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**sitrans**

LU SAM

**SIEMENS**

**Safety Guidelines:** Warning notices must be observed to ensure personal safety as well as that of others, and to protect the product and the connected equipment. These warning notices are accompanied by a clarification of the level of caution to be observed.

**Qualified Personnel:** This device/system may only be set up and operated in conjunction with this manual. Qualified personnel are only authorized to install and operate this equipment in accordance with established safety practices and standards.

**Unit Repair and Excluded Liability:**

- The user is responsible for all changes and repairs made to the device by the user or the user's agent.
- All new components are to be provided by Siemens Milltronics Process Instruments Inc.
- Restrict repair to faulty components only.
- Do not reuse faulty components.

**Warning:** This product can only function properly and safely if it is correctly transported, stored, installed, set up, operated, and maintained.

**This product is intended for use in industrial areas. Operation of this equipment in a residential area may cause interference to several frequency based communications.**

**Note:** Always use product in accordance with specifications.

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# SITRANS LU SAM

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## Notes:

- The SITRANS LU SAM is to be used only in the manner outlined in this instruction manual.
- This product is intended for use in industrial areas. Operation of this equipment in a residential area may cause interference to several frequency based communications.

The SITRANS LU SAM Satellite Alarm Module is used to provide up to 20 relay outputs for the scan points of the associated main electronics. Normal operation of the SITRANS LU SAM is programmed at the main electronics. The only SITRANS LU SAM on board settings are for bank selection, output testing and loss of communication.

## Specifications

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- Power: » 100/115/200/230 V AC  $\pm$  15%, 50/60 Hz, 20 VA
- Environmental:
  - » location: » indoor / outdoor
  - » altitude » 2000 m max
  - » ambient temp.: » – 20 to 50 °C
  - » relative humidity: » suitable for outdoor (type 4X / NEMA 4X / IP65 enclosure)
  - » installation category: » II
  - » pollution degree: » 4
- Input:
  - » communication from application device\*
  - »  $\pm$  20 mA bipolar current loop
  - » 4800 baud rate
  - » non polarized
- Output:
  - » relays: » 20 multi-purpose relays, programmable from associated application device\*
  - » 1 form 'C' SPDT contact per relay, rated 5 A at 250 V AC non-inductive
  - » communication:»  $\pm$ 20 mA bipolar current loop (input retransmission)
  - » maximum loading 1 receiving unit
- Displays:
  - » 1 power / communication status LED
  - » 20 relay status LEDs
- Memory:
  - » 10 minutes minimum data retention
- Enclosure:
  - » TYPE 4X / NEMA 4X / IP65
  - » 209 mm W x 285 mm H x 92 mm D (8.2" W x 11.2"H x 3.6"D)
  - » polycarbonate
- \* Application Device: » SITRANS LU 10 process material level monitors
- Approvals:
  - » CE\*, FM, CSA NRTL/C
  - \* EMC performance available upon request.

- Weight: » 3 kg (6.6 lb)
- Cable (optional): » Belden 8760, shielded / twisted pair, 18 ga. or equivalent

# Installation

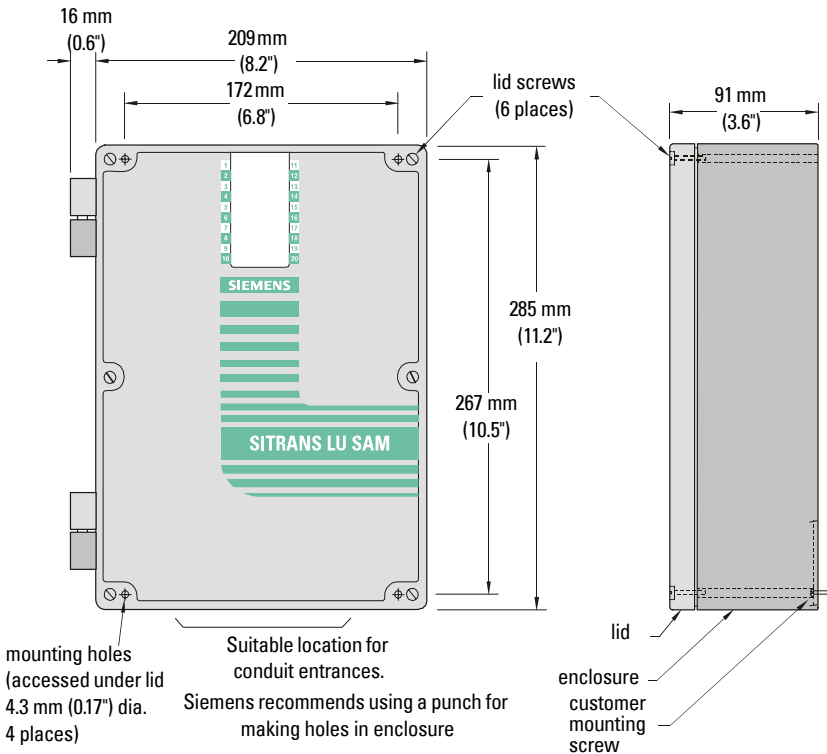
## Notes

- Installation shall only be performed by qualified personnel and in accordance with local governing regulations.
- Do not mount the SITRANS LU SAM in direct sunlight without the use of a sun shield.
- This product is susceptible to electrostatic shock. Follow proper grounding procedures.

The SITRANS LU SAM should be mounted in an area that is within the unit's ambient temperature range and suitable for the specified enclosure. The front cover should be accessible for viewing and have sufficient room to swing open; allowing for wiring and setting switches.

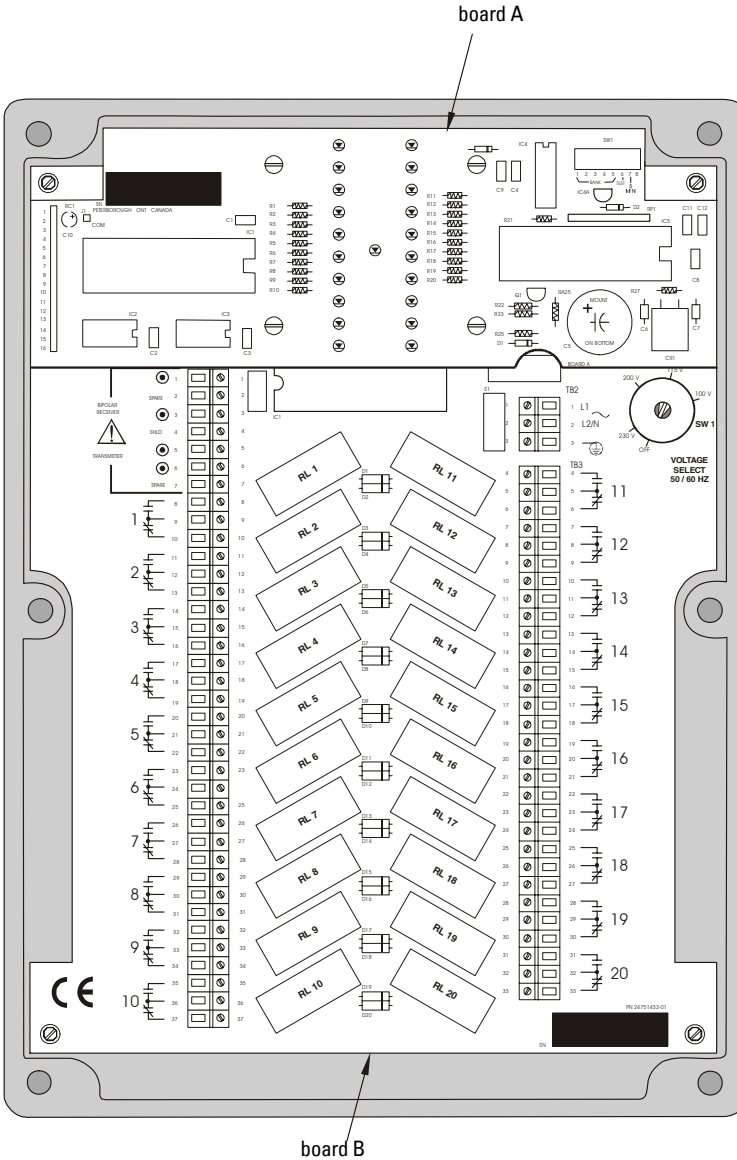
The SITRANS LU SAM may be installed remotely from the main electronics to a maximum loop length of 3,000 m (10,000 ft) when using 18 ga. wire.

## Outline and Mounting



**Note:** Non-metallic enclosure does not provide grounding between connections. Use grounded type bushings and jumpers.

# Layout



**All field wiring must have insulation suitable for at least 250 V.**

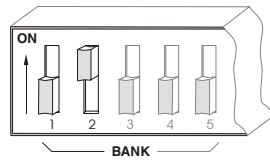
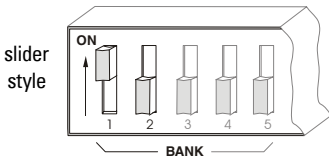
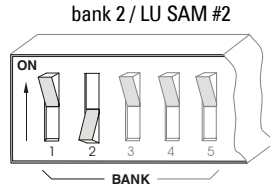
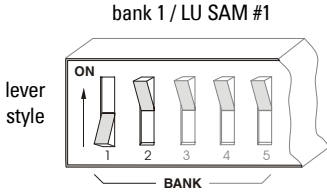
**Relay contact terminals are for use with equipment having no accessible live parts and wiring having insulation suitable for at least 250 V.**

**The maximum allowable working voltage between adjacent relay contacts shall be 250 V.**



# Switch Setting

Set the bank / LU SAM selection switches ( SW1 - 1 & 2 ) located at the upper right hand corner of board 'A' in order to enable the SITRANS LU SAM corresponding to the points being addressed.



## Interconnection

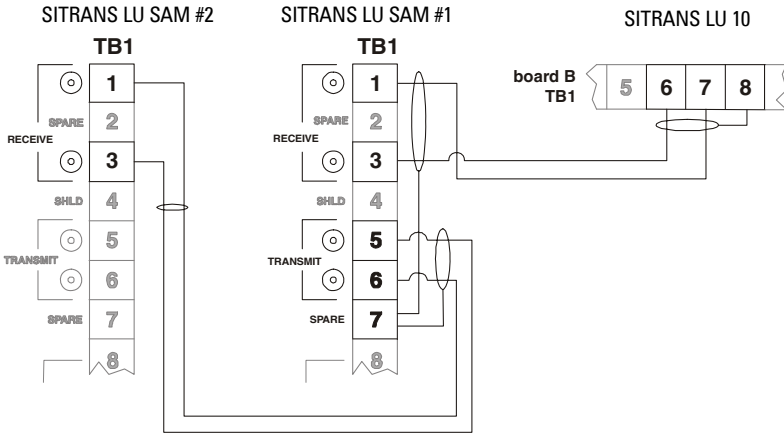
### System Diagram



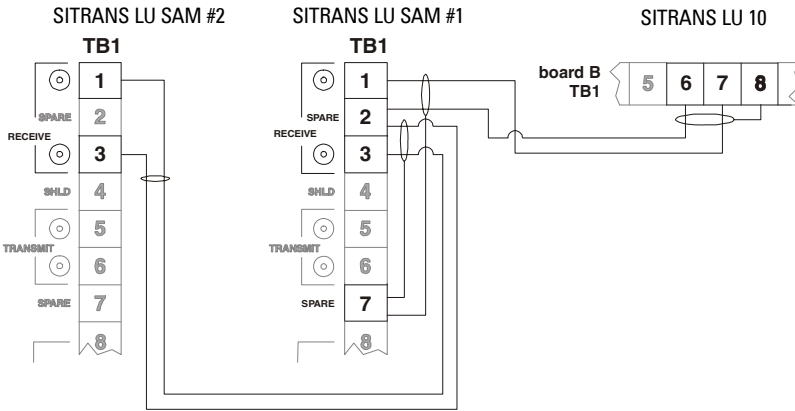
Typical system design. Refer to associated application device instruction manual.

# SITRANS LU 10 Communication

## Retransmit Configuration

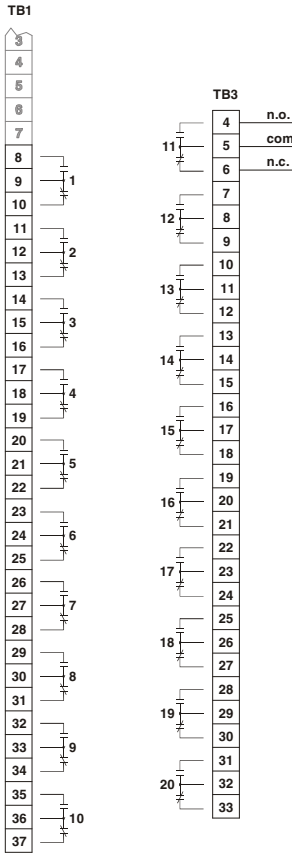


## \* Serial Configuration (single loop)



1. SITRANS LU SAM receiver input is polarized.
2. Refer to associated application device instruction manual for wiring detail. Check that the communication parameter P-740, is 'on'.
3. SITRANS LU SAM interconnecting cable shield should be grounded at applications device only. Insulate shields at junctions to prevent inadvertent grounding.
4. \* If SITRANS LU SAM is unpowered, transmitter ceases communication to all downstream peripherals.
5. Maximum individual loop length 3000 m (10,000 ft) with specified cable.

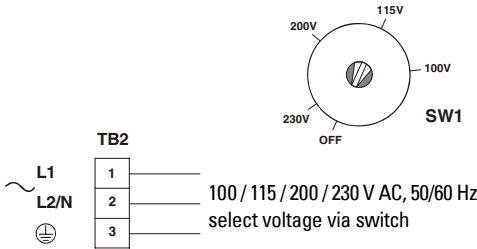
# Relay Output



relay contact, S.P.D.T., 5A at  
250 V AC, non-inductive  
(typical of up to 20 per LU SAM)

All relays are certified for use in equipment where the short circuit capacity of the circuits in which they are connected is limited by fuses having ratings not exceeding the rating of the relays.

# Power



Switch is shown in OFF position. Select appropriate voltage.

## Notes:

- The equipment must be protected by a 15 A fuse or circuit breaker in the building installation.
- A circuit breaker or switch in the building installation, marked as the disconnect switch, shall be in close proximity to the equipment and within easy reach of the operator.

# Operation

Relay setpoints and function are established when programming the associated application device. Refer to the associated instruction manual.

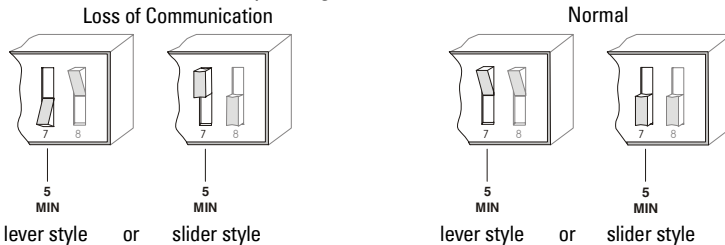
When power to the SITRANS LU SAM is applied, the Power / Data LED (center) illuminates to indicate the power on condition. All relays default to the energized state, relay LEDs off, until updated by the application device.

The Power / Data LED flashes whenever a valid message is received from the application device. If the LED does not flash, check for faulty communication wiring.

The buffers associated with the individual relay points hold the received data until it is updated, controlling the relay and the relay LED status accordingly. When an alarm ON status is received, the programmed relay de-energizes and the corresponding LED lights. As the buffers are updated subject to the scan sequence as programmed into the application device, relay and LED status are independent of the application device LCD display.

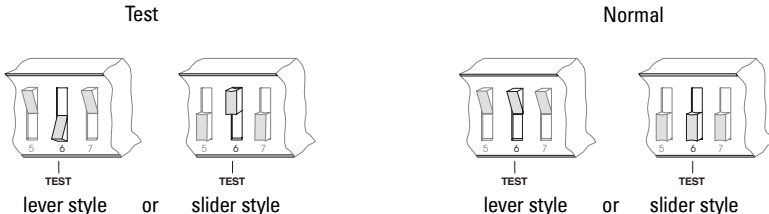
On interruption of power, all relays de-energize (LEDs off), but the stored status is memorized for ten minutes. Once power is restored, all relays revert to their previous status, if the memory is intact, and normal operation resumes.

If SW1 - 7 is closed, relay 20 is redefined as a Loss of Communication (LOC) alarm. If communication is broken for 5 minutes or more, the relay de-energizes and its associated LED lights. When communication is re-established, or by opening SW1 - 7, the relay and LED resume their normal operating status.



The SITRANS LU SAM may be tested in two ways:

1. Via the associated application device. Refer to the associated instruction manual.
2. Via the TEST switch SW1 - 6, located at the upper right corner of board A.



Test overrides the normal operation of all 20 relays. The status LEDs sequentially flash on and off until switch 6 is reset (0) for normal operation of the SITRANS LU SAM. During test, the SITRANS LU SAM buffer is updated if communication has continued. Upon resumption of normal operation, the relays and LEDs assume the status found in the buffer.

# Maintenance

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The SITRANS LU SAM requires no maintenance. However, a program of periodic checks is recommended. This should include regular inspection, general cleaning and good housekeeping practices.

The enclosure and circuit boards should be cleaned only when power is disconnected at the main breaker, using a vacuum and clean, dry paint brush. Check all electrical terminals for corrosion and arcing.

# Notes

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[www.siemens.com/processautomation](http://www.siemens.com/processautomation)

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