

## Binary Input 23BE50



## Application

The binary input board 23BE50 is used for the isolated input of 64 process signals in 4 groups with up to 16 binary signals each. Scanning and processing of the inputs are executed with the high time resolution of 1 ms.

The Allocation of an input signal to the processing functions can be done according to the rules of configuration. The board 23BE50 can process the following types of signals:

- 64 single indications with time stamp
- 32 double indications with time stamp
- 8 step position information each with 8 bit
- 8/16 bit digital measured value(s)
- 8/16 bit string Information
- 64 pulse counters (max. 120Hz)

Power supply 560PSU40/41 is needed to feed these modules.

## Characteristics

All inputs are potentially isolated by means of opto-couplers. If a common return is necessary, it may be realized by external short circuit connectors, which are included in the delivery.

The input current of the inputs is typ. 1.5 mA.

The board has 64 light emitting diodes to indicate the signal-state. The LED's are organized in two columns. The LED's follows directly the input.

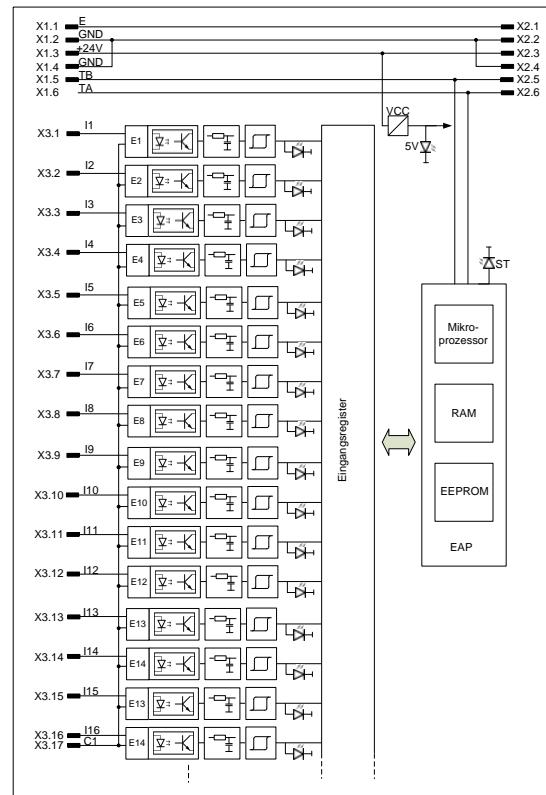
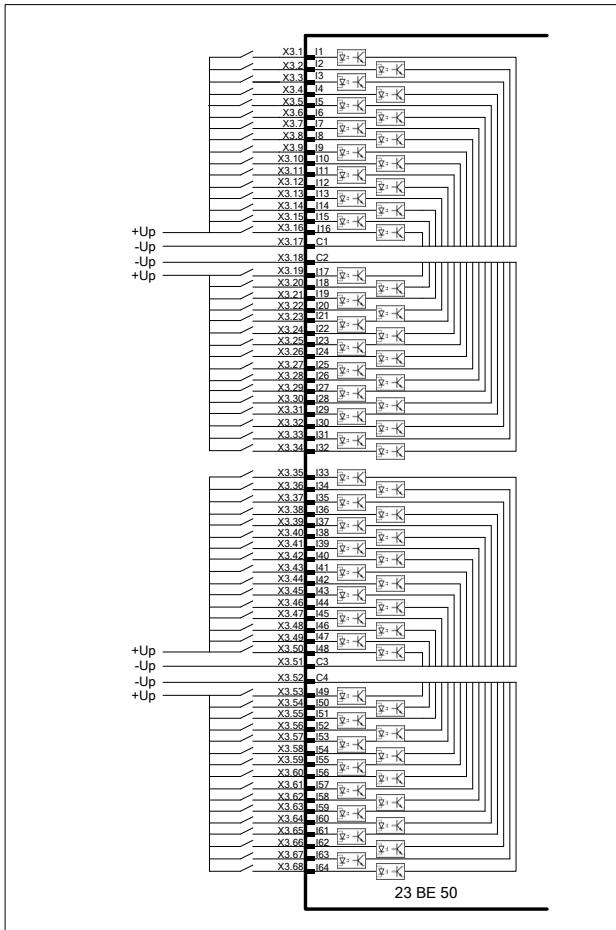


Figure 1: Block diagram 23BE50

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**Figure 2: Input block diagram 23BE50**

The binary input board 23BE50 can execute the following processing functions for the different types of signals:

- Digital filtering to suppress contact bounce
- Suppression of technologically caused chattering signals
- Intermediate position suppression and monitoring for double indications
- Consistency check for all binary input channels allocated to digital measured values

The 23BE50 has a buffer which allows the temporary storage of 247 time-stamped event messages in chronological order designated for transmission to the communication unit (CMU).

The micro-controller on the board processes all time-critical tasks of the parameterized processing functions. Moreover it carries out the interactive communication with the RTU560 system bus. All configuration data and processing parameters are loaded from the communication unit via the RTU560 bus.

The board is equipped with a serial interface to the RTU560 system bus.

During initialization and operation the board carries out a number of tests. If a fault occurs it is reported to the communication unit. All fault conditions impairing the function of the board are displayed as common fault signal with a light emitting diode (ST). A failure of the board is detected by the communication unit.

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### Technical Data

In addition to the RTU560 general technical data, the following applies:

#### Input Channels

Inputs	64, opto-coupler isolated
Input voltage	24V/48V/60V V DC -20 % ... +15 % log. 0: -3 V ... 9 V log 1: 18 V ... 60 V
Input current	Typ. 1,5 mA
Maximum Input Voltage (IEC870-3)	-3V, max 1. Min. 120V, max 1 Min.

#### Power Supply

Supply	24 V DC $\pm$ 10 %
Current consumption	Typ. 42 mA

#### Mechanical Layout

Housing	for EN-Rail mounting
Color Housing	green
Color top cover	light gray
Dimension	186 x 126 x 61 mm
Weight	370 g without connectors

#### Connection Type

Process connector	8-pole pluggable screw-terminal -Anytek TJ085153000G 0,34-2,5mm <sup>2</sup> 9-pole pluggable screw-terminal -Anytek TJ095153000G 0,34-2,5mm <sup>2</sup> (included in delivery)
Power supply and E-line Serial peripheral bus	6-pole pluggable screw-terminal -Anytek TJ085153000G 0,34-2,5mm <sup>2</sup> (included in delivery)

#### Insulation

Transient voltage according to EN60255-5, 12/2001, chapter 6.1.3, respectively EN60870-2-1, 07/1997, chapter 6, class VW3	5 kV DC, 1.2 $\mu$ s/50 $\mu$ s
Withstand voltage according to EN60255-5, 12/2001, chapter 6.1.4, respectively EN60870-2-1, 07/1997, chapter 6, class VW3	2,5 kV AC 50 Hz
Insulation resistance according to EN60255-5, 12/2001, chapter 6.2.2	>100 M $\Omega$ at 500 V DC

#### Electromagnetic Compatibility

Electrostatic discharge immunity test according EN61000-4-2, 12/2001, (level 3)	6 kV Conducted 8 kV Air  Performance criteria A
Radiated radio-frequency electromagnetic field immunity test according to EN61000-4-3, 11/2003, (level 3)	10 V/m  Performance criteria A
Electrical fast transient/burst immunity test according to EN61000-4-4, 07/2005 (level 3)	4 kV  Performance criteria A
Surge immunity test according to EN61000-4-5, 12/2001, (level 3)	2 kV (line to line) 4 kV (line to earth) Performance criteria A
Immunity to conducted disturbances, induced by radio-frequency fields according to EN61000-4-6, 12/2001 (level 3)	10 V  Performance criteria A
Oscillatory wave immunity test according to EN61000-4-12, 12/2001 (level 3)	2,5 kV (Common Mode) 1 kV (Differential Mode)  Performance criteria A
Test for immunity to conducted, common mode disturbances according to EN61000-4-16, 04/2005 (level 4)	0 Hz to 150 kHz 30 / 300 V  Performance criteria A

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Test for immunity to voltage dips/short interruptions according to EN61000-4-29, 10/2001	-100 %: 50 ms
	Performance criteria A

### Mechanical Stress

Vibration tests (sinusoidal) according to IEC60255-21-1, 05/1996, chapter 4.2, class 1	0.0350 mm 0.5 g at 10 ... 150 Hz
Mechanical influences (sinusoidal) according to IEC60870-2-2, 06/1998, chapter 4.2, class B	10 m/s <sup>2</sup> at 9 ... 200 Hz 15 m/s <sup>2</sup> at 200..500 Hz
Vibration, shock, bump and seismic tests according to IEC60255-21-2, 05/1996, chapter 4.2, class 1	15 g, 25 g / 11 ms 6 impulse / ordinate 10 g / 16 ms 1000 impulse / ordinate
Seismic test	3.5 mm / 1 g / 1...9 Hz 9...35 Hz

### Interference

Electromagnetic disturbance characteristics according to EN55011, 08/2003 0.01 to 30 MHz	≤ 66 µV Class A
Electromagnetic disturbance characteristics according to EN55011, 08/2003 30 MHz to 1 GHz	≤ 50 µV/m Class A

### Safety

Information Technology Equipment according to EN60950-1, 03/2003	Over voltage category II, pollution degree II, reinforced insulation
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### Environmental Conditions

Temperature	-25 ... 70 °C
Relative humidity	5 ... 95 % (not condensing)

### Ordering information

23BE50	1KGT 020 900 R 0001
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### Accessories

Power supply unit 560PSU40/41	For up to 8 units
Ordering information for 560PSU40	1KGT 011600 R0001
Ordering information for 560PSU41	1KGT 017700 R0001
Fiber optic coupler 560FOC40	
Ordering information for 560FOC40	1KGT 011500 R0001

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