

## Measurement

- Offset-free and low-noise 16 bit data acquisition system ISA-ASIC
- Internal sample rate 3,500 Hz

## Communication

- Standard RS232- or RS485 interface

## Advantages

- Direct measurement on the bus bar
- Full electric isolated (acc. with 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

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	$\pm 300$ A
Measurement voltage $U_{eff}$ AC/DC for safety reasons only $\leq 250$ V to earth	250 V AC phase to earth 500 V AC phase to phase $\pm 500$ V DC	
Operating temperature range	-20...+75 °C	
Power supply	24 V DC, 40 mA	

Extended operating conditions		
	RM01 ( $R_{Shunt} 12 \mu\Omega$ )	RM03 ( $R_{Shunt} 30 \mu\Omega$ )
Pulse current $I_{eff}$ AC/DC $t_{pulse} \leq 1$ sec, duty cycle $\leq 0.5$ %	$\pm 2,000$ A	$\pm 600$ A
Power supply	21...26 V DC, 50 mA	

Absolute maximum ratings		
Pulse voltage $U_{peak}$ $t_{pulse} \leq 1$ sec, duty cycle $\leq 10$ %	$\pm 1,000$ V	

Specifications (based on nominal ratings)		
	RM01 ( $R_{Shunt} 12 \mu\Omega$ )	RM03 ( $R_{Shunt} 30 \mu\Omega$ )
Accuracy <sup>1</sup> DC current measurement	$\pm(0.3 \% \text{ of rdg} + 0.01 \% \text{ of rng})$	$\pm(0.1 \% \text{ of rdg} + 0.01 \% \text{ of rng})$
Accuracy <sup>1</sup> AC current measurement	$\pm(1 \% \text{ of rdg} + 0.01 \% \text{ of rng})$	$\pm(0.3 \% \text{ of rdg} + 0.01 \% \text{ of rng})$
Resolution current measurement <sup>2</sup>	0.003...0.090 A	0.001...0.030 A
Accuracy <sup>1</sup> DC voltage measurement	$\pm(0.1 \% \text{ of rdg} + 0.005 \% \text{ of rng})$	
Accuracy <sup>1</sup> AC voltage measurement	$\pm(0.3 \% \text{ of rdg} + 0.005 \% \text{ of rng})$	
Resolution voltage measurement <sup>2</sup>	0.001...0.030 V	
Linearity error	< 100 ppm	

General informations		
Isolated Interface	RS232 RS485	IHC-A IHC-B
Data transmission rate <sup>3</sup>	0.500...4,200 msec	
Integration time	AC measurement DC measurement	100 msec 5...10,000 msec
Frequency range AC measurement	30...70 Hz	
Internal heat resistance $R_{th}$	< 0.5 K/W	
Connector	current voltage	massive copper plate pluggable screw terminal blocks
Storing temperature range	-30...+85 °C	
Protection type <sub>housing</sub> <sup>4</sup>	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	max. 0.330 kg (depending on type)	

<sup>1</sup> Accuracy:  $\pm(\% \text{ of reading} + \% \text{ of range})$

<sup>2</sup> depends on integration time

<sup>3</sup> depends on measurement mode and baud rate

<sup>4</sup> to ensure this protection type of the installed IHC, all active and dangerous connectors have to be covered

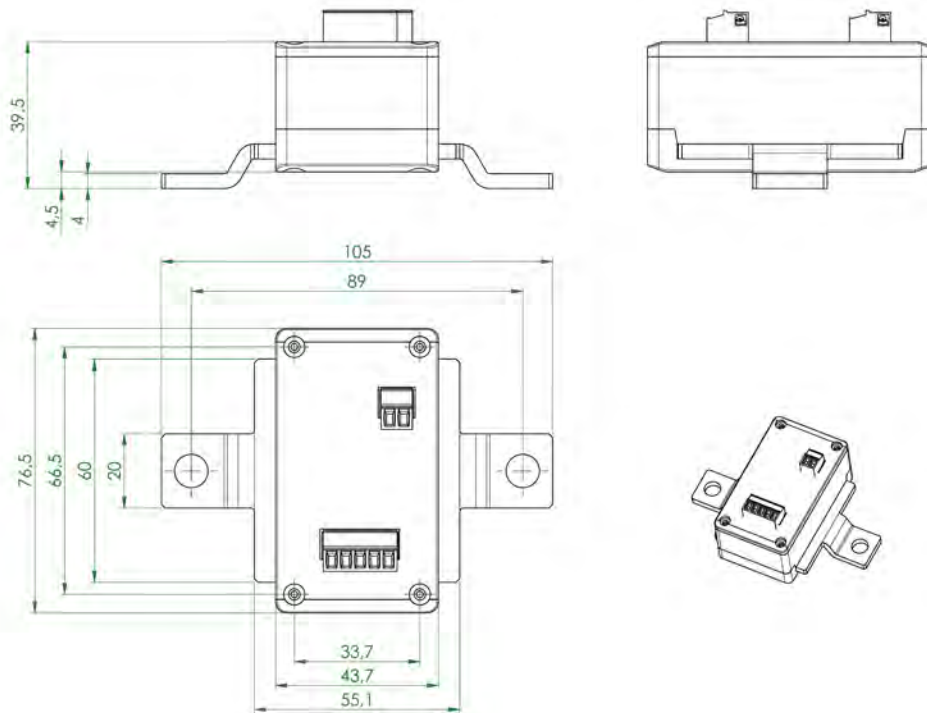
IHC-A/B-RM01/03	ISABELLENHÜTTE Heusler GmbH & Co. KG	Dillenburg, 24.06.2010 he/jh/bs
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Isolation characteristics	
<b>Safety standard</b>	EN 61010-1:2001 (Safety regulations for electrical measurement devices, control units and laboratory equipment)
<b>Nominal AC / DC line-to-neutral voltage mains supply</b>	max. 250 V <sub>eff</sub> AC/DC (rated voltage between interface and hazardous live parts)
<b>Measurement category</b>	CAT III, double insulation
<b>Insulation test voltage</b>	3,536 VAC <sub>eff</sub>
<b>Humidity<sub>relative</sub></b>	max. 80 %
<b>Pollution degree</b>	3
<b>Operational altitude</b>	max. 2,000 m

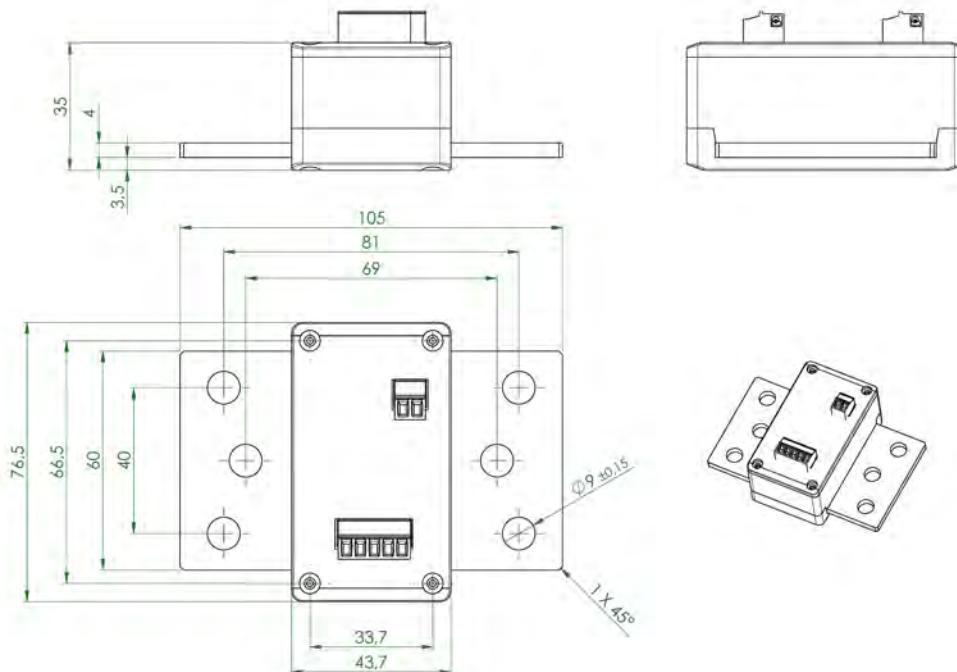
EMC – electromagnetic compatibility			
Immunity to interference in acc. with EN 61326-1:2006, industrial applications			
<b>Electrostatic discharge (ESD)</b>	EN 61000-4-2	Criterion B <sup>1</sup>	4 kV (contact discharge) 8 kV (discharge in air)
<b>Electromagnetic HF-field</b>	EN 61000-4-3	Criterion A <sup>2</sup>	80 MHz – 1 GHz, 10 V/m 1.4 GHz – 2 GHz, 3 V/m 2 GHz – 2.7 GHz, 1 V/m
<b>Fast transients (BURST)</b>	EN 61000-4-4	Criterion B <sup>1</sup>	2 kV
<b>Voltage capacities (SURGE)</b>	EN 61000-4-5	Criterion B <sup>1</sup>	1 kV (DC supply)
<b>Cable-conducted disturbance</b>	EN 61000-4-6	Criterion A <sup>2</sup>	150 kHz – 80 MHz, 3 V
<b>Power frequency magnetic field</b>	EN 61000-4-8	Criterion A <sup>2</sup>	30 A/m
Noise emission in acc. with EN 61326-1:2006, industrial applications, class A			
<b>HF-radiation</b>	EN 55011		40/47 dB <sub>μV/m</sub>
<b>Cable-conducted HF</b>	EN 55011		150 kHz – 500 kHz (79 dB <sub>μV</sub> ) 500 kHz – 30 MHz (73 dB <sub>μV</sub> )

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

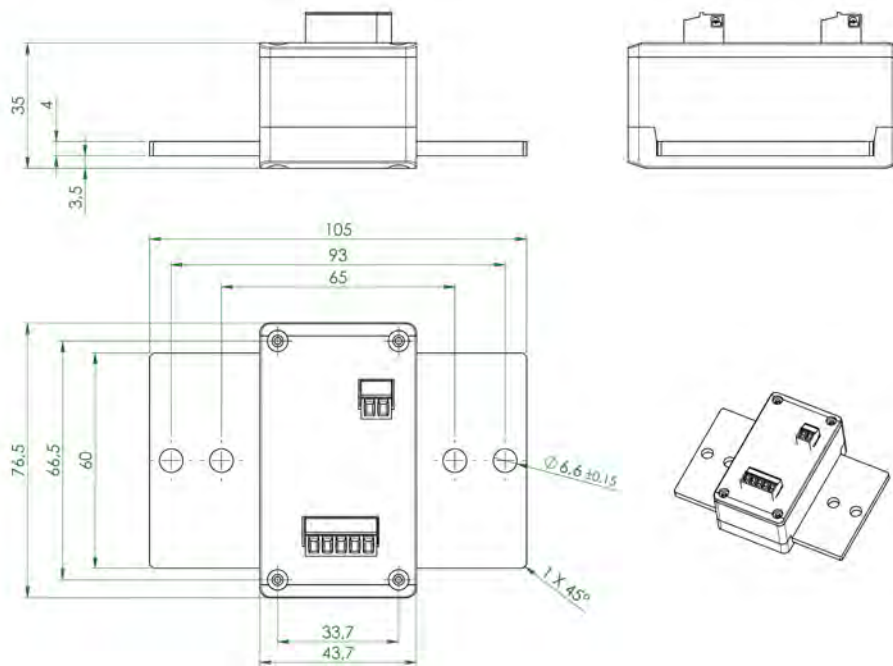
<sup>2</sup> Criterion A: Normal operating behaviour within the defined limits.



drawing IHC-A/B-RM03-1.9



drawing IHC-A/B-RM01-3.9



drawing IHC-A/-B-RM01-2.6

Remark:

All dimensions in mm.