



MC-HL 600V RA90-HL 600V

UL 1569; UL 2225; CSA C22.2 No. 123; CSA C22.2 No. 174; UL 44

XLPE insulated, corrugated welded aluminum sheath and PVC jacket

CONSTRUCTION

Conductor	Uncoated soft copper per ASTM B3 stranded: - sizes smaller than 8AWG are concentric class B acc to ASTM B8 - sizes 8AWG and larger are compacted acc. to ASTM B-496
Insulation	Cross-linked polyethylene type XHHW-2/R90 acc. to UL 44/CSA C22.22 No. 38
Grounding conductors	Uncoated soft copper per ASTM B3 stranded acc. to ASTM B8
Assembly	MC-HL VFD: 3 insulated conductors with 3 uninsulated ground wires MC-HL: 4 - 19 insulated conductors with 1 uninsulated ground wire
Fillers	Non-hygroscopic fillers as necessary
Core wrapping	Polypropylene tape
Aarmor	Continuously corrugated welded aluminum



Characteristic

Core identification

Sizes smaller than 8AWG: per ICEA Method 1 Table E-2 (as below)

Conductor number	Insulation color	Stripe color
1	Black	-
2	Red	-
3	Blue	-
4	Orange	-
6	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

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Characteristic

Conductor number	Insulation color	Stripe color
15	Yellow	Red
16	Brown	Red
17	Black	Blue
18	Red	Blue
19	Orange	Blue
Sizes 8AWG and larger: method 4 per ICEA (all cores are black with printed numbers in contrasting ink)		
Colour of sheath	Black	
Maximum conductor operating temperature	+90°C	
Lowest ambient temperature for fixed installation	-40°C	
Maximum short-circuit conductor temperature	+250°C	

Fire Performance

Flame retardant	UL 1685/IEEE 1202 FT-4
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Cable Marking

TELE-FONIKA (UL) E140378 MC-HL 3C (SIZE) CU + 3C (SIZE) CU GRD XHHW-2 600V SUN RES FOR CT USE DIRECT BURIAL -40C FT4 CSA 205591 RA90 HL XLPE 3C(SIZE AWG)(SIZE mm2)+3C (SIZE AWG)(SIZE mm2) 600V GRD SUN RES FT4 (-40°C) (FOOTAGE MARKERS) (PRODUCTION CODE)

Approvals

UL approved E140378

CSA approved 80243354

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Conductor size	Number of conductors	Insulation thickness	Diameter of the insulated wire	Ground wire size	Approx. diameter over core	Approx. diameter over armor	Jacket thickness	Approximate overall diameter of cable	Approximate net weight of cable
AWG kcmil	No.	mil	inch	AWG	inch	inch	mil	inch	lbs/1000ft
3 insulated conductors with 3 uninsulated ground wires									
14	3	30	0.14	18	0.37	0.54	50	0.65	205
12	3	30	0.15	16	0.43	0.58	50	0.68	264
10	3	30	0.18	14	0.45	0.61	50	0.71	326
8	3	45	0.24	14	0.55	0.77	50	0.87	436
6	3	45	0.28	12	0.63	0.88	50	0.99	603
4	3	45	0.33	12	0.74	0.99	50	1.10	798
2	3	45	0.38	10	0.85	1.12	50	1.22	1104
1/0	3	55	0.45	10	1.00	1.37	50	1.47	1662
2/0	3	55	0.48	10	1.18	1.56	60	1.68	2020
3/0	3	55	0.54	8	1.28	1.67	60	1.79	2469
4/0	3	55	0.59	8	1.39	1.79	60	1.91	2942
250	3	65	0.66	8	1.54	1.95	60	2.07	3422
350	3	65	0.76	6	1.75	2.18	60	2.31	4499
350	3	65	0.76	8	1.75	2.18	60	2.31	4587
500	3	65	0.88	6	2.00	2.46	75	2.62	6230
4 - 19 insulated conductors with 1 uninsulated ground wire									
14	4	30	0.14	14	0.37	0.57	50	0.67	243
14	5	30	0.14	14	0.44	0.64	50	0.74	266
14	6	30	0.14	14	0.44	0.64	50	0.74	285
14	8	30	0.14	14	0.55	0.76	50	0.87	349
14	9	30	0.14	14	0.57	0.82	50	0.92	375
14	11	30	0.14	14	0.59	0.84	50	0.94	426
14	12	30	0.14	14	0.63	0.88	50	0.98	447
14	19	30	0.14	14	0.75	1.01	50	1.12	616
12	4	30	0.15	12	0.43	0.65	50	0.76	294
12	8	30	0.15	12	0.62	0.86	50	0.97	453
12	11	30	0.15	12	0.67	0.93	50	1.03	559
12	12	30	0.15	12	0.71	0.97	50	1.07	592
12	18	30	0.15	12	0.80	1.07	50	1.17	793
10	4	30	0.18	10	0.47	0.73	50	0.83	377

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Conductor size	Number of conductors	Insulation thickness	Diameter of the insulated wire	Ground wire size	Approx. diameter over core	Approx. diameter over armor	Jacket thickness	Approximate overall diameter of cable	Approximate net weight of cable
AWG kcmil	No.	mil	inch	AWG	inch	inch	mil	inch	lbs/1000ft
10	8	30	0.18	10	0.71	0.97	50	1.07	606
10	11	30	0.18	10	0.78	1.04	50	1.14	748
8	4	45	0.24	10	0.61	0.81	50	0.92	483
6	4	45	0.28	8	0.72	0.90	50	1.01	663
350	4	65	0.76	3	1.89	2.34	75	2.50	5802
500	4	65	0.88	2	2.17	2.65	75	2.80	7897

Conductor size	Number of conductors	Min. Bending Radius	Max. pulling tension	DC Resistance at 20°C *	Ampacity at 90°C **
AWG kcmil	No.	inch	lbs	Ω / 1000 ft	A
3 insulated conductors with 3 uninsulated ground wires					
14	3	4.4	95	2.684	25
12	3	4.7	155	1.696	30
10	3	5.1	245	1.061	40
8	3	6.1	350	0.654	55
6	3	6.9	560	0.411	75
4	3	7.7	825	0.258	95
2	3	8.5	1310	0.162	130
1/0	3	10.3	1980	0.102	170
2/0	3	11.8	2450	0.081	195
3/0	3	12.6	3145	0.064	225
4/0	3	13.4	3890	0.051	260
250	3	14.5	4550	0.043	290
350	3	16.2	6425	0.031	350
350	3	16.2	6260	0.031	350
500	3	18.4	8990	0.022	430

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Conductor size	Number of conductors	Min. Bending Radius	Max. pulling tension	DC Resistance at 20°C *	Ampacity at 90°C **
AWG kcmil	No.	inch	lbs	Ω / 1000 ft	A
4 - 19 insulated conductors with 1 uninsulated ground wire					
14	4	4.7	100	2.684	15
14	5	5.2	140	2.684	15
14	6	5.2	160	2.684	15
14	8	6.1	210	2.711	15
14	9	6.4	230	2.711	15
14	11	6.6	280	2.711	12
14	12	6.9	300	2.711	12
14	19	7.8	465	2.711	12
12	4	5.3	185	1.696	20
12	8	6.8	330	1.712	20
12	11	7.2	445	1.712	15
12	12	7.5	480	1.712	15
12	18	8.2	705	1.712	15
10	4	5.8	295	1.061	30
10	8	7.5	530	1.072	28
10	11	8.0	705	1.072	20
8	4	6.4	435	0.654	44
6	4	7.1	690	0.411	60
350	4	17.5	8270	0.031	280
500	4	19.6	11765	0.022	344

* The DC resistance when measured on a single conductor within a completed twisted conductor assembly

**Ampacities are based on TABLE 310.16 of the NEC 2020, for three-core cables,

Ampacities have been adjusted for more than three current-carrying conductors based on Table 310.15.

The overcurrent protection for these conductor types shall not exceed 15 amperes for 14 AWG, 20 amperes for 12 AWG, and 30 amperes for 10 AWG.

Ampacities is given for cables in raceway or direct buried at 30°C ambient temperature and 90°C conductor temperature.

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Applications and Features

- Cables may be installed indoors or outdoors, in wet or dry locations, in cable tray or direct burial
- Aluminum corrugated sheath provides protection against moisture, gasses, liquids and mechanical damage
- The cables are resistant to impacts and bending at low temperatures up to -40°C
- The outer sheath is UV sunlight and oil resistant
- Flame test meets FT4
- For use in Class I, II and III, Division 1 and 2 and Class I, Zones 1 and 2 hazardous locations per NEC Articles 501, 502, 503 and 505

Standard length cable packing

on drums
