TELE POWER Battery

Front Access terminal suitable for 19" cabinet

IEC 896-2: 1995

ITS Intertek Testing Services ETL SEMKO
UKAS PRODUCT CERTIFICATION 121
SERIAL NO: 03 1033

Certificate of UL

Certificate of CE

ETS Germany EMC tested

LEAD RETURN RECYCLE

Front Access AGM / GEL

Front Access Construction

MSB front access AGM/GEL construction has been designed to suit specially for easy installation, maintenance and ease in taking voltage readings.

Container

Standard are black and white containers.

Plates

99.9999% highly pure lead is used in the manufacturing process to elevate and enhance performance thus minimizing impurities which may cause corrosion and deteriorate performance. The positive and negative plates are casted from a calcium/lead/tin alloy to strengthen the construction thereby reducing grid corrosion. Moreover MSB with its JV partner manufactures the battery 'complete' from 0~100% (from raw lead to its own plate and oxide manufacture) thus having full control of the end product. This is important as it maintains a high consistency of its end product thus ensuring high and improved quality.

Separator AGM

The separator for AGM are woven glass mat fibres which are acid resistant but has the ability to 'soak' up and immobilize the acid within it for the chemical re-action required for the battery to be active. 'Wrap' type separators are used to protect the plates from pre-mature disintegration thus prolonging life and performance.

Separator GEL

The microporous German imported 'rubberized dura-plastic' are selected due to its high mechanical strength while operating in adverse temperatures and at the same time providing a 'porous' route for chemical re-action between the positive and negative plates. The GEL is imported from Germany which has a long and proven record for GEL technology batteries.

Safety Release Valve

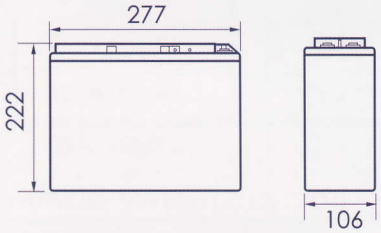
The rubber safety release valve have been designed to 'trap' the gases released during normal operation to recombine back to water. The valve only opens when internal pressure exceeds 4 p.s.i. and re-closes when pressure is approx. 0.6 p.s.i.

Advantages

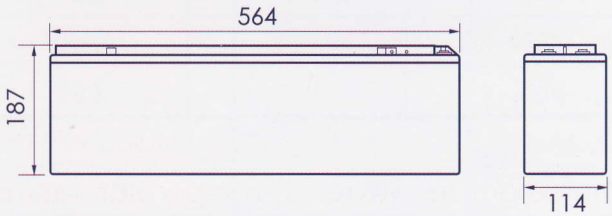
- **Compact design for 19" rack installations for telecommunications**
- **Front Access Terminals for ease of voltage measurement**
- **Insulated Integral Cover for terminals**
- **High Operation Temperatures of 0°C to 55°C**
- **Compliance to IEC 896-2, BS 6290 Pt.4, EUROBAT HI rated**
- **THICK Positive Plates, >10 years design life**
- **Flame Retardant Containers**
- **Manufactured from Recyclable materials**

Lay-out / Configurations

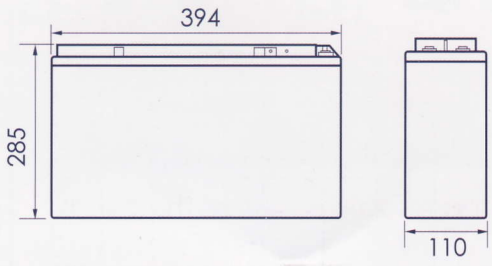
MS12-55TE/ MSG12-50TE



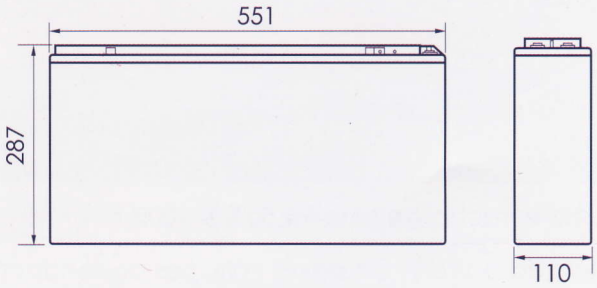
MS12-75TE/ MSG12-70TE



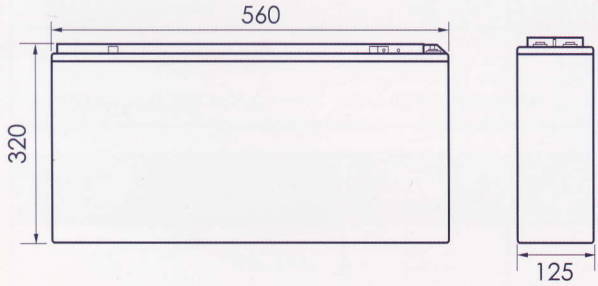
MSG12-100TE/ MS12-100TE



MS12-125, 150TE/ MSG12-125, 150TE

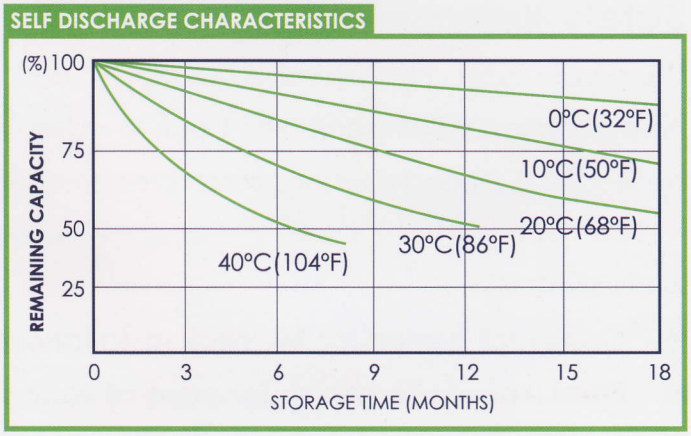


MS12-180TE/ MSG12-170TE



Storage and Shelf Life

The rate of self discharge is approximately 3% per month @ 20°C. Lower temperatures reduce the rate of self discharge while higher temperature increases it. Therefore a cool dry storage area is recommended.



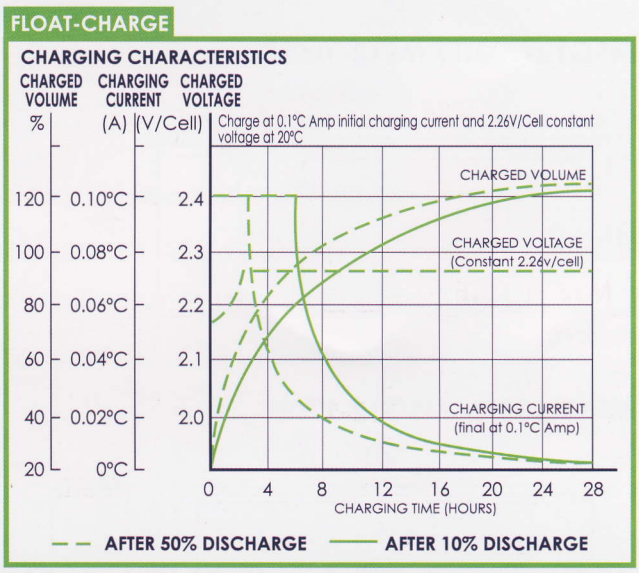
State of Charge

Below is the table of various cell voltage to estimate state of charge of the battery after 6 hours open circuit. For 12 volts or 6 cells, take the below and multiply by 6.

% of capacity @ 25°C	Cell voltage at different Temperatures				
	0°C	10°C	20°C	30°C	40°C
100%	2.16	2.15	2.13	2.13	2.13
80%	2.09	2.09	2.09	2.09	2.09
60%	2.06	2.06	2.06	2.06	2.06
40%	2.02	2.02	2.02	2.02	2.02
20%	1.97	1.97	1.97	1.97	1.97

Float Charging / Time Taken to Recharge

The recommended charging current is 0. IC Amps with initial recommended current limited to 0.3°C Amps for a maximum of 3 hours. The figure on the right shows recharge time for 50% & 100% discharged battery. Charging voltages depends on the operating temperature shown below.



Temperature	0°C	15°C	20°C	25°C	30°C	40°C
Float Voltage per cell	2.38	2.33	2.27	2.25	2.24	2.22

MSB TELE POWER Battery

Front Access AGM

Applications

- Telecommunications
- Float Service
- UPS Standby
- Photovoltaic
- Wind Turbine Standby
- Emergency Lighting
- Other DC Standby
- Engine Starting

Front Access GEL

Applications

- Telecommunications
- Cycling/Float Service
- UPS Standby
- Photovoltaic
- Wind Turbine Standby
- Wheel Chair
- Emergency Lighting
- Marine

Specifications AGM

Model	Cap. @ 10hr rate to 1.80vpc	Dimensions (D x W x H)mm	Weight (kg)	Terminal Hole
MS12-55TE	55	277 x 106 x 222	18.0	M6/16
MS12-75TE	75	564 x 114 x 187	26.5	M6/16
MS12-100TE	100	394 x 110 x 285	36.0	M6/16
MS12-125TE	125	551 x 110 x 287	41.0	M6/16
MS12-150TE	150	551 x 110 x 287	48.5	M6/16
MS12-180TE	180	560 x 125 x 320	54.0	M8/20

Specifications GEL

Model	Cap. @ 10hr rate to 1.80vpc	Dimensions (D x W x H)mm	Weight (kg)	Terminal Hole
MSG12-50TE	50	277 x 106 x 222	18.2	M6/16
MSG12-70TE	70	564 x 114 x 187	27.0	M6/16
MSG12-100TE	100	394 x 110 x 285	34.0	M6/16
MSG12-125TE	125	551 x 110 x 287	41.5	M6/16
MSG12-150TE	150	551 x 110 x 287	50.0	M6/16
MSG12-170TE	170	560 x 125 x 320	56.0	M8/20

Constant Current Discharge AGM

Constant Current (Amps) Discharge Characteristics @ 25°C to 1.67 volts per cell (vpc)

F.VOLT / TIME	10min	15min	20min	30min	1hr	2hr	3hr	4hr	5hr	8hr	10hr
MS12-55TE	111.0	81.8	71.0	54.0	32.2	20.0	15.5	12.0	9.5	6.2	6.0
MS12-75TE	152.0	112.0	96.5	73.0	44.0	27.0	21.0	16.0	13.3	9.2	8.1
MS12-100TE	200.0	149.0	125.0	97.0	56.0	35.4	27.0	21.7	18.0	12.1	11.0
MS12-125TE	248.0	184.0	155.0	122.0	70.0	44.0	33.5	26.0	22.0	14.5	13.5
MS12-150TE	292.0	217.0	193.0	146.0	82.0	52.5	40.0	32.0	26.9	17.8	16.0
MS12-180TE	350.0	258.0	232.0	175.0	99.0	63.0	47.7	37.9	31.2	21.5	19.0

Constant Current (Amps) Discharge Characteristics @ 25°C to 1.70 volts per cell (vpc)

F.VOLT / TIME	10min	15min	20min	30min	1hr	2hr	3hr	4hr	5hr	8hr	10hr
MS12-55TE	105.0	79.2	70.0	53.0	31.4	19.5	14.7	11.4	9.3	6.5	5.8
MS12-75TE	143.0	108.0	96.0	72.4	42.3	26.5	20.0	15.7	13.8	9.1	8.0
MS12-100TE	190.0	143.7	123.3	95.0	54.2	35.0	26.5	21.0	17.8	12.0	10.6
MS12-125TE	234.0	178.0	153.0	119.0	68.0	43.5	33.0	25.8	21.3	14.3	13.2
MS12-150TE	278.0	211.0	191.0	145.0	81.0	52.3	39.6	31.0	26.6	17.6	15.7
MS12-180TE	335.0	252.0	230.0	170.0	97.0	62.8	47.0	36.7	30.9	21.0	18.9

Constant Current (Amps) Discharge Characteristics @ 25°C to 1.75 volts per cell (vpc)

F.VOLT / TIME	10min	15min	20min	30min	1hr	2hr	3hr	4hr	5hr	8hr	10hr
MS12-55TE	102.0	77.8	69.0	52.0	30.6	19.0	14.5	11.2	9.1	6.2	5.6
MS12-75TE	139.0	106.0	95.0	70.0	41.6	26.0	19.6	15.2	13.0	8.6	7.7
MS12-100TE	184.0	141.0	121.0	93.0	54.0	34.5	26.0	20.4	17.0	11.5	10.4
MS12-125TE	227.0	175.0	151.0	117.0	66.0	43.0	32.0	25.6	21.1	14.2	12.8
MS12-150TE	269.0	206.0	189.0	143.0	80.0	52.0	39.0	30.3	25.7	17.3	15.6
MS12-180TE	322.0	247.0	227.0	168.0	95.0	62.0	46.0	36.2	30.7	20.5	18.4

Constant Current (Amps) Discharge Characteristics @ 25°C to 1.80 volts per cell (vpc)

F.VOLT / TIME	10min	15min	20min	30min	1hr	2hr	3hr	4hr	5hr	8hr	10hr
MS12-55TE	90.0	71.5	63.0	50.0	30.0	19.0	14.0	11.0	9.0	6.1	5.5
MS12-75TE	123.0	97.5	86.0	70.0	39.5	26.0	19.0	14.8	12.5	8.5	7.5
MS12-100TE	165.0	130.0	121.0	95.0	52.8	34.0	25.0	19.4	16.5	11.3	10.0
MS12-125TE	204.0	172.0	148.0	115.0	65.0	42.5	31.3	24.3	20.5	14.1	12.5
MS12-150TE	239.0	198.0	188.0	140.0	78.0	51.3	37.3	29.5	25.0	17.0	15.0
MS12-180TE	286.0	237.0	225.0	165.0	93.0	62.0	44.0	35.3	30.5	20.0	18.0

MSB TELE POWER Battery

Constant Current Discharge GEL

Constant Current (Amps) Discharge Characteristics @ 25°C to 1.67 volts per cell (vpc)

F.VOLT / TIME	10min	15min	20min	30min	1hr	2hr	3hr	4hr	5hr	8hr	10hr
MSG12-50TE	94.0	68.8	57.6	46.8	27.0	17.3	12.6	10.3	8.6	5.7	5.3
MSG12-70TE	125.0	96.3	80.6	65.0	37.0	24.2	17.6	14.2	12.0	8.0	7.4
MSG12-100TE	176.0	133.0	114.0	93.0	52.5	34.5	25.7	20.6	17.0	11.7	10.4
MSG12-125TE	219.4	165.3	140.0	116.0	65.6	43.0	31.5	25.5	21.0	14.0	13.0
MSG12-150TE	263.3	200.0	172.0	140.0	78.5	52.0	37.8	30.6	26.0	17.0	15.8
MSG12-170TE	315.0	232.0	208.8	157.5	89.0	56.7	43.0	34.0	28.0	19.4	17.8

Constant Current (Amps) Discharge Characteristics @ 25°C to 1.70 volts per cell (vpc)

F.VOLT / TIME	10min	15min	20min	30min	1hr	2hr	3hr	4hr	5hr	8hr	10hr
MSG12-50TE	90.0	68.8	57.6	46.8	27.0	17.3	12.6	10.3	8.6	5.7	5.3
MSG12-70TE	12.0	96.3	80.6	65.0	37.0	24.2	17.6	14.4	12.0	8.0	7.3
MSG12-100TE	175.0	133.0	114.0	93.0	52.5	34.5	25.2	20.0	17.3	11.6	10.4
MSG12-125TE	219.0	166.0	142.8	116.0	65.6	43.0	31.0	25.0	21.2	14.0	12.8
MSG12-150TE	263.2	199.8	171.5	139.6	78.8	51.7	37.8	30.6	25.7	17.0	15.6
MSG12-170TE	302.0	226.8	207.0	153.0	87.0	56.5	42.0	33.0	27.8	19.0	17.6

Constant Current (Amps) Discharge Characteristics @ 25°C to 1.75 volts per cell (vpc)

F.VOLT / TIME	10min	15min	20min	30min	1hr	2hr	3hr	4hr	5hr	8hr	10hr
MSG12-50TE	86.8	67.0	57.2	45.8	26.0	17.0	12.4	9.9	8.4	5.6	5.2
MSG12-70TE	121.0	94.0	80.0	63.8	36.0	24.0	17.3	13.7	11.8	7.8	7.2
MSG12-100TE	170.0	131.0	112.0	91.0	51.3	34.0	24.7	19.4	16.7	11.2	10.2
MSG12-125TE	212.0	163.8	140.0	114.0	64.0	42.8	31.0	24.1	21.0	13.8	12.7
MSG12-150TE	255.1	196.5	168.7	136.8	77.0	51.3	37.1	29.3	25.0	16.7	15.3
MSG12-170TE	290.0	222.0	204.0	151.0	85.5	55.8	41.4	32.6	27.6	18.5	17.3

Constant Current (Amps) Discharge Characteristics @ 25°C to 1.80 volts per cell (vpc)

F.VOLT / TIME	10min	15min	20min	30min	1hr	2hr	3hr	4hr	5hr	8hr	10hr
MSG12-50TE	78.0	64.4	56.7	45.3	25.3	17.0	12.0	9.5	8.2	5.5	5.0
MSG12-70TE	110.0	90.0	79.0	63.2	35.3	23.6	16.9	13.0	11.3	7.6	7.0
MSG12-100TE	156.0	125.0	112.0	90.3	50.2	33.0	24.0	19.0	16.0	10.8	10.0
MSG12-125TE	195.0	157.0	140.0	113.0	62.8	41.5	30.0	23.6	20.0	13.5	12.5
MSG12-150TE	234.0	188.0	167.8	135.4	75.3	50.0	36.0	28.4	24.0	16.2	15.0
MSG12-170TE	257.0	213.0	203.0	148.5	84.0	56.0	39.6	31.8	27.5	18.0	17.0

** The manufacturer reserves the right to make changes to the specifications without prior notice.*

MSB TELE POWER Battery

Purchasing Specifications for Front Access Terminal VRLA Batteries

- Batteries must comply to IEC 896-2, BS 6290 Pt.4. A certificate of compliance must be attached.
- Batteries must have >10 years life design. A life acceleration test report is to be enclosed.
- Battery must have front access terminals for ease of maintenance purposes.
- Containers must be flame retardant. FV '0' is preferred.
- Battery are to be of the AGM/GEL design.
- Terminals must have brass/copper inserts.
- Connectors must be shrouded/covered to prevent dust collection and accidental short circuiting.
- Connectors must be of sufficient cross section to provide high discharge of minimum 0.2°C through it.
- Connectors must be of tinned copper.

MSB

DP/ACC/TelePower/10-10