

DC source/sink individual:

I-TS-3870:

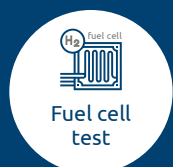
Single-channel system for testing and simulating batteries, fuel cells, and powertrains. One output channel capable of up to 1500 V or 1200 A. Maximum power in single-channel operation: 650 kW; up to 2.6 MW in parallel operation (maximum values for voltage, current, and power depend on the specific configuration).

MI-TS-3871:

Multi-channel system for energy-efficient testing and simulation. Two or four outputs, up to 1500 V or 1200 A per output (no galvanic isolation between DC outputs // Maximum values for voltage, current, and number of output channels depend on the specific configuration).

Typical Applications

- Battery testing (battery charging / discharging tests)
- Battery simulation / battery emulation
- Test power supply for contactors, fuses, circuit breakers
- EV / EVSE testing
- Power supply for trains for maintenance purposes at ICE facilities
- Load for fuel cells
- Testing of DC motors (powertrain)



Fuel cell test



Electrolyser test



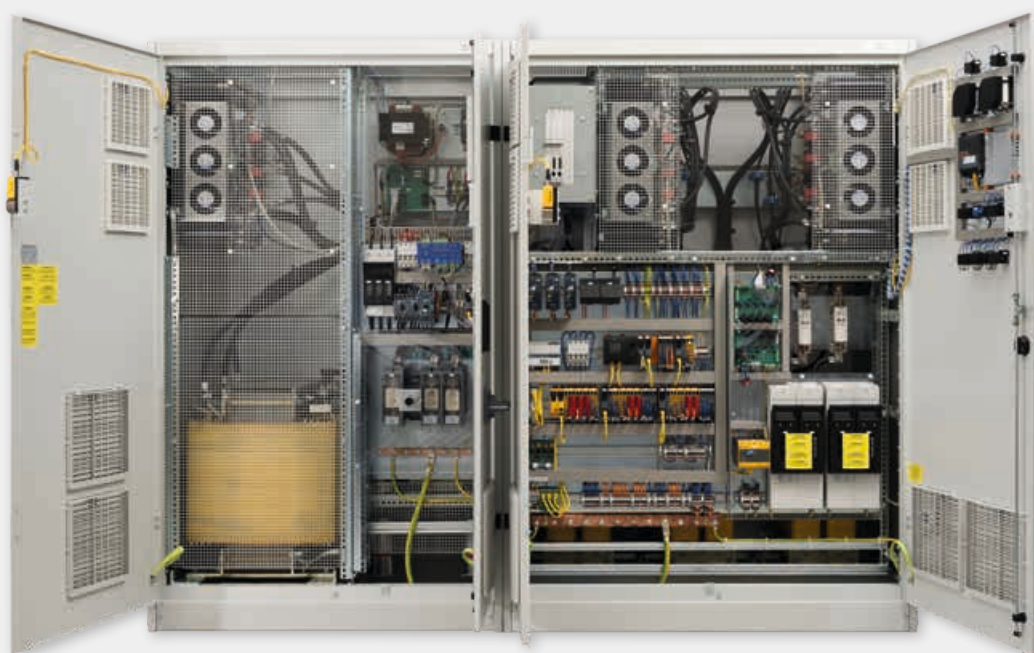
Battery test



Battery simulation



Powertrain test





Basic-Equipment

- Input voltage (standard):
3x 400 V, 3x 380 V, 50 / 60 Hz
- Main switch (load break switch with fuses in the AC input; lockable in the off position)
- Safety control for Performance Level d (PLd) in accordance with ISO 13849-1 / EN 60204-1
- Touchscreen display
- Battery tester version
- Stop switch (black mushroom switch) in control cabinet door
- Voltmeter and standby indicator in cabinet door
- DC output contactors (standard contactor)
- DC current measurement with 0.1% f.s. accuracy
- Terminals for DC voltage measurement (accuracy 0.1% f.s. with sense leads)
- Terminals for external "Emergency Stop"
- Terminals for external "Stop"
- Terminals for calibration kit
- Modbus TCP-IP interface
- CAN bus interface ("100 Hz" with dbc file)
- VNC interface via Ethernet
- Protection class IP20
- Low-noise design (vibrating metal components, fan control)



Options (selection)

- (M)I-TS-ISO-3.0, DC insulation monitoring unit
- I-TS-Parallel 3.0, parallel control unit
- (M)I-TS-EM, battery simulator
- (M)I-TS-TEST-EM, switchable battery tester / battery simulator
- (M)I-TS-E-Stopp, emergency stop button (yellow / red) installed in the cabinet door
- (M)I-TS-IF-ANALOG-IN, "Analogue Input" interface
- (M)I-TS-IF-ANALOG-OUT, "Analogue Output" interface

	I-TS-3870- 300-60-600	I-TS-3870- 600-160-1000	I-TS-3870- 1000-250-1000	I-TS-3870- 1000-400-1200	I-TS-3870- 1200-320-1200	I-TS-3870- 1200-550-1200
DC output parameters						
Power	60 kW	160 kW	250 kW	400 kW	320 kW	550 kW
DC voltage	5 – 300 V	5 – 600 V	5 – 1000 V	5 – 1000 V	10 – 1200 V	10 – 1200 V
DC current	± 600 A	± 1000 A	± 1000 A	± 1200 A	± 1200 A	± 1200 A
Channels	1	1	1	1	1	1
Current rise time	≤ 1,0 ms	≤ 1,0 ms	≤ 1,3 ms	≤ 1,3 ms	≤ 1,0 ms	≤ 1,0 ms
Internal resistance adjustment range	-5 mΩ to +500 mΩ	-6 mΩ to +600 mΩ	-10 mΩ to +1000 mΩ	-8mΩ to +833 mΩ	-10mΩ to +1000 mΩ	-10mΩ to +1000 mΩ
Voltage ripple	< 0,1 % fs RMS					
Residual current ripple	< 0,1 % fs RMS					
Accuracy						
Voltage control (CV)	0,1 % fs					
Current control (CC)	0,1 % fs					
Power control (CP)	0,2 % fs					
Voltage measurement	0,1 % fs / 16 bit					
Current measurement	0,1 % fs / 16 bit					
AC input parameters						
Voltage	3/PE AC 400 V 50 Hz ± 10 %					
Frequency	50 Hz ± 5 %					
Power factor at rated power	> 0,99 ind.					
Conditional Rated short-circuit current	50 kA					
Max. power consumption in kVA	67	173	269	426	342	577
Max. AC current @ 400 V -10 %	107	278	431	684	549	925
Galvanic isolation between AC & DC	By default, the DC side is isolated from earth					
Mechanical details for protection class IP 20 (AF air cooling)						
Number of cabinets	1	2	2	3	2	3
Dimensions L x W x H in mm	1400 x 800 x 2000	2400 x 800 x 2000	2600 x 800x 2000	3600x 800 x 2000	2600 x 800 x 2200	3800 x 800 x 2200
Weight in kg	990	1200 + 760	1500 + 1150	1540 + 770 + 1150	1600 + 1150	1900 + 1160 + 1180
Minimum clearance to ceiling	300					
Minimum clearance to rear wall	0					
Door Hinge	on both sides					
General data						
Ambient conditions during operation	3K22 / 3M11 +5 to 40°C; 5 – 85% relative humidity, non-condensing					
Max. installation height at rated data	1000 m above sea level; air pressure ≥ 870 hPa					
Cable entry	from below					
Color	RAL 7035; textured paint					

I-TS-3870- 1200-650-1200	MI-TS-3871- 1200-320-600-2	MI-TS-3871- 1200-320-1200-2	MI-TS-3871- 1200-650-1200-2	MI-TS-3871- 1200-650-1200-4	I-TS-3870- 1500-250-800	I-TS-3870- 1500-400-800	MI-TS-3871- 1500-400-800-2
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DC output parameters							
650 kW	320 kW	320 kW	650 kW	650 kW	250 kW	400 kW	400 kW
10 – 1200 V	10 – 1200 V	10 – 1200 V	10 – 1200 V	10 – 1200 V	10 – 1500 V	10 – 1500 V	10 – 1500 V
± 1200 A	± 600 A	± 1200 A	± 1200 A	± 1200 A	± 800 A	± 800 A	± 800 A
1	2	2	2	4	1	1	2
≤ 1,0 ms	≤ 1,0 ms	≤ 1,0 ms	≤ 1,0 ms	≤ 1,0 ms	≤ 1,4 ms	≤ 1,4 ms	≤ 1,4 ms
-10 mΩ to +1000 mΩ	-20 mΩ to +2000 mΩ	-10 mΩ to +1000 mΩ	-10 mΩ to +1000 mΩ	-10 mΩ to +1000 mΩ	-19 mΩ to +1875 mΩ	-19 mΩ to +1875 mΩ	-19 mΩ to +1875 mΩ

< 0,1 % fs RMS

< 0,1 % fs RMS

Accuracy							
				0,1 % fs			
				0,1 % fs			
				0,2 % fs			
				0,1 % fs / 16 bit			
				0,1 % fs / 16 bit			

AC input parameters							
3/PE AC 400 V 50 Hz ± 10 %							
50 Hz ± 5 %							
> 0,99 ind.							
50 kA							
685	344	352	695	716	274	431	442
1100	553	565	1116	1149	439	693	710

By default, the DC side is isolated from earth

Mechanical details for protection class IP 20 (AF air cooling)							
3	3	3	4	6	2	3	4
4000 x 800 x 2200	3800 x 800 x 2200	3800 x 800 x 2200	5200 x 800 x 2200	7600 x 800 x 2200	2600 x 800 x 2200	3600 x 800 x 2200	4800 x 800 x 2200
2200 + 1080 + 1150	1600 + 1060 + 1060	1600 + 1150 + 1150	2200 + 1080 + 1150 + 1150	2200 + 1080 + 4 x 1150	1500 + 1150	1540 + 1080 + 1150	1540 + 1080 + 2 x 1150
300							
0							
on both sides							

General data							
3K22 / 3M11 +5 to 40°C; 5 – 85% relative humidity, non-condensing							
1000 m above sea level; air pressure ≥ 870 hPa							
from below							
RAL 7035; textured paint							

This is just a sample of our product range;
we would be happy to assist you in developing a customized project.

Subject to technical changes.



We would be happy
to provide you with a
customized quote for
systems with overload
protection and
liquid cooling.