

# NewTec NXP NTBMS

## Battery Management Reference Design with Functional Safety Features up to ASIL C

Get Samples

Data Sheet

Tools

### Description:

Battery Management System for producer of Battery systems in cars as Auxiliary Battery or Starter Battery with Li-Ion battery. Designed for systems with high demand on reliability and safety in compliance to ISO 26262 ASIL C.

Two boards approach: a functional safety System-on-Module (Safety SoM) board and a BMS application board. The Safety SoM is based on NXP's S32K144 and KEA microcontrollers, and FS4503C safety power system. The BMS application board is based on NXP's MC33772B battery cell controller IC

### Key Feature:

Integrated system Diagnostic function up to ASIL C

- Overcurrent, overcharge, overtemperature and overvoltage protection
- Under voltage, unintended relay close and open, crash detection

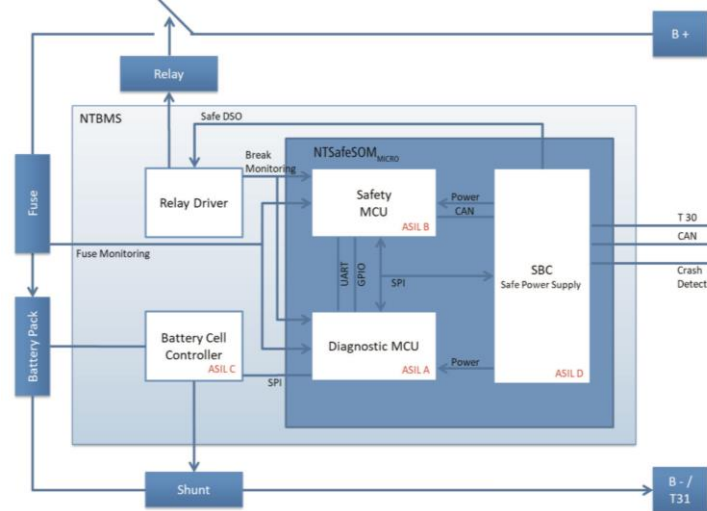
### Battery Characteristics

Electrical current carrying capability	250 A permanent 600A for 40s 1400A for 1s
BMS Current	Operating current < 25mA @ RT
NXP Safety components	<b>Safe NXP MCU S32K144 ASIL B:</b> Intrusive diagnostic (MCU) Memory storage (RAM and Flash)  <b>Safe NXP Power Supply system basis chip FS45 ASIL D</b> Power Management (low power and normal mode) LIN for starter battery CAN for the auxiliary battery

### Orderable Samples

Part Number	Entry Price
NTBMS-FSNXP	\$875

### Block Diagram



### Safety SOM and BMS Application Board



### Highlights



Low Power



Safety & Security



Modular SOM Design



Automotive Grade

### Target Applications

- Automotive Battery Management System for 14V auxiliary battery
- Monitoring of starter batteries
- Extendable to 48V battery systems
- Stationary Energy Storage systems; Smart Grid
- The Safety SoM can be used as a generic safety computer board addressing a wide area of applications such as motor control, Valve Control systems, safety PLC or Motorcycle ABS.

### Enablement and Tools

- IAR IDE and S32 DS IDE support with plug-ins for 3<sup>rd</sup> party tool vendor compilers & debuggers
- SDK with low level drivers integrated in S32DS IDE
- Application software with drivers
- Safety Software for BMS
- Initial safety documentation
- Optional safety certification and support via NewTec

[www.NXP.com/NTBMS](http://www.NXP.com/NTBMS)

