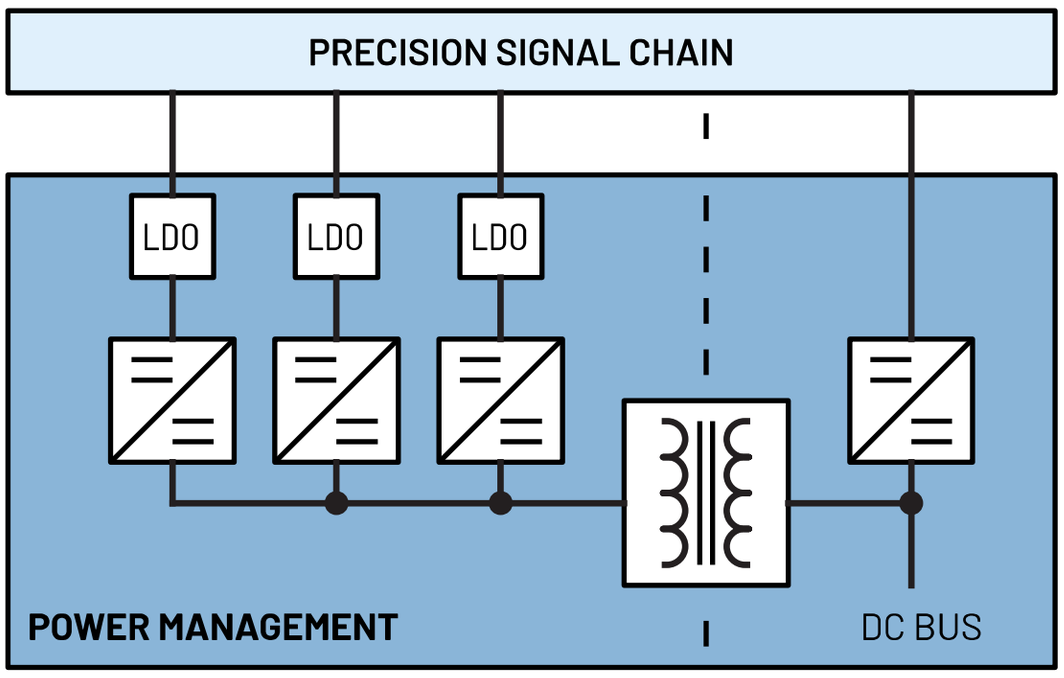
POWER SOLUTIONS FOR PRECISION TECHNOLOGY SIGNAL CHAINS

PRECISION CURRENT SENSING

Generic Signal Chains for Current Measurement Contactless Sensing – Hall 5V Output

Rev. 0 | Aug. 2022



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USER GUIDE

GENERIC SIGNAL CHAINS FOR CURRENT MEASUREMENT	**CONTACTLESS SENSING: HALL 5V OUTPUT**	
	Input Voltage	5V
		12V
		24V

APPENDIX	Parts Guide
	Power Requirements

This document is interactive. You can click on any underlined text to navigate through the document.

For the table of contents and resources:

CURRENT AND VOLTAGE MEASUREMENT	**POWER OPTIMIZED**	
	Non-isolated	1-Channel Signal Chain
		4-Channel Signal Chain
		8-Channel Signal Chain
	Isolated	1-Channel Signal Chain
		4-Channel Signal Chain
		8-Channel Signal Chain

Left-click the specific signal chain to go through its respective block diagram or power tree.

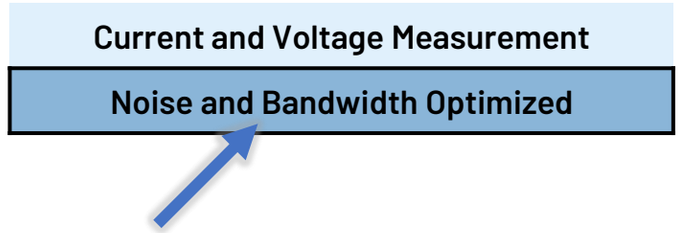
APPENDIX	Parts Guide
	Power Requirements

Left-click the appendix to go through the list of power devices and other references.

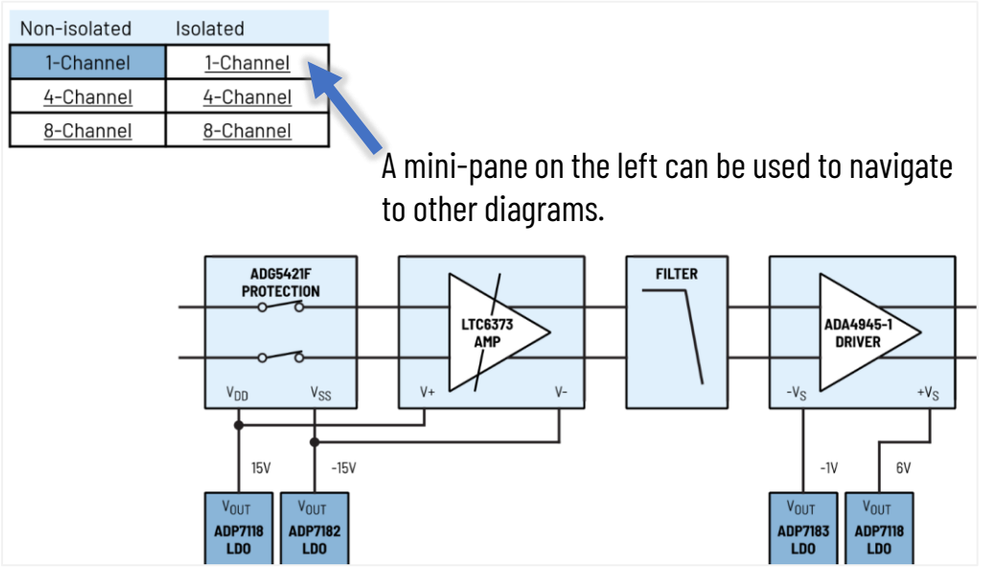
The Power Components are listed on the Appendix, and you may click on the part to go through its product page online.

PART #	DESCRIPTION
LT3471	Dual 1.3A, 1.2MHz Boost/Inverter in 3mm × 3mm DFN
LT8604	High Efficiency 42V/120mA Synchronous Buck
LT8570-1	Boost/SEPIC/Inverting DC/DC Converter with 65V Switch, Soft-Start and Sync.

For the individual pages:



Left-click the subcategory (in this case, **Noise and Bandwidth Optimized**) to return to the Table of Contents.



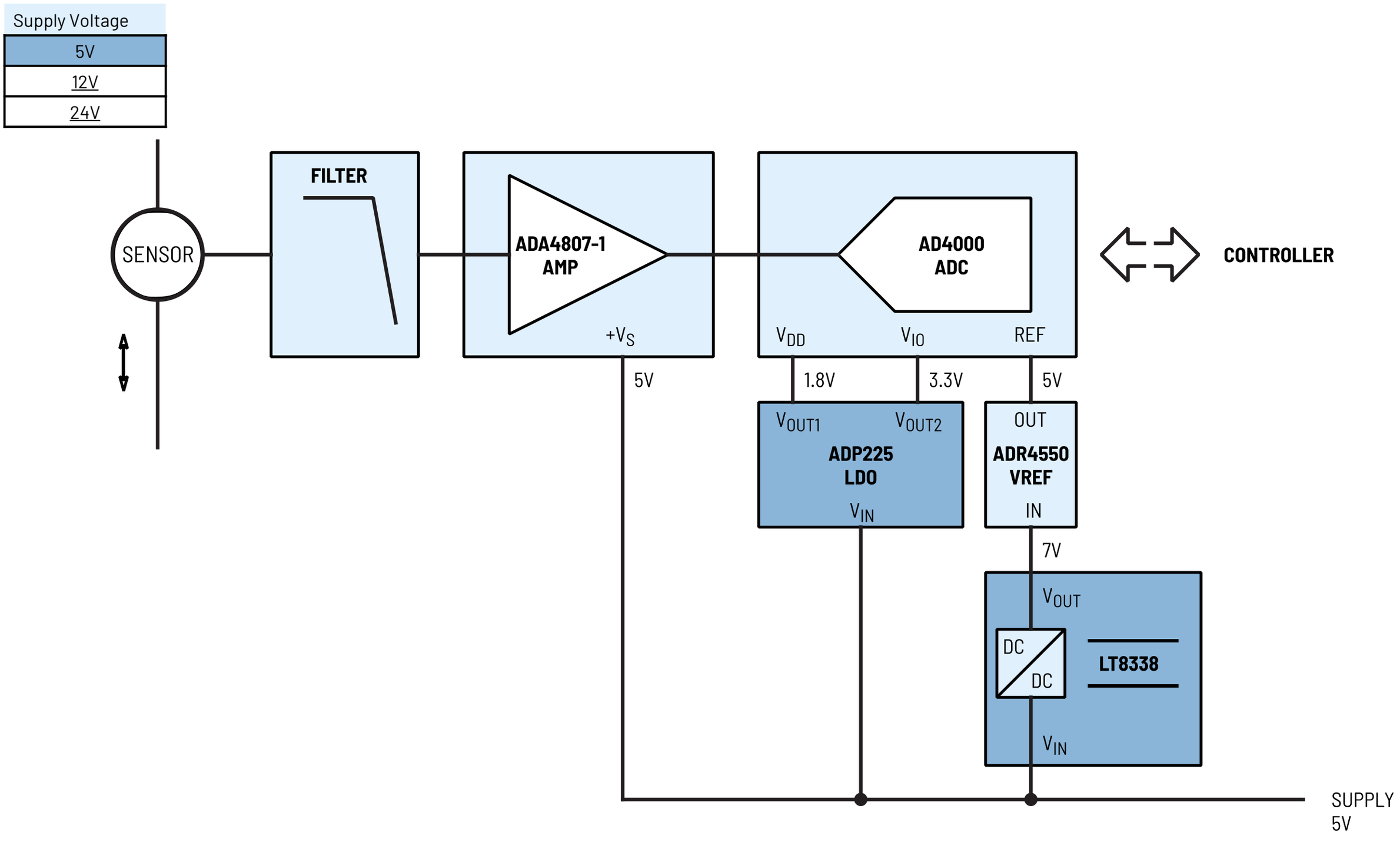
A mini-pane on the left can be used to navigate to other diagrams.

APPENDIX	Parts Guide	USER GUIDE
	Power Requirements	

Generic Signal Chain for Current Measurement

Contactless Sensing – Hall 5V Output

Supply Voltage
5V
12V
24V



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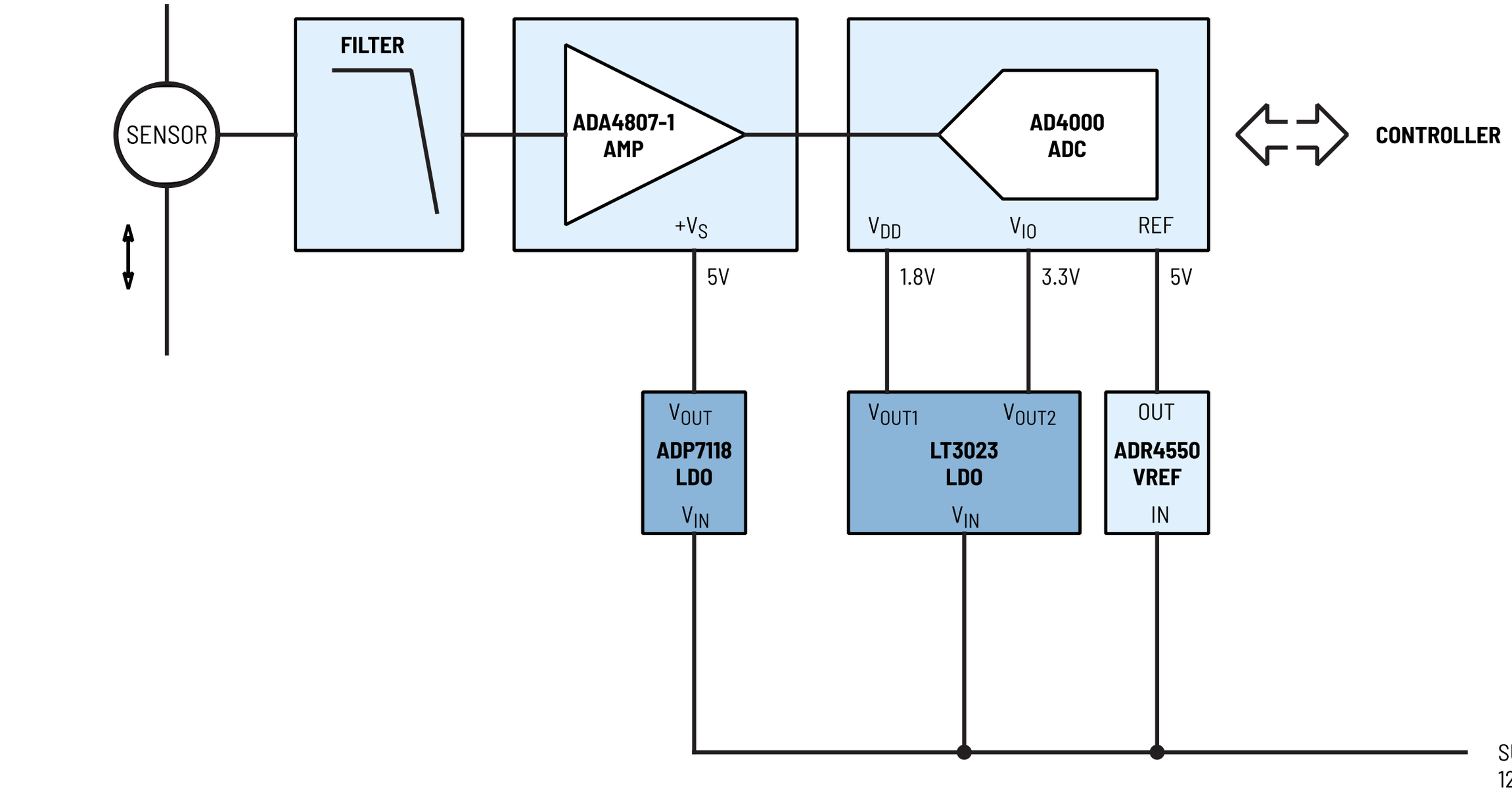
	Power Requirements	

Generic Signal Chain for Current Measurement

Contactless Sensing – Hall 5V Output

Supply Voltage

- 5V
- 12V
- 24V



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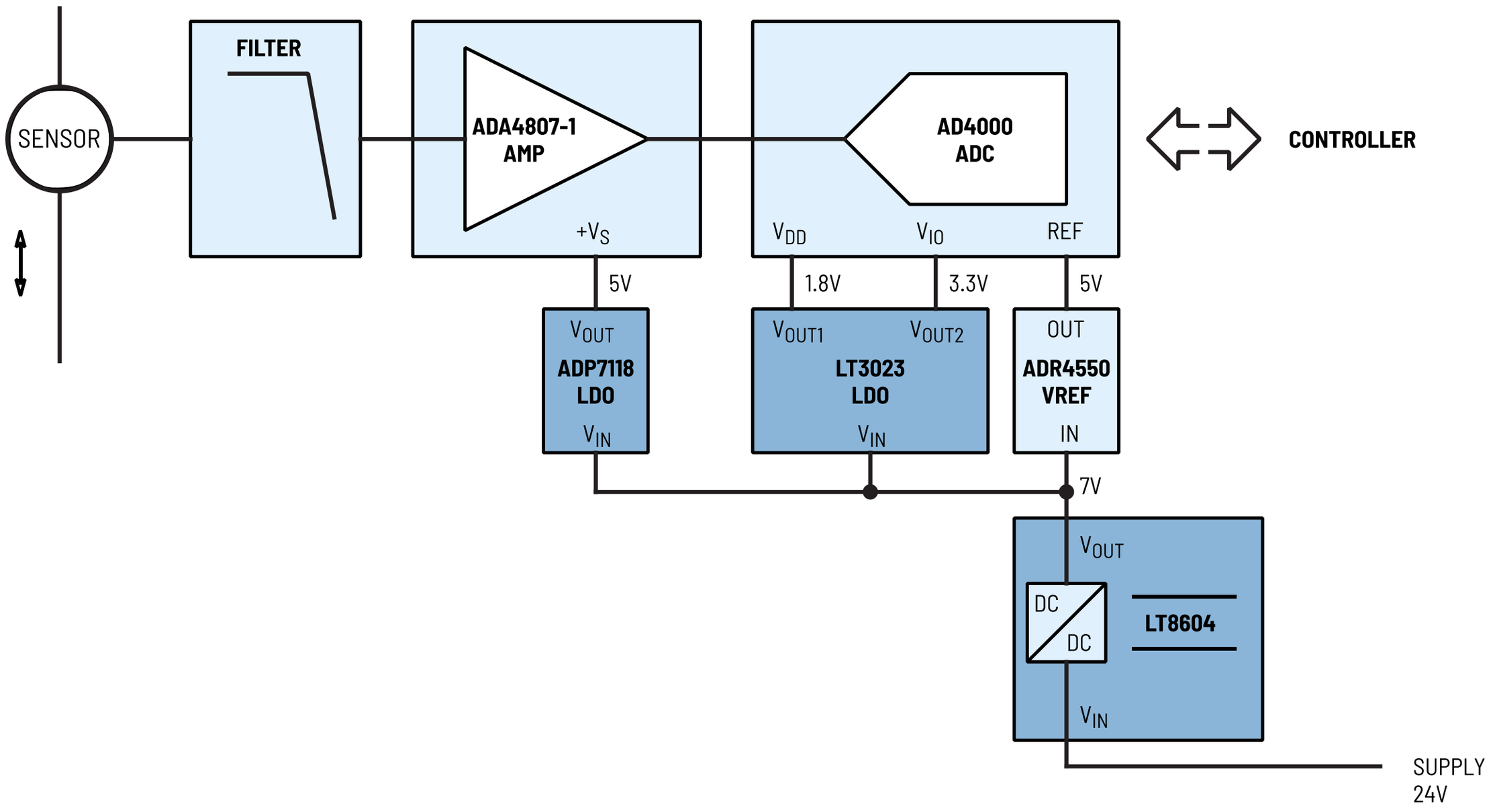
Generic Signal Chain for Current Measurement

Contactless Sensing – Hall 5V Output

Supply Voltage
5V
12V
24V



Precision Current Sensing

Generic Signal Chain for Current Measurement

Contactless Sensing – Hall 5V Output

Supply Voltage

5V
12V
24V

PART #	DESCRIPTION
ADP7118	20 V, 200 mA, Low Noise, CMOS LDO Linear Regulator
ADP225	Dual, 300 mA Output, Low Noise, High PSRR Voltage Regulators, Adj. Output: 0.5 V to 5 V
LT3023	Dual 100mA, Low Dropout, Low Noise, Micropower Regulator
LT8338	40V, 1.2A Micropower Synchronous Boost Converter with Pass-Thru
LT8604	High Efficiency 42V/120mA Synchronous Buck

Generic Signal Chain for Current Measurement

Contactless Sensing – Hall 5V Output

Supply Voltage

5V
12V
24V

POWER REQUIREMENTS

PARAMETER	STAGES	Amplifier		Filter	ADC		Reference
	Part #	ADA4807-1		-	AD4000		ADR4550
	Pin	$+V_S$	$-V_S$		V_{DD}	V_{IO}	IN
Supply Voltage	V	5	0	-	1.8	3.3	7 (or 12)
Supply Current	mA	0.95	0.95	-	5.42	0.16	0.95
PSRR	dB	72 (1MHz)	47 (1MHz)	-	75 (200kHz)		60 (1MHz)

Note 1: The supply currents indicated are the maximum quiescent current of the supply rails. For overall full load or short circuit current specifications, refer to the datasheets of the signal chain components.

Note 2: The supply voltages indicated are the values for typical applications.

Note 3: Consult the corresponding datasheets for details on: (1) power supply rejection ratio (PSRR) and (2) power dissipation.

Note 4: The actual supply current requirement shall be multiplied depending on the number of channels on the signal chain.