

# ATRW

## Automatic Timing (Recording) Device for Railway Wagons

### INTRODUCTION

With the demand for correct turn around time of the wagons, lot of wagon users like coal fields, food corporation go-downs, warehouses and other industries, mining areas are compelled to complete the process of loading of wagons within a stipulated time to achieve overall efficiency as well as to avoid overheads and penalties being paid to the Railways. This device enables the user to strictly monitor and control the timing of wagon loading and unloading, etc so that the turn around time is monitored avoiding huge penalties thus resulting in considerable savings. The equipment is scalable user-friendly, highly reliable and accepted by Railways.

### TECHINCAL DESCRIPTION

Rail wheel sensors placed on the railway track recognize the entry of the LOCO into the coal filling yard and logs the event with time stamp in a micro processor based System .Completion of filling is also identified based on no wheel sensing for a long time. Time difference between these two actions is the time taken for filling the wagons. This is done automatically in the controller. This system also absorbs shunting conditions, train stopping over the sensor for a long time etc. Health of the system along with sensors is continuously monitored and logged as an event. The system interfaces to a host system through which logged data print out can be obtained.

### FUNCTIONS & SILENT FEATURES

- Rail wheel sensing based on proximity sensor placed on track about 100 meters away from control system
- Logs the train entered to filling station as an event with time stamping
- Also logs the train departure with time stamping
- Microprocessor based intelligent control system
- Also logs the train departure with time stamping
- Continuous health monitoring indicates failure of sensor control system by a LED flashing on the front panel
- Also logs all HW failures into the memory and can be taken as printout
- Easy maintenance
- Battery back up to caters for working of system for 12 hrs without input power supply

### SPECIFICATIONS For Controller

- 32 bit microprocessor based system
- Power supply 12v @ 500 ma
- Non volatile event log memory
- Event log memory upto 10x106events
- 2 row LCD display
- Keypad
- Surge & lightning protection
- Health indication on front panel
- All components used are of industrial grade
- Operating temperature 00 to 700 c
- Parallel port printer interface

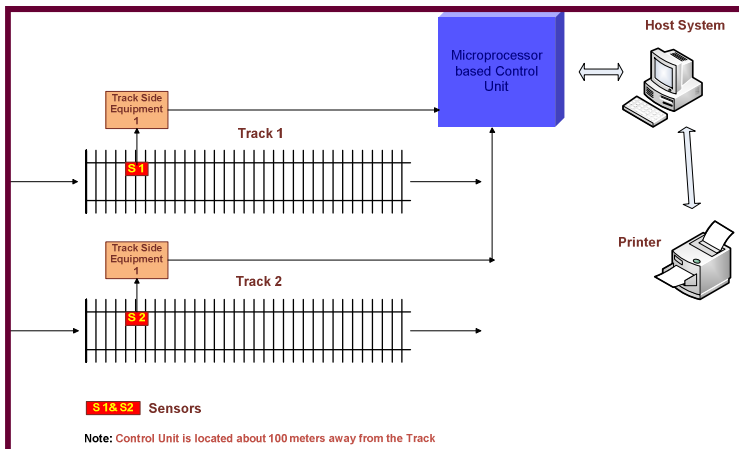


## SPECIFICATIONS Rail Wheel Sensor Type ZK24

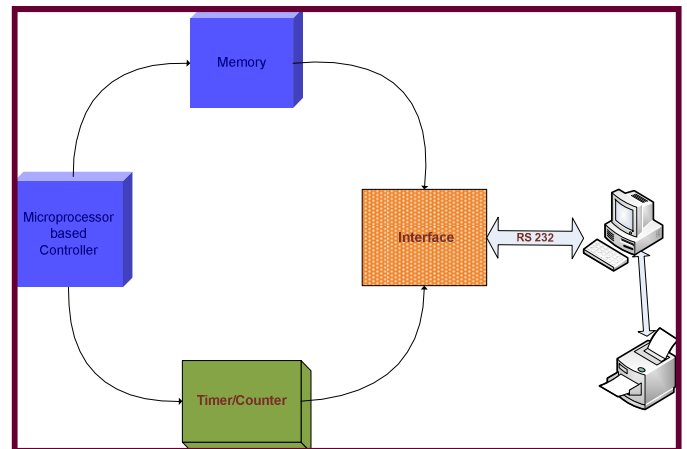
- Detection of drop-away from the rail
- Double rail wheel sensing system in one case – detection of direction.
- IP68 protection against water and dust
- Tested on shocks 200g according to EN 50125-3
- Operating temperature range -45... +80oc, humidity up to 100%
- The ZK24 sensor is mounted on the inner side of the rail
- Universal rail mounting clamp for rail types S45... UIC60 (other profiles on demand), no need for rail drilling.
- Traction current immunity, lighting over voltage protection
- Sensor ZK24 is tested and verified according to current standards for the railway safety signaling systems by ISA department of “TUV Rheinland Group”.
- The ZK24 rail wheel sensor with double structure is used for the rail wheel passage detection.
- Used in fail-safe signaling systems such as axle counters, level crossings, different kind of interlocking systems and other systems that are based on train detection over the certain track point.
- Detection of all rail wheel types according to UIC 510-2, minimal wheel diameter 300 mm.



## Layout Diagram-ATRW at Railway Coal Filling Yard



## Block Diagram-ATRW



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