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1 LED SIGN SOFTWARE

Danthonia understands that customer satisfaction is strongly linked to products that last for years and don't need a lot of up-keep. We know that you get the best return on investment from equipment built with reliable components. We think it's worth maintaining this high standard for every part of our signs because even if you can't tell the difference at first, you will start to notice after a few years.

Our web-based software allows you to change messages from your PC as well as any mobile device, as long as you're connected to the internet and have mobile phone coverage. There's no software, apps, or plug-ins to install, and no IT involvement needed. The software is compatible with all popular browsers. Date, time and temperature displays are standard, with a real-time clock keeping your time accurate. You'll be able to schedule playlists for certain days and times, schedule the sign to turn on and off at set times, and choose from

a variety of entrance and exit effects. Our school clients have found that of all the data connection options, a 4G connection is by far the biggest time saver. This is mostly because it means there's no data installation involved and they can change their sign from anywhere at any time.

2 4G DATA CONNECTION

The 4G data connection we offer eliminates data installation altogether. You'll avoid the frustration of coordinating multiple contractors at the time of install to get power and data working. The 4G connection eliminates the need to comply with data cabling regulations, and avoids underground cables which could expose your sign to dangerous electrical surges.



3 NO ONGOING COSTS

We've included the 4G data usage required for your sign in our purchase price - there is no ongoing cost to you.

4 4G SECURITY

The 4G connection will keep all traffic from your computer to the LED screen completely secure, protected by SSL encryption. Because the LED sign is not connected to your network in any way, 4G communications will never compromise the security of your local or enterprise network. 4G avoids having to establish connections through your corporate firewall.

5 SMD PIXEL CONSTRUCTION

We construct our LED screens with a special type of pixels that enhance resolution, colour, and image quality, called Surface Mount Device (SMD) pixels. Each SMD pixel has three LED chips - red, green, and blue - mounted together and encapsulated in a translucent polymer. These three colours mix to create over a million shades of colour. The close proximity of the chips mounted in one pixel results in excellent

colour and high image quality. The full colour screen supports most digital image and digital video file types, and there are 22 font sizes at your disposal, the smallest of which is designed to fit the maximum amount of text on the screen.

6 WIDE VIEWING ANGLE

SMD pixels are small, thin, and create a slim profile. This low profile is what allows a wide horizontal viewing angle of 140 degrees because the SMD pixel does not block the view of the neighbouring pixels.

7 HIGH RESOLUTION

Because the resolution of an LED sign is one of the main cost drivers, it's very important you take this into consideration. We measure resolution by the number of millimetres between pixels - the industry terminology for this is 'pitch' (for example, P6.67 screens have a 6.67mm pitch). The higher the resolution, the smaller the pitch and the more pixels required. The number of pixels, in turn, directly affects the price and the quality of the image on your LED screen.

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8

EFFICIENT LED CHIPS

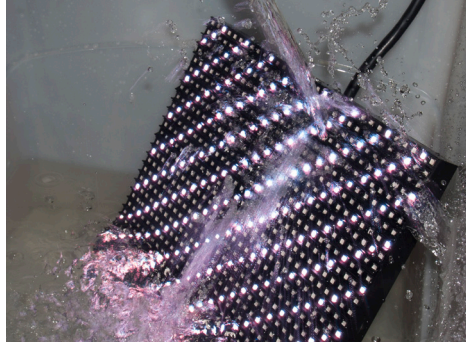
We use efficient 'high brightness chips' that require minimal energy input and produce minimal heat, prolonging and preserving the life of the sign. Your LED sign will have a brightness of at least 6,000cd/m², and will be rated at 100,000 hours to 50% brightness. This means that you would need to run your sign at maximum brightness, non-stop, with every bulb lit up for over 10 years before the LED bulbs reach half brightness.

We've installed a light sensor to detect ambient light that automatically adjusts the LED brightness for optimum readability and power consumption. That's why you'll notice the display is dimmed during dark or overcast conditions and brightened in daylight.

9

WATERPROOF

Moisture, whether in the form of humidity, rain, or salt-laden coastal air has the potential to corrode the electronics inside an LED sign. So, while screen construction must allow air exchange for temperature control, it also must protect the moisture-sensitive components. The parts most susceptible



The tiles are rated at IP67, meaning they can be fully submerged in water.



to water damage are the power supply units, or PSUs. They are the 'workhorses' that drive the display, converting AC mains power to a usable current and voltage for the small LED chips. The PSUs are housed inside splash-proof enclosures. Each one has its own small cooling fan that runs only when required. This means that during the night or on cool rainy days, humid air is not pulled through the internal electronics. In addition, the PSUs are protected with a waterproof 'conformal coating,' which prevents corrosion. If this process is omitted because it increases costs, the

customer will not be able to detect it — until something goes wrong. Our LED displays are constructed from 320mm square, sealed tiles that are both water and dust proof, with the LED bulbs sealed inside. The tiles are mounted on a frame independently of the other components, and are rated at IP67, meaning they can be fully submerged in water.

Another problem related to moisture is rust. Because steel components and fixings are susceptible to rust, we use marine-grade aluminium and/or stainless steel, avoiding the issue altogether.





10 THERMAL MANAGEMENT/ HEAT TOLERANCE

All electronics generate a certain amount of heat. However, excessive heat can cause LED bulbs, or ‘chips,’ to deteriorate over time. Therefore, a reliable and effective cooling system is essential to the longevity of an LED display. Danthonia’s thermal management system aims at minimising heat production, optimising screen ventilation, and ensuring a high temperature tolerance by all parts.

Because excessive heat causes LED bulbs to deteriorate over time, we’ve engineered an effective cooling system for our tiles that uses passive convection. This eliminates cooling fans from the main cabinet, which tend to be less efficient and prone to failure. Each power supply box has its own built-in cooling fan, enabling an operating temperature range from -20° to 70° C. But even with the best screen cooling system, there are days when the ambient temperatures exceed 40° C, and the internal temperature of an LED sign will be higher still. Another key part of thermal management in LED signs is ventilation. On the back of each module are metal fins that absorb and divert

We use marine-grade aluminium and/or stainless steel

heat from the LEDs. Open spaces along the top and bottom of the frame allow the natural exchange of warm for cool air.

11 SURGE PROTECTION

Power surges are a known source of damage to digital appliances. The surges most likely to affect an LED sign are caused by lightning strikes or sudden massive changes in demand on the grid. We’ve eliminated the most susceptible component – copper data wire – with our 4G connection. The other vulnerable electronics have built-in surge protection that allows them to handle some power irregularities without interruption to the display. When installing a sign, we recommend that it is connected by its own power circuit to a switchboard that is protected with surge arrestors, as lightning damage is not covered by the warranty.



AUSTRALIAN MADE

12 VANDALISM

Danthonia's LED signs can easily withstand the rigours of the great Australian outdoors, but what about intentional damage? Interestingly, the incidence of vandal attacks is quite low. Nevertheless, we've taken steps to ensure that in the event of vandalism, repair will be quick and easy. If part of the LED screen is damaged, replacing a module is simple and does not require an electrician.

Our LED displays are electrically tested by Australian Safety Approval (ASA), meeting the certification standard AS/NZS 60950.1:2011 +A1 for suitability.

14 TRAINING AND SUPPORT

Training is free and support is ongoing. Our customer service continues long after your sign is installed, so if you have any issue at all with your LED sign, do not hesitate to get in touch with our team—we'll be right with you!

13 AUSTRALIAN MADE & COMPLIANT

P13 display modules are designed, manufactured, and tested in Australia. This includes the circuit boards, which use only the very best electronic components. They are designed for the harsh Australian climate, easily tolerating high temperatures. They are IP67 rated, to resist the floods, and are fully EMC compliant.

15 WARRANTY

Since installing our first LED screen in 2009, Danthonia signs have weathered record-breaking heat waves and tropical cyclones. But just in case you do have trouble, our Five-Year Warranty will cover every part of the service costs, including parts, shipping, labour, access equipment, and travel time.



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GIVE US A RING to discuss your next LED project.

1800 552 700



DANTHONIA
— DESIGNS —

THE SIGN PEOPLE

