TS Algonquin M3 6.5 (0.858) 632



Governing Units: Metric

European Fully Annealed Al Cross-sectional Area 320.50 mm² 632.49 kcmil	Governing Units: Metric				
Encapsulated Aluminum Cross-Sectional Area 63.59 mm² 0.09856 in²	Mechanical Specifications			Imperial	
Diameter of Composite Core (Exclude Encapsulation) 6.5 mm 0.25600 in	Fully Annealed Al Cross-sectional Area*	320.50	mm ²	632.49	
Cross-sectional Area of Core (Exclude Encapsulation) 33.20 mm² 0.05143 in²	Encapsulated Aluminum Cross-Sectional Area	63.59	mm ²	0.09856	in ²
Deverall Diameter of Conductor 21.793 mm 0.858 in	Diameter of Composite Core (Exclude Encapsulation)	6.5	mm	0.25600	
Cross-sectional Area of the Conductor (Exclude Covering) 353.70 mm² 0.54821 in²	Cross-sectional Area of Core (Exclude Encapsulation)	33.20	mm ²	0.05143	in ²
Minimate Tensile Strength of Conductor 1,2 110.54 KN 24.85 kip	Overall Diameter of Conductor	21.793	mm	0.858	
Ultimate Tensile Strength of Conductor 1), 2)	Cross-sectional Area of the Conductor (Exclude Covering)	353.70	mm ²	0.54821	in ²
Strength of Core - 399 ksi (2750 MPa) 91.32 kN 20.53 kip	Ultimate Tensile Strength of Conductor 1) ,2)	110.54		24.85	kip
Some conductor Mass per unit length 937.35 kg/km 629.98 lb/kft	Rated Strength of Core - 399 ksi (2750 MPa)	91.32	kN	20.53	kip
Fully Annealed AlMass per unit length (Include Encapsulation)** Region	Core Mass per unit length (Exclude Encapsulation)	58.00	kg/km	38.98	lb/kft
Fully Annealed AlMass per unit length (Include Encapsulation)** Region	Conductor Mass per unit length	937.35	kg/km	629.98	lb/kft
Coefficient of Linear Expansion Above Thermal Kneepoint (core) 0.500 x10.6/°C 0.278 x10.6/°F	Fully Annealed AlMass per unit length (Include Encapsulation)**	879.35		591.00	
18.126	Maximum Emergency Temperature at Surface 3)	200		392	
Final Modulus of Elasticity Above Thermal Kneepoint (based on core area) 150.0 GPa 21.8 Msi	Coefficient of Linear Expansion Above Thermal Kneepoint (core)	0.500		0.278	
Final Modulus of Elasticity Below Thermal Kneepoint (based on conductor area) 64.6 GPa 9.4 Msi	Coefficient of Linear Expansion Below Thermal Kneepoint (conductor)	18.126	x10 ⁻⁶ /°C	10.070	x10 ⁻⁶ /°F
Aluminum Heat Capacity 821.6 watt-s/m-°C 139.1 watt-s/ft-°F Core Heat Capacity 49.1 watt-s/m-°C 8.3 watt-s/ft-°F Encapsulation Thickness 2.30 mm 0.09055 in Stranding Ratio 1.0215	Final Modulus of Elasticity Above Thermal Kneepoint (based on core area)	150.0	GPa	21.8	Msi
A9.1 Watt-s/m-*C 8.3 Watt-s/ft-*F	Final Modulus of Elasticity Below Thermal Kneepoint (based on conductor area)		GPa	9.4	Msi
2.30 mm 0.09055 in Stranding Ratio 1.0215	Aluminum Heat Capacity	821.6	Watt-s/m-°C	139.1	Watt-s/ft-°F
1.0215 Covered Thickness 0.000 mm 0.000 in	Core Heat Capacity	49.1	Watt-s/m-°C	8.3	Watt-s/ft-°F
Description	Encapsulation Thickness	2.30	mm	0.09055	in
Metric Imperial	Stranding Ratio	1.0215			
DC Resistance at 20°C (Fully Annealed Al 63% IACS) 0.0869 ohm/km 0.1398 ohm/mile DC Resistance at 25°C 0.0886 ohm/km 0.1426 ohm/mile DC Resistance at 75°C 0.1063 ohm/km 0.1711 ohm/mile Gemperature Coefficient of Resistance at 20°C 0.00408 1/°C 0.00227 1/°F Frequency 60 Hz 60 Hz AC Resistance at 25°C 0.0895 ohm/km 0.1441 ohm/mile AC Resistance at 75°C 0.1071 ohm/km 0.1723 ohm/mile AC Resistance at 180°C 0.1440 ohm/km 0.2317 ohm/mile Ampacity 4) 1294 @180°C, & A GMR (estimated) 8.79 mm 0.0288 ft nductive Reactance (Xa: internal flux+external flux radius 1 ft) 0.2674 ohm/km 0.430 ohm/mile	Covered Thickness				
DC Resistance at 25°C 0.0886 ohm/km 0.1426 ohm/mile	Electrical Specifications	Metric		Imperial	
DC Resistance at 75°C 0.1063 ohm/km 0.1711 ohm/mile Temperature Coefficient of Resistance at 20°C 0.00408 1/°C 0.00227 1/°F Frequency 60 Hz 60 Hz AC Resistance at 25°C 0.0895 ohm/km 0.1441 ohm/mile AC Resistance at 75°C 0.1071 ohm/km 0.1723 ohm/mile AC Resistance at 180°C 0.1440 ohm/km 0.2317 ohm/mile Ampacity 4) 1294 @180°C, & A GMR (estimated) 8.79 mm 0.0288 ft nductive Reactance (Xa: internal flux+external flux radius 1 ft) 0.2674 ohm/km 0.430 ohm/mile	DC Resistance at 20°C (Fully Annealed Al 63% IACS)	0.0869	ohm/km	0.1398	ohm/mile
Temperature Coefficient of Resistance at 20°C 0.00408 1/°C 0.00227 1/°F	DC Resistance at 25°C		ohm/km		ohm/mile
Frequency 60	DC Resistance at 75°C			0.1711	
AC Resistance at 25°C 0.0895 ohm/km 0.1441 ohm/mile AC Resistance at 75°C 0.1071 ohm/km 0.1723 ohm/mile AC Resistance at 180°C 0.1440 ohm/km 0.2317 ohm/mile AC Resistance at 180°C 0.1440 ohm/km 0.2317 ohm/mile 1294 @180°C, & A 1363 @200°C, & A GMR (estimated) 8.79 mm 0.0288 ft ohm/km 0.430 ohm/mile 12674 ohm/mile 126744 ohm/mile 12674 ohm/mile	Temperature Coefficient of Resistance at 20°C	0.00408		0.00227	1/°F
AC Resistance at 75°C 0.1071 ohm/km 0.1723 ohm/mile AC Resistance at 180°C 0.1440 ohm/km 0.2317 ohm/mile O.2317 ohm/mile O.231	Frequency				
AC Resistance at 180°C 0.1440 ohm/km 0.2317 ohm/mile Ampacity 4) 1294 @180°C, & A 1363 @200°C, & A GMR (estimated) 8.79 mm 0.0288 ft nductive Reactance (Xa: internal flux+external flux radius 1 ft) 0.2674 ohm/km 0.430 ohm/mile	AC Resistance at 25°C		ohm/km		ohm/mile
Ampacity 4) 1294 @180°C, & A 1363 @200°C, & A 1363 @200°C, & A GMR (estimated) 8.79 mm 0.0288 ft nductive Reactance (Xa: internal flux+external flux radius 1 ft) 0.2674 ohm/km 0.430 ohm/mile	AC Resistance at 75°C	0.1071	ohm/km	0.1723	ohm/mile
Ampacity 4) 1363 @200°C, & A GMR (estimated) 8.79 mm 0.0288 ft nductive Reactance (Xa: internal flux+external flux radius 1 ft) 0.2674 ohm/km 0.430 ohm/mile	AC Resistance at 180°C	0.1440			
1363 @200°C, & A	Ampacity 4)				
nductive Reactance (Xa: internal flux+external flux radius 1 ft) 0.2674 ohm/km 0.430 ohm/mile	· ····p······/		1363	@200	°C, & A
· · · · · · · · · · · · · · · · · · ·	GMR (estimated)		mm	0.0288	
Capacitive Reactance 0.1590 Mohm-km 0.099 Mohm-mile	Inductive Reactance (Xa: internal flux+external flux radius 1 ft)	0.2674		0.430	ohm/mile
	Capacitive Reactance	0.1590	Mohm-km	0.099	Mohm-mile

^{*}TS Algonquin M3 6.5 (0.858) 632 conductor is produced with Fully Annealed Al aluminum. The nominal Aluminum equivaeInt area is 320.5 sq. mm (632.5 kcmil)

The information contained herein is offered in good faith. All values are nominal unless specifically indicated as maximum or minimum. The actual configuration of a given size may vary between conductor manufacturers and may result in slight variations in some of the indicated values. Data herein is to be considered confidential and proprietary to TS Conductor

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^{**}TS® Conductors are required to exhibit lay lengths (ratios) that conform to established ACSR and ACSS standards.

¹⁾ Fully Annealed Al rated tensile strength based on applicable standard. Core tensile strength based on 100% of its strength.

²⁾ Strength at ambient temperature, Strength may be reduced to Rated Core Strength when temperature is above knee point

³⁾ Maximum continuous operating temperature of TS Algonquin M3 6.5 (0.858) 632 is 180°C and a maximum emergency temperature of 200°C

^{4).} Ampacity based on: 25°C ambient temperature, 2ft/s (0.6 m/s) perpendicular wind, 0.5 Emis 0.5 Absorb.60 Hz, sea level (0) elevation, 30°N line Azimuth, noon on June 10th (96W/sq.ft, 1033W/sq.m), clear atmosphere