

Real-Time Remote Monitoring

FUJITSU Software Imagepower Analog Meter Recognizer

Analog Meter Recognizer (AMR) can digitizing the measurement values of various types of in remote areas with difficulty to access and automate the meter reading by camera which results in reducing the load and danger of monitoring work. Additionally improve work efficiency when an alert is triggered in real time when abnormal readings are captured.

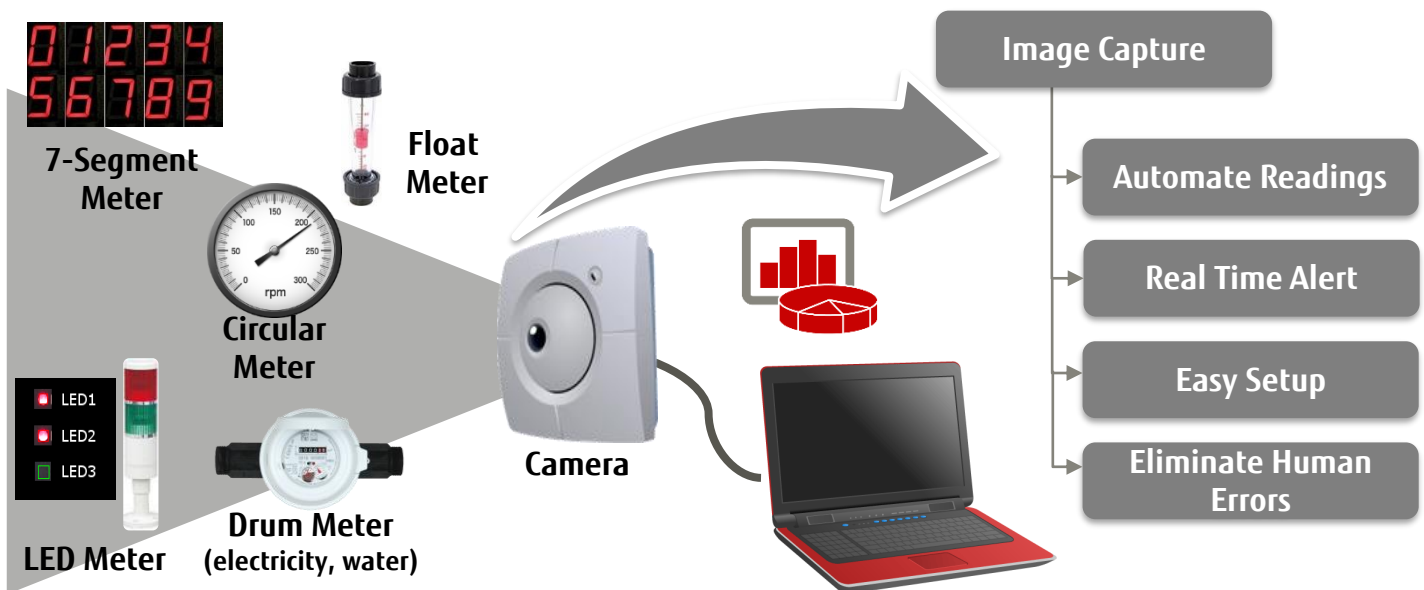
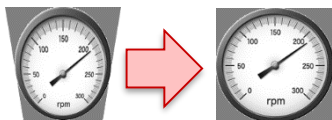


Image Recognition Technology

Analog Meter Recognizer (AMR) provides image correction functions for reading meters in various environments therefore making hard to read meters easily readable.

Distortion Correction

Resolves distorted meter image enables recognition even when the camera can not be placed directly in front of the meter.



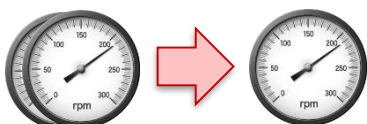
Brightness Correction

Brighten meter image enables recognition even when the meter is located in dark place.



Camera Shake Correction

Reduce camera shake impact enables recognition even when the camera cannot be placed at the exact front of the meter.



Temporary Deviation Correction

Removes temporary deviation by ignores values caused by people blocking meter and camera when passing by or any unwanted obstruction.



Key Features & System Overview

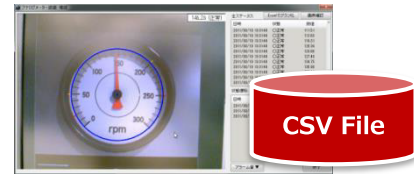
1 Digitize Value

Capable to recognize wide range of meter.

- Circular meter (Circular, fan-shaped)
- 7-segment meter
- LED lamp
- Float Meter
- Drum Meter

2 Data Logging

Auto generate log with timestamp and meter readings in CSV file.



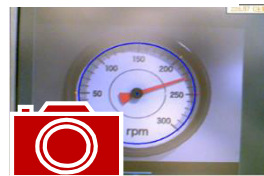
3 Alert Notification

Trigger alert based on threshold setting to notified user.



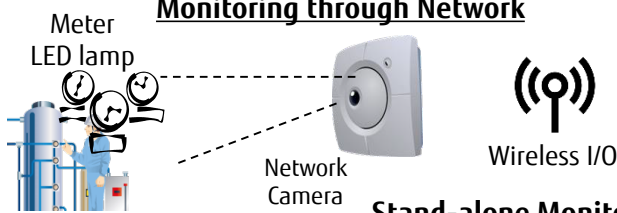
4 Images Recordings

Auto capture meter snapshots during alert notification or based on user periodical setting.



Data Source

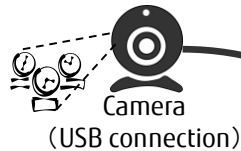
Monitoring through Network



Central Monitoring System



Stand-alone Monitoring



Data Processing



Server



PC

Presentation/Function



Visualize

- Real Time Monitor
- Trend Analysis
- Notification

Remote Monitoring Center



Use Case

Customer Challenges

- Legacy machine that unable to collect data from controller.
- Location of machine hard to access by inspector.

Proposed Solution

- Continuous measurement of the analog meter of the clean room air conditioner and digitization, energy saving tuning implemented

Outcome & Benefits

- Cost savings of more than 150 K US\$ per year
- Find the optimum value by visualization of equipment
- Capture signs of failure and previous changes



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