

Robotic Arm With Electrical Vehicle

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Abstract- The main focus of this work was to design, develop and implementation of competitively robot arm with enhanced control and stumpy cost so that the small scale industry can also use them. The robot arm was designed with three degrees of freedom with electrical linear actuator like structure talented to accomplish accurately simple tasks, such as Fault detection and light material handling, which will be integrated into a mobile platform that serves as an assistant for industrial workforce.

A robot manipulator consists of links connected by joints. The links of the manipulator can be considered to form a kinematic chain. The business end of the kinematic chain of the manipulator is called the end effectors and it is analogous to the human hand. For the end effectors can be a various sensor or can be designed to perform any desired task such as finding various fault heat liege, smock, current liege, etc. The robot arm is equipped with several servo motors which do links between arms and perform arm movements .The servo motors include that a controller (PIC16F631) was implemented. Testing and validation of the robot arm was carried out and results shows that it work properly.

Keywords- Sensor (Heat, Smock, Current), Servo motor, Kinematic chain.

I. INTRODUCTION

A Robot is a virtually intelligent agent capable of carrying out tasks robotically with the help of some supervision. Practically, a robot is basically an electro-mechanical machine that is guided by means of computer and electronic programming. Robots can be classified as autonomous, semiautonomous and remotely controlled. Robots are widely used for variety of tasks such as service stations, cleaning drains, and in tasks that are considered too dangerous to be performed by humans. A robotic arm is a robotic manipulator, usually programmable, with similar functions to a human arm. They have many different functions such as material handling, assembly, arc welding, resistance welding, and machine tool load and unload functions, painting, spraying, etc.

This Robotic arm is programmable in nature and it can be manipulated. The robotic arm is also sometimes referred to as anthropomorphic as it is very similar to that of a human hand. Humans today do all the tasks involved in the manufacturing industry by themselves. However, a Robotic arm can be used for various tasks such as welding, drilling, spraying and many more. A self-sufficient robotic arm is fabricated by using components like micro-controllers and motors.

Due to increase using of industrial robot arms, an evolution to that topic began trying to imitate human movements in a detail mode. The present work is part of a two-phase project, which requires a mobile robot to be able to transport the tools from the storage room to the industrial cell. In this phase in the project, which carried out at MET, BKC, IOE, Nashik the main focus was to design, development and implementation of an industrial robotic arm with stumpy cost, accurate and superior control. This robot arm was designed with Three degrees of freedom and electrical linear actuator talented to accomplish simple tasks, such as Fault detection and light material handling, which will be integrated into a mobile platform that serves as an assistant for industrial workforce.

II. FINDINGS

Robotic system exist today in industry have an single purpose for an mechanical job but it lack in the adding sensor and fault detection techniques. This robotic arm mainly provide an combination of sensor and hardware for robotic arm.

Also an robotic arm have an fixed position for its application which reduces its application limits of machine and hence we have provide an locomotive system so that it can not only provide an mechanical function but also can use in the maintances .

DESCRIPTION-

This robotic system mainly can divided in two part. Upper part of system mainly consists of an Robotic arm and Sensor box system .where as an lower part of system mainly