

Description

The SICAM AI Unit 7XV5674 is used for the acquisition of analog signals from automation processes and for the transmission of measured values to a connected supervisory system or control center over communication protocol. The modules of the device detect, calculate, analyze and transmit measured values.

SICAM AI Unit offers twelve 20-mA inputs referring to the standard IEC 60688. The 20-mA inputs are divided into 2 groups, on 2 boards each with 6 channels.

Device type:

- DIN rail mounted device
- Plastic case 96 mm x 96 mm x 100 mm (W x H x D)
- Protection class IP20



Fig. 13/30 SICAM AI Unit

Application

The SICAM AI Unit 7XV5674 can support diverse applications. For acquiring DC field signals, SICAM AI Unit 7XV5674 can be applied in the following application fields:

- Protection
- SCADA
- DMS
- EMS systems
- GIS (Gas-Insulated Switchgear) – gas pressure monitoring
- Other industrial processes

For example, 4-mA to 20-mA signals coming from transducers (for example, for monitoring of: power, temperatures, pressure and position) are delivered over standard protocol for further processing, as visualization or connection to other automation processes. The DC inputs from SICAM AI Unit 7XV5674 can be parametrized to support the following ranges:

- DC 0 mA to 20 mA
- DC 4 mA to 20 mA

The measuring accuracy amounts to 0.2% of the rated value (20 mA) under reference conditions. The measuring accuracy amounts to 1.0% of the rated current (20 mA) under environmental impact.

Highlights

- Wide application field (SCADA, protection and automation processes)
- Connection to serial or Ethernet interfaces of SIPROTEC 4 or 5 devices
- Connection to all protection and field devices using IEC 61850-GOOSE messages and IEC 61850 reporting
- Compact and robust design (-25°C to 70°C operation temperature)
- Flexible communication variations (Ethernet, optical fiber or electrical RS485)
- Modbus RTU/TCP, SIPROTEC 20 mA Serial or Ethernet interface to SIPROTEC 5 devices via SUP protocol
- Accurate process measurement (0.2% reference conditions)
- Time synchronization over NTP
- Internal switch allows cost savings
- The integrated web server allows you to configure the parameters via HTML pages using a web browser

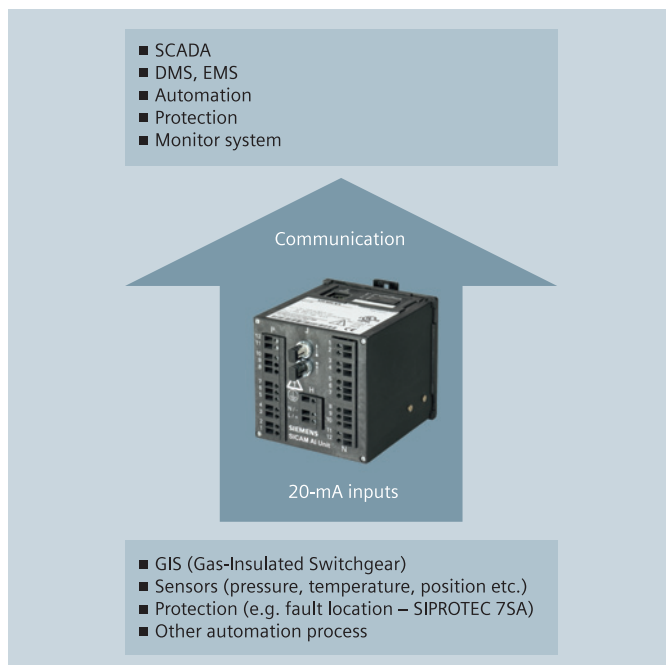


Fig. 13/31 Application example

Description

Measurands

Only direct currents are measured with SICAM AI Unit. The measurement cycles on the board 1 and board 2 are carried out simultaneously. A complete measurement cycle amounts to 642 ms for 6 channels. The measurement of one channel amounts to 107 ms and is repeated after 642 ms.

Limit settings

With the automation functions menu, you can set up to 16 upper or lower limit violations. Limit violations of the upper or lower value range can be output as indications. Up to 4 limit value violations can be signaled at the device via the two binary outputs. 4 group indications can be parameterized and up to 16 logically linked single-point indications can be assigned to each of them.

Communication

To communicate with the substation controller and other peripheral devices, the SICAM AI Unit device has an Ethernet interface and optionally a serial interface (RS485 or optical).

SICAM AI Unit is available in various variants:

- Communication via Ethernet
 - With integrated Ethernet switch: Modbus TCP protocol
 - With integrated Ethernet switch: Modbus TCP protocol and IEC 61850 protocol

Via Ethernet, the following functions are supported:

- Connection to SIPROTEC 5 devices via SUP (Slave Unit/Protocol)
- Device parameterization
- Transmission of measured data
- Transmission of indications
- Time synchronization via NTP
- Communication protocols Modbus TCP and IEC 61850 (reporting and GOOSE)
- Integrated Ethernet switch

With the Ethernet switch that is integrated in the device, further network components can be cascaded via a Y cable, and can therefore also be incorporated in an existing network with IEC 61850 or another Ethernet protocol.

Serial interface

The serial interface as electrical RS485 or optical can be chosen:

- Without serial interface
- With RS485 interface
- With optical interface

The serial interface supports the following functions:

- Transmission of measured data
- Transmission of indications
- Time synchronization via Modbus RTU

If the serial interface is selected, you can use either the Modbus RTU or the SIPROTEC RTU 20 mA communication protocol.

Time synchronization

During operation, SICAM AI Unit needs the date and time for all time-relevant processes. This ensures that a common time basis exists when communicating with peripheral devices and enables time stamping of the process data.

The following types of time synchronization can be executed:

- External time synchronization via Ethernet NTP (preferred)
- External time synchronization via field bus using the Modbus RTU communication protocol
- Internal time synchronization via RTC – Real Time Clock – (if external time synchronization is not available)

Indications signaled by LEDs

SICAM AI Unit automatically monitors the functions of its hardware, software and firmware components. The LEDs on the top side of the housing indicate the current device status.

Parameterization

No special software is needed for parameterization. You can set the parameters from your computer via HTML pages and a web browser. Internet Explorer 6 (or higher) is necessary for this purpose.

Accessories

The following components are optionally available:

- Device manual E50417-G1140-C492 (download available at www.siprotec.com)
- Y cable, order no. 7KE6000-8GD00-0BA2
- Ethernet patch cables (CAT6) RS485 cables for SIPROTEC devices 6XV1 830-0E
- RS485 bus connectors for SIPROTEC devices, 6ES7972-0BA42-0XA0, 6ES7972-0BB42-0XA0
- RS485 cable for SIPROTEC device 6XV1 830-0E
- Order information for assembled fiber-optic cable (FO cable) can be found in the SIPROTEC download area at www.siemens.com/siprotec under accessories, 6XV81xx.
- Further details on the accessories of the device can be found at: www.siprotec.com.

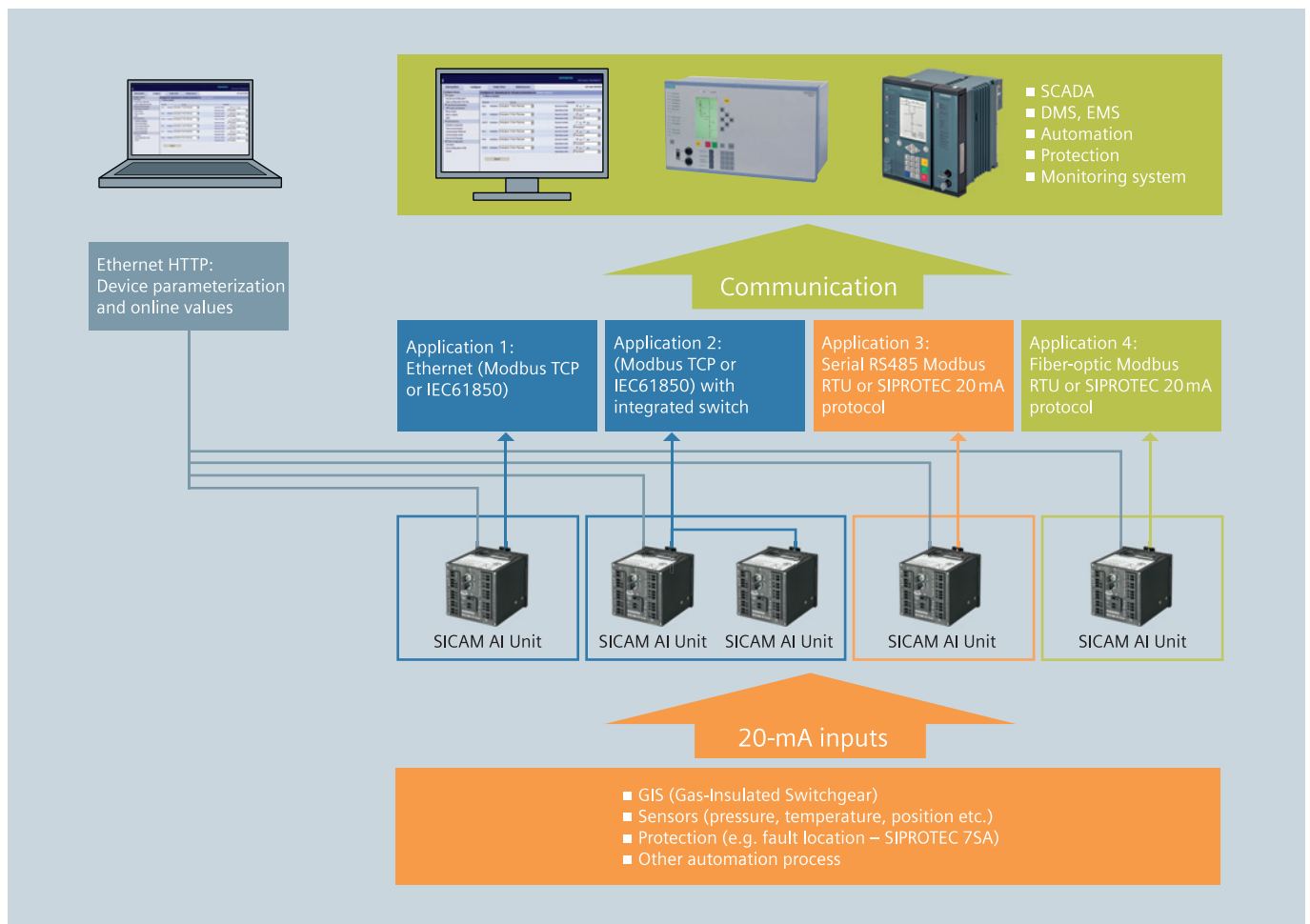


Fig. 13/32 Application example

Accessories / 7XV5674

Selection and ordering data

Description	Order No.
SICAM AI Unit	7XV 5 6 7 4 - 0 K K □ 0 - □ A A 1
Device	
Twelve 20-mA inputs for SIPROTEC devices	
DIN rail mounting unit, IP20	
Case 96 mm x 96 mm x 100 mm	
Power supply: DC 24-240V, AC 100-230V	
Ethernet interface, connection RJ45	
Integrated Ethernet switch	
Web server for parameterization	
UL certification	
Serial interface and communication protocol	
Without serial communication	0
RS485, 9-pol. Sub-D plug – Serial Modbus RTU and SIPROTEC 20 mA protocol FO 820 nm	3
ST connector – Serial Modbus RTU and SIPROTEC 20 mA protocol	4
Ethernet interface and communication protocol	
Ethernet interface with Modbus TCP/UDP	
Ethernet interface with Modbus TCP/UDP and IEC 61850 reporting and GOOSE	
Communication interface and communication protocol	
Ethernet interface with Modbus TCP/UDP or binary signal transmission	1
Ethernet interface with Modbus TCP/UDP, binary signal transmission or IEC 61850 (GOOSE, MMS, reporting)	2