SMART
BUSBAR

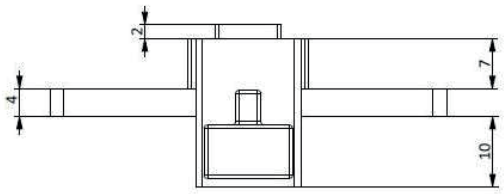
EFI current sensor is a high precision miniature coreless magnetic current sensor for AC and DC measurements with analog interface and fast over-current detection output.

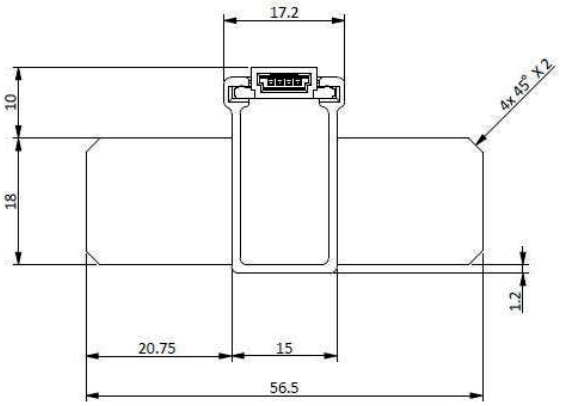
Typical applications are HV electrical sub-systems like inverters and battery junction. Main functions are current measurement and overload or short-circuit detection.

Main Features

- AC and DC bidirectional current sensing
- Full scale up to +/- 1500 A for high current applications
- Single-ended, differential, or redundant outputs
- Single supply voltage 5 V
- Very low sensitivity and offset errors over temperature and lifetime
- Phase delay (<1° at 1 kHz) for closed loop control
- Differential sensor measurement principle ensures low stray magnetic field sensitivity
- Optional fast Over-Current Detection (OCD) output with programmable threshold
- Ratiometric analog output in respect to VDD variations

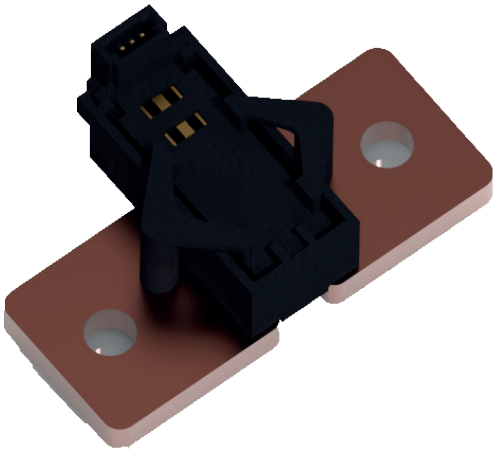
Dimensions





E-MOBILITY

Optimization of electric mobility



TECHNOLOGY
High Precision Coreless Current Sensor

EFIPOWER
BY EFI AUTOMOTIVE

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SENSE - BUILD - DRIVE

EFI AUTOMOTIVE

SMART BUSBAR

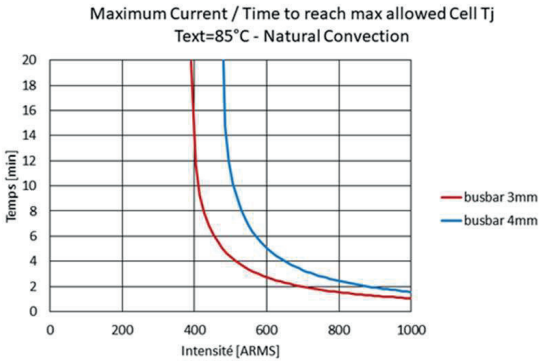
Maximum Ratings

Parameter description	Symbol name	Minimum	Typ.	Maximum	Units	Notes
Supply Voltage	V_{cc}		5	6.5	V	
Supply Current	I_{cc}		16	22	mA	Vcc(min) <= Vcc <= Vcc(max), no load on output
Reverse Supply Voltage	VR_{CC}			-0.5	V	
Output Voltage	V_{out}			6.5	V	
Reverse Output Voltage	VR_{lot}			-0.5	V	
Ambiant Temperature	T_{amb}	-40		150	°C	See Time Current Characteristics (TCC). Depends on the self-heating due to current
Storage Temperature	T_S	-40		150	°C	

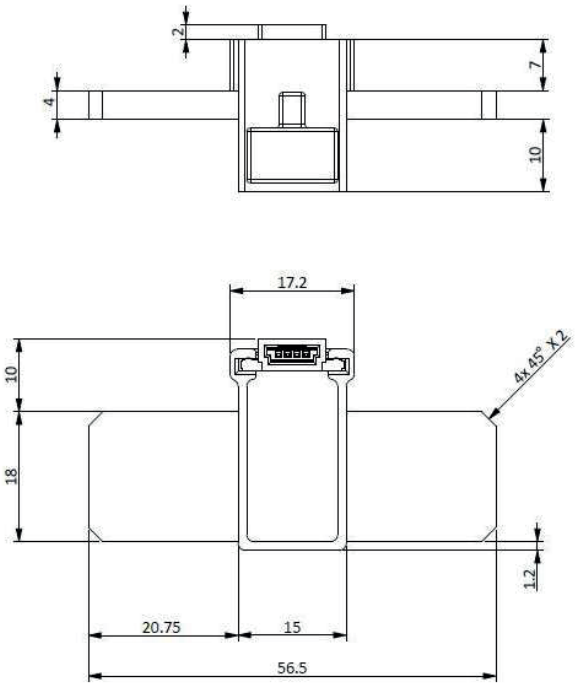
Typical Performances

Parameter description	Symbol name	Minimum	Typ.	Maximum	Units	Notes
Arithmetic calculation	Accuracy	-2.5		2.5	%	Tj = -40°C to 165°C, from 10A to full-scale
RMS calculation	Accuracy	-1.5		1.5	%	Tj = -40°C to 165°C, from 10A to full-scale
Response time	$t_{response}$		1.5		µs	TA = 25°C, step 0 - 500A
Sensor bandwidth	BW		50		kHz	Equivalent -3dB Bandwidth

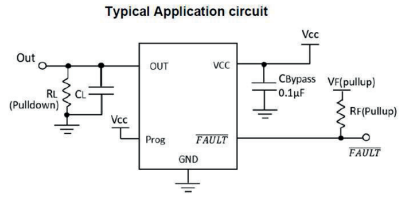
Time – Current characteristics (TCC)



Current sensor arithmetic and RMS error gages



Electrical interface



CL, CBypas and RL integrated on the sensor PCB
FAULT output used for overcurrent. Prog not connected.

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