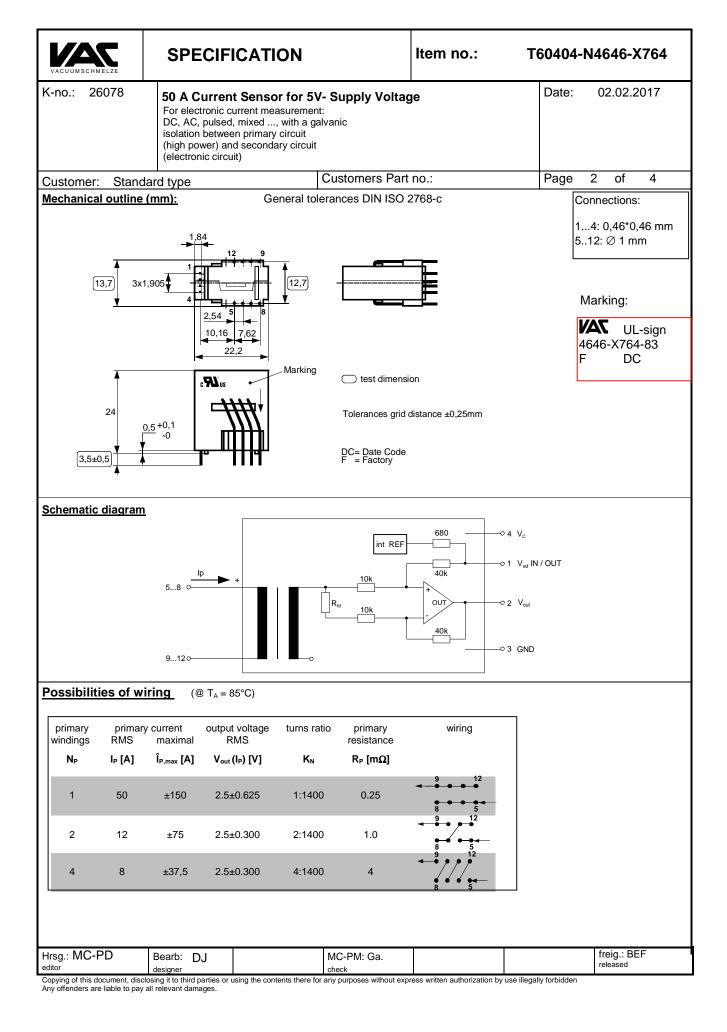
K-no.: 26078	SPECIFICATION	Item no	).:	T60404-N	14646-X764
	<b>50 A Current Sensor for 5V- Supply Vol</b> For electronic current measurement: DC, AC, pulsed, mixed, with a galvanic isolation between primary circuit (high power) and secondary circuit (electronic circuit)	ltage		Date:	02.02.2017
Customer: Stand	lard type Customers F	art no.:		Page	1 of 4
Description	Characteristics		olications	g-	
<ul> <li>Closed loop (compe Current Sensor with field probe</li> <li>Printed circuit board</li> <li>Casing and material</li> </ul>	nsation)  • Excellent accuracy magnetic • Very low offset current • Very low temperature dependency a current drift	Mai app and offset ●	nly used for s lications: AC variable drives Static conv Battery sup Switched M Power Sup		ns oplies (SMPS) g applications
Electrical data – Ra	tings				
I <sub>PN</sub>	Primary nominal r.m.s. current		50		А
V <sub>out</sub>	Output voltage @ I <sub>P</sub>			<sub>f</sub> ± (0.625*1 <sub>P</sub> /1 <sub>F</sub>	
Vout	Output voltage @ $I_P=0$ , $T_A=25^{\circ}C$			$f \pm 0.000725$	V
vout V <sub>Ref</sub>	External Reference voltage range		v Rei 0		V
v Ker	Internal Reference voltage		-	±0.005	v
K <sub>N</sub>	Turns ratio		-	4 : 1400	v
T NN			1	4.1400	
Accuracy – Dynami	ic performance data		<b>4</b>		11
I <sub>P,max</sub>	Max. measuring range	<mark>min.</mark> ±150	typ.	max.	Unit
X	Accuracy @ I <sub>PN</sub> , T <sub>A</sub> = 25°C	100		0.7	%
εL	Linearity			0.1	%
C∟ V <sub>out</sub> - V <sub>Ref</sub>	Offset voltage @ $I_P=0$ , $T_A= 25^{\circ}C$			±0.725	mV
$\Delta V_o / V_{Ref} / \Delta T$	Temperature drift of $V_{out}$ @ I <sub>P</sub> =0, $V_{Ref}$ =2,5V, T <sub>A</sub>		0.7	10	ppm/°C
t <sub>r</sub>	Response time @ 90% von $I_{PN}$		300	10	ns
Δt (I <sub>P.max</sub> )	Delay time at di/dt = 100 A/ $\mu$ s		200		ns
	Frequency bandwidth	DC200	200		kHz
f		2011.200			
f					
f		min.	tvp.	max.	Unit
f General data	Ambient operating temperature	<mark>min.</mark> -40	typ.	<b>max.</b> +85	Unit °C
f General data T <sub>A</sub>	Ambient operating temperature Ambient storage temperature (acc to M3101)	-40	typ.	+85	°C
f <u>Seneral data</u> T <sub>A</sub> Ts	Ambient storage temperature (acc to M3101)				°C °C
f <u>Seneral data</u> T <sub>A</sub> T <sub>S</sub> m	Ambient storage temperature (acc to M3101) Mass	-40 -40	12	+85 +105	°C °C g
f <u>Seneral data</u> T <sub>A</sub> T <sub>S</sub> m V <sub>C</sub>	Ambient storage temperature (acc to M3101) Mass Supply voltage	-40	12 5	+85	°C °C g V
f <u>Seneral data</u> T <sub>A</sub> T <sub>S</sub> m	Ambient storage temperature (acc to M3101) Mass	-40 -40	12	+85 +105	°C °C g
f <u>Seneral data</u> T <sub>A</sub> T <sub>S</sub> m V <sub>C</sub>	Ambient storage temperature (acc to M3101) Mass Supply voltage	-40 -40 4.75	12 5 15	+85 +105 5.25	°C °C g V mA
f <u>General data</u> T <sub>A</sub> T <sub>S</sub> m V <sub>C</sub> I <sub>C</sub>	Ambient storage temperature (acc to M3101) Mass Supply voltage Current consumption Constructed and manufactored and tested in ac Reinforced insulation, Insulation material group	-40 -40 4.75 ccordance with	12 5 15 EN 61800-	+85 +105 5.25	°C °C g V mA
f <u>General data</u> T <sub>A</sub> T <sub>S</sub> m V <sub>C</sub> I <sub>C</sub> S <sub>clear</sub>	Ambient storage temperature (acc to M3101) Mass Supply voltage Current consumption Constructed and manufactored and tested in ad Reinforced insulation, Insulation material group Clearance (component without solder pad)	-40 -40 4.75 ccordance with 1, Pollution de 9.6	12 5 15 EN 61800-	+85 +105 5.25	°C °C g V mA o Pin 5 – 12) mm
f <u>General data</u> T <sub>A</sub> T <sub>S</sub> m V <sub>C</sub> I <sub>C</sub> <u>S<sub>clear</sub></u> S <sub>creep</sub>	Ambient storage temperature (acc to M3101) Mass Supply voltage Current consumption Constructed and manufactored and tested in ad Reinforced insulation, Insulation material group Clearance (component without solder pad) Creepage (component without solder pad)	-40 -40 4.75 ccordance with 0 1, Pollution de 9.6 10.6	12 5 15 EN 61800-	+85 +105 5.25 5-1 (Pin 1 – 4 t	°C °C g V mA o Pin 5 – 12) mm mm
f <u>General data</u> T <sub>A</sub> T <sub>S</sub> m V <sub>C</sub> I <sub>C</sub> S <sub>clear</sub>	Ambient storage temperature (acc to M3101) Mass Supply voltage Current consumption Constructed and manufactored and tested in ad Reinforced insulation, Insulation material group Clearance (component without solder pad)	-40 -40 4.75 ccordance with 1, Pollution de 9.6	12 5 15 EN 61800-	+85 +105 5.25	°C °C g V mA o Pin 5 – 12) mm

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Mechanical stress according to M3209/3 Settings: 10 – 2000 Hz, 1 min/Octave, 2 hours       30g         Inspection (Measurement after temperature balance of the samples at room temperature; SC = significant characteristic)       Wout (SC) (V) M30116: Output voltage vs. external reference (Ip=40As, 40-80Hz)       625±0,7% mV         Vour VRef (Ip=0) (V) M3226: Offset voltage       ± 0.725 mV       W         Vd       (V) M3014: Test voltage, rms, 1 s       1.8 kV         Ve       (AQL 1/S4)       Partial discharge voltage acc.M3024 (RMS)       1400 V         Ve       (AQL 1/S4)       Partial discharge voltage acc.M3024 (RMS)       1400 V         Vw       HV transient test according to M3064 (1,2 µs / 50 µs-wave form)       8 kV         Vd       Testing voltage to M3014       (5 s)       3.6 kV         Ve       Partial discharge voltage acc.M3024 (RMS)       1400 V         with Vvor (RMS)       1750 V       V         Applicable documents         Operating temperature of the current sensor and the primary conductor must not exceed 105°C.       200 V         Current direction: A positive output current appears at point Is, by primary current in direction of the arrow.       300 V         Applicable documents       UL 508 file E317483, category NMTR2 / N       1750 V         Hag: MC-PD       Bearb: DJ       MC-PM: Ga.       1769	VACUUMSCHMELZE	SPECIFICATION		Item no	<b>)</b> .:	T60404-N4646-X764		
Description         Description         Description         Description           Electrical Data         min. typ. max.         Unit           Vice         Supply Current with primary ourrent         15mA + I_*Ve_VV_mR_         mA           Re         Resistance / primary winding @ T_=25°C         1         mQ           Rusat         Short circuit output courrent         15mA + I_*Ve_VV_mR_         mA           Re         Resistance / primary winding @ T_=25°C         6         67         Q           Rusat         Internal resistance of Vear         1         MQ         Q           Rv.ter         Internal recommended resistance of Vear         1         MQ         Q           AVr./AT         Temperature drift of VB m_s = 40 +85°C         1         mV         Vo           AVr.         Longtermethin of Va @ T_s = 40 +85°C         1         mV         Vo           AVr.         Califier an overload of 10 k Im)         1         mVV         Vo         Longtermethin of Va @ T_s = 40 +85°C         1         mVV           Vor         Longtermethin of Va @ T_s = 40 +85°C         1         mVV         Vor         MV         Vor         Longtermethin of Va @ T_s = 40 +85°C         1         mVV         Vor         MV         Vor </th <th>K-no.: 26078</th> <th colspan="4">For electronic current measurement: DC, AC, pulsed, mixed, with a galvanic isolation between primary circuit (high power) and secondary circuit</th> <th></th> <th colspan="2">Date: 02.02.2017</th>	K-no.: 26078	For electronic current measurement: DC, AC, pulsed, mixed, with a galvanic isolation between primary circuit (high power) and secondary circuit					Date: 02.02.2017	
The subscription of the set of th	Customer: Stand	ard type		Customers Par	t no.:		Page 3	of 4
min.         typ.         max.         Unit           Voxt         Maximum supply voltage (without function)         7         V           Ic         Supply Current with primary current         15mA + Ip <sup>+</sup> Ke+Vour(R, mA         mA           Res         Secondary coil resistance 0 (mary withing @ T_a=25°C         1         mΩ           Rs         Secondary coil resistance 0 (Vu, = 45°C         67         Ω           Ri, etc.         Internal resistance of Vu, = 1         kΩ         KΩ           Ri, Wait         Output resistance of Vu, = 1         kΩ         KΩ           Ci         External recommended capacitance of Vu, = 1         kΩ         KΩ           AVr / ΔT         Temperature drift of X @ T_A = -40 +85°C         40         ppm/K           AVa = Δ(Vue, Vae)         Sum of any offset drift including:         2         6         mV           Va         Longtermorthift of V.@ T_A = -40+85°C         1         mV         Var           Var         Temperature drift too N.@ T_A = -40+85°C         1         mV         Var           Var         Colsteringe (orthor and Vat E. Titler first order)         2.5         mV         Var           Var         Offsetripple (with 10 MHz: filter first order)         2.5         mV         Var<								
Vote         Maximum supply voltage (whot function)         7         V           lc         Supply Current with primary current         15mA H <sub>0</sub> /Ks+Vou/R,         mA           Re         Resistance / primary winding @ T_=25°C         1         mA           Re         Resistance / primary winding @ T_=25°C         1         mQ           Rs         Secondary cold resistance @ T_=25°C         67         Ω           Ri,Rat         Internal resistance of Reference input         670         Ω           Ri,Rat         Internal recommended resistance of Voit         1         KΩ           Qu         External recommended capacitance of Voit         500         pF           AVn / ΔT         Temperature drift of V @ T_a = -40 +85°C         40         ppm/K           Vin         Longtermdrift of V 0         T_a = -40 +85°C         1         mV           Var         Temperature drift non V <sub>1</sub> @ T_a = -40 +85°C         1         mV           Var         Temperature drift non V <sub>1</sub> @ T_a = -40 +85°C         1         mV           Var         Temperature drift non V <sub>1</sub> @ T_a = -40 +85°C         1         mV           Var         Offsetripple (with 104 KHz- filter first order)         2         5         mV           Var	Electrical Data				min		may	l lmit
Ic         Supply Current with primary current         15mA +I <sub>2</sub> :K <sub>1</sub> +V <sub>04</sub> /V <sub>R</sub> ,         mA           box30         Short forcul output current         ±20         mA           Re         Resistance / primary winding @ T <sub>a</sub> =25°C         1         mΩ           Rs         Secondary coil resistance @ T <sub>a</sub> =85°C         67         Ω           Rs         Secondary coil resistance @ T <sub>a</sub> =85°C         67         Ω           Rs         External recommended capacitance of V <sub>out</sub> 1         K1           Rt         External recommended capacitance of V <sub>out</sub> 1         K2           Qc         External recommended capacitance of V <sub>out</sub> 2         6         mV           Vor         Longtermdrift of X <sub>0</sub> @ T <sub>A</sub> = -40 +85°C         1         mV           Vor         Longtermdrift of X <sub>0</sub> @ T <sub>A</sub> = -40 +85°C         1         mV           Vor         Longtermdrift of X <sub>0</sub> @ T <sub>A</sub> = -40 +85°C         1         mV           Var         Temperature drift vor N <sub>0</sub> @ T <sub>A</sub> = -40 +85°C         1         mV           Var         Conferences of V <sub>04</sub> @ T <sub>A</sub> = -40 +85°C         1         mV           Var         Conferences of V <sub>04</sub> @ T <sub>A</sub> = -40 +85°C         1         mV           Var         Offsetripple (with 10 Hz- filte	Votet	Maximum su	Innly voltage (withou	it function)	min.	тур.		
μα.soc         Short circuit output current         ±20         mA           Rp         Resistance / primary winding @ T_a=25°C         1         mΩ           Rs         Secondary coil resistance @ T_a=85°C         67         Ω           R_the         Internal resonance of Voat         1         Ω           R_t(Voat)         Output resistance of Voat         1         K2           R_t         External recommended capacitance of Voat         1         K2           AVr, /ΔT         Temperature diff of Va         1         mV           AVg= Δ(Voat-Vke)         Sum of any offset difft including:         2         6         mV           Vor         Temperature difft of Vo         0         T_a=40+85°C         1         mV           Vor         Temperature difft on Vo         0         T_a=40+85°C         1         mV           Vor         Temperature difft on Vo         0         T_a=40+85°C         1         mV           Va         Longtermidite         mit on Vo         Temperature difft on Vo         Temperature difft on Vo         Temperature difft on Vo         1         mVV           Va         Offsetripple (with 1 MHz- filter first order)         2.5         mV         Seconding to M209/3         30g </td <td></td> <td></td> <td></td> <td>,</td> <td>15mA</td> <td>+In*KN+Va</td> <td>-</td> <td></td>				,	15mA	+In*KN+Va	-	
Rp       Resistance / primary winding @ T_a=25°C       1       mΩ         Rs       Secondary coil resistance @ T_a=85°C       67       Ω         Rs       Internal resistance of Value       670       Ω         Right       External recommended capacitance of Value       1       K2         Rt       External recommended capacitance of Value       1       K2         Cc       External recommended capacitance of Value       500       pF         ΔXn / ΔT       Temperature drift of X @ T_a = -40 +85°C       40       ppm K         ΔVor       Longterm/drift of V <sub>0</sub> 1       mV       Vor         Var       Temperature drift or N <sub>0</sub> @ T_a = -40 +85°C       1       mV       Vor         Var       Longterm/drift of V <sub>0</sub> 1       mV/V       Vor       Longterm/drift or N <sub>0</sub> 1       mV/V         Var       Temperature drift to N <sub>0</sub> @ T_a = -40 +85°C       1       mV       Vor         Var       Comperative drift or N <sub>0</sub> @ T_a = -40 +85°C       1       mV         Var       Offsetripple (with 10k1-z filter first order)       2       5       mV         Vasc       Offsetripple (with 20 k1-z filter first order)       0.6       1       mV/V         Vasc								
Rs         Secondary coil resistance @ T <sub>A</sub> =85°C         67         Ω           R,Ref         Internal resistance @ Reference input         670         Ω           R,Wau)         Output resistance of Vout         1         Ω           Rt, Wau)         Output resistance of Vout         1         KΩ           Rt, E         External recommended capacitance of Vout         1         KΩ           QXn /ΔT         Temperature drift Vout         7         40         ppm/K           AVa = Δ(Vout-Vout)         Longtermrith including:         2         6         mV           Vor         Longtermrith of Vo         Temperature drift Vo         1         mV           Vor         Congtermrith Vo         0         Temperature drift Vo         1         mV           Vor         Congtermrith of Vo         Temperature drift Vo         1         mV         No           Vor         Congtermrith Vo         Na @ T_a = 40485°C         1         mV         No           Vor         Congtermrith of Vo         0.6         T         mV         No         No           Vor         Congtermrith Voltage trans roteol 010 km)         1         mV/V         No         No         No         Settings: No         No				T₄=25°C				
R, Ref         Internal resistance of Reference input         670         Ω           R, (V <sub>sac</sub> )         Output resistance of V <sub>sac</sub> 1         Ω           R, L         External recommended resistance of V <sub>sac</sub> 1         Ω           Q, L         External recommended resistance of V <sub>sac</sub> 500         pF           ΔX <sub>17</sub> /ΔT         Temperature drift of X @ T <sub>A</sub> = 40 +85 °C         40         ppm/K           ΔV <sub>0</sub> = Δ(V <sub>sac</sub> -V <sub>sac</sub> )         Sun of any offset drift including:         2         6         mV           V <sub>0</sub> Longtermdrift of V <sub>0</sub> @ T <sub>A</sub> = 40 +85 °C         1         mV         V           V <sub>0</sub> Hysteresis of V <sub>sac</sub> @ I <sub>P</sub> =0 (after an overload of 10 x I <sub>hy</sub> )         1         mV/           V <sub>00</sub> Offsetripple (with 10 MLz- filter first order)         2.5         mV/           V <sub>00</sub> Offsetripple (with 100 KHz- filter first order)         0.6         1         mV/           V <sub>00</sub> Offsetripple (with 100 KHz- filter first order)         0.6         1         mV           V <sub>00</sub> Offsetripple (with 100 KHz- filter first order)         0.6         1         mV           V <sub>00</sub> Offsetripple (with 20 KHz- filter first order)         0.6         1         mV           V <sub>00</sub>			, , ,			•	67	
R <sub>1</sub> (Vour)         Output resistance of Vout         1         Ω           R <sub>4</sub> External recommended resistance of Vout         1         K2           C <sub>4</sub> External recommended capacitance of Vout         1         K4           C <sub>4</sub> External recommended capacitance of Vout         500         pF           ΔXn/ΔT         Temperature drift of X @ T <sub>A</sub> = -40 +85 °C         40         ppm/K           ΔV <sub>0</sub> = Δ(Vout-Veie)         Sum of any offset drift including:         2         6         mV           V <sub>0</sub> Longtermdrift of V <sub>0</sub> 1         mV         V         V         Longtermdrift of V <sub>0</sub> 1         mV           V <sub>0</sub> Longtermdrift of V <sub>0</sub> 1         mV         V         V         ImV         V         V         Longtermdrift of V <sub>0</sub> 1         mV           V <sub>0</sub> Contractified in this order         35         mV         V         V         MV         MV         MV <td< td=""><td>_</td><td></td><td></td><td></td><td></td><td>670</td><td>01</td><td></td></td<>	_					670	01	
RL       External recommended resistance of $V_{out}$ 1       kQ         CL       External recommended capacitance of $V_{out}$ 500       pF         AV <sub>0</sub> = $\Delta(V_{out} = V_{Net})$ Sum of any offset drift including:       2       6       mV         AV <sub>0</sub> = $\Delta(V_{out} = V_{Net})$ Sum of any offset drift including:       2       6       mV         Vor       Longterndrift of $V_0$ 1       mV       mV       mV         Var       Temperature drift first on $V_0$ @ $T_A = -40$ +85°C       1       mV       mV         Var       Temperature drift first on $V_0$ @ $T_A = -40$ +85°C       1       mV       mV         Var       Temperature drift first order       35       mV       mV       association and the temperature drift first order       35       mV         Vess       Offsetripple (with 10 KHz - filter first order       2       5       mV       association and the temperature based to dus209/3       30g       Stings: 10 - 2000 Hz + 11 mir Order Vez, 2 hours       Brepection (Measurement after temperature balance of the samples at room temperature; SC = significant characteristic)         Voat (SC)       (V)       M30146       Output voltage, rms, 1 s       1.8       kV         Va       (AQL 1/S4)       Partial discharge voltage acc.M3024 (RMS)       1400 </td <td>1 -</td> <td></td> <td></td> <td>, input</td> <td></td> <td>010</td> <td>1</td> <td></td>	1 -			, input		010	1	
$Q_{L}$ External recommended capacitance of $V_{out}$ 500       pF $\Delta X_{T_1}/\Delta T$ Temperature drift of X @ T_A = -40 +85 °C       40       ppm/K $\Delta V_0 = \Delta (V_{out} - V_{Rel})$ Sum of any offset drift including:       2       6       mV $V_{ot}$ Longtermdrift of V <sub>0</sub> $T_A = -40 \dots +85 °C$ 1       mV $V_{ot}$ Temperature drift von V <sub>0</sub> @ T_A = -40 \dots +85 °C       1       mV $V_{ot}$ Hypersteis of V <sub>out</sub> @ IP=0 (leften an overload of 10 x I <sub>m</sub> )       1       mV $\Delta V_0/\Delta V_C$ Supply voltage rejection ratio       1       mV/V $\Delta v_{ods}$ Offsetripple (with 10 kHz- filter first order)       2.5       mV $v_{oes}$ Offsetripple (with 10 kHz- filter first order)       0.6       1       mV $V_{oes}$ Offsetripple (with 00 kHz- filter M3209/3       30g       Settings: 10 - 2000 Hz, 1 min/Octave, 2 hours       30g         spection (Measurement after temperature balance of the samples at room temperature; SC = significant characteristic)       Vour-V <sub>fiet</sub> (Ip=0) (V)       M3226:       Offset voltage       ± 0.725       mV $V_{our}(Fiet (le=0)$ (V)       M3226:       Offset voltage       ± 0.725       mV       V       V_0 - V_0r((ImS)       11.8 <td></td> <td></td> <td></td> <td>an of V</td> <td>1</td> <td></td> <td>1</td> <td></td>				an of V	1		1	
ΔX <sub>1</sub> /ΔT         Temperature drift of X @ T <sub>A</sub> = -40 +85 °C         40         ppm/K           AV <sub>0</sub> = Δ(V <sub>0ut</sub> -V <sub>Refl</sub> )         Sum of any offset drift including:         2         6         mV           V <sub>0</sub> Longtermdrift of V <sub>0</sub> 1         mV           V <sub>0</sub> Longtermdrift of V <sub>0</sub> 1         mV           V <sub>0</sub> Temperature drift von V <sub>0</sub> @ T <sub>A</sub> = -40 +85°C         1         mV           V <sub>0</sub> Temperature drift von V <sub>0</sub> @ T <sub>A</sub> = -40 +85°C         1         mV           V <sub>0</sub> Temperature drift von V <sub>0</sub> @ T <sub>A</sub> = -40 +85°C         1         mV           V <sub>0</sub> Temperature drift von V <sub>0</sub> @ T <sub>A</sub> = -40 +85°C         1         mV           V <sub>0</sub> Hystersis of V <sub>0</sub> 1         mV         M           V <sub>0</sub> Offsetripple (with 10 kHz- filter first order)         35         mV         V <sub>0as</sub> Offsetripple (with 10 kHz- filter first order)         0.6         1         mV           V <sub>0</sub> Maximum possible coupling capacity (primary – secondary)         5         10         pF           Mechanical stress according to M3209/3         30g         Settings: 10 – 2000 Hz, 1 mi/Octave, 2 hours         625±0,7%         mV           Noure (SC)         (V)         M3014:	=			001	1		500	
AVor = A(Vort - VRed)         Sum of any offset drift including:         2         6         mV           Vort         Longtermdrift of V <sub>0</sub> 1         mV           Vort         Temperature drift von V <sub>0</sub> @ T <sub>A</sub> = -40+85°C         1         mV           Vort         Hysteresis of V <sub>out</sub> @ I <sub>P</sub> =0 (after an overload of 10 x I <sub>P0</sub> )         1         mV           AVo/AVC         Supply voltage rejection ratio         1         mV/V           Vort         Hysteresis of V <sub>out</sub> @ I <sub>P</sub> =0 (after an overload of 10 x I <sub>P0</sub> )         35         mV           Vort         Offsetripple (with 10M kHz- filter first order)         2.5         mV           Vort         Offsetripple (with 10M kHz- filter first order)         0.6         1         mV           Vort         Maximum possible coupling capacity (primary – secondary)         5         10         pF           Mechanical stress according to M3209/3         30g         Settings: 10 – 2000 Hz, 1 min/Octave, 2 hours         mV           Vort (V)         M3011/6:         Output voltage vs. external reference (I <sub>P</sub> =40As, 40-80Hz)         625±0.7%         mV           Vourt-VRef (IP=0)         (V)         M3011/6:         Output voltage vs. external reference (I <sub>P</sub> =40As, 40-80Hz)         625±0.7%         mV           Vourt-VRef (IP=0)         (V)			· · · · · · · · · · · · · · · · · · ·					
Vort         Longtermdrift of V0         1         mV           Vort         Temperature drift von V0 (0, CTA = -40+85°C 1         mV           Vort         Hysteresis of Voca (0, CTA = no vertical of 10 x Im)         1         mV           AV0/AVC         Supply voltage rejection ratio         1         mV/V           Voss         Offsetripple (with 1 MHz- filter first order)         2.5         mV           Voss         Offsetripple (with 10 kHz- filter first order)         2.6         1         mV/V           Voss         Offsetripple (with 20 kHz- filter first order)         0.6         1         mV           Voss         Offsetripple (with 20 kHz- filter first order)         0.6         1         mV           Voss         Offsetripple (with 20 kHz- filter first order)         0.6         1         mV           Voss         Offsetripple (with 20 kHz- filter first order)         0.6         1         mV           Voss         Offsetripple (with 20 kHz- filter first order)         0.6         1         mV           Voss         Offsetripple (with 20 kHz- filter first order)         0.6         1         mV           Voss         Offsetripple (with 20 kHz- filter first order)         0.6         1         mV           Voss         Offset		•				-	-	
Vort       Temperature drift von $V_0 \oplus T_A = -40 \dots +85^\circ C$ 1       mV $V_{0H}$ Hysteresis of $V_{out} \oplus I_P = 0$ (after an overload of 10 x $I_{PN}$ )       1       mV $\Delta V_0/\Delta V_C$ Supply voltage rejection ratio       1       mV/V         Vors       Offsetripple (with 1 MHz- filter first order)       35       mV         Vors       Offsetripple (with 20 kHz- filter first order)       2       5       mV         Vors       Maximum possible coupling capacity (primary – secondary)       5       10       pF         Maximum possible coupling capacity (primary – secondary)       5       10       pF         Maximum possible coupling capacity (primary – secondary)       5       10       pF         Maximum possible coupling capacity (primary – secondary)       5       10       pF         Maximum possible coupling capacity (primary – secondary)       5       10       pF         Maximum possible coupling capacity (primary – secondary)       625±0.7%       mV       Vort/Viet/(P=0)       (W       M3214:       Testype (P=0)       625±0.7%       mV         Vort/Vect (P=0)       (V)       M3226:       Offset voltage       ± 0.725       mV       Vort/Vect (P=0)       0       7%       mV       Vore/Vect (P=0)       7%				:			6	
V <sub>0H</sub> Hysteresis of V <sub>out</sub> @ Ip=0 (after an overload of 10 x I <sub>ex</sub> )       1       mV         AVg/AVC       Supply voltage rejection ratio       1       mV/V         Voes       Offsetripple (with 10Hz- filter first order)       35       mV         Voes       Offsetripple (with 10 kHz- filter first order)       0.6       1       mV         Voes       Offsetripple (with 20 kHz- filter first order)       0.6       1       mV         Vess       Offsetripple (with 20 kHz- filter first order)       0.6       1       mV         Vess       Offsetripple (with 20 kHz- filter first order)       0.6       1       mV         Vess       Offsetripple (with 20 kHz- filter first order)       0.6       1       mV         Vess       Offsetripple (with 20 kHz- filter first order)       0.6       1       mV         Vess       Offsetripple (with 20 kHz- filter first order)       0.6       1       mV         Vess       Offsetripple (with 10 kHz- filter first order)       0.6       1       mV         Vess       Offsetripple (with 10 kHz- filter first order)       0.6       1       mV         VourtVref(le=0)       (V)       M3126:       Offsetripple (with 10 kHz- filter first order)       0.6       1       mV         V								
AV/AVc       Supply voltage rejection ratio       1       mV/V         Voss       Offsetripple (with 1 MHz- filter first order)       35       mV         Voss       Offsetripple (with 100 kHz- filter first order)       2       5       mV         Voss       Offsetripple (with 20 kHz- filter first order)       0.6       1       mV         Voss       Offsetripple (with 20 kHz- filter first order)       0.6       1       mV         Vess       Offsetripple (with 100 kHz- filter first order)       0.6       1       mV         Vess       Offsetripple (with 100 kHz- filter first order)       0.6       1       mV         Vess       Maximum possible coupling capacity (primary – secondary)       5       10       pF         Mechanical stress according to M3209/3       30g       Setting: 10 - 2000 Hz, 1 min/Ctave, 2 hours       30g         mspection       (Measurement after temperature balance of the samples at room temperature; SC = significant characteristic)       Vour(SC)       (V) M3014:       Testy ohtage rms, 1 s       1.8       kV         Vour-Veref (I==0) (V)       M3226:       Offset voltage acc.M3024 (RMS)       1400       V       V         Ve       (AQL 1/S4)       Partial discharge voltage acc.M3024 (RMS)       1400       V       V         Vd		•				1		
Voss       Offsetripple (with 1 MHz- filter first order)       35       mV         Voss       Offsetripple (with 100 KHz- filter first order)       2       5       mV         Voss       Offsetripple (with 100 KHz- filter first order)       0.6       1       mV         Voss       Offsetripple (with 20 kHz- filter first order)       0.6       1       mV         Voss       Offsetripple (with 20 kHz- filter first order)       0.6       1       mV         Voss       Offsetripple (with 20 kHz- filter first order)       0.6       1       mV         Vastinum possible coupling capacity (primary – secondary)       5       10       pF         Maximum possible coupling capacity (primary – secondary)       5       10       pF         Maximum possible coupling capacity (primary – secondary)       5       10       pF         Maximum possible coupling capacity (primary – secondary)       5       10       pF         Maximum possible coupling capacity (primary – secondary)       5       10       pF         Maximum possible coupling capacity (primary – secondary)       625±0.7%       mV         Vour-Vier(I(F=0) (V)       M3014:       Test voltage vs. external reference (Ip=40As, 40-80Hz)       625±0.7%       mV         Va       (AQL 1/S4)       Partial discharge	••••	-		an overload of 10 x I <sub>P</sub>	N)			mV
Vess       Offsetripple (with 100 kHz- filter first order)       2       5       mV         Vess       Offsetripple (with 20 kHz- filter first order)       0.6       1       mV         Ck       Maximum possible coupling capacity (primary – secondary)       5       10       pF         Mechanical stress according to M3209/3       30g       Settings: 10 – 2000 Hz, 1 min/Octave, 2 hours       30g         nspection       (Measurement after temperature balance of the samples at room temperature; SC = significant characteristic)       Vour-VRef (IP=0) (V)       M3011/6:       Output voltage vs. external reference (Ip=40As, 40-80Hz)       625±0,7%       mV         Vour-VRef (IP=0) (V)       M3014:       Test voltage, rms, 1 s       1.8       kV         Va       (V)       M3014:       Test voltage, rms, 1 s       1.8       kV         Ve       (AQL 1/S4)       Partial discharge voltage acc.M3024 (RMS)       1400       V         Ve       (AQL 1/S4)       Partial discharge voltage acc.M3024 (RMS)       1400       V         Ve       Partial discharge voltage acc.M3024 (RMS)       1400       V       V         Ve       Partial discharge voltage acc.M3024 (RMS)       1750       V         Ve       Partial discharge voltage acc.M3024 (RMS)       1750       V         Op	$\Delta V_0 / \Delta V_C$	Supply voltage	ge rejection ratio				1	mV/V
Vorses       Offsetripple (with 20 kHz- filter first order)       0.6       1       mV         2k       Maximum possible coupling capacity (primary – secondary)       5       10       pF         Mechanical stress according to M3209/3       30g       Settings: 10 – 2000 Hz, 1 min/Octave, 2 hours       30g         mspection       (Measurement after temperature balance of the samples at room temperature; SC = significant characteristic)       Vout(SC)       (V)       M3011/6:       Output voltage vs. external reference (Ip=40As, 40-80Hz)       625±0,7%       mV         Vout=VRef (Ip=0)       (V)       M3226:       Offset voltage       ± 0.725       mV         Vd       (V)       M3014:       Test voltage, rms, 1 s       1.8       kV         Ve       (AQL 1/S4)       Partial discharge voltage acc.M3024 (RMS)       1400       V         Vd       Testing voltage to M3014       (5 s)       3.6       kV         Vd       Testing voltage to M3024 (RMS)       1400       V       V         Vd       Testing voltage acc.M3024 (RMS)       1400       V       V         Vd       Testing voltage acc.M3024 (RMS)       1400       V       V         Vd       Testing voltage acc.M3024 (RMS)       1400       V       V       V       V       vi	Voss		`	'				
Ck       Maximum possible coupling capacity (primary – secondary)       5       10       pF         Mechanical stress according to M3209/3       30g       30g         Settings: 10 – 2000 Hz, 1 min/Octave, 2 hours       30g         Inspection       (Measurement after temperature balance of the samples at room temperature; SC = significant characteristic)         Voat (SC)       (V)       M3011/6:       Output voltage vs. external reference (Ip=40As, 40-80Hz)       625±0,7%       mV         Voat -VRef (Ip=0)       (V)       M3226:       Offset voltage       ± 0.725       mV         Vd       (V)       M3014:       Test voltage, rms, 1 s       1.8       kV         Ve       (AQL 1/S4)       Partial discharge voltage acc.M3024 (RMS)       1400       V         Ve       (AQL 1/S4)       Partial discharge voltage acc.M3024 (RMS)       1400       V         Vd       Testing voltage to M3014       (2 s) 3.6       kV       V         Vd       Testing voltage to M3014       (2 s) 3.6       kV       V         Vd       Testing voltage acc.M3024 (RMS)       1400       V         Vd       Testing voltage to M3014       (5 s)       3.6       kV         Ve       With Vvor (RMS)       1750       V       V       V	V <sub>oss</sub>	Offsetripple	(with 100 kHz- filter	firdt order)		2	5	mV
Mechanical stress according to M3209/3 Settings: 10 – 2000 Hz, 1 min/Octave, 2 hours       30g         Inspection (Measurement after temperature balance of the samples at room temperature; SC = significant characteristic)       Wout (SC)       (V)       M3011/6:       Output voltage vs. external reference (Ip=40As, 40-80Hz)       625±0,7%       mV         Vout -VFert (Ip=0) (V)       M3216:       Otfset voltage       ± 0.725       mV         Vd       (V)       M3014:       Test voltage, rms, 1 s       1.8       kV         Ve       (AQL 1/S4)       Partial discharge voltage acc.M3024 (RMS)       1400       V         Ve       (AQL 1/S4)       Partial discharge voltage acc.M3024 (RMS)       1400       V         Vg       Testing voltage to M3014       (5 s)       3.6       kV         Ve       Partial discharge voltage acc.M3024 (RMS)       1400       V         vd       Testing voltage to M3014       (5 s)       3.6       kV         Ve       Partial discharge voltage acc.M3024 (RMS)       1400       V         vith Vvor (RMS)       1750       V       V       Settings: MC-W       Testing voltage to M3014       (5 s)       3.6       kV         Ve       Partial discharge voltage acc.M3024 (RMS)       1400       V       vith Vvor (RMS)       1750 <t< td=""><td>V<sub>oss</sub></td><td>Offsetripple</td><td>(with 20 kHz- filter f</td><td>irst order)</td><td></td><td>0.6</td><td>1</td><td></td></t<>	V <sub>oss</sub>	Offsetripple	(with 20 kHz- filter f	irst order)		0.6	1	
Vour=VRef (IP=0) (V)       M3226:       Offset voltage, rms, 1 s       ± 0.725       mV         Vd       (V)       M3014:       Test voltage, rms, 1 s       1.8       KV         Va       (V)       M3014:       Test voltage, rms, 1 s       1.8       KV         Va       (V)       M3014:       Test voltage voltage acc.M3024 (RMS)       1400       V         Va       (AQL 1/S4)       Partial discharge voltage acc.M3024 (RMS)       1400       V         Vw       HV transient test according to M3064 (1,2 µs / 50 µs-wave form)       8       kV         Vd       Testing voltage to M3014       (5 s)       3.6       kV         Va       Partial discharge voltage acc.M3024 (RMS)       1400       V         Va       Testing voltage to M3014       (5 s)       3.6       kV         Va       Partial discharge voltage acc.M3024 (RMS)       1400       V         Va       Partial discharge voltage acc.M3024 (RMS)       1400       V         Va       Var (RMS)       1750       V	С <sub>к</sub>	Mechanical s	stress according to	M3209/3	econdary)	5	-	p⊢
Vour=VRef (IP=0) (V)       M3226:       Offset voltage, rms, 1 s       ± 0.725       mV         Vd       (V)       M3014:       Test voltage, rms, 1 s       1.8       KV         Va       (V)       M3014:       Test voltage, rms, 1 s       1.8       KV         Va       (V)       M3014:       Test voltage voltage acc.M3024 (RMS)       1400       V         Va       (AQL 1/S4)       Partial discharge voltage acc.M3024 (RMS)       1400       V         Vw       HV transient test according to M3064 (1,2 µs / 50 µs-wave form)       8       kV         Vd       Testing voltage to M3014       (5 s)       3.6       kV         Va       Partial discharge voltage acc.M3024 (RMS)       1400       V         Va       Testing voltage to M3014       (5 s)       3.6       kV         Va       Partial discharge voltage acc.M3024 (RMS)       1400       V         Va       Partial discharge voltage acc.M3024 (RMS)       1400       V         Va       Var (RMS)       1750       V	Inspection (Measurer	ment after tempe	rature balance of the	samples at room terr	perature; SC	= significar	nt characteristic)	
Vd       (V)       M3014:       Test voltage, rms, 1 s       1.8       kV         Ve       (AQL 1/S4)       Partial discharge voltage acc.M3024 (RMS)       1400       V         Vve       (AQL 1/S4)       Partial discharge voltage acc.M3024 (RMS)       1400       V         Type Testing       (Pin 1 - 4 to Pin 5 - 12)       1750       V         Vw       HV transient test according to M3064 (1,2 µs / 50 µs-wave form)       8       kV         Vd       Testing voltage to M3014       (5 s)       3.6       kV         Ve       Partial discharge voltage acc.M3024 (RMS)       1400       V         Deparating temperature of the current sensor and the primary current in direction of the	V <sub>out</sub> (SC) (V)	M3011/6:	Output voltage vs.	external reference	(I <sub>P</sub> =40As, 40	-80Hz)	625±0,7%	mV
pin 1 – 4 vs. pin 5 – 12         Ve       (AQL 1/S4)       Partial discharge voltage acc.M3024 (RMS)       1400       V         With Vvor (RMS)       1750       V         Type Testing (Pin 1 - 4 to Pin 5 - 12)         Vw       HV transient test according to M3064 (1,2 µs / 50 µs-wave form)       8       kV         Vd       Testing voltage to M3014       (5 s)       3.6       kV         Ve       Partial discharge voltage acc.M3024 (RMS)       1400       V         Ve       Partial discharge voltage acc.M3024 (RMS)       1750       V         Applicable documents       1750       V       V         Operating temperature of the current sensor and the primary conductor must not exceed 105°C.       Current direction: A positive output current appears at point 1 <sub>5</sub> , by primary current in direction of the arrow.         Housing and bobbin material UL-listed: Flammability class 94V-0.       Enclosures according to IEC529: IP50.         Further standards       UL 508 file E317483, category NMTR2 / N       Ifreig.: BEF         Hisg.: MC-PD       Bearb:		M3226:	Offset voltage				± 0.725	mV
Ve       (AQL 1/S4)       Partial discharge voltage acc.M3024 (RMS)       1400       V         With Vvor (RMS)       1750       V         Type Testing (Pin 1 - 4 to Pin 5 - 12)         Vw       HV transient test according to M3064 (1,2 µs / 50 µs-wave form)       8       kV         Vd       Testing voltage to M3014       (5 s)       3.6       kV         Ve       Partial discharge voltage acc.M3024 (RMS)       1400       V         Ve       Partial discharge voltage acc.M3024 (RMS)       1750       V         Applicable documents       1750       V       V         Operating temperature of the current sensor and the primary conductor must not exceed 105°C.       Current direction: A positive output current appears at point Is, by primary current in direction of the arrow.       Husting and bobbin material UL-listed: Flammability class 94V-0.         Enclosures according to IEC529: IP50.       Further standards       UL 508 file E317483, category NMTR2 / N         Hrsg.: MC-PD       Bearb: DJ       MC-PM: Ga.       Ifreig.: BEF released	V <sub>d</sub> (V)						1.8	kV
Type Testing       (Pin 1 - 4 to Pin 5 - 12)         Vw       HV transient test according to M3064 (1,2 µs / 50 µs-wave form)       8       kV         Vd       Testing voltage to M3014       (5 s)       3.6       kV         Ve       Partial discharge voltage acc.M3024 (RMS)       1400       V         with Vvor       (RMS)       1750       V         Applicable documents         Departing temperature of the current sensor and the primary conductor must not exceed 105°C.         Current direction: A positive output current appears at point 1s, by primary current in direction of the arrow.       Housing and bobbin material UL-listed: Flammability class 94V-0.         Enclosures according to IEC529: IP50.       Euther standards       UL 508 file E317483, category NMTR2 / N	V <sub>e</sub> (AC	QL 1/S4)	Partial discharge vo	oltage acc.M3024	(RMS)			
Vw       HV transient test according to M3064 (1,2 µs / 50 µs-wave form)       8       kV         Vd       Testing voltage to M3014       (5 s)       3.6       kV         Ve       Partial discharge voltage acc.M3024 (RMS)       1400       V         with Vvor (RMS)       1750       V         Applicable documents         Operating temperature of the current sensor and the primary conductor must not exceed 105°C.         Current direction: A positive output current appears at point I <sub>S</sub> , by primary current in direction of the arrow.         Housing and bobbin material UL-listed: Flammability class 94V-0.         Enclosures according to IEC529: IP50.         Further standards       UL 508 file E317483, category NMTR2 / N         Trsg.: MC-PD       Bearb: DJ       MC-PM: Ga.       freig.: BEF released	<b>Type Testing</b> (Pin 1		with V <sub>vor</sub> (RMS)				1750	V
Ve       Partial discharge voltage acc.M3024 (RMS)       1400       V         with Vvor (RMS)       1750       V    Applicable documents          Operating temperature of the current sensor and the primary conductor must not exceed 105°C. Current direction: A positive output current appears at point Is, by primary current in direction of the arrow. Housing and bobbin material UL-listed: Flammability class 94V-0. Enclosures according to IEC529: IP50. Further standards UL 508 file E317483, category NMTR2 / N Hrsg.: MC-PD Bearb: DJ MC-PM: Ga. freig:: BEF released			test according to M	13064 (1,2 µs / 50	µs-wave for	m)	8	kV
with Vvor (RMS)       1750       V         Applicable documents       Deprating temperature of the current sensor and the primary conductor must not exceed 105°C.       Current direction: A positive output current appears at point Is, by primary current in direction of the arrow.       Current direction: A positive output current appears at point Is, by primary current in direction of the arrow.       Housing and bobbin material UL-listed: Flammability class 94V-0.         Enclosures according to IEC529: IP50.       Euchyperature of the E317483, category NMTR2 / N       Freig.: BEF         Hrsg.: MC-PD       Bearb: DJ       MC-PM: Ga.       freig.: BEF						(5 s)		
Applicable documents         Operating temperature of the current sensor and the primary conductor must not exceed 105°C.         Current direction: A positive output current appears at point I <sub>S</sub> , by primary current in direction of the arrow.         Housing and bobbin material UL-listed: Flammability class 94V-0.         Enclosures according to IEC529: IP50.         Further standards       UL 508 file E317483, category NMTR2 / N         Hrsg.: MC-PD       Bearb: DJ       MC-PM: Ga.	Ve		0 0	3024 (RMS)				
Operating temperature of the current sensor and the primary conductor must not exceed 105°C.         Current direction: A positive output current appears at point I <sub>s</sub> , by primary current in direction of the arrow.         Housing and bobbin material UL-listed: Flammability class 94V-0.         Enclosures according to IEC529: IP50.         Further standards       UL 508 file E317483, category NMTR2 / N         Hrsg.: MC-PD       Bearb: DJ       MC-PM: Ga.		with V <sub>vor</sub> (RN	MS)				1750	V
Enclosures according to IEC529: IP50. Further standards UL 508 file E317483, category NMTR2 / N Hrsg.: MC-PD Bearb: DJ MC-PM: Ga.	Operating temperature Current direction: A pos	of the current ser	ent appears at point Is	, by primary current i	xceed 105°C n direction of	the arrow.		
Hrsg.: MC-PD Bearb: DJ MC-PM: Ga.	Enclosures according to	o IEC529: IP50.						
released	unnen stanualus	0L 300 HIE E317	400, Calegory NWTR.	2 / IN				
released	MODD	1			1	I	1	
	Hrsg.: MC-PD	Bearb: DJ		MC-PM: Ga.				

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VACUUMSCI	HMELZE	SPECIFI	CATION		Item no.:	T60404-N	4646-X764
K-no.: 2	26078	For electronic cu DC, AC, pulsed, isolation between	rrent measurement mixed, with a ga n primary circuit secondary circuit		e	Date:	02.02.2017
Custome	r: Stand	ard type		Customers Part	no.:	Page 4	4 of 4
<u>Explanati</u>	on of seve	eral of the terms u	ised in the table	<u>ts (in alphabetica</u>	<u>l order)</u>		
t <sub>r</sub> :				rmance for the spe nt and the output v		ent range), measur	ed as delay time
∆t (I <sub>Pmax</sub> ):				nce for the rapid cu age V <sub>out</sub> (I <sub>Pmax</sub> ) with			
V <sub>0</sub> :		bltage between V <sub>ou</sub> (0) - 2,5V	<sub>t</sub> and the rated re	eference voltage of	V <sub>ref</sub> = 2,5V.		
Upd	Rated disc U <sub>PD</sub>	charge voltage (rec = $\sqrt{2} * V_e / 1,5$	curring peak volta	ige separated by th	ne insulation) prove	ed with a sinusoid	al voltage V <sub>e</sub>
V <sub>vor</sub>	test in IEC	61800-5-1		dal voltage with pe	ak value of 1,875	* U <sub>PD</sub> required for	partial discharge
	V <sub>vor</sub>	= 1,875 *U <sub>PD</sub> / √	2				
V <sub>sys</sub>	System vo	oltage RMS va	ue of rated volta	ge according to IE	C 61800-5-1		
V <sub>work</sub>	Working v	oltage voltage a	ccording to IEC 6	61800-5-1 which o	ccurs by design in	a circuit or across	insulation
V <sub>0H</sub> :	Zero var	iation of V <sub>o</sub> after ov	verloading with a	DC of tenfold the r	ated value		
V <sub>0t</sub> :	Long ter	m drift of $V_o$ after 1	00 temperature o	cycles in the range	-40 bis 85 °C.		
X:		ible measurement $00 \cdot \left  \frac{V_{out}(I_{PN})}{0,62} \right $		nspection at RT, d %	efined by		
X <sub>ges</sub> (I <sub>PN</sub> ):				by drifts over the term $X_{ges} = 100 \cdot \begin{vmatrix} X \\ - \end{pmatrix}$			asurement I <sub>PN</sub>
εL:	Linearity	fault defined by	$\varepsilon_{\rm L} = 100 \cdot \left  \frac{\rm I}{\rm I_{\rm I}} \right $	$\frac{P}{P_{N}} - \frac{V_{out}(I_{P}) - V}{V_{out}(I_{PN}) - V}$	$\left  \frac{V_{out}(0)}{V_{out}(0)} \right  $ %		
		,		1			
Hrsg.: MC	-PD	Bearb: DJ designer		MC-PM: Ga.			freig.: BEF

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