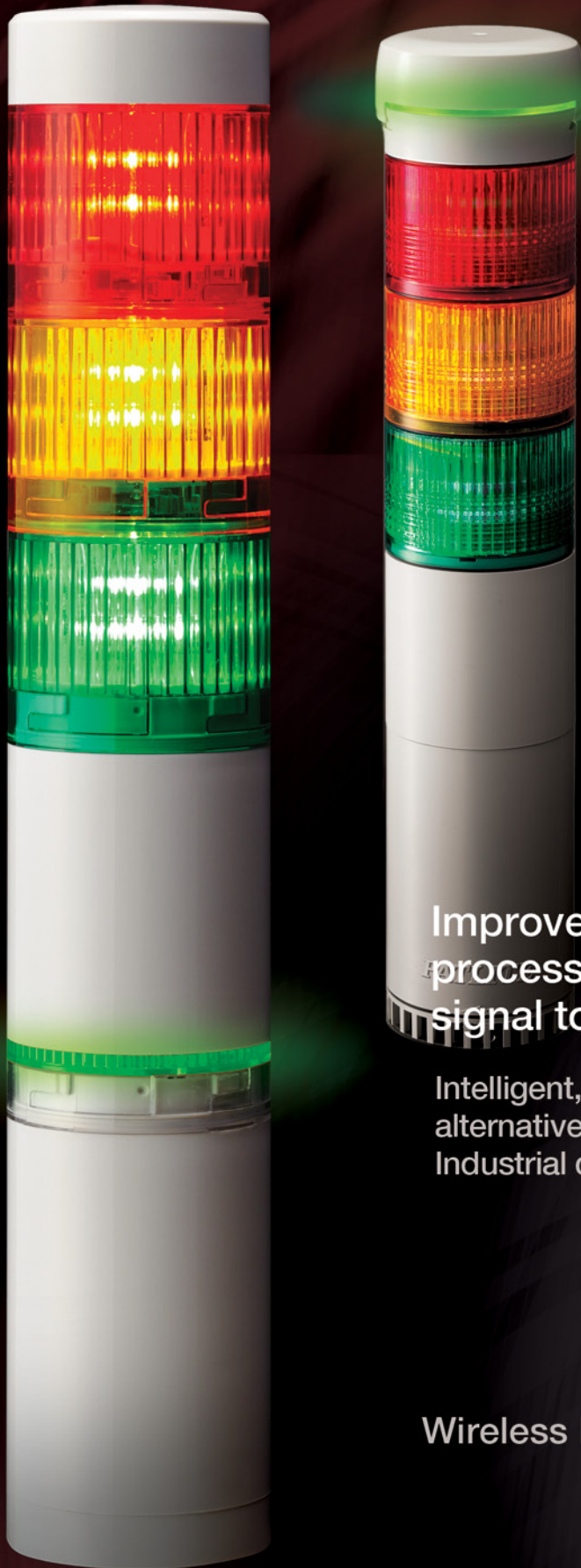


**PATLITE**<sup>®</sup>  
New Frontiers in Safety, Security and Comfort.



SMART FACTORY



Improve your  
processes with wireless  
signal tower monitoring

Intelligent, cost-efficient  
alternative to complex  
Industrial data collection systems

**WD-Z2**  
Wireless Data Acquisition System



SIGNAL TOWER

WD-Z2 TRANSMITTER

WIRELESS TRANSMISSION

IIoT, Industrial Internet of Things, a term that has become more than just a buzzword but a way of the future.

IIoT provides businesses with the ability to access and monitor plant-wide manufacturing data for operational visibility, predictive maintenance and interconnectivity among machines, components and people. This achieves Kaizen, enabling businesses to continuously improve their processes and quickly solve problems as they arise.

The WD System is a revolutionary low-cost, IIoT add-on, allowing PATLITE Signal Towers to transmit wireless operational data, based on its physical, visual and audible alert system. Seamlessly acquire and view real-time machine data, irrespective of the age or type of machine, to prompt immediate responses from operators.

Predicting maintenance, identifying bottlenecks and increasing OEE (Overall Equipment Effectiveness) on the factory floor is now simpler than ever.



**WDT-Z2  
TRANSMITTER**

# CASE STUDY 1

## BEFORE

Production bottlenecks are being caused by machine down time and uneven production flow. To address this issue, we are manually creating daily machine reports which are tedious and inaccurate.

## AFTER

The WD system enables us to monitor our line in real-time, quickly identify bottlenecks and address them. We can also determine the severity of machine issues for more effective predictive maintenance.



# CASE STUDY 2

## BEFORE

We operate several manufacturing facilities in different locations and have no system in place to remotely monitor machines in real-time. Our goal is to share productivity among our facilities to improve company wide productivity.

## AFTER

The WD system allows us to monitor all lines in all locations remotely and in real-time. Workers are able to better understand how their efforts affect the bigger picture improving company wide productivity.



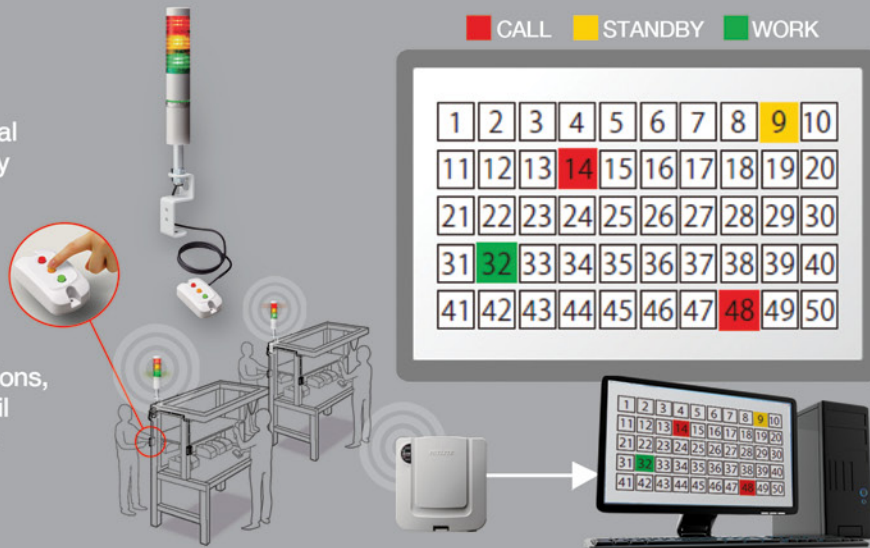
# CASE STUDY 3

## BEFORE

Maintenance calls from our manual assembly stations are only visually displayed on signal towers. When a supervisor is away from their station or site, delays and production bottlenecks occur.

## AFTER

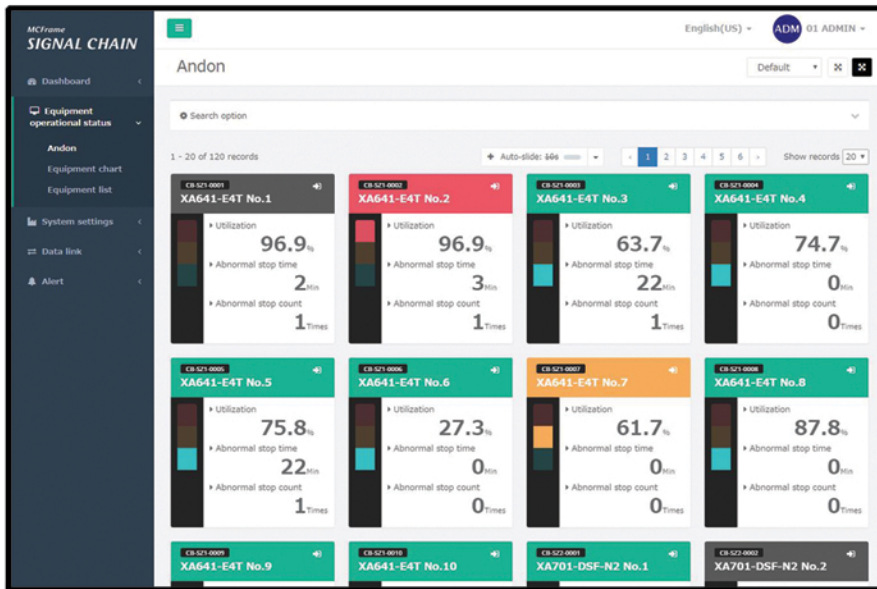
With the WD installed in workstations, supervisors can now receive email alerts for maintenance calls when away from the site, greatly reducing bottlenecks.



# Third Party Software Suite

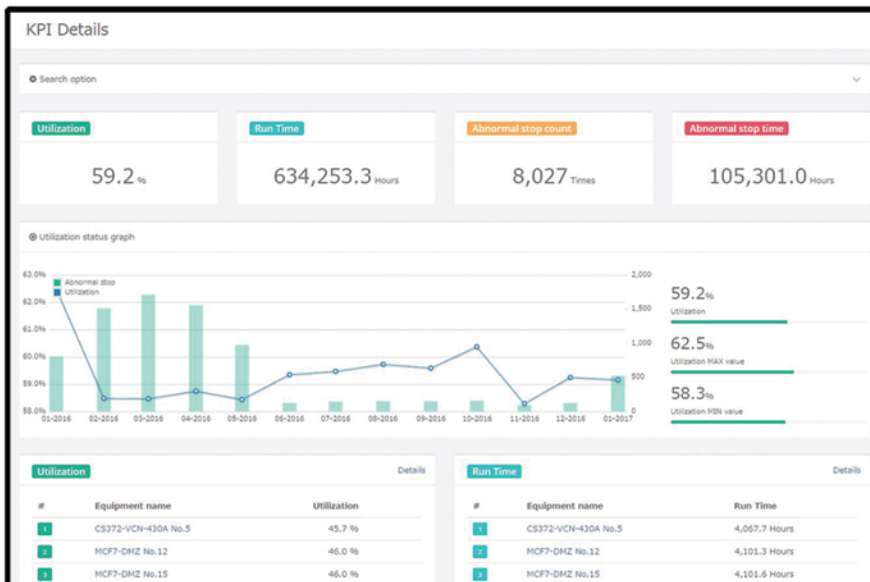


View health of production operations in real time and receive live updates on any status changes



- Display effective utilization, stop times, and abnormalities for each device
- Immediately visualize equipment that are no longer efficient
- Customize display settings for various application preferences

Check operation history for each production unit in a graphical detailed display

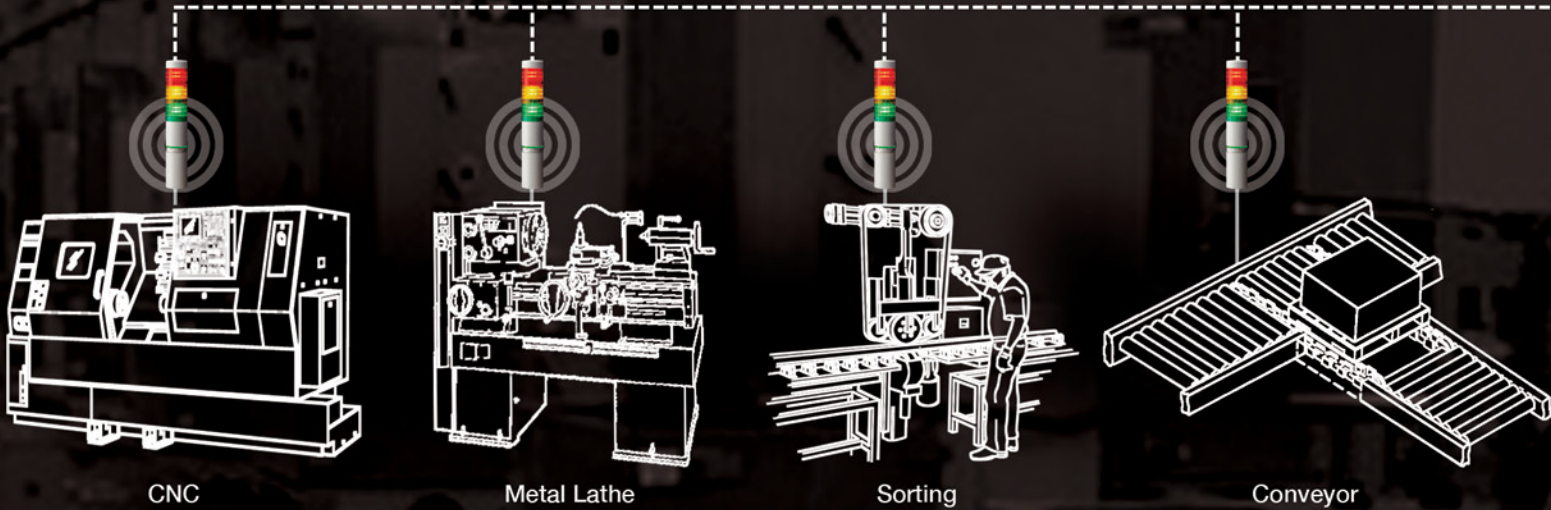


- View numbers in analog graphs or digital numbers to clearly view efficiency percent over a period of time
- Easily check long term adverse equipment to make educated administrative decisions for factory improvement
- Set alerts for machine downtime based on severity level or time duration.

Signal Chain Demo Site - [bit.ly/schaindemo](https://bit.ly/schaindemo)  
Login: user01  
PW: kaizen-iot

# Network-enable your machines

WD Transmitters easily attach to compatible PATLITE Signal Towers and enables wireless data transmissions to a WD Receiver



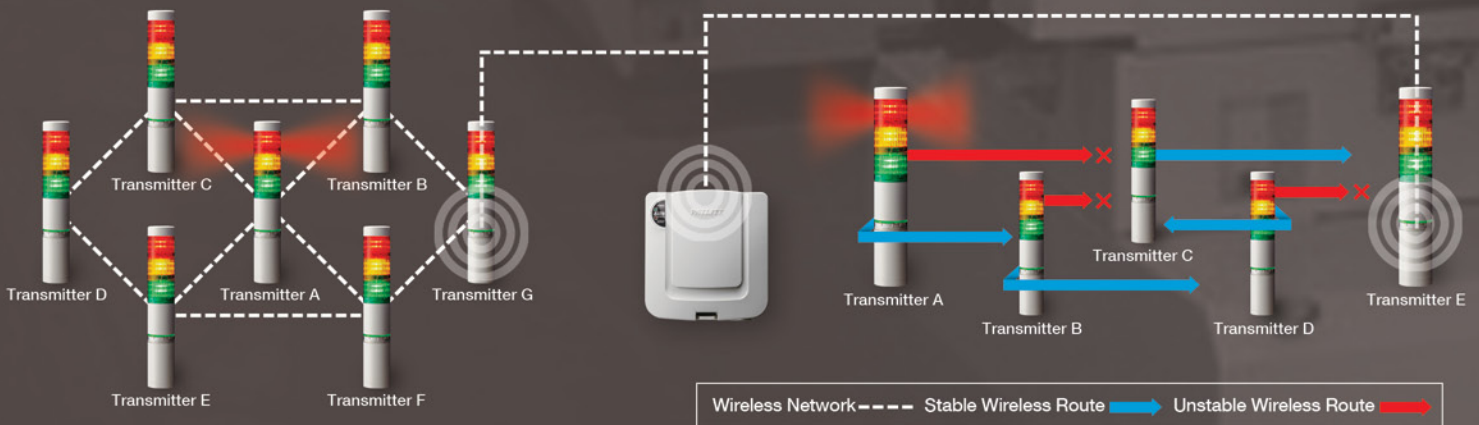
## Wireless Communications System

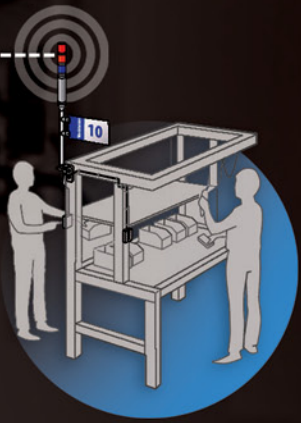
ROUTING FUNCTION AUTOMATICALLY SELECTS OPTIMUM COMMUNICATION ROUTE

Multi-hop mesh networking allows the WD system to adapt to various environmental conditions when transmitting data by selecting the best route for radio wave communications. Even if the floor layout of the equipment is altered, data communications will resume normally.

ZIGBEE WIRELESS 2.4GHZ MESH NETWORKING FOR ACCURATE AND RELIABLE COMMUNICATIONS

The WD system does not require complicated wireless or network settings. The system automatically and continuously selects the best routes to send data through to ensure stable data transmission.





Manual workstations

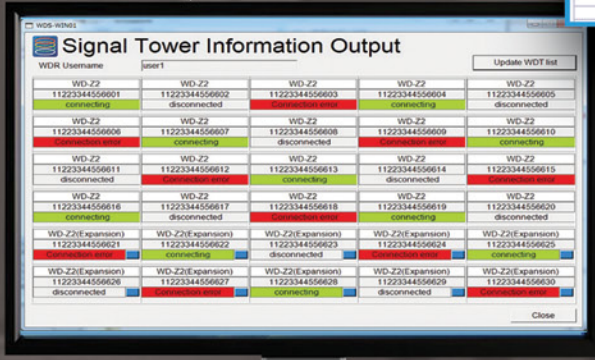
Receiver WDR-LE-Z2



wireless data transmission

Ethernet (LAN) or USB

Data	Time	Mac Address	Username	Red	Amber	Green	Blue	White	Buzzer	WDT/Monitoring	Elapsed time
6/27/17	12:53:06	58C232FFFE2CF92E	Workstation 1	1	1	1	0	9	0	9	0:00:50
6/27/17	12:53:06	58C232FFFE2CF92E	CNC 3	1	0	0	0	0	0	9	0:00:00
6/27/17	12:53:12	58C232FFFE2CF92E	Lathe Machine 1	0	0	1	0	9	0	9	0:00:06
6/27/17	12:53:14	58C232FFFE2CF92E	Server Room 2	1	1	1	0	9	0	9	0:00:02
6/27/17	12:57:07	58C232FFFE2CF92E	Global Server 1	1	1	1	0	9	0	9	0:00:53
6/27/17	12:57:07	58C232FFFE2CF92E	LR Tower	1	0	0	0	0	0	9	0:00:53
6/27/17	12:57:18	58C232FFFE2CF92E	LME Tower	1	1	1	0	9	0	9	0:00:11



Time	Mac Address	Username	Red	Amber	Green	Blue	White	Buzzer	WDT/Monitoring	Elapsed Time
6/27/17	58C232FFFE2CF92E	Workstation 1	1	1	1	0	9	0	9	0:00:50
6/27/17	58C232FFFE2CF92E	CNC 3	1	0	0	0	0	0	9	0:00:00
6/27/17	58C232FFFE2CF92E	Lathe Machine 1	0	0	1	0	9	0	9	0:00:06
6/27/17	58C232FFFE2CF92E	Server Room 2	1	1	1	0	9	0	9	0:00:02
6/27/17	58C232FFFE2CF92E	Global Server 1	1	1	1	0	9	0	9	0:00:53
6/27/17	58C232FFFE2CF92E	LR Tower	1	0	0	0	0	0	9	0:00:53
6/27/17	58C232FFFE2CF92E	LME Tower	1	1	1	0	9	0	9	0:00:11

CSV data can be easily manipulated for various calculations and charts

WDS-WIN01 Software



## Included WDS-WIN01 Software MAKES IT EASY TO SETUP WIRELESS COMMUNICATIONS WITH SIGNAL TOWERS ON THE PLANT FLOOR

- User-friendly software interface for easy operability
- Allows users to acquire equipment data from remote locations
- CSV data logger (license required)

# Third Party Software Suite

## Flex Signal

### Monitor the operation status of the entire production floor in real-time

- Display production times, stop times, and count functions for each device
- Instantly discover production bottlenecks at a glance
- Each display module can be customized to your application and floor plan
- Able to output display to a larger monitor for a clearer visual system



### Check operation history for each production unit in a graphical display

- Realize immediate areas for improvements by seeing the difference in time between normal operating mode (green) and stopped operating mode (red or orange)
- Visualize the units that have a normal operating run time and other units that will need to be stopped more often due to inefficiency

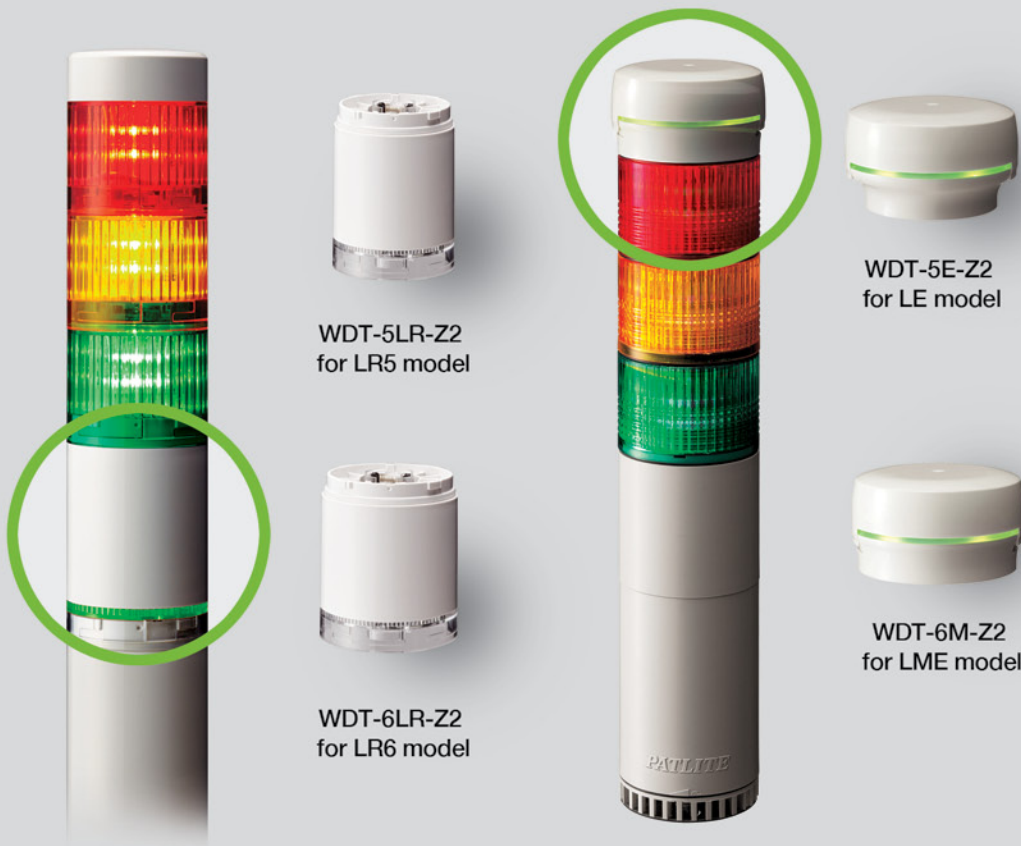


Flex Signal Demo Site - [bit.ly/flexsignal](http://bit.ly/flexsignal)

Flex Signal is a third party software suite and not an official product of PATLITE Corporation

## Signal Tower Transmitter

## Receiver



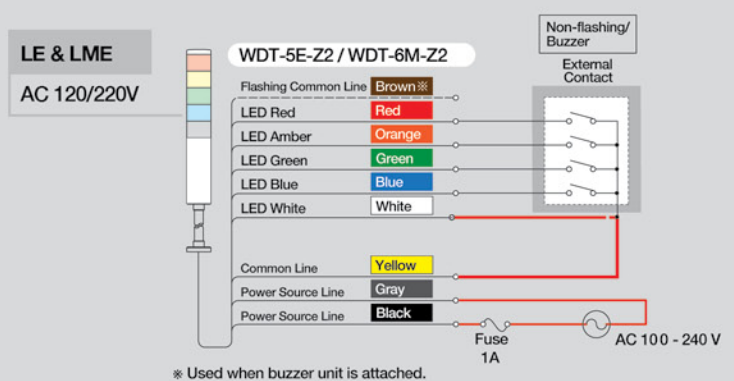
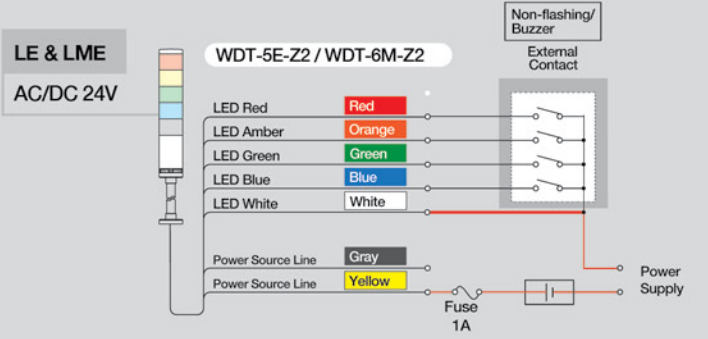
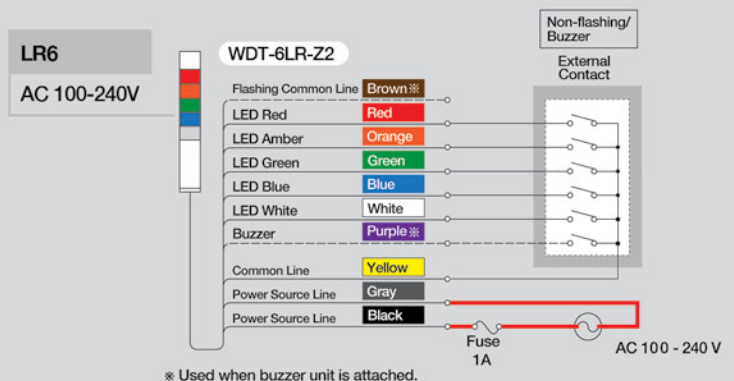
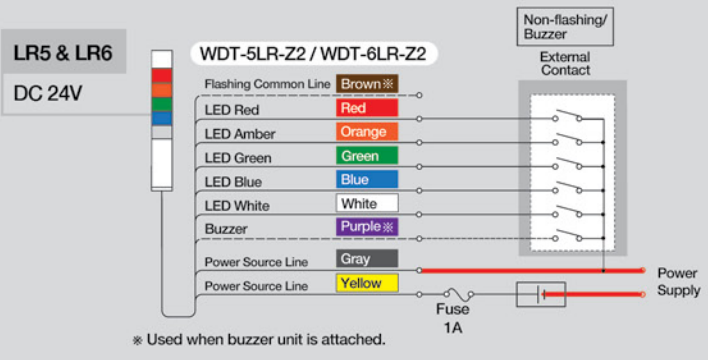
WDR-LE-Z2

## AC Adaptor



Model: ADP-001

## Wiring Diagrams for Signal Towers and Transmitters



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