MC-HL 600/1000V
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: 4-12 insulated conductors with 1 uninsulated ground wire MC-HL: 4-37 insulated conductors with 1 insulated green ground wire
Fillers	Non-hygroscopic fillers as necessary
Core wrapping	Polypropylene tape
Armor	Continuously corrugated welded aluminum
Jacket	Flame and sunlight resistance PVC acc. to UL 1569



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

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Characteristic

Conductor number	Insulation color	Stripe color
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	-

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Characteristic

Sizes 8AWG and larger: method 4 per ICEA (all cores are black with printed numbers in contrasting ink) for cross-sections of 8 AWG and larger, color marking is also possible - such constructions have the addition „M1/E2" in the cable name.

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

Cable Marking

TELE-FONIKA 600/1000V (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	0.53	50	0.64	194
12	3	30	0.15	16	0.41	0.57	50	0.68	236
10	3	30	0.18	14	0.45	0.61	50	0.72	295
8	3	45	0.24	14	0.55	0.75	50	0.86	404
6	3	45	0.28	12	0.63	0.83	50	0.94	549
4	3	45	0.33	12	0.74	0.90	50	1.01	732
2	3	45	0.38	10	0.85	1.04	50	1.15	1044
1/0	3	55	0.45	10	1.05	1.37	50	1.48	1614
2/0	3	55	0.48	10	1.18	1.57	60	1.70	2006
3/0	3	55	0.54	8	1.28	1.57	60	1.70	2445
4/0	3	55	0.59	8	1.36	1.67	60	1.80	2933
4 - 12 insulated conductors with 1 uninsulated ground wire									
3	4	30	0.14	14	0.37	0.53	50	0.64	208
3	12	30	0.14	14	0.63	0.83	50	0.94	427
3	4	30	0.15	12	0.44	0.61	50	0.72	271
3	12	30	0.15	12	0.71	0.90	50	1.01	556
3	4	30	0.18	10	0.47	0.61	50	0.72	360
3	4	45	0.24	10	0.67	0.87	50	0.98	511
3	4	45	0.28	8	0.76	0.97	50	1.08	690
3	4	45	0.33	8	0.85	1.04	50	1.15	918
3	4	45	0.38	6	1.02	1.37	50	1.48	1369
3	4	55	0.45	6	1.20	1.57	60	1.70	2070
3	4	55	0.48	6	1.31	1.57	60	1.70	2491

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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**
4 - 37 insulated conductors with 1 green insulated ground wire									
4	4	30	0.14	14	0.44	0.61	50	0.72	230
4	5	30	0.14	14	0.50	0.70	50	0.81	274
4	7	30	0.14	14	0.57	0.75	50	0.86	404
14	9	30	0.14	14	0.61	0.83	50	0.94	364
14	19	30	0.14	14	0.75	0.90	50	1.01	581
14	37	30	0.14	14	1.10	1.37	50	1.48	1007
12	7	30	0.15	12	0.57	0.73	50	0.84	404
10	4	30	0.18	10	0.59	0.75	50	0.86	374

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	4.5	95	2.684	25
12	3	4.7	155	1.696	30
10	3	5.0	245	1.061	40
8	3	6.0	350	0.654	55
6	3	6.6	560	0.411	75
4	3	7.1	825	0.258	95
2	3	8.1	1310	0.162	130
1/0	3	10.3	1980	0.102	170
2/0	3	11.9	2450	0.081	195
3/0	3	11.9	3145	0.064	225
4/0	3	12.6	3890	0.051	260

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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 - 12 insulated conductors with 1 uninsulated ground wire				
14	4	4.5	115	2.684	15
14	12	6.6	300	2.684	15
12	4	5.0	185	1.696	20
12	12	7.1	480	1.696	15
10	4	5.0	295	1.061	30
8	4	6.9	435	0.654	44
6	4	7.6	690	0.411	60
4	4	8.1	1045	0.258	76
2	4	10.3	1660	0.162	104
1/0	4	11.9	2550	0.102	136
2/0	4	11.9	3175	0.081	156
	4 -37 insulated conductors with 1 green insulated ground wire				
14	4	5.0	115	2.684	15
14	5	5.6	140	2.684	15
14	7	6.0	185	2.684	15
14	9	6.6	230	2.684	12
14	19	7.1	465	2.684	10
14	37	10.4	885	2.684	10
12	7	6.6	295	1.696	20
10	4	6.0	295	1.061	30

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

***Ampacitites 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. Ampacitities 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
- Cables can be used with a rated voltage of 600/1000V

Standard length cable packing	on drums

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