



Wireless Predictive and Preventive

Maintenance of Large Cranes (Unloaders)

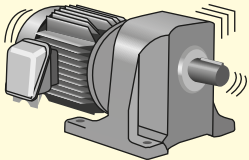


We have to retain a cargo ship in the case of a failure in an unloader that is used to discharge bulk cargo, such as iron ore or coal, from the ship!

The unloader is huge, and it moves and rotates. It would be convenient if we could control the unloader wirelessly!



We need to monitor the motor temperature, vibration, and power consumption as well, for the predictive and preventive maintenance of the unloader!



Motor

Conveyor

Motor

Motor

Control panel

Conveyor

Unloader

The unloader refers to a cargo landing machine that is installed at a berth, such as a pier, to discharge ore or other bulk cargo from ships.

Predictive and Preventive Maintenance

You can conduct predictive and preventive maintenance of existing crane equipment by simply retrofitting sensors.



No Wiring Work

It is possible to retrofit sensors wirelessly, with no wiring work required.



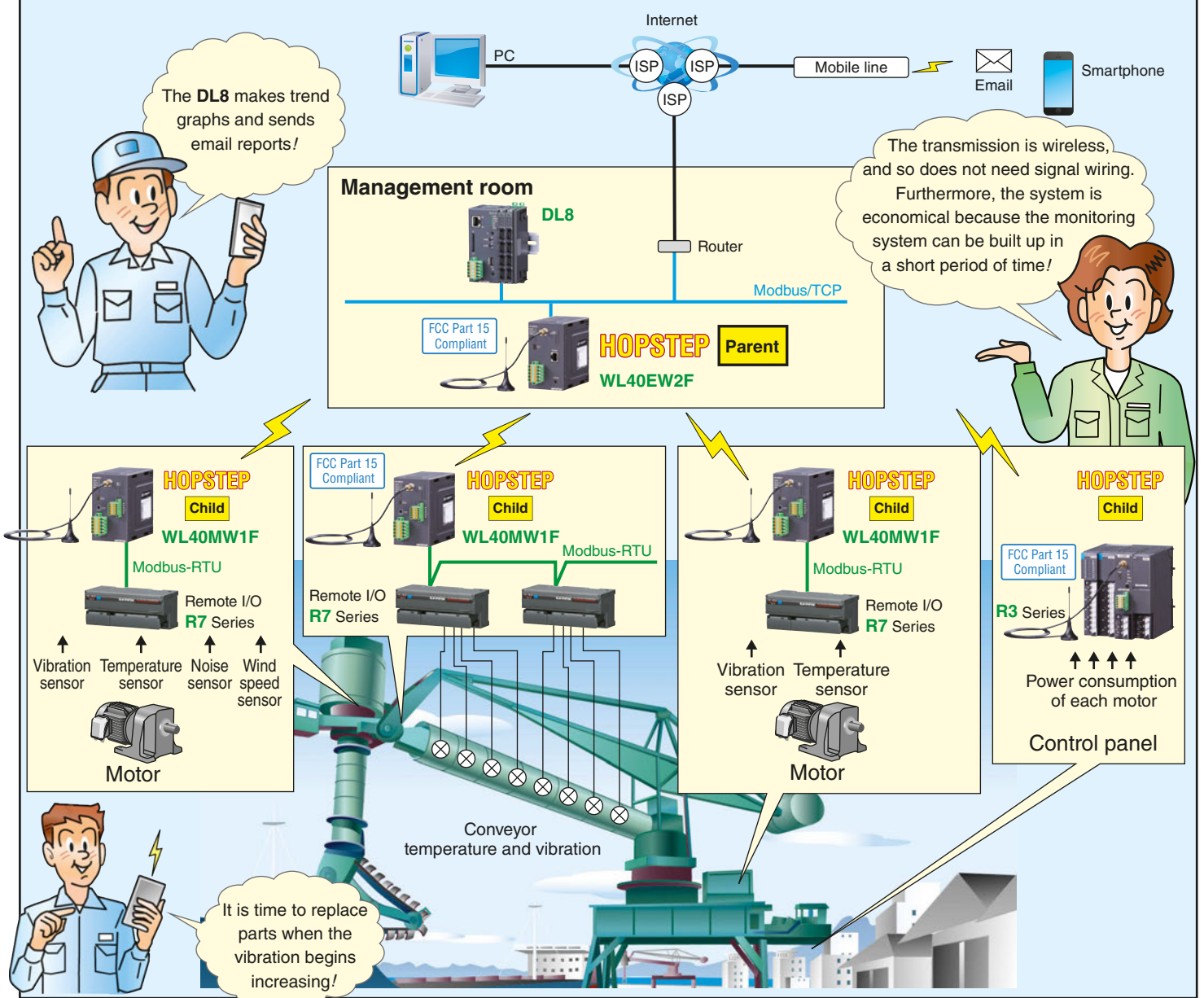
Possible to Obtain Measurement Signals

You can take the measurements necessary for predictive and preventive maintenance.



Example of Remote Monitoring System with

HOPSTEP (900 MHz ISM Band Multi-hop Wireless System)



FCC Part 15 Compliant 900 MHz ISM Band Wireless Products ^{(*)2}

- Free communication charges and no license fees.
- Reaching a long line-of-sight distance, up to 0.62 mile (1 km). ^{(*)1}
- Excellent wave propagation characteristics

For the DL8 and the Remote I/O R7 Series in detail, see M-System's website.



HOPSTEP Parent
Wireless Gateway
Model: WL40EW2F



HOPSTEP Child
Wireless Gateway
Model: WL40MW1F



HOPSTEP Child
Remote I/O R3 Series
Modbus Interface
Module
Model: R3-NMW1F

^{(*)1} Be sure to conduct a signal strength site survey before introducing wireless modules.
^{(*)2} This device is approved for use only in the US.

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