HC01

UTILITY MODEL

High current block up to 600 A for contacting prismatic or pouch cells

Centers (mm/mil)	35,0 / 1378
Current (Power)	600 A
Current (Sense)	15,0 A
R typ (circular/internal)	<0,5 mOhm
Temperature	-45°C...+200°C (H)

Spring Force (cN ±20%)

Version	Preload	Nominal
Sensor	70	200
Sense	50	300
Power	70	24500

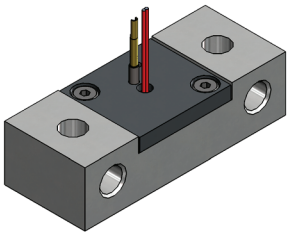
Travel (mm)

Version	Nominal	Maximum
Sensor	3,0	4,0
Sense	4,4	5,5
Power	4,0	5,0
Gewinde (M)		10,0

Materials and Plating

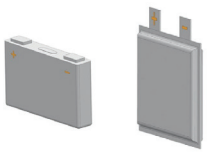
Plunger	BeCu, gold plated
Spring	Stainless steel, gold plated
Holder	Aluminum, silver plated

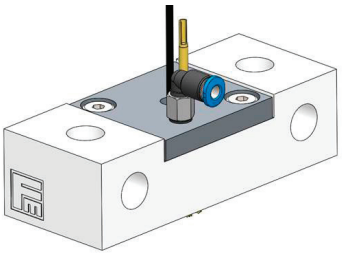
HC01D06245GTS1



The high current block can be fixed with an M8 and lock nut or screwed directly to M10 in the thread. The additional M3 hole can always be used for cooling, regardless of the design. A pneumatic connection piece 2102959 is provided for this purpose (not included in the scope of delivery).
Recommended cable cross-section: 120 mm² +50 mm².

Suitable for:





Order Code	Tip Style	Cooling	Sense	Temperature Sensor	Mounting with
HC01A06245G		x	-	-	M8 / M10
HC01B06245G		x	F732 KF07	-	M8 / M10
HC01C06245GTS1		x	-	PT100	M8 / M10
HC01C06245GTS2		x	-	PT1000	M8 / M10
HC01C06245GTS3		x	-	NTC	M8 / M10
HC01C06245GTS4		x	-	Typ-K	M8 / M10
HC01D06245GTS1		x	F732 KF07	PT100	M8 / M10
HC01D06245GTS2		x	F732 KF07	PT1000	M8 / M10
HC01D06245GTS3		x	F732 KF07	NTC	M8 / M10
HC01D06245GTS4		x	F732 KF07	Typ-K	M8 / M10

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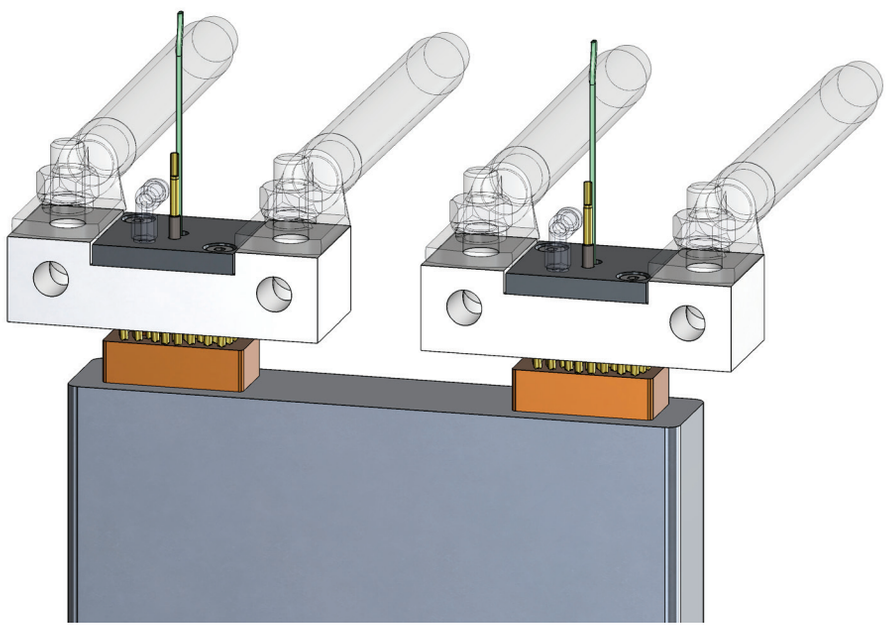
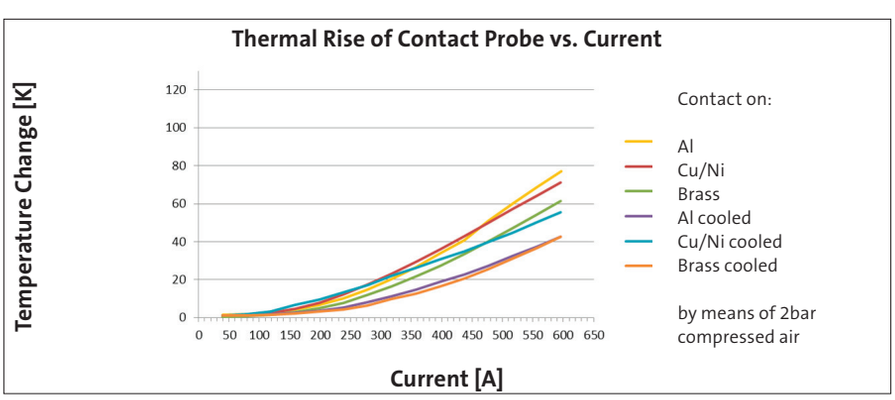


Function:
Typical application of the contact block is the contacting of prismatic or pouch cells, but also various other high current applications.

Advantages:

- Continuous current carrying capacity up to 600 A
- Individually spring-loaded plungers with proven scratch contact for current path for optimum contact on typical cell arresters of LIB cells
- Equipped with spring-loaded sense contact probe for voltage path of four-pole measurement
- Additional sense contact probe can be retrofitted via contact insert with encoder interface
- Integrated spring-loaded temperature sensor (4 types) directly at the contact point
- Low heating of less than 50K at full load
- Connection for additional cooling possibility of contact point integrated
- Universal design of electrical connections and mechanical mounting (M8/M10 vertical and horizontal)



VERIFICATION PROJECT AT THE ISEA INSTITUTE AT RWTH AACHEN

Target: The testing and comparison of various designs of FEINMETALL high-current blocks under application-oriented conditions in cell production, in particular during the formation process.

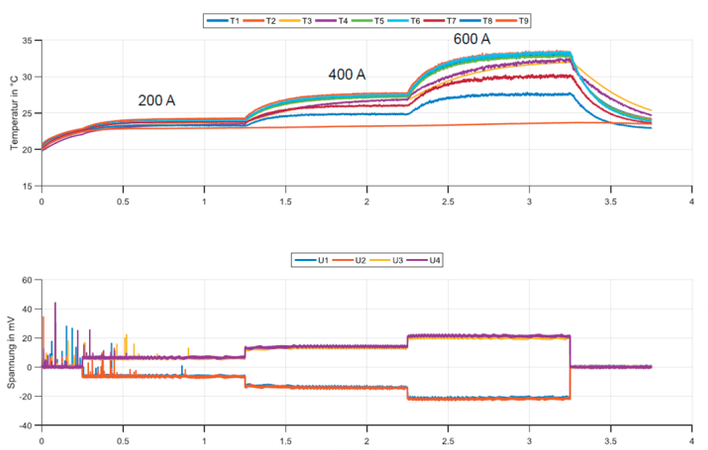
Test setup: Contacting of 2 blocks (PLUS and MINUS) to mating an uncoated copper contact

Diagram above: Typical temperature curve over 1h continuous current. Heating due to power loss at various measuring points on the high-current block HC01 as well as on its terminals and on the mating contact.

Diagram below: Voltage drop via contacting PLUS- and MINUS-pole.

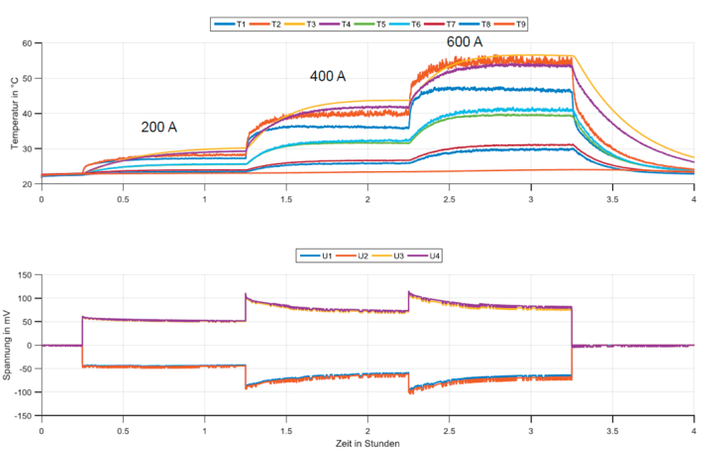
Result:
- Same time constants of the system over all current stages.
- Constant contact resistance across the current stages.
- Constant contact resistance over time.
- No fritting effect can be seen from the measured values, which proves a stable, low-impedance contacting behaviour.
- Only 12 Watt power dissipation at 600A.

Diagram 1 - Design with SCRATCH principle



Result:
- Higher temperatures compared to scratch blocks.
- More scatter between temperature measuring points and between PLUS and MINUS contacts.
- Higher voltage drop or contact resistance.
- Pronounced fritting effect present, evident at the voltage peaks during switching.
- Approximately 4 times the power loss at 600A compared to HC01.

Diagram 2 - Design without SCRATCH principle



Extract from a long-term test of 2 blocks HC01 on mating contacts PLUS= Aluminum, MINUS= Nickel-plated copper.

Result:
The contact resistance at the MINUS pole is significantly higher than at the PLUS pole, mainly due to the different surfaces of the mating contact. The contact quality at the MINUS pole depends on the plunger stroke. In addition to the contact force, this is also related to the scratch effect.

Diagram 3 - Typical temperature curve over several 100 cycles.