SL-P6R1-WF SL-PA6R1-WF

Single Stack Light Monitoring Module with Wi-Fi Interface

Features

- Able to detect the status of each color segment: ON, OFF, or Flashing
- 6-channel DC/AC Digital Input and 1-channel alarm Relay Output
- Compatible with the IEEE802.11b/g/n standards
- Support infrastructure and limit-AP modes for wireless networks
- Status monitoring for user-defi ned combinations of multiple color segments
- Reports the duration of the previous and current status
- Supports the Modbus RTU, Modbus TCP and MQTT protocols
- Includes RS-485/Ethernet/Wi-Fi communication interfaces
- Includes redundant power inputs: PoE (IEEE 802.3af, Class 1) and DC input
- Web-based configuration interface and firmware update via Ethernet
- Relay Output for alarm devices
- Wide operating temperature range: -25 to +75°C

Introduction

The main purpose of managing the status of a machine is to reduce the amount of downtime while also reducing production costs. The easiest way to achieve this is by installing an SL-P6R1-WF/SL-PA6R1-WF intelligent module from ICP DAS, which monitors the output of the machine's indicators without affecting the operation of the equipment, thereby enabling the current operation stage of the machine to be mastered, which ensures timely command of the logistics system support in order to achieve production goals. The SL-P6R1-WF/SL-PA6R1-WF is a stack light monitoring module which includes 6-channel DC/AC Digital Input and 1-channel Relay Output that can be used to monitor the status of the stack lights on the MES (Manufacturing Execution System) machine.

The module can be used to detect the status of each color segment of the stack light to determine whether it is either OFF, ON, or flashing. In addition to detecting the status of each individual color segment, the status for a combination of multiple color segments can also be defined, including the ability to report the duration of the previous status. The SL-P6R1-WF/SL-PA6R1-WF includes WLAN connections that are compliant with the IEEE802.11b/g standards. With the popularity of 802.11 network infrastructure, the SL-P6R1-WF/SL-PA6R1-WF provides an easy method of incorporating wireless connectivity into the monitoring and control of your systems. It is easy to implement stack light status monitoring on an MES via SCADA software, thereby improving machine utilization and throughput. The SL-P6R1-WF/SL-PA6R1-WF also supports the Modbus/TCP and UDP protocols as well as network encryption configuration and offers easy and safe access for users at any time and from anywhere.

Applications

- Factory Automation
- Machine Automation
- Remote Maintenance
- Remote Diagnosis
- Testing Equipment

System Specifications

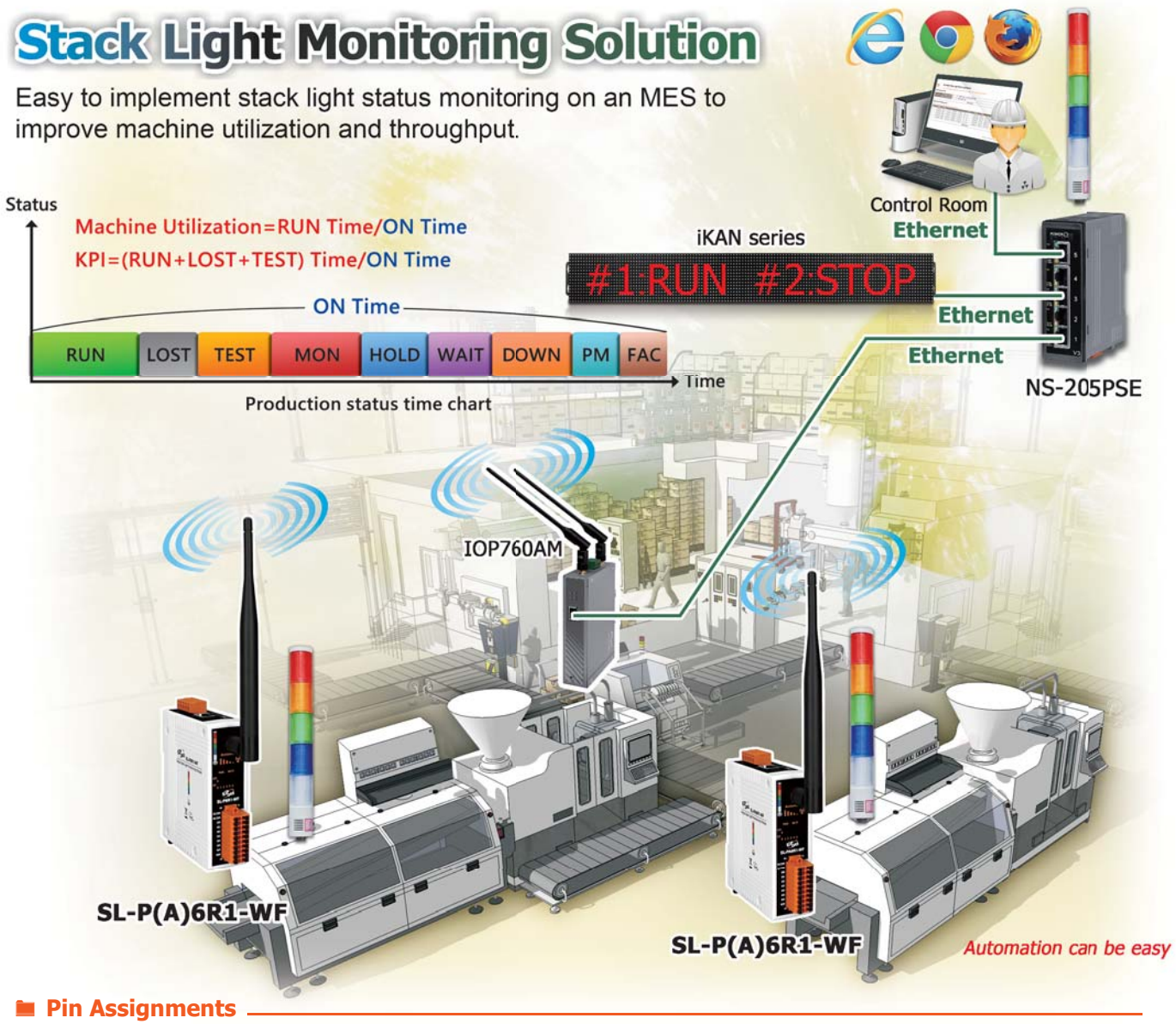
Model		SL-P6R1-WF	SL-PA6R1-WF
Software			
Built-in Web Server		Yes	
Communication			
RS-485 Port		Baud Rate = 1200 ~ 115200 bps	
Ethernet Port		10/100 Base-TX, 8-Pin RJ-45 x1 (Auto-negotiating, Auto-MDI/MDIX, LED indicators)	
Security		IP filter (whitelist) and Password (web)	
Protocol		Modbus/RTU(RS-485), Modbus TCP(Ethernet, Wi-Fi) and MQTT(Ethernet)	
Dual Watchdog		Yes, Module (2.3 seconds), Communication (Programmable)	
Wi-Fi Interface			
Antenna		5 dBi (OmniDirectional)	
Output Power		8 dBm @ 11 Mbps	
Receive Sensitivity		-83 dBm @ 11 Mbps	
Standard Supported		IEEE 802.11 b/g/n	
Wireless Mode		Infrastructure & Limit-AP	
Encryption		WEP, WPA and WPA2	
Transmission Range		50 meters (LOS)	
LED Indicators			
S1		System indicator	
E1		PoE indicator (Green)	
		Link/Act,(Yellow)	
Antenna		Signal Strength	
Isolation			
Intra-module Isolation, Field-to-Logic		3750 VDC	
EMS Protection			
ESD (IEC 61000-4-2)		±4 kV Contact for Each Terminal	
		±8 kV Air for Random Point	
EFT (IEC 61000-4-4)		±2 kV for Power	
Power Requirements			
Reverse Polarity Protection		Yes	
Power Input		Terminal Block: +10 ~ +48 VDC	
		PoE: IEEE 802.3af, Class 1	
Consumption	PoE	1.2 W Max.	
	Non-PoE	1 W Max.	
Mechanical			
Dimensions (W x L x H)		33 mm x 108 mm x 127 mm	
Installation		DIN-Rail Mounting	

Environment	
Operating Temperature	-25 to +75°C
Storage Temperature	-30 to +80°C
Humidity	10 to 95% RH, Non-condensing

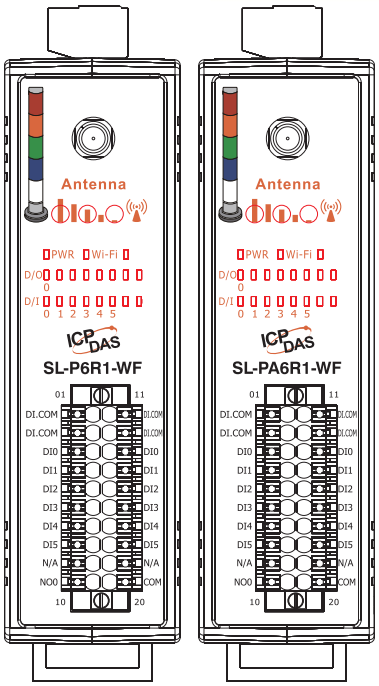
I/O Specifications

Model		SL-P6R1-WF	SL-PA6R1-WF
Digital Input			
Input Channels		6	
Type		Wet Contact (Sink, Source)	
ON Voltage Level		+10 VDC ~ 50 VDC	80 VAC ~240 VAC
OFF Voltage Level		+4 V Max.	30 VAC Max.
Input Impedance		10 KΩ, 0.5 W	150 KΩ, 2 W
Max. Stack Light Flashing Speed		3 kHz	60 Hz
Able to detect the status of each color segment: ON, OFF, or Flashing		Yes	
Status monitoring for user-defined combinations of multiple color segments		Max. 81 combinations	
Report duration of previous status		Yes, 10 ~ 65500 s	
Overvoltage Protection		70 VDC	300 VAC
Isolation		3750 VDC	
Digital Output			
Output Channels		1	
Type		Power Relay, Form A (SPST N.O.)	
Operating Voltage Range		250 VAC or 30 VDC	
Max. Load Current		5 A	
Operate Time		6 ms	
Release Time		3 ms	
Electrical Life (Resistive load)	VDE	5 A @ 250 VAC 30,000 ops (10 ops/minute) at 75°C	
		5 A @ 30 VDC 70,000 ops (10 ops/minute) at 75°C	
	UL	5 A @ 250 VAC/30 VDC 6,000 ops	
		3 A @ 250 VAC/30 VDC 100,000 ops	
Mechanical Life		20,000,000 ops at no load (300 ops/minute)	
Power-on Value		Yes, Programmable	
Safe Value		Yes, Programmable	

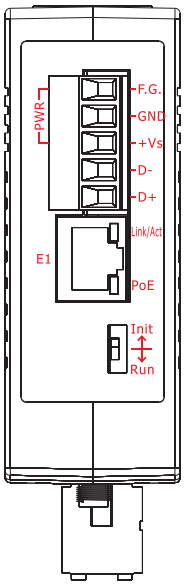
Applications



Pin Assignments



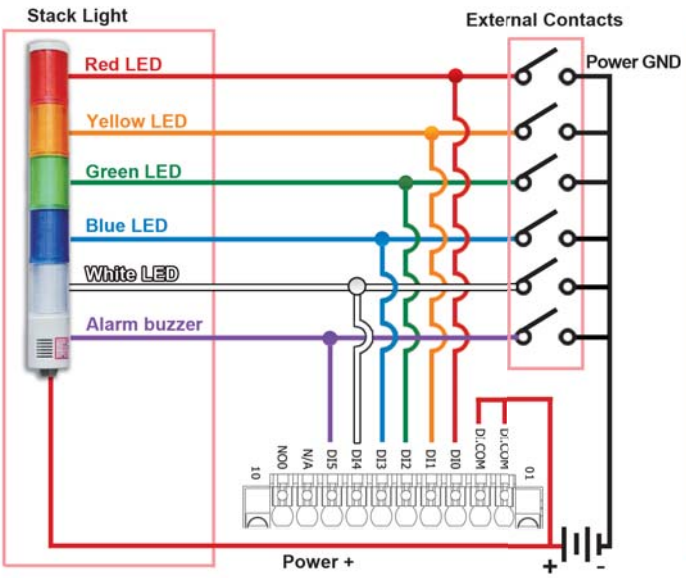
Pin Assignment	Terminal No.		Pin Assignment
DI.COM	01	11	DI.COM
DI.COM	02	12	DI.COM
DI0	03	13	DI0
DI1	04	14	DI1
DI2	05	15	DI2
DI3	06	16	DI3
DI4	07	17	DI4
DI5	08	18	DI5
N/A	09	19	N/A
NO0	10	20	COM

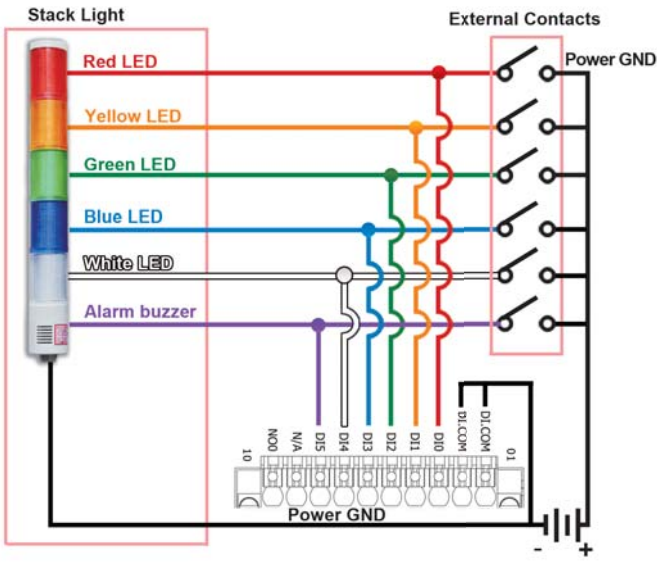


Terminal No.	Pin Assignment
PWR	F.G.
	GND
	+ Vs
RS-485	D-
	D+
E1	

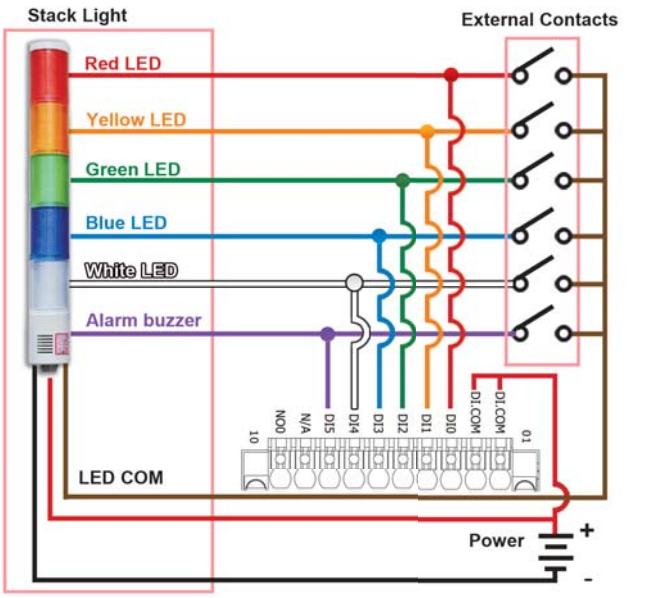
Wire Connections

SL-P6R1-WF

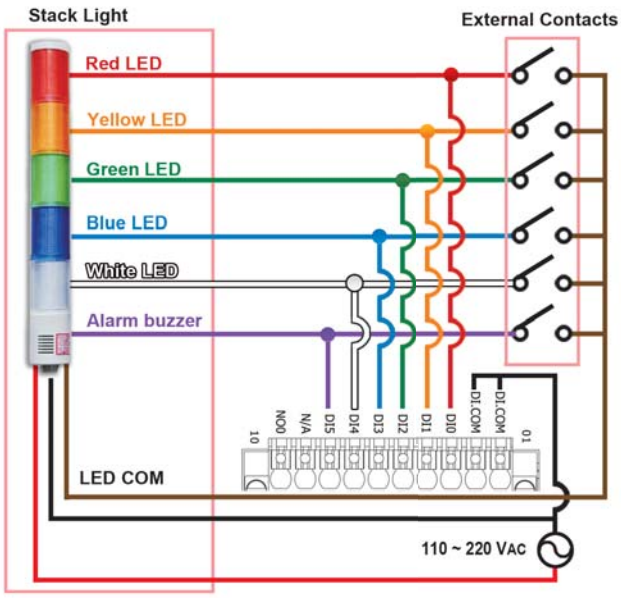




SL-P6R1-WF



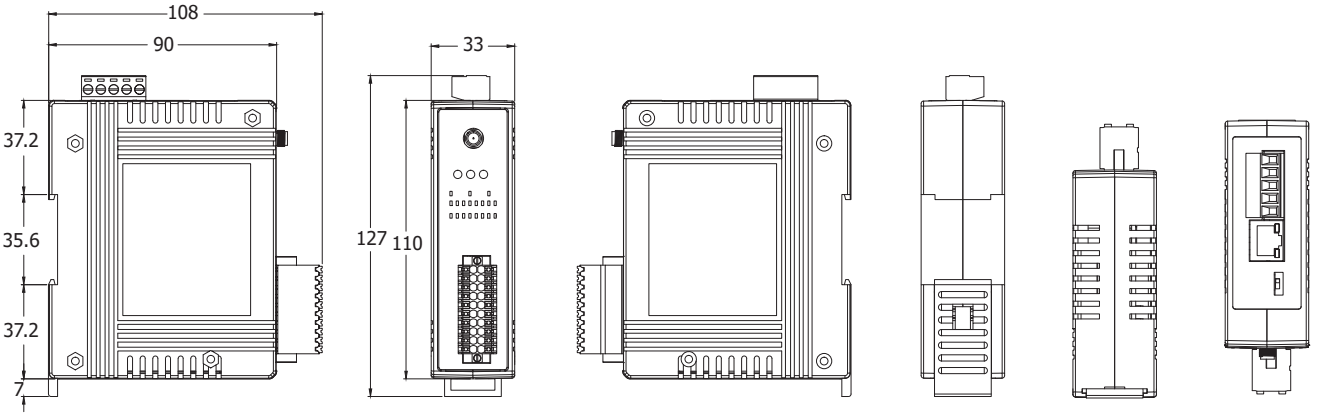
SL-PA6R1-WF



Related Products

 tM-7520U CR	Isolated RS-232 to RS-485 Converter (RoHS)	 NS-205PSE CR	Unmanaged Ethernet Switch with 4 PoE Ports and 1 RJ-45 Uplink (RoHS)
 tM-7561 CR	Isolated USB to RS-485 Converter (RoHS)	 WF-2571 CR	Ethernet to Wi-Fi Bridge (RoHS)
 I-7514U CR	4-channel RS-485 Hub (RoHS)	 IOP760AM CR	Ethernet/UART to Wi-Fi Converter (with category A plug type)

Dimensions (Units: mm)



Left View | Front View | Right View | Rear View | Bottom View | Top View

Ordering Information

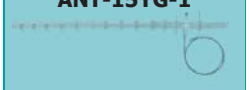
SL-P6R1-WF CR	Single Stack Light Monitoring Module with Ethernet/RS-485/Wi-Fi Interfaces and PoE for DC Stack Lights. (6 DC DI + 1 Relay) (RoHS)
SL-PA6R1-WF CR	Single Stack Light Monitoring Module with Ethernet/RS-485/Wi-Fi Interfaces and PoE for AC Stack Lights. (6 AC DI + 1 Relay) (RoHS)

Accessories

Antenna Extension Cable

3S001-1 	RG58A/U 1 Meter RP-SMA Male to RP-SMA Female	**3S005-1** 	RG58A/U 5 Meter RP-SMA Male to RP-SMA Female
3S003-1 	RG58A/U 3 Meter RP-SMA Male to RP-SMA Female	**3S008-1** 	RG58A/U 8 Meter RP-SMA Male to RP-SMA Female

External Antenna

ANT-8 	8 dBi 2.4 GHz External Antenna (OmniDirectional)	**ANT-18** 	18 dBi 2.4 GHz External Antenna (Directional)
ANT-15	15 dBi 2.4 GHz External Antenna (OmniDirectional)	**ANT-21** 	21 dBi 2.4 GHz External Antenna (Directional)
ANT-15YG-1 	15 dBi 2.4 GHz External Antenna (Directional)		