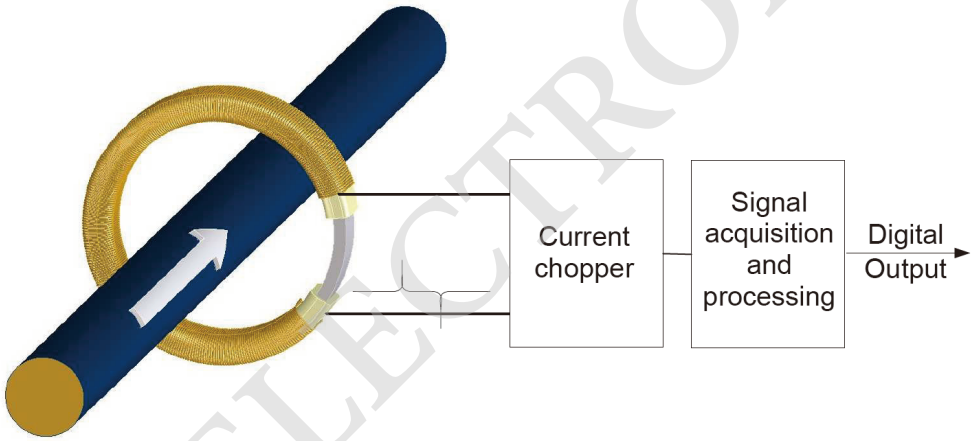
BMS BDU PDU Current Transducer
RCANV500H

Features

- Transducer using Fluxgate technology
- Unlimited over-current capability
- Panel mounting
- Output signal: High speed CAN (up to 500 kpbs)
- Configurable internal digital low-pass frequency filter
- Connector type: Tyco AMP 1473672-1
- Configurable CAN speed/CAN ID/RS485
- Ingress Protection – IP56 level.

Principle of Fluxgate transducer



A low-frequency fluxgate transducer is made of a wound core which saturates under low induction. A current chopper switches the winding's current to saturate the magnetic core alternatively at ±B max with a fixed frequency. Fluxgate transducers use the change of the saturation's point symmetry to measure the primary current. Due to the principle of switching the current, all offsets (electric and magnetic) are cancelled.

Application fields

- Hybrid and electric vehicle battery pack
- Conventional lead-acid batteries
- Accurate current measurement for battery management applications (SOC, SOH, SOF, etc...)
- Tank backup power supply

Selection Guide

Part No.	Rated input	Supply voltage	Secondary connector	Operating temperature	Communication protocol
RCANV500H	+/-500A	+9VDC~+16VDC±5%	Tyco AMP 1473672	-40℃~100℃	CAN protocol 2.0

Electrical Characteristics@25℃

Item	Symbol	Min	Typ	Max	Unit.
Rated input Current	I_p	-500		500	A
Measure range	I_{pm}	-550		550	A
Supply voltage	Vc	9	13.5	16	VDC
Current consumption @I_P=0A	I_C		≤30		mA
Current consumption @I_P=I_{pm}	Ic		≤100		V
Linearity error	εL		≤0.05FS		%
Linearity in full temperature range	εL		≤0.15FS		%
Offset current	I_0	-5		+5	mA
Offset current in full range temperature	I_0	-10		+10	mA
Overall accuracy	x	-0.1FS		+0.1FS	%
Full temperature range accuracy	x	-0.3FS		+0.3FS	%
Output noise		-5		+5	mA
Zero drift	Toff		0mA/K		
Output temperature drift		-70		+70	ppm/k

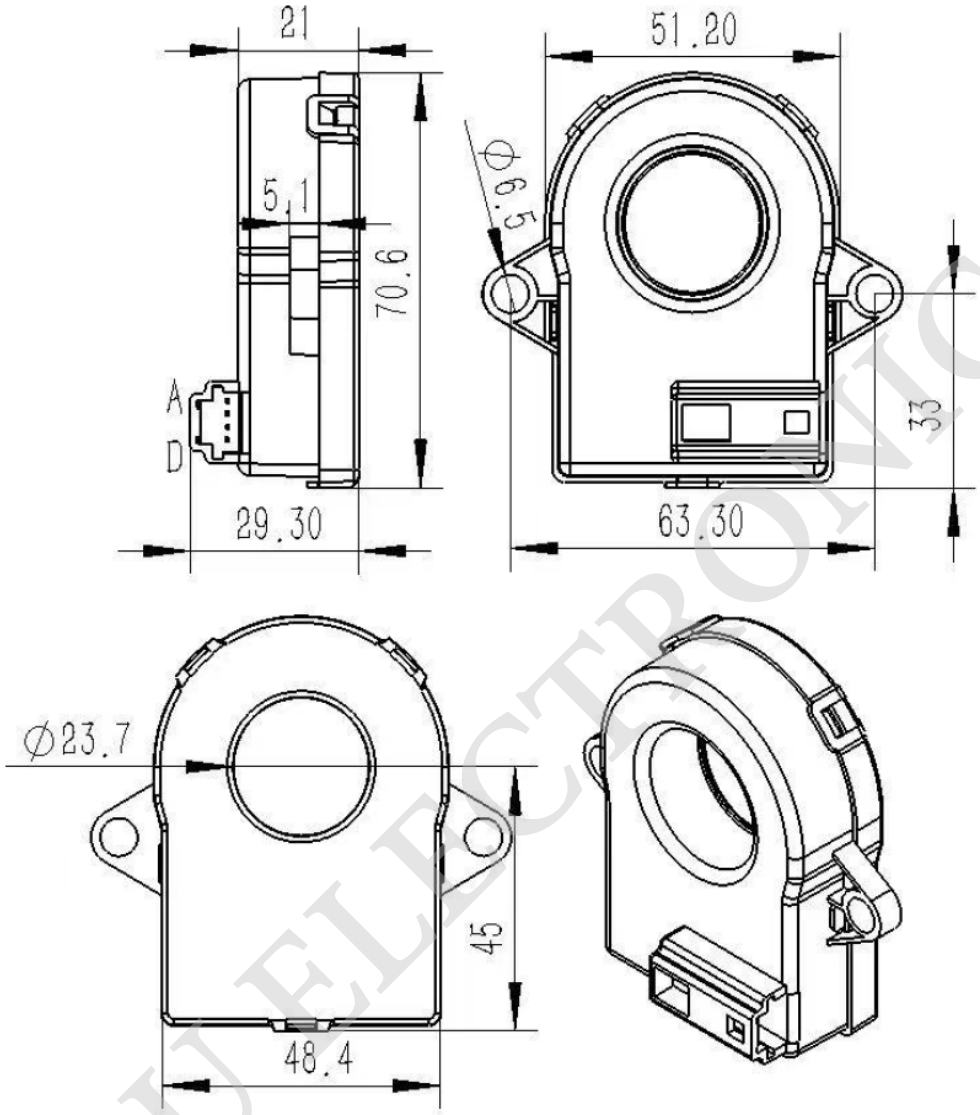
General Characteristics

Item	Symbol	Min	Typ	Max	Unit.
Operating Temperature	Ta	-40	--	+100	℃
Storage Temperature	T_S	-40	--	+125	℃
Weight	m		≈70		g

EMC

Item		Specifications	
EMI	CE	CISPR32/EN55032 CLASS B	
	RE	CISPR32/EN55032 CLASS B	
EMS	RS	IEC/EN61000-4-3 30V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4 ±4kV	perf. Criteria A
	Surge Current	IEC62955 6000V/2Ω/3000A, 8/20us	perf. Criteria B

Mechanical dimensions



PIN No.	FUNCTION
A	CAN_L
B	CAN_H
C	GND
D	VCC

Absolute maximum rating (not operating)

Parameter	Symbol	Unit	Specification	Condition
Over-voltage	U_C	V	32	400ms
Over-voltage	U_C	V	24	60s
Minimum supply voltage	U_{CMIN}	V	8	Continuous, not operating
Maximum supply voltage	U_{CMAX}	V	18	Continuous, not operating
ESD	U_D	KV	2.5	50Hz,60s
IP CLASS			IP56	
Insulation resistance	Ir	MΩ	500	500 V - ISO 16750-2

CAN OUTPUT

- CAN protocol 2.0
- CAN oscillator tolerance: 0.27%
- Bit rate: 250kbps
- 120 ohm termination resistor to be added externally
- Date model: Big-Endian

Message Description	CAN ID	Name	Data Length (Nb bytes)	Type of frame	Message launch type	Signal description	Signal name	Start bit	Length
Return Current IP (mA)	3C2H	RCANV500H	8	Standard	Cyclic trance lived message period 10±1 ms	IP Value: 80000000H = 0 mA, 7FFFFFFFH = −1 mA, 80000001H = 1 mA	IP-VALUE	0	31
						Error indication (1 bit) 0 = Normal 1 = Failure	ERROR_INDICATION	32	39

Error management

Failure Mode	I_P Value	Error Indication	Error Information
Failure information	80000000H	1	41H

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