

DATA SHEET:

TS GreatBlue M3 5 NoStrand (0.398) 120



Governing Units: Metric

Mechanical Specifications	Metric		Imperial	
Fully Annealed Al Cross-sectional Area*	60.63	mm ²	119.64	kcmil
Encapsulated Aluminum Cross-Sectional Area	60.63	mm ²	0.09397	in ²
Diameter of Composite Core (Exclude Encapsulation)	5.0	mm	0.19700	in
Cross-sectional Area of Core (Exclude Encapsulation)	19.60	mm ²	0.03043	in ²
Overall Diameter of Conductor	10.109	mm	0.398	in
Cross-sectional Area of the Conductor (Exclude Covering)	80.30	mm ²	0.12440	in ²
Ultimate Tensile Strength of Conductor 1) ,2)	58.54	kN	13.16	kip
Rated Strength of Core - 399 ksi (2750 MPa)	54.00	kN	12.14	kip
Core Mass per unit length (Exclude Encapsulation)	34.00	kg/km	22.85	lb/kft
Conductor Mass per unit length	197.67	kg/km	132.85	lb/kft
Fully Annealed Al Mass per unit length (Include Encapsulation)**	163.67	kg/km	110.00	lb/kft
Maximum Emergency Temperature at Surface 3)	200	°C	392	°F
Coefficient of Linear Expansion Above Thermal Kneepoint (core)	0.500	x10 ⁻⁶ /°C	0.278	x10 ⁻⁶ /°F
Coefficient of Linear Expansion Below Thermal Kneepoint (conductor)	13.112	x10 ⁻⁶ /°C	7.284	x10 ⁻⁶ /°F
Final Modulus of Elasticity Above Thermal Kneepoint (based on core area)	150.0	GPa	21.8	Msi
Final Modulus of Elasticity Below Thermal Kneepoint (based on conductor area)	83.3	GPa	12.1	Msi
Aluminum Heat Capacity	155.4	Watt-s/m-°C	26.3	Watt-s/ft.°F
Core Heat Capacity	33.5	Watt-s/m-°C	5.7	Watt-s/ft.°F
Encapsulation Thickness	2.55	mm	0.10057	in
Stranding Ratio	1.0200			
Covered Thickness	0.000	mm	0.000	in
Electrical Specifications	Metric		Imperial	
DC Resistance at 20°C (Fully Annealed Al 63% IACS)	0.4514	ohm/km	0.7264	ohm/mile
DC Resistance at 25°C	0.4606	ohm/km	0.7413	ohm/mile
DC Resistance at 75°C	0.5527	ohm/km	0.8894	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	0.4607	ohm/km	0.7414	ohm/mile
AC Resistance at 75°C	0.5528	ohm/km	0.8896	ohm/mile
AC Resistance at 180°C	0.7461	ohm/km	1.2007	ohm/mile
Ampacity 4)		451	@180°C, & A	
		473	@200°C, & A	
GMR (estimated)	4.30	mm	0.0141	ft
Inductive Reactance (Xa: internal flux+external flux radius 1 ft)	0.3213	ohm/km	0.517	ohm/mile
Capacitive Reactance	0.1957	Mohm-km	0.122	Mohm-mile

*TS GreatBlue M3 5 NoStrand (0.398) 120 conductor is produced with Fully Annealed Al aluminum. The nominal Aluminum equivalent area is 60.6 sq. mm (119.6 kcmil)

**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 GreatBlue M3 5 NoStrand (0.398) 120 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

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

contact: info@tsconductor.com

ID:49308

Date Produced:

2/23/2024