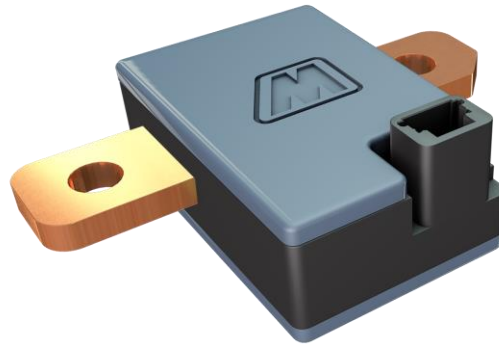


Current Sensor



Description

Methodé's patented cost-effective current measurement sensor offers high accuracy measurements in a small package size.

The measurement principle is based on sensing the current's magnetic field.

The featured automotive grade magnetic measurement technology is fully validated for Methodé's magnetoelastic force and torque sensors available on the market today and carried over to measure a current's magnetic field.

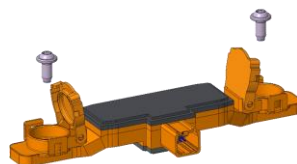
Proven to be consistent over lifetime without the need for recalibration.

Main Features

Internally with 2 individual sensing channels

- Enhanced accuracy with combined channels
- Redundancy at sensing element level (other options can be discussed)
- Effective cancellation of stray field effects on measurement
- High overall accuracy ($\leq 0.5\%$ FS)
- Full galvanic isolation – over molded busbar
- high integration level – mold customizable for customer requirements

e.g., finger-proof design (IPXXB) with caps protecting bolts



Current Sensor



Parameter	Symbol	Value	Unit	Notes
Current Measurement Range Full Scale (FS)	FS	± 500 or ± 1400	A	Contact us for custom ranges
Extended Range		110	% FS	accuracy can be reduced for > 100% FS
Maximum Gain Error (see image)				
-Min to -1 A error crossing		1	% of reading	
-1 A to +1 A crossing		1	A	
+1 A error crossing to Max		1	% of reading	
Maximum Odd Symmetry Error (see image)		± 0.5	% FS	
Resolution @ ± 500 A Range				
$\approx \leq 50$ A		0,1	A	
$\approx \geq 100$ A		0,3	A	
Resolution @ ± 1500 A Range				
≤ 100 A		0,2	A	
≥ 100 A		1	A	
Power Supply				
Supply Voltage	U_c	+6 to +18	VDC	
Supply Voltage - over voltage	U_c	tbd	VDC	
Current Consumption	I_c	< 200	mA	
Communication				
Digital Output		SAE J2716-2016 SENT or CAN		Contact us for other comms.
Minimum Rate		10	ms	
Connector		4x Pin TE Connectivity Ref.: 1565749, Keying 1		Mates with reference 1473672-1
Time to powerup and current measurement communication initiated		< 150	ms	
Environment				
Temperature, ambient operating	T_A	- 40 to + 85	$^{\circ}\text{C}$	
Temperature, ambient storage		- 40 to + 85	$^{\circ}\text{C}$	
Operational altitude range		-400 to 4000	m	

Current Sensor



Humidity, storage
and operational

< 95 %

Functional Safety

Functional Safety
Rating

ASIL B or C

Redundancy

internally uses 2
independent channels

accuracy is reduced if one
channel fails (error flag)

Busbar Geometry

cross sectional area

150 mm²

dimensions

30 x 5 mm

System Rating (sensor busbar assembly)

Operating Voltage

< 1000 V

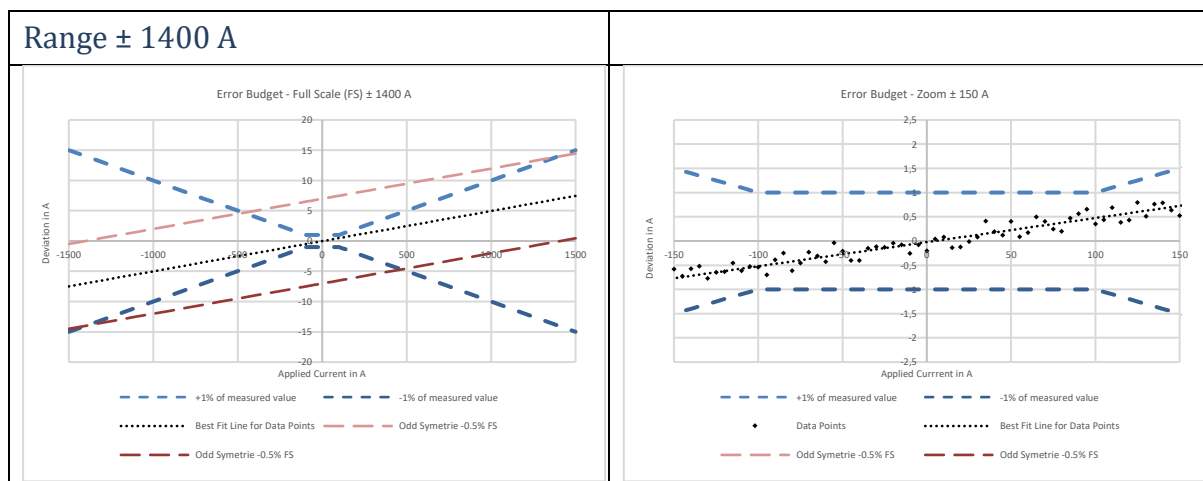
ARMS Current

tbd

DCFC Current

tbd

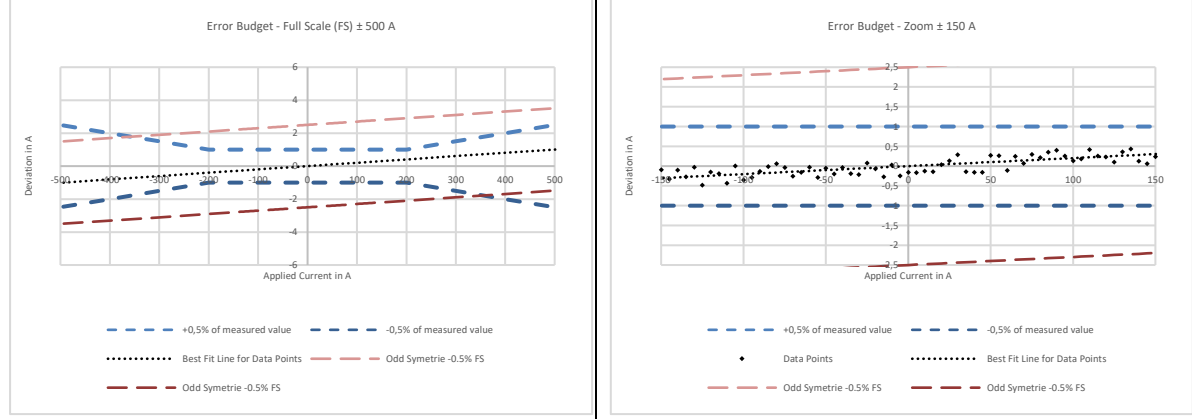
Range ± 1400 A



Current Sensor

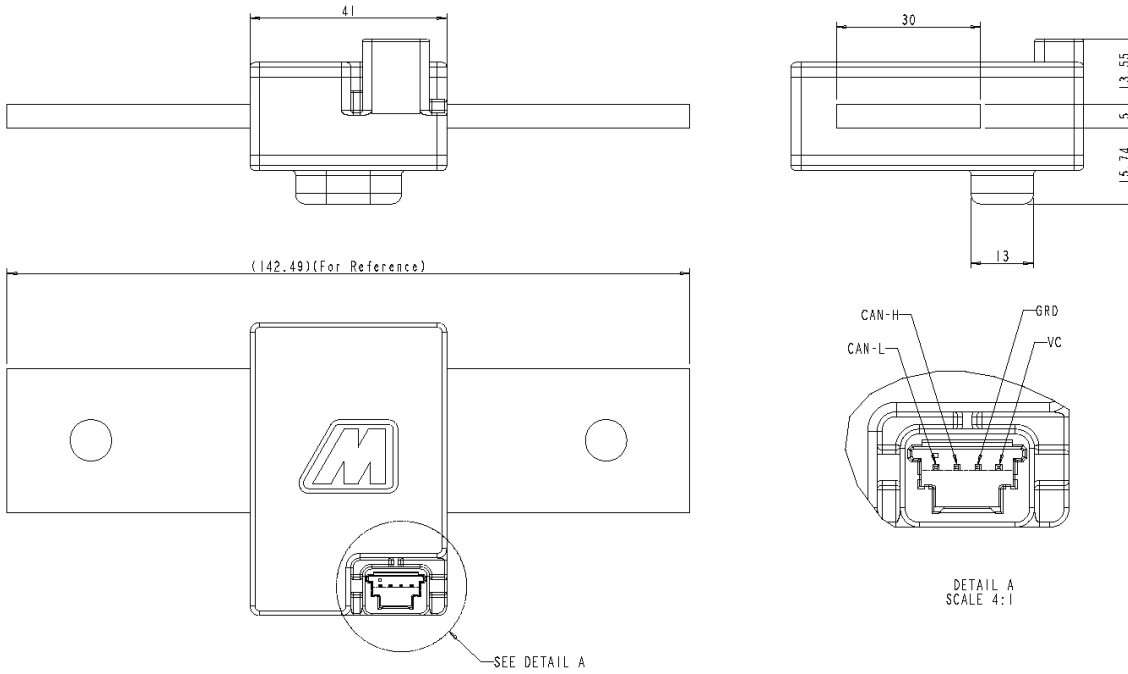


Range ± 500 A



Current Sensor

Packaging



Current Sensor



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