Southwire®
Industrial Cable

ARMOR-X® PRODUCT CATALOG

SOUTHWIRE THE PEOPLE

Southwire started as a small operation in Carrollton, Georgia with 12 employees in 1950. Today, the company employs more than 3,500 people at sales offices, distribution centers and manufacturing facilities throughout North America. Southwire's employees are dedicated to the company's founding principles of developing quality products matched with quality service. **While others have come and gone, and come again, Southwire has remained a constant and reliable manufacturer and supplier of wire and cable products for more than 50 years.**

SOUTHWIRE THE PRODUCTS

Southwire provides a full line of products for a wide range of applications. The company leads the industry in new and innovative products that help simplify installation, saving time and money. In addition to its standard product line, Southwire can also make custom products offering its customers the most complete line of products for almost any requirement or situation. No matter what the industrial application requires, you need look no farther. Southwire has just the right Armor-X® cable product you're looking for.

SOUTHWIRE THE SERVICE

With 9 distribution centers strategically located across the country, Southwire can fill all of your wire and cable product needs where you need them, when you need them, resulting in savings of time and money. The broad product range, combined with these distribution centers mean you **get more products in fewer deliveries**. Southwire's multiple manufacturing plants give Southwire the ability to offer the **widest range of custom armored products** in the industry.

SOUTHWIRE THE INNOVATION

As a technology leader, Southwire has developed new manufacturing processes to produce quality wire and cable products more efficiently. This means a lower cost product for you. In addition, **Southwire's on-site D.B. Cofer Technology Center leads the industry in new product innovation** that simplifies the installation process for contractors. This on-site research and development facility continues to keep Southwire Company a few steps ahead of the competition.

SOUTHWIRE THE COMPANY

Since 1950, Southwire has been on the move, growing and evolving into North America's largest building wire producer and supplier. With innovation backed by experience, Southwire leads the industry with the broadest line of wire and cable products, from copper and aluminum MC cable to industrial power cable and utility products.

Southwire®

THE LEADING MANUFACTURER OF WIRE AND CABLE

INNOVATION, EXPERIENCE, RELIABILITY... FOR MORE THAN 50 YEARS

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Solid company. Dedicated people. Quality products.
Dependable service. Product innovation. Made in the USA.

SOUTHWIRE COMPANY OFFERS PRODUCTS THAT OFFER SOLUTIONS.

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HLX07ENS

2.4 kV

ARMOR-X®

Type MV-105 or MC

EPR Insulated, 105°C

Three Bare Copper Grounding Conductors

Continuous Corrugated Aluminum Armor with -40°C PVC Jacket

Limited to 2,400 Volts Maximum

Suitable for VFD Applications

APPLICATIONS

Southwire HLX07ENS ARMOR-X® Type MV-105 or MC Cable provides an impervious sheath recommended as an economical alternative to traditional conduit systems. For use in aerial installations, direct burial, concrete-encased installations, cable trays, troughs or continuous rigid cable supports. For use in Classes I, II, III, Divisions 1 and 2, hazardous locations covered under NEC® Articles 501, 502, and 503. The cable is designed with three symmetrically placed ground wires to reduce problems associated with pulse-width modulated AC drives. These cables are capable of operating continuously in wet or dry locations at a maximum conductor temperature of 105°C for normal operation, 140°C for emergency overload conditions, and 250°C for short circuit conditions, and are rated at 2,400 V in wet or dry locations.

SPECIFICATIONS

Southwire HLX07ENS ARMOR-X® Type MV-105 or MC Cable is manufactured and tested in accordance with the latest revisions of:

- ICEA S-96-659 (NEMA WC 71) Ethylene-Propylene-Rubber-Insulated Wire and Cable for the Transmission and Distribution of Electric Energy
- UL 1072 – Medium Voltage Power Cables
- IEEE 1202 – Flame Test (70,000 BTU/hr Vertical Tray Test)
- ICEA T-29-520 – Vertical Cable Tray Flame Tests (210,000 BTU/hr)
- UL 1309 Listed as Marine Shipboard Cable
- ABS Listed as CWCMC

CONSTRUCTION

Southwire's HLX07ENS ARMOR-X® Type MV-105 or MC continuous corrugated aluminum armor provides a sheath impervious to moisture, liquids, and gases. Cable is flame retardant UL-listed for cable tray use, direct burial, sunlight, oil resistant and minus 40°C installation temperatures. Continuous aluminum sheath meets the grounding requirements of NEC® 250-122. Cable is constructed with an extruded conductor shield and flexible EPR insulation. SOLONON® low smoke, non-halogen polyolefin jackets are available upon request.

- **Scope**
  This specification covers three-conductor EPR (ethylene propylene rubber) insulated, non-shielded, continuous corrugated aluminum armored, thermoplastic jacketed power cables with three grounding conductors for use in aerial installations, direct burial, concrete-encased installation, cable trays, troughs, or continuous rigid cable supports. For use in Classes I, II, and III, Division 1 and 2, hazardous locations covered under NEC® Articles 501, 502, and 503. These cables are capable of operating continuously at a maximum temperature of 105°C for normal operations, 140°C for emergency overload conditions, and 250°C for short circuit conditions, and are rated 2,400 V in wet or dry locations.
- **Standards**
  The following standards shall form part of this specification: UL Standard 1072 for Medium Voltage Power Cable and ICEA S-93-639 (NEMA WC74) 5-46 kV Shielded Power Cable for Use in the Transmission and Distribution of Electric Energy.
- **Conductor**
  The conductor shall be Class B compressed concentric stranded bare copper in accordance with ASTM B3 and B8 and ICEA.

Southwire® Industrial Cable

UL LISTED

MADE IN USA

WEIGHTS, MEASUREMENTS AND PACKAGING

PRODUCT CODE	SIZE	CONDUCTOR DIAMETER		0.090" (3.30mm) INSULATION DIAMETER		GROUND COND. SIZE	APPROXIMATE ARMOR-X® DIAMETER		JACKET THICKNESS		APPROXIMATE OVERALL DIAMETER		APPROXIMATE NET WEIGHT		ALLOWABLE AMPACITIES*	
	AWG OR kcmil	inch	mm	inch	mm	NO. x AWG	inch	mm	inch	mm	inch	mm	lbs/ 1000 ft	kg/km	DUCT BURIAL	IN AIR
HLX07ENS-002	2	0.277	7.04	0.505	12.8	3 x 10	1.47	37.3	0.050	1.27	1.57	39.9	1390	2069	180	140
HLX07ENS-010	1/0	0.362	9.19	0.587	14.9	3 x 8	1.59	40.4	0.060	1.52	1.71	43.4	1920	2857	230	185
HLX07ENS-020	2/0	0.405	10.29	0.629	16.0	3 x 8	1.76	44.7	0.060	1.52	1.88	47.8	2243	3337	260	215
HLX07ENS-040	4/0	0.512	13.00	0.736	18.7	3 x 6	2.04	51.8	0.060	1.52	2.16	54.9	3287	4891	335	285
HLX07ENS-250	250	0.558	14.17	0.791	20.1	3 x 6	2.20	55.9	0.060	1.52	2.32	58.9	3688	5488	365	320
HLX07ENS-350	350	0.661	16.79	0.893	22.7	3 x 6	2.43	61.7	0.075	1.91	2.58	65.5	4961	7382	440	395
HLX07ENS-500	500	0.790	20.07	1.021	25.9	3 x 4	2.67	67.8	0.075	1.91	2.82	71.6	6571	9777	530	485
HLX07ENS-750	750	0.968	24.59	1.208	30.7	3 x 4	3.20	81.3	0.085	2.16	3.37	85.6	9700	14434	650	615

*Ampacities are based on the NEC® 2008 Edition. Direct burial ampacities are based on Table 310-83 three conductors within an overall covering directly buried, 105°C conductor, 20°C earth ambient temperature. In air ampacities are based on Table 310-71 three conductors within an overall covering in free air, 105°C conductor, 40°C ambient temperature.

CONSTRUCTION (continued)

- **Conductor Shield**
  The conductor shall be shielded with an extruded semiconducting thermosetting polymeric layer, which shall be firmly bonded to the insulation. The thickness will be in accordance with the referenced standards.
- **Insulation**
  The insulation shall be EPR (ethylene propylene rubber) meeting the requirements of the referenced standards. The average thickness will be 0.090" and the minimum spot thickness will be not less than 90% of the average thickness.
- **Grounding Conductor**
  The three ground conductors shall be Class B compressed concentric stranded bare copper in accordance with ASTM B3 and B8.
- **Assembly**
  The insulated power conductors shall be cabled round with fillers and with three grounding conductors in the outer interstices and covered with a binder tape.
- **Armor**
  Continuous, impervious, welded, corrugated copper free aluminum armor will be applied over the assembly.
- **Jacket**
  The cable shall be covered with a yellow PVC jacket conforming to the requirements specified for polyvinyl chloride in ICEA. The average thickness shall be in accordance with the referenced standards and the minimum spot thickness shall be not less than 80% of the average thickness. The jacket shall be sunlight resistant and shall meet the requirements of the IEEE 1202 (70,000 BTU/hr) and ICEA T-29-520 (210,000 BTU/hr) vertical cable tray flame tests. The PVC jacket shall be suitable for use at a minimum ambient temperature of minus 40°C. Optional SOLONON® low smoke, non-halogen polyolefin jackets are available upon request.
- **Identification**
  Manufacturer's identification shall be printed on the jacket.
- **Tests**
  Physical and electrical tests shall be conducted in accordance with the requirements of the referenced standards.

HLX09ET

ARMOR-X®-HL

5 kVU or 8 kV Shielded Type MV-105 or MC-HL

No Lead EPR Insulated, 105°C

Three Bare Copper Grounding Conductors

Continuous Corrugated Aluminum Armor with -40°C PVC Jacket

Suitable for VFD Applications

APPLICATIONS

Southwire HLX09ET ARMOR-X® Type MV-105 or MC-HL provides an impervious sheath recommended as an economical alternative to traditional conduit systems. For use in aerial installations, direct burial, concrete-encased installations, cable trays, troughs or continuous rigid cable supports. For use in Classes I, II, and III, Division 1 and 2 hazardous locations covered under NEC® Articles 501, 502, and 503. The cable is designed with three symmetrically placed ground wires to reduce problems associated with pulse-width modulated AC drives. These cables are capable of operating continuously in wet or dry locations at a maximum conductor temperature of 105°C for normal operation, 140°C for emergency overload conditions, and 250°C for short circuit conditions, and are rated 5,000 V, 133% and 8,000 V, 100% insulation levels.

SPECIFICATIONS

Southwire HLX09ET Type MV-105 or MC-HL Cable is manufactured and tested in accordance with the latest revisions of the following standards and specification:

- UL 1072 - Medium Voltage Power Cables
- UL 2225 - Safety Metal-Clad Cables and Cable-Sealing Fittings for Use in Hazardous (Classified) Locations
- UL 1309 - Listed as Marine Shipboard Cable
- ICEA S-93-639 (NEMA WC 74) - 5-46 kV Shielded Power Cable for Use in the Transmission and Distribution of Electric Energy
- IEEE 1202 - Flame Testing of Cable for Use in Cable Tray in Industrial and Commercial Occupancies (70,000 BTU/hr)
- ICEA T-29-520 Vertical Tray Flame Test (210,000 BTU/hr)

Certified qualification tests were performed in accordance with the requirements of AEIC CS-8. Cable has fully met the qualification testing requirements of AEIC CS-8.

CONSTRUCTION

Southwire HLX09ET ARMOR-X® Type MV-105 or MC-HL continuous, corrugated aluminum armor provides a sheath impervious to moisture, liquids, and gases. Cable is flame retardant UL-listed for cable tray use, direct burial, sunlight resistant and minus 40°C installation temperature. Continuous aluminum sheath meets the grounding requirements of NEC® 250-122 in non-HL locations. Cable provides proven, flexible EPR insulation. SOLONON® low smoke, non-halogen polyolefin jackets are available upon request.

- **Scope**
  This specification covers three-conductor no lead EPR (ethylene propylene rubber) insulated, shielded, continuous corrugated aluminum armored, thermoplastic jacketed power cables with three grounding conductors for use in aerial installations, direct burial, concrete-encased installations, cable trays, troughs, or continuous rigid cable supports. The cable shall be listed Type MV-105 or MC-HL for use in Classes I, II, and III, Division 1 and 2, hazardous locations. These cables are capable of operating continuously at a temperature of 105°C for normal operations, 140°C for emergency overload conditions, and 250°C for short circuit conditions, and are rated 8,000 V, 100% and 5,000 V, 133% insulation levels.
- **Standards**
  The following standards shall form part of this specification: UL Standard 1072 for Medium Voltage Power Cable and ICEA S-93-639 (NEMA WC74) 5-46 kV Shielded power Cable in Use in the Transmission and Distribution of Electric Energy.
- **Conductor**
  The conductor shall be Class B compressed concentric stranded bare copper in accordance with ASTM B3 and B8 and ICEA.

WEIGHTS, MEASUREMENTS AND PACKAGING

PRODUCT CODE	SIZE	DIAMETER		0.115" (2.29mm) INSULATION DIAMETER		EXTRUDED INSULATION SHIELD DIAMETER		GRD. COND. SIZE	APPROXIMATE ARMOR-X® DIAMETER		JACKET THICKNESS		APPROX. OVERALL DIAMETER		APPROXIMATE NET WEIGHT		ALLOWABLE AMPACITIES*	
	AWG OR kcmil	inch	mm	inch	mm	inch	mm	NO. X AWG	inch	mm	inch	mm	inch	mm	lbs/ 1000 ft	kg/ km	DIRECT BURIAL	IN AIR
HLX09ET-002	2	0.283	7.19	0.568	14.41	0.623	15.81	3 x 10	1.760	44.70	0.060	1.52	1.880	47.8	1797	2673	190	154
HLX09ET-001	1	0.322	8.18	0.608	15.43	0.663	16.83	3 x 8	1.845	46.86	0.060	1.52	1.965	49.9	2066	3074	215	180
HLX09ET-010	1/0	0.362	9.19	0.648	16.45	0.703	17.84	3 x 8	1.870	47.50	0.060	1.52	1.990	50.5	2368	3523	245	205
HLX09ET-020	2/0	0.405	10.29	0.688	17.46	0.743	18.86	3 x 8	2.040	51.82	0.060	1.52	2.160	54.9	2716	4042	280	240
HLX09ET-040	4/0	0.512	13.00	0.793	20.13	0.848	21.53	3 x 6	2.290	58.17	0.075	1.91	2.440	62.0	3804	5666	360	320
HLX09ET-250	250	0.558	14.17	0.850	21.59	0.905	22.99	3 x 6	2.430	61.72	0.075	1.91	2.580	65.5	4269	6353	395	355
HLX09ET-350	350	0.661	16.79	0.953	24.19	1.008	25.59	3 x 6	2.670	67.82	0.075	1.91	2.820	71.6	5483	8158	475	440
HLX09ET-500	500	0.790	20.07	1.078	27.37	1.133	28.77	3 x 4	2.980	75.69	0.075	1.91	3.130	79.5	7363	10955	570	545
HLX09ET-750	750	0.968	24.59	1.265	32.13	1.320	33.53	3 x 4	3.540	89.92	0.085	2.16	3.710	94.2	10741	15982	700	685

*Ampacities are based on the NEC® 2008 Edition. Direct burial ampacities are based on Table 310.83 three-conductors within an overall covering directly buried, 105°C conductor, 20°C earth ambient temperature. In air ampacities are based on Table 310.71 three-conductors within an overall covering in free air, 105°C conductor, 40°C ambient temperature.

CONSTRUCTION (continued)

- **Conductor Shield**
  The conductor shall be shielded with an extruded semiconducting thermosetting polymeric layer, which shall be firmly bonded to the insulation. The thickness shall be in accordance with the referenced standards.
- **Insulation**
  The insulation shall be no lead EPR (ethylene propylene rubber) meeting the requirements of the referenced standards. The average thickness shall be 0.115".
- **Insulation Shield**
  The insulation shall be shielded with an extruded semiconducting thermosetting polymeric layer which will be identified as semiconducting. Over this layer shall be applied a helically-wrapped 5-mil copper tape with 25% overlap. The method of phase identification shall be similar to ICEA Method 3, using printed circuit numbers and colors (1-BLACK, 2-RED, 3-BLUE).
- **Ground Conductor**
  The three ground conductors shall be Class B compressed concentric stranded bare copper in accordance with ASTM B3 and B8.
- **Assembly**
  The insulated and shielded power conductors shall be cabled round with fillers and with a grounding conductor in one outer interstice and covered with a binder tape.
- **Armor**
  Continuous, impervious, welded, corrugated copper-free aluminum armor shall be applied over the assembly.
- **Jacket**
  The cable shall be covered with a yellow PVC jacket conforming to the requirements specified for polyvinyl chloride in ICEA. The average thickness shall be in accordance with the referenced standards. The jacket shall be sunlight resistant and shall meet the requirements of the IEEE 1202 (70,000 BTU/hr) and ICEA T-29-520 (210,000 BTU/hr) vertical cable tray flame tests. The jacket shall be suitable for use at a minimum ambient temperature of minus 40°C. Optional SOLONON® low smoke, non-halogen polyolefin jackets and CPE jackets are available upon request.
- **Identification**
  Manufacturer's identification shall be printed on the jacket.
- **Tests**
  Qualification tests shall be conducted in accordance with the requirements of AEIC.

HLX11ET

ARMOR-X®-HL

15 kV Shielded Type MV-105 or MC-HL

No Lead EPR Insulated, 105°C

Bare Copper Grounding Conductor

Continuous Corrugated Aluminum Armor with -40°C PVC Jacket

APPLICATIONS

ARMOR-X® Type MV-105 or MC-HL provides an impervious sheath recommended as an economical alternative to traditional conduit systems. For use in aerial installations, direct burial, concrete-encased installations, cable trays, troughs or continuous rigid cable supports. For use in Classes I, II, and III, Division 1 and 2 hazardous locations covered under NEC® Articles 501, 502, and 503. These cables are capable of operating continuously in wet or dry locations at a maximum conductor temperature of 105°C for normal operation, 140°C for emergency overload conditions, and 250°C for short circuit conditions, and are rated 15,000 V, 100% insulation levels.

SPECIFICATIONS

Southwire HLX11ET Type MV-105 or MC-HL Cable is manufactured and tested in accordance with the latest revisions of the following standards and specification:

- UL 1072 - Medium Voltage Power Cables
- UL 2225 - Safety Metal-Clad Cables and Cable-Sealing Fittings for Use in Hazardous (Classified) Locations
- UL 1309 - Listed as Marine Shipboard Cable
- ABS listed as CWCMC
- ICEA S-93-639 (NEMA WC 74) - 5-46 kV Shielded Power Cable for Use in the Transmission and Distribution of Electric Energy
- ICEA T-29-520 – Vertical Cable Tray Flame Test (210,000 BTU/hr)
- IEEE 1202 - Flame Testing of Cable for Use in Cable Tray in Industrial and Commercial Occupancies (70,000 BTU/hr)

Certified qualification tests were performed in accordance with the requirements of AEIC CS-8.
Cable has fully met the qualification testing requirements of AEIC CS-8.

CONSTRUCTION

ARMOR-X® Type MV-105 or MC-HL continuous, corrugated aluminum armor provides a sheath impervious to moisture, liquids, and gases. Cable is flame retardant UL-listed for cable tray use, direct burial, sunlight resistant and minus 40°C installation temperature. Continuous aluminum sheath meets the grounding requirements of NEC® 250-122 in non-HL locations. Cable provides proven, flexible EPR insulation. SOLONON® low smoke, non-halogen polyolefin jackets are available upon request.

- **Scope**
  This specification covers three-conductor no lead EPR (ethylene propylene rubber) insulated, shielded, continuous corrugated aluminum armored, thermoplastic jacketed power cables with grounding conductor for use in aerial installations, direct burial, concrete-encased installations, cable trays, troughs, or continuous rigid cable supports. The cable shall be listed Type MV-105 or MC-HL for use in Classes I, II, and III, Division 1 and 2, hazardous locations. These cables are capable of operating continuously at a temperature of 105°C for normal operations, 140°C for emergency overload conditions, and 250°C for short circuit conditions, and are rated 15,000 V, 100% insulation level.
- **Standards**
  The following standards shall form part of this specification: UL Standard 1072 for Medium Voltage Power Cable and ICEA S-93-639 (NEMA WC74) 5-46 kV Shielded Power cable for Use in the Transmission and Distribution of Electrical Energy.

Southwire® Industrial Cable

WEIGHTS, MEASUREMENTS AND PACKAGING

PRODUCT CODE	SIZE	DIAMETER		0.175" (4.45mm) INSULATION DIAMETER		EXTRUDED INSULATION SHIELD DIAMETER		GRD. COND. SIZE	APPROXIMATE ARMOR-X® DIAMETER		JACKET THICKNESS		APPROXIMATE OVERALL DIAMETER		APPROXIMATE NET WEIGHT		ALLOWABLE AMPACITIES*	
	AWG OR kcmil	inch	mm	inch	mm	inch	mm	AWG	inch	mm	inch	mm	inch	mm	lbs/ 1000 ft	kg/ km	DIRECT BURIAL	IN AIR
HLX11ET-002	2	0.283	7.19	0.683	17.34	0.738	18.73	6	2.09	53.09	0.060	1.52	2.21	56.13	2272	3381	200	185
HLX11ET-010	1/0	0.362	9.19	0.763	19.37	0.818	20.76	4	2.20	55.88	0.060	1.52	2.32	58.9	2727	4057	255	240
HLX11ET-040	4/0	0.512	13.00	0.908	23.05	0.963	24.45	3	2.55	64.77	0.075	1.91	2.70	68.6	4199	6248	375	360
HLX11ET-500	500	0.790	20.07	1.193	30.29	1.248	31.69	1	3.00	75.69	0.075	1.91	3.13	79.5	7810	11621	590	600

*Ampacities are based on the NEC® 2008 Edition. Direct burial ampacities are based on Table 310.83 three conductors within an overall covering directly buried, 105°C conductor, 20°C earth ambient temperature. In air ampacities are based on Table 310.71 three conductors within an overall covering in free air, 105°C conductor, 40°C ambient temperature.

CONSTRUCTION (continued)

- **Conductor**

  The conductor shall be Class B compressed concentric stranded bare copper in accordance with ASTM B3 and B8 and ICEA.
- **Conductor Shield**

  The conductor shall be shielded with an extruded semiconducting thermosetting polymeric layer, which shall be firmly bonded to the insulation. The thickness shall be in accordance with the referenced standards.
- **Insulation**

  The insulation shall be no lead EPR (ethylene propylene rubber) meeting the requirements of the referenced standards. The average thickness shall be 0.175" and the minimum spot thickness shall be not less than 90% of the average thickness.
- **Insulation Shield**

  The insulation shall be shielded with an extruded semiconducting thermosetting polymeric layer which shall be identified as semiconducting. Over this layer shall be applied a helically-wrapped 5-mil copper tape with 25% overlap. The method of phase identification shall be similar to ICEA Method 3, using printed circuit numbers and colors (1-BLACK, 2-RED, 3-BLUE).
- **Ground Conductor**

  The ground conductor shall be Class B compressed concentric stranded bare copper in accordance with ASTM B3 and B8.
- **Assembly**

  The insulated and shielded power conductors shall be cabled round with fillers and with a grounding conductor in one outer interstice and covered with a binder tape.
- **Armor**

  Continuous, impervious, welded, corrugated copper free aluminum armor shall be applied over the assembly.
- **Jacket**

  The cable shall be covered with a red PVC jacket conforming to the requirements specified for polyvinyl chloride in ICEA. The average thickness shall be in accordance with the referenced standards and the minimum spot thickness shall be not less than 80% of the average thickness. The jacket shall be sunlight resistant and shall meet the requirements of the IEEE 1202 (70,000 BTU/hr) and ICEA T-29-520 (210,000 BTU/hr) vertical cable tray flame tests. The jacket shall be suitable for use at a minimum ambient temperature of minus 40°C.
- **Identification**

  Manufacturer's identification shall be printed on the jacket.
- **Tests**

  Physical and electrical test shall be conducted in accordance with the requirements of the referenced standards.

HLX13ET

ARMOR-X®-HL

15 kVU Shielded Type MV-105 or MC-HL

No Lead EPR Insulated, 105°C

Bare Copper Grounding Conductor

Continuous Corrugated Aluminum Armor with -40°C PVC Jacket

APPLICATIONS

Southwire HLX13ET ARMOR-X® Type MV-105 or MC-HL provides an impervious sheath recommended as an economical alternative to traditional conduit systems. For use in aerial installations, direct burial, concrete-encased installations, cable trays, troughs or continuous rigid cable supports. For use in Classes I, II, and III, Division 1 and 2 hazardous locations covered under NEC® Articles 501, 502, and 503. These cables are capable of operating continuously in wet or dry locations at a maximum conductor temperature of 105°C for normal operation, 140°C for emergency overload conditions, and 250°C for short circuit conditions, and are rated 15,000 V, 133% insulation levels.

SPECIFICATIONS

Southwire HLX13ET Type MV-105 or MC-HL Cable is manufactured and tested in accordance with the latest revisions of the following standards and specification:

- UL 1072 - Medium Voltage Power Cables
- UL 2225 - Safety Metal-Clad Cables and Cable-Sealing Fittings for Use in Hazardous (Classified) Locations (HL)
- UL 1309 listed as Marine Shipboard cable, ABS listed as CWCMC
- ICEA S-93-639 (NEMA WC 74) - 5-46 kV Shielded Power Cable for Use in the Transmission and Distribution of Electric Energy
- ICEA T-29-520 – Vertical Cable Tray Flame Test (210,000 BTU/hr)
- IEEE 1202 - Flame Testing of Cable for Use in Cable Tray in Industrial and Commercial Occupancies (70,000 BTU/hr)

Certified qualification tests were performed in accordance with the requirements of AEIC CS-8. Cable has fully met the qualification testing requirements of AEIC CS-8.

CONSTRUCTION

Southwire HLX13ET ARMOR-X® Type MV-105 or MC-HL continuous corrugated aluminum armor provides a sheath impervious to moisture, liquids, and gases. Cable is flame retardant UL-listed for cable tray use, direct burial, sunlight resistant and minus 40°C installation temperature. Continuous aluminum sheath meets the grounding requirements of NEC® 250-122 in non-HL locations. Cable provides proven, flexible EPR insulation. SOLONON® low smoke, non-halogen polyolefin jackets are available upon request.

- **Scope**
  This specification covers three-conductor no lead EPR (ethylene propylene rubber) insulated, shielded, continuous corrugated aluminum armored, thermoplastic jacketed power cables with grounding conductor for use in aerial installations, direct burial, concrete-encased installations, cable trays, troughs, or continuous rigid cable supports. The cable will be listed Type MV-105 or MC-HL for use in Classes I, II, and III, Division 1 and 2, hazardous locations. These cables are capable of operating continuously at a temperature of 105°C for normal operations, 140°C for emergency overload conditions, and 250°C for short circuit conditions, and are rated 15,000 V, 133% insulation levels.
- **Standards**
  The following standards shall form part of this specification: ICEA S-93-639/NEMA WC74, UL 1072, UL 1309 and UL 2225.
- **Conductor**
  The conductor shall be Class B compressed concentric stranded bare copper in accordance with ASTM B3 and B8 and ICEA Part 2, Section 2.1 and 2.5.

Southwire® Industrial Cable

UL LISTED

MADE IN USA

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WEIGHTS, MEASUREMENTS AND PACKAGING

PRODUCT CODE	SIZE	DIAMETER		0.220" (5.59mm) INSULATION DIAMETER		EXTRUDED INSULATION SHIELD DIAMETER		GRD. COND. SIZE	APPROXIMATE ARMOR-X® DIAMETER		JACKET THICKNESS		APPROXIMATE OVERALL DIAMETER		APPROXIMATE NET WEIGHT		ALLOWABLE AMPACITIES*	
	AWG OR kcmil	inch	mm	inch	mm	inch	mm	AWG	inch	mm	inch	mm	inch	mm	lbs/ 1000 ft	kg/ km	DIRECT BURIAL	IN AIR
HLX13ET-002	2	0.283	7.19	0.773	19.62	0.828	21.02	6	2.29	58.17	0.075	1.91	2.44	62.0	2540	3780	200	185
HLX13ET-010	1/0	0.362	9.19	0.853	21.65	0.908	23.05	4	2.43	61.72	0.075	1.91	2.58	65.5	3126	4652	255	240
HLX13ET-020	2/0	0.405	10.29	0.893	22.67	0.948	24.07	4	2.55	64.77	0.075	1.91	2.70	68.6	3533	5257	290	275
HLX13ET-040	4/0	0.512	13.00	0.998	25.34	1.053	26.73	3	2.75	69.85	0.075	1.91	2.90	73.7	4663	6939	375	360
HLX13ET-250	250	0.558	14.17	1.055	26.80	1.110	28.13	3	2.88	73.15	0.075	1.91	3.03	77.0	5069	7543	410	400
HLX13ET-350	350	0.661	16.79	1.158	29.40	1.213	30.80	2	3.22	81.79	0.085	2.16	3.39	86.1	6742	10032	495	490
HLX13ET-500	500	0.790	20.07	1.283	32.58	1.338	33.97	1	3.54	89.92	0.085	2.16	3.71	94.2	8764	13041	590	600
HLX13ET-750	750	0.908**	23.06	1.410	35.81	1.465	37.21	1/0	3.85	97.79	0.085	2.16	4.02	102.1	11666	17358	720	745

*Ampacities are based on the NEC® 2008 Edition. Direct burial ampacities are based on Table 310.83 three conductors within an overall covering directly buried, 105°C conductor, 20°C earth ambient temperature. In air ampacities are based on Table 310.71 three conductors within an overall covering in free air, 105°C conductor, 40°C ambient temperature.
** 750 kcmil is constructed with compact strand.

CONSTRUCTION (continued)

- **Conductor Shield**
  The conductor shall be shielded with an extruded semiconducting thermosetting polymeric layer, which shall be firmly bonded to the insulation. The thickness shall be in accordance with the referenced standards.
- **Insulation**
  The insulation shall be no lead EPR (ethylene propylene rubber) meeting the requirements of the referenced standards. The average thickness shall be 0.220" and the minimum spot thickness shall be not less than 90% of the average thickness.
- **Insulation Shield**
  The insulation shall be shielded with an extruded semiconducting thermosetting polymeric layer which shall be identified as semiconducting. Over this layer shall be applied a helically-wrapped 5-mil copper tape with 25% overlap. The method of phase identification shall be similar to ICEA Method 3, using printed circuit numbers and colors (1-BLACK, 2-RED, 3-BLUE).
- **Ground Conductor**
  The ground conductor shall be Class B compressed concentric stranded bare copper in accordance with ASTM B3 and B8.
- **Assembly**
  The insulated and shielded power conductors shall be cabled round with fillers and with a grounding conductor in one outer interstice and covered with a binder tape.
- **Armor**
  Continuous, impervious, welded, corrugated copper free aluminum armor shall be applied over the assembly.
- **Jacket**
  The cable shall be covered with a red PVC jacket conforming to the requirements specified for polyvinyl chloride in ICEA. The average thickness shall be in accordance with the referenced standards and the minimum spot thickness shall be not less than 80% of the average thickness. The jacket shall be sunlight resistant and shall meet the requirements of the IEEE 1202 (70,000 BTU/hr) and ICEA T-29-520 (210,000 BTU/hr) vertical cable tray flame tests. The jacket shall be suitable for use at a minimum ambient temperature of minus 40°C.
- **Identification**
  Manufacturer's identification shall be printed on the jacket.
- **Tests**
  Certified qualification tests were performed in accordance with the requirements of AEIC CS-8.

HLX19ET

ARMOR-X®-HL

35 kV Shielded Type MV-105 or MC-HL

No Lead EPR Insulated, 105°C

Bare Copper Grounding Conductor

Continuous Corrugated Aluminum Armor with -40°C PVC Jacket

APPLICATIONS

ARMOR-X® Type MV-105 or MC-HL provides an impervious sheath recommended as an economical alternative to traditional conduit systems. For use in aerial installations, direct burial, concrete-encased installations, cable trays, troughs or continuous rigid cable supports. For use in Classes I, II, and III, Division 1 and 2 hazardous locations covered under NEC® Articles 501, 502, and 503. These cables are capable of operating continuously in wet or dry locations at a maximum conductor temperature of 105°C for normal operation, 140°C emergency overload conditions, and 250°C for short circuit conditions, and are rated 35,000 V, 100% insulation levels.

SPECIFICATIONS

Southwire HLX19ET Type MV-105 or MC-HL Cable is manufactured and tested in accordance with the latest revisions of the following standards and specifications:

- UL 1072 - Medium Voltage Power Cables
- UL 2225 - Safety Metal-Clad Cables and Cable-Sealing Fittings for Use in Hazardous (Classified) Locations (HL)
- UL 1309 listed as Marine Shipboard cable, ABS listed as CWCMC
- ICEA S-93-639 (NEMA WC 74) - 5-46 kV Shielded Power Cable for Use in the Transmission and Distribution of Electric Energy
- ICEA T-29-520 – Vertical Cable Tray Flame Test (210,000 BTU/hr)
- IEEE 1202 - Flame Testing of Cable for Use in Cable Tray in Industrial and Commercial Occupancies (70,000 BTU/hr)

Certified qualification tests were performed in accordance with the requirements of AEIC CS-8. Cable has fully met the qualification testing requirements of AEIC CS-8.

CONSTRUCTION

ARMOR-X® Type MV-105 or MC-HL continuous corrugated aluminum armor provides a sheath impervious to moisture, liquids, and gases. Cable is flame retardant UL-listed for cable tray use, direct burial, sunlight resistant and minus 40°C installation temperature. Continuous aluminum sheath meets the grounding requirements of NEC® 250-122 in non-HL locations. Cable provides proven, flexible EPR insulation. SOLONON® low smoke, non-halogen polyolefin jackets are available upon request.

- **Scope**
  This specification covers three-conductor no lead EPR (ethylene propylene rubber) insulated, shielded, continuous corrugated aluminum armored, thermoplastic jacketed power cables with grounding conductor for use in aerial installations, direct burial, concrete-encased installations, cable trays, troughs, or continuous rigid cable supports. The cable will be listed Type MV-105 or MC-HL for use in Classes I, II, and III, Division 1 and 2, hazardous locations. These cables are capable of operating continuously at a temperature of 105°C for normal operations, 140°C for emergency overload conditions, and 250°C for short circuit conditions, and are rated 35,000 V, 100% insulation level.
- **Standards**
  The following standards shall form part of this specification: ICEA S-93-639/NEMA WC 74, UL 1072, UL 2225.
- **Conductor**
  The conductor shall be Class B compressed concentric stranded bare copper in accordance with ASTM B3 and B8 and ICEA Part 2, Section 2.1 and 2.5.

Southwire® Industrial Cable

LISTED

MADE IN USA

WEIGHTS, MEASUREMENTS AND PACKAGING

PRODUCT CODE	SIZE	DIAMETER		0.345" (8.76mm) INSULATION DIAMETER		EXTRUDED INSULATION SHIELD DIAMETER		GRD. COND. SIZE	APPROXIMATE ARMOR-X® DIAMETER		JACKET THICKNESS		APPROXIMATE OVERALL DIAMETER		APPROXIMATE NET WEIGHT		ALLOWABLE AMPACITIES*	
	AWG OR kcmil	inch	mm	inch	mm	inch	mm	AWG	inch	mm	inch	mm	inch	mm	lbs/ 1000 ft	kg/ km	DIRECT BURIAL	IN AIR
HLX19ET-010	1/0	0.362	9.2	1.098	27.9	1.153	29.3	4	3.00	76.2	0.075	1.91	3.15	80.0	4127	6141	255	240
HLX19ET-020	2/0	0.406	10.3	1.138	28.9	1.193	30.3	4	3.00	76.2	0.075	1.91	3.15	80.0	4497	6692	290	275
HLX19ET-040	4/0	0.512	13.0	1.243	31.6	1.298	33.0	3	3.29	83.6	0.085	2.16	3.46	87.9	5720	8512	375	360
HLX19ET-250	250	0.558	14.2	1.300	33.0	1.355	34.4	2	3.54	89.9	0.085	2.16	3.71	94.2	6309	9388	410	400
HLX19ET-350	350	0.661	16.8	1.403	35.6	1.458	37.0	2	3.54	89.9	0.085	2.16	3.71	94.2	7773	11566	495	490

*Ampacities are based on the NEC® 2008 Edition. Direct burial ampacities are based on Table 310.83 three conductors within an overall covering directly buried, 105°C conductor, 20°C earth ambient temperature. In air ampacities are based on Table 310.71 three conductors within an overall covering in free air, 105°C conductor, 40°C ambient temperature.
* Larger sizes available upon request.

CONSTRUCTION (continued)

- **Conductor Shield**
  The conductor shall be shielded with an extruded semiconducting thermosetting polymeric layer, which shall be firmly bonded to the insulation. The thickness shall be in accordance with the referenced standards.
- **Insulation**
  The insulation shall be no lead EPR (ethylene propylene rubber) meeting the requirements of the referenced standards. The average thickness shall be 0.345" and the minimum spot thickness shall be not less than 90% of the average thickness.
- **Insulation Shield**
  The insulation shall be shielded with an extruded semiconducting thermosetting polymeric layer which shall be identified as semiconducting. Over this layer shall be applied a helically-wrapped 5-mil copper tape with 25% overlap. The method of phase identification shall be similar to ICEA Method 3, using printed circuit numbers and colors (1-BLACK, 2-RED, 3-BLUE).
- **Ground Conductor**
  The ground conductor shall be Class B compressed concentric stranded bare copper in accordance with ASTM B3 and B8.
- **Assembly**
  The insulated and shielded power conductors shall be cabled round with fillers and with a grounding conductor in one outer interstice and covered with a binder tape.
- **Armor**
  Continuous, impervious, welded, corrugated copper free aluminum armor shall be applied over the assembly.
- **Jacket**
  The cable shall be covered with a PVC jacket conforming to the requirements specified for polyvinyl chloride in ICEA. The average thickness shall be in accordance with the referenced standards and the minimum spot thickness shall be not less than 80% of the average thickness. The jacket shall be sunlight resistant and shall meet the requirements of the IEEE 1202 (70,000 BTU/hr) and ICEA T-29-520 (210,000 BTU/hr) vertical cable tray flame tests. The jacket shall be suitable for use at a minimum ambient temperature of minus 40°C.
- **Identification**
  Manufacturer's identification shall be printed on the jacket.
- **Tests**
  Physical and electrical tests shall be conducted in accordance with the requirements of the referenced standards.

INTRODUCTION

When pulling ARMOR-X® cable into cable trays, the same approach should be used as for cable installed into conduit. Care must be given to the run lengths, number of cable turns, and cable sheave size to insure the cable's maximum pulling tension, minimum bending radius, and maximum allowable sidewall pressure are not exceeded subjecting the cable to possible damage.

When pulling around bends in cable trays, excessive sidewall pressure can damage the cable. Sidewall pressure can be reduced by using a large radius sheave. Many times a large radius sheave cannot be used and an assembly of multiple smaller sheaves is used. Care should be given to prevent damage due to high sidewall pressure on the individual sheaves. The individual sheaves should have a minimum inside radius of 1.25 inches with at least one sheave per 20° of the bend. A three sheave assembly for a 90° bend should be used.

Rollers and sheaves must be well maintained and lubricated to achieve the lowest possible coefficient of friction.

ROLLER MOUNTING

- Rollers must be properly spaced to prevent the cable from touching the tray.
- Rollers must be free turning.

When the tray changes direction, vertically or horizontally, sheave radii must be large enough to meet the minimum bending and maximum allowable sidewall pressure limits.

ROLLER SPACING

Roller spacing will vary with:

- Cable weight
- Cable tension
- Cable construction
- Roller height above the tray

To estimate roller spacing the following equation can be used.

$$s = \sqrt{\frac{8hTW}{W}} \text{ feet}$$

Where:

s = distance between rollers in feet
h = height of top roller above the tray bottom in feet
T = tension in pounds
W = total cable assembly weight in pounds/foot

The distance will be conservative for armored cable due to the fact that the equation assumes a perfectly flexible cable. When possible, a length of cable should be used to determine maximum spacing under no tension as a check for the calculated values.

PULLING TENSIONS

Pulling tensions for cable trays are approached the same as predicting tensions for pulling cable in conduit, adjusting the coefficient of friction to reflect using rollers and sheaves.

HORIZONTAL STRAIGHT SECTIONS

The tension for horizontal straight sections of cable tray can be estimated with the following equation.

$$T_{out} = \mu W L + T_{in} \text{ pounds}$$

Where:

- **T_{out}** = tension out of a section in pounds
- **μ** = coefficient of dynamic friction (μ = 0.15)
- **W** = total cable assembly weight in pounds/foot
- **L** = straight section length in feet
- **T_{in}** = tension into a section in pounds

The coefficient of friction (μ) equal to 0.15 accounts for the low rolling friction of well maintained rollers.

INCLINED STRAIGHT SECTION

Use the following equation for pulling up an inclined straight section.

$$T_{out} = W L (\sin \Theta + \mu \cos \Theta) = T_{in} \text{ pounds}$$

Where:

- **T_{out}** = tension out of a section in pounds
- **W** = total cable assembly weight in pounds/foot
- **Θ** = straight section angle from horizontal in radians
- **L** = straight section length in feet
- **μ** = coefficient of dynamic friction (μ = 0.15)
- **T_{in}** = tension into a section in pounds

ARMOR REMOVAL

The depth stop on the cable slitting saw is so that the blade cuts through the ribs of the corrugated sheath and scores the bottom ribs without cutting through to the core. Use a hacksaw to cut cylindrically to length. The aluminum can now be removed using a screwdriver to separate the slit and remove the sheath. When slitting cables with small outer diameters, 1 inch diameter and less, use the small cable guide to stay on center.

VERTICAL SECTIONS

When pulling straight up or down the equation for inclined pulls simplifies to the following equations.

PULLING STRAIGHT UP

$$T_{out} = W\,L + T_{in} \text{ pounds}$$

PULLING STRAIGHT DOWN

$$T_{out} = -\,W\,L + T_{in} \text{ pounds}$$

Where:

W = total cable assembly weight in pounds/foot

L = straight vertical section in feet

TENSION AT BENDS

If the sheaves in the bends in cable trays are well maintained, they will not have the multiplying effect on tension that bends in conduit have. The sheaves will turn with the cable allowing the coefficient of friction to be assumed zero. This results in the commonly used approximation for conduit bend equation (e^{wmf}) becoming one. Even though there is no multiplying effect, the cable bends around the sheave. A 200 pound adder per bend should be used for a three conductor 500 kcmil copper conductor armored cable. If the sheaves are not well maintained, the bend will have a multiplying effect and must be used to calculate the tension in the pull using the same equations used for installations in conduit.

TENSION ENTERING CABLE TRAY

Since the tension entering the cable tray is rarely zero, it is critical that the tension required to remove the cable from the reel should be used to calculate the total tension for the installation.

Frequently, it is difficult to know the location of the reel of cable until the cable is to be installed. The following equations are used to approximate the tension entering the cable tray and an be used to determine how critical the reel position will be for the cable pull.

FEEDING OFF REEL HORIZONTALLY

When the cable reel can be elevated so that the cable can be pulled directly into the tray, the following equation should be used to approximate the tension required to remove the cable from the reel.

$$T_{reel} = 25\,W \text{ pounds}$$

Where:

T_{reel} = tension in pounds

W = total cable assembly weight in pounds/foot

VERTICAL SECTIONS

FEEDING OFF REEL VERTICALLY

When the cable reel must be positioned directly below the cable tray, the following equation should be used to approximate the tension required to pull the cable into the tray.

T = W L pounds

Where:

W = total cable assembly weight in pounds/foot

L = straight vertical section length in feet

The tension can now be approximated for pulling the cable into the tray from a horizontal position and when the reel is placed directly under the tray. To estimate the tension entering the cable tray when the reel must be placed away from and below the entrance to the tray, use the equation for feeding off the reel vertically where the height (**L**) is the vertical distance between the reel and a cable tray. To allow for ending forces as the cable comes off the reel, the minimum tension added should be 25 **W**.

CROSS REFERENCE CHART						
CABLE (Size - Cond.)	SOUTHWIRE ARMOR-X® ARMOR O.D.	CMP TMCX ALUMINUM PART NUMBER	HUB SIZE (inch)	CMP TMC NICKEL PLATED BRASS PART NUMBER	HUB SIZE (inch)	CMP DESCRIPTION
16-1 pr	0.52	TMCX050A	0.50	TMCX050NB	0.50	Class 1 Div 1 Explosion Proof UL & CSA
16-2 pr	0.64	TMCX050A	0.50	TMCX050NB	0.50	Class 1 Div 1 Explosion Proof UL & CSA
16-4 pr	0.79	TMCX075A	0.75	TMCX075NB	0.75	Class 1 Div 1 Explosion Proof UL & CSA
16-8 pr	0.91	TMCX075A	0.75	TMCX075NB	0.75	Class 1 Div 1 Explosion Proof UL & CSA
16-1 tr	0.52	TMCX050A	0.50	TMCX050NB	0.50	Class 1 Div 1 Explosion Proof UL & CSA
16-4 tr	0.87	TMCX075A	0.75	TMCX075NB	0.75	Class 1 Div 1 Explosion Proof UL & CSA
16-8 tr	1.05	TMCX100A	1.00	TMCX100NB	1.00	Class 1 Div 1 Explosion Proof UL & CSA
14-3 w/GW	0.50	TMCX050A	0.50	TMCX050NB	0.50	Class 1 Div 1 Explosion Proof UL & CSA
12-3 w/GW	0.55	TMCX050A	0.50	TMCX050NB	0.50	Class 1 Div 1 Explosion Proof UL & CSA
12-4 w/GW	0.58	TMCX050A	0.50	TMCX050NB	0.50	Class 1 Div 1 Explosion Proof UL & CSA
10-3 w/GW	0.58	TMCX050A	0.50	TMCX050NB	0.50	Class 1 Div 1 Explosion Proof UL & CSA
10-4 w/GW	0.68	TMCX050A	0.50	TMCX050NB	0.50	Class 1 Div 1 Explosion Proof UL & CSA
8-3	0.75	TMCX075A	0.75	TMCX075NB	0.75	Class 1 Div 1 Explosion Proof UL & CSA
8-4	0.80	TMCX075A	0.75	TMCX075NB	0.75	Class 1 Div 1 Explosion Proof UL & CSA
6-3	0.80	TMCX075A	0.75	TMCX075NB	0.75	Class 1 Div 1 Explosion Proof UL & CSA
6-4	0.91	TMCX075A	0.75	TMCX075NB	0.75	Class 1 Div 1 Explosion Proof UL & CSA
4-3	0.91	TMCX075A	0.75	TMCX075NB	0.75	Class 1 Div 1 Explosion Proof UL & CSA
2-3	1.05	TMCX100A	1.00	TMCX100NB	1.00	Class 1 Div 1 Explosion Proof UL & CSA
1/0-3	1.35	TMCX125A	1.25	TMCX125NB	1.25	Class 1 Div 1 Explosion Proof UL & CSA
2/0-3	1.47	TMCX150A	1.50	TMCX150NB	1.50	Class 1 Div 1 Explosion Proof UL & CSA
4/0-3	1.67	TMCX20SA	2.00	TMCX20SNB	2.00	Class 1 Div 1 Explosion Proof UL & CSA
250-3	1.87	TMCX20SA	2.00	TMCX20SNB	2.00	Class 1 Div 1 Explosion Proof UL & CSA
350-3	2.08	TMCX250A	2.50	TMCX250NB	2.50	Class 1 Div 1 Explosion Proof UL & CSA
350-4	2.29	TMCX250A	2.50	TMCX250NB	2.50	Class 1 Div 1 Explosion Proof UL & CSA
500-3	2.43	TMCX250A	2.50	TMCX250NB	2.50	Class 1 Div 1 Explosion Proof UL & CSA

Outer Diameter Measurements are for Reference only. Please verify diameters before ordering fittings.

CROSS REFERENCE CHART						
CABLE (Size - Cond.)	SOUTHWIRE ARMOR-X® ARMOR O.D.	CROUSE HINDS	T&B	APPLETON	HAWKE	KILLARK
5 kV, EPR N/S, 3xGW, ARMOR-X®, YELLOW PVC						
2-3	1.47	TMCX5161	ST(X)200	TMCX-166150	N711-C2	MCXA 150
1/0-3	1.59	TMCX5161	ST(X)200	TMCX-166150	N711-D	MCXA 150
2/0-3	1.76	TMCX6206	ST(X)200	TMCX-206200	N711-D	MCXA 20S
4/0-3	2.04	TMCX7247	ST(X)250	TMCX-251250	N711-E	MCXA 200
250-3	2.08	TMCX7247	ST(X)250	TMCX-251250	N711-E	MCXA 200
350-3	2.43	TMCX7247	ST(X)300	TMCX-251250	N711-E	MCXA 250
500-3	2.67	TMCX8302	ST(X)350	TMCX-304300	N711-F	MCXA 300
750-3	3.20	TMCX9352	ST(X)400	TMCX-359350	N711-H	MCXA 350
5 kV, EPR, T/S, GW, ARMOR-X®, YELLOW PVC						
2-3	1.76	TMCX6206	ST(X)200	TMCX-206200	N711-D	MCXA 20S
1-3	1.85	TMCX6206	ST(X)250	TMCX-206200	N711-D	MCXA 20S
1/0-3	1.87	TMCX6206	ST(X)250	TMCX-206200	N711-D	MCXA 200
2/0-3	2.04	TMCX7247	ST(X)250	TMCX-251250	N711-E	MCXA 200
4/0-3	2.29	TMCX7247	ST(X)300	TMCX-251250	N711-E	MCXA 25S
250-3	2.43	TMCX7247	ST(X)300	TMCX-251250	N711-E	MCXA 250
350-3	2.67	TMCX8302	ST(X)350	TMCX-304300	N711-F	MCXA 300
500-3	2.98	TMCX8302	ST(X)350	TMCX-359350	N711-H	MCXA 350
750-3	3.54	TMCX10402	ST(X)400	TMCX-402400	N/A	N/A
15 kV, EPR, T/S, GW, ARMOR-X®, RED PVC						
2-3	2.29	TMCX7247	ST(X)300	TMCX-251250	N711-E	MCXA 25S
1/0-3	2.43	TMCX7247	ST(X)300	TMCX-251250	N711-E	MCXA 250
2/0-3	2.55	TMCX8302	ST(X)300	TMCX-304300	N711-E	MCXA 300
4/0-3	2.88	TMCX8302	ST(X)350	TMCX-304300	N711-F	MCXA 300
250-3	3.00	TMCX8302	ST(X)350	TMCX-304300	N711-H	MCXA 350
350-3	3.22	TMCX9352	ST(X)400	TMCX-359350	N711-H	MCXA 350
500-3	3.54	TMCX10402	ST(X)400	TMCX-402400	711-J	N/A
750-3	3.85	TMCX10402	ST(X)400-484	TMCX-402400	711-J	N/A

Outer Diameter Measurements are for Reference only. Please verify diameters before ordering fittings.

HLX01-POS/SPOS

TYPE MC-HL

ARMOR-X® and ARMOR-Xtra™HL

600 Volt Type MC-HL Cable

PVC/Nylon Insulated Singles, Sizes 18 AWG or 16 AWG, 90°C

Continuous Corrugated Aluminum Armor with -40°C PVC Jacket

APPLICATIONS

Southwire's 600 Volt ARMOR-X® and ARMOR-Xtra™ Type MC-HL POS/SPOS Instrumentation Cable provides an impervious sheath recommended as an economical alternative to traditional conduit systems. For use on Class 1 remote-control and signaling circuits where 600 volts is desired. For use indoors, outdoors, direct burial, encased in concrete, open trays, troughs or continuous rigid cable supports. For use in Classes I, II and III Division 1 and 2 hazardous locations. For use as a nonpower-limited fire alarm circuit cable (NPLF) per NEC® Article 760. Rated for wet and dry applications at temperatures not to exceed 90°C.

SPECIFICATIONS

Southwire's 600 Volt ARMOR-X® and ARMOR-Xtra™ Type MC-HL Instrumentation Cable is manufactured and tested in accordance with the latest revisions of:

- UL 83 – Thermoplastic Insulated Wire
- UL 1277 – Electrical Power and Control Cables
- UL 1569 – Metal-Clad Cables
- UL 1309 – Listed as Marine Shipboard Cable
- UL 2225 – Safety Metal-Clad Cables and Cable-Sealing for Use in Hazardous (Classified) Locations
- IEEE 1202 – Flame Testing of Cables for Use in Cable Tray in Industrial and Commercial Occupancies (70,000 BTU/hr)
- ICEA T-29-520 – Vertical Cable Tray Flame Tests (210,000 BTU/hr)

CONSTRUCTION

Southwire's 600 Volt ARMOR-X® and ARMOR-Xtra™ Type MC-HL continuous corrugated aluminum armor provides an aluminum sheath impervious to moisture, liquids and gases. Cable is flame retardant UL-listed for cable tray use, direct burial, sunlight resistant and minus 40°C installation temperature. Conductors are sizes 18 AWG or 16 AWG, 7-strand copper conductors, PVC insulation with nylon covering, color coded, twisted pairs and triads, group of pairs and triads, numeric print identification on the groups, aluminum polyester foil with 100% coverage, overall tinned drain wire, a nylon ripcord and a black PVC jacket. The paired conductors are colored black, red and numbered while the triads are color coded black, white, red and numbered.

- **Scope**
  This specification covers multiconductor PVC insulated, continuous corrugated aluminum armored, thermoplastic jacketed, Type MC-HL 600 volt instrumentation cable for use indoors, outdoors, direct buried, encased in concrete, open trays, troughs or continuous rigid cable supports. For use on Class 1 remote control and signaling circuits where 600 volts is desired. For use in Classes I, II, and III Division 1 and 2 hazardous locations. For use as a nonpower limited fire alarm circuit cable (NPLF) per NEC® Article 760. This cable is capable of operating continuously at a conductor temperature of 90°C in wet or dry locations.
- **Standards**
  The following standards will form part of this specification - ASTM B8, UL 83, UL 1569, and UL 1277.
- **Conductor**
  The conductor will be 18 AWG or 16 AWG, 7-strand, bare copper conductor.
- **Armor**
  Continuous, impervious, welded, corrugated copper free aluminum armor will be applied over the assembly.

Southwire® Industrial Cable

UL LISTED

MADE IN USA

WEIGHTS, MEASUREMENTS AND PACKAGING

PRODUCT CODE	SIZE	NUMBER OF:		INSULATION THICKNESS		INSULATION JACKET THICKNESS		INNER JACKET THICKNESS		APPROXIMATE CORE DIAMETER		APPROX. ARMOR-X® DIAMETER		OUTER JACKET THICKNESS		APPROXIMATE OVERALL DIAMETER		APPROXIMATE NET WEIGHT	
	AWG or kcmil	PAIRS	TRIADS	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	lbs/ 1000 ft	kg/km
HLX01-POS SINGLE PAIR AND TRIAD CABLE (POS)																			
HLX01-POS-16/ P1	16 (7)	1	-	0.015	0.38	0.005	0.13	0.045	1.14	0.302	7.67	0.520	13.2	0.060	1.5	0.640	16.3	165	246
HLX01-POS-16/ T1	16 (7)	-	1	0.015	0.38	0.005	0.13	0.045	1.14	0.317	8.05	0.520	13.2	0.050	1.3	0.620	15.7	171	254
HLX01-SPOS MULTI-PAIR AND TRIAD CABLES (SPOS)																			
HLX01- SPOS-18/ P2	18 (7)	2	-	0.015	0.38	0.005	0.13	0.045	1.14	0.437	11.1	0.640	16.3	0.060	1.5	0.760	19.3	224	333
HLX01-SPOS-16/ P2	16 (7)	2	-	0.015	0.38	0.005	0.13	0.045	1.14	0.416	10.6	0.640	16.3	0.060	1.5	0.760	19.3	249	371
HLX01-SPOS-18/ P4	18 (7)	4	-	0.015	0.38	0.005	0.13	0.045	1.14	0.516	13.1	0.740	18.8	0.060	1.5	0.860	21.8	294	438
HLX01-SPOS-16/ P4	16 (7)	4	-	0.015	0.38	0.005	0.13	0.045	1.14	0.552	14.0	0.780	19.8	0.060	1.5	0.900	22.9	365	543
HLX01-SPOS-18/ P8	18 (7)	8	-	0.015	0.38	0.005	0.13	0.045	1.14	0.676	17.2	0.910	23.1	0.060	1.5	1.030	26.2	443	659
HLX01-SPOS-16/ P8	16 (7)	8	-	0.015	0.38	0.005	0.13	0.045	1.14	0.720	18.3	0.910	23.1	0.060	1.5	1.030	26.2	528	786
HLX01-SPOS-18/ P12	18 (7)	12	-	0.015	0.38	0.005	0.13	0.045	1.14	0.814	20.7	1.050	26.7	0.060	1.5	1.170	29.7	569	847
HLX01-SPOS-16/ P12	16 (7)	12	-	0.015	0.38	0.005	0.13	0.045	1.14	0.868	22.0	1.220	31.0	0.060	1.5	1.340	34.0	744	1107
HLX01-SPOS-18/ P16	18 (7)	16	-	0.015	0.38	0.005	0.13	0.045	1.14	0.944	24.0	1.220	31.0	0.060	1.5	1.340	34.0	746	1110
HLX01-SPOS-16/ P16	16 (7)	16	-	0.015	0.38	0.005	0.13	0.045	1.14	1.023	26.0	1.350	34.3	0.060	1.5	1.470	37.3	944	1450
HLX01-SPOS-18/ P24	18 (7)	24	-	0.015	0.38	0.005	0.13	0.045	1.14	1.165	29.6	1.470	37.3	0.060	1.5	1.590	40.4	995	1481
HLX01-SPOS-16/ P24	16 (7)	24	-	0.015	0.38	0.005	0.13	0.045	1.14	1.218	30.9	1.540	39.1	0.070	1.8	1.680	42.7	1288	1917
HLX01-SPOS-18/ P36	18 (7)	36	-	0.015	0.38	0.005	0.13	0.045	1.14	1.276	32.4	1.590	40.4	0.070	1.8	1.730	43.9	1324	1970
HLX01-SPOS-16/ P36	16 (7)	36	-	0.015	0.38	0.005	0.13	0.045	1.14	1.404	35.7	1.670	42.4	0.070	1.8	1.810	46.0	1703	2534
HLX01-SPOS-16/ T4	16 (7)	-	4	0.015	0.38	0.005	0.13	0.045	1.14	0.636	16.2	0.870	22.1	0.060	1.5	0.990	25.1	453	674
HLX01-SPOS-16/ T8	16 (7)	-	8	0.015	0.38	0.005	0.13	0.045	1.14	0.838	21.3	1.050	26.7	0.060	1.5	1.170	29.7	738	1098
HLX01-SPOS-16/ T12	16 (7)	-	12	0.015	0.38	0.005	0.13	0.045	1.14	1.023	26.0	1.350	43.3	0.060	1.5	1.470	37.3	1008	1500

POS – single or multiple pairs or triads with an overall shield. SPOS – multiple shielded pairs or triads with an overall shield.

CONSTRUCTION (continued)

- **Insulation**
  The insulation will be PVC with a nylon covering meeting the requirements of the referenced standards. The insulation thickness will be 0.015 inches of PVC with 0.005 inches of nylon. Individual conductors will be color coded with the paired conductors colored black, red and numbered while the triads are color coded black, white, red and numbered.
- **Assembly**
  The insulated conductors will be twisted pairs or triads, group of pairs or triads, numeric print identification on the groups, aluminum polyester foil with 100% coverage and tinned copper drain wire over each group, overall aluminum polyester foil with 100% coverage, overall tinned drain wire, a nylon ripcord, and a black minus 40°C PVC jacket.
- **Jacket**
  The cable will be covered with a black PVC jacket conforming to the requirements specified for polyvinyl chloride in ICEA. The average thickness will be in accordance with ICEA, and the minimum spot thickness will be not less than 80% of the average thickness. The jacket will be sunlight resistant and will meet the requirements of the IEEE 1202 (70,000 BTU/hr) and ICEA T-29-520 (210,000 BTU/hr) vertical cable tray flame tests. It is suitable for use at a minimum ambient temperature of minus 40°C.
- **Identification**
  Manufacturer's identification will be printed on the jacket.
- **Tests**
  Physical and electrical tests will be conducted in accordance with the requirements of the referenced standards.

HLX01XXH
TYPE MC-HL CONTROL CABLE

ARMOR-X® and ARMOR-Xtra™ HL

600 Volt Type MC-HL Control

XLP Insulated, 90°C

Continuous Corrugated Aluminum Armor with -40°C PVC Jacket

APPLICATIONS

Southwire's 600 Volt HLX01XXH ARMOR-X® and ARMOR-Xtra™ Type MC-HL Control Cable provides an impervious sheath recommended as an economical alternative to traditional conduit systems. For use in aerial installations, direct burial, concrete-encased installations, open trays, troughs or continuous rigid cable supports. For use in Classes I, II and III, Division 1 and 2, hazardous locations covered under NEC® Articles 501, 502 and 503. These cables are capable of operating continuously in wet or dry locations at a maximum conductor temperature of 90°C for normal operation, 130°C for emergency overload conditions, and 250°C for short circuit conditions.

SPECIFICATIONS

Southwire's 600 Volt HLX01XXH ARMOR-X® and ARMOR-Xtra™ Type MC-HL Control Cable is manufactured and tested in accordance with the latest revisions of:

- UL 44 – Thermoset-Insulated Wire and Cables
- UL 1569 – Metal-Clad Cables
- UL 1309 – Listed as Marine Shipboard Cable
- UL 2225 – Safety Metal-Clad Cables and Cable-Sealing Fittings for Use in Hazardous (Classified) Locations
- ABS Listed as CWCMC
- IEEE 1202 – Flame Testing of Cables for Use in Cable Tray in Industrial and Commercial Occupancies (70,000 BTU/hr)
- ICEA T-29-520 – Vertical Cable Tray Flame Tests (210,000 BTU/hr)
- ICEA S-58-679 – Control Cable Conductor Identification

Southwire's 600 Volt HLX01XXH ARMOR-X® and ARMOR-Xtra™ Type MC-HL Control Cable meets and exceeds all construction requirements of ICEA S-95-658 (NEMA WC 70) – Nonshielded 0-2 kV Cables, with testing frequencies based on UL requirements.

CONSTRUCTION

Southwire's 600 Volt HLX01XXH ARMOR-X® and ARMOR-Xtra™ Type MC-HL continuous corrugated aluminum armor provides an aluminum sheath impervious to moisture, liquids and gases. Cable is flame retardant UL-listed for cable tray use, direct burial, sunlight resistant and minus 40°C installation temperature. Continuous aluminum sheath meets the grounding requirements of NEC® 250-122 in non-HL locations. Conductors are UL-listed Type XHHW-2 with phase identification.

- **Scope**
  This specification covers multiconductor XLP (cross-linked polyethylene) insulated, continuous corrugated aluminum armored, thermoplastic jacketed, 600 volt cable for use in aerial installations, metal racks, cable trays, troughs or continuous rigid cable supports. The cable will be listed Type MC-HL for Classes I, II and III, Division 1 and 2, hazardous locations. This cable is capable of operation continuously at a conductor temperature of 90°C in wet or dry locations.
- **Standards**
  The following standards will form part of this specification - ASTM B8, ICEA S-95-658/NEMA WC70, UL 44, UL 1569.
- **Conductor**
  The conductor will be Class B compressed concentric stranded bare copper in accordance with ASTM B3 and B8 and ICEA Part 2.

Southwire® Industrial Cable

UL LISTED

MADE IN USA

WEIGHTS, MEASUREMENTS AND PACKAGING

PRODUCT CODE	CONDUCTORS	GROUNDS	APPROXIMATE CORE DIAMETER		APPROXIMATE ARMOR-X® DIAMETER		JACKET THICKNESS		APPROXIMATE OVERALL DIAMETER		APPROXIMATE NET WEIGHT		ALLOWABLE AMPACITIES*
	NO. x AWG	NO. x AWG	inch	mm	inch	mm	inch	mm	inch	mm	lbs/1000 ft	kg/km	90°C
HLX01-XXH-14/2	2 x 14	1 x 14	0.300	7.6	0.520	13	0.060	1.5	0.640	16.3	180	268	25
HLX01-XXH-14/3	3 x 14	1 x 14	0.340	8.6	0.560	14	0.060	1.5	0.680	17.3	210	313	25
HLX01-XXH-14/3/P	3 x 14	3 x 18	0.300	7.6	0.520	13	0.060	1.5	0.640	16.3	197	293	25
HLX01-XXH-14/4	4 x 14	1 x 14	0.370	9.4	0.600	15	0.060	1.5	0.720	18.3	241	359	20
HLX01-XXH-14/4/P	4 x 14	3 x 18	0.340	8.6	0.560	14	0.060	1.5	0.680	17.3	225	335	20
HLX01-XXH-14/6	6 x 14	1 x 14	0.410	10	0.640	16	0.060	1.5	0.760	19.3	278	414	20
HLX01-XXH-14/8	8 x 14	1 x 14	0.490	12	0.740	19	0.060	1.5	0.860	21.8	337	502	17
HLX01-XXH-14/11	11 x 14	1 x 14	0.560	14	0.830	21	0.060	1.5	0.950	24.1	412	613	12
HLX01-XXH-14/18	18 x 14	1 x 14	0.670	17	0.910	23	0.060	1.5	1.030	26.2	557	829	12
HLX01-XXH-14/36	36 x 14	1 x 14	0.930	24	1.300	33	0.060	1.5	1.420	36.1	987	1469	10
HLX01-XXH-12/2	2 x 12	1 x 12	0.340	8.6	0.560	14	0.060	1.5	0.680	17.3	215	320	30
HLX01-XXH-12/3	3 x 12	1 x 12	0.380	10	0.600	15	0.060	1.5	0.720	18.3	255	379	30
HLX01-XXH-12/3/P	3 x 12	3 x 16	0.340	8.6	0.560	14	0.060	1.5	0.680	17.3	242	360	30
HLX01-XXH-12/4	4 x 12	1 x 12	0.420	11	0.640	16	0.060	1.5	0.760	19.3	296	441	24
HLX01-XXH-12/4/P	4 x 12	3 x 16	0.380	10	0.600	15	0.060	1.5	0.720	18.3	279	415	24
HLX01-XXH-12/6	6 x 12	1 x 12	0.470	12	0.690	18	0.060	1.5	0.810	20.6	350	521	24
HLX01-XXH-12/8	8 x 12	1 x 12	0.560	14	0.830	21	0.060	1.5	0.950	24.1	435	647	21
HLX01-XXH-12/11	11 x 12	1 x 12	0.670	17	0.880	22	0.060	1.5	0.980	24.9	513	763	15
HLX01-XXH-12/18	18 x 12	1 x 12	0.820	21	1.060	27	0.060	1.5	1.160	29.5	730	1086	15
HLX01-XXH-12/36	36 x 12	1 x 12	1.130	29	1.420	36	0.060	1.5	1.520	38.6	1315	1957	12
HLX01-XXH-10/2	2 x 10	1 x 10	0.410	10	0.610	15	0.060	1.5	0.710	18.0	258	384	40
HLX01-XXH-10/3	3 x 10	1 x 10	0.460	12	0.650	17	0.060	1.5	0.750	19.1	310	461	40
HLX01-XXH-10/3/P	3 x 10	3 x 14	0.390	10	0.600	15	0.060	1.5	0.720	18.3	308	458	40
HLX01-XXH-10/4	4 x 10	1 x 10	0.510	13	0.700	18	0.060	1.5	0.800	20.3	356	530	32
HLX01-XXH-10/4/P	4 x 10	3 x 14	0.440	11	0.640	16	0.060	1.5	0.760	19.3	358	533	32
HLX01-XXH-10/6	6 x 10	1 x 10	0.570	14	0.790	20	0.060	1.5	0.890	22.6	450	670	32
HLX01-XXH-10/8	8 x 10	1 x 10	0.670	17	0.880	22	0.060	1.5	0.980	24.9	555	826	28
HLX01-XXH-10/11	11 x 10	1 x 10	0.770	20	1.060	27	0.060	1.5	1.120	28.4	700	1042	20

*Ampacities shown are for general use as specified by the NEC® 2008 Edition, Section 310-15, Table 310.16 90°C. Ampacities for more than three current-carrying conductors are adjusted as required by Notes to Ampacity Tables of 0 to 2000 volts.
**one insulated green ground or three bare grounds

CONSTRUCTION (continued)

- **Insulation**
  The insulation will be XLP meeting the requirements of the referenced standards. The insulation thickness will be listed in ICEA Table 3.1, and the minimum spot thickness will not be less than 90% of the listed amounts.
- **Conductor**
  Individual conductors will be color coded using colors for the insulation per ICEA S-58-679, Method 1,Table 2.
- **Assembly**
  The insulated conductors will be cabled round with fillers and covered with a binder tape. Assembly will include a green insulated ground wire or three bare grounds.
- **Armor**
  Continuous corrugated copper free aluminum sheath shall be applied over the assembly. The continuous sheath will be impervious to moisture, liquids and gases.
- **Jacket**
  The cable will be covered with a black PVC jacket conforming to the requirements specified for polyvinyl chloride in ICEA. The average thickness will be in accordance with ICEA, and the minimum spot thickness will not be less than 80% of the average thickness. The jacket will be sunlight resistant and will meet the requirements of the IEEE 1202 (70,000 BTU/hr) and ICEA T-29-520 (210,000 BTU/hr) vertical cable tray flame tests and will be suitable for use at a minimum ambient temperature of minus 40°C.
- **Identification**
  Manufacturer's identification will be printed on the jacket.
- **Tests**
  Physical and electrical tests will be conducted in accordance with the requirements of the referenced standards.

HLX01XXH
TYPE MC-HL POWER CABLE

600 Volt

ARMOR-X® and ARMOR-Xtra™ Type MC-HL Power

XLP Insulated, 90°C

Continuous Corrugated Aluminum Armor with -40°C PVC Jacket

3 Copper Ground Wires

Suitable for Use With AC Drives

APPLICATIONS

Southwire's 600 Volt HLX01XXH ARMOR-X® and ARMOR-Xtra™ Type MC-HL Power Cable provides an impervious sheath recommended as an economical alternative to traditional conduit systems. For use in aerial installations, direct burial, concrete-encased installations, cable trays, troughs or continuous rigid cable supports. For use in Classes I, II and III, Division 1 and 2, hazardous locations covered under NEC® Articles 501, 502 and 503. The cable is designed with three symmetrically placed ground wires to reduce problems associated with pulse-width modulated AC drives. These cables are capable of operating continuously in wet or dry locations at a maximum conductor temperature of 90°C for normal operation, 130°C for emergency overload conditions, and 250°C for short circuit conditions.

SPECIFICATIONS

Southwire's 600 Volt HLX01XXH ARMOR-X® and ARMOR-Xtra™ Type MC-HL Power Cable is manufactured and tested in accordance with the latest revisions of:

- UL 44 – Thermoset-Insulated Wires and Cables
- UL 1569 – Metal-Clad Cables
- UL 1309 – Listed as Marine Shipboard Cable
- UL 2225 – Safety Metal-Clad Cables and Cable-Sealing Fittings for Use in Hazardous (Classified) Locations
- ABS listed as CWCMC
- IEEE 1580 – Incidental Motion "IM" Compliance (Sizes 6 AWG and larger)
- IEEE 1202 – Flame Testing of Cables for Use in Cable Tray in Industrial and Commercial Occupancies (70,000 BTU/hr)
- ICEA T-29-520 – Vertical Cable Tray Flame Tests (210,000 BTU/hr)
- ICEA S-58-679 – Control Cable Conductor Identification

Southwire's 600 Volt HLX01XXH ARMOR-X® and ARMOR-Xtra™ Type MC-HL Power Cable meets and exceeds all construction requirements of ICEA S-95-658 (NEMA WC 70) – Nonshielded 0-2 kV Cables, with testing frequencies based on UL requirements

CONSTRUCTION

Southwire's SOLONON® 600 Volt HLX01XXH ARMOR-X® and ARMOR-Xtra™ Type MC-HL continuous corrugated aluminum armor provides an aluminum sheath impervious to moisture, liquids and gases. Cable is flame retardant UL-listed for cable tray use, direct burial, sunlight resistant and minus 40°C installation temperature. Continuous aluminum sheath meets the grounding requirements of NEC® 250-122 in non-HL locations. Conductors are UL-listed Type XHHW-2 with phase identification.

CONSTRUCTION (continued)

- **Scope**
  This specification covers three or four conductor XLP (cross-linked polyethylene) insulated, continuous corrugated aluminum armored, thermoplastic jacketed, 600 volt cable with grounding conductor for use in aerial installations, metal racks, cable trays, troughs or continuous rigid cable supports. The cable will be listed Type MC-HL for Classes I, II and III, Division 1 and 2, hazardous locations and have three symmetrically placed grounds to reduce problems associated with pulse-width modulated ac drives. This cable is capable of operation continuously at a conductor temperature of 90°C in wet or dry locations.
- **Standards**
  The following standards will form part of this specification - ASTM B8, ICEA S-95-658/NEMA WC70, UL 44, UL 1569.
- **Conductor**
  The conductor will be Class B compressed concentric stranded bare copper in accordance with ASTM B3 and B8 and ICEA.
- **Insulation**
  The insulation will be XLP meeting the requirements of the referenced standards. The insulation thickness will be listed in ICEA and the minimum spot thickness will not be less than 90% of the listed amounts. Individual conductors will be color coded per ICEA S-58-679, using Method 3, Table 2 for sizes AWG 4 and larger, and using Method 1, Table 2 for sizes AWG 6 and smaller.
- **Assembly**
  The insulated conductors will be cabled round with three symmetrically placed ground wires, fillers and covered with a binder tape.
- **Armor**
  Continuous corrugated copper-free aluminum sheath shall be applied over the assembly. The continuous sheath will be impervious to moisture, liquids and gases.
- **Jacket**
  The cable will be covered with a black PVC jacket conforming to the requirements specified for polyvinyl chloride in ICEA. The average thickness will be in accordance with ICEA, and the minimum spot thickness will not be less than 80% of the average thickness. The jacket will be sunlight resistant and will meet the requirements of the IEEE 1202 (70,000 BTU/hr) and ICEA T-29-520 (210,000 BTU/hr) vertical cable tray flame tests. The jacket will be suitable for use at a minimum ambient temperature of -40°C.
- **Identification**
  Manufacturer's identification will be printed on the jacket.
- **Tests**
  Physical and electrical tests will be conducted in accordance with the requirements of the referenced standards.

HLX01XXH

TYPE MC-HL POWER CABLE

WEIGHTS, MEASUREMENTS AND PACKAGING																	
PRODUCT CODE	SIZE	CONDUCTOR DIAMETER		INSULATION THICKNESS		GROUNDS	APPROX. CORE DIAMETER		APPROX. ARMOR-X® DIAMETER		JACKET THICKNESS		APPROX. OVERALL DIAMETER		APPROXIMATE NET WEIGHT		ALLOWABLE AMPACITIES*
	AWG or kcmil	inch	mm	inch	mm	NO. x AWG	inch	mm	inch	mm	inch	mm	inch	mm	lbs/ 1000 ft	kg/ km	90°C
THREE CONDUCTOR																	
HLX01-XXH-14/3/P	14	0.070	1.77	0.030	0.76	3 x 18	0.290	7.37	0.500	12.6	0.050	1.27	0.600	15.1	175	260	25
HLX01-XXH-12/3/P	12	0.087	2.22	0.030	0.76	3 x 16	0.327	8.31	0.550	13.8	0.050	1.27	0.650	16.4	221	328	30
HLX01-XXH-10/3/P	10	0.111	2.81	0.030	0.76	3 x 14	0.367	9.33	0.580	14.6	0.050	1.27	0.680	17.1	283	421	40
HLX01-XXH-08/3	8	0.139	3.53	0.045	1.14	3 x 14	0.527	13.39	0.750	18.9	0.050	1.27	0.850	21.5	405	602	55
HLX01-XXH-06/3	6	0.174	4.43	0.045	1.14	3 x 12	0.572	14.53	0.800	20.2	0.050	1.27	0.900	22.7	541	805	75
HLX01-XXH-04/3	4	0.221	5.60	0.045	1.14	3 x 12	0.647	16.44	0.910	23.1	0.050	1.27	1.010	25.7	698	1039	95
HLX01-XXH-02/3	2	0.277	7.04	0.045	1.14	3 x 10	0.807	20.50	1.050	26.7	0.050	1.27	1.150	29.2	1043	1552	130
HLX01-XXH-010/3	1/0	0.362	9.19	0.055	1.40	3 x 10	1.060	26.92	1.350	34.3	0.050	1.27	1.450	36.8	1675	2492	170
HLX01-XXH-020/3	2/0	0.405	10.29	0.055	1.40	3 x 10	1.180	29.97	1.470	37.3	0.050	1.27	1.570	39.9	1857	2763	195
HLX01-XXH-040/3	4/0	0.512	12.95	0.055	1.40	3 x 8	1.380	35.05	1.670	42.4	0.060	1.52	1.790	45.5	2792	4155	260
HLX01-XXH-250/3	250	0.558	14.17	0.065	1.65	3 x 8	1.550	39.37	1.870	47.5	0.060	1.52	1.990	50.5	3277	4876	290
HLX01-XXH-350/3	350	0.661	16.79	0.065	1.65	3 x 6	1.790	45.47	2.200	55.8	0.060	1.52	2.320	58.9	4420	6577	350
HLX01-XXH-500/3	500	0.790	20.07	0.065	1.65	3 x 6	2.028	51.51	2.430	61.7	0.075	1.91	2.580	65.5	6001	8929	430
HLX01-XXH-750/3	750	0.968	24.59	0.080	2.03	3 x 4	2.576	65.43	2.980	75.7	0.075	1.91	3.130	79.5	9375	13949	535
FOUR CONDUCTOR																	
HLX01-XXH-14/4/P	14	0.070	1.77	0.030	0.76	3 x 18	0.327	8.31	0.550	13.8	0.050	1.27	0.650	16.4	202	301	20
HLX01-XXH-12/4/P	12	0.087	2.22	0.030	0.76	3 x 16	0.367	9.33	0.580	14.6	0.050	1.27	0.680	17.1	252	376	24
HLX01-XXH-10/4/P	10	0.111	2.81	0.030	0.76	3 x 14	0.405	10.29	0.630	15.9	0.050	1.27	0.730	18.4	332	494	32
HLX01-XXH-08/4	8	0.139	3.53	0.045	1.14	1 x 10	0.572	14.53	0.800	20.2	0.050	1.27	0.900	22.7	465	692	44
HLX01-XXH-06/4	6	0.174	4.43	0.045	1.14	1 x 8	0.647	16.44	0.910	23.1	0.050	1.27	1.010	25.7	640	952	60
HLX01-XXH-04/4	4	0.221	5.60	0.045	1.14	1 x 8	0.744	18.90	1.010	26.7	0.050	1.27	1.110	28.2	885	1317	76
HLX01-XXH-02/4	2	0.277	7.04	0.045	1.14	1 x 6	0.897	22.78	1.220	31.0	0.050	1.27	1.320	33.5	1291	1921	104
HLX01-XXH-010/4	1/0	0.362	9.19	0.055	1.40	1 x 6	1.180	29.97	1.470	37.3	0.050	1.27	1.570	39.9	1903	2832	136
HLX01-XXH-020/4	2/0	0.405	10.29	0.055	1.40	1 x 4	1.310	33.27	1.590	40.4	0.060	1.52	1.710	43.4	2376	3535	156
HLX01-XXH-040/4	4/0	0.510	12.95	0.055	1.40	1 x 4	1.550	39.37	1.870	47.5	0.060	1.52	1.990	50.5	3470	5164	208
HLX01-XXH-250/4	250	0.558	14.17	0.065	1.65	1 x 4	1.680	42.67	2.040	51.8	0.060	1.52	2.160	54.9	4052	6029	232
HLX01-XXH-350/4	350	0.661	16.79	0.065	1.65	1 x 3	1.960	49.78	2.290	58.2	0.075	1.91	2.440	62.0	5511	8201	280
HLX01-XXH-500/4	500	0.790	20.07	0.065	1.65	1 x 2	2.232	56.69	2.670	67.8	0.075	1.91	2.820	71.6	7721	11489	344
HLX01-XXH-750/4	750	0.968	24.59	0.080	2.03	1 x 1	2.753	69.93	3.220	81.8	0.085	2.16	3.390	86.1	11964	17803	428

*Ampacities shown are for general use as specified by the NEC® 2008 Edition, Section 310-15, Table 310-16 90°C. Ampacities for more than three current-carrying conductors are adjusted as required by Notes to Ampacity Tables of 0 to 2000 volts.

NOTES

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