VACUUMSCHMELZE	SPECIFICATION	Item-No.: T60404-M4645-X080

K-No.: 25105	**200A Current-Sensor-Module** 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: 15.11.2019
Customer: Standard Type	Customers Part No.:	Page 1 of 3

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

Applications

Mainly used for stationary operation in industrial applications:
- AC variable speed drives and servo motor drives
- Static converters for 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 rated current, r.m.s	200	A
R_M	Load resistance	0 ... 200	Ω
I_{SN}	Output rated current, r.m.s	100	mA
K_N	Turns ratio	(1) : 2000	

Accuracy – Dynamic performance data (with DRV401 @ V_C = 5V ±5%)		**min.**	**typ.**	**max.**	**Unit**
$I_{P,max}$	Max. measuring range @ R_M = 1.563 Ω	±300			A
X	Measuring accuracy @ I_{PN}, T_A= 25°C			0.5	%
ε_L	Linearity			0.1	%
I_0	Offset current @ I_P=0, T_A= 25°C		0.02	0.05	mA
I_{0H}	Hysteresis		0.03	0.1	mA
t_r	Response time		1		µs
$\Delta t(I_{P,max})$	Delay time at di/dt = 100 A/µs		1		µs
f	Frequency range	DC...100			kHz

General Data		**min.**	**typ.**	**max.**	**Unit**
T_A	Ambient operation temperature	-40		+85	°C
T_S	Ambient storage temperature	-40		+85	°C
m	Mass		123		g
R_S	Secondary coil resistance @ T_A=85°C			24	Ω
C_k	Coupling capacity		13		pF
	Mechanical Stress according to M3209/3 Settings: 10 – 2000 Hz, 1 min/Decade, 2 hours			2	g
	Constructed and manufactored and tested in accordance with EN 61800-5-1 (Pin 1 – 4 to innerhole) Reinforced insulation, Insulation material group 1, Pollution degree 2				
s_{clear}	clearance (component without solder pad)	16			mm
s_{creep}	creepage (component without solder pad)	25			mm
U_{sys}	System voltage overvoltage category 3			1000	V_{RMS}
U_{work}	Working voltage (table 7 acc. to EN61800-5-1)			1700	V_{RMS}
U_{PD}	Rated discharge voltage			1700	V_{RMS}

Type Testing according EN 61800-5-1 (Pin 1 – 4 to inner hole)

U_W	HV transient test acc. to M3064 (1.2 µs / 50 µs-wave form) 5 pulse ➔ polarity +, 5 pulse ➔ polarity -			12	kV
U_d	Testing voltage acc. to M3014		(60s)	4.4	kV_{RMS}
U_e	Partial discharge voltage acc.M3024 with U_{vor}			1800 2250	V_{RMS} V_{RMS}

Datum	Name	Index	Änderung
15.11.19	NSch.	81	Data sheet reworked / updated (current status). Minor change.
17.08.17	DJ	81	Page 1, Type test M3064 accurately defined. Minor change

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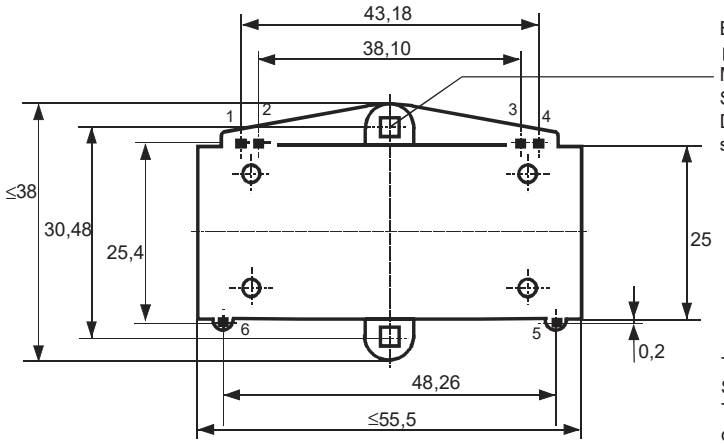
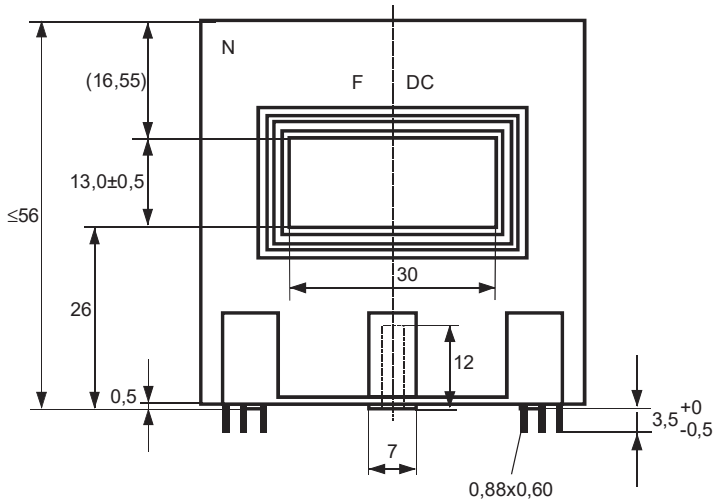
Mechanical outline (mm): General tolerances DIN ISO 2768-c



Befestigungsbohrung
□ 3,2 / 12 tief
Mounting hole □ 3,2 / 12 deep
Schraube Ø 3,9x9,5
DIN 7971 empfohlen
screw recommended

Toleranz der
Stiftabstände ± 0,2mm
Tolerance of the grid
distances



DC = Date Code
F = Factory
N = neu

Connections:

Pin1...6:
0.88*0.60 mm

Marking:

4645-X080
F DC

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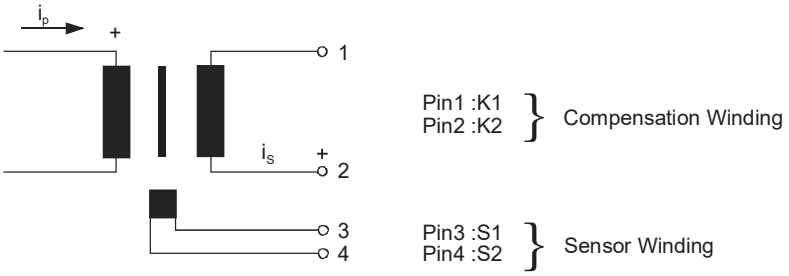
Schematic diagram:



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

K_N (SC)	(V)	M3011/6c:	Turns ratio	=1 : 2000 ± 0.5	%
I_0	(V)	M3226:	Offset current	< 0.1	mA
ΔΦ (K1-K2)	(V)	M3090:	Magnetic Flux compensation core	33...37	nVs
ΔΦ (S1-S2)	(V)	M3090:	Magnetic Flux sensor	20...35	nVs
R_S (K1-K2)	(V)	M3011/5:	Winding resistance compensation coil	16.7...19.2	Ω
R (S1-S2)	(V)	M3011/5:	Winding resistance magnetic probe coil	2.5...3.5	Ω
U_d	(V)	M3014:	Testing voltage, 1s Preliminary to secondary	2.2	kV_{RMS}
U_e	(AQL1/S4)	M3024:	Partial discharge voltage	1800	V_{RMS}
			with U_{vor}	2250	V_{RMS}

Other Information:

- Current direction: A positive output current appears at point I_S, by primary current in direction of the arrow.
- Temperature of the primary conductor should not exceed 105°C
- Housing and bobbin material: UL-listed. Flammability class UL 94V-0.

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