

DATA SHEET:

TS Ruddy M3 8.5 (1.131)



Governing Units: Metric

Mechanical Specifications	Metric		Imperial	
Fully Annealed Al Cross-sectional Area*	556.66	mm ²	1098.56	kcmil
Encapsulated Aluminum Cross-Sectional Area	95.00	mm ²	0.14725	in ²
Diameter of Composite Core (Exclude Encapsulation)	8.5	mm	0.33500	in
Cross-sectional Area of Core (Exclude Encapsulation)	56.70	mm ²	0.08795	in ²
Overall Diameter of Conductor	28.727	mm	1.131	in
Cross-sectional Area of the Conductor (Exclude Covering)	613.40	mm ²	0.95079	in ²
Ultimate Tensile Strength of Conductor 1) ,2)	189.09	kN	42.51	kip
Rated Strength of Core - 399 ksi (2750 MPa)	156.00	kN	35.07	kip
Core Mass per unit length (Exclude Encapsulation)	99.00	kg/km	66.54	lb/kft
Conductor Mass per unit length	1628.57	kg/km	1094.54	lb/kft
Fully Annealed Al Mass per unit length (Include Encapsulation)**	1529.57	kg/km	1028.00	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)	18.172	x10 ⁻⁶ /°C	10.095	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)	64.2	GPa	9.3	Msi
Aluminum Heat Capacity	1427.0	Watt-s/m-°C	241.6	Watt-s/ft-°F
Core Heat Capacity	83.9	Watt-s/m-°C	14.2	Watt-s/ft-°F
Encapsulation Thickness	2.70	mm	0.10630	in
Stranding Ratio	1.0225			
Covered Thickness	0.000	mm	0.000	in
Electrical Specifications	Metric		Imperial	
DC Resistance at 20°C (Fully Annealed Al 63% IACS)	0.0501	ohm/km	0.0806	ohm/mile
DC Resistance at 25°C	0.0511	ohm/km	0.0822	ohm/mile
DC Resistance at 75°C	0.0613	ohm/km	0.0987	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	0.0526	ohm/km	0.0847	ohm/mile
AC Resistance at 75°C	0.0626	ohm/km	0.1007	ohm/mile
AC Resistance at 180°C	0.0835	ohm/km	0.1344	ohm/mile
Ampacity 4)		1853	@180°C, & A	
		1956	@200°C, & A	
GMR (estimated)	11.58	mm	0.0380	ft
Inductive Reactance (Xa: internal flux+external flux radius 1 ft)	0.2466	ohm/km	0.397	ohm/mile
Capacitive Reactance	0.1458	Mohm-km	0.091	Mohm-mile

*TS Ruddy M3 8.5 (1.131) conductor is produced with Fully Annealed Al aluminum. The nominal Aluminum equivalent area is 556.7 sq. mm (1098.6 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 Ruddy M3 8.5 (1.131) 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

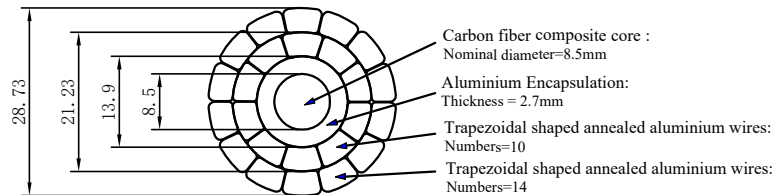
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ID:29655

Date Produced: 12/5/2023

Conductor design drawing for Customers

Unit is mm



TS[®] Ruddy M3 8.5 (1.131) ID: 29655

TS Conductor Corp.

TS[®] Ruddy 8.5 (1.131)

Design

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