DATA SHEET:

TS Windom M3 10.5 (1.453) 1821

Governing Units: Metric

Mechanical Specifications	Metric		Imperial	
Fully Annealed Al Cross-sectional Area*	922.93	mm^2	1821.37	kcmil
Encapsulated Aluminum Cross-Sectional Area	127.23	mm^2	0.19721	in^2
Diameter of Composite Core (Exclude Encapsulation)	10.5	mm	0.41300	in
Cross-sectional Area of Core (Exclude Encapsulation)	86.60	mm^2	0.13421	in^2
Overall Diameter of Conductor	36.900	mm	1.453	in
Cross-sectional Area of the Conductor (Exclude Covering)	1009.50	mm^2	1.56476	in^2
Ultimate Tensile Strength of Conductor 1) ,2)	292.43	kN	65.74	kip
Rated Strength of Core - 399 ksi (2750 MPa)	238.11	kN	53.53	kip
Core Mass per unit length (Exclude Encapsulation)	151.00	kg/km	101.48	lb/kft
Conductor Mass per unit length	2696.81	kg/km	1812.48	lb/kft
Fully Annealed AlMass per unit length (Include Encapsulation)**	2545.81	kg/km	1711.00	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)	18.465	$x10^{-6}$/°C	10.258	$x10^{-6}$/°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)	63.4	GPa	9.2	Msi
Aluminum Heat Capacity	2365.9	Watt-s/m-°C	400.6	Watt-s/ft-°F
Core Heat Capacity	128.1	Watt-s/m-°C	21.7	Watt-s/ft-°F
Encapsulation Thickness	3.00	mm	0.11811	in
Stranding Ratio	1.0260			
Covered Thickness	0.000	mm	0.000	in
Electrical Specifications	**Metric**		**Imperial**	
DC Resistance at 20ºC (Fully Annealed Al 63% IACS)	0.0303	ohm/km	0.0488	ohm/mile
DC Resistance at 25ºC	0.0309	ohm/km	0.0498	ohm/mile
DC Resistance at 75ºC	0.0371	ohm/km	0.0597	ohm/mile
Temperature Coefficient of Resistance at 20ºC	0.00408	1/°C	0.00227	1/°F
Frequency	60	Hz	60	Hz
AC Resistance at 25ºC	0.0334	ohm/km	0.0538	ohm/mile
AC Resistance at 75ºC	0.0392	ohm/km	0.0631	ohm/mile
AC Resistance at 180ºC	0.0514	ohm/km	0.0828	ohm/mile
Ampacity 4)		2558	@180°C, & A	
		2707	@200°C, & A	
GMR (estimated)	14.84	mm	0.0487	ft
Inductive Reactance (Xa: internal flux+external flux radius 1 ft)	0.2279	ohm/km	0.367	ohm/mile
Capacitive Reactance	0.1339	Mohm-km	0.083	Mohm-mile

*TS Windom M3 10.5 (1.453) 1821 conductor is produced with Fully Annealed Al aluminum. The nominal Aluminum equivaelnt area is 922.9 sq. mm (1821.4 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 Windom M3 10.5 (1.453) 1821 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:26386 Date Produced: 8/18/2024

DATA SHEET:

TS Windom M3 10.5 (36.900) IEC 1821

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DC Resistance at 75ºC	0.0371	ohm/km	0.0597	ohm/mile
Temperature Coefficient of Resistance at 20ºC	0.00408	1/°C	0.00227	1/°F
Frequency	50	Hz	50	Hz
AC Resistance at 25ºC	0.0327	ohm/km	0.0526	ohm/mile
AC Resistance at 75ºC	0.0386	ohm/km	0.0621	ohm/mile
AC Resistance at 180ºC	0.0510	ohm/km	0.0821	ohm/mile
Ampacity 4)		2569	@180°C, & A	
		2717	@200°C, & A	
GMR (estimated)	14.84	mm	0.0487	ft
Inductive Reactance (Xa: internal flux+external flux radius 1 ft)	0.1899	ohm/km	0.306	ohm/mile
Capacitive Reactance	0.1607	Mohm-km	0.100	Mohm-mile

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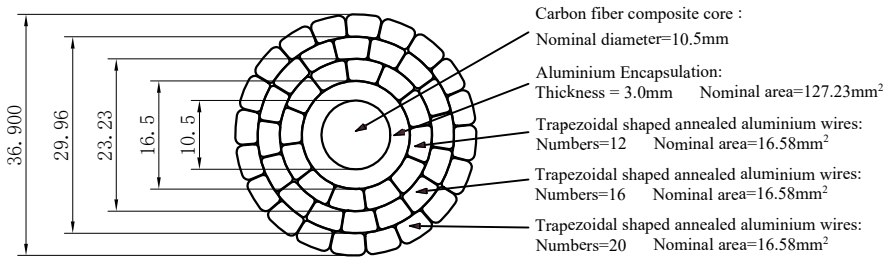
ID:26390 Date Produced: 8/18/2024

Unit is mm

TS® Conductor Cross sectional drawing

Expected value at production time



TS Conductor Corp.		
TS Windom M3 10.5 (1.453) ID:26386		
Design		
Check		
Ratify		