049	20/.059	10/.039	10/.039	20/.059
24 1/.2010"	15/.050	13/.046	15/.050	20/.060	10/.040	10/.040	20/.060
24 7/.0080"	15/.054	13/.050	15/.054	20/.064	10/.044	10/.044	20/.064
24 19/.0050"	15/.053	13/.049	15/.053	20/.063	10/.043	10/.043	20/.063
22 1/.0253"	15/.055	13/.049	15/.055	20/.065	10/.045	10/.045	20/.065
22 7/.0100"	15/.060	13/.056	15/.060	20/.070	10/.050	10/.050	20/.070
22 19/.0063"	15/.060	13/.056	15/.060	20/.070	10/.050	10/.050	20/.070
20 1/.0320"	15/.062	13/.048	15/.062	20/.072	10/.052	10/.052	20/.072
20 7/.0126"	15/.068	13/.064	15/.068	20/.078	10/.058	10/.058	20/.078
20 19/.0080"	15/.068	13/.064	15/.068	20/.078	10/.058	10/.058	20/.078
18 1/.962"	15/.070	13/.066	15/.070	20/.080	-	-	20/.080
18 7/.0159"	15/.078	13/.074	15/.078	20/.088	-	-	20/.088
18 19/.0100"	15/.077	13/.073	15/.077	20/.087	-	-	20/.087
16 19/.0117"	15/.086	13/.082	15/.086	20/.096	-	-	20/.096
14 19/.0147"	15/.099	13/.095	15/.099	20/.109	-	-	20/.109
12 19/.0185"	15/.118	13/.114	15/.118	20/.128	-	-	20/.128
10 37/.0157"	15/.144	13/.140	15/.144	20/.154	-	-	20/.154

*Not CSA approved

All figures referenced are nominal.

Buying Directory

COAXIAL CABLE, MIL-C-17G

Swept	Unswept
M17/60-RG142	M17/158-00001
M17/93-RG178	M17/169-00001
M17/93-00001	M17-170-00001
M17/94-RG179	M17/172-00001
M17/95-RG180	M17/174-00001
M17/110-RG302	M17/175-00001
M17/111-RG303	
M17/113-RG316	**Commercial Grade**
M17/127-RG393	RG 187 A/U
M17/128-RG400	RG 188 A/U
M17/131-RG403	RG 195 A/U
M17/152-00001	RG 196 A/U
M17/176-00002	

Low Loss, High Frequency Coax

LL120	SB142	SS402
LL142	SB304	SS405
LL304	SB393	
LL393-1	SB405	
LL393-2		

Low Noise Coax	High Strength Coax
LN178	HS178
LN179	HS179
LN180	HS180

PLENUM CABLES

Plenum, Coaxial FEP Core

NEC 725-2(b), CLP2, CATVP,
RG-62
RG-59
RG-58
RG-58-Thinnet
RG-11
RG-6
Ethernet Trunk
100 Ohm Twinax

Plenum Cables, UL "Classified"

Category 4 ETL Verified
Category 5 ETL Verified
Power-limited cables, NEC725-2(b)
CL2P, CMP, MMP, FPLP, CSA, FT4, FT6
Low-Cap
Mid-Cap
Loop
Sound and Control
Signaling
Ethernet Transceiver IEEE 802.3
Point-of-sale cables

INDUSTRIAL CABLES

TCGT 250°C UL AND CSA

UL Style	AWG Sizes	Voltage
5315	#24-#2	300
5288	#24-#8	600

TCGT 250°C UL AND CSA

UL Style	AWG Sizes	Voltage
5186	#24-#8	300
5127	#24-#2	600

Harbour Industries, Inc. makes every effort to ensure the accuracy of the information contained in this publication. However, Harbour is not responsible for errors or changes.

INDUSTRIAL CABLES (continued)

Multi-Temp 450°C UL and CSA

UL Style	AWG Sizes	Voltage
5128	#22-#4	300
5107	#22-#4/0	600

UL Teflon® PTFE Wires (AWM)

UL Style	AWG Sizes	Voltage	Temp. ° C.
UL1164	#28-#12	300	150
UL1180	#28-#12	300	200
UL1198	#24-#12	600	150
UL1199	#24-#12	600	200
UL1212	#32-#16	*	80
UL1213	#32-#16	*	105
UL1371	#32-#12	*	105
UL1512	#16-#14	*	105
UL1538	#32-#12	125	105
UL1584	#30-#12	1000	200
UL1659	#26-#12	600	250
UL1716	#32-#12	150	150
UL1815	#32-#12	300	250

UL Teflon® FEP Wires (AWM)

UL Style	AWG Sizes	Voltage	Temp. ° C.
UL1226	#26-#20	*	80
UL1227	#26-#14	*	105
UL1330	#26-#4/0	600	200
UL1331	#26-#4/0	600	150
UL1332	#26-#10	300	200
UL1333	#26-#4/0	300	150
UL1371	#26-#6	*	105
UL1538	#25-#6	125	105
UL1716	#25-#8	150	150

UL Tefzel® Wires

UL Style	AWG Sizes	Voltage	Temp. ° C.
UL1517	#24-#20	*	105
UL1586	#24-#6	*	105
UL1609	#24-#6	125	105
UL1610	#24-#10	*	105
UL10086	#24-#10	600	200
UL10109	#24-#10	300	200

CSA Teflon® PTFE Wires

CSA Style	AWG Sizes	Voltage	Temp. ° C.
10 Mils	#32-#16	150	150
13 Mils	#28-#12	300	200
20 Mils	#28-#12	600	200

*UL does not rate this style for voltage

CSA Teflon® FEP Wires

CSA Style	AWG Sizes	Voltage	Temp. ° C.
10 Mils	#28-#16	150	150
1/64"	#28-#10	300	180
1/32"	#28-#8	600	180
1/16"	#6-#2	600	180

UL & CSA Teflon® PTFE Wires

UL/CSA	AWG Sizes	Voltage	Temp. ° C.
1164/13 Mils	#28-#12	300	200
1180/13 Mils	#28-#12	300	200
1198/20 Mils	#28-#12	600	150
1199/20 Mils	#28-#12	600	200
1213/10 Mils	#32-#16	150	150
1716/10 Mils	#32-#16	150	150

UL & CSA Teflon® FEP Wires

UL Teflon® PTFE Wires (AWM)

UL/CSA	AWG Sizes	Voltage	Temp. ° C.
1330/1/64"	#28-#10	600	180
1330/1/32"	#28-#10	600	180
1331/1/64"	#28-#10	300	150
1331/1/32"	#28-#10	600	150
1332/1/64"	#28-#10	300	180
1333/1/64"	#28-#10	300	150
1716/10 Mils	#32-#16	150	150

CUSTOMS DESIGNS UTILIZING THE FOLLOWING COMPONENTS ARE AVAILABLE UPON REQUEST:

SOLID & STRANDED CONDUCTORS

Bare copper
Bare nickel (Glass A)
Nickel-plated copper
Nickel-plated high strength copper alloy
Nickel-plated steel
Nickel-plated copper-clad steel
Silver-plated high strength copper alloy
Silver-plated copper-clad steel
Silver-plated copper
Tin-plated copper
Thermocouple alloys
Resistive alloys
Oxygen-free nickel-plated copper
Oxygen-free silver-plated copper
Tin overcoat copper

SHIELD MATERIALS

Nickel-plated copper wire
Nickel-plated copper-clad steel wire
Silver-plated copper wire
Silver-plated copper-clad steel wire
Stainless steel
Aluminum/polyester tape
Aluminum/polyimide tape

INSULATION & JACKET MATERIALS

Extruded Materials

Ethylene/tetrafluoroethylene copolymer (ETF)
Ethylene/chlorotrifluoroethylene copolymer (ECTFE)
Fluorinated ethylene propylene (FEP)
Polyetheretherketone (PEEK)
Polyimide
Polytetrafluoroethylene (PTFE)
Polyurethanes
Polyvinylidene fluoride (PVDF)
Silicone rubbers
Tetrafluoroethylene/perfluoroalkoxy copolymer (PFA)
Thermoplastic elastomers (TPE)

Tapes

Ceramic • Glass • Mica/Glass • Polyester • Polyimide • PTFE (regular and semiconductive)

Yarns

Aramid • Ceramic • Fiberglass • K-fiber • Polyimide • Polyester • PTFE impregnated fiberglass

2075 Shelburne Road
PO Box 188
Shelburne, Vermont 05482
Tel (802) 985-3311
FAX (802) 985-9534
E-mail: sales@harbourind.com

1365 Industrial Blvd.
Farnham, Quebec J2N 2X3
Canada
Tel (514) 293-5304
FAX (514) 293-2421

Harbour INDUSTRIES

MILITARY HOOK-UP WIRE

MIL-W-16878 Rev. F. PTFE

Part No.	NEMA HP-3[1]	AWG Size[3]	Conductor	Voltage	Temp. ° C.
M16878/4	(X) E	#30-#10	SPC	600	200
M16878/5	(X) EE	#30-#8	SPC	1000	200
M16878/6	(X) ET	#30-#20	SPC	250	200
M16878/21	(W) E	#22-#10	SPC	600	200
M16878/22	(W) EE	#22-#6	SPC	1000	200
M16878/23	(X) ET (N)	#30-#20	NPC	250	260
M16878/25	(X) E (N)	#22-#12	NPC	600	260
M16878/26	(W) E (N)	#22-#10	NPC	600	260
M16878/27	(X) EE (N)	#26-#12	NPC	1000	260
M16878/28	(W) EE (N)	#22-#6	NPC	1000	260
M16878/34	(W) EE (S)	#22-#8	SPC	1000	200
M16878/35	(W) EE (N)	#22-#8	NPC	1000	260

MIL-W-16878 Rev. F. FEP

M16878/11	(X) K (S)	#26-#8	SPC	600	200
M16878/12	(X) KK (S)	#26-#4/0	SPC	1000	200
M16878/13	(X) KT (S)	#26-#20	SPC	250	200

MIL-W-16878 Rev. F. Silicone Rubber

M16878/7	-	#24-#10	SPC	600	200
M16878/8	-	#24-#4/0	SPC	1000	200
M16878/29	-	#24-#10	TPC	600	150
M16878/30	-	#24-#4/0	TPC	1000	150

MIL-W-16878 Rev. F. Silicone Rubber & Fiberglass Braid

M16878/31	-	#24-#4/0	TPC	1000	150
M16878/32	-	#24-#4/0	SPC	1000	200

MIL-W-22759 Rev. E. Mineral Filled PTFE

M22759/5	-	#24-#10	SPC	600	200
M22759/6	-	#24-#10	NPC	600	260
M22759/7	-	#24-#10	SPC	600	200
M22759/8	-	#24-#10	NPC	600	260

MIL-W-81822 FEP

M81822/6	-	#30-#18

MIL-W-81822 ETFE

M81822/13	-	#30-#18

MIL-C-7078 PTFE

MIL-W-47206 PTFE

MIL-C-27072 PTFE

MPD-1507 PTFE

MIL-W-8777 Silicone Rubber & Fiberglass Braid

MIL-W-22759 Rev. E. PTFE

Part No.	AWG Size	Conductor	Voltage	Temp. ° C.
M22759/9	#28-#8	SPC	1000	200
M22759/10	#28-#12	NPC	1000	260
M22759/11	#28-#8	SPC	600	200
M22759/12	#28-#12	NPC	600	260
M22759/20	#28-#20	SPC	1000	200
M22759/21	#28-#20	NPC	1000	260
M22759/22	#28-#20	SPC	600	200
M22759/23	#28-#20	NPC	600	260

MIL-W-22759 Rev. E. ETFE

M22759/16	#24-#2/0	TPC	600	150
M22759/17	#26-#20	SPA	600	150
M22759/18	#26-#10	TPC	600	150
M22759/19	#26-#20	SPA	600	150

MIL-W-22759 Rev. E. TFE & Glass Braid

M22759/1	#22-#4/0	SPC	600	200
M22759/2	#22-#4/0	NPC	600	260
M22759/3	#22-#2/0	NPC	600	260
M22759/4	#22-#2/0	SPC	600	200

MILITARY/COMMERCIAL CABLES

Shielded or unshielded, FEP extruded or PTFE tape wrap jacket using the following components:

MIL-C-27500 (G)

PTFE Primaries

Symbol	Leads	AWG Size
LE	M22759/9	#28-#8
LH	M22759/10	#28-#12
RC	M22759/11	#28-#8
RE	M22759/12	#28-#12
TK	M22759/20	#28-#20
TL	M22759/21	#28-#20
TM	M22759/22	#28-#20
TN	M22759/23	#28-#20

ETFE Primaries

TE	M22759/16	#26-#2/0
TF	M22759/17	#26-#20
TG	M22759/18	#26-#10
TH	M22759/19	#26-#20

TFE & Glass Braid Primaries

EA	M22759/1	#22-#4/0
E	M22759/2	#22-#4/0
RA	M22759/3	#22-#2/0
RB	M22759/4	#22-#2/0

TFE Primaries (Types E, EE, ET)

Symbol	
SE	FEP Extruded Jacket
STJ	PTFE Wrapped Jacket