



World of Automation

Chapter 1: General information

HIQUEL[®]
HIGH QUALITY ELECTRONICS

www.hiquel.com



HIQUEL

HIGH QUALITY ELECTRONICS

new dimension in time ...

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We reserve the right to alter specifications in the interests of technical progress.

CATALOGUE GUIDE



◆ number of closing contacts



◆ number of changing contacts



◆ DIN-Rail mounting



◆ 11 pin plug in



◆ timer functionality



◆ real time clock



◆ protection class



◆ temperature measurement function



◆ PTC (Thermistor) measurement function



◆ 3 phase measurement function



◆ diode array



◆ thyristor output



◆ RS232 host connectivity



◆ RS485 bus connectivity



◆ CAN connectivity



◆ Ethernet connectivity



◆ number of inputs



◆ number of outputs



◆ voltage measurement function



◆ current measurement function



◆ liquid level control



◆ speed control



◆ FBR room controller



◆ converter



◆ Arithmetic functions



◆ UL certification



◆ CE conformity

programmable controllers

text displays

expansion modules

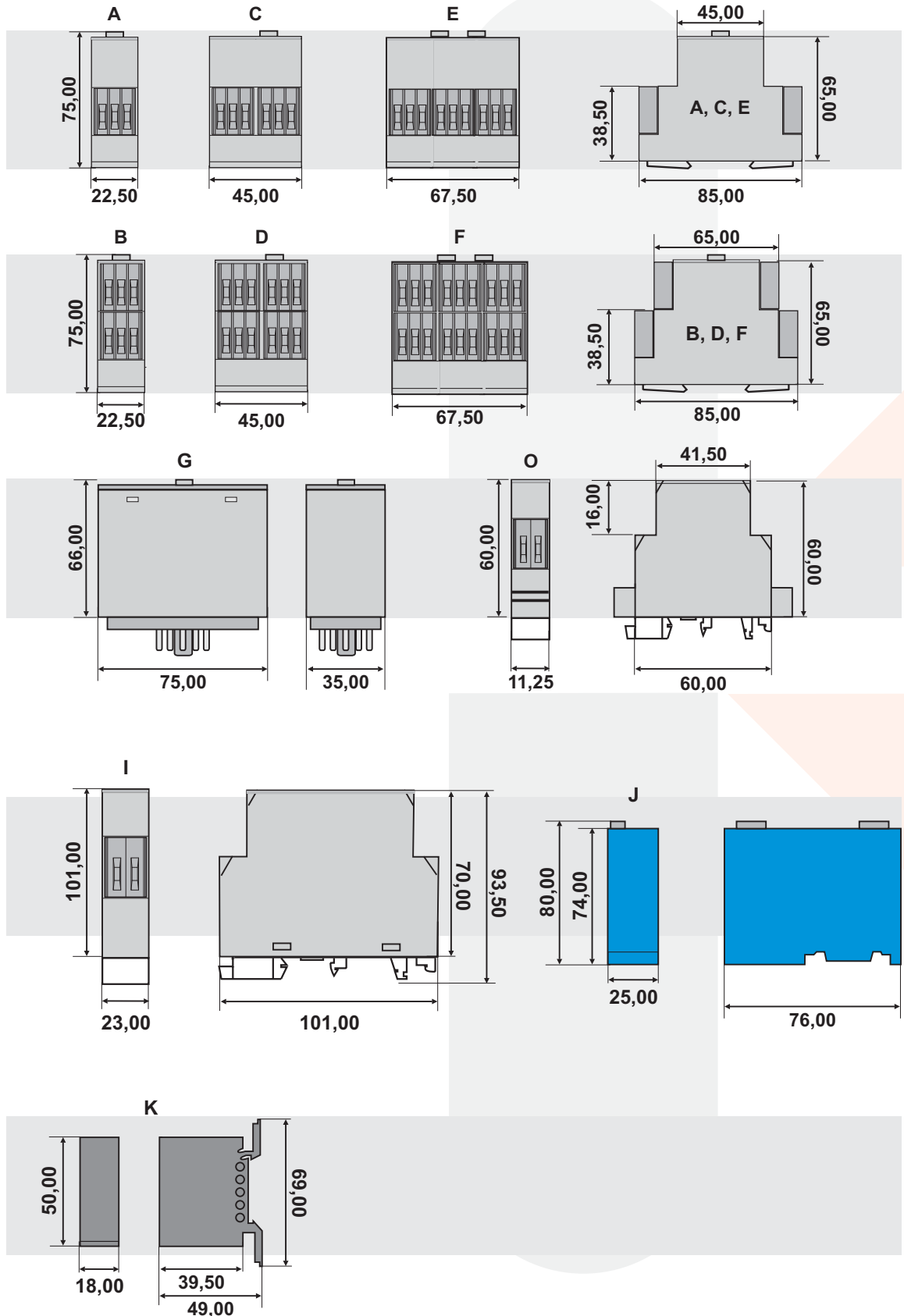
network data communication

alarm inform control about GSM





housing types



DIN-rail
 terminals: IP20
 housing: IP50
 all dimensions in mm



World of Automation

Chapter 2: SLS-500 Series

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2 Chapter 2: SLS-500 Series

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- .03 INFO SLS-500 series**
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Structured control



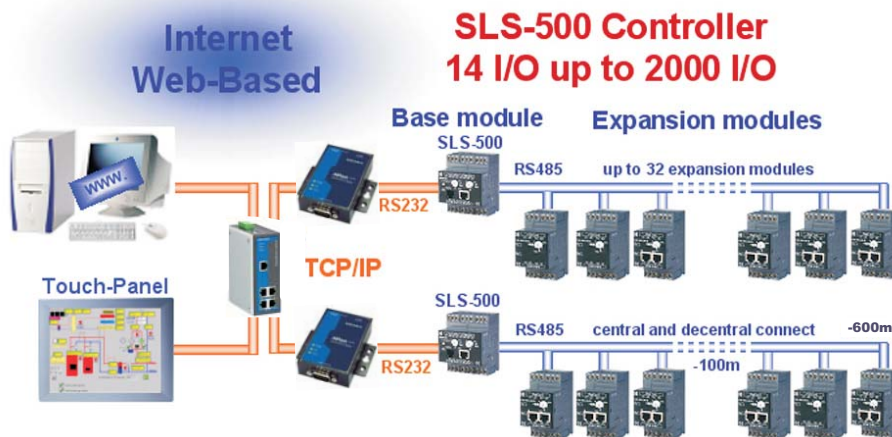
Basically there are two different PLC-series in the HIQUEL product range, the SLS-86 and the SLS-500. Both are modular concepted and can be used as central and/or distributed PLC systems. Due to the fact that a base module can be combined with a broad range of expansion modules both PLC series are very flexible and can therefore fit individual demands. For both series there are also compact controls available.

The SLS-86 and the SLS-500 are programmed without special software knowledge but with different software programs.

SLS-500 Series: complete bit, analogue and text processing

- various SLS-500 base modules (SLS-500-CAN, SLS-500)
- broad range of SLS-500 expansion modules (local and remote versions of all modules available)
- SLS-500 compact modules (SLS-510, SLS-520)

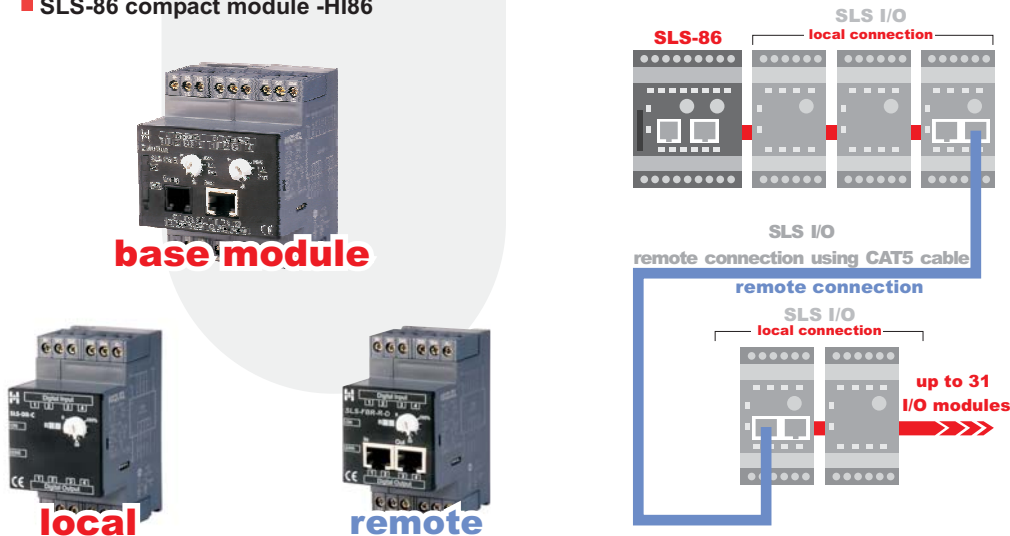
Building Management & Industrial Automation



SLS-500 Controller 14 I/O up to 2000 I/O

SLS-86 Series: bit processing

- SLS-86 base modules
- broad range of SLS-86 expansion modules (local and remote versions of all modules available)
- SLS-86 compact module -HI86

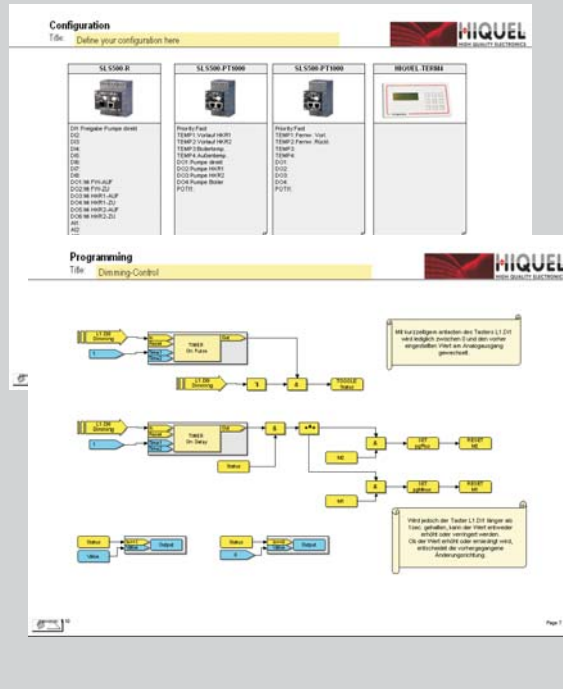


Programming



SLS-500-Configurator

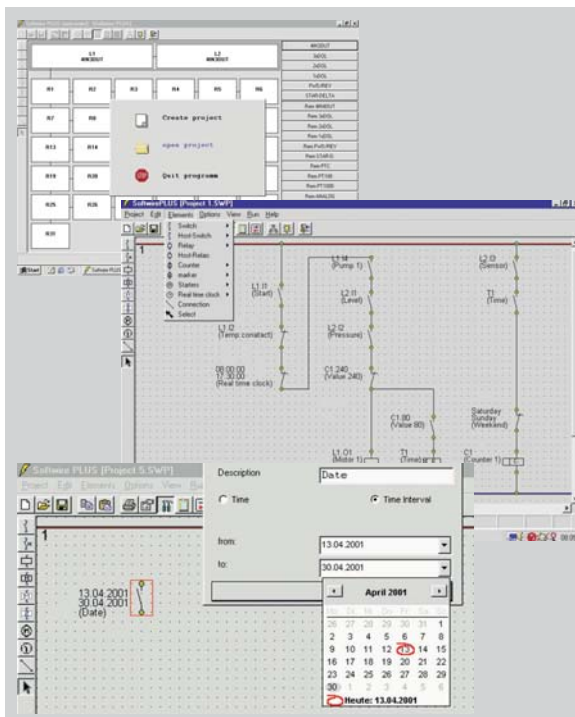
Series: SLS-500, SLS-500-CAN, SLS-510, SLS-520



- SLS-500-Configurator software is simple to use with a user-friendly graphic configuration which cuts costs to a minimum and is the basis for efficient processing of building management and industrial automation tasks.
- Complete analogue, bit and text processing.
- Easy adjustment by integrated scaling and arithmetic operations.
- Pre-programmed function modules (PID, Speed etc.)
- Easy RTC+Calendar programming: time/date/year...
- Online visualisation and simulation of functions
- Language selection by mouse click - German or English

SoftwarePLUS/SoftWIRE

Series: SLS-86, HI-86



- Comfortable programming via wiring (ladder) diagram (SoftwarePLUS) with online visualisation of I/O's, automatically creates complete paper documentation.
- Optimised display layout and automated address allocation for easy handling.
- No limitation of program elements on one ladder rung. Series and parallel circuit of contacts and coils.
- Latching contact, bistable, set and reset function, memories, star-delta-run-up, time functions...
- Software features: easy online visualisation and simulation of functions.
- Language selection simply by mouse click - German, English, Italian, Spanish, French...

SLS-500 Series

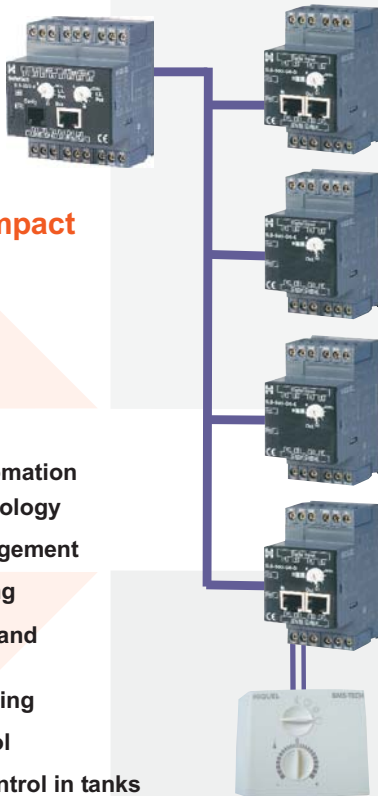
Complete bit, analogue and text processing

The PLC-series SLS-500 is a central and/or distributed PLC system with modular concept. The SLS-510 and the SLS-520 are compact controls of the SLS-500 series.

The base module allows easy and cost-effective communication with up to 32 different expansion modules over a bus length of up to 600m. The modules can be connected either locally by recessed side connectors for side by side DIN rail mounting or remotely via CAT5 cable.

SLS-500 base modules

- SLS-500-CAN
- SLS-500



SLS-500 compact modules

- SLS-510
- SLS-520

SLS-500 expansion modules

Connection: local and remote versions of all modules available

- digital input modules 24Vdc or 100-240Vac
- digital output modules, relays, transistor or photomos
- analogue I/O modules 0-10V or 0-20mA
- lighting dimmer module with 1 dimmed output 230V~
- temperature detection modules for Pt100- and PT1000 sensors
- 16bit analogue input modules; 0-10V or 0-20mA
- incremental encoder input with prescaled output pulses
- open protocol RS232/RS485 interface modules
- interface modules for GSM (text messaging) modem
- room temperature detection modules with 4 inputs
- room temperature controller

Area of use:

- industrial automation
- process technology
- building management
- air conditioning
- window, door and gate control
- material handling
- lighting control
- liquid level control in tanks and pumping systems
- bespoke systems



base module



local (C)

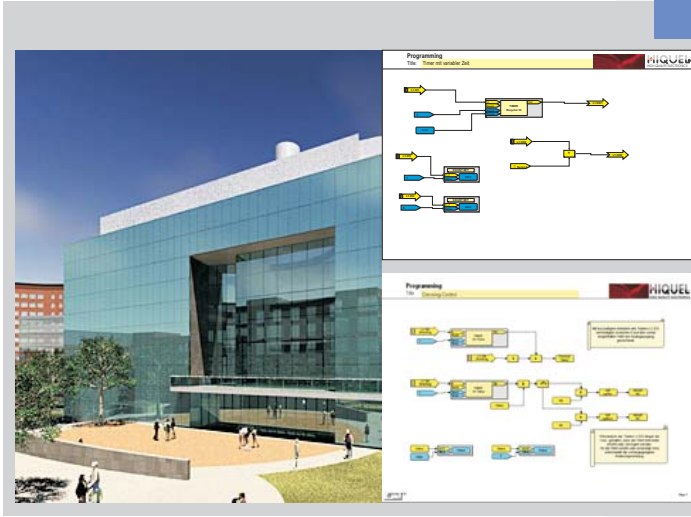


remote (D)

possible connections:
Modbus

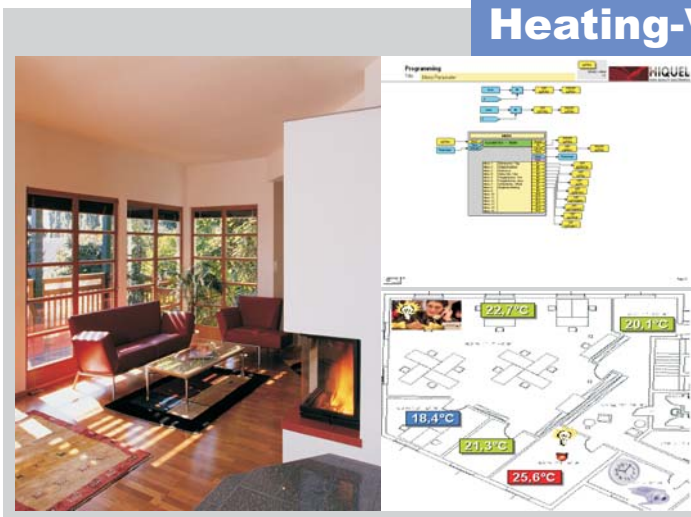


Control - Regulate



Building technology

- SLS-500 modules can be locally or remotely connected to an internal RS485 network in an easy and cost-effective way.
- SLS-500 can be integrated within standard applications (light switches, twilight sensors, temperature sensors, printers, modems, displays etc.)
- Simple wiring of solar heating controls, building controls, heating systems and alarms.
- Open protocol communication and networking is a standard feature of the SLS-500 product line.



Heating-Ventilation-Air Conditioning

- Simple HVAC control with pre-programmed PID controller and remote room control modules (remote control).
- SLS-500 modules are ideal to re-equip office buildings, schools, greenhouses etc.
- SLS-controls are perfectly suited for contracting companies: bespoke building management systems
- Comfortable and economical: HVAC, light control, solar heating systems - all controlled from one system

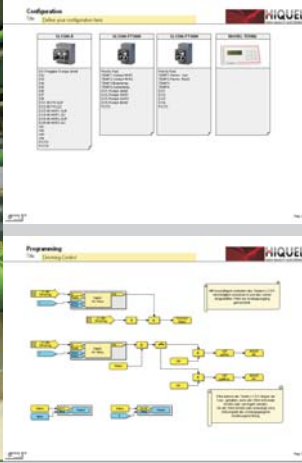


Control-Monitoring-Alarming

- Open protocol communication and networking is a standard feature of the SLS-500 product line.
- The models offer perfect access control: camera monitoring, identification systems etc.
- SLS-500 modules are ideal to re-equip office buildings, schools, greenhouses etc.
- The base module provides cost-effective communication with up to 32 extension modules over a bus length of maximum 600m.

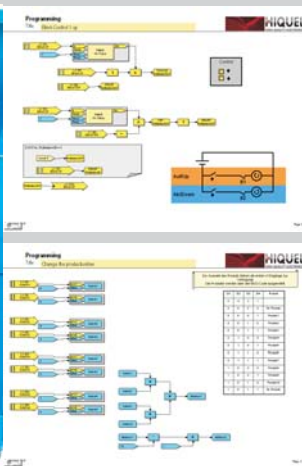
Automation

Process technology



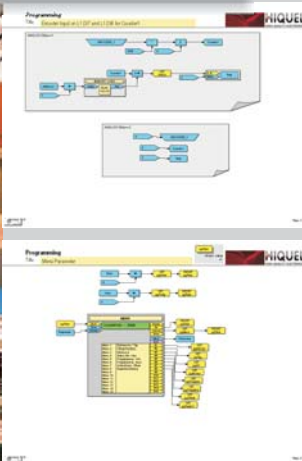
- The modular structure allows system changes to suit application alterations.
- Suitable for process control with complex functions processing large data volumes, e.g. analogue values, nominal values, meter readings or time parameters.
- Integration: printers, scanners, barcode scanners, identification systems, measuring systems, encoder modules...

Machine control



- SLS-500 modules are suited to display, compare and calculate analogue values and texts.
- Parameters or required values are changed directly on the text display or via PC.
- Installation in low profile control boxes and switch boxes within the machine is possible through the modular concept.
- Flexible program exchange by external memory card.

BMS applications



- SLS-500 modules can be combined to fit various requirements for digital thermostats GSM modems, scanners, access systems...
- Electrical wiring installations of SLS-Controllers are highly cost-efficient.
- Assembly of large networks is possible with SLS-Controller.
- Open protocol communication and networking is standard.



Programming

SLS-500-Configurator uses a totally new approach offering amazing possibilities for programming PLC's. The whole SLS-500 Product series is programmed with SLS-500-Configurator in Microsoft PowerPoint® with full integration to other Microsoft Office applications!

Series: SLS-500, SLS-500-CAN, SLS-510, SLS-520

For the first time the powerful 'SLS-500 Configurator' offers a graphic environment in MS PowerPoint for configuration and programming. Microsoft Office is the most widely used software package throughout the world and handling, as well as all hot keys of the individual Office components such as Word, Excel or Access are identical between applications. Therefore, the learning curve with the 'SLS-500 Configurator' software is dramatically reduced compared to a proprietary software solution.

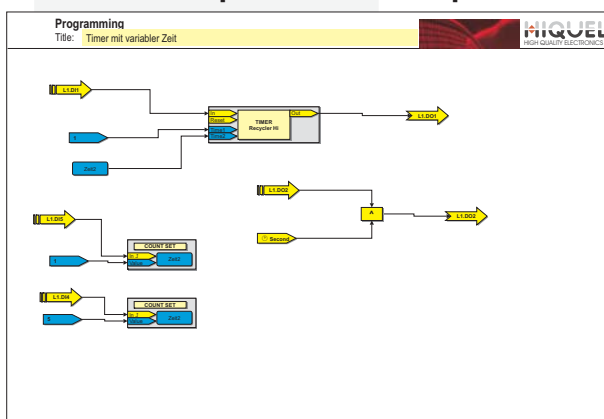
The 'SLS-500-Configurator' software combines PowerPoint's graphic abilities with a user-friendly graphic computer language supporting full bit-, analogue-, and text processing. Of course all popular elements, included in common PLC programming systems, such as flags, inputs and outputs, counters, time elements and edge detection functions are integrated in the software. However, there are special symbols for those graphic parts of the program.

As normal for PowerPoint, text notes, Word documents, Excel files, digital pictures and even digital videos can be embedded to create comprehensive documentation of your plant while programming your PLC!

For documentation purposes simply print out the project or export it to other office programs. For example the contactor configuration of the wiring diagram, triggered by a special part of the software can be integrated. An audio file that contains a description of the operational sequence dictated by the programmer can be added as well as a digital video showing the correct mode of machine operation to guarantee best basic knowledge for the maintenance staff and future programmers when modifications are required! It is also possible to embed whole documents. For example with a simple mouse click the user manual of a frequency converter is opened as PDF file, the entire wiring diagram or the operating guidelines are opened in Word format. Of course, parts of the program can be optionally printed out or exported easily to other Microsoft Office programs.

A special feature of PowerPoint is the ability to save all multimedia information in one single file. Therefore, to reinstall the program only this file is needed, as a compiler, which basically is an integrated simulator, an online load module and an online testing module are also integrated in this PowerPoint file. No additional software is needed to be able to work with the 'SLS-500-Configurator'!

System configuration: up to 32 I/O modules possible



Simple-to-use graphic style flow diagram software: automatic addressing, drop down symbol library. Text, photo, audio & video notes on program pages for future reference

Text Operation	Binary Operation	Analog Operation	Constant functions
+	&	←	const 0
>=		/	const 1
>	^	%	0.9
=	-	+	Alarm
<	↓	-	Start the application
<=	↑	-!	START
!=	↑↓	>=	Periodic functions
		>	1ms
		=	10ms
		<	100ms
		<=	Second
		SET Marker	Minute
		RESET Marker	Hour
		TOGGLE Marker	Day
			Week
			Month
			Year

Real time clock with calendar function: days of the week, weeks of the year, days, months, years, date, time



All program element addresses are automatically allocated and it is simple to adapt the screen and printout to personal needs.

Remote

RADIO

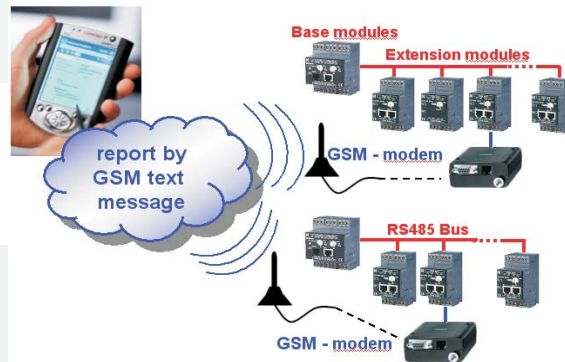
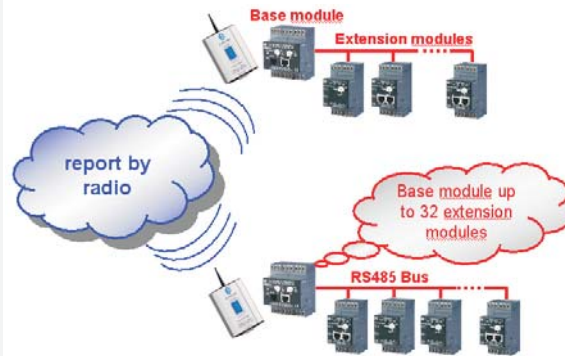
- ◆ report
- ◆ control
- ◆ alarm

GSM

- ◆ report
- ◆ control
- ◆ alarm

INTERNET

- ◆ WEB based
- ◆ Intranet



remote control and remote report

Compact modules

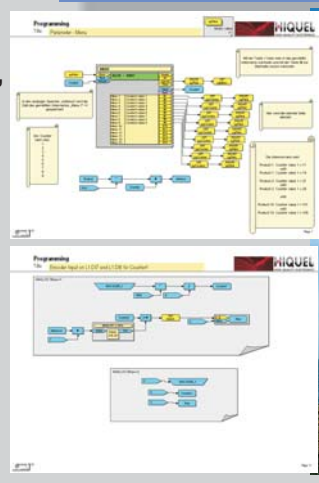
SLS-510 and SLS-520



SLS-510

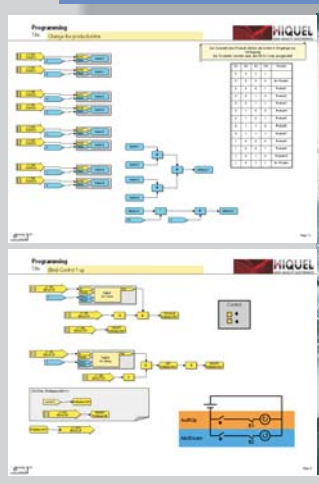
100-250Vac

- Ideal in buildings for lighting and HVAC systems, and in industrial applications such as conveyor belts, hydraulic systems, pumping systems, waste handling...
- 10A (SLS510) 5A (SLS520) relay outputs
- Latching contacts, bi-stable, set and reset functions, memories etc.
- The software offers easy online visualisation and simulation of functions.
- Simple documentation (printing).
- For AC and DC supply
- Complete bit and text processing.
- No limitation of circuits or function blocks.
- Manual settings on the module by means of potentiometers on the front-plate.
- Easy program exchange with memory card (SLS520).
- Simple combination of all time data, e.g. RTC time, period, weekdays, calendar week, days, months, years, date and time.



SLS-520

20-250Vac/dc



Starter Kits SLS-510, SLS-520

overview

all you need to get you going - a starter kit:
SLS-510 **SLS-520**



includes:

- ◆ SLS-510-R 100-250 Vac 10A
- ◆ serial interface cable (programming cable)
- ◆ CD-ROM Automation Software
- ◆ input simulator
- ◆ manual



includes:

- ◆ SLS-520-R 20-250Vac/dc
- ◆ serial interface cable (programming cable)
- ◆ CD-ROM Automation Software
- ◆ input simulator
- ◆ manual
- ◆ SIM-Card (memory card)

Programming with SLS-500-Configurator:

Programming without special software knowledge, suitable for small 8/4 I/O applications.

The SLS-510 and SLS-520 are compact programmable (intelligent) relays that can be used in many fields including industrial control and automation, and machinery control.

The SLS-510 has 8 digital inputs and 4 relay outputs, the SLS-520 has 8 digital inputs and 6 relay outputs. The user program memory for both modules is 16 kB. The SLS-520 additionally features a SIM Card for easy program exchange as well as module to module data transfers.

SLS-510 as well as SLS-520 are programmed with SLS-500-Configurator in Microsoft PowerPoint, with full integration to other Microsoft Office applications. For more detailed information please refer to page 1:06.

The Real Time Clock (RTC) can be easily programmed for point of time switching, (to perform a function at a fixed time/date) or time interval switching, (to perform a function between two times, dates, weeks, years etc). Days of the week, weeks of the year, days, months, years, date and time can be easily combined.

Analogue values can be set using the external potentiometers on the front plate or by PC.

The analogue functions are used to monitor and evaluate different levels, pressures or temperatures. With the analogue outputs you can control the rpm of a motor or the climate of a room and perform many other functions.

SLS-500-Configurator features on-line monitoring, simulation & status display of all I/O's and internal program elements on the PC. Programs can be simulated without a module connected.

It also automatically creates complete paper documentation.

All program element addresses are automatically allocated and it is simple to change the screen and printout.



compact control SLS-510 and SLS-520 starter kits

Ordering information

part no

SLS-510-R-Starter Kit SLS-510-R + Automation Software + download cable + manual + input simulator

SLS-520-R-Starter Kit SLS-520-R + Automation Software + download cable + manual + input simulator + SIM Card

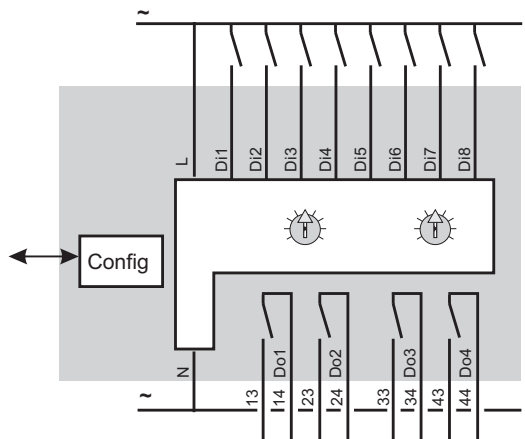
SLS-510, SLS-520

overview

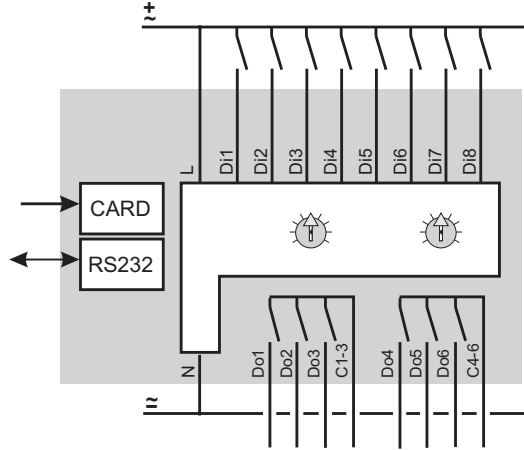
- ◆ compact programmable relay module
- ◆ supply voltage 100-250V~ (SLS-510), 20-250 V~ = (SLS-520)
- ◆ 8 digital inputs 100-250V~
- ◆ 4 SPNO outputs, max. 10A (SLS-510), 6 SPNO outputs, max. 5A (SLS-520)
- ◆ RS232 port for programming/monitoring (SLS-520)
- ◆ Memory Card for simple program transfer (SLS-520)
- ◆ LED indicators for inputs and outputs
- ◆ 2 potentiometers for timers and analogue values
- ◆ 16kB user-program memory
- ◆ 32 timers, 32 counters
- ◆ real time clock (RTC) with calendar function
- ◆ 67.5mm DIN rail mount housing
- ◆ graphical programming with 'SLS-500-Configurator' in Microsoft PowerPoint



SLS-510:



SLS-520:



specification

supply voltage	SLS-510	100-250V~
	SLS-520	20-250Vac/dc
power consumption	1W nominal	
output relay specification	SLS-510	max 10A 250V~
	SLS-520	max 5A 230V~
Ue/Ie AC-15	SLS-510	120V/5A 240V/4A
	SLS-520	24V/4A
Ue/Ie DC-13	SLS-510	24V/4A
	SLS-520	24V/4A
expected life time	SPNO	
	mechanical	1 x 10 ⁷ operations
	electrical	1 x 10 ⁵ operations
input specification	SLS-510	100-250V~
	SLS-520	24V= max 5mA
program memory	16kB	
protection class	terminals	IP20
	housing	IP50
screws	pozidrive 1	
screw tightening torque	0,6..0,8 Nm	
weight	210g	
dimensions	67.5 x 85 x 75mm	
operating conditions	-15 to 55°C non condensing	
	*EN 60947-5-1 VDE 0435	

ordering information

part no	supply	input	inp. galv. iso. *	output	outp. galv. iso.*	housing types
SLS-510-R	100-250V~	8x 100-250V~	no	4x SPNO	yes	E
SLS-Std-RS232	download cable					
SLS-520-R	20-250V~ =	8x 20-240V~ =	no	6x SPNO	yes	E
SLS-Std-RS232	download cable					

* measurement input galvanically isolated from the power supply

Starter Kits

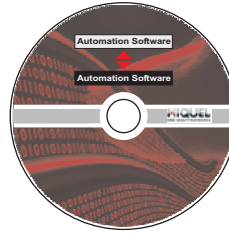
overview

SLS-500-CAN,
SLS-500

all you need to get you going - a starter kit:

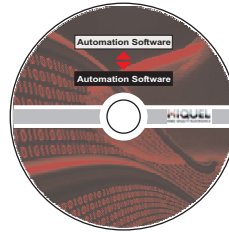
SLS-500-CAN:

- ◆ SLS-500-CAN-R 100-24 V= (base module)
- ◆ serial interface cable (programming cable)
- ◆ CD-ROM Automation Software
- ◆ SIM-Card (memory card)
- ◆ input simulator
- ◆ manual



SLS-500:

- ◆ SLS-500-R 100-24 V= (base module)
- ◆ serial interface cable (programming cable)
- ◆ CD-ROM Automation Software
- ◆ SIM-Card (memory card)
- ◆ input simulator
- ◆ manual



Programming with SLS-500-Configurator:

Programming without special software knowledge, suitable for small (8/6 I/O) and large (up to 250 I/O) applications.

The SLS-500 bases modules are modular programmable (intelligent) relays that can be used in many fields including industrial control, automation, and building management systems.

The base modules can communicate with up to 32 expansion modules either directly connected (local) or via CAT5 cable (remote). It is possible to connect up to 250 I/O over a maximum distance of 600m to one base module.

A broad range of expansion module types is available: including digital I/O, analogue I/O, room controller (FBR), lighting dimmer, temperature inputs, encoder inputs, stepper motor outputs, SMS-Module etc in local and remote versions (see tables on page 01:09 and 01:10).

The base modules of the SLS-500 product range (SLS-500-CAN, SLS-500) are programmed with SLS-500-Configurator in Microsoft PowerPoint, with full integration to other Microsoft Office applications. For more detailed information please refer to page 1:06.

With HTPC (Touch Panel) or TERM4 you can control or change values, display texts or change and update values, menu structure and SCADA software (HTPC)

The Real Time Clock (RTC) can be programmed easily for time switching, (to perform a function at a fixed time/date) or time interval switching, (to perform a function between two times, dates, weeks, years etc). Analogue values can be set using the external potentiometers on the front plate (SLS-500) or by PC. The analogue functions are used to monitor and evaluate different levels, pressures or temperatures. With the analogue outputs you can control the rpm of a motor or the climate of a room and perform many other functions.



SLS-500, SLS-500 CAN starter kits

ordering information

part no

SLS-500-CAN-R-Starter	SLS-500-CAN-R + Automation Software + download cable + manual + input simulator + SIM Card
SLS-500-R-Starter Kit	SLS-500-R + Automation Software + download cable + manual + input simulator + SIM Card
SLS-Std-R5232	download cable

SLS-500-CAN

overview

- ◆ system base module
- ◆ supply voltage 24V=
- ◆ 8 digital inputs 24V=, inputs 1-4 are dual digital/analogue 0-10V
- ◆ 6 SPNO outputs, max. 5A
- ◆ RS232 interface for programming/monitoring
- ◆ CAN Bus port via CAT5
- ◆ RS485 port connects up to 32 SLS-500-I/O modules
- ◆ LED indicators for inputs and outputs
- ◆ 48kB user-program memory
- ◆ timers, counters, RTC with calendar function, analogue- and text processing
- ◆ 67.5mm DIN rail mount housing
- ◆ graphical programming with 'SLS-500-Configurator' in Microsoft PowerPoint

specification

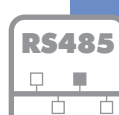
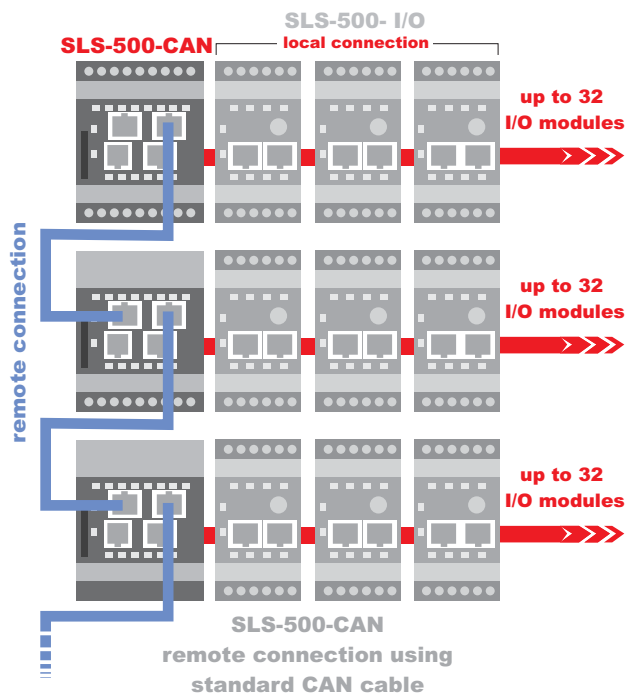
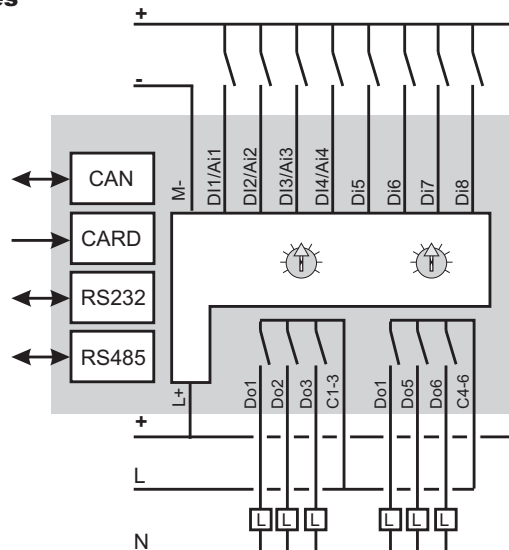
supply voltage	24V= ±10%
power consumption	1W nominal
output relay specification	max. 5A 230V~
Ue/Ie AC-15	120V/1,5A 240V/1A
Ue/Ie DC-13	24V/1A
Ue DC-13 photomos	60V~ =/2A
expected life time	SPNO
mechanical	1 x 10 ⁷ operations
electrical	1 x 10 ⁵ operations
input specification	24V= max. 5 mA
program memory	64kB
protection class	terminals IP20 housing IP50
screws	pozidrive 1
screw tightening torque	0,6..0,8 Nm
weight	210g
dimensions	67,5 x 85 x 75mm
operating conditions	-15 to +55 °C non condensing
resolution	analogue inputs and outputs

*EN 60947-5-1 VDE 0435

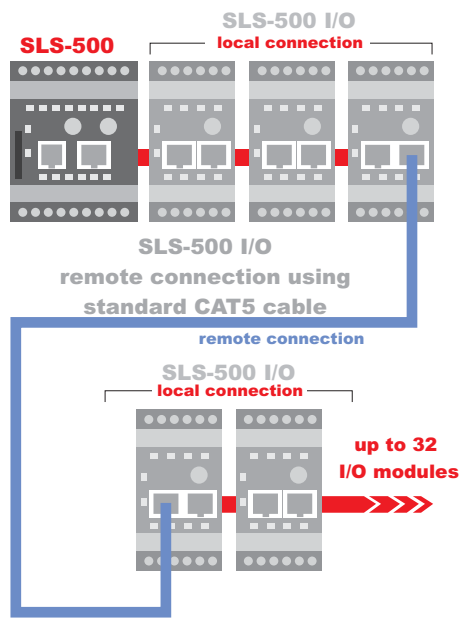
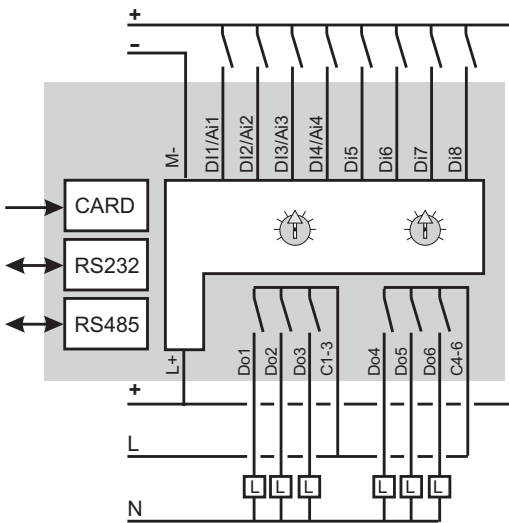
ordering information

part no	supply	input	inp. galv. iso.*	output	outp. galv. iso.*	housing types
SLS-500-CAN-R	24V=	8x 24V=	no	6x SPNO	yes	E
SLS-500-CAN-S	24V=	8x 24V=	no	6x Photomos	yes	E
SLS-500-CAN-R-4AiU-3AoU	24V=	4x 24V=	no	3x SPNO	yes	E
SLS-500-CAN-R-4AiU-3AoI	24V=	4x 24V=	no	3x SPNO	yes	E
SLS-500-CAN-R-4AiI-3AoU	24V=	4x 24V=	no	3x SPNO	yes	E
SLS-500-CAN-R-4AiI-3AoI	24V=	4x 24V=	no	3x SPNO	yes	E
SLS-500-SIM	SIM-Card memory 64kB					
SLS-500-BUS	bus termination for external I/O modules					

* measurement input galvanically isolated from the power supply



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SLS-500

overview

- ◆ system base module
- ◆ supply voltage 24V=
- ◆ 8 digital inputs 24V=, inputs 1-4 are dual digital/analogue 0-10V
- ◆ 6 SPNO outputs, max. 5A
- ◆ RS232 interface for programming/monitoring
- ◆ RS485 port connects up to 32 SLS-500-I/O modules
- ◆ LED indicators for inputs and outputs
- ◆ 2 potentiometers
- ◆ 16kB user-program memory
- ◆ timers, counters, RTC with calendar function, analogue- and text processing
- ◆ 67.5mm DIN rail mount housing
- ◆ graphical programming with 'SLS-500-Configurator' in Microsoft PowerPoint

specification

supply voltage	24V= ±10%
power consumption	1W nominal
output relay specification	max. 5A 230V~
Ue/Ie AC-15	120V/1,5A 240V/1A
Ue/Ie DC-13	24V/1A
Ue DC-13 Photomos	60V=/2A
expected life time	SPNO
mechanical	1 x 10 ⁷ operations
electrical	1 x 10 ⁵ operations
input specification	24V= max. 5 mA
program memory	16kB
protection class	terminals IP20
	housing IP50
screws	pozidrive 1
screw tightening torque	0,6..0,8 Nm
weight	210g
dimensions	67.5 x 85 x 75mm
operating conditions	-15 to +55°C non condensing
	*EN 60947-5-1 VDE 0435

ordering information

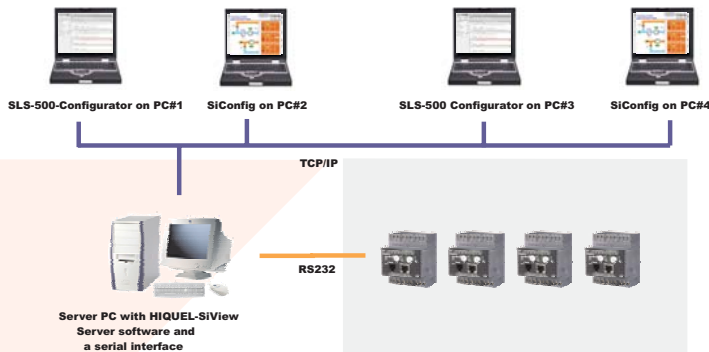
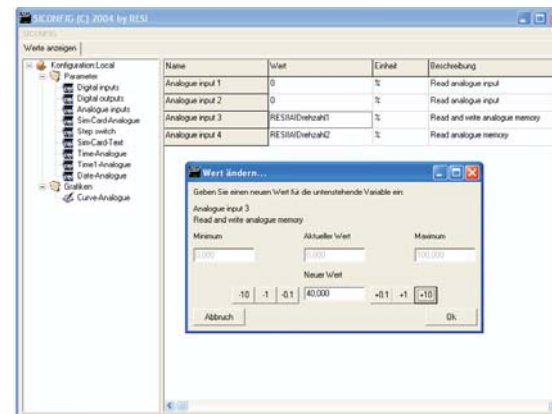
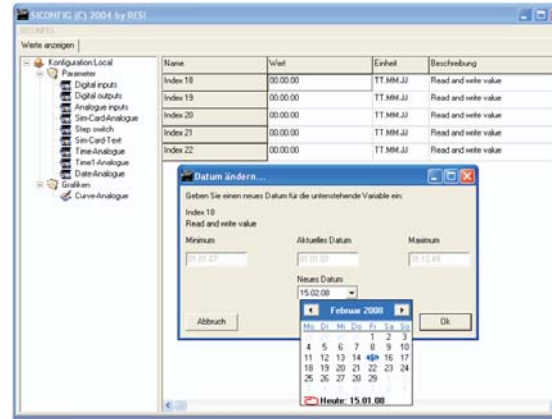
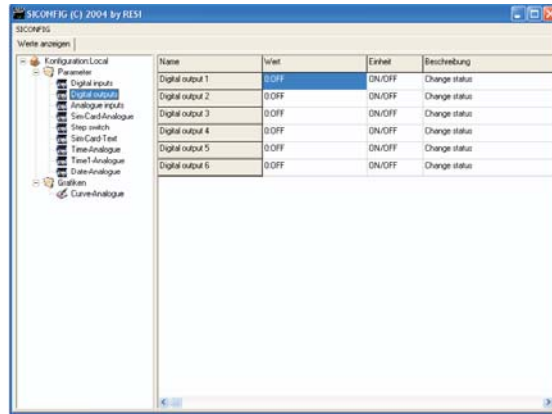
part no	supply	input	inp. galv. iso. *	output	outp. galv. iso.*	housing types
SLS-500-R	24V=	8x 24V=	no	6x SPNO	yes	E
SLS-500-S	24V=	8x 24V=	no	6x Photomos	yes	E
SLS-500-R-4AiU-3AoU	24V=	4x 24V=	no	6x SPNO	yes	E
SLS-500-R-4AiU-3AoI	24V=	4x 24V=	no	6x SPNO	yes	E
SLS-500-R-4AiI-3AoU	24V=	4x 24V=	no	6x SPNO	yes	E
SLS-500-R-4AiI-3AoI	24V=	4x 24V=	no	6x SPNO	yes	E
SLS-500-SIM	SIM-Card memory 64kB					
SLS-500-BUS	bus termination for external I/O modules					

*measurement input is galvanically isolated from the power supply

SLS-500-SiConfig

overview

- ◆ Communication software for SLS-500
- ◆ No licence needed
- ◆ Direct communication through RS232 and RS485 or SIVIEWServer
- ◆ GRID display
- ◆ simply Configuration
- ◆ password protection
- ◆ easy to use menu tree
- ◆ Win98, Win2000, WinXP
- ◆ special support for date and time
- ◆ Touchscreen capability
- ◆ No limits in views or entries
- ◆ Increases the capacity of your visualisation software
- ◆ Downloadable from www.hiquel.com



ordering information

Please download this program from www.hiquel.com



TERM4

overview

- ◆ LC backlit display
- ◆ 4 lines with 20 characters each line
- ◆ character size 3x5mm
- ◆ 9 control keys with symbols
- ◆ integrated RS232 interface
- ◆ error tolerant protocol for data transmission
- ◆ front panel mounting 195x110mm
- ◆ 25mm deep



specification

supply voltage	nominal voltage +10% / -15%
duty cycle	100%
protection class	IP54 (front side)
weight	660g
dimensions	
width	195mm
height	110mm
depth	40mm
operating conditions	-20 to +40°C non condensing

The **HIQUELTERM4** text display is designed for low-end visualisation applications and control tasks within the field of industrial automation. A compact, robust case has a liquid crystal display with 4 lines and 20 characters on each line plus a key pad with 9 keys. Each key has a unique symbol. **TERM4** is designed for monitoring alarms, displaying parameters, changing menu structures and displaying messages.

Drivers, and an easy to read manual describing all functions are supplied. **TERM4** is very easily connected to all host systems such as PLCs or PC's.

TERM4 is suited for use with both our SLS-86 and SLS-500 systems. With the **TERM4** text display it is easy to change the date, time and other settings, without PC, independently of the software.

ordering information

part no	type	supply	input	inp. galv. iso.*	output	outp. galv. iso.*	housing types
TERM4	-	24V= 2W	-	-	-	-	special

* measurement input galvanically isolated from the power supply





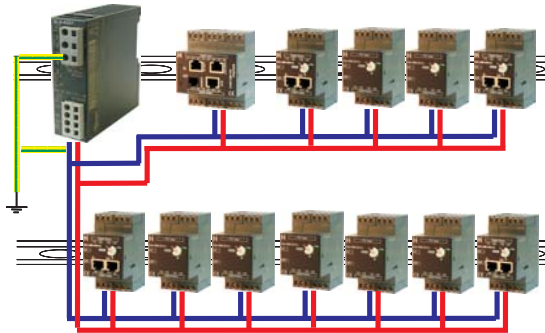
SLS-8207

overview



SLS-8207 power supply

- ◆ power supply 100-240V~
- ◆ output 24V= 2A
- ◆ LED-indicators for input power supply
- ◆ LED-indicators for output power supply
- ◆ 25mm DIN-rail mount housing



— 24V=
 — M- (mass)
 — GND (ground)

!!! IMPORTANT !!!

- M- must be always grounded.
- All converters must be grounded.
- All the GND must be linked.
- All modules have 24V and M- supply.

specification

power supply	100-240V~ ±20%
frequency	50-60Hz
input voltage	0.24 A / 230V~
buffer time	min.10ms / 230V~
output voltage	24Vdc, ±5%
ripple	<100mVss incl. spikes
output current	2A (48 W)
efficiency	typical 90%
loss power	typical 5W
parallel operated	yes
case	ABS/PC
mounting	DIN-rail mount housing
dimensions	25 x 80 x 76mm
operating conditions	-15 to +50 °C non condensing

ordering information

part no	supply	input	inp. galv. iso.*	output	outp. galv. iso.*	housing types
SLS-8207	100-240V~	-	yes	24V=	yes	J

* measurement input galvanically isolated from the power supply



World of Automation

Chapter 3: SLS-500 Extension

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3

Chapter 3: SLS-500 Extension

- .01 SLS-500-D**
- .02 SLS-500-D..-16A**
- .03 SLS-500-DBI-16A**
- .04 SLS-500-DVR**
- .05 SLS-500-8DI**
- .06 SLS-500-8D**
- .07 SLS-500-FBR**
- .08 FBR - remote room control unit**
- .09 SLS-500-DIM**
- .10 SLS-500-PT100**
- .11 SLS-500-PT1000**
- .12 SLS-500-AU**
- .13 SLS-500-AI**
- .14 SLS-500-AU-AU**
- .15 SLS-500-AI-AI**
- .16 SLS-500-AI-AU**
- .17 SLS-500-AU-AI**
- .18 SLS-500-SIO**
- .19 SLS-500-SMS**
- .20 SLS-500-GW**
- .21 SLS-500-T1**
- .22 SLS-500-MBUS**
- .23 SLS-500-Modbus**
- .24 Accessories - sensors**

SLS-500-D

overview

- ◆ digital I/O expansion module
- ◆ supply voltage 24V=
- ◆ 4 digital inputs 24V=
- ◆ 4 outputs
 - SPNO 230V~= max. 5A
 - or transistor (PNP) 24V= max. 800mA
 - or photomos 60V~= max. 2A
- ◆ LED indicators for inputs and outputs
- ◆ RS485 interface
- ◆ 1 potentiometer
- ◆ pre-programmable timer functions
- ◆ 45mm DIN rail mount housing



specification

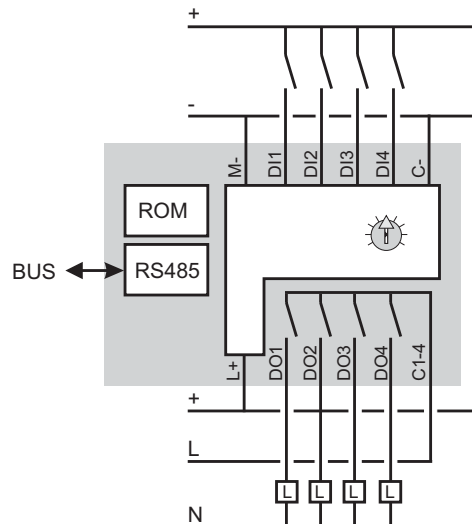
supply voltage	24V= ±10%
power consumption	0,5W nominal
output relay specification	max. 5A 230V~
U _e /I _e AC-15	120V/1,5A 240V/1A
U _e /I _e DC-13	24V/1A
expected life time	SPNO
mechanical	1x10 ⁷ operations
electrical	1x10 ⁵ operations
output transistor spec.	max. 800mA 24V= PNP
output photomos spec.	max. 2A 60V=
input specification	24V=
	min. 5 mA
protection class	terminals IP20
	housing IP50
screws	pozidrive 1
screw tightening torque	0,6..0,8 Nm
weight	140g
dimensions	45 x 85 x 75mm
operating conditions	-15 to +55°C non condensing

*EN 60947-5-1 VDE 0435

ordering information

part no	type	supply	input	inp. galv. iso.*	output	outp. galv. iso.*	housing types
SLS-500-DR-C	local	24V=	4x 24V=	yes	4x SPNO	yes	C
SLS-500-DR-D	remote	24V=	4x 24V=	yes	4x SPNO	yes	C
SLS-500-DT-C	local	24V=	4x 24V=	yes	4x trans. PNP	no	C
SLS-500-DT-D	remote	24V=	4x 24V=	yes	4x trans. PNP	no	C
SLS-500-DS-C	local	24V=	4x 24V=	yes	4x photomos	yes	C
SLS-500-DS-D	remote	24V=	4x 24V=	yes	4x photomos	yes	C

* measurement input galvanically isolated from the power supply



SLS-500-D...-16A

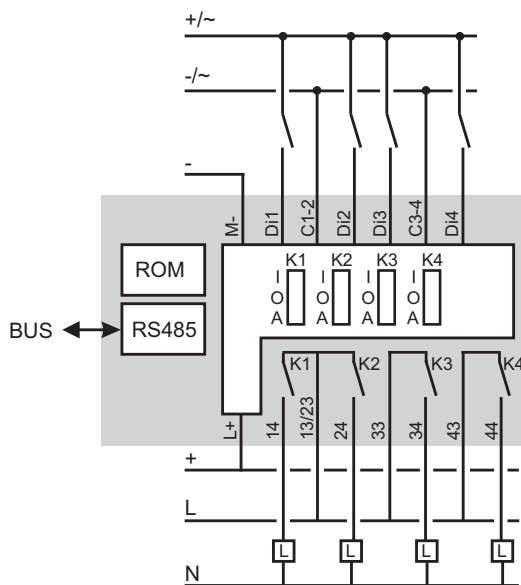
overview



- ◆ digital I/O expansion module
- ◆ universally for switching devices requiring mains power
- ◆ supply voltage 24V=
- ◆ 4 digital inputs 24V= or 230V~
- ◆ 4 outputs 230V~/16A
- ◆ 3 roots for 4 relay contacts
- ◆ MANUAL-OFF-AUTOMATIC switch
- ◆ LED indicators for inputs and outputs
- ◆ RS485 interface
- ◆ 67.5mm DIN rail mount housing

specification

supply voltage	24V=
power consumption	0,5W I
output relay specification	max. 16A 250V~
U _e /I _e AC-15	120V/3A 240V/3A
U _e /I _e DC-13	24V/1,5A
expected life time	SPNO
mechanical	1x10 ⁷ operations
electrical	7x10 ⁴ operations
input specification	230V~ / 24V=
	min. 1 mA / min. 3 mA
protection class	terminals IP20
	housing IP50
screws	pozidrive 1
screw tightening torque	0,6..0,8 Nm
weight	230g
dimensions	67,5 x 85 x 75mm
operating conditions	-15 to +55°C non condensing
	*EN 60947-5-1 VDE 0435



ordering information

part no	type	supply	input	inp. galv. iso.*	output	outp. galv. iso.*	housing types
SLS-500-DRR-16A-C	local	24V=	4x 230V~	yes	4x SPNO	yes	E
SLS-500-DRR-16A-D	remote	24V=	4x 230V~	yes	4x SPNO	yes	E
SLS-500-DR-16A-C	local	24V=	4x 24V~	yes	4x SPNO	yes	E
SLS-500-DR-16A-D	remote	24V=	4x 24V~	yes	4x SPNO	yes	E

* measurement input galvanically isolated from the power supply

SLS-500-DBI-16A

overview

- ◆ supply voltage 24V=
- ◆ 4 digital inputs
- ◆ 4 outputs / bistable SPNO max. 16A
- ◆ LED indicators for inputs and outputs
- ◆ RS485 interface
- ◆ manuel of automatic switch
- ◆ pre-programmable timer functions
- ◆ 67.5mm DIN rail mount housing



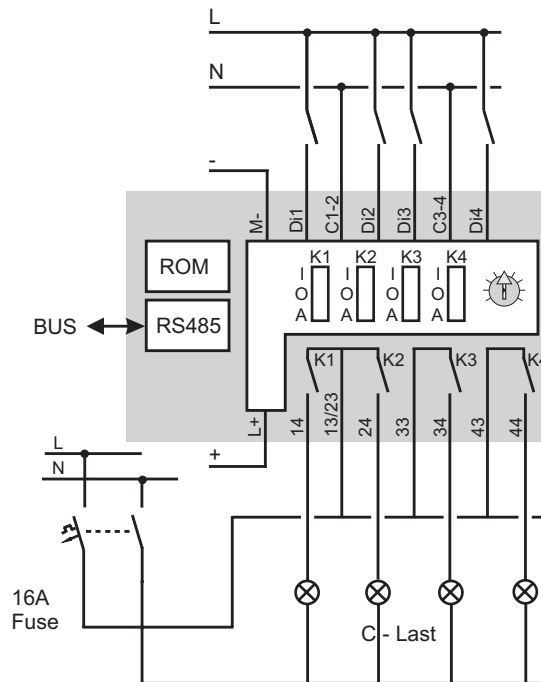
specification

supply voltage	24V=
power consumption	0,5W
output relay specification	max. 16A 230V~
Only for resistive and capacitive loads suited	$t < 20\text{ms}$ max. 165A
loads suited	$t < 200\mu\text{s}$ max. 800A
expected life time	SPNO
mechanical	3×10^6 operations
electrical	3×10^4 operations
input specification	230V~
	min. 1mA
protection class	terminals IP20
	housing IP50
screws	pozidrive 1
screw tightening torque	0,6..0,8 Nm
weight	230g
dimensions	67,5 x 85 x 75mm
operating conditions	-15 to +55°C non condensing
	*EN 60947-5-1 VDE 0435

ordering information

part no	type	supply	input	inp. galv.iso.*	output	outp. galv. iso.*	housing types
SLS-500-DBI-16A-C	local	24V=	4x 230V~	yes	4x SPNO	yes	E
SLS-500-DBI-16A-D	remote	24V=	4x 230V~	yes	4x SPNO	yes	E

* measurement input galvanically isolated from the power supply



SLS-500-DBI-16A digital input module

SLS-500-DVR

overview

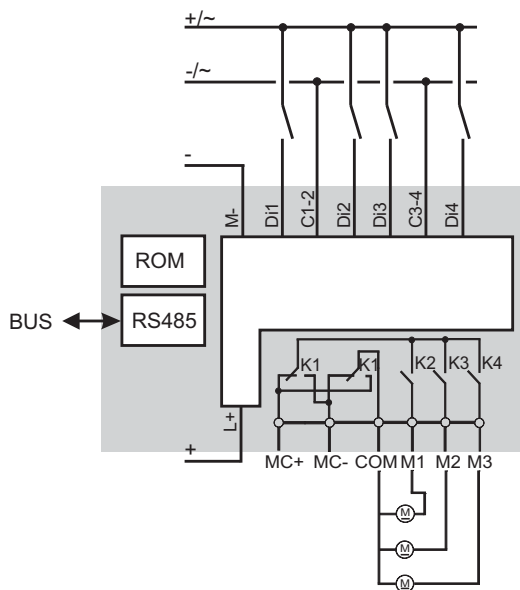
- ◆ digital I/O expansion module
- ◆ used to control up to 3 DC motors like shutters and skylights
- ◆ supply voltage 24V=
- ◆ 4 digital inputs 24V=
- ◆ 3 outputs for DC motor
- ◆ LED indicators for inputs and outputs
- ◆ pre-programmable timer functions
- ◆ RS485 interface
- ◆ 67.5mm DIN rail mount housing

specification

supply voltage	24V=
power consumption	0,5W
output relay specification	max. 5A 250V~
Ue/Ie DC-13	24V/1,5A
expected life time	SPNO
mechanical	2x10 ⁷ operations
electrical	7x10 ⁴ operations
input specification	24V=
	min. 3 mA
protection class	terminals IP20
	housing IP50
screws	pozidrive 1
screw tightening torque	0,6..0,8 Nm
weight	140g
dimensions	67,5 x 85 x 75mm
operating conditions	-15 bis +55°C non condensing

ordering information

part no	type	supply	input	inp.galv.iso.*	output	outp.galv.iso.*	housing types
SLS-500-DVR-C	local	24V=	4x 24V=	yes	1xSPCO	yes	E
SLS-500-DVR-D	remote	24V=	4x 24V=	yes	3xSPNO	yes	E



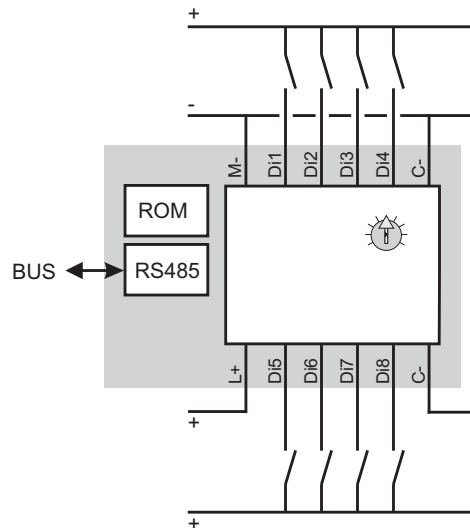
SLS-500-8DI

overview

- ◆ digital input expansion module
- ◆ supply voltage 24V=
- ◆ 8 digital inputs 24V=
- ◆ LED indicator for input
- ◆ RS485 interface
- ◆ 1 potentiometer
- ◆ pre-programmable timer functions
- ◆ 45mm DIN rail mount housing

specification

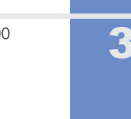
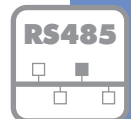
supply voltage	24V= ±10%
power consumption	0,5W nominal
input specification	24V=
	min. 5 mA
protection class	terminals IP20
	housing IP50
screws	pozidrive 1
screw tightening torque	0,6..0,8 Nm
weight	140g
dimensions	45 x 85 x 75mm
operating conditions	-15 to +55°C non condensing



ordering information

part no	type	supply	input	inp. galv. iso.*	output	outp. galv. iso.*	housing types
SLS-500-8DI-C	local	24V=	8x 24V=	yes	-	-	C
SLS-500-8DI-D	remote	24V=	8x 24V=	yes	-	-	C

* measurement input galvanically isolated from the power supply



SLS-500-8DI digital input module

SLS-500-8D

overview



local

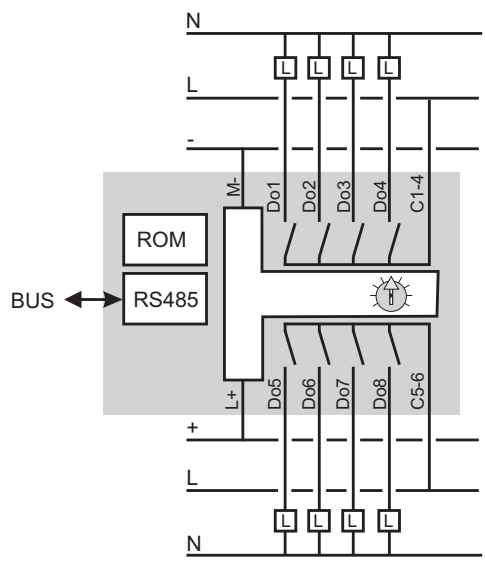


remote

- ◆ digital output expansion module
- ◆ supply voltage 24V=
- ◆ 8 digital outputs
 - SPNO 230V~= max. 5A
 - or transistor (PNP) 24V= max. 800mA
 - or photomos 60V~= max. 2A
- ◆ LED indicator for output
- ◆ RS485 interface
- ◆ 1 potentiometer
- ◆ pre-programmable timer functions
- ◆ 45mm DIN rail mount housing

specification

supply voltage	24V= ±10%
power consumption	0,5W nominal
output relay specification	max. 5A 230V~
Ue/Ie AC-15	120V/1,5A 240V/1A
Ue/Ie DC-13	24V/1A
expected life time	SPNO
mechanical	1x10 ⁷ operations
electrical	1x10 ⁶ operations
output transistor spec.	max. 800mA 24V= PNP
output photomos spec.	max. 2A 60V=
protection class	terminals IP20
	housing IP50
screws	pozidrive 1
screw tightening torque	0,6..0,8 Nm
weight	120g
dimensions	45 x 85 x 75mm
operating conditions	-15 to +55°C non condensing
	*EN 60947-5-1 VDE 0435



ordering information

part no	type	supply	input	inp. galv. iso.*	output	outp. galv. iso.*	housing types
SLS-500-8DR-C	local	24V=	-	-	8x SPNO	yes	C
SLS-500-8DR-D	remote	24V=	-	-	8x SPNO	yes	C
SLS-500-8DT-C	local	24V=	-	-	8x trans. PNP	no	C
SLS-500-8DT-D	remote	24V=	-	-	8x trans. PNP	no	C
SLS-500-8DS-C	local	24V=	-	-	8x photomos	yes	C
SLS-500-8DS-D	remote	24V=	-	-	8x photomos	yes	C

* measurement input galvanically isolated from the power supply

SLS-500-FBR

overview

- ◆ digital room controller expansion module
- ◆ supply voltage 24V=
- ◆ 4 FBR room controller inputs 24V=
- ◆ 4 outputs
 - SPNO 230V~= max. 5A
 - or transistor (PNP) 24V= max. 800mA
- ◆ LED indicators for inputs and outputs
- ◆ room temperature controller with day/night- and auto-switch, temperature setting and temperature correction
- ◆ RS485 interface
- ◆ 1 potentiometer
- ◆ pre-programmable timer functions
- ◆ 45mm DIN rail mount housing

specification

supply voltage	24V= ±10%
power consumption	0,5W nominal
output relay specification	max. 5A 230V~
Ue/Ie AC-15	120V/1,5A 240V/1A
Ue/Ie DC-13	24V/1A
expected life time	SPNO
mechanical	1x10 ⁷ operations
electrical	1x10 ⁵ operations
output transistor spec.	max. 800mA 24V= PNP
input specification	24V=
	min. 5 mA
protection class	terminals IP20
	package IP50
screws	pozidrive 1
screw tightening torque	0,6..0,8 Nm
weight	140g
dimensions	45 x 85 x 75mm
operating conditions	-15 to +55°C non condensing
	*EN 60947-5-1 VDE 0435

ordering information

part no	type	supply	input	inp. galv. iso.*	output	outp. galv. iso.*	housing types
SLS-500-FBR-R-C	local	24V=	4x 24V=	yes	4x SPNO	yes	C
SLS-500-FBR-R-D	remote	24V=	4x 24V=	yes	4x SPNO	yes	C
SLS-500-FBR-T-C	local	24V=	4x 24V=	yes	4x trans. PNP	no	C
SLS-500-FBR-T-D	remote	24V=	4x 24V=	yes	4x trans. PNP	no	C
FBR	please refer to page 03:08						

* measurement input galvanically isolated from the power supply



local

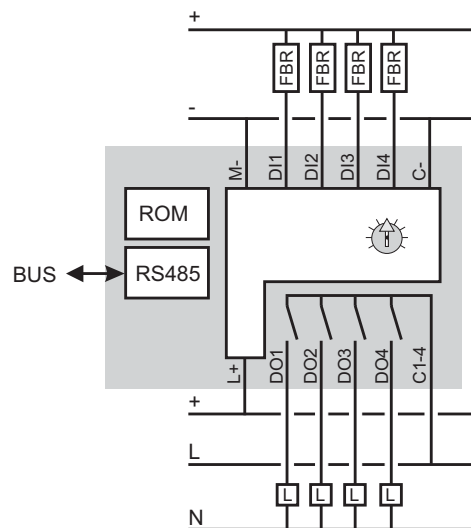


remote



FBR
room controller module
2-wire connection to
SLS-FBR module

FBR



SLS-500-FBR digital room controller module

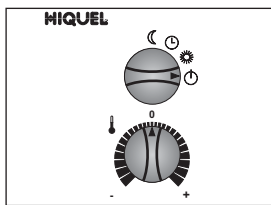


FBR-room control

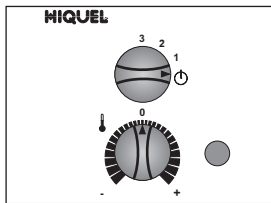
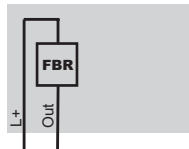
overview



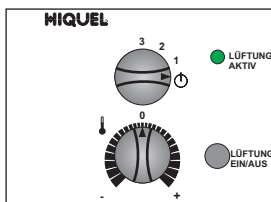
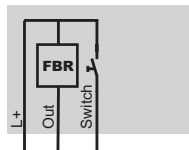
- ◆ digital remote room control unit
- ◆ supply voltage 24V=
- ◆ two-wire connection
- ◆ room temperature measuring, party-switch and ideal value adjustment
- ◆ with button and 2 LEDs available
- ◆ various printing options are possible
- ◆ 2-piece housing for easy installation
- ◆ mountable on a standard flush box



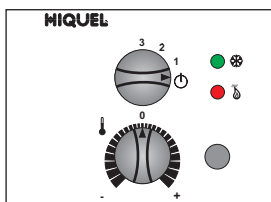
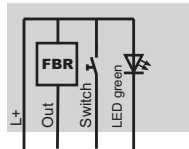
FBR-DS-PO



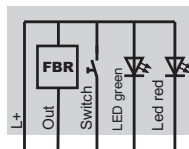
FBR-DS-PO-S



FBR-DS-PO-S-LG



FBR-DS-PO-S-LG-LR

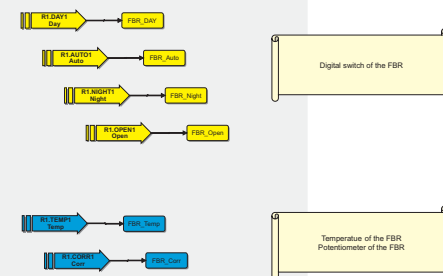


specification

supply voltage	24Vdc \pm 10%
duty cycle	100%
temperature range	-5 to +40°C
weight	80g
dimensions	
width	85mm
height	85mm
depth	25mm
operating conditions	-20 bis +40°C non condensing

Programming

Title: SLS-500-FBR



ordering information

part no	digital switch	potentiometer	button	LED left green	LED right red	housing type
FBR	-	-	-	-	-	special
FBR-DS	1	-	-	-	-	special
FBR-PO	-	1	-	-	-	special
FBR-DS-PO	1	1	-	-	-	special
FBR-DS-PO-S	1	1	1	-	-	special
FBR-DS-PO-S-LG	1	1	1	1	-	special
FBR-DS-PO-S-LG-LR	1	1	1	1	1	special

* At request are also other Labeling and assembly variants available

SLS-500-DIM

overview

- ◆ lighting dimmer expansion module
- ◆ supply voltage 24V=
- ◆ 1 dimmed output 600Watt 230V~
- ◆ RS485 interface
- ◆ pre-programmable timer functions
- ◆ 45mm DIN rail mount housing

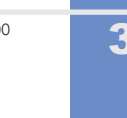
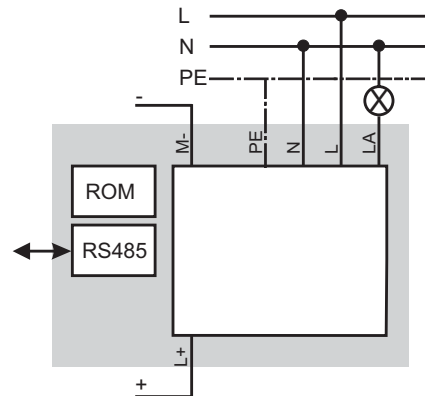
specification

supply voltage	24V= ±10%
power consumption	0,5W nominal
mains voltage	230 Vac
rated output	600 VA
rated current	2,5 A
load type	ohmic, inductive, automatic load detection
control type	phase control
resolution	1%
leakage current	< 1mA (OFF-State)
protection class	terminals IP20 housing IP50
screws	pozidrive 1
screw tightening torque	0,6..0,8 Nm
weight	155g
dimensions	45 x 85 x 75mm
operating conditions	-15 to +55°C non condensing

ordering information

part no	type	supply	input	inp. galv. iso.*	output	outp. galv. iso.*	housing types
SLS-500-DIM-C	local	24V=	-	-	1x dimmer	yes	C
SLS-500-DIM-D	remote	24V=	-	-	1x dimmer	yes	C

* measurement input galvanically isolated from the power supply



SLS-500-DIM lighting dimmer module



SLS-500-PT100

overview



local



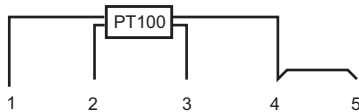
remote

- ◆ temperature input expansion module
- ◆ supply voltage 24V=
- ◆ 2 PT100 inputs
- ◆ 4 transistor outputs (PNP)
- ◆ LED indicators for outputs
- ◆ RS485 interface
- ◆ 1 potentiometer
- ◆ pre-programmable timer functions
- ◆ 45mm DIN rail mount housing

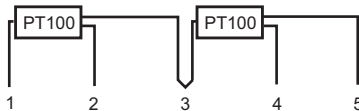
specification

supply voltage	24V= ±10%
power consumption	0,5W nominal
output transistor spec.	max. 800mA 24V= PNP
input specification	PT100 element
	-50°C to +300°C
	0,1°C repeat accuracy
protection class	terminals IP20
	housing IP50
screws	pozidrive 1
screw tightening torque	0,6..0,8 Nm
weight	120g
dimensions	45 x 85 x 75mm
operating conditions	-15 to +55°C non condensing

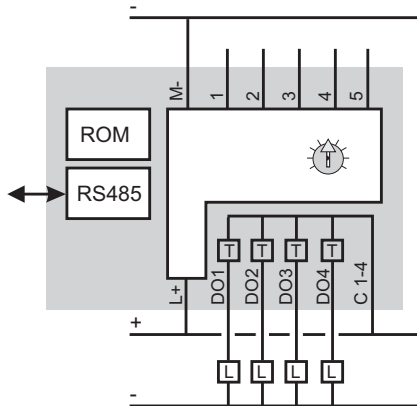
1 PT100 4-wire connection



2 PT100 3-wire connection



Remark:
Unused inputs are replaced by connections.



ordering information

part no	type	supply	input	inp. galv. iso.*	output	outp. galv. iso.*	housing types
SLS-500-PT100-C	local	24V=	2x PT100	no	4x trans. PNP	no	C
SLS-500-PT100-D	remote	24V=	2x PT100	no	4x trans. PNP	no	C

* The ordering information for various sensors you will find on page 03:23
* measurement input galvanically isolated from the power supply

SLS-500-PT1000

overview

- ◆ temperature input expansion module
- ◆ supply voltage 24V=
- ◆ up to 4 PT1000 inputs
- ◆ 4 transistor outputs (PNP)
- ◆ LED indicators for outputs
- ◆ RS485 interface
- ◆ 1 potentiometer
- ◆ pre-programmable timer functions
- ◆ 45mm DIN rail mount housing

specification

supply voltage	24V= ±10%
power consumption	0,5W nominal
output transistor spec.	max. 800mA 24V= PNP
input specification	PT1000 element -50°C to +300°C 0,1°C repeat accuracy
protection class	terminals IP20 housing IP50
screws	pozidrive 1
screw tightening torque	0,6..0,8 Nm
weight	120g
dimensions	45 x 85 x 75mm
operating conditions	-15 to +55°C non condensing

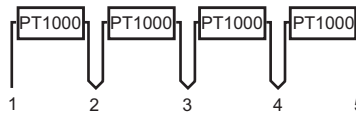
ordering information

part no	type	supply	input	inp. galv. iso.*	output	outp. galv. iso.*	housing types
SLS-500-PT1000-C	local	24V=	4x PT1000	no	4x trans. PNP	no	C
SLS-500-PT1000-D	remote	24V=	4x PT1000	no	4x trans. PNP	no	C

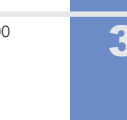
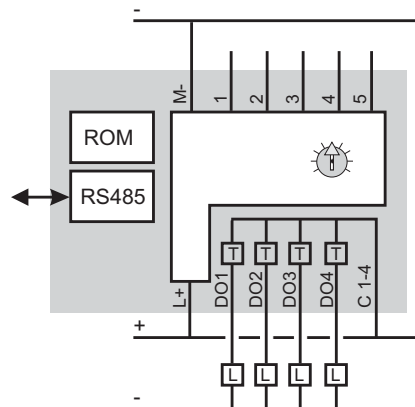
* The ordering information for various sensors you will find on page 03:23
 * measurement input galvanically isolated from the power supply



4 PT1000 2-wire connection



Remark:
Unused inputs are replaced by connections.



SLS-500-PT1000 temperature input module



SLS-500-AU

overview



local

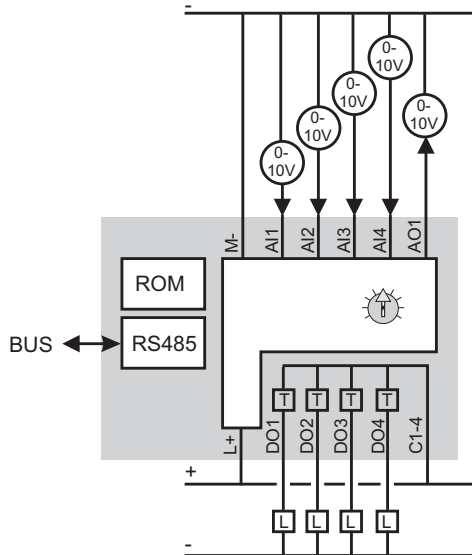


remote

- ◆ analogue I/O expansion module
- ◆ supply voltage 24V=
- ◆ 4 analogue inputs 0-10V
- ◆ 1 analogue output 0-10V
- ◆ 4 transistor outputs (PNP)
- ◆ LED indicators for outputs
- ◆ RS485 interface
- ◆ 1 potentiometer
- ◆ pre-programmable timer functions
- ◆ 45mm DIN rail mount housing

specification

supply voltage	24V=
power consumption	0,5W nominal
transistor output spec.	max. 800mA 24V= PNP max. 8kHz
analogue output spec.	0 - 10V= max. 2mA
resolution	12 bit
repeat accuracy	0,1%
precision	±0,5%
analogue input spec.	0 - 10V=
resolution	10 bit
input resistance	50kOhm
protection class	terminals IP20 housing IP50
screws	pozidrive 1
screw tightening torque	0,6..0,8 Nm
weight	120g
dimensions	45 x 85 x 75mm
operating conditions	-15 to +55 °C non condensing



ordering information

part no	type	supply	input	inp. galv. iso.*	output	outp. galv. iso.*	housing types
SLS-500-AU-C	local	24V=	4x 0-10V	no	4x trans. PNP	no	C
SLS-500-AU-D	remote	24V=	4x 0-10V	no	4x trans. PNP	no	C

* The ordering information for various sensors you will find on page 03:23
* measurement input galvanically isolated from the power supply

SLS-500-AI

overview

- ◆ analogue I/O expansion module
- ◆ supply voltage 24V=
- ◆ 4 analogue inputs 0-20 mA
- ◆ 1 analogue output 0-10 V
- ◆ 4 transistor outputs (PNP)
- ◆ LED indicators for outputs
- ◆ RS485 interface
- ◆ 1 potentiometer
- ◆ pre-programmable timer functions
- ◆ 45mm DIN rail mount housing

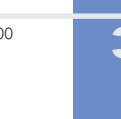
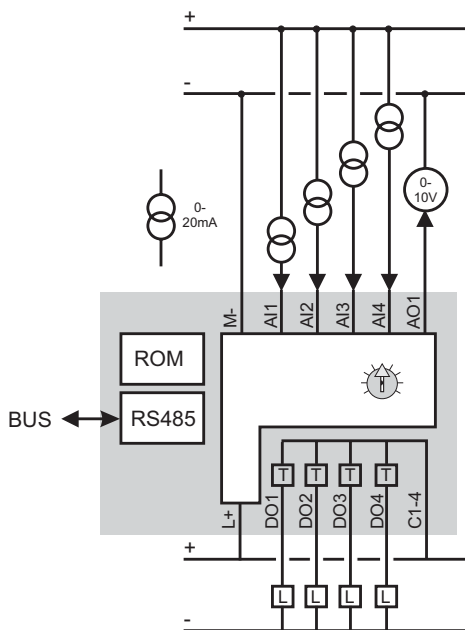
specification

supply voltage	24V= ±10%
power consumption	0,5W nominal
output transistor spec.	max. 800mA 24V= PNP max. 8kHz
analogue output spec.	0 - 10V= max. 2mA resolution 12 bit repeat accuracy 0,1% precision ±0,5%
analogue input spec.	0 - 20mA resolution 10 bit
input resistance	250 Ohm
protection class	terminals IP20 housing IP50
screws	pozidrive 1
screw tightening torque	0,6..0,8 Nm
weight	120g
dimensions	45 x 85 x 75mm
operating conditions	-15 to +55°C non condensing

ordering information

part no	type	supply	input	inp. galv. iso.*	output	outp. galv. iso.*	housing types
SLS-500-AI-C	local	24V=	4x 0-20mA	no	4x trans. PNP	no	C
SLS-500-AI-D	remote	24V=	4x 0-20mA	no	4x trans. PNP	no	C

* The ordering information for various sensors you will find on page 03:23
* measurement input galvanically isolated from power supply



SLS-500-AI analogue I/O module (current)

SLS-500-AU-AU

overview

- ◆ analogue I/O expansion module
- ◆ supply voltage 24V=
- ◆ 4 analogue inputs 0-10V
- ◆ 4 analogue outputs 0-10V
- ◆ RS485 interface
- ◆ 1 potentiometer
- ◆ pre-programmable timer functions
- ◆ 45mm DIN rail mount housing



specification

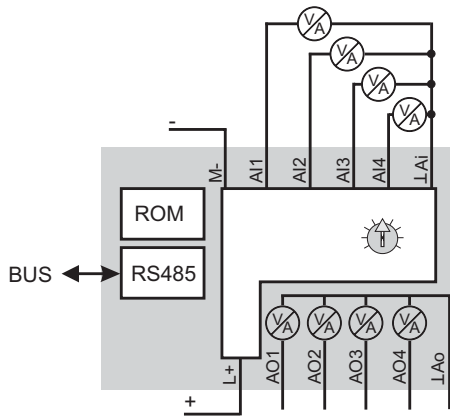
supply voltage	24V= ±10%
power consumption	0,5W nominal
analogue output spec.	0 - 10V= max. 2mA
resolution	12 bit
repeat accuracy	0,1%
precision	±0,5%
analogue input spec.	0 - 10V=
resolution	10 bit
input resistance	50kOhm
protection class	terminals IP20
	housing IP50
screws	pozidrive 1
screw tightening torque	0,6..0,8 Nm
weight	120g
dimensions	45 x 85 x 75mm
operating conditions	-15 to +55°C non condensing

ordering information

part no	type	supply	input	inp. galv. iso.*	output	outp. galv. iso.*	housing types
SLS-500-AU-AU-C	local	24V=	4x 0-10V	no	4x 0-10V	no	C
SLS-500-AU-AU-D	remote	24V=	4x 0-10V	no	4x 0-10V	no	C

* The ordering information for various sensors you will find on page 03:23
 * measurement input galvanically isolated from the power supply

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SLS-500-AI-AI

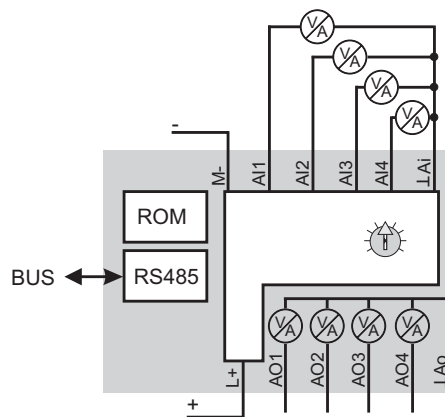
overview

- ◆ analogue I/O expansion module
- ◆ supply voltage 24V=
- ◆ 4 analogue inputs 0-20mA
- ◆ 4 analogue outputs 0-20mA
- ◆ RS485 interface
- ◆ 1 potentiometer
- ◆ pre-programmable timer functions
- ◆ 45mm DIN rail mount housing



specification

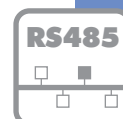
supply voltage	24V= ±10%
power consumption	0,5W nominal
analogue output spec.	0 - 10V= max. 2mA
resolution	10 bit
repeat accuracy	0,1%
precision	±0,5%
analogue input spec.	0 - 20mA
resolution	12 bit
input resistance	250 Ohm
protection class	terminals IP20
	housing IP50
screws	pozidrive 1
screw tightening torque	0,6..0,8 Nm
weight	120g
dimensions	45 x 85 x 75mm
operating conditions	-15 to +55°C non condensing



ordering information

part no	type	supply	input	inp. galv. iso.*	output	outp. galv. iso.*	housing types
SLS-500-AI-AI-C	local	24V=	4x 0-20mA	no	4x 0-20mA	no	C
SLS-500-AI-AI-D	remote	24V=	4x 0-20mA	no	4x 0-20mA	no	C

* The ordering information for various sensors you will find on page 03:23
 * measurement input galvanically isolated from the power supply



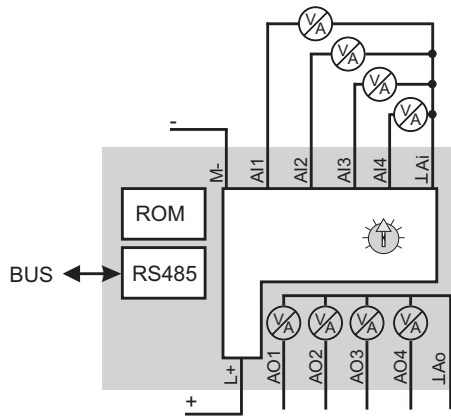
SLS-500-AI-AI analogue I/O module (current)



SLS-500-AI-AU

overview

- ◆ analogue I/O expansion module
- ◆ supply voltage 24V=
- ◆ 4 analogue inputs 0-20mA
- ◆ 4 analogue outputs 0-10V
- ◆ RS485 interface
- ◆ 1 potentiometer
- ◆ pre-programmable timer functions
- ◆ 45mm DIN rail mount housing



specification

supply voltage	24V= ±10%
power consumption	0,5W nominal
analogue output spec.	0 - 10V= max. 2mA
resolution	10 bit
repeat accuracy	0,1%
precision	±0,5%
analogue input spec.	0 - 10V=
resolution	12 bit
input resistance	250 Ohm
protection class	terminals IP20
	housing IP50
screws	pozidrive 1
screw tightening torque	0,6..0,8 Nm
weight	120g
dimensions	45 x 85 x 75mm
operating conditions	-15 to +55°C non condensing

ordering information

part no	type	supply	input	inp. galv. iso.*	output	outp. galv. iso.*	housing types
SLS-500-AI-AU-C	local	24V=	4x 0-20mA	no	4x 0-10V	no	C
SLS-500-AI-AU-D	remote	24V=	4x 0-20mA	no	4x 0-10V	no	C

* The ordering information for various sensors you will find on page 03:23
 * measurement input galvanically isolated from the power supply

SLS-500-AU-AI

overview

- ◆ analogue I/O expansion module
- ◆ supply voltage 24V=
- ◆ 4 analogue inputs 0-10V
- ◆ 4 analogue outputs 0-20mA
- ◆ RS485 interface
- ◆ 1 potentiometer
- ◆ pre-programmable timer functions
- ◆ 45mm DIN rail mount housing

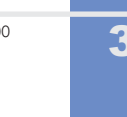
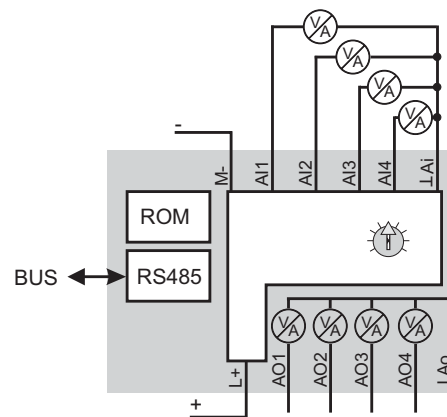
specification

supply voltage	24V= ±10%
power consumption	0,5W nominal
analogue output spec.	0 - 10V= max. 2mA
resolution	10 bit
repeat accuracy	0,1%
precision	±0,5%
analogue input spec.	0 - 20mA
resolution	12 bit
input resistance	50 kOhm
protection class	terminals IP20
	housing IP50
screws	pozidrive 1
screw tightening torque	0,6..0,8 Nm
weight	120g
dimensions	45 x 85 x 75mm
operating conditions	-15 to +55°C non condensing

ordering information

part no	type	supply	input	inp. galv. iso.*	output	outp. galv. iso.*	housing types
SLS-500-AU-AI-C	local	24V=	4x 0-10V	no	4x 0-20mA	no	C
SLS-500-AU-AI-D	remote	24V=	4x 0-10V	no	4x 0-20mA	no	C

* The ordering information for various sensors you will find on page 03:23
 * measurement input galvanically isolated from the power supply



SLS-500-AU-AI analogue I/O module

SLS-500-SIO

overview

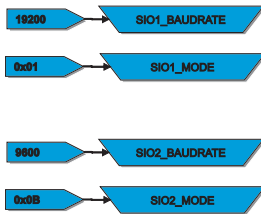
- ◆ serial I/O interface expansion module
- ◆ supply voltage 24V=
- ◆ 2 open-protocol serial ports can be used as RS232 or RS485
- ◆ the following baud rates are available: 1200, 2400, 4800, 9600, 19200, 38400
- ◆ status LED for RS232
- ◆ pre-programmable timer functions
- ◆ 45mm DIN rail mount housing



remote

Programming

Title: Initialization



Possible Modes for SIO1 and SIO2:

- 8,N,1=0x01
- 7,N,1=0x00
- 8,N,2=0x09
- 7,N,2=0x08
- 8,E,1=0x03
- 7,E,1=0x02
- 8,E,2=0x0B
- 7,E,2=0x0A
- 8,O,1=0x05
- 7,O,1=0x04
- 8,O,2=0x0D
- 7,O,2=0x0C

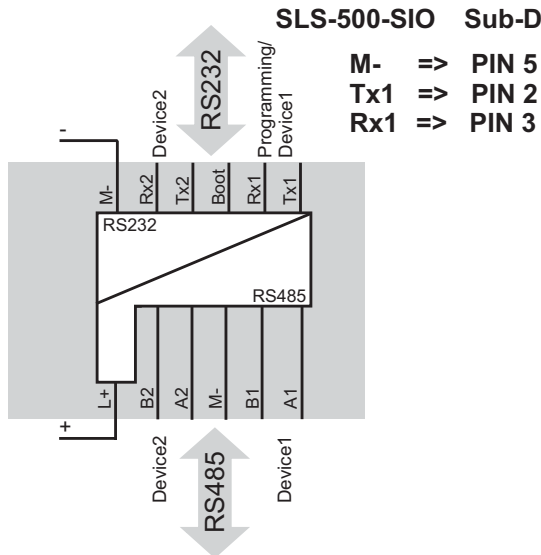
Possible Baudrates for SIO1 and SIO2

- 1200
- 2400
- 4800
- 9600
- 19200
- 38400

specification

supply voltage	24V= ±10%
power consumption	0,5W nominal
protection class	terminals IP20 housing IP50
screws	pozidrive 1
screw tightening torque	0,6..0,8 Nm
weight	140g
dimensions	45 x 85 x 75mm
operating conditions	-15 to +55°C non condensing

Connection to a PC (9 pin SUB-D socket):



ordering information

part no	type	supply	input	inp. galv. iso.*	output	outp. galv. iso.*	housing types
SLS-500-SIO-D	remote	24V=	-	-	-	-	C
SLS-550-SIO-D	remote	24V=	-	-	-	-	C
SLS-500-PC-RS232-SIO	download cable						

* measurement input galvanically isolated from the power supply

SLS-500-SMS

overview

- ◆ GSM (Text) modem interface expansion module
- ◆ supply voltage 24V=
- ◆ connection to a SIEMENS TC35 GSM-terminal
- ◆ SMS (Text) message sending on the basis of a GSM protocol
- ◆ received SMS will perform control functions
- ◆ LED indicators for RS232
- ◆ RS485 interface
- ◆ 45mm DIN rail mount housing



For instance use with:

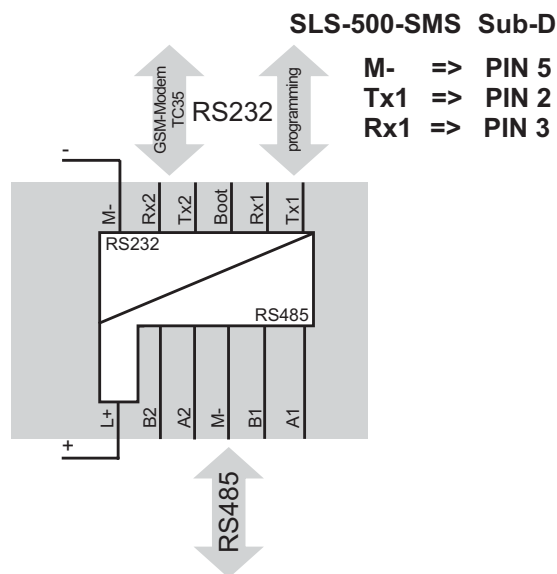
Siemens TC35 GSM-module + aerial + cable (see below):



specification

supply voltage	24V= ±10%
power consumption	0,5W
protection class	terminals IP20 housing IP50
screws	pozidrive 1
screw tightening torque	0,6..0,8 Nm
weight	140g
dimensions	45 x 85 x 75mm
operating conditions	-15 to +55°C non condensing

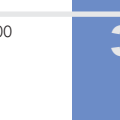
Connection to a PC (9 pin SUB-D socket):



ordering information

part no	type	supply	input	inp. galv. iso.*	output	outp. galv. iso.*	housing types
SLS-500-SMS-D	remote	24V=	-	-	-	-	C
SLS-500-TC35-SMS	connecting cable						
SLS-500-PC-RS232-SIO	download cable						
TC35-PS	power supply cable for TC35						
TC35	GSM module and aerial						

* measurement input galvanically isolated from the power supply



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remote

SLS-500-GW

overview

- ◆ Gateway expansion module
- ◆ supply voltage 24V=
- ◆ Gateway for EnOcean Radio Receiver
- ◆ Gateway for SLS-500-MBUS up to 4 values
- ◆ Gateway for Dali-Lighting controls
- ◆ RS232 and RS485 interface
- ◆ 45mm DIN rail mount housing



specification

supply voltage	24V=±10%
power consumption	0,5W
protection class	terminals IP20 housing IP50
screws	pozidrive 1
screw tightening torque	0,6..0,8 Nm
weight	140g
dimensions	45 x 85 x 75mm
operating conditions	-15 bis +55°C non condensing

ordering information

part no	type	supply	housing types
SLS-500-GW-D	remote	24V=	C

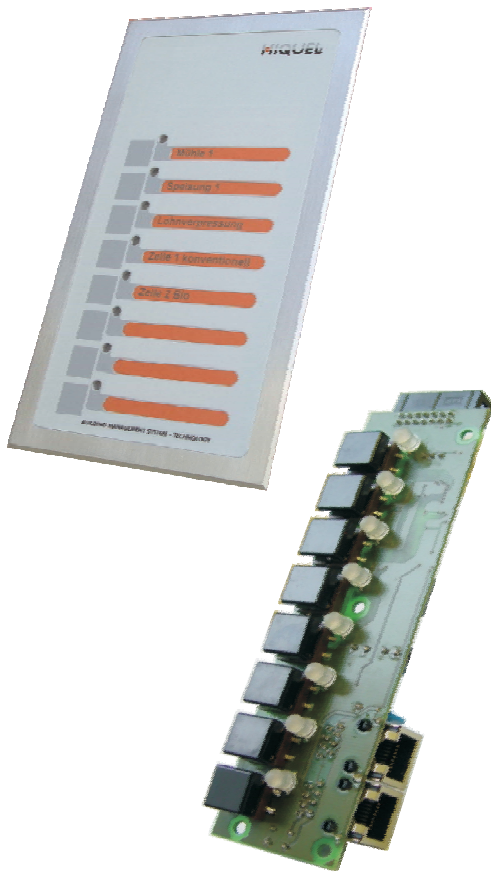
*measurement input galvanically isolated from the power supply



SLS-500-T1

overview

- ◆ button and LED expansion module
- ◆ supply voltage 24V= over bus connection
- ◆ Ideal for industrial and building automation
- ◆ 8 free programmable buttons
- ◆ 8 free programmable LEDs
- ◆ Each LED can display 4 states
- ◆ Connectable as an expansion module on every SLS-500-CAN base module
- ◆ Free selectable label for every button and LED
- ◆ Print design for customer specific applications available

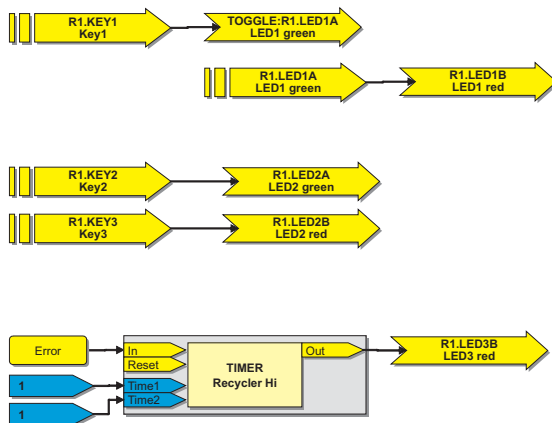


specification

supply voltage	nominal voltage +10% / -15%
duty cycle	100%
protection class	IP54 (front)
weight	660g
dimensions	
width	195mm
height	110mm
depth	40mm
operating conditions	-20 bis +40°C non condensing

Programming

Title: Programming



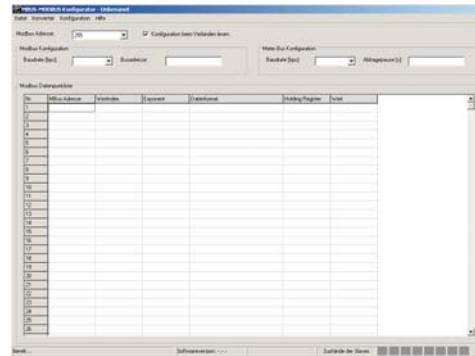
ordering information

part no	type	supply	construction	housing type
SLS-500-T1-D	remote	24V=	print	special
SLS-500-T1-D-A	remote	24V=	print with Alu-front	special
SLS-500-T1-D-AP	remote	24V=	print with Alu-front and housing	special

SLS-500-MBUS

overview

- ◆ **MBUS-MODBUS-protocol-converter**
- ◆ **allows you to read of MBUS-counter via Modbus-RTU**
- ◆ **Up to 8 counter per converter readable**
- ◆ **Readout interval adjustable**
- ◆ **Readout of the counter values via Modbus register**
- ◆ **with RS232 or RS485 interface**
- ◆ **easy programming via Windows-Utility**
- ◆ **It is also possible to upgrade the counter definitions by your own**



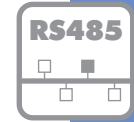
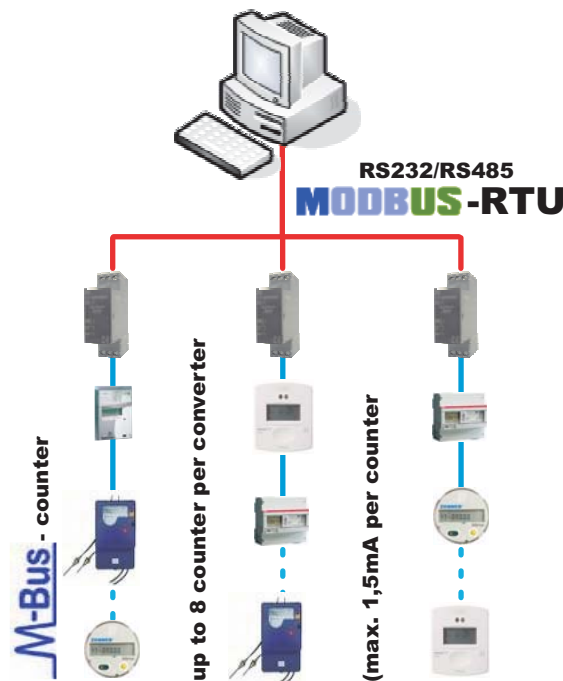
specification

supply voltage	24V = ± 10%
power consumption	0,5W nominal
Modbus-interface	RS232 or RS485 Modbus-RTU 9600 to 57600 Baud, 8 data bits, no parity, 1 stop bit
MBUS-interface	max. 8 members á 1,5 mA per member 300 to 38400 Baud, 8 data bits, no parity, 1 stop bit max. cable length 350m
protection class	terminals IP20 housing IP50
screws	pozidrive 1
screw tightening torque	0,6..0,8 Nm
weight	80g
dimensions	22,5 x 75 mm
operating conditions	-15 bis +55 °C non condensing

ordering information

part no	interface	supply	housing types
SLS-500-MBUS-232	RS232-Modbus RTU	24V=	A
SLS-500-MBUS-485	RS485-Modbus RTU	24V=	A
SLS-500-PC-RS232-SIO	configuration cable for SLS-500-Mbus-RS232		

MODBUS-RTU-Master
(z.B.: SPS, PC,)



SLS-500-MBUS protocol converter

SLS-500-Modbus

overview



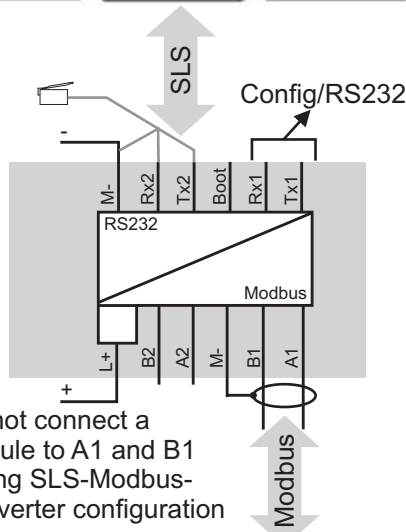
- ◆ Modbus converter expansion module
- ◆ supply voltage 24V=
- ◆ RS232 / modbus converter
- ◆ the following baud rates are available: 9600, 19200, 38400
- ◆ you can choose a modbus address from ID 0x0000 - ID 0x7F
- ◆ SLS-500-Configurator configuration cable and SLS-500 cable are delivered with the modbus converter
- ◆ LED indicators for receiving (Rx) and transmission (Tx)
- ◆ 45mm DIN rail mount housing

Configuration:

SLS-500-Configurator is available for programming and configuration:

Programming File: Modbus-Configuration for SLS-500-Modbus-Conv.

<p>A:0x0 Coil-Status for binary 1 BIT</p> <table border="1"> <tr><th>MODBUS</th></tr> <tr><td>Coil 1bit</td></tr> <tr><td>0x0001</td></tr> <tr><td>Bit variable 1bit</td></tr> <tr><td>L1.D11</td></tr> </table>	MODBUS	Coil 1bit	0x0001	Bit variable 1bit	L1.D11	<p>C:0x3 Input-Register for analogue 16 BIT SIGNED</p> <table border="1"> <tr><th>MODBUS</th></tr> <tr><td>Input Register 16bit signed</td></tr> <tr><td>0x0001</td></tr> <tr><td>Analog variable 16bit signed</td></tr> <tr><td>R1.A11</td></tr> </table>	MODBUS	Input Register 16bit signed	0x0001	Analog variable 16bit signed	R1.A11	<p>E:0x4 Holding-Register for analogue 16 BIT SIGNED</p> <table border="1"> <tr><th>MODBUS</th></tr> <tr><td>Holding Register 16bit signed</td></tr> <tr><td>0x0001</td></tr> <tr><td>Analog variable 16bit signed</td></tr> <tr><td>R1.A13</td></tr> </table>	MODBUS	Holding Register 16bit signed	0x0001	Analog variable 16bit signed	R1.A13
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R1.A13																	
<p>B:0x1 Input-Status for binary 1 BIT</p> <table border="1"> <tr><th>MODBUS</th></tr> <tr><td>Input 1bit</td></tr> <tr><td>0x0001</td></tr> <tr><td>Bit variable 1bit</td></tr> <tr><td>L1.D12</td></tr> </table>	MODBUS	Input 1bit	0x0001	Bit variable 1bit	L1.D12	<p>D:0x3 Input-Register for analogue 32 BIT FLOAT</p> <table border="1"> <tr><th>MODBUS</th></tr> <tr><td>Input Register 32bit float</td></tr> <tr><td>0x0001</td></tr> <tr><td>Analog variable 32bit float</td></tr> <tr><td>R1.A12</td></tr> </table>	MODBUS	Input Register 32bit float	0x0001	Analog variable 32bit float	R1.A12	<p>F:0x4 Holding-Register for analogue 32 BIT FLOAT</p> <table border="1"> <tr><th>MODBUS</th></tr> <tr><td>Holding Register 32bit float</td></tr> <tr><td>0x0001</td></tr> <tr><td>Analog variable 32bit float</td></tr> <tr><td>R1.A14</td></tr> </table>	MODBUS	Holding Register 32bit float	0x0001	Analog variable 32bit float	R1.A14
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R1.A14																	



Do not connect a module to A1 and B1 during SLS-Modbus-Converter configuration

Modbus is a protocol based on Master/Slave architecture which has been developed for industrial control networking.

Due to the trouble-free exchange of data between Modbus and a wide range of serial interfaces, this system has widespread consumer acceptance.

specification

supply voltage	24V= ±10%
power consumption	1W nominal
settings	9600 baud
used addresses	modbus SLS-500-memory type
	0x0000 to 0x7F } bit-variables
	0x0000 to 0x7F } analogous-variables
protection class	terminals IP20 housing IP50
screws	pozidrive 1
screw tightening torque	0,6..0,8 Nm
weight	120g
dimensions	45 x 85 x 75mm
operating conditions	-15 to +55 °C non condensing

ordering information

part no	supply	input	inp. galv. iso.*	output	outp. galv. iso.*	housing types
SLS-500-Modbus-Conv.	24V=	-	-	-	-	C

* measurement input galvanically isolated from the power supply

Accessories



wind sensor

rain sensor



outdoor sensor



cable sensor



surface-contacting sensor



ordering information

weather station	part no	supply	output	measuring range
rain sensor	RM1	24Vdc/Vac	relay NO/NC 30V/4A	
wind sensor	WS1	24Vdc	0...10Vdc	0,7...40m/s

temperature sensor passive	part no	with silicon cable	output	measuring range
cable surface -contacting sensor	ALTF1-PT1000	no	PT1000	-10...+105°C
cable surface-contacting sensor	ALTF1-PT1000-S	yes	PT1000	-30...+180°C
surface-contacting sensor	ALTF2-PT1000	no	PT1000	-30...+110°C
outdoor temperature sensor	ATF1-PT1000	no	PT1000	-50...+90°C
cable temperature sensor	HTF-PT1000	no	PT1000	-10...+105°C
cable temperature sensor	HTF-PT1000-S	yes	PT1000	-50...+180°C

temperature sensor active	part no	voltage	output 0..10Vdc	sensor	measuring range
surface-contacting sensor	ALTM2-U			PT1000	-50...+50°C
outdoor temperature sensor	ATM1-U			PT1000	5 ranges adjustable -50..150°C

temperature sensor active	part no	current	output 4..20mA	sensor	measuring range
surface-contacting sensor	ALTM2-I			PT1000	-50..+50°C
outdoor temperature sensor	ATM1-I			PT1000	5 ranges adjustable -50..150°C

light intensity sensor	part no	voltage	output 0..10Vc	sensor	measuring range
Brightness sensor	AHKF-0,5-U				0...500Lux
outdoor light intensity sensor	AHKF-60-U				0...60000 Lux

Light intensity sensor	part no	current	output 4..20mA	sensor	measuring range
Brightness sensor	AHKF-0,5-I				0...500Lux
outdoor light intensity sensor	AHKF-60-I				0...60000 Lux

* At request are also other sensor types and measuring ranges available

