

# Battery management system

## BMU isoSPI > PROFINET

The battery monitoring unit (BMU), based on the kumkeo kuBusBox platform, is the master processing unit of a battery management system (BMS) and acts simultaneously as a PROFINET gateway.

Part no.: 4260629980053



### SUPPLY

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

### CHIPSET

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

### INTERFACES

<b>Power supply</b>	Pluggable terminal block, ∅ 0.2 - 1.31mm <sup>2</sup> (AWG16-26)
<b>PROFINET</b>	2x RJ45
<b>isoSPI</b>	1x D-sub 9-pin

### MECHANICAL DATA

<b>Dimensions</b>	165.5mm x 110mm x 50mm
<b>Weight</b>	Approx. 0.5kg
<b>Attachment</b>	35mm DIN top hat rail

### BATTERY SYSTEM

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

### PROFINET

<b>Device function</b>	PROFINET IO device
<b>Transfer rate</b>	100Mbps
<b>Update rate</b>	16ms (RT, adjustable)
<b>PROFINET IO version</b>	2.32 / 2.35
<b>Supported protocols</b>	SNMP, LLDP
<b>Supported MIBs</b>	MIB2
<b>Real-time class</b>	RT_CLASS_1
<b>Netload class</b>	II
<b>Conformance class</b>	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/s<sup>2</sup> 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** Contact discharge: 4kV  
Air discharge: 8kV  
According to EN 61000-4-2

**Electromagnetic fields** 80MHz to 1GHz  
According to EN 61000-4-3 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)** Signal connection:  
±1kV  
5/50ns  
5kHz repetition frequency  
Mains DC input:  
±2kV  
5/50ns  
5kHz repetition frequency

**Conducted disturbances** 150kHz to 80MHz  
According to EN 61000-4-6 10V/m  
80%AM (1kHz)

**Emitted interference,  
casing** 30MHz - 40dB (µV/m)  
230MHz quasi-peak value  
at 10m

According to CISPR 16-1-1  
CISPR 16-1-4  
CISPR 16-2-3 230 MHz - 47dB (µV/m)  
1000 MHz quasi-peak value  
at 10m

**Emitted interference,  
low voltage connection** 0.15MHz - 79dB (µV/m)  
0.5MHz quasi-peak value  
CISPR 16-1-1 66dB(µV/m)  
CISPR 16-1-2 average  
CISPR 16-2-1

0.5MHz - 73dB (µV/m)  
30MHz quasi-peak value  
60dB(µV/m)  
average

**EN 55032** 0.15MHz - 74dB (µV/m)  
Telecommunication connections 0.5MHz quasi-peak value  
74dB - 64dB  
(µV/m) average

0.5MHz - 74dB (µV/m)  
30MHz quasi-peak value  
64dB (µV/m)  
average

kumkeo GmbH  
Heidenkampsweg 82a ▪ 20097 Hamburg

Tel.: +49 (0) 40 2846761 0  
Fax: +49 (0) 40 2846761 99

Email: [info@kumkeo.de](mailto:info@kumkeo.de)