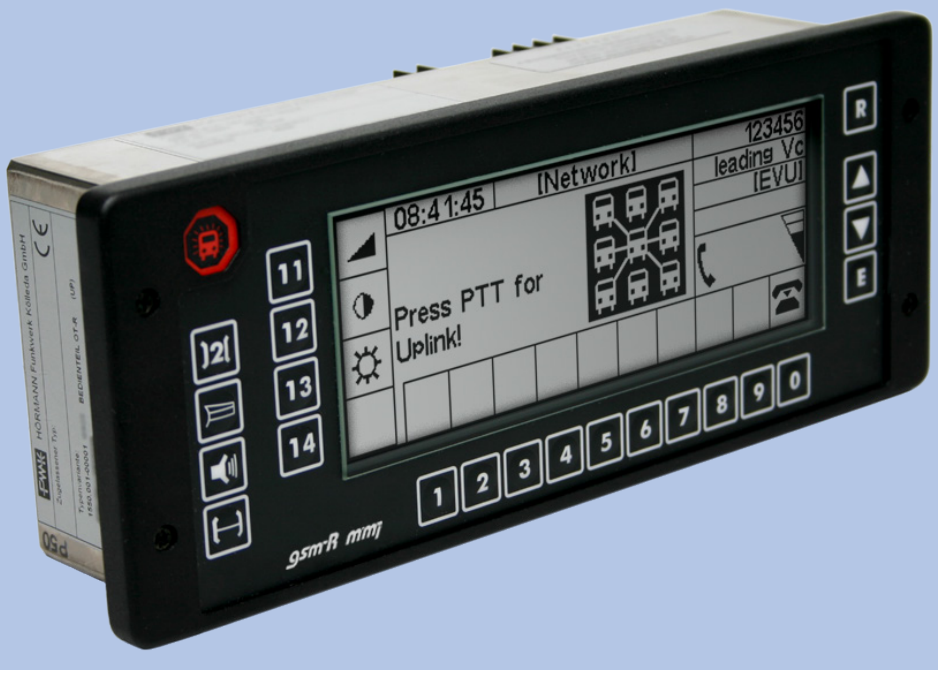

MESA 23: Operating Device

MMIS

The operating device MMIS as part of the train radio system MESA 23 is designed for the menu-driven operation of digital and analogue train radio. It fulfils the requirements for the operation on rail-vehicles and it is designed for the console installation in the driver‘s cabin. With the use of handset and a loudspeaker the driving crew is able to carry out diverse communication tasks.

The CENELEC-Standard “MMI Symbols for ERTMS/ETCS/EIRENE-MMI“ was used as basis for the design of the keyboard symbols.

The railway specific functions are controlled by the keyboard consisting of 9 hard keys and 14 softkeys. The following functions are realised by the hard keys:

- Emergency call
- Call to secondary controller
- Call to conductor
- Call to train public address / Intercom
- Train to train call
- Direction button up
- Direction button down
- Enter button
- Reset of the train radio system

All other operating functions will be controlled by softkeys.

A fixed functional allocation at the same softkeys in the menu levels and an optimal display size allow an easy handling of all operating activities by the train driver.

Operating concept:

Funkwerk’s MMIs are developed in accordance with the specification as well as to European standards. They are characterised by its innovative and intuitive ease of use. Except for permanently reachable key functions our MMIs are mainly controlled by softkeys to facilitate its use and to provide the flexibility for functional adaptations without needed hardware modifications.

The operating device MMIS is only compatible to the train radio system MESA 23.

Hard keys: Keys with fixed functional allocation independent from the current menu level.

Softkeys: The functional allocation of the softkeys is given by the direct and adjacent area of the display and depends on current menu level of the radio system.

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Technical Specification

Display	
Visible range	(171 x 61) mm
Resolution	(360 x 128) pixels
Reading angle at 25 °C	vertical: -60° to +40°, horizontal: -40° to +40°

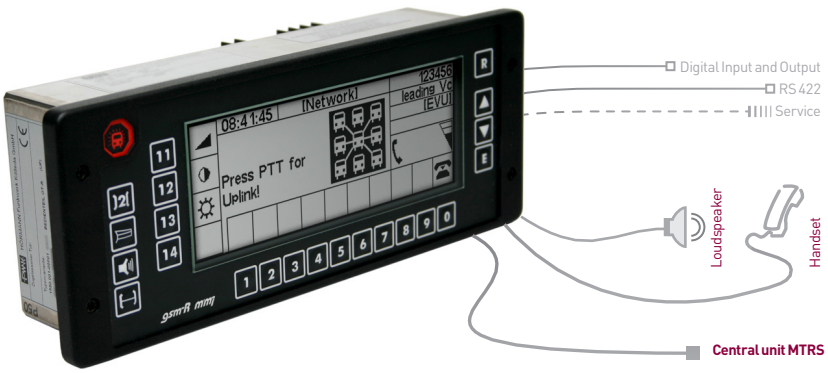
Dimensions+ Weight	
Construction	closed housing
W x H x D	(296 x 116 x 118) mm
Weight	3.5 kg

Environmental Conditions	
Protection class	front: IP 54 according to DIN EN 60529
	rear side: IP 41 according to DIN EN 60529
Vibration and shocks	according to DIN EN 50155
EMC	according to DIN EN 50121-3-2 and DIN EN 50155

Climatic Conditions	
Operating temperature range	-25 °C to +55 °C
Storage temperature range	-40 °C to +70 °C (in original package)
Maximal gradient	± 1 °C/min of ambient temperature
Maximal humidity	75 % in annual average
Relative humidity	95 % on max. 30 days per year
Altitude and pressure fluctuation	-100 m to 1,800 m above sea level

Interfaces	
X1: central unit	25-pin D-Sub
X2: handset	9-pin D-Sub
X3: loudspeaker	9-pin D-Sub
X4: digital Input and Output	9-pin D-Sub
X5: RS422 (data application)	15-pin HD-D-Sub
X6: charging unit	9-pin D-Sub
Service	IrDA with maximal 115.2 kBit/s
Miscellaneous	brightness sensor, protective earth conductor

Power Supply	
Input voltage	nominal 24 V_{DC} from central unit
Charging unit for mobile phones	output voltage: (12.0 ± 0.5) V_{DC}
	maximum output current: 300 mA



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