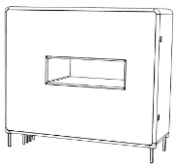
VACUUMSCHMELZE	**Datasheet**	**Item no.: T60404-N4647-P282**

K-No.: 30325	**250A Current Sensor** For the electronic measurement of currents: DC, AC, pulsed, mixed with a galvanic Isolation between the primary circuit (high power) and the secondary circuit (electronic circuit)		Date: 10.04.2026
Customer: Standard Type	Customers Part no:		Page 1 of 3

Description

- Closed loop (compensation) Current Sensor with magnetic probe
- Printed circuit board mounting
- UL 508 recognized component

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
- Uninterruptable Power Supplies (UPS)

Electrical data - Ratings

I_{PN}	Primary nominal RMS current		250	A
V_{OUT}	Output voltage		$V_{REF} \pm (0.625 * I_P/I_{PN})$	V
V_{OUT}	Output voltage @ I_P=0A, ϑ_A=25°C		$V_{REF} \pm 0.0007$	V
V_{REF}	External Reference voltage range		0 … 4	V
	Internal Reference voltage @ I_P=0A		2.5 ± 0.005	V
K_N	Transformation ratio		(1) : 1400	

Accuracy – Dynamic performance data

		min.	typ.	max.	Unit
$I_{P,max}$	Max. measuring range @ V_C=5V	±600			A
X	Accuracy @ I_{PN}, ϑ_A=25°C			0.7	%
ε_L	Linearity			0.1	%
V_{OUT}-V_{REF}	Offset voltage @ I_P=0A, ϑ_A=25°C			0.7	mV
$\Delta V_O/V_{REF}/\Delta\vartheta$	Temperature drift of V_{OUT} @ I_P=0A, V_{REF}=2.5V, ϑ_A		3	6	ppm/°C
t_{ra}	Reaction time		<1		µs
f_{BW}	Frequency bandwidth (small signal)	DC … 400			kHz

General data

ϑ_A	Ambient operation temperature	-40		105	°C
ϑ_S	Ambient storage temperature (acc. to M3101)	-40		105	°C
m	Mass		64		g
V_C	Supply voltage	4.75	5	5.25	V
I_C	Supply current @ I_P=0A and RT		17		mA

[1)] s_{clear}	Clearance (component without solder pad)	17			mm
[1)] s_{creep}	Creepage (component without solder pad)	17			mm
[1)] $U_{sys, re}$	System voltage (reinforced insulation)			1000	V_{RMS}
[1)] $U_{work, re}$	Working voltage (reinforced insulation)			1000	V_{RMS}
[1)] U_{PD}	Rated discharge voltage			1414	V_{PEAK}
[1)] $U_{sys, basic}$	System voltage (basic insulation)			1800	V_{RMS}
[1)] $U_{work, basic}$	Working voltage (basic insulation)			2800	V_{RMS}
	According to UL 508: max. potential difference			600	V_{RMS}

[1)] Constructed, manufactured and tested in accordance with IEC 61800-5-1:2007 (primary to secondary)
Insulation material group 1, Overvoltage category III, Pollution degree 2

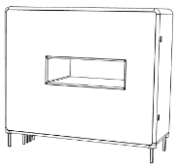
Date	Name	Issue	Amendment
10.04.2026	DJ	81	Changes acc. to CN-26-048
06.08.2024	DJ	81	UL sign added. CN-24-073

Editor: R&D-PD NPI D	Designer: DJ		MC-PM: NSch.			Released: SB

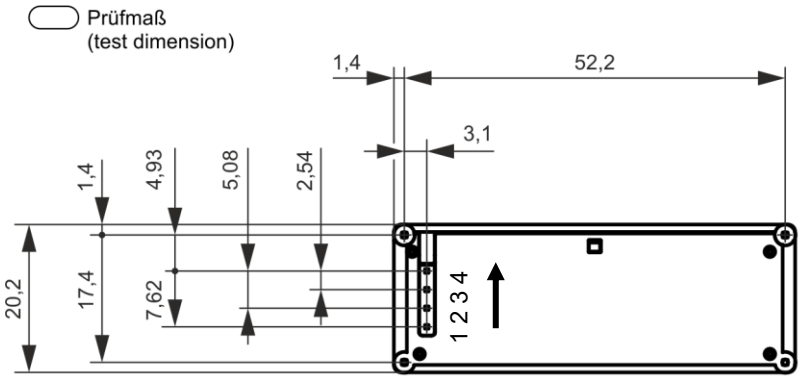
Weitergabe sowie Vervielfältigung dieser Unterlage, Verwertung und Mitteilung ihres Inhalts nicht gestattet, soweit nicht ausdrücklich zugestanden. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patenterteilung oder GM-Eintragung vorbehalten

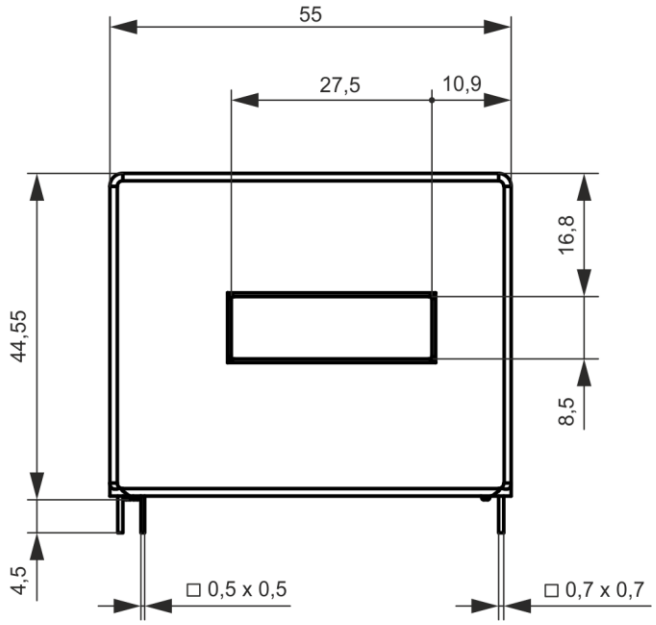
Copying of this document, disclosing it to third parties or using the contents there for any purposes without express written authorization by use illegally forbidden. Any offenders are liable to pay all relevant damages

VACUUMSCHMELZE	**Datasheet**	**Item no.: T60404-N4647-P282**
K-No.: 30325	**250A Current Sensor** For the electronic measurement of currents: DC, AC, pulsed, mixed with a galvanic Isolation between the primary circuit (high power) and the secondary circuit (electronic circuit)	Date: 10.04.2026
Customer: Standard Type	Customers Part no:	Page 2 of 3



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



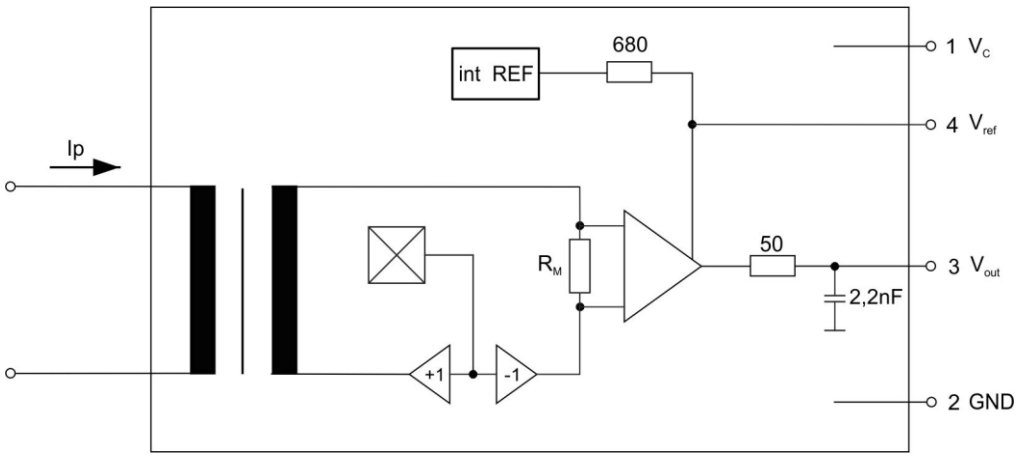


Marking:
VAC
UL-sign 4647-P282
F DC

F: Factory
DC: Date code

Date code format: YYWW

Schematic diagram:

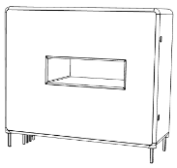


Editor: R&D-PD NPI D	Designer: DJ		MC-PM: NSch.			Released: SB

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

VACUUMSCHMELZE	**Datasheet**	**Item no.: T60404-N4647-P282**

K-No.: 30325	**250A Current Sensor** For the electronic measurement of currents: DC, AC, pulsed, mixed with a galvanic Isolation between the primary circuit (high power) and the secondary circuit (electronic circuit)		Date: 10.04.2026

Customer: Standard Type	Customers Part no:	Page 3 of 3

Electrical data: (investigate by a type checking)

		min.	typ.	max.	Unit
$V_{C,tot}$	maximum supply voltage (without function)			7	V
I_C	Supply Current with primary current		17mA+I_P*K_N+V_{OUT}/R_L		mA
$I_{OUT,SC}$	Short circuit output current			±20	mA
R_S	Secondary coil resistance @ ϑ_A = 85°C			10	Ω
$R_{i,REF}$	Internal resistance of Reference output		680		Ω
$R_{i,Vout}$	Output resistance of V_{OUT}		50		Ω
R_L	External recommended resistance of V_{OUT}	1			kΩ
C_L	External recommended capacitance of V_{OUT}		no limit		pF
X_{Ti} / $\Delta\vartheta$	Temperature drift of X @ ϑ_A = -40°C ... 85°C			40	ppm/°C
ΔV_O=Δ(V_{OUT}-V_{REF})	Sum of any offset drift including:			1	mV
V_{Ot}	Long term drift of V_O		0.3		mV
V_{OT}	Temperature drift of V_O @ ϑ_A = -40°C … 85°C		0.4		mV
V_{OH}	Hysteresis of V_{OUT} @ I_P=0A (caused by I_P = 10 x I_{PN})		0.5		mV
$\Delta V_O/\Delta V_C$	Supply voltage rejection ratio		0.05		mV/V
v_{OSS}	Offsetripple (with 1 MHz-Filter, first order)		3.5		mV_{PP}
v_{OSS}	Offsetripple (with 100 kHz-Filter, first order)		1.5		mV_{PP}
v_{OSS}	Offsetripple (with 20 kHz-Filter, first order)		0.8		mV_{PP}
C_k	Coupling capacity (primary - secondary)		4		pF
	Mechanical stress according to M3209/3 Settings: 10-2000Hz, 1min/oct, 2 hours		2		g

Routine-Tests: (Measurement after temperature balance of the samples at room temperature, SC=significant characteristic)

V_{OUT} (SC)	(100%) M3011/6:	Output voltage	620.625 ... 629.375	mV
V_{OUT}-V_{REF}	(100%) M3226:	Offset voltage	± 0.7	mV
U_d	(100%) M3014:	Test voltage, 1s	2.2	kV_{RMS}
U_{PDE} U_{PD}	(AQL 1/S4) M3024:	Partial discharge voltage (extinction)	1.875 1.5	kV_{RMS}

Type-Tests: (Precondition acc. to M3236)

$\hat{U}_W$	HV transient test acc. to M3064 (1.2µs / 50µs) 5 pulses -> polarity +, 5 pulses -> polarity -	12	kV_{PEAK}
U_d	Test voltage acc. to M3014, 60s	4.4	kV_{RMS}
U_{PDE} U_{PD}	Partial discharge voltage (extinction) acc. to M3024	1.875 1.5	kV_{RMS}

Other instructions:

- Current direction: A positive output voltage vs. V_{REF} appears at point V_{OUT}, if primary current flows in direction of the arrow sign on Sensor package.
- Temperature of the primary conductor should not exceed 105°C.
- At ambient operation temperature above 85°C, primary current must be reduced to $200A_{RMS}$.
- Housing and bobbin material UL-listed: Flammability class 94V-0.
- Housing without red phosphorous.
- The color of the plastic material is not specified and the current sensor can be supplied in different colors (e.g. brown, black, white, natural). This has no effect on the specifications or UL approval.
- Further standards: UL 508 file E317483, category NMTR2 / NMTR8

Editor: R&D-PD NPI D	Designer: DJ		MC-PM: NSch.			Released: SB

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