



12-1148

# TEL LONG DURATION SERIES



# APPLICATIONS

- Customer Premise
- Broadband
- Wireless
- PBX
- Repeaters
- Fixed Wireline

# FEATURES & BENEFITS

- Telcordia certified life exceeding 10 years.
- Telcordia tested and qualified to meet all SR-4228 requirements.
- Flame-arresting, one-way pressure-relief vent for safety and long life.
- Thermally welded case-to-cover bond to ensure a leak-proof seal.
- Flame-retardant polypropylene case and cover compliant with UL94 V-0.
- Absorbent Glass Mat (AGM) technology for efficient gas recombination 99% plus.
- Complies with UL1778, 924, 1989 and 94 V-0.
- Eurobat Classification: Long Life.
- UL-recognized component.
- Multicell design for ease of installation and maintenance.
- Not restricted for air transport - Classified as non-hazardous material, complies with IATA/ICAO Special Provision A67.
- Not restricted for surface transport - Classified as non-hazardous material, complies with DOT-CFR Title 49 parts 171-189.
- Not restricted for water transport - Classified as non-hazardous material, complies with IMDG exception 238.

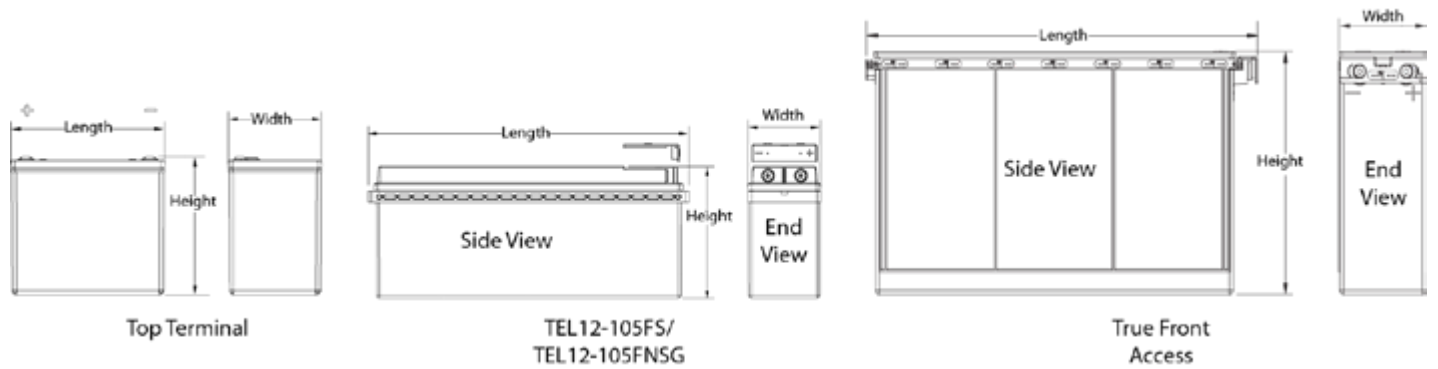
# SPECIFICATIONS

<b>OPERATING TEMPERATURE RANGE WITH TEMPERATURE COMPENSATION</b>	Discharge: -40°F (-40°C) to +160°F (+71°C) Charge: -10°F (-23°C) to +140°F (+60°)
<b>NOMINAL OPERATING TEMPERATURE RANGE</b>	+74°F (+23°C) to +80°F (+27°C)
<b>RECOMMENDED MAXIMUM CHARGING CURRENT LIMIT</b>	C/5 amperes @ 20 Hr rate @ 77°F (25°C)
<b>FLOAT CHARGE VOLTAGE</b>	13.5 to 13.8 average per 12V unit (6.75 to 6.90 per 6V unit) @ 77°F (25°C)
<b>MAXIMUM AC RIPPLE (CHARGER)</b>	AC Ripple Voltage - 0.5% RMS or 1.5% P-P of float charge voltage recommended for best results. AC Ripple Current - Max current allowed = C/20 AMPS RMS (5 AMPS RMS Per 100Ah)
<b>SELF DISCHARGE</b>	Battery can be stored up to 6 months at 77°F (25°C) before a freshening charge is required. Batteries stored at temperatures greater than 77°F (25°C) will require recharge sooner than batteries stored at lower temperatures. See C&D bulletin 41-7272, Self-Discharge and Inventory Control for details.
<b>EQUALIZE AND CYCLE SERVICE CHARGE VOLTAGE</b>	14.40 to 14.80 VDC average per 12V unit @ 77°F (25°C); 7.20 to 7.40 VDC per 6V unit

# TECHNICAL DATA

CELL	NUMBER OF CELLS	NOMINAL VOLTAGE	NOMINAL CAPACITY		SHORT CIRCUIT	INTERNAL RESISTANCE	TERMINALS	TERMINAL TORQUE	
			10 HR RATE TO 1.80 @	8 HR RATE TO 1.75 @				IN.-LBS	N-m
<b>TEL 12-30</b>	6	12	29.1	30.5	2150	0.0100	#10-32	30	3.4
<b>TEL 12-45</b>	6	12	44.4	46	2500	0.0060	#10-32	30	3.4
<b>TEL 12-70</b>	6	12	67.2	69	3100	0.0050	1/4-20	110	12.4
<b>TEL 12-80</b>	6	12	77.5	79	3300	0.0040	1/4-20	110	12.4
<b>TEL 12-90</b>	6	12	85.5	88	3600	0.0035	1/4-20	110	12.4
<b>TEL 12-105FNSG</b>	6	12	102	104	4000	0.0030	M6	107	12
<b>TEL 12-115FN</b>	6	12	106	108	4000	0.0030	M6	107	12
<b>TEL 12-125</b>	6	12	123	127	5000	0.0023	1/4-20	110	12.4
<b>TEL 12-160Fa</b>	6	12	151	157	4700	0.0031	1/4-20	110	12.4
<b>TEL 12-170FGa</b>	6	12	169	169	4700	0.0033	M6	107	12
<b>TEL 12-180Fa</b>	6	12	174	181	4500	0.0037	1/4-20	110	12.4
<b>TEL 12-210F</b>	6	12	199	202	4500	0.0040	M6	107	12
<b>TEL 12-210Fa</b>	6	12	199	202	4500	0.0040	1/4-20	110	12.4
<b>TEL 12-210FG</b>	6	12	199	202	4500	0.0040	M6	107	12
<b>TEL 6-180</b>	3	6	171	176	4350	0.0012	1/4-20	110	12.4

# DIMENSIONS



MODEL	NOMINAL DIMENSIONS							
	LENGTH		WIDTH		HEIGHT		WEIGHT	
	in	mm	in	mm	in	mm	lbs	kg
TEL 12-30	7.77	197	5.19	132	6.80	173	27	12
TEL 12-45	8.99	228	5.48	139	8.07	205	41	18
TEL 12-70	10.26	261	6.83	173	8.01	204	56	25
TEL 12-80	12.04	306	6.83	173	8.06	205	67	30
TEL 12-90	13.42	341	6.80	173	8.52	216	75	34
TEL 12-105FN5G	15.63	397	4.17	106	11.30	287	71	32
TEL 12-115FN5G	20.12	511	4.33	110	9.25	235	73	33
TEL 12-125	13.57	345	6.80	173	10.93	278	102	46
TEL 12-160Fa	22.01	559	4.96	126	11.14	283	117	53
TEL 12-170Fa	22.01	559	4.96	126	10.91	277	112	51
TEL 12-170FG	22.01	559	4.96	126	11.14	283	112	51
TEL 12-180Fa	22.01	559	4.96	126	12.60	320	132	60
TEL 12-210F	22.01	559	4.96	126	12.60	322	132	60
TEL 12-210Fa	22.01	559	4.96	126	12.60	320	132	60
TEL 12-210FG	22.01	559	4.96	126	12.83	322	132	60
TEL 6-180	12.63	321	6.97	177	8.94	227	75	34

**NOTE:** All dimensions are for reference only. Lug & hardware dimensions not included. Batteries to be mounted with 0.5 in. (12.5 mm) spacing minimum allowing free air ventilation. Contact a C&D Representative for additional dimension information.

## TEL12-30

END POINT VOLTS/CELL	CONSTANT POWER DISCHARGE RATINGS - AMPERES @ +77°F (+25°C)											
	OPERATING TIME TO END POINT VOLTAGE (IN HOURS)											
	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	10.00	12.00	20.00	24.00
1.75	22.10	12.95	9.20	7.15	5.82	4.92	4.27	3.80	3.11	2.65	1.65	1.38
1.80	21.00	12.40	8.80	6.90	5.62	4.74	4.12	3.68	3.02	2.58	1.61	1.35
1.85	19.60	11.60	8.40	6.63	5.40	4.56	3.96	3.53	2.92	2.50	1.55	1.30
1.90	18.50	11.05	8.03	6.35	5.22	4.41	3.84	3.41	2.82	2.41	1.50	1.25

## TEL12-45

END POINT VOLTS/CELL	CONSTANT POWER DISCHARGE RATINGS - AMPERES @ +77°F (+25°C)											
	OPERATING TIME TO END POINT VOLTAGE (IN HOURS)											
	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	10.00	12.00	20.00	24.00
1.75	31.50	18.50	13.20	10.25	8.45	7.23	6.34	5.69	4.69	3.98	2.50	2.10
1.80	30.00	18.00	13.00	10.00	8.23	7.08	6.19	5.53	4.57	3.88	2.45	2.06
1.85	28.00	17.40	12.70	9.88	8.05	6.90	6.00	5.35	4.43	3.75	2.33	1.97
1.90	26.20	16.50	12.17	9.50	7.83	6.70	5.86	5.20	4.27	3.60	2.23	1.88

## TEL12-70

END POINT VOLTS/CELL	CONSTANT POWER DISCHARGE RATINGS - AMPERES @ +77°F (+25°C)											
	OPERATING TIME TO END POINT VOLTAGE (IN HOURS)											
	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	10.00	12.00	20.00	24.00
1.75	46.80	27.50	19.83	15.55	12.86	11.00	9.64	8.64	7.10	6.01	3.75	3.15
1.80	44.50	26.80	19.20	14.95	12.30	10.58	9.29	8.38	6.92	5.86	3.66	3.08
1.85	41.80	25.38	18.30	14.25	11.90	10.20	9.00	8.05	6.60	5.59	3.53	2.98
1.90	39.50	24.20	17.30	13.63	11.30	9.70	8.57	7.73	6.40	5.42	3.43	2.88

## TEL12-80

END POINT VOLTS/CELL	CONSTANT POWER DISCHARGE RATINGS - AMPERES @ +77°F (+25°C)											
	OPERATING TIME TO END POINT VOLTAGE (IN HOURS)											
	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	10.00	12.00	20.00	24.00
1.75	53.80	31.50	22.60	17.50	14.50	12.50	11.00	9.88	8.14	6.92	4.40	3.68
1.80	51.10	30.50	21.60	16.95	14.00	12.15	10.69	9.56	7.85	6.70	4.28	3.59
1.85	47.00	27.50	20.30	16.13	13.40	11.58	10.26	9.13	7.50	6.35	4.11	3.45
1.90	43.00	25.40	18.50	15.00	12.50	10.80	9.50	8.50	6.95	5.93	3.88	3.29

## TEL12-90

END POINT VOLTS/CELL	CONSTANT POWER DISCHARGE RATINGS - AMPERES @ +77°F (+25°C)											
	OPERATING TIME TO END POINT VOLTAGE (IN HOURS)											
	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	10.00	12.00	20.00	24.00
1.75	60.00	34.80	25.00	19.75	16.20	13.95	12.26	10.95	9.08	7.79	5.00	4.21
1.80	57.00	33.00	24.00	19.00	15.60	13.42	11.86	10.56	8.80	7.58	4.89	4.13
1.85	53.30	31.40	22.80	18.21	15.00	12.77	11.30	10.10	8.44	7.23	4.67	3.96
1.90	49.50	29.85	21.67	17.13	14.20	12.13	10.64	9.50	7.90	6.73	4.34	3.69

**NOTE:** Batteries to be mounted with 0.5 in. (12.5 mm) spacing minimum allowing free air ventilation. Specifications subject to change without notification. The above ratings do not include connector voltage drops.

# TEL12-105FNSG

END POINT VOLTS/CELL	CONSTANT POWER DISCHARGE RATINGS - AMPERES @ +77°F (+25°C)											
	OPERATING TIME TO END POINT VOLTAGE (IN HOURS)											
	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	10.00	12.00	20.00	24.00
1.75	72.9	41.4	29.6	23.5	19.4	16.6	14.5	13.0	10.6	9.0	5.8	4.9
1.80	71.5	40.4	29.0	22.9	19.0	16.3	14.2	12.7	10.4	8.8	5.6	4.7
1.85	66.2	37.7	27.1	21.5	17.9	15.5	13.6	12.2	10.0	8.5	5.4	4.4
1.90	58.6	33.9	24.6	19.6	16.4	14.2	12.6	11.2	9.2	7.8	5.0	4.2

# TEL12-115FN

END POINT VOLTS/CELL	CONSTANT POWER DISCHARGE RATINGS - AMPERES @ +77°F (+25°C)											
	OPERATING TIME TO END POINT VOLTAGE (IN HOURS)											
	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	10.00	12.00	20.00	24.00
1.75	71.3	41.1	29.7	23.7	19.9	17.1	15.0	13.5	11.0	9.4	6.0	5.1
1.80	69.9	40.2	29.1	23.2	19.4	16.8	14.7	13.1	10.8	9.2	5.9	5.0
1.85	65.7	38.2	27.8	22.2	18.6	16.1	14.1	12.6	10.3	8.8	5.7	4.8
1.90	58.8	34.7	25.5	20.5	17.3	15.1	13.2	11.8	9.7	8.3	5.3	4.6

# TEL12-125

END POINT VOLTS/CELL	CONSTANT POWER DISCHARGE RATINGS - AMPERES @ +77°F (+25°C)											
	OPERATING TIME TO END POINT VOLTAGE (IN HOURS)											
	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	10.00	12.00	20.00	24.00
1.75	87.50	49.00	36.00	28.40	23.60	20.20	17.64	15.75	12.80	10.83	6.74	5.68
1.80	82.50	47.25	34.67	27.50	22.70	19.50	17.00	15.19	12.40	10.58	6.60	5.58
1.85	77.00	44.00	32.50	26.25	21.80	18.67	16.29	14.50	11.90	10.08	6.39	5.40
1.90	71.00	41.50	30.67	24.30	20.20	17.20	15.10	13.40	11.03	9.42	6.00	5.08

# TEL12-160Fa

END POINT VOLTS/CELL	CONSTANT POWER DISCHARGE RATINGS - AMPERES @ +77°F (+25°C)											
	OPERATING TIME TO END POINT VOLTAGE (IN HOURS)											
	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	10.00	12.00	20.00	24.00
1.75	107.1	62.2	44.9	35.4	29.3	25.1	22.0	19.7	16.1	13.7	8.6	7.3
1.80	102.7	60.3	43.7	34.5	28.7	24.6	21.6	19.3	15.9	13.5	8.5	7.2
1.85	95.2	56.9	41.6	33.0	27.5	23.6	20.8	18.5	15.3	13.0	8.2	6.9
1.90	83.7	51.2	37.7	30.1	25.2	21.7	19.1	17.1	14.1	12.0	7.5	6.3

# TEL12-170FGa

END POINT VOLTS/CELL	CONSTANT POWER DISCHARGE RATINGS - AMPERES @ +77°F (+25°C)											
	OPERATING TIME TO END POINT VOLTAGE (IN HOURS)											
	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	10.00	12.00	20.00	24.00
1.75	109.0	62.1	45.1	35.7	29.8	25.6	22.5	20.3	16.8	14.2	8.9	7.5
1.80	106.0	61.5	44.2	35.0	29.2	25.1	22.2	20.1	16.6	14.0	8.7	7.4
1.85	98.0	57.9	41.8	33.2	27.8	24.1	21.3	19.3	16.0	13.5	8.4	7.1
1.90	87.6	52.0	38.0	30.4	25.6	22.2	19.6	17.7	14.7	12.3	7.7	6.5

**NOTE:** Batteries to be mounted with 0.5 in. (12.5 mm) spacing minimum allowing free air ventilation. Specifications subject to change without notification. The above ratings do not include connector voltage drops.

## TEL12-180Fa

END POINT VOLTS/CELL	CONSTANT POWER DISCHARGE RATINGS - AMPERES @ +77°F (+25°C)											
	OPERATING TIME TO END POINT VOLTAGE (IN HOURS)											
	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	10.00	12.00	20.00	24.00
1.75	123.1	71.7	51.7	40.8	33.8	29.0	25.4	22.6	18.6	15.9	10.0	8.5
1.80	117.3	69.6	50.6	40.0	33.3	28.6	25.0	22.3	18.4	15.6	9.8	8.3
1.85	107.3	65.5	48.0	38.3	31.9	27.4	24.1	21.5	17.7	15.1	9.5	8.0
1.90	107.9	59.1	43.8	35.1	29.4	25.3	22.3	19.9	16.4	14.0	8.8	7.4

## TEL12-210FG

END POINT VOLTS/CELL	CONSTANT POWER DISCHARGE RATINGS - AMPERES @ +77°F (+25°C)											
	OPERATING TIME TO END POINT VOLTAGE (IN HOURS)											
	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	10.00	12.00	20.00	24.00
1.75	132.7	79.5	56.2	44.0	36.4	31.1	27.3	24.4	20.0	17.2	11.0	9.4
1.80	128.3	77.7	54.9	42.9	35.5	30.3	26.6	23.7	19.6	16.7	10.8	9.2
1.85	117.6	73.3	52.0	40.7	33.7	28.8	25.3	22.6	18.7	16.0	10.4	8.9
1.90	104.3	66.6	47.4	37.3	30.9	26.5	23.3	20.9	17.3	14.9	9.7	8.3

## TEL12-210Fa

END POINT VOLTS/CELL	CONSTANT POWER DISCHARGE RATINGS - AMPERES @ +77°F (+25°C)											
	OPERATING TIME TO END POINT VOLTAGE (IN HOURS)											
	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	10.00	12.00	20.00	24.00
1.75	138.0	82.7	56.7	44.0	37.9	32.3	28.4	24.8	20.0	17.8	11.5	9.8
1.80	133.5	80.8	54.0	41.8	36.9	31.5	27.6	24.6	20.0	17.4	11.2	9.6
1.85	122.4	76.3	52.8	40.8	35.0	30.0	26.3	23.5	19.4	16.6	10.8	9.2
1.90	108.5	69.2	49.3	38.8	32.2	27.6	24.3	21.7	18.0	15.4	10.1	8.6

## TEL6-180

END POINT VOLTS/CELL	CONSTANT POWER DISCHARGE RATINGS - AMPERES @ +77°F (+25°C)											
	OPERATING TIME TO END POINT VOLTAGE (IN HOURS)											
	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	10.00	12.00	20.00	24.00
1.75	120.0	68.5	50.0	39.2	32.4	28.0	24.6	21.9	18.1	15.5	10.0	8.4
1.80	113.0	66.0	48.0	38.0	31.4	27.0	23.7	21.2	17.6	15.1	9.7	8.2
1.85	106.0	62.0	45.5	36.0	30.0	25.8	22.7	20.3	16.9	14.5	9.3	7.8
1.90	94.0	57.3	42.0	33.5	27.9	24.0	21.1	19.0	15.8	13.7	8.9	7.6

**NOTE:** Batteries to be mounted with 0.5 in. (12.5 mm) spacing minimum allowing free air ventilation. Specifications subject to change without notification. The above ratings do not include connector voltage drops.



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