WF 5218

12-Channel Battery Monitoring and Balancing Node

The WF 5218 is a 12-channel battery monitoring and balancing node for accurate cell measurement in series-connected battery modules or packs. Each channel integrates a high-voltage multiplexer, precision ADC, and a passive balancing resistor. The module also includes inputs for resistive temperature sensors.

A 1600 VDC double-insulation barrier isolates the battery domain from the communication interface, providing highest personal safety in high-voltage applications.

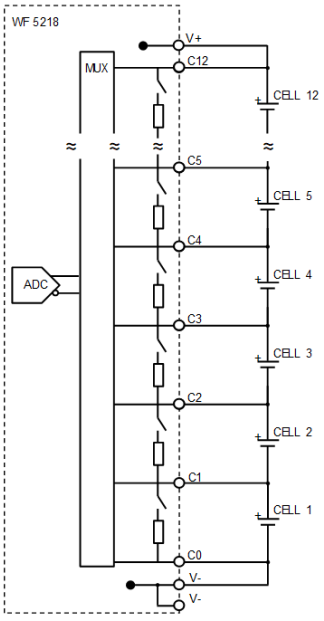
Multiple WF 5218 units can be connected in series and interfaced through the WF 5220 Gateway (USB) or the WF 5221 Gateway (EtherCAT). Both interfaces support open standards for easy software integration in common programming languages such as C, Python, C#, and LabVIEW.

Application areas

- R&D battery testing and validation
- Laboratory battery characterization
- Battery module and pack prototyping
- Energy storage systems (ESS)
- EV battery service and diagnostics
- Second-life battery evaluation
- Battery state-of-health (SoH) and state-of-charge (SoC) studies
- Industrial automation and test systems

Features

- 12-channel high-accuracy cell-voltage monitoring
- Integrated passive balancing on all cell channels
- Support for resistive temperature sensors
- High-resolution ADC with 0.1 mV resolution and ±1.0 mV typical accuracy
- Designed series-connected battery cells
- Daisy-chain capability of up to 16 nodes per gateway
- Galvanic isolation with 1600 VDC double-insulation barrier for highest personal safety
- Scalable architecture for large battery stacks
- Compatible with WF 5220 (USB) and WF 5221 (EtherCAT) gateways
- Open and documented communication interfaces for seamless software integration



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WF 5218 Data Sheet
AB0005-150, rev B

Specifications

Analog Input Characteristics	
Number of channels	12
Measurement range C_n to C_{n-1}	0 to 5 V
Measurement resolution	0.1 mV
Measurement error	±1.0 mV typical
Max sampling rate	66 Hz
Built in balancing resistor	150 Ω

Temperature input Characteristics	
Number of channels	3
Measurement resolution	0.1 mV
Measurement error	±1.3 mV typical (±0.5 °C @25 °C)
Max sampling rate	66 Hz

Power supply	
V^+ to V^- Supply Voltage	5-75 V (11-55 V for full meas. accuracy)
V^+ Current@sleep	6 uA
V^+ Current@measurement	16 mA

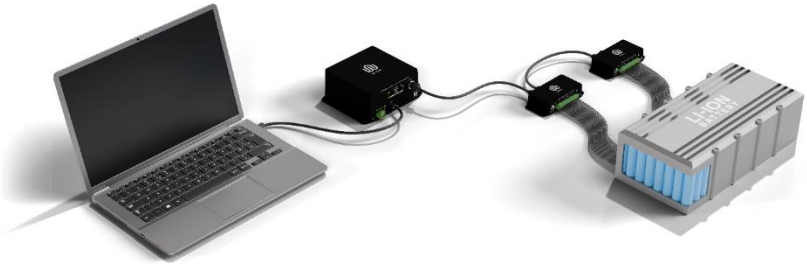
Isolation Voltages (rated working voltage)		
Channel to channel	None	
Channel to Link, Continuous	1 600 V	Double Insulation
Link In to Link Out, Continuous	80 V	Double Insulation

Environmental	
Operating temperature	-20°C to 60°C
Indoor / Outdoor	Indoor use only

Mechanical	
Size (w x d x h)	137.54 x 63.32 x 31.00 mm
Weight	128 g

Ordering information

Article no	Product
AE0043	WF 5218 Battery Monitoring and Balancing Node



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