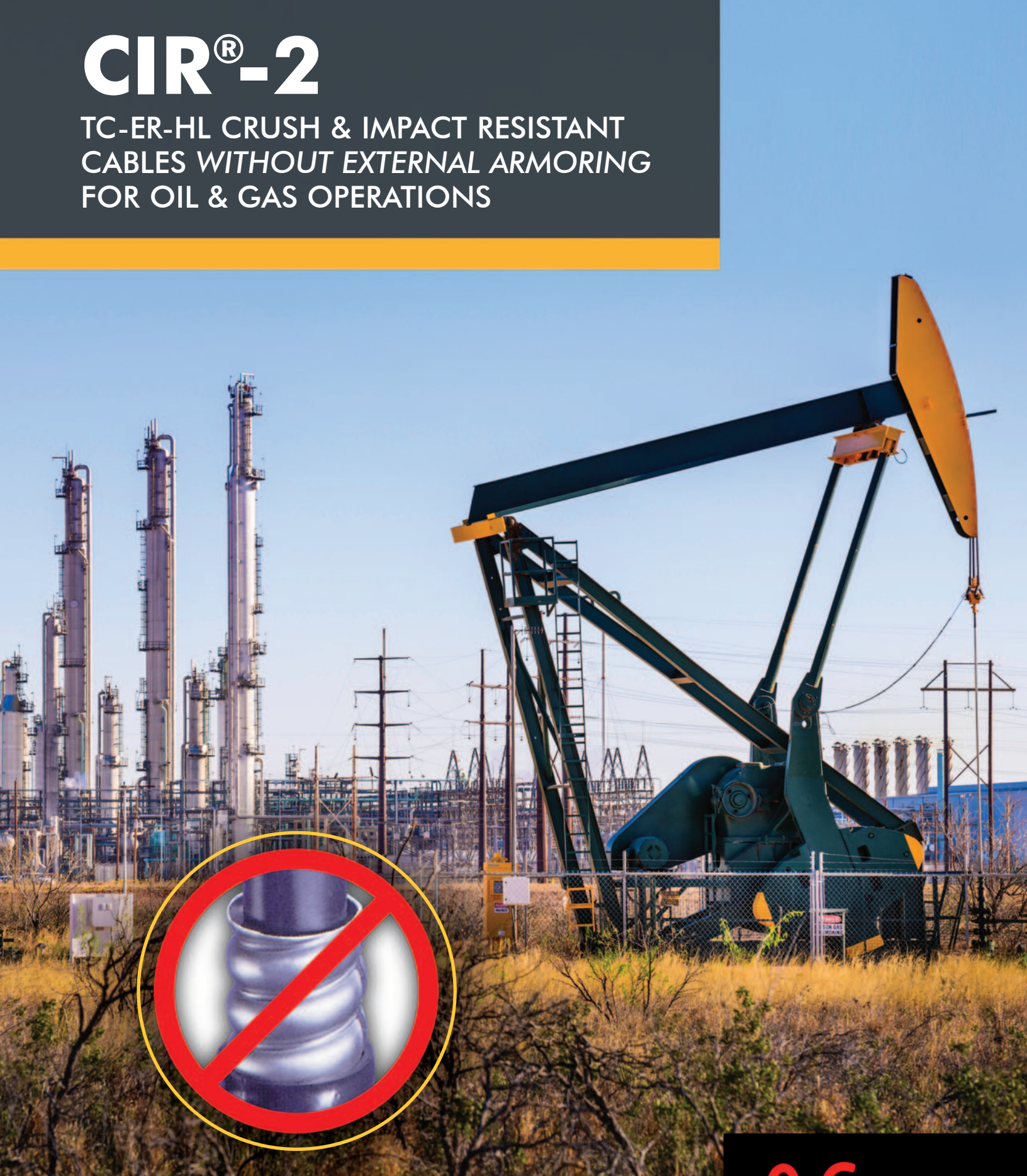


CIR[®]-2

TC-ER-HL CRUSH & IMPACT RESISTANT
CABLES *WITHOUT EXTERNAL ARMORING*
FOR OIL & GAS OPERATIONS



INDEX



CIR-2[®]

Crush and Impact Resistant
Without External Armoring

Passes the same
crush and impact testing
required by
UL 2225 for Type MC-HL

- Highly Flexible
- GEXOL[®] Insulated
- Designed for extreme cold environments
- Easier and Safer to Install

CIR-2 Power Cables

- Three & Four Conductor + Ground 2- 3

CIR-2 Control Cable

- Multi-Conductor 4

CIR-2 Instrumentation Cables

- Individually Shielded Pairs. 5
- Individually Shielded Triads 5

CIR-2 Type VFD Cable

- Three Conductor 6 - 7

Color Codes / Stranding Profile 8

Why Specify CIR-2? 9

CIR-2[®] RATINGS & APPROVALS

- UL Listed as TC-ER-HL (E123629):
Suitable for Class 1, Div 1 and Zone 1 environments
- UL Listed as Type TC-ER:
Suitable for use in Class I, Div 2
and Zone 2 environments
- Severe cold durability
 - Exceeds CSA cold bend/cold impact (-40°C/-35°F)
 - Brittlepoint as per ASTM D 7646-07 exceeds -65°C for Jacket and -75°C for insulation
- 90°C temperature rating
- Flame Retardant – IEEE 1202

Nexans AmerCable believes the information presented throughout this catalog to be reliable and current. All information is subject to change without notice. The information listed is approximate, and is presented only as a guide for product selection. We make no claims or warranties for the suitability of any product for any particular application. Cable diameters are subject to a +/- 5% manufacturing tolerance.

CIR[®]-2 OVERVIEW

Nexans AmerCable's CIR[®] is a flexible cable family designed to replace older-technology designs like Type MC. Nexans AmerCable CIR has been successfully used globally since 2002 for mission-critical equipment operating in harsh oil and gas environments.

CIR-2 is ideal for downstream/midstream facilities, well pads and land drilling operations where environmental conditions present unique challenges to a cable's service life. CIR-2 cables comply with the requirements for hazardous location cables required by UL 2225.

This highly robust cable offers significant advantages over Type MC:

- **Highly flexible** – unlike Type MC, CIR is flexible for easier installation. The cable can also be reused during an upgrade or retrofit.
- **Extremely cold environments**
 - Exceeds CSA cold bend/cold impact (-40°C/-35°C)
 - Brittlepoint as per ASTM D 746-07 exceeds -65°C for the Jacket and -75°C for the Insulation.
- **Insulated with GEXOL[®]** – Nexans AmerCable's exclusive insulating compound provides superior flexibility, dielectric properties and field proven performance in the harshest environments.
- **Smaller bend radius** (up to 40% smaller) and Reduced tray fill (up to 35% less) compared to Type MC
- **Gas & vapor tight** – impervious to water and air
- **UL Listed as Type TC-ER-HL** – suitable for use in Class 1, Div 1 and Zone 1 environments including those where tray cables are not practical or cost-prohibitive.
- **UL Listed as Type TC-ER** – suitable for a variety of uses, including those where tray cables are not practical or cost-prohibitive.

A photograph showing several black CIR-2 cables installed in a metal tray. The cables are bundled together and run through a curved section of the tray. A white text box is overlaid on the left side of the image.

Faster and Easier to Install than Metal Clad

CIR[®] is the fastest, safest crush-proof cable to install. Metal clad cable installation requires an expensive box of tools and a multi-step procedure for jacket removal.

A vertical cross-section of a CIR-2 cable. It shows a thick black outer jacket, a blue inner insulation layer, and a red inner insulation layer. The center contains several twisted conductors.

Lower Total Installed Cable Cost

See page 9

CIR[®]-2 POWER CABLE GEXOL[®] INSULATED

THREE & FOUR CONDUCTOR + GROUND • 0.6/1KV • RATED 90°C

CONDUCTOR

Soft annealed flexible stranded tinned copper per IEEE 1580 Table 11.

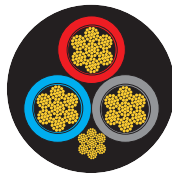
INSULATION

GEXOL[®] cross-linked flame retardant polyolefin, meeting the requirements for Type P of IEEE 1580 and Type X110 of UL 1309/CSA 245. 600V/IEC 1000V.

Brittlepoint as per ASTM D 746-07 exceeds -65°C for Jacket and -75°C for Insulation

JACKET

A black, flame retardant, oil, abrasion, chemical and sunlight resistant thermoset compound meeting UL 1309/CSA 245 and IEEE 1580.



CIR-2 POWER CABLE RATINGS & APPROVALS

- 90°C temperature rating
- UL Listed as TC-ER-HL – suitable for Class 1, Div 1 and Zone 1 environments
- UL Listed as Type TC-ER – suitable for use in Class I, Div 2 and Zone 2 environments
- Flame Retardant – IEEE 1202

APPLICATION

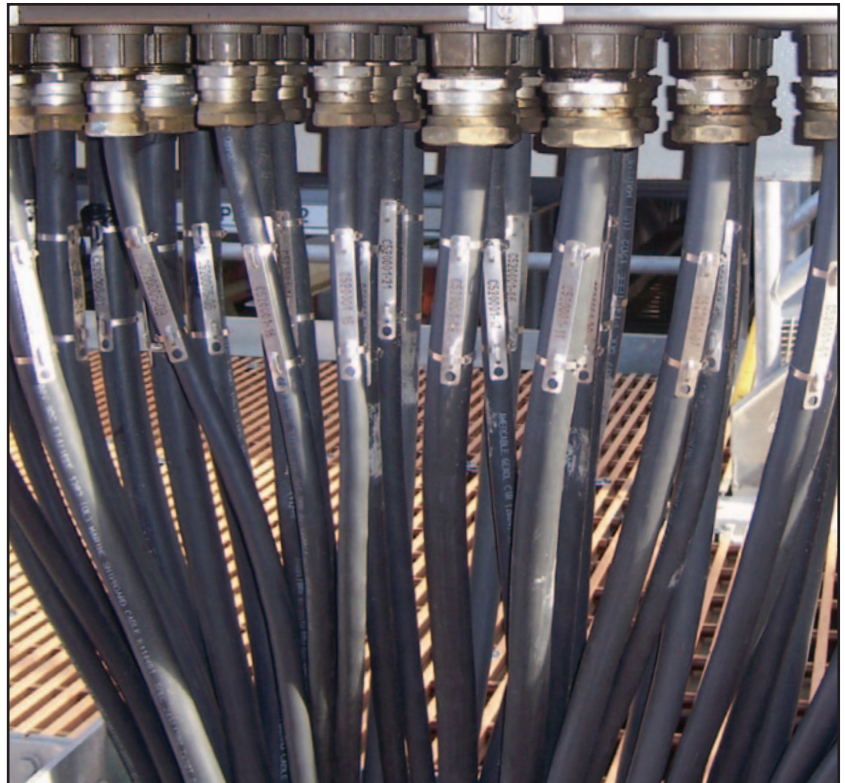
A flexible alternative to Type MC cable where user requires crush and impact protection for cables.

FEATURES

- Complies with the requirements for TC-ER-HL per UL 2225
- Rated TC-ER
- Exceeds CSA cold bend /cold impact (-40°C / -35°C)
- Brittlepoint as per ASTM D 746-07 exceeds -65°C for Jacket and -75°C for Insulation
- Gas & vapor tight – impervious to water & air

CIR vs. TYPE MC

- Smaller bend radius (up to 40% smaller)
- Reduced tray fill (up to 35% less)
- Considerably more flexible
- Reduced installation time and cost
- Glands cost up to 50% LESS



CIR®-2 POWER CABLE

Conductor Size		Number of Conductors	Grounding Conductor AWG/kcmil	Part No. 37-102-	Nominal Diameter (inches)	Weight (lbs/1000 ft.)	90°C NEC Ampacity	75°C NEC Ampacity	DC Resistance at 25°C Ampacity	AC Resistance at 90°C, 60Hz (ohms/1000 ft.)	Inductive Reactance (ohms/1000 ft.)	Voltage Drop (Volts/Amp/1000 ft.)
AWG/kcmil	mm ²											
14	2.1	3	14	508CIRGAG2	0.532	165	15	15	2.91	3.64	0.04	5.069
14	2.1	4	14	509CIRGAG2	0.572	195	15	15	2.91	3.64	0.04	5.072
12	3.3	3	12	516CIRGAG2	0.580	213	20	20	1.83	2.28	0.03	3.195
12	3.3	4	12	517CIRGAG2	0.700	288	20	20	1.83	2.28	0.04	3.198
10	5.2	3	10	308CIRGAG2	0.685	310	30	30	1.15	1.44	0.03	2.028
10	5.2	4	10	408CIRGAG2	0.740	371	30	28	1.15	1.44	0.03	2.031
8	7.6	3	10	309CIRGAG2	0.821	447	55	50	0.708	0.885	0.034	1.261
8	7.6	4	10	409CIRGAG2	0.888	536	44	40	0.708	0.885	0.037	1.263
6	12.5	3	8	310CIRGAG2	0.915	621	75	65	0.445	0.556	0.032	0.803
6	12.5	4	8	410CIRGAG2	1.100	780	60	52	0.445	0.556	0.035	0.806
4	21	3	6	312CIRGAG2	0.944	781	95	85	0.300	0.376	0.029	0.550
4	21	4	6	412CIRGAG2	1.037	964	76	68	0.300	0.376	0.032	0.553
2	34	3	6	314CIRGAG2	1.100	1082	130	115	0.184	0.230	0.028	0.347
2	34	4	6	414CIRGAG2	1.202	1351	104	92	0.184	0.230	0.030	0.350
1/0	54	3	6	316CIRGAG2	1.329	1665	170	150	0.117	0.147	0.028	0.232
1/0	54	4	6	416CIRGAG2	1.468	1954	136	120	0.117	0.147	0.030	0.235
2/0	70	3	4	317CIRGAG2	1.445	2042	195	175	0.0929	0.1174	0.0270	0.190
2/0	70	4	4	417CIRGAG2	1.600	2417	156	140	0.0929	0.1174	0.0296	0.193
4/0	109	3	4	319CIRGAG2	1.792	3106	260	230	0.0585	0.0753	0.0261	0.131
4/0	109	4	4	419CIRGAG2	1.948	3842	208	184	0.0585	0.0753	0.0287	0.134
250	127	3	3	330CIRGAG2	1.925	3683	290	255	0.0488	0.0635	0.0263	0.115
250	127	4	3	430CIRGAG2	2.106	4383	232	204	0.0488	0.0635	0.0290	0.118
350	177	3	3	331CIRGAG2	2.206	4448	350	310	0.0344	0.0456	0.0256	0.090
350	177	4	3	431CIRGAG2	2.440	6216	280	248	0.0344	0.0456	0.0283	0.093
500	253	3	2	333CIRGAG2	2.540	6115	430	380	0.0251	0.0348	0.0258	0.075
500	253	4	2	433CIRGAG2	2.872	8655	344	304	0.0251	0.0348	0.0284	0.078
750	380	3	1	334CIRGAG2	2.975	9042	535	475	0.0166	0.0253	0.0252	0.061
750	380	4	1	434CIRGAG2	3.353	11812	428	380	0.0166	0.0253	0.0278	0.063

NOTE: Cable diameters are subject to a +/- 5% manufacturing tolerance.

Ampacities are based on Table 310.16 of the National Electrical Code (NEC) for conductors rate 90°C, in a multi-conductor cable, at an ambient temperature of 30°C. The 75°C column is provided for additional information. The ampacities shown apply to open runs of cable, installation in any approved raceway. Derating for more than three current carrying conductors within the cable is in accordance with NEC Table 310.15 (B) (2) (a). The ampacities shown also apply to cables installed in cable tray in accordance with NEC Section 392.11.

For Cable Color Codes and Stranding Information see page 8

HAWKE GLAND TYPES

Hawke Gland Types	TYPE CIR
Industrial & Safe Area (IP68)	121
Increased Safety "EExe"	501/421
Explosion Proof	710 Class I, Div. 2 Class I, Zone 1 & 2
Flameproof "EExd"	501/421 Zone 1 & 2

BEND RADIUS

	TYPE CIR
IEEE 45	6X Diameter
NEC	< 1" (25mm) 4X Diameter > 1" (25mm) < 2" (50mm) 5X Diameter > 2" (50mm) 6X Diameter



CIR[®]-2 CONTROL CABLE GEXOL[®] INSULATED

MULTI-CONDUCTOR • 0.6/1KV • RATED 90°C



CONDUCTOR

Soft annealed flexible stranded tinned copper per IEEE 1580 Table 11.

INSULATION

GEXOL[®] cross-linked flame retardant polyolefin, meeting the requirements for Type P of IEEE 1580 and Type X110 of UL 1309/CSA 245. 600V/IEC 1000V.

Brittlepoint as per ASTM D 746-07 exceeds -65°C for Jacket and -75°C for Insulation

JACKET

A black, flame retardant, oil, abrasion, chemical and sunlight resistant thermoset compound meeting UL 1309/CSA 245 and IEEE 1580.



APPLICATION

A flexible alternative to Type MC cable where user requires crush and impact protection for cables.

FEATURES

- Complies with the requirements for TC-ER-HL per UL 2225
- Rated TC-ER
- Exceeds CSA cold bend /cold impact (-40°C / -35°C)
- Brittlepoint as per ASTM D 746-07 exceeds -65°C for Jacket and -75°C for Insulation
- Gas & vapor tight – impervious to water & air

CIR vs. TYPE MC

- Smaller bend radius (up to 40% smaller)
- Reduced tray fill (up to 35% less)
- Considerably more flexible
- Reduced installation time and cost
- Glands cost up to 50% LESS



For Cable Color Codes & Stranding Information, see page 8.

See page 2 for CIR-2 Ratings & Approvals

Conductor Size		Number of Conductors	Part No. 37-102-	Nominal Diameter (inches)	Weight (lbs/1000 ft.)	90°C NEC Ampacity	75°C NEC Ampacity	DC Resistance at 25°C (ohms/1000 ft.)	AC Resistance at 90°C, 60Hz (ohms/1000 ft.)	Voltage Drop (Volts/Amp/1000 ft.)
AWG	mm ²									
14	2.1	2	507CIRGAG2	0.500	137	15	15	2.91	3.64	5.069
14	2.1	3	508CIRGAG2	0.532	165	15	15	2.91	3.64	5.069
14	2.1	4	509CIRGAG2	0.572	195	15	15	2.91	3.64	5.072
14	2.1	5	510CIRGAG2	0.673	261	15	15	2.91	3.64	5.072
14	2.1	7	521CIRGAG2	0.800	345	15	14	2.91	3.64	5.072
14	2.1	9	764CIRGAG2	0.813	372	15	14	2.91	3.64	5.072
14	2.1	12	585CIRGAG2	0.850	447	12	10	3.00	3.75	5.224
14	2.1	19	765CIRGAG2	1.090	698	12	10	3.00	3.75	5.224
14	2.1	37	514CIRGAG2	1.455	1211	10	8	3.00	3.75	5.224
12	3.3	2	515CIRGAG2	0.539	175	20	20	1.83	2.28	3.195
12	3.3	3	516CIRGAG2	0.580	213	20	20	1.83	2.28	3.195
12	3.3	4	517CIRGAG2	0.700	288	20	20	1.83	2.28	3.198
12	3.3	5	560CIRGAG2	0.740	333	20	20	1.83	2.28	3.198
12	3.3	7	712CIRGAG2	0.865	442	20	17	1.83	2.28	3.198
12	3.3	9	766CIRGAG2	0.910	483	20	17	1.83	2.28	3.198
12	3.3	12	750CIRGAG2	0.935	578	15	12	1.88	2.35	3.294
12	3.3	19	767CIRGAG2	1.180	920	15	12	1.88	2.35	3.294
12	3.3	37	520CIRGAG2	1.500	1548	12	10	1.88	2.35	2.028
10	5.2	2	553CIRGAG2	0.582	229	30	30	1.15	2.35	2.028
10	5.2	3	308CIRGAG2	0.685	310	30	30	1.15	1.44	2.031
10	5.2	4	408CIRGAG2	0.740	371	30	28	1.15	1.44	2.031
10	5.2	5	561CIRGAG2	0.800	433	30	28	1.15	1.44	2.031
10	5.2	7	591CIRGAG2	0.930	569	28	24	1.15	1.44	2.031
10	5.2	9	768CIRGAG2	1.060	712	28	24	1.15	1.44	2.031
10	5.2	12	762CIRGAG2	1.135	868	20	17	1.18	1.48	2.092

NOTE: Cable diameters are subject to a +/- 5% manufacturing tolerance.

Ampacities are based on Table 310.16 of the National Electrical Code (NEC) for conductors rate 90°C, in a multi-conductor cable, at an ambient temperature of 30°C. The 75°C column is provided for additional information. The ampacities shown apply to open runs of cable, installation in any approved raceway. Derating for more than three current carrying conductors within the cable is in accordance with NEC Table 310.15 (B) (2) (a). The ampacities shown also apply to cables installed in cable tray in accordance with NEC Section 392.11.

*Rated TC-ER

CIR[®]-2 INSTRUMENTATION CABLE GEXOL[®] INSULATED



INDIVIDUALLY SHIELDED PAIRS/TRIADS • 0.6/1KV • RATED 90°C

CONDUCTOR

Soft annealed flexible stranded tinned copper per IEEE 1580 Table 11.

INSULATION

GEXOL[®] cross-linked flame retardant polyolefin, meeting the requirements for Type P of IEEE 1580 and Type X110 of UL 1309/CSA 245. 600V/IEC 1000V.

JACKET

A black, flame retardant, oil, abrasion, chemical and sunlight resistant thermoset compound meeting UL 1309/CSA 245 and IEEE 1580.



PAIRS/TRIADS

Each pair/triad is twisted with a bare tinned drain wire. Each pair/triad is shielded with polyester-backed aluminum foil tape to afford 100% coverage. Pair to pair, or triad to triad, isolation – plus overall shielding – is provided.

For Cable Color Codes and Stranding Information see page 8

APPLICATION

A flexible alternative to Type MC cable where user requires crush and impact protection for cables.

FEATURES

- Complies with the requirements for TC-ER-HL per UL 2225
- Rated TC-ER
- Exceeds CSA cold bend /cold impact (-40°C / -35°C)
- Brittlepoint as per ASTM D 746-07 exceeds -65°C for Jacket and -75°C for Insulation
- Gas & vapor tight – impervious to water & air

CIR vs. TYPE MC

- Smaller bend radius (up to 40% smaller)
- Reduced tray fill (up to 35% less)
- Considerably more flexible
- Reduced installation time and cost
- Glands cost up to 50% LESS

See page 2 for CIR-2 Ratings & Approvals, and page 8 for Color Coding



Conductor Size		Pairs	Triads	Part No. 37-102-	Nominal Diameter (inches)	Weight (lbs/ 1000 ft.)	DC Resistance 20°C (ohms/1000 ft.)	Mutual Capacitance (nF/1000 ft.)	Inductance (mH/1000 ft.)
AWG	mm2								
16	1.3	1	-	610CIRAG2	0.437	106	4.52	32	0.20
16	1.3	2	-	611CIRAG2	0.700	279	4.52	32	0.20
16	1.3	4	-	613CIRAG2	0.790	340	4.52	32	0.20
16	1.3	8	-	616CIRAG2	1.075	702	4.52	32	0.20
16	1.3	12	-	618CIRAG2	1.275	1062	4.52	32	0.20
16	1.3	24	-	699CIRAG2	1.637	1560	4.52	32	0.20
16	1.3	-	1	668CIRAG2	0.467	128	4.52	32	0.20
16	1.3	-	4	698CIRAG2	0.930	453	4.52	32	0.20
16	1.3	-	8	677CIRAG2	1.130	825	4.52	32	0.20
16	1.3	-	12	734CIRAG2	1.380	1235	4.52	32	0.20

NOTE: Cable diameters are subject to a +/- 5% manufacturing tolerance



VALUES

#16 PAIRS / TRIADS

Capacitance – nF/1000 feet = 32

Inductance – mH/1000 = 0.20

Resistance – Ohms/1000 feet = 4.52 (@ 20°C)

Gexol[®] and CIR[®] are registered trademarks of AmerCable Incorporated.

CIR[®]-2 TYPE VFD POWER CABLE

UL LISTED AS TYPE TC-ER & TYPE TC-ER-HL

THREE CONDUCTOR • GEXOL[®] INSULATED • 600V • RATED 90°C

POWER CONDUCTORS (3)

Soft annealed flexible stranded tinned copper per IEEE 1580 Table 11.

INSULATION (2kV)

Gexol[®] cross-linked flame retardant polyolefin, meeting the requirements for Type P of IEEE 1580 and Type X110 of UL 1309/CSA 245.

Color: Gray with printed phase I.D. (Black-Red-Blue)

JACKET

A black, flame retardant, oil, abrasion, chemical and sunlight resistant thermoset CPE meeting UL 1309/CSA 245 and IEEE 1580.

GROUND CONDUCTORS (3)

Soft annealed flexible stranded tinned copper per IEEE 1580 Table 11. Gexol[®] insulation sized per UL 1277. Color: Green

Note: Sizes over 1" OD have uninsulated grounds

SHIELD

Overall tinned copper braid plus aluminum/polyester tape providing 100% coverage.



CIR-2 VFD POWER CABLE RATINGS & APPROVALS

- 90°C temperature rating
- UL Listed as TC-ER-HL – suitable for Class 1, Div 1 and Zone 1 environments
- UL Listed as Type TC-ER – Suitable for use in Class I, Div 2 and Zone 2 environments
- Flame Retardant – IEEE 1202
- Suitable for use in Class I, Div 2 and Zone 2 environments

APPLICATION

A flexible braid and foil shielded power cable specifically engineered for use in variable frequency AC motor drive (VFD) applications where user requires crush and impact protection.

FEATURES

- Specially engineered cable design produces longer service life in VFD applications.
- Overall braid and foil shield provides 100% coverage containing VFD EMI emissions.
- Symmetrical insulated ground conductors reduce induced voltage imbalances and carry common mode noise back to the drive.
- High strand count conductors and braid shield design is much more flexible, easier to install and more resistant to vibration than Type MC.
- GEXOL's lower dielectric constant (standard XLPEs, EPRs and other Type P insulation materials have higher dielectric constants) reduces reflected wave peak voltage magnitudes. This allows for longer output cable distances and minimizes the effect of high frequency noise induced into the plant ground system.
- 2kV insulation thickness resists the repetitive 2x voltage spikes from 600V VFDs and reduces drive over current trip problems due to cable charging current.
- Passes the same stringent crush and impact testing required by UL 2225 for Type MC-HL
- Gas & vapor tight – impervious to water and air

CIR-2 vs. TYPE MC

- Smaller bend radius (up to 40% smaller)
- Reduced tray fill (up to 35% less)
- Considerably more flexible
- Reduced installation time and cost
- Glands cost up to 50% LESS

CIR®-2 TYPE VFD POWER CABLE

Size AWG/ kcmil	Part No. 37-102-	Nominal Diameter Inches	Weight Per 1000 Ft.	DC Resist. @ 25°C (Ohms/1k ft)	AC Resist. @ 90°C, 60 Hz (Ohms/1k ft)	Inductive Reactance (Ohms/1k ft)	Voltage Drop @ 90°C (Volts/Amp/1k ft)	Green Insulated Grounding Size (AWG)	IEEE Ampacity 90°C	NEC Ampacity 90°C	IEEE Ampacity 75°C	NEC Ampacity 75°C
14	508CIRVA2	0.742	283	2.907	3.635	0.040	5.073	18	24	15	20	15
12	516CIRVA2	0.815	378	1.826	2.283	0.038	3.199	18	29	20	24	20
10	308CIRVA2	0.871	473	1.153	1.441	0.036	2.032	14	38	30	32	30
8	309CIRVA2	0.893	553	0.708	0.885	0.037	1.263	14	48	55	41	50
6	310CIRVA2	1.093	797	0.445	0.556	0.033	0.804	12	65	75	54	65
4	312CIRVA2	1.225	929	0.300	0.376	0.031	0.552	12	83	95	70	85
2	314CIRVA2	1.341	1276	0.184	0.230	0.029	0.348	10	111	130	93	115
1	315CIRVA2	1.447	1576	0.147	0.184	0.029	0.285	10	131	145	110	130
1/0	316CIRVA2	1.566	2144	0.117	0.147	0.029	0.234	10	150	170	126	150
2/0	317CIRVA2	1.733	2144	0.093	0.117	0.028	0.192	10	173	195	145	175
4/0	319CIRVA2	1.874	3131	0.058	0.075	0.027	0.132	8	232	260	194	230
262	320CIRVA2	2.031	3875	0.048	0.063	0.027	0.115	6	273	297	228	262
313	321CIRVA2	2.130	4709	0.040	0.053	0.026	0.100	6	298	328	249	292
373	322CIRVA2	2.257	5209	0.034	0.045	0.025	0.088	6	332	364	277	322
444	323CIRVA2	2.400	6310	0.028	0.039	0.025	0.080	6	382	402	319	355
535	324CIRVA2	2.705	7193	0.024	0.033	0.026	0.072	6	407	446	340	394
646	326CIRVA2	2.898	9217	0.020	0.028	0.026	0.065	4	474	496	396	438
777	327CIRVA2	3.102	10340	0.016	0.025	0.025	0.060	4	516	546	431	483



NOTE: Cable diameters are subject to a +/- 5% manufacturing tolerance

Ampacities are based on Table 310.15 (B) (16) of the National Electrical Code (NEC) for conductors rated 90°C, in a multi-conductor cable, at an ambient temperature of 30°C. The 75°C column is provided for additional information. The ampacities shown apply to open runs of cable, installation in any approved raceway. Derating for more than three current carrying conductors within the cable is in accordance with NEC Table 310.15 (B) (3) (a). The ampacities shown also apply to cables installed in cable tray in accordance with NEC Section 392.80.

*See next page for
Stranding Profile*

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Registered in the U.S. Patent and Trademark Office.

CIR[®]-2 CABLE COLOR CODES

CONTROL CABLES

COLORED INSULATION

CONDUCTOR #	BASE COLOR	TRACER COLOR
1	Black	-
2	Red	-
3	Blue	-
4	Orange	-
5	Yellow	-
6	Brown	-
7	Red	Black
8	Blue	Black
9	Orange	Black
10	Yellow	Black
11	Brown	Black
12	Black	Red
13	Blue	Red
14	Orange	Red
15	Yellow	Red
16	Brown	Red
17	Black	Blue
18	Red	Blue
19	Orange	Blue
20	Yellow	Blue
21	Brown	Blue
22	Black	Orange
23	Red	Orange
24	Blue	Orange
25	Yellow	Orange
26	Brown	Orange
27	Black	Yellow
28	Red	Yellow
29	Blue	Yellow
30	Orange	Yellow
31	Brown	Yellow
32	Black	Brown
33	Red	Brown
34	Blue	Brown
35	Orange	Brown
36	Yellow	Brown
37	Black	-

POWER CABLES

6 AWG and smaller = colored insulation

4 AWG and larger = print

CONDUCTOR #	COLOR
1	Black
2	Red
3	Blue
4	Orange

INSTRUMENTATION CABLES

Pairs	Black, White
Triads	Black, White, Red
Pair / Triad Number Printed on Conductors	



**Crush and Impact
Resistant
Without External
Armoring**

Safer to Handle

Easier to Install

CIR-2 STRANDING PROFILES

SIZE AWG/ KCMIL	NUMBER OF STRANDS	CLOSEST IEEE 45 STD. SIZE	EQUIVALENT METRIC SIZE (MM ²)	UNINSULATED CONDUCTOR DIA. (INCHES)
16	19	3	1.32	0.059
14	19	4	2.08	0.074
12	19	6	3.29	0.093
10	37	10	5.23	0.113
8	37	16	7.57	0.136
6	61	26	12.49	0.175
4	133	41	21.11	0.258
2	133	66	33.51	0.324
1/0	266	106	54.45	0.401
2/0	323	133	70.01	0.455
4/0	532	212	108.91	0.567
250	627	250	127	0.615
350	888	350	177	0.725
500	1221	500	253	0.875
750	1850	750	380	1.127

WHY SPECIFY CIR[®]-2 CABLES?

The True Cable Cost Comparison

LOWER TOTAL INSTALLED COST

CIR-2 (TC-ER-HL) vs. Type CWCMC (MC-HL)

Based on 100 ft. of cable, 2 glands and installation labor (cable & glands)

16 AWG 1 Shielded Pair	CIR-2 Saves you 36%
14 AWG 3/C+G	CIR-2 Saves you 37%
6 AWG 3/C+G	CIR-2 Saves you 38%
4 AWG 3/C+G	CIR-2 Saves you 33%
2/0 4/C+G	CIR-2 Saves you 10%

Glands for CIR-2 Cables cost up to 50% LESS than those for Type MC

1. Labor rate \$35.00/hr.
2. Labor time quotes based on long established Fluor Daniel Project Controls Standard Unit for Type TC and Type CWCMC cables for installation tray.
3. Identical installation for both products using a 100 ft. run basis.
4. Hawke A121 series glands used for CIR[®] cables and Hawke N701 glands used for Type CWCMC cables.
5. MRO pricing is used for cables and glands.



CIR[®]-2

TC-ER-HL CRUSH & IMPACT RESISTANT
CABLES WITHOUT EXTERNAL ARMORING
FOR OIL & GAS OPERATIONS



Nexans AmerCable is an ISO 9001 certified cable manufacturer that combines leading-edge manufacturing technology, innovative thinking, and high-quality service to deliver the finest upstream oil & gas cable products available.

Nexans AmerCable serves the world from our Oil & Gas Group headquarters in Houston, Texas. Our professional field engineers and sales force work with you to create innovative, cost effective project solutions.



“Two things that contractors and engineers can’t stop raving about are the flexibility of the CIR cable and the easiness of prepping for terminations.”

Nexans AmerCable

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