Crystal Display Systems Ltd

IP RATED SOLUTIONS

Plus Top 20 Frequently Asked Questions (FAQs)

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WHAT IS AN IP RATING?

IP ratings, or Ingress Protection ratings, are a standardized classification system used to define the level of protection provided by an enclosure or casing against intrusion from foreign objects (like dust and dirt) and moisture (such as water). The IP rating is typically represented by the letters "IP" followed by two digits. The first digit represents the level of protection against solid particles, while the second digit represents the level of protection against liquids.

CODE LETTERS

FIRST DIGIT

SECOND DIGIT

IP65 DISPLAYS

IP65 displays are commonly used in outdoor environments, industrial settings, or applications where the display may be exposed to dust, moisture, or water. These displays are designed to withstand harsh conditions while maintaining functionality and visual clarity. They are suitable for a wide range of applications, including outdoor digital signage, industrial control panels, marine displays, and more.

IP66 DISPLAYS

IP66 displays are suitable for use in harsh environments where exposure to dust, moisture, or water is common. They are commonly used in outdoor settings, industrial facilities, marine applications, and other environments where ruggedness and durability are required. These displays can withstand challenging conditions while maintaining functionality and visual clarity, making them suitable for a wide range of applications, including outdoor digital signage, industrial control panels, shipboard displays, and more.

IP SEAL RATINGS

Definition of IP Codes (Ingress Protection): IP67 Switch Seal Rating: Water-Wash Capable and Process-Sealed

The IP (Ingress Protection) codes, as defined by the IEC (International Electrotechnical Commission) 60529 Standards, establish an international classification system for assessing the effectiveness of enclosures in safeguarding electrical equipment against the intrusion of foreign bodies and moisture.

1. **Degrees of Protection Against Solid Objects – First Digit**
   - 6: Dust-tight
2. **Degrees of Protection Against Liquids – Second Digit**
   - 7: Protection against immersion effects from 15cm to 1m (6" to 40").

In adherence to these standards, our criterion for designating a switch as "process-sealed" is meeting the minimum requirements of IP-67. This indicates that a switch with an IP-67 rating is dust-tight and capable of withstanding a water submersion test at a depth of 40" (1m) for up to 30 minutes.

However, it's important to note that despite the IP67 rating, variations may occur in actual water-wash machine processing. The water-wash pressures and air-knife drying in modern PCB machine-washing may exceed the seal requirements of the IP-67 rating, potentially allowing water entry into the switch.

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First Number	Definition	Second Number	Definition
0	No Protection	0	No Protection
1	Protected against solid objects over 50mm (e.g. accidental touch by hands)	1	Protected against vertically falling drops of water.
2	Protected against solid objects over 12mm (e.g. fingers)	2	Protected against direct sprays up to 15* from vertical
3	Protected against solid objects over 2.5mm (e.g. tools and wires)	3	Protected against direct sprays up to 60* from vertical
4	Protected against solid objects over 1mm (e.g. tools, wires and small wires)	4	Protected against sprays from all directions - limited ingress permitted.
5	Protected against dust-limited ingress (no harmful deposit)	5	Protected against low pressure jets if water from all directions - limited ingress permitted
6	Totally protected against dust	6	Protected against strong jets of water (e.g. for use on shipdecks - limited ingress permitted)
		7	Protected against the effects of temporary immersion between 15cm and 1m. Duration of test 30 min.
		8	Protected against long periods of immersion under pressure

IP67 DISPLAYS

IP67 is a rating commonly used to describe the level of protection a device has against solid particles (like dust) and water. When applied to displays, an IP67 rating means that the display is dust-tight and can withstand immersion in water up to 1 meter deep for up to 30 minutes. This level of protection makes IP67 displays suitable for use in outdoor environments or in situations where they may be exposed to water or dust.

IP68 DISPLAYS

IP68 is a higher level of protection compared to IP67. An IP68-rated display is also dust-tight and can withstand immersion in water, but it offers greater water resistance. Specifically, IP68-rated displays can be submerged in water deeper than 1 meter for longer periods of time, typically up to 3 meters deep for 30 minutes or more, depending on the specific device.

IP Rated Monitor Frequently Asked Questions (FAQs)

Q: Are IP68-rated display monitors suitable for underwater use?
A: Yes, IP68-rated display monitors are designed for underwater use in applications such as marine navigation, underwater exploration, and aquatic entertainment.

Q: Can IP-rated display monitors be cleaned with water?
A: Yes, IP-rated display monitors can be safely cleaned with water and mild cleaning agents, making them easy to maintain in industrial and outdoor environments.

Q: Are IP-rated display monitors impact-resistant?
A: While IP ratings primarily focus on protection against dust and water ingress, many IP-rated display monitors also feature ruggedized enclosures and shock-absorbing designs for enhanced durability.

Q: Can IP-rated display monitors withstand extreme temperatures?
A: Yes, IP-rated display monitors are often designed to operate reliably in a wide range of temperatures, from freezing cold to extreme heat, ensuring consistent performance in diverse environments.

Q: Do IP-rated display monitors require additional cooling mechanisms?
A: Depending on the operating conditions and environmental factors, some IP-rated display monitors may incorporate cooling fans, heatsinks, or passive cooling solutions to maintain optimal temperature levels.

Q: Can IP-rated display monitors be used in hazardous locations?
A: Yes, certain models of IP-rated display monitors are certified for use in hazardous locations where the risk of fire, explosion, or chemical exposure is present, complying with industry-specific safety standards.

Q: Are IP-rated display monitors resistant to chemicals and solvents?
A: Many IP-rated display monitors feature chemically resistant materials and coatings that offer protection against exposure to oils, solvents, and corrosive chemicals commonly found in industrial environments.

Q: Can IP-rated display monitors be mounted outdoors?
A: Yes, IP-rated display monitors are suitable for outdoor mounting applications, with weatherproof enclosures and mounting hardware designed to withstand exposure to the elements.

Q: Are IP-rated display monitors compatible with touchscreen technology?
A: Yes, many IP-rated display monitors are available with touchscreen functionality, offering intuitive interaction and control in outdoor and industrial settings.

Q: What warranty and support options are available for IP-rated display monitors?
A: We offer a comprehensive warranty coverage and technical support services for our IP-rated display monitors, ensuring customer satisfaction and peace of mind throughout the product lifecycle. Contact us for details.

IP Rated Monitor Frequently Asked Questions (FAQs)

Q: What does IP rating stand for?
A: IP stands for "Ingress Protection," a standard rating system that defines the level of protection against dust and water ingress for electronic devices.

Q: What does the first digit in an IP rating represent?
A: The first digit indicates the level of protection against solid objects such as dust and debris (see table included in this document).

Q: What does the second digit in an IP rating represent?
A: The second digit denotes the level of protection against water and moisture (see table included in this document).

Q: What does an IP65 rating mean?
A: An IP65 rating indicates that the display monitor is dust-tight and protected against low-pressure water jets from any direction.

Q: What applications are suitable for IP65-rated display monitors?
A: IP65-rated display monitors are suitable for outdoor use, industrial environments, and locations where exposure to dust and water is common. Discuss your project with our technical sales and support teams.

Q: What does an IP66 rating mean?
A: An IP66 rating signifies that the display monitor is dust-tight and protected against high-pressure water jets from any direction.

Q: Are IP66-rated display monitors suitable for marine environments?
A: Yes, IP66-rated display monitors are often used in marine applications where exposure to saltwater and harsh weather conditions is expected. Other applications are also appropriate.

Q: What does an IP67 rating mean?
A: An IP67 rating indicates that the display monitor is dust-tight and can withstand immersion in water up to 1 meter for 30 minutes.

Q: Can IP67-rated display monitors be used in outdoor kiosks and interactive displays?
A: Yes, IP67-rated display monitors are suitable for outdoor kiosks, interactive displays, and other applications requiring waterproof and rugged displays.

Q: What does an IP68 rating mean?
A: An IP68 rating signifies that the display monitor is dust-tight and can withstand continuous immersion in water under specified conditions.

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