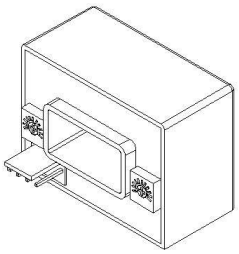
Current Transducer HAS 50 .. 600-S

I_{PN} = 50 .. 600 A

For the electronic measurement of currents: DC, AC, pulsed..., with galvanic isolation between the primary circuit (high power) and the secondary circuit (electronic circuit).



Electrical data

Type	Primary nominal current rms I_{PN} (A)	Primary current, measuring range [1] I_{PM} (A)	RoHS since date code
HAS 50-S	50	± 150	45217
HAS 100-S	100	± 300	45325
HAS 200-S	200	± 600	45166
HAS 300-S	300	± 900	45326
HAS 400-S	400	± 900	45333
HAS 500-S	500	± 900	45201
HAS 600-S	600	± 900	45260

V_C	Supply voltage (± 5 %) [1]		± 15	V
I_C	Current consumption		± 15	mA
R_{IS}	Isolation resistance @ 500 VDC		> 1000	MΩ
V_{OUT}	Output voltage (Analog) @ ± I_{PN}, R_L =10 kΩ, T_A = 25°C		± 4V ± 40	mV
R_{OUT}	Output internal resistance	approx	100	Ω
R_L	Load resistance [2]		> 1	kΩ

Accuracy - Dynamic performance data

X	Accuracy @ I_{PN} , T_A = 25°C (excluding offset)		< ± 1	%
ε_L	Linearity error [3] (0 .. ± I_{PN})		< ± 1	% of I_{PN}
V_{OE}	Electrical offset voltage, T_A = 25°C		< ± 20	mV
V_{OH}	Hysteresis offset voltage @ I_P =0, after an excursion of 1 x I_{PN}		< ± 20	mV
TCV_{OE}	Temperature coefficient of V_{OE}	HAS 50-S	< ± 2	mV/K
		HAS 100 .. 600-S	< ± 1	mV/K
TCV_{OUT}	Temperature coefficient of V_{OUT} (% of reading)		< ± 0.1	%/K
t_r	Response time to 90 % of I_{PN} step		< 3	µs
di/dt	di/dt accurately followed		> 50	A/µs
BW	Frequency bandwidth (- 3 dB) [4]		DC .. 50	kHz

General data

T_A	Ambient operating temperature		- 10 .. + 80	°C
T_S	Ambient storage temperature		- 25 .. + 80	°C
m	Mass	approx	60	g
	Standards [5]		EN 50178: 1997	

Notes:
1) Operating at ± 12 V ≤ V_C < ± 15 V will reduce the measuring range.
2) If the customer uses 1 kΩ of the load resistor, the primary current has to be limited as the nominal. To measure the full defined measuring range, the load resistor should be at minimum 10 kΩ.
3) Linearity data exclude the electrical offset.
4) Please refer to derating curves in the technical file to avoid excessive core heating at high frequency.
5) Please consult characterisation report for more technical details and application advice; To IEC 61000-4-3 (2006), Output is above to 15% of **V**sn between 200MHz and 700MHz.

Features

- Hall effect measuring principle
- Galvanic isolation between primary and secondary circuit
- Isolation voltage 3000 V
- Low power consumption
- Extended measuring range (3 x I_{PN})
- Insulated plastic case made of polycarbonate PBT recognized according to UL 94-V0.

Advantages

- Easy mounting
- Small size and space saving
- Only one design for wide current ratings range
- High immunity to external interference.

Applications

- AC variable speed 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.

Current Transducer HAS 50 .. 600-S

Isolation characteristics

V_d	Rms voltage for AC isolation test, 50 Hz, 1 min	3.6	kV
$\hat{V}_w$	Impulse withstand voltage 1.2/50 µs	> 6.6	kV
		Min	
dCp	Creepage distance	7.08	mm
dCl	Clearance distance	6.23	mm
CTI	Comparative Tracking Index (group IIIa)	275	

Applications examples

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

- Over voltage category OV 3
- Pollution degree PD2
- Non-uniform field

	EN 50178	IEC 61010-1
dCp, **dCl**, $\hat{V}_w$	Rated isolation voltage	Nominal voltage
Single isolation	600 V	600 V
Reinforced isolation	300 V	300 V

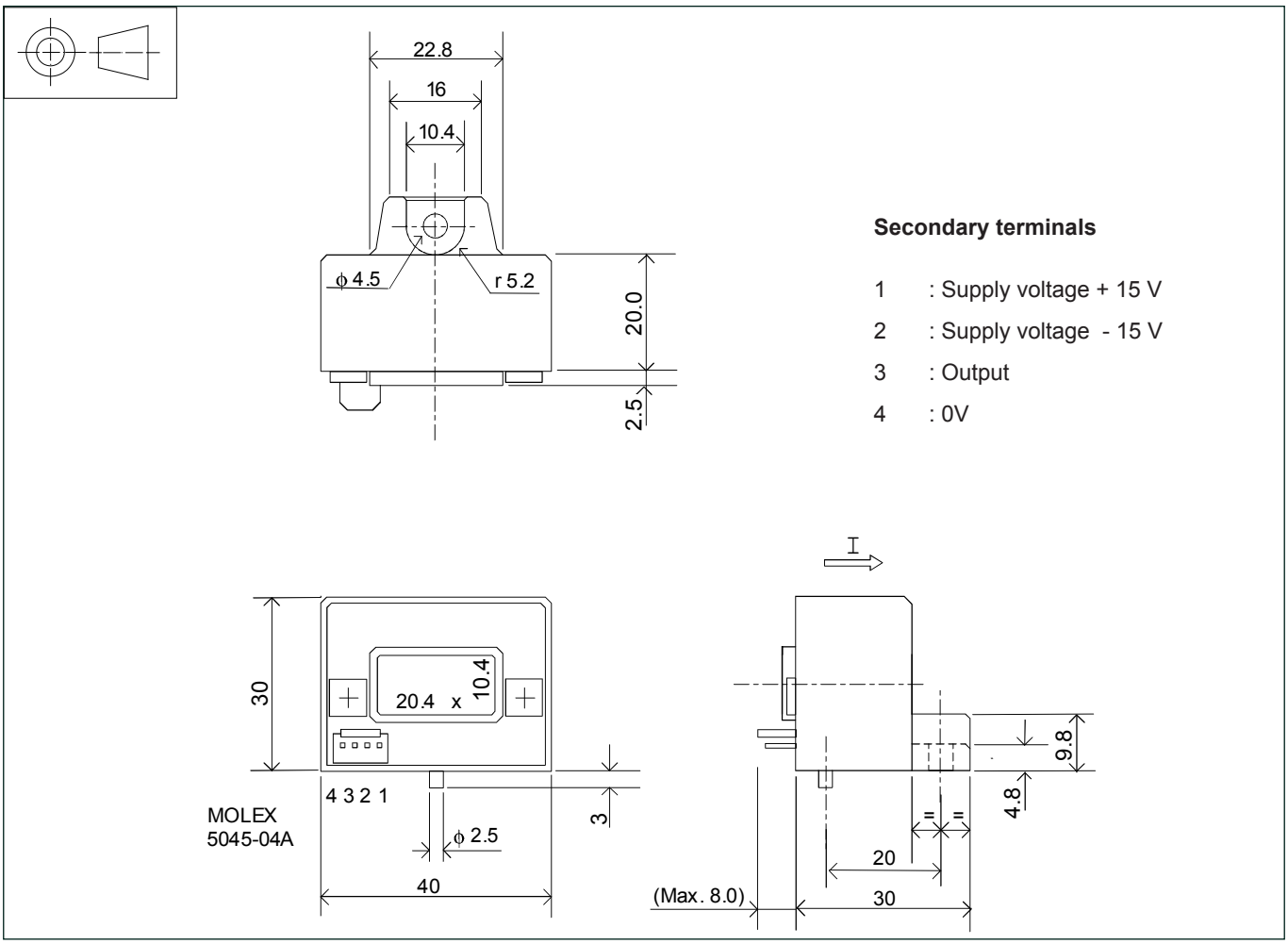
Safety

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.

Dimensions HAS 50 .. 600-S (in mm.)



Mechanical characteristic

- General tolerance ± 0.5 mm

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