

Norman S. Nise

CONTROL SYSTEMS ENGINEERING

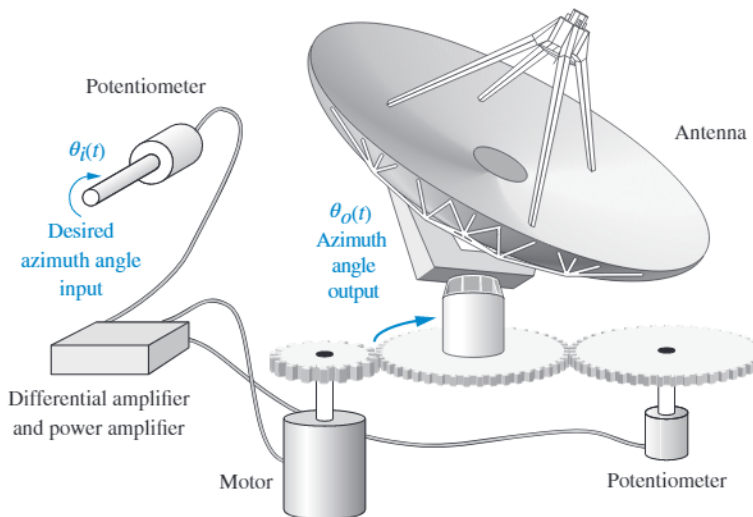
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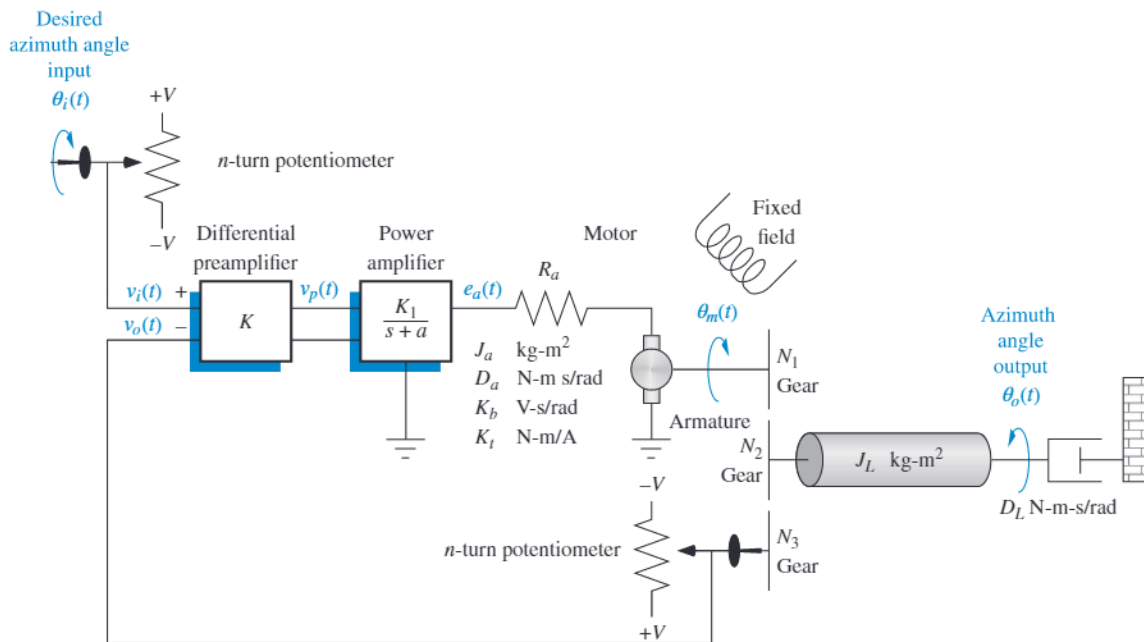
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Antenna Azimuth Position Control System

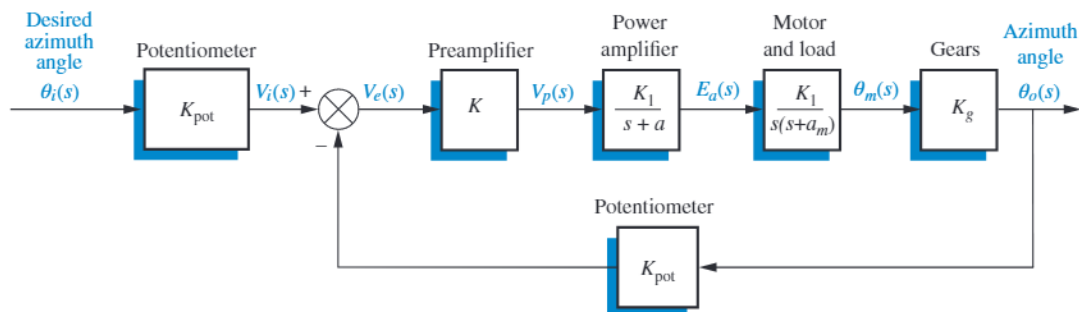
Layout



Schematic



Block Diagram



Schematic Parameters

Parameter	Configuration 1	Configuration 2	Configuration 3
V	10	10	10
n	10	1	1
K	—	—	—
K_1	100	150	100
a	100	150	100
R_a	8	5	5
J_a	0.02	0.05	0.05
D_a	0.01	0.01	0.01
K_b	0.5	1	1
K_t	0.5	1	1
N_1	25	50	50
N_2	250	250	250
N_3	250	250	250
J_L	1	5	5
D_L	1	3	3

Block Diagram Parameters

Parameter	Configuration 1	Configuration 2	Configuration 3
K_{pot}	0.318		
K	—		
K_1	100		
a	100		
K_m	2.083		
a_m	1.71		
K_g	0.1		

Note: reader may fill in Configuration 2 and Configuration 3 columns after completing the antenna control Case Study challenge problems in Chapters 2 and 10, respectively.

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CONTROL SYSTEMS ENGINEERING

Seventh Edition

Norman S. Nise

California State Polytechnic University, Pomona

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To my wife, Ellen; sons, Benjamin and Alan; and daughter, Sharon, and their families.

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The new Honda robot ASIMO walks up stairs during a North American educational tour designed to introduce the public to ASIMO and to encourage students to study robotics science. ASIMO (Advanced Step in Innovative Mobility) is a product of over 15 years of robotic development at Honda and was created for the purpose of helping people in need. (Photo by Spencer Platt/Getty Images). This book has not been approved, licensed, or sponsored by Honda.

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