Passenger Information Display Hardware Selection Guide

RisingStar Engineering Team - Apr 07, 2026

A passenger information display is a digital screen installed at transit locations — bus stops, railway platforms, airport terminals, and ferry docks — that shows arrival times, departure schedules, route maps, service alerts, and emergency notifications to waiting passengers.

Unlike traditional static timetable boards, a passenger information display connects to a central data source and updates content automatically. When a bus is delayed, the display shows the revised arrival time. When a train platform changes, the display updates instantly. When an emergency requires evacuation instructions, the display broadcasts the message across the entire network.

For transit operators, choosing the right passenger information display hardware directly impacts readability, reliability, and maintenance costs — and ultimately, passenger satisfaction.



Choosing a passenger information display for outdoor or semi-outdoor transit environments requires careful evaluation of several hardware specifications. Below are the most important factors to consider.

Display Brightness and Sunlight Readability

The Challenge:

A passenger information display installed at an open-air bus stop or railway platform must compete with ambient sunlight that can exceed 100,000 lux on a clear day. Standard LCD panels (300–500 nits) become completely unreadable under these conditions.

What to Look For:

Installation Environment	Recommended Brightness
Open-air bus stops, exposed platforms	3000–5000 nits
Sheltered bus stops, covered platforms	1500–2500 nits
Indoor terminals, enclosed stations	700–1500 nits

RisingStar's outdoor passenger information displays deliver up to 5000 nits brightness, ensuring arrival times and route info stay clearly visible even in direct midday sun. Built-in ambient light sensors automatically adjust brightness — maximum during daylight hours, reduced at night — optimizing energy consumption without sacrificing readability.



Weather Protection and Ingress Rating

The Challenge:

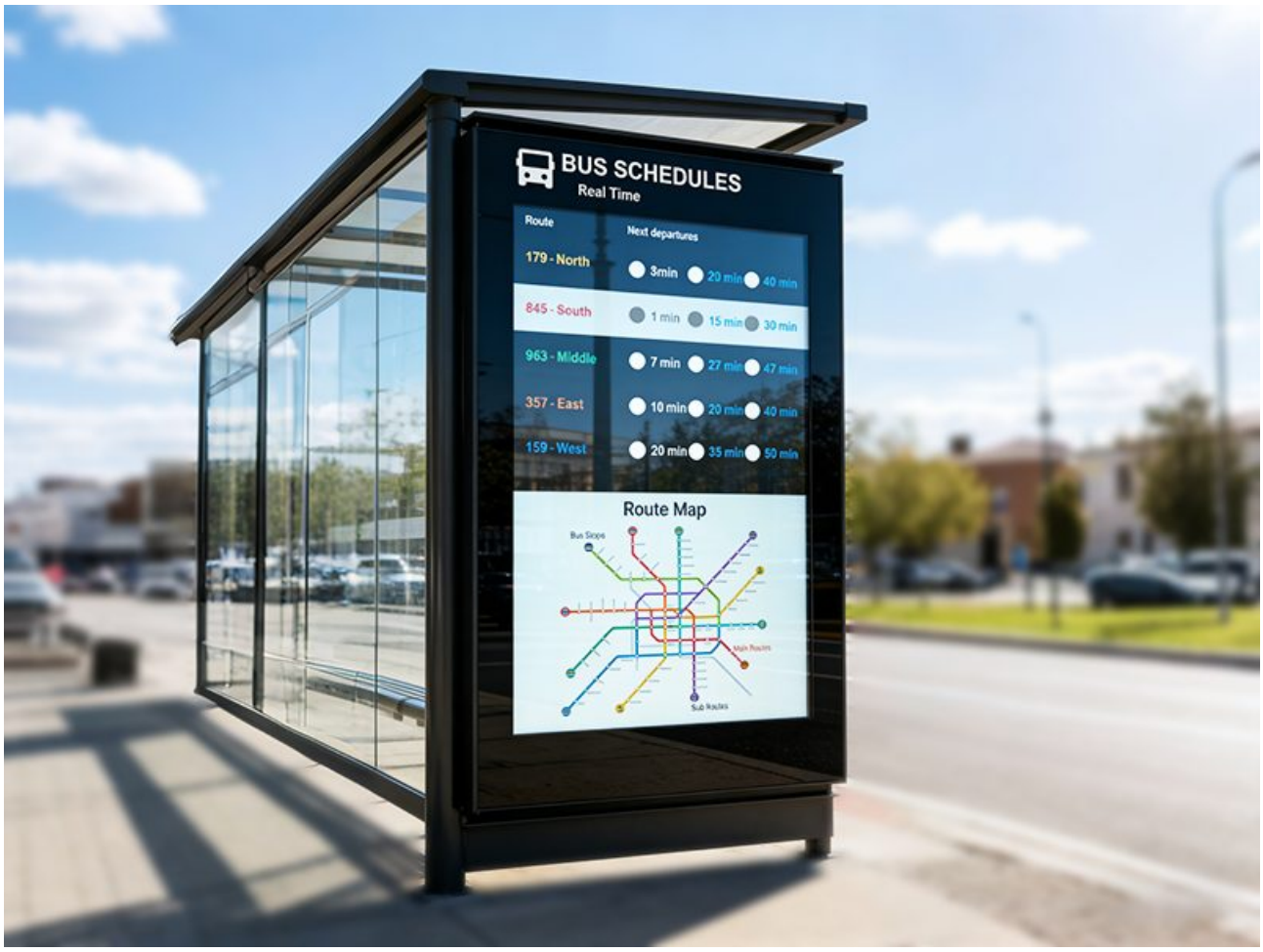
Outdoor passenger information displays face rain, snow, dust, coastal salt spray, and industrial pollution. Moisture ingress is one of the leading causes of display failure in

transit installations.

What to Look For:

- IP65 rating: Protected against dust ingress and low-pressure water jets from any direction
- IP66 rating: Protected against dust ingress and powerful water jets — recommended for coastal and high-rainfall regions
- Fully sealed enclosure: Gasketed access panels, waterproof connectors, and corrosion-resistant internal coatings

RisingStar's outdoor passenger information displays carry IP65/IP66 ratings with fully sealed enclosures engineered for 24/7 operation in rain, snow, sandstorms, and coastal salt spray conditions.



Operating Temperature Range

The Challenge:

A passenger information display installed outdoors must function reliably across the full range of local climate conditions. In summer, direct sunlight can raise the display surface temperature to 70°C. In winter, displays in northern regions face temperatures below

-20°C.

Standard LCD panels are rated for 0°C to 40°C and can malfunction outside this range. Additionally, standard panels develop permanent black spots ("blackening") when the liquid crystal material exceeds approximately 70°C.

What to Look For:

- Operating temperature range: -20°C to 70°C minimum
- Intelligent thermal management: Built-in heating elements for cold climates and ventilation fans for hot conditions

RisingStar displays incorporate Hi-Tni Heat Resistant technology, preventing panel blackening at surface temperatures — essential for passenger information displays installed in tropical, desert, and high-solar-radiation regions.

Display Size and Viewing Distance

The Challenge:

A passenger information display must be large enough to read from the typical waiting distance at a transit location, but not so large that it overwhelms the installation space or exceeds the budget.

Sizing Guidelines:

Application	Recommended Size	Typical Viewing Distance
Compact bus stop	21.5"–32"	3–5 meters
Standard bus stop	43"	5–10 meters
Major station platform	55"–65"	10–20 meters
Transit hub main board	75"–86"	20–40 meters
Platform edge / shelter header	37"–49.5" (stretch bar)	5–15 meters

For narrow installation spaces such as bus shelter headers and platform edges, stretch bar displays with ultra-wide aspect ratios (e.g., 1920×720 or 3840×360) provide route-specific information in a compact form factor.

Panel Technology and Image Quality

What to Look For:

- IPS or AHVA panel technology: Wide viewing angles (80°+ from all directions) ensure readability for passengers approaching from different angles
- Optical bonding: Eliminates the air gap between the LCD panel and cover glass, reducing internal reflection by approximately 80% and preventing fogging during temperature transitions
- Anti-glare (AG) coating: Reduces surface reflection from sunlight and artificial

lighting

- A/A+ grade panels: Sourced from tier-1 manufacturers (LG Display, AUO, Innolux, BOE, Tianma) for consistent quality and long-term reliability

Backlight Lifespan and Total Cost of Ownership

What to Look For:

- Backlight lifespan: up to 50,000 hours
- Direct-lit LED backlight: More energy-efficient and longer-lasting than older CCFL or edge-lit LED designs
- Energy consumption: Look for displays with smart auto-dimming to reduce power usage during evening hours

RisingStar's passenger information displays use direct-lit LED backlight technology that reduces power consumption by approximately 35% compared to edge-lit designs, lowering operating costs across large display networks.

Based on typical transit deployment scenarios, here are our most commonly specified display models. Browse our full passenger information display collection for complete specifications.

Standard Bus Stop Displays

- 32"-65" Outdoor Waterproof High Brightness LCD Display for Bus Stop Information) — 2500 nits~4000 nits, IP65/IP66, compact size for space-constrained stops

Station Platform Displays

- 55" Outdoor Waterproof Digital Signage — 2500–5000 nits, IP65/IP66, 4K UHD option
- 65" Outdoor Waterproof Digital Signage) — 3000–5000 nits, large-format for major stations
- 75" Outdoor Waterproof Digital Signage) — 2500–3000 nits, flagship size for transit hubs

Narrow Space and Platform Edge Displays

- 37" Stretch Bar Display) — 1000–5000 nits, 3840×360 ultra-wide resolution
- 49.5" Stretch Bar Display — 4000 nits, 1920×720 resolution, sunlight readable

Complete Product Range

For full specifications and additional sizes, browse our Passenger Information Display page, Outdoor Waterproof Digital Signage and Open Frame Display collections.

FAQ

Q: How bright does an outdoor passenger information display need to be?

A: For open-air locations, we recommend 3000–5000 nits. For sheltered locations, 1500–2500 nits is typically sufficient.

Q: Can your displays operate in extreme heat?

A: Yes. Our displays are rated for -20°C to 70°C operation, with Heat Resistant technology preventing panel blackening.

Q: What connectivity options do your displays support?

A: Ethernet, 4G/LTE, WiFi, and RS485. We work with your network team to ensure compatibility with your existing infrastructure.

Q: What is the expected lifespan?

A: up to 50,000+ hours of backlight life. In practice, many displays keep running well beyond that.

Related Resources

- Passenger Information Display — Complete range of transit displays for bus stops, railway platforms, and metro stations
- Outdoor Waterproof Digital Signage — Full range of IP65/IP66-rated outdoor displays for transit locations
- Sunlight Readable LCD Display — Sunlight-readable displays from 500 to 5000 nits
- Open Frame Display — Embedded display solutions for custom transit kiosks
- EV Charging Station Display — Touch-enabled displays for transit hub charging stations
- Window Facing High Brightness Display — High-brightness displays for transit center retail and advertising spaces
- OEM/ODM Custom Solutions — Custom display engineering for specialized applications