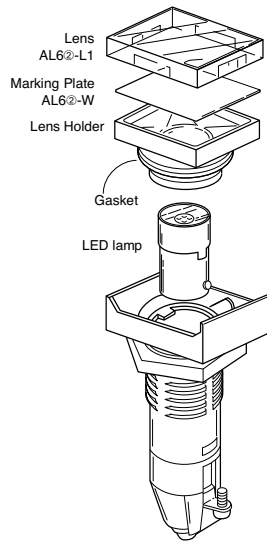
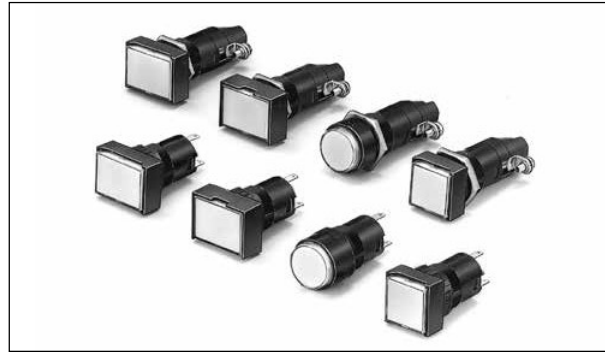


ø16 AP6S Series Miniature Pilot Lights

Miniature Pilot Lights with Super Bright LEDs





- IDEC's LSTD LED lamps with BA9S base
- Six illumination colors: amber, green, red, blue, white, and yellow
- Screw terminal and solder/tab terminal available
- Degree of protection: IP65
- The current-limiting resistor in the LED lamp eliminates the need for external resistors



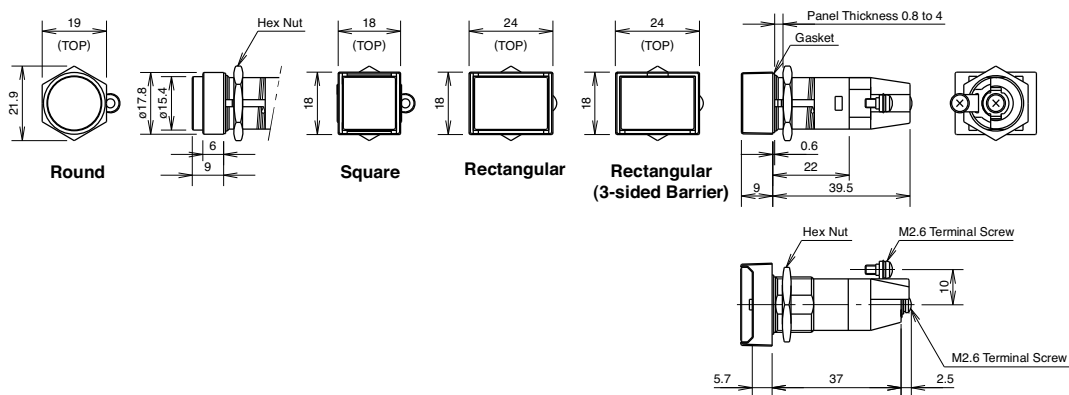
Specifications

Illumination	LED		
Rated Voltage	6V AC/DC	12V AC/DC	24V AC/DC
Voltage Range	6V AC/DC±10%	12V AC/DC±10%	24V AC/DC±10%
LED Lamp Part No.	LSTD-6②	LSTD-1②	LSTD-2②
LED Life	50,000 hours approx.		
Operating Temperature	-20°C to +50°C (no freezing)		
Storage Temperature	-30°C to +80°C (no freezing)		
Operating Humidity	45 to 85% RH (no condensation)		
Insulation Resistance	Between live and dead metal parts: 100mΩ minimum (500V DC megger)		
Dielectric Strength	Between live and dead metal parts: 2000V AC, 1 minute		
Terminal Style	Screw terminal: M2.6 Tab terminal: #110 solder/tab terminal (applicable cable: 1.25 mm ² max.)		
Housing Material	Black plastic		
Degree of Protection	IP65 (IEC 60529)		
Weight (approx.)	Terminal screw type: 18g Solder/tab screw type: 9g		

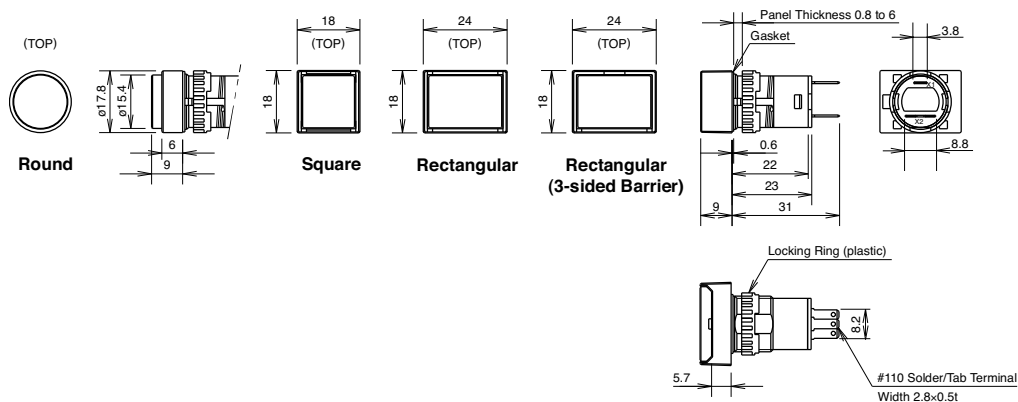
- Specify a color code in place of ② in the LED Lamp Part No.
A (amber), G (green), PW (pure white), R (red), S (blue), Y (yellow)

Shape	Terminal Style	Operating Voltage	Part No.	Lens Color Code	Built-in LED (Part No.)
	Solder/Tab Terminal	6V AC/DC±5%	AP6MS52②	Specify a lens color code in place of ② in the Part No. A: amber G: green PW: pure white R: red S: blue Y: yellow	LSTD-6②
		12V AC/DC±10%	AP6MS53②		LSTD-1②
		24V AC/DC±10%	AP6MS54②		LSTD-2②
	Screw Terminal	6V AC/DC±5%	AP6MS52M②		LSTD-6②
		12V AC/DC±10%	AP6MS53M②		LSTD-1②
		24V AC/DC±10%	AP6MS54M②		LSTD-2②
	Solder/Tab Terminal	6V AC/DC±5%	AP6QS52②		LSTD-6②
		12V AC/DC±10%	AP6QS53②		LSTD-1②
		24V AC/DC±10%	AP6QS54②		LSTD-2②
	Screw Terminal	6V AC/DC±5%	AP6QS52M②		LSTD-6②
		12V AC/DC±10%	AP6QS53M②		LSTD-1②
		24V AC/DC±10%	AP6QS54M②		LSTD-2②
	Solder/Tab Terminal	6V AC/DC±5%	AP6HS52②	LSTD-6②	
		12V AC/DC±10%	AP6HS53②	LSTD-1②	
		24V AC/DC±10%	AP6HS54②	LSTD-2②	
	Screw Terminal	6V AC/DC±5%	AP6HS52M②	LSTD-6②	
		12V AC/DC±10%	AP6HS53M②	LSTD-1②	
		24V AC/DC±10%	AP6HS54M②	LSTD-2②	
	Solder/Tab Terminal	6V AC/DC±5%	AP6GS52②	LSTD-6②	
		12V AC/DC±10%	AP6GS53②	LSTD-1②	
		24V AC/DC±10%	AP6GS54②	LSTD-2②	
	Screw Terminal	6V AC/DC±5%	AP6GS52M②	LSTD-6②	
		12V AC/DC±10%	AP6GS53M②	LSTD-1②	
		24V AC/DC±10%	AP6GS54M②	LSTD-2②	

Dimensions Screw Terminal

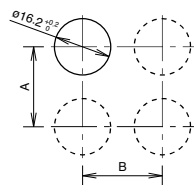


Solder/Tab Screw Terminal



Mounting Hole Layout

All dimensions in mm.

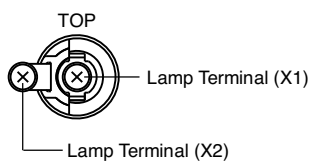


Minimum Mounting Centers

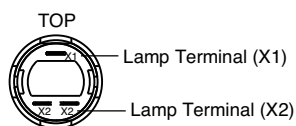
	A		B	
	Round/Square	Rectangular	Round/Square	Rectangular
Screw Terminal	23 mm	23 mm	23 mm	24 mm
Tab Terminal	18 mm	18 mm	18 mm	24 mm

Terminal Arrangement (Bottom View)

Screw Terminal



Solder/Tab Terminal





Accessories

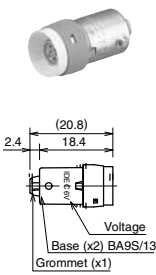
Tools

Shape	Specification	Part No.	Ordering No.	Package Quantity	Remarks
	Metal (nickel-plated brass)	MT-001	MT-001	1	Used to tighten the locking ring when installing an AP6S unit onto a panel.
	Nitril Rubber	OR-55	OR-55	1	Used to install and remove LED lamps.
	Stainless Steel	MT-101	MT-101	1	Used to remove lens and buttons.


Replacement Parts for AP6M/AP2M/AP1M

Shape	Part No.	Ordering No.	Package Quantity	Remarks	
	Round	AL6M-L②	AL6M-L②PN05	5	Specify a color code in place of ② in the Ordering No. A: amber C: clear G: green R: red S: blue Y: yellow Use a clear lens for pure white illumination.
	Square	AL6Q-L②	AL6Q-L②PN05	5	
	Rectangular Rectangular with 3-sided Barrier	AL6H-L②	AL6H-L②PN05	5	
	Round	AL6M-W	AL6M-WPN05	5	White
	Square	AL6Q-W	AL6Q-WPN05	5	
	Rectangular Rectangular with 3-sided Barrier	AL6H-W	AL6H-WPN05	5	

LED Lamps

Dimensions	Operating Voltage	Current Draw		Part No.	Ordering No.	②Illumination Color Code	Package Quantity	Base
		AC	DC					
	6V DC ±10%	8 mA	7 mA (A, R) 5.5 mA (G, PW, S)	LSTD-6②	LSTD-6②	Specify a color code in place of ② in the Ordering No.	1	BA9S/13
					LSTD-6②PN10		10	
	12V AC/DC ±10%	11 mA	10 mA	LSTD-1②	LSTD-1②	A: amber G: green PW: pure white R: red S: blue	1	
					LSTD-1②PN10		10	
	24V AC/DC ±10%	11 mA	10 mA	LSTD-2②	LSTD-2②	Use a pure white (PW) LED lamp with yellow (Y) lens.	1	
					LSTD-2②PN10		10	

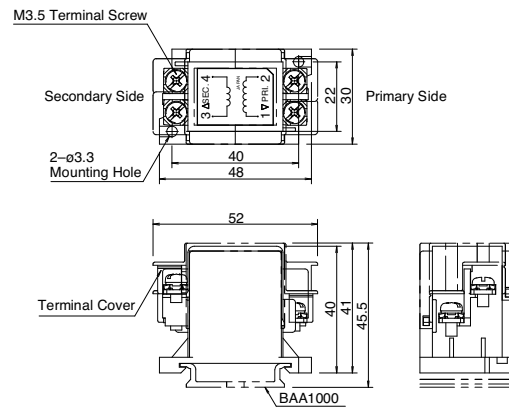
Transformer

Shape	Primary Voltage	Secondary Voltage	Part No.	Applicable Load
Din Rail Mount Transformer For 6V 	100/110V AC	5.5V AC, 1W	TWR516	LSTD-6 LED lamp (6V AC/DC) or LS-6 incandescent lamp (6V AC/DC, 1W)
	115/120V AC		TWR5126	
	200/220V AC		TWR526	
	230/240V AC		TWR5246	
	380V AC		TWR5386	
	400/440V AC		TWR546	
	480V AC		TWR5486	

Specifications

Operating Voltage	100/110V AC, 115/120V AC, 200/220V AC, 230/240V AC, 380V AC, 400/440V AC, 480V AC (50/60Hz)
Current Draw	2.4 VA
Rated Insulation Voltage	600V
Insulation Resistance	100 MΩ minimum (500V DC megger)
Operating Temperature	-30 to +60°C (no freezing)
Storage Temperature	-40 to +80°C (no freezing)
Operating Humidity	35 to 85% RH (no condensation)
Vibration Resistance	Damage Limits: 30 Hz, amplitude 1.5 mm Operating extremes: 5 to 55 Hz, amplitude 0.5 mm
Shock Resistance	Damage limits: 1,000 m/s ² Operating Extremes: 100 m/s ²
Dielectric Strength	2,500V AC, 1 minute
Terminal Screw	M3.5
Applicable Wire	2 mm ² maximum, 2 wires maximum
Weight (approx.)	87g

Dimensions

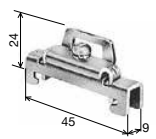


Accessories

DIN Rail

Part No.	Ordering No.	Length	Weight (approx.)	Material	Package Quantity
BAA1000	BAA1000PN10	1000 mm	200g	Aluminum	10

End Clip

Part No.	Ordering No.	Applicable DIN Rail	Weight (approx.)	Material	Package Quantity	Dimensions
BNL6	BNL6PN10	BAA1000 BAP1000	15g	Steel (Zinc-plated)	10	

Safety Precautions

•Turn off power to the AP6S series units before installation, removal, wiring, maintenance, and inspection. Failure to turn power off may cause electrical shocks or fire hazard.

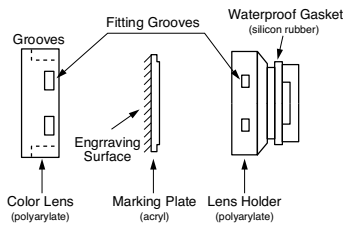
•For wiring, use wires of proper size to meet the voltage and current requirements. Improper soldering may cause overheating and create fire hazards.

Instructions

Replacing Lens and Marking Plate

Removal

Remove the operator (color lens, marking plate, and lens holder) by holding the color lens recesses with the Lens Removal Tool (MT-101) and pulling it out. Remove the marking plate by disengaging the latches between the color lens and lens holder. The marking plate must be engraved on the front side as shown below.



Installation

Place the marking plate on the lens holder in the correct direction and press the color lens onto the lens holder to engage the latches. Insert the lens holder into the housing in the correct direction.

Marking Plate and Engraving Area

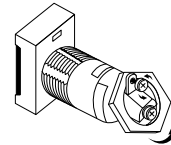
Engraving must be made on the engraving area less than 0.5mm deep.

Lens	Round	Square	Rectangular
Built-in Marking Plate			
	<ul style="list-style-type: none"> • Engraving must be made on the engraving area within 0.5mm deep. • The marking plate is made of white acrylic resin. 		
Applicable Marking Film			
	<ul style="list-style-type: none"> *Thickness = 0.1 mm × 1 pc. • Marking film is not supplied. • Recommended marking film: Polyester film 		

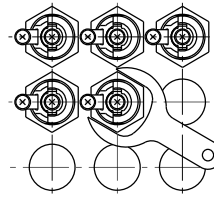
Notes on Mounting

Screw Terminal

- Because screw terminal types use hexagonal nuts, they cannot be mounted closely together. However, rectangular units can be mounted closely when installed horizontally.
- When removing the hexagonal nuts, loosen the terminal screws. The hexagonal nuts cannot be removed when the terminal screws are tightened.



- When mounting the pilot lights collectively, note the mounting order. Pilot lights mounted in between units cannot be removed.



Tab Terminal

The locking ring is plastic. To tighten the ring, use an optional locking ring wrench (MT-001). Do not use pliers. Do not tighten with excessive force, otherwise the locking ring will be damaged. Tightening torque should not exceed 0.88 N·m

Collective Mounting and Continuous Illumination

Collective mounting or continuous illumination of pilot lights may cause the ambient temperature to rise above the rated operating temperature. Make sure to provide efficient ventilation when the mounting panel is not metallic or when the pilot lights are mounted collectively.

Wiring

Solder the terminal at 350°C within 3 seconds using a 60W soldering iron. SnAgCu type lead-free solder is recommended. When soldering, do not touch the pilot light housing with the soldering iron. Also ensure that no tensile force is applied to the terminal. Do not bend the terminal or apply excessive force to the terminal.

Power Supply for LED Lamps

The operating voltage of the LED lamp is within ±5% or ±10% of the rated voltage. Make sure that the power voltage is within this range.

Ordering Terms and Conditions

Thank you for using IDEC Products.

By purchasing products listed in our catalogs, datasheets, and the like (hereinafter referred to as "Catalogs") you agree to be bound by these terms and conditions. Please read and agree to the terms and conditions before placing your order.

1. Notes on contents of Catalogs

- (1) Rated values, performance values, and specification values of IDEC products listed in this Catalog are values acquired under respective conditions in independent testing, and do not guarantee values gained in combined conditions.
Also, durability varies depending on the usage environment and usage conditions.
- (2) Reference data and reference values listed in Catalogs are for reference purposes only, and do not guarantee that the product will always operate appropriately in that range.
- (3) The specifications / appearance and accessories of IDEC products listed in Catalogs are subject to change or termination of sales without notice, for improvement or other reasons.
- (4) The content of Catalogs is subject to change without notice.

2. Note on applications

- (1) If using IDEC products in combination with other products, confirm the applicable laws / regulations and standards.
Also, confirm that IDEC products are compatible with your systems, machines, devices, and the like by using under the actual conditions. IDEC shall bear no liability whatsoever regarding the compatibility with IDEC products.
- (2) The usage examples and application examples listed in Catalogs are for reference purposes only. Therefore, when introducing a product, confirm the performance and safety of the instruments, devices, and the like before use. Furthermore, regarding these examples, IDEC does not grant license to use IDEC products to you, and IDEC offers no warranties regarding the ownership of intellectual property rights or non-infringement upon the intellectual property rights of third parties.
- (3) When using IDEC products, be cautious when implementing the following.
 - i. Use of IDEC products with sufficient allowance for rating and performance
 - ii. Safety design, including redundant design and malfunction prevention design that prevents other danger and damage even in the event that an IDEC product fails
 - iii. Wiring and installation that ensures the IDEC product used in your system, machine, device, or the like can perform and function according to its specifications
- (4) Continuing to use an IDEC product even after the performance has deteriorated can result in abnormal heat, smoke, fires, and the like due to insulation deterioration or the like. Perform periodic maintenance for IDEC products and the systems, machines, devices, and the like in which they are used.
- (5) IDEC products are developed and manufactured as general-purpose products for general industrial products. They are not intended for use in the following applications, and in the event that you use an IDEC product for these applications, unless otherwise agreed upon between you and IDEC, IDEC shall provide no guarantees whatsoever regarding IDEC products.
 - i. Use in applications that require a high degree of safety, including nuclear power control equipment, transportation equipment (railroads / airplanes / ships / vehicles / vehicle instruments, etc.), equipment for use in outer space, elevating equipment, medical instruments, safety devices, or any other equipment, instruments, or the like that could endanger life or human health
 - ii. Use in applications that require a high degree of reliability, such as provision systems for gas / waterworks / electricity, etc., systems that operate continuously for 24 hours, and settlement systems
 - iii. Use in applications where the product may be handled or used deviating from the specifications or conditions / environment listed in the Catalogs, such as equipment used outdoors or applications in environments subject to chemical pollution or electromagnetic interference
If you would like to use IDEC products in the above applications, be sure to consult with an IDEC sales representative.

3. Inspections

We ask that you implement inspections for IDEC products you purchase without delay, as well as thoroughly keep in mind management/maintenance regarding handling of the product before and during the inspection.

4. Warranty

(1) Warranty period

The warranty period for IDEC products shall be one (1) year after purchase or delivery to the specified location. However, this shall not apply in cases where there is a different specification in the Catalogs or there is another agreement in place between you and IDEC.

(2) Warranty scope

Should a failure occur in an IDEC product during the above warranty period for reasons attributable to IDEC, then IDEC shall replace or repair that product, free of charge, at the purchase location / delivery location of the product, or an IDEC service base. However, failures caused by the following reasons shall be deemed outside the scope of this warranty.

- i. The product was handled or used deviating from the conditions / environment listed in the Catalogs
- ii. The failure was caused by reasons other than an IDEC product
- iii. Modification or repair was performed by a party other than IDEC
- iv. The failure was caused by a software program of a party other than IDEC
- v. The product was used outside of its original purpose
- vi. Replacement of maintenance parts, installation of accessories, or the like was not performed properly in accordance with the user's manual and Catalogs
- vii. The failure could not have been predicted with the scientific and technical standards at the time when the product was shipped from IDEC
- viii. The failure was due to other causes not attributable to IDEC (including cases of force majeure such as natural disasters and other disasters)

Furthermore, the warranty described here refers to a warranty on the IDEC product as a unit, and damages induced by the failure of an IDEC product are excluded from this warranty.

5. Limitation of liability

The warranty listed in this Agreement is the full and complete warranty for IDEC products, and IDEC shall bear no liability whatsoever regarding special damages, indirect damages, incidental damages, or passive damages that occurred due to an IDEC product.

6. Service scope

The prices of IDEC products do not include the cost of services, such as dispatching technicians. Therefore, separate fees are required in the following cases.

- (1) Instructions for installation / adjustment and accompaniment at test operation (including creating application software and testing operation, etc.)
- (2) Maintenance inspections, adjustments, and repairs
- (3) Technical instructions and technical training
- (4) Product tests or inspections specified by you

The above content assumes transactions and usage within your region. Please consult with an IDEC sales representative regarding transactions and usage outside of your region. Also, IDEC provides no guarantees whatsoever regarding IDEC products sold outside your region.

IDEC CORPORATION

Head Office

6-64, Nishi-Miyahara-2-Chome, Yodogawa-ku, Osaka 532-0004, Japan

USA	IDEC Corporation	Tel: +1-408-747-0550	opencontact@idec.com	Hong Kong	IDEC Izumi (H.K.) Co., Ltd.	Tel: +852-2803-8989	info@hk.idec.com
Germany	APEM GmbH	Tel: +49-40-25 30 54-0	service@eu.idec.com	China	IDEC (Shanghai) Corporation	Tel: +86-21-6135-1515	idec@cn.idec.com
Singapore	IDEC Izumi Asia Pte. Ltd.	Tel: +65-6746-1155	info@sg.idec.com		Beijing Branch	Tel: +86-10-6581-6131	idec@cn.idec.com
Thailand	IDEC Asia (Thailand) Co., Ltd	Tel: +66-2-392-9765	sales@th.idec.com		Guangzhou Branch	Tel: +86-20-8362-2394	idec@cn.idec.com
India	IDEC Controls India Private Limited	Tel: +91-80679-35328	info_india@idec.com	Japan	IDEC Corporation	Tel: +81-6-6398-2527	jp_marketing@idec.com
Taiwan	IDEC Taiwan Corporation	Tel: +886-2-2577-6938	service@tw.idec.com				

 www.idec.com

Specifications and other descriptions in this brochure are subject to change without notice.

