Features

- Hall effect measuring principle
- AISC
- Output proportional to power supply variation （including offset and sensitivity）
- Galvanic separation between primary and secondary
- Insulating plastic case recognized according to UL 94-V0
- No insertion losses
- Small size

Industrial Applications

- AC variable speed drivers
- Uninterruptible Power Supplies (UPS)
- Static converters for DC motor drives
- Switched Mode Power Supplies (SMPS)
- Power supplies for welding applications
- Battery supplied applications
- Windmill inverters

Safety

This transducer must be used in limited-energy secondary circuits according to IEC61010-1.
This transducer 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 transducer, 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 transducer 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.

Absolute maximum ratings

Parameter	Symbol	Unit	Value
Supply voltage	V_C	V	6
Max. allowable output current @ I_{PN} or V_{PN}	I_{out}	mA	4
ESD rating, Human Body Model (HBM)	V_{ESD}	V	4000
ESD rating, Human Body Model (HBM)	V_{ESD}	V	4000

※ 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	℃	-40 -40 -40 -40		150 150 125 85	CI770-50A CI770-100A CI770-150A CI770-200A
Ambient storage temperature	T_S	℃	-55		165	
Mass	m	g		5		
Standards	EN 50178, IEC 61010-1, UL 508					

Insulation coordination

Parameter	Symbol	Unit	Value	Comment
Rms voltage for AC insulation test, 50 Hz, 1 min	V_d	kV	4.8	
Plastic case	-	-	UL94-V0	
Comparative tracking index	*CTI*	PLC	3	
Application example	-	-	450V CAT Ⅲ PD2	Reinforced insulation，according to EN 50178, EN 61010-1
Application example	-	-	700V CAT Ⅲ PD2	Basic insulation，according to EN 50178, EN 61010-1

Electrical data

CI770-50A

※ With T_A = 25℃, V_C = 5V, R_L = 10kΩ, unless otherwise noted.

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Electrical data						
Primary nominal current rms	I_{PN}	A	-50		50	
Supply voltage	V_C	V	4.5	5.0	5.5	
Output voltage	V_{OUT}	V	$V_{OUT}=(V_C/5)\times(2.5+G_{th}\times I_P)$			@ V_C
Offset output voltage	V_{QOV}	V		2.5		@V_C=5V and I_P=0A
Theoretical sensitivity	G_{th}	mV/A		40		
Current consumption	I_C	mA		11	15	
Load resistance	R_L	kΩ	5			
Load capacitor	C_2	nF		1.5	5	
Filer capacitor	C_1	μF		4.7		
Performance data						
Sensitivity error	$\mathcal{E}_G$	%	-1		1	
Temperature of G	*TCG*	%	-1		1	@T_A=-40℃~150℃
Electrical offset voltage	V_{OE}	mV		±5		@V_C=5V and I_P=0A
Temperature coefficient of V_{OE}	TCV_{OE}	mV		±35		@T_A=-40℃~150℃
Hysteresis offset voltage	V_{OM}	mV		±6		@V_C=5V, after ±I_{PN}
Linearity error	$\mathcal{E}_L$	% of I_{PN}	-1		1	Exclusive of V_{OE}
Accuracy @ I_{PN}	*X*	% of I_{PN}	-3		3	@T_A=-40℃~150℃
Power on duration	t_{POD}	μs		10		
Response time @ 90% I_{PN}	t_r	μs		4	5	@C_2=OPEN
Frequency bandwidth (-3dB)	*BW*	kHz		120		@C_2= OPEN
Output noise	*Vno*	mV		10		@C_2=1.5nF

Electrical data

CI770-100A

※ With T_A = 25℃, V_C = 5V, R_L = 10kΩ, unless otherwise noted.

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Electrical data						
Primary nominal current rms	I_{PN}	A	-100		100	
Supply voltage	V_C	V	4.5	5.0	5.5	
Output voltage	V_{OUT}	V	$V_{OUT}=(V_C/5)\times(2.5+G_{th}\times I_P)$			@ V_C
Offset output voltage	V_{QOV}	V		2.5		@V_C=5V 且 I_P=0A
Theoretical sensitivity	G_{th}	mV/A		20		
Current consumption	I_C	mA		11	15	
Load resistance	R_L	kΩ	5			
Load capacitor	C_2	nF		1.5	5	
Filer capacitor	C_1	μF		4.7		
Performance data						
Sensitivity error	ε_G	%	-1		1	
Temperature of G	*TCG*	%	-1.5		1.5	@T_A=-40℃~150℃
Electrical offset voltage	V_{OE}	mV		±5		@V_C=5V and I_P=0A
Temperature coefficient of V_{OE}	TCV_{OE}	mV		±35		@T_A=-40℃~150℃
Hysteresis offset voltage	V_{OM}	mV		±6		@ V_C=5V, after ±I_{PN}
Linearity error	ε_L	% of I_{PN}	-1		1	Exclusive of V_{OE}
Accuracy @ I_{PN}	*X*	% of I_{PN}	-3		3	@T_A=-40℃~150℃
Power on duration	t_{POD}	μs		10		
Response time @ 90% I_{PN}	t_r	μs		4	5	@C_2=OPEN
Frequency bandwidth (-3dB)	*BW*	kHz		120		@C_2= OPEN
Output noise	*Vno*	mV		6		@C_2=1.5nF

Electrical data

CI770-150A

※ With T_A = 25℃, V_C = 5V, R_L = 10kΩ, unless otherwise noted.

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Electrical data						
Primary nominal current rms	I_{PN}	A	-150		150	
Supply voltage	V_C	V	4.5	5.0	5.5	
Output voltage	V_{OUT}	V	$V_{OUT}=(V_C/5)\times(2.5+G_{th}\times I_P)$			@ V_C
Offset output voltage	V_{QOV}	V		2.5		@V_C=5V and I_P=0A
Theoretical sensitivity	G_{th}	mV/A		13.33		
Current consumption	I_C	mA		11	15	
Load resistance	R_L	kΩ	5			
Load capacitor	C_2	nF		1.5	5	
Filer capacitor	C_1	μF		4.7		
Performance data						
Sensitivity error	ε_G	%	-1		1	
Temperature of G	TCG	%	-2		2	@T_A=-40℃~125℃
Electrical offset voltage	V_{OE}	mV		±5		@V_C=5V and I_P=0A
Temperature coefficient of V_{OE}	TCV_{OE}	mV		±35		@T_A=-40℃~125℃
Hysteresis offset voltage	V_{OM}	mV		±6		@V_C=5V, after ±I_{PN}
Linearity error	ε_L	% of I_{PN}	-1		1	Exclusive of V_{OE}
Accuracy @ I_{PN}	X	% of I_{PN}	-3		3	@T_A=-40℃~125℃
Power on duration	t_{POD}	μs		10		
Response time @ 90% I_{PN}	t_r	μs		4	5	@C_2=OPEN
Frequency bandwidth (-3dB)	BW	kHz		120		@C_2= OPEN
Output noise	Vno	mV		4		@C_2=1.5nF

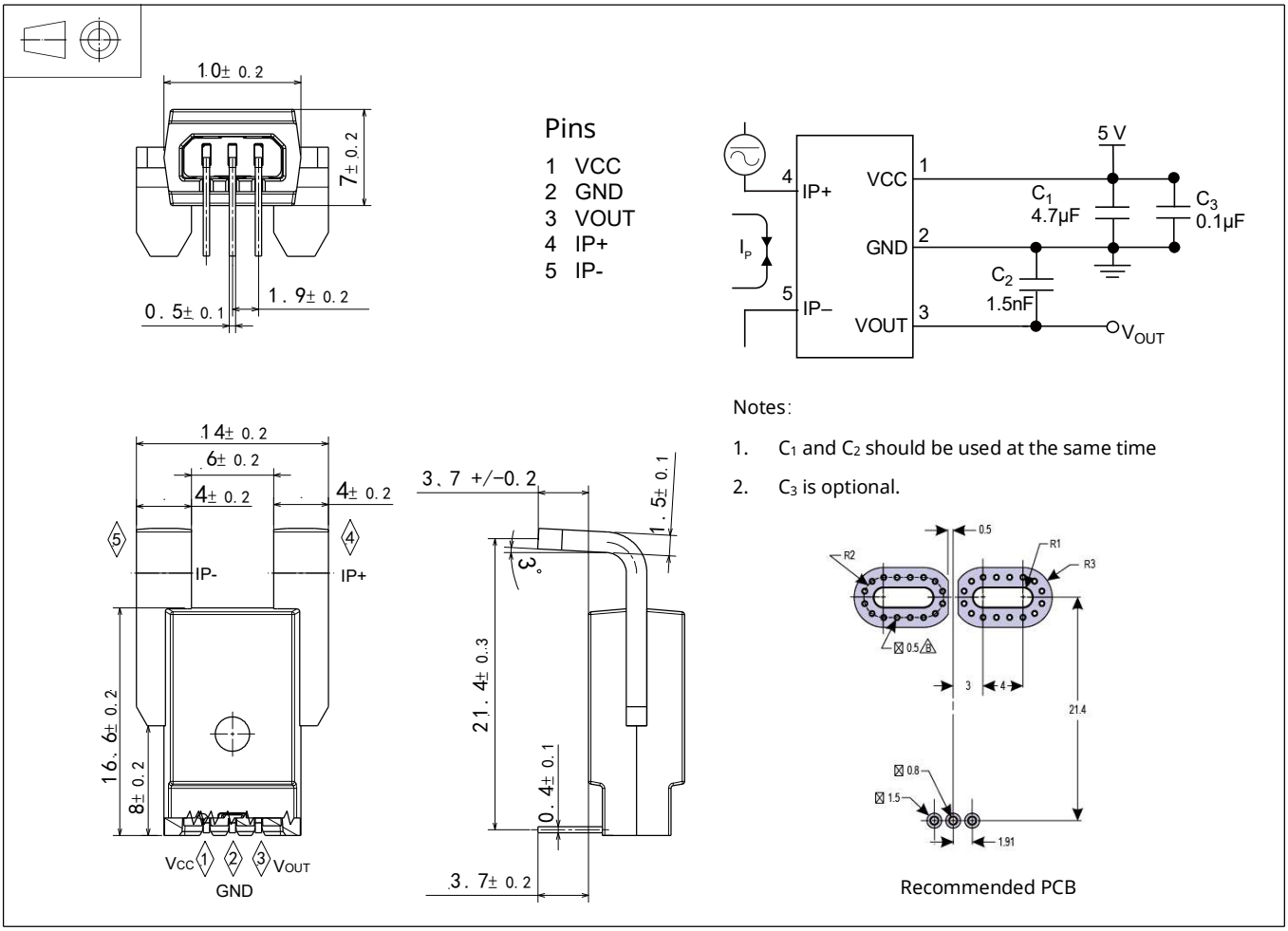
Electrical data

CI770-200A

※ With T_A = 25℃, V_C = 5V, R_L = 10kΩ, unless otherwise noted.

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Electrical data						
Primary nominal current rms	I_{PN}	A	-200		200	
Supply voltage	V_C	V	4.5	5.0	5.5	
Output voltage	V_{OUT}	V	$V_{OUT}=(V_C/5)\times(2.5+G_{th}\times I_P)$			@ V_C
Offset output voltage	V_{QOV}	V		2.5		@V_C=5V and I_P=0A
Theoretical sensitivity	G_{th}	mV/A		10		
Current consumption	I_C	mA		11	15	
Load resistance	R_L	kΩ	5			
Load capacitor	C_2	nF		1.5	5	
Filer capacitor	C_1	μF		4.7		
Performance data						
Sensitivity error	$\mathcal{E}_G$	%	-1		1	
Temperature of G	TCG	%	-2		2	@T_A=-40℃~85℃
Electrical offset voltage	V_{OE}	mV		±5		@V_C=5V and I_P=0A
Temperature coefficient of V_{OE}	TCV_{OE}	mV		±35		@T_A=-40℃~85℃
Hysteresis offset voltage	V_{OM}	mV		±6		@V_C=5V, after ±I_{PN}
Linearity error	$\mathcal{E}_L$	% of I_{PN}	-1		1	Exclusive of V_{OE}
Accuracy @ I_{PN}	X	% of I_{PN}	-3		3	@T_A=-40℃~85℃
Power on duration	t_{POD}	μs		10		
Response time @ 90% I_{PN}	t_r	μs		4	5	@C_2=OPEN
Frequency bandwidth (-3dB)	BW	kHz		120		@C_2= OPEN
Output noise	Vno	mV		6		@C_2=1.5nF

Dimensions (in mm)



Mechanical characteristics

- ✧ Core — Silicon Iron
- ✧ Busbar and pins — Tin plated cooper

Remarks

- ✧ PCB layout referred to Dimension paragraph.