BBR
VERKEHRSTECHNIK

Economical and Eco-Friendly

MOFIS® MEDIA.ECO

Energy-saving display systems

MOFIS MEDiA.ECO

Economical and Eco-Friendly

MOFIS® MEDIA.ECO Basic

Solar displays with integrated solar cells and rechargeable batteries

MOFIS MEDIA.ECO

Economical and eco-friendly are the most distinctive attributes of our innovative alternative to conventional displays: The MOFIS® MEDIA.ECO line ensures the timeliness of passenger information even at stops where providing a power supply is difficult to accomplish. Temporarily stops are a typical example for this, where normally only printed timetables are provided for the passengers, even by operators that normally operate dynamic passenger information systems.

The MOFIS® MEDIA.ECO Basic is a display device for dynamic passenger information with integrated solar panels and rechargeable batteries. It doesn't require any external cables for power supply and communication, and all components are integrated in a common housing. Because of its decent design, the device fits perfectly in city environments.

A superb readability under all light conditions is ensured. In addition, the device is equipped with a touch sensor for activating its background illumination.

The energy-efficient MOFIS® MEDIA.ECO Basic has been developed especially for solar-powered operation. Furthermore, it can transmit a set of diagnostics data, such as battery and solar panel state, for remote maintenance access.

The display housing is protected against vandalism, so that thrown stones, punches, kicks etc. cannot impair its reliable operation.

A standard holder makes it possible to attach MOFIS® MEDIA.ECO Basic displays on existing poles.

A central server supplies the display via a GPRS network with the required data. Firmware updates are forwarded to the display through GPRS as well.

Technical Data

Construction	Outer pane: Lucent Lexan RVS304 housing Front pane made of tempered glass Colour: RAL 7001 with anti-graffiti coating
Range of temperature	-10° C to 40° C
Power supply	Network-independent photovoltaic system
Size	450 x 300 x 95 mm
Display	LCD
Resolution	Matrix 1: 17 x 8 pixels Matrix 2: 30 x 8 pixels Matrix 3: 156 x 8 pixels
Protection class	IP55

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MOFIS® MEDIA.ECO Solar LTN LCD
Solar display with Text-to-Speech functionality

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Besides our previous energy-saving, head-high display boards, we are now presenting an alternative for use at a clearance height of 2.8 m. This is made possible by the new, innovative LTN technology (Low Twisted Nematic). Off-grid solar technology with no restrictions on brightness and contrast guarantees the best visibility and low power consumption.

Advantages of LTN-LCD Technology

By making the best possible use of ambient light, LTN display boards use very little power and are also significantly brighter and more effective than standard LCDs with a dark background. The colour brilliance is so high that there is often no need of any backlight during the day. The LED backlighting built into the display is automatically adjusted to the ambient brightness by means of LDRs, and is only sometimes required and mostly at reduced luminosity.

As a result, a long life can also be achieved for the backlighting.

Wireless data transmission allows use in remote locations as well as the realisation of mobile displays. They are flexible and also offer high cost benefits as there is no need for complex cable installations.

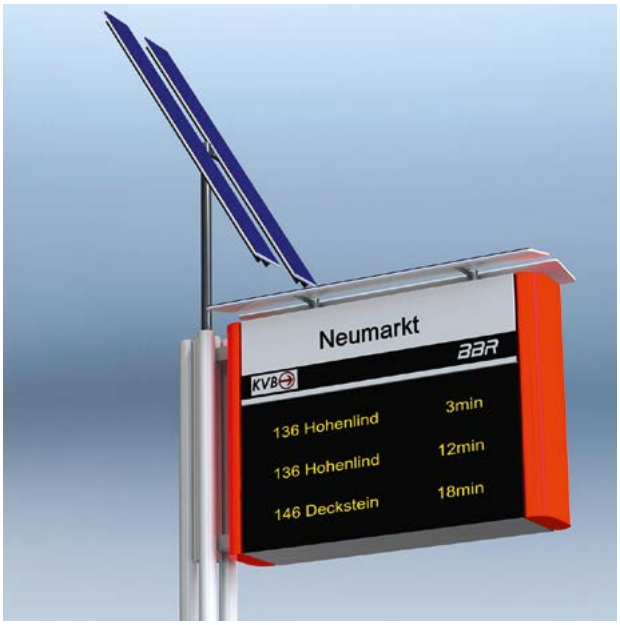
Solar Technology

For a double-sided display, four solar panels (2 x vertical, 2 x horizontal) are mounted on the roof of the housing, moulded to a frame. The peak power of the solar panels has been generously proportioned to ensure that they continue to operate without interruption even in unfavourable locations or during bad weather.

Technical Details

Housing	
Design	aluminium design, one-sided or double-sided, outdoor housing
Protection Class	IP 54
Surface	powder coated
Colour	any RAL colour possible
Size (w x h x l)	approx. 850 x 677 x 204 mm
Screen	VSG safety glass approx. 8.7 mm
Display Area	
Size	approx. 640 x 192 mm
LTN-LCD colour	yellow-green
LCD pitch	4 mm
Pixels	160 x 48
Luminance	approx. 6,000 cd/m2*
Reading distance	approx. 15 metres
Solar	
Solar Panel	4 panels of 20 watts each (peak), dimensions: 1050 x 150 mm
Power supply	off-grid, via photovoltaic system, power storage Ni-MH batteries with 10 Ah each at 12 V
Average power requirement	approx. 2.5 watts
Miscellaneous	
Interfaces	RS-485, RS-232, Ethernet
Temperature range	-20°C to +60°C
Data transmission	GSM / GPRS

*through direct sunlight



Text-To-Speech

A Text-To-Speech (TTS) speech device speaks the entire contents displayed (timetable information, special messages) as soon as the passenger presses the button.

Button for text-to-speech functionality

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MOFIS® MEDIA.ECO Timetable
Solar display with bi-stable LCD Display

MOFIS MEDIA.ECO

The MOFIS® MEDIA.ECO Timetable provides the capability to display static timetables electronically. A bi-stable cholesteric LCD display with a resolution of 640 x 480 pixels doesn't need any power supply for a static illumination. Display updates are accomplished via GSM / GPRS.

Due to the innovative Cholesteric Liquid Crystal Display (ChLCD) technology, MEDIA.ECO Timetable is extremely modest in respect of power consumption. Thus it is a cost-efficient alternative to conventional display devices. MEDIA.ECO Timetable requires energy only when the display is either generated for the first time or is to be changed (paging). The displays have a bi-stable state which doesn't need any additional supply voltage, so that the image content remain displayed without consuming any further energy.

The GPRS-controlled device doesn't require any wiring, thus the installation is less costly and faster to install. As a free-standing display, the monitor can mounted on a pole or inside a bus/tram shelter.

For upgrading the displays, a battery is required which can be optionally supplemented by a solar panel.

Technical Data

Housing		
Construction	Torsion-free blind and casement frame system. Casement frame flushing with the adjacent areas. Constant hidden aeration. Solar panel housing with a swivel-mounted adapter. Frameless glass enclosure with VSG safety glass of 7.14 mm thickness and antireflection coating. Ceramic-printed passe-partout.	
Protection class	IP 45	
Colour	Freely selectable	
Dimensions (W x H x D)	Display: 500 x 400 x 73 mm Solar panel housing: 535 x 660 x 60 mm	
Mounting	As display on a pole or inside a bus/tram shelter, usable on stops and stations without power supply, e.g on temporary stops.	
Display field		
Size	Visible screen: 245 x 184 mm; (12'' / 4:3 ratio), Other sizes on demand.	
Type	Reflective TFT monitor cholesteric monochrom LCD screen, bi-stable	
Resolution	640x480 pixels, monochrome	
Font colour	Black on green background, other colours are possible as well (black/yellow, blue/white, black/orange)	
Brightness	141 cd/m2	
Degree of reflection	white/blue: black/yellow: black/orange: black/green:	22% 19% 12% 15%

Additional Information			
Interface	RS-232		
Range of temperature	Storage: min. -40°, max. 80°C Operation: min. -20°, max. 80°C		
Update time	15-35 s depending on the ambient temperature		
	0° C	25° C	75° C
white/blue:	25 s	9 s	2 s
black/yellow:	25 s	9 s	2 s
black/orange:	15 s	4 s	2 s
black/green:	29 s	9 s	3 s
Power supply	+9.0VDC...+16VDC; typ. 12VDC		
Current consumption (typically)	0 mA controller disabled (picture uploaded), 18 mA when standby modus controller is enabled, 110 mA when screen is being updated		
Modem	Data transmission via GPRS		
Display	Graphics in full screen mode, ticker text is not possible, LED lighting enabled via touchscreen button action or motion detector		

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