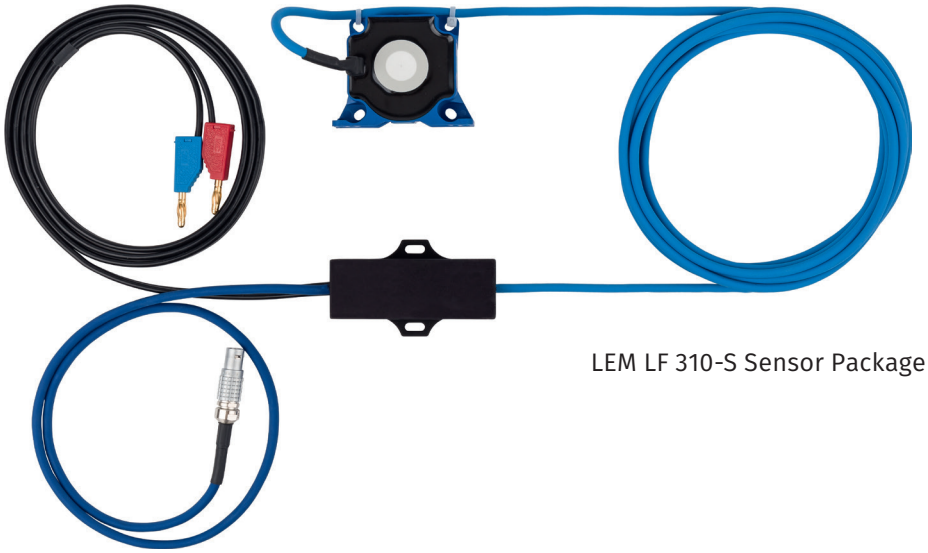
LEM Sensor Package

LF 210-S(/SP3)|LF 310-S|LF 510-S|LF 1010-S



LEM LF 310-S Sensor Package

Product description

The CSM LEM Sensor Packages combined with a measurement module such as an AD4 pro IG1000 allow very precise measurements of electrical currents up to ±1,250 A (max. 800 A_{rms} continuously) with signal frequencies up to 200 kHz (LEM LF 1010-S).

An AD4 pro IG1000 MiniModule can measure up to four electrical currents synchronously. Alternatively, up to four voltages can be measured synchronously. It is therefore also possible to measure electrical power.

The applied current transducer ensures galvanic isolation between test object and measurement system and is thus suitable for high-voltage applications.

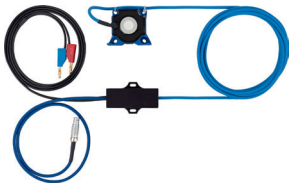
Key features

- Precise measurements on electrical components in vehicles for the optimization of power and fuel consumption
- Ready-to-use solution for current measurements up to ±1,250 A with sensor LEM LF 1010-S
- TEDS support according to IEEE 1451.4
- High accuracy and frequency bandwidth (200 kHz) even at ±1,250 A measurement current (LEM LF 1010-S)
- Fast and synchronous (< 1 µs) current measurements (e.g. of all three phases)
- Possible use in 48 V on-board supply systems and high-voltage environments

Scope of delivery

- LEM Sensor Package
  - Sensor LEM LF 210-S/SP3 | LEM LF 210-S | LEM LF 310-S | LEM LF 510-S | LEM LF 1010-S
  - Signal conditioning
  - Cabling (ready to be connected)

Technical data

Type designation	**LEM LF 210-S/ SP3 Sensor Package**	**LEM LF 210-S Sensor Package**	**LEM LF 310-S Sensor Package**	**LEM LF 510-S Sensor Package**	**LEM LF 1010-S Sensor Package**
Technical data valid as of revision	B002				
	 image simular				
Notice	technical data of LEM sensor according to manufacturer specification:				
	LEM LF 210-S/ SP3	LEM LF 210-S	LEM LF 310-S	LEM LF 510-S	LEM LF 1010-S
Nominal current (for continuous operation)	up to 50 A_{rms}	up to 200 A_{rms}	max. 300 A_{rms}	max. 500 A_{rms}	max. 800 A_{rms}
	See section "Product variants"				
Measurement range	up to ±50 A	up to ±200 A	±500 A	±800 A	±1,250 A
	See section "Product variants"				
Threshold frequency	100 kHz			200 kHz	
Measurement uncertainty					
Internal shunt	max. ±0.02 % of measured value, 5 ppm/K				
LEM sensor	details see LEM Specification				
TEDS support	according to IEEE 1451.4				
Power supply	externally powered via U_{Bat} of the vehicle with active reverse polarity protection				
Minimum	9 V DC				
Maximum	36 V DC				
Power consumption					
Minimum	1.5 W			1.8 W	
	at 0 A ("idle")				
Maximum	5.1 W	3.2 W	6.0 W	4.5 W	6.0 W
Output voltage	±5 V at measurement range				
Recommended measurement range	±5 V (AD4 pro IG1000 MiniModule)				
Housing	signal conditioning only See section "Connection scheme"				
Protection class	IP67 (potted)				
Dimensions (w × h × d)	approx. 50 × 25 × 85 mm				
Connectors					
Power supply	banana plugs				
Output (to module)	LEMO 1B, 8-pole, code G				
Operating and storage conditions	signal conditioning only See section "Connection scheme"				
Operating temperature range	-40 °C to +85 °C				

Type designation	LEM LF 210-S/ SP3 Sensor Package	LEM LF 210-S Sensor Package	LEM LF 310-S Sensor Package	LEM LF 510-S Sensor Package	LEM LF 1010-S Sensor Package
Cable lengths					
To power supply	1.5 m				
To LEM sensor	3.0 m				
To measurement module	0.75 m				

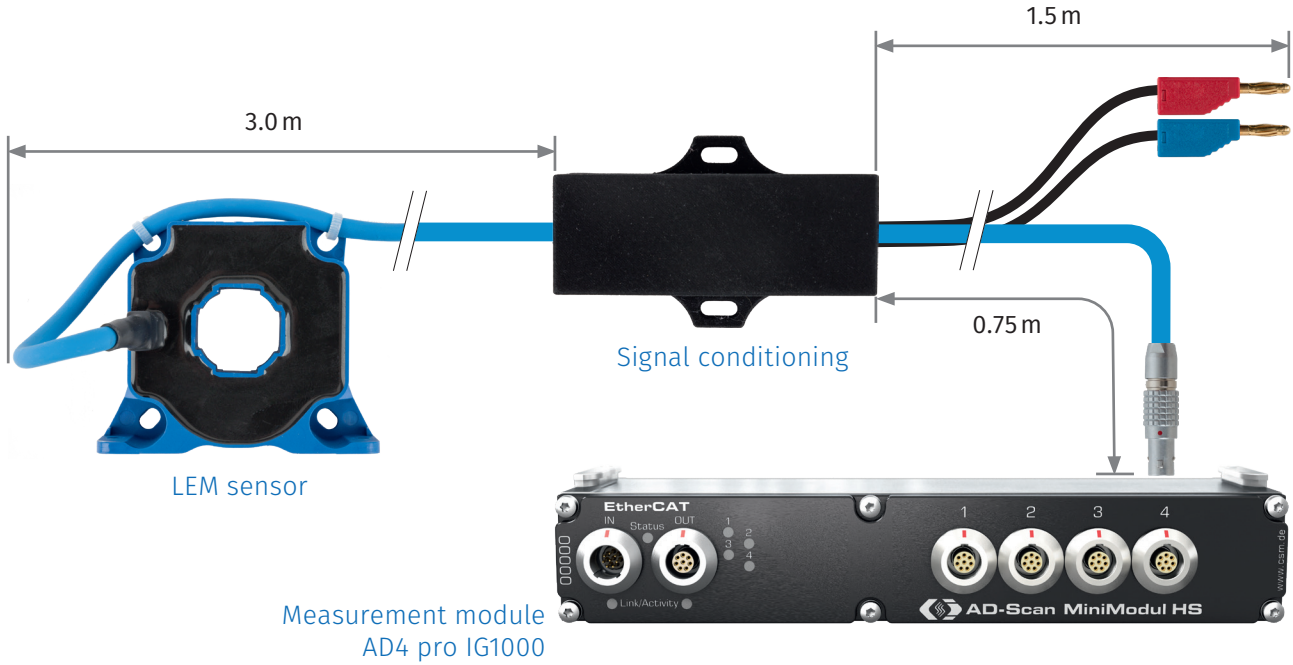
Product variants LEM LF 210-S/SP3 Sensor Package

Name suffix	_50	_20	_10	_5
Nominal current (for continuous operation)	max. 50 A_{rms}	max. 20 A_{rms}	max. 10 A_{rms}	max. 5 A_{rms}
Measurement range	±50 A	±20 A	±10 A	±5 A

Product variants LEM LF 210-S Sensor Package

Name suffix	_200	_100
Nominal current (for continuous operation)	max. 200 A_{rms}	max. 100 A_{rms}
Measurement range	±200 A	±100 A

Connection scheme (LEM LF 310-S Sensor Package)





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