

# Predictive Monitoring Systems

for Wayside and Trackside Facility Maintenance

Grasps the status of field equipment and solidly backs up maintenance

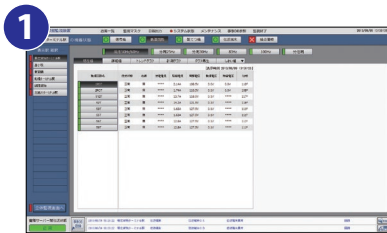
Field equipment status of the whole railway section is measured in real time, and by performing limit value monitoring, early detection of failure becomes possible.

Also, displaying measured data stored inside the equipment can be useful for finding the cause for failure occurrence and for considering recurrence prevention.



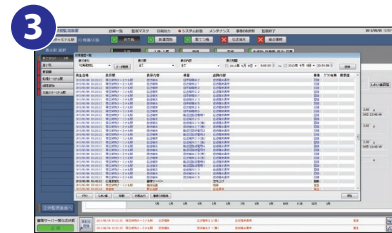
## Four major functions which solidly support maintenance

- 1 **Display of real time measured data** ⇒ Automation
- 2 **Trend value management of measured data** ⇒ Preventive maintenance
- 3 **Limit value check of measured data** ⇒ Early detection of failure
- 4 **Display of measured data** ⇒ Identification of failure cause  
(Early restoration and recurrence prevention)



### 1 Display of real time measured data

Field equipment status is displayed in real time.



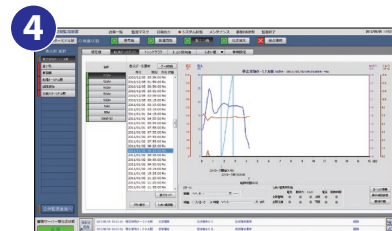
### 3 Limit value check of measured data

An alarm is activated in cases of threshold anomaly and failure of field equipment in real time, and also they are compiled. (Up to 3,000 cases)



### 2 Trend value management of measured data

Statistical results of daily measured data are displayed on the graph for thirteen months.



### 4 Display of measured data

Shifts in point machines are compiled up to 1,000 cases, and the necessary switchover data are displayed on the graph.

## Field transmission by general-purpose network technology

Transmission from inside an equipment room to field equipment box is conducted by adopting ARCNET, a general-purpose network for industrial use, for connection between transmission terminals and processors.

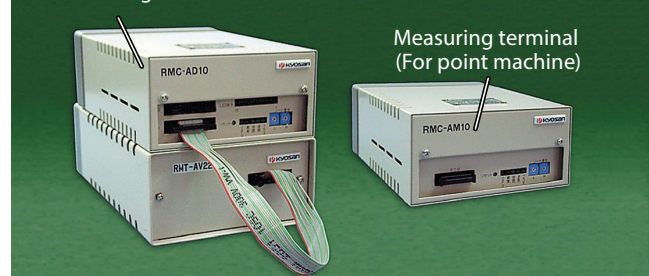
Transmission capacity (1 packet)	Short: 256 byte, long: 512 byte
Transmission speed	156.25kbps

## Accuracy enhancement by the latest measuring technique

For alternate current, effective value calculation is performed. For direct current, average value calculation applies. By these, measurement errors due to waveform distortion are reduced. Also, with regard to measurement of track circuits etc., considering the current of overhead contact lines and the influence of other overlapping signals, unnecessary frequency components are removed by the embedded active filter.

## Easy-to-mount forms of measuring terminals

Measuring terminals



Measuring terminal  
(For point machine)