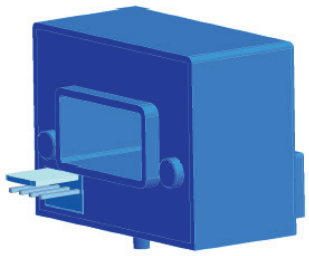
Current Transducer HASS 50..600-S

I_{PN} = 50 .. 600 A

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

All Data are given with a R_L = 10 kΩ



Electrical data

Primary nominal current rms I_{PN} (A)	Primary current measuring range I_{PM} (A)	Type
50	± 150	**HASS 50-S**
100	± 300	**HASS 100-S**
200	± 600	**HASS 200-S**
300	± 900	**HASS 300-S**
400	± 900	**HASS 400-S**
500	± 900	**HASS 500-S**
600	± 900	**HASS 600-S**

V_{OUT}	Analog Output voltage @ I_P		V_{OE} ± (0.625. I_P/ I_{PN})	V
G_{TH}	Theoretical sensitivity		0.625	V/ I_{PN}
V_{REF}	Reference voltage [1]	Ouput voltage	2.5 ± 0.025	V
		Ouput impedance	typ. 200	Ω
		Load impedance	≥ 200	Ω
R_L	Load resistance		≥ 2	kΩ
R_{OUT}	Output internal resistance		< 5	Ω
C_L	Capacitive loading (± 20 %)		= 4.7	nF
V_C	Supply voltage (± 5 %) [2]		5	V
I_C	Current consumption	@ V_C = 5V	19	mA

Accuracy - Dynamic performance data

X	Accuracy [3] @ I_{PN} , T_A = 25°C		≤ ± 1	%
ε_L	Linearity error	0 .. I_{PN}	≤ ± 0.5	%
		0 .. I_{PM}	≤ ± 1	%
TCV_{OE}	Temperature coefficient of V_{OE}	(+25.. +85°C)	≤ ± 0.4	mV/K
		(-40.. +25°C)	≤ ± 0.525	mV/K
TCV_{REF}	Temperature coefficient of V_{REF}	(+25.. +85°C)	≤ ± 0.01	%/K
		(-40.. +25°C)	≤ ± 0.015	%/K
TCV_{OE}/V_{REF}	Temperature coefficient of V_{OE}/V_{REF}		≤ ± 0.15	mV/K
TCG	Temperature coefficient of **G**		≤ ±0.05% of reading//K	
V_{OE}	Electrical offset voltage @ I_P = 0, T_A = 25°C		V_{REF} ± 0.025	V
V_{OM}	Magnetic offset voltage @ I_P = 0 after an overload of I_{PM}		< ± 0.4	%
t_{ra}	Reaction time to 10 % of I_{PN} step		< 3	µs
t_r	Response time to 90 % of I_{PN} step		< 5	µs
di/dt	di/dt accurately followed		> 100	A/µs
V_{no}	Output voltage noise	(DC .. 10 kHz)	< 20	mVpp
		(DC .. 1 MHz)	< 40	mVpp
BW	Frequency bandwidth (- 3 dB) [4]		DC .. 50 kHz	8: 1997

Notes:
[1] It is possible to overdrive V_{REF} with an external reference voltage between 1.5V - 2.8V providing its ability to sink or source approximately 5 mA.
[2] Maximum supply voltage (not operating) < 6.5 V
[3] Excluding Offset and Magnetic offset voltage
[4] Small signal only to avoid excessive heatings of the magnetic core.

Features

- Hall effect measuring principle
- Galvanic isolation between primary and secondary circuit
- Isolation test voltage 3300 V
- Low power consumption
- Single power supply + 5 V
- Fixed offset & Gain
- Isolated plastic case recognized according to UL 94-V0.

Advantages

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

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.

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General data

T_A	Ambient operating temperature	- 40 .. + 85	°C
T_S	Ambient storage temperature	- 40 .. + 85	°C
m	Mass	55	g
	Standards	EN 50178:1997	

Isolation characteristics

V_b Rated isolation voltage rms with following conditions
-Over voltage category Ⅲ
-Pollution degree 2
-Heterogeneous field

	EN50178	IEC61010-1
Single insulation	300V	300V
Reinforced insulation	150V	150V

V_d	Rms voltage for AC isolation test, 50 Hz, 1 min	3.3	kV
V_e	Partial discharge extinction voltage rms @ 10 pC	> 1	kV
V_w	Impulse withstand voltage 1.2/50 µs	6	kV
dCp	Creepage distance	> 5.5	mm
dCl	Clearance distance	> 5.5	mm
CTI	Comparative Tracking Index (Group I)	> 600	V

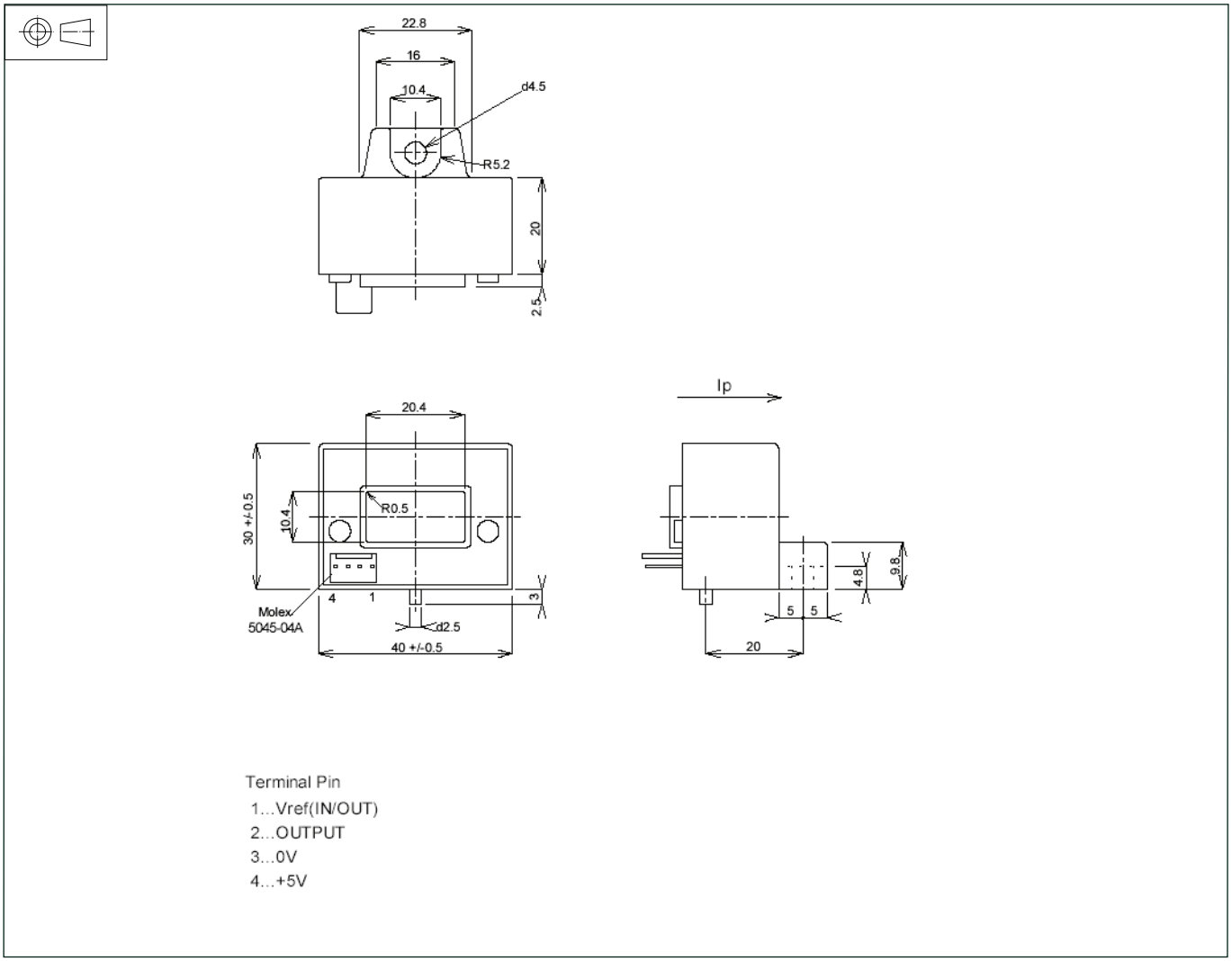
Safety

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.

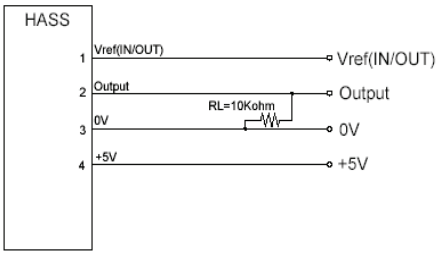
Caution, risk of electrical shock

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.

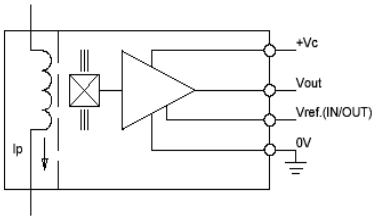
Dimensions HASS 50..600-S (in mm)



Required Connection Circuit



Operation Principle



Mechanical characteristics

- General tolerance ± 0.5 mm
- Aperture for primary conductor 20.4x10.4x0.5mm
- Transducer fastening M4
- Recommended fastening torque <1.5N•m
- Connection of secondary Molex 5045-04A

Remarks

- Arrow indicates positive current flow direction.
- Temperature of the primary conductor should not exceed 100°C.