

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

BELGAUM-590014



A Project Report on

“SMART WINDOWS”

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ABSTRACT

Smart window is an implementation of Industrial Ergonomics in modern industrial set up. Industries is capital intensive and complex inters dependent system. The process of automation has also to be implemented for securing valuable company assets. Fire break out, electricity short circuits are most common reasons for loss of valuable assets. We made an effort build a model which works as Smart Window.

Smart window has been implemented with Micro Controller Philips 89V51RD2BN. MQ-2 sensor has been used as gas sensor to detect the any combustible gas liberated out of fire breakout. The MQ-2 sensor has been connected through comparator circuitry which gives digital high or low as on output, which is fed as input to Micro Controller to open door to clear the gas present inside the factory building. As fire is considered as most hazardous, every time when fire is detected, the system triggers an SMS to designated mobile number. The mobile number is considered to be Fire station helpline.

HSM-20G, Humidity Sensor has been used to sense the moisture in the air to detect the rain. The Humidity Sensor is connected through ADC to micro controller. A threshold value of 130 points has been set out. Once the humidity is reached to this limit, the door closes.

A manual switch has been given to operate door opening and closing. This gives convenience to override the actual process defined by Smart Window.

The project has Philips Micro Controller as its Central Processing Unit. 80C51 Central Processing Units 5 V Operating voltage from 0 to 40 MHz 64 kB of on-chip Flash program memory with ISP (In-System Programming) and IAP (In-Application Programming) Supports 12-clock (default) or 6-clock mode selection via software or ISP SPI (Serial Peripheral Interface) and enhanced UART PCA (Programmable Counter Array) with PWM and Capture/Compare functions Four 8-bit I/O ports with three high-current Port 1 pins (16 mA each) Three 16-bit timers/counters Programmable Watchdog timer (WDT) Eight interrupt sources with four priority levels.