TFT Display Technology

TRAIN INFORMATION MONITOR (ZIM) DISPLAY WIDE

This train information monitor is available as a wide display in single-sided and double-sided versions as master and master/slave.
The active display area has a diagonal of approx. 49.5".

MAXIMUM FLEXIBILITY

The Train Information Monitor ZIM Display wide is a high-resolution TFT train information monitor for indoor and outdoor use. With a particularly bright, sunlight-readable display (up to 2,000 cd/m²), a robust IK10-protected housing and IP54 protection, it is ideal for platforms and transport stations.
The display offers a resolution of 1,920 × 540 px, a wide viewing angle (178°), and meets the TSI-PRM requirements for accessible passenger information. Available in single-sided or double-sided versions (master/slave), the system features integrated diagnostic functions, sensors, UPS buffering and modern interfaces such as fibre optics, PoE, BLE and LoRaWAN.
Designed for a service life of at least 10 years, the ZIM wide display stands for reliable, high-contrast and standard-compliant passenger information in demanding continuous operation.

HIGHLIGHTS

- single-sided or double-sided (master/slave) for indoor and outdoor use
- modular design – easy maintenance and good spare parts availability
- anti-reflective laminated safety glass with highly effective IR and UV blocking filter
- integrated diagnostic functions and sensor technology
- various interfaces such as fibre optics, PoE, BLE and LoRaWAN
- CE certificate, TSI conformity

Funkwerk Systems GmbH – Member of Funkwerk Group
Liebigstraße 1a | D-85757 Karlsfeld | T. +49 (0) 8131 9075-100 | M. info@funkwerk-mobility-platform.com | www.funkwerk-mobility-platform.com

TECHNICAL DATA

GENERAL DESCRIPTION

Product designation	Train Information Monitor (ZIM) display, TFT technology, size 49,5" wide, outdoor
Area of application	enclosed design for indoor and outdoor use suitable for departure and arrival displays, advance notice displays, etc. suitable for use in direct sunlight

HOUSING

Housing colours	Door frame/window passe-partout colour RAL5022 – midnight blue Body colour RAL9006 – white aluminium Finish – protection IK 10
Front panel	anti-reflective laminated safety glass with a thickness of approx. 8.8 mm, with highly effective IR and UV blocking filter reasy-to-clean coating Impact resistance in accordance with DIN EN 356, P2A
Fastening	via 6 x closed blind rivet nuts M12 on the rear side of a suitable bracket

TFT PANEL

Visible surface (TFT display)	1,209 mm x 340 mm (49.5" screen diagonal) physical resolution 1,920 x 540 pixels
Display colours	up to 16.7 million possible colours
Viewing angle	approx. 178° in horizontal and vertical direction
Display brightness	min. 1,000 cd/m² (center of display)
Luminance	2,000 cd/m²
Adjustment of display brightness	Brightness control via ambient light sensor, configurable parameters
Ambient light	readable even in direct sunlightt
Backlighting	adjustable LED backlighting
Reaction time (g-g)	max. 14 ms

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DIMENSIONS AND WEIGHTS

Weights	double-sided approx. 114 kg single-sided approx. 60 kg
Dimensions	see dimensional drawing

POWER SUPPLY

Power supply	230 V / 50 Hz, external fuse protection C6A Device disconnect switch, all poles Surge protection with SPD type 3 Inrush current limiter 16A Mains filter
Railway earth connection	2 x closed threaded sockets M12 on the top for screw connection equipotential bonding cable
Power connections	Master: Power supply: 230 V AC (L, N, PE): CA3-GS plug connector incl. 5 m connection cable permanently connected via cable gland Slave power supply connection: Hirschmann CA3-GD plug connector incl. cover cap Network: 5 m sheathed cable, single-mode OS2 duplex LC fibre optic cable PoE device external: RJ45 socket incl. cover cap Train stop sensor connections: 2 x M8 socket (HARTING M8 PCB ADAPTER 4POL PCOD. FEMALE) incl. cover cap Control connection slave: USB incl. cover cap Video signal slave: DisplayPort socket incl. cover cap Slave: Power supply: 230 V AC (L, N): 2 m connection cable with Hirschmann CA3-LS plug connector Control connection: USB connection cable, 2 m, with plug housing Video signal: DisplayPort connection cable, 2 m, with plug housing
Power consumption	Master: typ. approx. 65 Watt, max. approx. 105 Watt Master-Slave: typ. approx. 100 Watt, max. approx. 180 Watt

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CLIMATIC AND ENVIRONMENTAL CONDITIONS

Temperature range	-20° C to + 40° C (operation) -20° C bis + 60° C (storage)
Air conditioning	internal air circulation with speed-controlled fans
Noise generation	< 50 dB according to the German Federal Technical Instructions on Noise Protection
Static stability	Wind load zone 4 according to EN1991-1-4 Snow load zone 3 according to EN1991-1-3
Usage and service life	min. 10 years

INTERFACES AND FUNCTIONS

Data interface	Network via single-mode fibre optic cable (GBIC module in integrated media converter) optional mobile communications with LTE module Quectel EC25-EUX and external housing antenna (additional approval may be required)
Electronic beacon	Bluetooth Low Energy (BLE) Nordic nRF52840 Dongle
LoRaWAN	LoRA-E5-LF module with serial interface and integrated antenna
UPS	Bridging of display PC, controller board, and media converter power supply for a period of approx. 5 minutes Energy storage in SuperCaps
Buffering RTC/Bios Display PC	SuperCap on computer board
Detection of power supply interruption	via UPV output
Performance measuring	via energy meters in the 230 V AC circuit
Reset	Interruption of 230 V AC power supply via switching relay for approx. 15 seconds triggered by command
Digital GPIO	5 freely usable GPIO outputs/inputs via connectors on the controller board level 3.3 V DC Load capacity max. 20 mA per output
Interface for train stop sensor	two RS 485 connections, galvanically isolated, including power supply, each 24 V DC, 12 watts
Interface for PoE devices	one RJ45 connection for PoE in accordance with IEEE802.3at with a maximum of 60 watts

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SENSORS AND MONITORING

Diagnostic interface	Transfer of warnings and settings from serial to USB, protocol version ZIM V-0.9.1
Sensor	interior air temperature, front temperature, humidity, panel current error, backlight current error, backlight brightness, acoustic glass break sensor, door opening, power consumption, fan speeds, mains voltage error, operating voltages, overvoltage protection monitoring
Temperature monitoring	Warning and panel shutdown when limit values are exceeded
Humidity monitoring	Warning and panel shutdown when limit values are exceeded
TFT panel monitoring	Warning when the permissible power consumption is exceeded or not reached
TFT backlight monitoring	Warning when the permissible power consumption is exceeded or not reached
Display PC monitoring	Warning when the permissible power consumption is exceeded or not reached
Media converter monitoring	Warning when the permissible power consumption is exceeded or not reached
Power consumption indicator monitoring	Warning when the permissible power consumption is exceeded or not reached
Door closure monitoring	Warning by reed sensors when the housing door is opened
Fan speed monitoring	Warning when the permissible speeds are not reached by evaluating the fan speed signals
Glass breakage monitoring	Warning when glass breakage noise is detected
Operating voltages monitoring	Warning when voltages fall below permissible levels: 24 V DC main supply 24 V DC fan supply
Watchdog	triggered by internal programme error or command Watchdog triggers 230 V AC reset relay.

CERTIFICATIONS

Protection class	IP 54 according to EN 60529
Electrical protection class	Class II, PE connection only as functional earth
Approvals	CE (EMC, electrical safety, RoHS) in accordance with EU Directives 2014/30/EU, 2014/35/EU, 2017/2102/EU, TSI-PRM

ARTICLE NUMBERS

ZIM Display Wide one-sided	360.20100-0020
ZIM Display Wide double-sided	360.20100-0021

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