

Measurement

- Offset-free and low-noise 16 bit data acquisition system ISA-ASIC
- Internal sample rate 3500 Hz

Communication

- Standard RS232- or RS485 interface

Advantages

- Direct measurement on the bus bar
- Full electric isolated (acc. to EN 61010-1:2001)
- Excellent accuracy and linearity
- Compact design and high versatility
- Lower power loss than DIN shunt

**Applications**

- Stationary battery buffered power supplies
- Current and voltage monitoring in control units
- Ah meter electroplating plants, wind power stations, motion control etc.

Measurement Functions

- Current/voltage: DC rate, effective value AC rate, effective value AC+DC, oscilloscope function
- Frequency
- Apparent power, real power, reactive power
- Apparent energy, real energy, reactive energy
- Charge

Absolute maximum ratings		
	RM01 ($R_{Shunt} 12 \mu\Omega$)	RM03 ($R_{Shunt} 30 \mu\Omega$)
Pulse current I_{eff} AC/DC (1 sec)	$\pm 2,000$ A	± 600 A
Measurement voltage U_{eff} AC/DC	± 519 VAC phase to phase 735 VDC ¹	
Overrange limit U_{max} AC/DC	900 VAC/DC ¹	
Power supply	$21 \dots 26$ VDC, 50 mA	

Recommended operating conditions (nominal ratings)		
	RM01 ($R_{Shunt} 12 \mu\Omega$)	RM03 ($R_{Shunt} 30 \mu\Omega$)
Continuous current I_{eff} AC/DC	$\pm 1,000$ A	± 300 A
Measurement voltage U_{eff} AC/DC	± 300 VAC/DC phase to zero ± 400 VAC phase to phase 565 VDC ¹	
Operating temperature range	$-40 \dots +80$ °C	
Power supply ²	$23 \dots 25$ VDC, $28 \dots 44$ mA	

¹ reference potential ≤ 300 V to zero

² current consumption over operating temperature range

IHC-A/B -RM01/03	ISABELLENHÜTTE Heusler GmbH & Co. KG	Dillenburg, 23.09.2009 he/jh/bs
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Specifications ¹		
	RM01 ($R_{Shunt} 12 \mu\Omega$)	RM03 ($R_{Shunt} 30 \mu\Omega$)
Accuracy DC current measurement ²	0.3 % ± 300 mA	0.1 % ± 100 mA
Accuracy AC current measurement ²	1.0%	0.3 %
Resolution current measurement ³	0.003...0.090 A	0.001...0.030 A
Accuracy DC voltage measurement ²	0.1 % ± 100 mV	
Accuracy AC voltage measurement ²	0.3 %	
Resolution voltage measurement ³	0.001...0.020 V	
Linearity error	< 100 ppm	
Frequency range AC measurement	40 ... 70 Hz	
Internal heat resistance R_{th}	< 0.1 K/W	

General informations	
Isolated Interface	RS232, RS485
Data transmission rate ⁴	0.500...4200 msec
Connector	current: massive copper plate voltage: pluggable screw terminal blocks
Protection type ⁵ _{housing}	IP 67
CE-Identification: EMC low voltage directive	2004/108/EG 2006/95/EG
EAR-Conformity	WEEE reg. no. DE 54422632
RoHs-Conformity	yes
UL 94 classification	V1
Dimensions	105 x 77 x 34 mm
Mass	0.330 kg (depending on type)

¹ specifications based on nominal ratings

² over operating temperature range

³ depends on integration time

⁴ depends on measurement mode and baud rate

⁵ to ensure this protection type of the installed IHC-A/B-RM01/03, all active and dangerous connectors have to be covered

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Isolation characteristics	
Testing foundation	EN 61010-1:2001 (Safety regulations for electrical measurement devices, control units and laboratory equipment)
Operating voltage	max. 300 V _{eff} AC/DC (rated voltage phase to zero)
Measurement category	CAT III, double insulation
Insulation test voltage	3536 VAC _{eff}
Humidity _{relative}	max. 80 %
Contamination class	3
Operational altitude	max. 2000 m

EMC – electromagnetic compatibility			
Immunity to interference in acc. with EN 61326-1:2006, industrial, class A			
Electrostatic discharge (ESD)	EN 61000-4-2	Criterion B ¹	4 kV (contact discharge) 8 kV (discharge in air)
Electromagnetic HF-field	EN 61000-4-3	Criterion A ²	80 MHz – 1 GHz, 10 V/m 1,4 GHz – 2 GHz, 3 V/m 2 GHz – 2,7 GHz, 1 V/m
Fast transients (BURST)	EN 61000-4-4	Criterion B ¹	2 kV
Voltage capacities (SURGE)	EN 61000-4-5	Criterion B ¹	1 kV (DC supply)
Cable-conducted disturbance	EN 61000-4-6	Criterion A ²	150 kHz – 80 MHz, 3 V
Noise emission in acc. with EN 61326-1:2006, industrial, class A			
HF-radiation			40/47 db _{μV/m}
Cable-conducted HF			150 kHz – 500 kHz (79 db _{μV}) 500 kHz – 30 MHz (73 db _{μV})

Remark:

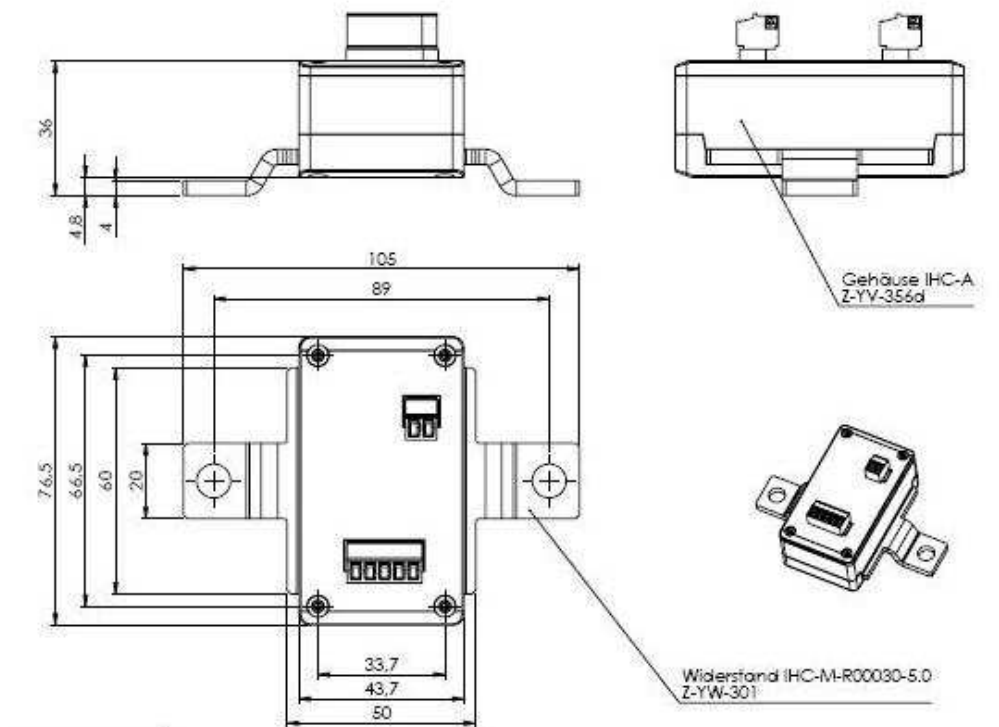
The above mentioned data about isolation and EMC do not apply to all IHC-X-RMxx of the first series (the hardware version 1 is identified in the item number e. g. IHC-A-1.1-030-023-115), because the isolation- and EMC- tests were not completed during their despatch. Therefore, in very special applications, measurement uncertainties or malfunctions can occur.

The certification of IHC will take place expected in September 2009.

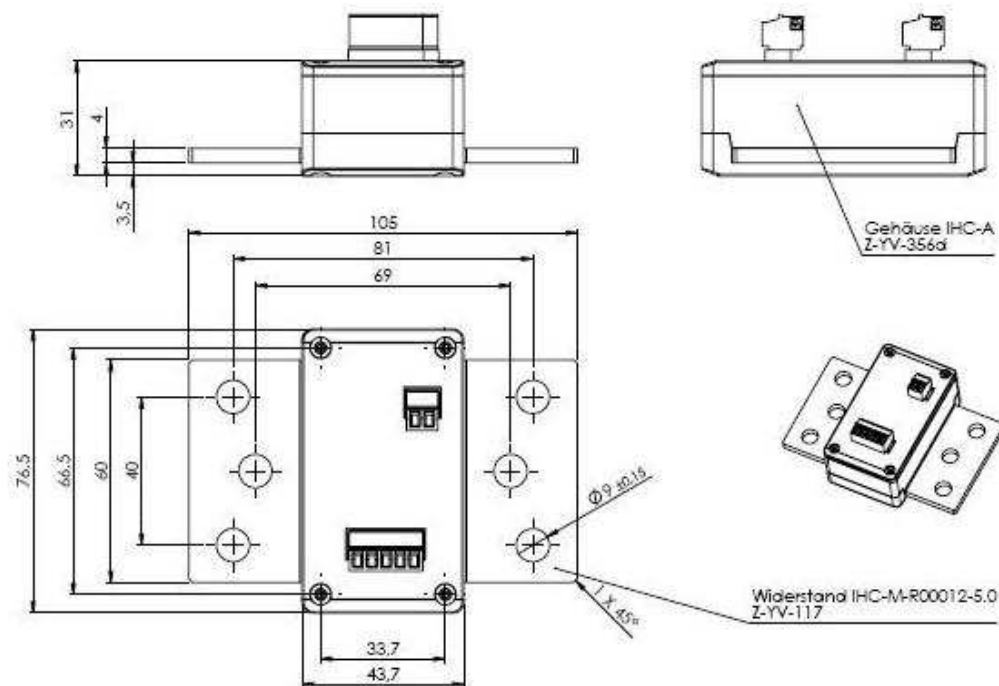
¹ Criterion B: Temporary impairment of operational behaviour that is corrected by the device itself.

² Criterion A: Normal operating behaviour within the defined limits.

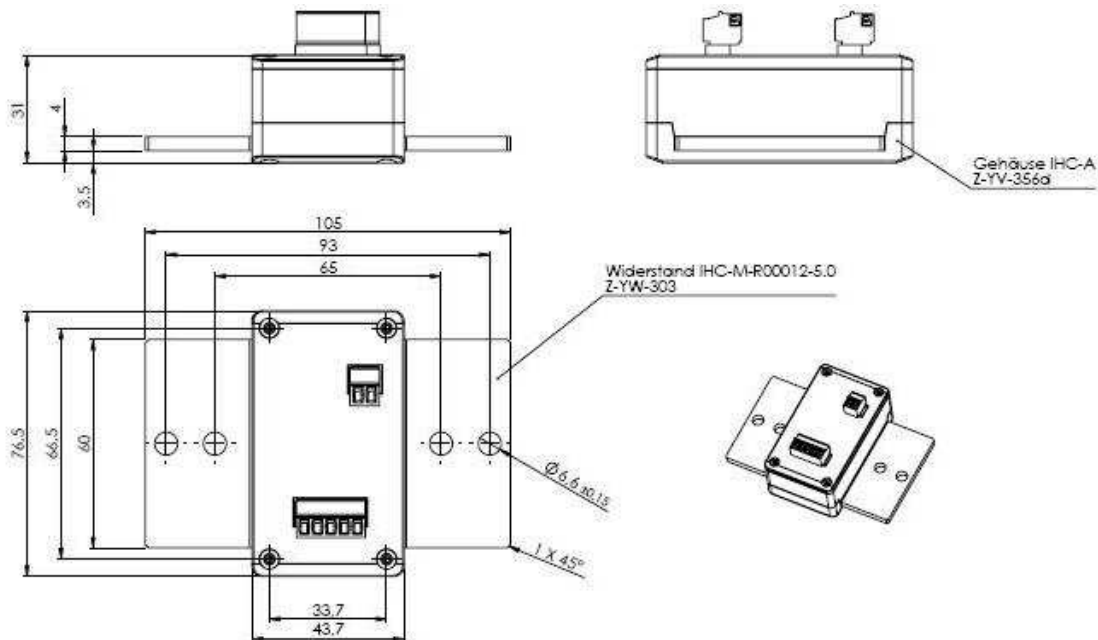
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drawing-no. Z-YW-301



drawing-no. Z-YV-117



drawing-no. Z-YW-303

Remark:

All dimensions in mm.

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