

Specifications

Real-time Visual LED Display

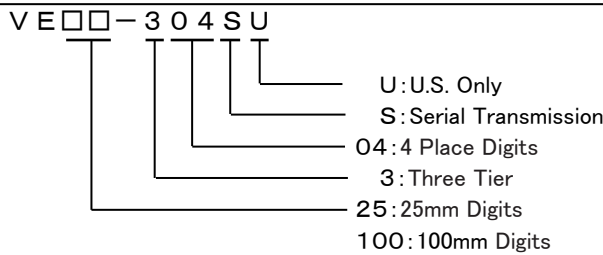
VE25–304SU (U.S. Only)

VE100–304SU (U.S. Only)

PATLITE Corporation

Revision History

1. Model



2. General Specifications

Item	Specification	
	Model	VE25-304SU
Rated Voltage	AC100~240V(50Hz/60Hz) ※1 12VDC ※4	
Operating Voltage Range	AC90 to 264V ※1	
Operating Ambient Temperature	0°C~40°C	
Storage Ambient Humidity	35 to 85% RH (No dew or condensation)	
Mounting Location	Indoors Only	
Storage Ambient Temperature	-10°C to 70°C	
Insulation Resistance	More than 1Mohm at 500VDC between the AC Adaptor power supply and the Frame Ground.※1	
Withstand Voltage	1500VAC applied for 1 minute between the AC Adaptor power supply and Frame Ground without breaking insulation. (Detected Current: 10mA) ※1	
Vibration Resistance	JIS C0040 Acceleration 19.6m/s ²	
Noise Resistance (Power Supply)	1000Vp-p; 100ns/1 μs 60 pulse/s ※1	
Outside Dimensions	270(W) × 200(L) × 70(D) mm ※2.	580(W) × 480(L) × 70(D) mm
Mass	2.5kg or less ※3	6.5kg or less ※3
Power Consumption (All LED is On)※1	11W	12W
Conformity Standards	FCC Part15 Subpart B Class A	
Remarks	There are no contents of controlled substances exceeding the threshold for the RoHS Directive.	

※The above contents may change without preliminary notice for product improvements, etc

※1 It is a value measured with the exclusive AC Adaptor.

※2 The Installation Bracket dimensions are not included.

※3 The mass of the attached AC Adaptor is not included.(The weight of the AC power cable and AC adapter is about 400g)

※4 Main Unit Only

3. Performance Specifications

Item	Specification		
	Model	VE25-304SU	VE100-304SU
Display	Element Type	7 Segment LED Element (Red)	Round-shaped LED Element (Red)
	Tiers/Digits	3 Tiers with 4 place digits	
	Character Height	25mm (1 in.)	100mm (4 in.)
	Display Characters	Numbers, Minus, Decimal Point, Symbols	
	LED Brightness Setting	3 Settings of High, Middle and Low; Off and On.	
	Operating Mode	Numerical Display/Production Control Mode	
Interface	Input/Output Terminals	6 Input Terminal Buss: No-voltage contact current and short-circuit current of about 10mA with an internal DC voltage of 12V. 3 Output Terminal Buss: NPN Open Collector; maximum load DC24V, 100mA, residual voltage drop of about 1V	
	Serial Transmission Terminal	Transmission System: Half-duplex, synchronized system; Start-stop synchronization Terminating Resistor Switch: ON/OFF is set from the switch located on the back-panel. •RS-485 Maximum Host Connection of 32 units; ID: 01- 32 (Sets up via remote control) Baud rate: 4800 bps, 9600bps, 19200bps, 38400bps (Sets up via remote control) Stop bit: 2 bits; Data Length: 8 bits; Parity: Even, Odd, None	
Memory	Retention Period: About one month with a full charge Battery charge time: About 24 hours (at 25°C)		
Setting Method	Infrared Remote Control (Remote Control VE-IRU type sold as an option).		
Power Supply	Exclusive AC Adaptor Included		

4. Display Specifications

4-1. Operating Mode

Operating Mode	Specification								
Numerical Display Mode	Display Function	Numerical Display, Character Display, Flashing-display, Brightness Adjustment							
	Communication Setup	Transmission Speed (baud rate), Parity, ID, Numerical Backup ON/OFF							
	External Contact Output	3 ON/OFF controllable outputs							
	Special Functions	Fixed Start-up Communication Mode Simultaneous Command Function Numerical Backup Function Arbitrary Numerical Value Input Function							
Production Control Mode	Display Item	PLAN	Displays the final value scheduled before production starts.						
		TARGET	Displays the scheduled value expected to reach during the production period. (Target number can be measured by takt time progress.)						
		ACTUAL	Displays the actual value for completion during production.						
		STATUS	Displays the value "number of achievements minus target number".						
		QTY LEFT	Displays the planned value minus the achievement value.						
		QTY SHORT	Displays the achievement value minus the planned value.						
		%PLAN	Displays the achievement value divided by the planned value multiplied by 100.						
		%TARGET	Displays the achievement value divided by the target number multiplied by 100.						
		TAKT	Displays the recent production duration based on the achievement input.						
	TAKT AVE	Displays the work-hours divided by the achievement value.							
	Display Contents (The factory default is set at "1".)	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			
Other Functions	<ul style="list-style-type: none"> •Prescale Function: Prescale UP / Prescale Down (Factory Default: Prescale UP, Prescale Value: 1) •Takt Time Function •Target Count Display "Stop" Function •Working-hour Function: <ul style="list-style-type: none"> maximum 16 classifications for working scheduling, maximum 3 classifications for measurement data clear time (The remote control can be used to set up the Working-hour Function.)								

Operating Mode	Communication Function	Specification
Production Control Mode	Data Read-out (Main Unit→Host)	<During Measurement> ・STATUS ・QTY LEFT ・QTY SHORT ・%PLAN ・%TARGET ・TAKT ・TAKT AVE ・ACTUAL ・TARGET Data Read-out is possible.
		<When changing part number> ・PLAN ※5 ・Takt Time ・Prescale Value ・Progress + Preset Value ・Progress - Preset Value Data Read-out is possible.
		<During default setting and Maintenance> ・LED Brightness ・Takt Unit ・Prescale Range ・Input Terminal Sensitivity ・Automatic Start FunctionON/OFF ・Working-hour FunctionON/OFF ・Working-hour ・Clear Time ・Present time ※5 ・Display(Numerical Value/ Display Type) ※5 Data Read-out is possible.
	Writing Data (Host→Main Unit)	<During Measurement> ・ACTUAL ・TARGET Data writing is possible.
		<When changing part number> ・PLAN ・Takt Time ・Prescale Value ・Progress + Preset Value ・Progress - Preset Value ・Clear Measurement ※5 Data writing is possible.
		<During default setting and Maintenance> ・LED Brightness ・Takt Unit ・Prescale Range ・Input Terminal Sensitivity ・Automatic Start FunctionON/OFF ・Working-hour FunctionON/OFF ・Start Measurement ・Finish Measurement ※5 ・LED lights "ON" ※5 ・LED lights "OFF" ※5 ・All Reset ・Working-hour ・Clear Time ・Time Data writing is possible.

※5 Active During Measurement

4-2. Terminal Buss Functionality List

Input/Output Direction	Name	Function
	FG	Frame Ground. Connect to a solid ground at all costs.
INPUT	COM	Input Terminal common.
	RESULTS	The achievement number will count up when an input is entered.
	COUNTDOWN	The achievement number will count down by "1" (subtraction) when an input is entered.
	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.
	FINISH	The measurement will end when an input is entered.
	REMOTE OFF	The input from a remote control is inhibited when an input is entered.
OUTPUT	COM	Output terminal common.
	ACHIEVE	When the number of achievements reaches the planned number, a 5 second output signal is sent.
	GAIN+	When [Number of achievements minus target number] is greater than [progress + preset value], an output signal is sent.
	LOSS-	When [Number of achievements minus target number] is less than [progress - preset value], an output signal is sent.
RS-485	SG	Signal Ground.
	+	The positive RS-485 transmitter/receiver data signal.
	-	The negative RS-485 transmitter/receiver data signal.

5. Communication Command Protocol

5-1. Shared Protocol (Data Read-out)

•Transmission (Host → Main Unit)

STX	ID	R	Command Classification	CS	ETX
1 byte	2 bytes	1 byte	1 byte	2 bytes	1 byte

•Reply [Normal] (Main Unit → Host)

STX	ID	Command Classification	Data	CS	ETX
1 byte	2 bytes	1 byte	Variable (3 - 144 byte)	2 bytes	1 byte

•Reply [Abnormal] (Main Unit → Host)

STX	ID	Command Classification	NAK/CAN	CS	ETX
1 byte	2 bytes	1 byte	1 byte	2 bytes	1 byte

STX: Start Text (Value: 02H)

ID: Main Unit ID (01~32)

R: Data Read-out (Value: 52H)

Command Classification: Various commands for readout of Plan Number, etc.

NAK: Negative Response (Value: 15H)

CAN: Cancel (Value: 18H)

CS: Checksum

(When a 1 byte value from the ID code is changed by adding to another value, the result is converted to a 2 byte ASCII code by using a checksum value.)

ETX: End of Text (Value: 03H)

※When setting up an ID for the main unit, be sure not to duplicate the value. Failure to comply may result in improper display or disrupted communication.

5-2. Shared Protocol (Writing Data)

•Transmission (Host → Main Unit)

STX	ID	W	Command Classification	Data	CS	ETX
1 byte	2 bytes	1 byte	1 byte	Variable (3 - 144 byte)	2 bytes	1 byte

•Reply [Normal] (Main Unit → Host)

STX	ID	Command Classification	ACK	CS	ETX
1 byte	2 bytes	1 byte	1 byte	2 bytes	1 byte

•Reply [Abnormal] (Main Unit → Host)

STX	ID	Command Classification	NAK/CAN	CS	ETX
1 byte	2 bytes	1 byte	1 byte	2 bytes	1 byte

STX: Start Text (Value: 02H)

ID: Main Unit ID (01 ~ 32, FF)

W: Writing Data (Value: 57H)

Command Classification: Various commands for readout of Plan Number, etc.

ACK: Affirmative Response (Value: 06H)

NAK: Negative Response (Value: 15H)

CAN: Cancel (Value: 18H)

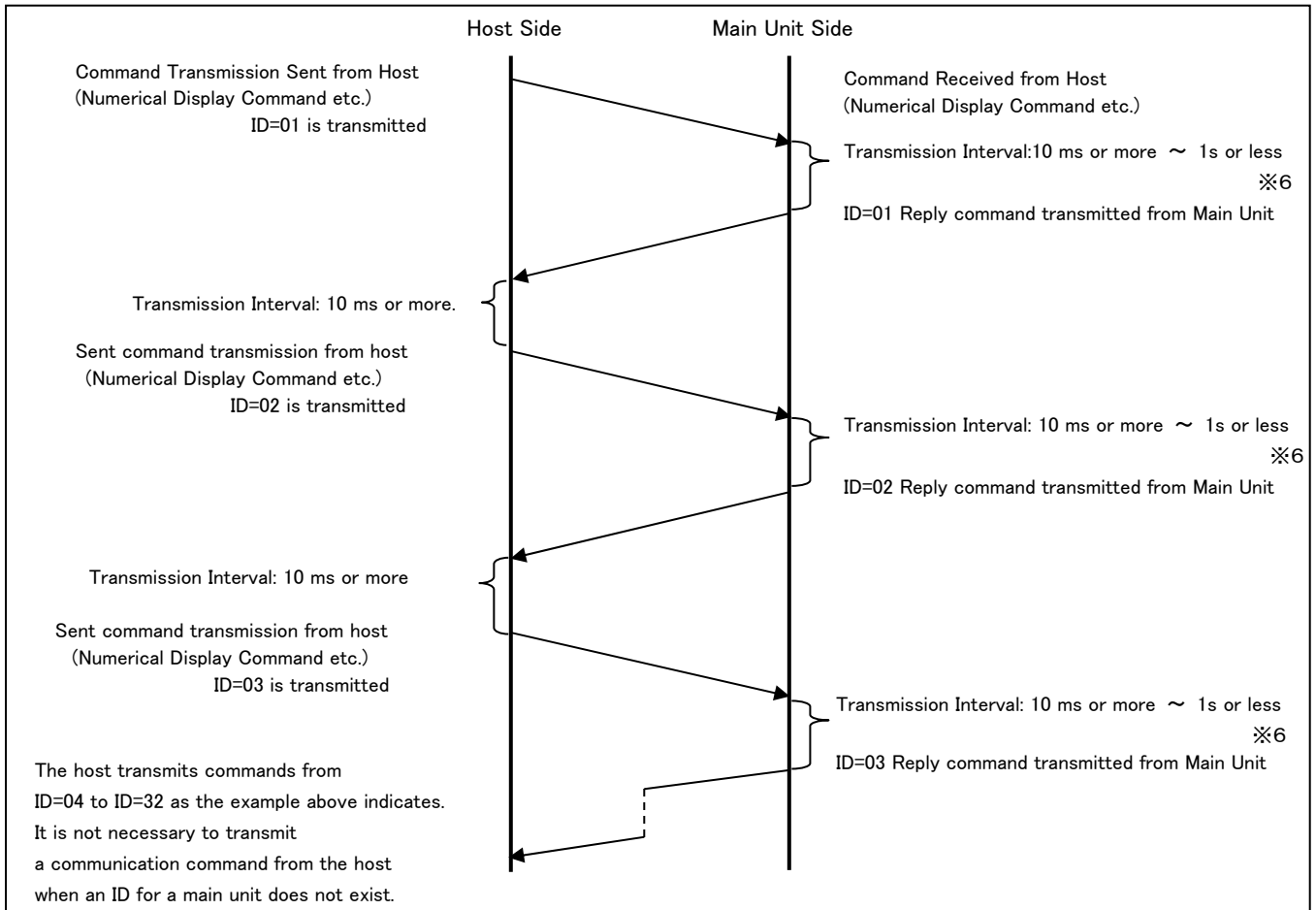
CS: Checksum

(When a 1 byte value from the ID code is changed by adding to another value, the result is converted to a 2 byte ASCII code by using a checksum value.)

ETX: End of Text (Value: 03H)

※When setting up an ID for the main unit, be sure not to duplicate the value. Failure to comply may result in improper display or disrupted communication.

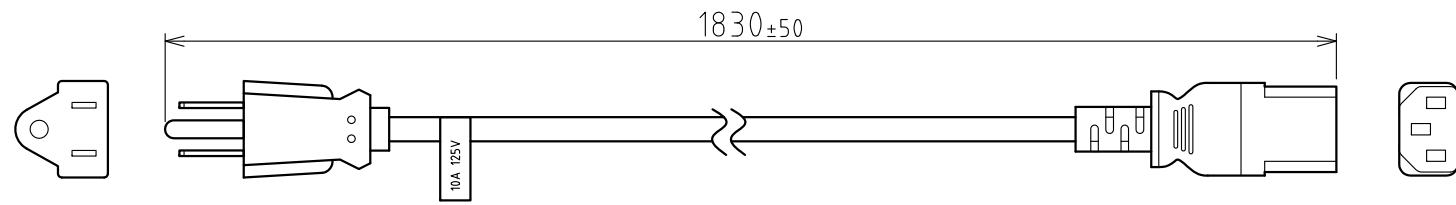
5-3. Transmission Timing



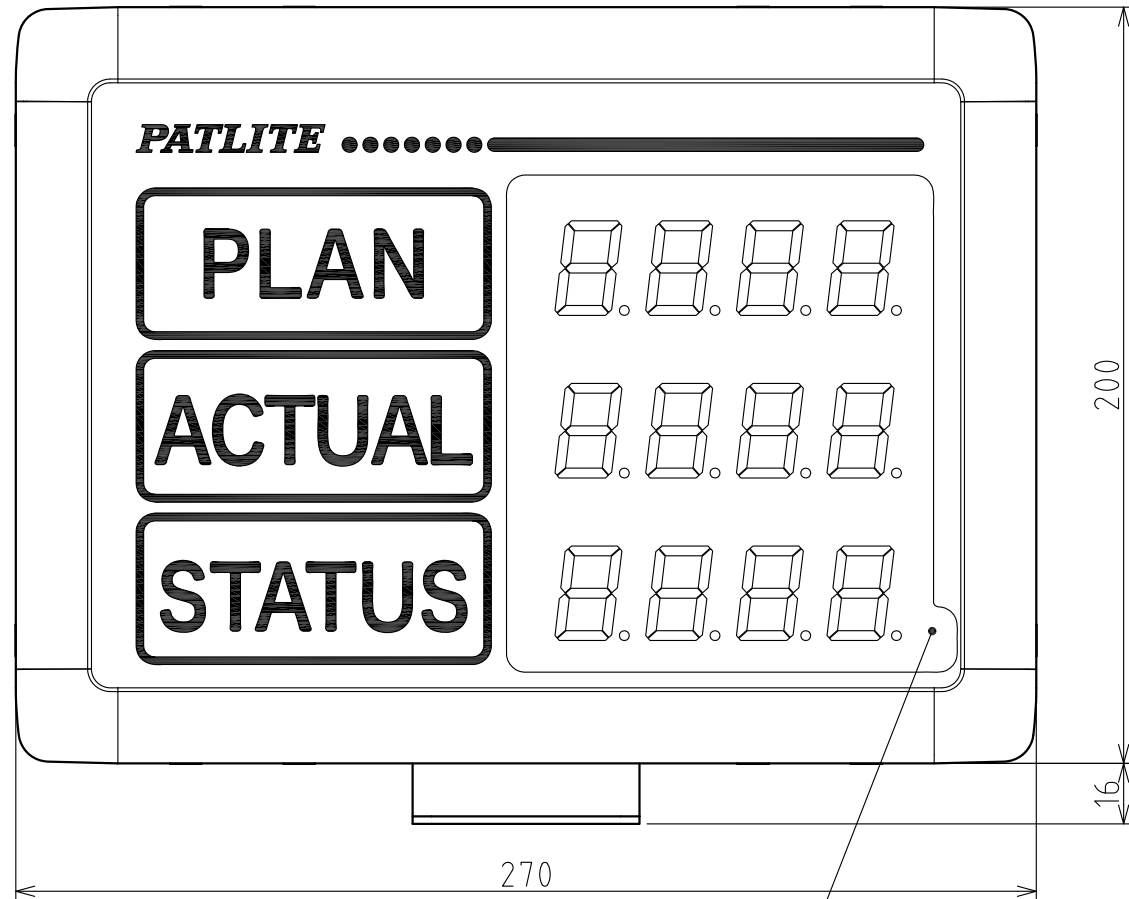
•When there is no reply (1s or more) from a main unit, causing a communication error, try to send the transmission from the host, again.

•When setting up, ensure that no ID from a main unit is duplicated.

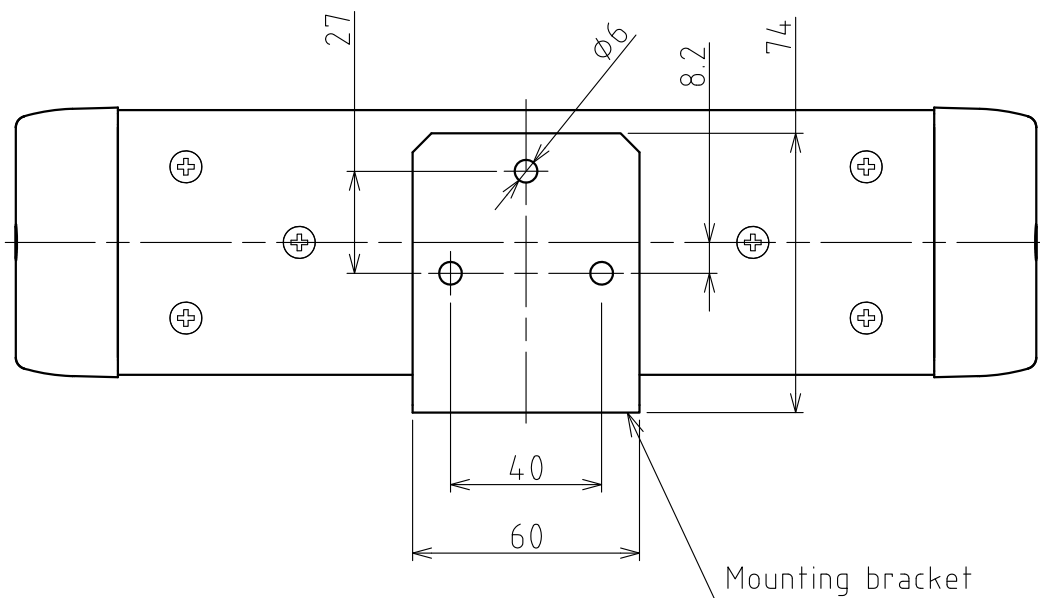
※6 Although the usual reply interval is about 10ms, some setting commands require about 100ms for a reply.



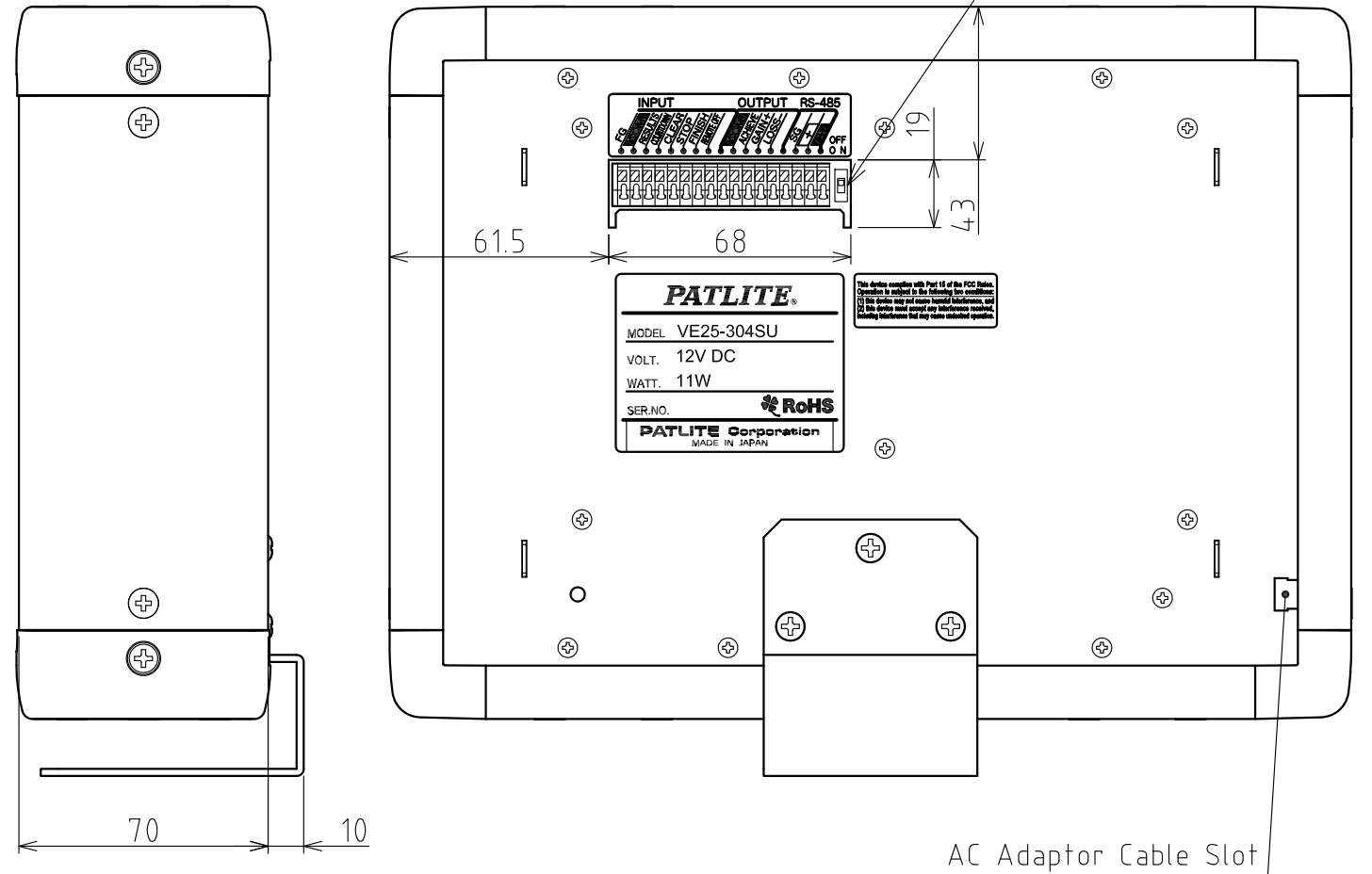
AC power cord (Accessory)



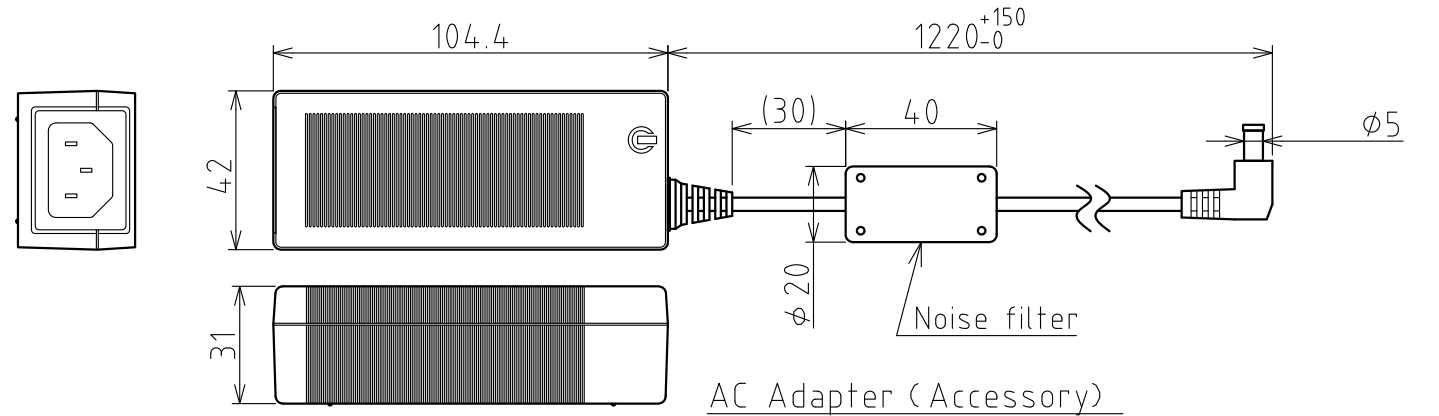
Infrared Remote Sensor



Mounting bracket

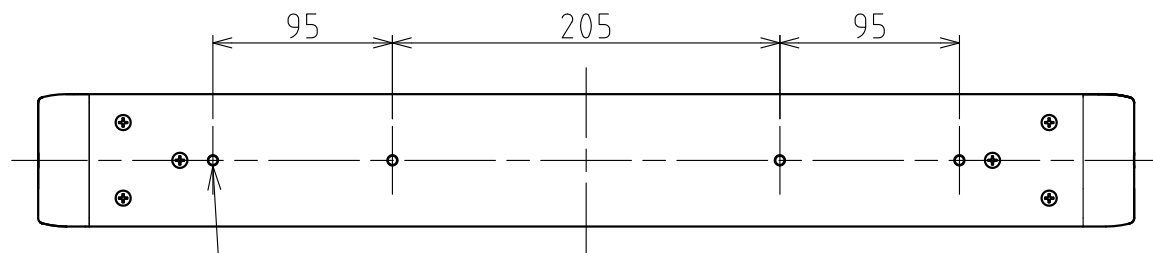


AC Adaptor Cable Slot

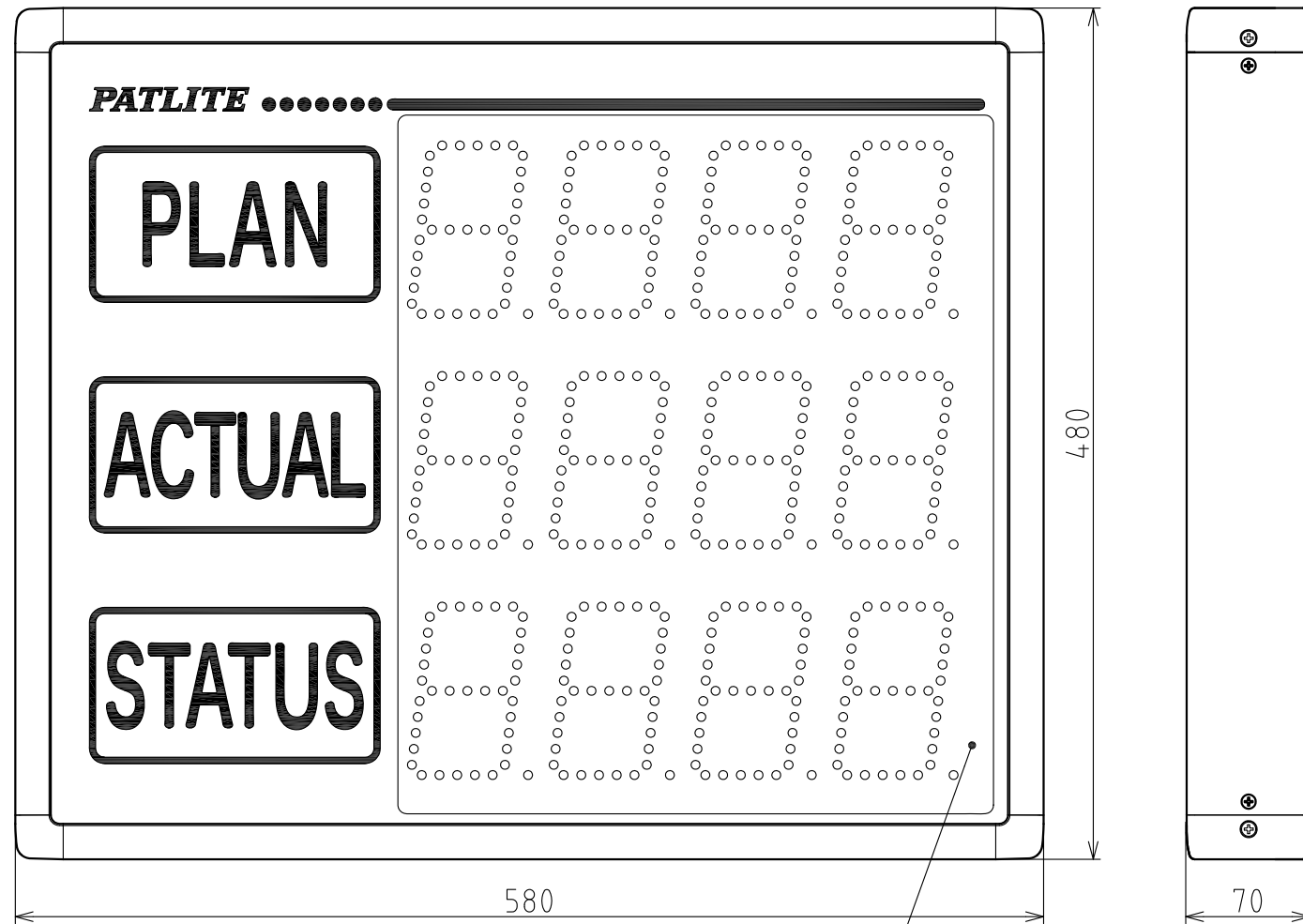


AC Adapter (Accessory)

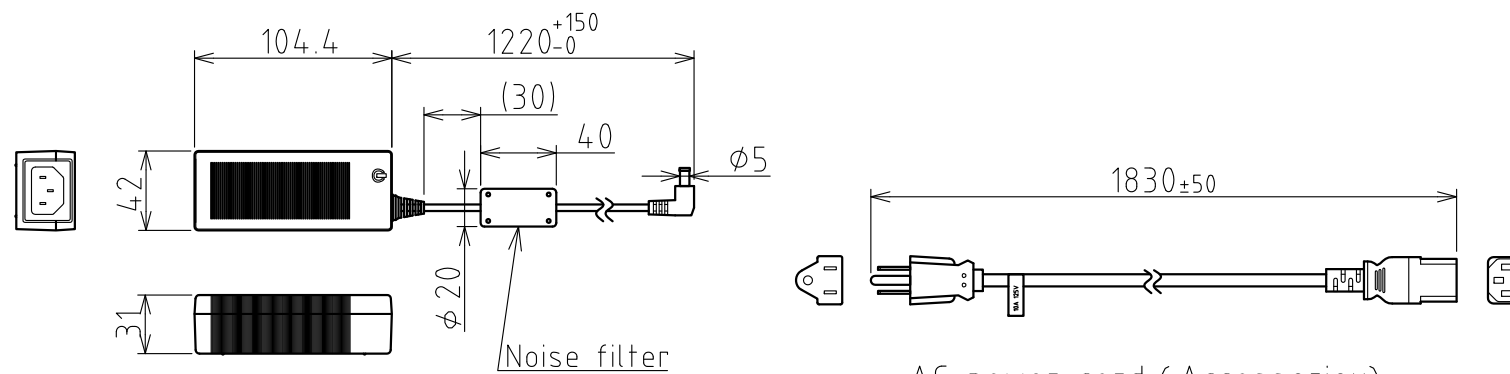
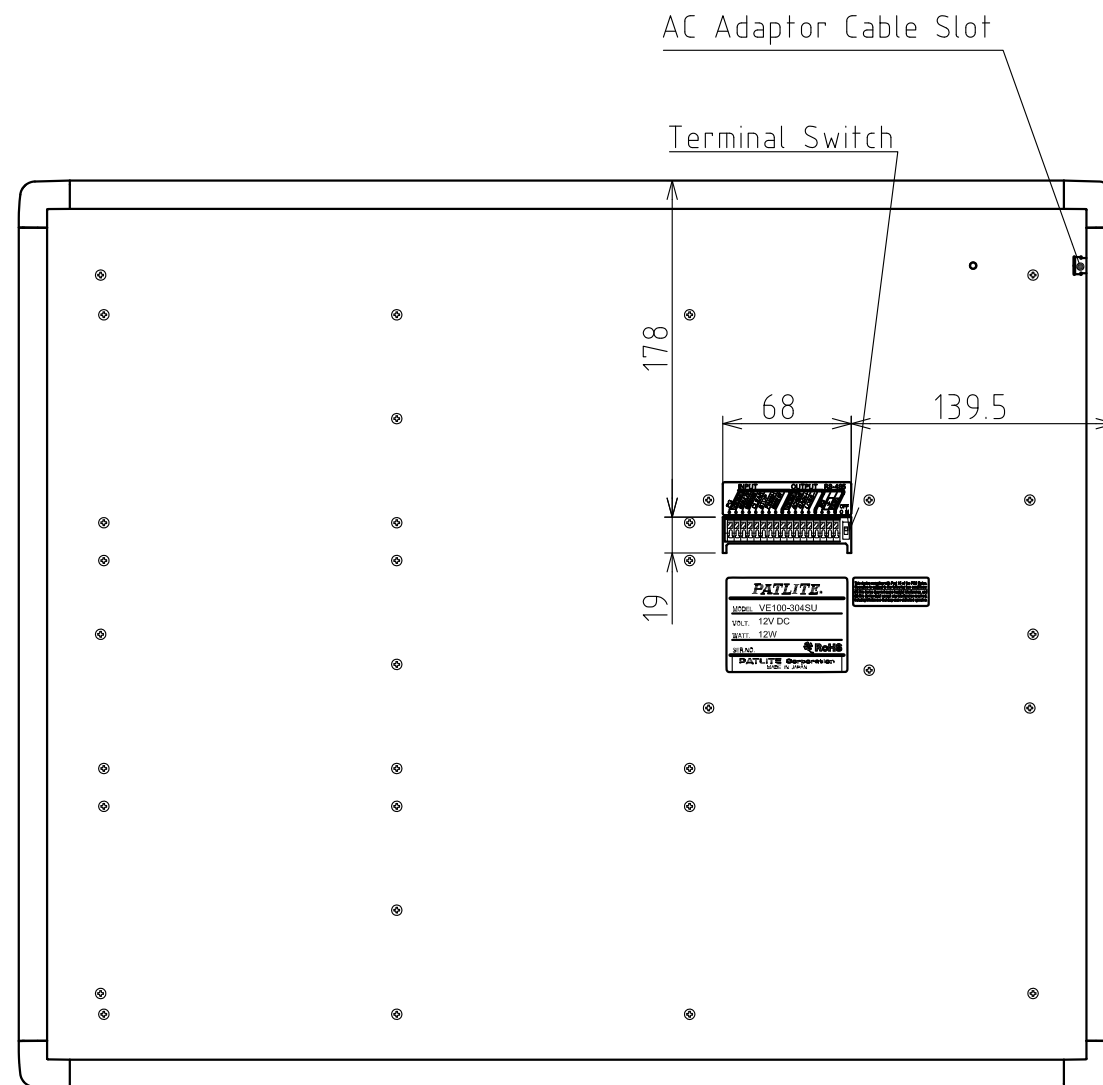
<p>外觀図面 Outer Dimension Drawing</p>
<p>株式会社 パトライト PATLITE Corporation</p>
<p>VE25-304SU-W18B-9_10</p>



Mounting Screws (4 pcs.) : M6×25mm(MAX) (Not Included Mounting Bracket)



Infrared Remote Sensor



AC Adapter (Accessories)

AC power cord (Accessories)

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