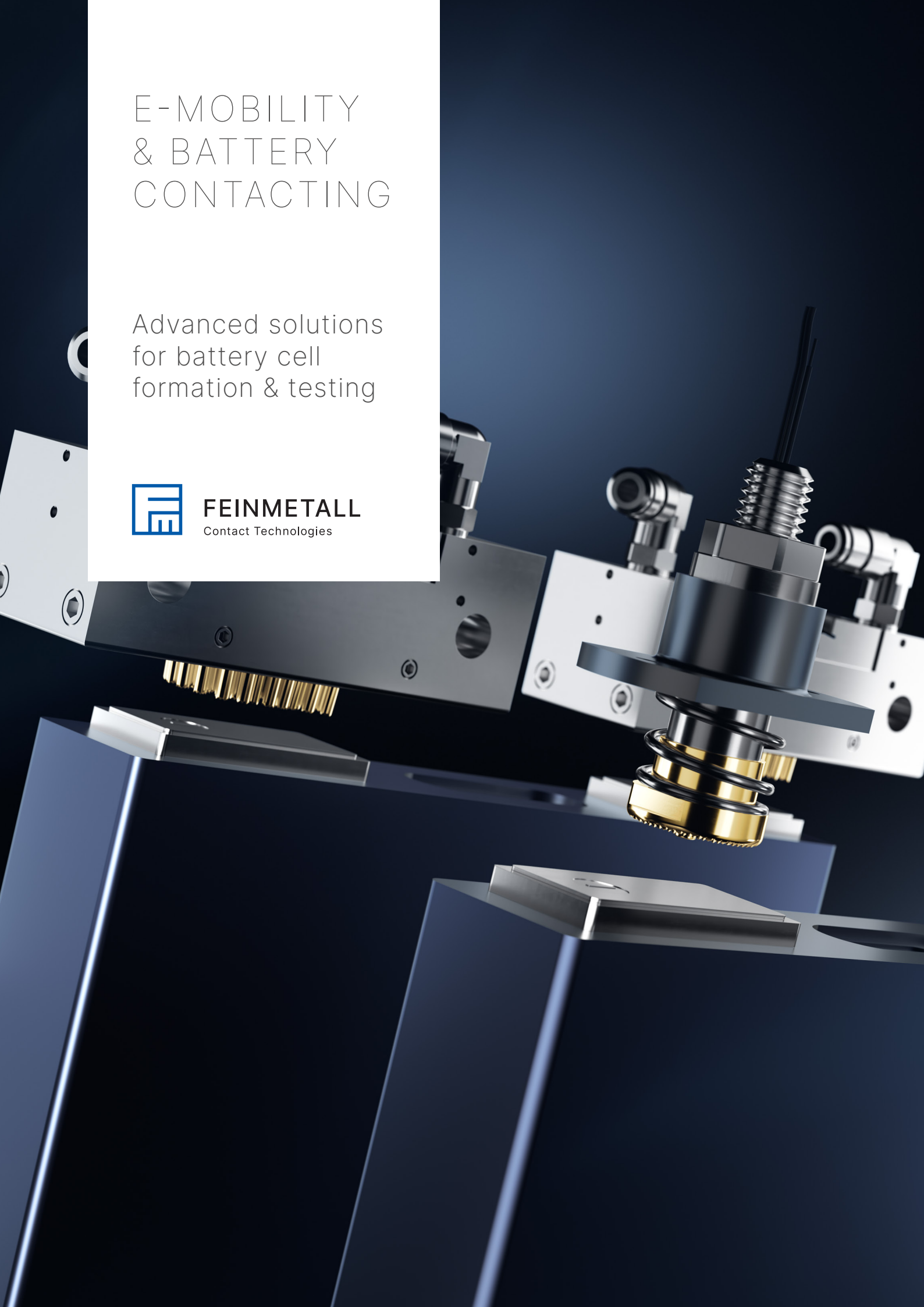


E-MOBILITY & BATTERY CONTACTING

Advanced solutions
for battery cell
formation & testing



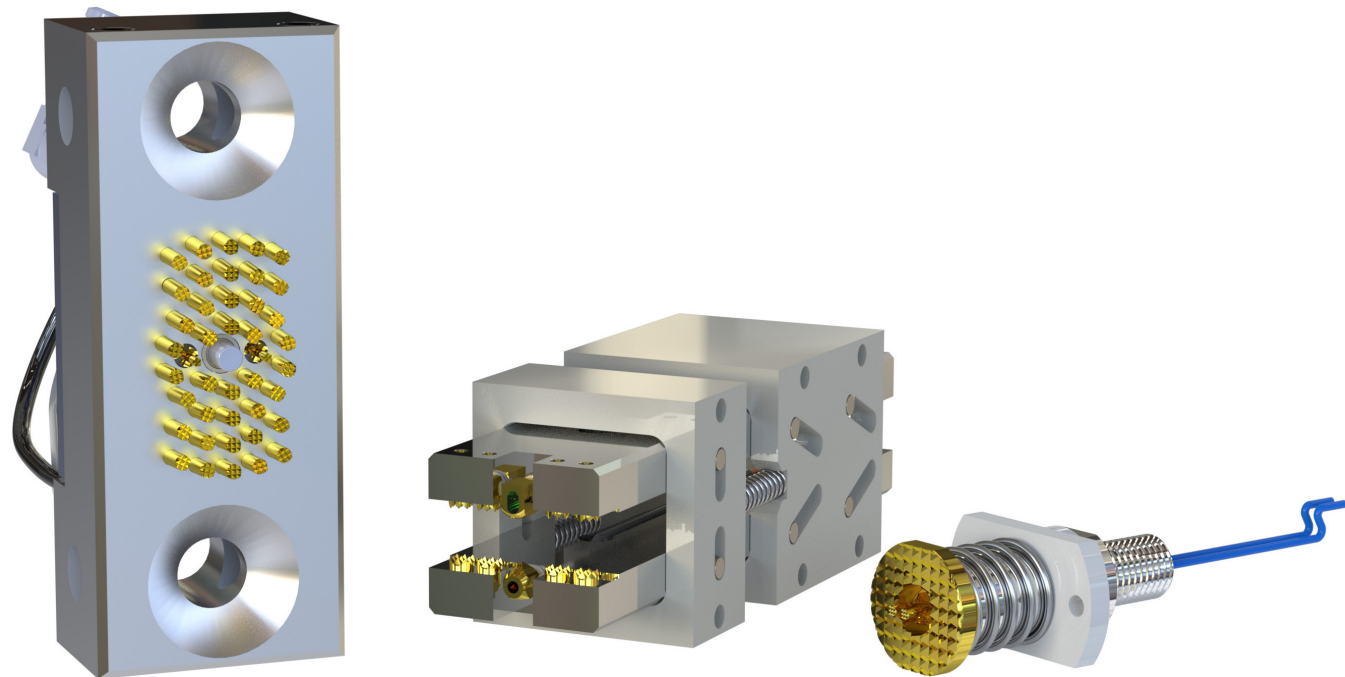
FEINMETALL
Contact Technologies



BATTERY CELL TEST AND FORMATION

Reliable and high-quality battery cell production requires complex high performance contacting during several steps of the production. The quality of battery cells is reflected in a wide variety of parameters such as electrochemical stability, capacity, performance or service life. End-of-line quality assessment of battery cells in the form of quality determination and evaluation in cell production helps to identify optimization potential at an early stage, minimize reject rates and thus reduce production costs. We help you with the best contact solutions for your battery production.

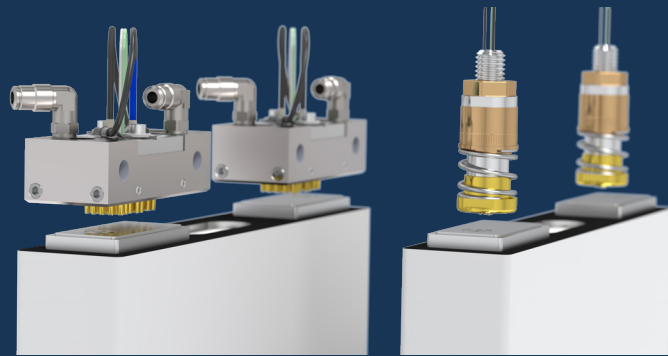
In development and test of battery cells, the challenges for contacting technology are enormous. On the one hand, the charging and discharging processes require very high currents, often over a long period of time. On the other hand, the contacts must be adapted to the geometry of the battery cells to allow many battery cells to be contacted next to each other. In addition, voltage measurement must usually be carried out in parallel with the charging or discharging current. Temperature monitoring directly at the contact point is also often required. These challenges demand innovative solutions.



	Type	Current	Round Cell		Pouch Cell		Prismatic Cell		Scratch	Notes
			Formation	Test	Formation	Test	Formation	Test		
	HC01	600				x		x	x	Block
	HC02	100		x		x		x	x	Round block
	HC06	50		x		x		x	x	Round block
	HC04	300			x	x	x	x		Coaxial
	HC04	300			x	x	x	x		Probe Formation
	HC16	150			x		x			Probe Formation
	HC14	150			x	x				Pliers
	HC15	250			Connector Test					Pliers
	HC14	200			x	x				Pliers
	F349...C	100			x	x	x	x		Coaxial
	F348...C	100			x	x	x	x		Screwable
	F733...C	25	x		x		x			4-point crown or serrated Head
	F566...C	35	x		x		x			Plugable
	F762...C	40	x		x		x		x	with serrated Head
	F735...C	50	x		x		x			Screwable
	HC20	400			Inverter Test					Round block
	HC07	50	x		Contacting Screws					Round block

TEST

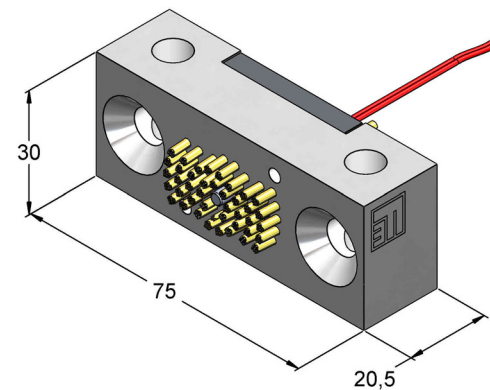
Prismatic Cell Contacting



HC01

Contact Block for 600A

The scratch contact block HC01 can be equipped with sense contacts and/or temperature sensor depending on customer requirements.



Electrical specifications	
Current (Power)	600 A
Current (Sense)	15 A
R_{typ}	<0,5 mOhm
Temperature	-40°C...+200°C

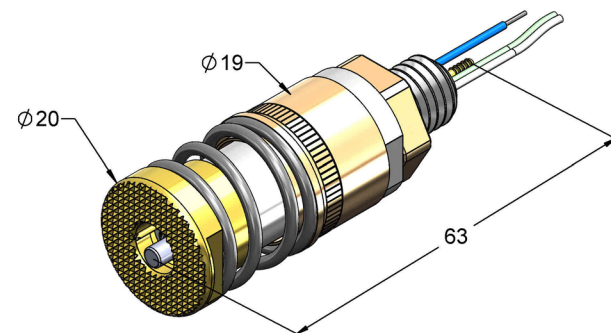
Also suitable for:



HC04

Coaxial Contact for 300A

The coaxial high current probe HC04 has a modular design and can also be supplied with two sense pins, with temperature sensor or compressed air cooling.



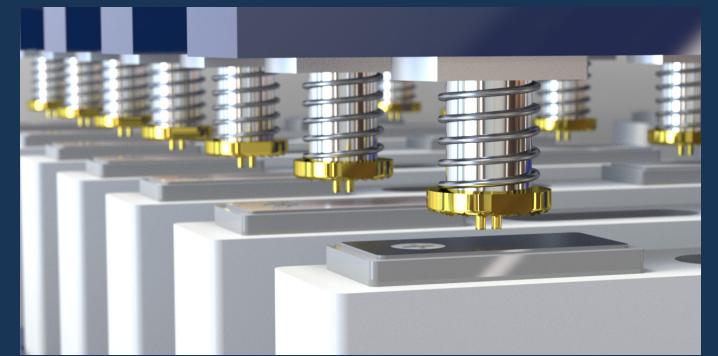
Electrical specifications	
Current (Power)	300 A
Current (Sense)	2,0 A
R_{typ}	<1 mOhm
Temperature	-40°C...+200°C

Also suitable for:



FORMATION

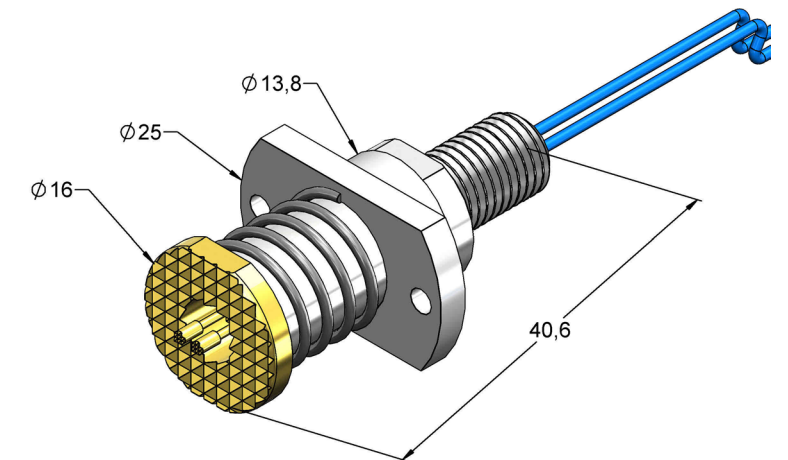
Prismatic Cell Contacting



HC16

Coaxial Contact for 150A

HC16 was especially developed for the formation process of prismatic cells.



Electrical specifications	
Current (Power)	150 A
Current (Sense)	5,0 A
R_{typ}	<1 mOhm
Temperature	-40°C...+200°C

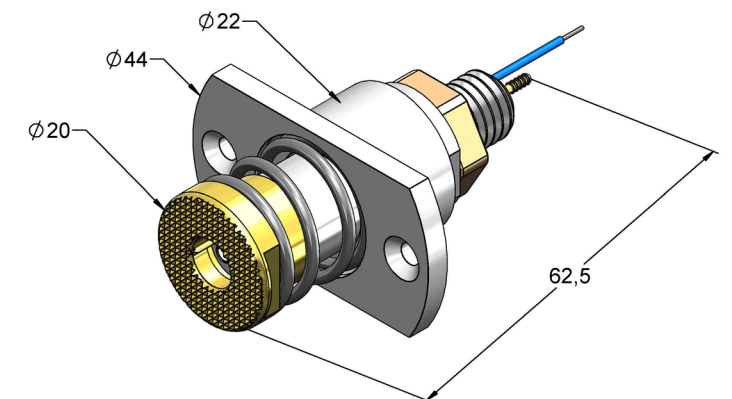
Also suitable for:



HC04

Coaxial Contact for 300A

Corresponds to the HC04 with flange. For formation currents up to 300A continuous current.



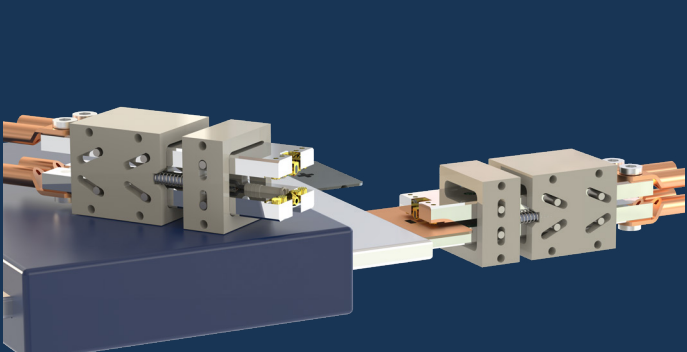
Electrical specifications	
Current (Power)	300 A
Current (Sense)	2,0 A
R_{typ}	<1 mOhm
Temperature	-40°C...+200°C

Also suitable for:



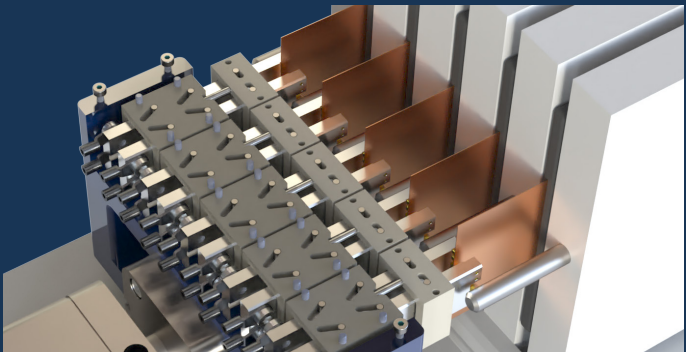
TEST

Pouch Cell Contacting



FORMATION

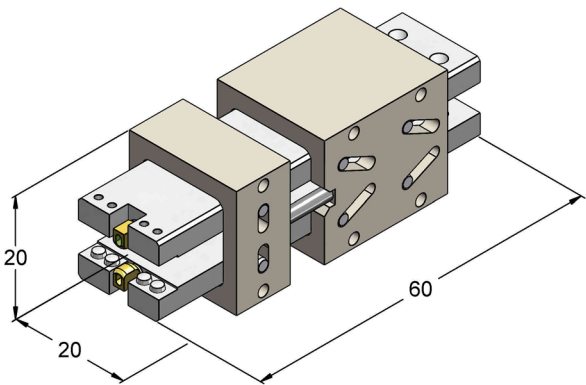
Pouch Cell Contacting



HC14

Contact Pliers for 150A

Soft contacting with HC14 clamping principle. Equipped with sense contacts and/or temperature sensors depending on customer requirements.

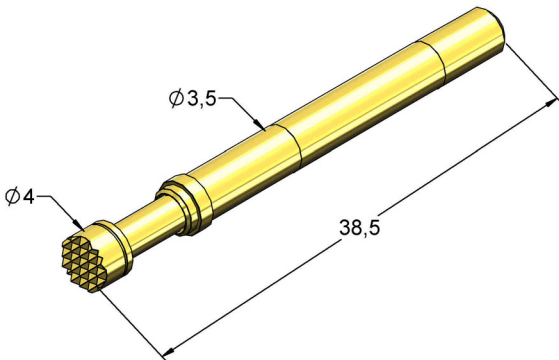


Electrical specifications	
Current (Power)	150 A
Current (Sense)	2,0 A
R _{typ}	<0,3 mOhm
Temperature	-40°C...+200°C

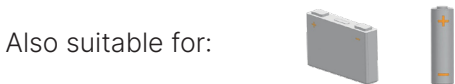
F775C

Contact Probe for 50A

Available with different tip styles depending on the customer requirement.



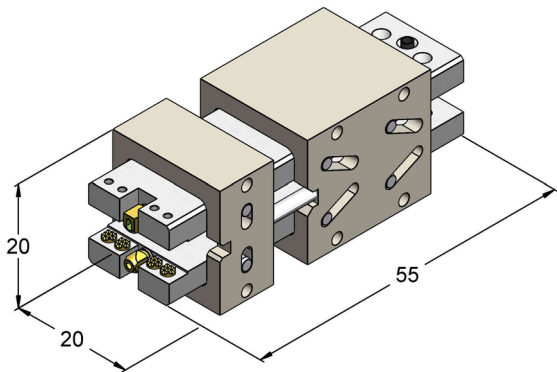
Electrical specifications	
Current (Power)	50 A
R _{typ}	<4 mOhm
Temperature	-40°C...+200°C



HC14

Contact Pliers for 200A

Aggressive contacting for even lower contact resistance. Equipped with sense contacts and/or temperature sensors depending on customer requirements.

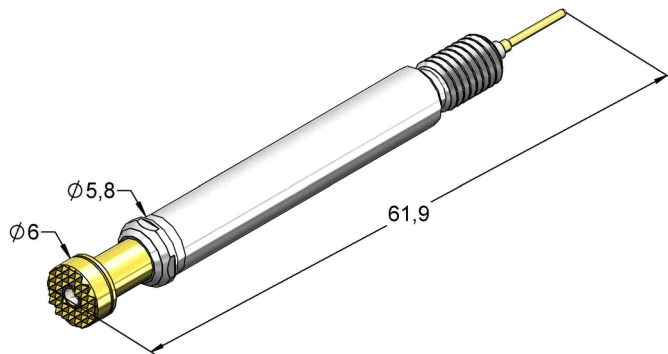


Electrical specifications	
Current (Power)	200 A
Current (Sense)	2,0 A
R _{typ}	<0,3 mOhm
Temperature	-40°C...+200°C

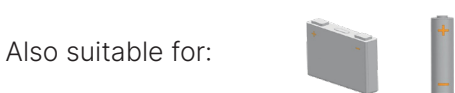
F348C & F349C

Contact Probe for 100A

Formation probe available with and without sense pin.

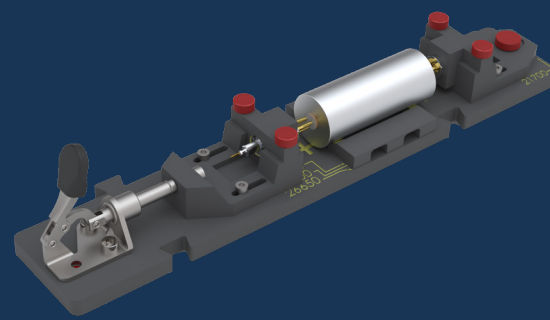


Electrical specifications	
Current (Power)	100 A
Current (Sense)	4,0 A
R _{typ}	<4 mOhm
Temperature	-40°C...+200°C



TEST

Round Cell Contacting

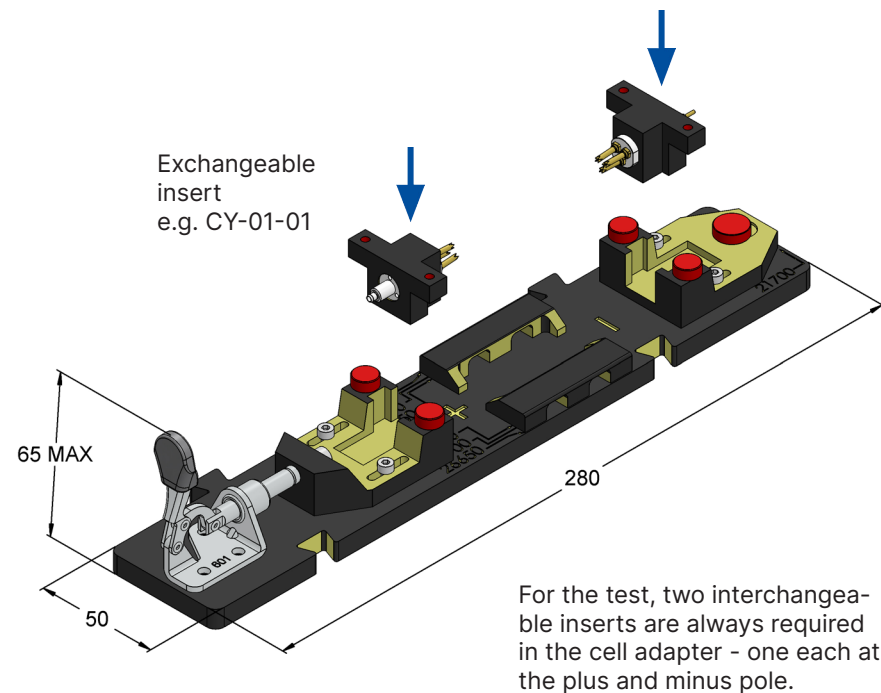


FXB

For Cylindrical Cells

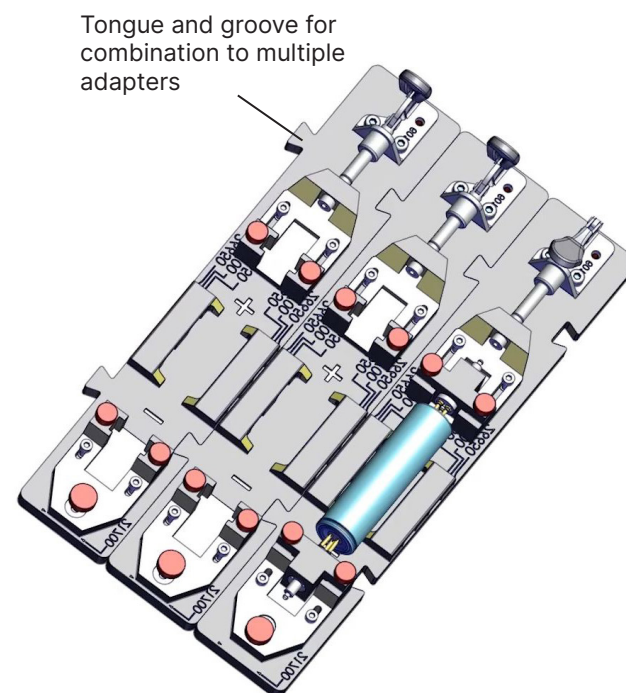
Fixture for testing different cylindrical cell types. Available with scratch principle. Double or single sided contacting possible.

Expandable cell fixture for contacting round cells of the type 18650, 21700 and 26650



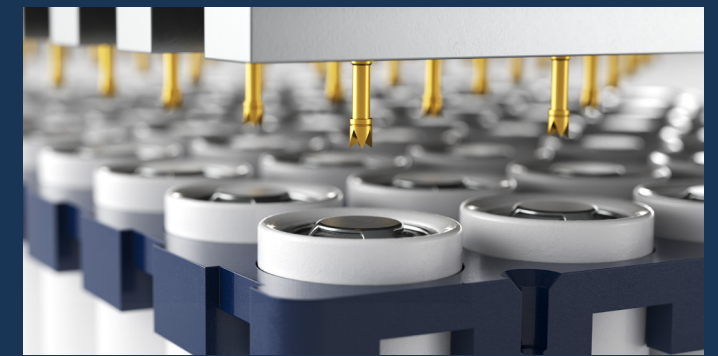
Hand adapter for cylindrical battery cells type 18650, 21700 and 26650 with the following properties:

- Modular design ⇒ One basic adapter can be combined with different contact probe carriers
- Exchangeable inserts (contact probe carrier)
- Variable adjustment of the cell diameter and cell length
- Contacting feed via hand lever
- Temperature resistance up to at least 70°C
- Dimensions: 280×50×65mm
- Several single adapters can be combined to a multiple adapter by means of tongue and groove.



FORMATION

Round Cell Contacting

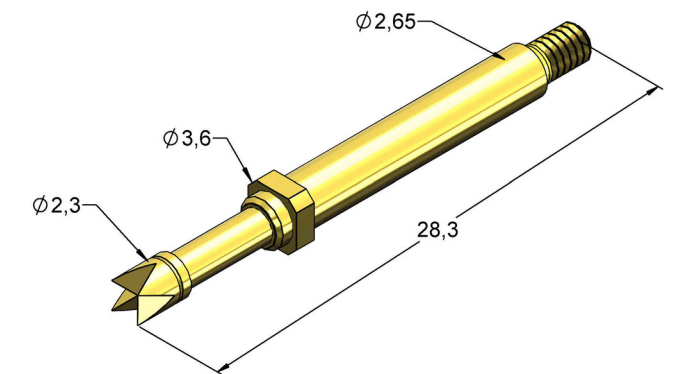


F733C

Contact Probe for 25A

Available with different tip styles depending on the customer requirement.

Electrical specifications	
Current (Power)	25 A
R _{typ}	<4 mOhm
Temperature	-40°C...+200°C



Also suitable for:

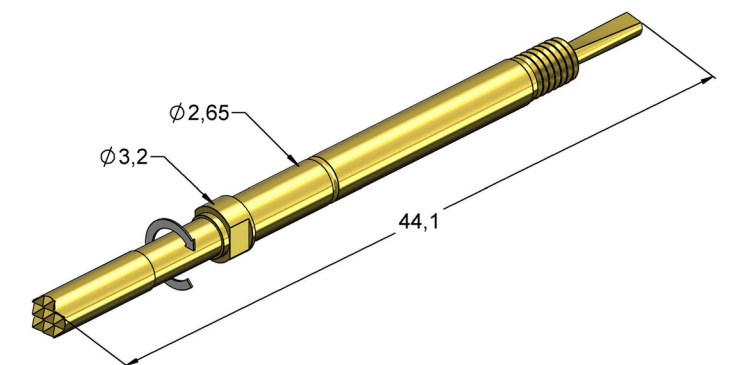


F762C

Contact Probe for 40A

Standard probe with scratching twist function for lowest contact resistances.

Electrical specifications	
Current (Power)	40 A
R _{typ}	<5 mOhm
Temperature	-40°C...+200°C

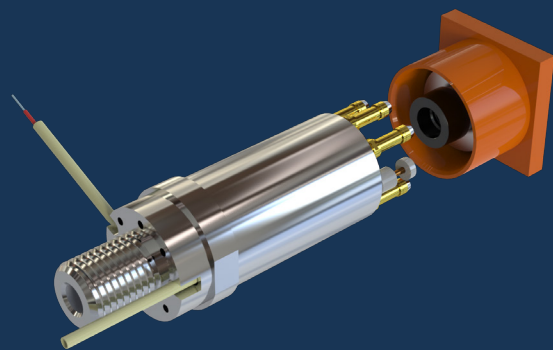


Also suitable for:



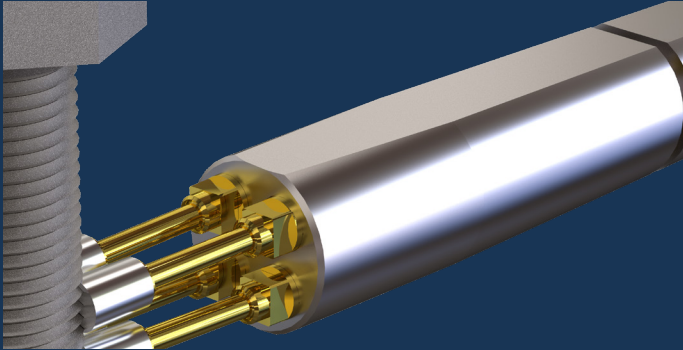
TEST

Inverter Test



TEST

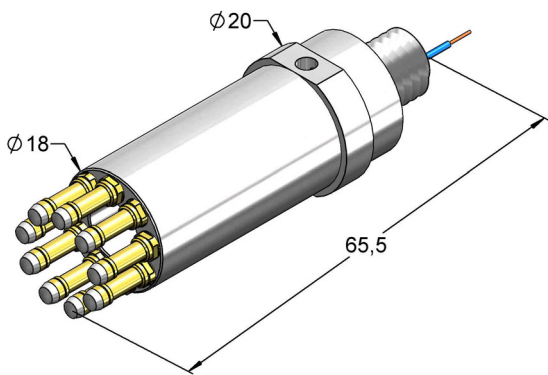
Equipment Test



HC20

Round Block for 400A

High current contact solution with sense measurement.

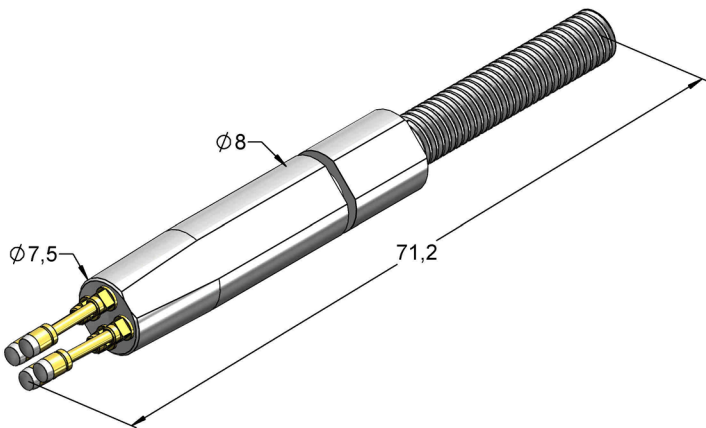


Electrical specifications	
Current (Power)	400 A
Current (Sense)	25,0 A
R _{typ} (Sense)	<0,2 mOhm
Temperature	-40°C...+200°C

HC07

Soft Scratch for 70A

High current contact solution for contacting screws.

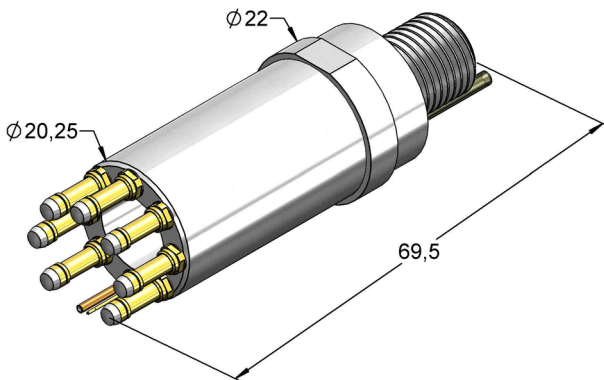


Electrical specifications	
Current (Power)	70 A
R _{typ}	<3 mOhm
Temperature	-40°C...+200°C

HC20

Round Block for 400A

High current solution for contacting Inverters. Available with sense and temperature measurement.

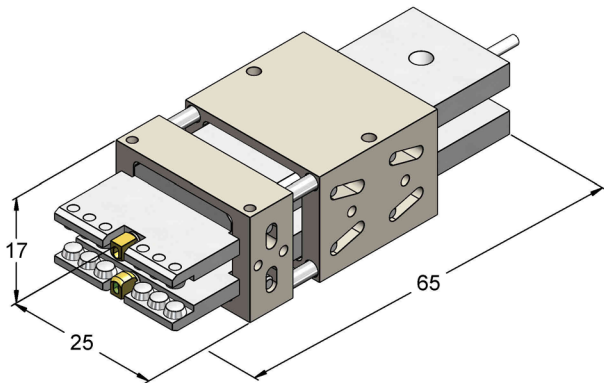


Electrical specifications	
Current (Power)	400 A
Current (Sense)	2,0 A
R _{typ} (Sense)	<0,2 mOhm
Temperature	-40°C...+200°C

HC15

Contact Pliers for 250A

High current contact solution for contacting flat connectors. Equippable with sense contact and temperature sensor.



Electrical specifications	
Current (Power)	250 A
Current (Sense)	2,0 A
R _{typ} (Sense)	<0,2 mOhm
Temperature	-40°C...+200°C



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CONTACT

BATTERY & HIGH CURRENT CONTACTING
battery@feinmetall.com

ELECTRONICS TESTING
electronic@feinmetall.com

FINE PITCH TESTING
finepitch@feinmetall.com

INTERFACE SOLUTIONS
interface@feinmetall.com

SEMICONDUCTOR TESTING PRODUCTS
semiconductor@feinmetall.com

WIRE HARNESS TESTING
wireharness@feinmetall.com