



Anexo III - 15

BASE DE DATOS: AÑO 2011 (ÉPOCA LLUVIOSA - DMAX)

[Nombre de Barras/Buses](#)

[Buses](#)

[Unidades de Generación](#)

[Cargas](#)

[Reactivo](#)

[Líneas](#)

[Tranformadores de 2 Devanados](#)

[Transformadores de 3 Devanados](#)



Base de Datos		
Número de Bus	Nombre del Bus	Nivel de Voltaje
6000	FRONTER	230
6001	PAN230	230
6002	PAN115	115
6003	PANII230	230
6004	PANII115	115
6005	CHO230	230
6006	CHO115	115
6007	CHO34	34.5
6008	LSA230	230
6009	LSA115	115
6010	LSA34	34.5
6011	MDN230	230
6012	MDN115	115
6013	MDN34	34.5
6014	PRO230	230
6015	PRO115	115
6016	PRO34	34.5
6017	CEMEX	4.2
6018	CAC115	115
6019	CVI115A	115
6020	CVI T1A	13.8
6021	CVI T1B	13.8
6022	CVI T2A	13.8
6023	CVI T2B	13.8
6024	CHI115	115
6025	CHI13A	13.8
6026	CHI13B	13.8
6027	LOC115A	115
6028	LOC T1A	13.8
6029	LOC T1B	13.8
6030	LOC T2A	13.8
6031	LOC T2B	13.8
6032	MAR115A	115
6033	MAR T1A	13.8
6034	MAR T1B	13.8
6035	MAR T2A	13.8
6036	SMA115	115
6037	SMA T1A	13.8
6038	SMA T1B	13.8
6039	SMA T2A	13.8
6040	SFR115	115
6041	SFR T2A	13.8
6042	SFR T2B	13.8



6043	SFR T3A	13.8
6044	SFR T3B	13.8
6045	SFR T4A	13.8
6046	SFR T4B	13.8
6047	CLA115	115
6048	CLA13.8	13.8
6049	ARE115	115
6050	ARE34	34.5
6051	POC115	115
6052	POC34	34.5
6053	STG115	115
6054	STG34	34.5
6055	MOS115B	115
6056	MOS T1A	13.8
6057	TOC115	115
6058	TOC13.8	13.8
6059	LM1115	115
6060	LM2115	115
6061	L.M.44	43.8
6062	L.M.13B	13.8
6063	MHOPE	43.8
6064	MHOPE2.4	2.4
6065	MHOPE12	12
6066	FFIELD	115
6067	FF13.8	13.8
6068	FF44	43.8
6069	COLON44A	43.8
6070	CLN4.16	4.2
6071	BLMG2	13.8
6072	BLMG3	13.8
6073	BLMG4	13.8
6074	LMDIST	115
6075	BLMG5	13.8
6076	BLMG6	13.8
6077	BLMG8	13.8
6078	BLMG9	13.8
6079	PM44-2	43.8
6080	PM44-3	43.8
6081	M.O13B	13.8
6082	PAN13T1	13.8
6083	PAN13T2	13.8
6084	PAN13T3	13.8
6085	PANIIT1	13.8
6086	PANIIT2	13.8
6087	CAL115	115
6088	LES115	115
6090	LESG1	13.8
6091	LESG2	13.8



6092	LVA115	115
6094	LVAG1	13.8
6095	LVAG2	13.8
6096	FOR230	230
6097	FORG1	13.8
6098	FORG2	13.8
6099	FORG3	13.8
6100	BAY230	230
6101	BAYG1	13.8
6102	BAYG2	13.8
6103	COP230	230
6104	COP13.8	13.8
6105	PAM230	230
6106	PAM13A	13.8
6107	PAM13B	13.8
6110	BAYG3	13.8
6113	PAN G1	13.8
6114	PAN G2	13.8
6123	MIR115	115
6124	MIR44	43.8
6125	MIR12	13.8
6126	MIR13A	12
6127	MIR13B	13.8
6128	MIR13C	12
6129	MIR13D	13.8
6130	MIR13F	13.8
6131	BAL44	43.8
6132	SUM44	43.8
6133	MAD44	43.8
6134	MAD6A	6.9
6135	MAD6B	6.9
6136	MAD6C	6.9
6137	GAM44	43.8
6138	ACL44	43.8
6139	GAT44	43.8
6140	GAT6A	6.9
6144	HOW12	12
6145	MIR2	12
6146	BAL12	12
6147	BAL2	2.4
6148	SUM	12
6149	GAM2	2.4
6151	IND44	43.8
6152	IND2	2.4
6153	TAP401	43.8
6154	TAP402	43.8
6155	MIR13G	13.8
6156	MIR12A	12
6157	MIR12B	12
6170	CPA115	115



6171	PAC230	230
6172	PAC13.8	13.8
6173	STR115	115
6174	PM115-1A	115
6175	PM115-2A	115
6176	ESTG1	13.8
6177	ESTG2	13.8
6178	EST230	230
6179	GUA230	230
6182	VEL230	230
6183	CVI T3A	13.8
6184	CVI T3B	13.8
6185	LOC T3A	13.8
6186	LOC T3B	13.8
6187	MAR T2B	13.8
6188	MAR T3A	13.8
6189	MAR T3B	13.8
6190	SMA T2B	13.8
6191	SMA T3A	13.8
6192	SMA T3B	13.8
6193	MOS T1B	13.8
6194	MOS T2A	13.8
6195	MOS T2B	13.8
6196	TOC T1B	13.8
6197	TOC T2B	13.8
6210	TIN115	115
6211	PM115-9	115
6212	TIN13.8	13.8
6213	TIN T1	13.8
6214	TIN T2	13.8
6230	CBA115	115
6231	CBA T1A	13.8
6232	CBA T1B	13.8
6233	CBA T2A	13.8
6234	CBA T2B	13.8
6235	CBA T3	13.8
6236	CBA T4	13.8
6240	LGU 230	230
6241	LGU 34	34.5
6260	CHA 230	230
6261	CHA 115	115
6262	CHA 34	34.5
6263	ESP230	230
6264	CHAG113.8	13.8
6265	CHAG213.8	13.8



6266	ESP34	34.5
6267	CHAG3 34	34.5
6268	CHAG3 6.9	6.9
6270	CAT 115	115
6271	CAT 13A	13.8
6272	CAT 13B	13.8
6280	GIR 115	115
6281	GIR 13A	13.8
6282	GIR 13B	13.8
6290	CATII 11	115
6291	TCOG1	13.8
6292	TCOG2	13.8
6293	TCOG3	13.8
6300	CAL 34.5	34.5
6310	ALGA34.5	34.5
6311	ALGA13.8	13.8
6320	MEND34.5	34.5
6321	MEND13.8	13.8
6330	BAI230	230
6331	BAI115	115
6332	BAM115	115
6333	BAM13A	13.8
6334	BAM13B	13.8
6335	BAIG1	13.8
6336	BAIG2	13.8
6340	CAN 230	230
6341	CAN 34	34.5
6350	PM115-8	115
6360	GLA230	230
6361	GLA13A	13.8
6362	GLA13B	13.8
6363	ZAM230	230
6364	LOR13A	13.8
6365	LOR13B	13.8
6366	EVA230	230
6367	PRU13A	13.8
6368	PRU13B	13.8
6380	BOQIII 230	230
6381	BOQIII 34.5	34.5
6382	PEDI34.5	34.5
6383	PEDII34.5	34.5
6384	PEDI13.8	13.8
6385	PEDII13.8	13.8
6400	FRONTCHA	230
6430	ANTON230	230
6431	EOLICO I	0.6
6500	FRONTDOM	230
6505	IMAGINARIO	34.5
6509	MAC34.5	34.5
6510	MAC0.69A	0.7



6511	MAC0.69B	0.7
6520	PANCH13.8	13.8
6529	HCONC34.5	34.5
6530	HCONC4.16	4.2
6540	CAZ13.8	13.8
6541	CAZ0.48A	0.5
6542	CAZ0.48B	0.5
6543	CAZ0.48C	0.5
6544	CAZ0.48D	0.5
6545	CAZ0.48E	0.5
6546	CAZ0.48F	0.5
6550	CHAZ115	115
6551	CHAZ13.8	13.8
6552	CHAZ 0.48A	0.5
6553	CHAZ 0.48B	0.5
6554	CHAZ 0.48C	0.5
6555	CHAZ 0.48D	0.5
6560	PLANETA13.8	13.8
6570	FRAILE13.8	13.8
6580	LBO115	115
6581	LBO13.8	13.8
6590	24DIC230	230
6591	24DIC13.8	13.8
6600	HUACA13.8	13.8
6610	PAN13T4	13.8
6620	PSUR34.5	34.5
6621	PSUR4.16	4.2
6622	PNORTE34.5	34.5
6623	PNORTE4.16	4.2
6630	COCHEA34.5	34.5
6631	COCHEA13.8	13.8
6640	MENDII34.5	34.5
6641	MENDII13.8	13.8
6650	BTOTUMA34.5	34.5
6651	BTOTUMA4.16	4.2
6660	HCALD34.5	34.5
6661	HCALD4.16	4.2
6670	RP-490 34.5	34.5
6671	RP-490 6.6A	6.6
6672	RP-490 6.6B	6.6
6680	BFRIO230	230
6681	BFRIO13A	13.8
6682	BFRIO13B	13.8
6690	DOM230	230
6691	ALTO230	230
6692	ALTO13A	13.8
6693	ALTO13B	13.8
6694	ALTO13C	13.8
6695	PANDO230	230
6696	PANDO13A	13.8



6697	PANDO13B	13.8
6698	MLIRIO230	230
6699	MLIRIO13A	13.8
6700	MLIRIO13B	13.8
6701	MLIRIO13C	13.8
6710	TIZ34.5	34.5
6711	TIZ4.16	4.2
6720	SIND34.5	34.5
6721	SIND4.16	4.2
6730	SAND34.5	34.5
6731	SAND4.16	4.2
6740	RROJAS34.5	34.5
6741	RROJAS4.16	4.2
6750	BON13.8	13.8
6760	SBA230	230
6761	SBA34.5	34.5
6762	BAR34.5	34.5
6763	BAR13.8	13.8
6764	CRU34.5	34.5
6765	CRU13.8	13.8
6766	LAG34.5	34.5
6767	LAG13.8	13.8
6768	ESTRECHO34.5	34.5
6769	ESTRECHO4.16	4.2
6770	CAÑAZAS34.5	34.5
6771	CAÑAZAS13.8	13.8
6780	OAGUA34.5	34.5
6781	OAGUA13.8	13.8
6790	SMA230	230
6791	SMA13A	13.8
6792	SMA13B	13.8
6800	LOC T4A	13.8
6801	LOC T4B	13.8
6810	SVC-LV	13.2
6820	PLANETAII 34	34.5
6821	PLANETAII	4.2
6830	SLO34.5	34.5
6831	SLO13.8	13.8
6840	BUR230	230
6841	BUR13A	13.8
6842	BUR13B	13.8
6843	BUR13C	13.8
6850	POT34.5	34.5
6851	POT4.16	4.2
6860	BBL230	230
6861	BBL13.8	13.8
6870	TABII230	230
6871	TABII13.8	13.8
6880	CHAI230	230
6881	CHAIIG1 13.8	13.8



6882	CHAIIG2 13.8	13.8
6890	PANIIT3	13.8
6900	SVC-LV	13.2
6910	GON115	115
6911	GON13.8	13.8
6920	STR230	230
6921	CB250A-1	13.8
6922	CB250A-2	13.8
6923	CB250B-1	13.8
6924	CB250B-2	13.8



Nombre
Frontera Panamá - Costa Rica en Progreso 230 KV
Panamá 230 KV
Panamá 115 KV
Panamá II 230 KV
Panamá II 115 KV
Chorrera 230 KV
Chorrera 115 KV
Chorrera 34.5 KV
Llano Sánchez 230 KV
Llano Sánchez 115 KV
Llano Sánchez 34.5 KV
Mata de Nance 230 KV
Mata de Nance 115 KV
Mata de Nance 34.5 KV
Progreso 230 KV
Progreso 115 KV
Progreso 34.5 KV
CEMEX 4.16 KV
Cáceres 115 KV
Cerro Viento 115 KV
Cerro Viento T ₁ 13.8 KV (Barra A)
Cerro Viento T ₁ 13.8 KV (Barra B)
Cerro Viento T ₂ 13.8 KV (Barra A)
Cerro Viento T ₂ 13.8 KV (Barra B)
Chilibre 115 KV
Chilibre 13.8 KV (Barra A)
Chilibre 13.8 KV (Barra B)
Locería 115 KV
Locería T ₁ 13.8 KV (Barra A)
Locería T ₁ 13.8 KV (Barra B)
Locería T ₂ 13.8 KV (Barra A)
Locería T ₂ 13.8 KV (Barra B)
Marañón 115 KV
Marañón T ₁ 13.8 KV (Barra A)
Marañón T ₁ 13.8 KV (Barra B)
Marañón T ₂ 13.8 KV (Barra A)
Santa María 115 KV
Santa María T ₁ (Barra A)
Santa María T ₁ (Barra B)
Santa María T ₂ (Barra A)
San Francisco 115 KV
San Francisco T ₂ (Barra A)
San Francisco T ₂ (Barra B)



San Francisco T ₃ (Barra A)
San Francisco T ₃ (Barra B)
San Francisco T ₄ (Barra A)
San Francisco T ₄ (Barra B)
Calzada Larga 115 KV
Calzada Larga 13.8 KV
La Arena 115 KV
La Arena 34.5 KV
Pocrí 115 KV
Pocrí 34.5 KV
Santiago 115 KV
Santiago 34.5 KV
Monte Oscuro 115 KV (Barra B)
Monte Oscuro T ₁ (Barra A)
Tocumen 115 KV
Tocumen 13.8 KV
Las Minas I 115 KV
Las Minas II 115 KV
Las Minas 43.8 KV
Las Minas 13.8 KV (Barra B)
Monte Esperanza 43.8 KV
Monte Esperanza 2.4 KV
Monte Esperanza 12 KV
France Field 115 KV
France Field 13.8 KV
France Field 43.8 KV
Colón 43.8 KV
Colón 4.16 KV
Las Minas 13.8 KV (Unidad 2)
Las Minas 13.8 KV (Unidad 3)
Las Minas 13.8 KV (Unidad 4)
Las Minas Distribución 115 KV (Bus Imaginario)
Las Minas 13.8 KV (Unidad 5)
Las Minas 13.8 KV (Unidad 6)
Las Minas 13.8 KV (Unidad 8)
Las Minas 13.8 KV (Unidad 9)
Punto Medio (Colón-France Field) 43.8 KV
Punto Medio (Colón-Monte Esperanza-France Field) 43.8 KV
Monte Oscuro 13.8 KV (Barra B)
Panamá T ₁ 13.8 KV
Panamá T ₂ 13.8 KV
Panamá T ₃ 13.8 KV
Panamá II T ₁ 13.8 KV
Panamá II T ₂ 13.8 KV
Caldera 115 KV
La Estrella 115 KV
La Estrella 13.8 KV (Unidad 1)
La Estrella 13.8 KV (Unidad 2)



Los Valles 115 KV
Los Valles 13.8 KV (Unidad 1)
Los Valles 13.8 KV (Unidad 2)
Fortuna 230 KV
Fortuna 13.8 KV (Unidad 1)
Fortuna 13.8 KV (Unidad 2)
Fortuna 13.8 KV (Unidad 3)
Bayano 230 KV
Bayano 13.8 (Unidad 1)
Bayano 13.8 (Unidad 2)
COPESA 230 KV (Imaginario)
COPESA 13.8 KV
Panam 230 KV
Panam 13.8 KV (Barra A)
Panam 13.8 KV (Barra B)
Bayano 13.8 KV (Unidad 3)
Turbinas de Gas en Panama (Unidad 1)
Turbinas de Gas en Panama (Unidad 2)
Miraflores 115 KV
Miraflores 43.8 KV
Miraflores 13.8 KV
Miraflores 12 KV (Barra A)
Miraflores 13.8 KV (Barra B)
Miraflores 12 KV (Barra C)
Miraflores 13.8 KV (Barra D)
Miraflores 13.8 KV (Barra F)
Balboa 43.8 KV
Summit 43.8 KV
Madden 43.8 KV
Madden 6.9 KV (Barra A)
Madden 6.9 KV (Barra B)
Madden 6.9 KV (Barra C)
Gamboa 43.8 KV
Agua Clara 43.8 KV
Gatún 43.8 KV
Gatún 6.9 KV
Howard 12 KV
Miraflores 12 KV
Balboa 12 KV
Balboa 2.4 KV
Summit 12 KV
Gamboa 2.4 KV
Industrial 43.8 KV
Industrial 2.4 KV
Circuito 401 (Límite ACP-ENSA)
Circuito 402 (Límite ACP-ENSA)
Miraflores 13.8 KV
Miraflores 12 KV (Barra A)
Miraflores 12 KV (Barra B)
Cemento Panamá 115 KV



Pacora 230 KV
Pacora 13.8 KV
Santa Rita 115 KV
Punto Medio 115-1A (Cáceres-Santa Rita)
Punto Medio 115-2A (Cáceres-Santa Rita)
Estí 13.8 KV (Unidad 1)
Estí 13.8 KV (Unidad 2)
Estí 230 KV
Guasquitas 230 KV
Veladero 230 KV
Cerro Viento T ₃ 13.8 KV (Barra A)
Cerro Viento T ₃ 13.8 KV (Barra B)
Locería T ₃ 13.8 KV (Barra A)
Locería T ₃ 13.8 KV (Barra B)
Marañón T ₂ (Barra B)
Marañón T ₃ (Barra A)
Marañón T ₃ (Barra B)
Santa María T ₂ (Barra B)
Santa María T ₃ (Barra A)
Santa María T ₃ (Barra B)
Monte Oscuro T ₁ (Barra B)
Monte Oscuro T ₂ (Barra A)
Monte Oscuro T ₂ (Barra B)
Tocumen T ₁ (Barra B)
Tocumen T ₂ (Barra B)
Tinajitas 115 KV
Punto Medio (Monte Oscuro-Tinajitas)
Tinajitas 13.8 KV
Tinajitas T ₁ 13.8 KV
Tinajitas T ₂ 13.8 KV
Centro Bancario 115 KV
Centro Bancario T ₁ 13.8 KV (Barra A)
Centro Bancario T ₁ 13.8 KV (Barra B)
Centro Bancario T ₂ 13.8 KV (Barra A)
Centro Bancario T ₂ 13.8 KV (Barra B)
Centro Bancario T ₃ 13.8 KV
Centro Bancario T ₄ 13.8 KV
El Higo 230 KV (Las Guías)
El Higo 34.5 KV (Las Guías)
Changuinola 230 KV
Changuinola 115 KV
Changuinola 34.5 KV
Esperanza 230 KV
Changuinola 13.8 KV (Unidad 1)
Changuinola 13.8 KV (Unidad 2)



Esperanza 34.5 KV
Changuinola 34.5 KV (Asociada a la Unidad 3)
Changuinola 6.9 KV (Unidad 3)
Cativá 115 KV
Cativá 13.8 KV (Barra A)
Cativá 13.8 KV (Barra B)
El Giral 115 KV
El Giral 13.8 KV (Barra A)
El Giral 13.8 KV (Barra B)
Cativa II 115 KV
Termo Colón 13.8 KV (Unidad 1)
Termo Colón 13.8 KV (Unidad 2)
Termo Colón 13.8 KV (Unidad 3)
Caldera 34.5 KV
Los Algarrobos 34.5 KV
Los Algarrobos 13.8 KV
Mendre 34.5 KV
Mendre 13.8 KV
Baitún 230 KV
Baitún 115 KV
Bajo de Mina 115 KV
Bajo de Mina 13.8 KV (Unidad 1)
Bajo de Mina 13.8 KV (Unidad 2)
Baitún 13.8 (Unidad 1)
Baitún 13.8 (Unidad 2)
Cañazas 230 KV
Cañazas 34.5 KV
Punto Medio 115-8 (Cáceres-Marañón)
Gualaca 230 KV
Gualaca 13.8 KV (Unidad 1)
Gualaca 13.8 KV (Unidad 2)
Zambrano 230 KV
Lorena 13.8 KV (Unidad 1)
Lorena 13.8 KV (Unidad 2)
El Valle 230 KV
Prudencia 13.8 KV (Unidad 1)
Prudencia 13.8 KV (Unidad 2)
Boquerón III 230 KV
Boquerón III 34.5 KV
Pedregalito 34.5 KV
Pedregalito II 34.5 KV
Pedregalito 13.8 KV
Pedregalito II 13.8 KV
Frontera Panamá - Costa Rica en Changuinola 230 KV
Antón 230 KV
Eólico I 0.6 KV
Frontera Panamá - Costa Rica en Dominical 230 KV
Bus Imaginario 34.5 KV (Punto de conexión de Macano e Hidro Concepción)
Macano 34.5 KV
Macano 0.69 KV (Unidad 1)



Macano 0.69 KV (Unidad 2)
Paso Ancho 13.8 KV
Hidro Concepción 34.5 KV
Hidro Concepción 4.16 KV
Cerro Azul 13.8 KV
Cerro Azul 0.48 KV (Barra A - Imaginario)
Cerro Azul 0.48 KV (Barra B - Imaginario)
Cerro Azul 0.48 KV (Barra C - Imaginario)
Cerro Azul 0.48 KV (Barra D - Imaginario)
Cerro Azul 0.48 KV (Barra E - Imaginario)
Cerro Azul 0.48 KV (Barra F - Imaginario)
Charco Azul 115 KV
Charco Azul 13.8 KV
Charco Azul 0.48 KV (Barra A - Imaginario)
Charco Azul 0.48 KV (Barra B - Imaginario)
Charco Azul 0.48 KV (Barra C - Imaginario)
Charco Azul 0.48 KV (Barra D - Imaginario)
Los Planetas 13.8 KV
El Fraile 13.8 KV
Llano Bonito 115 KV
Llano Bonito 13.8 KV
24 de Diciembre 230 KV
24 de Diciembre 13.8 KV
La Huaca 13.8 KV
Panamá T ₄ 13.8 KV
Las Perlas Sur 34.5 KV
Las Perlas Sur 4.16 KV
Las Perlas Norte 34.5 KV
Las Perlas Norte 4.16 KV
Cochea 34.5 KV
Cochea 13.8 KV
Mendre II 34.5 KV
Mendre II 13.8 KV
Bajos de Totuma 34.5 KV
Bajos de Totuma 4.16 KV
Hidro Caldera 34.5 KV
Hidro Caldera 4.16 KV
RP-490 34.5 KV
RP-490 6.6 KV (Unidad 1)
RP-490 6.6 KV (Unidad 2)
Bajo Frío 230 KV
Bajo Frío 13.8 KV (Unidad 1)
Bajo Frío 13.8 KV (Unidad 2)
Dominical 230 KV
El Alto 230 KV
El Alto 13.8 KV (Unidad 1)
El Alto 13.8 KV (Unidad 2)
El Alto 13.8 KV (Unidad 3)
Pando 230 KV
Pando 13.8 KV (Unidad 1)



Pando 13.8 KV (Unidad 2)
Monte Lirio 230 KV
Monte Lirio 13.8 KV (Unidad 1)
Monte Lirio 13.8 KV (Unidad 2)
Monte Lirio 13.8 KV (Unidad 3)
Tizingal 34.5 KV
Tizingal 4.16 KV
El Síndigo 34.5 KV
El Síndigo 4.16 KV
San Andrés 34.5 KV
San Andrés 4.16 KV
Remijio Rojas 34.5 KV
Remijio Rojas 4.16 KV
Bonyic 13.8 KV
San Bartolo 230 KV
San Bartolo 34.5 KV (Subestación)
San Bartolo 34.5 KV
San Bartolo 13.8 KV
Las Cruces 34.5 KV
Las Cruces 13.8 KV
La Laguna 34.5 KV
La Laguna 13.8 KV
Los Estrechos 34.5 KV
Los Estrechos 4.16 KV
Cañazas 34.5 KV
Cañazas 13.8 KV
Ojo de Agua 34.5 KV
Ojo de Agua 13.8 KV
Santa María 82 230 KV
Santa María 82 13.8 KV (Unidad 1)
Santa María 82 13.8 KV (Unidad 2)
Locería T ₄ 13.8 KV (Barra A)
Locería T ₄ 13.8 KV (Barra B)
SVC 13.2 KV (S/E Llano Sánchez)
Los Planetas II 34.5 KV
Los Planetas II 4.16 KV
San Lorenzo 34.5 KV
San Lorenzo 13.8 KV
Burica 230 KV
Burica 13.8 KV (Unidad 1)
Burica 13.8 KV (Unidad 2)
Burica 13.8 KV (Unidad 3)
Potreros 34.5 KV
Potreros 4.16 KV
Barro Blanco 230 KV
Barro Blanco 13.8 KV
Tabasará II 230 KV
Tabasará II 13.8 KV
Changuinola II 230 KV
Changuinola II 13.8 KV (Unidad 1)

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Changuinola II 13.8 KV (Unidad 2)
Panama II T ₃ 13.8 KV
SVC 13.2 KV (S/E Panamá II)
Gonzalillo 115 KV
Gonzalillo 13.8 KV
Santa Rita 230 KV
Carbón 250 A (Genérico) 13.8 KV (Unidad 1)
Carbón 250 A (Genérico) 13.8 KV (Unidad 2)
Carbón 250 B (Genérico) 13.8 KV (Unidad 1)
Carbón 250 B (Genérico) 13.8 KV (Unidad 2)



Código de Bus	Nombre de Bus	kV Base	Numero de Area / Nombre	Número de Zona / Nombre	Número de Agente / Nombre
6000	FRONTER	230	6 PANAMA	64 PA_OESTE	20 ETESA
6001	PAN230	230	6 PANAMA	60 PA_CAPIT	20 ETESA
6002	PAN115	115	6 PANAMA	60 PA_CAPIT	20 ETESA
6003	PANII230	230	6 PANAMA	61 PA_ESTE	20 ETESA
6004	PANII115	115	6 PANAMA	61 PA_ESTE	20 ETESA
6005	CHO230	230	6 PANAMA	63 PA_CENTR	20 ETESA
6006	CHO115	115	6 PANAMA	63 PA_CENTR	20 ETESA
6007	CHO34	34.5	6 PANAMA	63 PA_CENTR	20 ETESA
6008	LSA230	230	6 PANAMA	63 PA_CENTR	20 ETESA
6009	LSA115	115	6 PANAMA	63 PA_CENTR	20 ETESA
6010	LSA34	34.5	6 PANAMA	63 PA_CENTR	20 ETESA
6011	MDN230	230	6 PANAMA	64 PA_OESTE	20 ETESA
6012	MDN115	115	6 PANAMA	64 PA_OESTE	20 ETESA
6013	MDN34	34.5	6 PANAMA	64 PA_OESTE	20 ETESA
6014	PRO230	230	6 PANAMA	64 PA_OESTE	20 ETESA
6015	PRO115	115	6 PANAMA	64 PA_OESTE	20 ETESA
6016	PRO34	34.5	6 PANAMA	64 PA_OESTE	20 ETESA
6017	CEMEX	4.2	6 PANAMA	62 PA_ATLAN	28 CEMEX
6018	CAC115	115	6 PANAMA	60 PA_CAPIT	20 ETESA
6019	CVI115A	115	6 PANAMA	60 PA_CAPIT	22 ENSA
6020	CVI T1A	13.8	6 PANAMA	60 PA_CAPIT	22 ENSA
6021	CVI T1B	13.8	6 PANAMA	60 PA_CAPIT	22 ENSA
6022	CVI T2A	13.8	6 PANAMA	60 PA_CAPIT	22 ENSA
6023	CVI T2B	13.8	6 PANAMA	60 PA_CAPIT	22 ENSA
6024	CHI115	115	6 PANAMA	62 PA_ATLAN	22 ENSA
6025	CHI13A	13.8	6 PANAMA	62 PA_ATLAN	22 ENSA
6026	CHI13B	13.8	6 PANAMA	62 PA_ATLAN	22 ENSA
6027	LOC115A	115	6 PANAMA	60 PA_CAPIT	21 FENOSA
6028	LOC T1A	13.8	6 PANAMA	60 PA_CAPIT	21 FENOSA
6029	LOC T1B	13.8	6 PANAMA	60 PA_CAPIT	21 FENOSA
6030	LOC T2A	13.8	6 PANAMA	60 PA_CAPIT	21 FENOSA
6031	LOC T2B	13.8	6 PANAMA	60 PA_CAPIT	21 FENOSA
6032	MAR115A	115	6 PANAMA	60 PA_CAPIT	21 FENOSA
6033	MAR T1A	13.8	6 PANAMA	60 PA_CAPIT	21 FENOSA
6034	MAR T1B	13.8	6 PANAMA	60 PA_CAPIT	21 FENOSA
6035	MAR T2A	13.8	6 PANAMA	60 PA_CAPIT	21 FENOSA
6036	SMA115	115	6 PANAMA	60 PA_CAPIT	22 ENSA
6037	SMA T1A	13.8	6 PANAMA	60 PA_CAPIT	22 ENSA
6038	SMA T1B	13.8	6 PANAMA	60 PA_CAPIT	22 ENSA
6039	SMA T2A	13.8	6 PANAMA	60 PA_CAPIT	22 ENSA
6040	SFR115	115	6 PANAMA	60 PA_CAPIT	21 FENOSA
6041	SFR T2A	13.8	6 PANAMA	60 PA_CAPIT	21 FENOSA
6042	SFR T2B	13.8	6 PANAMA	60 PA_CAPIT	21 FENOSA
6043	SFR T3A	13.8	6 PANAMA	60 PA_CAPIT	21 FENOSA
6044	SFR T3B	13.8	6 PANAMA	60 PA_CAPIT	21 FENOSA
6045	SFR T4A	13.8	6 PANAMA	60 PA_CAPIT	21 FENOSA
6046	SFR T4B	13.8	6 PANAMA	60 PA_CAPIT	21 FENOSA

6047	CLA115	115	6 PANAMA	62 PA_ATLAN	22 ENSA
6048	CLA13.8	13.8	6 PANAMA	62 PA_ATLAN	22 ENSA
6049	ARE115	115	6 PANAMA	63 PA_CENTR	21 FENOSA
6050	ARE34	34.5	6 PANAMA	63 PA_CENTR	21 FENOSA
6051	POC115	115	6 PANAMA	63 PA_CENTR	21 FENOSA
6052	POC34	34.5	6 PANAMA	63 PA_CENTR	21 FENOSA
6053	STG115	115	6 PANAMA	63 PA_CENTR	21 FENOSA
6054	STG34	34.5	6 PANAMA	63 PA_CENTR	21 FENOSA
6055	MOS115B	115	6 PANAMA	60 PA_CAPIT	22 ENSA
6056	MOS T1A	13.8	6 PANAMA	60 PA_CAPIT	22 ENSA
6057	TOC115	115	6 PANAMA	61 PA_ESTE	22 ENSA
6058	TOC T1A	13.8	6 PANAMA	61 PA_ESTE	22 ENSA
6059	LM1115	115	6 PANAMA	62 PA_ATLAN	25 BLM
6060	LM2115	115	6 PANAMA	62 PA_ATLAN	25 BLM
6061	L.M.44	43.8	6 PANAMA	62 PA_ATLAN	22 ENSA
6062	L.M.13B	13.8	6 PANAMA	62 PA_ATLAN	22 ENSA
6063	MHOPE	43.8	6 PANAMA	62 PA_ATLAN	22 ENSA
6064	MHOPE2.4	2.4	6 PANAMA	62 PA_ATLAN	22 ENSA
6065	MHOPE12	12	6 PANAMA	62 PA_ATLAN	22 ENSA
6066	FFIELD	115	6 PANAMA	62 PA_ATLAN	22 ENSA
6067	FF13.8	13.8	6 PANAMA	62 PA_ATLAN	22 ENSA
6068	FF44	43.8	6 PANAMA	62 PA_ATLAN	22 ENSA
6069	COLON44A	43.8	6 PANAMA	62 PA_ATLAN	22 ENSA
6070	CLN4.16	4.2	6 PANAMA	62 PA_ATLAN	22 ENSA
6071	BLMG2	13.8	6 PANAMA	62 PA_ATLAN	25 BLM
6072	BLMG3	13.8	6 PANAMA	62 PA_ATLAN	25 BLM
6073	BLMG4	13.8	6 PANAMA	62 PA_ATLAN	25 BLM
6074	LMDIST	115	6 PANAMA	62 PA_ATLAN	22 ENSA
6075	BLMG5	13.8	6 PANAMA	62 PA_ATLAN	25 BLM
6076	BLMG6	13.8	6 PANAMA	62 PA_ATLAN	25 BLM
6077	BLMG8	13.8	6 PANAMA	62 PA_ATLAN	25 BLM
6078	BLMG9	13.8	6 PANAMA	62 PA_ATLAN	25 BLM
6079	PM44-2	43.8	6 PANAMA	62 PA_ATLAN	22 ENSA
6080	PM44-3	43.8	6 PANAMA	62 PA_ATLAN	22 ENSA
6081	M.O13B	13.8	6 PANAMA	62 PA_ATLAN	22 ENSA
6082	PAN13T1	13.8	6 PANAMA	60 PA_CAPIT	20 ETESA
6083	PAN13T2	13.8	6 PANAMA	60 PA_CAPIT	20 ETESA
6084	PAN13T3	13.8	6 PANAMA	60 PA_CAPIT	20 ETESA
6085	PANIIT1	13.8	6 PANAMA	61 PA_ESTE	20 ETESA
6086	PANIIT2	13.8	6 PANAMA	61 PA_ESTE	20 ETESA
6087	CAL115	115	6 PANAMA	64 PA_OESTE	20 ETESA
6088	LES115	115	6 PANAMA	64 PA_OESTE	24 AES
6090	LESG1	13.8	6 PANAMA	64 PA_OESTE	24 AES
6091	LESG2	13.8	6 PANAMA	64 PA_OESTE	24 AES
6092	LVA115	115	6 PANAMA	64 PA_OESTE	24 AES
6094	LVAG1	13.8	6 PANAMA	64 PA_OESTE	24 AES
6095	LVAG2	13.8	6 PANAMA	64 PA_OESTE	24 AES
6096	FOR230	230	6 PANAMA	64 PA_OESTE	23 FORTUNA
6097	FORG1	13.8	6 PANAMA	64 PA_OESTE	23 FORTUNA
6098	FORG2	13.8	6 PANAMA	64 PA_OESTE	23 FORTUNA



6099	FORG3	13.8	6 PANAMA	64 PA_OESTE	23 FORTUNA
6100	BAY230	230	6 PANAMA	61 PA_ESTE	24 AES
6101	BAYG1	13.8	6 PANAMA	61 PA_ESTE	24 AES
6102	BAYG2	13.8	6 PANAMA	61 PA_ESTE	24 AES
6103	COP230	230	6 PANAMA	61 PA_ESTE	30 COPESA
6104	COP13.8	13.8	6 PANAMA	61 PA_ESTE	30 COPESA
6105	PAM230	230	6 PANAMA	63 PA_CENTR	27 PANAM
6106	PAM13A	13.8	6 PANAMA	63 PA_CENTR	27 PANAM
6107	PAM13B	13.8	6 PANAMA	63 PA_CENTR	27 PANAM
6110	BAYG3	13.8	6 PANAMA	61 PA_ESTE	24 AES
6113	PAN G1	13.8	6 PANAMA	60 PA_CAPIT	33 EGESA
6114	PAN G2	13.8	6 PANAMA	60 PA_CAPIT	33 EGESA
6123	MIR115	115	7 ACANAL	65 PA_ACP	26 ACP
6124	MIR44	43.8	7 ACANAL	65 PA_ACP	26 ACP
6125	MIR12	13.8	7 ACANAL	65 PA_ACP	26 ACP
6126	MIR13A	12	7 ACANAL	65 PA_ACP	26 ACP
6127	MIR13B	13.8	7 ACANAL	65 PA_ACP	26 ACP
6128	MIR13C	12	7 ACANAL	65 PA_ACP	26 ACP
6129	MIR13D	13.8	7 ACANAL	65 PA_ACP	26 ACP
6130	MIR13F	13.8	7 ACANAL	65 PA_ACP	26 ACP
6131	BAL44	43.8	7 ACANAL	65 PA_ACP	26 ACP
6132	SUM44	43.8	7 ACANAL	65 PA_ACP	26 ACP
6133	MAD44	43.8	7 ACANAL	65 PA_ACP	26 ACP
6134	MAD6A	6.9	7 ACANAL	65 PA_ACP	26 ACP
6135	MAD6B	6.9	7 ACANAL	65 PA_ACP	26 ACP
6136	MAD6C	6.9	7 ACANAL	65 PA_ACP	26 ACP
6137	GAM44	43.8	7 ACANAL	65 PA_ACP	26 ACP
6138	ACL44	43.8	7 ACANAL	65 PA_ACP	26 ACP
6139	GAT44	43.8	7 ACANAL	65 PA_ACP	26 ACP
6140	GAT6A	6.9	7 ACANAL	65 PA_ACP	26 ACP
6142	DUG44	43.8	7 ACANAL	65 PA_ACP	26 ACP
6143	DUG12	12	7 ACANAL	65 PA_ACP	26 ACP
6144	HOW12	12	7 ACANAL	65 PA_ACP	26 ACP
6145	MIR2	12	7 ACANAL	65 PA_ACP	26 ACP
6146	BAL12	12	7 ACANAL	65 PA_ACP	26 ACP
6147	BAL2	2.4	7 ACANAL	65 PA_ACP	26 ACP
6148	SUM	12	7 ACANAL	65 PA_ACP	26 ACP
6149	GAM2	2.4	7 ACANAL	65 PA_ACP	26 ACP
6151	IND44	43.8	7 ACANAL	65 PA_ACP	26 ACP
6152	IND2	2.4	7 ACANAL	65 PA_ACP	26 ACP
6153	TAP401	43.8	7 ACANAL	65 PA_ACP	26 ACP
6154	TAP402	43.8	7 ACANAL	65 PA_ACP	26 ACP
6155	MIR13G	13.8	7 ACANAL	65 PA_ACP	26 ACP
6156	MIR12A	12	7 ACANAL	65 PA_ACP	26 ACP
6157	MIR12B	12	7 ACANAL	65 PA_ACP	26 ACP
6170	CPA115	115	6 PANAMA	62 PA_ATLAN	29 CPSA
6171	PAC230	230	6 PANAMA	61 PA_ESTE	32 PEDREGAL
6172	PAC13.8	13.8	6 PANAMA	61 PA_ESTE	32 PEDREGAL
6173	STR115	115	6 PANAMA	62 PA_ATLAN	20 ETESA
6174	PM115-1A	115	6 PANAMA	62 PA_ATLAN	20 ETESA



6175	PM115-2A	115	6 PANAMA	62 PA_ATLAN	20 ETESA
6176	ESTG1	13.8	6 PANAMA	64 PA_OESTE	24 AES
6177	ESTG2	13.8	6 PANAMA	64 PA_OESTE	24 AES
6178	EST230	230	6 PANAMA	64 PA_OESTE	24 AES
6179	GUA230	230	6 PANAMA	64 PA_OESTE	20 ETESA
6182	VEL230	230	6 PANAMA	64 PA_OESTE	20 ETESA
6183	CVI T3A	13.8	6 PANAMA	61 PA_ESTE	22 ENSA
6184	CVI T3B	13.8	6 PANAMA	61 PA_ESTE	22 ENSA
6185	LOC T3A	13.8	6 PANAMA	60 PA_CAPIT	21 FENOSA
6186	LOC T3B	13.8	6 PANAMA	60 PA_CAPIT	21 FENOSA
6187	MAR T2B	13.8	6 PANAMA	60 PA_CAPIT	21 FENOSA
6188	MAR T3A	13.8	6 PANAMA	60 PA_CAPIT	21 FENOSA
6189	MAR T3B	13.8	6 PANAMA	60 PA_CAPIT	21 FENOSA
6190	SMA T2B	13.8	6 PANAMA	60 PA_CAPIT	22 ENSA
6191	SMA T3A	13.8	6 PANAMA	60 PA_CAPIT	22 ENSA
6192	SMA T3B	13.8	6 PANAMA	60 PA_CAPIT	22 ENSA
6193	MOS T1B	13.8	6 PANAMA	60 PA_CAPIT	22 ENSA
6194	MOS T2A	13.8	6 PANAMA	60 PA_CAPIT	22 ENSA
6195	MOS T2B	13.8	6 PANAMA	60 PA_CAPIT	22 ENSA
6196	TOC T1B	13.8	6 PANAMA	61 PA_ESTE	22 ENSA
6210	TIN115	115	6 PANAMA	62 PA_ATLAN	22 ENSA
6211	PM115-9	115	6 PANAMA	60 PA_CAPIT	22 ENSA
6212	TIN13.8	13.8	6 PANAMA	60 PA_CAPIT	22 ENSA
6213	TIN T1	13.8	6 PANAMA	60 PA_CAPIT	22 ENSA
6214	TIN T2	13.8	6 PANAMA	60 PA_CAPIT	22 ENSA
6230	CBA115	115	6 PANAMA	60 PA_CAPIT	21 FENOSA
6231	CBA T1A	13.8	6 PANAMA	60 PA_CAPIT	21 FENOSA
6232	CBA T1B	13.8	6 PANAMA	60 PA_CAPIT	21 FENOSA
6233	CBA T2A	13.8	6 PANAMA	60 PA_CAPIT	21 FENOSA
6234	CBA T2B	13.8	6 PANAMA	60 PA_CAPIT	21 FENOSA
6235	CBA T3	13.8	6 PANAMA	60 PA_CAPIT	21 FENOSA
6236	CBA T4	13.8	6 PANAMA	60 PA_CAPIT	21 FENOSA
6240	LGU 230	230	6 PANAMA	63 PA_CENTR	20 ETESA
6241	LGU 34	34.5	6 PANAMA	63 PA_CENTR	20 ETESA
6260	CHA 230	230	6 PANAMA	64 PA_OESTE	20 ETESA
6261	CHA 115	115	6 PANAMA	64 PA_OESTE	20 ETESA
6262	CHA 34	34.5	6 PANAMA	64 PA_OESTE	20 ETESA
6263	ESP230	230	6 PANAMA	64 PA_OESTE	45 AES CHANGUIN
6264	CHAG113.8	13.8	6 PANAMA	64 PA_OESTE	45 AES CHANGUIN
6265	CHAG213.8	13.8	6 PANAMA	64 PA_OESTE	45 AES CHANGUIN
6266	ESP34	34.5	6 PANAMA	64 PA_OESTE	45 AES CHANGUIN
6267	CHAG3 34	34.5	6 PANAMA	64 PA_OESTE	45 AES CHANGUIN
6268	CHAG3 6.9	6.9	6 PANAMA	64 PA_OESTE	45 AES CHANGUIN
6270	CAT 115	115	6 PANAMA	62 PA_ATLAN	25 BLM
6271	CAT 13A	13.8	6 PANAMA	62 PA_ATLAN	25 BLM
6272	CAT 13B	13.8	6 PANAMA	62 PA_ATLAN	25 BLM
6280	GIR 115	115	6 PANAMA	62 PA_ATLAN	34 TERCAR
6281	GIR 13A	13.8	6 PANAMA	62 PA_ATLAN	34 TERCAR
6282	GIR 13B	13.8	6 PANAMA	62 PA_ATLAN	34 TERCAR
6290	CATII 11	115	6 PANAMA	62 PA_ATLAN	35 TERCOLON



6291	TCOG1	13.8	6 PANAMA	62 PA_ATLAN	35 TERCOLON
6292	TCOG2	13.8	6 PANAMA	62 PA_ATLAN	35 TERCOLON
6293	TCOG3	13.8	6 PANAMA	62 PA_ATLAN	35 TERCOLON
6300	CAL 34.5	34.5	6 PANAMA	64 PA_OESTE	20 ETESA
6310	ALGA34.5	34.5	6 PANAMA	64 PA_OESTE	36 ESEPSA
6311	ALGA13.8	13.8	6 PANAMA	64 PA_OESTE	36 ESEPSA
6320	MEND34.5	34.5	6 PANAMA	64 PA_OESTE	37 CAL ENER
6321	MEND13.8	13.8	6 PANAMA	64 PA_OESTE	37 CAL ENER
6330	BAI230	230	6 PANAMA	64 PA_OESTE	40 IDEAL PANAMA
6331	BAI115	115	6 PANAMA	64 PA_OESTE	40 IDEAL PANAMA
6332	BAM115	115	6 PANAMA	64 PA_OESTE	40 IDEAL PANAMA
6333	BAM13A	13.8	6 PANAMA	64 PA_OESTE	40 IDEAL PANAMA
6334	BAM13B	13.8	6 PANAMA	64 PA_OESTE	40 IDEAL PANAMA
6340	CAN 230	230	6 PANAMA	64 PA_OESTE	38 PETROTER
6341	CAN 34	34.5	6 PANAMA	64 PA_OESTE	38 PETROTER
6350	PM115-8	115	6 PANAMA	60 PA_CAPIT	20 ETESA
6360	GLA230	230	6 PANAMA	64 PA_OESTE	41 BONTEX
6363	ZAM230	230	6 PANAMA	64 PA_OESTE	41 BONTEX
6364	LOR13A	13.8	6 PANAMA	64 PA_OESTE	41 BONTEX
6365	LOR13B	13.8	6 PANAMA	64 PA_OESTE	41 BONTEX
6366	EVA230	230	6 PANAMA	64 PA_OESTE	41 BONTEX
6367	PRU13A	13.8	6 PANAMA	64 PA_OESTE	41 BONTEX
6368	PRU13B	13.8	6 PANAMA	64 PA_OESTE	41 BONTEX
6380	BOQIII 230	230	6 PANAMA	64 PA_OESTE	20 ETESA
6381	BOQIII 34.5	34.5	6 PANAMA	64 PA_OESTE	20 ETESA
6382	PEDI34.5	34.5	6 PANAMA	64 PA_OESTE	44 PEDREGALITO
6383	PEDII34.5	34.5	6 PANAMA	64 PA_OESTE	44 PEDREGALITO
6384	PEDI13.8	13.8	6 PANAMA	64 PA_OESTE	44 PEDREGALITO
6385	PEDII13.8	13.8	6 PANAMA	64 PA_OESTE	44 PEDREGALITO
6400	FRONTCHA	230	6 PANAMA	64 PA_OESTE	20 ETESA
6500	FRONTVEL	230	6 PANAMA	64 PA_OESTE	20 ETESA
6505	IMAGINARIO	34.5	6 PANAMA	64 PA_OESTE	46 H BOQUERON
6509	MAC34.5	34.5	6 PANAMA	64 PA_OESTE	46 H BOQUERON
6510	MAC0.69A	0.7	6 PANAMA	64 PA_OESTE	46 H BOQUERON
6511	MAC0.69B	0.7	6 PANAMA	64 PA_OESTE	46 H BOQUERON
6520	PANCH13.8	13.8	6 PANAMA	64 PA_OESTE	47 P ANCHO
6529	HCONC34.5	34.5	6 PANAMA	64 PA_OESTE	48 HPOWER
6530	HCONC4.16	4.2	6 PANAMA	64 PA_OESTE	48 HPOWER
6540	CAZ13.8	13.8	6 PANAMA	61 PA_ESTE	33 EGESA
6541	CAZ0.48A	0.5	6 PANAMA	61 PA_ESTE	33 EGESA
6542	CAZ0.48B	0.5	6 PANAMA	61 PA_ESTE	33 EGESA
6543	CAZ0.48C	0.5	6 PANAMA	61 PA_ESTE	33 EGESA
6544	CAZ0.48D	0.5	6 PANAMA	61 PA_ESTE	33 EGESA
6545	CAZ0.48E	0.5	6 PANAMA	61 PA_ESTE	33 EGESA
6546	CAZ0.48F	0.5	6 PANAMA	61 PA_ESTE	33 EGESA
6550	CHAZ115	115	6 PANAMA	64 PA_OESTE	33 EGESA
6551	CHAZ13.8	13.8	6 PANAMA	64 PA_OESTE	33 EGESA
6552	CHAZ 0.48A	0.5	6 PANAMA	64 PA_OESTE	33 EGESA
6553	CHAZ 0.48B	0.5	6 PANAMA	64 PA_OESTE	33 EGESA
6554	CHAZ 0.48C	0.5	6 PANAMA	64 PA_OESTE	33 EGESA



6555	CHAZ 0.48D	0.5	6 PANAMA	64 PA_OESTE	33 EGESA
6560	PLANETA13.8	13.8	6 PANAMA	64 PA_OESTE	49 S FRANCOLI
6570	FRAILE13.8	13.8	6 PANAMA	63 PA_CENTR	50 HIBERICA
6580	LBO115	115	6 PANAMA	61 PA_ESTE	22 ENSA
6581	LBO13.8	13.8	6 PANAMA	61 PA_ESTE	22 ENSA
6590	24DIC230	230	6 PANAMA	61 PA_ESTE	22 ENSA
6591	24DIC13.8	13.8	6 PANAMA	61 PA_ESTE	22 ENSA





Voltaje (pu)	Angulo (grad)
1.0162	14.02
0.9959	-8.05
1.0125	-10.44
0.9997	-7.46
1.015	-9.69
1.0024	-6.55
0.982	-10.08
1.0266	-16.81
1.0118	-0.41
1.0226	-4.61
1.0222	-5.52
1.012	12.21
1.0173	13.69
0.9955	10.53
1.0161	14.02
1.0144	13.51
1.0114	12.61
1.0054	-15.36
1.0123	-10.46
1.0078	-10.91
1.0554	-15.07
1.0084	-11.11
1.0186	-16.08
1.0065	-11.2
1.0018	-10.42
1.0119	-13.52
1.0115	-13.09
1.0064	-11.46
1.0488	-16.92
1.0068	-11.82
1.0457	-18.32
1.0049	-11.9
1.0043	-11.69
1.0313	-17.31
1.0026	-12.05
1.0536	-17.1
1.0108	-10.59
1.039	-14.71
1.0096	-10.85
1.041	-15.6
1.0044	-11.8
1.0369	-17.83
1.0049	-12.2
1.0149	-18.27
1.0023	-12.21
1.0362	-16.81
1.0046	-12.13



0.9968	-10.98
1.0803	-12.29
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1	0
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1	0
1	0
1	0
1.0096	-10.82
1.042	-16.61
1.0132	-9.98
1.048	-16.52
1.0088	-7.38
1.0088	-7.35
1.0211	-9.75
1.0068	-10.12
0.9768	-10.53
1	0
1	0
1.0086	-7.99
1	0
0.9648	-10.01
0.9714	-10.67
1	0
1.0053	-2.57
1.0053	-2.57
1.0057	-2.81
1.0088	-7.37
0.9769	-7.38
0.9769	-7.38
0.9842	-7.38
0.9842	-7.38
0.9666	-10.2
0.9761	-10.56
1	0
1.0117	-11.01
1.0117	-11.01
1.0117	-11.01
1.0139	-10.23
1.0139	-10.23
1.0238	16.97
1.0263	17.46
1.01	21.6
1.01	21.6
1.0238	17.18
1.01	21.87
1.01	21.87
1.0105	13.07
0.985	17
1.0105	13.07



1.0105	13.07
1.0136	-4.31
1	0
0.99	0.08
1.0021	-6.97
1.0021	-6.97
1.0025	-6.53
0.9853	0.02
0.9853	0.02
0.99	-0.43
0.9888	-10.44
0.9888	-10.44
1.024	-9.59
0.9999	-6
1.021	-6.71
1.0156	-6.21
1.01	-3.38
1.01	-2.78
1.01	-3.59
1.01	-3.95
1.0023	-6.63
1.0015	-5.3
1.0212	-1.49
1.01	1.04
1.01	1.73
1.01	1.72
0.9963	-6.12
0.9789	-9.34
0.9787	-9.35
0.9779	-9.48
1.0086	-6.21
1.0267	-6.48
1.0267	-6.48
1.0265	-6.38
1.0652	-7.4
1.0538	-8.06
1.0272	-5.69
1.045	-6.38
0.9759	-10.03
0.9743	-10.98
0.9761	-10.03
0.9761	-10.03
0.9999	-6
1.0256	-6
1.0256	-6
1.0098	-7.34
1.0073	-6.36
0.9832	-2.1
1.0091	-7.75
1.0116	-8.95



1.0116	-8.95
1.013	11.76
1.013	11.76
1.013	11.76
1.013	11.76
1.0182	6.62
1.0581	-15.58
1.0066	-11.17
1.0455	-19.37
1.0036	-11.95
1.0047	-12.05
1.057	-14.41
1.0036	-11.87
1.0097	-10.82
1.0362	-16.56
1.0089	-10.97
1.0078	-11.19
1.0438	-14.97
1.0084	-11.08
1.0123	-10.4
1.0096	-10.82
1.0097	-10.82
1.054	-14.77
1.0083	-11.07
1.0087	-11.08
1.0054	-11.64
1	0
1	0
1	0
1	0
1	0
1	0
1.0039	-3.72
0.9732	-9.94
1.0123	22.72
1.0086	21.75
0.9965	20.02
1.0123	22.92
1	31.14
1	30.37
0.9982	31.56
0.9987	31.6
0.9969	32.02
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1	-2
1	-2
1.0099	-7.13
1	-3.14
1	-3.09
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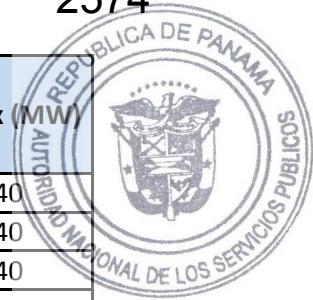


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0.9608	-7.42
1.0517	20.36
1.0601	21.31
1.01	26.32
1.0583	21.08
1.01	21.93
1.0163	14.36
1.0032	18.36
1.006	21.3
1	30.59
1	30.59
1.0084	15.91
0.9545	14.07
1.0085	-11.11
1.0171	11.93
1.0225	12.17
1.02	13.4
1.02	13.4
1.0254	12.3
1.02	14.29
1.02	14.29
1.015	13.44
1.0108	18.47
1.0174	19.43
1.0167	19.07
1.02	20.49
1.02	19.76
1.0125	22.72
1.0377	6.45
1.0108	18.47
1.0215	19.92
1.0214	20.02
1.0214	20.02
0.9494	10.71
1.0123	19.15
1.0094	19.47
1.0021	-6.97
1.0021	-6.97
1.0021	-6.97
1.0021	-6.97
1.0021	-6.97
1.0021	-6.97
1.0144	13.51
1.0144	13.51
1.0144	13.51
1.0144	13.51
1.0144	13.51

2573

1.0144	13.51
0.9494	10.69
0.975	-5.34
1.0075	-10.95
1.0015	-12.72
1.0033	-6.95
0.9964	-8.99



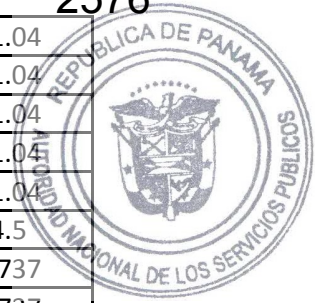


Número de Bus	Unidad de Generación	Id	VSched (pu)	En línea	Pgen (MW)	Pmax (MW)
6071	BLMG2 13.800	V2	1	1	38	40
6072	BLMG3 13.800	V3	1	1	38	40
6073	BLMG4 13.800	V4	1	1	38	40
6075	BLMG5 13.800	J5	0.99	0	30	32
6076	BLMG6 13.800	J6	0.99	0	30	32
6077	BLMG8 13.800	T8	0.99	0	30	33.5
6078	BLMG9 13.800	V9	0.99	0	20	49.31
6090	LESG1 13.800	E1	1.01	1	22.42	23.6
6091	LESG2 13.800	E2	1.01	1	22.42	23.6
6094	LVAG1 13.800	L1	1.01	1	26	27.4
6095	LVAG2 13.800	L2	1.01	1	26	27.4
6097	FORG1 13.800	F1	0.985	1	62	100
6098	FORG2 13.800	F2	0.985	0	62	100
6099	FORG3 13.800	F3	0.985	0	62	100
6101	BAYG1 13.800	B1	1	1	58.1117	87
6102	BAYG2 13.800	B2	0.99	1	58.65	87
6104	COP13.8 13.800	CO	1	0	40	42
6106	PAM13A 13.800	M1	1	1	15.1	16
6106	PAM13A 13.800	M2	1	1	15.1	16
6106	PAM13A 13.800	M3	1	1	15.1	16
6107	PAM13B 13.800	M4	1	1	15.1	16
6107	PAM13B 13.800	M5	1	1	15.1	16
6107	PAM13B 13.800	M6	1	1	15.1	16
6110	BAYG3 13.800	B3	0.99	1	60.143	86
6113	PAN G1 13.800	G1	1	0	58.65	21.4
6114	PAN G2 13.800	G2	1	0	19	21.4
6127	MIR13B 13.800	G6	1.01	1	17.999	18
6128	MIR13C 12.000	G3	1.01	1	19.999	22
6129	MIR13D 13.800	G4	1.01	1	19.3275	33
6130	MIR13F 13.800	G5	1.01	1	17	18
6134	MAD6A 6.9000	G1	1.01	1	10	12
6135	MAD6B 6.9000	G2	1.01	1	10	12
6136	MAD6C 6.9000	G3	1.01	1	10	12
6140	GAT6A 6.9000	G1	1	0	0	3
6140	GAT6A 6.9000	G2	1	0	0	3
6140	GAT6A 6.9000	G3	1	0	0	3
6140	GAT6A 6.9000	G4	1	0	0	4.5
6140	GAT6A 6.9000	G5	1	0	0	4.5
6140	GAT6A 6.9000	G6	1	0	0	4.5
6155	MIR13G 13.800	G7	1	0	0	18.9
6155	MIR13G 13.800	G8	1	0	0	18.9
6156	MIR12A 12.000	G1	1	0	0	12.176
6157	MIR12B 12.000	G2	1	0	0	12.176
6172	PAC13.8 13.800	P1	1	1	16.95	17.84
6172	PAC13.8 13.800	P2	1	1	16.95	17.84
6172	PAC13.8 13.800	P3	1	1	16.95	17.84

6176	ESTG1	13.800	E1	1	0	57	60
6177	ESTG2	13.800	E2	1	0	57	60
6264	CHAG113.8	13.800	G1	1	1	99.607	104.85
6265	CHAG213.8	13.800	G2	1	1	99.607	104.85
6268	CHAG3 6.9	6.9000	G3	1	1	8.66	9.776
6271	CAT 13A	13.800	G1	1	1	8.26	8.72
6271	CAT 13A	13.800	G2	1	1	8.26	8.72
6271	CAT 13A	13.800	G3	1	1	8.26	8.72
6271	CAT 13A	13.800	G4	1	1	8.26	8.72
6271	CAT 13A	13.800	G5	1	1	8.26	8.72
6272	CAT 13B	13.800	G0	1	1	8.26	8.72
6272	CAT 13B	13.800	G6	1	1	8.26	8.72
6272	CAT 13B	13.800	G7	1	1	8.26	8.72
6272	CAT 13B	13.800	G8	1	1	8.26	8.72
6272	CAT 13B	13.800	G9	1	1	8.26	8.72
6281	GIR 13A	13.800	G1	1	1	3.7	3.87
6281	GIR 13A	13.800	G2	1	1	3.7	3.87
6281	GIR 13A	13.800	G3	1	1	3.7	3.87
6281	GIR 13A	13.800	G4	1	1	3.7	3.87
6282	GIR 13B	13.800	G5	1	1	8.27	8.73
6282	GIR 13B	13.800	G6	1	1	8.27	8.73
6282	GIR 13B	13.800	G7	1	1	8.27	8.73
6282	GIR 13B	13.800	G8	1	1	8.27	8.73
6291	TCOG1	13.800	G1	0.995	0	47	50
6292	TCOG2	13.800	G2	0.995	0	47	50
6293	TCOG3	13.800	G3	0.995	0	47	50
6311	ALGA13.8	13.800	A1	1.01	1	4.8	5.1
6311	ALGA13.8	13.800	A2	1.01	1	4.8	5.1
6321	MEND13.8	13.800	M1	1.01	1	8.9	9.375
6321	MEND13.8	13.800	M2	1.01	1	8.9	9.375
6333	BAM13A	13.800	G1	1	1	26.6	28
6334	BAM13B	13.800	G2	1	1	26.6	28
6364	LOR13A	13.800	G1	1.02	1	16	16.9
6365	LOR13B	13.800	G2	1.02	1	16	16.9
6367	PRU13A	13.800	G1	1.02	1	26	28
6368	PRU13B	13.800	G2	1.02	1	26	28
6384	PEDI13.8	13.800	G1	1.02	1	9.5	10
6384	PEDI13.8	13.800	G2	1.02	1	9.5	10
6385	PEDI13.8	13.800	G1	1.02	1	6.175	6.5
6385	PEDI13.8	13.800	G2	1.02	1	6.175	6.5
6510	MAC0.69A	0.7000	G1	1	1	1.628	1.714
6511	MAC0.69B	0.7000	G2	1	1	1.628	1.714
6520	PANCH13.8	13.800	P1	1	1	4.75	5
6530	HCONC4.16	4.2000	G1	1	1	4.75	5
6530	HCONC4.16	4.2000	G2	1	1	4.75	5
6541	CAZO.48A	0.5000	G1	1	0	10.488	11.04
6542	CAZO.48B	0.5000	G2	1	0	10.488	11.04
6543	CAZO.48C	0.5000	G3	1	0	10.488	11.04
6544	CAZO.48D	0.5000	G4	1	0	10.488	11.04
6545	CAZO.48E	0.5000	G5	1	0	10.488	11.04



6546	CAZ0.48F 0.5000	G6	1	0	10.488	11.04
6552	CHAZ 0.48A 0.5000	G1	1	0	10.488	11.04
6553	CHAZ 0.48B 0.5000	G2	1	0	10.488	11.04
6554	CHAZ 0.48C 0.5000	G3	1	0	10.488	11.04
6555	CHAZ 0.48D 0.5000	G4	1	0	10.488	11.04
6560	PLANETA13.8 13.800	G1	1	1	4.275	4.5
6570	FRAILE13.8 13.800	G1	1	1	2.47	2.737
6570	FRAILE13.8 13.800	G2	1	1	2.47	2.737



Pmin (MW)	Qgen (Mvar)	Qmax (Mvar)	Qmin (Mvar)	Mbase (MVA)	R Source (pu)	X Source (pu)
15	0	15	0	47	0	0.12
15	0	15	0	47	0	0.12
15	0	15	0	47	0	0.12
10	2.093	9	0	39.44	0	0.116
10	2.893	9	0	39.44	0	0.116
20	0	9	0	50	0	0.129
20	0	10	0	71	0	0.16
11	3.5104	12	-5	27	0	0.11
11	3.5104	12	-5	27	0	0.11
12	-3.2073	12	-5	27	0	0.11
12	-3.2073	12	-5	27	0	0.11
5	-20.6844	50	-50	111	0	0.155
5	-21.768	50	-50	111	0	0.155
5	-15.564	50	-50	111	0	0.155
40	10.9053	30	-25	94	0	0.26
40	3.1355	30	-25	94	0	0.26
5	0	26	0	50	0	0.2
13	9	9	0	20.67	0	0.2576
13	9	9	0	20.67	0	0.2576
13	9	9	0	20.67	0	0.2576
13	9	9	0	20.67	0	0.2576
13	9	9	0	20.67	0	0.2576
13	9	9	0	20.67	0	0.2576
40	-7.0145	67	-25	100	0	0.24
5	11.5	11.5	0	27.77	0	0.561
5	11.5	11.5	0	27.77	0	0.561
2	1.1478	8	0	23	0	0.223
11	8.6321	11	0	29.41	0	0.15
17	11.456	15	0	44.12	0	0.16
2	1.9978	8	0	27.69	0	0.15
0	0.9283	6	-6	13	0	0.36
0	0.84	6	-6	13	0	0.36
0	0.8404	6	-6	13	0	0.36
0	-0.098	2	-2	4.1	0	0.33
0	-0.098	2	-2	4.1	0	0.33
0	-0.098	2	-2	4.1	0	0.33
0	-0.195	3	-3	5.63	0	0.38
0	-0.195	3	-3	6.25	0	0.38
0	1.962	3	-3	6.25	0	0.38
11	4.485	8	0	23.05	0	0.179
11	4.485	8	0	23.05	0	0.179
0	0	5.9527	-5.9527	13.53	0	0.223
0	0	5.9527	-5.9527	13.53	0	0.223
3.5	9	9	-11	21.7	0	0.223
3.5	9	9	-11	21.7	0	0.223
3.5	9	9	-11	21.7	0	0.223

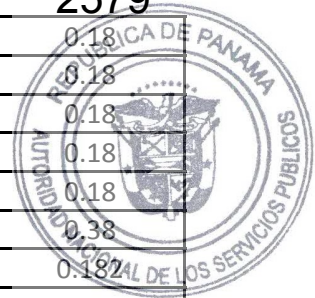


31.5	9.221	28.98	-28.98	69	0	0.3
31.5	9.221	28.98	-28.98	69	0	0.3
59.68	-1.7161	52.425	-48.93	116.5	0	0.19
59.68	1.6455	52.425	-48.93	116.5	0	0.19
6	4.88	4.88	-4.12	10.86	0	0.36
1.3	-0.4019	5.6	-5.6	10.9	0	0.156
1.3	-0.4019	5.6	-5.6	10.9	0	0.156
1.3	-0.4019	5.6	-5.6	10.9	0	0.156
1.3	-0.4019	5.6	-5.6	10.9	0	0.156
1.3	-0.4019	5.6	-5.6	10.9	0	0.156
1.3	-0.4019	5.6	-5.6	10.9	0	0.156
1.3	-0.4019	5.6	-5.6	10.9	0	0.156
1.3	-0.4019	5.6	-5.6	10.9	0	0.156
1.3	-0.4019	5.6	-5.6	10.9	0	0.156
1	-0.3919	2	-2	4.84	0	0.22
1	-0.3919	2	-2	4.84	0	0.22
1	-0.3919	2	-2	4.84	0	0.22
1	-0.3919	2	-2	4.84	0	0.22
2	-0.8578	2.5	-2.5	10.91	0	0.22
2	-0.8578	2.5	-2.5	10.91	0	0.22
2	-0.8578	2.5	-2.5	10.91	0	0.22
2	-0.8578	2.5	-2.5	10.91	0	0.22
30	20.332	25	-25	71.88	0	0.178
30	24.658	25	-25	71.88	0	0.24
10	25	25	-35	70.59	0	0.1
0.925	0.2284	2.26	-2.26	5.67	0	0.16
0.925	0.2284	2.26	-2.26	5.67	0	0.16
1.9	1.2991	4.16	-4.16	10.4	0	0.11
1.9	1.2991	4.16	-4.16	10.4	0	0.11
20.07	1.1773	10	-10	30	0	0.3
20.07	1.1773	10	-10	30	0	0.3
3.905	-1.6672	7.8	-7	25	0	0.3
3.905	-1.6672	7.8	-7	25	0	0.3
8	-3.5076	8	-8	33	0	0.3
8	-3.5076	8	-8	33	0	0.3
5	1.3847	4.875	-4.875	12.5	0	0.174
5	1.3847	4.875	-4.875	12.5	0	0.174
3.37	1.7116	3.208	-3.581	7.46	0	0.182
3.37	1.7116	3.208	-3.581	7.46	0	0.182
0	-0.09	0.903	-0.09	2.1	0	0.38
0	-0.09	0.903	-0.09	2.1	0	0.38
0	2	2	-2	6.25	0	0.38
0	-2.497	2.497	-2.497	5.55	0	0.178
0	-2.497	2.497	-2.497	5.55	0	0.178
7.2	-0.592	6.336	-5.28	15	0	0.18
7.2	-0.592	6.336	-5.28	15	0	0.18
7.2	-0.592	6.336	-5.28	15	0	0.18
7.2	-0.592	6.336	-5.28	15	0	0.18
7.2	-0.592	6.336	-5.28	15	0	0.18



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7.2	-0.592	6.336	-5.28	15	0	0.18
7.2	-3.848	6.336	-5.28	15	0	0.18
7.2	-3.848	6.336	-5.28	15	0	0.18
7.2	-3.848	6.336	-5.28	15	0	0.18
7.2	-3.848	6.336	-5.28	15	0	0.18
0	2	2	-2	4.92	0	0.38
0	1.168	1.168	-1.168	2.97	0	0.182
0	1.168	1.168	-1.168	2.97	0	0.182



RTran (pu)	XTran (pu)	Gentap (pu)	Agente	Modo de Control (Unidad Eólica)	Factor de Potencia (Unidad Eólica)
0	0	1	25	Not a wind machine	1
0	0	1	25	Not a wind machine	1
0	0	1	25	Not a wind machine	1
0	0	1	25	Not a wind machine	1
0	0	1	25	Not a wind machine	1
0	0	1	25	Not a wind machine	1
0	0	1	25	Not a wind machine	1
0	0	1	24	Not a wind machine	1
0	0	1	24	Not a wind machine	1
0	0	1	24	Not a wind machine	1
0	0	1	24	Not a wind machine	1
0	0	1.03	23	Not a wind machine	1
0	0	1.03	23	Not a wind machine	1
0	0	1.03	23	Not a wind machine	1
0	0	1	24	Not a wind machine	1
0	0	1	24	Not a wind machine	1
0	0	1	30	Not a wind machine	1
0	0	1	27	Not a wind machine	1
0	0	1	27	Not a wind machine	1
0	0	1	27	Not a wind machine	1
0	0	1	27	Not a wind machine	1
0	0	1	27	Not a wind machine	1
0	0	1	24	Not a wind machine	1
0	0	1	33	Not a wind machine	1
0	0	1	33	Not a wind machine	1
0	0	1	26	Not a wind machine	1
0	0	1	26	Not a wind machine	1
0	0	1	26	Not a wind machine	1
0	0	1	26	Not a wind machine	1
0	0	1	26	Not a wind machine	1
0	0	1	26	Not a wind machine	1
0	0	1	26	Not a wind machine	1
0	0	1	26	Not a wind machine	1
0	0	1	26	Not a wind machine	1
0	0	1	26	Not a wind machine	1
0	0	1	26	Not a wind machine	1
0	0	1	26	Not a wind machine	1
0	0	1	26	Not a wind machine	1
0	0	1	26	Not a wind machine	1
0	0	1	26	Not a wind machine	1
0	0	1	26	Not a wind machine	1
0	0	1	26	Not a wind machine	1
0	0	1	26	Not a wind machine	1
0	0	1	26	Not a wind machine	1
0	0	1	26	Not a wind machine	1
0	0	1	32	Not a wind machine	1
0	0	1	32	Not a wind machine	1
0	0	1	32	Not a wind machine	1



0	0	1	33	Not a wind machine	1
0	0	1	33	Not a wind machine	1
0	0	1	33	Not a wind machine	1
0	0	1	33	Not a wind machine	1
0	0	1	33	Not a wind machine	1
0	0	1	49	Not a wind machine	1
0	0	1	50	Not a wind machine	1
0	0	1	50	Not a wind machine	1





Número de Bus	Nombre del Bus	Id	Numero de Area / Nombre	Número de Zona / Nombre
6007	CHO34 34.500	1	6 PANAMA	63 PA_CENTR
6007	CHO34 34.500	13	6 PANAMA	63 PA_CENTR
6007	CHO34 34.500	2	6 PANAMA	63 PA_CENTR
6007	CHO34 34.500	3	6 PANAMA	63 PA_CENTR
6007	CHO34 34.500	31	6 PANAMA	63 PA_CENTR
6007	CHO34 34.500	8	6 PANAMA	63 PA_CENTR
6009	LSA115 115.00	1	6 PANAMA	63 PA_CENTR
6010	LSA34 34.500	1	6 PANAMA	63 PA_CENTR
6013	MDN34 34.500	1	6 PANAMA	64 PA_OESTE
6016	PRO34 34.500	1	6 PANAMA	64 PA_OESTE
6017	CEMEX 4.1600	1	6 PANAMA	62 PA_ATLAN
6020	CVI T1A 13.800	61	6 PANAMA	61 PA_ESTE
6020	CVI T1A 13.800	62	6 PANAMA	61 PA_ESTE
6020	CVI T1A 13.800	63	6 PANAMA	61 PA_ESTE
6020	CVI T1A 13.800	64	6 PANAMA	61 PA_ESTE
6022	CVI T2A 13.800	65	6 PANAMA	61 PA_ESTE
6022	CVI T2A 13.800	66	6 PANAMA	61 PA_ESTE
6022	CVI T2A 13.800	67	6 PANAMA	61 PA_ESTE
6022	CVI T2A 13.800	68	6 PANAMA	61 PA_ESTE
6022	CVI T2A 13.800	69	6 PANAMA	61 PA_ESTE
6022	CVI T2A 13.800	70	6 PANAMA	61 PA_ESTE
6024	CHI115 115.00	ID	6 PANAMA	62 PA_ATLAN
6025	CHI13A 13.800	56	6 PANAMA	62 PA_ATLAN
6025	CHI13A 13.800	57	6 PANAMA	62 PA_ATLAN
6026	CHI13B 13.800	59	6 PANAMA	62 PA_ATLAN
6026	CHI13B 13.800	60	6 PANAMA	62 PA_ATLAN
6026	CHI13B 13.800	87	6 PANAMA	62 PA_ATLAN
6028	LOC T1A 13.800	28	6 PANAMA	60 PA_CAPIT
6028	LOC T1A 13.800	29	6 PANAMA	60 PA_CAPIT
6028	LOC T1A 13.800	30	6 PANAMA	60 PA_CAPIT
6028	LOC T1A 13.800	87	6 PANAMA	60 PA_CAPIT
6028	LOC T1A 13.800	MD	6 PANAMA	60 PA_CAPIT
6028	LOC T1A 13.800	RM	6 PANAMA	60 PA_CAPIT
6030	LOC T2A 13.800	32	6 PANAMA	60 PA_CAPIT
6030	LOC T2A 13.800	33	6 PANAMA	60 PA_CAPIT
6030	LOC T2A 13.800	34	6 PANAMA	60 PA_CAPIT
6030	LOC T2A 13.800	35	6 PANAMA	60 PA_CAPIT
6030	LOC T2A 13.800	81	6 PANAMA	60 PA_CAPIT
6030	LOC T2A 13.800	89	6 PANAMA	60 PA_CAPIT
6033	MAR T1A 13.800	46	6 PANAMA	60 PA_CAPIT
6033	MAR T1A 13.800	47	6 PANAMA	60 PA_CAPIT
6033	MAR T1A 13.800	48	6 PANAMA	60 PA_CAPIT
6033	MAR T1A 13.800	49	6 PANAMA	60 PA_CAPIT
6033	MAR T1A 13.800	50	6 PANAMA	60 PA_CAPIT
6033	MAR T1A 13.800	51	6 PANAMA	60 PA_CAPIT
6035	MAR T2A 13.800	52	6 PANAMA	60 PA_CAPIT
6035	MAR T2A 13.800	53	6 PANAMA	60 PA_CAPIT



6035	MAR T2A	13.800	54	6 PANAMA	60 PA_CAPIT
6035	MAR T2A	13.800	55	6 PANAMA	60 PA_CAPIT
6035	MAR T2A	13.800	56	6 PANAMA	60 PA_CAPIT
6035	MAR T2A	13.800	57	6 PANAMA	60 PA_CAPIT
6037	SMA T1A	13.800	36	6 PANAMA	60 PA_CAPIT
6037	SMA T1A	13.800	37	6 PANAMA	60 PA_CAPIT
6037	SMA T1A	13.800	38	6 PANAMA	60 PA_CAPIT
6037	SMA T1A	13.800	39	6 PANAMA	60 PA_CAPIT
6039	SMA T2A	13.800	42	6 PANAMA	60 PA_CAPIT
6039	SMA T2A	13.800	43	6 PANAMA	60 PA_CAPIT
6039	SMA T2A	13.800	44	6 PANAMA	60 PA_CAPIT
6039	SMA T2A	13.800	45	6 PANAMA	60 PA_CAPIT
6041	SFR T2A	13.800	8	6 PANAMA	60 PA_CAPIT
6041	SFR T2A	13.800	11	6 PANAMA	60 PA_CAPIT
6041	SFR T2A	13.800	15	6 PANAMA	60 PA_CAPIT
6041	SFR T2A	13.800	21	6 PANAMA	60 PA_CAPIT
6041	SFR T2A	13.800	22	6 PANAMA	60 PA_CAPIT
6043	SFR T3A	13.800	5	6 PANAMA	60 PA_CAPIT
6043	SFR T3A	13.800	6	6 PANAMA	60 PA_CAPIT
6043	SFR T3A	13.800	10	6 PANAMA	60 PA_CAPIT
6043	SFR T3A	13.800	17	6 PANAMA	60 PA_CAPIT
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6045	SFR T4A	13.800	4	6 PANAMA	60 PA_CAPIT
6045	SFR T4A	13.800	16	6 PANAMA	60 PA_CAPIT
6045	SFR T4A	13.800	19	6 PANAMA	60 PA_CAPIT
6045	SFR T4A	13.800	23	6 PANAMA	60 PA_CAPIT
6048	CLA13.8	13.800	T1	6 PANAMA	60 PA_CAPIT
6056	MOS T1A	13.800	1	6 PANAMA	60 PA_CAPIT
6056	MOS T1A	13.800	2	6 PANAMA	60 PA_CAPIT
6056	MOS T1A	13.800	3	6 PANAMA	60 PA_CAPIT
6056	MOS T1A	13.800	4	6 PANAMA	60 PA_CAPIT
6056	MOS T1A	13.800	5	6 PANAMA	60 PA_CAPIT
6056	MOS T1A	13.800	6	6 PANAMA	60 PA_CAPIT
6056	MOS T1A	13.800	7	6 PANAMA	60 PA_CAPIT
6058	TOC T1A	13.800	1	6 PANAMA	61 PA_ESTE
6058	TOC T1A	13.800	2	6 PANAMA	61 PA_ESTE
6058	TOC T1A	13.800	3	6 PANAMA	61 PA_ESTE
6058	TOC T1A	13.800	4	6 PANAMA	61 PA_ESTE
6058	TOC T1A	13.800	5	6 PANAMA	61 PA_ESTE
6058	TOC T1A	13.800	6	6 PANAMA	61 PA_ESTE
6058	TOC T1A	13.800	7	6 PANAMA	61 PA_ESTE
6062	L.M.13B	13.800	1	6 PANAMA	62 PA_ATLAN
6063	MHOPE	43.800	1	6 PANAMA	62 PA_ATLAN
6066	FFIELD	115.00	1	6 PANAMA	62 PA_ATLAN
6069	COLON44A	43.800	1	6 PANAMA	62 PA_ATLAN
6125	MIR12	13.800	1	7 ACANAL	65 PA_ACP
6126	MIR13A	12.000	1	7 ACANAL	65 PA_ACP



6138	ACL44	43.800	1	7 ACANAL	65 PA_ACP
6140	GAT6A	6.9000	1	7 ACANAL	65 PA_ACP
6144	HOW12	12.000	1	7 ACANAL	65 PA_ACP
6145	MIR2	12.000	1	7 ACANAL	65 PA_ACP
6146	BAL12	12.000	1	7 ACANAL	65 PA_ACP
6147	BAL2	2.4000	1	7 ACANAL	65 PA_ACP
6148	SUM	12.000	1	7 ACANAL	65 PA_ACP
6149	GAM2	2.4000	1	7 ACANAL	65 PA_ACP
6152	IND2	2.4000	1	7 ACANAL	65 PA_ACP
6170	CPA115	115.00	1	6 PANAMA	62 PA_ATLAN
6172	PAC13.8	13.800	1	6 PANAMA	61 PA_ESTE
6183	CVI T3A	13.800	71	6 PANAMA	61 PA_ESTE
6183	CVI T3A	13.800	72	6 PANAMA	61 PA_ESTE
6183	CVI T3A	13.800	73	6 PANAMA	61 PA_ESTE
6183	CVI T3A	13.800	74	6 PANAMA	61 PA_ESTE
6183	CVI T3A	13.800	75	6 PANAMA	61 PA_ESTE
6183	CVI T3A	13.800	76	6 PANAMA	61 PA_ESTE
6185	LOC T3A	13.800	82	6 PANAMA	60 PA_CAPIT
6185	LOC T3A	13.800	83	6 PANAMA	60 PA_CAPIT
6185	LOC T3A	13.800	84	6 PANAMA	60 PA_CAPIT
6185	LOC T3A	13.800	85	6 PANAMA	60 PA_CAPIT
6185	LOC T3A	13.800	86	6 PANAMA	60 PA_CAPIT
6188	MAR T3A	13.800	58	6 PANAMA	60 PA_CAPIT
6188	MAR T3A	13.800	60	6 PANAMA	60 PA_CAPIT
6188	MAR T3A	13.800	63	6 PANAMA	60 PA_CAPIT
6191	SMA T3A	13.800	92	6 PANAMA	60 PA_CAPIT
6191	SMA T3A	13.800	93	6 PANAMA	60 PA_CAPIT
6191	SMA T3A	13.800	94	6 PANAMA	60 PA_CAPIT
6191	SMA T3A	13.800	95	6 PANAMA	60 PA_CAPIT
6191	SMA T3A	13.800	96	6 PANAMA	60 PA_CAPIT
6191	SMA T3A	13.800	97	6 PANAMA	60 PA_CAPIT
6194	MOS T2A	13.800	8	6 PANAMA	60 PA_CAPIT
6194	MOS T2A	13.800	9	6 PANAMA	60 PA_CAPIT
6194	MOS T2A	13.800	10	6 PANAMA	60 PA_CAPIT
6194	MOS T2A	13.800	11	6 PANAMA	60 PA_CAPIT
6194	MOS T2A	13.800	12	6 PANAMA	60 PA_CAPIT
6194	MOS T2A	13.800	BP	6 PANAMA	60 PA_CAPIT
6212	TIN13.8	13.800	1	6 PANAMA	60 PA_CAPIT
6212	TIN13.8	13.800	2	6 PANAMA	60 PA_CAPIT
6212	TIN13.8	13.800	3	6 PANAMA	60 PA_CAPIT
6212	TIN13.8	13.800	4	6 PANAMA	60 PA_CAPIT
6212	TIN13.8	13.800	5	6 PANAMA	60 PA_CAPIT
6212	TIN13.8	13.800	6	6 PANAMA	60 PA_CAPIT
6230	CBA115	115.00	1	6 PANAMA	60 PA_CAPIT
6231	CBA T1A	13.800	1	6 PANAMA	60 PA_CAPIT
6241	LGU 34	34.500	1	6 PANAMA	63 PA_CENTR
6262	CHA 34	34.500	1	6 PANAMA	64 PA_OESTE
6341	CAN 34	34.500	1	6 PANAMA	64 PA_OESTE
6581	LBO13.8	13.800	1	6 PANAMA	61 PA_ESTE
6591	24DIC13.8	13.800	1	6 PANAMA	61 PA_ESTE



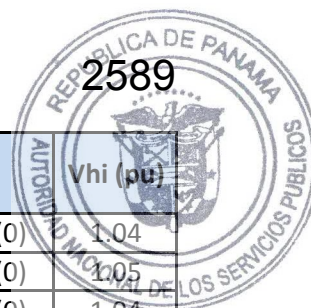
Número de Agente / Nombre	En Servicio	Pcarga (MW)	Qcarga (Mvar)
21 FENOSA	1	14.025	2.457
21 FENOSA	1	10.454	1.831
20 ETESA	1	21.796	3.818
20 ETESA	1	24.15	4.231
21 FENOSA	1	3.791	0.664
21 FENOSA	1	15.561	2.726
21 FENOSA	1	112.849	19.769
21 FENOSA	1	9.656	1.692
21 FENOSA	1	62.584	10.964
21 FENOSA	1	13.257	2.322
28 CEMEX	1	24.2	4.239
22 ENSA	1	2.185	0.383
22 ENSA	1	1.915	0.336
22 ENSA	1	3.601	0.631
22 ENSA	1	6.414	1.124
22 ENSA	1	4.339	0.76
22 ENSA	1	6.474	1.134
22 ENSA	1	3.511	0.615
22 ENSA	1	5.057	0.886
22 ENSA	1	2.384	0.418
22 ENSA	1	3.152	0.552
22 ENSA	1	9.018	1.58
22 ENSA	1	5.237	0.917
22 ENSA	1	4.269	0.748
22 ENSA	1	3.551	0.622
22 ENSA	1	1.905	0.334
22 ENSA	1	2.883	0.505
21 FENOSA	1	7.721	1.353
21 FENOSA	1	11.581	2.029
21 FENOSA	1	8.14	1.426
21 FENOSA	1	3.89	0.682
21 FENOSA	1	0.529	0.093
21 FENOSA	1	0.738	0.129
21 FENOSA	1	9.227	1.616
21 FENOSA	1	4.429	0.776
21 FENOSA	1	5.945	1.041
21 FENOSA	1	7.571	1.326
21 FENOSA	1	6.963	1.22
21 FENOSA	1	5.686	0.996
21 FENOSA	1	7.023	1.23
21 FENOSA	1	7.791	1.365
21 FENOSA	1	1.157	0.203
21 FENOSA	1	5.566	0.975
21 FENOSA	1	4.569	0.8
21 FENOSA	1	6.225	1.09
21 FENOSA	1	6.404	1.122
21 FENOSA	1	5.247	0.919



21 FENOSA	1	6.743	1.181
21 FENOSA	1	4.22	0.739
21 FENOSA	1	5.397	0.945
21 FENOSA	1	4.16	0.729
22 ENSA	1	5.945	1.041
22 ENSA	1	6.354	1.113
22 ENSA	1	5.087	0.891
22 ENSA	0	0	0
22 ENSA	1	7.551	1.323
22 ENSA	1	1.915	0.336
22 ENSA	1	7.062	1.237
22 ENSA	1	2.713	0.475
21 FENOSA	1	3.013	0.528
21 FENOSA	1	7.322	1.283
21 FENOSA	1	6.793	1.19
21 FENOSA	1	5.397	0.945
21 FENOSA	1	7.432	1.302
21 FENOSA	1	7.052	1.235
21 FENOSA	1	4.369	0.765
21 FENOSA	1	7.531	1.319
21 FENOSA	1	7.013	1.228
21 FENOSA	1	6.554	1.148
21 FENOSA	1	4.529	0.793
21 FENOSA	1	5.107	0.895
21 FENOSA	1	6.933	1.214
21 FENOSA	1	1.287	0.225
21 FENOSA	1	6.414	1.124
21 FENOSA	1	7.302	1.279
21 FENOSA	1	2.623	0.46
22 ENSA	1	2.703	0.474
22 ENSA	1	7.252	1.27
22 ENSA	1	7.791	1.365
22 ENSA	1	1.227	0.215
22 ENSA	1	4.429	0.776
22 ENSA	1	4.988	0.874
22 ENSA	1	4.279	0.75
22 ENSA	1	3.691	0.647
22 ENSA	1	2.544	0.446
22 ENSA	1	2.474	0.433
22 ENSA	1	3.701	0.648
22 ENSA	1	6.793	1.19
22 ENSA	1	8.569	1.501
22 ENSA	1	8	1.401
22 ENSA	1	6.713	1.176
22 ENSA	1	12.479	2.186
22 ENSA	1	6.723	1.178
22 ENSA	1	54.265	9.506
22 ENSA	1	25.686	4.5
26 ACP	1	5.716	1.001
26 ACP	1	11.432	2.003



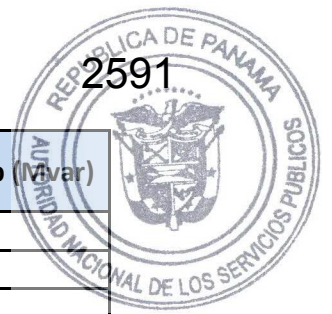
26 ACP	0	0	0
26 ACP	1	0.858	0.15
26 ACP	1	0.349	0.061
26 ACP	1	1.377	0.241
26 ACP	1	5.706	1
26 ACP	1	9.905	1.735
26 ACP	1	1.716	0.301
26 ACP	1	1.007	0.176
26 ACP	1	3.621	0.634
29 CPSA	1	8.02	1.405
22 ENSA	1	10.245	1.795
22 ENSA	1	2.025	0.355
22 ENSA	1	5.217	0.914
22 ENSA	1	7.033	1.232
22 ENSA	1	4.379	0.767
22 ENSA	0	0	0
22 ENSA	1	3.91	0.685
21 FENOSA	1	10.354	1.814
21 FENOSA	1	8.868	1.554
21 FENOSA	1	7.461	1.307
21 FENOSA	1	6.414	1.124
21 FENOSA	1	4.469	0.783
21 FENOSA	1	8.469	1.484
21 FENOSA	1	6.135	1.075
21 FENOSA	1	1.247	0.218
22 ENSA	1	3.152	0.552
22 ENSA	1	7.831	1.372
22 ENSA	1	4.329	0.758
22 ENSA	1	7.601	1.332
22 ENSA	1	2.753	0.482
22 ENSA	1	3.252	0.57
22 ENSA	1	9.776	1.713
22 ENSA	1	5.925	1.038
22 ENSA	1	1.596	0.28
22 ENSA	1	2.195	0.384
22 ENSA	1	2.214	0.388
22 ENSA	1	2.604	0.456
22 ENSA	1	5.845	1.024
22 ENSA	1	5.845	1.024
22 ENSA	1	5.845	1.024
22 ENSA	1	6.055	1.061
22 ENSA	1	7.93	1.389
22 ENSA	1	7.092	1.242
21 FENOSA	1	64.789	11.35
21 FENOSA	1	7.8	1.371
21 FENOSA	1	42.963	7.526
39 BOFCO	1	12.639	2.214
38 PETROTER	1	13.397	2.347
22 ENSA	1	14.015	2.455
22 ENSA	1	16.02	2.806



Número de Bus	Nombre de Bus	En servicio	Modo Control	Método de Ajuste	Vhi (pu)
6002	PAN115 115.00	1	Locked (0)	Sequential input order (0)	1.04
6008	LSA230 230.00	1	Locked (0)	Sequential input order (0)	1.05
6010	LSA34 34.500	1	Locked (0)	Sequential input order (0)	1.04
6013	MDN34 34.500	1	Locked (0)	Sequential input order (0)	1.04
6020	CVI T1A 13.800	1	Locked (0)	Sequential input order (0)	1
6022	CVI T2A 13.800	1	Locked (0)	Sequential input order (0)	1
6025	CHI13A 13.800	1	Locked (0)	Sequential input order (0)	1.05
6026	CHI13B 13.800	1	Locked (0)	Sequential input order (0)	1.05
6028	LOC T1A 13.800	1	Locked (0)	Sequential input order (0)	1.05
6030	LOC T2A 13.800	1	Locked (0)	Sequential input order (0)	1.05
6033	MAR T1A 13.800	1	Locked (0)	Sequential input order (0)	1.05
6035	MAR T2A 13.800	1	Locked (0)	Sequential input order (0)	1.05
6037	SMA T1A 13.800	1	Locked (0)	Sequential input order (0)	1.05
6039	SMA T2A 13.800	1	Locked (0)	Sequential input order (0)	1.05
6041	SFR T2A 13.800	1	Locked (0)	Sequential input order (0)	1.05
6043	SFR T3A 13.800	1	Locked (0)	Sequential input order (0)	1.05
6045	SFR T4A 13.800	1	Locked (0)	Sequential input order (0)	1.05
6056	MOS T1A 13.800	1	Locked (0)	Sequential input order (0)	1.05
6058	TOC T1A 13.800	1	Locked (0)	Sequential input order (0)	1.05
6062	L.M.13B 13.800	1	Locked (0)	Sequential input order (0)	1
6063	MHOPE 43.800	1	Locked (0)	Sequential input order (0)	1
6066	FFIELD 115.00	1	Locked (0)	Sequential input order (0)	1.05
6069	COLON44A 43.800	1	Locked (0)	Sequential input order (0)	1.05
6143	DUG12 12.000	1	Locked (0)	Sequential input order (0)	1.04
6145	MIR2 12.000	1	Locked (0)	Sequential input order (0)	1.04
6146	BAL12 12.000	1	Locked (0)	Sequential input order (0)	1.04
6147	BAL2 2.4000	1	Locked (0)	Sequential input order (0)	1.04
6152	IND2 2.4000	1	Locked (0)	Sequential input order (0)	1.04
6182	VEL230 230.00	1	Locked (0)	Sequential input order (0)	1.05
6183	CVI T3A 13.800	1	Locked (0)	Sequential input order (0)	1
6185	LOC T3A 13.800	1	Locked (0)	Sequential input order (0)	1.05
6188	MAR T3A 13.800	1	Locked (0)	Sequential input order (0)	1.05
6191	SMA T3A 13.800	1	Locked (0)	Sequential input order (0)	1.05
6194	MOS T2A 13.800	1	Locked (0)	Sequential input order (0)	1.05
6212	TIN13.8 13.800	1	Locked (0)	Sequential input order (0)	1
6230	CBA115 115.00	1	Locked (0)	Sequential input order (0)	1
6231	CBA T1A 13.800	1	Locked (0)	Sequential input order (0)	1
		1	Locked (0)	Sequential input order (0)	

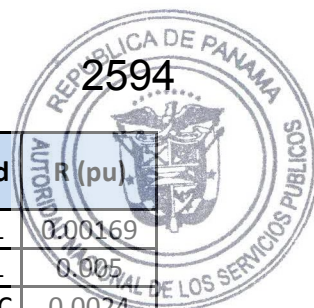


Vlo (pu)	Número de Bus Remoto	Nombre de Bus Remoto	Contribución de Vars (%)	Despachado (Mvar)	Blk 1 Steps	Blk Bstep (Mvar)
0.97	6001	PAN230 230.00	100	60	1	15
0.94	0		100	0	1	20
0.96	0		100	0	1	-20
0.96	0		100	-20	1	-20
1	0		100	5.4	1	5.4
1	0		100	0	1	9.9
0.96	0		100	3.6	1	3.6
0.96	0		100	0	1	3.6
0.96	0		100	9.9	1	9.9
0.96	0		100	3.6	1	3.6
0.96	0		100	0	1	8.1
0.96	0		100	9.9	1	9.9
0.96	0		100	0	1	5.4
0.96	0		100	0	1	3.6
0.96	0		100	9.9	1	9.9
0.96	0		100	0	1	8.1
0.96	0		100	8.1	1	8.1
0.96	0		100	0	1	10.8
0.96	0		100	5.4	1	5.4
0.96	0		100	7	1	7
0.96	0		100	4.8	1	2.4
0.96	0		100	10.7	1	10.7
0.96	0		100	0	1	7
0.97	0		100	4	1	4
0.97	0		100	0.75	1	0.75
0.97	0		100	6	1	6
0.97	0		100	3	1	3
0.97	0		100	0.75	1	0.75
0.94	0		100	0	1	-20
1	0		100	0	1	8.1
0.96	0		100	0	1	9.9
0.96	0		100	0	1	6.3
0.96	0		100	0	1	8.1
0.96	0		100	0	1	3.6
1	0		100	0	1	2.7
1	0		100	8.1	1	8.1
1	0		100	0	1	8.1



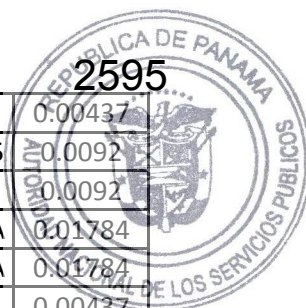
2591

Blk 2 Steps	Blk 2 Bstep (Mvar)	Blk 3 Steps	Blk 3 Bstep (Mvar)	Blk 4 Steps	Blk 4 Bstep (Mvar)
1	15	1	15	1	15
1	-20	1	-20	0	0
0	0	0	0	0	0
1	-20	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
1	2.4	0	0	0	0
1	10.7	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
1	-20	1	-20	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
2	4.5	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0



Número de Bus (Desde)	Nombre de Bus (Desde)	Número de Bus (Hasta)	Nombre de Bus (Hasta)	Id	R (pu)
6000	FRONTER 230.00	6014	PRO230 230.00	1	0.00169
6000	FRONTER 230.00	56050	RCL230A 230.00	1	0.005
6001	PAN230 230.00	6003	PANII230 230.00	1C	0.0024
6001	PAN230 230.00	6003	PANII230 230.00	2B	0.0024
6001	PAN230 230.00	6005	CHO230 230.00	3A	0.0068
6001	PAN230 230.00	6005	CHO230 230.00	4A	0.0068
6002	PAN115 115.00	6018	CAC115 115.00	12	0.0006
6002	PAN115 115.00	6018	CAC115 115.00	37	0.00037
6002	PAN115 115.00	6024	CHI115 115.00	3A	0.0172
6002	PAN115 115.00	6027	LOC115A 115.00	22	0.0047
6002	PAN115 115.00	6027	LOC115A 115.00	38	0.0047
6002	PAN115 115.00	6036	SMA115 115.00	7	0.0014
6002	PAN115 115.00	6055	MOS115B 115.00	10	0.00267
6002	PAN115 115.00	6170	CPA115 115.00	4A	0.03112
6002	PAN115 115.00	6210	TIN115 115.00	9	0.00414
6003	PANII230 230.00	6008	LSA230 230.00	12	0.0196
6003	PANII230 230.00	6008	LSA230 230.00	13	0.0196
6003	PANII230 230.00	6103	COP230 230.00	2A	0.00195
6003	PANII230 230.00	6171	PAC230 230.00	1B	0.00363
6003	PANII230 230.00	6590	24DIC230 230.00	B2	0.001815
6004	PANII115 115.00	6019	CVI115A 115.00	28	0.008
6004	PANII115 115.00	6019	CVI115A 115.00	29	0.008
6004	PANII115 115.00	6057	TOC115 115.00	32	0.0058
6004	PANII115 115.00	6057	TOC115 115.00	33	0.0058
6005	CHO230 230.00	6008	LSA230 230.00	4B	0.0242
6005	CHO230 230.00	6105	PAM230 230.00	11	0.00004
6005	CHO230 230.00	6240	LGU 230 230.00	4B	0.01404
6008	LSA230 230.00	6182	VEL230 230.00	14	0.0111
6008	LSA230 230.00	6182	VEL230 230.00	15	0.0111
6008	LSA230 230.00	6182	VEL230 230.00	5A	0.02213
6008	LSA230 230.00	6182	VEL230 230.00	6A	0.02213
6008	LSA230 230.00	6240	LGU 230 230.00	4C	0.01016
6011	MDN230 230.00	6014	PRO230 230.00	9	0.0094
6011	MDN230 230.00	6096	FOR230 230.00	7	0.0065
6011	MDN230 230.00	6096	FOR230 230.00	8	0.0065
6011	MDN230 230.00	6182	VEL230 230.00	5B	0.01568
6011	MDN230 230.00	6182	VEL230 230.00	6B	0.01568
6011	MDN230 230.00	6380	BOQIII 230 230.00	9A	0.0047
6012	MDN115 115.00	6087	CAL115 115.00	15	0.0182
6012	MDN115 115.00	6087	CAL115 115.00	16	0.0182
6014	PRO230 230.00	6330	BAI230 230.00	1	0.004
6014	PRO230 230.00	6330	BAI230 230.00	2	0.004
6014	PRO230 230.00	6380	BOQIII 230 230.00	9B	0.0047
6015	PRO115 115.00	6550	CHAZ115 115.00	1	0.000175

6018	CAC115	115.00	6027	LOC115A	115.00	6	0.00437
6018	CAC115	115.00	6123	MIR115	115.00	35	0.0092
6018	CAC115	115.00	6123	MIR115	115.00	5	0.0092
6018	CAC115	115.00	6174	PM115-1A	115.00	1A	0.01784
6018	CAC115	115.00	6175	PM115-2A	115.00	2A	0.01784
6018	CAC115	115.00	6350	PM115-8	115.00	8	0.00437
6019	CVI115A	115.00	6040	SFR115	115.00	11	0.008
6019	CVI115A	115.00	6580	LBO115	115.00	1	0.0025
6019	CVI115A	115.00	6580	LBO115	115.00	2	0.0025
6024	CHI115	115.00	6047	CLA115	115.00	24	0.009
6024	CHI115	115.00	6060	LM2115	115.00	3B	0.0241
6027	LOC115A	115.00	6032	MAR115A	115.00	21	0.0055
6027	LOC115A	115.00	6230	CBA115	115.00	39	0.0012
6027	LOC115A	115.00	6230	CBA115	115.00	40	0.0012
6032	MAR115A	115.00	6350	PM115-8	115.00	8	0.00551
6040	SFR115	115.00	6230	CBA115	115.00	41	0.0012
6055	MOS115B	115.00	6211	PM115-9	115.00	1	0.00429
6059	LM1115	115.00	6066	FFIELD	115.00	30	0.00766
6059	LM1115	115.00	6066	FFIELD	115.00	31	0.00766
6059	LM1115	115.00	6074	LMDIST	115.00	23	0
6059	LM1115	115.00	6173	STR115	115.00	1B	0.00424
6059	LM1115	115.00	6173	STR115	115.00	2B	0.00424
6059	LM1115	115.00	6270	CAT 115	115.00	0A	0.0005
6059	LM1115	115.00	6290	CATII 11	115.00	1C	0.00051
6060	LM2115	115.00	6074	LMDIST	115.00	26	0
6060	LM2115	115.00	6170	CPA115	115.00	4B	0.01277
6060	LM2115	115.00	6270	CAT 115	115.00	0B	0.0005
6061	L.M.44	43.800	6079	PM44-2	43.800	2	0.06741
6061	L.M.44	43.800	6080	PM44-3	43.800	3	0.0816
6063	MHOPE	43.800	6068	FF44	43.800	1	0.5313
6063	MHOPE	43.800	6080	PM44-3	43.800	3	0.00915
6063	MHOPE	43.800	6153	TAP401	43.800	1	0.00052
6063	MHOPE	43.800	6154	TAP402	43.800	2	0.00052
6068	FF44	43.800	6079	PM44-2	43.800	2	0.00763
6069	COLON44A	43.800	6079	PM44-2	43.800	2	0.01983
6069	COLON44A	43.800	6080	PM44-3	43.800	3	0.00763
6087	CAL115	115.00	6088	LES115	115.00	17	0.0042
6087	CAL115	115.00	6092	LVA115	115.00	18	0.0015
6096	FOR230	230.00	6179	GUA230	230.00	18	0.00159
6096	FOR230	230.00	6340	CAN 230	230.00	0A	0.00456
6100	BAY230	230.00	6103	COP230	230.00	2A	0.01071
6100	BAY230	230.00	6171	PAC230	230.00	1A	0.00915
6104	COP13.8	13.800	6540	CAZ13.8	13.800	1	0.0083
6124	MIR44	43.800	6131	BAL44	43.800	1	0.02625
6124	MIR44	43.800	6131	BAL44	43.800	2	0.02625
6124	MIR44	43.800	6132	SUM44	43.800	1	0.05934
6124	MIR44	43.800	6132	SUM44	43.800	2	0.05934



6124	MIR44	43.800	6142	DUG44	43.800	1	0.06932
6132	SUM44	43.800	6133	MAD44	43.800	1	0.1348
6132	SUM44	43.800	6133	MAD44	43.800	2	0.1348
6132	SUM44	43.800	6137	GAM44	43.800	1	0.0612
6132	SUM44	43.800	6137	GAM44	43.800	2	0.0612
6137	GAM44	43.800	6138	ACL44	43.800	1	0.2487
6137	GAM44	43.800	6138	ACL44	43.800	2	0.2487
6138	ACL44	43.800	6139	GAT44	43.800	1	0.01934
6138	ACL44	43.800	6139	GAT44	43.800	2	0.05615
6138	ACL44	43.800	6153	TAP401	43.800	1	0.05168
6138	ACL44	43.800	6154	TAP402	43.800	2	0.05168
6143	DUG12	12.000	6144	HOW12	12.000	1	0.0092
6143	DUG12	12.000	6144	HOW12	12.000	2	0.0092
6151	IND44	43.800	6153	TAP401	43.800	1	0.0055
6151	IND44	43.800	6154	TAP402	43.800	2	0.0055
6170	CPA115	115.00	6280	GIR 115	115.00	43	0.00159
6171	PAC230	230.00	6590	24DIC230	230.00	B1	0.001815
6173	STR115	115.00	6174	PM115-1A	115.00	1	0.00833
6173	STR115	115.00	6175	PM115-2A	115.00	1	0.00833
6173	STR115	115.00	6290	CATII 11	115.00	1B	0.00395
6178	EST230	230.00	6179	GUA230	230.00	19	0.00022
6179	GUA230	230.00	6182	VEL230	230.00	16	0.0085
6179	GUA230	230.00	6182	VEL230	230.00	17	0.0085
6179	GUA230	230.00	6360	GLA230	230.00	22	0.00542
6182	VEL230	230.00	6500	FRONTVEL	230.00	25	0.02123
6210	TIN115	115.00	6211	PM115-9	115.00	1	0.00252
6260	CHA 230	230.00	6263	ESP230	230.00	0C	0.0044
6260	CHA 230	230.00	6400	FRONTCHA	230.00	21	0.00244
6263	ESP230	230.00	6340	CAN 230	230.00	0B	0.01043
6266	ESP34	34.500	6267	CHAG3 34	34.500	25	0.0015
6300	CAL 34.5	34.500	6310	ALGA34.5	34.500	56	0.1022
6300	CAL 34.5	34.500	6320	MEND34.5	34.500	57	0.029
6331	BAI115	115.00	6332	BAM115	115.00	15	0.0182
6360	GLA230	230.00	6363	ZAM230	230.00	23	0.00723
6363	ZAM230	230.00	6366	EVA230	230.00	24	0.00633
6381	BOQIII 34.5	34.500	6382	PEDI34.5	34.500	66	0.0243
6381	BOQIII 34.5	34.500	6383	PEDII34.5	34.500	67	0.0243
6381	BOQIII 34.5	34.500	6505	IMAGINARIO	34.500	1	0
6400	FRONTCHA	230.00	58350	CAH230	230.00	1	0.00633
6500	FRONTVEL	230.00	56052	RCL230B	230.00	1	0.00325
6505	IMAGINARIO	34.500	6509	MAC34.5	34.500	1	0.38031
6505	IMAGINARIO	34.500	6529	HCONC34.5	34.500	1	0.065935



X (pu)	B (pu)	En Servicio	Normal (MVA)	Emergencia (MVA)	Longitud (Km)	Agente
0.0095	0.0178	1	193	366	9.7	1
0.0274	0.054	0	200	0	30	5
0.0117	0.0237	1	350	450	13	20
0.0117	0.0237	1	350	450	13	20
0.035	0.0717	1	193	366	40.3	20
0.035	0.0717	1	193	366	40.3	20
0.0026	0.0004	1	120	175	0.78	20
0.00173	0.00536	1	142	178	0	20
0.0736	0.0113	1	93	175	22.5	20
0.0225	0.0031	1	137	175	6.5	21
0.0225	0.0031	1	137	175	6.5	21
0.0047	0.0007	1	93	175	1.4	22
0.01231	0.03819	1	109	135	5.7	22
0.13317	0.02043	1	93	175	37.3	20
0.01869	0.00654	1	151	175	5.7	22
0.1749	0.3623	1	225	450	195	20
0.1749	0.3623	1	225	450	195	20
0.00933	0.01895	1	186	350	10.4	20
0.01731	0.03516	0	186	350	19	20
0.008655	0.01758	1	186	350	9.5	20
0.0381	0.0052	1	158	196	7.5	22
0.0381	0.0052	1	158	196	7.5	22
0.0277	0.0038	1	93	175	4	22
0.0277	0.0038	1	93	175	4	22
0.1247	0.2554	1	193	366	142.2	20
0.00038	0.00071	1	193	366	0.6	27
0.07233	0.14813	1	193	366	82.5	20
0.1019	0.1996	1	225	450	110.07	20
0.1019	0.1996	1	225	450	110.07	20
0.11395	0.23334	1	193	366	109.36	20
0.11395	0.23334	1	193	366	109.36	20
0.05237	0.10727	1	193	366	59.7	20
0.0528	0.0907	0	193	366	54	20
0.0337	0.0689	1	193	366	37.5	20
0.0337	0.0689	1	193	366	37.5	20
0.08075	0.16536	1	193	366	84.49	20
0.08075	0.16536	1	193	366	84.49	20
0.0264	0.04535	1	193	366	27	20
0.0953	0.0107	1	93	175	25	20
0.0953	0.0107	1	93	175	25	20
0.02249	0.03863	1	186	350	23	40
0.02249	0.03863	1	186	350	23	40
0.0264	0.04535	1	193	366	27	20
0.00076	0	1	47.8	0	0.02	33



0.02079	0.00283	1	140	150	6	21
0.0352	0	0	90	100	9	26
0.0352	0	1	90	100	9	26
0.09431	0.01198	1	150	175	47.54	20
0.09431	0.01198	1	150	175	47.54	20
0.02079	0.00283	1	140	150	5.5	21
0.0375	0.0053	1	141	155.1	11	21
0.0106	0.0007	1	90	0	3	22
0.0106	0.0007	1	90	0	3	22
0.0388	0.0026	1	90	0	11	22
0.1031	0.0158	1	93	175	32.1	20
0.0187	0.0022	1	114	125.4	5	21
0.0054	0.0168	1	160	0	2.72	21
0.0054	0.0168	1	160	0	2.72	21
0.01867	0.00219	1	114	132	5.5	21
0.0054	0.0168	1	184	0	2.7	21
0.01953	0.02818	1	109	135	5.7	22
0.03157	0.0043	1	93	175	9.1	22
0.03157	0.0043	1	93	175	9.1	22
0.0004	0	1	90.6	0	0.1	22
0.02241	0.00285	0	150	175	6.64	20
0.02241	0.00285	1	150	175	6.64	20
0.0005	0.0005	1	93	175	0.08	25
0.00267	0.00034	1	150	175	0.79	20
0.0004	0	1	90.6	0	0.1	22
0.05466	0.00838	1	93	175	16.7	20
0.0005	0.0005	1	93	175	0.08	25
0.17616	0.0009	0	41	46	8.84	22
0.21322	0.0009	1	41	46	10.7	22
1.2571	0.00009	1	32	36	0	22
0.02391	0.0009	1	41	46	1.2	22
0.175	0	1	38	46	0	22
0.175	0	1	38	46	0	22
0.01993	0.0009	1	41	46	1	22
0.05181	0.0009	1	41	46	2.6	22
0.01993	0.0009	1	41	46	1	22
0.0204	0.0027	1	93	175	5.69	20
0.007	0.0009	1	93	175	1.74	20
0.0152	0.028	1	225	450	16.01	20
0.02756	0.04725	1	280	366	28	20
0.05112	0.10385	1	186	350	57	20
0.04367	0.0882	1	186	350	48.4	20
0.019	0	1	100	0	0.23	33
0.1279	0	1	56	65	0	26
0.1279	0	1	56	65	0	26
0.1946	0	1	38	46	0	26
0.1946	0	1	38	46	0	26



0.22128	0	1	38	46	0	26
0.4618	0	1	38	46	0	26
0.4618	0	1	38	46	0	26
0.18994	0	1	38	46	0	26
0.18994	0	1	38	46	0	26
0.7703	0	1	38	46	0	26
0.7703	0	1	38	46	0	26
0.03202	0	1	38	46	0	26
0.0733	0	1	38	46	0	26
0.1731	0	1	38	46	0	26
0.1731	0	1	38	46	0	26
0.03288	0	1	38	46	0	26
0.03288	0	1	38	46	0	26
0.0047	0	1	20	25	0	26
0.0047	0	1	20	25	0	26
0.00733	0	1	159	0	2.3	34
0.008655	0.01758	1	186	350	9.5	20
0.07511	0.00952	1	150	175	0	20
0.07511	0.00952	1	150	175	0	20
0.0209	0.00266	1	150	175	6.19	20
0.00186	0.00391	1	193	366	0.5	20
0.0778	0.1524	1	225	450	84.3	20
0.0778	0.1524	1	225	450	84.3	20
0.00305	0.00523	1	131	405	6	41
0.13727	0.27419	1	300	389	150.2	20
0.01147	0.01655	1	109	135	3.3	22
0.02657	0.04557	1	280	366	27	20
0.01476	0.02532	1	280	366	15	20
0.06299	0.10801	1	280	366	64	20
0.0077	0.0003	1	286	318.7	8.52	45
0.1879	0	1	29	29	12.5	36
0.082	0	1	20	39	2.5	37
0.0953	0.0107	1	93	175	25	40
0.00406	0.00698	1	131	405	8	41
0.00355	0.00611	1	131	405	7	41
0.0933	0	1	22	39	7.5	44
0.0933	0	1	22	39	11.4	44
0.00001	0	1	28.7	32.8	0	46
0.03836	0.07023	0	300	0	40	5
0.02099	0.04192	0	374	374	23	5
0.7816	0.00068	1	20.7	0	15	46
0.09216	0.00027	1	28.7	32.8	6	48



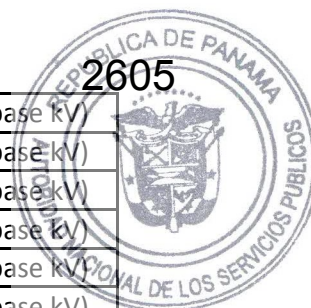
Número de Bus (Desde)	Nombre del Bus (Desde)	Número de Bus (Hasta)	Nombre del Bus (Hasta)	Id	Nombre	En Servicio
6010	LSA34 34.500	6570	FRAILE13.8 13.800	T1		1
6013	MDN34 34.500	6520	PANCH13.8 13.800	T1		1
6013	MDN34 34.500	6560	PLANETA13.8 13.800	T1		1
6017	CEMEX 4.1600	6047	CLA115 115.00	T1		1
6017	CEMEX 4.1600	6047	CLA115 115.00	T2		1
6017	CEMEX 4.1600	6047	CLA115 115.00	T3		1
6024	CHI115 115.00	6025	CHI13A 13.800	T1		1
6024	CHI115 115.00	6026	CHI13B 13.800	T2		1
6047	CLA115 115.00	6048	CLA13.8 13.800	T1		1
6060	LM2115 115.00	6071	BLMG2 13.800	T2		1
6060	LM2115 115.00	6072	BLMG3 13.800	T3		1
6060	LM2115 115.00	6073	BLMG4 13.800	T4		1
6062	L.M.13B 13.800	6074	LMDIST 115.00	T9	BLM44T9	1
6063	MHOPE 43.800	6064	MHOPE2.4 2.4000	T1		0
6063	MHOPE 43.800	6064	MHOPE2.4 2.4000	T2		0
6063	MHOPE 43.800	6065	MHOPE12 12.000	T1		0
6063	MHOPE 43.800	6065	MHOPE12 12.000	T2		0
6066	FFIELD 115.00	6067	FF13.8 13.800	T1		0
6066	FFIELD 115.00	6067	FF13.8 13.800	T2		0
6066	FFIELD 115.00	6068	FF44 43.800	T3	FF44T3	1
6069	COLON44A 43.800	6070	CLN4.16 4.1600	T1		0
6069	COLON44A 43.800	6070	CLN4.16 4.1600	T2		0
6087	CAL115 115.00	6300	CAL 34.5 34.500	T1		1
6096	FOR230 230.00	6097	FORG1 13.800	T1		1
6096	FOR230 230.00	6098	FORG2 13.800	T2		1
6096	FOR230 230.00	6099	FORG3 13.800	T3		1
6100	BAY230 230.00	6101	BAYG1 13.800	T1		1
6100	BAY230 230.00	6102	BAYG2 13.800	T2		1
6100	BAY230 230.00	6110	BAYG3 13.800	T3		1
6103	COP230 230.00	6104	COP13.8 13.800	T1		1
6105	PAM230 230.00	6106	PAM13A 13.800	T1		1
6105	PAM230 230.00	6107	PAM13B 13.800	T2		1
6123	MIR115 115.00	6124	MIR44 43.800	T1		1
6123	MIR115 115.00	6124	MIR44 43.800	T2		1
6124	MIR44 43.800	6125	MIR12 13.800	T1		1
6124	MIR44 43.800	6125	MIR12 13.800	T2		1
6124	MIR44 43.800	6126	MIR13A 12.000	T1		1
6124	MIR44 43.800	6127	MIR13B 13.800	T2		1
6124	MIR44 43.800	6128	MIR13C 12.000	T3		1
6124	MIR44 43.800	6129	MIR13D 13.800	T4		1
6124	MIR44 43.800	6130	MIR13F 13.800	T5		1
6124	MIR44 43.800	6145	MIR2 12.000	T1		1
6124	MIR44 43.800	6145	MIR2 12.000	T2		1
6124	MIR44 43.800	6155	MIR13G 13.800	T6		1



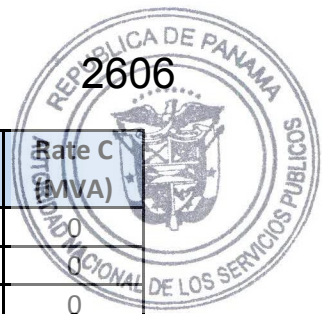
6124	MIR44	43.800	6156	MIR12A	12.000	T1	
6124	MIR44	43.800	6157	MIR12B	12.000	T1	
6131	BAL44	43.800	6146	BAL12	12.000	T1	
6131	BAL44	43.800	6146	BAL12	12.000	T2	
6131	BAL44	43.800	6147	BAL2	2.4000	T1	
6131	BAL44	43.800	6147	BAL2	2.4000	T2	
6131	BAL44	43.800	6147	BAL2	2.4000	T3	1
6132	SUM44	43.800	6148	SUM	12.000	T1	1
6132	SUM44	43.800	6148	SUM	12.000	T2	1
6133	MAD44	43.800	6134	MAD6A	6.9000	T1	1
6133	MAD44	43.800	6135	MAD6B	6.9000	T2	1
6133	MAD44	43.800	6136	MAD6C	6.9000	T3	1
6137	GAM44	43.800	6149	GAM2	2.4000	T1	1
6137	GAM44	43.800	6149	GAM2	2.4000	T2	1
6139	GAT44	43.800	6140	GAT6A	6.9000	T1	1
6139	GAT44	43.800	6140	GAT6A	6.9000	T2	1
6142	DUG44	43.800	6143	DUG12	12.000	T1	1
6151	IND44	43.800	6152	IND2	2.4000	T1	1
6151	IND44	43.800	6152	IND2	2.4000	T2	1
6171	PAC230	230.00	6172	PAC13.8	13.800	T1	1
6176	ESTG1	13.800	6178	EST230	230.00	T1	1
6177	ESTG2	13.800	6178	EST230	230.00	T2	1
6240	LGU 230	230.00	6241	LGU 34	34.500	T1	1
6263	ESP230	230.00	6264	CHAG113.8	13.800	T1	1
6263	ESP230	230.00	6265	CHAG213.8	13.800	T2	1
6264	CHAG113.8	13.800	6266	ESP34	34.500	T1	1
6267	CHAG3 34	34.500	6268	CHAG3 6.9	6.9000	T1	1
6270	CAT 115	115.00	6271	CAT 13A	13.800	T1	1
6270	CAT 115	115.00	6272	CAT 13B	13.800	T2	1
6280	GIR 115	115.00	6281	GIR 13A	13.800	T1	1
6280	GIR 115	115.00	6282	GIR 13B	13.800	T2	1
6290	CATII 11	115.00	6291	TCOG1	13.800	T1	1
6290	CATII 11	115.00	6292	TCOG2	13.800	T2	1
6290	CATII 11	115.00	6293	TCOG3	13.800	T3	1
6310	ALGA34.5	34.500	6311	ALGA13.8	13.800	T1	1
6320	MEND34.5	34.500	6321	MEND13.8	13.800	T1	1
6330	BAI230	230.00	6331	BAI115	115.00	T1	1
6332	BAM115	115.00	6333	BAM13A	13.800	T1	1
6332	BAM115	115.00	6334	BAM13B	13.800	T1	1
6340	CAN 230	230.00	6341	CAN 34	34.500	T1	1
6380	BOQIII 230	230.00	6381	BOQIII 34.5	34.500	T1	1
6382	PEDI34.5	34.500	6384	PEDI13.8	13.800	T1	1
6383	PEDII34.5	34.500	6385	PEDII13.8	13.800	T1	1
6509	MAC34.5	34.500	6510	MAC0.69A	0.7000	T1	1
6509	MAC34.5	34.500	6511	MAC0.69B	0.7000	T2	1
6529	HCONC34.5	34.500	6530	HCONC4.16	4.2000	T1	1
6540	CAZ13.8	13.800	6541	CAZ0.48A	0.5000	T1	1



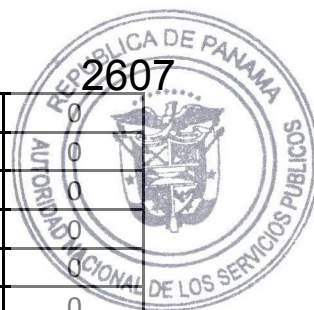
6540	CAZ13.8	13.800	6542	CAZO.48B	0.5000	T1	
6540	CAZ13.8	13.800	6543	CAZO.48C	0.5000	T1	
6540	CAZ13.8	13.800	6544	CAZO.48D	0.5000	T1	
6540	CAZ13.8	13.800	6545	CAZO.48E	0.5000	T1	
6540	CAZ13.8	13.800	6546	CAZO.48F	0.5000	T1	
6550	CHAZ115	115.00	6551	CHAZ13.8	13.800	T1	1
6550	CHAZ115	115.00	6551	CHAZ13.8	13.800	T2	1
6551	CHAZ13.8	13.800	6552	CHAZ 0.48A	0.5000	T1	1
6551	CHAZ13.8	13.800	6553	CHAZ 0.48B	0.5000	T1	1
6551	CHAZ13.8	13.800	6554	CHAZ 0.48C	0.5000	T1	1
6551	CHAZ13.8	13.800	6555	CHAZ 0.48D	0.5000	T1	1
6580	LBO115	115.00	6581	LBO13.8	13.800	T1	1
6590	24DIC230	230.00	6591	24DIC13.8	13.800	T1	1



0	0	33	None	1	Turns ratio (pu on bus base kV)
0	0	33	None	1	Turns ratio (pu on bus base kV)
0	0	33	None	1	Turns ratio (pu on bus base kV)
0	0	33	None	1	Turns ratio (pu on bus base kV)
0	0	33	None	1	Turns ratio (pu on bus base kV)
0	0	33	None	1	Turns ratio (pu on bus base kV)
0	0	33	None	1	Turns ratio (pu on bus base kV)
0	0	33	None	1	Turns ratio (pu on bus base kV)
0	0	33	None	1	Turns ratio (pu on bus base kV)
0	0	33	None	1	Turns ratio (pu on bus base kV)
0	0	33	None	1	Turns ratio (pu on bus base kV)
6581	0	33	Voltage	1	Turns ratio (pu on bus base kV)
6591	0	33	Voltage	1	Turns ratio (pu on bus base kV)



Impedance I/O Code	Admittance I/O Code	R (pu or watts)	X (pu)	Rate A (MVA)	Rate B (MVA)	Rate C (MVA)
Zpu (system base)	Y pu (system base)	0	0.06	10	12	
Zpu (system base)	Y pu (system base)	0	0.06	10	12	
Zpu (system base)	Y pu (system base)	0	0.06	10	13	0
Zpu (system base)	Y pu (system base)	0	0.972	10	0	0
Zpu (system base)	Y pu (system base)	0	0.972	15	0	0
Zpu (system base)	Y pu (system base)	0	0.972	30	0	0
Zpu (system base)	Y pu (system base)	0	0.5773	25	0	0
Zpu (system base)	Y pu (system base)	0	0.5773	25	0	0
Zpu (system base)	Y pu (system base)	0	0.9893	10	0	0
Zpu (system base)	Y pu (system base)	0	0.2225	50	0	0
Zpu (system base)	Y pu (system base)	0	0.2225	50	0	0
Zpu (system base)	Y pu (system base)	0	0.2115	50	0	0
Zpu (system base)	Y pu (system base)	0	0.52	28	0	0
Zpu (system base)	Y pu (system base)	0	0.8827	9.1	0	0
Zpu (system base)	Y pu (system base)	0	0.8827	9.1	0	0
Zpu (system base)	Y pu (system base)	0	0.654	12.5	0	0
Zpu (system base)	Y pu (system base)	0	0.654	12.5	0	0
Zpu (system base)	Y pu (system base)	0	0.685	15	0	0
Zpu (system base)	Y pu (system base)	0	0.6875	20	0	0
Zpu (system base)	Y pu (system base)	0	0.3024	42	0	0
Zpu (system base)	Y pu (system base)	0	0.6	13.3	0	0
Zpu (system base)	Y pu (system base)	0	0.6	13.3	0	0
Zpu (system base)	Y pu (system base)	0	0.24	62.5	0	0
Zpu (system base)	Y pu (system base)	0	0.11	111	0	0
Zpu (system base)	Y pu (system base)	0	0.11	111	0	0
Zpu (system base)	Y pu (system base)	0	0.11	111	0	0
Zpu (system base)	Y pu (system base)	0	0.12781	96	0	0
Zpu (system base)	Y pu (system base)	0	0.12781	96	0	0
Zpu (system base)	Y pu (system base)	0	0.1113	109	0	0
Zpu (system base)	Y pu (system base)	0	0.17667	100	0	0
Zpu (system base)	Y pu (system base)	0	0.23016	63	0	0
Zpu (system base)	Y pu (system base)	0	0.23016	63	0	0
Zpu (system base)	Y pu (system base)	0.0468	0.2586	47	0	0
Zpu (system base)	Y pu (system base)	0.0468	0.2586	50	0	0
Zpu (system base)	Y pu (system base)	0.08101	0.466	25	0	0
Zpu (system base)	Y pu (system base)	0.08101	0.466	25	0	0
Zpu (system base)	Y pu (system base)	0.08101	0.0466	25	0	0
Zpu (system base)	Y pu (system base)	0.04606	0.26	23	0	0
Zpu (system base)	Y pu (system base)	0.05256	0.3	30	0	0
Zpu (system base)	Y pu (system base)	0.04256	0.24	45	0	0
Zpu (system base)	Y pu (system base)	0.0384	0.2168	24	0	0
Zpu (system base)	Y pu (system base)	0.22498	0.907	9.4	0	0
Zpu (system base)	Y pu (system base)	0.22498	0.907	9.4	0	0
Zpu (system base)	Y pu (system base)	0	0.1876	46	0	0



Zpu (system base)	Y pu (system base)	0.08101	0.466	25	0	
Zpu (system base)	Y pu (system base)	0.08101	0.466	25	0	
Zpu (system base)	Y pu (system base)	0.07927	0.438	25	0	
Zpu (system base)	Y pu (system base)	0.07927	0.457	25	0	
Zpu (system base)	Y pu (system base)	0.08742	0.82	9.4	0	
Zpu (system base)	Y pu (system base)	0.08742	0.82	9.4	0	0
Zpu (system base)	Y pu (system base)	0.08742	0.833	9.4	0	0
Zpu (system base)	Y pu (system base)	0.15184	0.8693	9.4	0	0
Zpu (system base)	Y pu (system base)	0.15184	0.875	9.4	0	0
Zpu (system base)	Y pu (system base)	0.1	0.454	16	0	0
Zpu (system base)	Y pu (system base)	0.1	0.574	16	0	0
Zpu (system base)	Y pu (system base)	0.1	0.5733	16	0	0
Zpu (system base)	Y pu (system base)	0.10474	1	6.3	0	0
Zpu (system base)	Y pu (system base)	0.10474	1	6.3	0	0
Zpu (system base)	Y pu (system base)	0.1	0.534	28	0	0
Zpu (system base)	Y pu (system base)	0.1	0.534	28	0	0
Zpu (system base)	Y pu (system base)	0.07881	0.454	25	0	0
Zpu (system base)	Y pu (system base)	0.1	0.867	9.4	0	0
Zpu (system base)	Y pu (system base)	0.1	0.867	9.4	0	0
Zpu (system base)	Y pu (system base)	0	0.1846	65	0	0
Zpu (system base)	Y pu (system base)	0	0.6105	70	0	0
Zpu (system base)	Y pu (system base)	0	0.6105	70	0	0
Zpu (system base)	Y pu (system base)	0	0.245	50	0	0
Zpu (system base)	Y pu (system base)	0	0.133	127	0	0
Zpu (system base)	Y pu (system base)	0	0.131	127	0	0
Zpu (system base)	Y pu (system base)	0	0.0841	13	0	0
Zpu (system base)	Y pu (system base)	0	0.085	13	0	0
Zpu (system base)	Y pu (system base)	0	0.2279	52	0	0
Zpu (system base)	Y pu (system base)	0	0.2279	52	0	0
Zpu (system base)	Y pu (system base)	0	0.475	20	0	0
Zpu (system base)	Y pu (system base)	0	0.2152	66.6	0	0
Zpu (system base)	Y pu (system base)	0	0.0847	75	0	0
Zpu (system base)	Y pu (system base)	0	0.0847	75	0	0
Zpu (system base)	Y pu (system base)	0	0.0847	75	0	0
Zpu (system base)	Y pu (system base)	0	0.9278	12	0	0
Zpu (system base)	Y pu (system base)	0	0.0853	22	0	0
Zpu (system base)	Y pu (system base)	0	0.135	60	0	0
Zpu (system base)	Y pu (system base)	0	0.6105	70	0	0
Zpu (system base)	Y pu (system base)	0	0.6105	70	0	0
Zpu (system base)	Y pu (system base)	0	0.22	50	0	0
Zpu (system base)	Y pu (system base)	0	0.2054	83.3	0	0
Zpu (system base)	Y pu (system base)	0	0.101	27	0	0
Zpu (system base)	Y pu (system base)	0	0.1	16	0	0
Zpu (system base)	Y pu (system base)	0	0.11	2.5	0	0
Zpu (system base)	Y pu (system base)	0	0.11	2.5	0	0
Zpu (system base)	Y pu (system base)	0	0.06	10	13	0
Zpu (system base)	Y pu (system base)	0	0.054	12.6	0	0



Zpu (system base)	Y pu (system base)	0	0.054	12.6	0	0
Zpu (system base)	Y pu (system base)	0	0.054	12.6	0	0
Zpu (system base)	Y pu (system base)	0	0.054	12.6	0	0
Zpu (system base)	Y pu (system base)	0	0.054	12.6	0	0
Zpu (system base)	Y pu (system base)	0	0.054	12.6	0	0
Zpu (system base)	Y pu (system base)	0	0.06335	45	60	75
Zpu (system base)	Y pu (system base)	0	0.06335	45	60	75
Zpu (system base)	Y pu (system base)	0	0.054	12.6	0	0
Zpu (system base)	Y pu (system base)	0	0.054	12.6	0	0
Zpu (system base)	Y pu (system base)	0	0.054	12.6	0	0
Zpu (system base)	Y pu (system base)	0	0.2225	50	0	0
Zpu (system base)	Y pu (system base)	0	0.2225	50	0	0



2609

Magnetización G (pu or watts)	MagnetizaciónB (pu)	Agente	MVA Base de Devanado	Relación de Devanado (pu or kV)	Rmax (Relación de ángulo)
0	0	50	100	1.05	1.5
0	0	47	100	1.05	1.5
0	0	49	100	1.05	1.5
0	0	28	100	0.9753	1.1
0	0	28	100	0.9753	1.1
0	0	28	100	0.9753	1.1
0	0	22	100	1	1.1
0	0	22	100	0.9812	1.1
0	0	22	100	0.9187	1.1
0	0	25	100	1	1.1
0	0	25	100	1	1.1
0	0	25	100	1	1.1
0	0	22	100	1.025	1.1
0	0	22	100	1	1.1
0	0	22	100	1	1.1
0	0	22	100	0.9875	1.1
0	0	22	100	0.9875	1.1
0	0	22	100	1.0063	1.1
0	0	22	100	1.0063	1.1
0	0	22	100	1.0938	1.1
0	0	22	100	0.9688	1.1
0	0	22	100	0.9688	1.1
0	0	20	100	0.975	1.5
0	0	23	100	1	1.1
0	0	23	100	1	1.1
0	0	23	100	1	1.1
0	0	24	100	1.025	1.1
0	0	24	100	1.025	1.1
0	0	24	100	1.0134	1.1
0	0	30	100	1	1.1
0	0	27	100	1.08	1.1
0	0	27	100	1.08	1.1
0	0	26	100	1.07	1.1
0	0	26	100	1.07	1.1
0	0	26	100	0.9749	1.1
0	0	26	100	0.9749	1.1
0	0	26	100	0.9749	1.1
0	0	26	100	1	1.1
0	0	26	100	1.025	1.1
0	0	26	100	1.025	1.1
0	0	26	100	1	1.1
0	0	26	100	0.9749	1.1
0	0	26	100	0.9749	1.1
0	0	26	100	1	1.1



0	0	26	100	0.9749	1.1
0	0	26	100	0.9749	1.1
0	0	26	100	0.9498	1.1
0	0	26	100	0.9498	1.1
0	0	26	100	0.9521	1.1
0	0	26	100	0.9521	1.1
0	0	26	100	0.9521	1.1
0	0	26	100	0.9726	1.1
0	0	26	100	0.9726	1.1
0	0	26	100	1.0244	1.1
0	0	26	100	1.0244	1.1
0	0	26	100	1.0244	1.1
0	0	26	100	0.9521	1.1
0	0	26	100	0.9521	1.1
0	0	26	100	1	1.1
0	0	26	100	1	1.1
0	0	26	100	1	1.1
0	0	26	100	1	1.1
0	0	26	100	1	1.1
0	0	32	100	1.025	1.1
0	0	20	100	1	1.5
0	0	20	100	1	1.5
0	0	20	100	1.0059	1.1
0	0	45	100	1.0059	1.1
0	0	45	100	1.0059	1.1
0	0	45	100	1.0059	1.1
0	0	45	100	1.0059	1.1
0	0	25	100	1	1.1
0	0	25	100	1	1.1
0	0	34	100	1	1.1
0	0	34	100	1	1.1
0	0	35	100	1.05	1.5
0	0	35	100	1.05	1.5
0	0	35	100	1.05	1.5
0	0	36	100	1.05	1.5
0	0	37	100	1.05	1.5
0	0	40	100	1	1.5
0	0	20	100	1	1.5
0	0	20	100	1	1.5
0	0	38	100	1.05	1.5
0	0	20	100	1	1.1
0	0	44	100	1	1.5
0	0	44	100	1	1.5
0	0	46	100	1	1.5
0	0	46	100	1	1.5
0	0	48	100	1	1.5
0	0	33	100	1	1.1

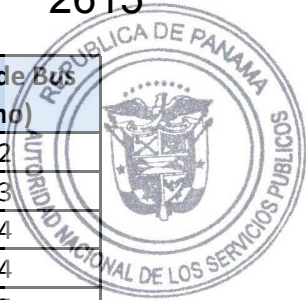


2611

0	0	33	100	1	1.1
0	0	33	100	1	1.1
0	0	33	100	1	1.1
0	0	33	100	1	1.1
0	0	33	100	1	1.1
0	0	33	100	1	1.1
0	0	33	100	1	1.1
0	0	33	100	1	1.1
0	0	33	100	1	1.1
0	0	33	100	1	1.1
0	0	33	100	1	1.1
0	0	33	100	1	1.1
0	0	22	100	1	1.1
0	0	22	100	1	1.1



Número de Bus (Desde)	Nombre de Bus (Desde)	Número de Bus (Hasta)	Nombre de Bus (Hasta)	Número de Bus (Último)
6001	PAN230 230.00	6002	PAN115 115.00	6082
6001	PAN230 230.00	6002	PAN115 115.00	6083
6001	PAN230 230.00	6002	PAN115 115.00	6084
6002	PAN115 115.00	6113	PAN G1 13.800	6114
6003	PANII230 230.00	6004	PANII115 115.00	6085
6003	PANII230 230.00	6004	PANII115 115.00	6086
6005	CHO230 230.00	6006	CHO115 115.00	6007
6005	CHO230 230.00	6006	CHO115 115.00	6007
6008	LSA230 230.00	6009	LSA115 115.00	6010
6008	LSA230 230.00	6009	LSA115 115.00	6010
6011	MDN230 230.00	6012	MDN115 115.00	6013
6011	MDN230 230.00	6012	MDN115 115.00	6013
6011	MDN230 230.00	6012	MDN115 115.00	6013
6014	PRO230 230.00	6015	PRO115 115.00	6016
6014	PRO230 230.00	6015	PRO115 115.00	6016
6020	CVI T1A 13.800	6019	CVI115A 115.00	6021
6022	CVI T2A 13.800	6019	CVI115A 115.00	6023
6028	LOC T1A 13.800	6027	LOC115A 115.00	6029
6030	LOC T2A 13.800	6027	LOC115A 115.00	6031
6033	MAR T1A 13.800	6032	MAR115A 115.00	6034
6035	MAR T2A 13.800	6032	MAR115A 115.00	6187
6037	SMA T1A 13.800	6036	SMA115 115.00	6038
6039	SMA T2A 13.800	6036	SMA115 115.00	6190
6041	SFR T2A 13.800	6040	SFR115 115.00	6042
6043	SFR T3A 13.800	6040	SFR115 115.00	6044
6045	SFR T4A 13.800	6040	SFR115 115.00	6046
6056	MOS T1A 13.800	6055	MOS115B 115.00	6193
6058	TOC T1A 13.800	6057	TOC115 115.00	6196
6059	LM1115 115.00	6075	BLMG5 13.800	6076
6059	LM1115 115.00	6077	BLMG8 13.800	6078
6061	L.M.44 43.800	6074	LMDIST 115.00	6062
6088	LES115 115.00	6090	LESG1 13.800	6091
6092	LVA115 115.00	6094	LVAG1 13.800	6095
6183	CVI T3A 13.800	6019	CVI115A 115.00	6184
6185	LOC T3A 13.800	6027	LOC115A 115.00	6186
6188	MAR T3A 13.800	6032	MAR115A 115.00	6189
6191	SMA T3A 13.800	6036	SMA115 115.00	6192
6194	MOS T2A 13.800	6055	MOS115B 115.00	6195
6212	TIN13.8 13.800	6210	TIN115 115.00	6213
6212	TIN13.8 13.800	6210	TIN115 115.00	6214
6231	CBA T1A 13.800	6230	CBA115 115.00	6232
6260	CHA 230 230.00	6261	CHA 115 115.00	6262
6363	ZAM230 230.00	6364	LOR13A 13.800	6365
6366	EVA230 230.00	6367	PRU13A 13.800	6368



Nombre de Bus (Último)		Id	Nombre	En Servicio	Terminal No Medida	Devanado 1 Lado	Devanado 2 Lado
PAN13T1	13.800	T1	TRAFO1	All in-service	From bus	From bus	To bus
PAN13T2	13.800	T2	TRAFO2	All in-service	From bus	From bus	To bus
PAN13T3	13.800	T3	TRAFO3	All in-service	From bus	From bus	To bus
PAN G2	13.800	T4	TRAFO4	All in-service	To bus	From bus	To bus
PANIIT1	13.800	T1	TRAFO1	All in-service	From bus	From bus	To bus
PANIIT2	13.800	T2	TRAFO2	All in-service	From bus	From bus	To bus
CHO34	34.500	T1	TRAFO1	All in-service	From bus	From bus	To bus
CHO34	34.500	T2	TRAFO2	All in-service	From bus	From bus	To bus
LSA34	34.500	T1	TRAFO1	All in-service	From bus	From bus	To bus
LSA34	34.500	T2	TRAFO2	All in-service	From bus	From bus	To bus
MDN34	34.500	T1	TRAFO1	All in-service	From bus	From bus	To bus
MDN34	34.500	T2	TRAFO2	All in-service	From bus	From bus	To bus
MDN34	34.500	T3	TRAFO3	All in-service	From bus	From bus	To bus
PRO34	34.500	T1	TRAFO1	All in-service	From bus	From bus	To bus
PRO34	34.500	T2	TRAFO2	All in-service	From bus	From bus	To bus
CVI T1B	13.800	T1	CVI T1	All in-service	From bus	From bus	To bus
CVI T2B	13.800	T2	CVI T2	All in-service	From bus	From bus	To bus
LOC T1B	13.800	T1	LOC T1	All in-service	From bus	From bus	To bus
LOC T2B	13.800	T2	LOC T2	All in-service	From bus	From bus	To bus
MAR T1B	13.800	T1	MAR T1	All in-service	From bus	From bus	To bus
MAR T2B	13.800	T2	MAR T2	All in-service	From bus	From bus	To bus
SMA T1B	13.800	T1	STM T1	All in-service	From bus	From bus	To bus
SMA T2B	13.800	T2	STM T2	All in-service	From bus	From bus	To bus
SFR T2B	13.800	T2	SFCO T2	All in-service	From bus	From bus	To bus
SFR T3B	13.800	T3	SFCO T3	All in-service	From bus	From bus	To bus
SFR T4B	13.800	T4	SFCO T4	All in-service	From bus	From bus	To bus
MOS T1B	13.800	T1	MOS T1	All in-service	From bus	From bus	To bus
TOC T1B	13.800	T1	TOC T1	All in-service	From bus	From bus	To bus
BLMG6	13.800	T1	TRAFO7	All in-service	To bus	From bus	To bus
BLMG9	13.800	T1	TRAFO12	All in-service	To bus	From bus	To bus
L.M.13B	13.800	T8	BLM44T8	All in-service	From bus	From bus	To bus
LESG2	13.800	T1	TRAFO1	All in-service	To bus	From bus	To bus
LVAG2	13.800	T1	TRAFO1	All in-service	To bus	From bus	To bus
CVI T3B	13.800	T3	CVI T3	All in-service	From bus	From bus	To bus
LOC T3B	13.800	T3	LOC T3	All in-service	From bus	From bus	To bus
MAR T3B	13.800	T3	MAR T3	All in-service	From bus	From bus	To bus
SMA T3B	13.800	T3	SMA T3A	All in-service	From bus	From bus	To bus
MOS T2B	13.800	T2	MOS T2	All in-service	From bus	From bus	To bus
TIN T1	13.800	T1	TIN T1	All in-service	From bus	From bus	To bus
TIN T2	13.800	T2	TIN T1	All in-service	From bus	From bus	To bus
CBA T1B	13.800	T1	CBA T1A	All out-of-service	From bus	From bus	To bus
CHA 34	34.500	T1	TRAFO1	All in-service	From bus	From bus	To bus
LOR13B	13.800	T1	TRAFO1	All in-service	To bus	From bus	To bus
PRU13B	13.800	T1	TRAFO1	All in-service	To bus	From bus	To bus

All in-service

To bus


From bus

To bus





W1-2 R (pu or watts)	W1-2 X (pu)	W2-3 R (pu or watts)	W2-3 X (pu)	W3-1 R (pu or watts)
0	0.0514	0	0.4495	0
0	0.0514	0	0.4495	0
0	0.0257	0	0.2247	0
0	0.01768	0	0.3211	0
0	0.0514	0	0.4495	0
0	0.0514	0	0.4495	0
0	0.12	0	0.23	0
0	0.12	0	0.23	0
0	0.1314	0	0.3262	0
0	0.1314	0	0.3262	0
0	0.1314	0	0.3262	0
0	0.1314	0	0.3262	0
0	0.1341	0	0.3347	0
0	0.12	0	0.23	0
0	0.1226	0	0.2286	0
0	0.53	0	0.4	0
0	0.36	0	0.24	0
0	0.2987	0	0.203	0
0	0.2987	0	0.203	0
0	0.2987	0	0.203	0
0	0.2987	0	0.203	0
0	0.4153	0	0.2226	0
0	0.454	0	0.2226	0
0	0.3584	0	0.2436	0
0	0.2987	0	0.203	0
0	0.2987	0	0.203	0
0	0.2987	0	0.203	0
0	0.2987	0	0.203	0
0	0.2063	0	0.1074	0
0	0.1465	0	0.2773	0
0	0.2536	0	0.4358	0
0	0.31	0	0.5887	0
0	0.31	0	0.5887	0
0	0.36	0	0.24	0
0	0.3584	0	0.2436	0
0	0.2987	0	0.203	0
0	0.3584	0	0.2436	0
0	0.2987	0	0.203	0
0	0.3584	0	0.2436	0
0	0.3584	0	0.2436	0
0	0.3584	0	0.2436	0
0	0.125	0	0.2293	0
0	0.12	0	0.2	0
0	0.12	0	0.2	0



W3-1 X (pu)	Magnetización G (pu or watts)	Magnetización B (pu)	Devanado 1-2 MVA Base	Devanado 2-3 MVA Base	Devanado 3-1 MVA Base
0.5257	0	0	100	100	100
0.5257	0	0	100	100	100
0.2628	0	0	100	100	100
0.1768	0	0	100	100	100
0.5257	0	0	100	100	100
0.5257	0	0	100	100	100
0.38	0	0	100	100	100
0.38	0	0	100	100	100
0.4881	0	0	100	100	100
0.4881	0	0	100	100	100
0.4881	0	0	100	100	100
0.4881	0	0	100	100	100
0.5105	0	0	100	100	100
0.38	0	0	100	100	100
0.385	0	0	100	100	100
0.88	0	0	100	100	100
0.56	0	0	100	100	100
0.463	0	0	100	100	100
0.463	0	0	100	100	100
0.463	0	0	100	100	100
0.463	0	0	100	100	100
0.586	0	0	100	100	100
0.634	0	0	100	100	100
0.5556	0	0	100	100	100
0.463	0	0	100	100	100
0.463	0	0	100	100	100
0.463	0	0	100	100	100
0.463	0	0	100	100	100
0.2063	0	0	100	100	100
0.1485	0	0	100	100	100
0.175	0	0	100	100	100
0.31	0	0	100	100	100
0.31	0	0	100	100	100
0.56	0	0	100	100	100
0.5556	0	0	100	100	100
0.463	0	0	100	100	100
0.5556	0	0	100	100	100
0.463	0	0	100	100	100
0.5556	0	0	100	100	100
0.5556	0	0	100	100	100
0.5556	0	0	100	100	100
0.379	0	0	100	100	100
0.12	0	0	100	100	100
0.12	0	0	100	100	100



Star Point Bus Voltage	Star Point Bus Angle	Agente
1.0117	-11	20
1.0117	-11	20
1.0117	-11	20
0.98876	-10.4	20
1.01391	-10.2	20
1.01391	-10.2	20
0.98197	-10.1	20
0.98197	-10.1	20
1.02119	-5.1	20
1.02119	-5.1	20
1.0167	14	20
1.0167	14	20
1.01653	14.2	20
1.01437	13.5	20
1.01437	13.5	20
1.00839	-11.1	22
1.00645	-11.2	22
1.00678	-11.8	21
1.00488	-11.9	21
1.00256	-12	21
1.00473	-12	21
1.00965	-10.8	22
1.00968	-10.8	22
1.00494	-12.2	21
1.00234	-12.2	21
1.0046	-12.1	21
1.00776	-11.2	21
1.01225	-10.4	22
0.97693	-7.4	25
0.98417	-7.4	25
0.98958	-9.8	25
1.0019	17.9	24
1.02216	17.6	24
1.00662	-11.2	22
1.00362	-12	21
1.00359	-11.9	21
1.00888	-11	22
1.0084	-11.1	21
1.0083	-11.1	22
1.00869	-11.1	22
1	0	21
1.00857	21.7	20
1.02176	12.5	24
1.02376	12.9	41