MANUAL

EIU32.0 EtherNet/IP™ interface

Universal Motor Controller UMC100.3

Important notice

Target group
This description is intended for the use of trained specialists in electrical installation and control and automation engineering, who are familiar with the applicable national standards.

Safety requirements
The responsible staff must ensure that the application or use of the products described satisfy all the requirements for safety, including all the relevant laws, regulations, guidelines and standards.

Using this handbook

Symbols
This technical document contains symbols to point the reader to important information, potential risks and precautionary information. The following symbols are used:

	Sign to indicate a potentially dangerous situation that can cause damage to the connected devices or the environment.
	Sign to indicate important information and conditions.
	Sign to indicate a potentially dangerous situation that can cause human injuries.

Terms and abbreviations

ACD	Address Conflict Detection – mechanism used by devices to detect other devices in the network using the same IP address
CIP	Common Industrial Protocol; protocol for industrial automation applications; used in EtherNet/IP™, DeviceNet, ControlNet
DLR	Device Level Ring; functionality for identifying a fault in an Ethernet ring structure
EDS	Electronic Data Sheet; file that describes the properties of an EtherNet/IP™ device. It is required to integrate and configure a device in an Ethernet/IP™ network
EIP	Abbreviation for EtherNet/IP™; also used in this manual
HTTP	Hyper Text Transfer Protocol
IP address	Each device to be addressed as a node on an Ethernet network needs to have a unique IP address
MAC address	Medium Access Control; unique numbering of the Ethernet controller in a device documented on the EIU32.0 product label
Scanner	The device which initiates a connection or a request. It can be considered as the "master"
SNMP	Simple Network Management Protocol
TCP/IP	Transmission Control Protocol / Internet Protocol
UDP	User Datagram Protocol; used for real-time data transfer

Trademarks

CIP	Common Industrial Protocol, trademarks of Open DeviceNet Vendor Association
EtherNet/IP™	Trademark of ControlNet International under license by Open DeviceNet Vendor Association, Inc. (ODVA)

More information about EtherNet/IP™, ODVA and their protected technologies can be found on the ODVA website www.odva.org

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Related documents

Technical documentation	Document no.
UMC100.3 manual English version	2CDC135032D0204 Rev. B
UMC100.3 ATEX Technical description English version	2CDC135033D0202
EIU32.0 and UMC100.3 integration in Rockwell Studio5000	2CDC135060M0201

Version information

This document is valid for:
EtherNet/IP™ interface EIU32.0 Order code 1SAJ262000R0100
Firmware version 1.001

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EIU32.0 requires UMC100.3 with following or later firmware

UMC100.3 DC	1SAJ530000R0100	3.06.0
UMC100.3 UC	1SAJ530000R1100	3.06.0
UMC100.3 DC, ATEX	1SAJ530000R0200	40.03.0
UMC100.3 UC, ATEX	1SAJ530000R1200	40.03.0
UMC100.3 DC, ATEX, Conformal Coating	1SAJ530000R0210	40.03.0
UMC100.3 UC, ATEX, Conformal Coating	1SAJ530000R1210	40.03.0

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Cyber security

Disclaimer
This product is designed to be connected and to communicate information and data via a network interface.

It is your sole responsibility to provide and continuously ensure a secure connection between the product and your network or any other network (as the case may be) and to establish and maintain appropriate measures (such as but not limited to the installation of firewalls, application of authentication measures, encryption of data, installation of antivirus programs, etc) to protect the product, the network, its system and interfaces against any kind of security breaches, unauthorized access, interference, intrusion, leakage and/or theft of data or information.

ABB Ltd and its affiliates are not liable for damages and/or losses related to such security breaches, unauthorized access, interference, intrusion, leakage and/or theft of data or information.

Although ABB provides functionality testing on the products and updates that we release, you should institute your own testing program for any product updates or other major system updates (to include but not limited to code changes, configuration file changes, third party software updates or patches, hardware change out, etc) to ensure that the security measures that you have implemented have not been compromised and system functionality in your environment is as expected.

For more information/contact regarding ABB cyber security see: http://www.abb.com/cybersecurity

Deployment guideline
This device shall be connected only to **a private/restricted network and not to any public networks**.
When connecting EIU32.0 to public networks, security measures must be taken to reduce the cyber security risks. Such measures are not provided by the EIU32.0 device: "external equipment“ is needed.
This private/restricted network can be connected for access via Internet or other network when using **“external equipment”** which can be separated devices or devices that combine **firewall, router and secure VPN functionality**. The cyber security standard of these external equipment depends on the customer and the targeted security level.

This “Cyber Security Deployment” guideline cannot suggest concrete products for **“external equipment”** to make a secure system setup. This must be decided along the specific project, requirements and existing infrastructure.

Open Ports in EIU32.0

80/tcp	http (webserver)
44818/tcp	EtherNet/IP™
1024/udp	internal
2222/udp	EtherNet/IP™
25383/udp	internal (netident protocol)
44818/udp	EtherNet/IP™

These ports may be needed for proper function of the EIU32.0 in the network and have to be taken into account for configuration of cyber security means.

Recommendations

When commissioning a network system it is important to address any cyber security issues by making a cyber security assessment of the system. Example of methods to reduce security vulnerabilities are:

- Network connection
  Limit the connections with routers/firewall and similar products
- Network access control
  Add some control/limitations on the network by routers/firewall and similar products
- Network monitor
  If required add products which can monitor the network access and traffic
- Network separation
  From a cyber security point and the protection of the industry factory system, it is good to separate the remote connection gateway from the factory control connected gateways
- It is highly recommended to contact any cyber security personnel/consultant to make an effective cyber security assessment of the system.

Webserver

The EIU32.0 includes a webserver. This webserver is disabled by default as it is not needed by the main functions of EIU32.0. Its functionality is limited to monitoring and maintenance data; the modification of settings is prohibited.
WARNING! The web server is using the HTTP communication protocol. Please be aware of the security limitations with HTTP before enabling the webserver. All data sent over HTTP connections are sent in plain text and can possibly be read by any hacker that manages to break into the connection between the webserver and the web browser.

Overview

The EIU32.0 EtherNet/IP™ communication interface supports the EtherNet/IP™ network protocol. This chapter contains a short description of EtherNet/IP™ and the main features of the EIU32.0 Ethernet adapter.

Highlighted features

- The EIU32.0 Ethernet interface provides EtherNet/IP™ connectivity for the Universal Motor Controller UMC100.3
- It uses the open industrial protocol EtherNet/IP™ based on standard Ethernet
- EIU32.0 is certified by ODVA to ensure proper function in EtherNet/IP™ networks
- The EIU32.0 can be mounted in two different ways: directly on a UMC100.3 Universal Motor Controller, or separately on an SMK3.0 adapter. This offers additional advantages in case of withdrawable applications
- Through the EIU32.0 it is possible to:
  - give control commands to the motor controller (Start, Stop, Auto, etc)
  - read status information and actual values from the device
  - change parameters
  - read maintenance counters
  - reset a trip
- Device configuration can be done within the control system
- A built-in two-port switch allows flexible usage in linear, star or ring network topologies
- Beacon-based Device Level Ring (DLR) functionality, a feature to achieve system redundancy
- Fast communication recovery
- ACD (Address Conflict Detection) functionality, a mechanism which allows the EIU32.0 to detect other devices on the network using the same IP address as itself
- Integrated webserver for easy monitoring and maintenance

Ethernet

Unlike traditional fieldbuses, Ethernet-based communication systems use an active infrastructure with a standard Ethernet physical layer and standard Ethernet and internet protocols. They support a variety of physical media (coaxial cable, twisted pair, fiber optics) and allow different topologies like bus, ring and star. The EIU32.0 Ethernet adapter supports twisted pair cabling as physical media.
The EIU32.0 is compatible with the Ethernet standards IEEE 802.3 and IEEE 802.3u.

EtherNet/IP™

EtherNet/IP™ is based on the Common Industrial Protocol (CIP) and designed for use in industrial environments. It offers all functions required in automation applications.

- Producer-consumer services for controlling, data-collection
- Use of existing IEEE standards
- Based on the Ethernet standard TCP/IP protocol
- Compatible with accepted communication standards and Internet protocols like Hypertext Transfer Protocol (HTTP), Simple Network Management Protocol (SNMP), File Transfer Protocol (FTP), Dynamic Host Configuration Protocol (DHCP)

EtherNet/IP™ Interface EIU32.0

The EIU32.0 communication interface enables the UMC100.3 Universal Motor Controller to work on an EtherNet/IP™ network. It fulfills the ODVA CIP (Common Industrial Protocol) and Ethernet/IP™specifications and is approved with the ODVA Ethernet/IP™ Conformance Test CT14.

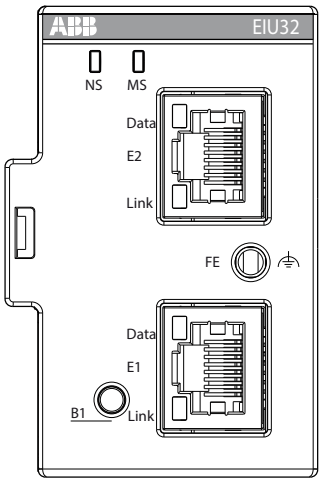
This ensures proper functioning on EtherNet/IP™ networks.

The EIU32.0 can be used in two different ways depending on the application of the Universal Motor Controller UMC100.3:

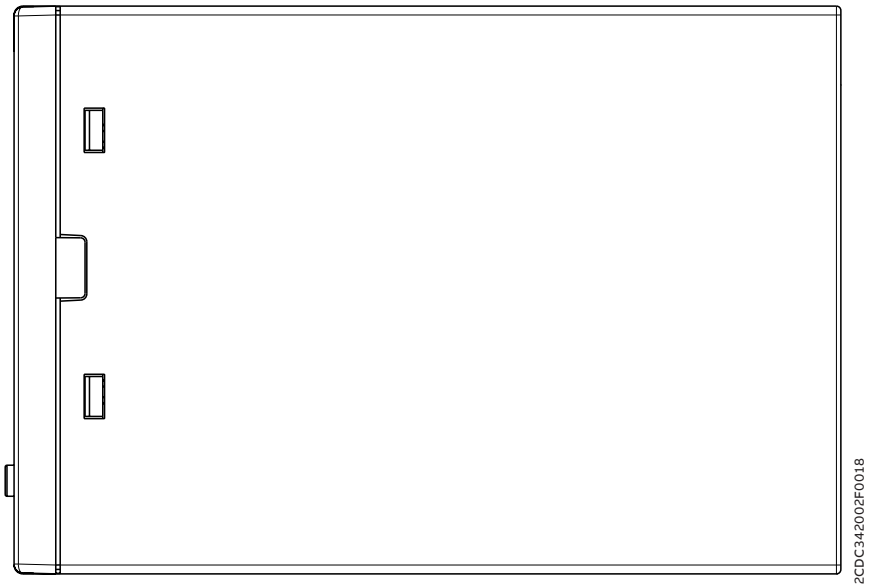
- UMC100.3 fix-mounted in the MCC (Motor Control Center)
  In this case the EIU32.0 communication interface is mounted directly on the UMC100.3 motor controller. It is supplied by the motor controller and is mechanically locked to it.
- UMC100.3 used in a drawer
  In common withdrawable applications, the EIU32.0 can also be mounted in the cable chamber of the MCC, outside the drawer. Instead of wiring two Ethernet cables inside the drawer, just one simple 5-wire cable is required for the connection. This simplifies wiring and offers some additional advantages.

Two RJ45 Ethernet ports with an integrated switch allow easy integration in all kinds of network topologies and also support ring structures. Device Level Ring (DLR) functionality ensures effective communication even in the event of of a ring interuption. LEDs on the front for Module Status (MS), Network Status (NS) and Ethernet communication make device status identification fast.

See chapter "Technical Data / LED Status Indication" for detailed information.



MS	LED module status
NS	LED network status
E2	RJ45 Ethernet port 2
FE	Functional earth connector
E1	RJ45 Ethernet port 1
B1	Button



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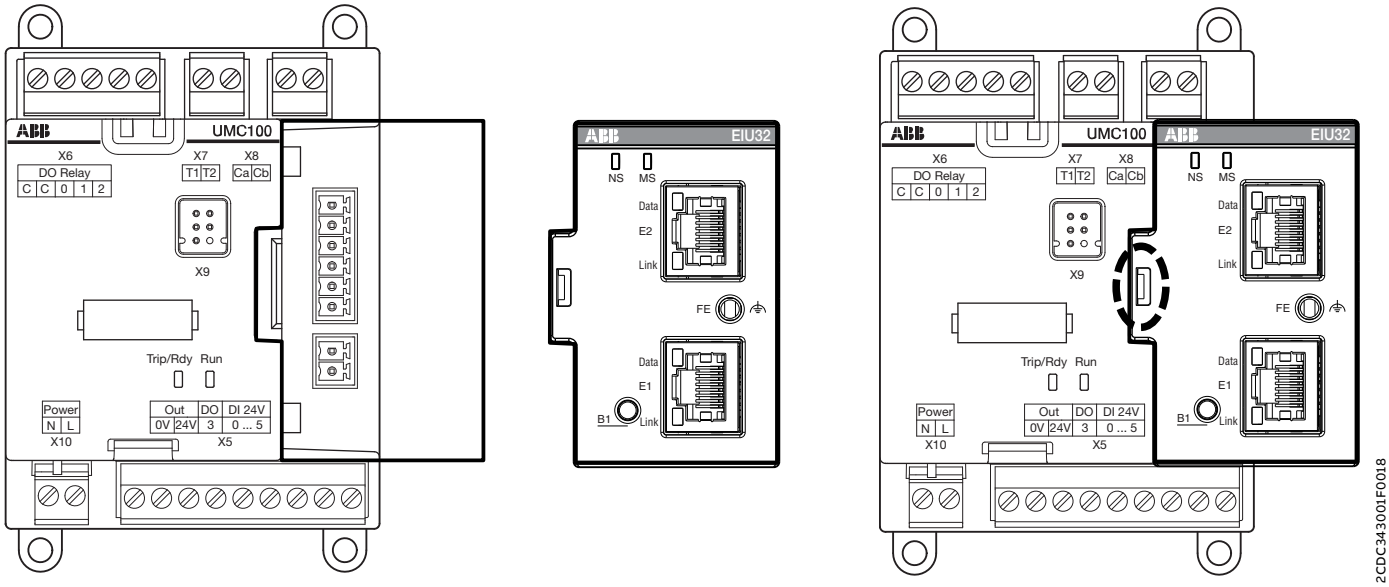
01 Side and top view of the EIU32.0

Installation

Mounting and dismounting
Depending on the application, the EtherNet/IP™ communication interface EIU32.0 can be mounted either directly on the UMC100.3 or remotely from the UMC100.3 using the single mounting kit (SMK3.0).

Mounting the EIU32.0 direct on a UMC100.3
When the module is installed directly on the UMC100.3, the UMC100.3 with EIU32.0 looks and behaves like a device with an integrated EtherNet/IP™ communication. No additional accessories are required.

In this case the EIU32.0 is supplied by the UMC100.3, and it is mechanically locked.



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02 Mounting EIU32.0 direct on a UMC100.3

Mounting the EIU32.0 remotely from the UMC100.3
The EIU32.0 can be mounted separately by using the Single Mounting Kit (SMK3.0) adapter. This is recommended in drawer applications. The EIU32.0 communication interface is mounted in the cable chamber of the MCC and the connection to the UMC100.3 is done by simple cables, avoiding Ethernet cabling inside the drawer.

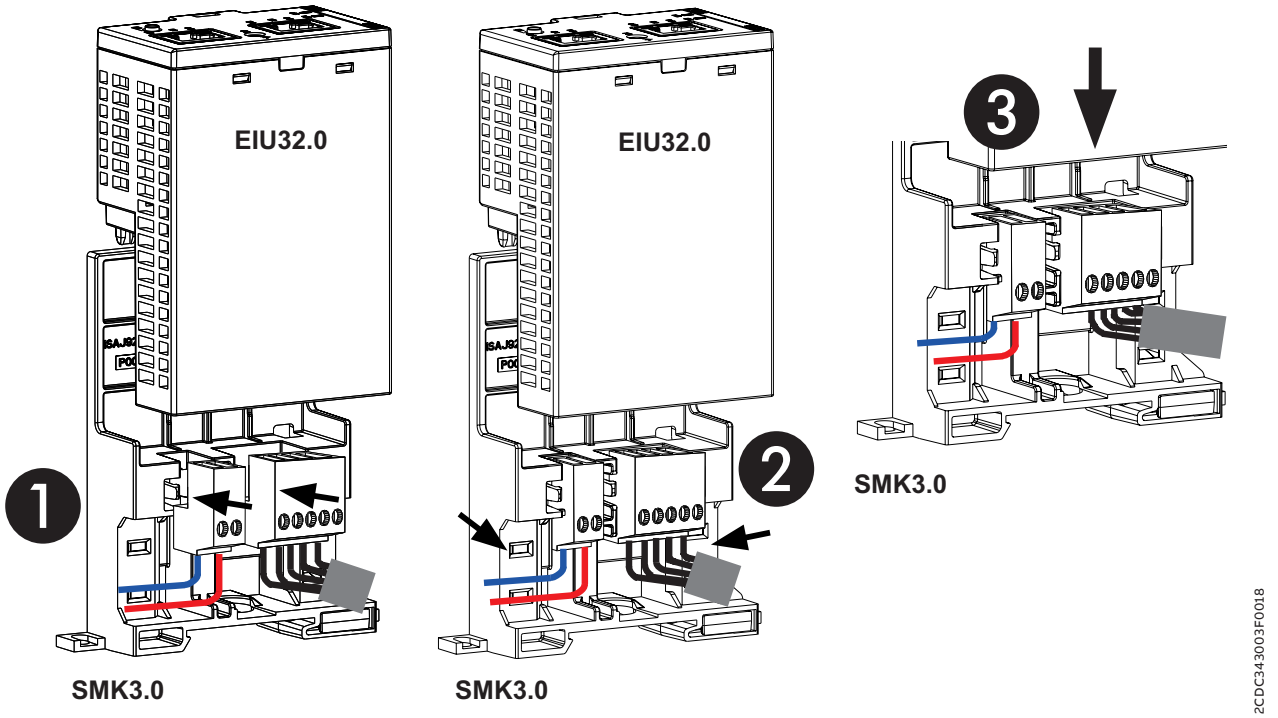
In this case the EIU32.0 must be supplied separately to keep it working even if the drawer is removed. The SMK3.0 adapter is delivered including a terminal block for connection to the 24 V DC supply. The connection to the drawer is done by a cable CDP24.150 (accessories) which fits directly into the SMK3.0 adapter. If vibrations are expected, it is recommended to fix the SMK3.0 adapter with end stops on the DIN rail or to fix it with screws.

All connectors are also available as spare parts to create individual cable connections. See chapter, Ordering Data.
In this case the total cable length (inside + outside the drawer) should not exceed 3 m

Step 1:
Snap in the communication and supply connectors

Step 2:
Fix cables with cable ties

Step 3:
Move down the EIU32.0 until snapped in



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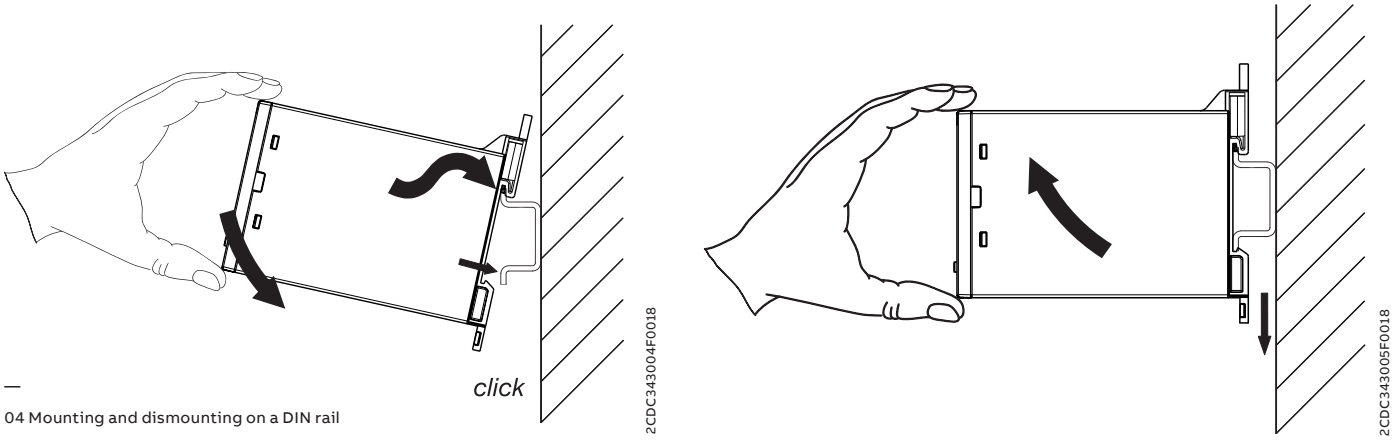
03 Mounting EIU32.0 on a SMK3.0 adapter



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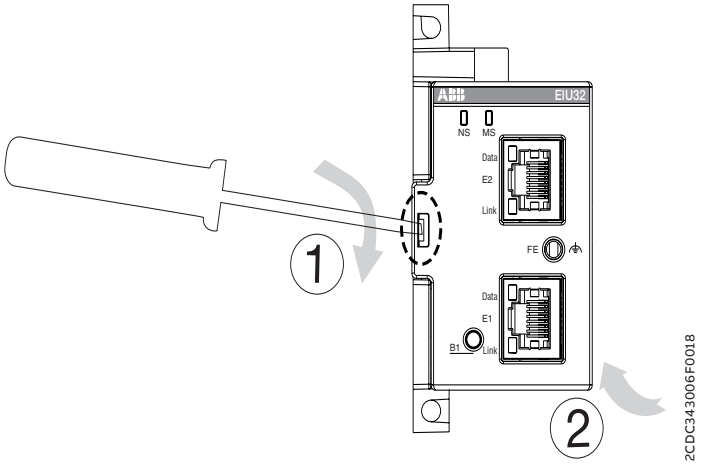
04 Mounting and dismounting on a DIN rail

Dismounting EIU32.0
Follow the procedure shown below to dismount the EIU32.0 from UMC100.3 or SMK3.0. Unlock with a screwdriver and detach EIU32.0



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05 Dismounting EIU32.0

Electrical Installation

General
Locate the communication cables as far away from the motor cables as possible. Avoid parallel runs. Use bushings at cable entries.

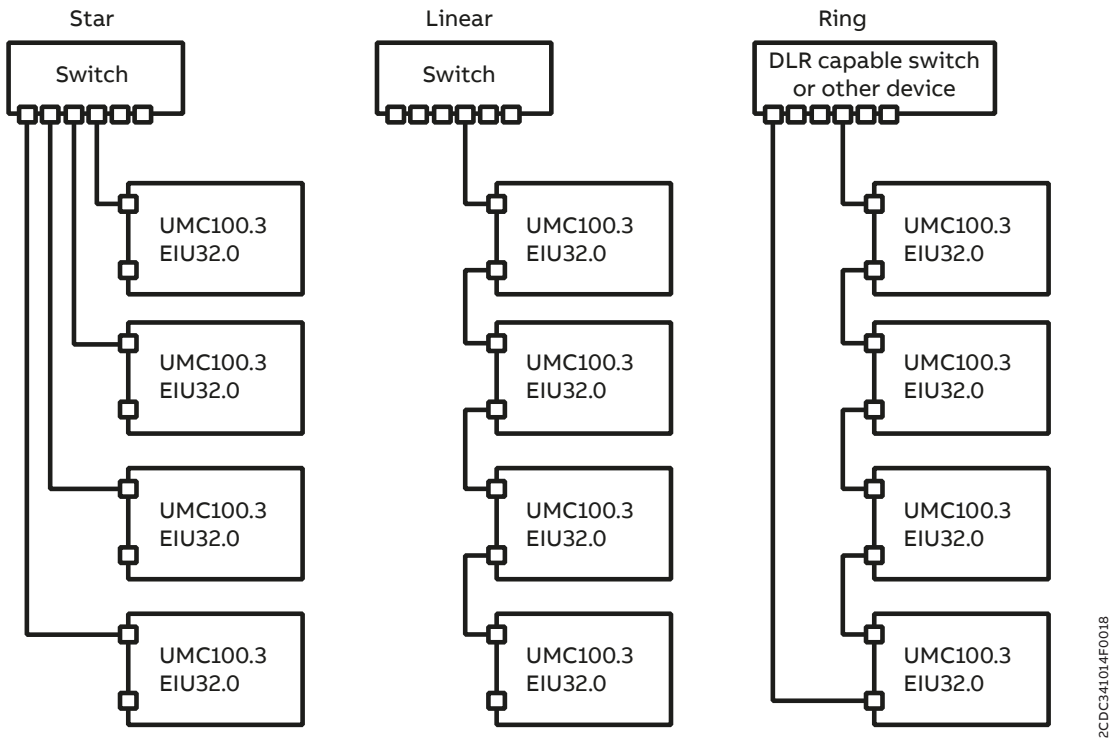
Ethernet connection
The network cable is connected to the RJ45 connectors on the EIU32.0 interface. Standard CAT5e or higher, FTP or STP cables can be used. Cables and switches need to be suitable for use in industrial environments. Functions like DLR (Device Level Ring) require the use of switches or other devices that support this functionality.

Functional Earth
There is a special connector FE provided for shielding the RJ45 housings. A wire with 14…18 AWG / 1…2.5 mm^2 (recommended 1.5 mm^2) should be connected to functional earth to improve shielding. The wire can be pushed in without the use of a special tool.

Power supply connection
The EIU32.0 needs to be supplied by 24 V DC if it is remote-mounted on an SMK3.0 Single Mounting Kit.

Ethernet communication

Topologies
The EIU32.0 supports all kinds of network topologies.



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06 Different topologies that can be realized with the EIU32.0
For the ring structure a special node with DLR supervisor capability must be used

Star topology
In star topology just one RJ45 cable must be connected between the EIU32.0 and a switch. An unmanaged standard switch can be used in this operation mode. The advantages of a star topology is that it is a simple solution, and devices with 10 and 100 Mbit/s can be connected.

Linear topology
In linear or bus topology the internal two-port switch of the EIU32.0 is used to connect EIU32.0 to EIU32.0. Only the first EIU32.0 in the chain needs to be connected to a switch or directly to an EtherNet/IP™ scanner. The second Ethernet port of the last EIU32.0 remains unconnected. This topology is simple and cost-effective due to the use of integrated switches, and it also requires no configuration. Its disadvantage is that any break of the cable disconnects any devices behind the break. In practice, star and linear topologies can also be mixed.

Device Level Ring (DLR)
EtherNet/IP™ includes the special Device Level Ring (DLR) protocol. It is a single-fault tolerant network protocol for automation purposes that identifies breaks in the Ethernet ring and rapidly reconfigures the ring in the event of a fault. EIU32.0 supports DLR technology as a ring node.

A DLR network consists of:

Supervisor Node	Active Supervisor Node Back-up Supervisor Node	controlling the network ring (optional)
Ring Node	Devices such as EIU32.0 with a minimum of two embedded switch ports supporting DLR IO-modules, controllers, and others are also considered as ring nodes Some can also work as a supervisor node	
TAP device	For connecting devices that do not support DLR technology (optional)	

A minimum of one device in the network needs to work as the ring supervisor, protecting the integrity of the ring and reconfiguring it in the event of a fault. The ring supervisor can be a PLC, DCS, IO-module, switch or any other device supporting this functionality.
In a configurable interval, the ring supervisor sends beacons in both ring directions through the ring nodes. Faults are detected by interrrupted beacon traffic and a link or node failure is detected by adjacent nodes. After detecting a fault, the connection to the nodes will be reconfigured in the ring recovery process. The topology then will be two linear lines instead of a ring structure.

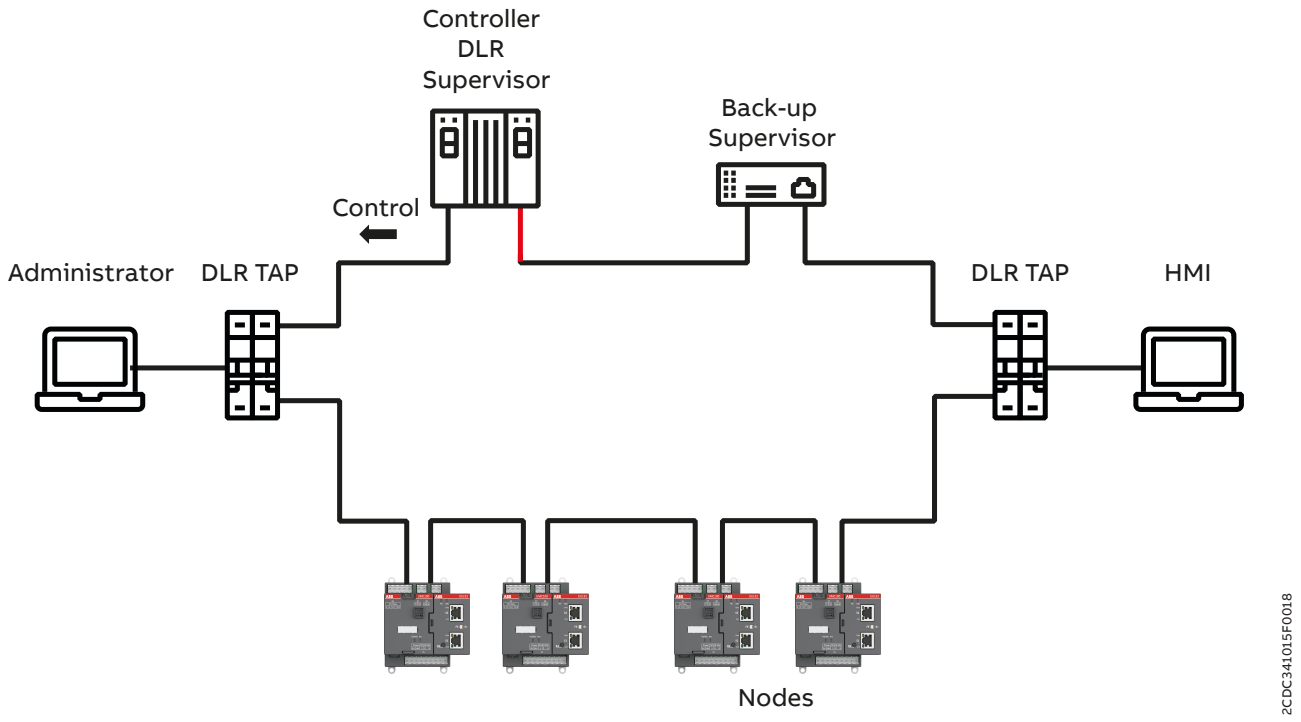
Ring recovery is fast: using the default beacon interval of 400 µs and 50 beacon-based nodes, the ring recovery time will be around 3 ms.

Recommendations

- Minimum one device in a DLR should work as a back-up ring supervisor
- To keep the ring recovery time small, a ring should have less than fifty nodes
- With a larger number of nodes the risk of faults increases, including double faults with the risk of losing a segment of the ring

For more information about system design, wiring and other topics please check www.odva.org

DLR functionality



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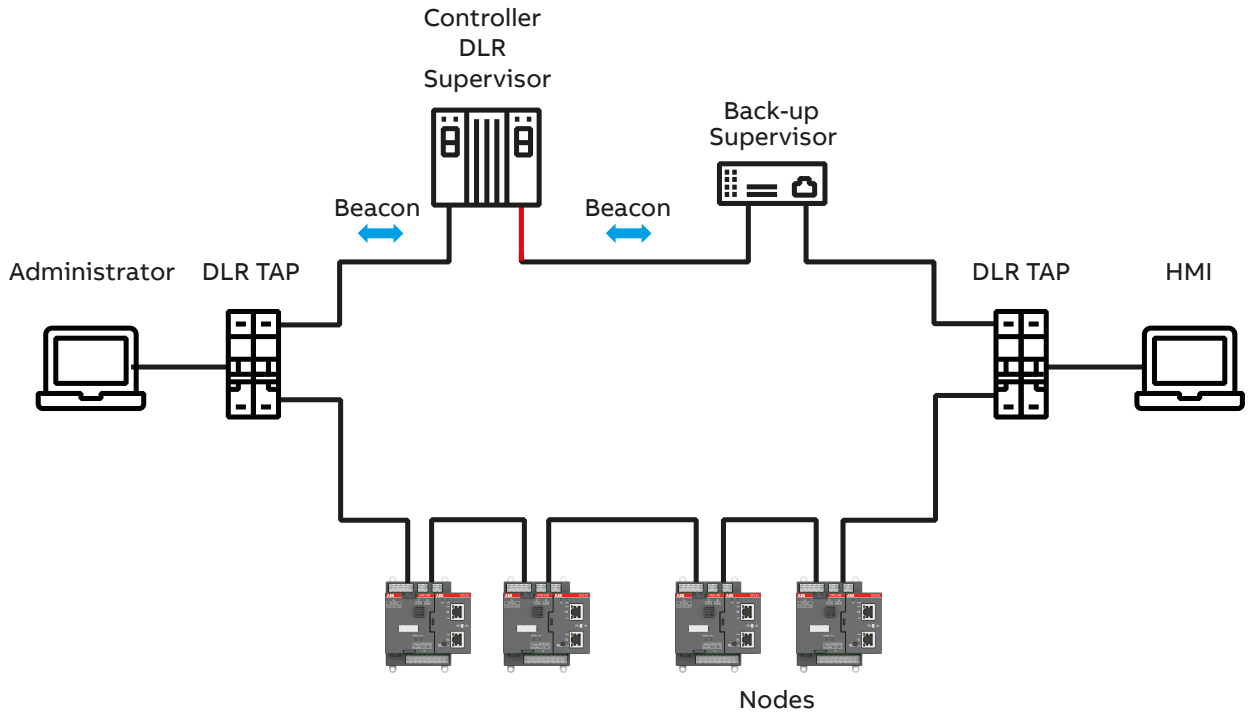
07 Example for a DLR network:
– Ring supervisor blocks one port for control traffic
– All control traffic goes via just one port of the ring supervisor



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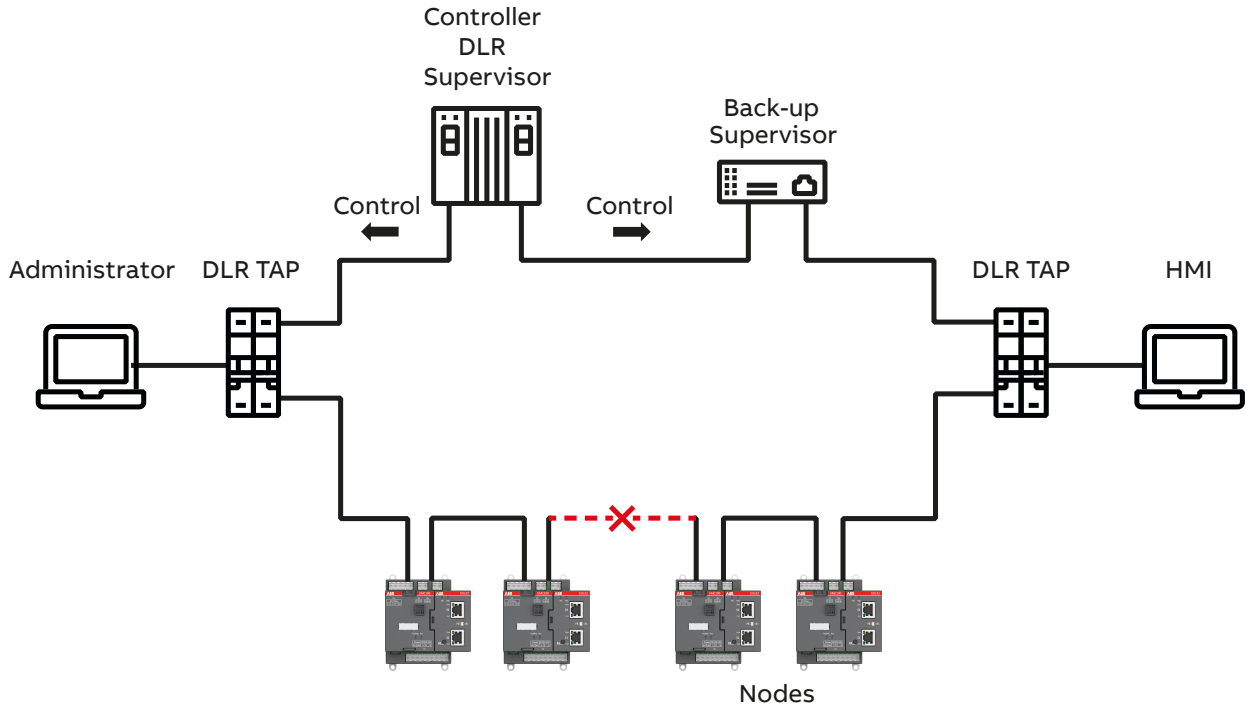
08 In configurable time intervals beacon frames are sent out on both ports of the DLR supervisor to detect a break in the ring



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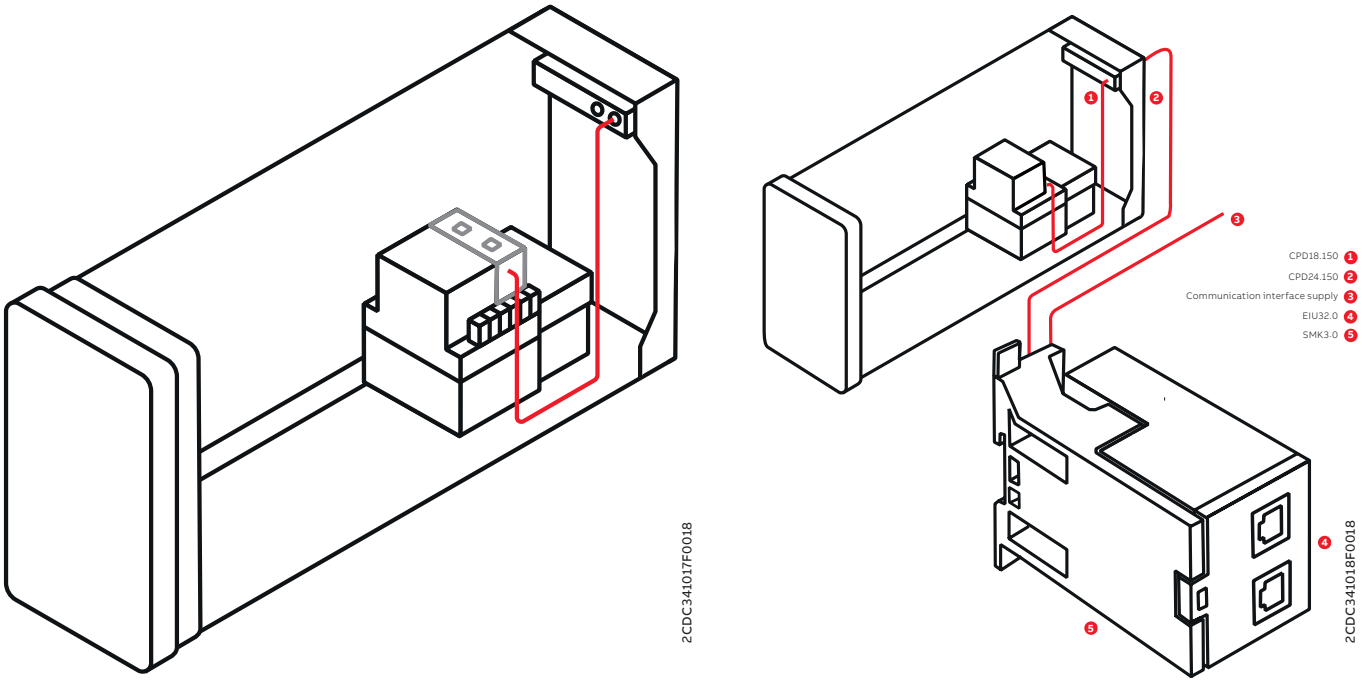
09 After a failure is identified, the ring supervisor unblocks one port. Control traffic is then via two ports

Ring topology in drawout systems

Drawout systems are used where the highest availability and shortest downtimes are required. In such systems all the devices required for a single motor feeder are installed into a drawer to ensure fast and easy exchange in the event of a failure.

In such applications the EIU32.0 has the advantage that it can be mounted outside the drawer in the cable chamber of the MCC (It could of course also be mounted directly on an UMC100.3 inside a drawer, without the following benefits). As a consequence, the Ethernet cables stay outside the drawer, and the connection to the UMC100.3 motor controller inside the drawer is done by simple 5-wire cables.



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10 Withdrawable application

There are many benefits to using the EIU32.0 in this way:

- No need to connect two Ethernet cables with many thin wires to multiple drawer contacts
- Taking out one drawer does not open the Ethernet communication line
- No missing IP address – no network reconfiguration required
- No by-pass switches for each drawer required (as sometimes recommended)
- Taking out several drawers does not result in the loss of a segment of the ring

Figure 11 shows a situation where devices have integrated Ethernet ports and two drawers are withdrawn. Devices between these two drawers can no longer be reached. The DLR redundancy function also does not help in this situation and cannot solve this problem.

The solution with EIU32.0 is shown on the left. The EIU32.0 is not mounted inside the drawer but is installed in the cable compartment where the switch and other central equipment are installed. The Ethernet cable is not connected to the UMC100.3 mounted inside the drawer. There is just a simple 5-wire connection between EIU32.0 and the UMC100.3 in the drawer.

No special measures are required if one or more drawers are withdrawn. A removed drawer cannot disturb the Ethernet communication in any way.

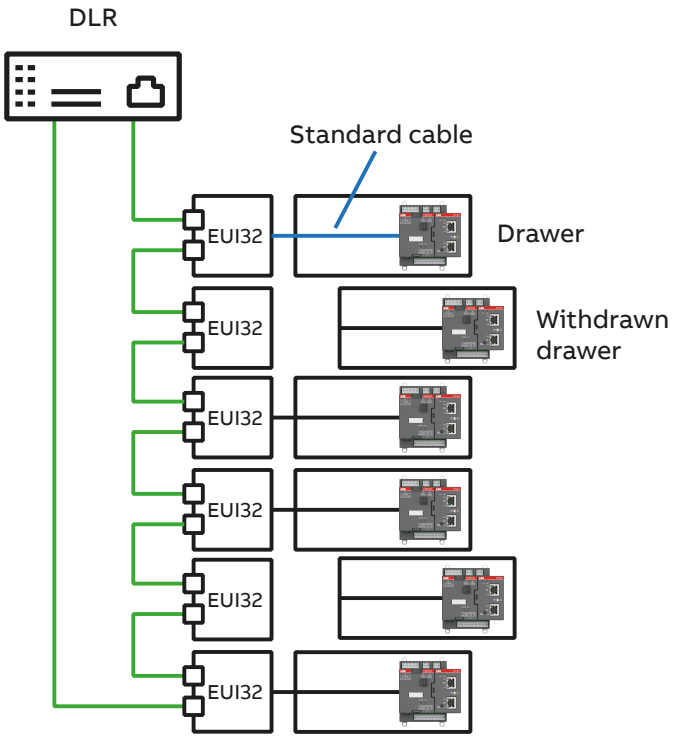
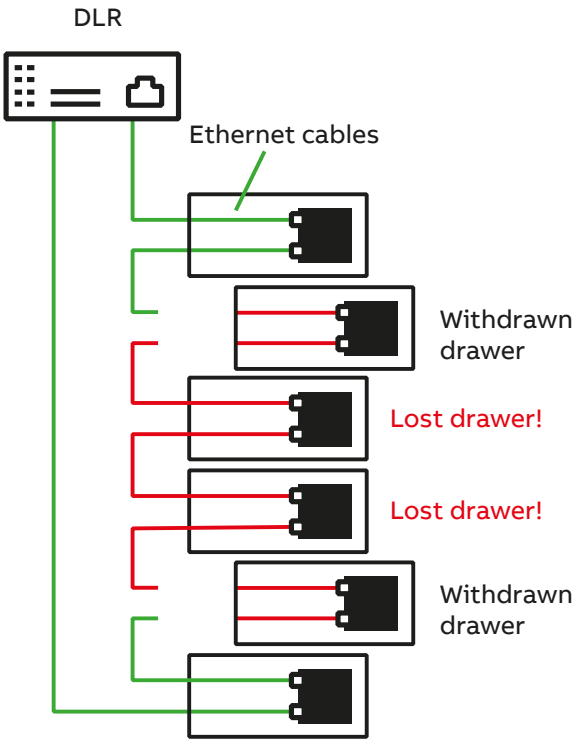


ABB solution
EtherNet/IP™ module mounted outside the drawer
Several drawers can be taken out at the same time



Competitor solution
Motor controller with 2 integrated ports
Taking out 2 drawers can result in loosing several drawers

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11 Difference between UMC100.3 with EIU32.0 and other motor controllers

Control system integration

EDS description
An Electronic Data Sheet (EDS) is an ASCII text file that describes the features of an EtherNet/IP™ device and is used by software tools for device and network connection configuration. The latest EDS file can always be downloaded from the ABB website:
www.abb.com
→ Products → Low Voltage Products and Systems → Automation, control and protection → Motor controllers
→ Universal Motor Controllers → Ethernet Interfaces

The EDS file supports the following devices at the time of writing this manual::
- Universal Motor Controller UMC100.3

Usage with multiple EtherNet/IP™ clients
The EIU32.0 allows concurrent communication with up to four EtherNet/IP™ clients (eg PLCs). Please note the following points:
- Only one of the connected devices can be the Exclusive Owner.
- All other connections have to be Listen-Only or Input-Only.
- In case several EIU32.0 are connected in a line, each of the devices can have a different Exclusive Owner.
- All connections that shall be used in parallel must be configured as "multicast connections".
- All connections that shall be used in parallel must be configured with the same RPI (Requested Packet Interval).

Network configuration
After inserting the EDS file into the master system and adding one or several EIU32.0 to the project, the implicit connection(s) have to be configured:
- Exclusive Owner: Only one connected master can be configured as Exclusive Owner. It is a Class 0 or 1 bidirectional connection to input and output data, where the data is controlled by this Scanner.
  The EIU32-0 supports four different types of Exclusive Owner connections:
  1. UMC100.3 Output and Input data
  2. UMC100.3 Output data and Input data including diagnosis information
  3. UMC100.3 Output and Input data plus additional Configuration Assembly
  4. UMC100.3 Output data and Input data including Diagnosis information plus additional Configuration Assembly
- Input Only: Class 0 or 1 Connection to UMC100.3 Input connection data.
  The Scanner receives input data from the target device and produces a heartbeat to the target device. There is no output data.
- Listen Only: Class 0 or 1 Connection to UMC100.3 Input connection data.
  The Scanner receives input data from the target device and produces a heartbeat to the target device. There is no output data. A Listen-Only Connection can only be attached to an existing Exclusive Owner or Input-Only Connection. If this underlying connection closes, then the Listen-Only connection will also be closed or timed out.

EIU32.0 Configuration
To enable communication through the Ethernet network, the EIU32.0 needs a valid IP address. There are three different IP-address modes. The setting is done via the connected UMC100.3:

1. DHCP: In this mode the EIU32.0 will receive its IP address from a DHCP server inside the network (Default mode)
2. Basic: In Basic setting, the first three octets are fixed to 192.168.1.xxx. The last octet will be automatically set to the bus address of the UMC100.3
3. User Defined: This setting allows all four octets to be set directly by the user

If the connected UMC100.3 is configured to perform an Address Check before starting bus communication, the bus address of the UMC100.3 must always match the last octet of the IP address.

The intention of this requirement is to prevent the incorrect placement of drawers in a withdrawable system. The configuration of the EIU32.0 needs to be done via the connected UMC100.3, using the operator panel UMC100-PAN:

Enter the Menu → Communication → Ethernet and set the following parameters:

Parameter name	Default setting	Allowed range
IP Setting Mode	DHCP	DHCP / Basic / User defined
IP address octet 1	192	0 – 255
IP address octet 2	168	0 – 255
IP address octet 3	1	0 – 255
IP address octet 4	UMC address	0 – 255
Subnet mask octet 1	255	0 – 255
Subnet mask octet 2	255	0 – 255
Subnet mask octet 3	255	0 – 255
Subnet mask octet 4	0	0 – 255
Gateway octet 1	0	0 – 255
Gateway octet 2	0	0 – 255
Gateway octet 3	0	0 – 255
Gateway octet 4	0	0 – 255
Enable webserver	Off	On / Off

When the IP setting mode is set to “Basic”, you can also change octets 1 – 3 of the IP-address.
This setting will then be ignored and set back to the above mentioned default values!

Integration into special control systems
The integration in different control systems DCS and PLCs is described in separate documents. Connect the UMC100.3 to an Allen-Bradley PLC over EtherNet/IP™ using the EIU32.0.

ABB object dictionary

The EIU32.0 object dictionary consists of the following object classes

Class Code	Object	Description
0x01	Identity	Identification and general information about the device
0x02	Message Router	Messaging connection point
0x04	Assembly	Collection of I/O data
0x06	Connection Manager	Managing both I/ O and Explicit Messaging Connections
0x70	ABB EIU32.0 Parameter	Access to the configuration related data of EIU32.0.
0x71	ABB Device Byte Parameter	Access to the byte-sized parameters and data of the connected device
0x72	ABB Device Word Parameter	Access to the word-sized parameters and data of the connected device
0x73	ABB Device DWord Parameter	Access to the Dword-sized parameters and data of the connected device
0x74	ABB Device 8-Byte Parameter	Access to the 8-byte-sized parameters and data of the connected device
0xF5	TCP/IP Interface	Configuration of the device's TCP/IP network interface
0xF6	Ethernet Link	Link-specific status information for the Ethernet communications interface
0x47	DLR	Status information for DLR protocol
0x48	Quality of Service	Configuration of QoS-related behaviour

Identity Object (0x01)

The Identity Object provides identification and general information about the device. The first and only instance identifies the whole device. It is used for electronic keying and by applications wishing to determine what devices are on the network.

Class attributes

Attribute	Access	Name	Type	Value
1	Get	Revision	UINT	1
2	Get	Max. Instance	UINT	1
6	Get	Max. Class Attribute	UNIT	7
7	Get	Max. Instance Attribute	UNIT	9

Instance attributes

Attribute	Access	Name	Type	Value
1	Get	Vendor ID	UNIT	760
2	Get	Device Type	UNIT	12 Communications Adapter
3	Get	Product Code	UNIT	Related to connected device 11201 = UMC100.3
4	Get	Revision Major Revision Minor Revision	STRUCT of USINT USINT	
5	Get	Status	WORD	Summary status Bit 0 – 0=not owned; 1=owned by master Bit 2 – 0=Factory Defaulted; 1=Configured Bits 4-7 – Extended Status Bit 8 – Minor Recoverable fault Bit 9 – Minor Unrecoverable fault Bit 10 – Major Recoverable fault Bit 11 – Major Unrecoverable fault
6	Get	Serial Number	UDINT	Serial number
7	Get	Product name	SHORT_STRING	"EIU32.0 for UMC"

Attribute	Access	Name	Type	Value
8	Get	State	USINT	Present state of the device 0 = Nonexistent 1 = Device Self Testing 2 = Standby 3 = Operational 4 = Major Recoverable Fault 5 = Major Unrecoverable Fault 6 – 254 = Reserved 255 = Default Value
9	Get	Configuration Consistency Value	UINT	

—

Common services

Service code	Class	Instance	Service name
1 (0x01)	Yes	Yes	Get_Attribute_All
14 (0x0E)	Yes	Yes	Get_Attribute_Single
5 (0x05)	Yes	Yes	Reset Type 0 and Type 1 are supported

Message Router Object (0x02)

No class or instance attributes are supported. The message router object exists only to route explicit messages to other objects.

Assembly Object (0x04)

The Assembly Object binds attributes of multiple objects, which enables each object's data to be sent or received over a single connection. Assembly objects can be used to bind input data or output data. The terms "input" and "output" are defined from the network's point of view. An input sends (produces) data on the network, and an output receives (consumes) data from the network.

Only static assemblies are supported.

—

Class attributes

Attribute	Access	Name	Type	Value
1	Get	Revision	UINT	1

—

Instance attributes

Attribute	Access	Name	Type	Value
3	Get/Set	Data	ARRAY of BYTE	Input/Output data depending on the instances number
4	Get	Size	UINT	Number of bytes in Attribute 3

—

Common services

Service code	Class	Instance	Service name
14 (0x0E)	No	Yes	Get_Attribute_Single
16 (0x10)	No	Yes	Set_Attribute_Single

—

Assembly instances

Instance	Type	Description
0x64	Consuming	Output Data, for details refer to UMC100.3 manual
0x65	Producing	Input Data, for details refer to UMC100.3 manual
0x66	Producing	Input and Diagnostic Data, for details refer to UMC100.3 manual

Connection Manager Object (0x06)

The Connection Manager Class allocates and manages the internal resources associated with both I/ O and Explicit Messaging Connections.

—

Class attributes

Attribute	Access	Name	Type	Value
1	Get	Revision	UINT	1
2	Get	Max. Instance	UINT	1

—

Common services

Service code	Class	Instance	Service name
14 (0x0E)	Yes	Yes	Get_Attribute_Single

ABB EIU32.0 Parameter Object (0x70)

The ABB EIU32.0 Parameter Object provides access to the configuration related data of EIU32.0.

—

Class attributes

Attribute	Access	Name	Type	Value
1	Get	Revision	UINT	1
2	Get	Number of Instances	UINT	1

One instance is created which contains all EIU32.0 parameters.

—

Instance attributes

Attribute	Access	Name	Type	Value
1	Get	Product code of the connected device	UINT	Product code
2	Get	Actual address of the connected device	UINT	Address
3	Get	FBP Port communication status	USINT	Communication Status, see table below
4	Get/Set	Number of connection losses between EIU32.0 and device	UINT	Connection Losses

—

Meaning of communication status

Code	Error Type	Description
0	Wait For Module	No communication between EIU32.0 and connected device established yet
1	OK	EIU32.0 is configured and working correctly
2	Communication Fault on FBP Port	Communication to connected device is lost
3	Unsupported Device Type	Device connected to EIU32.0 is not supported
4	Address Mismatch	Config-Fault
5	Product Code Mismatch	Config-Fault
6	IO-Size Mismatch	Config-Fault
7	IO Size too long	Config-Fault
8	Diagnosis too long	Config-Fault
9	Parameter Block too long	Config-Fault

—

Common services

Service code	Class	Instance	Service name
14 (0x0E)	No	Yes	Get_Attribute_Single
16 (0x10)	No	Yes	Set_Attribute_Single

ABB Device Byte Parameter Object (0x71)

The ABB Device Byte Parameter Object provides access to the byte-sized parameters and other data of the connected UMC100.3. These parameters and data of the connected UMC100.3 have to be fetched/written from or to this device via explicit messaging.

—

Class attributes

Attribute	Access	Name	Type	Value
1	Get	Revision	UINT	1
2	Get	Number of Instances	UINT	256
3	Get	Number of all accessible UMC100.3 parameters (no matter which size)	UINT	224

—

Instance attributes

Attribute	Access	Name	Type	Value
1..n	Get/Set	Parameter / Data of connected UMC100.3	UINT	Byte Data Value

The device specific access path to UMC100.3 data/parameters is described in a separate document.

—

Common services

Service code	Class	Instance	Service name
14 (0x0E)	Yes	Yes	Get_Attribute_Single
16 (0x10)	No	Yes	Set_Attribute_Single

ABB Device Word Parameter Object (0x72)

The ABB Device Word Parameter Object provides access to the word-sized parameters and other data of the connected UMC100.3. These parameters and data of the connected UMC100.3 have to be fetched/written from or to this device via explicit messaging.

—

Class attributes

Attribute	Access	Name	Type	Value
1	Get	Revision	UINT	1
2	Get	Number of Instances	UINT	256
3	Get	Number of all accessible UMC100.3 parameters (no matter which size)	UINT	224

—

Instance attributes

Attribute	Access	Name	Type	Value
1..n	Get/Set	Parameter / Data of connected UMC100.3	UINT	2 Byte Data Value

The device specific access path to UMC100.3 data/parameters is described in a separate document. Link

—

Common services

Service Code	Class	Instance	Service name
14 (0x0E)	Yes	Yes	Get_Attribute_Single
16 (0x10)	No	Yes	Set_Attribute_Single

ABB Device DWord Parameter Object (0x73)

The ABB Device DWord Parameter Object provides access to the DWord-sized parameters and other data of the connected UMC100.3. These parameters and data of the connected UMC100.3 have to be fetched/written from or to this device via explicit messaging.

—

Class attributes

Attribute	Access	Name	Type	Value
1	Get	Revision	UINT	1
2	Get	Number of Instances	UINT	256
3	Get	Number of all accessible UMC100.3 parameters (no matter which size)	UINT	224

—

Instance attributes

Attribute	Access	Name	Type	Value
1..n	Get/Set	Parameter / Data of connected UMC100.3	UDINT	4 Byte Data Value

The device specific access path to UMC100.3 data/parameters is described in a separate document.

—

Common services

Service code	Class	Instance	Service name
14 (0x0E)	Yes	Yes	Get_Attribute_Single
16 (0x10)	No	Yes	Set_Attribute_Single

ABB Device 8-Byte Parameter Object (0x74)

The ABB Device 8-Byte Parameter Object provides access to the 8-Byte-sized parameters and other data from the connected UMC100.3. These parameters and data from the connected UMC100.3 have to be fetched/written from or to this device via explicit messaging.

—

Class attributes

Attribute	Access	Name	Type	Value
1	Get	Revision	UINT	1
2	Get	Number of Instances	UINT	256
3	Get	Number of all accessible UMC100.3 parameters (no matter which size)	UINT	224

—

Instance attributes

Attribute	Access	Name	Type	Value
1..n	Get/Set	Parameter / Data of connected UMC100.3	USINT[8]	8 Byte Data Value

The device specific access path to UMC100.3 data/parameters is described in a separate document.

—

Common services

Service code	Class	Instance	Service name
14 (0x0E)	Yes	Yes	Get_Attribute_Single
16 (0x10)	No	Yes	Set_Attribute_Single

TCP/IP Interface Object (0xF5)

The TCP/IP Interface Object provides the mechanism to configure the TCP/IP network interface of EIU32.0. Cconfigurable items include the device's IP Address, Network Mask, and Gateway Address. The TCP/IP interface configuration is done by selecting the required settings via the UMC100.3 user panel. (For details see chapter EIU32.0 Configuration) The default IP setting mode is DHCP. The EIU32.0 is capable of Address Conflict Detection (ACD). Quick Connect is not supported by EIU32.0.

—

Class attributes

Attribute	Access	Name	Type	Value
1	Get	Revision	UINT	4
2	Get	Max. Instance	UINT	1

—

Instance attributes

Attribute	Access	Name	Type	Value
1	Get	Status	DWORD	Bit 0..3 = Interface Configuration Status Bit 4 = Mcast Pending Bit 5 = Interface Configuration Pending Bit 6 = AcdStatus Bit 7 = Acd Fault Bit 8..31 reserved
2	Get	Configuration Capability	DWORD	Bit 0 = BOOTP Client Bit 1 = DNS Client Bit 2 = DHCP Client Bit 3 = DHCP-DNS Update (not supported) Bit 4 = Configuration settable Bit 5 = Hardware Configurable Bit 6 = Interface Configuration Change requires Reset Bit 7 = AcdCapable Bit 8..31 reserved
3	Get	Configuration Control	DWORD	Bit 0..3 Configuration Method (0 = static, 1 = BOOTP, 2 = DHCP) Bit 4 = DNS Enable (not supported) Bit 5..31 reserved
4	Get	Physical Link Object Path Size Path	STRUCT of UINT Padded EPATH	Path to physical link object Size of Path Logical segments identifying phys. link
5	Get	Interface Configuration IP Address Network Mask Gateway Address Name Server Name Server 2 Domain Name	STRUCT of UDINT UDINT UDIdNT UDINT UDINT STRING	The device´s IP address The device´s network mask Default gateway address Primary name server Secondary name server Default domain name
6	Get/Set	Host Name	STRING	The device's host name
10	Get/Set	SelectAcd	BOOL	0 = Disable ACD 1 = Enable ACD (default)
11	Get/Set	LastConflictDetected AcdActivity Remote MAC ArpPdu	STRUCT of USINT ARRAY of 6 USINT ARRAY of 28 USINT	 State of ACD Acitivity, default = 0 MAC address of remote node from the ARP PDU in which a conflict was detected Copy of the raw ARP PDU in which a conflict was detected.
13	Get/Set	Encapsulation Inactivity Timeout	UINT	Number of seconds of inactivity before TCP connection is closed (1..3600, default = 120)

—

Common services

Service code	Class	Instance	Service name
1 (0x01)	No	Yes	Get_Attribute_All
14 (0x0E)	Yes	Yes	Get_Attribute_Single
16 (0x10)	No	Yes	Set_Attribute_Single

Ethernet Link Object (0xF6)

The Ethernet Link Object maintains link-specific status information for the physical Ethernet communications interface. As EIU32.0 includes a 2-port switch, it holds two instances of this object. Instance 1 is assigned to Ethernet port 1 (“E1”) and instance 2 is assigned to Ethernet port 2 (“E2”). The EIU32.0 is capable of 10 and 100 Mbps in Half and Full Duplex mode. It is capable of auto-negotiation and of auto-MDIX.

—

Class attributes

Attribute	Access	Name	Type	Value
1	Get	Revision	UINT	4
2	Get	Max. Instance	UINT	2
3	Get	Number of Instances	UINT	2

—

Instance attributes

Attribute	Access	Name	Type	Value
1	Get	Interface Speed	UDINT	Speed in Mbps (10 or 100 Mbps)
2	Get	Interface Flags	DWORD	Bit 0 = Link Status Bit 1 = Half (0) or Full (1) Duplex Bit 2..4 = Negotiation Status (0) in progress (1) failed, using default (10 HD) (2) failed, but detected speed (HD) (3) successfully negotiated (4) not attempted, speed/duplex forced Bit 5 = Manual Setting Requires Reset (1) Bit 6 = Local Hardware Fault (0) Bit 7..31 Reserved
3	Get	Physical Address	ARRAY of 6 USINT	MAC Address
4	Get	Interface Counters	STRUCT of 11 UDINT	For details refer to Vol 2: EtherNet/IP™ Adaptation of CIP
5	Get	Media Counters	STRUCT of 12 UDINT	For details refer to Vol 2: EtherNet/IP™ Adaptation of CIP
6	Get/Set	Interface Control Control Bits Forced Interface Speed	STRUCT of WORD UINT	Configuration for physical interface Bit 0 = Auto-negotiate, Bit 1 = Forced Duplex 10 or 100 Mbps
7	Get	Interface Type	USINT	0 = Unknown interface type 1 = Internal to the device 2 = Twisted pair 3 = Optical fiber 4..255 reserved
8	Get	Interface State	USINT	0 = Unknown interface state 1 = The interface is enabled and is ready to send and receive data 2 = The interface is disabled 3 = The interface is testing 4-255 reserved..
9	Get/Set	Admin State	USINT	0 = Reserved 1 = Enable the interface 2 = Disable the interface
10	Get	Interface Label	SHORT_STRING	E1, E2 for Ethernet interfaces 1 and 2
11	Get	Interface Capability	STRUCT	Bit 0: Manual Setting Requires Reset (1) Bit 1: Auto-negotiate (1 = supported) Bit 2: Auto-MDIX (1 = supported) Bit 3: Manual Speed/Duplex setting (1 = supported) Bit 4..31 reserved

—

Common services

Service code	Class	Instance	Service name
1 (0x01)	No	Yes	Get_Attribute_All
14 (0x0E)	Yes	Yes	Get_Attribute_Single
16 (0x10)	No	Yes	Set_Attribute_Singe

DLR Object (0x47)

The Device Level Ring (DLR) Object provides status information interface for the DLR protocol. The DLR protocol is a layer 2 protocol that enables the use of an Ethernet ring topology.

—

Class attributes

Attribute	Access	Name	Type	Value
1	Get	Revision	UINT	3

—

Instance attributes

Attribute	Access	Name	Type	Value
1	Get	Network Topology	USINT	0 = Linear topology 1 = Ring topology
2	Get	Network Status	USINT	0 = Normal 1 = Ring Fault 2 = Unexpected Loop Detected 3 = Partial Network Fault 4 = Rapid Fault/Restore Cycle
10	Get	Active Supervisor Address	STRUCT of UDINT ARRAY of 6 USINT	 Supervisor IP Address Supervisor MAC Address
12	Get	Capability Flags	DWORD	Bit 0 = Announce-based Ring Node *) Bit 1 = Beacon-based Ring Node *) Bit 2..4 reserved Bit 5 = Supervisor Capable Bit 6 = Redundant Gateway capable Bit 7 = Flush_Table frame capable Bit 8..31 reseved

*) The EIU32.0 works as beacon-based ring node

—

Common services

Service code	Class	Instance	Service name
1 (0x01)	No	Yes	Get_Attribute_All
14 (0x0E)	Yes	Yes	Get_Attribute_Single

Quality of Service Object (0x48)

Quality of Service (QoS) is a general term applied to mechanisms used to treat traffic streams with different relative priorities or other delivery characteristics. Standard QoS mechanisms include IEEE 802.1D/Q (Ethernet frame priority) and Differentiated Services (DiffServ) in the TCP/IP protocol suite. The QoS Object provides a means to configure certain QoS-related behaviors in the EIU32.0 EtherNet/IP™ device. The QoS Object is required for devices that support sending EtherNet/IP™ messages with non-zero DiffServ Code Points (DSCP), or sending EtherNet/IP™ messages in 802.1Q tagged frames or devices that support the DLR functionality.

—

Class attributes

Attribute	Access	Name	Type	Value
1	Get	Revision	UINT	1
2	Get	Max. Instance	UINT	1

—

Instance attributes

Attribute	Access	Name	Type	Value
1	Get/Set	802.1Q Tag Enable	USINT	Enables or disables sending 802.1Q frames on CIP and IEEE 1588 messages 0 = tagged frames disabled (default) 1 = tagged frames enabled
2	Get/Set	DSCP PTP Event	USINT	DSCP value for PTP (IEEE 1588) event messages, default = 59 (0x3B)
3	Get/Set	DSCP PTP General	USINT	DSCP value for PTP (IEEE 1588) general messages, default = 47 (0x2F)
4	Get/Set	DSCP Urgent	USINT	DSCP value for CIP transport class 0/1 Urgent priority messages, default = 55 (0x37)
5	Get/Set	DSCP Scheduled	USINT	DSCP value for CIP transport class 0/1 Scheduled priority messages, default = 47 (0x2F)
6	Get/Set	DSCP High	USINT	DSCP value for CIP transport class 0/1 high priority messages, default = 43 (0x2B)
7	Get/Set	DSCP Low	USINT	DSCP value for CIP transport class 0/1 low priority messages, default = 31 (0x1F)
8	Get/Set	DSCP Explicit	USINT	DSCP value for CIP explicit messages (transport class 2/3 and UCMM) and all other EtherNet/IP™ encapsulation messages, default = 27 (0x1B)

—

Common services

Service code	Class	Instance	Service name
14 (0x0E)	Yes	Yes	Get_Attribute_Single
16 (0x10)	No	Yes	Set_Attribute_Singe

Webserver

General
The EIU32.0 has an integrated webserver for monitoring and maintenance purposes. It shows all settings of the Ethernet interface and of the connected Universal Motor Controller UMC100.3.

WARNING!
The web server uses the HTTP communication protocol. Please be aware of the security limitations of HTTP before enabling the webserver. All data sent over HTTP connections are sent in plain text and can possibly be read by any hacker managing to break into the connection between the webserver and the web browser. The EIU32.0 was tested according the ABB Cyber Security rules. For more information regarding ABB cyber security see:

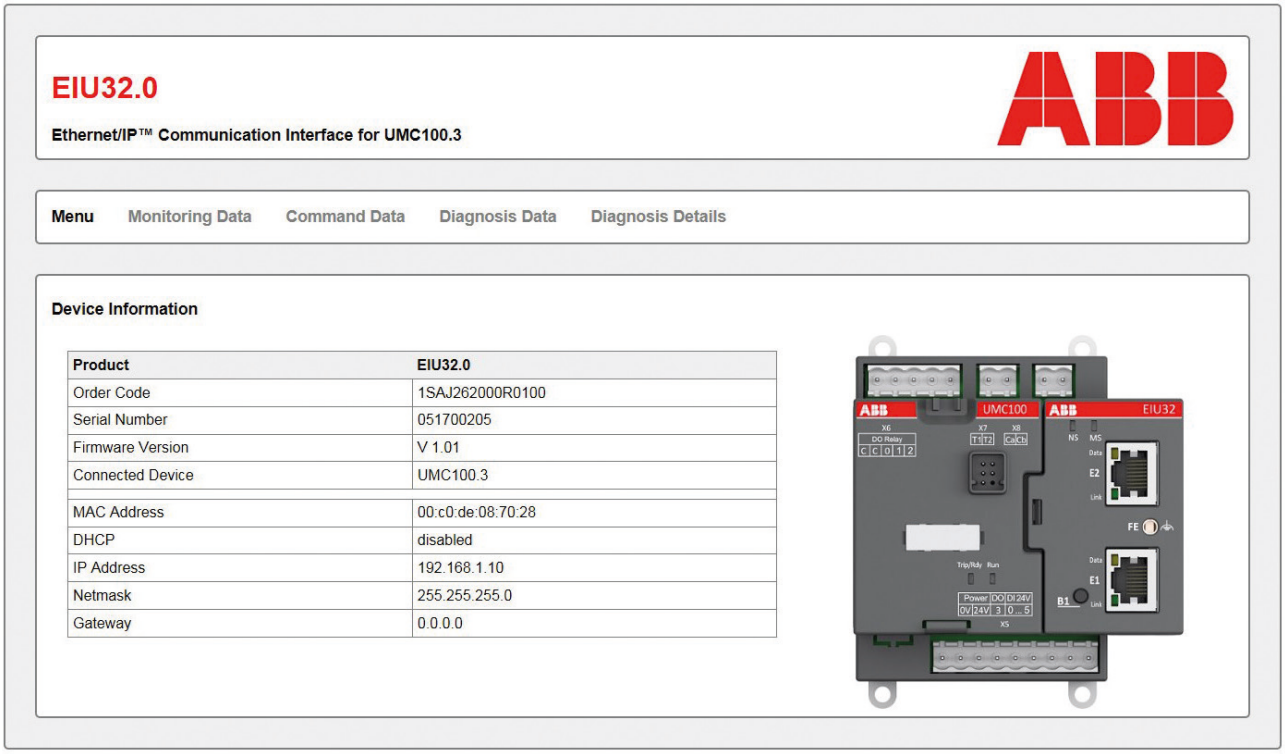
http://www.abb.com/cybersecurity

Webserver functions

The webserver consists of the following pages for:

Menu	Information
Device Information	Identification of the connected device and its Ethernet settings
Monitoring Data	All UMC100.3 data that is sent as input data to the Controller/PLC
Command Data	All controller/PLC output data that is sent to the UMC100.3
Diagnosis Data	The 8 diagnosis bytes that are sent from UMC100.3 to the Controller/PLC
Diagnosis Details	Shows all actual faults and warnings in detail

Device information
Shows EIU32.0 product data and ethernet settings



Monitoring data

The 16 bytes data that are sent fom UMC100.3 to the DCS/PLC as input data

EIU32.0

Ethernet/IP™ Communication Interface for UMC100.3

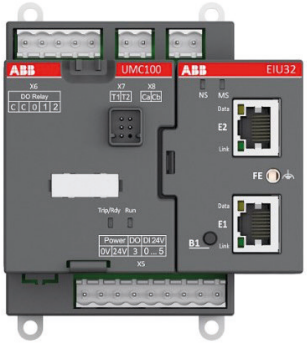
Menu | Device Information | Command Data | Diagnosis Data | Diagnosis Details

Monitoring Data Overview Open Manual Page

Word	Byte	Value
Word 0	Byte 0	0x22
	Byte 1	0xf8

Word	Description	Value
Word 1	Motor Current in % of Ie	0x0000
Word 2	Thermal Load in %	0x0000
Word 3	Time to Trip in s	0x1999
Word 4	Time to Restart in s	0x0000
Word 5	Active Power	0x0000

Word	Byte	Value
Word 6	Byte 12	0x53
	Byte 13	0x00
Word 7	Byte 14	0x00
	Byte 15	0x00



Command data

The 12 bytes data that are sent fom DCS/PLC to UMC100.3 output (command) data

EIU32.0

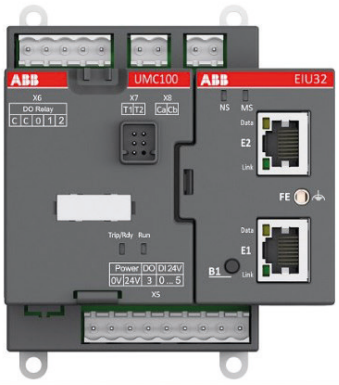
Ethernet/IP™ Communication Interface for UMC100.3

Menu | Device Information | Monitoring Data | Diagnosis Data | Diagnosis Details

Command Data Overview Open Manual Page

Word	Byte	Value
Word 0	Byte 0	0x20
	Byte 1	0x10
Word 1	Byte 2	0x00
	Byte 3	0x00

Word	Description	Value
Word 2	from Custom Application	0x0000
Word 3	from Custom Application	0x0000
Word 4	from Custom Application	0x0000
Word 5	from Custom Application	0x0000



Diagnosis data

The 8 bytes diagnosis data containing all faults and warnings

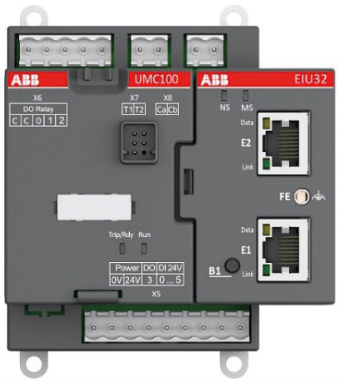
EIU32.0

Ethernet/IP™ Communication Interface for UMC100.3

Menu | Device Information | Monitoring Data | Command Data | Diagnosis Details

Diagnosis Data Overview | Open Manual Page

Diagnosis	Value
Diag Byte 0	0x02
Diag Byte 1	0x00
Diag Byte 2	0x00
Diag Byte 3	0x00
Diag Byte 4	0x00
Diag Byte 5	0x00
Diag Byte 6	0x00
Diag Byte 7	0x00



Diagnosis details

Faults and warnings are shown in detail

EIU32.0

Ethernet/IP™ Communication Interface for UMC100.3

Menu | Device Information | Monitoring Data | Command Data | Diagnosis Data

Diagnosis Details | Open Manual Page

Diagnosis Byte 0
Thermal Overload Trip
Phase Loss (U/I)
Imbalance (U/I)
Locked Rotor
Thermal Load Prewarn.
PTC Temperature High
PTC Wiring Problem
Check-Back Error

Diagnosis Byte 1
I below Trip Level
I below Warn Level
I above Trip Level
I above Warn Level
Earthfault Trip
Earthfault Warning
UMC Selftest Error
Actuator

Diagnosis Byte 2
IO-Module Missing
Custom App. Error
IO-Module Issue
Auxiliary Input 1
Auxiliary Input 2
Auxiliary Input 3
Auxiliary Input 4
Auxiliary Input 5

Diagnosis Byte 3
Auxiliary Input 6
Ext. Fault Multif. DIO0
Ext. Fault Multif. DIO1
Ext. Fault Multif. DIO2
AM1 exeeds Triplevel
AM1 exeeds Warnlevel
AM2 exeeds Triplevel
AM2 exeeds Warnlevel

Diagnosis Byte 4
-
-
Underload (Power)
Power Overload
Voltage out of Spec.
THD High
-
-

Diagnosis Byte 5
-
-
-
Number of Starts Overrun
Only one Start left
Cooling Time Running
-
-

Diagnosis Byte 6
-
-
-
-
-
-
Parameter out of Range
Additional Diag available

Additional Diagnosis	
See Help/Manual for details.	
Extended Diagnosis	0

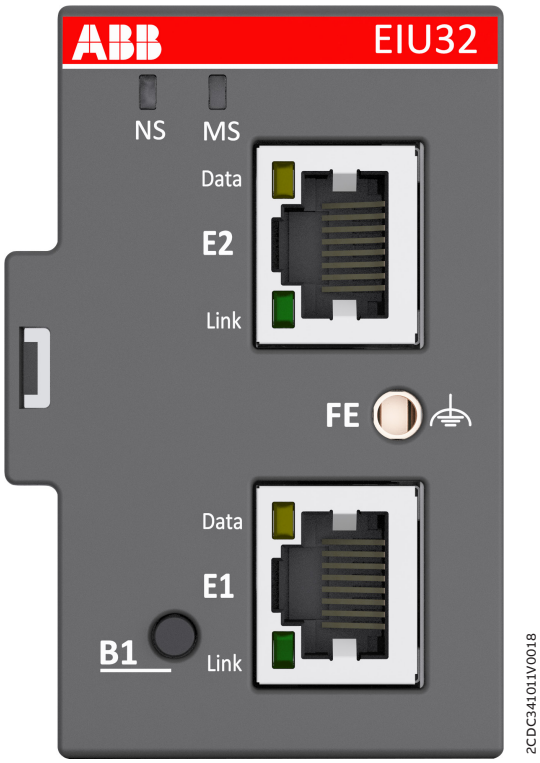
Technical data

LED status indication
The EIU32.0 provides LEDs for detailled diagnostics

MS	Module Status	bicolor green/red
NS	Network Status	bicolor green/red

Each RJ45 connector has two LEDS

Data	yellow
Link	green



—
12 Front view of EIU32.0

—

LED Module Status (MS)

Color	Indicator	Summary	Requirement
	Off	No power	No power is supplied to the device
Green	On	Ok, device operational	The device is operating correctly
Green	Flashing	Standby	The device has not been configured, ie no connection to UMC100.3, waiting for IP address from DHCP server, no physical connection to Ethernet network
Red	On	Major fault	The device has detected a non-recoverable major fault
Red	Flashing	Minor fault	The device has detected a recoverable minor fault eg communication loss between EIU32.0 and UMC100.3 or an incorrect or inconsistent configuration
Green/red	Flashing	Self-test	The device is performing its power up testing

—

LED Network Status (NS)

Color	Indicator	Summary	Requirement
	Off	Not powered no IP address	The device is powered off, or is powered on but with no IP address configured; no physical connection to Ethernet network
Green	On	Connected	At least one CIP connection (any transport class) is established, and an Exclusive Owner has not timed out.
Green	Flashing	No connections	An IP address is configured and physical connection to an Ethernet network is detected, but no CIP connections are established, and an Exclusive Owner connection has not timed out
Red	On	Duplicate IP	The device has detected that its IP address is already in use.
Red	Flashing	Connection timeout	An Exclusive Owner connection for which this EU32.0 is the target has timed out. The network status indicator returns to steady green only when all timed out Exclusive Owner connections are re-established.
Green/red	Flashing	Self-test	The device is performing its power up testing

—

LED Ethernet Status

LED	Indicator	Summary
Data	Off	No network traffic
Data	On	-
Data	Flashing	Communication with network active
Link	Off	No connection to network
Link	On	Connection to network established
Link	Flashing	-

General data

Supply	
Supply voltage	24 V DC (-20% ... +30%) (19.2 ... 31.2 V DC) incl. ripple Use SELV or PELV approved power supply unit if supplied separately!
Current consumption	Typ. 90 mA, max. 130 mA at 19.2 ... 31.2 V DC
Total power dissipation	Typ. 2.2 W, max. 2.5 W
Buffering time	10 ms
Reverse polarity protection	Yes

Communication interfaces	
Type of Interface	EtherNet/IP™
Number and kind of Ethernet interfaces	2 ports RJ45
Functional earth connector	Yes, for RJ45 shielding
Ethernet baudrate	10 / 100 Mbit/s
Duplex modes	Half Duplex, Full Duplex, Auto-Negotiation
Autocrossover	Yes
Autosensing	Yes
Redundancy support	DLR
Address conflict detection	Yes
Webserver	Yes
Interface to UMC100.3	Yes
Short-circuit protection on UMC100.3 port	Yes
Cable length between EIU32.0 and UMC100.3	It is strongly recommended to limit the length to 3m
Micro-USB port	Reserved, no isolation

Diagnosis	
Ethernet ports	RJ45 with LEDs
EtherNet/IP™	Module status (MS), Network status (NS)

Installation, mounting, dimensions	
Mounting position	Any
Type of mounting	Direct on UMC100.3 or remote on SMK3.0 adapter If vibrations are expected, it is recommended to fix the SMK3.0 adapter with end stops on the DIN-rail or to fix it with screws
Dimensions (W x H x D)	38 x 64 x 93 mm
Net weight	0.110 kg
Required spacing	None

Wiring of Functional Earth (FE)	
Cable type	Solid or stranded, (twisted if stranded)
Wire size	14...18 AWG / 1...2.5 mm² (recommended 1.5 mm²)
Insulator diameter	Max 3.4 mm
Trim length	6 mm
Mechanical durability	5 cycles

Environmental conditions	
Pollution degree terminals RJ45	3
Temperature range (storage/operation)	-25 ... +70 °C / 0 ... +60 °C
Humidity	10 ... 95 %, not condensing
Vibration (sinusoidal) acc. to IEC/EN 60068-2-6 (Fc)	0.7 g / 10 .... 150 Hz (mounted on UMC100.3 / SMK3.0)
Shock (half-sine) acc. to IEC/EN 60068-2-27 (Ea)	15 g / 11 ms
Altitude	2000 m, for higher altitudes please contact your local sales unit

Standards / directives	
Product standard	IEC/EN61010-2-201
EMC Directive	2014/30/EU
RoHS Directive	2011/65/EU

Approvals, certificates
ODVA
CE, cUL
ABS, DNV, GL

EMC	
Measurement of radiated and conducted interference according to EN61131-2 CISPR16-2-3	class A
Electrostatic discharge according to IEC 61000-6-2	8 kV air discharge 6 kV contact discharge
Radiofrequency electromagnetic field according to IEC 61000-4-3	10 V/m
Fast transient burst according to EN61000-4-4	2 kV power supply 0.5 kV communication lines
High energy surges according to EN61000-4-5	1/0.5 kV CM/DM power supply
Conducted radio frequency interference according to EN61000-4-6	10 V
Immunity low frequency harmonics according to EN61000-4-11	Power supply: 50 ... 12 kHz, 3 V

ODVA Certificate

DECLARATION OF CONFORMITY

Declaration of Conformity (DOC) Reference Information

File Number: 11710.01 Part 1 of 1 Year Last Issued: 2018

Length of Validity: Continues in effect so long as the named entity (i) remains an ODVA Licensed Vendor for the ODVA technology(ies) defined by the above specification(s); (ii) continues to fulfill its user responsibilities as defined in its Terms of Usage Agreement with ODVA; and (iii) the CIP Identity for the Product(s) remains identical to those enumerated in this Declaration of Conformity.

ODVA Licensed Vendor to Whom this DOC Has Been Issued

Entity Name: ABB Stotz Kontakt GmbH Vendor ID: 760

Overview of Compliant Product(s) Covered by This DOC

(The list of product(s) covered by this DOC begins on page 2.)

Networks(s) Supported:	EtherNet/IP
Distinctive CIP Services Supported:	None
CIP Device Profile Supported:	Communications Adapter
Test Date:	March 20, 2018
Classification of Declaration:	Single Product

Trademark(s) Approved for Use in the Labeling and Promotion of the Products Named Herein

(Color variations of logo marks allowed pursuant to ODVA Brand Standards + Identity Guidelines. No abbreviation of word marks allowed.)

	Logo Marks	Word Marks
ODVA Certification Marks	ODVA CONFORMANT	**ODVA CONFORMANT™**
ODVA Technology Marks	EtherNet/IP	**EtherNet/IP™**

This Declaration of Conformity, and approval of the use of ODVA's trademarks as shown above, has been granted by ODVA, Inc. based on its determination that the Product(s) identified herein fulfill(s) ODVA's standards for compliance with ODVA's specifications listed below at the ODVA composite Conformance Test (CT) level shown in parentheses:

The EtherNet/IP™ Specification (CT 14)

This Declaration of Conformity issued on **April 16, 2018** on behalf of ODVA by:

Katherine Voss, President and Executive Director

The list of product(s) covered by this DOC begins on page 2.

DECLARATION OF CONFORMITY

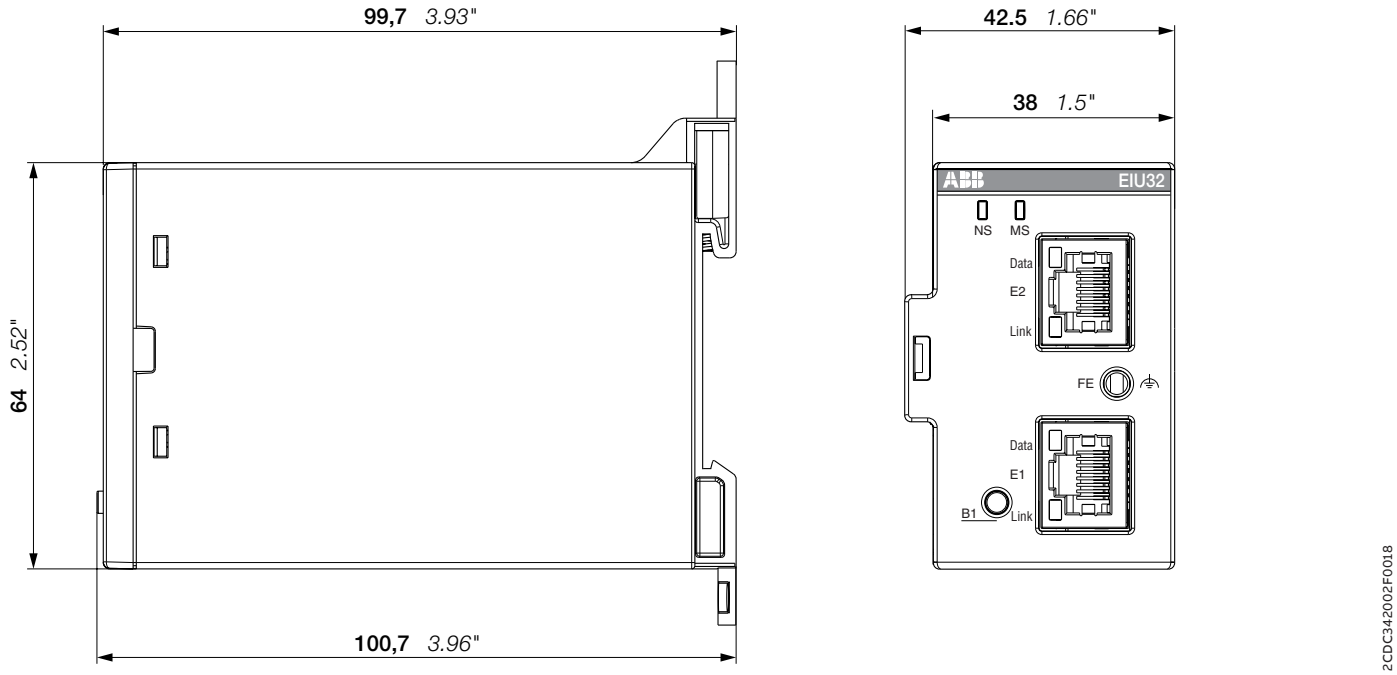
Declaration of Conformity (DOC) Reference Information

File Number: 11710.01 Part 1 of 1 Year Last Issued: 2018

Identity for Product(s) Covered Under this Declaration of Conformity

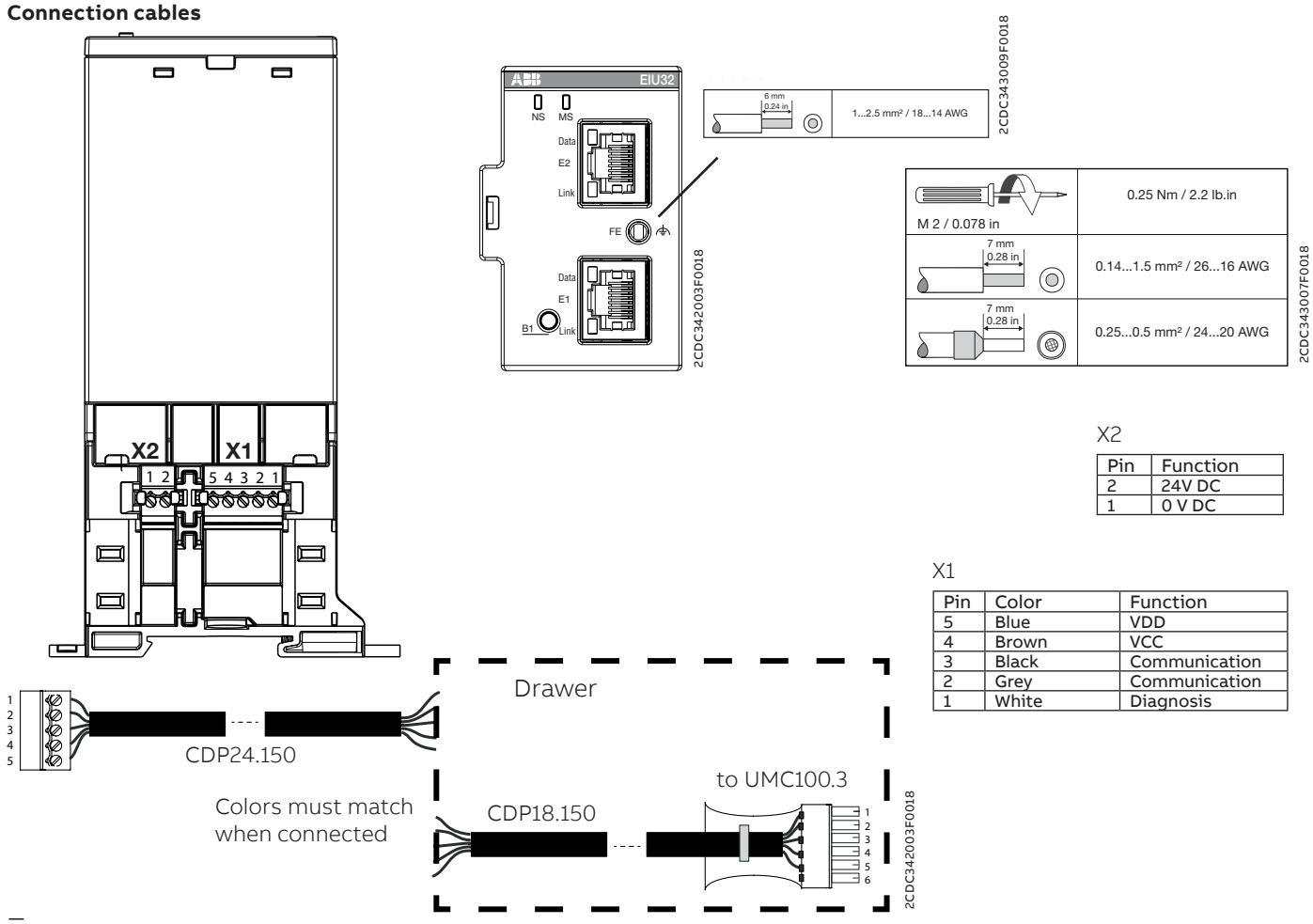
No.	Product Code	Product Name	Product Revision
1	11201	**EIU32.0 for UMC**	1.001

Dimensions



13 Side view and front view of EIU32.0

Connection cables



X2

Pin	Function
2	24V DC
1	0 V DC

X1

Pin	Color	Function
5	Blue	VDD
4	Brown	VCC
3	Black	Communication
2	Grey	Communication
1	White	Diagnosis

14 Connection cables used with EIU32.0

Ordering data

Order code	Type	Description
1SAJ262000R0100	EIU32.0	EtherNet/IP™ communication interface
1SAJ929600R0001	SMK3.0	Single mounting kit for separate mounting of the communication interface
1SAJ929180R0015	CDP18.150	Cable between UMC100.3 and drawer inside, 1.5 m
1SAJ929240R0015	CDP24.150	Cable between SMK3.0 and drawer outside, 1.5 m
1SAJ929610R0001	SMK3-X2.10	Terminal block 2-pol. for SMK3.0 supply, 10 pcs
1SAJ929620R0001	SMK3-X1.10	Terminal block 5-pol. for SMK3.0 communication, 10 pcs

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ABB STOTZ-KONTAKT GmbH
Electrification Products Division
Low Voltage Products and Systems
Eppelheimer Strasse 82
69123 Heidelberg, Germany

You can find the address of your local sales organization on the ABB homepage

abb.com/lowvoltage

Additional information
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