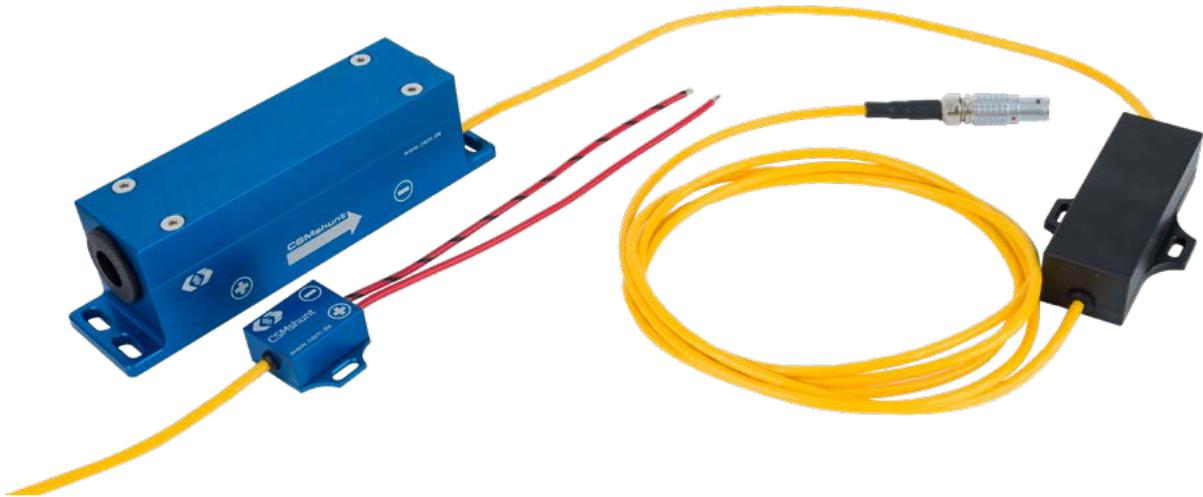


# CSMshunt



## Product description

With the CSMshunt, CSM extends the range of applications for all AD measurement modules to include the safe and accurate measurement of electrical currents under harsh environmental conditions. It can also be used on any analog measurement inputs.

The power supply of the external amplifier is electrically isolated. The galvanic isolation of the measurement signal has to be provided by the measurement module, thus avoiding incorrect measurements due to interference.

The shunt devices are optimised for AD measurement modules, featuring a high temperature resistance up to +125 °C under full load and excellent accuracy.

The CSMshunt is looped into the current path where the measurement is performed. The original circuit protection remains completely intact.

## Shipping content

- ▶ CSMshunt
  - ▶ Shunt 2.5A | 25A | 125A | 250A
  - ▶ Signal conditioning
  - ▶ Cabling (ready-to-connect)
  - ▶ Calibration certificate

## Highlights

- ▶ *Universally applicable, shunt-based solution for current measurements under harsh environmental conditions*
- ▶ *Robust housing with external measurement amplifier*
- ▶ *Available for the measurement ranges 2.5A, 25A, 125A and 250A*
- ▶ *Can be directly connected to all CSM AD measurement modules*
- ▶ *Operating temperature under full load: -40 °C to +125 °C*
- ▶ *Outstanding accuracy over the entire temperature range*

## Technical data

Type designation	CSMshunt 2.5A	CSMshunt 25A	CSMshunt 125A	CSMshunt 250A
				
Input measurement range	±2.5 A (Shunt 10 mΩ)	±25 A (Shunt 1 mΩ)	±125 A (Shunt 0.2 mΩ)	±250 A (Shunt 0.1 mΩ)
Threshold frequency	1.4 kHz			
Measurement accuracy				
at 25 °C	< 0.5 % of measured value ±0.25 mA < 1 % of measured value <sup>1</sup>	< 0.5 % of measured value ±2.5 mA < 1 % of measured value <sup>1</sup>	< 0.5 % of measured value ±12.5 mA	< 0.5 % of measured value ±25 mA
Temperature drift	typ. 60 ppm/K		typ. 120 ppm/K	
Galvanic isolation <sup>2</sup>	no safety isolation in terms of high-voltage applications			
Excitation	500 V			
Measured signal	no <sup>3</sup>			
Power supply				
Minimum	12 V DC			
Maximum	15 V DC			
Current consumption	typ. 12.5 mA 12 V DC			
Output voltage	±10 V at ±I <sub>rated</sub>			
	(±25 mV at ±I <sub>rated</sub> ) <sup>1</sup>			
Maximum load	R <sub>L</sub> > 20 kΩ			
Maximum overcurrent	10 A	70 A	200 A	385 A
Housing				
Protection class				
Shunt	IP67		IP54	
Amplifier	IP67			
Weight				
Shunt	approx. 50 g		approx. 250 g	
Amplifier	approx. 60 g			
Dimensions (W × H × D)				
Shunt	41 × 15 × 30 mm		135 × 35 × 40 mm	
Amplifier	80 × 30 × 30 mm			

<b>Type designation</b>	<b>CSMshunt 2.5A</b>	<b>CSMshunt 25A</b>	<b>CSMshunt 125A</b>	<b>CSMshunt 250A</b>
<b>Connector</b>				
Input	open end, 2.5 mm <sup>2</sup> copper wire		M6 threaded bolt	
Output	LEMO 0B, 6-pole <sup>4</sup>			
<b>Operating and storage conditions</b>				
Operating temperature range	-40 °C to +125 °C			
Relative Humidity	5 % to 95 %			
Storage temperature	-55 °C to +125 °C			
<b>Conformity</b>	<b>CE</b>			

<sup>1</sup> CSMshunt passive.

<sup>2</sup> CSMshunt devices are designed for measurements in vehicles with 12V, 24V and 42V on-board power supply systems. The maximum operating voltage at the measurement inputs is 60V. Not suitable to be directly connected to systems with higher operating voltages, e.g. high-voltage batteries of hybrid or electric vehicles.

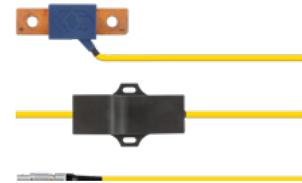
<sup>3</sup> The galvanic isolation of measurement signals has to be effected by the measurement module.

<sup>4</sup> Optionally available in other variants.

## Related Products

### CSMshunt open

CSMshunt open devices have been especially designed for compact, space-saving applications. CSMshunt devices feature excellent temperature stability, outstanding measurement accuracy. They are perfectly adapted to be used in combination with AD measurement modules.



### CSMshunt Fuse

The input of the CSMshunt Fuse is plugged directly into an ATO fuse holder. The original flat fuse of the vehicle is located in a fuse holder attached to the cable which is dimensioned for fuses up to 30A and a permanent current of ±21A.





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