




		REVISIONS			
		REV.	DESCRIPTION	ECN NO.	DATE
Special Characteristic Symbols		Pre-01	FIRST RELEASE FOR RFQ#F2022-00853.	N/A	03/02/23
	SAFETY				
	CRITICAL				
	IMPORTANT				

In case of contradicting requirements the following priority is valid:

- legal requirements
- specification
- drawing
- other applicable documents

Automotive Application **HALOGEN-FREE** **ELV**

PAGE 7 IS FOR INTERNAL ONLY

A35V00144F Lead free and RoHS compliant per EU Directive 2011/65/EU


TITLE
AMOD,RCD, CURRENT SENSOR

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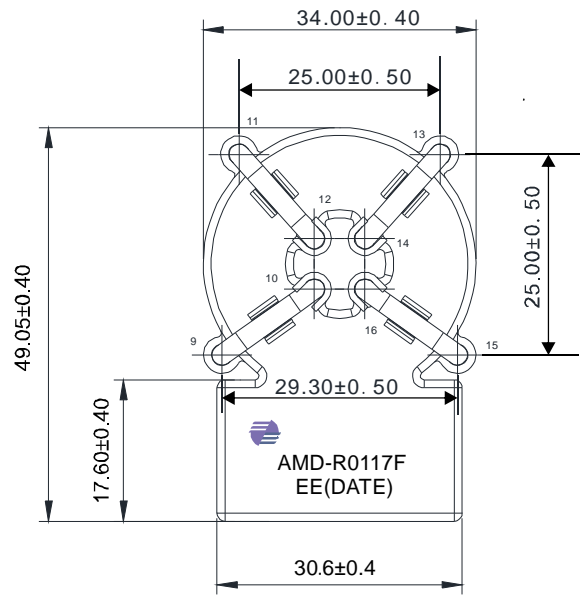
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCH/mm.

TOLERANCE ARE:
INCH mm ANGLE
.XXX ± .005 .XX ± .13 X.X ± 0.3
.XX ± .02 .X ± .5 X ± 1

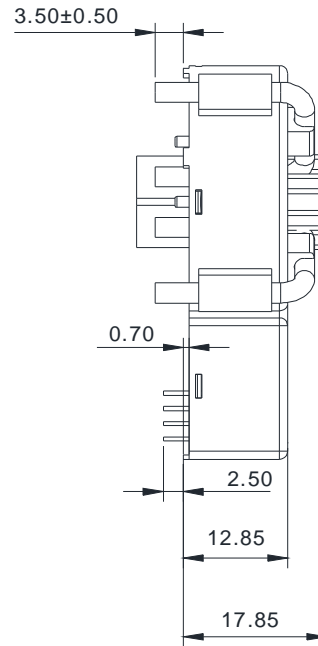
APPROVALS	DATE
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APPROVED BY J.YANG	03/02/23
Q.A. W.ZHANG	03/02/23

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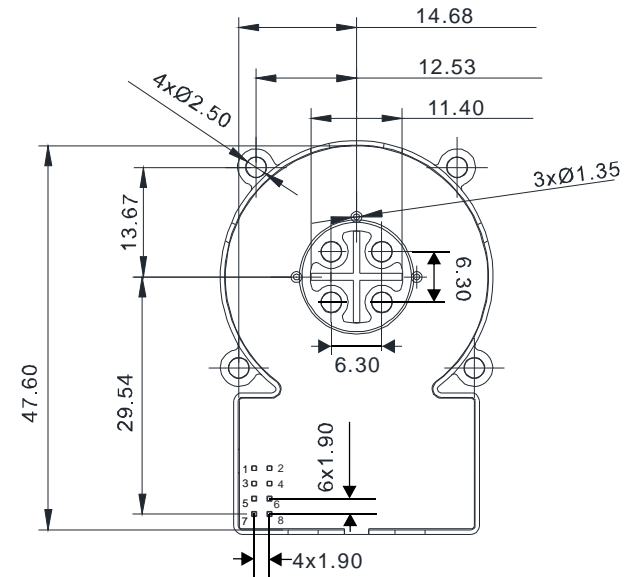
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Top view



Side view



Connections
 PIN1-8: 0.5X0.5mm
 PIN 9-16: Ø2.5MM

Bottom view

MECHANICAL OUTLINE



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1. Dimension are specified in mm.
2. Unless otherwise specified, all tolerance are ± 0.25 .
3. "(DATE)" includes at least the manufacturing date code(in YYWW format) plus manufacturing site code.



4: FEATURES

- PCB mounted RCD module
- Excellent accuracy
- Fluxgate current sensor with toroidal core
- Switching open-collector outputs
- Compact design

5: APPLICATIONS

Mainly used for stationary and mobile applications:

- IC-CPD acc. to IEC62752
- Compliance With IEC62955



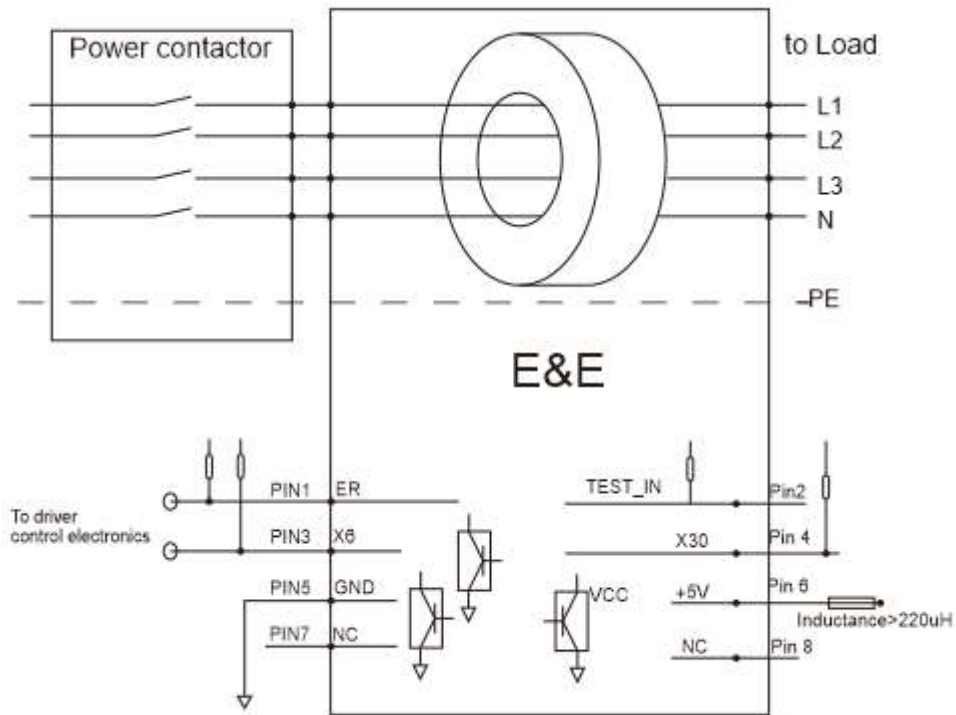
6: TYPICAL APPLICATION DIAGRAM:

General description of sensor function:

The Sensor is sensitive to AC and DC current and can be used for fault current detection in IC-CPD applications.

The Sensor detects AC and DC fault currents according to IEC62752:2016. In the event of a DC fault current, PIN 3 will change its state from a low level (GND) to high impedance state. In the event of an AC fault current, PINs 3 and 4 will change state from a low level (GND) to a high impedance state. Error conditions (e.g. an internal error) are signaled by PIN 1 (ERROR-OUT) which changes state to high impedance state.

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X6(PIN3)	X30(PIN4)	ER(PIN1)	State
GND	GND	GND	Normal condition
High Impedance	GND	GND	≥6mADC
High Impedance	High Impedance	GND	≥30mArms
High Impedance	High Impedance	High Impedance	ERROR

PIN description:	
PIN no.	Description
PIN 1 --> ERROR-OUT (open collector output)	If no system fault is detected, the output PIN 1 is at low level (GND). If a system fault is detected, PIN 1 is at high impedance state. In this case, PINS 3 and 4 will be set to a high impedance state too
PIN2-->TEST_IN(refer to figure)	A function test is activated if this PIN is connected to GND Attention: During the functional test no differential current shall flow. If a push-pull switch is used, the voltage range must be 0V..5V.
PIN 3 --> X6-OUT (open collector output)	If the residual current is below 6mA dc and no system fault occurs the output on PIN 3 is a low level (GND). In any other case output PIN 3 is in a high impedance state. If PIN 4 is high impedance, PIN 3 will also be set to high impedance.
PIN 4 --> X30-OUT (open collector output)	If the residual current is below the 30mA rms. and no system fault occur the output on PIN 4 is a low level (GND). In any other case PINs 3 and 4 are in a high impedance state.
PIN 5 --> GND	Ground connection
PIN 6 --> VCC	Positive supply voltage
PIN 7 --> N.C.	Not Connected
PIN 8 --> N.C.	Not Connected
PIN 9 -- PIN16	For primary wires connection



7: ELECTRICAL SPECIFICATION

Symbol	Parameter	Condition	min.	typ.	max.	Unit	remark
I_P	Primary rated current (1phase / 3phase)			32	40	A	
$I_{\Delta N, \max}$	Measuring range (peak)		-300		300	mA	
f_{BW}	Frequency range		DC		2	KHz	
$I_{\Delta N1}$	Rated residual operating current 1		3.5	4.8	6	mA DC	
$I_{\Delta N2}$	Rated residual operating current 2		20	25	30 ⁽¹⁾ / 420 ⁽²⁾	mA RMS	(1) f = DC to 150Hz (2) f = 150Hz to 2kHz
T_r	Response time	AC: $I_n=1 \cdot I_{\Delta N2}$		150	300	ms	Interrupting Time according to IEC62752 (E)-1:2016 Table 2 + 3
		AC: $I_n=2 \cdot I_{\Delta N2}$		90	150		
		AC: $I_n=5 \cdot I_{\Delta N2}$		25	40		
		DC: $I_n=1 \cdot I_{\Delta N1}$		300	10000		
		DC: $I_n=10 \cdot I_{\Delta N1}$		90	300		
		DC: $I_n=50 \cdot I_{\Delta N1}$		25	40		
$I_{\Delta R1}$	Hysteresis recovery current level for $I_{\Delta N1}$ (absolute value dc)			2.5		mA	X6 will remain in their states until I_{Δ} is below the recovery threshold $I_{\Delta R1}$
$I_{\Delta R2}$	Hysteresis recovery current level for $I_{\Delta N2}$ (absolute value rms)			10		mA	X30 will remain in their states until I_{Δ} is below the recovery threshold $I_{\Delta R2}$
V_{CC}	Supply voltage		4.8	5	5.2	V	
I_{CC}	Consumption current		TBD		TBD	mA	
T_A	Ambient operation temperature		-40		85	°C	

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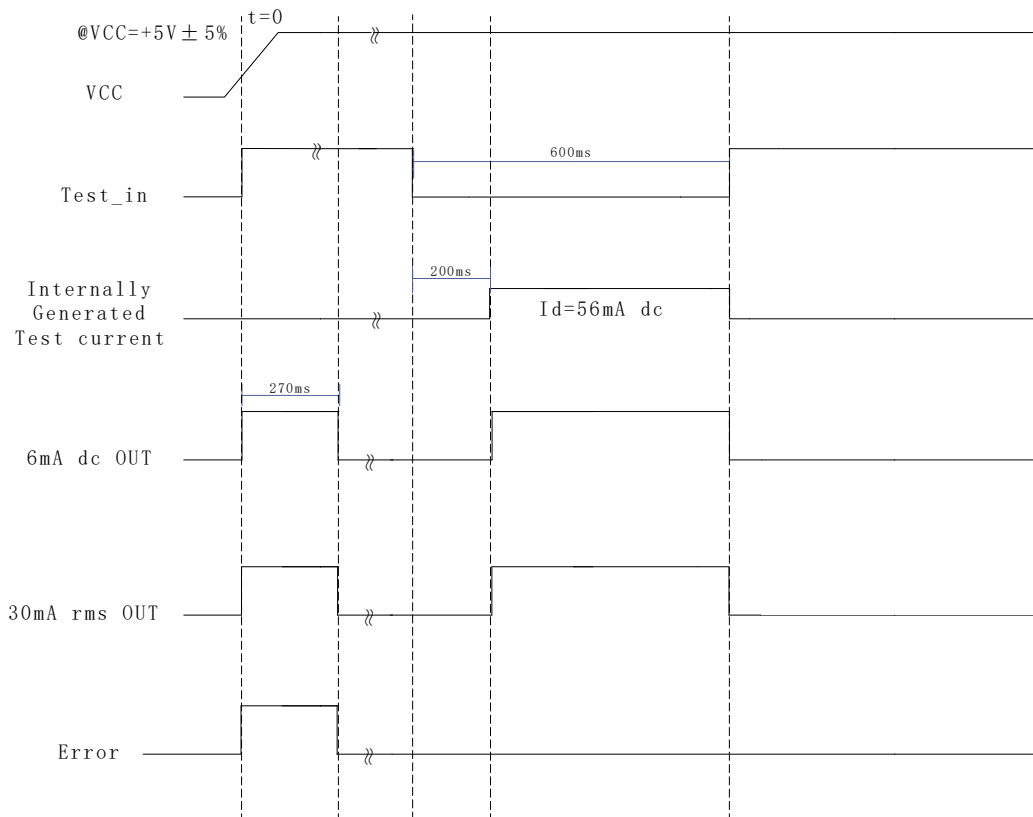


Absolute maximum ratings

Symbol	Parameter	Condition	min.	typ.	max.	Unit	remark
V _{CE}	Collector-Emitter voltage (PINs 1, 3 and 4)				40	V	
I _C	Collector current (PINs 1, 3 and 4)				50	mA	
U _{MAX}	Maximum rated voltage of primary conductors				440	V	

Figure:

After activating the test sequence, the end product has to monitor the correct state of the outputs being used at the following points in time.



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