INBLOX® Ethernet head module

Function

The **Ethernet head module** is the basis of the smart version of the INBLOX® series. In addition to its 24 V supply voltage connection it has got a LAN connection for the integrated web server. The head is the core of the smart INBLOX® series and can be extended to max. 20 segments and 10 Master systems by Diag Rep modules and Diag+ Rep modules. An alarm module can be connected in place of a fifth extension module. Event alarms are then given by switching contacts. The E-head is provided with an extended logic and alarms are shown on the web screen as known from the INspektor®. For every extension module a device matrix with certain colours for relevant events can be displayed and the alarms stored as snapshots (up to 100 per extension module).

The head has different options to alert the user in case of network deterioration. It is possible to send an e-mail, an SNMP trap or the INBLOX® can be integrated in a network monitoring software, such as PROmanage® NT.

Ethernet head module

Technical data

- Voltage supply: 24 VDC
- Power supply: 0,3 A
- Connection: screw terminal for 24 V voltage supply
  LAN-Connection for Web interface
- Baud rate: 9,6 kbps to 12 Mbps

- Ethernet:
  - Baud rate: 100 Mbps / 10 Mbps
  - Connection: RJ45
  - Protocols: IPv4 according to DHCP or manual
  - Time server: NTP-time synchronizing

General data

- Installation: 35 mm DIN top-hat rail
- Dimensions (H x W x D): 114,5 x 22,5 x 99 mm
- Protective system: IP20
- Operating temperature: 5 °C bis 55 °C
- Storage temperature: -20 °C bis 70 °C
- PROFIBUS types: DP, DP-V1, FMS, MPI
- Extensions: DP Diag+ Rep; DP Diag Master; PA Diag+; Diag Rep X1, X2, X4; alarm module
- Automatic alarm: Email
  SNMP-Trap
  SNMP-request with PROmanage® NT

Alarm indication with each module. LEDs light up red until the alarms have been cleared.

Samlpe configuration Comfort Line

LED

Power: lights up green, if 24 V is connected

Run: lights green at 1Hz rate, if everything is o.k.

screw terminal for contact point with modules 1-4

shield

shield

Signal line A

Signal line B
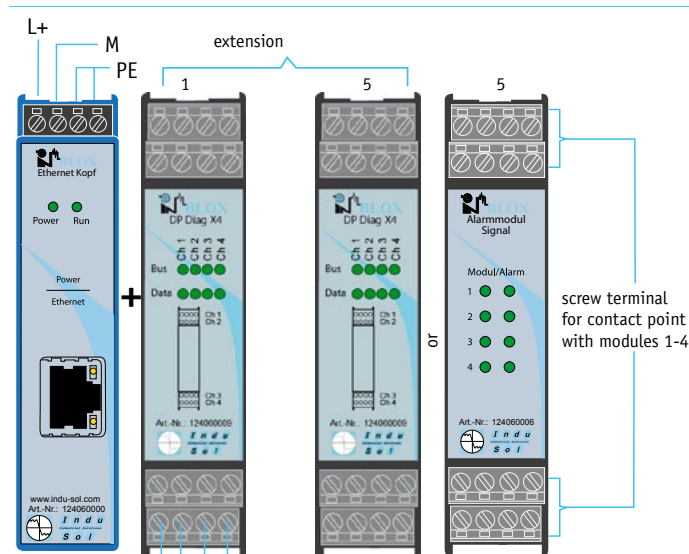
Samlpe configuration Premium Line

Ordering details	Art. No.
INBLOX® Ethernet head module (E head)	124060000

Updated 06/2018

INBLOX® Extension module Diag Rep X1

Function

The extension **DP Diag Rep X1 module** is simply connected to the IN-BLOX® head module and is coupled with the backplane bus directly. The data exchange and power supply for this module takes place via the backlplane bus. Each of these extension modules has an integrated PROFIBUS analysis, which monitors and assesses the whole telegram communication logical and physical. The determined state of network quality can be always requested via the web interface of the INBLOX® Ethernet head module or direcly via the status LEDs.

The extension DP Diag Rep X1 provides a PROFIBUS interface for connection of a PROFIBUS connector via SUB-D socket. The PROFIBUS network can be expanded by another segment or analysed by a further PROFIBUS master system per extension module, according to configuration of the INBLOX® Ethernet head module.

If a segment ends or begins immediately on a connection of the extension module, the bus termination resistor should be activated directly on the connector. The PG socket of the connector can be used as online measuring point for suitable diagnostic tools.

Technical data

- Voltage supply: 24 VDC with a backplane bus
- Power supply: 0,3 A with a backplane bus
- Connection: 9-pole sub-D PROFIBUS-connection
- Baud rate: 9,6 kbps to 12 Mbps

General data

- Installation: 35 mm DIN top-hat rail
- Dimensions (H x W x D): 114,5 x 22,5 x 99 mm
- Protective system: IP20
- Operating temperature: 5 °C to 55 °C
- Storage temperature: -20 °C to 70 °C
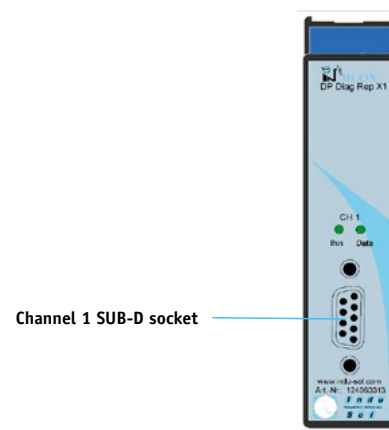- PROFIBUS-types: DP, DP-V1, FMS, MPI

LED

Bus: Bus health per channel

- 🟢 **Green:** Everything is okay
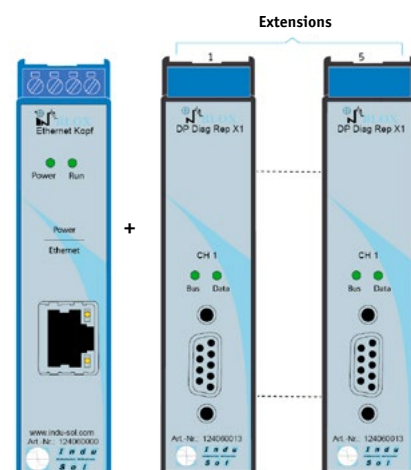- 🔴 **Red:**   Error telegram, telegram repetition, diagnostic messages, node failure

Data:
- 🟢 **Green:** Bus activity on the channel
- 🔴 **Red:**   Configuration problems in PB
- ⚪ **Off:**   No bus activity

INBLOX® Extension module Diag Rep X1

Channel 1 SUB-D socket

Connection diagram

Extensions

Sample configuration

Ordering details	Art. No.
INBLOX® Extension module DP Diag Rep X1	**124060013**

INBLOX® Extension module Diag Rep X2

Function

The extension **DP Diag Rep X2 module** is simply connected to the IN-BLOX® head module and is coupled with the backplane bus directly. The data exchange and power supply for this module takes place via the backlplane bus. Each of these extension modules has an integrated PROFIBUS analysis, which monitors and assesses the whole telegram communication logical and physical. The determined state of network quality can be always requested via the web interface of the INBLOX® Ethernet head module or direcly via the status LEDs.

The extension DP Diag Rep X2 provides a PROFIBUS interface for connection of a PROFIBUS connector via SUB-D socket. The PROFIBUS network can be expanded by another segment or analysed by a further PROFIBUS master system per extension module, according to configuration of the INBLOX® Ethernet head module.

If a segment ends or begins immediately on a connection of the extension module, the bus termination resistor should be activated directly on the connector. The PG socket of the connector can be used as online measuring point for suitable diagnostic tools.

Technical data

- Voltage supply: 24 VDC with a backplane bus
- Power supply: 0,3 A with a backplane bus
- Connection: 2 x 9-pole sub-D PROFIBUS-connection
- Baud rate: 9,6 kbps to 12 Mbps

General data

- Installation: 35 mm DIN top-hat rail
- Dimensions (H x W x D): 114,5 x 45 x 99 mm
- Protective system: IP20
- Operating temperature: 5 °C to 55 °C
- Storage temperature: -20 °C to 70 °C
- PROFIBUS-types: DP, DP-V1, FMS, MPI
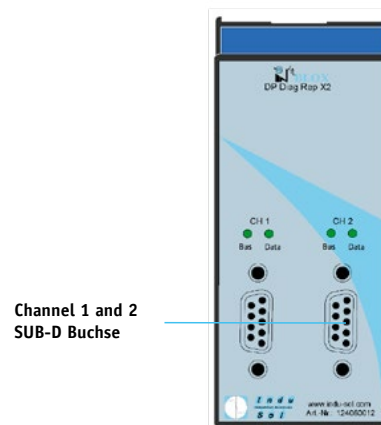
LED

Bus: Bus health per channel

- 🟢 **Green:** Everything is okay
- 🔴 **Red:** Error telegram, telegram repetition, diagnostic messages, node failure

Data:
- 🟢 **Green:** Bus activity on the channel
- 🔴 **Red:** Configuration problems in PB
- ⚪ **Off:** No bus activity

INBLOX® Extension module Diag Rep X2

Channel 1 and 2
SUB-D Buchse

Connection diagram
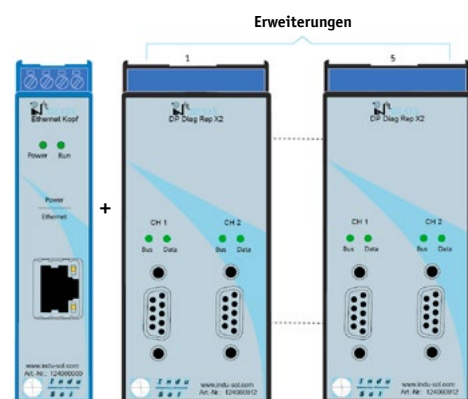
Ordering details	Art. No.
INBLOX® Extension module DP Diag Rep X2	124060012

Updated 06/2018

INBLOX® Extension module DP Diag Rep X4

Function

The extension **DP Diag Rep X4** is provided with four terminals and is able to open four segments in each case.

It is simply connected to the head and is coupled with the backplane bus directly. It obviates the need of a separate voltage supply.

Up to five extension modules can be connected to every head, whereby it is possible to create up to 25 segments (Basic Repeater) or 20 segments (E head) per network.

The PROFIBUS can be converted from its original line topology to a star topology and spur lines designed without reservation. The applied LEDs ensures for a first simple diagnosis and monitoring. The diagnosis is also possible via the websurface, when its connected to the E-head.

Technical data

- Voltage supply: 24 V with a backplane bus
- Power supply: 0,3 A with a backplane bus
- Connection: 4 screw terminals – OUT
  (assignment: shield/B/A/shield)
- Transmission rate: 9,6 kBit/s to 12 MBit/s

General data

- Installation: 35 mm DIN top-hat rail
- Dimensions (H x W x D): 114,5 x 22,5 x 99 mm
- Protective system: IP20
- Operating temperature: 5 °C to 55 °C
- Storage temperature: -20 °C to 70 °C
- PROFIBUS types: DP, DP-V1, FMS, MPI

Terminal configuration

PROFIBUS DP

Terminal connection for DP

Channel 1		Channel 2	
2	B	6	B
3	A	7	A
1+4	shield	5+8	shield

Channel 3		Channel 4	
10	A	14	A
11	B	15	B
9+12	shield	13+16	shield

LED
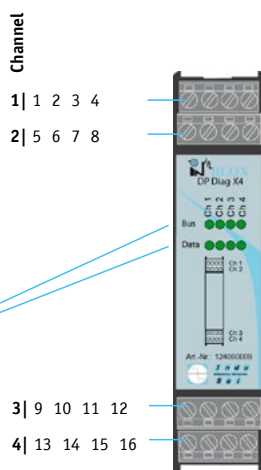
Channel

1| 1 2 3 4
2| 5 6 7 8
3| 9 10 11 12
4| 13 14 15 16

Bus (Bus quality)
Data (Bus activity)

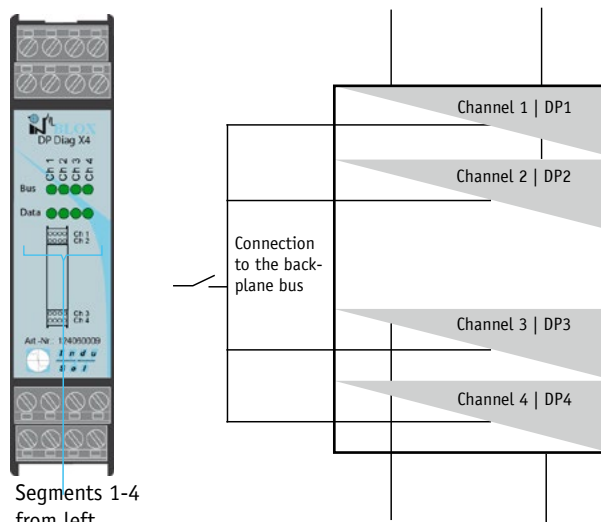**BUS LED GREEN:** lights up green, if everything is okay

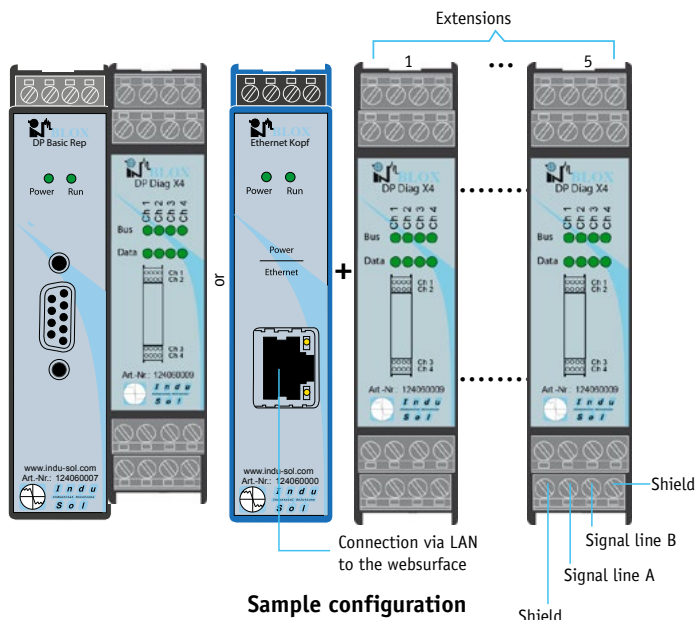**Data LED GREEN:** Data traffic exists

BUS LED RED: detected defects e.g.
- Error telegrams,
- Telegram repetition,
- Diagnostic messages,
- Node failure

INBLOX® Extension module DP Diag Rep X4

Channel 1 | DP1
Channel 2 | DP2

Connection to the backplane bus

Channel 3 | DP3
Channel 4 | DP4

Segments 1-4 from left to right

Sample configuration

Extensions
1 ... 5

Connection via LAN to the websurface

Shield
Signal line B
Signal line A
Shield

Sample configuration

Ordering details	Art. No.
INBLOX® Extension DP Diag Rep X4	124060009

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INBLOX® DP Diag+ Rep

Function

The **DP Diag+ Rep** extension is provided with a D-subminiature connector and can thus open a segment.

It is simply connected to the head and is coupled with the backplane bus directly. It is according to the need of a separate voltage supply. Not only peripheral participant and devices can be connected to the segments but also other master systems.

Up to five extension modules can be connected to every head. It is thus possible to create up to five segments per head module. The PROFIBUS can be converted from its original line topology to a star topology and spur lines designed without reservation.

Each individual segment is monitored by the integrated diagnosis. The alarm LED displays errors diagnosed during monitoring. These DP Diag+ Rep modules require the E-head for design. According to the web interface the device matrix can be displayed and the relevant diagnoses (error telegrams repeat telegrams etc.) read out. The bus physics, too, is permanently monitored for the first time and can be displayed by a bar chart for the quality characteristics or an oscilloscope recording.

Technical data

- Voltage supply: 24 VDC with a backplane bus
- Power supply: 0,3 A with a backplane bus
- Connection: 9-pole sub-D PROFIBUS-connection
- Baud rate: 9,6 kbps to 12 Mbps

General data

- Installation: 35 mm DIN top-hat rail
- Dimensions (H x W x D): 114,5 x 22,5 x 99 mm
- Protective system: IP20
- Operating temperature: 5 °C to 55 °C
- Storage temperature: -20 °C to 70 °C
- PROFIBUS-types: DP, DP-V1, FMS, MPI
- Characteristics: card slot for SD/MMC memory cards
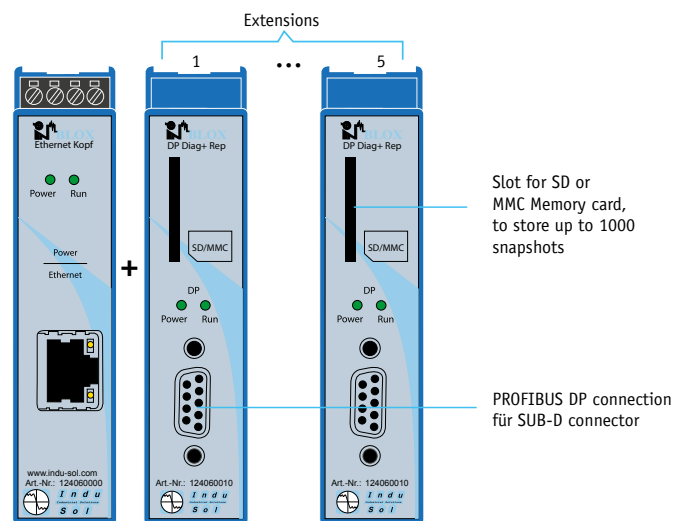
LED

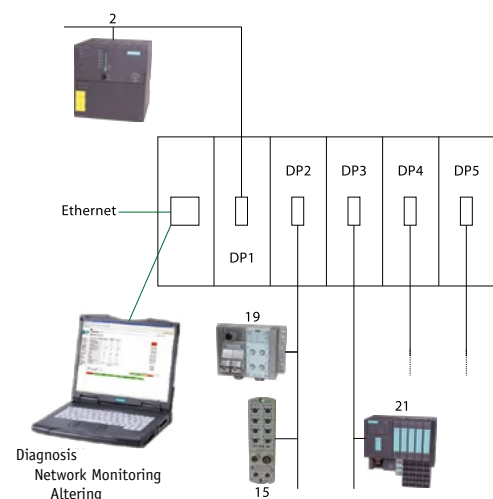**Alarm:** Signal lights red, when alarm is lying ahead

Run: lights up green, if everything is o.k.

INBLOX® DP Diag+ Rep

Slot for SD or MMC Memory card, to store up to 1000 snapshots

PROFIBUS DP connection für SUB-D connector

Sample configuration

Diagnosis Network Monitoring Altering

Practical example

Ordering details

Ordering details	Art. No.
INBLOX® DP Diag+ Rep	124060010

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INBLOX® alarm module

Function

The **alarm module** comes with four terminals and is capable of monito-ring one INBLOX® module per terminal. If available, it is always the last module to be connected and is coupled directly according to a backpla-ne bus. Therefore no separate voltage supply is needed. Every terminal/channel has got a switching output for alarms and a reset input. The alarm module can be installed in connection with the E-head only.

In case of alarm the alarm LED lights up until it is cleared manually according to the web interface or the reset input is actuated. The different alarm LEDs show which INBLOX® module is affected. The web interface of the E-head is used to select the relevant module to show the relevant device and detailed information.

Technical data

- Connection: 4 screw terminals
- Voltage supply: 24 V with a backplane bus
- Power supply: 0,3 A with a backplane bus

General data

- Installation: 35 mm DIN top-hat rail
- Dimensions (H x W x D): 114,5 x 22,5 x 99 mm
- Protective system: IP20
- Operating temperature: 5 °C to 55 °C
- Storage temperature: -20 °C to 70 °C
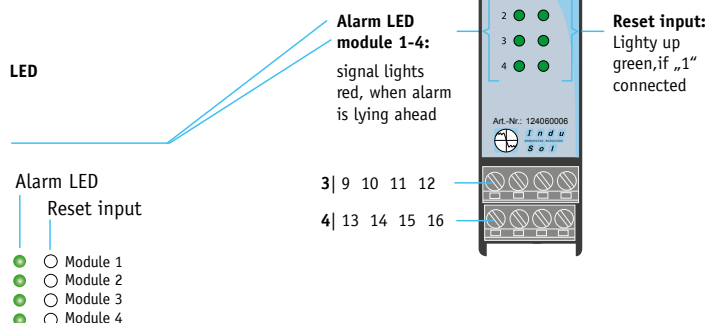
Terminal configuration

Alarm module

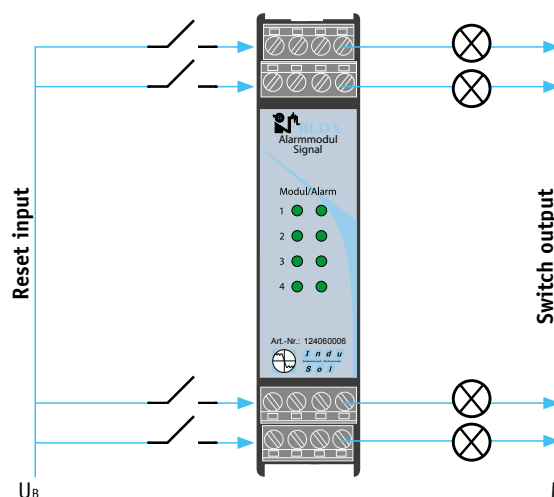Terminal connection

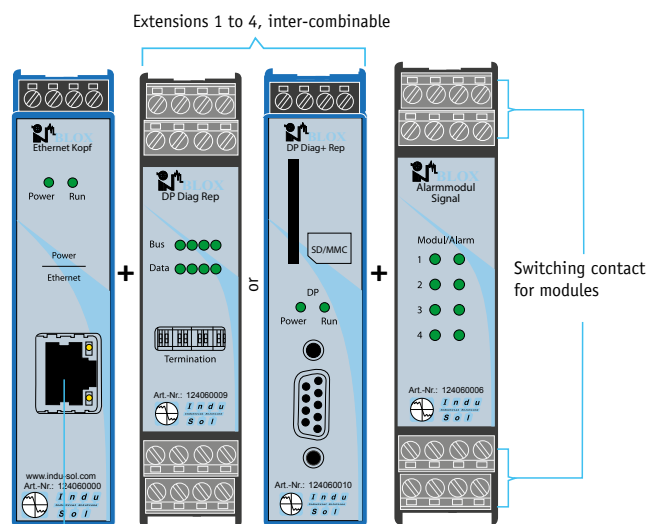| Alarm for module 1		Alarm for module 2	
1	IN+	5	IN+
2	IN-	6	IN-
3+4	OUT	7+8	OUT

Alarm for module 3		Alarm for module 4	
9	IN+	13	IN+
10	IN-	14	IN-
11+12	OUT	15+16	OUT

1| 1 2 3 4

2| 5 6 7 8

3| 9 10 11 12

4| 13 14 15 16

LED

Alarm LED module 1-4:
signal lights red, when alarm is lying ahead

Reset input: Lighty up green, if „1" connected

Alarm LED

Reset input

○ Module 1
○ Module 2
○ Module 3
○ Module 4

INBLOX® alarm module

Reset input

Switch output

U_B

M

Connection diagram

Extensions 1 to 4, inter-combinable

Ethernet Kopf — Power Run — Power — Ethernet — www.indu-sol.com — Art.-Nr.: 124060000

DP Diag Rep — Bus — Data — Termination — Art.-Nr.: 124060009

DP Diag+ Rep — SD/MMC — DP Power Run — Art.-Nr.: 124060010

or

Alarmmodul Signal — Modul/Alarm 1 2 3 4 — Art.-Nr.: 124060006

Switching contact for modules

Connection to web Interface according to LAN

Sample configuration

Ordering details

Ordering details	Art. No.
INBLOX® alarm module	124060006