

ASi-3 Sercos Gateways with integrated Safety Monitor

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Safety on Sercos and Safe Link in one device

- up to 456 Devices

Safely monitoring safety drives with Safety on Sercos

2 ASi master, Sercos Device

- switch integrated

Up to 64 release circuits

- up to 6 release circuits SIL 3, cat. 4 on the monitor

Safe ASi outputs are supported

- up to 64 independent ASi outputs
Multiple safe ASi outputs possible via a single ASi address

Safe speed and standstill monitoring

Applications up to category 4/PLe/SIL 3

Chip card for storage of configuration data



(figure similar)



| Figure | Field-bus Interface | Safety communication | Inputs Safety, SIL 3, cat. 4 | Outputs Safety, SIL 3, cat. 4 | Inputs Safety, expandable to | Safety outputs, independent according to SIL 3, expandable to | Number of ASi networks, number of ASi Master ⁽¹⁾ | Integrated decoupling, ASi current measurement in the gateway ⁽²⁾ | Diagnostic and configuration interface ⁽³⁾ | Art. no. |
|--------|---------------------|---|------------------------------|---|---|---|---|--|---|----------------|
| | Sercos | Schneider drives via Sercos + Safe Link | 3 x 2 channels | 6 release circuits; 6 x electronic safe outputs | max. 62 x 2 channels, max. 1922 in max. configuration | max. 64, max. 1984 in max. configuration | 2 ASi networks, 2 ASi-3 masters | yes, max. 4 A/ASi network | Ethernet diagnostic | BWU2984 |

(1) **Number of ASi networks, number of ASi Master**
"Double Master": 2 ASi networks, 2 ASi-3 Masters.

(2) **Integrated decoupling, ASi current measurement in the gateway**

"yes, max. 4 A/ASi network": Data decoupling integrated in the gateway. Cost-effective power for 2 ASi networks with 1 power supply (optionally supply of multiple Single Gateways by 1 power supply). Operation with short cable lengths with standard 24 V power supply possible.

(3) **Diagnostic and configuration interface**

"Ethernet diagnostic": Access to ASi Master and Safety Monitor with Bihl+Wiedemann software by using the Ethernet diagnostic interface.

The latest version of the device description file of the gateway is available in the "Downloads" section of the respective device.

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| | |
|--|---|
| Article no. | BWU2984 |
| Fieldbus Interface | |
| Type | Sercos 2 x RJ-45: 100MBaud, 2-Port-Switch, Sercos III |
| Baud rates | 100 MBaud |
| Card slot | chip card for storage of configuration data |
| Diagnostic Interface | |
| Type | Ethernet RJ-45 acc. to IEEE 802.3 |
| Safety communication | safe Schneider drives over Sercos + Safe Link |
| ASi | |
| ASi specification | 3.0 |
| Cycle time | 150 μ s * (number of nodes + 2) |
| Operating voltage | 30 V (20 ... 31.6 V) |
| Operating current | 300 mA |
| ASi Power24V capability ⁽¹⁾ | yes |
| AUX | |
| Operating voltage | 24 V _{DC} (19,2 ... 28,8 V) |
| Max current consumption | 7,2 A |
| Display | |
| LCD | indication of ASi addresses and error messages in plain text |
| LED power (green) | power on |
| LED Sercos (green) | Sercos communication active |
| LED config error (red) | configuration error |
| LED U ASi (green) | ASi voltage o.k. |
| LED ASi active (green) | ASi normal operation active |
| LED prg enable (green) | automatic addresses programming enabled |
| LED prj mode (yellow) | configuration mode active |
| LED AUX (green) | auxiliary power |
| LEDs SI1 ... SI6 (yellow) | state of inputs: LED off:open LED on:closed |
| LEDs SO1 ... SO6 (yellow) | state of inputs: LED off:open LED on:closed |
| UL-specifications (UL508) | |
| External protection | an isolated source with a secondary open circuit voltage of ≤ 30 V DC with a 3 A maximum over current protection. Over current protection is not required when a Class 2 source is employed. |
| In general | UL mark does not provide UL certification for any functional safety rating or aspects of the above devices. |

ASi-3 Sercos Gateways with integrated Safety Monitor

| | |
|--|---|
| Article no. | BWU2984 |
| Environment | |
| Applied standards | EN 60529 EN 62026-2 EN 61000-6-2 EN 61000-6-4 EN 62061, SIL 3 EN 61508, SIL 3 EN ISO 13849-1, PL _e |
| Operating altitude | 2000 m |
| Ambient temperature | 0 °C ... +55 °C |
| Storage temperature | -25 °C ... +85 °C |
| Pollution degree | 2 |
| Housing | stainless steel, for DIN rail mounting |
| Protection category | IP20 |
| Tolerable loading referring to humidity | according to EN 61131-2 |
| Maximum tolerable shock and vibration stress | according to EN 61131-2 |
| Voltage of insulation | ≥500 V |
| Weight | 800 g |
| Dimensions (W / H / D in mm) | 109 / 120 / 106 |

(1) ASi Power24V

The device can be operated directly on a 24 V (PELV) power supply. The gateway has been optimized with integrated data coupling coils and adjustable self-resetting fuses for safe use of powerful 24 V power supplies.

| | |
|---|--|
| Article no. | BWU2984 |
| Safety monitor | |
| Start delay | <10 ms |
| Max. turn-off time | <40 ms |
| Antivalent switches for local inputs | yes |
| Standstill monitors for local inputs | 6 axes up to 50 Hz ⁽¹⁾ |
| Speed monitors for local inputs | 3 to 6 axes up to 400 Hz ⁽²⁾ |
| Connection | |
| Connection | COMBICON |
| Length of connector cable | unlimited ⁽³⁾ |
| Input | |
| Inputs Safety, SIL3, cat. 4 | 3 x 2 channels ⁽⁴⁾ |
| Inputs digital, EDM | up to 6 standard inputs ⁽⁴⁾ |
| Switching current | 15 mA (T = 100 μs), continuously 4 mA at 24 V |
| Power supply | out of AUX |
| Output | |
| Number of release circuits on the monitor | 6 |
| Outputs | semiconductor output max. contact load: 1,2 A _{DC-13} at 30 V, Σ = 7,2 A in sum ⁽⁵⁾ |
| Power supply (semiconductor outputs) | out of AUX |
| Test pulse (semiconductor outputs) | if output is on: minimum interval between 2 test pulses: 250 ms; maximum pulse width 1 ms |

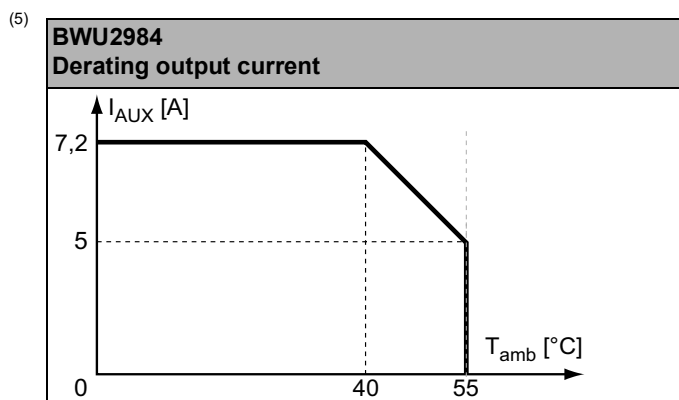
⁽¹⁾ connection at all SI or SO terminals possible.

⁽²⁾ connection only at terminals SO1 ... SO6 configured as standard inputs (see "Variations of terminal configuration for BWU2984")

⁽³⁾ loop resistance ≤150 Ω

⁽⁴⁾ see "Variations of terminal configuration for BWU2984"

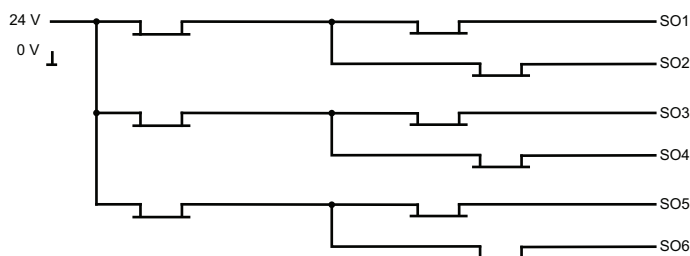
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| Article no. | Operating current | | |
|-------------|---|---|--|
| | master power supply, approx 300 mA out of ASi network | master power supply, max. 300 mA out of ASi circuit 1 (approx. 70 mA ... 300 mA), max. 300 mA out of ASi circuit 2 (approx. 70 mA ... 300 mA); in sum max. 370 mA | Cost-effective power for 2 ASi networks with 1 power supply, ca. 350 mA (PELV voltage) |
| BWU2984 | - | - | • |

| | BWU2984 |
|--|---------|
| Data decoupling integrated in the gateway | • |
| Redundant power supply out of ASi: all fundamental functions of the device remain available even in case of power failure in one of the two ASi networks | - |
| Current measurement of the ASi circuits | • |
| Self-resetting adjustable fuses | • |
| ASi earth fault monitor distinguishes between ASi cable and sensor cable | • |
| Cost-effective power for 2 ASi networks with 1 power supply | • |

Safety outputs block diagram BWU2984



Variations of terminal configuration for BWU2984

| Terminal | Safe output | Safe input for mechanical contacts in combination with T1, T2 ⁽¹⁾ | Safe antivolt input ⁽¹⁾ | Safe electronic input ⁽¹⁾ | Standard input ⁽¹⁾ |
|----------|-------------|--|------------------------------------|--------------------------------------|-------------------------------|
| SI1,2 | - | • | • | • | • |

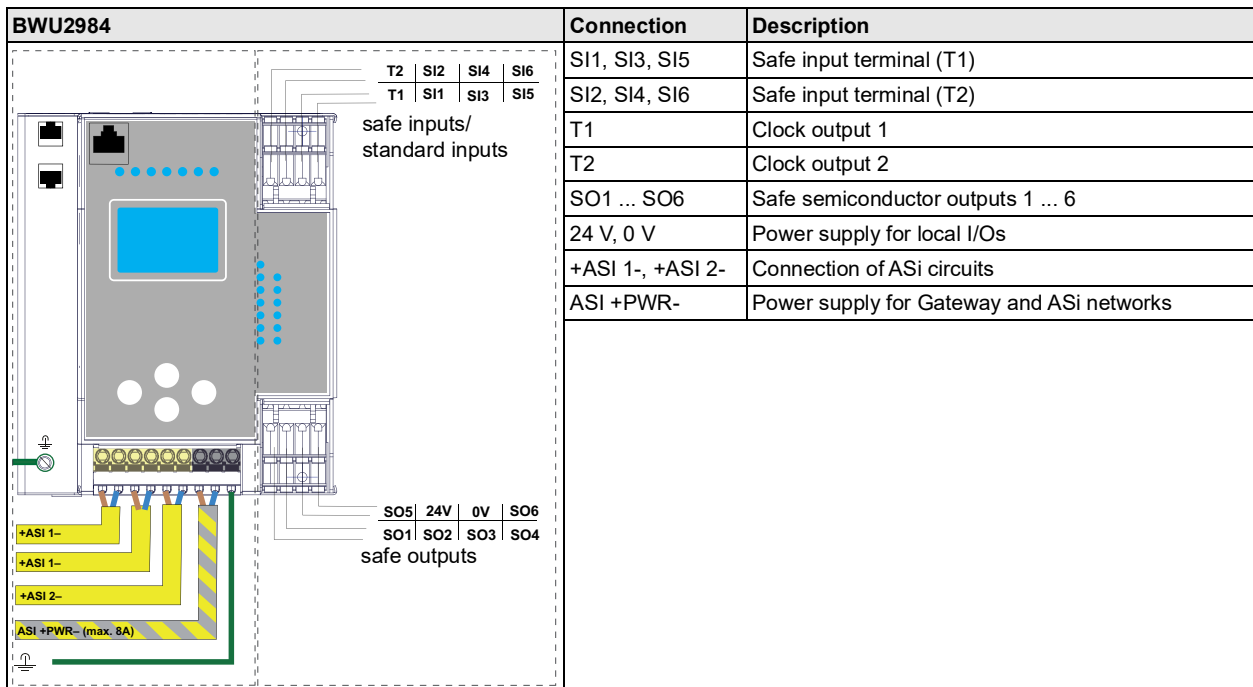
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| Terminal | Safe output | Safe input for mechanical contacts in combination with T1, T2 ⁽¹⁾ | Safe antivalent input ⁽¹⁾ | Safe electronic input ⁽¹⁾ | Standard input ⁽¹⁾ |
|----------------------|-------------|--|--------------------------------------|--------------------------------------|-------------------------------|
| SI3,4 | – | • | • | • | • |
| SI5,6 | – | • | • | • | • |
| SO1,2 ⁽²⁾ | • | • | • | – | • |
| SO3,4 ⁽²⁾ | • | • | • | – | • |
| SO5,6 ⁽²⁾ | • | • | • | – | • |

(1) Inputs may only be supplied by the same 24 V source as the device itself.

(2) If outputs are configured as inputs, the input current has to be limited by an external element at ≤ 100mA (slow-blow fuse).

Connections: Gateway + Safety Monitor:



Accessories:

- Safe contact expander, 1 or 2 independent channels (art. no. BWU2548 / BWU2539)
- Bihl+Wiedemann Suite - Safety Software for Configuration, Diagnostics and Commissioning (art. no. BW2916)
- Power supplies, e.g.: ASi power supply, 4 A (art. no. BW1649), ASi power supply, 8 A (art. no. BW1997) (further power supply units can be found at www.bihl-wiedemann.de/en/products/accessories/power-supplies)