Central processing unit with integral test algorithms and redundant design, for use as part of a modular safety-related system with connection to SafetyBUS p®.

**Technical details**

<table>
<thead>
<tr>
<th>PSS SB CPU 3</th>
<th>PSS1 SB CPU 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function</td>
<td>Central processing unit for decentralised applications</td>
</tr>
<tr>
<td>Application range</td>
<td>Failsafe applications conforming to EN 954-1, 11/94, DIN V 19 250, 01/89, DIN VDE 0116, EN IEC 61508</td>
</tr>
</tbody>
</table>

**Electrical data**

- **Processing time**: Typ. 0.5 ms for 1000 instructions
- **Real-time clock**: Integrated into ST section
- **Alarm processing**: Max. 32 alarms in FS section
- **Flags**: 2048 (ST section), 5184 (FS section)
- **Timers**: 64 (ST section), 64 (FS section)
- **Time base**: 50, 100 ms, 1, 10 s, 1 min
- **Counters**: 64 (ST section), 64 (FS section)
- **Date memory**: Standard section: 170 kByte, Failsafe section: 64 kByte (non-retentive)
- **Program memory**: Standard section: Integral 512 kByte Flash-EPROM, Failsafe section: 512 kByte Flash-EPROM

**Display**

- 4-digit

**Serial interfaces, galvanically isolated**

- RS 232/RS 485 for user and for programming device
- Termination for user adjustable

**SafetyBUS p®**

- Transmission rate: Max. 500 kBit/s
- Cable runs: Max. 3500 m
- Transmission type: Differential two-wire cable
- Connection: 9-pin D-Sub-coupling

**Mechanical data**

- **Size (H x W x D)**: 257 x 41 x 220 mm, 265 x 41 x 218 mm
- **Weight**: 1260 g, 620 g

**Environmental data**

- **Protection type (EN 60529, 02/00)**: IP 20
- **Ambient temperature (EN 60068-2-14, 11/99)**: 0...+60 °C
- **Storage temperature (EN 60068-2-1/2-1, 03/95)**: -25...+70 °C
- **Climatic suitability (DIN IEC 60068-2-3, 12/86)**: max. 95 % r.h.
- **Condensation**: Not permitted
- **Vibration to EN 60068-2-6, 04/95**: Frequency range: 10...150 Hz, Amplitude: 0.075 mm, max. 1 g
- **Shock**
  - EN 60068-2-27, 03/99: 30g, 11ms
  - EN 60068-2-29, 04/93: 10g, 16 ms
- **EMC**
  - EN 61000-6-2, 04/99
  - EN 55011, 08/00

**Features**

- SafetyBUS p® connection
- Failsafe modules have type-approval
- Powerful CPU means programs are processed at high speed
- Failsafe (FS) and standard (ST) programs are processed without feedback
- Approved blocks are available for all key functions such as emergency stopping, thereby reducing development and commissioning costs
- Programmable communications interface available

**Approvals**

<table>
<thead>
<tr>
<th>PSS SB CPU</th>
<th>PSS1 SB CPU</th>
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<tbody>
<tr>
<td>[TÜV]</td>
<td>[TÜV]</td>
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<td>[UL Listed]</td>
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</table>
Safe Bus Systems

Central Processing Unit with SafetyBUS p® Connection
PSS SB CPU 3, PSS1 SB CPU 3

**Description**

The 3-channel diverse structure of the processing units PSS SB CPU 3 (PSS 3000) and PSS1 SB CPU 3 (PSS 3100), used in conjunction with integral test and safety algorithms, means that the PSS-range is suitable for applications conforming to EN 954-1, 11/94 up to category 4 DIN V 19250, 01/89, AK 6 and EN IEC 61508, SIL 3.

Periphery devices may be connected separately (decentralised) via SafetyBUS p®, or via I/Os on local plug-in modules. An additional feature to the decentralised I/O modules is the ability to connect a safety-related network of PSS safety systems via SafetyBUS p®.

The CPU processes two independent sections of the program that operate without feedback: the failsafe (FS) program and the standard (ST) program. Within the FS program, all safety-related functions are processed through three channels. The program is generated once only; all compiling and copying functions are carried out by the CPU. Non-safety-related control functions are performed in the ST program through a single channel. Programs are generated using a PC and are downloaded via the RS232/RS 485 programming port.

Approved standard function blocks are available for all key functions, from emergency stopping through to the complete control of a machine such as a press. This can substantially reduce development and commissioning times.

A serial interface or corresponding communications module is available through the ST program, enabling users to communicate with supervisory systems or connect to a graphics system. LEDs and a 4-digit display provide information on status and diagnostics.

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**Order reference**

<table>
<thead>
<tr>
<th>Description</th>
<th>PSS SB CPU 3</th>
<th>PSS1 SB CPU 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>System SafetyBUS p</td>
<td>PSS 3000</td>
<td>PSS 3100</td>
</tr>
<tr>
<td>Description</td>
<td>PSS SB CPU 3</td>
<td>PSS1 SB CPU 3</td>
</tr>
<tr>
<td>Order number</td>
<td>301 071</td>
<td>302 071</td>
</tr>
</tbody>
</table>

The PSS SB CPU 3 and PSS1 SB CPU 3 supports all fail-safe-units. Exception: The PSS(1) AI and PSS(1) Al Ip must have a version number 2.0 or higher. The PSS(1) SB CPU 3 are compatible with the PSS(1) SB CPU central processing units.