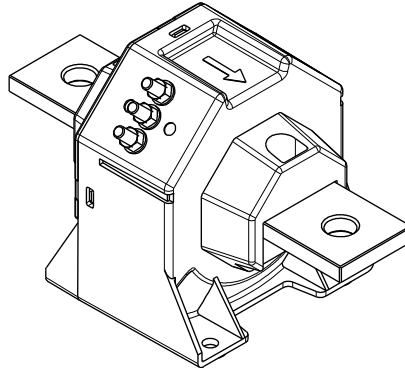


CM6A B00 SERIES

Current Sensor

Model Number:

CM6A 1000 B00



For the electronic measurement of current: DC, AC, pulsed..., with galvanic separation between the primary and the secondary circuits.

Features

- ✧ Closed loop (compensated) current sensor using the Hall effect
- ✧ Galvanic separation between primary and secondary
- ✧ Insulating plastic case recognized according to UL 94-V0
- ✧ Very good linearity
- ✧ High accuracy
- ✧ Very low offset drift over temperature
- ✧ No insertion loss
- ✧ Standards:
 - EN50155: 2007
 - UL508:2013

Applications

- ✧ Single or three inverters
- ✧ Traction converter
- ✧ Auxiliary converter
- ✧ Battery charger
- ✧ Propulsion and braking chopper
- ✧ Subway

Safety

This sensor must be used according to IEC61010-1.

This sensor must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the following manufacture's operating instructions.

Caution, risk of electrical shock!



When operating the sensor, certain parts of the module can carry hazardous voltage (e.g., Primary busbar, power supply). Ignore this warning can lead to injury and/or cause serious damage.

This sensor is a built-in device, whose conducting parts must be inaccessible after installation. A protective housing or additional shield could be used.

Main supply must be able to be disconnected.

CM6A B00 SERIES

Absolute maximum ratings(not operating)

Parameter	Symbol	Unit	Value
Supply voltage	V_C	V	± 25.2
Primary conductor temperature	T_B	$^{\circ}\text{C}$	100

- ※ Stresses above these ratings may cause permanent damage.
- ※ Exposure to absolute maximum ratings for extended periods may degrade reliability.

Environmental and mechanical characteristics

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Ambient operating temperature	T_A	$^{\circ}\text{C}$	-40		85	
Ambient storage temperature	T_S	$^{\circ}\text{C}$	-40		90	
Mass	m	g		1200		
Standards	EN 50155:2007, UL508:2013					

Insulation coordination

Parameter	Symbol	Unit	Value	Comment
Rms voltage for AC insulation test @ 50Hz, 1min	V_d	kV	12	Between primary and secondary
Clearance (pri.- sec.)	d_{Cl}	mm	45.2	
Creepage distance (pri.- sec.)	d_{Cp}	mm	52.8	
Plastic case	-	-	UL94-V0	
Comparative tracking index	CTI	PLC	3	

CM6A B00 SERIES

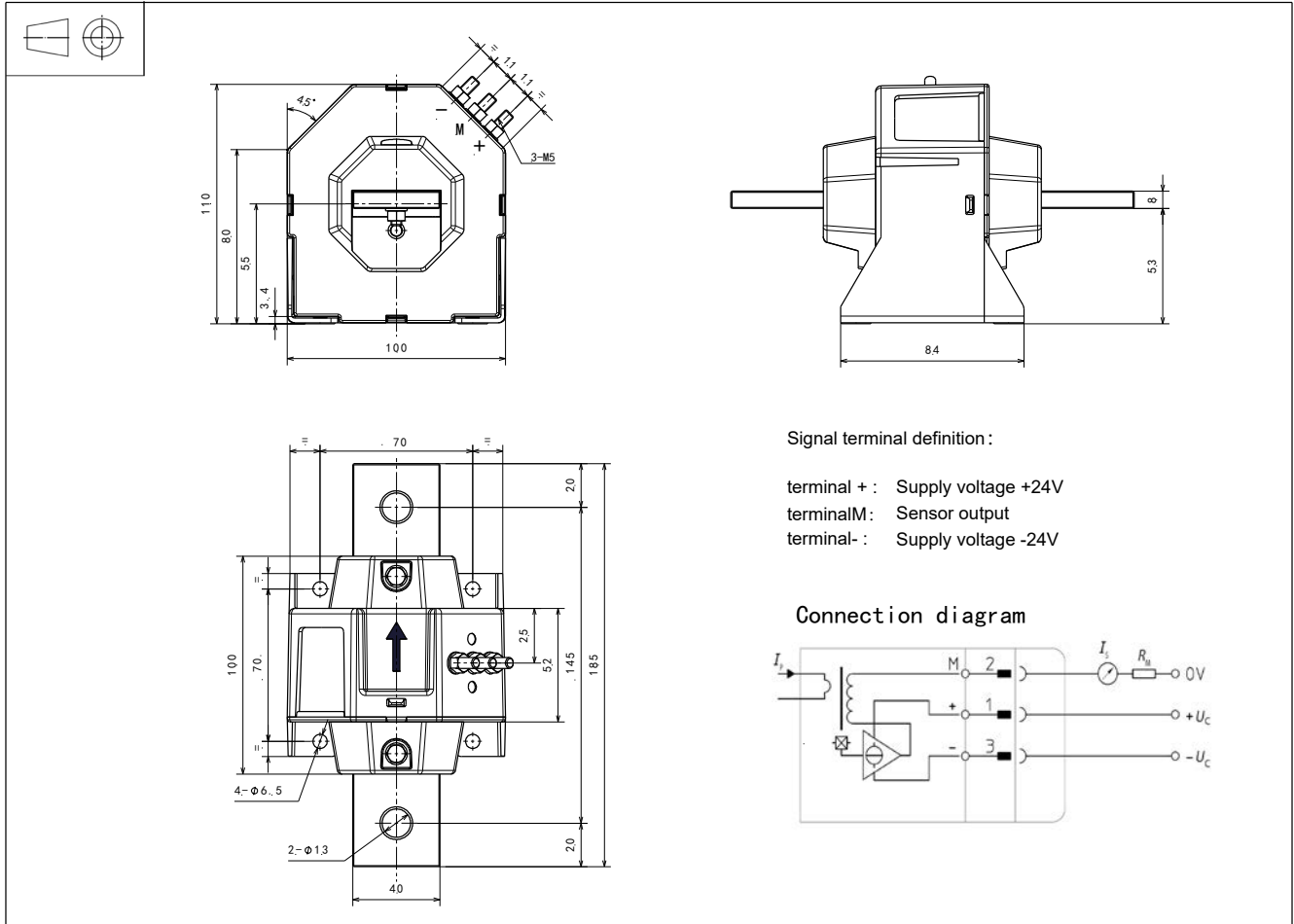
Electrical data

※ With $T_A = 25^\circ\text{C}$, $V_C = \pm 24\text{V}$, $R_M = 1\Omega$, Unless otherwise noted.

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Primary nominal rms current	I_{PN}	A	-1000		1000	
Primary current, measuring range	I_{PM}	A	-2000		2000	
Measuring resistance	R_M	Ω	0 0		62 7	@ $\pm 24\text{V}$, @ $\pm 85^\circ\text{C}$, $\pm 1000\text{A}$ @ $\pm 24\text{V}$, @ $\pm 85^\circ\text{C}$, $\pm 2000\text{A}$
Secondary nominal rms current	I_{SN}	mA	-200		200	
Secondary coil resistance	R_S	Ω			47	@ 70°C
Secondary current, measuring range	I_S	mA	-400		400	
Number of secondary turns	N_S	-		5000		
Theoretical sensitivity	G_{th}	mA/A		0.2		
Supply voltage	V_C	V		± 24		@ $\pm 5\%$
Current consumption	I_C	mA		$28 + I_S$		
Zero offset current	I_O	mA	-0.5		0.5	
Thermal drift of offset current	I_{OT}	mA	-0.6	± 0.2	0.6	@ $-40^\circ\text{C} \sim 85^\circ\text{C}$
Residual current@ $I_P=0$ after I_{PN}	I_{OM}	mA	-0.5		0.5	
Sensitivity error	\mathcal{E}_G	%	-0.2		0.2	
Linearity error 0... I_{PN}	\mathcal{E}_L	% of I_{PN}	-0.1		0.1	
Accuracy@ I_{PN}	X	% of I_{PN}	-0.4		0.4	
Response time@ 90% of I_{PN}	t_r	μs		0.5	1	
Frequency bandwidth(-1dB)	BW	kHz		150		

CM6A B00 SERIES

Dimensions (in mm. 1 mm = 0.0394 inch)



Mechanical characteristics

- ◇ General tolerance ± 0.5 mm
- ◇ Transduce vertical fastening 4pc $\Phi 6.5$ mm through hole or primary conductor
- ◇ Recommended fastening torque 5.5 N•m ($\pm 10\%$)
- ◇ Connection of secondary 4pc M5 threaded bolt
- ◇ Recommended fastening torque 1.2 N•m ($\pm 10\%$)

Remarks

- ◇ I_S and I_P are in the same direction, when I_P flows in the direction of arrow.
- ◇ Temperature of the primary conductor should not exceed 100°C .
- ◇ For security, do not install a current sensor with primary current or secondary power supply.

This is a standard model. For different applications (measurement, secondary connections...), please contact CHIPSENSE.