

DATA SHEET:

# TS Piveto M3 8 (0.99) 831



Governing Units: Metric

Mechanical Specifications	Metric		Imperial	
Fully Annealed Al Cross-sectional Area*	421.17	mm <sup>2</sup>	831.17	kcmil
Encapsulated Aluminum Cross-Sectional Area	86.58	mm <sup>2</sup>	0.13420	in <sup>2</sup>
Diameter of Composite Core (Exclude Encapsulation)	8.0	mm	0.31500	in
Cross-sectional Area of Core (Exclude Encapsulation)	50.30	mm <sup>2</sup>	0.07791	in <sup>2</sup>
Overall Diameter of Conductor	25.146	mm	0.990	in
Cross-sectional Area of the Conductor (Exclude Covering)	471.40	mm <sup>2</sup>	0.73073	in <sup>2</sup>
Ultimate Tensile Strength of Conductor 1) ,2)	163.52	kN	36.76	kip
Rated Strength of Core - 399 ksi (2750 MPa)	138.21	kN	31.07	kip
Core Mass per unit length (Exclude Encapsulation)	87.00	kg/km	58.47	lb/kft
Conductor Mass per unit length	1243.11	kg/km	835.47	lb/kft
Fully Annealed Al Mass per unit length (Include Encapsulation)**	1156.11	kg/km	777.00	lb/kft
Maximum Emergency Temperature at Surface 3)	200	°C	392	°F
Coefficient of Linear Expansion Above Thermal Kneepoint (core)	0.500	x10 <sup>-6</sup> /°C	0.278	x10 <sup>-6</sup> /°F
Coefficient of Linear Expansion Below Thermal Kneepoint (conductor)	17.563	x10 <sup>-6</sup> /°C	9.757	x10 <sup>-6</sup> /°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)	65.8	GPa	9.5	Msi
Aluminum Heat Capacity	1079.6	Watt-s/m-°C	182.8	Watt-s/ft-°F
Core Heat Capacity	74.3	Watt-s/m-°C	12.6	Watt-s/ft-°F
Encapsulation Thickness	2.60	mm	0.10236	in
Stranding Ratio	1.0215			
Covered Thickness	0.000	mm	0.000	in
Electrical Specifications	Metric		Imperial	
DC Resistance at 20°C (Fully Annealed Al 63% IACS)	0.0661	ohm/km	0.1064	ohm/mile
DC Resistance at 25°C	0.0674	ohm/km	0.1085	ohm/mile
DC Resistance at 75°C	0.0809	ohm/km	0.1302	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	0.0685	ohm/km	0.1103	ohm/mile
AC Resistance at 75°C	0.0818	ohm/km	0.1317	ohm/mile
AC Resistance at 180°C	0.1098	ohm/km	0.1767	ohm/mile
Ampacity 4)		1550	@180°C, & A	
		1634	@200°C, & A	
GMR (estimated)	10.19	mm	0.0334	ft
Inductive Reactance (Xa: internal flux+external flux radius 1 ft)	0.2562	ohm/km	0.412	ohm/mile
Capacitive Reactance	0.1522	Mohm-km	0.095	Mohm-mile

\*TS Piveto M3 8 (0.99) 831 conductor is produced with Fully Annealed Al aluminum. The nominal Aluminum equivalent area is 421.2 sq. mm (831.2 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 Piveto M3 8 (0.99) 831 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:26335

Date Produced:

3/4/2024

DATA SHEET:

# TS Piveto M3 8 (25.146) IEC 831



Governing Units: Metric

Mechanical Specifications	Metric		Imperial	
Fully Annealed Al Cross-sectional Area*	421.17	mm <sup>2</sup>	831.17	kcmil
Encapsulated Aluminum Cross-Sectional Area	86.58	mm <sup>2</sup>	0.13420	in <sup>2</sup>
Diameter of Composite Core (Exclude Encapsulation)	8.0	mm	0.31500	in
Cross-sectional Area of Core (Exclude Encapsulation)	50.30	mm <sup>2</sup>	0.07791	in <sup>2</sup>
Overall Diameter of Conductor	25.146	mm	0.990	in
Cross-sectional Area of the Conductor (Exclude Covering)	471.40	mm <sup>2</sup>	0.73073	in <sup>2</sup>
Ultimate Tensile Strength of Conductor 1) ,2)	163.52	kN	36.76	kip
Rated Strength of Core - 399 ksi (2750 MPa)	138.21	kN	31.07	kip
Core Mass per unit length (Exclude Encapsulation)	87.00	kg/km	58.47	lb/kft
Conductor Mass per unit length	1243.11	kg/km	835.47	lb/kft
Fully Annealed Al Mass per unit length (Include Encapsulation)**	1156.11	kg/km	777.00	lb/kft
Maximum Emergency Temperature at Surface 3)	200	°C	392	°F
Coefficient of Linear Expansion Above Thermal Kneepoint (core)	0.500	x10 <sup>-6</sup> /°C	0.278	x10 <sup>-6</sup> /°F
Coefficient of Linear Expansion Below Thermal Kneepoint (conductor)	17.563	x10 <sup>-6</sup> /°C	9.757	x10 <sup>-6</sup> /°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)	65.8	GPa	9.5	Msi
Aluminum Heat Capacity	1079.6	Watt-s/m-°C	182.8	Watt-s/ft-°F
Core Heat Capacity	74.3	Watt-s/m-°C	12.6	Watt-s/ft-°F
Encapsulation Thickness	2.60	mm	0.10236	in
Stranding Ratio	1.0215			
Covered Thickness	0.000	mm	0.000	in
Electrical Specifications	Metric		Imperial	
DC Resistance at 20°C (Fully Annealed Al 63% IACS)	0.0661	ohm/km	0.1064	ohm/mile
DC Resistance at 25°C	0.0674	ohm/km	0.1085	ohm/mile
DC Resistance at 75°C	0.0809	ohm/km	0.1302	ohm/mile
Temperature Coefficient of Resistance at 20°C	0.00408	1/°C	0.00227	1/°F
Frequency	50	Hz	50	Hz
AC Resistance at 25°C	0.0682	ohm/km	0.1098	ohm/mile
AC Resistance at 75°C	0.0816	ohm/km	0.1312	ohm/mile
AC Resistance at 180°C	0.1096	ohm/km	0.1764	ohm/mile
Ampacity 4)		1551	@180°C, & A	
		1635	@200°C, & A	
GMR (estimated)	10.19	mm	0.0334	ft
Inductive Reactance (Xa: internal flux+external flux radius 1 ft)	0.2135	ohm/km	0.344	ohm/mile
Capacitive Reactance	0.1826	Mohm-km	0.113	Mohm-mile

\*TS Piveto M3 8 (25.146) IEC 831 conductor is produced with Fully Annealed Al aluminum. The nominal Aluminum equivalent area is 421.2 sq. mm (831.2 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 Piveto M3 8 (25.146) IEC 831 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.50 Hz, sea level (0) elevation, 30°N line Azimuth, noon on June 10th (96W/sq.ft, 1033W/sq.m), clear atmosphere

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contact: info@tsconductor.com

ID:26330

Date Produced: 12/21/2023

DATA SHEET:

# TS Piveto M1 8 (0.99) 831



Governing Units: Metric

Mechanical Specifications	Metric		Imperial	
Fully Annealed Al Cross-sectional Area*	421.17	mm <sup>2</sup>	831.17	kmil
Encapsulated Aluminum Cross-Sectional Area	86.58	mm <sup>2</sup>	0.13420	in <sup>2</sup>
Diameter of Composite Core (Exclude Encapsulation)	8.0	mm	0.31500	in
Cross-sectional Area of Core (Exclude Encapsulation)	50.30	mm <sup>2</sup>	0.07791	in <sup>2</sup>
Overall Diameter of Conductor	25.146	mm	0.990	in
Cross-sectional Area of the Conductor (Exclude Covering)	471.40	mm <sup>2</sup>	0.73073	in <sup>2</sup>
Ultimate Tensile Strength of Conductor 1) ,2)	133.40	kN	29.99	kip
Rated Strength of Core - 312 ksi (2150 MPa)	108.09	kN	24.30	kip
Core Mass per unit length (Exclude Encapsulation)	101.00	kg/km	67.88	lb/kft
Conductor Mass per unit length	1257.11	kg/km	844.88	lb/kft
Fully Annealed Al Mass per unit length (Include Encapsulation)**	1156.11	kg/km	777.00	lb/kft
Maximum Emergency Temperature at Surface 3)	200	°C	392	°F
Coefficient of Linear Expansion Above Thermal Kneepoint (core)	1.440	x10 <sup>-6</sup> /°C	0.800	x10 <sup>-6</sup> /°F
Coefficient of Linear Expansion Below Thermal Kneepoint (conductor)	18.834	x10 <sup>-6</sup> /°C	10.463	x10 <sup>-6</sup> /°F
Final Modulus of Elasticity Above Thermal Kneepoint (based on core area)	113.0	GPa	16.4	Msi
Final Modulus of Elasticity Below Thermal Kneepoint (based on conductor area)	61.9	GPa	9.0	Msi
Aluminum Heat Capacity	1079.6	Watt-s/m-°C	182.8	Watt-s/ft.°F
Core Heat Capacity	85.9	Watt-s/m-°C	14.5	Watt-s/ft.°F
Encapsulation Thickness	2.60	mm	0.10236	in
Stranding Ratio	1.0215			
Covered Thickness	0.000	mm	0.000	in
Electrical Specifications	Metric		Imperial	
DC Resistance at 20°C (Fully Annealed Al 63% IACS)	0.0661	ohm/km	0.1064	ohm/mile
DC Resistance at 25°C	0.0674	ohm/km	0.1085	ohm/mile
DC Resistance at 75°C	0.0809	ohm/km	0.1302	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	0.0685	ohm/km	0.1103	ohm/mile
AC Resistance at 75°C	0.0818	ohm/km	0.1317	ohm/mile
AC Resistance at 180°C	0.1098	ohm/km	0.1767	ohm/mile
Ampacity 4)		1550	@180°C, & A	
		1634	@200°C, & A	
GMR (estimated)	10.19	mm	0.0334	ft
Inductive Reactance (Xa: internal flux+external flux radius 1 ft)	0.2562	ohm/km	0.412	ohm/mile
Capacitive Reactance	0.1522	Mohm-km	0.095	Mohm-mile

\*TS Piveto M1 8 (0.99) 831 conductor is produced with Fully Annealed Al aluminum. The nominal Aluminum equivalent area is 421.2 sq. mm (831.2 kmil)

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- 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 Piveto M1 8 (0.99) 831 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

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contact: info@tsconductor.com

ID:26333

Date Produced:

1/5/2024

DATA SHEET:

# TS Piveto M1 8 (25.146) IEC 831



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- 4). Ampacity based on: 25°C ambient temperature, 2ft/s (0.6 m/s) perpendicular wind, 0.5 Emis 0.5 Absorb.50 Hz, sea level (0) elevation, 30°N line Azimuth, noon on June 10th (96W/sq.ft, 1033W/sq.m), clear atmosphere

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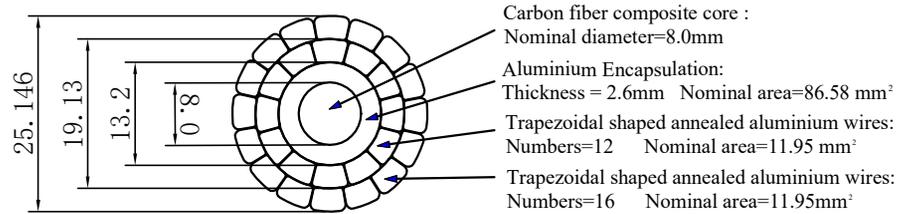
ID:26332

Date Produced:

1/5/2024

# TS<sup>®</sup> Conductor Cross sectional drawing

Expected value at production time



Drawing for:  
26330,26335,26332,26333

## TS Conductor Corp.

TS Piveto M3 8 (0.99) 831 ID:26335

Design

Check

Ratify