Model number

VBG-ENX-K20-D
Ethernet/IP + Modbus TCP Gateway

Features

- Gateway compliant with AS-Interface specification 3.0
- Connection to Ethernet Modbus TCP/IP
- Double addressing detection of von AS-Interface slaves
- Integrated webservice
- Earth fault detection
- AS-Interface EMC monitoring
- Easy commissioning by graphic display
- Commissioning, locally on the gateway or via AS-i Control Tools software
- Fault diagnosis via LEDs and graphic display
- AS-Interface monitor or extended AS-Interface diagnostic read via display
- Parallel diagnostic interface for monitoring during operation
- Integrated switch allows line topology

Dimensions

Electrical connection

Indicating / Operating means
Function

The VBG-ENX-K20-D is an Ethernet/IP + Modbus TCP gateway in accordance with ASInterface specification 3.0.

The design of the K20 in stainless steel with IP20 is particularly suited for use in switching cabinets for snap on mounting on the 35 mm mounting rail.

The gateway in accordance with the AS-Interface specification V 3.0 is used to connect AS-Interface systems to a higher-level net. It acts as a master for the AS-Interface segment and as a slave for the higher-level net. During cyclic data exchange, the digital data of an AS-Interface segment is transferred.

Analog values as well as the complete command set of the new AS-Interface specification are transferred using a command interface.

The address allocation and acceptance of the target configuration can be achieved via the keys. 7 LEDs fitted to the front panel indicate the actual state of the AS-Interface branch.

With the graphical display, the commissioning of the AS-Interface circuits and testing of the connected peripherals can take place completely separately from the commissioning of the higher-level network and the programming. Four switches allow all the functions covered on the other AS-Interface masters by AS-i Control Tools software to be visualized on the display. An RS 232 socket provides a way of exporting data relating to the gateway, network and operation directly from the gateway for extended local diagnosis purposes.

The device has a card slot for a memory card for the storage of configuration data.

An integrated Switch and 2 RJ-45 sockets allow the design of a line topology without the use of an external Switch.

An integrated webserver allows to administer the device and The AS-interface network without additional hard and/or software via a browser interface.

PLC Functionality

Optionally the gateway is also available with PLC functionality. Therefore you can order a code key VAZ-CTR additionally.

Technical data

General specifications
- AS-Interface specification: V3.0
- PLC-Functionality: activateable
- Duplicate address detection: from AS-Interface slaves
- Earth fault detection: EFD integrated
- EMC monitoring: integrated
- Diagnostics function: extended function via display
- UL File Number: E223772

Indicators/operating means
- Display: illuminated graphical LC display for addressing and error messages
- LED ETHERNET: ethernet active; LED green
- LED AS-i ACTIVE: AS-Interface operation normal; LED green
- LED PRG ENABLE: automatic programming; LED green
- LED POWER: voltage ON; LED green
- LED PRJ MODE: projecting mode active; LED yellow
- LED U AS-i: AS-Interface voltage; LED green
- Button: 4

Electrical specifications
- Insulation voltage: $U_i \geq 500 \text{ V}$
- Rated operational voltage: $U_o$ from AS-Interface 30 V DC
- Rated operational current: $I_o \leq 300 \text{ mA}$ from AS-Interface

Interface 1
- Interface type: RJ-45
- Protocol: Ethernet/IP + MODBUS TCP/IP according to IEEE 802.3 , integrated switch
- Transfer rate: 10 MBit/s / 100 MBit/s , Automatic baud rate detection

Interface 2
- Interface type: RS 232, serial
- Diagnostic Interface: Diagnostic Interface
- Transfer rate: 19.2 kBit/s

Interface 3
- Interface type: Chip card slot

Connection
- Ethernet: RJ-45
- AS-Interface: spring terminals, removable

Ambient conditions
- Ambient temperature: 0 ... 55 °C (32 ... 131 °F)
- Storage temperature: -25 ... 85 °C (-13 ... 185 °F)

Mechanical specifications
- Protection degree: IP20
- Housing: Stainless steel
- Mass: 500 g
- Construction type: Low profile housing

Compliance with standards and directives
- Directive conformity
- Standard conformity
- Electromagnetic compatibility: EN 61000-6-2:2005, EN 61000-6-4:2007
- AS-Interface: EN 50295:1999
- Protection degree: EN 60529:2000
- Shock and impact resistance: EN 61131-2:2004
- EN 13849:2008 (PL e)

Notes

In an AS-Interface network only one device can be operated earth fault detection. If there are many devices in an AS-Interface network, this can lead to the earth fault monitoring response threshold becoming less sensitive.

Accessories

VAZ-SW-ACT32
- Full version of the AS-I Control Tools including connection cable

USB-0,8M-PVC ABG-SUBD9
- Interface converter USB/RS 232
Model number

**VBG-ENX-K20-DMD**
Ethernet/IP + Modbus TCP Gateway, double master for 2 AS-Interface networks

Features

- Gateway compliant with AS-Interface specification 3.0
- Connection to Ethernet Modbus TCP/IP
- 2 AS-Interface networks
- Double addressing detection of von AS-Interface slaves
- Integrated webserver
- Earth fault detection
- AS-Interface EMC monitoring
- Easy commissioning by graphic display
- Commissioning, locally on the gateway or via AS-i Control Tools software
- Fault diagnosis via LEDs and graphic display
- AS-Interface monitor or extended AS-Interface diagnostic read via display
- Parallel diagnostic interface for monitoring during operation
- Integrated switch allows line topology

Dimensions

![Dimensions Diagram](image)

Electrical connection

![Electrical Connection Diagram](image)

Indicating / Operating means

![Indicating / Operating means Diagram](image)
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<tr>
<td><strong>General specifications</strong></td>
<td>The VBG-ENX-K20-DMD is an Ethernet/IP + Modbus TCP gateway with 2 AS-Interface masters in accordance with AS-Interface specification 3.0. This means that data can be transferred from 2 parallel AS-Interface branches via one IP address. The design of the K20 in stainless steel with IP20 is particularly suited for use in switching cabinets for snap on mounting on the 35 mm mounting rail. The gateway in accordance with the AS-Interface specification V 3.0 is used to connect AS-Interface systems to a higher-level network. It acts as a master for the AS-Interface segment and as a slave for the higher-level network. During cyclic data exchange, the digital data of an AS-Interface segment is transferred. Analog values as well as the complete command set of the new AS-Interface specification are transferred using a command interface. The address allocation and acceptance of the target configuration can be achieved via the keys. 7 LEDs fitted to the front panel indicate the actual state of the AS-Interface branch. With the graphical display, the commissioning of the AS-Interface circuits and testing of the connected peripherals can take place completely separately from the commissioning of the higher-level network and the programming. Four switches allow all the functions covered on the other AS-Interface masters by AS-i Control Tools software to be visualized on the display. An RS 232 socket provides a way of exporting data relating to the gateway, network and operation directly from the gateway for extended local diagnosis purposes. The device has a card slot for a memory card for the storage of configuration data. An integrated Switch and 2 RJ-45 sockets allow the design of a line topology without the use of an external Switch. An integrated webservice allows to administrate the device and The AS-interface network without additional hard and/or software via a browser interface. The redundant power supply guarantees that the double master remains in function and is diagnosticable, when a failure of a power supply unit in one of the two AS-interfaces circles occurs. Also communication with the superior field bus is not disturbed by the failure of a power supply. <strong>PLC Functionality</strong> Optionally the gateway is also available with PLC functionality. Therefor you can order a code key VAZ-CTR additionally.</td>
</tr>
<tr>
<td>AS-Interface specification</td>
<td>V3.0</td>
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<tr>
<td>PLC-Functionality</td>
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<td>Duplicate address detection</td>
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<td>ethernet active; LED green</td>
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<td><strong>LED AS-I ACTIVE</strong></td>
<td>AS-Interface operation normal; LED green</td>
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<td><strong>LED CONFIG ERR</strong></td>
<td>configuration error; LED red</td>
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<tr>
<td><strong>LED PRG ENABLE</strong></td>
<td>auton. programming; LED green</td>
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<tr>
<td><strong>LED POWER</strong></td>
<td>voltage ON; LED green</td>
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<td><strong>LED PRJ MODE</strong></td>
<td>projecting mode active; LED yellow</td>
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<td><strong>LED U AS-i</strong></td>
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<td>≤ 200 mA from AS-Interface circuit 1</td>
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<td>Housing</td>
<td>Stainless steel</td>
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<tr>
<td>Mass</td>
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</tr>
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**Notes**

In an AS-Interface network only one device can be operated earth fault detection. If there are many devices in an AS-Interface network, this can lead to the earth fault monitoring response threshold becoming less sensitive.

**Accessories**

**VAZ-SW-ACT32**

Full version of the AS-i Control Tools including connection cable

**USB-0.8M-PVC ABG-SUBD9**

Interface converter USB/RS 232
**Model number**

**VBG-ENX-K30-DMD-S16**

Ethernet/IP + Modbus TCP Gateway with integrated safety monitor, double master for 2 AS-Interface networks

**Features**

- Gateway and safety monitor in one housing
- Gateway compliant with AS-Interface specification 3.0
- Connection to Ethernet Modbus TCP/IP
- AS-Interface safety monitor with extended range of functions
- Fulfills technical safety requirements up to SIL 3 according to IEC 61508 and EN 62061 and up to PLe according to EN 13849
- Chip card for storing configuration data
- 2 AS-Interface networks
- 2 safe output relays and 2 safe electronic outputs
- Integrated switch allows line topology

**Dimensions**

**Electrical connection**

**Indicating / Operating means**
**Technical data**

**General specifications**
- AS-Interface specification: V3.0
- PLC-Functionality: activatable
- Duplicate address detection: from AS-Interface slaves
- Earth fault detection: EFD
- EMC monitoring: integrated
- Diagnostics function: Extended function via display
- Switch-on delay: < 10 s
- Response delay: < 40 ms
- UL File Number: E223772

**Electrical specifications**
- Insulation voltage $U_1$ ≥ 500 V
- Rated operational voltage $U_2$: 30.5 ... 31.6 V from AS-Interface, Outlets K3 and K4 24 V DC
- Rated operational current $I_0$: ≤ 300 mA off AS interface network 1, ≤ 300 mA off AS interface network 2, ≤ 370 mA in total

**Interface 1**
- Interface type: RJ-45
- Protocol: Ethernet/IP + MODBUS TCP/IP according to IEEE 802.3
- Transfer rate: 10 MBit/s / 100 MBit/s, Automatic baud rate detection

**Interface 2**
- Interface type: RS 232, serial
- Diagnostic Interface
- Transfer rate: 19.2 kBit/s

**Interface 3**
- Interface type: Chip card slot

**Input**
- Number/Type: 4 EDM/Start inputs: EDM: Inputs for the external device monitoring circuits
  - Start: start inputs: Static switching current 4 mA at 24 V, dynamic 30 mA at 24 V (t=100 μs)

**Output**
- Safety output: max. contact load:
  - Outlet circuits 1 and 2: 2 potential-free contacts, 3 $A_{DC-15}$ at 30 V DC, 3 $A_{AC-15}$ at 30 V AC
  - Outlet circuits 3 and 4: 2 PNP transistor outlets $0.5 A_{DC-13}$ at 30 V DC

**Connection**
- Ethernet: RJ-45
- AS-Interface: spring terminals, removable

**Ambient conditions**
- Ambient temperature: 0 ... 55 °C (32 ... 131 °F)
- Storage temperature: -25 ... 85 °C (-13 ... 185 °F)

**Mechanical specifications**
- Protection degree: IP20
- Material: Stainless steel
- Mass: 800 g
- Construction type: Low profile housing, Stainless steel

**Function**

The VBG-ENX-K30-DMD-S16 is an Ethernet/IP+Modbus TCP gateway with an integrated safety monitor and a double master according to AS-Interface specification 3.0 with a degree of protection IP20.

The device is a gateway with full functionality combined with a safety monitor. The gateway connects an AS-Interface system to a higher-level Ethernet or Modbus protocol. It acts as a master for the AS-Interface segment and as a slave for Ethernet / Modbus. During cyclic data exchange, the digital data of an AS-Interface segment is transferred via Ethernet / Modbus using a command interface.

The gateway has four inputs and four outputs. The four inputs are used either for extended EDM device monitoring or as start inputs. Two sets of two outputs act as relay outputs and switch output circuits 1 and 2 and, as semiconductor outputs, output circuits 3 and 4. The K30 model is particularly suitable for installation in a control cabinet.

The device can be performed using switches. Seven LED located on the front panel indicate the current status of the AS-Interface segment. One LED shows the power supply via AUX. A further eight LEDs indicate the status of the inputs and outputs.

With the graphical display, the commissioning of the AS-Interface circuit and testing of the connected peripherals can take place completely separately from the commissioning of the higher-level network and the programming. Four switches allow all the functions covered on the other AS-Interface masters by AS-i Control Tools software to be visualized on the display. An RS 232 socket provides a way of exporting data relating to the gateway, network and operation directly from the gateway for extended local diagnosis purposes.

The device has a card slot for a memory card for the storage of configuration data. An integrated Switch and 2 RJ-45 sockets allow the design of a line topology without the use of an external Switch.

An integrated webserver allows to administrate the device and The AS-interface network without additional hard and/or software via a browser interface. The redundant power supply guarantees that the double master remains in function and is diagnosticable, when a failure of a power supply unit in one of the two AS-interfaces circles occurs. Also communication with the superior field bus is not disturbed by the failure of a power supply.

**Accessories**

VAZ-SW-SIMON+
Software for configuration of K30 Master Monitors/K31 Safety Monitors, incl. connecting cable

USB-0,8M-PVC ABG-SUBD9
Interface converter USB/RS 232
Compliance with standards and directives

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Notes

In an AS-Interface network only one device can be operated earth fault detection. If there are many devices in an AS-Interface network, this can lead to the earth fault monitoring response threshold becoming less sensitive.