

DC Tolerant Current Transformer with Lead Wire

The TAD Series of current transformers are designed specifically for electronic watt-hour meter application where the AC current or half wave rectified DC current must be accurately transformed into a current signal appropriate for micro-processor based circuits. Offering exceptional accuracy and minimal phase shift, these current transformers are designed to operate in harsh operating environments.

New TAD models are designed and manufactured to meet the specific design challenges of the client's specific application. The following models are only a small sampling of the many different products currently available. If the specific application requirements are not met by any of these products, a technical evaluation of the specific requirements may be obtained by emailing or mailing those requirements to Application Engineering (engineering@tichenassociates.com) at the address below.



Application:

Electronic watt-hour meters that meet the IEC 62053-21, 23 standards for DC tolerant current transformers.

Specifications:

- Frequency: 50/ 60 Hz
- Ratio Primary to Secondary: 1:2500
- Maximum Primary Voltage: 720 VAC_{RMS}
- Insulation Resistance: 1,000 M ohms @ 500 VDC
- Isolation Voltage: 2,500 VAC (50/60Hz), 1 minute, 0.5mA
- Maximum – 6,000V pulse (1.2μsecond/ 50μsecond)
- Operating Temperature: -40°C to +85°C

- Construction:
 - Case Material: PBT Resin UL flame retardant rating 94-V0
 - Interior Insulation: Epoxy resin
- Lead wire: 200mm (7.9"), 24AWG, UL1007, RED/ Black
- Lead termination: Stripped & tinned
- RoHS compliant



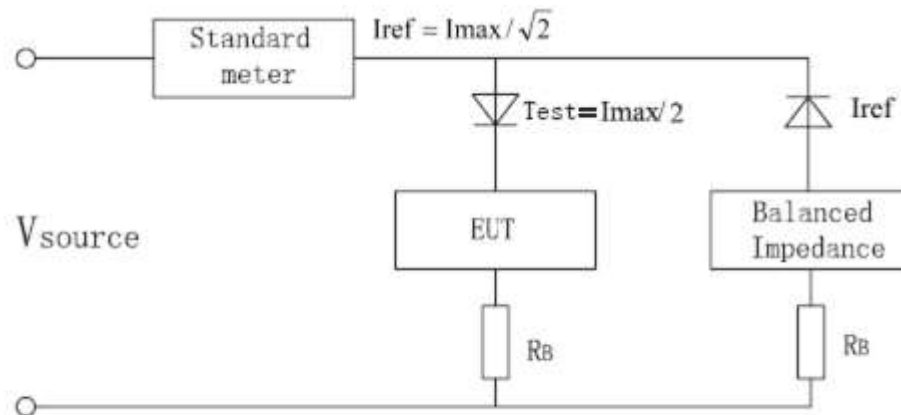
Performance:

- Accuracy: $\leq 0.2\%$
- Accuracy Class: 0.1L (IEC 60044-1)
- Phase Shift: $< 8'$
- Linearity: 5% to 400% Rated Primary Current
- Secondary Burden: ≤ 12.5 ohms

Standard Models:

	Rated Current (A _{RMS})	Maximum Current (A _{RMS})	Reference			
			Current (A _{RMS})	F (IDC,max)	R _{CU} (ohm)	R _B (ohm)
TAD014-05(20)A/ 2mA	5	20	15	< 3%	120 ± 10%	12.5
TAD014-10(40)A/ 4mA	10	40	30	< 3%	120 ± 10%	12.5
TAD016-10(60)A/ 4mA	10	60	45	< 3%	110 ± 10%	12.5
TAD016-20(80)A/ 8mA	20	80	60	< 3%	110 ± 10%	12.5
TAD020-20(100)A/ 8mA	20	100	75	< 3%	90 ± 10%	12.5
TAD020-20(120)A/ 8mA	20	120	85	< 3%	90 ± 10%	12.5
TAD22K-20(80)A/ 8mA	20	80	60	< 3%	105 ± 10%	12.5

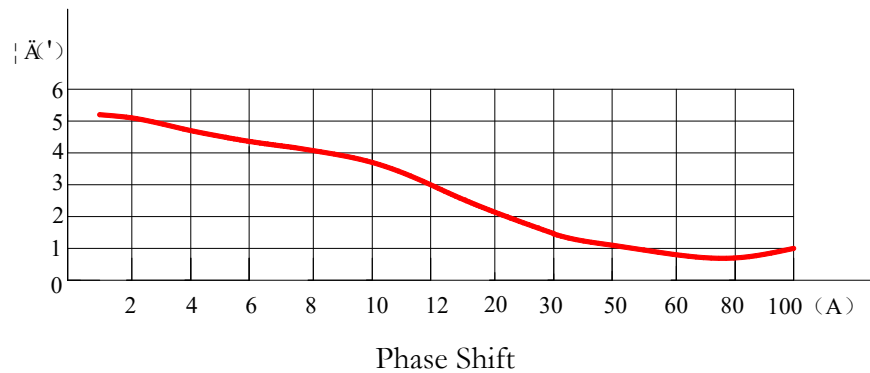
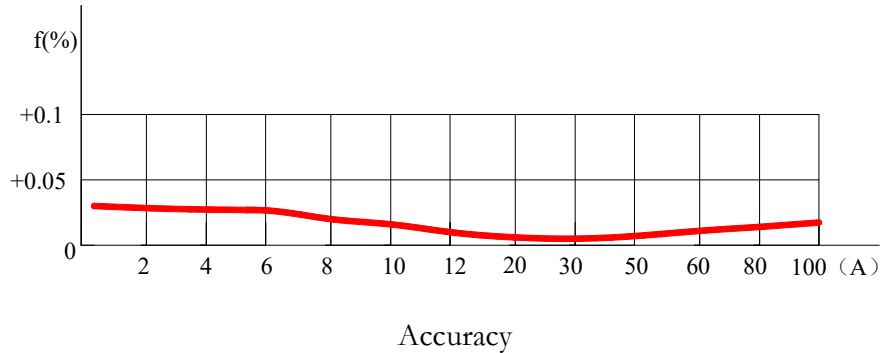
Test Circuit:



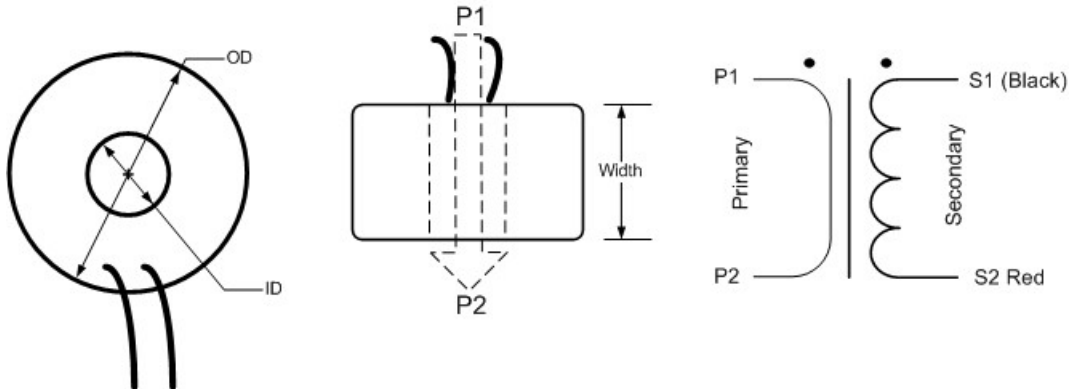
NOTES:

- IDC,max – Half wave rectified DC amplitude without saturation for Class 1 meter (IEC 62053-21, 23)
- $\Phi(I)$ - Maximum phase error for $I < I_{max}$
- F(I) - Maximum amplitude error for $I < I_{max}$
- RCU – Winding resistance
- RB - Burden resistor

Typical Performance:



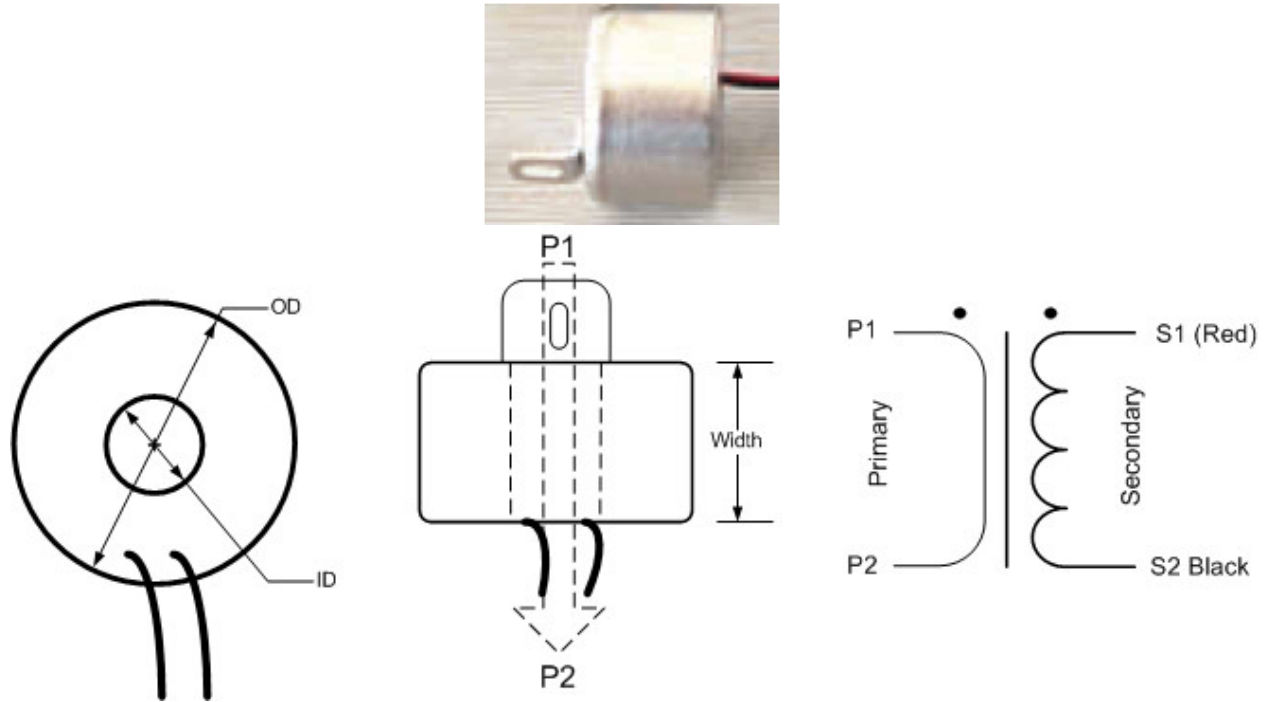
Outline Drawing – TAD014, TAD016, TAD020:



Dimensions:

	ID (mm/in)	OD (mm/in)	Width (mm/in)
TAD014	5.0/ 0.197	26.0/ 1.024	16.0/ 0.630
TAD016	9.5/ 0.374	28.5/ 1.122	16.5/ 0.650
TAD020	13.5/ 0.531	35.5/ 1.398	14.3/ 0.563

Outline Drawing – TAD22K:



Dimensions – TAD22K:

	ID (mm/in)	OD (mm/in)	Width (mm/in)
TAD22K	8.0/ 0.315	39.0/ 1.535	22.2/ 0.874