

# TDWIRE

CABLE SOLUTIONS



# Low voltage





### AW Aluminum Clad Steel conductors

Aluminum clad steel wires, concentrically stranded, are used in shielding of distribution and transmission overhead lines, specially in zones of high saline or industrial contamination, has an excellent corrosion resistance to corrosion in corrosive environments from industrial or atmospheric conditions.

### Characteristics

TD-WIRE AW has an excellent corrosion resistance to corrosion in corrosive environments from industrial or atmospheric conditions.

### Applications

TD-WIRE AW are used in shielding of distribution and transmission overhead lines, specially in zones of high saline or industrial contamination.

## Construction

Aluminum clad steel wires, concentrically stranded

## Standards and References

ASTM B416 Concentric-Lay-Stranded Aluminum-Clad Steel Conductors // RETIE

## AW Aluminum Clad Steel conductors

Número de parte Part Number	Calibre N hilos x AWG Size Strands AWG	Diámetro Hilo Strand Diameter mm	Area (mm <sup>2</sup> )	Diámetro del conductor Conductor diameter (mm)	Carga de Rotura (kgf) Rated Breaking Load	Peso (kg/km) Weight	Resistencia DC (ohm/km) DC Resistance	Corto circuito* (kA) Short circuit capacity
CAD30305	3x5	4,62	50,3	9,96	5542	333	1,696	5,1
CAD30306	3x6	4,12	39,9	8,87	4930	264	2,137	4,1
CAD30307	3x7	3,67	31,6	7,90	4122	209	2,694	3,2
CAD30308	3x8	3,26	25,1	7,03	3269	166	3,397	2,6
CAD30309	3x9	2,91	19,9	6,26	2592	132	4,285	2,0
CAD30310	3x10	2,59	15,8	5,58	2055	104	5,403	1,6
CAD30705	7x5	4,62	117,3	13,86	12252	780	0,730	12,0
CAD30706	7x6	4,12	93,1	12,35	10898	618	0,920	9,5
CAD30707	7x7	3,67	73,8	11,00	9112	491	1,159	7,5
CAD30708	7x8	3,26	58,6	9,79	7227	389	1,462	6,0
CAD30709	7x9	2,91	46,4	8,72	5729	308	1,844	4,7
CAD30710	7x10	2,59	36,8	7,76	4544	245	2,325	3,8
CAD30712	7x12	2,05	23,1	6,15	2859	154	3,695	2,4
CAD31905	19x5	4,62	318,5	23,10	33255	2128	0,270	32,5
CAD31906	19x6	4,12	252,7	20,58	29580	1689	0,341	25,8
CAD31907	19x7	3,67	200,4	18,33	24732	1339	0,430	20,4
CAD31909	19x8	3,26	159,0	16,32	19616	1062	0,542	16,2
CAD31909	19x9	2,91	126,0	14,53	15549	842	0,683	12,9
CAD31910	19x10	2,59	99,9	12,94	12332	668	0,862	10,2
CAD31912	19x12	2,05	62,9	10,27	7761	420	1,369	6,4
CAD33705	37x5	4,62	620,3	32,34	64759	4169	0,140	63,3
CAD33706	37x6	4,12	492,1	28,81	57603	3308	0,176	50,2
CAD33707	37x7	3,67	390,3	25,66	48163	2624	0,222	68,0
CAD33708	37x8	3,26	309,6	22,85	38200	2081	0,280	53,9
CAD33709	37x9	2,91	245,4	20,34	30280	1650	0,353	42,7
CAD33710	37x10	2,59	194,6	18,12	24016	1308	0,445	33,9
CAD33712	37x12	2,05	122,5	14,37	15113	823	0,707	12,5

Steel Aluminum Clad Strands conductivity 20,3% IACS, Elasticity Modulus 160 Gpa, Linear expansion coefficient 12,6x10<sup>-6</sup>/°C

Short circuit current capacity for 657 °C maximum temperature, 40°C initial temperature, and one second.

**All the information is presented as a guide for the user and installer, who is responsible for complying with local regulations such as RETIE. Values are nominal and are subject to standard tolerances. Updates may be made without prior notice.**



## CCS Copper Clad Steel conductors



### CCS Copper Clad Steel conductors

Copper clad steel wires, concentrically stranded, specially suitable to transport fault currents to ground.

## Applications

TTD-WIRE CCS are used in grounding systems connections for distribution and transmission of electrical energy.

## Construction

- Copper clad steel wires, concentrically stranded.
- Copper clad steel conductors concentrically stranded , specially suitable to transport fault currents to ground.

## Standards and References

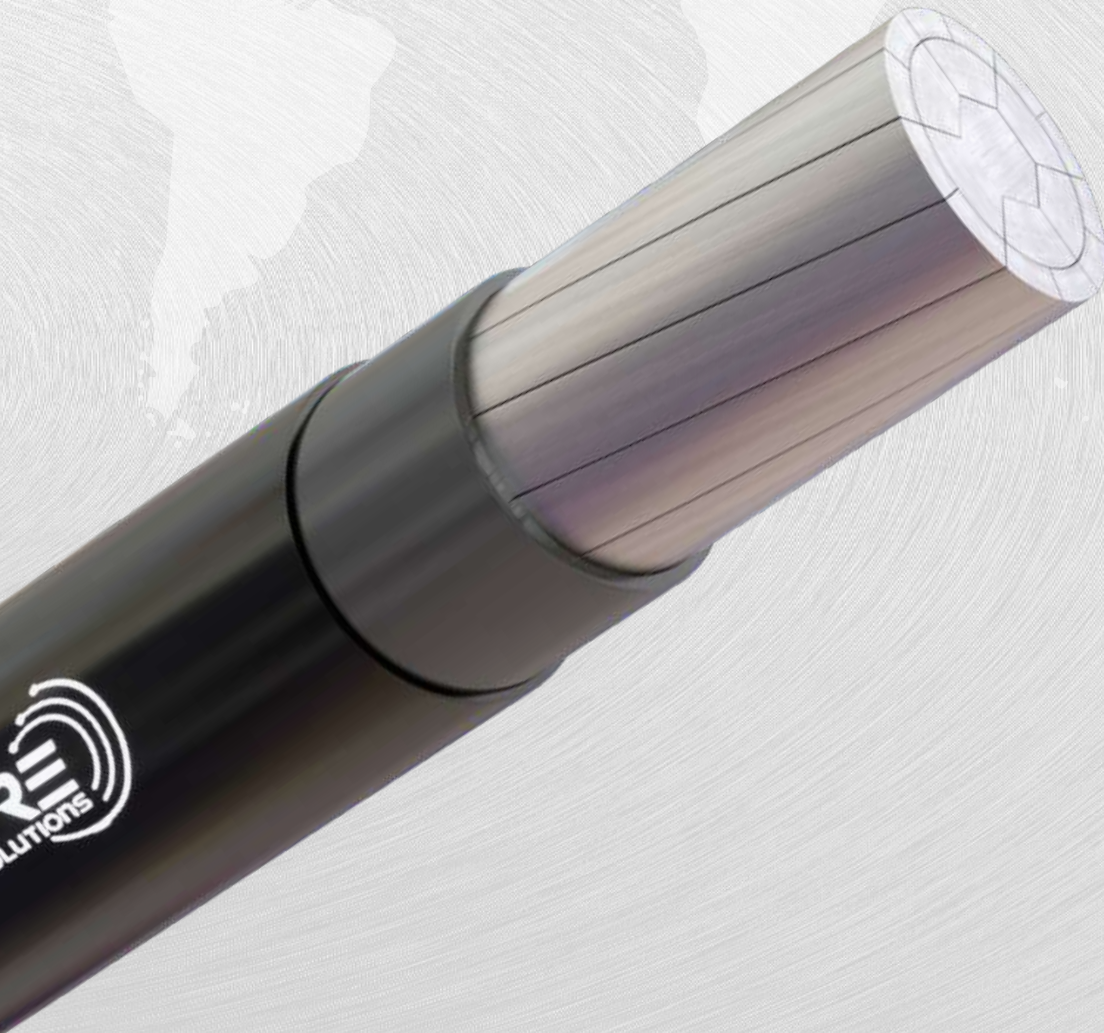
ASTM B228 Concentric-Lay-Stranded Copper-Clad Steel Conductors // RETIE

Número de parte Part Number	Calibre Size			Diámetro o Hilo Strand Diameter r mm	Area (mm <sup>2</sup> )	Diámetro o del conduct or Conduct or diameter (mm)	Carga de Rotura (kgf) Rated Breaking Load					Peso (kg/km) Weight		Resistencia DC (ohm/km) DC Resistance		Corto circuito** (kA) Short circuit capacity	
	Inches	Hilos Strands	AWG				Grado Grade *					Grado Grade		Grado Grade		Grado Grade	
							40 HS	30 HS	30 EHS	40 DSA	30 DSA	30	40	30	40	30	40
CAD90305	-	3	5	4.62	50,3	9.96	3685	4075	4910	1305	1465	413	418	1.135	0.852	7.7	8.8
CAD90306	-	3	6	4.12	39,9	8.87	3050	3360	4075	1035	1165	328	331	1.431	1.074	6.1	6.9
CAD90307	-	3	7	3.67	31,6	7.90	2520	2770	3360	820	925	260	263	1.804	1.353	4.8	5.5
CAD90308	-	3	8	3.26	25,1	7.03	2085	2280	2765	650	730	206	208	2.275	1.706	3.8	4.4
CAD90309	-	3	9	2.91	20,0	6.27	1715	1870	2245	515	580	164	166	2.862	2.147	3.0	3.5
CAD90310	-	3	10	2.59	15,8	5.58	1420	1545	1830	410	460	130	131	3.618	2.714	2.4	2.7
CAD90312	-	3	12	2.05	9,9	4.42	745	780	1165	260	295	82	82	5.756	4.318	1.5	1.7
CAD91940	-	19	4/0	2.68	107,2	13,40	9023	9837	-	2707	2951	874	883	0.547	0.410	16,4	18,7
CAD90720	-	7	2/0	3.50	67,4	10,51	5035	5547	-	1510	1664	554	560	0.876	0.657	10,3	11,7
CAD90710	-	7	1/0	3.12	53,5	9,36	4331	4737	-	1299	1421	439	444	1.105	0.829	8,2	9,3
CAD90702	-	7	2	2.47	33,6	7,42	2949	3213	-	885	964	276	279	1.757	1.318	5,1	5,9
CAD90704	-	7	4	1.96	21,2	5,88	1539	1606	-	462	482	174	176	2.794	2.096	3,2	3,7

All the information is presented as a guide for the user and installer, who is responsible for complying with local regulations such as RETIE. Values are nominal and are subject to standard tolerances. Updates may be made without prior notice.



# Building Wire





## TD WIRE AA8000 THHN-THWN DATA SHEET



### THHN/THWN-2 AL AA8000 CABLE

Conductor of aluminum alloy, 600V maximum voltage operation and 90°C maximum temperature operation 90°C, Aluminum alloy AA 8000 series conductor, PVC Thermoplastic Insulation, Nylon jacket.

Aluminum alloy conductor, brand **TD-WIRE**, for 600 volts and a maximum operating temperature of 90°C.

- 1- Conductor in AA 8000 series aluminum alloy.
- 2- Insulation in thermoplastic material.
- 3- Nylon jacket.

Resistant to heat, moisture, gasoline, and oil. Suitable for installation in trays.

## Applications

- The TD-WIRE THHN/THWN-2 cables are used in conduits and cable trays for service entrances, feeders, and branch circuits in commercial or industrial applications as specified in NTC 2050, for voltage levels up to 600V.
- When used as THHN type, it is suitable for dry or wet locations at temperatures not exceeding 90°C.
- When used as THWN-2 type, it is suitable for use in dry, wet, or damp locations at temperatures not exceeding 90°C, or not exceeding 75°C when exposed to oil or coolant.

## Standards and References

ASTM B800, B801 // UL83 // NTC 1332 // RETIE





## TD WIRE AA8000 THHN-THWN DATA SHEET

### Construction

D-WIRE THHN/THWN-2 are AA-8000 series aluminum alloy, conventional, compressed or compact stranded.

Polyvinyl chloride (PVC) Insulated and polyamide (Nylon) jacketed, heat and moisture-resistant.

Allowable Ampacities of Insulated Conductors Rated Up to and Including 2000 Volts, 60°C Through 90°C (140°F Through 194°F), Not More Than Three Current-Carrying Conductors in Raceway, Cable, or Earth (Directly Buried), Based on Ambient Temperature of 30°C

**Unless the equipment is marked for use at higher temperatures, the conductor ampacities shall be limited to the following per NEC 110.14(C):**

- 60°C - When terminated to equipment for circuits rated 100 amperes or less marked for 14 through 1 AWG conductors.
- 75°C - When terminated to equipment for circuits rated over 100 amperes or marked for conductors larger than 1 AWG. 90°C.
- 90°C - THHN dry locations and THWN wet or dry locations for ampacity adjustment purposes using NEC section 310.15

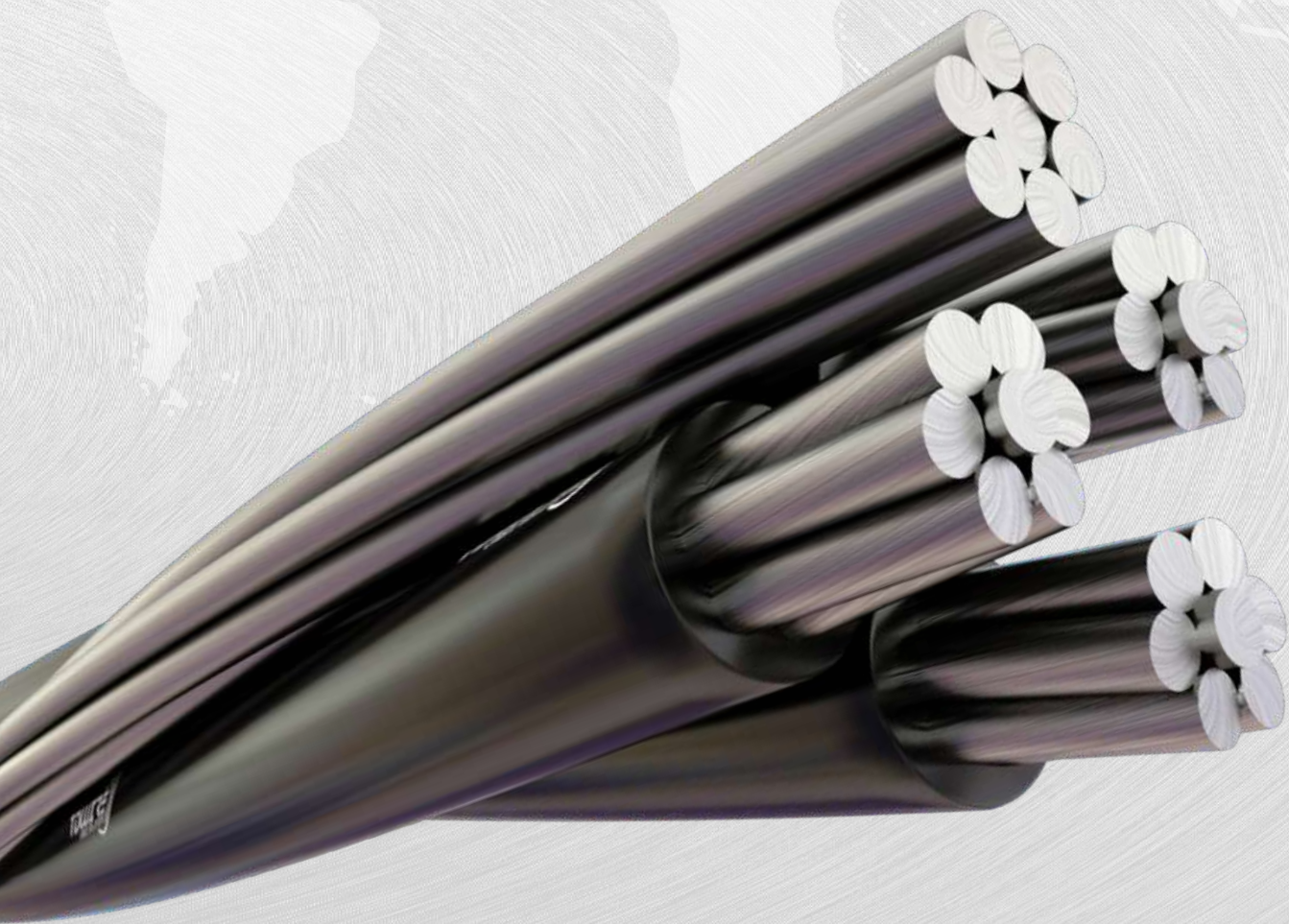
# TD WIRE AA8000 THHN-THWN DATA SHEET

Part number	Size		Conductor diameter (mm)	Thickness (mm)		Overall diameter	Total Weight (kg/km)	Ampacity (A)			
	AWG / kcmil			Insulation	Jacket			60 °C	75 °C	90 °C	Suggested by RETIE
CBTA10006	6	7	4,29 - 4,53	0,76	0,13	6,20 - 6,43	57	40	50	60	40
CBTA10004	4	7	5,41 - 5,71	1,02	0,15	7,91 - 8,21	92	55	65	75	55
CBTA10002	2	7	6,83 - 7,20	1,02	0,15	9,35 - 9,73	134	75	90	100	75
CETA10001	1	19	7,77 - 8,20	1,27	0,18	10,9 - 11,3	176	85	100	115	85
CBTA10010	1/0	19	8,70 - 9,18	1,27	0,18	11,8 - 12,3	212	100	120	135	120
CBTA10020	2/0	19	9,78 - 10,3	1,27	0,18	12,9 - 13,5	258	115	135	150	135
CBTA10030	3/0	19	11,0 - 11,6	1,27	0,18	14,2 - 14,8	314	130	155	175	155
CBTA10040	4/0	19	12,3 - 13,0	1,27	0,18	15,5 - 16,2	384	150	180	205	180
CBTA10250	250	37	13,4 - 14,2	1,52	0,20	17,2 - 18,0	465	170	205	230	205
CBTA10300	300	37	14,7 - 15,5	1,52	0,20	18,5 - 19,3	545	190	230	255	230
CBTA10350	350	37	15,9 - 16,8	1,52	0,20	19,7 - 20,6	624	210	250	280	250
CBTA10400	400	37	17,0 - 17,9	1,52	0,20	20,9 - 21,8	702	225	270	305	270
CBTA10500	500	37	19,0 - 20,0	1,52	0,20	22,9 - 24,0	858	260	310	350	310
CBTA10600	600	61	20,9 - 22,0	1,78	0,23	25,4 - 26,5	1043	285	340	385	340
CBTA10750	750	61	23,3 - 24,6	1,78	0,23	27,9 - 29,2	1275	320	385	435	385
CBTA11000	1000	61	26,9 - 28,4	1,78	0,23	31,6 - 33,1	1657	375	445	500	445

**All the information is presented as a guide for the user and installer, who is responsible for complying with local regulations such as RETIE. Values are nominal and are subject to standard tolerances. Updates may be made without prior notice.**



# 600V Secondary distribution



## Multiplex Cable Secondary Distribution



### **Aluminium multiconductor duplex, Triplex a Quadruplex Cable low voltage**

2Stranded 1350 Aluminum Conductor Insulation in cross-linked polyethylene (XLPE) sunlight resistant and weathering, 90°C maximum operating temperature. Support messenger neutral in ACSR conductor of 6/1 configuration and optionally with covering as the insulation. The configurations can be Duplex, Triplex and Quadruplex which are made up of a neutral and the isolated phases wired around the neutral.

TD-WIRE MULTIPLEX cables (Duplex, Triplex or Quadruplex) with aluminum conductor, XLPE insulation sunlight resistant, phases are assembled around the ACSR messenger neutral which can be covered.

## Applications

- TD-WIRE MULTIPLEX cable is used in low voltage distribution systems of 600 volts phase-to-phase or less and at conductor temperatures not to exceed 90°C

## Standards and References

**ICEA S-76-474 Standard for Neutral Supported Power Cable Assemblies with Weather Resistant Extruded Insulation Rated 600 Volts // RETIE**

**ASTM B231 Concentric-Lay-Stranded Aluminum 1350 Conductors**

**ASTM B232 Concentric-Lay-Stranded Aluminum Conductors, Coated-Steel Reinforced (ACSR)**

**EC 60228 Conductors of insulated cables**

**IEC 60502-1 Power cables with extruded insulation and their accessories for rated voltages of 1 kV ( $U_m = 1,2$  kV) and 3 kV ( $U_m = 3,6$  kV)**

### Construction

- 1- Stranded 1350 Aluminum Conductor
- 2- Insulation in cross-linked polyethylene (XLPE) sunlight resistant and weathering, 90°C maximum operating temperature.
- 3- Support messenger neutral in ACSR conductor of 6/1 configuration and optionally with covering as the insulation.
- 4- The configurations can be Duplex, Triplex and Quadruplex which are made up of a neutral and the isolated phases wired around the neutral.

Ampacity for 90°C conductor temperature, 40°C ambient temperature, 2,2 km/h wind speed, 1 W/m<sup>2</sup> solar emission, at sea level

# Multiplex Cable Secondary Distribution

Part Number	Type	Phases	Phase conductor				Neutro mensajero Neutral Mesenger					Overall Diameter (mm)	Total weight aprox. (kg/km)	Ampacity (A)
			Size	Strands	Insulation thickness (mm)	Insulation Diameter mm	Type	Size	Strands	Insulation	Breaking Load (kgf)			
CBT40404	DPX 4 AWG + 4 ACSR	1	4 AWG	7	1,14	8,3	ACSR	4 AWG	6/1	-	844	14,6	173	115
CBT40202	DPX 2 AWG + 2 ACSR	1	2 AWG	7	1,14	9,8	ACSR	2 AWG	6/1	-	1291	17,8	264	150
CBT41010	DPX 1/0 AWG + 1/0 ACSR	1	1/0 AWG	7	1,52	12,5	ACSR	1/0 AWG	6/1	-	1987	22,6	424	205
CBT420202	TPX 2x2 AWG + 2 ACSR	2	2 AWG	7	1,14	9,8	ACSR	2 AWG	6/1	-	1291	20,1	394	150
CBT421010	TPX 2x1/0 AWG + 1/0 ACSR	2	1/0 AWG	7	1,52	12,5	ACSR	1/0 AWG	6/1	-	1987	25,7	633	205
CBT422020	TPX 2x2/0 AWG + 2/0 ACSR	2	2/0 AWG	7	1,52	13,7	ACSR	2/0 AWG	6/1	-	2404	28,0	781	235
CBT424040	TPX 2x4/0 AWG + 4/0 ACSR	2	4/0 AWG	19	1,52	16,6	ACSR	4/0 AWG	6/1	-	3788	33,9	1183	315
CBT430202	CPX 3x2 AWG + 2 ACSR	3	2 AWG	7	1,14	9,8	ACSR	2 AWG	6/1	-	1291	23,6	523	135
CBT431010	CPX 3x1/0 AWG + 1/0 ACSR	3	1/0 AWG	7	1,52	12,5	ACSR	1/0 AWG	6/1	-	1987	30,2	842	180
CBT432020	CPX 3x2/0 AWG + 2/0 ACSR	3	2/0 AWG	7	1,52	13,7	ACSR	2/0 AWG	6/1	-	2404	32,9	1037	205
CBT434040	CPX 3x4/0 AWG + 4/0 ACSR	3	4/0 AWG	19	1,52	16,6	ACSR	4/0 AWG	6/1	-	3788	39,9	1560	275
CBT50404	DPX 4 AWG + 4 ACSR XLPE	1	4 AWG	7	1,14	8,3	ACSR	4 AWG	6/1	XLPE	7387	17,0	204	115
CBT50202	DPX 2 AWG + 2 ACSR XLPE	1	2 AWG	7	1,14	9,8	ACSR	2 AWG	6/1	XLPE	1291	20,2	305	150
CBT51010	DPX 1/0 AWG + 1/0 ACSR XLPE	1	1/0 AWG	7	1,52	12,5	ACSR	1/0 AWG	6/1	XLPE	1987	25,8	492	205
CBT520202	TPX 2x2 AWG + 2 ACSR XLPE	2	2 AWG	7	1,14	9,8	ACSR	2 AWG	6/1	XLPE	1291	21,2	434	150
CBT521010	TPX 2x1/0 AWG + 1/0 ACSR XLPE	2	1/0 AWG	7	1,52	12,5	ACSR	1/0 AWG	6/1	XLPE	1987	27,0	701	205
CBT522020	TPX 2x2/0 AWG + 2/0 ACSR XLPE	2	2/0 AWG	7	1,52	13,7	ACSR	2/0 AWG	6/1	XLPE	2404	29,5	858	235
CBT524040	TPX 2x4/0 AWG + 4/0 ACSR XLPE	2	4/0 AWG	19	1,52	16,6	ACSR	4/0 AWG	6/1	XLPE	3788	35,8	1283	315
CBT530202	CPX 3x2 AWG + 2 ACSR XLPE	3	2 AWG	7	1,14	9,8	ACSR	2 AWG	6/1	XLPE	1291	23,7	564	135
CBT531010	CPX 3x1/0 AWG + 1/0 ACSR XLPE	3	1/0 AWG	7	1,52	12,5	ACSR	1/0 AWG	6/1	XLPE	1987	30,3	910	180
CBT532020	CPX 3x2/0 AWG + 2/0 ACSR XLPE	3	2/0 AWG	7	1,52	13,7	ACSR	2/0 AWG	6/1	XLPE	2404	33,1	1114	205
CBT534040	CPX 3x4/0 AWG + 4/0 ACSR XLPE	3	4/0 AWG	19	1,52	16,6	ACSR	4/0 AWG	6/1	XLPE	3788	40,1	1660	275

CBT42525	DPX 25 mm <sup>2</sup> + 25 ACSR	1	25 mm <sup>2</sup>	7	1,14	8,7	ACSR	25 mm <sup>2</sup>	6/1	-	844	15,1	184	121
CBT43535	DPX 35 mm <sup>2</sup> + 35 ACSR	1	35 mm <sup>2</sup>	7	1,52	10,6	ACSR	35 mm <sup>2</sup>	6/1	-	1291	18,6	277	158
CBT45050	DPX 50 mm <sup>2</sup> + 50 ACSR	1	50 mm <sup>2</sup>	7	1,52	12,2	ACSR	50 mm <sup>2</sup>	6/1	-	1987	22,3	412	215
CBT423535	TPX 2x35 mm <sup>2</sup> + 35 ACSR	2	35 mm <sup>2</sup>	7	1,52	10,6	ACSR	35 mm <sup>2</sup>	6/1	-	1291	21,7	419	158
CBT425050	TPX 2x50 mm <sup>2</sup> + 50 ACSR	2	50 mm <sup>2</sup>	7	1,52	12,2	ACSR	50 mm <sup>2</sup>	6/1	-	1987	25,0	610	215
CBT427070	TPX 2x70 mm <sup>2</sup> + 70 ACSR	2	70 mm <sup>2</sup>	7	1,52	13,7	ACSR	70 mm <sup>2</sup>	6/1	-	2404	28,2	768	247
CBT429595	TPX 2x95 mm <sup>2</sup> + 95 ACSR	2	95 mm <sup>2</sup>	19	1,52	15,6	ACSR	95 mm <sup>2</sup>	6/1	-	3788	31,9	1085	331
CBT433535	CPX 3x35 mm <sup>2</sup> + 35 ACSR	3	35 mm <sup>2</sup>	7	1,52	10,6	ACSR	35 mm <sup>2</sup>	6/1	-	1291	22,9	561	142
CBT435050	CPX 3x50 mm <sup>2</sup> + 50 ACSR	3	50 mm <sup>2</sup>	7	1,52	12,2	ACSR	50 mm <sup>2</sup>	6/1	-	1987	26,4	807	189
CBT437070	CPX 3x70 mm <sup>2</sup> + 70 ACSR	3	70 mm <sup>2</sup>	7	1,52	13,7	ACSR	70 mm <sup>2</sup>	6/1	-	2404	29,7	1016	215
CBT439595	CPX 3x95 mm <sup>2</sup> + 95 ACSR	3	95 mm <sup>2</sup>	19	1,52	15,6	ACSR	95 mm <sup>2</sup>	6/1	-	3788	33,6	1413	289
CBT52525	DPX 25 mm <sup>2</sup> + 25 ACSR XLPE	1	25 mm <sup>2</sup>	7	1,14	8,7	ACSR	25 mm <sup>2</sup>	6/1	XLPE	844	17,4	216	121
CBT53535	DPX 35 mm <sup>2</sup> + 35 ACSR XLPE	1	35 mm <sup>2</sup>	7	1,52	10,6	ACSR	35 mm <sup>2</sup>	6/1	XLPE	1291	21,0	317	158
CBT55050	DPX 50 mm <sup>2</sup> + 50 ACSR XLPE	1	50 mm <sup>2</sup>	7	1,52	12,2	ACSR	50 mm <sup>2</sup>	6/1	XLPE	1987	25,5	480	215
CBT523535	TPX 2x35 mm <sup>2</sup> + 35 ACSR XLPE	2	35 mm <sup>2</sup>	7	1,52	10,6	ACSR	35 mm <sup>2</sup>	6/1	XLPE	1291	22,9	459	158
CBT525050	TPX 2x50 mm <sup>2</sup> + 50 ACSR XLPE	2	50 mm <sup>2</sup>	7	1,52	12,2	ACSR	50 mm <sup>2</sup>	6/1	XLPE	1987	26,4	677	215
CBT527070	TPX 2x70 mm <sup>2</sup> + 70 ACSR XLPE	2	70 mm <sup>2</sup>	7	1,52	13,7	ACSR	70 mm <sup>2</sup>	6/1	XLPE	2404	29,7	844	247
CBT529595	TPX 2x95 mm <sup>2</sup> + 95 ACSR XLPE	2	95 mm <sup>2</sup>	19	1,52	15,6	ACSR	95 mm <sup>2</sup>	6/1	XLPE	3788	33,6	1185	331
CBT533535	CPX 3x35 mm <sup>2</sup> + 35 ACSR XLPE	3	35 mm <sup>2</sup>	7	1,52	10,6	ACSR	35 mm <sup>2</sup>	6/1	XLPE	1291	25,6	601	142
CBT535050	CPX 3x50 mm <sup>2</sup> + 50 ACSR XLPE	3	50 mm <sup>2</sup>	7	1,52	12,2	ACSR	50 mm <sup>2</sup>	6/1	XLPE	1987	29,5	875	189
CBT537070	CPX 3x70 mm <sup>2</sup> + 70 ACSR XLPE	3	70 mm <sup>2</sup>	7	1,52	13,7	ACSR	70 mm <sup>2</sup>	6/1	XLPE	2404	33,2	1093	215
CBT539595	CPX 3x95 mm <sup>2</sup> + 95 ACSR XLPE	3	95 mm <sup>2</sup>	19	1,52	15,6	ACSR	95 mm <sup>2</sup>	6/1	XLPE	3788	37,6	1513	289

All the information is presented as a guide for the user and installer, who is responsible for complying with local regulations such as RETIE. Values are nominal and are subject to standard tolerances. Updates may be made without prior notice.



## Multiplex Cable Secondary Distribution MM2



### **Aluminium multiconductor duplex, Triplex a Quadruplex Cable low voltage**

Stranded 1350 Aluminum Conductor Insulation in cross-linked polyethylene (XLPE) sunlight resistant and weathering, 90°C maximum operating temperature. Support messenger neutral in ACSR conductor of 6/1 configuration and optionally with covering as the insulation. The configurations can be Duplex, Triplex and Quadruplex which are made up of a neutral and the isolated phases wired around the neutral.

TD-WIRE MULTIPLEX cables (Duplex, Triplex or Quadruplex) with aluminum conductor, XLPE insulation sunlight resistant, phases are assembled around the ACSR messenger neutral which can be covered.

## Applications

- TD-WIRE MULTIPLEX cable is used in low voltage distribution systems of 600 volts phase-to-phase or less and at conductor temperatures not to exceed 90°C

## Standards and References

**ICEA S-76-474 Standard for Neutral Supported Power Cable Assemblies with Weather Resistant Extruded Insulation Rated 600 Volts // RETIE**

**ASTM B231 Concentric-Lay-Stranded Aluminum 1350 Conductors**

**ASTM B232 Concentric-Lay-Stranded Aluminum Conductors, Coated-Steel Reinforced (ACSR)**

**EC 60228 Conductors of insulated cables**

**IEC 60502-1 Power cables with extruded insulation and their accessories for rated voltages of 1 kV ( $U_m = 1,2$  kV) and 3 kV ( $U_m = 3,6$  kV)**





## Multiplex Cable Secondary Distribution MM2

### Construction

- 1- Stranded 1350 Aluminum Conductor
- 2- Insulation in cross-linked polyethylene (XLPE) sunlight resistant and weathering, 90°C maximum operating temperature.
- 3- Support messenger neutral in ACSR conductor of 6/1 configuration and optionally with covering as the insulation.
- 4- The configurations can be Duplex, Triplex and Quadruplex which are made up of a neutral and the isolated phases wired around the neutral.

Ampacity for 90°C conductor temperature, 40°C ambient temperature, 2,2 km/h wind speed, 1 W/m<sup>2</sup> solar emission, at sea level

Número de parte Part Number	Tipo Type	Fases Phases	Conductor de fase Phase conductor				Neutro mensajero Neutral Messenger					Diámetro total Overall Diameter (mm)	Masa total aprox Total weight approx. (kg/km)	Capacidad de corriente Ampacity (A)
			Calibre Size	Hilos Strands	Espesor de aislamiento o Insulation thickness (mm)	Diámetro de aislamiento o Insulation Diameter mm	Tipo Type	Calibre Size	Hilos Strands	Aislamiento o Insulation	Carga de rotura Breaking Load (kgf)			
CBT633550	CPX 3x35 mm2 + 50 AAAC XLPE	3	35 mm2	7	1,52	10,6	AAAC	50 mm2	7	XLPE	1987	25,6	623	142
CBT635050	CPX 3x50 mm2 + 50 AAAC XLPE	3	50 mm2	7	1,52	12,2	AAAC	50 mm2	7	XLPE	1987	29,5	790	189
CBT637050	CPX 3x70 mm2 + 50 AAAC XLPE	3	70 mm2	7	1,52	13,7	AAAC	50 mm2	7	XLPE	1987	33,2	944	215
CBT639550	CPX 3x95 mm2 + 50 AAAC XLPE	3	95 mm2	19	1,52	15,6	AAAC	50 mm2	7	XLPE	1987	37,5	1180	289
CBT633554	CPX 3x35 mm2 + 54,6 AAAC XLPE	3	35 mm2	7	1,52	10,6	AAAC	54,6 mm2	7	XLPE	2166	25,6	638	142
CBT635054	CPX 3x50 mm2 + 54,6 AAAC XLPE	3	50 mm2	7	1,52	12,2	AAAC	54,6 mm2	7	XLPE	2166	29,5	805	189
CBT637054	CPX 3x70 mm2 + 54,6 AAAC XLPE	3	70 mm2	7	1,52	13,7	AAAC	54,6 mm2	7	XLPE	2166	33,2	959	215
CBT639554	CPX 3x95 mm2 + 54,6 AAAC XLPE	3	95 mm2	19	1,52	15,6	AAAC	54,6 mm2	7	XLPE	2166	37,5	1195	289
CBT55050	DPX 50 mm2 + 50 ACSR XLPE (1x1/0+1/0)	1	50 mm2	7	1,52	12,5	ACSR	50 mm2	6/1	XLPE	1987	25,8	492	205
CBT523535	TPX 2x35 mm2 + 35 ACSR XLPE (2x2+2)	2	35 mm2	7	1,14	9,8	ACSR	35 mm2	6/1	XLPE	1291	21,2	434	150
CBT525050	TPX 2x50 mm2 + 50 ACSR XLPE (2x1/0+1/0)	2	50 mm2	7	1,52	12,5	ACSR	50 mm2	6/1	XLPE	1987	27,0	701	205
CBT527070	TPX 2x70 mm2 + 70 ACSR XLPE (2x2/0+2/0)	2	70 mm2	7	1,52	13,7	ACSR	70 mm2	6/1	XLPE	2404	29,5	858	235
CBT533535	CPX 3x35 mm2 + 35 ACSR XLPE (3x2+2)	3	35 mm2	7	1,14	9,8	ACSR	35 mm2	6/1	XLPE	1291	23,7	564	135
CBT535050	CPX 3x50 mm2 + 50 ACSR XLPE (3x1/0+1/0)	3	50 mm2	7	1,52	12,5	ACSR	50 mm2	6/1	XLPE	1987	30,3	910	180
CBT537070	CPX 3x70 mm2 + 70 ACSR XLPE (3x2/0+2/0)	3	70 mm2	7	1,52	13,7	ACSR	70 mm2	6/1	XLPE	2404	33,1	1114	205



# Medium voltage





## Medium Voltage (15, 35 y 46 kV) Cable copper tape metallic shield



### Medium Voltage (15, 35 y 46 kV) Cable copper tape metallic shield

Copper or Aluminum conductor, standard or compacted stranded , thermoset semiconductor conductor shield, XLPE or TR XLPE insulation, thermoset semiconductor insulation shield, copper tape metallic shield and PVC, PE or ZH external jacket, 15, 35 and 46 kV Operating Temperature 90°C, 130°C emergency overload temperature, 250°C short circuit temperature , PVC flame retardant jacket (optional for CT installations), UV resistant, XLPE-TR tree retardant. 110 and 200 kV BIL for 15 and 35 kV

### Characteristics

15, 35 and 46 kV Operating Temperature 90°C, 130°C emergency overload temperature, 250°C short circuit temperature , PVC flame retardant jacket (optional for CT installations), UV resistant, XLPE-TR tree retardant. 110 and 200 kV BIL for 15 and 35 kV.

### Aplications

Underground distribution networks. Industrial plants and buildings with substations located in primary distribution of electrical energy. Installation in ducts, gutters or direct burial.

## Standards and References

ICEA S-93-639 Shielded Power Cables for 5 kV to 46 kV for use in Transmission and Distribution of Electrical Energy

# Medium Voltage (15, 35 y 46 kV) Cable copper tape metallic shield

## Construction

Copper or Aluminum conductor, standard or compacted stranded, thermoset semiconductor conductor shield, XLPE or TR XLPE insulation, thermoset semiconductor insulation shield, copper tape metallic shield and PVC, PE or ZH external jacket

\*Ampacity based on NEC Table 310.60 (C) (77 and 78) Ampacities of Three Single-Insulated Conductors in Underground Electrical Ducts (Three Conductors per Electrical Duct) Based on Ambient Earth Temperature of 20°C, Electrical Duct Arrangement Detail 1, 100 % Load Factor, Thermal Resistance (RHO) of 90, Conductor Temperatures of 90°C

Número de parte Part Number		Voltaje Nominal Rated Voltage		Conductor / Conductor			Aislamiento Insulation (mm)		Pantalla Aislamiento Insulation shield (mm)		Chaqueta Jacket		Conductor de cobre Copper conductor				Conductor de aluminio Aluminum conductor				
		Voltaje (kV) Voltage	Nivel Level	Calibre / Size AWG/kcmil	Hilos Strands	Diámetro (mm) Diameter	Espesor Thickn ess	Diámetro Diameter	Espesor Thickn ess	Diámetro Diameter	Espesor Thickn ess	Diámetro Diameter	Masa total Total Weight kg/km	Resistencia DC DC Resista nce ohm/k m	Ampac idad Ampac ity * A	Conten ido Cu Cu conten t kg/km	Masa total Total Weight kg/km	Resistencia DC DC Resista nce ohm/k m	Ampac idad Ampac ity * A	Contenido Metal kg/km Metal content	
Cu	Al																		Al	Cu	
		15	100%	2	7	6,8	4,45	17,1	0,61	18,5	2,03	22,9	829	0,523	155	346	622	0,855	120	92	48
		15	100%	1/0	19	8,6	4,45	18,8	0,61	20,3	2,03	24,7	1063	0,329	200	527	733	0,537	155	146	52
		15	100%	2/0	19	9,6	4,45	19,9	0,61	21,3	2,03	25,7	1222	0,261	230	654	806	0,426	175	184	55
		15	100%	3/0	19	10,8	4,45	21,1	0,61	22,5	2,03	26,9	1420	0,207	260	813	894	0,338	200	232	58
		15	100%	4/0	19	12,1	4,45	22,4	0,61	23,8	2,03	28,2	1662	0,164	295	1013	1003	0,268	230	293	61
		15	100%	250	37	13,2	4,45	23,5	0,61	24,9	2,03	29,3	1870	0,139	325	1189	1091	0,227	250	346	64
		15	100%	350	37	15,7	4,45	26,0	0,81	27,9	2,03	32,3	2437	0,0992	390	1647	1343	0,162	305	484	72
		15	100%	500	37	18,7	4,45	29,0	0,81	30,9	2,03	35,3	3218	0,0694	465	2329	1564	0,113	370	692	79
		15	100%	750	61	23,0	4,45	33,5	0,81	35,4	2,03	39,8	4507	0,0463	565	3446	2174	0,0756	455	1037	91
		15	100%	1000	61	26,9	4,45	37,6	0,81	39,5	2,90	45,7	5997	0,0347	640	4601	2861	0,0567	525	1383	102
		15	133%	2	7	6,8	5,59	19,4	0,61	20,8	2,03	25,3	870	0,523	155	352	722	0,855	120	92	54
		15	133%	1/0	19	8,6	5,59	21,2	0,61	22,6	2,03	27,0	1103	0,329	200	533	839	0,537	155	146	58
		15	133%	2/0	19	9,6	5,59	22,2	0,61	23,6	2,03	28,0	1261	0,261	230	660	915	0,426	175	184	61
		15	133%	3/0	19	10,8	5,59	23,4	0,61	24,8	2,03	29,2	1458	0,207	260	819	1007	0,338	200	232	64
		15	133%	4/0	19	12,1	5,59	24,7	0,61	26,1	2,03	30,5	1699	0,164	295	1019	1046	0,268	230	296	67
		15	133%	250	37	13,2	5,59	25,8	0,81	27,7	2,03	32,1	1934	0,139	325	1196	1243	0,227	250	346	71
		15	133%	350	37	15,7	5,59	28,3	0,81	30,2	2,03	34,6	2568	0,0992	390	1653	1474	0,162	305	484	78
		15	133%	500	37	18,7	5,59	31,3	0,81	33,2	2,03	37,6	3360	0,0694	465	2335	1802	0,113	370	692	86
		15	133%	750	61	23,0	5,59	35,8	0,81	37,7	2,03	42,1	4663	0,0463	565	3472	2330	0,0756	455	1037	97
		15	133%	1000	61	26,9	5,59	39,9	1,02	42,3	2,90	48,5	6205	0,0347	640	4608	3089	0,0567	525	1383	109
		35	100%	1/0	19	8,6	8,76	27,5	0,81	29,4	2,03	33,8	1534	0,329	200	551	1204	0,537	155	146	76
		35	100%	2/0	19	9,6	8,76	28,6	0,81	30,4	2,03	34,8	1707	0,261	230	677	1291	0,426	175	184	78
		35	100%	3/0	19	10,8	8,76	29,8	0,81	31,7	2,03	36,1	1921	0,207	260	837	1394	0,338	200	232	81
		35	100%	4/0	19	12,1	8,76	31,1	0,81	33,0	2,03	37,4	2181	0,164	295	1037	1522	0,268	230	293	85
		35	100%	250	37	13,2	8,76	32,2	0,81	34,1	2,03	38,5	2404	0,139	325	1213	1625	0,227	250	346	88
		35	100%	350	37	15,7	8,76	34,7	0,81	36,6	2,03	41,0	2973	0,0992	390	1669	1878	0,162	305	484	94
		35	100%	500	37	18,7	8,76	37,7	0,81	39,6	2,90	45,8	3982	0,0694	465	2352	2424	0,113	370	692	102



# Medium Voltage (15, 35 y 46 kV) Cable copper tape metallic shield

		35	100%	750	61	23,0	8,76	42,2	1,02	44,5	2,90	50,7	5396	0,0463	565	3489	3064	0,0756	455	1037	115
		35	100%	1000	61	26,9	8,76	46,3	1,02	48,6	2,90	54,8	6749	0,0347	640	4624	3472	0,0567	525	1398	124
		35	133%	1/0	19	8,6	10,67	31,3	0,81	33,2	2,03	37,6	1764	0,329	200	561	1434	0,537	155	146	86
		35	133%	2/0	19	9,6	10,67	32,3	0,81	34,2	2,03	38,6	1942	0,261	230	687	1526	0,426	175	184	88
		35	133%	3/0	19	10,8	10,67	33,6	0,81	35,5	2,03	39,9	2164	0,207	260	846	1636	0,338	200	232	91
		35	133%	4/0	19	12,1	10,67	34,9	0,81	36,8	2,03	41,2	2430	0,164	295	1047	1771	0,268	230	293	95
		35	133%	250	37	13,2	10,67	36,0	0,81	37,9	2,03	42,3	2659	0,139	325	1222	1880	0,227	250	346	98
		35	133%	350	37	15,7	10,67	38,5	1,02	40,8	2,90	47,0	3482	0,0992	390	1680	2259	0,162	305	484	104
		35	133%	500	37	18,7	10,67	41,5	1,02	43,8	2,90	50,0	4333	0,0694	465	2363	2775	0,113	370	692	113
		35	133%	750	61	23,0	10,67	46,0	1,02	48,3	2,90	54,5	5726	0,0463	565	3499	3394	0,0756	455	1037	125
		35	133%	1000	61	26,9	10,67	50,1	1,02	52,4	2,90	58,6	7101	0,0347	640	4634	3985	0,0567	525	1383	135
		46	100%	4/0	19	12,1	11,30	36,1	0,81	38,0	2,90	44,2	2727	0,164	235	1050	2068	0,268	235	293	98
		46	100%	250	37	13,2	11,30	37,2	0,81	39,1	2,90	45,3	2963	0,139	250	1226	2185	0,227	250	346	101
		46	100%	350	37	15,7	11,30	39,7	1,02	42,1	2,90	48,3	3611	0,0992	305	1683	2514	0,162	305	484	108
		46	100%	500	37	18,7	11,30	42,7	1,02	45,1	2,90	51,3	4469	0,0694	370	2366	2911	0,113	370	692	116
		46	100%	750	61	23,0	11,30	47,2	1,02	49,6	2,90	55,8	5873	0,0463	440	3502	3542	0,0756	440	1037	128
		46	100%	1000	61	26,9	11,30	51,3	1,02	53,7	2,90	59,9	7259	0,0347	506	4637	4143	0,0567	506	1383	138
		46	133%	4/0	19	12,1	14,73	45,0	1,02	47,3	2,90	53,5	3339	0,164	235	1074	2680	0,268	235	293	122
		46	133%	250	37	13,2	14,73	46,1	1,02	48,4	2,90	54,6	3587	0,139	250	1250	2808	0,227	250	346	125
		46	133%	350	37	15,7	14,73	48,6	1,02	50,9	2,90	57,1	4212	0,0992	305	1706	3114	0,162	305	484	131
		46	133%	500	37	18,7	14,73	51,6	1,02	53,9	2,90	60,1	5098	0,0694	370	2388	3540	0,113	370	692	139
		46	133%	750	61	23,0	14,73	56,1	1,02	58,4	2,90	64,6	6544	0,0463	440	3525	4213	0,0756	440	1037	151
		46	133%	1000	61	26,9	14,73	60,2	1,02	62,5	2,90	68,7	7967	0,0347	506	4660	4851	0,0567	506	1383	161



# Power & Control





## ALUMINUM POWER CABLE



### ALUMINUM POWER CABLE

Aluminum Power Cable 600 volts and 90°C operating temperature, Compacted AA8000 Class B conductor, Phase conductor with insulation in Polyvinyl Chloride (PVC) type THHN/THWN-2 90°C, Three or four conductors black insulation numbers printed, Polyester Binder tape, PVC Thermoplastic compound, external jacket.t.

## Applications

TD WIRE Aluminum Power Cable 600 Volt Type TC-ER are suited for use in wet and dry areas, conduits, ducts, troughs, trays, direct burial, aerial supported by a messenger, and where superior electrical properties are desired. These cables are capable of operating continuously at the conductor temperature not in excess of 90°C in wet or dry locations, 105°C for emergency overload, and 250°C for short circuit conditions. For uses in Class I, II, and III, Division 2 hazardous locations; constructions with 3 or more phase conductors are suitable for exposed runs; all per NEC and NTC 2050.

## Standards and References

**UL 83 Thermoplastic-Insulated Wires / UL 1277 Electrical Power and Control Tray Cables / ASTM B801 Concentric-Lay-Stranded Conductors of 8000 Series Aluminum Alloy // RETIE**





## ALUMINUM POWER CABLE

### Construction

#### **Aluminum Power Cable 600 volts and 90°C operating temperature**

- 1- Compacted AA8000 Class B conductor
- 2- Phase conductor with insulation in Polyvinyl Chloride (PVC) type THHN/THWN-2 90°C
- 3- Three or four conductors black insulation numbers printed
- 4- Polyester Binder tape
- 5- PVC Thermoplastic compound, external jacket

Allowable Ampacities of Insulated Conductors Rated Up to and Including 2000 Volts, 60°C Through 90°C, Not More Than Three Current-Carrying Conductors in Raceway, Cable, or Earth (Directly Buried), Based on Ambient Temperature of 30°C

**Unless the equipment is marked for use at higher temperatures, the conductor ampacities shall be limited to the following per NEC 110.14(C):**

60°C - When terminated to equipment for circuits rated 100 amperes or less marked for 14 through 1 AWG conductors.

75°C - When terminated to equipment for circuits rated over 100 amperes or marked for conductors larger than 1 AWG. 90°C.

90°C - THHN dry locations and THWN wet or dry locations for ampacity adjustment purposes using NEC section 310.15.

Número de parte Part number	Conductores Conductors		Aislamiento y cubierta Insulation			Ensamble Assembly	Chaqueta Jacket		Datos Generales General Data			Capacidad de corriente Ampacity (A) *	
	# Conductores de fase x Calibre # Phase conductors x Size	Diámetro Diameter (mm)	PVC Espesor Thickness (mm)	NYLON Espesor Thickness (mm)	Diámetro Diameter (mm)	Diámetro Diameter (mm)	Espesor Thickness (mm)	Diámetro Diameter (mm)	Peso Total Total Weight (kg/km)	Radio de curvatura Bending radius (mm)	Tensión de halado (Conductor es de fase) Pulling Tension (Phase conductors ) (kgf)	90°C	Sugerida por RETIE ** Suggested by RETIE
	3 x 6 AGW	4,29	0,76	0,14	6,21	13,4	1,4	16,7	353	167	199	60	40
	3 x 4 AGW	5,41	1,02	0,17	7,91	17,0	1,4	20,3	529	203	317	75	55
	3 x 2 AGW	6,81	1,02	0,17	9,31	20,1	2,0	24,6	785	246	505	100	75
	3 x 1/0 AGW	8,53	1,27	0,20	11,61	25,0	2,0	29,5	1143	295	801	115	85
	3 x 2/0 AGW	9,55	1,27	0,20	12,63	27,2	2,0	31,7	1343	317	1012	135	120
	3 x 4/0 AGW	12,10	1,27	0,20	15,18	32,7	2,0	37,2	1896	372	1608	150	135
	3 x 250 AGW	13,20	1,52	0,23	16,87	36,3	2,0	40,8	2256	408	1900	175	155
	3 x 350 AGW	15,60	1,52	0,23	19,27	41,5	2,8	47,5	3087	475	2660	205	180
	3 x 500 AGW	18,70	1,52	0,23	22,37	48,2	2,8	54,2	4089	542	3800	230	205
	4 x 6 AGW	4,29	0,76	0,14	6,21	15,0	1,4	18,3	425	183	266	60	40
	4 x 4 AGW	5,41	1,02	0,17	7,91	19,1	2,0	23,6	703	236	423	75	55
	4 x 2 AGW	6,81	1,02	0,17	9,31	22,5	2,0	27,0	948	270	673	100	75
	4 x 1/0 AGW	8,53	1,27	0,20	11,61	28,0	2,0	32,5	1390	325	1068	115	85
	4 x 2/0 AGW	9,55	1,27	0,20	12,63	30,5	2,0	35,0	1637	350	1349	135	120
	4 x 4/0 AGW	12,10	1,27	0,20	15,18	36,7	2,0	41,1	2325	411	2144	150	135
	4 x 250 AGW	13,20	1,52	0,23	16,87	40,7	2,8	46,7	2928	467	2534	175	155
	4 x 350 AGW	15,60	1,52	0,23	19,27	46,5	2,8	52,5	3782	525	3547	205	180
	4 x 500 AGW	18,70	1,52	0,23	22,37	54,0	2,8	60,0	5029	600	5067	230	205

**All the information is presented as a guide for the user and installer, who is responsible for complying with local regulations such as RETIE. Values are nominal and are subject to standard tolerances. Updates may be made without prior notice.**

# Substation





### **2OHM TD-WIRE Control Cable for 600/1000 volts and 90°C operating temperature**

2OHM TD-WIRE Control Cable for 600/1000 volts and 90°C operating temperature, Soft copper conductor stranded, 7 strands, Insulation in thermosetting material XLPE 90°C, Polyester tape, Copper wires and tape shielding, less than 2 ohm/km, 100% coverage, HFFR-LS Low Smoke Halogen Free Composite Outer Jacket

## **Construction**

2OHM TD-WIRE Control Cable for 600/1000 volts and maximum operating temperature of 90°C

- 1- Soft copper conductor stranded, 7 strands
- 2- Insulation in thermosetting material XLPE 90°C
- 3- Polyester tape
- 4- Copper wires and copper tape shielding, maximum resistance 2 ohm/km, 100% coverage
- 5- HFFR-LS Low Smoke Halogen Free Composite Outer Jacket

## **Application**

CONTROL 2OHM TD-WIRE cables are used in electrical control systems in power substations. Installation in ducts, raceways and trays.

## **Standards and References**

**EC 60502-1 Power cables with extruded insulation and their accessories for rated voltages from 1kV (Um=1,2kV) upto 30kV (Um=36kV)**

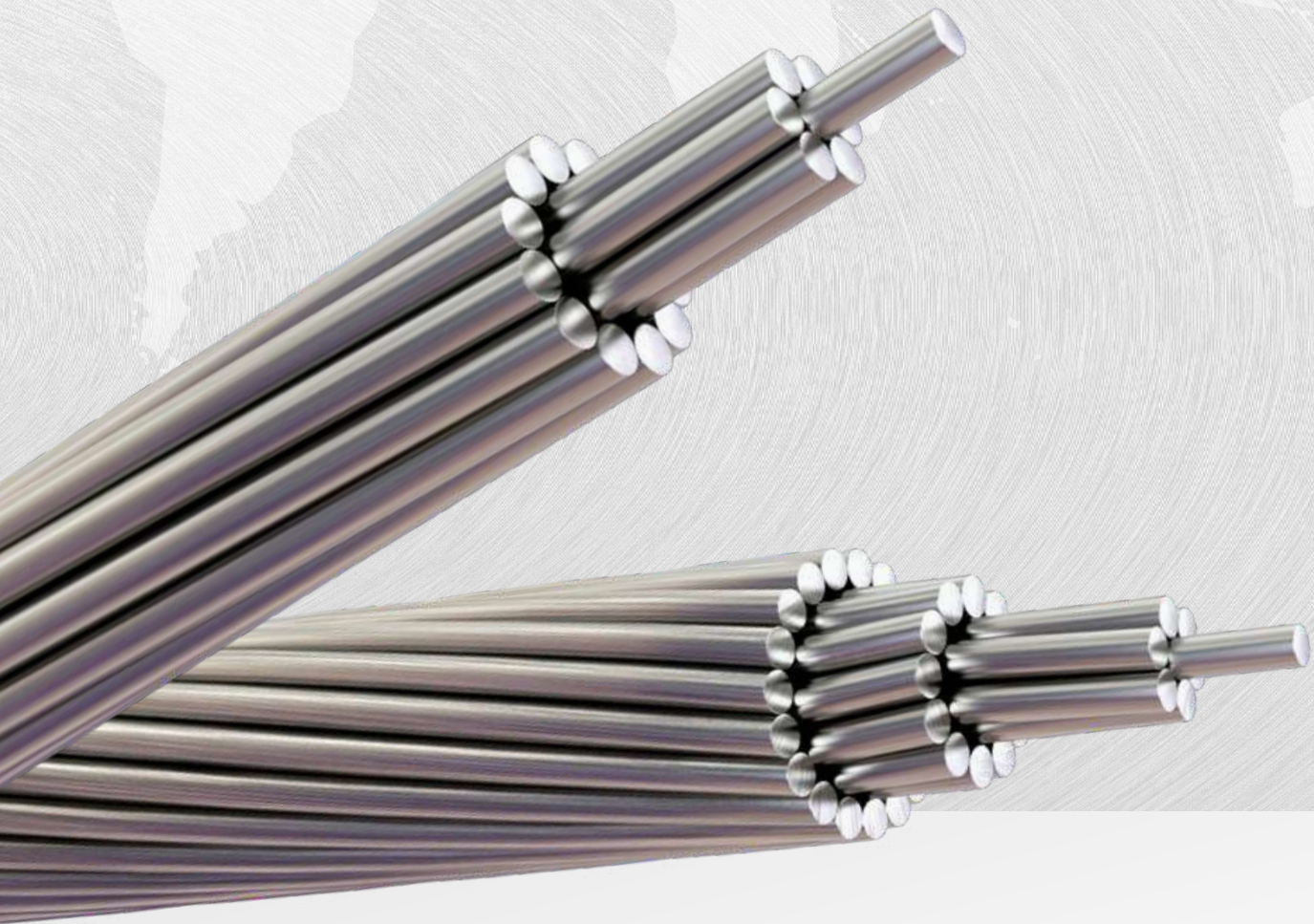
**Part 1: Cables for rated voltages of 1 kV (Um= 1,2 kV) and 3 kV (Um= 3,6 kV).**

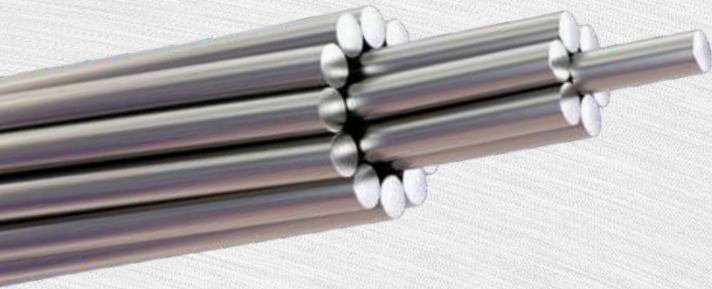
Reference	Conductors		Insulation		assembly	Shield		HFFR-LS Jacket		General Data		
	# Conductors x Size	Diameter (mm)	Thickness (mm)	Diameter (mm)	Diameter (mm)	Type	Máxima resistencia ohm/km	Thickness (mm)	Diameter (mm)	Total weight	Bending radius	Pulling Tension (kef)
	4 x 1,5 mm <sup>2</sup>	1,56	0,70	3,04	7,34	PC+PH	2,0	1,8	12,4	333	124	41
	7x 1,5 mm <sup>2</sup>	1,56	0,70	3,04	9,12	PC+PH	2,0	1,8	14,2	444	142	72
	12 x 1,5 mm <sup>2</sup>	1,56	0,70	3,04	12,63	PC+PH	2,0	1,8	17,7	668	177	124
	19 x 1,5 mm <sup>2</sup>	1,56	0,70	3,04	15,20	PC+PH	2,0	1,8	20,3	912	203	197
	4 x 2,5 mm <sup>2</sup>	1,99	0,70	3,47	8,38	PC+PH	2,0	1,8	13,5	403	135	69
	7x 2,5 mm <sup>2</sup>	1,99	0,70	3,47	10,41	PC+PH	2,0	1,8	15,5	556	155	121
	12 x 2,5 mm <sup>2</sup>	1,99	0,70	3,47	14,42	PC+PH	2,0	1,8	19,5	860	195	207
	19 x 2,5 mm <sup>2</sup>	1,99	0,70	3,47	17,35	PC+PH	20	1,8	22,4	1202	224	328
	2x 4 mm <sup>2</sup>	2,52	0,70	4,00	8,00	PC+PH	2,0	1,8	13,1	365	131	55
	4x4 mm <sup>2</sup>	2,52	0,70	4,00	9,66	PC+PH	2,0	1,8	14,7	504	147	110
	7x 4 mm <sup>2</sup>	2,52	0,70	4,00	12,00	PC+PH	2,0	1,8	17,1	720	171	193
	12 x 4 mm <sup>2</sup>	2,52	0,70	4,00	16,62	PC +PH	20	1,8	21,7	1142	217	331
	19 x 4 mm <sup>2</sup>	2,52	0,70	4,00	20,00	PC + PH	20	1,8	25,1	1626	251	524
	2x 6 mm <sup>2</sup>	3,09	0,70	4,57	9,14	PC+PH	2,0	1,8	14,2	439	142	83
	4x 6 mm <sup>2</sup>	3,09	0,70	4,57	11,03	PC+PH	2,0	1,8	16,1	630	161	166
	7x6 mm <sup>2</sup>	3,09	0,70	4,57	13,71	PC+PH	2,0	1,8	18,8	923	188	290
	12 x 6 mm <sup>2</sup>	3,09	0,70	4,57	18,99	PC + PH	20	1,8	24,1	1495	241	497
	2x 10 mm <sup>2</sup>	4,01	0,70	5,49	10,98	PC+PH	2,0	1,8	16,1	581	161	138
	4 x 10 mm <sup>2</sup>	4,01	0,70	5,49	13,25	PC+PH	2,0	1,8	18,3	871	183	276
	7x 10 mm <sup>2</sup>	4,01	0,70	5,49	16,47	PC+PH	2,0	1,8	21,5	1322	215	483
	12 x 10 mm <sup>2</sup>	4,01	0,70	5,49	22,81	PC+PH	2,0	1,8	27,9	2191	279	828

All the information is presented as a guide for the user and installer, who is responsible for complying with local regulations such as RETIE. Values are nominal and are subject to standard tolerances. Updates may be made without prior notice.



# Bare Aluminum Overhead Transmission & Distribution Products





### **AAAC All Aluminum Allow Conductor**

AAAC All Aluminum Allow Conductor, Aluminum 6202 T81, concentrically stranded are used as bare overhead transmission and distribution conductor as well as neutral messenger support, offers and optimal balance in electrical and mechanical performance and light weight.

## **Applications**

- TD-WIRE AAAC conductors are used as bare overhead transmission and distribution conductor as well as neutral messenger support.
- TD-WIRE ACAR conductors offers and optimal balance in electrical and mechanical performance and light weight.

## **Standards and References**

**ASTM B399 Standard Specification for Concentric-Lay-Stranded Aluminum-Alloy 6201-T81**

### **Construction**

Aluminum 6202 T81, concentrically stranded.

Ampacity for 75°C conductor temperature, 25°C ambient temperature, 0,6m/s wind speed, 1W/m<sup>2</sup> solar emission, at sea level

Part Number	Size (kcmil)	Code word	Strands	Strands diameter (mm)	Diameter	Weight	Rated Strength kgf	Ampacity (A) *
CAD2077	77,47	Ames	7	2,67	8,02	108	1272	191
CAD2123	123,3	Azusa	7	3,37	10,1	171	1939	256
CAD2155	155,4	Anaheim	7	3,78	11,4	216	2445	296
CAD2195	195,7	Amherst	7	4,25	12,7	272	3079	342
CAD2246	246,9	Alliance	7	4,77	14,3	343	3884	395
CAD2312	312,8	Butte	19	3,26	16,3	435	4767	460
CAD2394	394,5	Canton	19	3,66	18,3	549	6013	532
CAD2465	465,4	Cairo	19	3,98	19,9	647	7092	590
CAD2559	559,5	Darien	19	4,36	21,8	778	8527	663
CAD2652	652,4	Elgin	19	4,71	23,5	907	9943	729
CAD2927	927,2	Greeley	37	4,02	28,1	1289	13827	908
CAD21077	1077,4	-	61	3,38	30,4	1498	15891	998
CAD21165	1165,1	-	61	3,51	31,6	1620	17183	1045
CAD21259	1259,6	-	61	3,65	32,8	1751	18578	1096
CAD21348	1348,8	-	61	3,78	34,0	1875	19894	1143
CAD21439	1439,2	-	61	3,9	35,1	2001	21226	1187

**All the information is presented as a guide for the user and installer, who is responsible for complying with local regulations such as RETIE. Values are nominal and are subject to standard tolerances. Updates may be made without prior notice.**





## **ACAR Aluminum Conductor Aluminum Alloy Reinforced**

ACAR Aluminum Conductor Aluminum Alloy Reinforced, 6201 Aluminum Alloy strands core, concentrically stranded, 1350-H19 wires, concentrically stranded over the aluminum alloy core, conductors are used as bare overhead transmission and distribution conductor, offers and optimal balance in electrical and mechanical performance

## **Applications**

- TD-WIRE ACAR conductors are used as bare overhead transmission and distribution conduct.
- TD-WIRE ACAR conductors offer and optimal balance in electrical and mechanical performance

## **Standards and References**

ASTM B524 Concentric-Lay-Stranded Aluminum  
Conductors, Aluminum-Alloy Reinforced (ACAR, 1350/6201)

## **Construction**

- 1- 6201 Aluminum Alloy strands core, concentrically stranded
- 2- 1350-H19 wires, concentrically stranded over the aluminum alloy core.

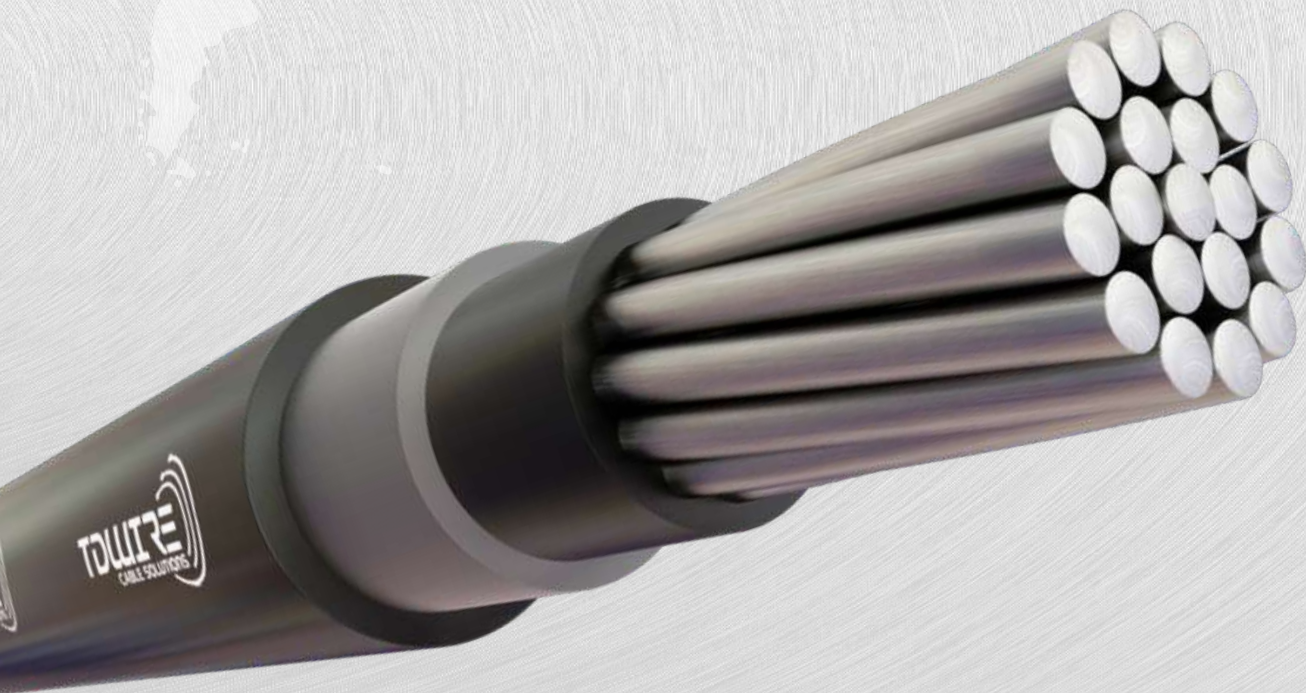
Ampacity for 75°C conductor temperature, 25°C ambient temperature, 0,6m/s wind speed, 1W/m<sup>2</sup> solar emission, at sea level

Part number	Size (Kcmil)	Strands (mm)			strands diameter (mm)	Diameter (mm)	Weight (kg/km)	Rated Strength kgf	Ampacity (A)*
		Total	Aluminium	Alloy					
CAD1250	250 kcmil	19	12	7	291	14,6	349	2760	365
CAD1300	300 kcmil	19	12	7	3,19	16,0	419	3310	400
CAD1350	350 kcmil	19	12	7	3,45	17,2	488	3780	432
CAD1400	400 kcmil	19	12	7	3,69	18,4	558	4320	462
CAD1450	450 kcmil	19	12	7	391	19,5	628	4960	490
CAD1500	500 kcmil	19	12	7	4,12	20,6	698	5400	517
CAD1550	550 kcmil	37	18	19	3,10	217	767	6510	537
CAD1600	600 kcmil	37	18	19	3,23	22,6	836	7100	561
CAD1650	650 kcmil	37	18	19	337	23,6	836 906	7480	561 584
CAD1700	700 kcmil	37	18	19	3,49	245	976	8060	606
CAD1750	750 kcmil	37	18	19	3,62	253	1046	8635	627
CAD18800	800 kcmil	37	18	19	373	26,1	1115	9210	648
CAD1900	900 kcmil	37	18	19	3,96	27,7	1255	10360	687
CAD11000	1000 kcmil	37	18	19	4,18	29,2	1394	11510	724
CAD11100	1100 kcmil	37	18	19	4,38	30,7	1533	12660	759
CAD11200	1200 kcmil	37	18	19	4,57	32,0	1673	13815	793
CAD11300	1300 kcmil	61	42	19	3,71	33,4	1814	13130	837
CAD11400	1400 kcmil	61	42	19	3,85	34,6	1954	14140	868
CAD11500	1500 kcmil	61	42	19	3,98	35,8	2093	15150	899
CAD11600	1600 kcmil	61	42	19	4,11	37,0	2233	16160	928
CAD11700	1700 kcmil	61	42	19	4,24	38,2	2373	17165	957
CAD11800	1800 kcmil	61	42	19	4,36	39,3	2512	18175	984
CAD11900	1900 kcmil	61	42	19	4,48	40,3	2652	19185	1011
CAD12000	2000 kcmil	61	42	19	4,6	41,4	2791	20195	1038

All the information is presented as a guide for the user and installer, who is responsible for complying with local regulations such as RETIE. Values are nominal and are subject to standard tolerances. Updates may be made without prior notice.



# Covered Aerial MV Systems Products





### Covered Cables

Covered Cables are used in aerial distribution networks, in forest areas, with large trees and where there are strong winds, especially on narrow roads and for connection, ACSR or AAAC type conductors (Optionally with longitudinal blocking against moisture migration) XLPE semi-conductive layer bonded to insulation Insulation in XLPE (Crosslinked Polyethylene) with high dielectric capacity HDPE cover (high-density polyethylene resistant to surface discharges, and sunlight resistant) of substations, to comply with the high standards of reliability of service quality,

## List of products

- OCAS11002
- OCAS11004
- OCAS11020
- OCAS11030
- OCAS11040
- OCAS11266W
- OCAS11364M
- OCAS11397M
- OCAS11477P
- OCAS21077
- OCAS21123
- OCAS21155
- OCAS21197
- OCAS21246
- OCAS21312
- OCAS21394
- OCAS21465
- OCAS21559
- OCAS12010
- OCAS12020
- OCAS12030
- OCAS12040
- OCAS12266
- OCAS12336
- OCAS22595
- OCAS12397
- OCAS12477
- OCAS22123
- OCAS22155
- OCAS22195
- OCAS22246
- OCAS22312
- OCAS22394
- OCAS22465

## Standards and References

**NTC 5909 Covered Power Cables (Semi-insulated) from 15 - 46 kV for use in overhead electrical energy distribution lines**



## 90°C semi-insulated cables

### Construction

- 1-ACSR or AAAC type conductors (Optionally with longitudinal blocking against moisture migration)
- 2-XLPE semi-conductive layer bonded to insulation
- 3- Insulation in XLPE (Crosslinked Polyethylene) with high dielectric capacity
- 4- HDPE cover (high-density polyethylene resistant to surface discharges, and sunlight resistant)

Ampacity for 90°C conductor temperature, 25°C ambient temperature, 0,6m/s wind speed, 1W/m<sup>2</sup> solar emission, at sea level.

## Covered Cables Tri-layer

Part Number	parte voltage (kv)	Tipo de Conductor	Calibre Size	Nombre clave Code Word	Hilos Stronds	Overoll diometer (mm)	Total weight (kg/km)	Ampocity (A) *
OCAS11002	15	ACSR	2 AWG	Sparrow	6/1	17,0	321	190
OCAS11004	15	ACSR	1/0 AWG	Raven	6/1	19,0	436	255
OCAS11020	15	ACSR	2/0 AWG	Quail	6/1	20,2	512	295
OCAS11030	15	ACSR	3/0 AWG	Pigeon	6/1	21,6	608	345
OCAS11040	15	ACSR	4/0 AWG	Penguin	6/1	23,1	652	400
OCAS11266W	15	ACSR	266,8 AWG	Waxwing	18/1	24,2	727	465
OCAS11364M	15	ACSR	336,4 AWG	Merlin	18/1	26,2	871	535
OCAS11397M	15	ACSR	397,5 AWG	Chickade	18/1	27,6	992	595
OCAS11477P	15	ACSR	477 AWG	Pelican	18/1	29,4	1154	675
OCAS21077	15	AAAC	77,47 kcmil	Ames	7	17,0	294	190
OCAS21123	15	AAAC	123,3 kcmil	Azusa	7	19,0	390	255
OCAS21155	15	AAAC	155,4 kcmil	Anaheim	7	20,2	455	295
OCAS21197	15	AAAC	195,7 kcmil	Ambherst	7	22,0	549	345
OCAS21246	15	AAAC	246,9 kcmil	Alliance	7	22,5	649	400
OCAS21312	15	AAAC	312,8 kcmil	Butte	19	25,0	745	465
OCAS21394	15	AAAC	394,5 kcmil	Canton	19	27,1	891	535
OCAS21465	15	AAAC	465,4 kcmil	Cairo	19	28,6	1017	595
OCAS21559	15	AAAC	559,5 kcmil	Darien	19	31,1	1201	675
OCAS12010	35	ACSR	1/0 AWG	Raven	6/1	26,8	698	255
OCAS12020	35	ACSR	2/0 AWG	Quail	6/1	28,0	789	295
OCAS12030	35	ACSR	3/0 AWG	Pigeon	6/1	29,3	901	345
OCAS12040	35	ACSR	4/0 AWG	Penguin	6/1	30,9	930	400
OCAS12266	35	ACSR	266,8 AWG	Waxwing	18/1	32,0	1043	465
OCAS12336	35	ACSR	336,4 AWG	Merlin	18/1	33,8	1206	535
OCAS12397	35	ACSR	397,5 AWG	Chickade	18/1	35,4	1344	595
OCAS12477	35	ACSR	477 AWG	Pelican	18/1	37,2	1525	675
OCAS22123	35	AAAC	123,3 kcmil	Azusa	7	26,8	649	255
OCAS22155	35	AAAC	155,4 kcmil	Anaheim	7	28,0	726	295
OCAS22195	35	AAAC	195,7 kcmil	Amherst	7	29,7	831	345
OCAS22246	35	AAAC	246,9 kcmil	Alliance	7	31,3	946	400
OCAS22312	35	AAAC	312,8 kcmil	Butte	19	32,8	1070	465
OCAS22394	35	AAAC	394,5 kcmil	Canton	19	34,7	1237	535
OCAS22465	35	AAAC	465,4 kcmil	Cairo	19	36,4	1380	595
OCAS22559	35	AAAC	559,5 kcmil	Darien	19	38,9	1529	675



# VFD





## CABLE VFD (Variable Frequency Driver)

### VFD Cable

2VFD Cable 2000 V and 90°C operating temperature, Flexible Soft copper conductor, Insulation in thermosetting material XLPE 90°C, Three phase conductor and 3 grounding conductors assembled, Polyester binder tape, Overlapped Copper tape shielding, 100% coverage, HFFR-LS Low Smoke Halogen Free Composite Outer Jacket



## Applications

- VFD TD-WIRE cables are used to connect the variable frequency driver to the motor

## Standards and References

UL 1277 Electrical Power and Control Tray Cables with Optional Optical-Fiber Members / UL 2277 Outline of Investigation for Flexible Motor Supply Cable and Wind Turbine Tray Cable

## Construction

### FD Cable 2000 V and 90°C operating temperature

- 1- Flexible Soft copper conductor
- 2- Insulation in thermosetting material XLPE 90°C
- 3- Insulated flexible grounding conductor
- 4- Three phase conductor and 3 grounding conductors assembled
- 5- Polyester binder tape
- 6- Overlapped Copper tape shielding, 100% coverage
- 7- HFFR-LS Low Smoke Halogen Free Composite Outer Jacket



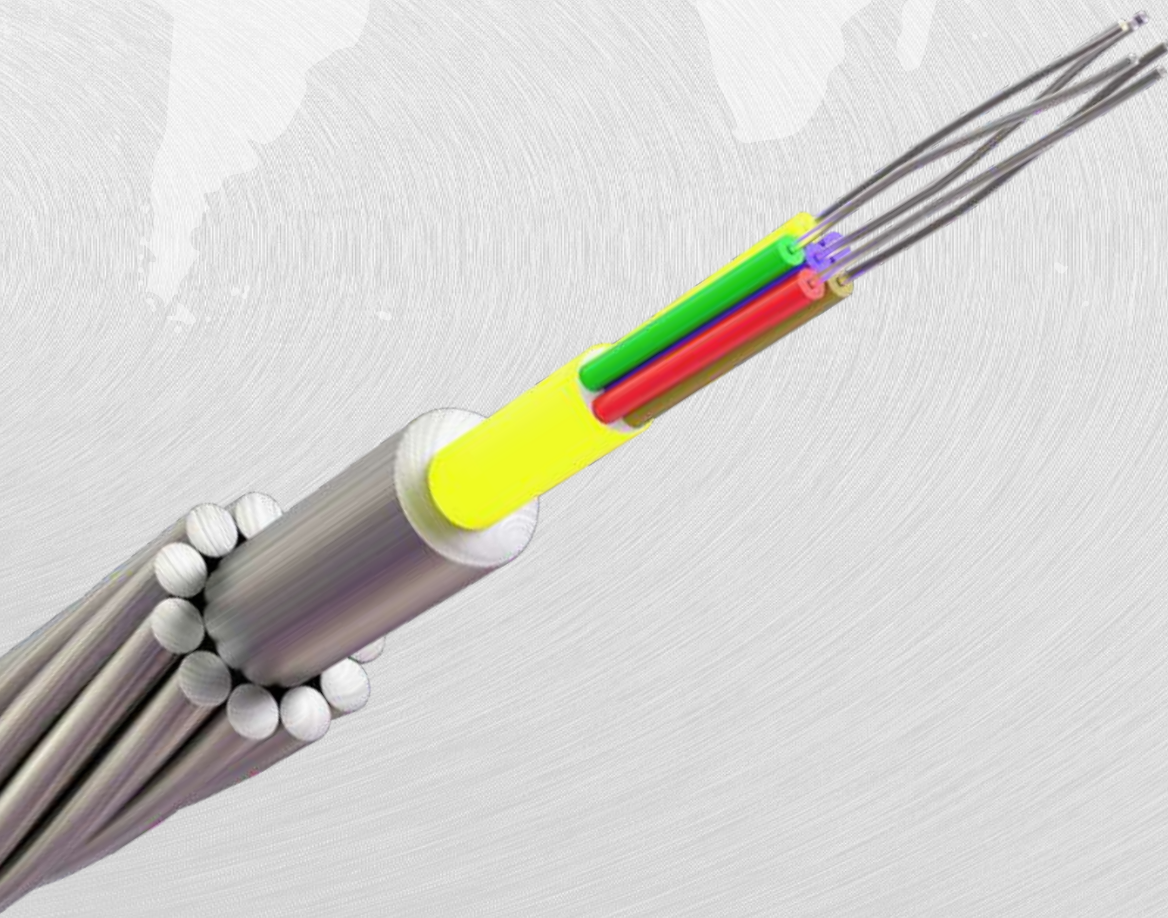


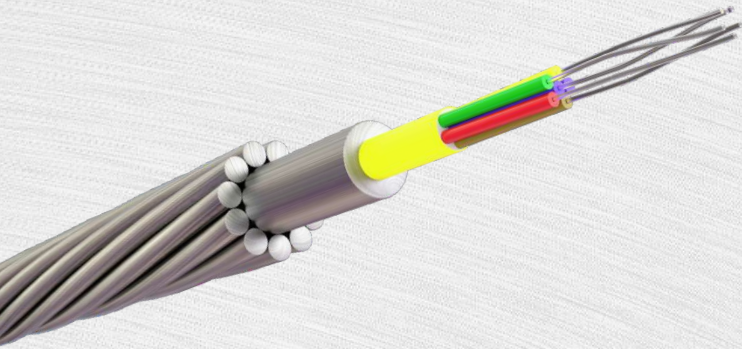
## CABLE VFD (Variable Frequency Driver)

Part number	Three flexible phase conductors				Three insulated grounding conductors				Assembly	HFFR-LS Jacket		General Data		
	Size	Diameter (mm)	Insulation Thickness (mm)	Insulation Diameter (mm)	Size AWG	Diameter (mm)	Insulation Thickness (mm)	Insulation Diameter (mm)	Diameter (mm)	Thickness (mm)	Diameter (mm)	Total Weight (kg/km)	Bending radius (am)	Pulling Tension (kgf)
	12 AWG	2,33	1,52	5,49	16	1,47	0,50	2,55	11,83	1,44	15,2	320	182	69
	10 AWG	2,90	1,52	6,06	14	1,84	0,52	2,96	13,06	1,44	16,4	414	197	110
	8 AWG	3,64	1,78	7,34	14	1,84	0,76	3,44	15,82	1,44	19,1	558	229	176
	6 AWG	4,76	1,78	8,46	12	2,33	0,76	3,93	18,23	2,03	22,8	827	274	279
	4 AWG	5,92	1,78	9,62	12	2,33	0,76	3,93	20,73	2,03	25,3	1079	304	441
	2 AWG	7,52	1,78	11,22	10	2,90	0,76	4,50	24,18	2,03	28,7	1528	344	693
	1/0 AWG	9,51	2,29	14,23	10	2,90	0,76	4,50	30,67	2,03	35,2	2213	422	1113
	2/0 AWG	10,86	2,29	15,58	10	2,90	0,76	4,50	33,57	2,03	38,1	2635	457	1407
	4/0 AWG	13,74	2,29	18,46	8	3,64	1,14	6,01	39,78	2,75	45,8	4048	550	2247
	250 kecmil	14,97	2,67	20,47	8	3,64	1,14	6,01	44,11	2,75	50,1	4719	601	2660
	350 kecmil	17,88	2,67	23,38	6	4,76	1,14	7,13	50,38	2,75	56,4	6283	677	3724
	500 kemil	21,04	2,67	26,54	6	4,76	1,14	7,13	57,19	2,75	63,2	8326	758	5320

All the information is presented as a guide for the user and installer, who is responsible for complying with local regulations such as RETIE. Values are nominal and are subject to standard tolerances. Updates may be made without prior notice.

# Optical fiber





### OPGW - OPTICAL GROUND WIRE - OPGW

Optical Ground Wire Cables (OPGW) for the installation on overhead power lines. The cable contains optical fibers for data transmission and telecom purposes and is installed instead of a ground wire, double purpose as ground wire and data transmission.

## Construction

- 1- Aluminum Alloy strand
- 2- Steel strand Aluminum covered
- 3- Aluminum tube
- 4- SUS Tube
- 5- Optical fiber droup and gel

## Standards and References

- IEC 60793-1 Optical fiber Part 1: Generic specifications
- IEC 60793-2 Optical fiber Part 2: Product specifications
- ITU-T G.652 Characteristics of a single single-mode optical fiber cable
- ITU-T G.655 Characteristics of a non non-zero dispersion dispersion-shifted single single-mode optical fiber and cable
- EIA/TIA 598 B Color code of fiber optic cables
- IEC 60794 60794-4-10 Aerial optical cables along electrical power lines - Family specification for OPGW
- IEC 60794 60794-1-2 Optical fiber cables Part 1-2: Generic specification specification- Basic optical cable test procedures
- IEEE1138-2009 IEEE Standard for testing and performance for optical ground wire (OPGW) for use on electric utility power lines
- IEC 61232 Aluminum - clad steel wire for electrical purposes
- IE C 60104 Aluminum magnesium magnesium-silicon alloy wire for overhead line conductors
- IEC 61089 Round wire concentric lay overhead electrical stranded conductors

ESTRUCTURA Structure	Componente / Component	Material / Material	Cantidad / Quantity	Diámetro / Diameter (mm)
	Fibras / Fiber	G.652	24	-
	Tubo SUS / SUS Tube	SUS	1	-
	Tubo / Tube	Aluminio / Aluminum	1	Interno / Inner 3,20
				Externo / Outer 6,80
	Capa 1 / Layer 1	Hilos de Aluminio / Aluminum strands	6	2,60
		Hilos de Acero recubierto con aluminio / Aluminum Clad Steel Strands 20,3% IACS	5	2,60
	Capa 2 / Layer 2	Hilos de Aluminio / Aluminum strands	17	2,60

ESPECIFICACIONES DE LA FIBRA Fiber specifications	Especificaciones opticas Optical specifications	Descripción / Description	After cabling
		Atenuación / Attenuation @ 1310 nm	≤ 0,36 dB/km
		Atenuación / Attenuation @ 1550 nm	≤ 0,22 dB/km
		Longitud de onda de dispersión cero / Zero Dispersion Wavelength	1300 - 1324 nm
		Pendiente de dispersión cero / Zero Dispersion Slope	0.073 - 0.092 ps/nm nm <sup>2</sup> ·km
		Valor de enlace PDM / PMD Link value	≤ 0,2 ps/√km
		Longitud de onda de corte / Cable Cutoff Wavelength (λ <sub>cc</sub> )	≤ 1260 nm
		Pérdidas macro de doblado / Macro bending Loss (100 turns; φ50 mm) @1550 nm	≤ 0,05 dB
		Pérdidas macro de doblado / Macro bending Loss (100 turns; φ50 mm) @1625 nm	≤ 0,10 dB
		Diámetro de nodo campo / Mode Field Diameter @1310 nm	9,2 ± 0,4 μm
	Dimensiones Dimensions	Diámetro del recubrimiento / Cladding Diameter	125 ± 0,7 μm
		Error de concentricidad núcleo/recubrimiento // Core/clad concentricity error	≤ 0,6 μm
		Excentricidad del recubrimiento / Cladding Non-Circularity	≤ 1,0 %
	Especificaciones mecánicas Mechanical specifications	Prueba de esfuerzo / Strength test	≥ 0,69 GPa

Número de Fibras / Fiber number (Disponible / Available )		12	24	36	48	72	94
Parte número / Part number							
Sentido del paso de la capa externa / Stranding direction of outer layer		Right Hand (Z Stranding)					
Diámetro del cable / Cable Diameter		mm				17,2 ± 2%	
Peso del Cable / Cable Weight		kg/km				610 ± 5%	
Área de soporte Supporting cross section	Área de alambres AS / Section of AS Wire	mm <sup>2</sup>				26,55	
	Área de alambres AA / Section of AA Wire	mm <sup>2</sup>				122,11	
	Área del tubo de Al. / Section of Al. Tube	mm <sup>2</sup>				28,28	
Carga Nominal de Rotura (CR) / Rated Tensile Strength (RTS)		kN				69,8	
Módulo de elasticidad / Modulus of Elasticity		kN/mm <sup>2</sup>				78,1	
Coeficiente de dilatación Térmica / Thermal Elongation Coefficient		x 10 <sup>-6</sup> /°C				19,9	
Máx. esfuerzo de trabajo permisible (40% CR) Permissible Maximum Working Stress (40% RTS)		kN/mm <sup>2</sup>				157,8	
Esfuerzo diario (EDS) (16%-25% CR) Everyday Stress (EDS) (16%-25% RTS)		N/mm <sup>2</sup>				63,1 - 98,6	
Resistencia DC / DC Resistance		ohm/km				0,200	
Corriente de corto circuito en 1 segundo Short circuit current 1 second		kA				16,00	
Capacidad de Corriente de corto circuito (50°C-200°C) Short circuit current 1 second (50°C-200°C)		kA2s				256,7	
Mínimo radio de curvatura / Minimum Bending Radius		Instalación / Installation	mm			344	
		Operación / Operation				258	
Rango de Temperatura / Temperature Range		Instalación / Installation	°C			-10 - +50	
		Transporte y Operación Transportation & Operation				-40 - +80	

CÓDIGO DE COLORES Color Code	Número de fibras 24 / Number of fiber 24	Fibra No / Fiber No					
	Sin anillo de color	1	2	3	4	5	6
Azul / Blue		Orange / Naranja	Verde / Green	Marrón / Brown	Gris / Gray	White / Wite	
7		8	9	10	11	12	
Rojo / Red		Natural / Nature	Amarillo / Yellow	Violeta / Violet	Rosado / Pink	Aguamarina / Aqua	
Con anillo de color S150, sobre la superficie de la fibra cada 150mm ancho del anillo negro 2.0mm	13	14	15	16	17	18	
	Azul / Blue	Orange / Naranja	Verde / Green	Marrón / Brown	Gris / Gray	White / Wite	
	19	20	21	22	23	24	
	Rojo / Red	Natural / Nature	Amarillo / Yellow	Violeta / Violet	Rosado / Pink	Aguamarina / Aqua	



# CATALOGUE 2023-2024

## Email

[internationalsales@tdwire.com](mailto:internationalsales@tdwire.com)

[william.barrera@tdwire.com](mailto:william.barrera@tdwire.com)

## Phone

+57 324 596 6319

[www.tdwire.com](http://www.tdwire.com)