

ADC5000

High Dynamic DC source power supply
for Test Bench Applications

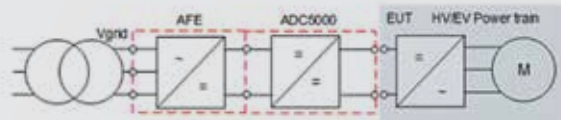


All for dreams

Main Applications

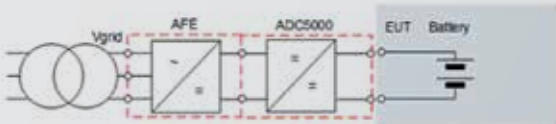
Battery Simulation

- ADC5000: “voltage regulator” mode
- EUT: Hybrid or EV drive train
- Voltage dip at load step (0-100%): $\leq 1,5\%$



Battery Test

- ADC5000: “current regulator” mode
- EUT: Battery
- Current rise time: 1+5ms



Suitable for test stands
for electrical & hybrid
vehicles and battery
system test

General Overview

- High dynamic DC source with energy recovery (AFE)
- Two voltage classes (700-1000Vdc)
- Wide range of current up to 2100A
- Operation modes: Parallel and Serie (up to 1200V)
- Compact footprint
- Modular design to meet different power needs
- Configurable according to customer's needs
- Easy to integrate with the existing automation systems (wide range of industrial fieldbus available)
- Easy maintenance: access from the front, power module on rails
- Air or water cooled

Cabinet Types and Ratings

Voltage class Z

Vinmax=770Vdc
Voutmax=700Vdc

| Cabinet Type | No overload | Heavy overload | Cabinet overall dimensions (*) [mm] | | |
|--------------|-------------|----------------|-------------------------------------|-------|------|
| | Idc0 [A] | Idc2 [A] | Length | Depth | High |
| ADC5A510Z1 | 510 | 360 | 1200 (600x1+600) | 600 | 2211 |
| ADC5A650Z1 | 650 | 470 | 1200 (600x1+600) | 600 | 2211 |
| ADC5A825Z1 | 825 | 585 | 1400 (800x1+600) | 600 | 2211 |
| ADC5A990Z1 | 990 | 705 | 1400 (800x1+600) | 600 | 2211 |
| ADC5A1K3Z2 | 1300 | 940 | 2000 (600x2+800) | 600 | 2211 |
| ADC5A1K6Z2 | 1650 | 1170 | 2400 (800x2+800) | 600 | 2211 |
| ADC5A2K0Z2 | 1980 | 1410 | 2400 (800x2+800) | 600 | 2211 |
| ADC5A2K5Z3 | 2475 | 1755 | 3600 (800x3+1200) | 600 | 2211 |
| ADC5A3K0Z3 | 2970 | 2115 | 3600 (800x3+1200) | 600 | 2211 |
| ADC5A2K3Z4 | - | 2340 | 4600 (800x4+1400) | 600 | 2211 |

Idc0: output current at 40° (cont. without overload).
Idc2: output current at 40° (with 150% overload 1/5').
(*) Cabinet dimensions are preliminary

Voltage class L

Vinmax=1100Vdc
Voutmax=1000Vdc

| Cabinet Type | No overload | Heavy overload | Cabinet overall dimensions (*) [mm] | | |
|--------------|-------------|----------------|-------------------------------------|-------|------|
| | Idc0 [A] | Idc2 [A] | Length | Depth | High |
| ADC5A285L1 | 285 | 210 | 1200 (600x1+600) | 600 | 2211 |
| ADC5A405L1 | 405 | 300 | 1200 (600x1+600) | 600 | 2211 |
| ADC5A525L1 | 525 | 375 | 1200 (600x1+600) | 600 | 2211 |
| ADC5A570L2 | 570 | 420 | 2000 (600x2+800) | 600 | 2211 |
| ADC5A810L2 | 810 | 600 | 2000 (600x2+800) | 600 | 2211 |
| ADC5A1K0L2 | 1050 | 750 | 2000 (600x2+800) | 600 | 2211 |
| ADC5A1K2L3 | 1215 | 900 | 3000 (600x3+1200) | 600 | 2211 |
| ADC5A1K6L3 | 1575 | 1125 | 3000 (600x3+1200) | 600 | 2211 |
| ADC5A2K1L4 | 2100 | 1500 | 3800 (600x4+1400) | 600 | 2211 |

Idc0: output current at 40° (cont. without overload).
Idc2: output current at 40° (with 150% overload 1/5').
(*) Cabinet dimensions are preliminary

Technical Data

| Input | Voltage Class "Z" | Voltage Class "L" |
|-----------------------------|--------------------------|---------------------------|
| Input voltage (Stand alone) | 770 Vdc max - stabilized | 1100 Vdc max - stabilized |
| Grid Voltage (With AFE) | 3x 400 ± 480 Vac | 3x 525 ± 690 Vac |
| Grid frequency (With AFE) | 47 ± 63Hz | |
| AC Power (With AFE) | 160 ± 1200 kW (400Vac) | 160 ± 1136 kW (690Vac) |
| Power factor (With AFE) | ≥ 0,98 | |
| THDi (With AFE) | ≤ 3% | |

| Output | Voltage Class "Z" | Voltage Class "L" |
|----------------|-------------------|-------------------|
| Output voltage | 40 ± 700 Vdc | 50 ± 1050 Vdc |
| Output current | ± 360 ± 2340 A | ± 210 ± 2100 A |

| Accuracy dynamics (Voltage) | |
|---|-----------------------------|
| Voltage accuracy | 0,1% FS |
| Voltage rise time (10% - 90%) | 5ms |
| Voltage dip at load change (0-100%Inom - 2,5ms) | 1,25% (Vout > 85% Vout max) |
| Setting resolution | 0,1 V |
| Residual ripple | 0,1% Vout max |

| Accuracy dynamics (Current) | |
|--------------------------------|--------------------|
| Current accuracy | 0,1% FS |
| Current rise time (10% - 90%) | 1 ± 5ms (typ. 2ms) |
| Setting resolution | 0,1 A |
| Residual ripple | 0,1% Idc0 |

| Ambient conditions | |
|-----------------------|------------------------------|
| Operating temperature | 5 ± 40°C |
| Relative humidity | 5 ± 95% (without condensing) |
| Altitude (a.s.l.) | 1000m (3000 max.) |

| Cabinet | |
|------------------|-----------------------|
| Enclosure | Rittal serie VX25 |
| Colour | RAL7035 |
| Protection class | IP33 |
| Cooling | air /water (optional) |
| Noise level | < 78dBA (air) |

| Features | |
|--------------------|---|
| Output current | 2 rated currents for different application overl. (Idc0/Idc2) |
| Operation modes | Current, Voltage or Power control |
| Output connections | DC-Contactor (DC1) with fuses |
| HMI | LCD graphic display (4 monitors) |
| Interface | Profibus-DP, Modbus TCP, Modbus RTU |

| Option | |
|--|--|
| Interface | Ethernet IP, ProfiNet I/O, Ethercat |
| On board PLC | Real time IEC 61131-3 PLC (ISaGRAF) |
| "Parallel" mode | Increased output current |
| "Serial" mode | Increased output voltage (up to 1200Vdc) |
| Output insulation monitor | Insulation relay |
| Voltage drop compensation of EUT connections | With external sense line |