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BEN OM01
BALANCER BOARD

BEN OM01 Balancer Board isoSPI
The balancer boards were developed for integration into battery packs. They assure safe operation by continuously monitoring operating temperatures and voltages of individual cells and balancing the charging level between the cells to identify and avoid critical levels.

Part no.: 4260629980060

SPECIFICATION

Parameter	Value
Measuring chip	LTC6813-1 analog device IC
Cells per unit	3–18 cells
Communication interface	isoSPI | DaisyChain max. 5 m
Balancing process	Passive
Cell balancing	Nominal 80 mA
Measuring range	-0.3 to 5.5 V DC per cell
Measuring deviations	Max. ±2.2 mV
Cell voltage, typ. sample rate	16 ms
Temperature measurement, connection to the cells	Max. 4x NTC, 10 kΩ, B3380K @25 °C
Temperature measurement onboard	1x NTC, 10 kΩ, B3380K @25 °C
Temperature measuring range	-40 °C to +85 °C
Measuring deviation	±1.5 °C
Ambient operating temperature:	-40 °C to 85 °C

SUPPLY

Parameter	Value
Power supply	Integral and via connected cells
Cell voltage range	0 to 5 V DC
Max. input current (isoSPI disabled)	5.6 µA to 5.9 µA
Max. input current (isoSPI enabled)	8.0 mA to 8.5 mA

INTERFACES

Parameter	Value
Power supply	2x Molex, part no.: 15912145
PROFINET IO controller	2x TE, part no.: 5-104361-3

SAFETY

Parameter	Value
Coating	ELPEGUARD® protective coating SL 1307 FLZ

MECHANICAL DATA

Parameter	Value
Attachment	6x M4 screws
Dimensions	52 mm x 180 mm x 10 mm
Weight	~ 50 g

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	Verfügbarkeit	
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