

Battery Management Unit

BMS-ABMS-xxxx-00xx-01-A

FEATURES

- Powerful decision and safety center for battery systems
- Aggregation of up to 432 battery cell parameters through CAN bus
- Complete monitoring solution when coupled to up to 36 Battery Cell Modules
- Monitoring of complete battery current and voltage up to 825V and 500 Amps
- Stand-alone or CAN bus driven operation
- Direct drive of six power contactors (battery charger, output terminals and pre-charge)
- Power contactors monitoring
- Eight battery status outputs and two temperature sensor inputs
- Redundant hardware alert wire input
- Integrated chassis leakage current detection
- Embedded website for easy set-up and diagnostic
- High reliability design (EN61508 SIL2 compliant)



APPLICATIONS

- High power lithium battery systems

SPECIFICATIONS

ABSOLUTE MAXIMUM RATINGS	MIN	TYP.	MAX	UNITS
Battery voltage (V_{batt}) - High Voltage version	-0.3		850	Vdc
Battery voltage (V_{batt}) - Low Voltage version	-0.3		350	Vdc
Power supply voltage			36	Vdc
CAN bus terminal voltage	-4		16	Vdc
Temperature sensor voltage	-0.3		15.3	Vdc
Alert wire voltage	-0.3		12.3	Vdc
Current sensor input current	-300		+300	mA
Open-drain outputs voltage	-0.3		40	Vdc
Contactors open-drain outputs current			5.1	A
Battery status open-drain outputs current	Internally limited			

ELECTRICAL CHARACTERISTICS ⁽¹⁾	MIN	TYP.	MAX	UNITS
Power supply voltage	10.5	24	32	Vdc
Supply power ⁽²⁾			10	W
Battery voltage – High Voltage version	200		825	Vdc
Battery voltage measurement error – High Voltage version			30	Vdc
Battery voltage – Low Voltage version	20		300	Vdc
Battery voltage measurement error – Low Voltage version			13	Vdc
Alert wire detection window	3	6	9	Vdc
Current sensor full-scale measuring range	-275		+275	mA
Power outputs global overcurrent threshold	8.13		9.35	A
Battery status open-drain output current			200	mA
Leakage current detector threshold			500	Ω/V
Temperature measurement accuracy (-20 to 50°C range)			1	°C
Temperature measurement accuracy (-40 to 110°C range)			3	°C
External CAN Bus frequency		500		kHz
Ethernet bitrate		10/100		Mbps
Alert wire detection latency		10		s
Recommended sensor for temperature inputs	Semitec - 103AT-11			
Dielectric withstand voltage between battery and chassis (Viso) ⁽³⁾	3			kVac

⁽¹⁾ Over -20 to +70°C temperature range

⁽²⁾ BMAN only, no load on power outputs, no current sensor powered

⁽³⁾ According to IEC60950. Production flash tested 2s.

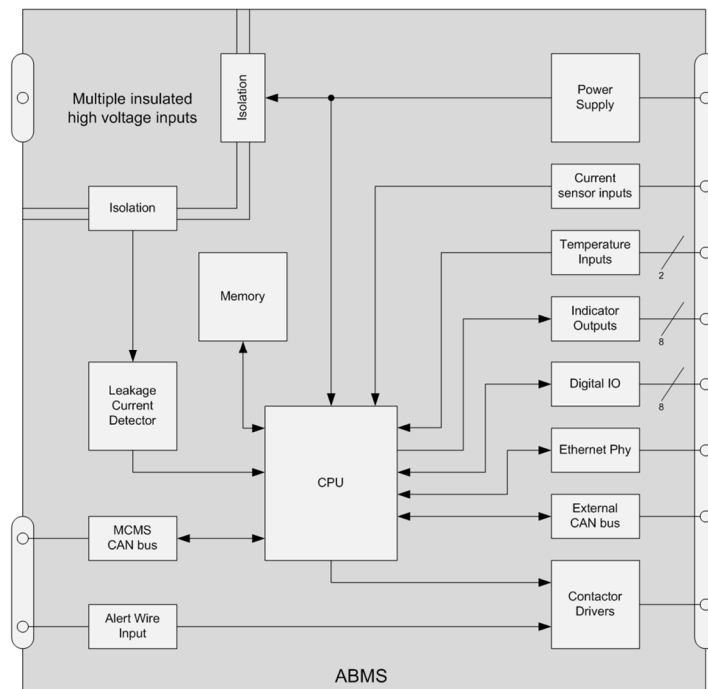
ENVIRONMENTAL CHARACTERISTICS	MIN	TYP.	MAX	UNITS
Operating ambient temperature	-20		+70	°C
Storage temperature	-40		+125	°C
MTBF ⁽⁴⁾		408		khrs

⁽⁴⁾ According to UTE C 80-810, ground mobile, 40°C

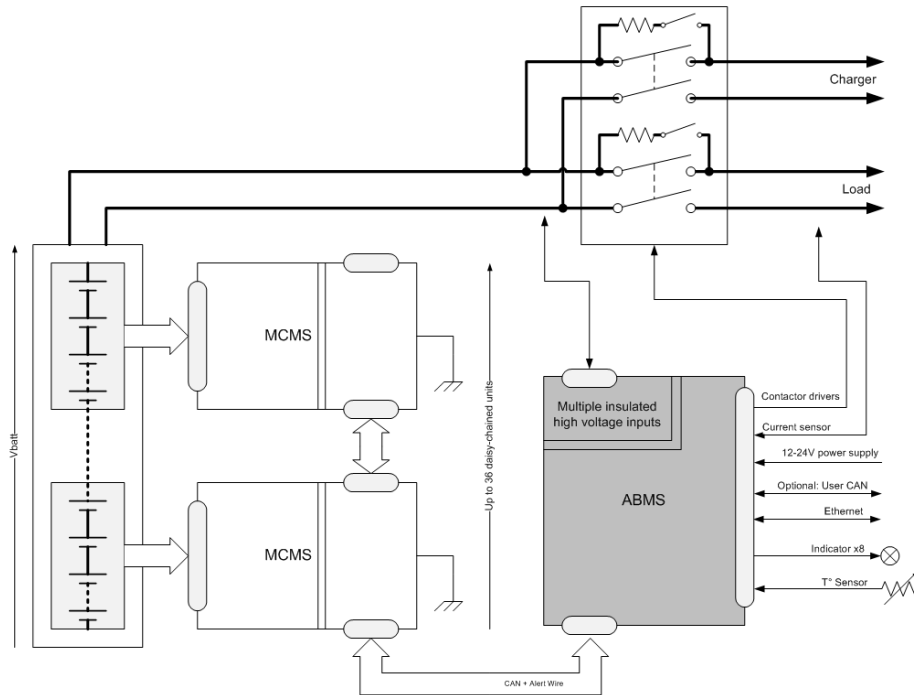
MECHANICAL CHARACTERISTICS	MIN	TYP.	MAX	UNITS
Length		103		mm
Width		82		mm
Height ⁽⁵⁾		12		mm

⁽⁵⁾ Without connectors

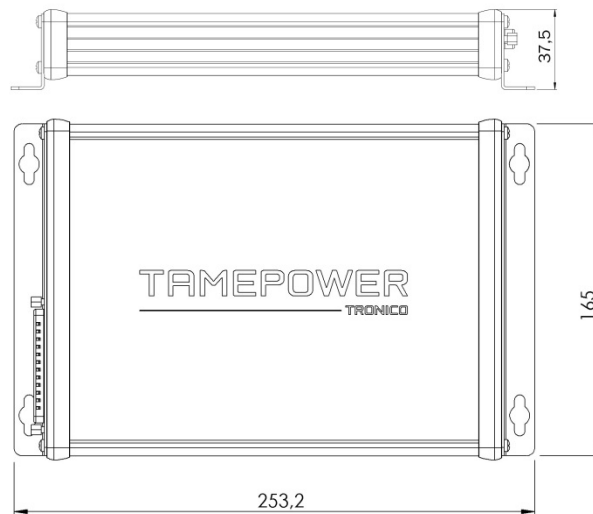
BLOCK DIAGRAM



TYPICAL APPLICATION



DIMENSIONS



ORDERING INFORMATION

BMS	-	MCMS	-	AAA	x	-	01-A
<i>Product Family</i>		<i>Product Model</i>		<i>Reserved</i>	<i>Battery voltage input range</i>		<i>Reserved</i>
Battery Management System		Adaptative Battery Management System			A: High Voltage version (200 – 850 Vdc) B: Low Voltage version (20 – 330 Vdc)		