MB CONNECT LINE

PRODUCT
CATALOGUE

OUR DNA:
100% IT-SECURITY

YOUR EXPERT FOR

SECURE REMOTE ACCESS

We enable remote diagnostics and remote access of your machines and plants.

INDUSTRIAL INTERNET OF THINGS

Collect valuable data from your machine plant and use the easy-to-navigate web visualization.

INDUSTRIAL SECURITY

Protect your machines and systems from unauthorized access and attacks.

OUR COMMITMENT
USABILITY AS A SUCCESS

FAST
YOUR TIME IS VALUABLE

Set up your devices faster and connect with just a few clicks. Focus on remote access – we take care of the technology behind it.

EASY
KEEP IT SIMPLE

It's all about usability. We want to improve your user experience so that you can excel as an automation professional, whether your main focus is remote access, data logging or cybersecurity.

SECURE
REMOTE ACCESS WITHOUT SECURITY CONCERNS

Do not worry: your data is secure and your system is protected against unauthorized access – security is our main priority.

CONTENTS

SYMBOL LEGEND:

	WAN
	LAN
	RS-232/RS-485
	MPI/PROFIBUS
	Mobile communication
	WiFi
	Firewall
	Key switch
	SIMPLY.connect ready

Registered trademarks of
Siemens: TIA Portal, S7-300, S7-400, S7-1200, S7-1500, SIMATIC, S7, STEP 7
Beckhoff: TWINCAT
3S-Smart Software: CoDeSys

MB CONNECT LINE
YOUR FORERUNNER FOR THE DIGITAL TRANSITION

MB connect line is an independent medium-sized company and a pioneer in secure industrial communication via the Internet. Our core competencies include Secure Remote Access, Industrial IoT (IIoT) and Industrial Security. We enable the digital transformation of our customers by connecting machines and systems worldwide and protecting their data from unauthorized access and manipulation.

With over 25 years of experience, we offer innovative solutions that meet the highest IT security standards, including certification in accordance with IEC 62443.

As an active partner of industry initiatives such as Cluster Mechatronik and TeleTrusT – Bundesverband IT-Sicherheit e.V., we underline our commitment to cyber security. As an IHK training company and partner for dual study programs, we train experts for the technology of the future.

MB connect line stands for reliability, innovation and 100% IT security. Our goal: to make industrial digitalization more secure.

Timo Bednarek and Alexander Kamm
Managing Directors
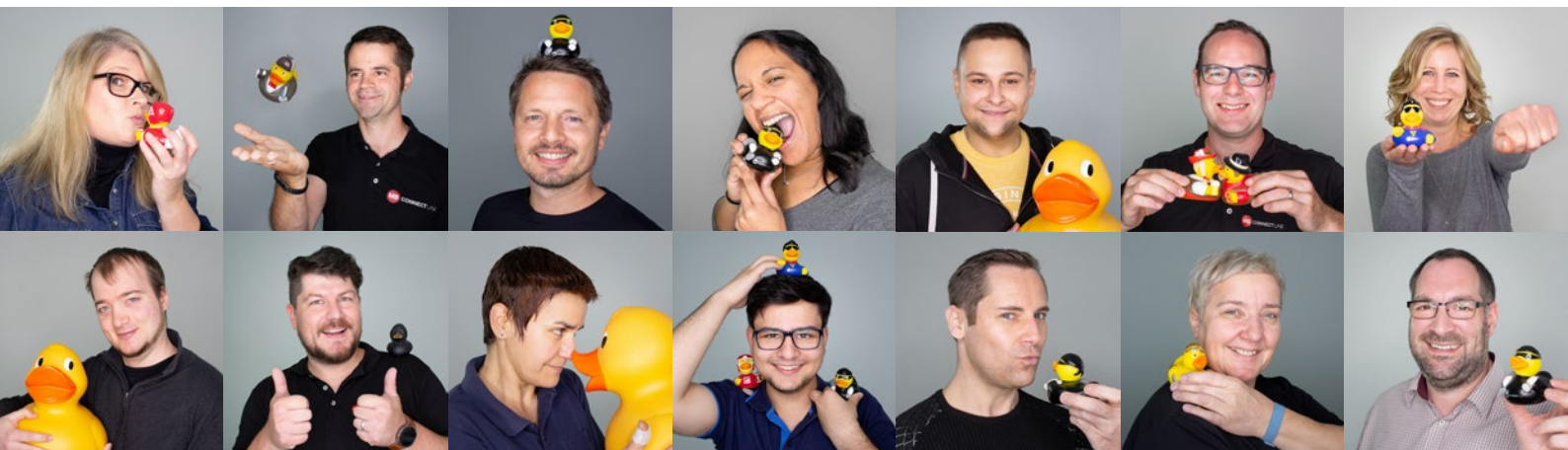
DATA SECURITY
SECURE CONNECTIONS ARE OUR PRIORITY

As a manufacturer of hardware and software for remote maintenance systems, we are committed to developing secure products and services for our customers, such as the mbCONNECT24 Remote Service Portal. We guarantee a reliable and rapid response to any security vulnerabilities that become known. In order to meet our requirements in this very sensitive area, we are active in the following organizations and work to constantly offer "state of the art" security technology on the market.

By using open source technologies, MB connect line not only stands for maximum security when using the mbCONNECT24 portal, but also for flexibility when integrating external hardware.

Our remote access system works with X.509 certificates, OpenSSL and TLS encryption.

Our servers are hosted in high-security centers worldwide.

MADE IN GERMANY

Our products are produced exclusively in Germany, which guarantees the highest quality and safeguards jobs in Europe.

SecurITy

Trust Seal
www.teletrust.de/itsmig

made in Germany

TELETRUST – IT SECURITY ASSOCIATION OF GERMANY

We are a member of TeleTrusT – Bundesverband IT-Sicherheit e.V. and develop our products according to the defined guidelines of this organization, which allows us to carry the "Security Made in Germany" and "Security Made in EU" labels. TeleTrusT is a competence network that includes domestic and foreign members from industry, administration and science as well as thematically related partner organizations. Our CEO and CTO represents Teletrust at the European Cyber Security Organization (ECSO), where he is active in several working groups.

ALLIANCE FOR CYBER-SECURITY

MB connect line is also a member of the Alliance for Cyber Security and we work actively with the Federal Office for Security and Information Technology. This enables our development engineers to counter security threats as quickly as possible, not only reactively but above all preventively.

CERT@VDE

Working together to successfully combat cyber attacks in the industrial production environment – that is the aim of CERT@VDE, the VDE's IT security platform. With the first platform for coordinating IT security issues, CERT@ VDE offers manufacturers, integrators, plant engineers and operators from the industrial automation sector the opportunity to exchange information and support on the topic of cyber security.

IEC 62443-4-1 CERTIFIED

We are officially IEC 62443-4-1 certified. This certification highlights our commitment to the highest standards in cyber security and the security of industrial control systems.
With this recognition, we are demonstrating a strong commitment to quality, security and trust in our development processes and products.

Our DNA: 100% IT security for more than 25 years.

Remote
Service Portal

mbCONNECT24

THE ECOSYSTEM

Remote Service Portal

- Worldwide accessibility via internet
- Serves as central connector between user, units and plant components
- Secure, encrypted connections to the machines and to the users
- As basis for secure remote maintenance, data collection, M2M-communication and networking via internet

mbCONNECT24
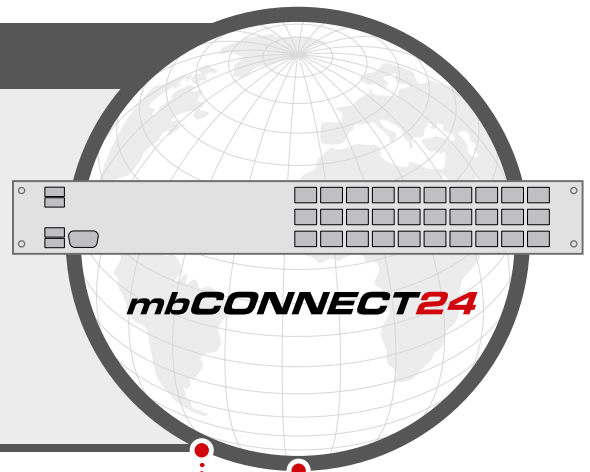
Server-Management

- Simple management via web interface
- Project based management of your machines and devices
- Role based user management with highly scalable access authorizations (also on IP or port level)
- Comprehensive functions for reporting, task management and messaging
- Public server solution (in the cloud as a free entry-level version)
- Private server solution (as .virtual for customers on premise or self-hosted)

Maximum security

- Encrypted SSL/TLS-connections
- 2-factor authentication
- Secure Remote Password Protocol (SRP)
- IP Black/Whitelisting
- Certified and audited security
- Security-by-Design
- LDAP-Connector

Your options

Transparent access (mbDIALUP)

✓ Diagnosis, configuration and programming via internet

✓ Use of existing engineering tools such as Siemens Step7, TIA, RSlogix or Codesys, as if you were on the spot

✓ Direct MPI/PROFIBUS interface and driver for SIMATIC software

✓ Remote diagnosis with program and firmware updates

✓ Several users can access the router at the same time

Webbased access (mbWEB2go)

✓ Supports webserver, RDP and VNC directly in standard browsers

✓ Optimized for smartphones and tablets

✓ No client- or additional software required

Webbased visualization

✓ Easy link of indicating and operating element with process data

✓ Reading and writing of system and process data via standard browser

✓ Editor for dashboards and widgets

✓ Access to visualization pages via external static links

Data management

✓ Comprehensive reports manual or time-controlled

✓ Data export as PDF, CSV or HTML

✓ Connection to enterprise systems (ERP, SCADA)

✓ External data base connection (mySQL)

Your machines and equipment

Remote Access

PLC

LAN
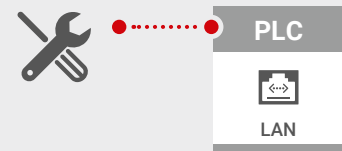
Data logging and alarming

PLC

LAN

M2M-Communication

PLC

LAN

PLC
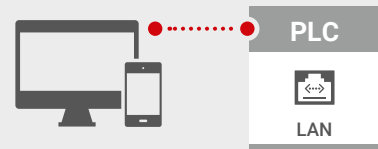
LAN
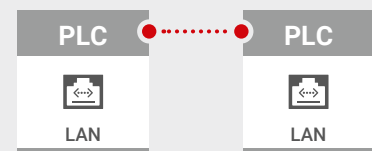
The modular system – functional principle

For remote access, collect and display data, web-based visualization, monitoring and alarming, as well as M2M communication on a secure platform.

Via webbrowser you can visualize equipment, read operating data or manage the process, look on the surveillance camera or on the webserver of the PLC.

The server with the remote service portal as central connecting component between users and machine and displays the management interface.

You have access to webserver as well as VNC- and RDP-support via smartphone or tablet without specific software.

HTTPS

The service staff connects with the portal via client-software (mbDIALUP) to have a IP transparent access to all devices behind the router.

TCP/UDP   VPN

SIEMENS, Rockwell, RSLogix, Beckhoff Twincat, Schneider Electric, Mitsubishi, …

mbCONNECT24

Webbased access   *mbWEB2go*

Functional principle

Terminalserver technologies, such as VNC or RDP, usually require an appropriate client on the user side, e.g. with Java or Flash; mbWEB2go solves this issue via server-sided Proxy, which translates the graphic outputs of VNC and RDP, so that access is possible directly via standard browser.

The mbWEB2go principle is based on a HTML5 web application and therefore doesn't need special plug-ins or additional installations. Through the minimum resource requirements it is ideal for smartphones and tablet computers.

mbWEB2go is a service in the Remote Service Portal and acts as PROXY between RDP, VNC, webserver and browser.

HTTPS

Browser   HTTPS

mbCONNECT24

PLC

LAN

Motion

RS-232/485

PLC

MPI/PROFIBUS

PLC

USB

VPN

Security through:

• Encrypted connections (SSL/TLS)

• Only outbound connections

• Regular security audits

The router allows the IP transparent access to PLC, HMI and other end devices. Additionally it serves as a firewall and collects data from control systems or sensors.

Connection to end devices with serial interface, Ethernet, MPI/PROFIBUS and USB.

Webbased access (mbWEB2go)

✓ Mobile and secure web access via HTTPS

✓ Works with every standard browser

✓ Access to web server and IP-cameras

✓ Supports RDP- and VNC-protocols without special clients or apps

✓ HTML5-capable standard browser is sufficient

✓ Independent from operating system on the end device

✓ Allows the monitoring and visualization independent from stationary PCs

PLC

LAN

Webserver

HMI

LAN

VNC Server

RDP Server

The center – Remote Service Portal

Central switchboard – server

- Switching point between users and devices (routers, data modems)
- All users and devices only connect to the server (so-called outgoing connections)
- Central management of all projects, users and machines
- Role-based user administration

- Organizes devices and users in projects
- Finely scalable access rights to participants behind the router
- Ensures encrypted data connections between the locations
- Ensures efficient workflow with integrated messaging system and task planner for an efficient workflow

Varieties of the Remote Service Portal
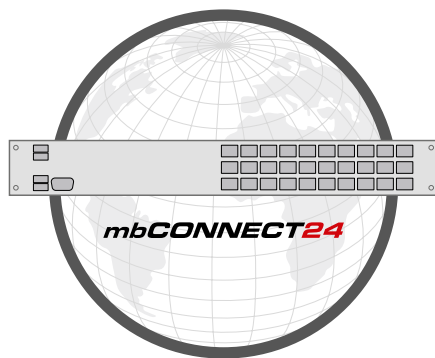
mbCONNECT24
Public Cloud

- Start with a free, ready-to-use environment
- Upgrade to a higher scope of services possible
- For small to medium-sized projects (up to 250 systems)
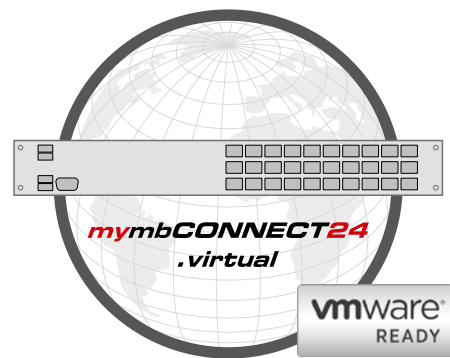
mymbCONNECT24.virtual
Private Cloud

- Hardware-independent virtual machine
- Runs on your hardware (in-house or hosted)
- Broadly scalable in terms of functionality and scope of services

- Machines and systems are equipped with an mbNET industrial router that logs on to the portal
- Machines and systems establish a VPN connection to the portal: permanently after switching on, program-controlled if required or by key switch or push of a button, router with modem via SMS
- The routers and data modems do not require a fixed IP address, as the end devices always log on to the portal themselves (no SIM card with a fixed IP either)
- Access control for each device connected to the router
- Third-party device connection, allowing you to integrate your own OpenVPN-enabled devices into the portal
- Templates simplify work with recurring configurations

Security at its maximum

- Encryption via the security protocol TLS/SSL
- Compliance with the highest standards also enables use in business-critical applications
- Since only outgoing connections are used, seamless integration into the existing IT is guaranteed without security concerns
- The existing security strategies remain unaffected
- This ensures the authenticity, integrity and confidentiality of the transmitted information
- 2-factor authentication (with SMS, call, email or authenticator app)
- With Secure Remote Password (SRP) technology
- Regular tool-supported and manual penetration tests

Customize

Customize the layout of the portal with your logo and company colors. Scalable up to the individual front foil of hardware components.

Basic
Logo can be customized.

Advanced
Logo, portal colors and the mbDIALUP software client can be customized.

Top 10 Facts

1. Secure and transparent access to controllers, machines and systems
2. Use of existing engineering tools such as Siemens Step7, TIA Portal, RSlogix or CoDeSys – as if you were on site
3. Direct MPI/PROFIBUS interface and driver for SIMATIC software
4. WAN connection via port 80, 443 or 1194 and PROXYs, China Gateway, one clear IP address per server
5. No special IT knowledge required
6. Multiple users can connect to a router at the same time and access the IP network simultaneously (limited by license and bandwidth)
7. Fast commissioning using various methods such as USB stick or SIMPLY.connect
8. Offline configuration management of the routers (central data storage on the server), no configuration required on the router
9. Personalized and limited access rights via project management in the portal
10. Scalable server solution

Project management

Project

Device

Interfaces

- System
- LAN
- Serial COM
- MPI/PROFIBUS
- USB

PLC	**HMI**	**PLC**
MPI/PROFIBUS	LAN	USB
PLC	**Motion**	**PLC**
LAN	RS-232/485	RS-232/485
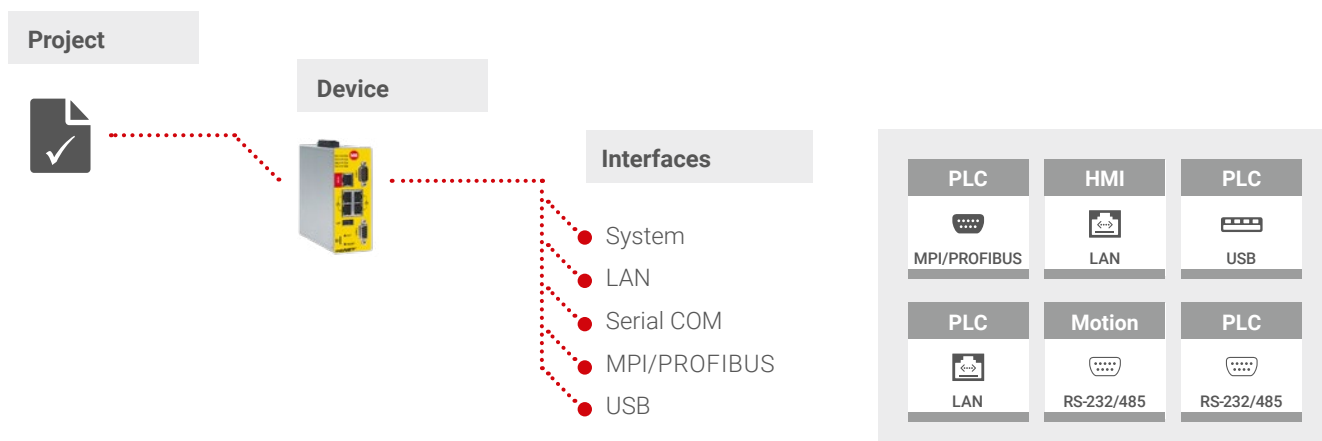
- Practical project structure in which the plant and machinery can be mapped directly
- Project-related management and configuration of the end devices

- A project forms the topmost instance – all hardware components are assigned to exactly one project
- As soon as a device is created in the project, the interfaces and connected components can be defined and managed

Reports

- Connection reports log which user was connected to which device at what time
- Reports for SMS sending, data consumption, configuration transfers and process data
- View and export reports as PDF, CSV, HTML

Scheduler

- Sending reports (connections, data points)
- Display of all tasks in the dashboard
- Organize recurring tasks in terms of time
- Timely and automated control of firmware updates and router administration

Client and user adminstration

- The distinction between clients, users and user groups simplifies the administration
- The client is superordinate

- Users or user groups are assigned to the client
- Access rights for multiple users can be conveniently managed via user groups
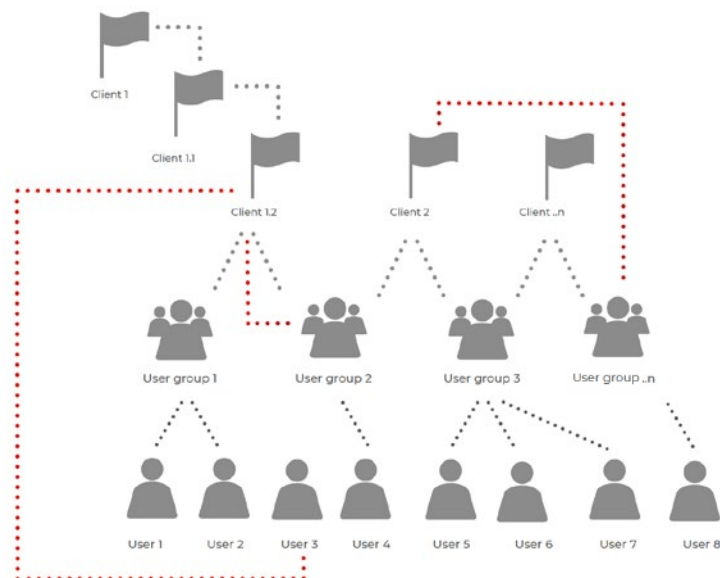
- Role-based rights management for all participants: Definition of which service technician, operator or production manager has access to which data and machines
- Restriction of access rights to individual ports or protocols

- Fine gradation of rights, for example operator (general system data), service technician (programming access) and management (production figures)

Task and message management

- Integrated mailing system, sending e-mails internally and externally
- Alarm management with SMS and e-mail
- Sending messages to other users/project participants
- Delegating tasks to other users/project participants

Webbased visualization

Check the operating data of your system via a web browser – directly with your smartphone or tablet. Thanks to barrier-free access to the remote service platform, you can view your system directly from your smartphone. You don't need an app or a special client. Your preferred browser is all you need.

Characteristics

✓ Works according to the HTML5 standard, works under Windows, iOS, Android

✓ Graphic display of data and statuses via freely configurable dashboards (instrument panel)

✓ Visualization of data from individual machines and systems or across locations

✓ Data is recorded by mbNET in the field and transferred to the dashboards on the portal

✓ Also data points from the PLC or measured values from energy meters

✓ Custom images (JPG, PNG) for the background definable

✓ Display of live parameters via system images

✓ Simple login with user ID and password for viewing

✓ Own display pages (dashboards) with information from systems and machines (all possible within a project)

✓ Corresponding display and input elements such as pointer instruments and bar graphs are supplied as a library

✓ The display pages can be configured for specific projects, clients and devices

✓ Visualizations can be created as templates and reused

Data collection

PLC — MPI/PROFIBUS

PLC — RS-232/485

• page 10

mbCONNECT24 — Database

Create your own visualizations

mbCONNECT24 — Database

Raw value

Scaling

I_{max}: 10
I_{min}: 0
O_{max}: +30
18
O_{min}: -30

Display element

Widget Temp °C

18 °C

Display in dashboard
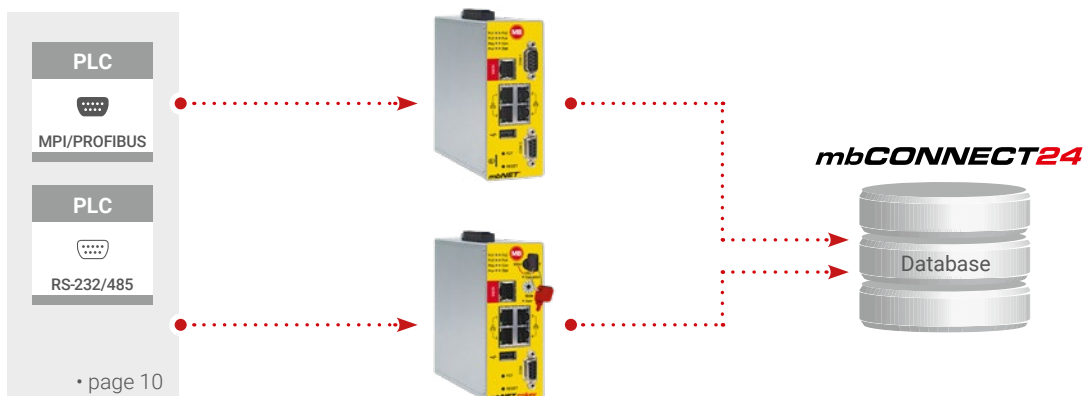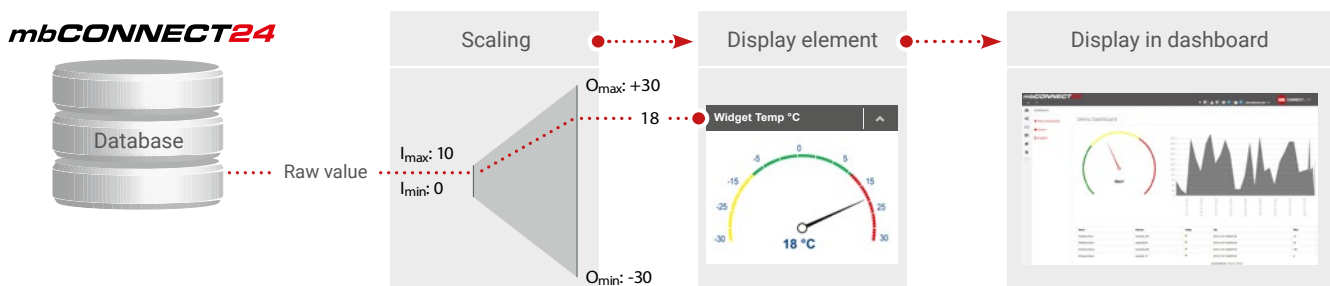
Access possibilities for remote access and data collection

Transparent access (mbDIALUP)

VCOM, tunnels virtual COM-Ports on COM-interface of the mbNET	RS-232 RS-485 — RS-232/485	VCOM
TCP/IP Ethernet-Protocols	Beckhoff Wago, ... *	TCP/IP
SEARCHoverIP, Multicast for common PLC-programming environment	PLC	TCP/IP — SEARCHoverIP
mbNET.S7 „Adapter" STEP7-Classic and TIA Portal for MPI/PROFIBUS	STEP 7 Classic TIA Portal — MPI/PROFIBUS	mbNET-S7
USBoverIP, tunnels virtual USB-Port on USB-interface of the mbNET	Rockwell Schneider Electric — USB	USBoverIP

mbCON...

* compatible with over 90 drivers for various control system types

Connectivity options for internet and in regards to plant/site

		Internet					Site				
		ETH	WiFi	4G	5G	5GHz (2,4GHz)	serial	S7-MPI/ PROFI-BUS	USB overIP	Remote access	Data collection
mbNET		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
mbNET.rokey		✔	-	✔	✔	-	-	-	✔	✔	-
mbNET.mini		✔	✔	✔	-	-	-	-	✔	✔	-

Motion

RS-232/485

PLC | HMI | Motion
LAN | LAN | LAN

Serial RS-232/485

Ethernet

MPI/PROFIBUS

PLC

MPI/PROFIBUS

USB

NECT**24**

Ethernet

PLC

LAN

USB

PLC

USB
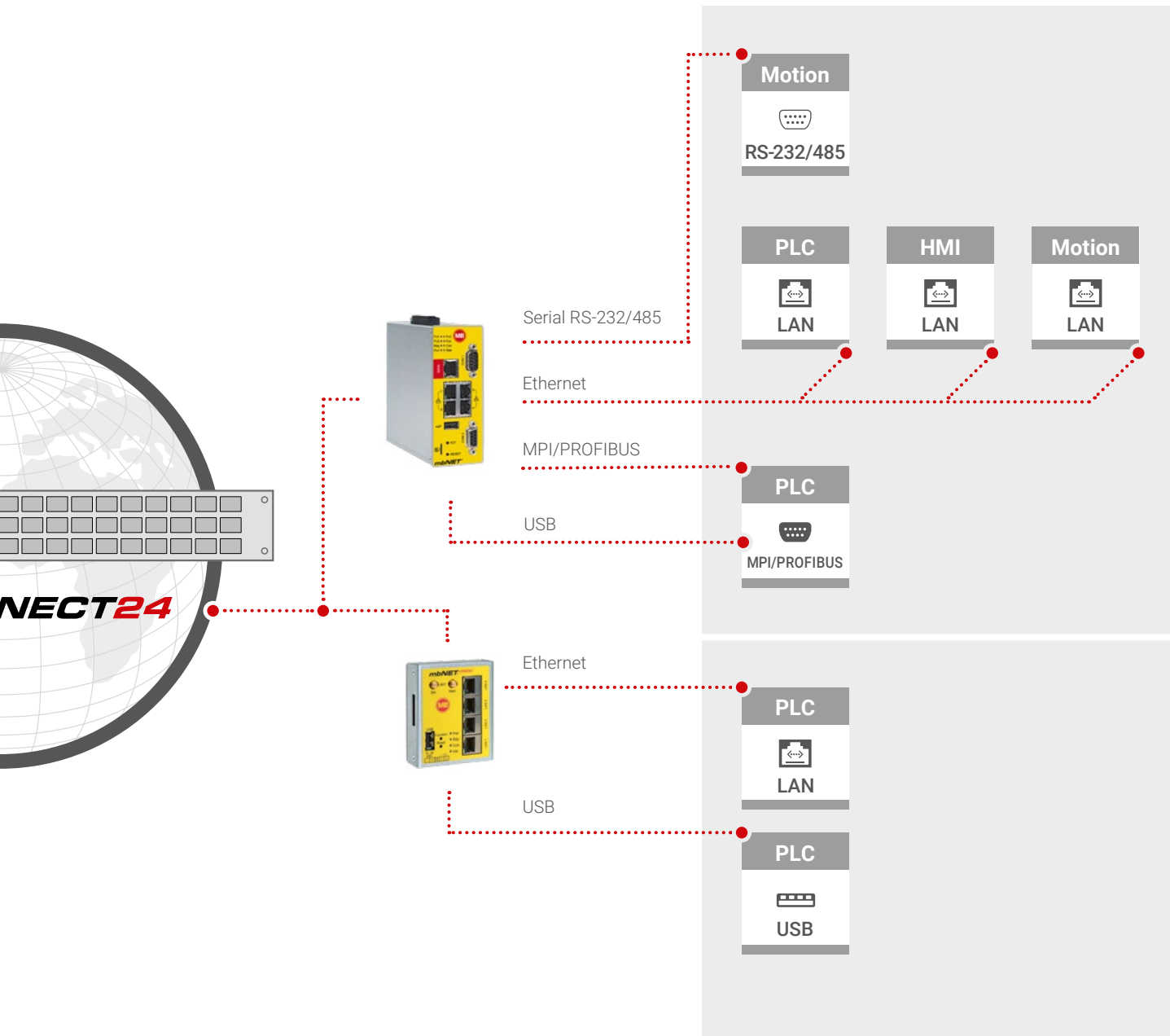
Data sources for data collection					
	Modbus TCP	Modbus RTU	Rockwell EthernetIP	KNX	OnBoard I/O's
mbNET	✔	✔	✔	✔	✔
mbNET.rokey	✔	✔	✔	✔	✔
mbNET.mini	-	-	-	-	✔

Functional Overview

mbCONNECT24

Item no.	Name	Account	Devices	Standard VPN Clients max. 50	Active VPN connections max. 250	mbWEB2go connections max. 500	Number of users	Number of user groups	Number of clients	M2M connection groups
7.100.001.00.00	**mbCONNECT24 V2 Customer Account**	1	∞	0+	1+	5+	∞	5+	1+	-
7.100.002.00.00	Active VPN connections				+1					
7.100.003.01.00	mbWEB2go connections					+50				
7.100.004.00.00	Standard VPN Clients, 10 pcs.			+10						
7.100.005.00.00	Upgrade data consumption, 2GB per month									
7.100.006.00.00	Advanced user access control							+250	+250	
7.100.007.00.00	Customizing Basic									
7.100.008.00.00	Customizing Advanced									
7.100.009.00.00	Alarm events, 250 pcs.									
7.100.010.00.00	Tasks for taskmanager, 5 pcs.									
7.100.011.00.00	Dashboards, 50 pcs.									
7.100.012.00.00	Data point storage, 1M									
7.100.014.00.00	Integration of external data point storage									
7.100.015.00.00	mbSMS, 250 pcs.									
7.100.016.00.00	Text2Speech, 250 pcs.									
7.100.017.00.00	LDAP-Connector									

Legend | **lic** License   **GB** Gigabyte   **k** thousand (kilo)   **M** Million (Mega)   **TB** Terabyte   **1+** expandable   **+1** extended by one

Firewall behind the device	Data points per unit	Data point storage	Dashboards	Alarm events	Tasks for taskmanager	Customizing Basic	Customizing Advanced	External data point storage	Data consumption	mbSMS	SMS.gateway	Text2Speech	Text2Speech.gateway	LDAP-Connector	Support/Service/Upgrade
		max. 5M	max. 260	max. 260	max. 6				max. 12GB						
lic	250	50k+	10+	10+	1+	lic	lic	lic	2GB+	10+	-	10+	-	lic	✔
									+2GB						
✔															
						✔									
							✔								
				+250											
					+5										
			+50												
		+1M													
								✔							
										+250					
												+250			
														✔	

✔ included   ❗ compulsory/mandatory   ∞ unlimited

Functional Overview

mymbCONNECT24.virtual

Item no.	Name	Account	Devices	Standard VPN Clients	Active VPN connections	mbWEB2go connections	Number of users	Number of user groups	Number of clients	M2M connection groups
					max. 250	∞				max. 500
7.302.201.00.00	**mymbCONNECT24.virtual** FREE (Evaluation)	1+ max. 2	5	1	1	1	5	1	1	1
7.302.202.00.00	**mymbCONNECT24.virtual** Factory Edition	1+ max. 5	25+ max. 100	1+ max. 100	2+	10+	250	250	1k	1+
7.302.203.00.00	**mymbCONNECT24.virtual** PRO Corporate	1+ max. 50	25+ max. 20k	1+ max. 20k	2+	10+	1k	250	1k	1+
7.300.004.00.00	Account licenses, 1 pc.	+1								
7.300.005.00.00	Device licenses, 25 pcs.		+25							
7.300.005.01.00	Device licenses, 5 pcs.		+5							
7.300.005.02.00	Device licenses, 100 pcs.		+100							
7.300.006.00.00	Standard VPN Clients, 25 pcs.			+25						
7.300.006.01.00	Standard VPN Clients, 10 pcs.			+10						
7.300.007.00.00	Active VPN connections, 1 pc.				+1					
7.300.008.00.00	Active mbWEB2go connections, 10 pcs.					+10				
7.300.008.01.00	Active mbWEB2go connections, 100 pcs.					+100				
7.300.009.00.00	M2M connection groups									+1
7.300.010.00.00	Data point storage, 1M									
7.300.011.00.00	Dashboards, 50 pcs.									
7.300.012.00.00	Alarm events, 50 pcs.									
7.300.013.00.00	Tasks for taskmanager, 5 pcs.									
7.300.014.00.00	Customizing Advanced									
7.300.015.00.00	Access to customer database API									
7.300.016.00.00	Integration of external data point storage									
7.300.017.00.00	mbSMS, 250 pcs.									
7.300.018.00.00	SMS.gateway									
7.300.019.00.00	Text2Speech, 250 pcs.									
7.300.020.00.00	Text2Speech.gateway									
7.300.021.00.00	LDAP-Connector									
7.300.022.00.00	EU DSGVO verification									

Legend | **lic** License **GB** Gigabyte **k** thousand (kilo) **M** Million (Mega) **TB** Terabyte **1+** expandable **+1** extended by one

Firewall behind the device	Data points per unit	Data point storage	Dashboards	Alarm events	Tasks for taskmanager	Customizing Basic	Customizing Advanced	Customer database API	External data point storage	Data consumption	mbSMS	SMS.gateway	Text2Speech	Text2Speech.gateway	EU DSGVO verification	LDAP-Connector	Support/Service/Upgrade
	max. 250	max. 5M	max. 20k	max. 20k	max. 101												
✔	5	50k	10	10	1	✔	-	-	-	✔	0+	-	10+	-	-	-	-
✔	250	50k	10	10	1+	✔	lic	lic	lic	✔	0+	lic	10+	lic	lic	lic	❗
✔	250	1M+	25+	25+	1+	✔	lic	lic	lic	✔	0+	lic	10+	lic	lic	lic	❗
																	✔
																	✔
																	✔
																	✔
																	✔
		+1M															✔
			+50														✔
				+50													✔
					+5												✔
							✔										✔
								✔									✔
									✔								✔
											+250	✔					✔
													+250	✔			✔
																✔	✔
															✔		

✔ included   ❗ compulsory/mandatory   ∞ unlimited

The following explanation applies analogously to all mbCONNECT24 variants, i.e. also mymbCONNECT24.virtual etc.

Account	An account is a record in the general ledger which encompasses a certain number of user, devices, etc., depending on the type of license.
Active connections	A connection is counted as active only when after logging in, the user establishes a connection to a component via VPN. The portal-login itself is not counted as an active connection.
Advanced user control	The advanced user access control encompasses a comprehensive user- and client management. By defining individual user groups, access rights can be managed comfortably. This client-management allows a digital reproduction of the existing corporate structure. Furthermore, access rights to individual components can be restricted and access rights for particular ports and protocols can be adapted to a specific situation.
Alarm event	An alarm event is a defined condition, or rule, pertinent to a specific data point. Alarm management is where the administration of alarm events takes place. The maximum number of alarms per account is limited and depends on which type of license is active. With alarm groups you can determine, which user will be informed when and how.
Clients	Clients serve the purpose of structuring all users into logical segments, such as business units or departments. Working with clients allows a more fluid and clean organizational segmentation of different sections.
Connection reports	The system mbCONNECT24 protocols all actions, such as active connections, mbWEB2go connections, SMS sending, and more. Data-export can be made in various formats (PDF, HTML, csv) depending on user-, device- or project-settings. These reports serve as a fundament for invoicing or controlling.
Customer-database API	With the API, MB connect line provides a defined interface (syntax & authentication) for external applications being able to access the apprehended data in the portal.
Customizing advanced	Customizing allows to individually adapt the portal's optical design for the customer. With customizing advanced, instead of the predefined MB logo and lettering, you can choose your own branding. Also, you gain access to the color palette. This can also be applied to the user's VPN-client mbDIALUP and for the program mbCHECK, that reviews the integration of local installations in the portal.
Customizing basic	Customizing allows the portal's optical adjustment by the customer. With customizing basic, MB connect line's logo in the above right corner can be replaced.
Dashboards	Dashboards are user interfaces, somewhat resembling an automobile's dashboard, to organize and present your information on mbCONNECT24. The built-in graphical elements (widgets) can be placed and linked with machine data to create your own visualization. Each dashboard can be individually customized, according to the user's respective needs (user, maintainer, administrator). The maximum number of dashboards available, depends on the chosen license type.
Data point storage	Concerns the total number of all protocolled data, independent from the single data-point's type or readout interval. In the end after reaching the maximum capacity, the first data record will be overwritten with a so called "rolling memory", after the FIFO-principle (First in – first out).
Data points per unit	The assessment of data points occupies memory on the respective component. The individual memory location for a particular value is called data point. The maximum amount of data points is determined by the type of mbCONNECT24 license and the employed component. The point of interest is how many different data points can be stored, regardless of how often the individual data point is registered.
Devices and Projects	The maximum amount possible equally refers to devices and projects and describes the amount of possible units in the account. You can neither create more devices, nor more projects than the expensed maximum.
External data point storage	The data point storage is integrated into the mbCONNECT24 standard configuration and consequentially limited in size. Connecting an external data-point-storage allows for a storage of data, independent of mbCONNECT24. This makes an own administration and easy data-processing possible. When it comes to data privacy and data protection, it is even easier to fulfill each customer's needs with this option.
Firewall behind the device	The component settings ("restrict access" – "firewall behind the device") allows for a user-independent access-rights control for connections over mbNET to the machine network. One example is an access restriction for a specific network range. Without these settings, all users who set up a VPN tunnel to mbNET would be having unrestrained access to all components connected to the router.
Guaranteed bandwidth	Due to the system, the complete bandwidth on the server is divided by the number of customer accounts. MB connect line guarantees bandwidth for the individual account. Apart from this, each customer's overall system's bandwidth will be influenced by the customer's local infrastructure. The aforementioned guarantee only refers to the service provided by MB connect line. MB connect line cannot vouch for externally occurring influential variables, so this part is not covered by this guarantee.

LDAP-Connector	Software component that allows access to LDAP-compliant servers (Lightweight Directory Access Protocol)
M2M connection groups	M2M refers to an automated data-exchange between devices, directly via mbCONNECT24.virtual – without manual intervention. A successful connection's prerequisite is a well-matched allocation of each component's IP address. The M2M function will be activated for a project and will be effective for all devices within the M2M project – referred to as "M2M compound group".
mbSMS	The service "mbSMS" is capable of sending SMS alarms and SMS news directly from the portal. Setting up a separate mobile device as gateway is not neccessary. For mymbCONNECT24, an individual SMS-gateway can be applied.
mbWEB2go connections	mbWEB2go provides a mobile and secure web-access to mbCONNECT24 via HTTPS. The same is true for smartphones and tablet computers. In this case, the installation of the VPN-client (mbDIALUP) is not necessary. A current browser (e.g. Firefox) is sufficient for the connection. mbWEB2go is easier to use than a VPN connection and provides a more streamlined workflow. Generally speaking, applications that allow access via HTTP, HTTPS, VNC, TELNET, SSH can be addressed via mbWEB2go. Besides the easier dial-in, these accesses can also be made available in the portal for users without a user account. The approval via "direct LINK" or also via "QR-Code" is the easiest access control on the market. The number of the mbWEB2go connections is independent from the number of active connections.
SearchoverIP	Function of mbCONNECT24 supports the discovery capabilities of various PLC systems via Internet connections. This way, controllers that have not yet been configured can be found via remote maintenance.
Several active connections to one unit	Due to the system, in the past, the number of active connections to one unit was limited to 1. Through further development, now it is technically possible for several users to be able to connect with the same site simultaneously. In practice this multiple access has to be known to the users and has to be coordinated safely in the process.
SMS.gateway	With the function "SMS.gateway" you can specify your own gateway for sending SMS messages in mymbCONNECT24. For example, existing infrastructures or quotas can be used by external service providers. This option makes it possible to implement the SMS dispatch in mymbCONNECT24 very efficiently and cost-effectively.
Softwareupdates	Usually, software updates are security updates to continuously update the cybersecurity level, but not introduce new features or functionalities. This not only applies to the portal software, but also to terminal devices.
Softwareupgrades	Includes further developments of mbCONNECT24, for example new features, displays and dialogues.
Standard-VPN-Clients (External devices)	The deployed technology "OpenVPN" allows the integration of different platforms into the mbCONNECT24 environment. In this case it is reasonable to involve your MB connect line contact-person to ensure an effective procedure.
Tasks for Taskmanager	With the task manager you can create service-time-controlled tasks in the mbCONNECT24 account. This includes e.g. sending any report (connections, data points) via E-Mail. The number of tasks per account is limited.
Text2Speech	Speech output of texts, for example for fault messages by telephone call
Text2Speech.gateway	The "Text2Speech.gateway" function can be used to specify a separate gateway for sending voice messages in mymbCONNECT24. For example, existing infrastructures or quotas can be used by external service providers. This option enables the transmission of voice messages in mymbCONNECT24 very efficiently and cost-effectively.
USBoverIP	Service of mbCONNECT24, allows remote access to compatible USB devices connected to the USB port of an mbNET industrial router.
User	A user profile is created for each individual person that is supposed to get access to the portal.
User groups	To further simplify user management, different user groups and their rights can be specified, for example "create device", or "delete device". The user will then be matched, according to their user level instead of having to assign those rights individually. This not only reduces the administrator's workload but also minimizes the error rate.
User/unit component settings (Firewall behind the unit)	If users connect an mbNET via VPN, they generally have complete access to all components, connected to the router. A user-dependent access control in the machine-net via router is only feasible with the mentioned extension (firewall behind the unit). Therefore, despite an existing VPN-tunnel to the user, access to certain network-areas can be limited.

Secure
Remote Access

mbNET'

INDUSTRIAL ROUTER
THE NEXT GENERATION
OF REMOTE ACCESS

The industrial routers mbNET are specifically designed for industrial use. They enable a secure and reliable connection of machines and equipment via Internet. They support various security protocols, so they are universally compatible. But the routers' full performance is achieved when they are connected to the remote service platform mbCONNECT24. The integrated firewall ensures maximum access protection.

Thanks to a variety of interfaces and device drivers, you enjoy enormous flexibility with the mbNET industrial router for the remote access of different control systems, drives, operating panels, frequency converters and other components.

✓ Integrated 4-port switch (4 x Ethernet 100 Mbit)

✓ Secure connection via VPN (PPTP, IPSec, L2TP, OpenVPN)

✓ Internet connection via Ethernet, WAN interface or modem (WAN-interface 100 Mbit, mobile communication or WiFi)

✓ optional: 2 × RS-232/-485-interface onboard switchable,
   optional: 1 × MPI/PROFIBUS up to 12 Mbit/s
         + 1 × RS-232/-485 switchable

✓ Firewall with IP filter, Simple-NAT, 1:1 NAT and port forwarding

✓ 4 digital inputs, 2 digital outputs – galvanically isolated

✓ Slim metal case with IP20 for DIN rail mounting

✓ Nano-SIM card slot directly on the front (only for LTE variants)

✓ extended temperature range (-40°C to +75°C)

✓ On-board Edge connectivity (activation via additional license)

✓ USBoverIP-capable

✓ simple configuration via SIMPLY.connect

✓ GPS functionality (only LTE devices)

Access to the Internet can be provided via WAN uplink to the company network or via the integrated modem connection (mobile radio or WiFi). A suitable mbNET industrial router is available for almost any on-site infrastructure.

CE   c(UL)us LISTED   PROG. CNTLR.
E482663

tec.boost

Upgrade via
optional features

Antennas

Extension for
4G/5G networks
or WiFi

**Edge
IIoT-License**

IoT-Upgrade via
Edge IIoT-License

mbNET.rokey
SECURE REMOTE ACCESS
WITH KEY SWITCH

Giving local staff the possibility to allow or disallow remote access is a recommendation of cybersecurity agencies such as the German BSI, the French ANSSI or the European ENISA. By offering a 2-level access control, mbNET.rokey complies with recommended practices for secure remote services.

In addition to the functions of mbNET, such as Secure Element, Secure Boot and Secure Firmware, the mbNET.rokey offers additional security with the on-board key switch, offering full control over network access on the operator side

PROG. CNTLR.
E482663

2-Level Security in Remote Access
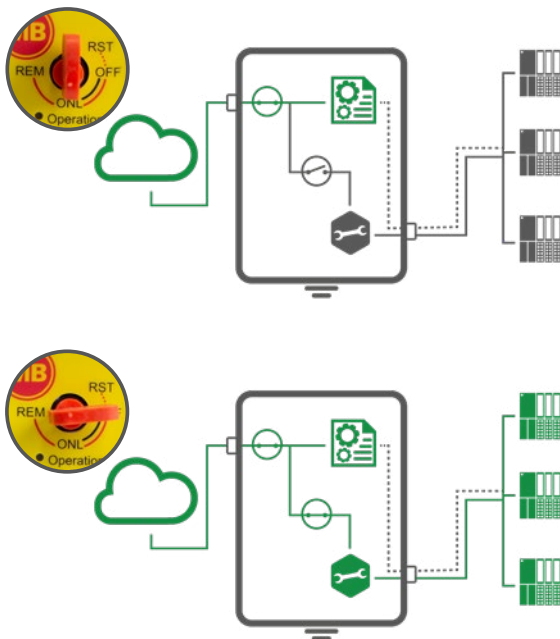
1. Level:

With the **ONL** position, the router connects to the remote access portal mbCONNECT24 and is displayed there as "online" connected. The remote maintainer now has access to the router's internal services (web server, data monitoring, etc.), but cannot route to the LAN segment.

2. Level:

In the **REM** position, routing between the remote maintainer and the LAN segment is enabled. All subscribers in the LAN segment can now be reached transparently. By resetting to "ONL", the local operator can interrupt remote access at any time.

In the **OFF** position, the connection to the Internet and remote access portal is completely disconnected. The router is offline. The "RST" position is only momentary and is used to reset the router to the factory settings. Two keys are supplied, a black key for the "OFF" and "ONL" positions and a red key for all positions. The rotary coding switch is reserved for future functions.

MB

c2
c4
Con
Stat

COM 1
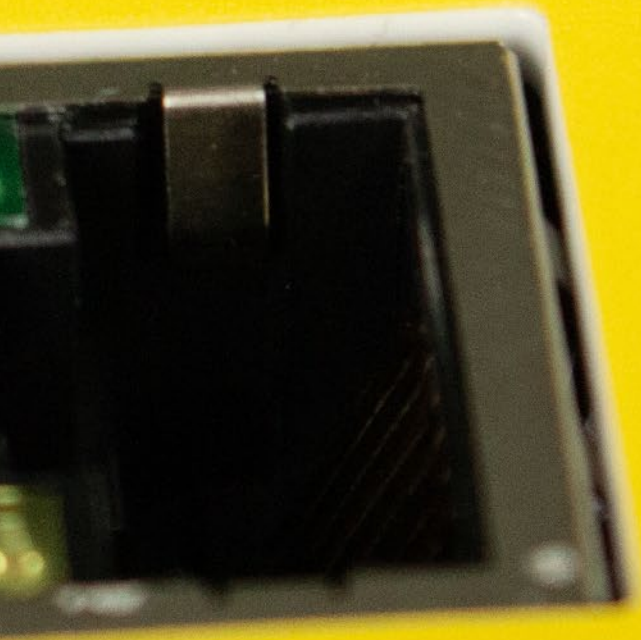
Security by Design

Secure Boot

The foundation is the so-called trusted chain of the boot process. It ensures that only trusted applications can be started by the system. This ranges from secured booting to digitally signed firmware.

Only if this is verified by a corresponding certificate, the firmware can be used on the device. It verifies boot loader, kernel, applications and file system. The highest level of security is provided by the hardware-based trust anchor (Root of Trust) located in a read-only memory (ROM).
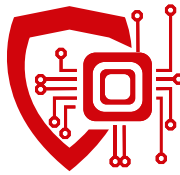
Secure Element

An important security aspect is the information security of the data on the router. The hardware-based security element (Secure Element) serves as a safe for passwords, certificates and keys. Thus, all stored data is completely protected and can not be read.

As additional secure data storage, another encrypted data container is created via a once-generated key. This function can also be used for the auxiliary memory via SD card or USB.

Secure Firmware

The main focus in the development of the new firmware was "Security by Design". This includes an assessment of all components used, including terms of their use. All safety-related settings are preset in such a way that they provide the highest possible level of safety with the same level of comfort.

The security concept's final touch is using the latest Linux kernel and taking advantage of the Linux security concept "MAC", which describes a system-based, rules-based access control strategy.

SIMPLY.connect – The easiest way to connect your device

SIMPLY.connect

Complex configuration was a thing of the past. With SIMPLY.connect we enable an intuitive integration of new devices* into the Remote Service Portal mbCONNECT24. And all this in only 3 steps.

1. LOGIN   **2. SCAN**   **3. COMPLETE**

= Devices with this symbol are SIMPLY.connect-ready

* Applies to all new mbNET models with WAN interface from 12/2019
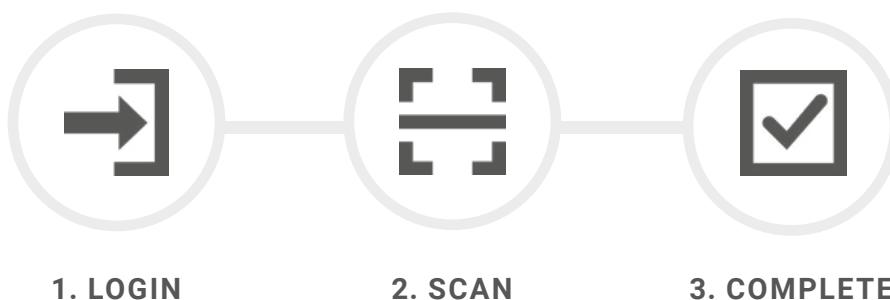
TEC.BOOST
POWERBOOST
FOR YOUR REMOTE ACCESS

Get even more out of your remote access – the power boost for your mbNET. Optimized monitoring through SNMPv3, more security through LAN segmentation, reliable authentification with 802.1x and flexible data communication thanks to MQTT Bridge. These features offer maximum efficiency and protection for your networks – ideal for the challenges of modern industrial applications.

802.1X CLIENT AUTHENTIFICATION   *from HW02 via WAN*

Security at the highest level: 802.1x for mbNET
802.1x is the standard for port-based network security controls developed by the Institute of Electrical and Electronics Engineers (IEEE). This standard ensures seamless integration into existing IT infrastructures and enables secure authentication and authorized connection to the local network. Briefly: Access control to a network before an IP address is assigned.

Multiple authentication methods
The mbNET supports a variety of secure authentication methods, including EAP-TLS, EAP-PEAP, EAP-TTLS and EAP-FAST. This ensures that your network security is always up to date.

Perfect for challenging IT environments
This feature is essential for administrators and allows machine and plant builders to easily integrate mbNET into factories where complex network infrastructures such as Cisco architectures with EAP-FAST are already in use. Integrate your hardware effortlessly into any IT environment!

SNMPv3: SIMPLE NETWORK MANAGEMENT PROTOCOL   *from HW02*

Discover the SNMP support for mbNET as of version 8.2.0! This new feature ensures that network administrators can seamlessly integrate important key figures and status information from the mbNET into their network monitoring. With SNMP, mbNET offers a robust solution that meets the highest standards.

The following MIBs (Management Information Base) are now available: Device type, serial number, firmware version, Ethernet port status, operating time, CPU load, RAM utilization as well as security-related information such as openVPN connection activity, connected users and number of firewall drops.

This data is crucial for the early detection and prevention of potential security risks. Integrate your mbNET seamlessly into your existing network monitoring.

	BASIC Features	**SINGLE** License	**TEC.BOOST** License Bundle
	included by default	choose your favourite feature	all tec.boost features in one bundle
Bugfixes	✔	✔	✔
Security Patches	✔	✔	✔
future tec.boost Features	-	-	✔ automatically with firmware upgrade on the device (features depend on HW version)
can be pre-activated on delivery	-	-	✔
802.1x Client (Radius) via WAN	✔	✔	✔
SNMPv3	✔	✔	✔
MQTT Bridge	-	Single License	✔
LAN Segmentation	-	Single License	✔
Radius Server (LAN-side)	-	Coming soon	✔ Coming soon

from HW02 applies to: 802.1x Client, SNMPv3
from HW06 applies to: MQTT Bridge, LAN Segmentation

FEATURES

MQTT **BRIDGE**   `from HW02`

From now on, all internally used MQTT topics of the router and the associated data can be easily mirrored to an external MQTT broker. This innovative solution enables seamless integration and synchronization of data between internal systems and external applications or cloud services. The captured data is securely and efficiently transferred to an external MQTT broker hosted outside the machine network.

The security of the data transfer is guaranteed by SSL/TLS in conjunction with CA certificates. This feature is particularly interesting for all users of a mymbCONNECT24 portal.

LAN SEGMENTATION /
PORT-BASED VLANS   `from HW06`

With the new LAN segmentation, our mbNET enables machine network architects to seamlessly and efficiently set up four separate local LAN segments directly on the remote access router. These segments are completely isolated when activated and are given individual IP address ranges, which significantly increases flexibility and control over your network infrastructure.

If communication between the segments is desired, this must first be actively configured. This ensures that only required and targeted data traffic is permitted. Layer 3 routing guarantees that ARP requests and unwanted broadcasts remain within the respective LAN segments, which optimizes both the performance and security of your network.

Optimize your machine network with the LAN segmentation of the mbNET.

192.168.**1**.1/24 — Host A
192.168.**2**.1/24 — Host B
192.168.**3**.1/24 — Host C
192.168.**4**.1/24 — Host D

mbNET with WAN/LAN

Name	Item no.	WAN	Wireless technology	LAN	RS-232 RS-485	MPI/ PROFIBUS	VPN*
MDH 816	1.116.200.06.00	1×	-	4×	-	-	OpenVPN
MDH 835	1.135.200.06.00	1×	-	4×	1×	1×	OpenVPN
MDH 871	1.171.200.06.00	1×	-	4×	2×	-	✔
MDH 876	1.176.200.06.00	1×	-	4×	1×	1×	✔

mbNET with LTE

Name	Item no.	WAN	Wireless technology	LAN	RS-232 RS-485	MPI/ PROFIBUS	VPN*
MDH 850 EU	1.150.220.06.00	1×	LTE Cat.1 & Cat.4	4×	2×	-	✔
MDH 850 US	1.150.130.06.00	1×	LTE Cat.1 & Cat.4	4×	2×	-	✔
MDH 855 EU	1.155.220.06.00	1×	LTE Cat.1 & Cat.4	4×	1×	1×	✔
MDH 855 US	1.155.130.06.00	1×	LTE Cat.1 & Cat.4	4×	1×	1×	✔
MDH 859 EU	1.159.220.06.00	1×	LTE Cat.1 & Cat.4	4×	-	-	OpenVPN
MDH 859 US	1.159.130.06.00	1×	LTE Cat.1 & Cat.4	4×	-	-	OpenVPN

mbNET with WiFi

Name	Item no.	WAN	Wireless technology	LAN	RS-232 RS-485	MPI/ PROFIBUS	VPN*
MDH 811	1.111.200.07.00	1×	IEEE 802.11 a/b/g/n/ac	4×	2×	-	✔
MDH 831	1.131.200.07.00	1×	IEEE 802.11 a/b/g/n/ac	4×	1×	1×	✔
MDH 841	1.141.200.07.00	1×	IEEE 802.11 a/b/g/n/ac	4×	-	-	OpenVPN

* IPSEC, PPTP, L2TP, OpenVPN

mbNET.rokey with key switch

Name	Item no.	WAN	Wireless technology	LAN	RS-232 RS-485	MPI/ PROFIBUS	VPN*
RKH 210	1.210.200.06.00	1×	-	4×	1×	-	✔
RKH 216	1.216.200.06.00	1×	-	4×	-	-	✔
RKH 235	1.235.200.06.00	1×	-	4×	-	1×	✔
RKH 259 EU	1.259.220.06.00	1×	LTE Cat.1 & Cat.4	4×	-	-	✔
RKH 259 US	1.259.130.06.00	1×	LTE Cat.1 & Cat.4	4×	-	-	✔

Optional Features mbNET / mbNET.rokey

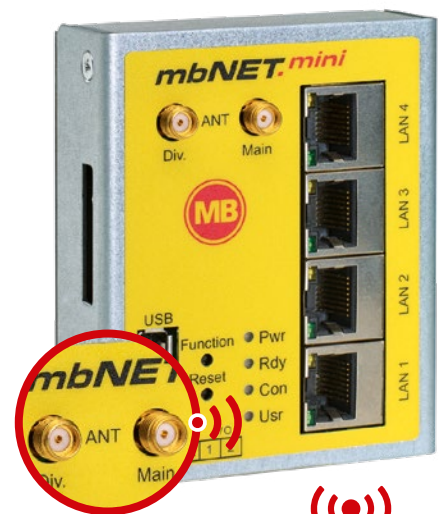| Name	Item no.	Description
tec.boost License Bundle	1.900.000.00.00	License Bundle including *SNMP, 802.1x, LAN-Segmentation, MQTT Bridge*
LAN-Segmentation	1.904.000.00.00	Single License *LAN-Segmentation* (from HW06)
MQTT Bridge	1.905.000.00.00	Single License *MQTT Bridge* (from HW02)

mbNET.mini

SMALL ROUTER
GREAT PERFORMANCE

The mbNET.mini is a very compact industrial router for DIN-rail mounting. It offers secure IP-based access to Ethernet devices and networks through the remote service platform mbCONNECT24. Therefore, it is not only suitable for remote maintenance applications but also for tasks such as alerts and M2M communication.

✓ Integrated Ethernet switch (3-port with LAN / WAN, otherwise 4-port)

✓ 1 × WAN or 1 × 4G modem, WiFi

✓ GPRS, EDGE, UMTS, HSPA+, LTE

✓ 2 configurable digital inputs / outputs for establishing a connection to the remote service platform or for sending alarms via SMS or e-mail or switching the output in the event of an alarm

✓ Solid metal case for DIN rail mounting

✓ USBoverIP-capable

✓ Secure connection to the Remote Service Platform mbCONNECT24

✓ Failover function from WAN to Modem/WiFi

✓ Simply configuration with SIMPLY.connect

The mbNET.mini industrial router is available in several versions. The WAN version uses the existing network to connect to the Internet and offers a 3-port LAN switch. Selected variants with a 4G modem enable a connection via the mobile network/WiFi and offer a 4-port LAN switch. Can only be used in conjunction with mbCONNECT24.

Antennas

Enhancement for 4G networks

mbNET.mini

Name	Item no.	WAN	Wireless technology	LAN	Failover	VPN
MDH 860	2.160.201.02.00	1×	-	3×	-	OpenVPN
MDH 862 EU	2.162.221.04.00	-	LTE Cat.1 & Cat.4	4×	-	OpenVPN
MDH 862 US	2.162.131.04.00	-	LTE Cat.1 & Cat.4	4×	-	OpenVPN
MDH 863	2.163.201.03.00	-	IEEE 802.11 b/g/n	4×	-	OpenVPN
MDH 866 EU	2.166.220.04.00	1×	LTE Cat.1 & Cat.4	3×	✔	OpenVPN
MDH 866 US	2.166.130.04.00	1×	LTE Cat.1 & Cat.4	3×	✔	OpenVPN
MDH 867	2.167.200.03.00	1×	IEEE 802.11 b/g/n	3×	✔	OpenVPN

CE   c(UL)us LISTED   PROG. CNTLR. E482663

MB

Function ● Pwr

Reset ● Rdy

● Con

● Usr

Industrial
Internet of Things

IOT UPGRADE
FOR YOUR REMOTE ACCESS

With the Edge IIoT-License, you can expand the industrial routers mbNET and mbNET.rokey into an Edge Gateway. The basis is the container platform Docker, in which several user applications are executed separately. Node-RED is a graphical development tool with function blocks that users can use to create their own individual IoT applications.

✔ Pre-installed Docker Engine
✔ Pre-installed containers:
   • Portainer.io: to manage Docker containers
   • Node-RED: For easy programming
   • Optional: 3 containers for running user applications
✔ Edge IIoT-License provides:
   • Web-based programming user interface with drag & drop
   • Industrial protocols: MQTTT, OPC-UA, Modbus, S7 and more
   • Cloud-connectivity: Azure, IBM, Amazon and more
   • TCP/IP, HTTPs, E-mail and more
   • User-defined function blocks
   • mbCONNECT24 node to connect with dashboards and widgets
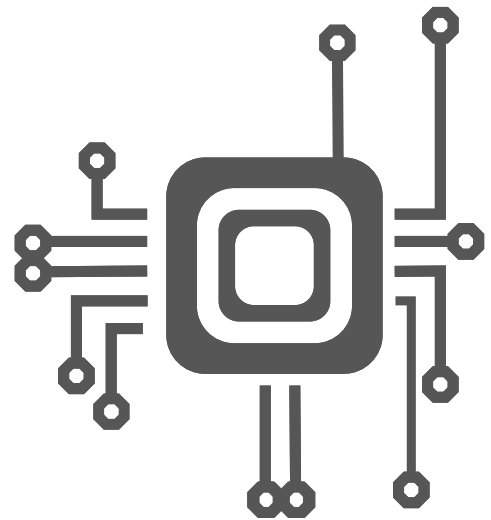
The Edge IIoT license extends the industrial routers mbNET and mbNET.rokey to an IoT gateway.
The additional data acquisition and processing functions allow you to use your remote installations in a much more versatile and flexible way.

Edge IIoT-License

Name	Item no.	Compatibility	Node-RED	Node-RED User-Nodes	Docker Container	Portainer.io
Edge IIoT-License	1.903.000.01.00	from HW06	✔	✔	✔	✔
mbEDGE.advanced EDG200	1.902.000.01.00	HW03 to HW05	✔	✔	✔	✔

Simplify IoT-Edge application development with Node-RED
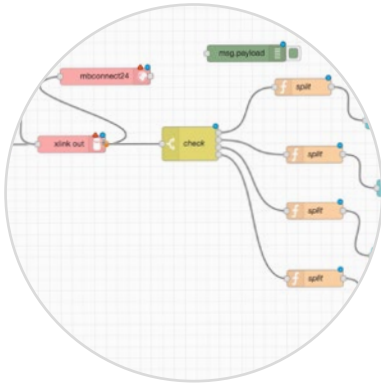
Node-RED is a web-based open source development tool for the simple development of IoT applications using drag & drop. In the graphical user interface, you connect different nodes to form a flow (flow diagram). Each node represents a functionality that you can either define yourself – or that is based on ready-made functions and code blocks from the comprehensive library. For example, communication via MQTT (publish/subscribe), OPC-UA or Modbus-TCP can be implemented with just a few mouse clicks – as can the connection to mbCONNECT24 or the sending of messages by email. A variety of cloud platforms are supported for storage and further processing. Node-RED runs autonomously in a Docker container and has access to all resources of the industrial router mbNET.

Docker & Containers: Your embedded IoT-Edge App

Docker is an open source software that provides containers (virtual workspaces) for various applications. As a key security feature, the containers are isolated from each other and from the operating system. They can only communicate via Docker-controlled mechanisms. In addition to the application, the Docker containers contain all the resources required at runtime.

mbEDGE.advanced offers a container with Portainer.io to manage the containers – as well as three additional containers for your individual applications. Security is also the top priority here: Docker only allows signed and therefore trustworthy images to run in the containers.

Security by Design

IT security is the core competence of MB connect line. Our products are developed strictly according to the principle of "Security by Design". This is based on the standards defined in IEC 62443. The mbNET industrial routers are equipped with a secure hardware element (crypto chip) and a secure boot concept so that devices can only boot with signed and trusted firmware.

All data stored in memory or via Edge IIoT-License is encrypted. It cannot be read without the key stored in the crypto chip. Secure systems and devices require a secure development process. It goes without saying that the development engineers at MB connect line are certified accordingly: Teletrust T.I.S.P. and T.P.S.S.E.

Industrial
Security

mbNETFIX

THE INDUSTRIAL FIREWALL
FOR AUTOMATION

mbNETFIX, the firewall for the automation professional is developed according to the highest security standard. You can configure the device quickly and easily – even without professional expertise. The operating modes Gateway and Bridge, enable a seamless integration into new and already existing network structures.

✓ IP, port, MAC and protocol filters for monitoring and restricting data traffic
✓ Versatile NAT functionalities, e.g. 1:1 NAT, SimpleNAT and
   port forwarding
✓ Cybersecurity at the highest level thanks to RSA key authentication
✓ Static routes
✓ 1x WAN and 3x LAN port switch (10/100 MBits)
✓ No web interface, thus minimizing attack vectors
✓ Configuration via user-friendly software and integrated Command Line Interface Shell (CLISH)
✓ Power supply 10-30 VDC
✓ Security by Design
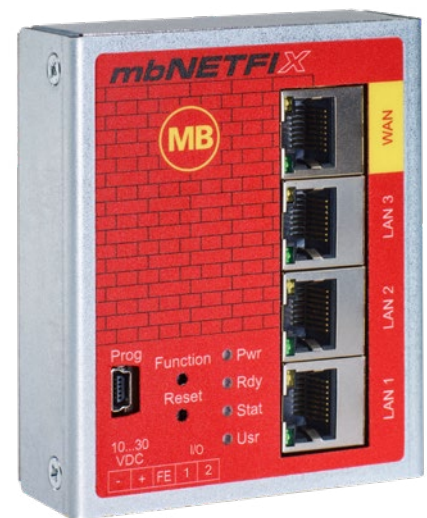
A special feature is the integrated learning function. This means that the firewall learns the data traffic and the user can explicitly release or block the connections between the IP devices directly from a learned packet table. This simplifies commissioning and requires no special IT knowledge.

mbNETFIX Manager

Software and documentation in our download portal.

In **Bridge mode** the mbNETFIX secures the exchange of data between interfaces, without introducing a change in the existing network structure.

In **Gateway mode** the mbNETFIX can segment two different networks, thus securing these networks and managing the data exchange between WAN and LAN.

mbNETFIX

Name	Item no.	WAN	LAN
NFH 100	5.100.200.03.00	1×	3×

PROG. CNTLR.
E482663

Features
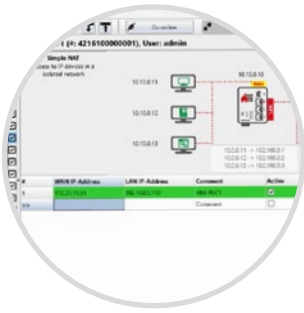
Automation User's Workflow

✓ Prepare projects and upload them to the device

✓ Go online and make changes on the runtime version

✓ Export projects and share with other users
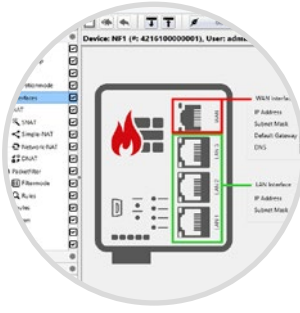
Graphical User Interface

✓ PLC programming-like environment

✓ View configuration and changes

✓ See how setup and rules apply
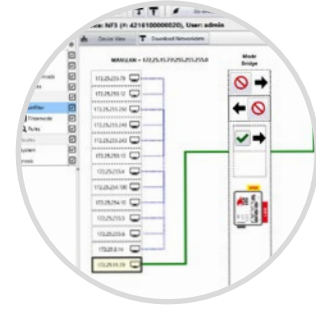
Learning Mode

✓ Visualize actively communicating devices

✓ Choose general traffic policies

✓ Select, which connections need to be preserved

Firewall with routing function
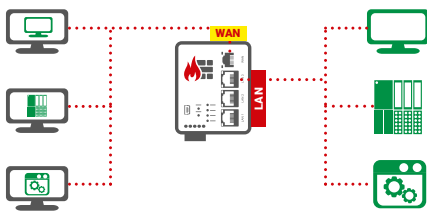
Simple NAT

Simple NAT enables easy access to individual components in an isolated network segment.

Source NAT

The source of the data packet is changed here. LAN devices respond locally to the router, so no gateway is required.
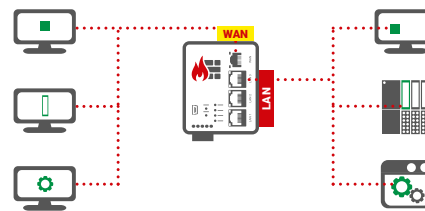
Port forwarding (DNAT)

With port forwarding, a single port can be forwarded to a specific IP address with specification of the port.

Network NAT

With this function, the complete LAN area (or partial areas) can be mirrored via so-called virtual IP addresses in the WAN area.

3+1 User Access Levels

Administrator

Full access to the device configuration. You can export the projects for other users.

Operator

Can change routing tables, NAT settings, filtering rules, but not operating mode, system settings, LAN or WAN addresses.

Viewer

Has full viewing access but cannot make any changes (diagnostic user).

Factory Reset

Can only reset the unit and requires visual and physical access to the unit to do so.

Accessories

ACCESSORIES

Network adapter

Item no.	Short description	Description
8.002.502.00.00	A/C power adapter 24V, with country adapter EU/UK/US/AU	Input: 230V/AC, Output: 24V/DC 1A

Connection cables

Item no.	End device	Description	Länge
8.002.202.00.00	Siemens S7 300/400	MPI/Profibus connection cable	1,2 m
8.002.203.00.00	Siemens S7 300/400	MPI/Profibus connection cable	3,0 m
8.002.204.00.00	Siemens S7 300/400	MPI/Profibus connection cable	7,0 m

Storage devices

Item no.	Short description	Description
8.002.401.00.00	mbMEM USB stick	4 GB, MLC Flash, 0°C to 60°C
8.002.402.01.00	Industrial USB stick	8 GB, MLC NAND Flash, -40°C to 85°C

Spare key-set for mbNET.rokey

Item no.	Short description	Description
8.002.001.00.00	Spare key-set	Spare key-set for mbNET.rokey *

* Proof of purchase of the corresponding device is required for ordering.

Illustration can deviate

ANTENNAS

Mobile communication antennas

Item no.	Type	Transmission method*	Thermal endurance	Connection	Cable length	Mounting	Dimensions in mm
8.002.101.01.00	oa	2G, 3G, 4G	-40 °C to +85 °C	SMA – male	2,5 m	Magnet	31 × 72
8.002.112.00.00	oa	2G, 3G, 4G	-40 °C to +85 °C	SMA – male	5 m	Magnet	31 × 72
8.002.103.00.00	oa	2G, 3G, 4G	-40 °C to +85 °C	SMA – male	12,5 m	Magnet	31 × 72
8.002.104.02.00	oa	2G, 3G, 4G, 5G	-40 °C to +80 °C	SMA – male	5 m	Wall mounting	46 × 164
8.002.105.01.00	oa	2G, 3G, 4G, 5G	-40 °C to +80 °C	2 × SMA – male	2 × 2 m	Wall mounting & Screenclip	137 × 151

WiFi antennas

Item no.	Type	Transmission method*	Thermal endurance	Connection	Cable length	Mounting	Dimensions in mm
8.002.108.00.00	oa	WiFi	-40 °C to +85 °C	SMA – female	2,5 m	Magnet & patch mounting	15 × 53
8.002.107.00.00	oa	WiFi	-40 °C to +85 °C	SMA – female	5 m	Magnet	31 × 233

Extension cables for antennas

8.002.109.00.00	Extension cable for mobile communication antennas (2G, 4G, 5G) 500 cm
8.002.110.00.00	Extension cable for mobile communication antennas (2G, 4G, 5G) 1000 cm
8.002.111.00.00	Extension cable for mobile WiFi antennas 1000 cm

Please note: cable length and signal strength

When buying, on the one hand the required length and on the other the damping properties must be included. In simple terms, the antenna gain decreases as the extension increases. Thus, the efficiency of the antenna decreases, the larger the extension cable is.

Please note: Transmission method of the provider

When buying antennas, all components must be coordinated. In addition to the length and the signal strength, the transmission method of the provider of the SIM card used must be observed. The LTE transmission method depends on providers and local conditions such as e.g. the present signal from.

oa = omnidirectional antenna

Further antennas and antenna extensions on request.

* Please refer to the respective provider for information about the transmission frequency.

MODEL OVERVIEW REMOTE ACCESS

	Model number	Item number	Basic functions		Interfaces to machine communication			
			Remote Access	Data collection (on portal server)	LAN	MPI/PROFIBUS	RS-232 / RS-485	USB port
mbNET								
	MDH 811	1.111.200.07.00	✔	✔	4x	-	2x	✔
	MDH 816	1.116.200.06.00	✔	✔	4x	-	-	✔
	MDH 831	1.131.200.07.00	✔	✔	4x	1x	1x	✔
	MDH 835	1.135.200.06.00	✔	✔	4x	1x	1x	✔
	MDH 841	1.141.200.07.00	✔	✔	4x	-	-	✔
	MDH 850 EU	1.150.220.06.00	✔	✔	4x	-	2x	✔
	MDH 850 US	1.150.130.06.00	✔	✔	4x	-	2x	✔
	MDH 855 EU	1.155.220.06.00	✔	✔	4x	1x	1x	✔
	MDH 855 US	1.155.130.06.00	✔	✔	4x	1x	1x	✔
	MDH 859 EU	1.159.220.06.00	✔	✔	4x	-	-	✔
	MDH 859 US	1.159.130.06.00	✔	✔	4x	-	-	✔
	MDH 871	1.171.200.06.00	✔	✔	4x	-	2x	✔
	MDH 876	1.176.200.06.00	✔	✔	4x	1x	1x	✔
mbNET.rokey								
	RKH 210	1.210.200.06.00	✔	✔	4x	-	1x	✔
	RKH 216	1.216.200.06.00	✔	✔	4x	-	-	✔
	RKH 235	1.235.200.06.00	✔	✔	4x	1x	-	✔
	RKH 259 EU	1.259.220.06.00	✔	✔	4x	-	-	✔
	RKH 259 US	1.259.130.06.00	✔	✔	4x	-	-	✔
mbNET.mini								
	MDH 860	2.160.201.02.00	✔	-	3x	-	-	✔
	MDH 862 EU	2.162.221.04.00	✔	-	4x	-	-	✔
	MDH 862 US	2.162.131.04.00	✔	-	4x	-	-	✔
	MDH 863	2.163.201.03.00	✔	-	4x	-	-	✔
	MDH 866 EU	2.166.220.04.00	✔	-	3x	-	-	✔
	MDH 866 US	2.166.130.04.00	✔	-	3x	-	-	✔
	MDH 867	2.167.200.03.00	✔	-	3x	-	-	✔

HARDWARE FUNCTIONS

WAN interface for wired Internet	Wireless technology	Connection	Supply voltage (DC)	Digital IN	Digital OUT	Slots and extensions	DIN rail mounting
Interfaces to portal server	**INTEGRATED MODEM**		**Electrical connections**			**Further connections**	
1x	IEEE 802.11 a/b/g/n/ac	SMA (male)	10-30V	4x	2x	eMMC	✔
1x	-	-	10-30V	4x	2x	eMMC	✔
1x	IEEE 802.11 a/b/g/n/ac	SMA (male)	10-30V	4x	2x	eMMC	✔
1x	-	-	10-30V	4x	2x	eMMC	✔
1x	IEEE 802.11 a/b/g/n/ac	SMA (male)	10-30V	4x	2x	eMMC	✔
1x	LTE Cat.1 & Cat.4	SMA (female)	10-30V	4x	2x	Mini-SIM/SD-Karte	✔
1x	LTE Cat.1 & Cat.4	SMA (female)	10-30V	4x	2x	Nano-SIM/eMMC	✔
1x	LTE Cat.1 & Cat.4	SMA (female)	10-30V	4x	2x	Nano-SIM/eMMC	✔
1x	LTE Cat.1 & Cat.4	SMA (female)	10-30V	4x	2x	Nano-SIM/eMMC	✔
1x	LTE Cat.1 & Cat.4	SMA (female)	10-30V	4x	2x	Mini-SIM/SD-Karte	✔
1x	LTE Cat.1 & Cat.4	SMA (female)	10-30V	4x	2x	Nano-SIM/eMMC	✔
1x	-	-	10-30V	4x	2x	eMMC	✔
1x	-	-	10-30V	4x	2x	eMMC	✔
1x	-	SMA (female)	10-30V	4x	2x	eMMC	✔
1x	-	SMA (female)	10-30V	4x	2x	eMMC	✔
1x	-	SMA (female)	10-30V	4x	2x	SD-Karte	✔
1x	LTE Cat.1 & Cat.4	SMA (female)	10-30V	4x	2x	Nano-SIM/eMMC	✔
1x	LTE Cat.1 & Cat.4	SMA (female)	10-30V	4x	2x	Nano-SIM/eMMC	✔
1x	-	-	10-30V	2x	2x	-	✔
-	LTE Cat.1 & Cat.4	SMA (female)	10-30V	2x	2x	Nano-SIM	✔
-	LTE Cat.1 & Cat.4	SMA (female)	10-30V	2x	2x	Nano-SIM	✔
-	IEEE 802.11 b/g/n	SMA (male)	10-30V	2x	2x	-	✔
1x	LTE Cat.1 & Cat.4	SMA (female)	10-30V	2x	2x	Nano-SIM	✔
1x	LTE Cat.1 & Cat.4	SMA (female)	10-30V	2x	2x	Nano-SIM	✔
1x	IEEE 802.11 b/g/n	SMA (male)	10-30V	2x	2x	-	✔

Subject to change without notice.

MODEL OVERVIEW REMOTE ACCESS

	Model number	Item number	Open VPN	VPN-Ipsec	VPN-L2PT	VPN-PPTP	Edge compatibility	SMTP client	DNS server	DHCP server LAN	DHCP server WAN
mbNET	MDH 811	1.111.200.07.00	✔	✔	✔	✔	✔	✔	✔	✔	✔
	MDH 816	1.116.200.06.00	✔	-	-	-	✔	✔	✔	✔	✔
	MDH 831	1.131.200.07.00	✔	✔	✔	✔	✔	✔	✔	✔	✔
	MDH 835	1.135.200.06.00	mb24	-	-	-	✔	✔	✔	✔	✔
	MDH 841	1.141.200.07.00	✔	-	-	-	✔	✔	✔	✔	✔
	MDH 850 EU	1.150.220.06.00	✔	✔	✔	✔	✔	✔	✔	✔	✔
	MDH 850 US	1.150.130.06.00	✔	✔	✔	✔	✔	✔	✔	✔	✔
	MDH 855 EU	1.155.220.06.00	✔	✔	✔	✔	✔	✔	✔	✔	✔
	MDH 855 US	1.155.130.06.00	✔	✔	✔	✔	✔	✔	✔	✔	✔
	MDH 859 EU	1.159.220.06.00	✔	-	-	-	✔	✔	✔	✔	✔
	MDH 859 US	1.159.130.06.00	✔	-	-	-	✔	✔	✔	✔	✔
	MDH 871	1.171.200.06.00	✔	✔	✔	✔	✔	✔	✔	✔	✔
	MDH 876	1.176.200.06.00	✔	✔	✔	✔	✔	✔	✔	✔	✔
mbNET.rokey	RKH 210	1.210.200.06.00	✔	✔	✔	✔	✔	✔	✔	✔	✔
	RKH 216	1.216.200.06.00	✔	✔	✔	✔	✔	✔	✔	✔	✔
	RKH 235	1.235.200.06.00	✔	✔	✔	✔	✔	✔	✔	✔	✔
	RKH 259 EU	1.259.220.06.00	✔	✔	✔	✔	✔	✔	✔	✔	✔
	RKH 259 US	1.259.130.06.00	✔	✔	✔	✔	✔	✔	✔	✔	✔
mbNET.mini	MDH 860	2.160.201.02.00	mb24	-	-	-	-	-	-	-	-
	MDH 862 EU	2.162.221.04.00	mb24	-	-	-	-	-	-	-	-
	MDH 862 US	2.162.131.04.00	mb24	-	-	-	-	-	-	-	-
	MDH 863	2.163.201.03.00	mb24	-	-	-	-	-	-	-	-
	MDH 866 EU	2.166.220.04.00	mb24	-	-	-	-	-	-	-	-
	MDH 866 US	2.166.130.04.00	mb24	-	-	-	-	-	-	-	-
	MDH 867	2.167.200.03.00	mb24	-	-	-	-	-	-	-	-

SOFTWARE FUNCTIONS

SFTP server (USB / SD card)	Firewall with IP filter 1:1 NAT and Port Forwarding	Transmission method	PPoE/PPTP WAN	Dyn DNS	mbNET DNS	Alarm management e-mail, SMS (Multiplex inputs)	Routing WAN-LAN, VPN-LAN	Web configuration	Protocol webserver	Individual configuration via WebGUI	mbCONNECT24 Portal functions | Routing, mbWEB2go, Internet SMS
USB/eMMC	✔	-	✔	✔	✔	✔	✔	✔	HTTPS	✔	✔
USB/eMMC	✔	-	✔	✔	✔	✔	✔	✔	HTTPS	✔	✔
USB/eMMC	✔	-	✔	✔	✔	✔	✔	✔	HTTPS	✔	✔
USB/eMMC	✔	-	✔	✔	✔	✔	✔	✔	HTTPS	-	✔
USB/eMMC	✔	-	✔	✔	✔	✔	✔	✔	HTTPS	✔	✔
USB/SD card	✔	4G	✔	✔	✔	✔	✔	✔	HTTPS	✔	✔
USB/eMMC	✔	4G	✔	✔	✔	✔	✔	✔	HTTPS	✔	✔
USB/eMMC	✔	4G	✔	✔	✔	✔	✔	✔	HTTPS	✔	✔
USB/eMMC	✔	4G	✔	✔	✔	✔	✔	✔	HTTPS	✔	✔
USB/SD card	✔	4G	✔	✔	✔	✔	✔	✔	HTTPS	✔	✔
USB/eMMC	✔	4G	✔	✔	✔	✔	✔	✔	HTTPS	✔	✔
USB/eMMC	✔	-	✔	✔	✔	✔	✔	✔	HTTPS	✔	✔
USB/eMMC	✔	-	✔	✔	✔	✔	✔	✔	HTTPS	✔	✔
USB/eMMC	✔	-	✔	✔	✔	✔	✔	✔	HTTPS	✔	✔
USB/eMMC	✔	-	✔	✔	✔	✔	✔	✔	HTTPS	✔	✔
USB/SD card	✔	-	✔	✔	✔	✔	✔	✔	HTTPS	✔	✔
USB/eMMC	✔	4G	✔	✔	✔	✔	✔	✔	HTTPS	✔	✔
USB/eMMC	✔	4G	✔	✔	✔	✔	✔	✔	HTTPS	✔	✔
USB	✔	-	-	-	-	-	✔	-	HTTP/ HTTPS	-	✔
USB	✔	4G	-	-	-	-	✔	-	HTTP/ HTTPS	-	✔
USB	✔	4G	-	-	-	-	✔	-	HTTP/ HTTPS	-	✔
USB	✔	-	-	-	-	-	✔	-	HTTP/ HTTPS	-	✔
USB	✔	4G	-	-	-	-	✔	-	HTTP/ HTTPS	-	✔
USB	✔	4G	-	-	-	-	✔	-	HTTP/ HTTPS	-	✔
USB	✔	-	-	-	-	-	✔	-	HTTP/ HTTPS	-	✔

Subject to change without notice.

Fc1 ● ● ● Fc2
Fc3 ● ● ● Fc4
Rdy ● ● ● Con
Pwr ● ● ● Stat

MB

REM

WAN

ST
OFF
ONL
Operation

EF0123456789

Mode
• User

2

MB CONNECT LINE

As an expert for secure remote access, IIoT and industrial security, we are committed to the highest standards in cyber security and the protection of industrial control systems.

With certifications such as IEC 62443-4-1, we are demonstrating a strong commitment to quality, security and trust in our development processes and products.

Our DNA: 100% IT-Security
for more than 25 years.

MB connect line GmbH

Winnettener Str. 6
91550 Dinkelsbühl
Germany

Phone: +49 (0) 98 51 / 58 25 29 0
E-Mail: info@mbconnectline.com

www.mbconnectline.com

SecurITy
made in Germany
Trust Seal
www.**teletrust**.de/itsmig