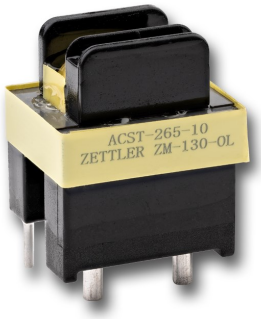
ACST-265-10

CURRENT SENSE TRANSFORMER

FEATURES

- Measuring current transformer acc. IEC 61869-1, IEC 61869-2
- Designed for IEC 61851 Mode 2 and Mode 3 charging applications
- Ideal for current monitoring applications
- Current range 0.4 to 36 Arms
- Primary to secondary insulation according OVC III / PD 3
- Dielectric strength 4 kV AC
- UL approved Class B insulation system
- TÜV type approved



ELECTRICAL DATA

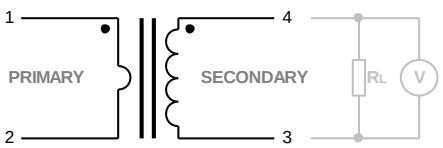
Primary current	
rated range	0.4 to 36 A
overload withstand	40 A (1min.)
impulse current withstand	1.85 kA (half wave)
Approved ratings	(TÜV)
primary current	32 A
extended current	120 %
secondary current	32 mA
short time thermal current	1 kA
system voltage	≤ 800 V
Working frequency	50/60 Hz (sin.)
Turns ratio N_S:N_P	1000 : 1
Accuracy	at rated range (R_L=60Ω, Ta=23°C)
classification	Class 5 (acc. IEC 61869-2)
w/o compensation	≤ 5 %
with compensation	≤ 1.5 % (typ.)
Secondary output	
transformation ratio	58.3 mV/A (typ. Ta=23°C, R_L=60Ω, f=50Hz)
max. voltage	2.2 V
burden resistor R_L	60 Ω (recommended)
Windings	
PRI DC resistance	< 0.2 mΩ (typ.)
SEC DC resistance	≤ 103 Ω (< 80 Ω typ.)
SEC inductance	≥ 500 mH (1V, 1 kHz, SER)
Dielectric strength	(at sea level, 1mA, 50/60Hz, 1sec.)
PRI to SEC	4 kV AC
PRI/SEC to core	2 kV AC
Insulation	(acc. IEC 60664-1)
PRI to SEC	Basic insulation (300 VAC, OVC III, PD 3)
Isolation spacing	(PRI to SEC)
clearance	≥ 4 mm
creepage	≥ 5 mm
solid insulation (dti)	0.7 mm

GENERAL DATA

Temperature range	
operating / storage	-40°C (-40°F) to 85°C (185°F)
Vibration resistance	0.062" (1.5 mm) DA at 10–55 Hz
Shock resistance	10 g
Bobbin	
material group	IIIa
flammability	UL94 V-0
Terminals	Tinned copper alloy
Soldering	(referring IEC 61760-1 wave soldering)
preheating	120°C (248°F) / ≤ 120 s
soldering	260 ±5°C (500 ±9°F) / ≤ 10 s
Cleaning	
max. solvent temp.	80°C (176°F)
max. immersion time	30 seconds
Dimensions	
length	20.0 mm (max.) (0.787")
width	17.8 mm (max.) (0.701")
height	23.8 mm (max.) (0.937")
Weight	14 grams (approx.)
Compliance	RoHS, REACH
Agency approvals	TÜV: R 50576118
Electrical insulation system	Class B, ZM-130-OL (UL E317390)
Packing unit in pcs	30 per shrink package / 300 per carton box

WIRING DIAGRAM

Burden resistor R_L and meter not included and shown for reference only.
Dots indicate winding polarity/direction.



ORDERING DATA

ACST- 265-10 ☐☐☐

Option
nil: standard version
(xxx): customized special versions

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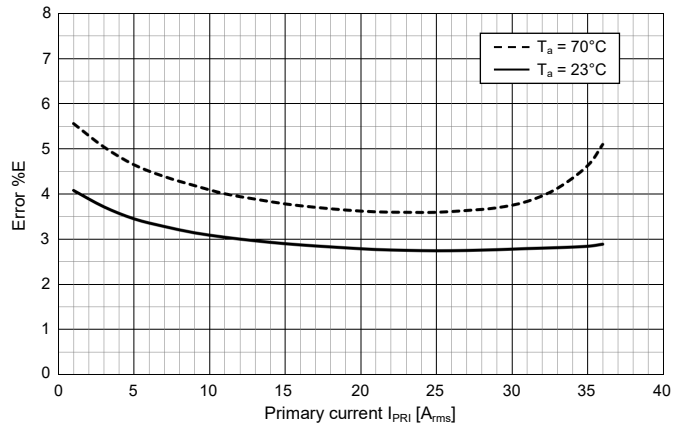
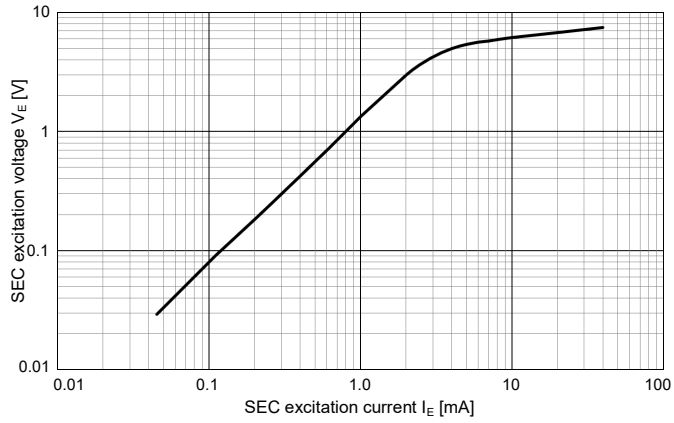
CHARACTERISTICS (TYP.)

Magnitude error at R_L = 60Ω, f = 50Hz



Excitation graph



RATIO ERROR COMPENSATION

Current transformers are built with a fixed *Turns Ratio*. It specifies the ratio of turns between the secondary winding and the primary winding.

Turns Ratio: $$n = \frac{Secondary\ Turns}{Primary\ Turns}$$

The *Current Ratio* is the ratio of the magnitude of the primary current to the secondary current. Due to core losses and other effects the actual *Current Ratio* differs from the *Turns Ratio*. The actual *Current Ratio* is not a constant value. It depends on various factors like e.g. the primary current, the burden resistor R_L connected to the secondary winding and the ambient temperature.

Current Ratio: $$r = \frac{Primary\ Current}{Secondary\ Current}$$

The deviation of the *Current Ratio* from the *Turns Ratio* is expressed as *Error* given in percent and typically shown as characteristic curve.

Percentage Error: $$\%E = 100 \cdot \frac{Current\ Ratio - Turns\ Ratio}{Current\ Ratio}$$

To compensate for this error, a ratio correction factor *RCF* can be determined by evaluating an average error for the required primary current range, considering the burden resistor R_L and ambient conditions.

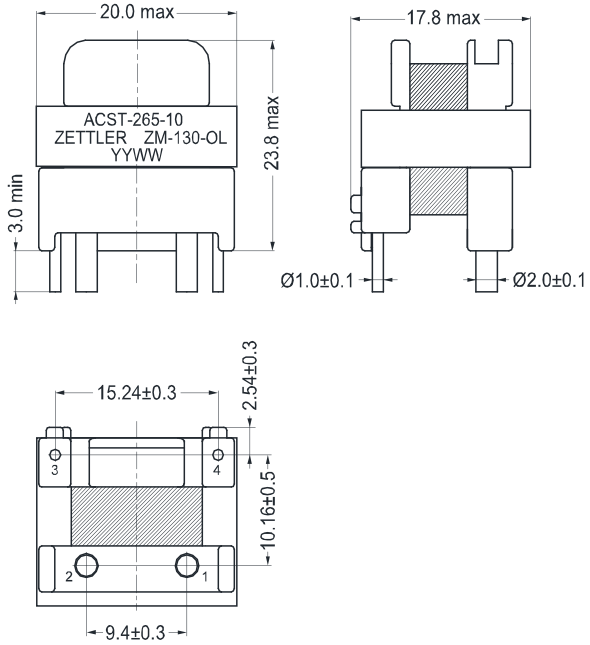
Ratio Correction Factor: $$RCF = \frac{100}{100 - \%E}$$

The accuracy of the primary current measurements thus can be optimized and tailored to application specific use cases.

Primary Current: $$I_{PRI} = \frac{U_{SEC}}{R_L} \cdot n \cdot RCF$$

MECHANICAL DATA

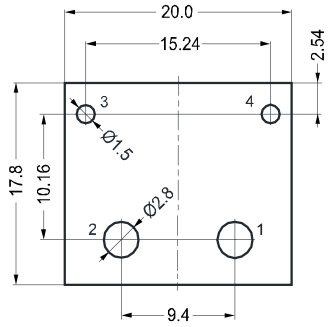
Dimensions in mm.
Pin dimensions for reference only and given without tin coating.



CAD data in attachment of the datasheet.

PC BOARD LAYOUT

Layout recommendation.
Dimensions in mm. Viewed towards terminals.



NOTES

1. All values at reference temperature of 23°C (73°F) unless stated otherwise.
2. Do not leave the secondary winding open circuited when the primary winding is energized. This may damage the secondary winding and leads to excessive core losses.
3. For automated dual wave soldering process we recommend preheating with 120°C (248°F) for max. 120 seconds and a soldering temperature of 260 ±5°C (500 ±9°F) for max. 10 seconds soldering time (max. 5 seconds per wave). For manual soldering we recommend 350°C (662°F) max. temperature for max. 5 seconds. During the soldering process, no force may be exerted on the terminals.
4. During storage, transport and usage, ensure a dry, non-condensing and non-icing environment.
5. Specifications subject to change without notice.

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DISCLAIMER

The specification provides an overview of the most significant product features. Any individual applications and operating conditions are not taken into consideration. It is recommended to test the product under application conditions. Responsibility for the application remains with the customer. Proper operation and service life cannot be guaranteed if the part is operated outside the specified limits.

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