VACUUMSCHMELZE	**SPECIFICATION**	**Item-No.:** **T60404-M4645-X030**

K-No.: 24373	**5 … 80 A 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	Date: 12.10.2006
Customer: Standard Type	Cutomers 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

Applications

Mainly used for stationary operation in industrial applications:
- AC variabel 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	100	A
R_M	Load resistance	0 ... 200	Ω
I_{SN}	Output rated current, r.m.s	100	mA
K_N	Turns ratio	4 : 1000	

Accuracy – Dynamic performance data

		min.	typ	max.	Unit
X*	Measuring accuracy @ I_{PN}, T_A=25°C (Module)			0.5	%
ε_L	Linearity			0.2	%
I_{0H}	Hystersis		0,03	0.1	mA
t_r	Response time			9	µs
$\Delta t(I_{p,max})$	Delay time at di/dt = 100 A/µs			2.5	µs
f	Frequency range	DC...100			kHz

General Data

		min.	typ.	max.	Unit
T_A	Ambient temperature	-40		+85	°C
T_S	Storage temperature	-40		+85	°C
m	Mass		31		g
R_S	Secondary coil resistance @ T_A=85°C			29.5	Ω
R_P	Primary coil resistance per turn @ T_A=25°C		0,25		mΩ
C_k	Coupling capacity		10		pF
	Mechanical Stress according to M3209/3 Settings: 10 – 2000 Hz, 1 min/Decade, 2 hours			10g	
V_b	Rated insulation voltage, according to EN50178 reinforced insulation Insulation material group 1, Pollution degree 2 mains supply, rms non mains supply (peak od DC)			600 1100	 V V
S_{clear}	clearance (component without solder pad)			10	mm
S_{creep}	creepage (component without solder pad)			11	mm

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

Designed according standard EN 50178 with insulation material group 1

V_W	HV transient test according (to M3064) (1,2 µs / 50 µs-wave form)	8	kV
V_d	Testing voltage, 60s (to M3024)	3.5	kV
V_e	Partial discharge voltage acc.M3024 (RMS)	1240	V

All data marked with * is verified by final inspection, other values are type tested.

Datum	Name	Index	Änderung
		81	

Hrsg.: KB-FB FT editor	Bearb: SA designer		KB-E: Len. check	KB-PM IA: KRe. check		freig.: SA released

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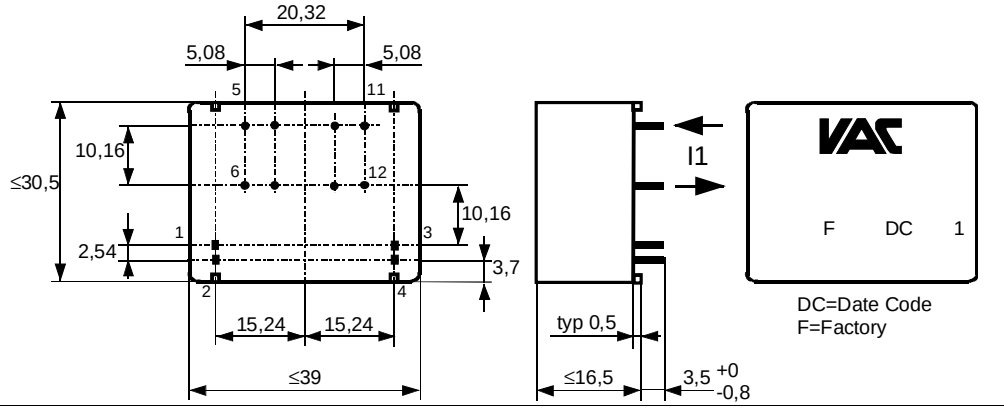
Mechanical outline (mm):

General tolerances DIN ISO 2768-c

Toleranz der Stiftabstände ±0,25mm
Tolerances grid distance

Ziffern 1 - 12 nicht aufgedruckt
Numbers 1 - 12 not imprinted



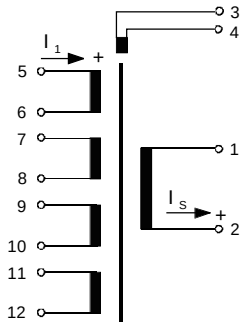
DC=Date Code
F=Factory

Connections:
Nr.: 1…4 = 0,88x0,6
Nr.: 5…12 = Ø 1,9

Marking:

4645X030
F DC

Schematic diagram



Pin 1 : K1, Pin 2 : K2 → Kompensationswicklung (compensation winding)

Pin 3 : S1, Pin 4 : S2 → Sensorwicklung (sensor winding)

Pin 5.....12 Primärstrom-Bügel (primary current turns)

Inspection (Measurements after temperature balance of the samples at room temperature.)

K_N (N1/N2)*	(V)	M3011/6c:	Turns ratio (I_1=40A, 40…80 Hz)	4 : 1000 ± 0,5	%
I_0*		M3226:	Offset current	< 0.1	mA
ΔΦ (K1-K2)*	(V)	M3090:	Magnetic Flux compensation core	17...19.5	nVs
ΔΦ (S1-S2)*	(V)	M3090:	Magnetic Flux sensor	20...35	nVs
R_S (K1-K2)*	(V)	M3011/5:	Winding resistance compensation coil	20...35	Ω
R (S1-S2)*	(V)	M3011/5:	Winding resistance magnetic probe coil	2.5...3.5	Ω
V_d*	(V)	M3014:	Testing voltage, rms, 1s Pin 1 - 4 to Pin 5 – 12	3.5*	kV
V_e*	(AQL1/S4)	M3024:	Partial discharge voltage	>1240*	V

Applicable documents

Classification of enviromental conditions according to EN 60721 5K3

Current direction: A positive output current appears at point I_S, by primary current in direction of the arrow.

Constructed, manufactured and tested in accordance with EN 50178 and agrees with the standards.

Housing and bobbin material: UL-listed. Flammability class UL 94V-0.

Enclosures according to IEC 60529: IP50.

Additional data available on request.

This specification is no declaration of warranty acc. BGB §443.

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