



Data Acquisition Module - C Module Series

Portable high-precision sensor data acquisition unit

Full-Scenario Precision Capture, Robust Protection for Demanding Tests – Stable, Accurate, Flexible Data Acquisition!

The C Module series is an all-in-one data acquisition solution for automotive and industrial use. It covers analog, temperature, lambda, frequency, high-voltage, and high-speed vibration signals, with 24-bit resolution, up to 1 kHz sampling, ±0.1°C temperature accuracy, and ±0.005 lambda precision. Built for harsh environments (-40°C~85°C, IP65/67, full electrical isolation), it supports multi-module daisy-chaining and CAN output. Seamlessly integrating with mainstream test systems, it’s ideal for vehicle data acquisition, new energy tests, and engine monitoring – reliable, efficient industrial-grade precision.

Main Specifications

Specifications	Aggregate Module-C-Multi LTK10		
Product Picture			
Data Acquisition Type	Temperature	Turbocharger Speed	Air-Fuel Ratio
Channel Configuration	10-channel temperature input	1 speed sensor interface	1 linear oxygen sensor interface
Measurement Accuracy	±1°C (Ambient Temperature: -40 °C to 105 °C)	(30 blades): ±0.25%	AFR: IP accuracy ±0.1% + 0.007 mA λ accuracy: ±0.005 (when λ ≈ 1)
Measurement Range	-100°C to +1250°C	10 blades: 0~320,000 RPM 30 blades: 0~100,000 RPM	LS4U.2: 0.55~32.767 LS4U.9: 0.650~15.990
Sampling Rate / Resolution	Sampling frequency: 0.2~10 Hz (Adjustable) Data transmission period: 100~5000 ms (Adjustable)	Resolution: 12 RPM (10 blades) 4 RPM (30 blades)	Sampling frequency: 100 Hz
Output Interface	CAN communication interface		
Protection Rating	High waterproof and dustproof rating, suitable for harsh environments		
Supported Features	Supports multi-module cascading for signal expansion; full electrical isolation (input, CAN, power supply, housing)		
Application Scenarios	Vehicle data acquisition, vehicle energy flow management, high-voltage applications		

Main Specifications

Specifications	Analog Acquisition	Temperature Acquisition		Lambda Acquisition
	C-AD4/8	C-Thermo-K/T 10/20	C-PT100	C-Lambda
Product Picture				
Channel Configuration	4 / 8-channel voltage input	10 / 20-channel K-type thermocouple input	4-channel PT sensor interface (compatible with 2-, 3-, and 4-wire systems)	1-channel linear oxygen sensor interface
Measurement Range	±60 V / ±10 V (adjustable)	-100°C to 1250°C	-200°C to 850°C	AFR (compatible with LSU4.2 / LSU4.9)
Measurement Accuracy	±10 mV / ±5 mV	±1°C (Ambient Temperature: -40°C to +85°C)	±0.1°C (Ambient Temperature: -40°C to +85°C)	AFR: ±0.1% + 0.007 mA λ accuracy: ±0.005 (λ ≈ 1)
Sampling Resolution	24-bit (Adjustable)	16-bit	24-bit	16-bit
Sampling Rate / Response Speed	1 Hz to 1 kHz (Adjustable)	0.2 Hz to 10 Hz (Adjustable)	0.1 Hz to 10 Hz (Adjustable)	100 Hz
Output Interface	CAN Output	CAN Output	CAN Output	CAN Output
Protection Rating	High water and dust resistance	Harsh environment resistance	Harsh environment resistance	Full electrical isolation
Insulation Performance	Full electrical isolation			
Supported Features	Supports multi-module cascaded expansion for signal acquisition			
Data Transmission Cycle	1 ms to 1 s (Adjustable)	100 ms to 5000 ms (Adjustable)	100 ms to 5000 ms (Adjustable)	10 ms
Application Scenarios	Vehicle data acquisition, vehicle energy flow management	Vehicle data acquisition	Vehicle data acquisition	Automotive exhaust measurement, vehicle data acquisition

■ Main Specifications

Specifications	Frequency Acquisition	High-Voltage Acquisition
	C-FREQ	HV-MODULE
Product Picture		
Channel Configuration	4-channel frequency input	1× high-voltage measurement channel Input cutoff frequency: 2 kHz Input impedance: 21 MΩ
Measurement Accuracy	Input voltage: ±60 V High / low level thresholds (Adjustable)	±2 V (−40°C to 85°C)
Measurement Range	0.1 kHz to 300 kHz	±1100 V
Sampling Rate / Resolution	Sampling rate: 1 ms to 1 s (Adjustable) Resolution: 16-bit	Sampling rate: 1 Hz to 1 kHz Resolution: 24-bit
Output Interface	CAN Output	Standard CAN Output
Protection Rating	High-voltage resistant, harsh-environment resistant	
Supported Features	Supports multi-module cascaded expansion for signal acquisition	
Application Scenarios	Vehicle data acquisition, vehicle energy flow management, high-voltage scenarios	Vehicle data acquisition, vehicle energy flow management

■ Advantages

 Analog Acquisition (C-AD4/8)	Adjustable precision + concatenation flexibility – stable analog capture in harsh industrial environments Reduce equipment procurement costs; ensure 99.9% data integrity in extreme industrial scenarios; simplify test setup with flexible parameter adjustment.
 Temperature Acquisition (C-Thermo-K10/20, C-PT100)	High-channel density + ±0.1°C accuracy – master -100 °C ~ + 1250 °C temperature monitoring effortlessly. Improve writing efficiency; lower maintenance costs; guarantee reliable data in extreme cold/hot test environments (e.g., vehicle winter testing)
 Lambda Acquisition (C-lambda)	Full electrical isolation + 100Hz response – capture lab-grade lambda data plug-and-play. Ensure compliance with automotive EMC standards; save testing time; provide trustworthy data for emission control system optimization.
 Frequency Acquisition (C-FREQ)	±60V wide input + adjustable thresholds – scale frequency testing with multi-module expansion. Eliminate extra adapter costs; improve test efficiency ; support integrated testing of multiple frequency-based components (e.g., motors, sensors).
 Combined Acquisition (C-Multi LTK10)	All-in-one temp/lambda/turbine speed – cut wiring chaos, thrive in high-voltage harsh conditions. Reduce wiring complexity; avoid data asynchrony risks; adapt to high-voltage/extreme condition testing (e.g., off-road vehicle trials).
 High-Voltage Acquisition (HV-MODULE)	Triple insulation + voltage-temp integration – safe, stable ±1500V high-voltage testing. Ensure operator safety in high-voltage tests; cut equipment investment; simplify new energy vehicle power train testing.

