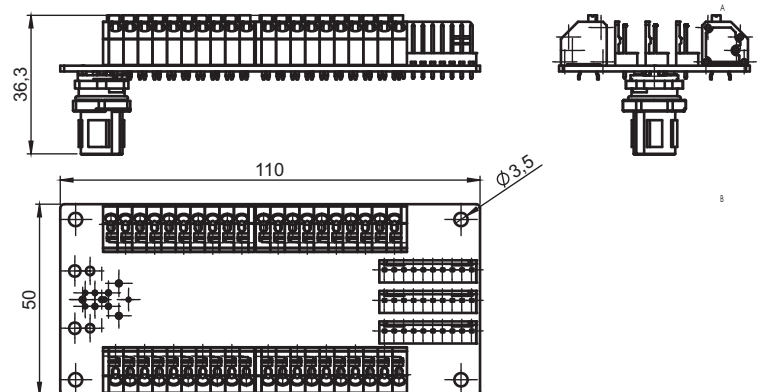
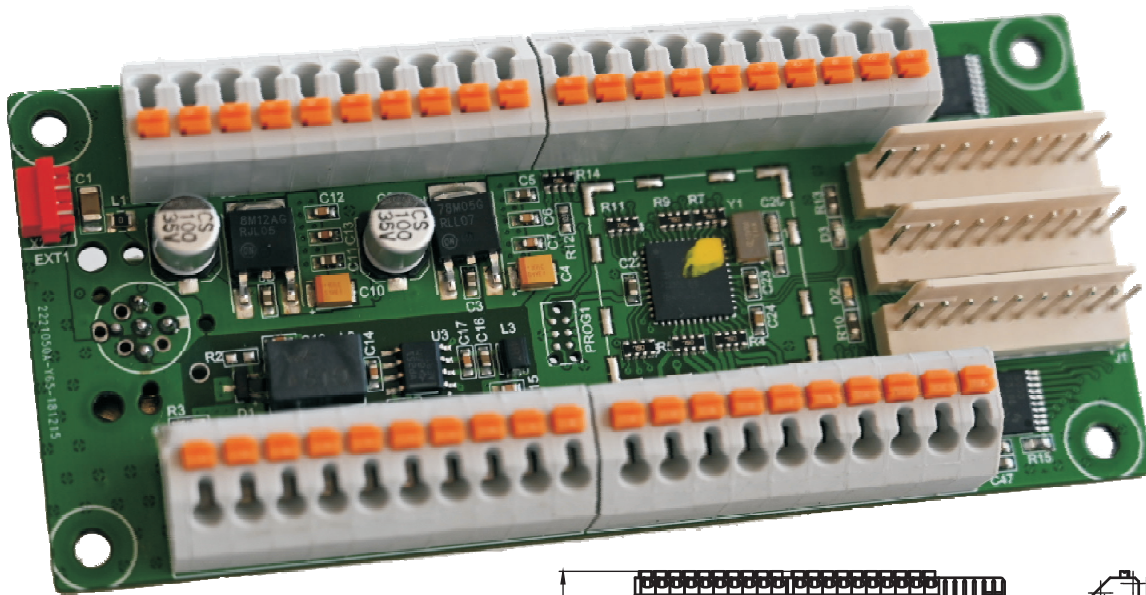




SYS-LRU5000 / SYS- LRU0000

simbus input / output device



Main Features

The simbus CAN I/O series is the heart of simbus solutions provided by simsystems GmbH. Based on CAN bus standards, these small stand-alone LRU's (line replaceable units) provide flexible facilities to control and monitor a diverse set of peripherals over the CAN Bus.

With its large count of general purpose I/Os, even full-blown keyboards can be processed by a single unit. Up to twenty-four constant-current PWM outputs allow for direct dimming control of indicators without requiring external hardware.

The included SPI, I2C™ and UART interfaces allow for further extension of the functionality, for example control of LCD-/TFT- or 7-Segment-Displays.

As a result of the LRU's small form factor, integration into each instrument and panel is possible. This Design Approach reduces the necessary wiring to a minimum of a single cable and allows for easy device replacement. The latter keeps Downtimes due to maintenance and failures minimal. Devices can be swapped in no-time and be serviced and repaired off-site.

For customer projects and integration, we offer a firmware and integration programming service.



CAN Bus Features:

- Message Bit Rates up to 1 Mbps
- Conforms to CAN 2.0B Active Specification
- Flexible Protocol Support: CANaerospace, CANopen, User Specified Protocols

Firmware Features:

- Upgradeable in-system
 - Bootloader via CAN Bus
 - No disassembly required
 - Minimal Downtime
- Event and/or Status Driven Message Propagation
- Flexible Protocol Implementation

Peripheral Features:

- 29 General Purpose Inputs/Outputs (GPIOs), including
 - 4 Push-Pull PWM outputs
 - 8-Channel, 10-Bit Analog-Digital-Converter
 - 12 High-Current Sink/Source Outputs (25 mA)
 - 14 Digital Inputs with internal Pull-Up Resistors
- 24 Constant-Current Sink PWM-Channels (SYS-LRU5000 only)
 - 16-bit (65536 step) PWM
 - 15mA per channel
 - Open-Collector-Operation
 - LED Supply Voltage up to 17V
- Synchronous Serial Port:
 - 3/4-wire SPI (supports all four SPI modes)
 - I2C™ Master and Slave modes
- Universal Asynchronous Serial Port
- Two integrated Status LEDs (red/green)
- Integrated Watchdog to detect and recover from System Upsets
- Single Connector for Power and Bus Connection:
 - 4-Pin Micro-Match Connector (SYS-LRU0000 only)
 - M12-A Standard CAN Bus Connector (SYS-LRU5000 only)
- Additional 4-pin micro-match connector for chaining with multiple SYS-LRU0000.
- EMC tested according to DIN EN 55011: 2017-03; Industrial, scientific and medical equipment - Radio-frequency disturbance characteristics - Limits and methods of measurement (CISPR 11:2015, modified + A1:2017).
- Operation / Storage temperature: -10° - 85° C

TYPICAL APPLICATIONS

- Mixed Switch and Indicator Processing
- Key Matrix Processing
- 7-Segment-Display Control via SPI/I2C™
- LCD-/TFT-Display Control via SPI/I2C™

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