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BEN OM01

BATTERY MONITORING UNIT

BEN OM01 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

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

CHIPSET

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

INTERFACES

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

MECHANICAL DATA

Parameter	Value
Dimensions	170 mm x 116.4 mm x 40 mm
Weight	~ 0.5 kg
Attachment	35 mm DIN top hat rail

BATTERY SYSTEM

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

* Under ideal conditions

PROFINET

Parameter	Value
Device function	PROFINET IO device
Transfer rate	100 Mbps
Update rate	16 ms (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

AMBIENT CONDITIONS

Parameter	Value
Vibration DIN EN 60068-2-6	2 Hz - 9 Hz & 9 Hz - 200 Hz: 1.5 mm with constant acceleration
Shock DIN EN 60068-2-27	50 m/s² for 6 ms
Ambient storage/transport temperature	-40 °C to 85 °C
Relative humidity	5 % to 85 % without condensation
Altitude for operation	<3,000 m above sea level
Protection rating	IP 20 (as per DIN EN 60529)
Protection class	III

COMPLIANCE WITH EMC DIRECTIVE 2014/30/EU

Parameter	Value	
Discharge of static electricity acc. to EN 61000-4-2	Contact discharge: 4 kV Air discharge: 8 kV	
Electromagnetic fields acc. to EN 61000-4-3	80 MHz to 1 GHz, 10 V/m 1.4 GHz to 1.6 GHz and 1.8 GHz to 2.2 GHz 2.4 GHz to 2.5 GHz and 5.1 GHz to 5.8 GHz, 3 V/m 80 % AM (1 kHz)	
Fast transients (burst) acc. to EN 61000-4-4	Signal connection: ±1 kV 5/50 ns 5 kHz repetition frequency Mains DC input: ±2 kV 5/50 ns 5 kHz repetition frequency	
Conducted disturbances acc. to EN 61000-4-6	150 kHz to 80 MHz 10 V/m 80 % AM (1 kHz)	
Emitted interference, casing acc. to CISPR 16-1-1 CISPR 16-1-4 CISPR 16-2-3	30 MHz - 230 MHz	40 dB (µV/m) quasi-peak value at 10 m
	230 MHz - 1000 MHz	47 dB (µV/m) quasi-peak value at 10 m
Emitted interference, low voltage connection CISPR 16-1-1 CISPR 16-1-2 CISPR 16-2-1	0.15 MHz – 0.5 MHz	79 dB (µV/m) quasi-peak value 66 dB(µV/m) average
	0.5 MHz – 30 MHz	73 dB (µV/m) quasi-peak value 60 dB(µV/m) average
EN 55032 Telecommunication connections	0.15 MHz – 0.5 MHz	74 dB (µV/m) quasi-peak value 74 dB - 64 dB (µV/m) average
	0.5 MHz - 30 MHz	74 dB (µV/m) quasi-peak value 64 dB (µV/m) average