



BAR BUS DATA SHEET

Version: 35E

CUSTOMER:	PPE LIMITADA	DATE:	4/5/2021
RFQ NO.:	FUTURO ANDINA	QUOTE NO.:	QN-14489
QUOTE BY:	ML	REVISION:	

TRANSFORMER/SWITCHGEAR UNIT	X
BUS RUN	X

A. BUS DESIGN PARAMETERS:

		English	Metric
1 Maximum Rated Voltage		1.058kV	1.058kV
2 Operating Voltage		480V	480V
3 BIL Rating of the Bus System		0kV	0kV
4 Rated Continuous Current	Amps	4000	4000
5 Short Time Current Rating	kAMP-sym	65.00	65.00
6 Momentary Current Rating	kAMP-asym	86.45	86.45
7 Peak Current Rating	kAMP-Peak	149.50	149.50
8 Short Time Current Duration	Seconds	1	1
9 Bus Configuration		3P3W	3P3W
10 System Frequency		50	50

B. ENVIRONMENTAL PARAMETERS

1 Ambient Temperature	Deg-C	40	40
2 Max Allowable Temp Rise	Deg-C	65	65
3 Max Operating Temperature	Deg-C	105	105
4 Elevation Above Sea Level	Feet/Meter	13123.4	4000
5 Basic Impulse Level Multiplier due to Elevation	Percent	0.79	0.79
6 Continuous Current Multiplier due to Elevation	Percent	0.80	0.80
7 Solar Station nearest Site		Buenos Aires , Argentina	
8 Solar Re-rate Temperature	Degrees	84.6F / 29.2C	
9 Continuous Current Multiplier due to Solar Heat Gain		0.98	0.98
10 Minimum Design BIL Level Due to Elevation Change		0kV	0kV

C. INSULATOR DATA

1 Insulator Type		Molded Polyester Block	
2 Insulator Number		Universal Support	
3 Phase-Phase Centers	Inches/mm	6.75	171.45
4 Momentary Short Circuit Force	Lbs/Ft-Kg/M	1375	2050
5 Insulator Strength	Lbs/Kg	6100	2767
6 Max Spacing due to Insul. Strength	Inches/mm	54.00	1371.60
7 Max Spacing due to Bar Strength	Inches/mm	70.00	1778.00
8 Max Insulator Spacing of the Bus System	Inches/mm	54.00	1371.60
9 Equal Insulator Spacing in 120" Sections	Inches/mm	40.00	1016.00
10 Weight of Insulator Location per foot of bus	Lbs/Ft-Kg/M	3.44	5.13
11 BIL Rating of the Insulator		95kV	95kV



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D. CONDUCTOR DATA:

1 Conductor Number			15012CC
2 Number, Size & Material of Phase Bus			(1) 1/2 x 12 Cu Bar
3 Number, Size & Material of Neutral Bus			Not Applicable
4 Number, Size & Material of Ground Bus			Not Applicable
5 Pole Width	Inches/mm	0.5	12.70
6 Conductor Cross Sectional Area	SqIn/Sqmm	5.95	3836.35
7 Conductor Bar(s) Weight	Lbs/Ft-Kg/M	69.14	103.09
8 Neutral Bar(s) Weight	Lbs/Ft-Kg/M	N/A	N/A
9 Ground Bar(s) Weight	Lbs/Ft-Kg/M	N/A	N/A
10 Conductor Emissivity Factor			0.45
11 Conductor Conductivity	Percent		100
12 Conductor Arrangement			Vertical Wide
13 Conductor Material			Copper Bar

E. INSULATION TYPE

Epoxy Insulation

F. ENCLOSURE DATA

1 Enclosure Material			Aluminum
2 Enclosure Height (Inside)	Inches/mm	21.188	538.18
3 Enclosure Width (Inside)	Inches/mm	27.375	695.33
4 Enclosure Weight	Lbs/Ft-Kg/M	14.26	21.26
5 Enclosure Rate Factor		0.735	0.735
6 Enclosure Type			TENV-NON SEG
7 Minimum Cross Section of Each Encl. Splice Plate	SqIn/Sqmm	0.2076255	133.95

G. CALCULATED VALUES

1 Max Continuous Current	Amperes	4442	4442
2 Rated Continuous Current	Amperes	4000	4000
3 Cond. Temp Rise @ Rated Current	Deg-C	53.82	53.82
4 Cond. Oper. Temp @ Rated Current	Deg-C	93.82	93.82
5 Cond. Temp Rise Due to Short Circuit	Deg-C	1.98	1.98
6 Conductor Temp after Short Circuit	Deg-C	95.80	95.80
7 Cond. DC Resistance @ 20Deg-C	Microhms/Ft / Microhms/M	1.3697	4.4939
8 Cond. DC Resistance @ Oper. Temp	Microhms/Ft / Microhms/M	1.7671	5.7976
9 Skin Effect Factor	Rac/Rdc	1.50	1.50
10 Cond. AC Resistance @ Oper.Temp	Microhms/Ft / Microhms/M	2.6507	8.6963
11 3-Pole losses	Watts/Ft-M	127.23	417.42
12 Total Weight per Bus foot	Lbs/Ft-Kg/M	86.85	129.48

Bus Assembly Catalog No.

260015012CNVW57-3N27382119A-40



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H. VOLTAGE DROP VALUES

1 Reactance	Microhms/Ft / Microhms/M	28.16	92.3985
2 Impedance	Microhms/Ft / Microhms/M	28.29	92.8076
3 Resistance Voltage Drop -IR	Volts	1.06	1.06
4 Reactance Voltage Drop -IX	Volts	11.27	11.27
5 Impedance Voltage Drop -IZ	Volts	11.32	11.32
6 Assumed Power Factor	INPUT>>>	0.9	0.9
7 Total Bus Footage	INPUT>>> Ft/M	100	30.48
8 Voltage at Source	INPUT>>> Volts	1058	1058
9 Voltage Drop	Volts	10.29	10.29
10 Voltage at Load	Volts	1048	1048
11 Percent Voltage Drop	Percent	0.97%	0.97%

J. HEATERS

1 Supply Voltage	Volts	120	120
2 Heater Rated Voltage	Volts	240	240
3 Heater Rated Wattage	Watts	1000	1000
4 Prevailing Wind Velocity	Ft/M-Minute	120	36.58
5 Prevailing Wind Velocity	Mi/Km-Hour	1.36	2.20
6 Max Heater Spacing in Outdoor Bus w/120 fpm wind	Ft/M	9.019	2.75

K. EXPANSION

1 Coldest Expected Temperature	Degree-C		
2 Hottest Conductor Operating Temperature	Degree-C	105	105
3 Hottest Enclosure Operating Temperature	Degree-C	80	80
4 Copper Bar Expansion from -40-105 Degrees	In/Ft - mm/M	0.0213	0.1479
5 Aluminum Enclosure Expansion from 0-80 Degrees	In/Ft - mm/M	0.0221	0.1127

L. WEIGHTS

1 Conductor Weight per bus foot	Lbs/Ft-Kg/M	69.14	103.09
2 Enclosure Weight per Bus foot	Lbs/Ft-Kg/M	14.26	21.26
3 Insulator & Support Weight per bus foot	Lbs/Ft-Kg/M	3.44	5.13
4 Neutral Weight per bus foot	Lbs/Ft-Kg/M	N/A	N/A
5 Ground Weight per bus foot	Lbs/Ft-Kg/M	N/A	N/A
6 Total Weight per Bus foot	Lbs/Ft-Kg/M	86.85	129.48