

52120A Transconductance Amplifier

Preliminary Technical Data

Expand the workload capability of your power and electrical calibrators

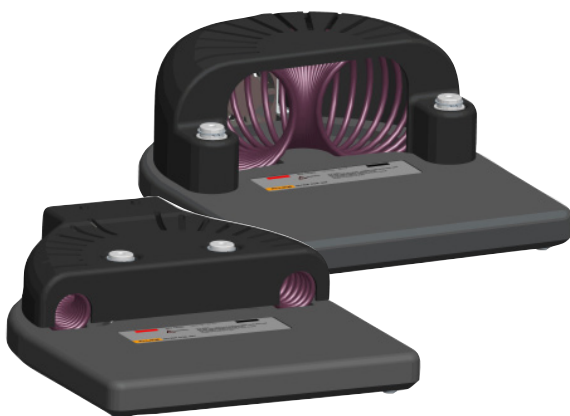
The new Fluke Calibration 52120A Transconductance Amplifier supplies dc and ac current up to 120 amps at accuracies to 100 ppm. Using accessory coils, it can generate 3,000 or 6,000 amps. Three 52120As connected in parallel can output up to 360 amps. Inductive drive capability of 1 mH and compliance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

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 enables you to test and calibrate a broad workload at full current range:

- Primary and secondary power standards
- Power and energy meters
- Power quality analyzers
- Digital multimeters, analog and clamp meters
- High current clamp meters, e.g.: Fluke i3000
- Rogowski coils e.g., Fluke i6000 Flex
- Current shunts, probes and transformers
- Relay/breaker test sets



Coil accessories support 3000 A and 6000 A



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.

52120A performance at a glance

- Industry-leading amplifier accuracy:
 - 100 ppm, dc - 850 Hz (used with 61XX EPS)
 - 150 ppm dc (used with dc/If calibrator)
 - 1000 ppm ac (used with dc/If calibrator)
- Frequency: 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: 2 or 3, up to 360 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

Specifications

Gain/Transconductance	Output current range		
	2 A rms	20 A rms	120 A rms
Maximum Input voltage	2 V rms	2 V rms	1.2 V rms
Transconductance	1 Siemens	10 Siemens	100 Siemens
Maximum Input current	200 mA rms	200 mA rms	120 mA rms
Current Gain	10	100	1,000

Accuracy with 6105A or 6100B				
Frequency	1 year amplitude accuracy at Tcal ±5 °C ±(ppm of output + ppm of range)		1 year phase angle accuracy at Tcal ±5°C ± (degrees)	1 hour stability with 6105A/6100B in open loop mode ± (ppm of output + ppm of range)
	With 6105A/6106A	With 6100B/6101B		
DC	100 + 50	200 + 100	n/a	50 + 10
16 Hz to 65 Hz	70 + 20	200 + 30	0.004 °	50 + 10
65 Hz to 180 Hz	75 + 20	200 + 30	0.012 °	50 + 10
180 Hz to 450 Hz	80 + 20	200 + 30	0.030 °	50 + 10
450 Hz to 850 Hz	80 + 20	200 + 30	0.050 °	50 + 10
850 Hz to 3 kHz	400 + 20	400 + 30	0.150 °	100 + 10
3 kHz to 6 kHz	400 + 20	400 + 30	0.300 °	100 + 20
6 kHz to 9 kHz	10,000 + 20	10,000 + 30	—	100 + 25

Accuracy with other devices				
Frequency	Amplitude accuracy at Tcal ±5 °C ± (ppm of output + ppm of range)			
	LCOMP OFF		LCOMP ON	
	1 year	1 hour stability	1 year	1 hour stability
DC	150 + 50	15 + 5	150 + 50	15 + 5
< 10 Hz	1,000 + 50	100 + 50	2,000 + 50	50 + 10
10 Hz to 100 Hz	1,000 + 50	100 + 50	2,000 + 50	50 + 10
100 Hz to 300 Hz	1,000 + 50	100 + 50	2,000 + 50	50 + 10
300 Hz to 1 kHz	1,000 + 50	100 + 50	2,000 + 50	50 + 10
1 kHz to 3 kHz	1,000 + 50	100 + 50	2,000 + 50	100 + 20
3 kHz to 10 kHz	10,000 + 50	10,000 + 50	20,000 + 50	100 + 20

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
Dimensions (HxWxD)	With feet: 192 mm x 432 mm x 648 mm (7.6 inches x 17 inches x 25.5 inches) Without feet: 178 mm x 432 mm x 648 mm (7 inches x 17 inches x 25.5 inches)
Weight	25 kg (54 lb.)
Operating temperature	5 °C - 35 °C
Operating max. relative humidity	<80 % 5 °C - 31 °C ramping linearly down to 50 % at 35 °C
Operating altitude	2,500 m (8200 ft.) maximum
Agency approvals	CE marked and CSA listed
Shock + vibration	MIL-PRF-28800F; Class 3
Design standards and compliance	Designed to IEC 61010-1 ed3: 2010
Maximum output voltage compliance	4.5V rms, 6.4 V pk

Ordering information (available Q2 2012)

Models

52120A Transconductance Amplifier, 120A

Options and accessories

52120A/COIL3KA Coil, 25 turn, 3000 Amp
52120A/COIL6KA Coil, 50 turn, 6000 Amp
52120A/6105 Kit, connect 5210A to 6105A
GCP 52120 Care Plan one year
G3P 52120 Care Plan three year

Information presented in this data sheet is preliminary and subject to change.

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Electrical	RF	Temperature	Pressure	Flow	Software
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