Procontrol P14 Diagnosis
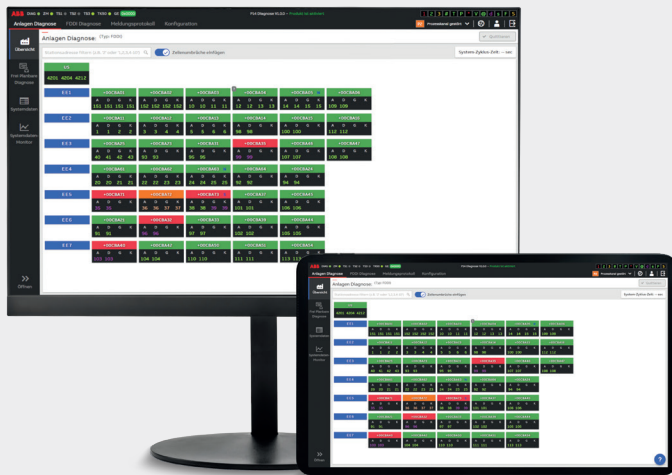## Diagnosis on mobile device or desktop

ABB Procontrol P14 Diagnosis enables continuous monitoring of your Procontrol P14 plant's health with the ability to provide detailed diagnostic information of all P14 working modules.
The optional extended FDDI Diagnosis monitors the correct functioning of all 88TK50/R1210 coupling modules in the FDDI network.

—
01 Monitoring and Diagnosis via Tablet

Application
P14 Diagnosis builds on two unique features of Procontrol P14: Each I/O module has its own microprocessor and is therefore independent and able to monitor and diagnose itself; and: all communication data is available via the bus to all other modules within the system. As a result, P14 Diagnosis detects all modules in the system and displays them with their current diagnostic information.

Remote monitoring via tablet or desktop
P14 Diagnosis is designed to be used in desktop or tablet environments. With this, important control system information can be viewed flexibly on site during maintenance and service work.
As a result, maintenance and service work is carried out faster and more effectively.
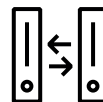
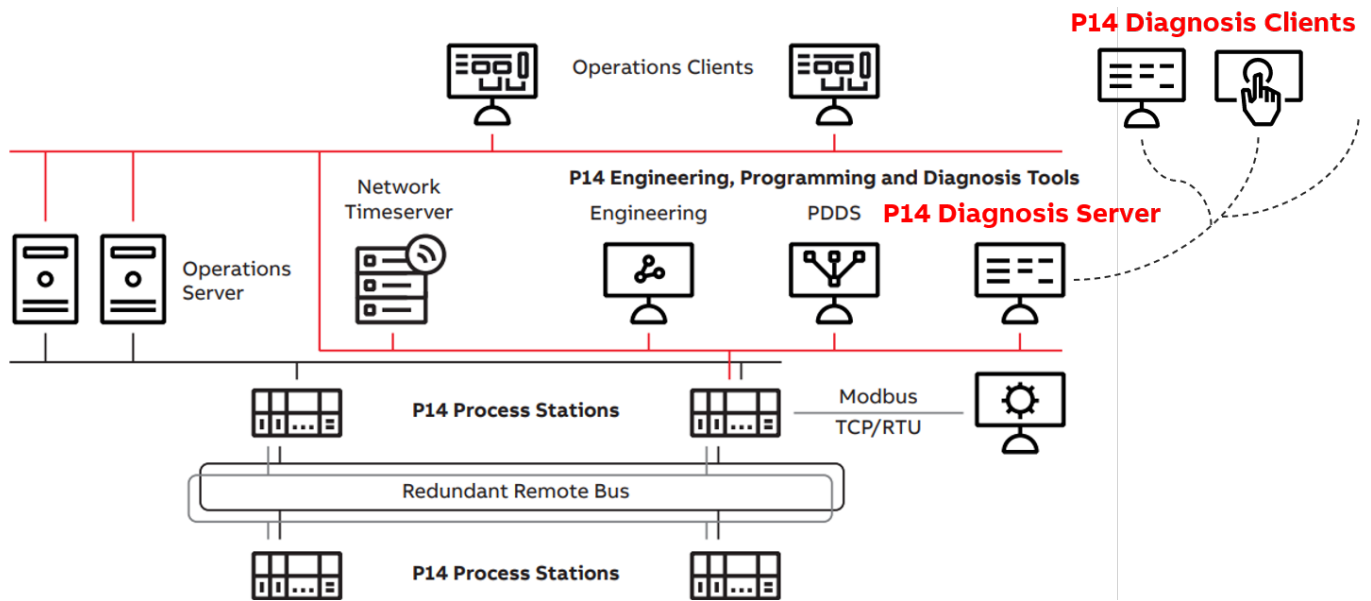**Continuous health monitoring of your P14 system**

Optimized for tablets and desktops

Accessible from any device on the system network

Extended monitoring of the FDDI network

Operations Clients

P14 Diagnosis Clients

Network Timeserver

P14 Engineering, Programming and Diagnosis Tools
Engineering   PDDS   **P14 Diagnosis Server**

Operations Server

P14 Process Stations   Modbus TCP/RTU

Redundant Remote Bus

P14 Process Stations

—
02

Functionality

Each P14 I/O module communicates its type, its loca-tion and its status data. Based on this informa-tion, P14 Diagnosis visualizes the P14 system, its cabinets and stations. Cabinets can be identified individually and their statuses are displayed in appropriate co-lours. Using the report function, er-ror messages such as the exceeding of a limit value can be exported for further analysis. Recorded data can be filtered by time period, components and type of error.

Messages

Each control system message is assigned a priority le-vel, message number and message area. Help texts are available to retrieve notes and recommen-dations for corrective actions to eliminate any po-tential error.The priority levels are selected depen-ding on the significance of the message.

The message area indicates in which part of the system an error has occurred. The messages are grouped in the following message areas:
• ED P14 Diagnosis – Self diagnosis
• VS Master station diagnosis
• SK Multi-purpose processing station diagnosis from the station coupling module
• SV Multi-purpose processing station diagnosis from the station control module
• TR Multi-purpose processing station diagnosis from the redundancy control module
• GE Module diagnosis
• DD Data diagnosis
• FD Free plannable diagnosis (user-configurable)
• ST Status diagnosis
• QT I/O-Bus diagnosis

The GE, DD, FD und DD message areas can be deactivated for the entire system.

Report function

The current message log can be exported as a .pdf or .xlsx file via the report function. This enables further analyses of the messages.

Server & Clients

The P14 Diagnosis web server can be installed on Windows 10 LTSC 2019 or Windows Server 2019 operating systems.

The web interface (client) can be accessed from any device in the same network simply via an Internet browser. No installation or further configuration is necessary.

Migration from CDS to P14 Diagnosis

The migration from any P14 CDS (ABB Control Diagnosis System) version to P14 Diagnosis is simple: Existing configuration data of the P14 CDS system can be imported into P14 Diagnosis and the system initialized. All defined cabinets and devices are detected during the scan and displayed in the overview.

General status

P14 Diagnosis sends a general status telegram on the P14 bus, which summarizes the system status. In addition, a general status of all prosses- and I/O modules (GE) is sent as a source telegram on the P14 bus.
The general status telegrams are sent every 30 seconds.

System data

In the system data view, system data can be displayed and requested for the entire system, a station, or a device. System data includes:

• System cycle time
• Events/minute
• Event telegrams/cycle, separated by data type
• Cyclic telegrams/cycle, separated by data type

Intuitive user guidance

P14 Diagnosis guides the user intuitively through the hierarchical structure of system, cabinet, station, module, register and bit. The clear graphical displays enable comprehensive diagnosis down to bit level without further configuration.

Plant Diagnosis, Message log, system and module data, free plannable diagnosis and much more can be accessed with just a few clicks.

Cyber Security

P14 diagnosis complies with all ABB cyber security guidelines and applicable legal regulations. User roles and access restrictions through user management can be managed by an administrator in P14 Diagnosis. Since P14 Diagnosis operates in the local network, this must be appropriately secured, e.g. by appropriate firewall rules, whitelisting of the used ports, etc.

Extended diagnosis of the FDDI network

The current health status of all FDDI nodes is monitored via internal error counters. In this way, a deterioration of the transmission quality in the FDDI network can be detected and localized at an early stage.

FDDI nodes of a Procontrol P14 system, 88TK50/R1210, constantly perform diagnostic functions and report faults via the FDDI network. These signals are received by P14 Diagnosis with an active FDDI license extension.

The status of the FDDI ring is permanently monitored and graphically displayed.
Ring disturbances are stored in the message log when they occur. Messages are generated when limit values are reached.

In addition, current and past error counters can be graphically analyzed for each FDDI node. FDDI Diagnosis works in combination with P14 Diagnosis' plant diagnosis, as its messages are reacted to.

FDDI Diagnosis can be purchased as a license option for P14 Diagnosis. A later change is possible without any problems. In this case, only the new license has to be installed, the configurations and all accumulated data of the plant diagnosis remain unchanged.

System Data: Station 102 [01CBA03]

Current system data — Station: 102 — Module: — Request system data — Show system data — Reset

Settings
- System-Cycle-Time
- Events / Minute
- Event telegrams / Cycle
- Cycle telegrams / Cycle

System Data

	MINIMUM	CURRENT	MAXIMUM
	05.11.21 / 16:44:56	18.11.21 / 11:44:02	06.11.21 / 11:29:56
SYSTEM-CYCLE-TIME	0.5 sec	0.6 sec	1 sec
EVENTS / MINUTE	482	543	747
EVENT TELEGRAMS / CYCLE	1	7	48
CYCLE TELEGRAMS / CYCLE	151	164	202

Event telegrams per datatype

DATATYPE	MINIMUM	CURRENT	MAXIMUM
DA 00	1	1	38
DA 01	0	0	2
DA 02	0	0	0
DA 03	0	0	0
DA 04	0	0	0
DA 05	0	6	8
DA 06	0	0	0
DA 07	0	0	0
DA 10	0	0	0
DA 11	0	0	0
DA 12	0	0	0

Cycle telegrams per datatype

DATATYPE	MINIMUM	CURRENT	MAXIMUM
DA 00	1	14	45
DA 01	55	55	55
DA 02	3	3	3
DA 03	3	3	3
DA 04	0	0	0
DA 05	44	44	44
DA 06	2	2	2
DA 07	2	2	2
DA 10	3	3	3
DA 11	6	6	6
DA 12	3	3	3
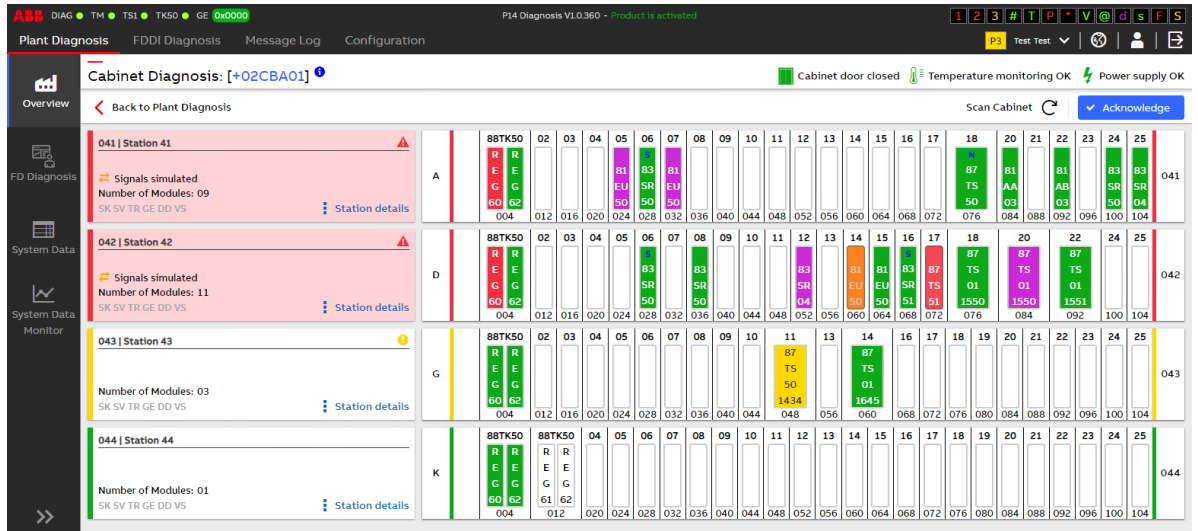
—
04 Plant Diagnosis –
Cabinet overview

—
05 FDDI Diagnosis
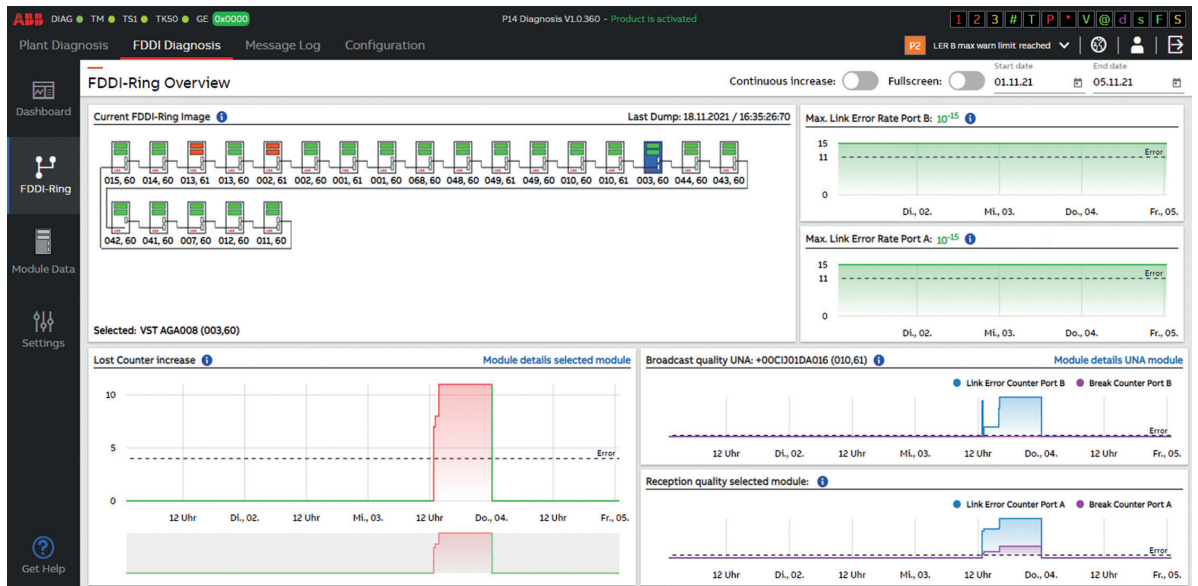
We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB AG does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

8VDE000842T0003 Rev.A - 11.2021