

52120A Transconductance Amplifier

Highlights

Expand the workload capability of your power and electrical calibrators

The Fluke Calibration 52120A Transconductance Amplifier supplies dc current up to 100 amps and ac current up to 120 amps, at accuracies to 140 ppm. Using accessory coils, it can generate 3,000 or 6,000 amps. Three 52120As connected in parallel can output up to 360 amps. Inductive drive capability of 1 mH and compliance voltage of 4.5 volts support a wide range of applications.

52120A performance at a glance

- Industry-leading amplifier accuracy:
 - - 140 ppm ac (used with 61XXA Electrical Power Standard)
 - - 350 ppm ac (used with dc/lf calibrator)
 - - 160 ppm dc (used with dc/lf calibrator)
- Frequency: DC to 10 kHz
- Burden voltage (compliance): 4.5 V @ 120 A
- Inductive drive capability: 1 mH load
- Output ranges: 2 A, 20 A, 120 A
- Input ranges: 2 V or 200 mA F.S. for 2 A and 20 A ranges, 1.2 V or 120 mA F.S. for 120 A range
- Parallel operation: Closed loop with 61XXX, 2 or 3 amplifiers, up to 360 A in a single phase
- Parallel operation: Standalone operation, up to 10 amplifiers, up to 1200 A in a single phase
- Accessory coils: 25-turn coil supports 3000 A, 50-turn coil supports 6000 A
- Control communication with 6105A/6100B Electrical Power Standards
- GPIB remote operation

Description

The 52120A is designed for users whose ability to address their calibration workload may be limited by the output current, accuracy and drive capability of their present test equipment, including:

- Calibration professionals in a calibration/standards lab or an electrical utility
- Manufacturers of power/energy instrumentation and meters, power quality analyzers or power converters
- Users of electrical test and measurement equipment

The 52120A operates as a transconductance amplifier with:

- 5500A/5520A/5522A Multi-Product Calibrator
- 5700A/5720A Multifunction Calibrator
- 5080A Multi-Product Calibrator
- 9100 Universal Calibration System
- Any calibrator, signal generator or power supply capable of sourcing 2 V or 200 mA, dc or ac

You may also operate your 52120A in closed-loop mode, seamlessly communicating with your Fluke Calibration 6105A or 6100B Electrical Power Standard to deliver enhanced 52120A accuracy.

Specifications

Operating limits	
Output ranges	2 A, 20 A, 120 A (100 A dc)
Input current range	200 mA, 200 mA, 120 mA (100 mA dc)
Current gain	10, 100, 1000
Input voltage range	2 V, 2 V, 1.2 V (1.0 V dc)
Transconductance	1,10,100 Siemens
Frequency	To 10 kHz
Maximum output compliance voltage	4.5 Vrms (6.4 Vpeak)

Inductive drive capability:	1 mH load
Output isolation, current terminal to earth	600 Vrms, 850 Vpeak, dc to 850 Hz
Performance specifications	
AC accuracy, closed loop with 6105A	To 140 ppm
DC accuracy, standalone	To 160 ppm
AC accuracy, standalone	To 350 ppm
Phase angle accuracy	0.006°
Load dependent phase angle shift	<0.001° @ 60 Hz
General specifications	
Input line voltage range	100 V to 240 V with up to ±10 % fluctuations
Transient overvoltage	Impulse withstand (overvoltage); Category II of IEC 60364-4-443
Frequency	47 Hz to 63 Hz
Maximum consumption	< 1500 VA
Calibration Documentation	Report of calibration with data included; 17025 accredited report optional
Dimensions with feet (H x W x L)	192 mm x 432 mm x 645 mm (7.6 inches x 17 inches x 25.5 inches)
Dimensions without feet (H x W x L)	178 mm x 432 mm x 645 mm (7 inches x 17 inches x 25.5 inches)
Weight	25 kg (54 lb.)
Design standards and compliance	Designed to EN 61010-1: 2010, CAN/CSA 22.2 No 61010.1-04, ANSI/UL 61010-1:2004, EN 61326-1:2006 CE marked, CSA listed
Operating temperature	5 °C to 35 °C
Calibration temperature range	16 °C to 30 °C
Warm up time	1 hour
Safe operating max. relative humidity (non-condensing)	<80 % 5 °C to 31 °C ramping linearly down to 50 % at 35 °C
Operating altitude	0 m to 2,500 m
Shock and vibration	MIL-PRF-28800F class 3
Specification confidence level	99%

Models and Accessories

Model Name	Description
52120A	Transconductance Amplifier

Accessories common to all models:

Accessory	Description
52120A/COIL3KA	Coil, 25 Turn, 3000 Amp
52120A/COIL6KA	Coil, 50 Turn, 6000 Amp
52120A/COIL12V	Coil 12 V DC Supply



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