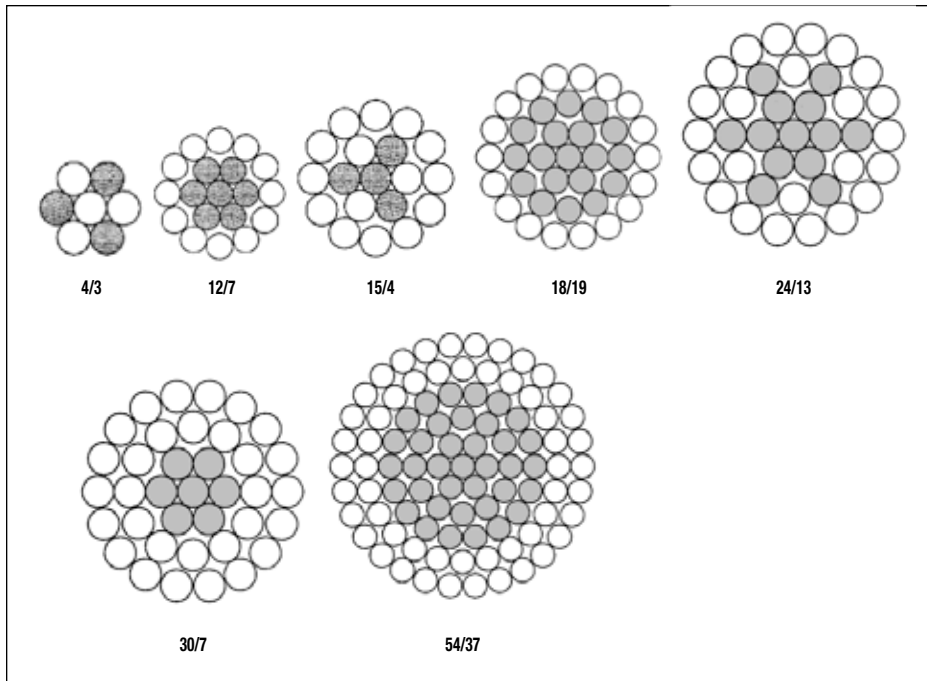


TransPowr® ACAR Bare Overhead Conductor

Aluminum Conductor Alloy-Reinforced Concentric-Lay-Stranded



Product Construction:

Complete Conductor:

Aluminum Conductor Alloy-Reinforced (ACAR) cable has aluminum 1350 H19 wires concentrically stranded around a 6201-T81 aluminum alloy core. Typically, the 6201-T81 is the conductor core, but in certain designs, the 1350 H19 and the 6201-T81 wires may be stranded in the same layer.

ACAR conductors are manufactured in accordance with the requirements of the latest issue of ASTM B524.

Features and Benefits:

Aluminum Conductor Alloy-Reinforced (ACAR) cable delivers high current-carrying capacity and strength combined with lower conductor weight. It is an excellent conductor choice where current-carrying capacity, higher strength and a lower conductor weight are critical to the line design.

Applications:

ACAR conductors are used for overhead distribution and transmission lines requiring all aluminum conductors but requiring higher strength and longer spans than what is capable with AAC conductors.

Options:

- E3X® surface coating (/E3X)
- High-conductivity aluminum (/HC) (62.2% IACS)
- Non-specular surface finish (/NS)



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Aluminum Conductor Alloy-Reinforced Concentric-Lay-Stranded

ACAR, CONCENTRIC-LAY-STRAINED (MECHANICAL PROPERTIES)

SIZE AWG OR kcmil	STRANDING NO. X DIA. INCHES		CROSS-SECTION SQ. INCHES		O.D. INCHES	APPROX. WEIGHT LB/1000 FT	PERCENT BY WEIGHT		RATED STRENGTH LBS	STANDARD PACKAGES (1)		
	AL	ALLOY	TOTAL	AL			AL	ALLOY		REEL DESIGNATION	WEIGHT LBS	LENGTH FEET
503.6	15x0.1628	4x0.1628	0.3955	0.3123	0.814	472	79.03	20.97	10500	NR 66.28	3800	8030
587.2	15x0.1758	4x0.1758	0.4612	0.3641	0.879	550	79.03	20.97	12200	NR 66.28	4430	8030
649.5	18x0.1325	19x0.1325	0.5102	0.2481	0.927	607	48.77	51.23	16600	NR 66.28	4200	6890
653.1	12x0.1854	7x0.1854	0.5129	0.3240	0.927	611	63.28	36.72	15400	RMT 84.45	6070	9910
739.8	18x0.1414	19x0.1414	0.5810	0.2827	0.990	692	48.78	51.22	18800	RMT 90.45	9020	13010
853.7	30x0.1519	7x0.1519	0.6705	0.5436	1.063	799	81.16	18.84	17500	RMT 96.60	14500	18000
853.7	24x0.1519	13x0.1519	0.6705	0.4349	1.063	799	64.98	35.02	19300	RMT 96.60	14500	18000
927.2	24x0.1583	13x0.1583	0.7282	0.4724	1.108	867	64.98	35.02	20900	RMT 90.45	9050	10400
1024.5	30x0.1664	7x0.1664	0.8046	0.6524	1.165	959	81.16	18.84	20900	RMT 96.60	14500	15000
1024.5	24x0.1664	13x0.1664	0.8046	0.5219	1.165	959	64.98	35.02	23100	RMT 96.60	14500	15000
1080.6	24x0.1709	13x0.1709	0.8487	0.5505	1.196	1011	64.98	35.02	24400	RMT 96.60	15800	15600
1080.6	18x0.1709	19x0.1709	0.8487	0.4129	1.196	1010	48.77	51.23	27200	RMT 96.60	15800	15600
1109.0	30x0.1731	7x0.1731	0.8707	0.7063	1.212	1038	81.17	18.83	22700	RMT 96.60	14500	13850
1109.0	24x0.1731	13x0.1731	0.8707	0.5650	1.212	1038	64.99	35.01	25000	RMT 96.60	14500	13850
1172.0	30x0.1780	7x0.1780	0.9207	0.7463	1.246	1097	81.15	18.85	24000	RMT 96.60	15900	14400
1172.0	18x0.1780	19x0.1780	0.9207	0.4477	1.246	1096	48.76	51.24	29500	RMT 96.60	15900	14400
1198.0	30x0.1799	7x0.1799	0.9410	0.7630	1.260	1122	81.17	18.83	24500	RMT 96.60	14500	12850
1198.0	24x0.1799	13x0.1799	0.9410	0.6104	1.260	1121	65.00	35.00	27100	RMT 96.60	14500	12850
1277.0	54x0.1447	7x0.1447	1.0031	0.8879	1.302	1196	88.58	11.42	24600	RMT 96.60	14400	12000
1277.0	42x0.1447	19x0.1447	1.0031	0.6905	1.302	1195	68.96	31.04	28400	RMT 96.60	14400	12000
1361.5	54x0.1494	7x0.1494	1.0693	0.9466	1.345	1275	88.58	11.42	26300	RMT 96.60	14400	11250
1534.4	42x0.1586	19x0.1586	1.2051	0.8298	1.427	1436	68.96	31.04	33800	RMT 96.60	14400	10000
1703.0	48x0.1671	13x0.1671	1.3377	1.0524	1.504	1594	78.77	21.23	34600	RMT 96.60	14400	9000
1798.0	42x0.1717	19x0.1717	1.4124	0.9722	1.545	1683	68.96	31.04	39600	RMT 96.60	15600	9200
1933.0	42x0.1780	19x0.1780	1.5180	1.0454	1.602	1809	68.97	31.03	42500	RMT 96.60	16700	9200
2338.0	42x0.1958	19x0.1958	1.8367	1.2642	1.762	2209	68.95	31.05	51500	RMT 96.60	16700	7500
2338.0	48x0.1958	13x0.1958	1.8367	1.4447	1.762	2210	78.77	21.23	47500	RMT 96.60	16700	7500
2493.0	54x0.1655	37x0.1655	1.9576	1.1620	1.821	2355	59.47	40.53	57600	RMT 96.60	15400	6500
2493.0	72x0.1655	19x0.1655	1.9577	1.5491	1.821	2357	79.21	20.79	50400	RMT 96.60	15400	6500

(1) Weights shown are for conductor only and do not include the reel. Normal length and shipping tolerances apply.
Dimensions and weights not designated minimum or maximum are nominal values and subject to manufacturing tolerances. In this context, weight means mass.

TransPwr® ACAR Bare Overhead Conductor

Aluminum Conductor Alloy-Reinforced Concentric-Lay-Stranded

ACAR, CONCENTRIC-LAY-STRADED (ELECTRICAL PROPERTIES)

SIZE AWG OR kcmil	STRANDING NO. X DIA. INCHES		CROSS-SECTION SQ. INCHES		O.D. INCHES	RESISTANCE (2) OHMS/1000 FT			AMPACITY 75° C (3)		GEOMETRIC MEAN RADIUS FT	INDUCTIVE REACTANCE OHM/1000 FT (4)	CAPACITIVE REACTANCE MEGAOHM - 1000 FT (4)
	AL	ALLOY	TOTAL	AL		DC @ 20°C	AC @ 25°C	AC @ 75°C	STD.	E3X®			
503.6	15x0.1628	4x0.1628	0.3955	0.3123	0.814	0.0354	0.0364	0.0433	655	740	0.0262	0.0837	0.5300
587.2	15x0.1758	4x0.1758	0.4612	0.3641	0.879	0.0303	0.0313	0.0372	720	815	0.0283	0.0820	0.5180
649.5	18x0.1325	19x0.1325	0.5102	0.2481	0.927	0.0287	0.0296	0.0350	755	855	0.0302	0.0804	0.5096
653.1	12x0.1854	7x0.1854	0.5129	0.3240	0.927	0.0279	0.0288	0.0342	765	865	0.0298	0.0807	0.5097
739.8	18x0.1414	19x0.1414	0.5810	0.2827	0.990	0.0252	0.0261	0.0308	820	930	0.0323	0.0789	0.4994
853.7	30x0.1519	7x0.1519	0.6705	0.5436	1.063	0.0208	0.0217	0.0257	910	1040	0.0344	0.0774	0.4882
853.7	24x0.1519	13x0.1519	0.6705	0.4349	1.063	0.0213	0.0222	0.0263	905	1035	0.0344	0.0774	0.4882
927.2	24x0.1583	13x0.1583	0.7282	0.4724	1.108	0.0196	0.0205	0.0242	950	1090	0.0359	0.0765	0.4817
1024.5	30x0.1664	7x0.1664	0.8046	0.6524	1.165	0.0173	0.0183	0.0216	1020	1175	0.0377	0.0753	0.4739
1024.5	24x0.1664	13x0.1664	0.8046	0.5219	1.165	0.0178	0.0187	0.0220	1010	1165	0.0377	0.0753	0.4739
1080.6	24x0.1709	13x0.1709	0.8487	0.5505	1.196	0.0168	0.0178	0.0209	1045	1205	0.0387	0.0747	0.4697
1080.6	18x0.1709	19x0.1709	0.8487	0.4129	1.196	0.0173	0.0182	0.0213	1040	1195	0.0390	0.0745	0.4697
1109.0	30x0.1731	7x0.1731	0.8707	0.7063	1.212	0.0160	0.0170	0.0200	1070	1235	0.0392	0.0744	0.4677
1109.0	24x0.1731	13x0.1731	0.8707	0.5650	1.212	0.0164	0.0174	0.0204	1065	1225	0.0392	0.0744	0.4677
1172.0	30x0.1780	7x0.1780	0.9207	0.7463	1.246	0.0152	0.0161	0.0190	1110	1280	0.0403	0.0738	0.4634
1172.0	18x0.1780	19x0.1780	0.9207	0.4477	1.246	0.0159	0.0169	0.0198	1095	1260	0.0406	0.0736	0.4634
1198.0	30x0.1799	7x0.1799	0.9410	0.7630	1.260	0.0148	0.0158	0.0186	1125	1300	0.0408	0.0735	0.4617
1198.0	24x0.1799	13x0.1799	0.9410	0.6104	1.260	0.0152	0.0162	0.0190	1115	1290	0.0408	0.0735	0.4617
1277.0	54x0.1447	7x0.1447	1.0031	0.8879	1.302	0.0138	0.0148	0.0174	1170	1355	0.0422	0.0727	0.4565
1277.0	42x0.1447	19x0.1447	1.0031	0.6905	1.302	0.0142	0.0152	0.0178	1160	1345	0.0426	0.0725	0.4565
1361.5	54x0.1494	7x0.1494	1.0693	0.9466	1.345	0.0129	0.0140	0.0164	1215	1410	0.0436	0.0720	0.4514
1534.4	42x0.1586	19x0.1586	1.2051	0.8298	1.427	0.0118	0.0129	0.0150	1305	1515	0.0467	0.0704	0.4421
1703.0	48x0.1671	13x0.1671	1.3377	1.0524	1.504	0.0105	0.0116	0.0136	1390	1625	0.0492	0.0692	0.4339
1798.0	42x0.1717	19x0.1717	1.4124	0.9722	1.545	0.0101	0.0112	0.0131	1435	1680	0.0505	0.0686	0.4297
1933.0	42x0.1780	19x0.1780	1.5180	1.0454	1.602	0.0094	0.0106	0.0123	1500	1760	0.0524	0.0678	0.4240
2338.0	42x0.1958	19x0.1958	1.8367	1.2642	1.762	0.0078	0.0092	0.0105	1680	1985	0.0576	0.0656	0.4091
2338.0	48x0.1958	13x0.1958	1.8367	1.4447	1.762	0.0077	0.0091	0.0104	1685	1990	0.0576	0.0656	0.4091
2493.0	54x0.1655	37x0.1655	1.9576	1.1620	1.821	0.0074	0.0088	0.0101	1740	2060	0.0598	0.0647	0.4040
2493.0	72x0.1655	19x0.1655	1.9577	1.5491	1.821	0.0072	0.0086	0.0099	1750	2070	0.0594	0.0649	0.4040

(2) Based on a conductivity of 61.2% (minimum lot average) IACS at 20°C for aluminum and 52.5% IACS at 20°C for aluminum alloy. To convert to ohms/mile, multiply by 5.28. To convert to ohms/km, multiply by 3.281.
 (3) Based on a conductor temperature of 75°C at 60 Hz and the following conditions: 25°C ambient temperature, 2 ft/sec crosswind (90° to conductor), 0.5 coefficient of emissivity for standard conductor and 0.9 for E3X coated conductor, 0.5 coefficient of absorptivity for standard conductor and 0.2 for E3X coated conductor, 30° northern latitude, sea level elevation, 90° azimuth of line (East-West), clear atmosphere, and a date and time of noon on July 1 (resulting in 96.0 W/ft² of solar and sky radiated heat). Actual ampacity will differ based on local conditions. For specific ampacities, please contact your General Cable sales representative.
 (4) Values for inductive reactance and capacitive reactance are expressed in terms of a 1 ft radius.
 Dimensions and weights not designated minimum or maximum are nominal values and subject to manufacturing tolerances. In this context, weight means mass.

