

Think Automation and beyond...



LD6A



LED SignaLight Towers



IDEC CORPORATION

High Visibility LED Indicating Towers with Striped Design



Stylish design

Unique lens shape offers high visibility

Four different mounting styles

Marking possible on non-illuminating areas

Flexible arrangement of LED units

Colour Arrangement according to IEC Standards

Indicating towers on machines should have the applicable colours in the following order from the top down; RED, YELLOW, BLUE, GREEN, WHITE.

(IEC60204-1 Fifth edition Chapter 10.3.2 Colours)

Colours for indicator lights and their meanings with respect to the condition of the machine.

Colour	Meaning	Explanation	Action by operator
RED	Emergency	Hazardous condition	Immediate action to deal with hazardous condition
YELLOW	Abnormal	Abnormal condition Impending critical condition	Monitoring and/or intervention (for example by re-establishing the intended function)
BLUE	Mandatory	Indication of a condition that requires action by the operator	Mandatory action
GREEN	Normal	Normal condition	Optional
WHITE	Neutral	Other conditions; may be used whenever doubt exists about the application of RED, YELLOW, GREEN, BLUE	Monitoring

(IEC 60204-1)

LD6A LED SignalLight Towers

Stylish design

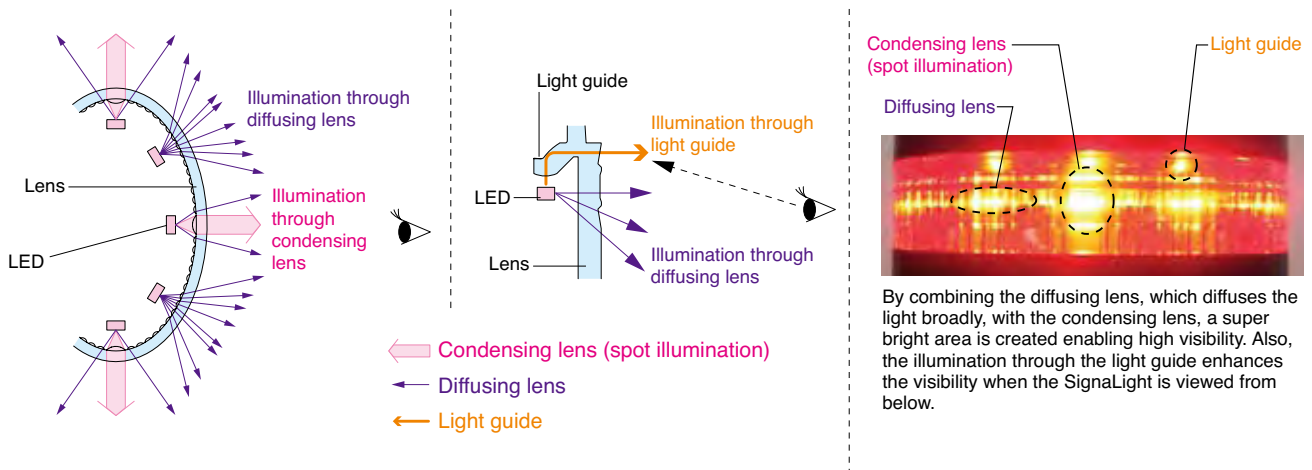
- The $\phi 40 \times 60$ oval shape of the SignalLight presents a stylish image.
LD6A LED SignalLight is highly visible due to the striped design, making a clear distinction between illuminating and non-illuminating areas.
- Unlike conventional products, the non-illuminating area is covered, making a distinction between non-illuminating and illuminating areas. This enables the illuminating area to provide brighter illumination.



Unique lens shape offers high visibility

Three different illumination methods and a unique lens shape enable high visibility from different directions.

■ Characteristics of the lens and light



LD6A LED SignalLight Towers

Four different mounting styles

- Four different mounting styles are available which enable mounting on aluminum frames, wall mounting, direct mounting, and pole mounting.



Frame Mount

(The Signalight in the above photo is attached to a 40-mm-sq. aluminum frame)



Wall Mount



Direct Mount



Pole Mount

- Marking is possible in the non-illuminating areas.



- The color arrangement can be changed easily by stacking LED units. The LED units use plug-in terminals which have proven to provide high reliability for IDEC relays. Optional LED units are available for expansion. (The length of the center screw needs to be changed.)



- Up to 5 LED units with 5 different illumination colors – red, yellow, blue, green, pure white – can be stacked. Dark gray and light gray housings are available. IP65 protection degree – dustproof and waterproof.



Dark gray

Light gray

LD6A LED SignalLight Towers

**Oval shape with striped design.
Presents a stylish image on all equipment.**

- SignalLight with striped design.
- Non-illuminating area between the lenses makes the illuminating color stand out. Built-in super bright LEDs.
- The lens part uses 3 different illumination methods. IDEC's unique lens shape enables high-visibility from different directions.
- Four different mounting styles available. Easy mounting on aluminum frames, wall mounting, direct mounting, and pole mounting.
- Degree of protection: IP65



Functional Specifications

Safety Standards	IEC60947-5-1, EN60947-5-1, UL508, CSA C22.2 No.14
Operating Temperature	-25 to +55°C (no freezing) See Highest Temperature Limitations of page 8.
Operating Humidity	45 to 85%RH (no condensation)
Storage Temperature	-40 to +75°C (no freezing)
Overvoltage Category	III (IEC60664-1)
Impulse Withstand Voltage	800V (IEC60947-1)
Insulation Resistance	100 MΩ minimum (500V DC megger)
Dielectric Strength	Between live and dead parts: 1000V, 1 minute
Pollution Degree	3
Corrosion Immunity	Atmosphere free from corrosive gases
Vibration Resistance	Operating extremes: 10 to 55 Hz, amplitude 0.5 mm
Shock Resistance	Operating extremes: 147 m/s ² , 6 shocks each in 6 axes
Degree of Protection	IP65 (IEC60529)
Housing Color	Dark gray, light gray
Material	Housing: ABS resin Lens: AS resin Pole: Steel (nickel-chrome plated) Pole stand: Diecast aluminum
Cable	UL1007 AWG22

Supplied Parts

Mounting Style	Supplied Parts
Frame mount	M4 screw (4 pcs)*, M4 spring washer (4 pcs)*, M4 plain washer (4 pcs)*, M5 screw (2 pcs), M5 spring washer (2 pcs), M5 plain washer (2 pcs), bracket (1 pc)
Wall mount	M4 screw (l=20) (4 pcs), M4 screw (l=8) (4 pcs)*, M4 spring washer (8 pcs)*, M4 plain washer (8 pcs)*, M4 nut (4 pcs), bracket (1 pc), gasket (1 pc)
Direct mount	M5 screw (4 pcs)*, M5 spring washer (4 pcs)*, M5 plain washer (4 pcs)*, M5 nut (4 pcs)*, O-ring (4 pcs), gasket (1 pc)
Pole mount	M5 screw (4 pcs), M5 spring washer (4 pcs), M5 plain washer (4 pcs), M5 nut (4 pcs), O-ring (4 pcs), gasket (1 pc)

* For dark gray housing, black parts are supplied.
For light gray housing, silver parts are supplied.

Specifications

Rated Insulation Voltage	60V		
Operating Voltage	24V AC/DC ±10%		
Rated Voltage	24V AC/DC		
LED Color Code	R (red), Y (yellow), S (blue), G (green), W (pure white)		
Rated Current (per tier)	R, Y 25 mA	S, G 30 mA	W 20 mA
Power Consumption (per tier)	R, Y 0.6W	S, G 0.75W	W 0.5W
LED Life (Note)	Approx. 30,000 hours (until the brightness reduces to 50% the initial value when lit at complete direct current of the rated voltage under 25°C environment.)		

Note: Life of the LED differs according to operating conditions and environment.

External Contact Ratings

Contact Capacity (per tier)	Current Capacity	100 mA minimum
	Dielectric Strength	35V AC minimum
Transistor Capacity (per tier)	Current Capacity	100 mA minimum
	Dielectric Strength	35V minimum
	Leakage Current	0.1 mA maximum

LED/Lens Color Code

LED Color	Standard Type	Clear Lens Type
R: Red	Red lens	Transparent lens
Y: Yellow	Yellow lens	Transparent lens
S: Blue	Blue lens	Transparent lens
G: Green	Green lens	Transparent lens
W: Pure white	Transparent lens	

For pure white (W) LED, the lens color for standard and clear lens type is transparent.

Type No. Development

LD6A - 5 G Q B - R Y S G W C		
Number of tiers 1: 1 tier 2: 2 tiers 3: 3 tiers 4: 4 tiers 5: 5 tiers	Housing color B: dark gray W: light gray	Lens color blank: same as LED color (standard type) C: transparent (clear lens type)
Mounting style G: frame mount W: wall mount D: direct mount P: pole mount	Voltage Q: 24V AC/DC	LED color code (specify code from highest tier) R: red Y: yellow S: blue G: green W: pure white

LD6A LED SignalLight Towers

Types

Package Quantity: 1

Mounting Style	Tiers	Type No. (Ordering Type No.)		LED Color Code	Weight (approx.)
		Dark Gray Housing	Light Gray Housing		
Frame Mount	1	LD6A-1GQB-□	LD6A-1GQW-□	R, Y, S, G, W	180g
	2	LD6A-2GQB-□□	LD6A-2GQW-□□	RY, RG	220g
	3	LD6A-3GQB-□□□	LD6A-3GQW-□□□	RYS, RYG	260g
	4	LD6A-4GQB-□□□□	LD6A-4GQW-□□□□	RYSG	300g
	5	LD6A-5GQB-□□□□□	LD6A-5GQW-□□□□□	RYSGW	340g
Wall Mount	1	LD6A-1WQB-□	LD6A-1WQW-□	R, Y, S, G, W	180g
	2	LD6A-2WQB-□□	LD6A-2WQW-□□	RY, RG	220g
	3	LD6A-3WQB-□□□	LD6A-3WQW-□□□	RYS, RYG	260g
	4	LD6A-4WQB-□□□□	LD6A-4WQW-□□□□	RYSG	300g
	5	LD6A-5WQB-□□□□□	LD6A-5WQW-□□□□□	RYSGW	340g
Direct Mount	1	LD6A-1DQB-□	LD6A-1DQW-□	R, Y, S, G, W	150g
	2	LD6A-2DQB-□□	LD6A-2DQW-□□	RY, RG	190g
	3	LD6A-3DQB-□□□	LD6A-3DQW-□□□	RYS, RYG	230g
	4	LD6A-4DQB-□□□□	LD6A-4DQW-□□□□	RYSG	270g
	5	LD6A-5DQB-□□□□□	LD6A-5DQW-□□□□□	RYSGW	310g
Pole Mount	1	LD6A-1PQB-□	LD6A-1PQW-□	R, Y, S, G, W	635g
	2	LD6A-2PQB-□□	LD6A-2PQW-□□	RY, RG	675g
	3	LD6A-3PQB-□□□	LD6A-3PQW-□□□	RYS, RYG	715g
	4	LD6A-4PQB-□□□□	LD6A-4PQW-□□□□	RYSG	755g
	5	LD6A-5PQB-□□□□□	LD6A-5PQW-□□□□□	RYSGW	795g

• Select the illumination color from the top tier specifying the LED color code from the left.

□: R (red), Y (yellow), S (blue), G (green), W (pure white)

Ordering Non-Standard Products

• Order according to the table above. Specify the illumination color from the top tier.

Example: When the LED color is RYGSW => **LD6A-5GQW-RYGSW**

• Clear lens type also available. Specify "C" after the LED color code.

Example: **LD6A-5GQW-RYGSW** => **LD6A-5GQW-RYSGWC**

Accessories

Package Quantity: 1

Name/Appearance		Type No. (Ordering Type No.)	LED Color Code
	For dark gray housing	LD9Z-6ALB-□	R, Y, S, G, W
		LD9Z-6ALB-□C	R, Y, S, G
	For light gray housing	LD9Z-6ALW-□	R, Y, S, G, W
		LD9Z-6ALW-□C	R, Y, S, G

• Specify an LED color code in place of □. R (red), Y (yellow), S (blue), G (green), W (pure white)

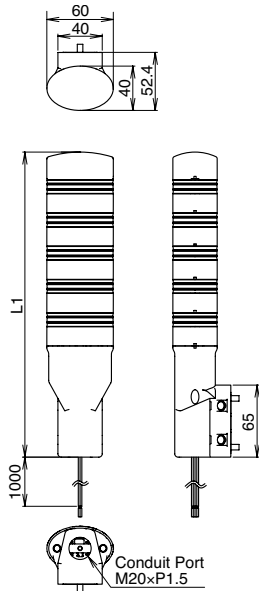
• When using pure white (W) with a clear lens, order LD9Z-6ALB-W (dark gray housing) or LD9Z-6ALW (light gray housing).

Package Quantity: 1

Name/Appearance		Type No. (Ordering Type No.)	Remarks
	1 tier	LD9Z-6AC1	A plain washer and a spring washer are supplied.
	2 tiers	LD9Z-6AC2	
	3 tiers	LD9Z-6AC3	
	4 tiers	LD9Z-6AC4	
	5 tiers	LD9Z-6AC5	

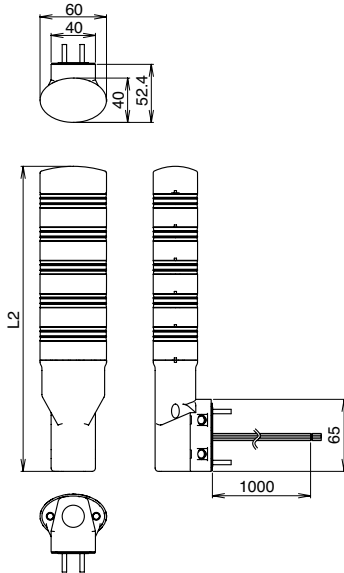
Dimensions

•Frame Mount

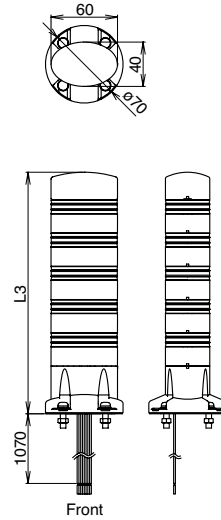


Cable size: UL1007 AWG22

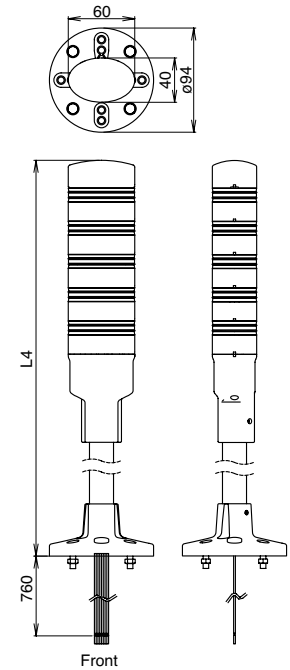
•Wall Mount Type



•Direct Mount



•Pole Mount



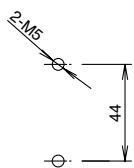
•Dimension Table

(Dimensions in mm)

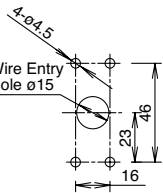
Tiers	Frame Mount (L1)	Wall Mount (L2)	Direct mount (L3)	Pole Mount (L4)
1	156	156	98	408
2	186	186	128	438
3	216	216	158	468
4	246	246	188	498
5	276	276	218	528

Panel Cut-Out

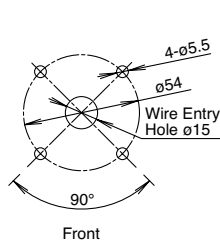
Frame Mount



Wall Mount

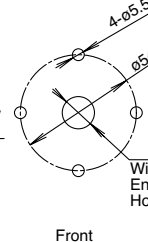


Direct Mount *

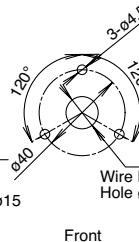


Pole Mount

Pattern A *



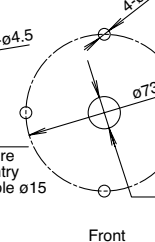
Pattern B



Pattern C



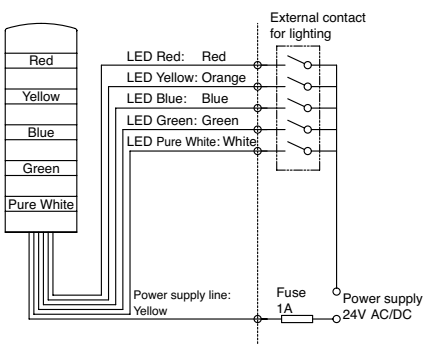
Pattern D



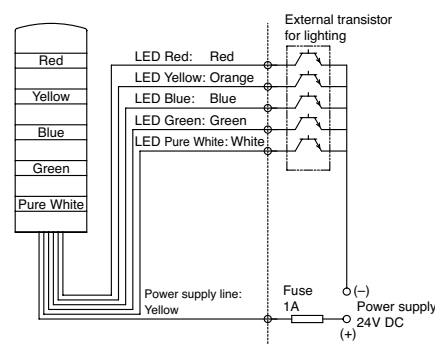
*Complies with IEC60947-5-1.

Wiring Examples

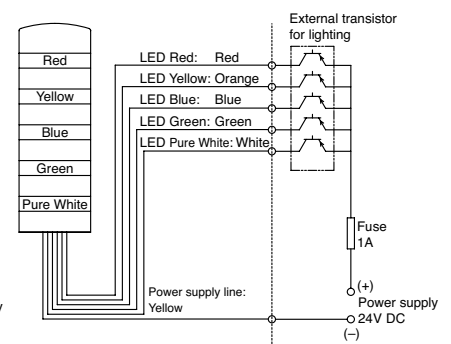
•Mechanical Contacts



•NPN Transistors



•PNP Transistors

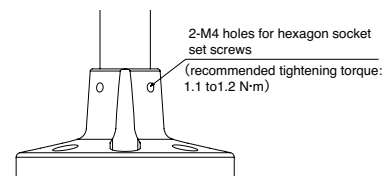


LD6A LED SignalLight Towers

Safety Precautions

- Turn off the power to the LD6A series before mounting, dismounting, wiring, and assembling the LED unit. Make sure of correct wiring, otherwise electrical shocks or fire may result.
- Mount LD6A on a solid surface not subjected to vibrations.
- Do not mount the LD6A upside-down or horizontally.

- Do not leave the LD6A without a cap or unassembled.
- Install the supplied gasket, otherwise waterproof characteristics is impaired.
- Do not apply any chemicals which may corrode the plastic material.
- If the LD6A is subjected to strong vibrations, the hexagon socket screw may become loose. Take measures to prevent loosening. (See the figure on the right.)



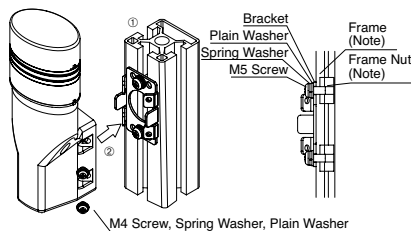
- Do not loosen the screw for which the tightening torque is not specified.

Instructions

Mounting

•Frame Mounting

1. Insert two nuts in the frame, and attach the bracket using two M5 screws.
Recommended tightening torque: 2.6 to 2.7 N·m
2. Mount the LD6A to the bracket using four M4 screws.
Recommended tightening torque: 1.6 to 1.7 N·m



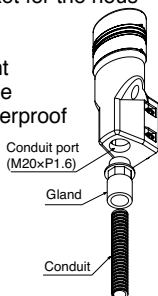
Note: See table below for typical examples of frames and nuts. Consult the manufacturer of the frame for the installation method of the frame nut.

- Examples of recommended frames and frame nuts

Frame Size	Frame	Frame Nut	Manufacturer
□30 mm (Note)	SFF-302	SFB-001 SFB-4B5 SFB-101	SUS Corporation
□40 mm	SFF-402	SFB-008 SFB-4A5 SFB-108	

Note: The mounting bracket for the housing is 40 mm.

When using a frame mount type, be sure to use flexible conduit, otherwise the waterproof characteristic is impaired. Refer to the "Example of Flexible Conduit" shown on the right.

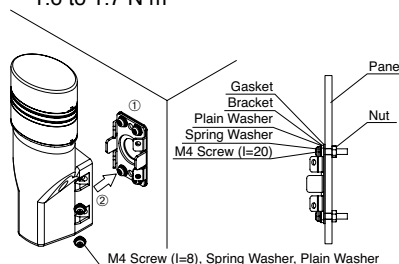


- Example of Flexible Conduit

Conduit Port Size	M20
Gland	AL16/M20/A/BL
Conduit	PAFS16BL
Manufacturer	Adaptaflex

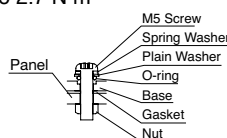
•Wall Mounting

1. Make four tapped holes in the mounting panel and mount the bracket and gasket using four screws (M4 x 20).
Recommended tightening torque: 1.6 to 1.7 N·m
2. Mount the LD6A to the bracket using four screws (M4 x 8).
Recommended tightening torque: 1.6 to 1.7 N·m



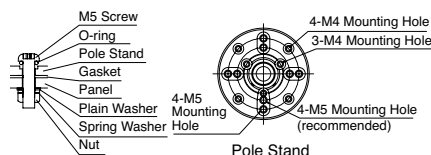
Direct Mounting

- Recommended tightening torque: 2.6 to 2.7 N·m



Pole Mounting

The pole mount type can be installed in four ways. The recommended mounting method (pattern 4) is described below.
Recommended tightening torque: 2.6 to 2.7 N·m (M5 screw)



Wiring

- Connect the wiring as shown below. Incorrect wiring may damage the internal circuit.
- Be sure to insulate unused wires.
- Connect an appropriate fuse to the power line as shown in the figure on page 7.
- Use a fuse with 1A rated current.
- Use a UL listed external fuse holder.
- Use a class 2 power supply only.
- When using the same color for two or more tiers, only one wire is used to light all tiers of the same color. Determine the contact capacity in consideration of the LED rated current.

•Wire Color

LED Color	Wire Color
LED Unit-Red	Red
LED Unit-Yellow	Orange
LED Unit-Blue	Blue
LED Unit-Green	Green
LED Unit-Pure White	White
Power Line	Yellow

Highest Temperature Limitations

The highest temperature is limited to 50°C when all tiers are lit continuously in the following combinations:

1. Two or more tiers including blue and green (example: Red-Green-Blue, Green-Green-Red)
2. Four or five tiers (example: Red-Yellow-Green-Pure White, Red-Yellow-Blue-Green-Pure White)

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



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