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# PRESS RELEASE

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## New Conceptual Design for CONRAC's Public Displays

It is well known that the requirements for public information systems, running 24/7 with static images are very demanding. But the "normal" operation is not the only challenge the displays have to meet.

Today, public safety is a main reason to use safety glass and IP54/65 protection with extremely robust housings added with anti-graffiti coatings.

If people have to be protected from injuries, then the display devices as well as other equipment installed in public areas are just as much in danger.

Vandalism, graffiti and thefts are a major problem for the transportation organisations costing large amounts of money.

To counteract vandalism, all CONRAC Public Displays have rugged aluminium housings and chassis's with durable powder coating. The powder coating is not only extremely resistant, but allows a much thicker coating than conventional processes. A further advantage is that powder coated items generally have fewer differences in the appearance, between horizontally coated and vertically coated surfaces than liquid coated ones.

A very important factor is eco-friendliness. Powder coatings emit zero or near zero volatile organic compounds (VOC) and the powder coating production lines produce less hazardous waste than conventional liquid coatings.

For the protection of the display panel, laminated safety glass with impact protection according to IK08 can withstand an impact energy of 5J (EN50102). To protect the displays against tampering, there are no external controls to avoid unauthorised accidental or deliberate interference. Furthermore, various theft-deterrent systems can be integrated.

CONRAC's series of Public Displays for indoor applications such as travel information, arrivals and departures and digital signage feature an IP20 protection with high efficiency anti-glare treatment. The laminated safety glass is resistant against scratches (MOHS hardness 7 – diamonds are MOHS hardness 10). It protects the display from vandalism and allows thorough cleaning of the without damaging the display panel. Apart from the protective aspect, the anti-glare surface of the glass panel guarantees a superior legibility from all angles.

Depending on the application, the outdoor series can be supplied according to IP54 specification (full protection against contact and interior injurious dust deposits as well as against splashed water from all directions) and IP 65 (total protection against contact, dust penetration and water projected in jets from any direction).

All this solves the protection issue. However, like with everything else in life, solving one problem does quite often create a new one. The sealing of the displays to a certain degree avoids dust and water getting in, but it also makes the temperature inside the display housing go up. The trend of the market clearly going to even larger screen sizes creates a further challenge for the manufacturers. The larger the display panel is, the more heat it develops, the higher the temperature inside the housing gets.

This clearly results in the requirement for more ventilation. But getting cold air in and hot air out does also involve drawing in dust. Now how can this be avoided?

To counteract these effects, CONRAC developed new housing concepts for both, the Public Displays for indoor applications as well as for the outdoor series.

## Innovative cooling concept for Indoor Displays

The main objective of the new development is the reduction of the panel temperature combined with the reduction of the risk for image sticking.

As a result of extensive R&D, a brand-new Public Display series with a highly innovative cooling concept lowering the temperature and enhancing the display lifetime has been developed. The average temperature on the display

surface inside the unit has been reduced by 10 Kelvin. It is known that a temperature decrease of the panel surface temperature by 2 Kelvin reduces the risk of image sticking by 40%.

The intelligent system works in two cycles, an open loop and a closed loop. Despite the Public Displays' laminated safety glass panel, it cools the TFT panel from front and back.

Depending on the display size and its power consumption, one, two or more air ventilation ducts can be integrated. A special sealing method avoids dust accumulation inside the display. The cooling system is very energy efficient and maintenance-free, reducing the cost of ownership.

### **New housing features for Outdoor Displays**

The cooling of the basic IP54 protected Outdoor Displays creates the need to periodically exchange or clean the dust filters of the devices. This used to involve opening the front accessible display, swivel out the panel and then exchange or clean the filter, which is not difficult, but takes a little bit of time.

To avoid time consuming expensive maintenance, an elaborate concept does now allow the exchange of filters in the IP54 version without even having to open the housing. It is as simple as that: Just unscrew the cover of the ventilation duct and slide out the filter.

Also new is the IP65 expansion kit. For the IP65 series, the cooling is based on passive heat exchange. An active cooling module is under development.

Saving time and money is also the idea behind the new "eBOX" concept for the Outdoor series. The display's intelligence, no matter whether for the monitor-only-, controller- or IPC-version, is integrated in the so-called eBOX, which according to the modular construction, is identical for all versions. Exchange of the eBOX is now reduced to disconnecting/connecting a few cables and opening/closing two screws.

To make life easy, the outline dimensions and fixing points of the new Public Display series, both, for indoor and outdoor use, are identical with those of the previous display devices. Hence, exchanging displays in an existing installation is no problem at all. Same applies to the modular electronics.

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## **PHOTOGRAPHS SUPPLIED**

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conrac\_001 – production of outdoor displays – running-in lines  
conrac\_002 – production of outdoor displays – running-in lines  
conrac\_003 – production of outdoor displays – running-in lines  
conrac\_004 – production of outdoor displays – running-in lines  
conrac\_005 – production of new public display series with cCOOL innovative cooling concept  
conrac\_006 – cCOOL feature  
conrac\_008 – outdoor display - easy filter exchange  
conrac\_010 – 82 inch outdoor display installed in Copenhagen's Main Train Station