# World of Automation

## Chapter 1: General information

**HIQUEL**

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# HIQUEL
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# new dimension in time ...

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# CATALOGUE GUIDE

**2** ◆ number of closing contacts

**2** ◆ number of changing contacts

**DIN** ◆ DIN-Rail mounting

**11** ◆ 11 pin plug in

◆ timer functionality

◆ real time clock

**IP50** ◆ protection class

**°C PT100** ◆ temperature measurement function

**PTC** ◆ PTC (Thermistor) measurement function

**3** ◆ 3 phase measurement function

◆ diode array

◆ thyristor output

**RS232** ◆ RS232 host connectivity

**RS485** ◆ RS485 bus connectivity

**CAN** ◆ CAN connectivity

**ETHERNET** ◆ Ethernet connectivity

**4 in** ◆ number of inputs

**4 out** ◆ number of outputs

**U 0-10V** ◆ voltage measurement function

**I 4-20mA** ◆ current measurement function

◆ liquid level control

**rpm** ◆ speed control

**FBR** ◆ FBR room controller

**RS232 RS485** ◆ converter

**9•9=81 789 456 123 0** ◆ Arithmetic functions

**c UL us** ◆ UL certification

**CE** ◆ CE conformity

**programmable controllers** ▶

**text displays** ▶

**expansion modules** ▶

**network data communication** ▶

**alarm inform control about GSM** ▶

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# housing types

**A** 75,00 22,50

**C** 45,00

**E** 67,50

45,00 **A, C, E** 65,00 38,50 85,00

**B** 75,00 22,50

**D** 45,00

**F** 67,50

65,00 **B, D, F** 65,00 38,50 85,00

**G** 66,00 75,00 35,00

**O** 60,00 11,25

41,50 16,00 60,00 60,00

**I** 101,00 23,00

70,00 93,50 101,00

**J** 80,00 74,00 25,00

76,00

**K** 50,00 18,00 69,00 39,50 49,00
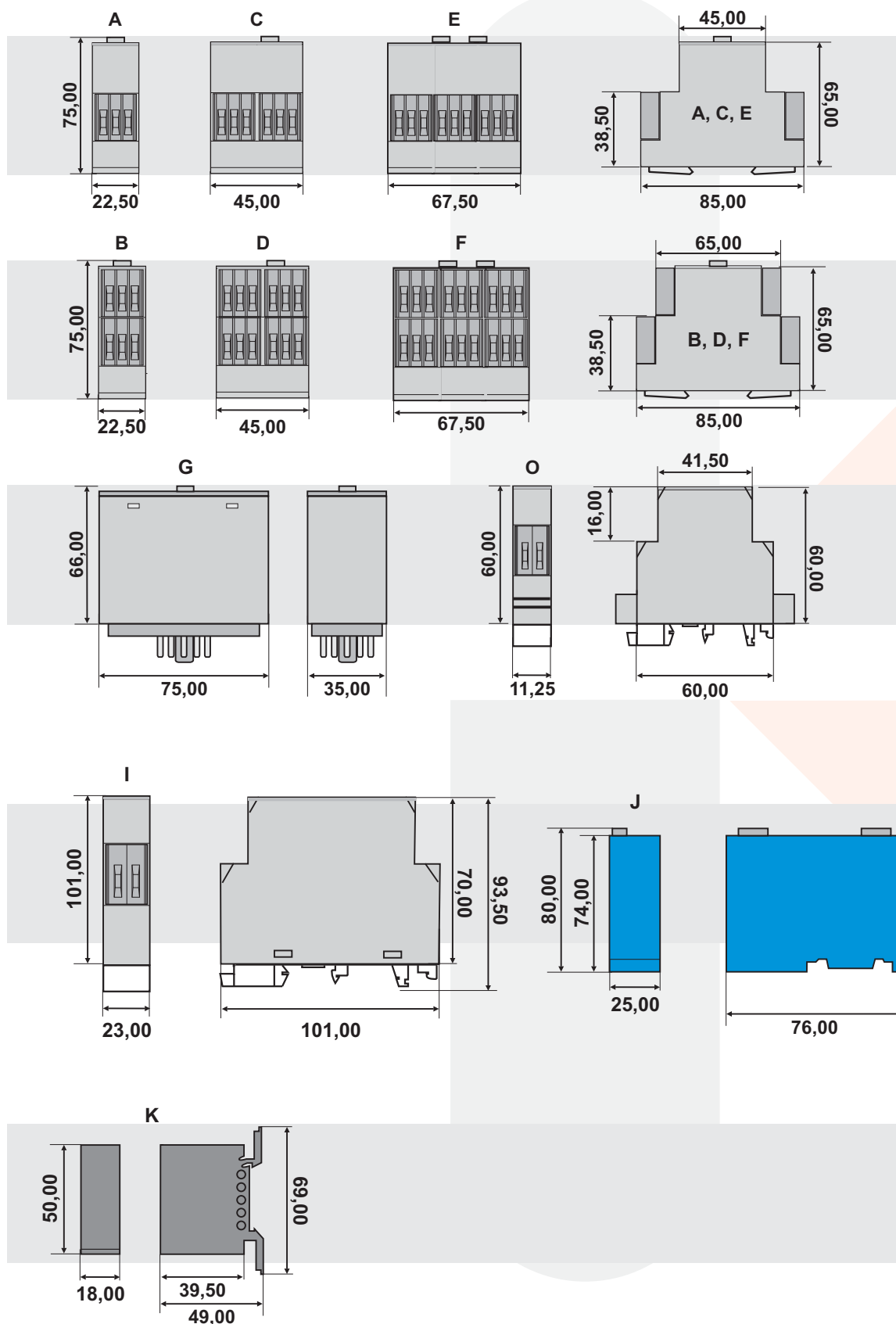
**DIN-rail**
**terminals: IP20**
**housing: IP50**

all dimensions in mm

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# World of Automation

## Chapter 2: SLS-500 Series

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## 2 Chapter 2: SLS-500 Series

# 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**

Internet Web-Based

SLS-500 Controller 14 I/O up to 2000 I/O
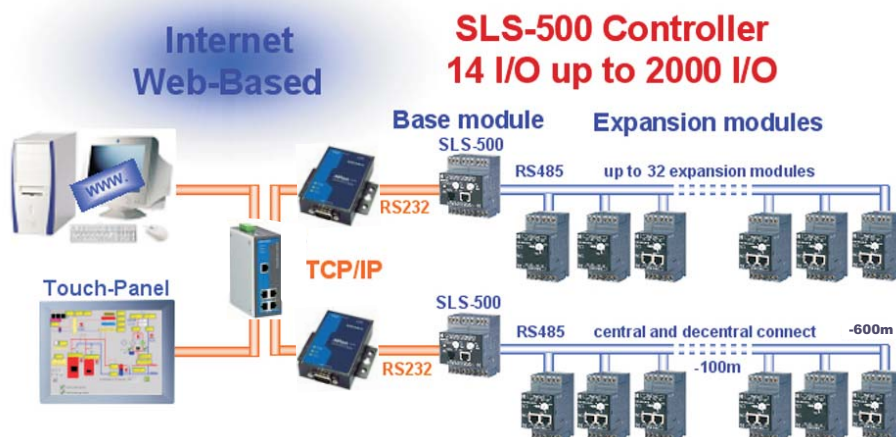
## SLS-86 Series: bit processing

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



base module

local

remote

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building / industrial automation
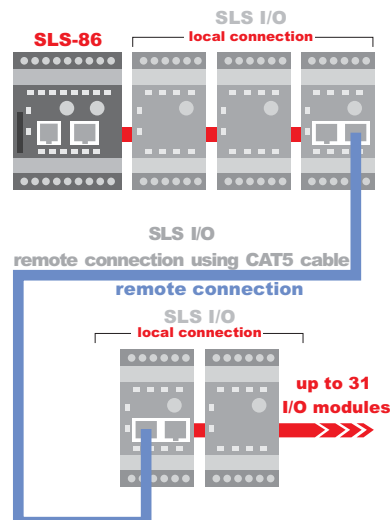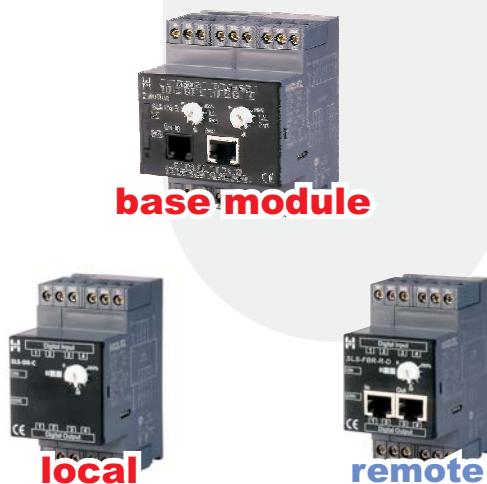
# Programming

## 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
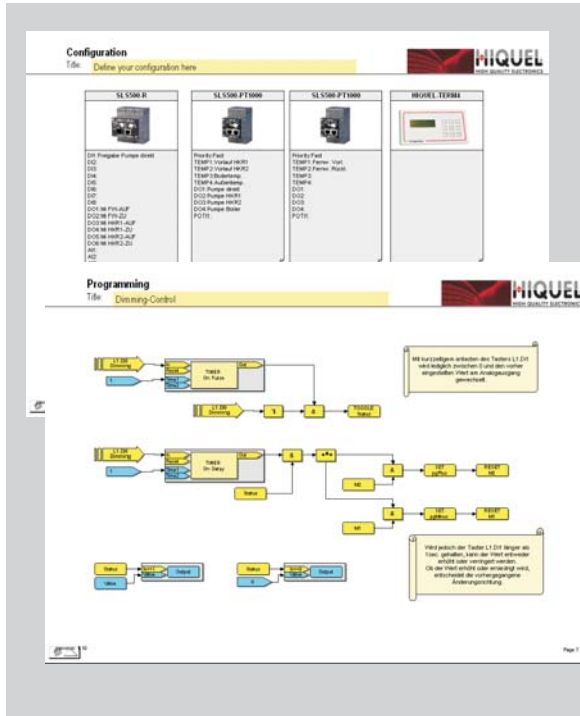
## SoftwirePLUS/SoftWIRE

**Series: SLS-86, HI-86**

- Comfortable programming via wiring (ladder) diagram (SoftwirePLUS) 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...

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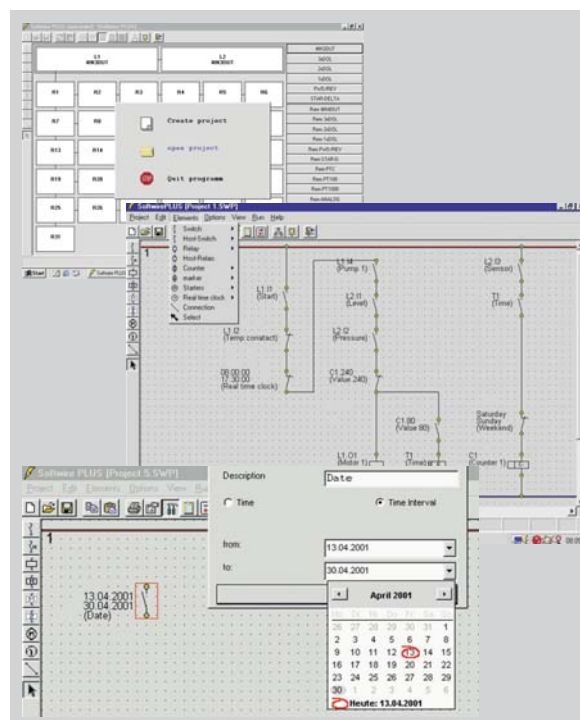
# SLS-500 Series

## 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 <u>locally</u> by recessed side connectors for side by side DIN rail mounting or <u>remotely</u> via CAT5 cable.

### SLS-500 base modules

- SLS-500-CAN
- SLS-500

### SLS-500 compact modules

- SLS-510
- SLS-520

### 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

### 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
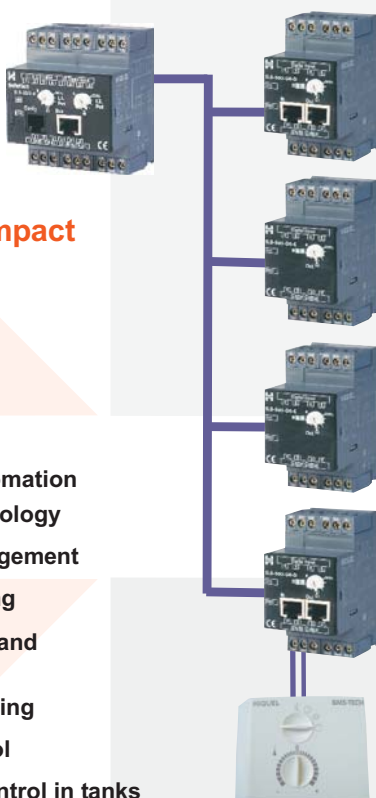
**base module**  **local (C)**  **remote (D)**

## possible connections:
## Modbus

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building / industrial automation
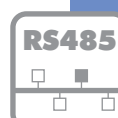
# Control - Regulate
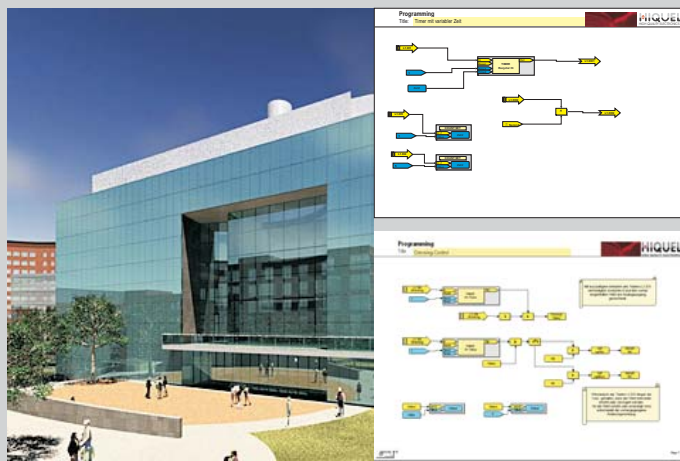
## Building technology

- 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.

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# Automation

## Process technology
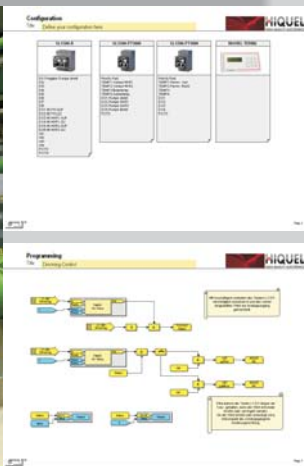
- The modular structure allows system changes to suit application alterations.

- 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
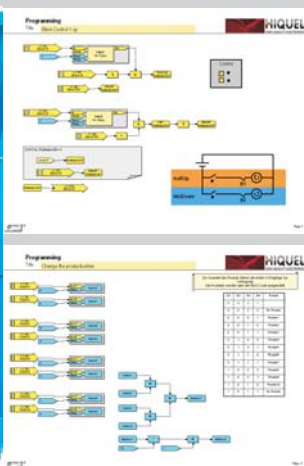
- SLS-500 modules are suited to display, compare and calculate analogue values and texts.

- 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
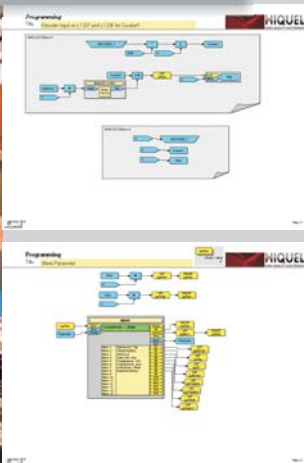
- SLS-500 modules can be combined to fit various requirements for digital thermostats GSM modems, scanners, access systems…

- 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 with SLS-500-Configurator**

**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 Power Point® 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.
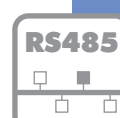
A special feature of PowerPoint is the ability to save all multimedia information in one single file. Therefore, to reinstall the program only this file is needed, as a compiler, which basically is an integrated simulator, an online load module and an online testing module are also integrated in this 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



## 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.**

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# Remote

## RADIO
- report
- control
- alarm

**Base module**

**Extension modules**

report by radio

Base module up to 32 extension modules

RS485 Bus

## GSM
- report
- control
- alarm

**Base modules**

**Extension modules**

report by GSM text message

GSM - modem

RS485 Bus

GSM - modem

## INTERNET
- WEB based
- Intranet

Internet Web-based

**Base module**

**Extension modules**

TCP/IP

Touch-Panel

RS485 Bus

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# SLS-500 modules
### overview

Sidebar icons: 8 in · U 0-10V · 6 out · DIN · RS485 · RS232 · (clock) · RTC · 9*9=81 keypad · CE

**Module types (columns):** SLS-500-R, SLS-500-8, SLS-500-CAN-R, SLS-500-CAN-8, SLS-500-DR-C (D), SLS-500-DRR-C (D), SLS-500-DT-C (D), SLS-500-D-C (D), SLS-500-DRK-C (D), SLS-500-DR-16A-C (D), SLS-500-DRR-16A-C (D), SLS-500-DIM-18A, SLS-500-DYR, SLS-500-8DI-C (D), SLS-500-8DR-C (D), SLS-500-8DT-C (D), SLS-500-DIM-C (D), SLS-500-FBR-C (D), SLS-500-PT100-C (D), SLS-500-PT1000-C (D), SLS-500-AIc-C (D), SLS-500-AIU-AU-C (D), SLS-500-AU-C (D), SLS-500-AIc-C (D), SLS-500-AI-AIc-C (D), SLS-500-AIU-AI-C (D), SLS-500-SIO-D, SLS-500-SMS-D, SLS-500-GW-D, SLS-500-T-I

| SLS 500 Types | SLS-500-R | SLS-500-8 | CAN-R | CAN-8 |
|---|---|---|---|---|
| U = power supply 24V~ (12V) | ✓ | ✓ | ✓ | ✓ |
| DI = digital inputs 24Vdc | 8(4) | 8(4) | 8(4) | 8(4) |
| DI = digital inputs 18-36Vadc | | | | |
| DI = digital inputs 100-250Vac | | | | |
| DI = Buttons with caption option | | | | |
| Do = relay outputs (NO) | 6 | 6 | 6 | |
| Do = relay outputs (NO) max 16A | | | | |
| Do = relay outputs (bistable) max 16A | | | | 6 |
| Do = PhotoMOS outputs 60V~ 2A | | | | 6 |
| Do = transistor outputs PNP | | | | |
| Do = dimmer outputs 400W/230Vac | | | | |
| Do = 3-state LED | 0(4) | 0(4) | 0(4) | 0(4) |
| AIU = analogue inputs 0-10Vdc 10 bit | | | | |
| AII = analogue inputs 0-20mA 10 bit | | | | |
| AoU = analogue outputs 0-10Vdc 10 bit | | | | |
| AoI = analogue outputs 0-20mA 10 bit | | | | |
| AIU = analogue inputs 0-10Vdc 16 bit | | | | |
| AII = analogue inputs 0-20mA 16 bit | | | | |
| PT100 = temperature inputs | | | | |
| PT1000 = temperature inputs | | | | |
| PTC = temperature inputs | | | | |
| FBR = digital room thermostat inputs | | | | |
| DI = high speed counter inputs up to 500kHz | 2 | 2 | 2 | 2 |
| DI = encoder inputs up to 500kHz | 2 | 2 | 2 | 2 |
| DI = encoder with prescaling function up to 50kHz | | | | |
| Text display 4x20 with RS232 | ✓ | ✓ | ✓ | ✓ |
| Programmable Interface RS232 | ✓ | ✓ | ✓ | ✓ |
| RTC = real time clock | 2 | 2 | | |
| Potentiometer | | | | |
| Program memory kB | 16 | 16 | 48 | 48 |
| SIM-Card memory kB | 64 | 64 | 64 | 64 |
| CAN interface | | | ✓ | ✓ |
| GSM interface | | | | |
| Free programmable interface SIO RS232 | 1 | 1 | 1 | 1 |
| Free programmable interface SIO RS485 | | | | |
| Modbus-interface | | | | |
| Internal bus interface RS485 | 1 | 1 | 1 | 1 |
| Numbers of expansion modules | 32 | 32 | 32 | 32 |

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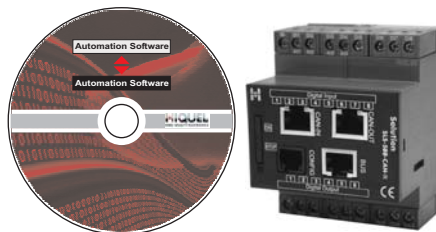# Starter Kits
## overview
### SLS-500-CAN, SLS-500

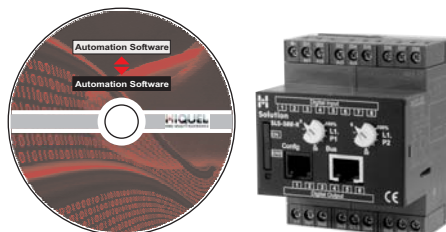## all you need to get you going - a starter kit:

**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.

## 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-RS232** | download cable |

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# 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 | $1 \times 10^7$ operations |
| electrical | $1 \times 10^5$ 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



SLS-500-CAN  SLS-500- I/O
local connection

remote connection

up to 32 I/O modules

up to 32 I/O modules

up to 32 I/O modules

SLS-500-CAN
remote connection using standard CAN cable

## 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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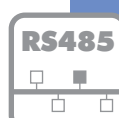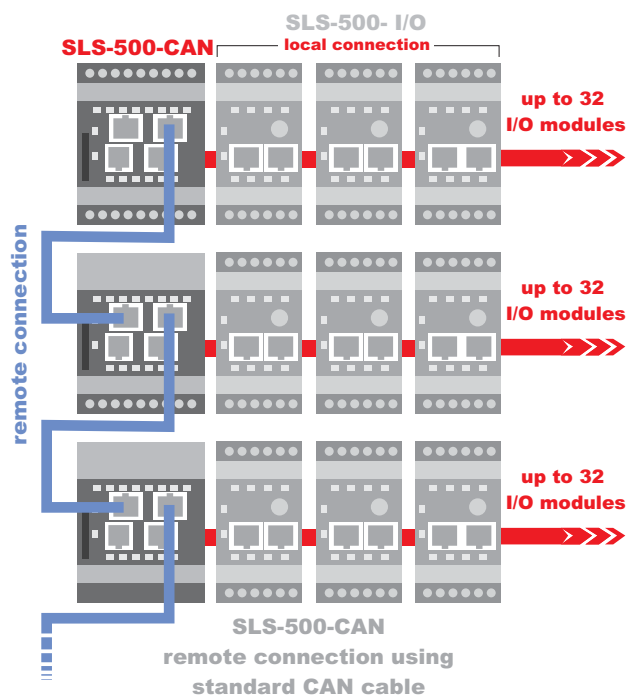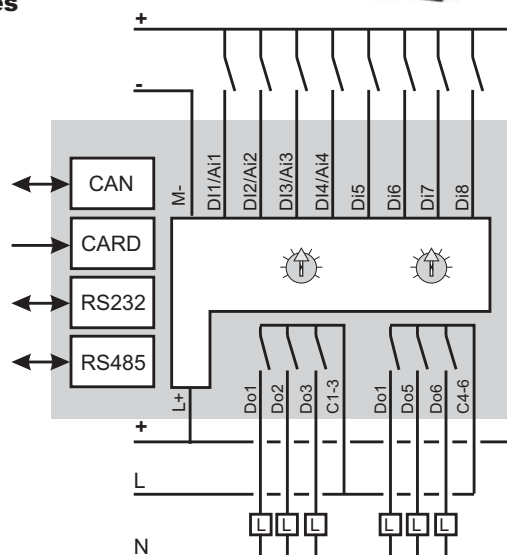
# SLS-500

## 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

24Vdc (12Vdc)

**SLS-500 I/O**
local connection

**SLS-500**

SLS-500 I/O
remote connection using
standard CAT5 cable

remote connection

**SLS-500 I/O**
local connection

up to 32
I/O modules

## 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 | $1 \times 10^7$ operations |
| electrical | $1 \times 10^5$ 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

X01.00

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© HIQUEL 2009
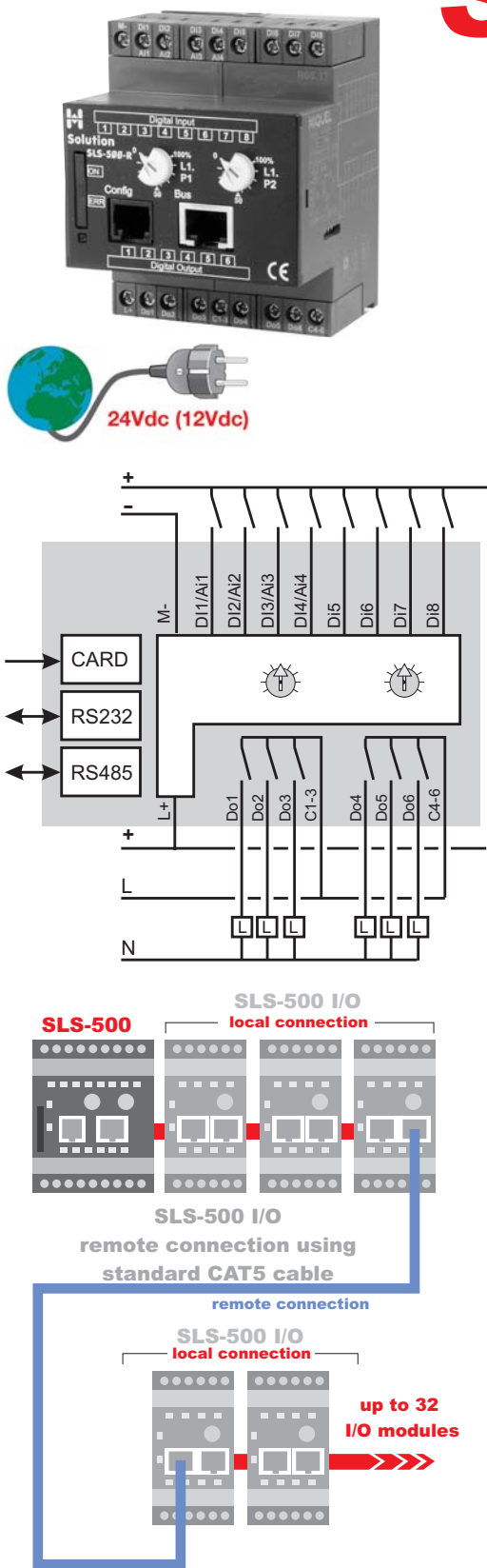
# SLS-500-SiConfig

## 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

RS485

RS232

SLS-500-Configurator on PC#1    SiConfig on PC#2        SLS-500 Configurator on PC#3    SiConfig on PC#4

TCP/IP

RS232

Server PC with HIQUEL-SiView
Server software and
a serial interface
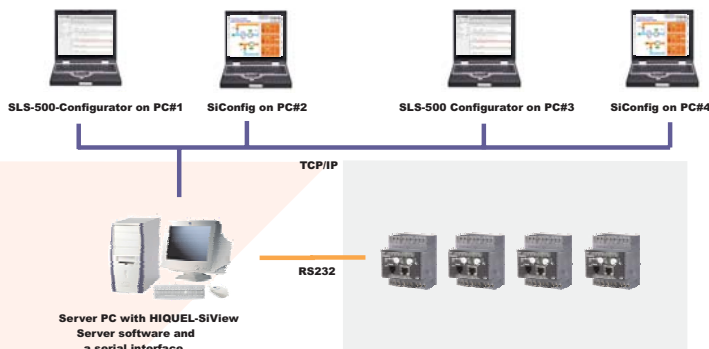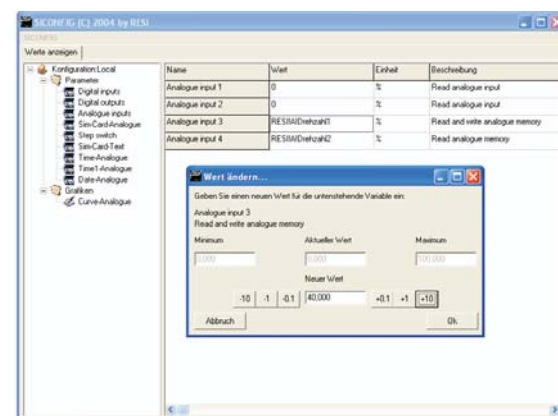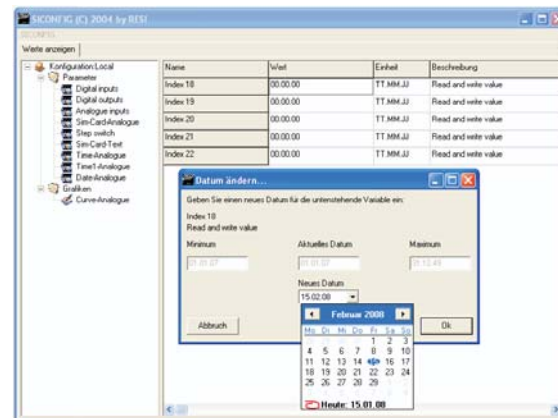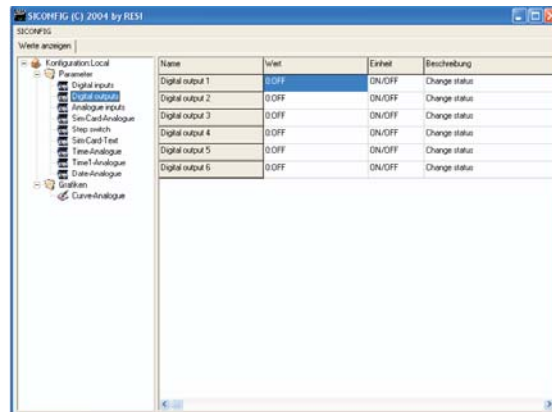
## ordering information

Please download this program from www.hiquel.com

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X01.00

2:15

# 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

RS232

## 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

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X01.00
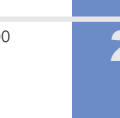
# World of Automation

## Chapter 3: SLS-500 Extension

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www.hiquel.com

# Index

# 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
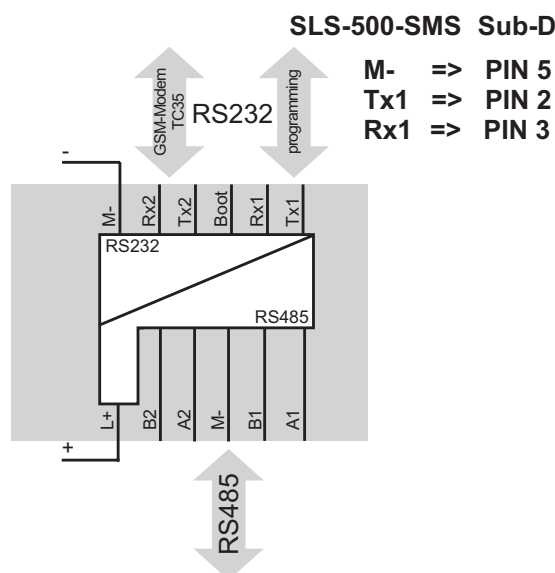- ◆ RS485 interface
- ◆ 45mm DIN rail mount housing

**remote**

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):

**SLS-500-SMS   Sub-D**

M-   => PIN 5
Tx1  => PIN 2
Rx1  => PIN 3

GSM-Modem TC35  RS232  programming

M- Rx2 Tx2 Boot Rx1 Tx1

RS232

RS485

L+ B2 A2 M- B1 A1

RS485

## 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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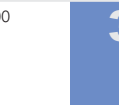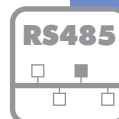
# World of Automation

## Chapter 6: Alarming

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# Index

## 6 Chapter 6: Alarming

# SMS-Master

24Vdc (12Vdc)

## Monitor and Control via SMS

The SMS-Master Controller offers a low cost solution for monitoring and controlling systems via SMS. Using digital, analogue or time events the SMS-Master sends pre-configured messages to mobile phone/s informing about operating states of machines, heating system, or other installations.

- analogue inputs with real unit scaling
- single user alert
- group user alert
- with or without report
- via SMS (text), fax or e-mail

SMS-MASTER:
!! ALARM !!
Siren

### Applications:

- machine control
- engineer call-out
- liquid level control
- pump control
- pressure control
- heating or cooling system control
- irrigation control
- storage control
- lighting control
- traffic light control
- access control
- holiday house control
- etc...

**Monitor and check your facility!**
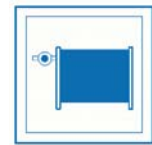
## Uninterruptable power supply

## Power failure alarm with UPS24

- UPS24, uninterruptible power supply with battery-pack
- LED indicators for power supply and actual state of wiring.
- Output 24V= / 110mAh
- Power failure alarm with UPS24 / Battery-Pack
- Power for 4 hours with UPS24 / Battery-Pack

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**SMS-Master and SMS-MINI Master starter kits**

8/4 in

U 0-10V

6/3 out

DIN

RS232

CE

## all you need to get you going - a starter kit:
## SMS-Master and SMS-MINI-Master
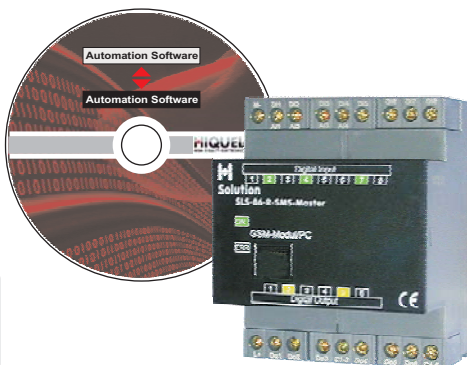
### includes:

◆ SLS-86-R-SMS-Master 24V= or
SLS-43-R-SMS-Master 24V=
basic module
◆ cables  (programming cable, etc.)
◆ CD-ROM SMS-Master software
◆ GSM-module (modem)
◆ manual
◆ aerial

The SMS-Master is a flexible alarming and messaging system that receives and sends messages to mobile-phones, fax or e-mail. It automatically generates reports of machine operating states, such as breakdowns. Incoming text messages can control functions and interrogate I/O status, with real unit reports of analogue levels e.g. Bar, Degrees C, level in Meters etc. Both SMS master controller can be programmed to monitor the four analogue inputs for threshold violation. If threshold values are passed, a message is sent with the analogue level converted into real units. E.g. Water level in **meters**, pressure in **PSI** or **Bar,** Temperature in $^0$**C.** Queries of analogue **signals** with **scaling** of current values are possible. The digital outputs can be switched on or off, or pulsed for a programmable period  simply by sending a text message instruction. The SMS-Master features 8 DI or 4 AI (0-10V) & 4 DI AND 6 relay outputs, the SMS-MINI-Master has 4 DI or 2 AI  (0-10V) & 2 DI AND 3 relay outputs.

### Programming with SMS-Configurator:

➤ all settings are executed in a dialogue oriented way
➤ clearly structured navigation tree shows all configuration possibilities graphically
➤ all messages and telephone numbers can be entered individually and changed easily at any time
➤ status SMS for all 4 inputs
➤ for each AI a scaling of the analogue signal and a min. and max. alarm threshold can be configured
➤ integrated real time clock for 100 days stand by
➤ optionally SMS can be send if a defined critical value is reached via pre-paid cards
➤ SMS can be send at a given time, to one or several persons simultaneously or after a defined delay time sequentially
➤ different modes of report:
   each SMS can be send to up to 4 different user groups
   each user group can contain up to 64 telephone numbers
   each user group has different modes of alarming and reporting
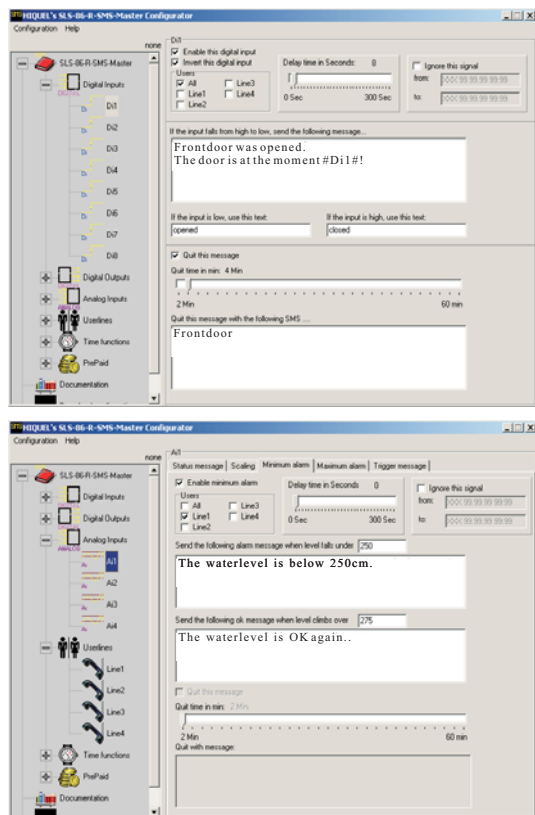
### ordering information

| part no | |
| --- | --- |
| **SLS-86-R-SMS-Kit-24** | SLS-86-R-SMS-Master + GSM-module (modem) + SMS-Master-Software + manual + aerial |
| **SLS-86-R-SMS-Kit-12** | SLS-86-R-SMS-Master + GSM-module (modem) + SMS-Master-Software + manual + aerial |
| **SLS-43-R-SMS-Kit-24** | SLS-86-R-SMS-Master + GSM-module (modem) + SMS-Master-Software + manual + aerial |
| **SLS-43-R-SMS-Kit-12** | SLS-86-R-SMS-Master + GSM-module (modem) + SMS-Master-Software + manual + aerial |

\* recommended power supply unit TPS3 (see catalogue 01:30)

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# SMS-Master modules

## overview

- ◆ GSM (text) master controller
- ◆ supply voltage 24V= or 12V=
- ◆ 8 and 4 digital inputs 24V= inputs, 4 and 2 are dual digital/analogue 0-10V respectively
- ◆ 6 and 3 SPNO outputs, max. 5A respectively
- ◆ RS232 interface for programming
- ◆ LED indicators for inputs and outputs
- ◆ 4 caller groups with up to 64 dial out numbers per group, together or sequentially
- ◆ integrated RTC with 100 days back up
- ◆ credit check of your pre-paid card
- ◆ UPS24 allows sending of a message to report a power failure with 4 hour backup
- ◆ 67.5mm DIN rail mount housing
- ◆ configuration with SMS-Master software

## 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 |
| expected life time | SPNO |
| mechanical | $1 \times 10^{7}$ operations |
| electrical | $1 \times 10^{5}$ operations |
| input specification | 24V=        max. 5 mA |
| 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 |

*EN 60947-5-1  VDE 0435

**SMS-Master:**



**SMS-MINI-Master:**



## ordering information

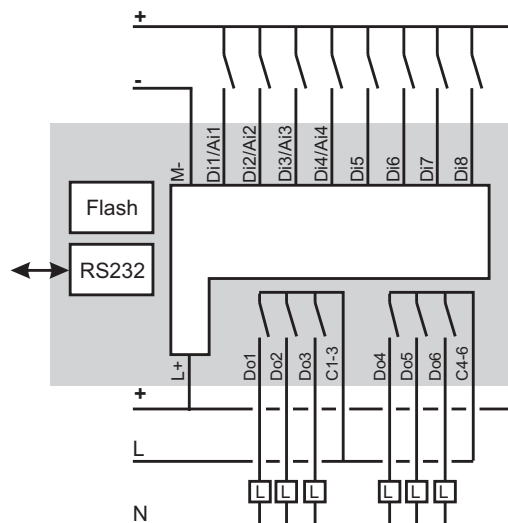| part no | supply | input | inp. galv. iso.* | output | outp. galv. iso.* | housing types |
|---|---|---|---|---|---|---|
| SLS-86-R-SMS-24" | 24V= | 8x 24V= | no | 6x SPNO | yes | E |
| SLS-86-R-SMS-12" | 12V= | 8x 12V= | no | 6x SPNO | yes | E |
| SLS-Std-RS232 | download cable | | | | | |
| SLS-43-R-SMS-MINI-24" | 24V= | 4x 24V= | no | 3x SPNO | yes | E |
| SLS-43-R-SMS-MINI-12" | 12V= | 4x 12V= | no | 3x SPNO | yes | E |
| TC35-PS | Spannungsversorgungskabel für TC35 | | | | | |
| TC35 | GSM-Modul und Antenne | | | | | |

\* Bestellbezeichnungen für diverse Fühler finden Sie auf Seite 3:23

\* Keine elektrische Verbindung zur Versorgung (galvanisch getrennt)

" beinhalten master modul, SMS-Config, Downloadkabel und Handbuch

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