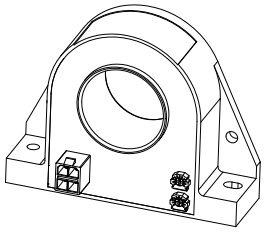
Current Transducer HTA 500-S/SP7

I_{PN} = 500 A

For the electronic measurement of currents: DC, AC, pulsed..., with galvanic separation between the primary circuit and the secondary circuit.



Electrical data

I_{PN}	Primary nominal current RMS		500	A
I_{PM}	Primary current, measuring range		±1000	A
U_{out}	Output voltage (Analog) @ $\pm I_{PN}$		±4	V
R_L	Load resistance	T_A = 0 ... +70 °C	> 1	kΩ
		T_A = −25 ... +85 °C	> 3	kΩ
U_C	Supply voltage (±5 %)		±15	V
I_C	Current consumption		< 25	mA
R_{INS}	Insulation resistance @ 500 V DC		> 500	MΩ

Accuracy - Dynamic performance data

ε	Error [1] @ I_{PN}, T_A = 25 °C, ±15 V	±1	%
ε_L	Linearity error [1] (0 ... $\pm I_{PN}$)	≤ ±0.5	%
U_{OE}	Electrical offset voltage, @ I_{PN} = 0, T_A = 25 °C	< ±10	mV
U_{OM}	Magnetic offset voltage @ I_{PN} = 0, after an overload of 3 x I_{PN}	< ±10	mV
TCU_{OE}	Temperature coefficient of U_{OE} @ T_A = −25 ... +85 °C	< ±1	mV/K
TCU_{out}	Temperature coefficient of U_{out} @ T_A = −25 ... +85 °C	< ±0.05	%/K
t_{D90}	Delay time to 90 % of the final output value for I_{PN} step [2]	< 3	µs
BW	Frequency bandwidth (small signal) [3]	DC ... 50	kHz

General data

T_A	Ambient operating temperature		−25 ... +85	°C
T_{Ast}	Ambient storage temperature		−25 ... +85	°C
m	Mass		230	g
	Standards	Safety	EN 50178(1994)	
		EMC	EN 50082-2(1992)	
			EN 50081-1(1992)	
	Deviation in output when tested to EN 61000-4-6		< 10	% of I_{PN}
	Deviation in output when tested to EN 61000-4-4		< 10	% of I_{PN}
	Deviation in output when tested to EN 61000-4-3		< 35	% of I_{PN}

Notes: [1] Excludes the electrical offset
[2] With a di/dt of 50 A/µs
[3] Refer to derating curves in the technical file to avoid excessive core heating at high frequency.

Features

- Open loop transducer using Hall effect
- Panel mounting-Horizontal or Vertical
- Insulating plastic case recognized according to UL 94-V0.

Special feature

- Output connector Amphenol G874D04K1531EU.

Advantages

- Excellent accuracy
- Very good linearity
- Low temperature drift
- Optimized response time
- Wide frequency bandwidth
- No insertion losses
- High immunity to external interference
- Current overload capability.

Applications

- AC variable speed drives and servo motor drives
- Static converters for DC motor drives
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Switched Mode Power Supplies (SMPS)
- Power supplies for welding applications.

Application domain

- Industrial.

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Current Transducer HTA 500-S/SP7

Insulation characteristics

U_d	RMS voltage for AC insulation test, 50 HZ, 1 min	4.0	kV
U_{Ni}	Impulse withstand voltage 1.2/50 µs	> 7.3	kV
		Min	
d_{Cp}	Creepage distance	7.2	mm
d_{Cl}	Clearance	7.2	mm
CTI	Comparative Tracking Index (group IIIa)	600	

Applications examples

According to **EN 50178 and IEC 61010-1** standards and following conditions:

- Over voltage category III
- Pollution degree PD2
- Non-uniform field

	EN 50178	IEC 61010-1
d_{Cp}, d_{Cl}, U_{Ni}	Rated insulation voltage	Nominal voltage
Single insulation	600 V	600 V
Reinforced insulation	300 V	300 V

Safety

This transducer must be used in limited-energy secondary circuits according to IEC 61010-1.

This transducer must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the manufacturer's operating instructions.

Caution, risk of electrical shock

When operating the transducer, certain parts of the module can carry hazardous voltage (eg. primary busbar, power supply).
Ignoring this warning can lead to injury and/or cause serious damage.
This transducer is a build-in device, whose conducting parts must be inaccessible after installation.
A protective housing or additional shield could be used.
Main supply must be able to be disconnected.

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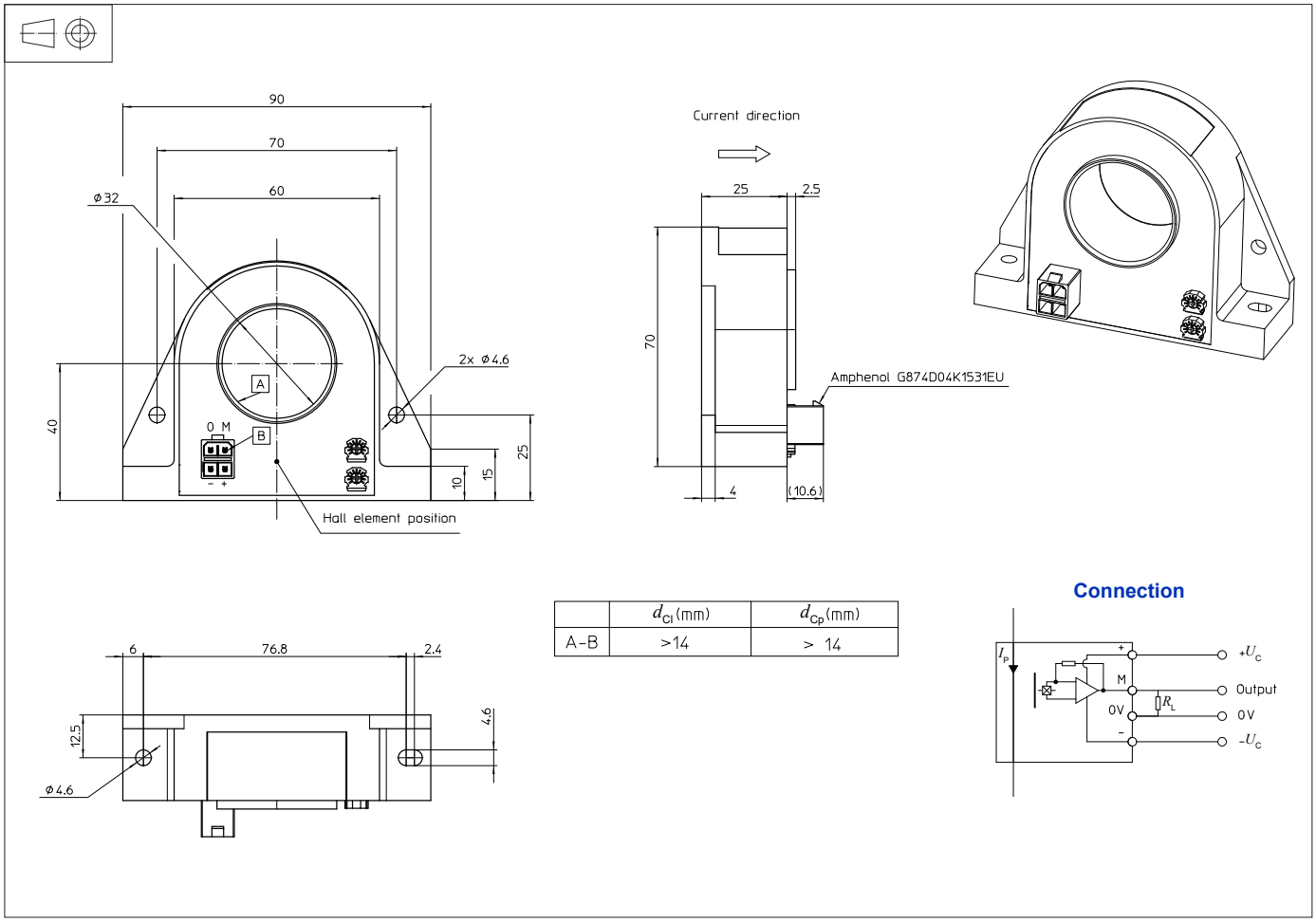
Dimensions HTA 500-S/SP7 (in mm.



	d_{Cl} (mm)	d_{Cp} (mm)
A-B	>14	> 14

Mechanical characteristics

• General tolerance	±0.5 mm
• Primary through-hole	⌀ 32 mm
• Connection of secondary	Amphenol G874D04K1531EU
• Transducer fastening Vertical position	1 hole and 1 notche ⌀ 4.6 mm 2 steel screws M4
Recommended fastening torque	0.75 N·m (±10 %)
• Transducer fasterning Horizontal position	2 holes ⌀ 4.6 mm 2 steel screws M4
Recommended fastening torque	0.75 N·m (±10 %)

Remarks

- U_{out} is positive when I_P flows in the direction of the arrow.
- Temperature of the primary conductor should not exceed 90 °C
- Installation of the transducer must be done unless otherwise specified on the datasheet, according to LEM Transducer Generic Mounting Rules. Please refer to LEM document N°ANE120504 available on our Web site: **https://www.lem.com/en/file/3137/download**.
- Dynamic performances (di/dt and delay time) are best with a single bar completely filling the primary hole.

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