VACUUMSCHMELZE	**SPECIFICATION**	**Item no.:**	**T60404-N4646-X763**

K-no.: 26077	**6 A Current Sensor 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: 05.02.2014
Customer: Standard type	Customers Part no.:	Page 1 of 2

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

I_{PN}	Primary nominal r.m.s. current	6	A
V_{out}	Output voltage @ I_P	$V_{Ref} \pm (0.625*I_P/I_{PN})$	V
V_{out}	Output voltage @ I_P=0, T_A=25°C	$V_{Ref} \pm 0.0056$	V
V_{Ref}	External Reference voltage range	0…4	V
	Internal Reference voltage	2.5 ±0.005	V
K_N	Turns ratio	1…4 : 2000	

Accuracy – Dynamic performance data

		min.	typ.	max.	Unit
$I_{P,max}$	Max. measuring range	±20			
X	Accuracy @ I_{PN}, T_A= 25°C			0.7	%
ε_L	Linearity			0.1	%
V_{out} - V_{Ref}	Offset voltage @ I_P=0, T_A= 25°C			±5.3	mV
ΔV_o / V_{Ref} / ΔT	Temperature drift of V_{out} @ I_P=0, V_{Ref} =2,5V, T_A= -40…85°C		6	30	ppm/°C
t_r	Response time @ 90% von I_{PN}		300		ns
Δt ($I_{P,max}$)	Delay time at di/dt = 100 A/µs		200		ns
f	Frequency bandwidth	DC…200			kHz

General data

		min.	typ.	max.	Unit
T_A	Ambient operating temperature	-40		+85	°C
T_S	Ambient storage temperature	-40		+105	°C
m	Mass		12		g
V_C	Supply voltage	4.75	5	5.25	V
I_C	Current consumption		15		mA

Constructed and manufactored and tested in accordance with EN 61800-5-1 (Pin 1 – 4 to Pin 5 – 12)
Reinforced insulation, Insulation material group 1, Pollution degree 2

S_{clear}	Clearance (component without solder pad)	9.6		mm
S_{creep}	Creepage (component without solder pad)	10.6		mm
V_{sys}	System voltage overvoltage category 3	RMS	600	V
V_{work}	Working voltage	RMS	1060	V
U_{PD}	Rated discharge voltage	peak value	1320	V

Note: "According UL 508: Max. potential difference = 600 V_{AC}

Date	Name	Issue	Amendment
05.02.14	Ga.	83	Marking changed acc to UL-specification. 4646X763-82 ➔ 4646-X763-83. CN-924
08.07.13	Ga.	82	Typo: page 2, primary current RMS changed from 2A to 1.5A. lapidary change.

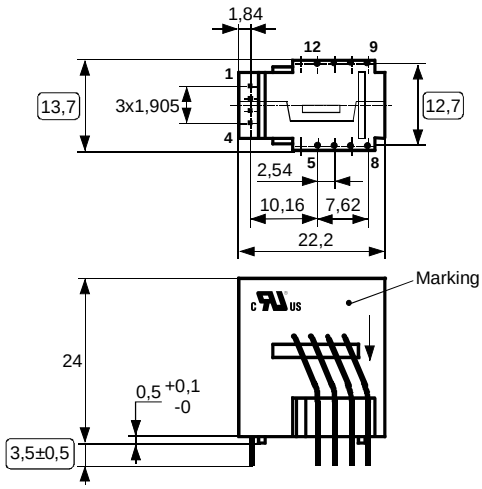
Hrsg.: KB-E editor	Bearb: Le designer		KB-PM: Ga. check			freig.: HS released

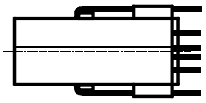
Copying of this document, disclosing it to third parties or using the contents there for any purposes without express written authorization by use illegally forbidden
Any offenders are liable to pay all relevant damages.

VACUUMSCHMELZE	**SPECIFICATION**	**Item no.:**	**T60404-N4646-X763**

K-no.: 26077	**6 A Current Sensor 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: 05.02.2014
Customer: Standard type	Customers Part no.:	Page 2 of 2

Mechanical outline (mm): General tolerances DIN ISO 2768-c





test dimension

Tolerances grid distance ±0,25mm

DC= Date Code
F = Factory

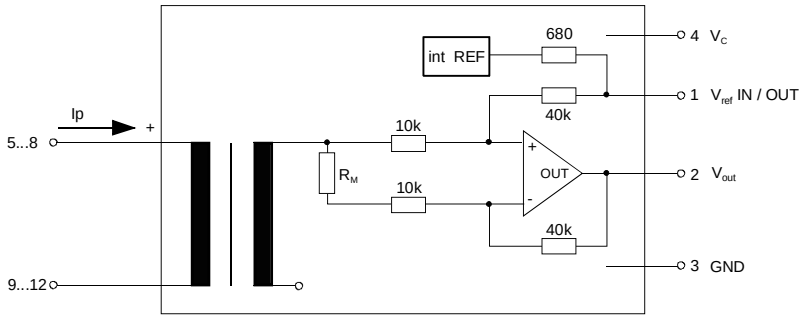
Connections:

1...4: 0,46*0,46 mm
5..12: ∅ 1 mm

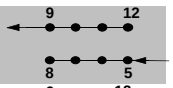
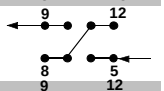
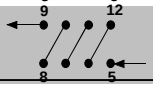
Marking:

UL-sign
4646-X763-83
F DC

Schematic diagram



Possibilities of wiring (@ T_A = 85°C)

primary windings	primary current RMS maximal		output voltage RMS	turns ratio	primary resistance	wiring
N_P	I_P [A]	$\hat{I}_{P,max}$ [A]	V_{out} (I_{PN}) [V]	K_N	R_P [mΩ]	
1	6	±20	2.5±0.625	1:2000	0.25	
2	3	±10	2.5±0.625	2:2000	1.0	
4	1.5	±6,7	2.5±0.625	4:2000	4	

Operating temperature of the current sensor and the primary conductor must not exceed 105°C.
Additional information is obtainable on request.
This specification is no declaration of warranty acc. BGB §443 dar.

Hrsg.: KB-E editor	Bearb: Le designer		KB-PM: Ga. check			freig.: HS released

Copying of this document, disclosing it to third parties or using the contents there for any purposes without express written authorization by use illegally forbidden
Any offenders are liable to pay all relevant damages.

VACUUMSCHMELZE	**Additional Information**	**Item No.:**	**T60404-N4646-X763**

K-No.: 26077	**6 A Current Sensor for 5V-Supply Voltage** For the electronic measurement of currents: DC, AC, pulsed, mixed ..., with a galvanic Isolation between the primary circuit (high power) and the secondary circuit	Date: 05.02.2014
Customer:	Customers Part No.:	Page 1 of 2

Electrical Data

		min.	typ.	max.	Unit
V_{Ctot}	Maximum supply voltage (without function)			7	V
I_C	Supply Current with primary current		15mA +I_p*K_N+V_{out}/R_L		mA
$I_{out,SC}$	Short circuit output current		±20		mA
R_P	Resistance / primary winding @ T_A=25°C		1		mΩ
R_S	Secondary coil resistance @ T_A=85°C			67	Ω
$R_{i,Ref}$	Internal resistance of Reference input		670		Ω
R_i,(V_{out})	Output resistance of V_{out}			1	Ω
R_L	External recommended resistance of V_{out}	1			kΩ
C_L	External recommended capacitance of V_{out}			500	pF
$\Delta X_{Ti} / \Delta T$	Temperature drift of X @ T_A = -40 ... +85 °C			40	ppm/K
$\Delta V_0 = \Delta(V_{out} - V_{Ref})$	Sum of any offset drift including:		5	15	mV
V_{0t}	Longtermdrift of V_0		3		mV
V_{0T}	Temperature drift von V_0 @ T_A = -40 ...+85°C		3		mV
V_{0H}	Hysteresis of V_{out} @ I_P=0 (after an overload of 10 x I_{PN})			7.5	mV
$\Delta V_0/\Delta V_C$	Supply voltage rejection ratio			1	mV/V
v_{oss}	Offsetripple (with 1 MHz- filter first order)			55	mV
v_{oss}	Offsetripple (with 100 kHz- filter firdt order)		9	15	mV
v_{oss}	Offsetripple (with 20 kHz- filter first order)		2.5	4	mV
C_k	Maximum possible coupling capacity (primary – secondary)		5	10	pF
	Mechanical stress according to M3209/3 Settings: 10 – 2000 Hz, 1 min/Oktave, 2 hours			30g	

Inspection (Measurement after temperature balance of the samples at room temperature; SC = significant characteristic)

V_{out} (I_P=I_{PN})	(V)	M3011/6:	Output voltage vs. external reference (I_P=6A, 40-80Hz)	625±0,7%	mV (SC)
V_{out}–V_{Ref} (I_P=0)	(V)	M3226:	Offset voltage	± 5.3	mV
V_d	(V)	M3014:	Test voltage, rms, 1 s pin 1 – 4 vs. pin 5 – 12	1.8	kV
V_e	(AQL 1/S4)		Partial discharge voltage acc.M3024 (RMS) with V_{vor} (RMS)	1400 1750	V V

Type Testing (Pin 1 - 4 to Pin 5 - 12)

V_W	HV transient test according to M3064 (1,2 µs / 50 µs-wave form)	8	kV
V_d	Testing voltage to M3014 (5 s)	3.6	kV
V_e	Partial discharge voltage acc.M3024 (RMS) with V_{vor} (RMS)	1400 1750	V V

Applicable documents

Current direction: A positive output current appears at point I_S, by primary current in direction of the arrow.
Enclosures according to IEC529: IP50.

Further standards UL 508 file E317483, category NMTR2 / NMTR8

Datum	Name	Index	Amendment
05.02.14	Ga.	83	Date updated.
08.07.13	Ga.	82	Date updated. Lapidary change.

Hrsg.: KB-E editor	Bearb: Le. designer		KB-PM: KRe. check			freig.: HS released

Weitergabe sowie Vervielfältigung dieser Unterlage, Verwertung und Mitteilung ihres Inhalts nicht gestattet, soweit nicht ausdrücklich zugestanden. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patenterteilung oder GM-Eintragung vorbehalten

Copying of this document, disclosing it to third parties or using the contents there for any purposes without express written authorization by use illegally forbidden.
Any offenders are liable to pay all relevant damages.

Explanation of several of the terms used in the tablets (in alphabetical order)

t_r: Response time (describe the dynamic performance for the specified measurement range), measured as delay time at $I_P = 0{,}9 \cdot I_{PN}$ between a rectangular current and the output voltage V_{OUt} (I_p)

Δt (I_{Pmax}): Delay time (describe the dynamic performance for the rapid current pulse rate e.g short circuit current) measured between I_{Pmax} and the output voltage $V_{out}(I_{Pmax})$ with a primary current rise of $di_P/dt \geq 100$ A/µs.

V_0: Offset voltage between V_{out} and the rated reference voltage of V_{ref} = 2,5V.
$V_o = V_{out}(0) - 2{,}5V$

U_{PD} Rated discharge voltage (recurring peak voltage separated by the insulation) proved with a sinusoidal voltage V_e
$U_{PD} = \sqrt{2} * V_e / 1{,}5$

V_{vor} Defined voltage is the RMS valve of a sinusoidal voltage with peak value of 1,875 * U_{PD} required for partial discharge test in IEC 61800-5-1
$V_{vor} = 1{,}875 * U_{PD} / \sqrt{2}$

V_{sys} System voltage RMS value of rated voltage according to IEC 61800-5-1

V_{work} Working voltage voltage according to IEC 61800-5-1 which occurs by design in a circuit or across insulation

V_{0H}: Zero variation of V_o after overloading with a DC of tenfold the rated value

V_{0t}: Long term drift of V_o after 100 temperature cycles in the range -40 bis 85 °C.

X: Permissible measurement error in the final inspection at RT, defined by

$$X = 100 \cdot \left| \frac{V_{out}(I_{PN}) - V_{out}(0)}{0{,}625V} - 1 \right| \%$$

$X_{ges}(I_{PN})$: Permissible measurement error including any drifts over the temperature range by the current measurement I_{PN}

$$X_{ges} = 100 \cdot \left| \frac{V_{out}(I_{PN}) - 2{,}5V}{0{,}625V} - 1 \right| \% \quad \text{or} \quad X_{ges} = 100 \cdot \left| \frac{V_{out}(I_{PN}) - V_{ref}}{0{,}625V} - 1 \right| \%$$

ε_L: Linearity fault defined by

$$\varepsilon_L = 100 \cdot \left| \frac{I_P}{I_{PN}} - \frac{V_{out}(I_P) - V_{out}(0)}{V_{out}(I_{PN}) - V_{out}(0)} \right| \%$$

This “Additional information“ is no declaration of warranty according BGB §443.

Weitergabe sowie Vervielfältigung dieser Unterlage, Verwertung und Mitteilung ihres Inhalts nicht gestattet, soweit nicht ausdrücklich zugestanden. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patenterteilung oder GM-Eintragung vorbehalten

Copying of this document, disclosing it to third parties or using the contents there for any purposes without express written authorization by use illegally forbidden. Any offenders are liable to pay all relevant damages.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Board Mount Current Sensors ***category:***

Click to view products by Vacuumschmelze ***manufacturer:***

Other Similar products are found below :

CSDD1FR CSLA2ELI CSNP661-007 SCL15 10006 L18P003S05 T60404-B4658-X030 LA02P021S03 LA01M041S05 LA03P054S05 CSNE151-003 L08P150D15IPV CT220FMC-IS5 CT220PMC-IS5 CT220BMC-HS5 SIC830AED-T1-GE3 CT-05 CT-07-100 CT-07-50 MR-1 MR-1-P5 T60404-N4646-X662 T60404-N4646-X664 DRV421RTJT CSNR161005 T60404-N4646-X651 MR-3 MR-2 MR-4 CT-06-100 CT-06-50 T60404-N4646-X412 CT-06-75 CSDA1BA-S CSDC1DA CSDD1EC CSLA1CF CSLA1DE CSLA1DG CSLA1DK CSLA1EL CSLA1GE CSLA1GF CSLA2CDI CSLA2CF CSLA2CFI CSLA2DE CSLA2DG CSLA2DH CSLA2DJ CSLA2DJI