

ROBT 402 Robotic/Mechatronic System Design

Mini-Project 1

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Cable-Driven System

1. I choose an electrical actuator because it has many advantages such as high efficiency, accuracy, ease of control, lower cost, etc.
2. The actuation provides from rotation to linear motion (as a pulley rotates, the cable moves vertically).
3. The actuation unit is equipped with an encoder to control the block's position and speed.
4. The actuation unit is mounted on support structure so that it is more convenient to operate it.
5. Additionally, I utilize pulley and support structure.
6. The schematic diagram

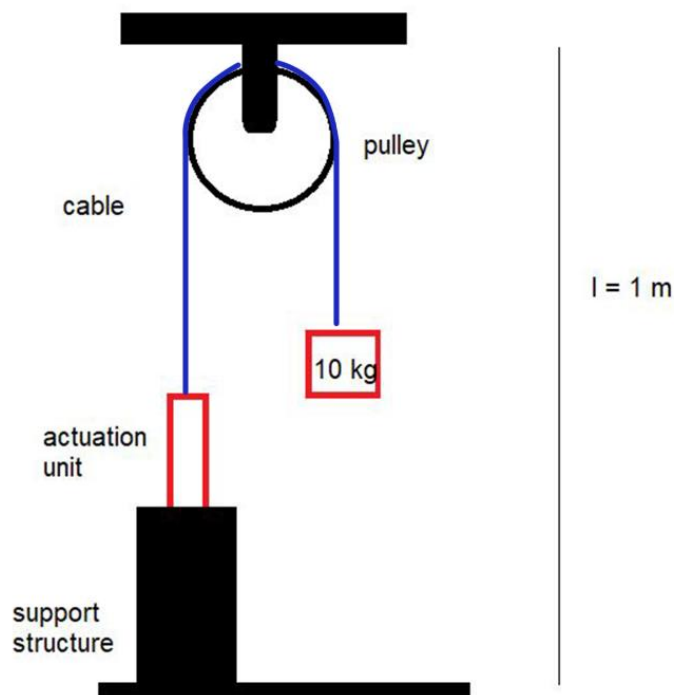


Figure 1: Schematic diagram

7. The motor specifications

Table 1: Motor Specifications

Material	Steel
Length	10 cm
Radius	2 cm
Weight	1 kg
Torque	0.5 Nm
Speed	1500 rpm
Power	24 W
Current	1 A
Voltage	24 V
Gear ratio	20:1
Efficiency	60 %