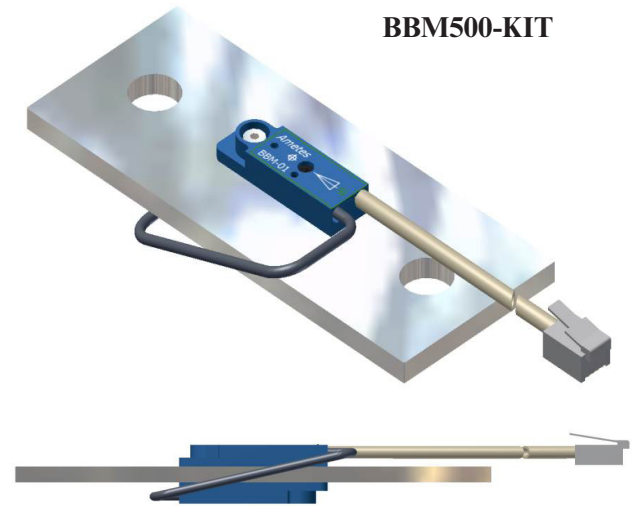


Ametes Bus Bar Module Current Sensor, BBMXX-KIT-I

The Ametes BBMXX-KIT Bus Bar Module Current Sensor Engineering Evaluation kit provides a tool to evaluate the BBM-01 current sensing module. There are five kits available that cover a range of currents from 200A to 3000A. The kit locates two magnetic field sensors on each side of an electric current bus bar. Two Sentron CSA-1VG precision Hall Effect IC's sense the magnetic field as a function of current on both sides of the bus bar. This enables effective cancellation of external magnetic fields without magnetic cores or shielding which can give rise to non-linearity and hysteresis effects. The BBM-01 has two analog differential outputs, A1 and A2. Each output has a range of 2.5VDC $\pm$ 2.0V. The differential voltage between the two outputs provides a full scale output $V_{O-A1}-V_{O-A2}$ of 0V $\pm$ 4.0V.



BBM500-KIT

Applications

- Power Electronics
- Motor and Generator Control
- Electromechanical Systems
- Battery Charging
- Transit and Off Road Vehicles

Features

- Very compact and low profile mechanical package
- Custom design bus bar geometries possible
- Single + 5V Power Supply at less than 25 mA
- High Level 0 $\pm$ 4V differential linear signal output
- Signal output electrically isolated from primary Bus Bar
- DC, bidirectional current sensing
- Clean recovery from very high overload (to 100x nominal current)

Specifications - Electrical

Symbol	Parameter	Units	BBM200 KIT-I	BBM500 KIT-I	BBM1000 KIT-I	BBM2000 KIT-I	BBM3000 KIT-I
I_{PN}	Primary Current, nominal	A	$\pm$ 200	$\pm$ 500	$\pm$ 1000	$\pm$ 2000	$\pm$ 3000
I_{PM}	Primary Current, max	A	$\pm$ 312	$\pm$ 700	$\pm$ 1400	$\pm$ 2800	$\pm$ 4200
V_{PN}	Bus Bar Voltage drop at I_{PN} ‡	mV	<5	<5	<5	<5	<5
V_{S-DIFF}	Voltage Sensitivity V_{O-DIFF} / I_P †	mV/A	16 $\pm$ 1.2	8 $\pm$ 0.6	4 $\pm$ 0.3	2 $\pm$ 0.15	1.33 $\pm$ 0.1
V_O	Output Voltage A1 & Output Voltage A2	V	2.5 $\pm$ 2.0	2.5 $\pm$ 2.0	2.5 $\pm$ 2.0	2.5 $\pm$ 2.0	2.5 $\pm$ 2.0
$V_{ON-DIFF}$	Differential Output Voltage at I_{PN} †	V	0 $\pm$ 4.0	0 $\pm$ 4.0	0 $\pm$ 4.0	0 $\pm$ 4.0	0 $\pm$ 4.0
$V_{OS-DIFF}$	Differential Output Offset Voltage at $I_P=0$ †	mV	< $\pm$ 30	< $\pm$ 30	< $\pm$ 30	< $\pm$ 30	< $\pm$ 30
V_{DD}	Supply Voltage, DC	V	5.0 $\pm$ 0.5	5.0 $\pm$ 0.5	5.0 $\pm$ 0.5	5.0 $\pm$ 0.5	5.0 $\pm$ 0.5
V_D	Voltage for AC Isolation Test	Vrms	600	600	600	600	600
V_L	Linearity Error $I_P < I_{PN}$	%	<1.5	<1.5	<1.5	<1.5	<1.5
TCV _o	Temperature Coefficient, V_O	mV/°C	<0.3	<0.3	<0.3	<0.3	<0.3
TCV _s	Temperature Coefficient of V_{S-DIFF}	ppm/°C	<300	<300	<300	<300	<300
r	Resolution, I_P	A	0.1	0.25	0.5	1.0	2.0

† Differential Output, $V_{O-DIFF} = V_{O-A1} - V_{O-A2}$

‡ The 5mV voltage drop is for a 160mm long bus bar at approximately 2A/mm²

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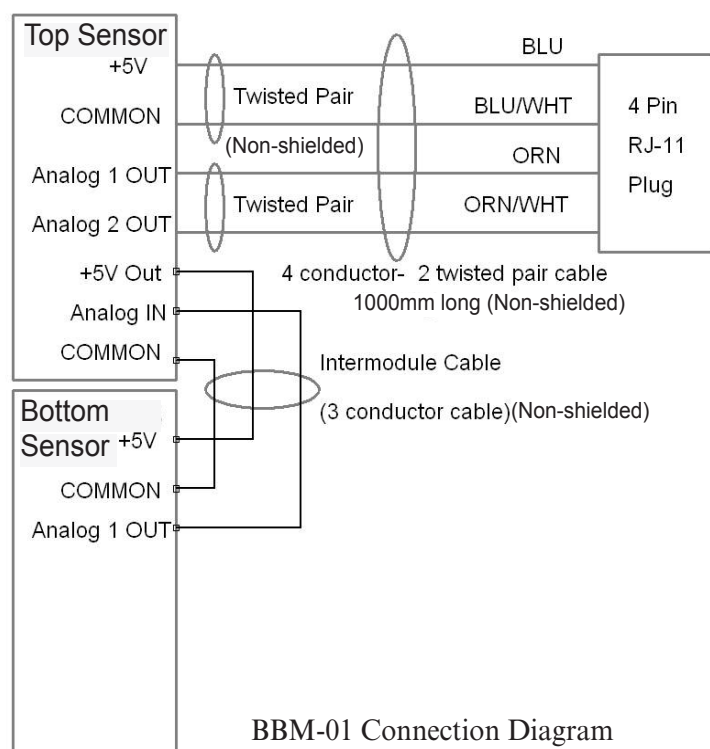
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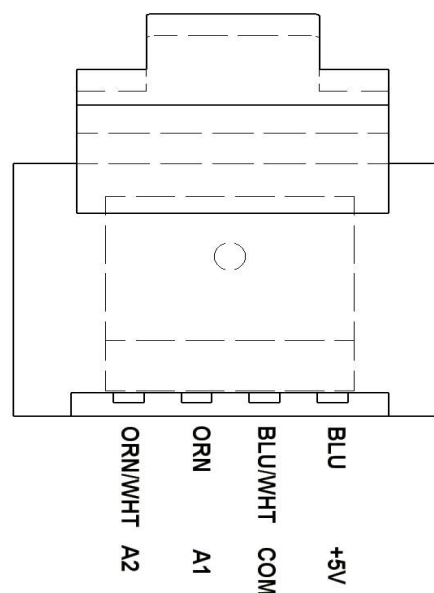
Ametes **Bus Bar Module Current Sensor, BBMXX-KIT-I**

Temperature			
Symbol	Parameter	Units	All Models
TA	Ambient Operating Temperature	°C	-40 to 85
TS	Ambient Storage Temperature	°C	-40 to 100

Mechanical		Units	BBM200 KIT-I	BBM500 KIT-I	BBM1000 KIT-I	BBM2000 KIT-I	BBM3000 KIT-I
l	Bus Bar length, width thickness	mm	160	160	160	160	160
w			15.75	38.1	76.2	101.6	152.4
t			6.35	6.35	6.35	12.7	12.7
C _L	Intermodule cable length	mm	400	400	400	400	400
M	Mass including cable	g	173	369	700	1826	2691



BBM-01 Connection Diagram



RJ-11 Connection Diagram

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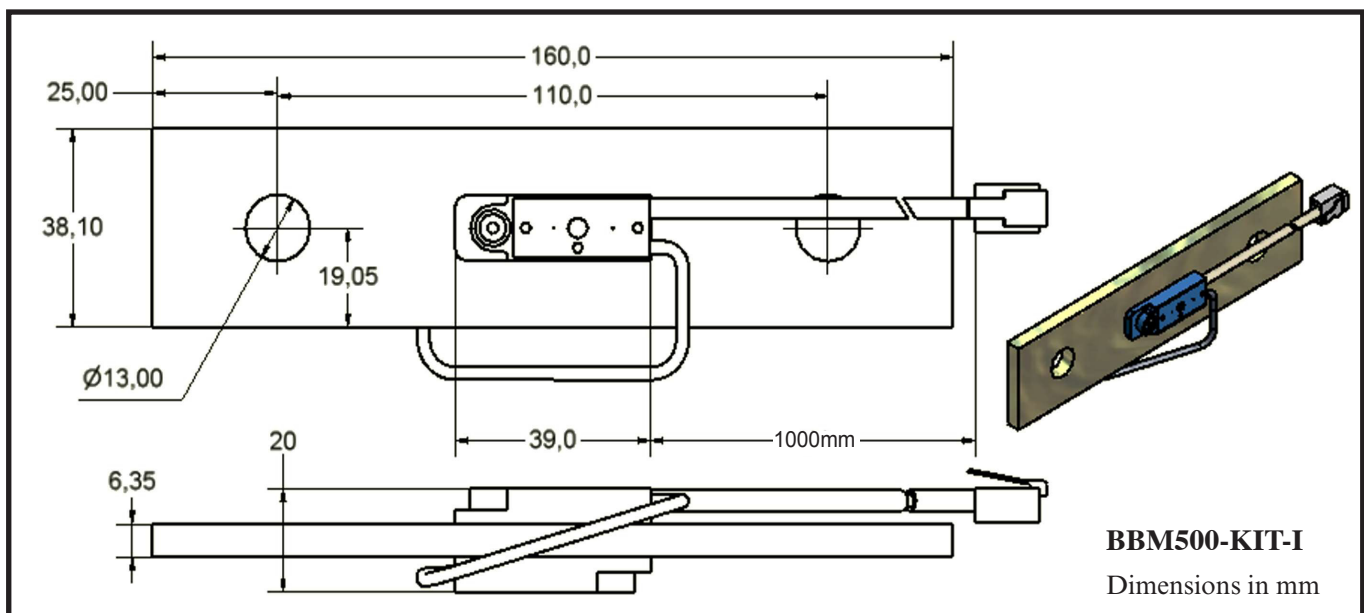
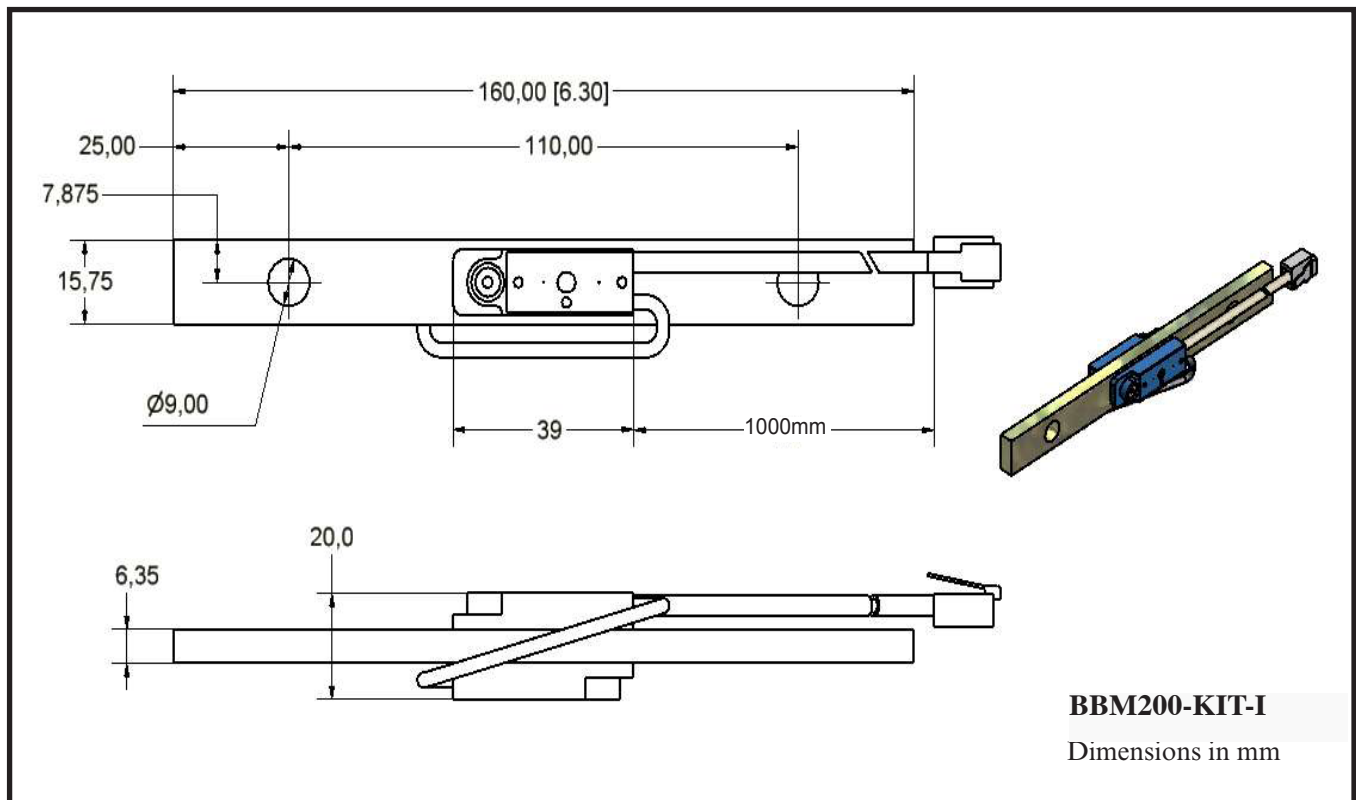
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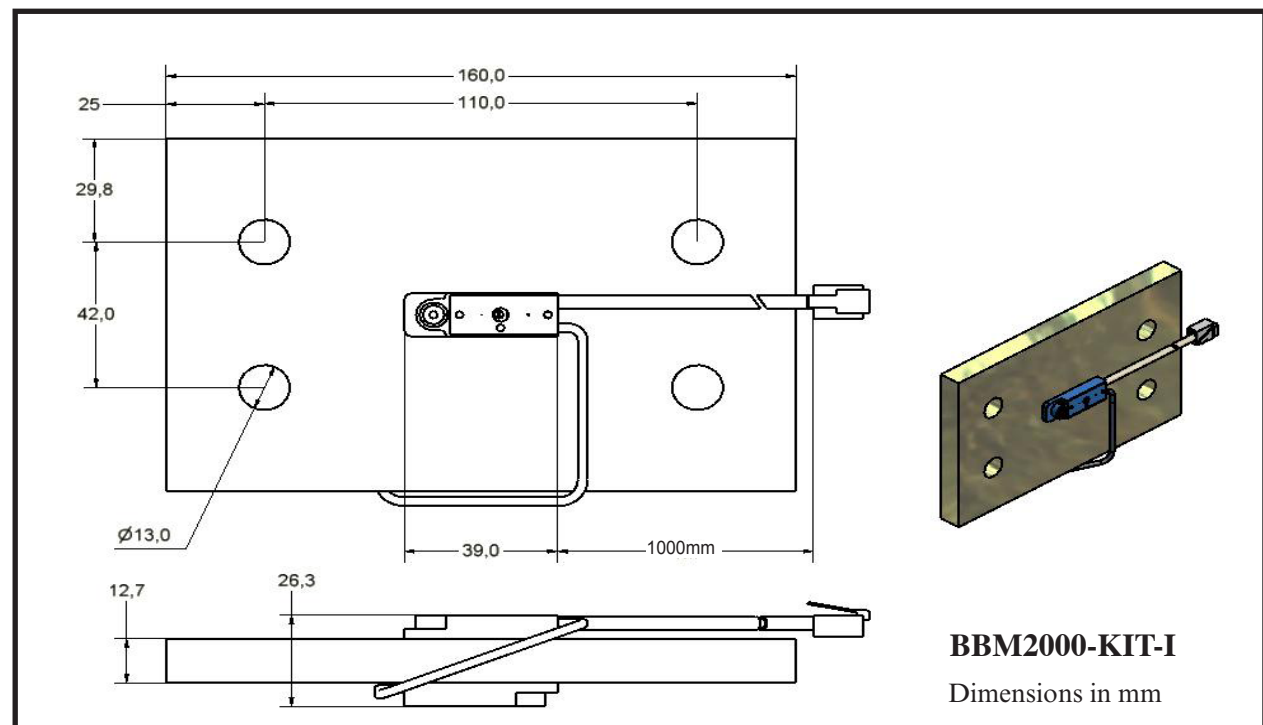
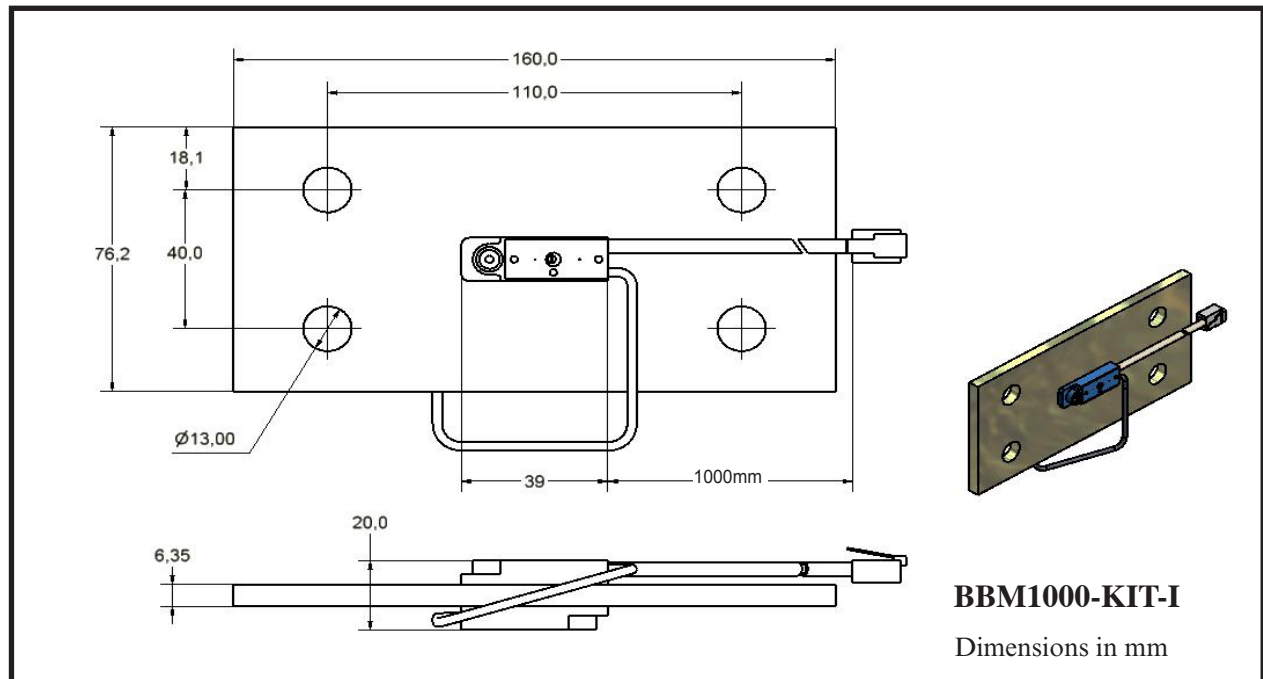
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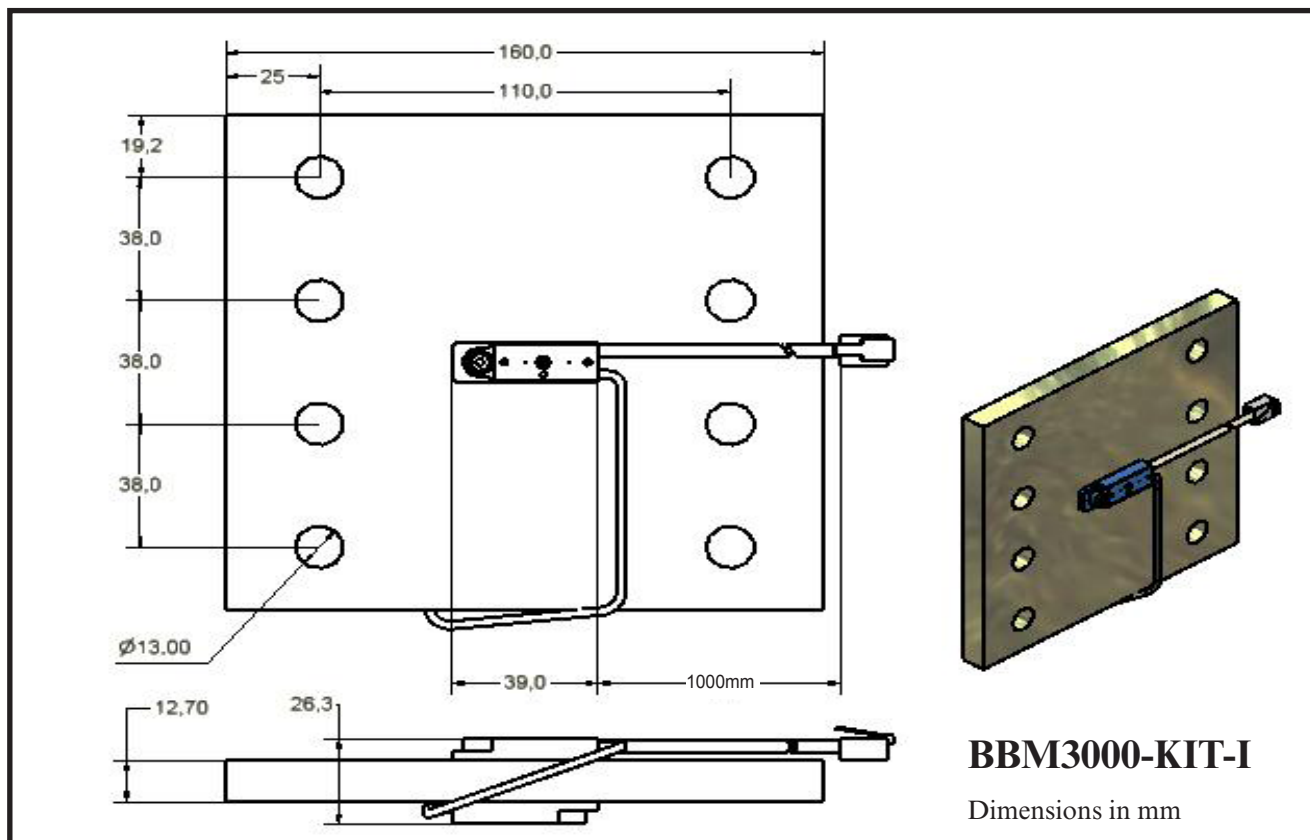
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