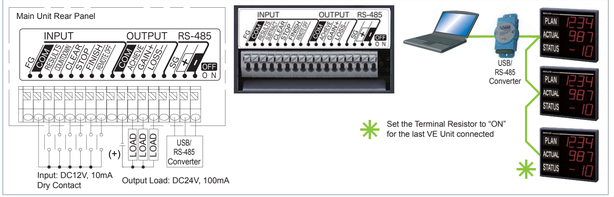
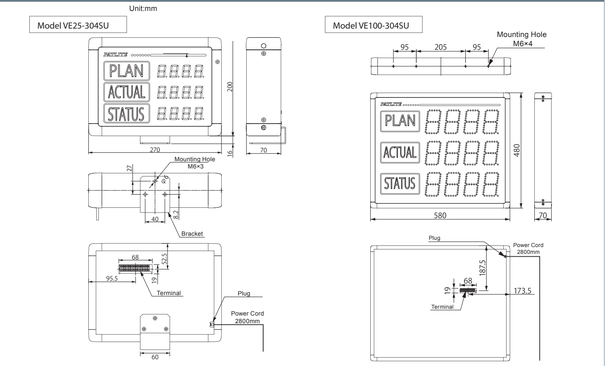
Terminal Wiring Diagram



VE Dimensions



VE Specifications

Item	Specification	
	VE100-302US	VE25-302US
Rated Voltage	Input: AC100V to 240V (50Hz/60Hz) Output: DC12V	
Voltage Range	AC90V - AC264V	
Operating Temperature/Humidity Range	0°C to 40°C / 35% to 85% RH (No Condensation)	
Mounting Location	For Indoor Use Only	
Insulation Resistance	1MΩ or more with DC500V test current between voltage line and FG	
Withstanding Voltage	10mA or more with AC1000V applied for 1 min between voltage line and FG	
Vibration Resistance	JIS C0040 Acceleration speed of 19.6m/s2	
Outer Dimensions (Unit:mm)	(l) 580 x (h) 480 x (d) 70	(l) 270 x (h) 200 x (d) 70
Mass (AC Adaptor Included)	about 5.8kg	about 1.9kg
Maximum Power Consumption	about 12W	about 11W
Conformity Standards	FCC Part 15 Subpart B Class A, RoHS Compliance (DIRECTIVE 2002/95/EC)	

Use PATLITE's AirGRID Wireless Data Acquisition System to further improve productivity

AirGRID™ WIRELESS SYSTEM

AirGRID Possibility
WIRELESS COMMUNICATION
Simply attach AirGRID transmitters on existing PATLITE 50mm or 60mm signal towers, to begin gathering data wirelessly. Use the data to identify process bottlenecks.

AirGRID Solution
FLEXIBLE LAYOUT
With the AirGRID, machine operation status data can be archived instantly from multiple machines. Even after machine layout changes or new machines are installed, it is not necessary to re-install hard-wires for data communication.

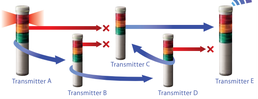
AirGRID Advantage
COST PERFORMANCE
Initial investment cost of the AirGRID is much less than the installation cost of a hard-wire network. Moreover, machine operating status data acquired can be utilized to determine the necessary maintenance period.

Multihopping wireless mesh networking implemented for accurate and reliable communication

The multi-hop mesh network communication is flexible enough to respond to various environmental conditions when transmitting data by selecting the best route for radio wave communication.
Even with modifications of the floor layout, data communication starts automatically from power-up.

Routing function automatically selects optimum communication route

This product doesn't need complicated wireless or network settings, the automatic selection for a good route to carry data communication is done as soon as the power source is connected. In addition, when an obstacle impares the data transmission of the wireless communication, the transmitter automatically searches for a different route to re-connect.



Other compatable Patlite Products to complement the VE for solutions

BSV
Ultra-slim MP3 field-programmable annunciator

HSST
3-light manually controlled LED stack light kit

WSST
Manual control box for up to 5 lights and 1 alarm (Stack Light Towers not included)

EWH
32 built-in sounds with 8 channles and a 105dB (at 1m) speaker output

PATLITE Corporation
International Division, Sales and Marketing Department
8-8, Matsuyamachi, Chuo-ku, Osaka, Japan 542-0067
TEL: +81-6-6763-8220
FAX: +81-6-6763-8221

PATLITE (U.S.A.) Corporation
20130 S. Western Ave. Torrance, CA 90501, U.S.A.
TEL: +1-310-328-3222
FAX: +1-310-328-2676

PATLITE (SINGAPORE) PTE LTD
No.2 Leng Kee Road, #05-01 Thye Hong Centre, Singapore 159086
TEL: +65-6226-1111
FAX: +65-6324-1411

PATLITE (CHINA) Corporation
Room 512, Jufeng Business Building, No.697-3 Lingshi Road, Shanghai China 200072
TEL: +86-21-6630-8969
FAX: +86-21-6630-8938

PATLITE Europe GmbH
Am Soeldnermoos 8, D-85399 Hallbergmoos, Germany
TEL.+49-811 9981 9770-0
FAX.+49-0-811 9981 9770-9

PATLITE KOREA CO., LTD.
202 Seokwang Bldg, 1361-9 Seocho-dong, Seocho-gu, Seoul, 137-863
TEL.+82-2-523-6636
FAX.+82-2-523-6637

http://www.patlite.com

VEGETABLE OIL INK

⚠ CAUTION
To ensure correct use of these products, read the "Instruction Manual" prior to use. Failure to follow all safeguards can result in fire, electric shock, or other accidents.
Specifications are subject to change without notice.

PATLITE ECO PROJECT
For the benefit of mankind and the earth, Patlite is committed to developing environmentally friendly products.

PATLITE®
New Frontiers in Safety, Security and Comfort.

A Real-time Production Monitoring Solution

VE Series

The VE Series Visual LED Display is a simple-to-use, self-contained factory production monitoring system, designed for industrial use on the automated machinery and "Lean Manufacturing" production process. The VE display provides real-time visual feedback to workers and supervisors about production goals, progress and problems. VE Models are very easy to install and operate, supporting both local setup via wireless remote control or remote access from a network. PATLITE offers a choice of 2 VE models (25mm or 100mm character height), mounting brackets and compatable signal towers. VE Series fully supports the principles of "Kaizen" and helps achieve a "Visual Factory" , where production information is quickly accessible and easy to understand.

Model VE100-304SU

- **Improve Manufacturing Productivity**
- **Reduce Down Time for "Kaizen"**
- **Ideal for Lean Manufacturing**

Model VE25-304SU

- **Real-time Production Monitoring**
- **Improve Production Reports**
- **Easy Installation**

www.patlite.com

Case Study

BEFORE
Wasted time was caused from an uneven production flow which was the result of machines in need of maintenance, operators waiting for parts, or call for help and Supervisors who did not know who was behind or needed help.

AFTER
After each station had a VE Real-time LED DIsplay Board with a Signal Tower installed;
⇒ Reduced time waiting for parts or maintenance
⇒ Improved productivity
⇒ Improved work flow
⇒ Supervisors could respond to help operators who needed it

Definitions

PLAN	Total number of parts to be produced
TAKT	Time in seconds allowed to make one part
TARGET	Number of parts to be produced during a given time (based on Takt time)
ACTUAL	Current number of parts made
STATUS	Number of parts made on schedule or behind schedule (based on Takt time)
Arbitrary	Parameter selectable from the user

VE Screen Display Selections

Five different combinations and one custom setting to display the VE to meet the right application.
Examples shown below use the following conditions: Plan = 2,000, Actual = 100; Target = 500; Total time from start = 8,000 seconds

Type 1	Plan	Total units planned	Example: 2000	
	Actual	Units made now	Example: 100	
	Status	Actual - Target	Example: 100 - 500 = -400	
Type 2	Plan	Total units planned	Example: 2000	
	Actual	Units made now	Example: 100	
	Actual Ratio	Percentage of plan made	Example: (100/2000) x 100 = 5%	
Type 3	Target	Units made during a preset time	Example: 500	
	Actual	Units made now	Example: 100	
	Status	Actual - Target	Example: 100 - 500 = -400	
Type 4	Plan	Total units planned	Example: 2000	
	Actual	Units made now	Example: 100	
	Work Ratio	Percentage of target made	Example: (100/500) x 100 = 20%	
Type 5	Plan	Total units planned	Example: 2000	
	Target	Units made during a preset time	Example: 500	
	Actual	Units made now	Example: 100	
Type 6	Plan	Total units planned	Example: 2000	
	Actual	Units made now	Example: 100	
	Rem 1	Number short from plan	Example: 2000 - 100 = 1900	
Type 7	Arbitrary	Target	Units made during a preset time	Example: 500
	Arbitrary	Status	Actual - Target	Example: 100 - 500 = -400
	Arbitrary	Takt Ave	Ave. sec per pcs.	Example: 8000/100 = 80 sec

VE Parameter Examples

The chart below describes how the VE can be setup to calculate the results of a simple task using the "Takt" function.
The Screen displays were set for "Type 5" and "Type 7" (arbitrary) to configure the results.

Sample Setup & Results

Time (sec)	0	4	8	12	16	20
Takt (4 sec)		4	4	4	4	4
Target		1	2	3	4	5
Plan [5]						5
Actual		1	1	2	3	4

Parameter Examples

Achievement %	(1/5)x100	(1/5)x100	(2/5)x100	(3/5)x100	(4/5)x100
Actual Work	(1/1)x100	(1/2)x100	(2/3)x100	(3/4)x100	(4/5)x100
Achieved Takt (sec)	=1pc 4	+1pc 8	=1pc 8	+1pc 4	-1pc 4
Takt Average	4/1	8/1	12/2	16/3	20/4

= Actual time spent/Actual pieces

Options

Remote Control — VE-IRU
For: VE25-3045U, VE100-3045U
RoHS

Display Labels — [Special Order]
For: VE25-3045U, VE100-3045U

Brackets (Set of 2) — VE-01
For: VE100-3045U
RoHS

Wide-range AC Adaptor — VE-AD02U
For: VE25-3045U, VE100-3045U
Input: 100 - 240VAC 47-63Hz
Output: 12VDC 2A
RoHS

USB to RS232C/RS485 Adaptor — ADAM-4561
For: VE25-3045U, VE100-3045U

VE Display Functionality

The data table below shows the items and description of the different combinations available to calculate and show the results for a "Real-time" factory environment.

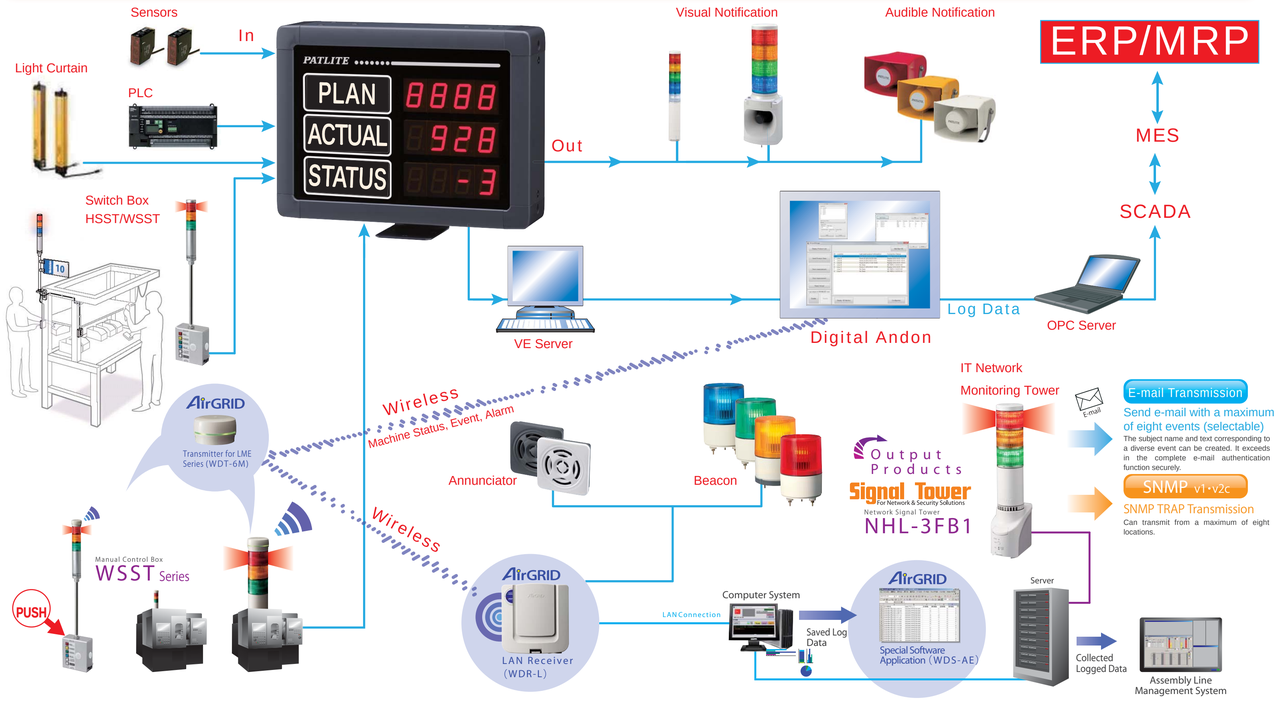
Item	Contents		
	Function Name	Label	Description
Display Item	Plan Number	PLAN	Displays the final value scheduled before production starts.
	Target Number	TARGET	Displays the scheduled value expected to reach during the production period.
	Achievement Number	ACTUAL	Displays the actual value for completion during production.
	Progress	STATUS	Displays the value "number of achievements minus target number".
	Remainder1	QTY LEFT	Displays the planned value minus the achievement value.
	Remainder2	QTY SHORT	Displays the achievement value minus the planned value.
	Achievement Ratio	%PLAN	Displays the achievement value divided by the planned value multiplied by 100.
	Actual Work Ratio	%TARGET	Displays the achievement value divided by the target number multiplied by 100.
	Achievement Takt	TAKT	Displays the recent production duration based on the achievement input.
	Takt Ave.	TAKT ave.	Displays the work-hours divided by the achievement value.

Display Contents — From the following seven types of displays, one type can be selected.
Types 1 through 6 are set, but the "User" type is capable of selecting three of the 10 items indicated in the section above.

Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	User
PLAN	PLAN	TARGET	TARGET	PLAN	PLAN	Arbitrary
ACTUAL	ACTUAL	ACTUAL	ACTUAL	TARGET	ACTUAL	Arbitrary
STATUS	%PLAN	STATUS	%TARGET	ACTUAL	QTY LEFT	Arbitrary

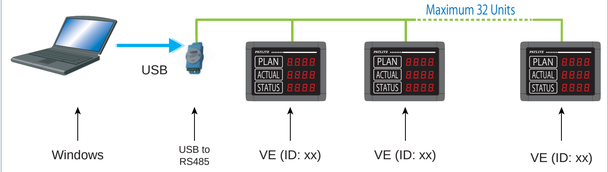
Prescale Function	The achievement count-up input can be changed when bulk sizes or packages are counted versus one item at a time. (Prescale UP / Prescale DOWN count is possible)
Takt Time	A base period (time unit: 1 second or 0.1 second) required to produce one product, with a target number that can be set up to measure takt time progress.
Target Count Display "Stop"	When an input signal is entered in the "STOP" terminal, the numerical value on the top rung will flash.
Working-hour Function	In conjunction with labor laws, the working hours and "Data Clear" time can be set up based on the maximum 16 hour work scheduling, and a maximum of 3 set ups can be made for measurement data clear time.
Automatic Start Function	As soon as the power supply is switched on and the start of production time comes, this function will automatically start the measurements without the need for a terminal input to "Clear" and pressing the "Start" button from the remote control.
LED Brightness Control	The brightness of the LED display can be changed to three levels.
LED lighting/flashing	The LED display can be turned on or off.

PATLITE Solutions for Lean Manufacturing on the Factory Floor



Factory Floor (Not Fully-automated) | **Operations, Maintenance, Data Center**

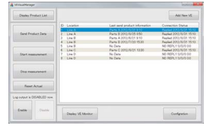
VE Software



Software Applications:

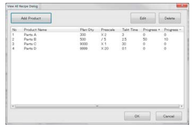
- Preset ID numbers faster for a large quantity of VE Display Boards
- Monitor the status in a network of the VE Display Boards
- Export data (i.e. csv format) for analysis and reports.

Parameter Transmission Window



Main Window

Parameter Setup Window



VE Inputs and Outputs

The VE Terminal has Intputs and Output to connect sensors, an RS485 module, and output indicators such as PATLITE signal towers or audible alarms, to indicate a specific condition.

Item		Contents
Output	ACHIEVE	When the achievement number reaches the planned number, a 5 second output signal is sent.
	GAIN+	When [Achievement Number minus Target Number] is greater than [GAIN + Preset Value], an output signal is sent.
	LOSS -	When [Achievement Number minus Target Number] is less than [LOSS - Preset Value], an output signal is sent.
Input	RESULTS	The achievement number is counted up.
	COUNTDOWN	The achievement number is counted down.
	CLEAR	The achievement number and target number will be reset to "0", and a new measurement is started.
	STOP	The target number is stopped when an input is entered. When stopped, the numerical value on the highest rung will flash as long as the stop input is held on.
	FINISH	When an input is entered, the measurement will end.
	REMOTE OFF	While an input on the terminal is entered, the input signal from a remote control is not received.