

# Current Transformers for Protection Relay

## Current Transformers For Passive Fault Recording

The YUANXING TA series of Miniature current transformers are designed for applications where AC current signals must be transformed accurately into a lower AC current or voltage signal appropriate for micro-processor based circuits.



The TAxx4x series of miniature current transformers for fault recording are designed for fault recorders in electrical system, which is used for changing transient fault current signal to a signal in weak electric circuit. It has a good transient characteristic.

A TA model can be 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 which have been and are currently being manufactured.

### FEATURES

- Low cost
- Electromagnetic, need no power supply
- Good transient characteristic
- 5 standard sizes
- Output current or voltage

### APPLICATIONS

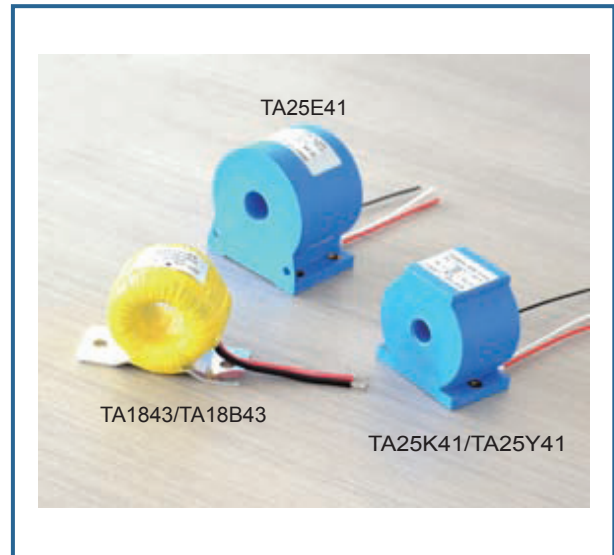
- For applications changing transient current, relay protection and fault recording in the power system.

### SPECIFICATIONS

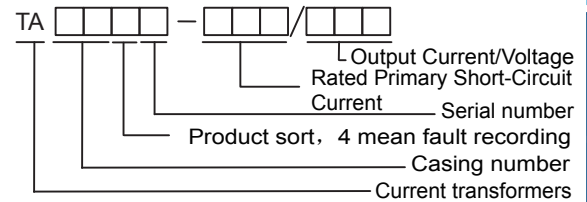
- Exterior Material: PBT Resin UL flame retardant rating 94-V0
- Interior Insulation: Epoxy Encapsulated
- Isolation Voltage: 2500 Vrms for 1 minute
- Dielectric Resistance: 1000M Ohms @500 Vdc
- Surge Withstand: 5000V (1.2/50µs standard shock wave) optional
- Rated burden: 100K Ohms
- Operating Temperature: -25 to +55°C, -40 to +85°C
- Frequency: 50 to 400 Hz
- Steady characteristics: Conform JBT 10635-2006
- Transient characteristics: Conform DL/T873-2004, DL/T663-1999
- RoHS compliant

### PERFORMANCES

Model	Rated Input/output	Rated primary shortcircuit current/Secondary output	Steady characteristics	Transient characterist	Dimensions (mm)
TA1843	1	20A/3.53V	0.5Class for 5-200%Rated Primary Current, 1.0Class for 2-40Times Rated Primary Current	Tp=100ms, Excursion factor COS φ=1.0 Ts error ≤5% Error peak ≤10%	ID-L-W-H
	5	100A/3.53V			20-64-30-43
TA18B43	1	20A/3.53V			ID-L-W-H
	5	100A/3.53V			17.5-64-32-
TA25K41	1	20A/3.53V			ID-L-W-H
	5	100A/3.53V			9-44-31-46
TA25Y41	1	20A/3.53V			ID-L-W-H
	5	100A/3.53V			9-49-32-46
TA39H41	1	20A/3.53V			ID-L-W-H
	5	100A/3.53V			45-45-40
TA25E41	1	20A/3.53V			ID-L-W-H



### PART NUMBERS



### TYPE PRODUCTION SPECIALITY

Model	Rated input/output	Steady characteristics		Transient characterist (Tp=100ms, Excursion factor)		
		Accuracy class	Linear range	Decay time constant	Time constant error	Large current peak error
TA25E41-40A/3.53V	1A/0.044V	0.5	0.1 ~ 50A	100ms	≤3%	≤5%
TA25Y41-200A/3.53V	1A/0.08825V	0.5	0.1 ~ 50A			

Note: Above specification can be used as a trouble wave record device manufacturer with inspection device

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Single turn primary  
Wound primary

Without DC Immunity  
With DC Immunity

Steady Protection

Transient Protection

Passive for Fault Recording

Active for Fault Recording

Motor Protection

### TA25K41-40A/1.765V TRANSIENT SPECIALITY

#### 1、Transient aperiodic component decay time test

Technical requirements: Short-circuit fault simulation, short circuit current is 5 times of fundamental component ,aperiodic component has a 100% offset,decay time for aperiodic component is 100ms,error should be less than  $\pm 5\%$ .

Short circuit fault memoir waveform figure see chart a. (I1 is CT primary input current, I2 is secondary output current, I1=40A, I2=0.1765V, below record is peak value of the first ten period of CT secondary output waveform,then we can count decay time constant

Name	first peak value	second peak value	third peak value	forth peak value	fifth peak value
measured value(A)	13.465	12.276	11.259	10.430	9.817

Name	sixth peak value	seventh peak value	seventh peak value	eighth peak value	tenth peak value
measured value(A)	9.301	8.882	8.527	8.239	7.976

95.45ms,error is 4.55%,meeting requirement that error below 5%

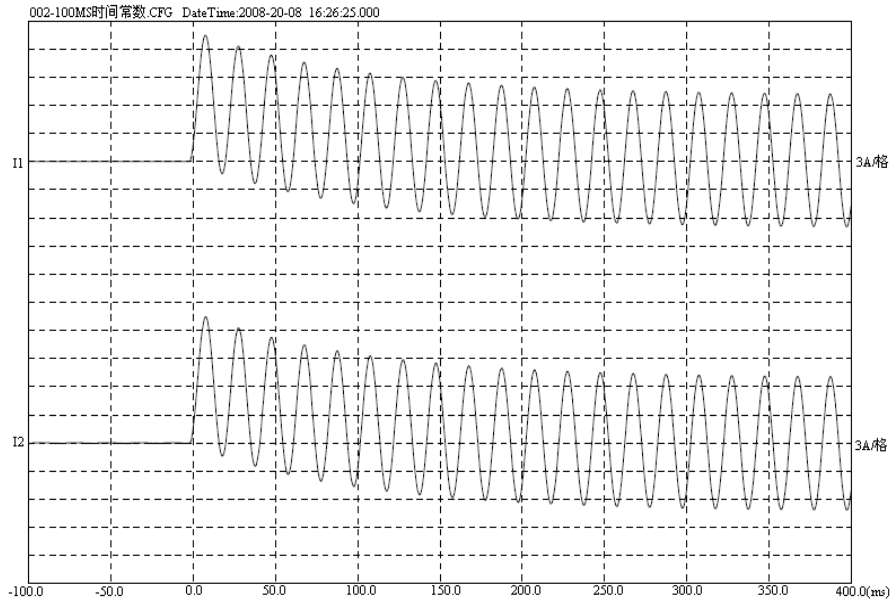


Chart 1 Transient aperiodic component decay time test wave record figure

#### 2、Large short-circuit current record ability test

Technical requirements: two successive short-circuit fault simulation. Every time a short circuit duration 40ms, short circuit current is 20 times of fundamental component,aperiodic component has a 100% offset,which will be exerted twice in the same direction,error between the first peak and the second peak should be less than 10% in the transient wave form test.

Short circuit fault memoir waveform figure see chart 2

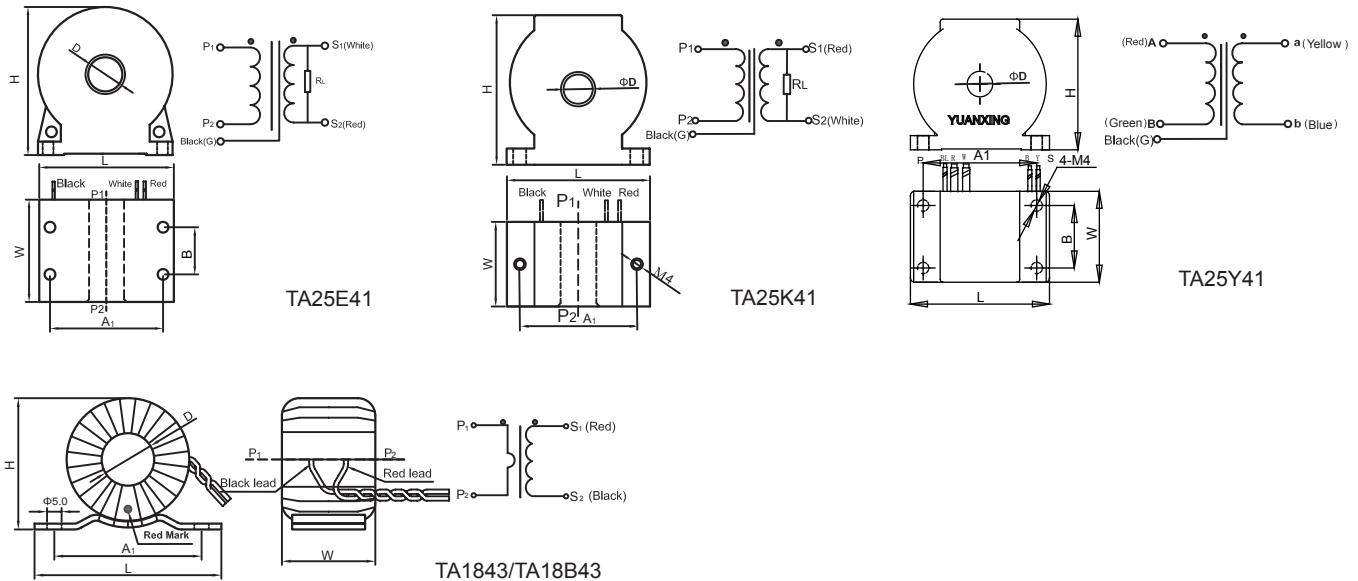


Chart 2 20 times as large as short circuit current test wave record figure

The following was recorded secondary output waveform transformer measured peak, which works out the instantaneous measurement errors, to meet the requirements of the error less than 10%.

Name	The first short-circuit fault		The second short-circuit fault	
	Peak value1	Peak value2	Peak value1	Peak value2
Actual value (A)	53.901	49.24	53.901	49.24
Measured value (A)	53.662	48.74	53.352	48.6
Error (%)	-0.443	-1.015	-1.019	-1.300

### OUTLINE DRAWINGS



### OUTLINE DIMENSIONS

Unit:mm (inch)

Model	L	W	H	A1	B	D(A2)
TA1841	64.0(2.520)	30.0(1.181)	43.0(1.693)	50.0(1.969)	---	20.0(0.787)
TA18B43	64.0(2.520)	32.0(1.260)	47.0(1.850)	50.0(1.969)	---	17.5(0.689)
TA25E41	50.0(1.969)	38.0(1.496)	55.0(2.165)	40.0(1.575)	22.0(0.866)	12.7(0.500)
TA25K41	44.0(1.732)	31.0(1.220)	46.0(1.811)	36.0(1.417)	---	9.0(0.354)
TA25Y41	49.0(1.929)	32.0(1.260)	46.0(1.811)	40.0(1.575)	22.0(0.866)	9.0(0.354)

