



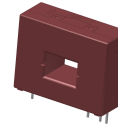
# SPECIFICATION

Item no.: T60404-N4646-X161

K-No.: 25256

## 50 A Current Sensor Module for 5V-Supply Voltage

For electronic current measurement:  
DC, AC, pulsed, mixed ...,  
with a galvanic isolation between  
primary circuit (high power) and  
secondary circuit (electronic circuit)



Date: 19.06.2013

Customer: Standard type

Customers Part no.:

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### Description

- Closed loop (compensation)  
Current Sensor with magnetic field probe
- Printed circuit board mounting
- Casing and materials UL-listed

### Characteristics

- Excellent accuracy
- Very low offset current
- Very low temperature dependency and offset current drift
- Very low hysteresis of offset current
- short response time
- Wide frequency bandwidth
- Compact design
- Reduced offset ripple

### Applications

Mainly used for stationary operation in industrial applications:

- AC variable speed drives and servo motor drives
- Static converters for DC motor drives
- Battery supplied applications
- Switched Mode Power Supplies (SMPS)
- Power Supplies for welding applications
- Uninterruptible Power Supplies (UPS)

### Electrical data – Ratings

		min.	typ.	max.	Einheit
$I_{PN}$	Primary nominal r.m.s. current		50		A
$V_{out}$	Output voltage @ $I_P$			$V_{Ref} \pm (0.625 \cdot I_P / I_{PN})$	V
$V_{out}$	Output voltage @ $I_P=0, T_A=25^\circ C$			$V_{Ref} \pm 0.0025$	V
$V_{Ref}$	Reference voltage external	0		4	V
$V_{Ref}$	Reference voltage internal			$2.5 \pm 0.005$	V
$K_N$	Turns ratio			1 : 1000	

### Accuracy – Dynamic performance data

		min.	typ.	max.	Unit
$I_{P,max}$	Max. measuring range	$\pm 172$			
X	Accuracy @ $I_{PN}, T_A=25^\circ C$			1	%
$\epsilon_L$	Linearity			0.1	%
$V_{out} -2,5V$	Offset voltage @ $I_P=0, T_A=25^\circ C$			$\pm 2,5$	mV
$\Delta V_{out} / 2,5V / \Delta T$	Temperature drift of $V_{out}$ @ $I_P=0, T_A=-40...85^\circ C$		3	10	ppm/K
$t_r$	Response time @ 80% von $I_{PN}$		1		$\mu s$
$\Delta t (I_{P,max})$	Delay time at $di/dt = 100 A/\mu s$		1		$\mu s$
f	Frequency bandwidth		DC...100		kHz

### General data

		min.	typ.	max.	Unit
$T_A$	Ambient operating temperature	-40		+85	$^\circ C$
$T_S$	Ambient storage temperature	-40		+85	$^\circ C$
m	Mass		18		g
$V_C$	Supply voltage	4.75	5	5.25	V
$I_{C0}$	Current consumption		16		mA
	Constructed and manufactured and tested in accordance with EN 61800-5-1 (Primary to Secondary) Reinforced insulation, Insulation material group 1, Pollution degree 2				
$S_{clear}$	Clearance (component without solder pad)		12		mm
$S_{creep}$	Creepage (component without solder pad)		12		mm
$V_{sys}$	System voltage			600	V
$V_{work}$	Working voltage (tabel 7 acc. to EN61800-5-1)			1000	V
$U_{PD}$	Rated discharge voltage			1225	V
	Max. potential difference acc to UL 508			600	V

### Maximal continuous and peak currents at defined temperatures

$T_A$	50 $^\circ C$	70 $^\circ C$	85 $^\circ C$	105 $^\circ C$
$I_P$	150 A	110 A	100 A	50 A
$I_{P,max}$	172 A	172 A	172 A	172 A

Date	Name	Issue	Amendment
19.06.13	KRe.	81	Mechanical outline: marking with UL-sign and max. potential difference added. CN-650
05.11.12	Le	81	Insignificant: Date changed.

Hrsg.: KB-E editor	Bearb: Le designer	KB-PM IA: KRe. check	freig.: HS released
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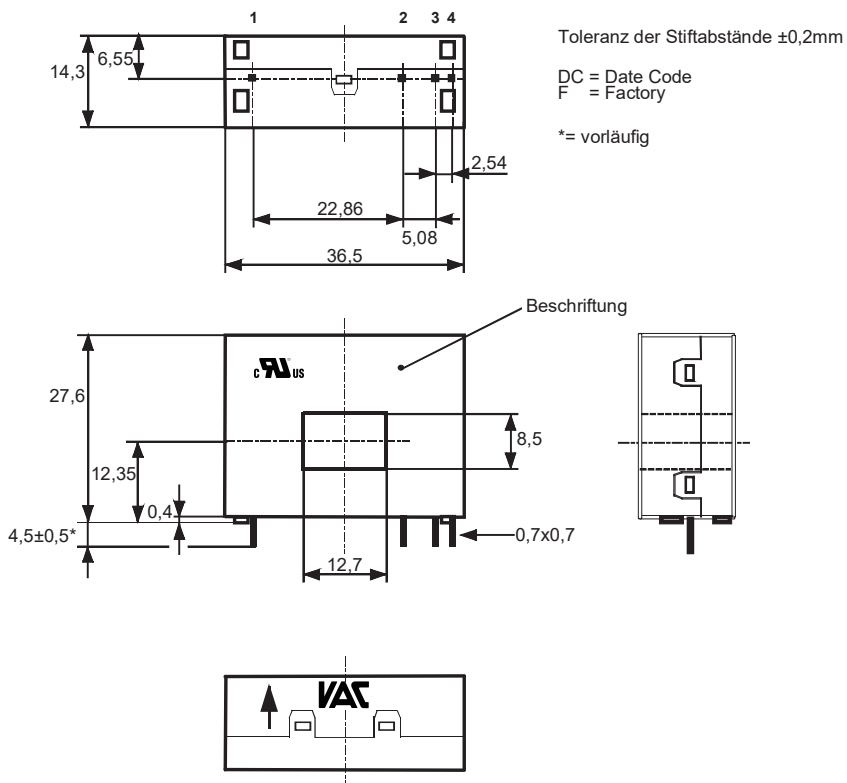
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**Mechanical outline (mm):**

General tolerances DIN ISO 2768-c



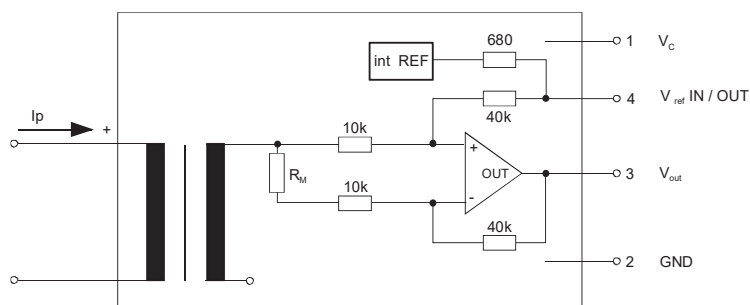
Connections:

1..4 = 0.7 x 0.7mm

Marking:

UL-sign  
4646X161  
F DC

**Schematic diagram**



Additional information is obtainable on request.  
Temperature of the primary conductor should not exceed 110°C.  
This specification is no declaration of warranty acc. BGB §443 dar.

Hrsg.: KB-E  
editor

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designer

KB-PM IA: KRe.  
check

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