MB CONNECTLINE

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Technical Data

V 6.2 DR02 - from HW02 - en | July 6th, 2020

MDH810, MDH811, MDH814, MDH815, MDH816, MDH819, MDH830, MDH831, MDH834, MDH835, MDH841, MDH849, MDH850, MDH855, MDH858, MDH859

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1 Technical data

mbNET® Industrial router

MDH 810, MDH 811, MDH 814, MDH 815, MDH 816, MDH 819, MDH 830, MDH 831, MDH 834, MDH 835, MDH 841, MDH 849, MDH 850 EU, MDH 850 AT&T, MDH 855 EU, MDH 855 AT&T, MDH 858 EU, MDH 858 AT&T, MDH 859 EU, MDH 859 AT&T - from hardware version: **HW 02**
You can find the hardware version on the device rating plate.

Housing dimensions

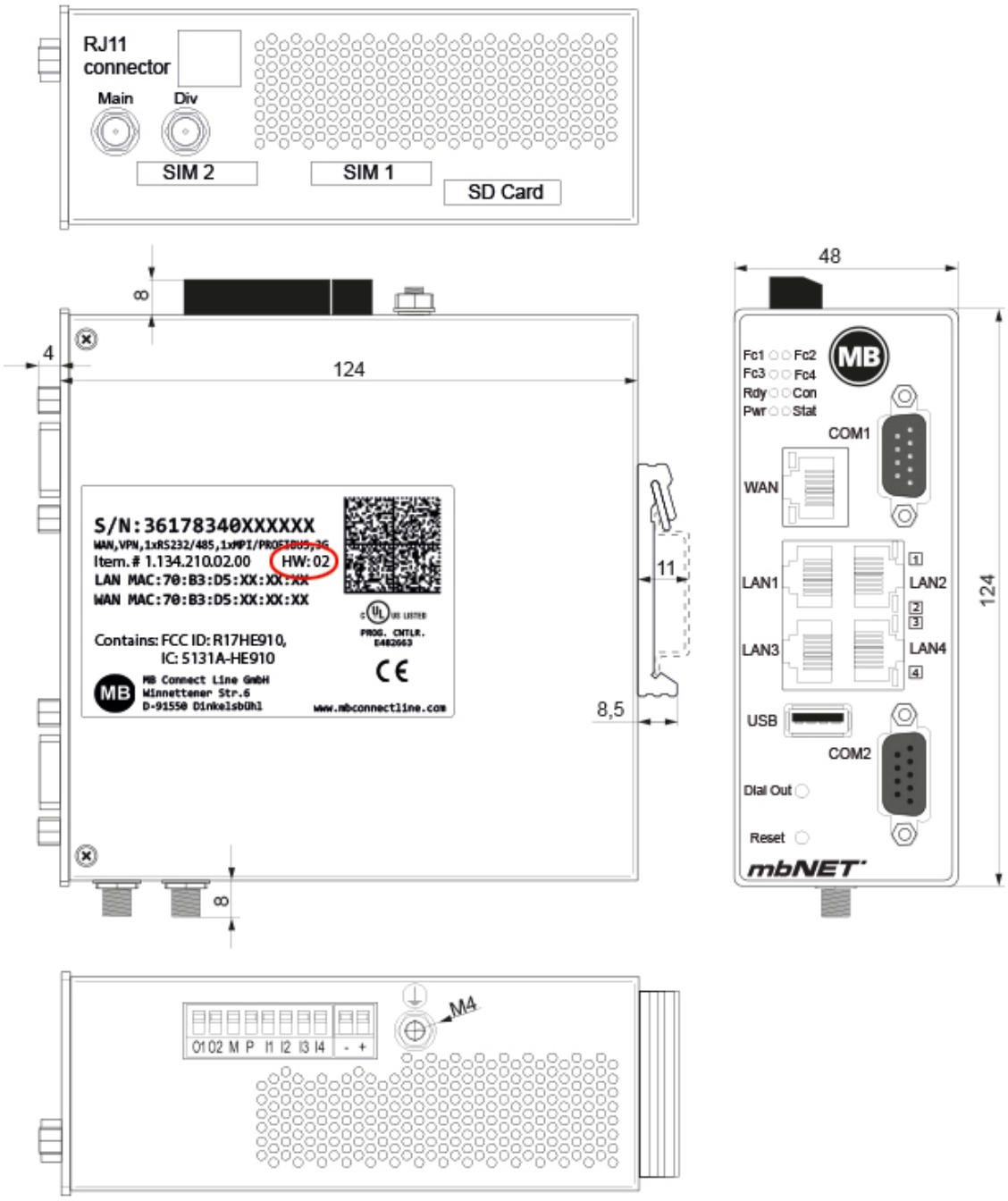


Image 1: Devices and interfaces vary depending on the device type.

Release note

Version	Date	Comment
V 6.2	Febr. 26th, 2020	Previous version: V 6.0 from June 4th, 2019 Correction of the current consumption: old = 1300 mA => new = 500mA Add the performance data for new LTE module, for devices with hardware version HW04.
V 6.2 DR01	Apr. 22nd, 2020	Add processor performance data.
V 6.2 DR02	July 6th, 2020	Adding the transmission power for radio modules.

General Data

Performance data		
Voltage ⎓ V (DC)	10 – 30 V DC (ext. power supply or SELV power supply, 10-30 V DC, Max. 40A)	
Current consumption	max. 500 mA @ 24 V	
Dissipated power	max. 6 W	
Random access memory	Devices **uo to** hardware version **HW02**: **256** MB Devices **from** hardware version **HW03**: **512** MB	
Processor	Devices **up to** hardware version **HW03**: ARM Cortex®-A8 up to **600MHz** Devices **from** hardware version **HW04**: ARM Cortex®-A8 up to **1GHz**	
IP Protection class	IP 30*	* at full occupancy of all connections and interfaces. Alternatively, unused interfaces can be covered with dust protection plugs.
Area of use	Dry environment	
Temperature (operating)	-40 – +75 °C	
Temperature (storage)	-40 – +85 °C	
Humidity	0 – 95% non-condensing	
Real-time clock	In the event of a power failure, the date and time are maintained for up to 7 days (depending on the ambient temperature).	
Dimensions (max.)	48 mm x 137 mm x 140 mm (W x D x H)	
Weight (max.)	650 g	
Housing/material	Metal	
Installation	DIN-top hat rail mounting	

I/Os and standard interfaces

Digital inputs	4 pieces, 1030 V DC (electrically isolated), (low 0 – 3.2 V DC, high 8 – 30 V DC)
Digital Outputs	2 pieces, 10-30 V DC (electrically isolated), to a maximum of 1.5 A per output
LAN interfaces	4 pieces, 10/100MBit/s full and half duplex operation, automatic detection patch cable/cross-over cable (auto detection)
USB interfaces	USB Host 2.0
SD card slot	For SD cards (32.0 mm × 24.0 mm × 2.1 mm) SDHC max. 32 GB; FAT/FAT32

NOTICE

As of firmware version **6.0.6 and** hardware version from **HW03**, all devices can use the ***mbEDGE*** function.

VPN

VPN protocol	IPsec/PPTP/OpenVPN, 64 Tunnel	MDH 810, MDH 811, MDH 814, MDH 830, MDH 831, MDH 834, MDH 850 EU, MDH 850 AT&T, MDH 855 EU, MDH 855 AT&T
Encryption method	Blowfish, AES, DES/3DES	

VPN protocol	OpenVPN, 1 Tunnel	MDH 815, MDH 816, MDH 819, MDH 835*, MDH 841, MDH 849, MDH 858 EU, MDH 858 AT&T, MDH 859 EU, MDH 859 AT&T
Encryption method	Blowfish	
Encryption algorithms	MD5, SHA1	
Authentication	Pre-Shared-Key, X.509	

*can only be operated with my / mbCONNECT24.

Network / security

Firewall	1:1 NAT, IP-Filter, port forwarding, stateful inspection
IP router	NAT-IP, TCP/IP routing, IP forwarding
Services	DHCP server, DHCP client, DNS server, NTP client, PPP server, DynDNS
Time levelling	NTP server

Optional Interfaces

WAN interfaces	10/100MBit/s full and half duplex operation, automatic detection patch cable/cross-over cable (auto detection)
Interface 1 (COM1)	RS-232/485 (software-switchable)
Interface 2 (COM2) - device-dependent -	RS-232/485 (software-switchable) or MPI/PROFIBUS - 12 MBit/s
SIM card slots	2 pieces SIM card reader with ejector (for mini-SIM)

Communication

Devices with analogue modem (MDH 810, MDH 815, MDH 830)

Countries where used	240 countries
Modulation types	V.21, V.22, V22bis, V.23, V.32, V.32bis, V.34
Data compression	V.42bis, MNP5
Error correction	MNP 2-4, V.42 LAPM
Dialling procedure	MFV/IWV
Modem port	RJ11 socket
FCC	Contains Part 15 & Part 68

Devices with UMTS (3G) module (MDH 814, MDH 819, MDH 834, MDH 849)

Countries where used	Global
GSM/GPRS/EDGE	850, 900, 1800, 1900 MHz; Downlink max.296 kbps, Uplink max. 236.8 kbps
HSxPA	800/850, 900, AWS 1700, 1900, 2100 MHz; Downlink max. 21 Mbps, Uplink max. 5.76 Mbps
Transmit output power	Class 4 (2 W, 33 dBm) @ GSM 850 / 900 Class 1 (1 W, 30 dBm) @ GSM 1800 / 1900 Class 3 (0.25 W, 24 dBm) @ UMTS Class E2 (0.5 W, 27 dBm) @ EDGE 850 / 900 Class E2 (0.4 W, 26 dBm) @ EDGE 1800 / 1900
Reception sensitivity	-108 dBm @ UMTS -107 dm @ GSM 850 / 900 MHz -106 dBm @ DCS1800 / PCS1900 MHz
Antenna connection	1-piece SMA socket 
FCC	Contains FCC ID: R17HE910
TAC	35613607

Devices with LTE (4G) module EU (MDH 850 EU, MDH 855 EU, MDH 858 EU, MDH 859 EU)

Devices with hardware version **HW 04**	
Countries where used	Europe
GSM/GPRS/EDGE	900 (B8), 1800 (B3) MHz; max. 236 kbps
HSxPA	900 (B8), 2100 (B1) MHz; Downlink max. 42 Mbps, Uplink max. 5,76 Mbps
LTE	800 (B20), 900 (B8),1800 (B3), 2100 (B1), 2600 (B7) MHz; Downlink max. 150 Mbps, Uplink max. 50 Mbps
Transmit output power	CLass 3 (0.2 W, 23 dBm) @ LTE CLass 3 (0.25 W, 23 dBm) @ 3G Class 4 (2 W) @ GSM 900 Class 1 (1 W) @ DCS 1800
Antenna connections	2 pieces SMA socket 
TAC	35162207

Devices with hardware version up to **HW 03**	
Countries where used	Europe, Australia
GSM/GPRS/EDGE	900, 1800 MHz; max. 236 kbps
HSxPA	850, 900, 2100 MHz; Downlink max. 42 Mbps, Uplink max. 5.76 Mbps
LTE	800 (B20), 1800 (B3), 2600 (B7) MHz; Downlink max. 100 Mbps, Uplink max. 50 Mbps
Transmit output power	Class 4 (2 W, 33 dBm) @ GSM 850 / 900 Class 1 (1 W, 30 dBm) @ GSM 1800 / 1900 Class E2 (0.5 W, 27 dBm) @ EDGE 850 / 900 Class E2 (0.4 W, 26 dBm) @ EDGE 1800 /1900 Class 3 (0.25 W, 24 dBm) @ UMTS Class 3 (0.2 W, 23 dBm) @ LTE
Antenna connections	2 pieces SMA socket 
TAC	35985205

Devices with LTE (4G) module - AT&T (MDH 850 AT&T, MDH 855 AT&T, MDH 858 AT&T, MDH 859 AT&T)

NOTICE

Device types MDH 850 AT&T, MDH 855 AT&T, MDH 858 AT&T, MDH 859 AT&T bear no CE marking and may not be used or put into operation in the European economic area (EEA)!

Countries where used	North America
GSM/GPRS/EDGE	850, 1900 MHz; max. 236 kbps
HSxPA	1900 (B2), 850 (B5) MHz; Downlink max. 21 Mbps, Uplink max. 5.76 Mbps
LTE	1900 (B2), AWS 1700 (B4), 850 (B5), 700 (B17) MHz; Downlink max. 100 Mbps, Uplink max. 50 Mbps
Transmit output power	Class 4 (2 W, 33 dBm) @ GSM 850 / 900 Class 1 (1 W, 30 dBm) @ GSM 1800 / 1900 Class E2 (0.5 W, 27 dBm) @ EDGE 850 / 900 Class E2 (0.4 W, 26 dBm) @ EDGE 1800 /1900 Class 3 (0.25 W, 24 dBm) @ UMTS Class 3 (0.2 W, 23 dBm) @ LTE
Antenna connections	2 pieces SMA socket 
FCC	Contains FCC ID: R17LE910NA

Devices with Wi-Fi module (MDH 811, MDH 831, MDH 841)

Devices with **Wi-Fi** modem (MDH 811, MDH 831, MDH 841)	
Wi-Fi	IEEE802.11b/g & 802.11n (1T1R mode), up to 150 MBit/s
Wi-Fi specification	· EU (2.412 GHz-2.472 GHz, 1-13 Channel) · USA (2.412 GHz-2.462 GHz, 1-11 Channel) · WPA/WP2, 64/128/152bit WEP, WPS · 802.11b: 1, 2, 5.5, 11 Mbps · 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps · 802.11n: (20 MHz) MCS0-7, up to 72 Mbps · 802.11n: (40 MHz) MCS0-7, up to 150 Mbps
Transmit output power (typical)	11b: 19+/- 1.0 dBm @ 11 Mbps 11g: 16+/- 1 dBm @ 54 mbps 802.11n: (HT20), 15 +/- 1dBm, 802.11n: (HT40), 15 +/- 1dBm
Receive sensivity (typical)	11b: -84dBm @ 11 Mbps; 11g: -70dBm @ 54 Mbps 802.11n: (HT20), -66 dBm @ MSC7, (HT40), -62 dBm @ MSC7
Antenna connection	1 piece RP SMA socket 
FCC	Contains FCC ID: YWTWFXM05

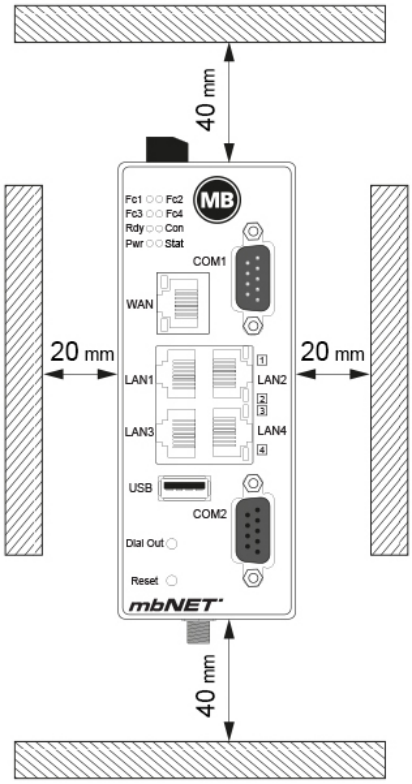
The router is designed to be mounted on DIN top hat rails (in accordance with DIN EN 50 022) and for installation in a control cabinet.

The installation and assembly must be carried out according to VDE 0100/IEC 364.

The router may be only mounted vertically as described.

NOTICE

Non-compliance with the minimum distances can destroy the device at high
ambient temperatures!



Markings / Listings / Certifications

CE c UL us LISTED PROG. CNTLR. E482663

Certificates (CE, UL, etc.) can be downloaded at www.mbconnectline.com.

SIMPLIFIED EU DECLARATION OF CONFORMITY

MB connect line GmbH hereby declares that the radio system type MDH 811, MDH 814, MDH 819, MDH 831, MDH 841, MDH 834, MDH 849, MDH 850 EU, MDH 855 EU, MDH 858 EU, MDH 859 EU corresponds to the 2014/53/EU directive.
A copy of the EU declaration of conformity is available at the following Internet address:
www.mbconnectline.com

MB connect line GmbH offers universal solutions for worldwide remote maintenance of machines and equipment. The specialists at MB connect line can draw on years of experience and extensive know-how.

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Despite a detailed description of the device and its functions, we cannot be held liable for the correctness of the content. The latest information can be obtained on our homepage. We welcome any comments or suggestions for improvement.