BEN
BATTERY MONITORING UNIT
developed by kumkeo

Battery Monitoring Unit
isoSPI > PROFINET R1

The Battery Monitoring Unit (BMU) is a powerful BMS master processing unit and PROFINET gateway in one, with a modular, flexible software architecture.

Part no.: 4260629980145

SUPPLY

Rated voltage	24V DC
Permissible voltage range	19.2V to 28.8V DC
Max. power input (excl. encoder power)	<4W (0.166A @24V DC)
Max. power input (incl. encoder power)	<12W (0.5A @24V DC)
Protection	Reverse polarity and surge

CHIPSET

NetX90 ARM® 32-bit Hilscher RISC microprocessor	
Communication	Cortex®-M4 @100MHz MPU
Application	Cortex®-M4 @100MHz MPU & FPU

INTERFACES

Power supply	Pluggable terminal block, ø 0.2 - 1.31mm² (AWG16-26)
PROFINET	2x RJ45
isoSPI	1x D-sub 9-pin

MECHANICAL DATA

Dimensions	170mm x 116,4mm x 40mm
Weight	Approx. 0.5kg
Attachment	35mm DIN top hat rail

BATTERY SYSTEM

System voltage	150 – 260V DC
Max. supported balancers	1-16*
Max. monitored cells	288*
System measuring range	0 - 450V DC
Communication	isoSPI (DaisyChain)

PROFINET

Device function	PROFINET IO device
Transfer rate	100Mbps
Update rate	16ms (RT, adjustable)
PROFINET IO version	2.32 / 2.35
Supported protocols	SNMP, LLDP
Supported MIBs	MIB2
Real-time class	RT_CLASS_1
Netload class	II
Conformance class	B

* Under ideal conditions

AMBIENT CONDITIONS

Vibration **DIN EN 60068-2-6**	2Hz - 9Hz & 9Hz - 200Hz: 1.5mm with constant acceleration
Shock **DIN EN 60068-2-27**	50m/s² for 6ms
Ambient operation/storage/transport temperature	-40°C to 85°C
Relative humidity	5% to 85% without condensation
Altitude for operation	<3000m above sea level
Protection rating	IP20 (as per DIN EN 60529)
Protection class	III

COMPLIANCE WITH EMC DIRECTIVE 2014/30/EU

Discharge of static electricity According to EN 61000-4-2	Contact discharge: 4kV Air discharge: 8kV
Electromagnetic fields According to EN 61000-4-3	80MHz to 1GHz 10V/m 1.4GHz to 1.6GHz and 1.8GHz to 2.2GHz 2.4GHz to 2.5GHz and 5.1GHz to 5.8GHz 3V/m 80%AM (1kHz)
Fast transients (burst) According to EN 61000-4-4	Signal connection: ±1kV 5/50ns 5kHz repetition frequency Mains DC input: ±2kV 5/50ns 5kHz repetition frequency

Conducted disturbances According to EN 61000-4-6	150kHz to 80MHz 10V/m 80%AM (1kHz)	
Emitted interference, casing According to CISPR 16-1-1 CISPR 16-1-4 CISPR 16-2-3	30MHz - 230MHz	40dB (µV/m) quasi-peak value at 10m
	230 MHz - 1000 MHz	47dB (µV/m) quasi-peak value at 10m
Emitted interference, low voltage connection CISPR 16-1-1 CISPR 16-1-2 CISPR 16-2-1	0.15MHz – 0.5MHz	79dB (µV/m) quasi-peak value 66dB(µV/m) average
	0.5MHz – 30MHz	73dB (µV/m) quasi-peak value 60dB(µV/m) average
EN 55032 Telecommunication connections	0.15MHz – 0.5MHz	74dB (µV/m) quasi-peak value 74dB - 64dB (µV/m) average
	0.5MHz - 30MHz	74dB (µV/m) quasi-peak value 64dB (µV/m) average

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