

RoboMuse 5.0: A Mobile Robot

1. Background

The mobile robot developed RoboMuse 5.0 is an evolution of a series of mobile robots since 2008 based on the robots designed and built by the undergraduate students of IIT Delhi who participated in Doordarshan Robocon competitions in that year, followed by several B. Tech projects undertaken. RoboMuse 1 to 4 were tested for their reliability and robustness by putting them in the Students Activity Centre of IIT Delhi unattended for 24×7 . It has two differential drive wheels placed centrally in order to make zero turning radius so that it take sharp turn.

2. Scope

The RoboMuse 5.0 shown in Fig. 1 can be used as an educational device for academic/research activities and high school community. Commercially available robots in general expensive. They require dedicated commercial software which does not allow easy modifications. The robot shown in Fig. 1 is very suitable for research and experimentation purposes, and for the beginners who want to get acquainted with robotics.

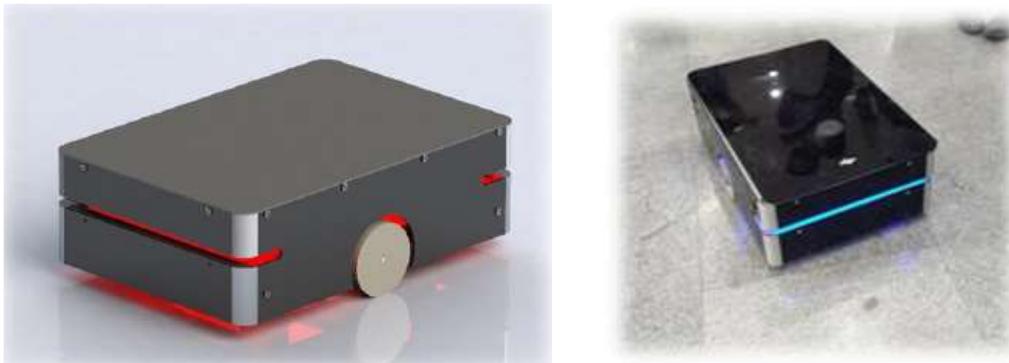


Figure 1 RoboMuse 5.0 mobile robot

3. Specifications

Model: RoboMuse 5.0
Length: 650mm
Width: 450mm
Height: 230mm
Ground Clearance: 20mm
Weight: 25KG
Loading Surface 650mm \times 450mm
Color Black and Grey
Payload: 100Kg
Towing Capacity: 100Kg
Speed and Performance: Maximum Speed (No load) 2m/s
Turning Radius: 0mm
Power: Battery LiFe 14V 70Ah
Charger: 220V 1.5A

It can be disassembled easily for transport; Off-the-shelf components used; Low cost Assembly instructions, user documentation.

4. Demonstration capabilities

It can be used to demonstrate kinematics motion control taught in a typical robotics course; point-to-point (PTP) motion, etc.