



CSMshunt

- Universal applicable, shunt-based adapter solution for current measurement
- Rugged housing with external measurement amplifier
- Available in 2.5 A, 25 A, 125 A, and 250 A ranges
- Suitable for direct connection to CSM AD-Scan MiniModules
- Operating temperature under full load:
 -40°C to +125°C
- Outstanding accuracy within the temperature range

The **CSMshunt** expands the usability of AD-Scan MiniModules, enabling the user to measure current in a **precise and accurate** manner – **even under the harshest environmental conditions.** Additionally CSMshunt is suitable for operating at all kinds of analog measurements.

The power supply of the external amplifier is **electrically isolated**. The electronic isolation of the measurement signal is handled by the measurement module, so that interspersion will not cause any measurement errors.

The shunt-based measurement solution is characterized not only by the optimum integration to AD-Scan Mini Modules (in particular by the **high temperature-resistance up to +125°C under full load**), but also its **excellent accuracy**.

The CSMshunt is designed to be inserted directly into the current path. Any pre-existing/original fusing remains completely unaffected.

As the standard offering, the CSMshunt 2.5 A and 25 A is delivered with 2.5 mm² open end copper wire. The CSMshunt 125 A and 250 A is delivered with an M6 thread bolt.

Typical fields of application

- Acquisition and monitoring of current in operational mode
- Acquisition and monitoring of current in sleep mode
- Detection of "electricity hogs" to avoid battery problems in serial production
- Monitoring of sleep- and recovery behaviour of ECUs



Monitoring of sleep- and recovery behaviour of ECUs

CSMshunt 125 A / 250 A

- ▷ Error analysis in the service garage for error identification in "non-mobility vehicles" and other electric-/electronic-problem vehicles
- □ Long-term monitoring of vehicle current during continuous vehicle operation.

Customer modification

In addition to the standard version of the CSMshunt, almost any custom input/output connector combinations are possible. Please contact us for further details.

Specifications CSMshunt

Threshold frequency	Technical Data	CSMshunt 2.5 A	CSMshunt 25 A	CSMshunt 125 A	CSMshunt 250 A	
Measurement accuracy at 25 °C	Input measurement range					
Co.5 % of co.5 % of co.5 % of co.5 % of meas value st.2.5 mA co.5 % of meas value	Threshold frequency	1.4 kHz				
Temperature drift		of meas. value ±0.25 mA	of meas. value ±2.5 mA	of meas. value ±12.5 mA	of meas. value ±25 mA	
Calvanic insulation Power supply measurement signal Son V Son V			of meas. value ⁽¹⁾	of meas. value ⁽¹⁾		
Power supply	Temperature drift		typ. 60	ppm/K		
Power supply Minimum Maximum Double of Double voltage Maximum load Maximum overcurrent 12 ∨ DC 15 ∨		no safety insulation in terms of high-voltage applications			ns	
Power supply Minimum Maximum Power consumption Output voltage Maximum overcurrent 12 ∨ DC 15	power supply	500 V				
Minimum 12 V DC Maximum 15 V DC Power consumption typ. 12.5 mA 12 V DC Output voltage ±10 V at ± Irated (±25 mV at ± Irated) (**) Maximum load R; > 20 k Ω Maximum overcurrent 10 A 70 A 200 A 750 A Housing Protection class IP54 Amplifier IP67 Weight Amplifier Shunt approx. 50 g approx. 250 g Amplifier approx. 60 g Dimensions (w x h x d) 41 x 15 x 30 mm 135 x 35 x 40 mm Amplifier 80 x 30 x 30 mm Connectors Input open end, 2.5 mm² copper wire M6 threaded bolt Output LEMO 08 6-pole(4) Operating and storage conditions Operating temperature -40°C to +125°C Relative humidity 5% to 95% Storage temperature -55°C to +125°C	measurement signal	none ⁽³⁾				
Power consumption Output voltage typ. 12.5 m A 12 V DC ±10 V at ± l _{rated} (1/4) Maximum load Maximum overcurrent 10 A 70 A 200 A 750 A Housing Protection class Shunt Amplifier IP67 IP54 IP54 Weight Shunt Amplifier approx. 50 g approx. 250 g approx. 250 g Amplifier Amplifier 41 x 15 x 30 mm 135 x 35 x 40 mm approx. 250 g <	Minimum					
Maximum load Maximum overcurrent (±25 mV at ± I _{rated}) ⁽¹⁾ R ₁ > 20 k Ω Housing Protection class Shunt Amplifier IP67 IP54 Amplifier Weight Shunt Amplifier approx. 50 g approx. 250 g Amplifier Dimensions (w x h x d) Shunt Amplifier 41 x 15 x 30 mm 135 x 35 x 40 mm Amplifier Shunt Amplifier 80 x 30 x 30 x 30 mm Connectors Input Output open end, 2.5 mm² copper wire M6 threaded bolt Defended by the company of						
Maximum load Maximum overcurrent 10 A 70 A 200 A 750 A Housing Protection class Shunt IP67 IP54 Amplifier IP67 IP57 Weight Shunt approx. 50 g approx. 250 g Amplifier approx. 60 g approx. 60 g Dimensions (w x h x d) Shunt Amplifier 41 x 15 x 30 mm 135 x 35 x 40 mm Amplifier 80 x 30 x 30 mm 135 x 35 x 40 mm Connectors Input Output open end, 2.5 mm² copper wire M6 threaded bolt Output LEMO 0B 6-pole ⁽⁴⁾ Operating and storage conditions Operating temperature Relative humidity Storage temperature -40°C to +125°C Storage temperature -55°C to +125°C	Output voltage	+10 V at + Iroted				
Housing	Maximum load					
Protection class Shunt	Maximum overcurrent	10 A	70 A	200 A	750 A	
Amplifier Weight Shunt Amplifier Shunt Amplifier Amplif	•					
Weight approx. 50 g approx. 250 g Amplifier approx. 60 g Dimensions (w x h x d) 41 x 15 x 30 mm 135 x 35 x 40 mm Shunt 41 x 15 x 30 mm 135 x 35 x 40 mm Amplifier 80 x 30 x 30 mm Connectors Input open end, 2.5 mm² copper wire M6 threaded bolt Output LEMO 0B 6-pole(4) Operating and storage conditions -40°C to +125°C Relative humidity 5 % to 95 % Storage temperature -55°C to +125°C	Shunt	IPO	IP54		54	
Shunt approx. 50 g approx. 250 g Amplifier approx. 60 g Dimensions (w x h x d) 41 x 15 x 30 mm 135 x 35 x 40 mm Shunt 80 x 30 x 30 mm Connectors Input open end, 2.5 mm² copper wire M6 threaded bolt Output LEMO 08 6-pole(4) Operating and storage conditions Operating temperature -40°C to +125°C Relative humidity 5 % to 95 % Storage temperature -55°C to +125°C	Amplifier		IP	67		
Amplifier Dimensions (w x h x d) Shunt Amplifier Connectors Input Output Output Operating and storage conditions Operating temperature Relative humidity Storage temperature Amplifier approx. 60 g 41 x 15 x 30 mm 135 x 35 x 40 mm 135 x 35 x 40 mm 135 x 35 x 40 mm M6 threaded bolt LEMO 0B 6-pole ⁽⁴⁾ Operating temperature -40°C to +125°C Felative humidity 5 % to 95 % Storage temperature	Weight					
Dimensions (w x h x d)	Shunt	approx. 50 g		approx	. 250 g	
Shunt 41 x 15 x 30 mm 135 x 35 x 40 mm Connectors Input Open end, 2.5 mm² copper wire M6 threaded bolt Output LEMO 0B 6-pole(4) Operating and storage conditions Operating temperature Relative humidity 5% to 95 % Storage temperature -55°C to +125°C	Amplifier		appro	x. 60 g		
Amplifier 80 x 30 x 30 mm Connectors Input Open end, 2.5 mm² copper wire M6 threaded bolt Output LEMO 0B 6-pole ⁽⁴⁾ Operating and storage conditions Operating temperature Relative humidity 5% to 95 % Storage temperature -55°C to +125°C	Dimensions (w x h x d)					
Connectors Input open end, 2.5 mm² copper wire M6 threaded bolt Output LEMO 0B 6-pole ⁽⁴⁾ Operating and storage conditions Operating temperature Relative humidity Storage temperature -55°C to +125°C	Shunt	41 x 15 x 30 mm		135 x 35	x 40 mm	
Input open end, 2.5 mm² copper wire M6 threaded bolt Output Operating and storage conditions Operating temperature Relative humidity Storage temperature Open end, 2.5 mm² copper wire LEMO 0B 6-pole(4) -40°C to +125°C 5 % to 95 % -55°C to +125°C	Amplifier	80 x 30 x 30 mm				
Output Coperating and storage conditions Operating temperature Relative humidity Storage temperature Coupling temperature -40°C to +125°C 5 % to 95 % -55°C to +125°C	Connectors					
Operating and storage conditions Operating temperature -40°C to +125°C Relative humidity 5 % to 95 % Storage temperature -55°C to +125°C	Input	open end, 2.5 mm ² copper wire		M6 threa	aded bolt	
Operating temperature -40°C to +125°C Relative humidity 5 % to 95 % Storage temperature -55°C to +125°C	Output	LEMO 0B 6-pole ⁽⁴⁾				
Relative humidity 5 % to 95 % Storage temperature -55°C to +125°C			-40°C to	+125°C		
Storage temperature -55°C to +125°C						
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For further technical information and references, please contact our technical sales.

Part numbers

ART1220101	CSMshunt 2,5 A, 2.5 m LEMO 0B 6-pole
ART1220701	CSMshunt 25 A, 2.5 m LEMO 0B 6-pole
ART1221301	CSMshunt 125 A, 2.5 m LEMO 0B 6-pole
ART1221701	CSMshunt 250 A, 2.5 m LEMO 0B 6-pole

¹⁾ CSMshunt passive.
2) This CSMshunt is designed to measure within 12 V-, 24 V-, or 42 V- vehicle onboard power supply. The maximum operation voltage at the measuring inputs is 60 V.

Not suitable for direct usage at systems with higher operating voltages, e.g. HV-battery of hybrid or e-cars.
3) The galvanic isolation of the measurement signal must be done in the measurement module.
4) Optionally available in other variants.

Further articles of CSMshunt

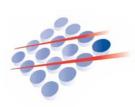
Articles	Variants	Picture
CSMshunt passive	2,5 A / 25 A	
	125 A / 250 A	
Amplifier CSMshunt passive		

Part numbers

ART1220501	CSMshunt 2,5 A passive, 0.5 m LEMO 0B 6-pole
ART1221101	CSMshunt 25 A passive, 0.5 m LEMO 0B 6-pole
ART1223001	CSMshunt 125 A passive, 0.5 m LEMO 0B 6-pole
ART1222901	CSMshunt 250 A passive, 0.5 m LEMO 0B 6-pole
ART1230101	Amplifier CSMshunt passive, 0.5 m LEMO 0B 6-pole



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