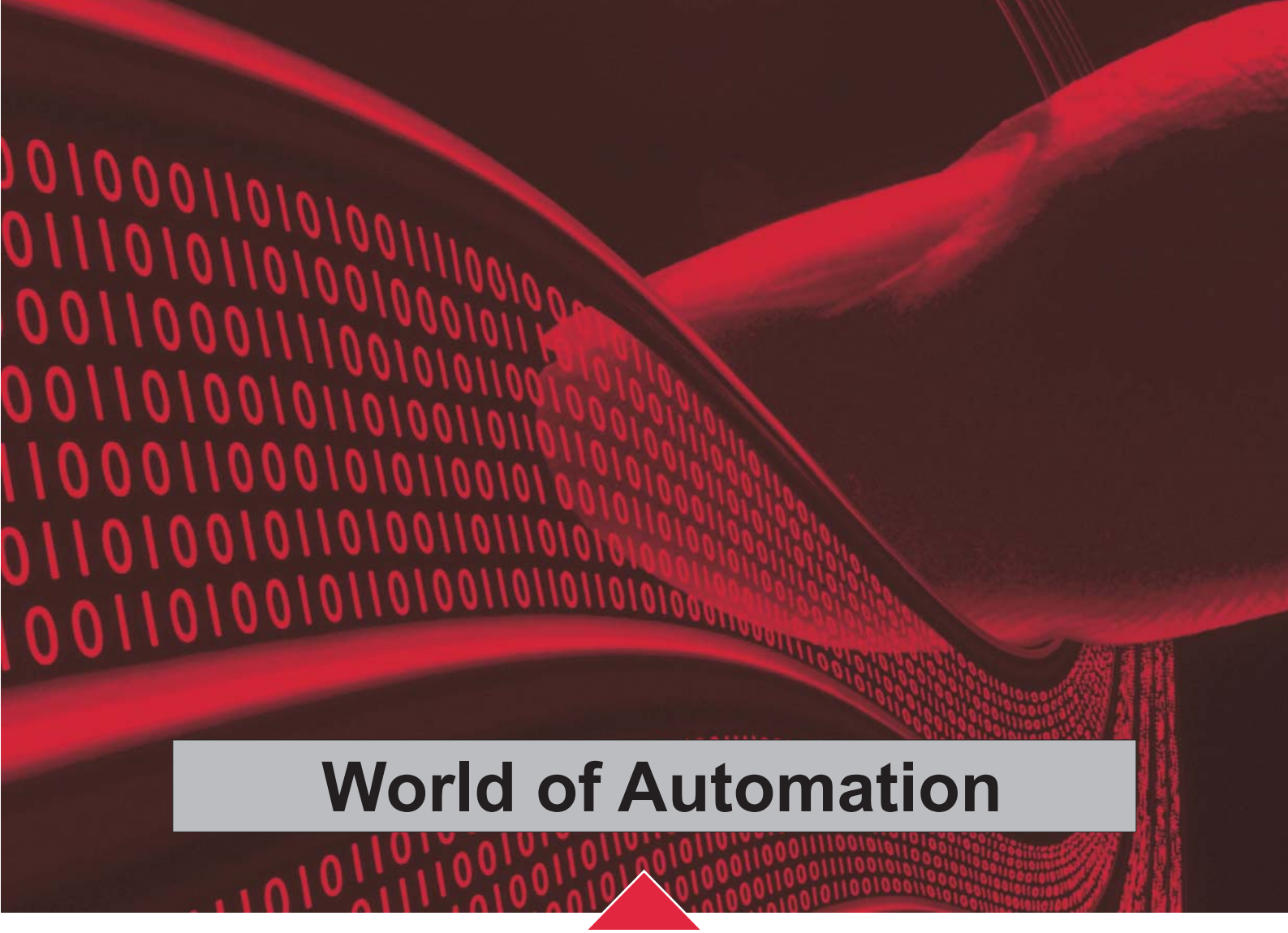

# World of Automation

## Chapter 3: SLS-500 Extension

HIQUEL®
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# Index



## 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

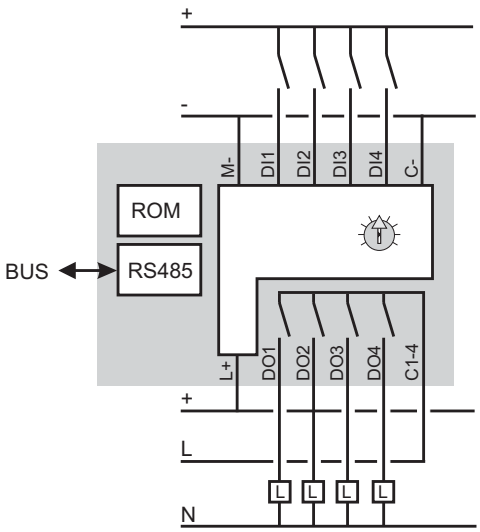

local


remote

## 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 |
| **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





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# SLS-500-D..-16A

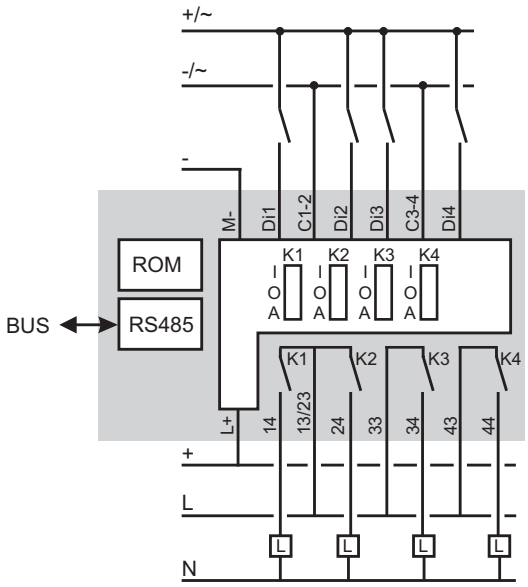
## overview

- 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~ |
| Ue/Ie AC-15 | 120V/3A 240V/3A |
| Ue/Ie 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





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# SLS-500-DBI-16A

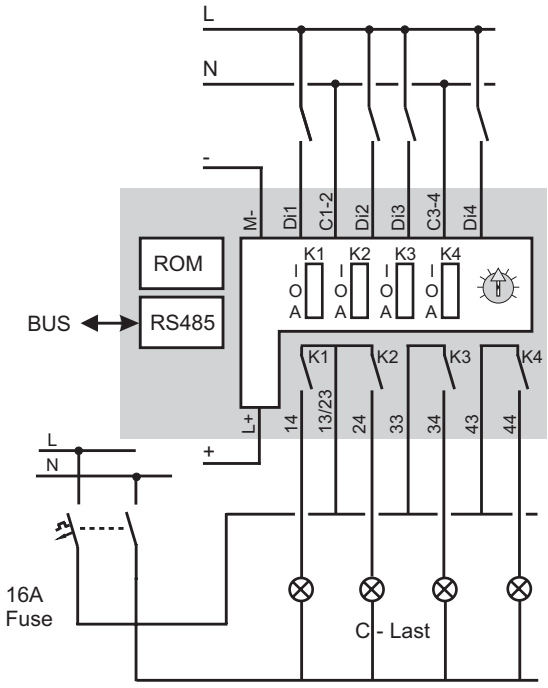
## overview

- **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 | t< 20ms max. 165A |
| loads suited | t< 200µms max. 800A |
| **expected life time** | SPNO |
| mechanical | $3x10^6$ operations |
| electrical | $3x10^4$ 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



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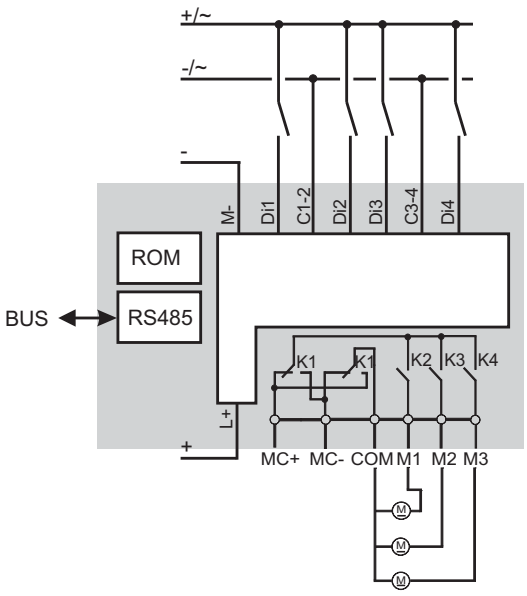
# SLS-500-DVR

## 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 |
| **expexted 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 |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# SLS-500-8DI

## overview

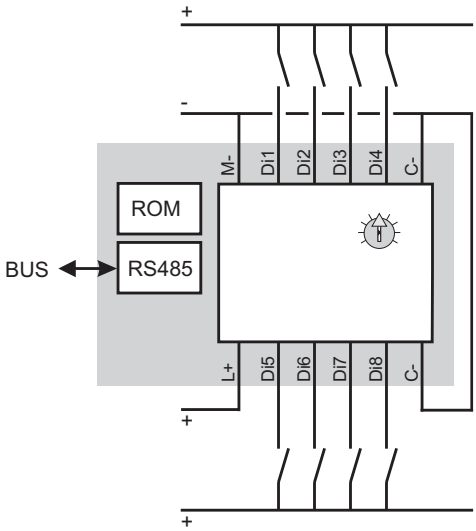
- digital input expansion module
- supply voltage 24V=
- 8 digital inputs 24V=
- LED indicator for input
- RS485 interface
- 1 potentiometer
- pre-programmable timer functions
- 45mm DIN rail mount housing


local


remote

## 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





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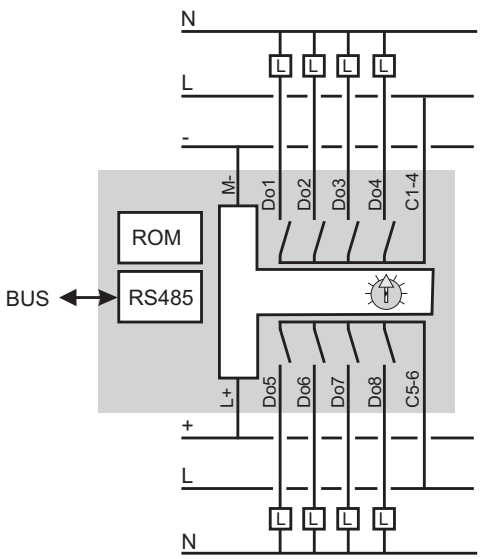
# SLS-500-8D

## 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 | $1x10^5$ 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



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# 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


local

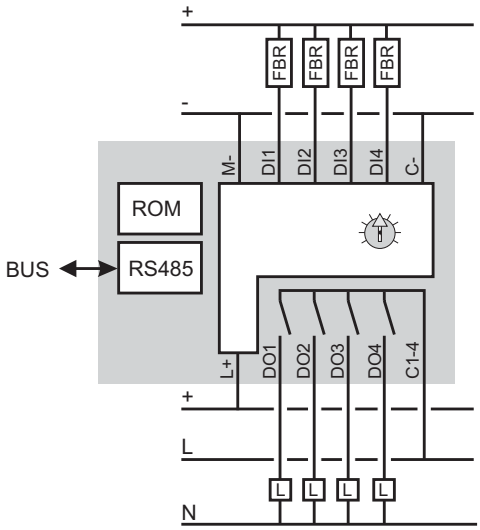

remote


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

FBR

## 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





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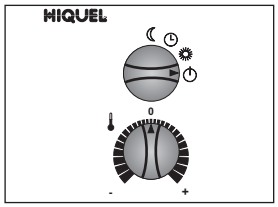
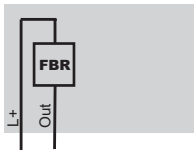
# FBR-room control

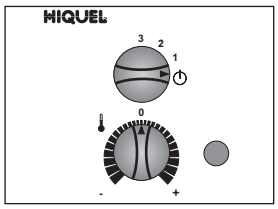
## overview


- 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

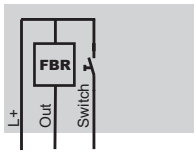


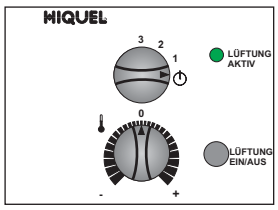

**FBR-DS-PO**



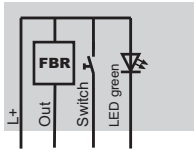



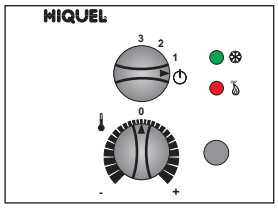

**FBR-DS-PO-S**



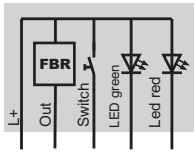




**FBR-DS-PO-S-LG**



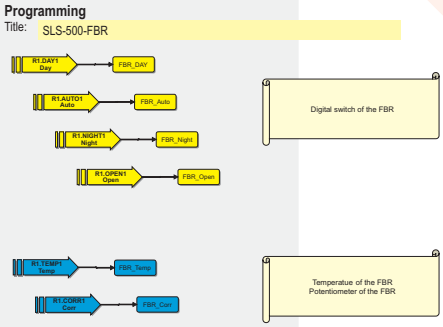




**FBR-DS-PO-S-LG-LR**




## specification

| | |
|---|---|
| **supply voltage** | 24Vdc +-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 |




## 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



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# SLS-500-DIM

## overview

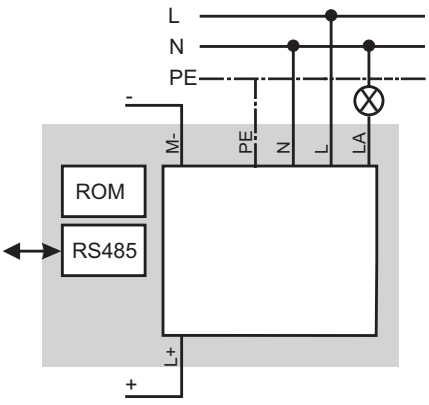
- **lighting dimmer expansion module**
- **supply voltage 24V=**
- **1 dimmed output 600Watt 230V~**
- **RS485 interface**
- **pre-programmable timer functions**
- **45mm DIN rail mount housing**


local


remote

## 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, inductice, automatic load detection |
| **control type** | phase control |
| **resolution** | 1% |
| **leakage current** | < 1mA (OFF-State) |
| **protection class** | terminals IP20<br>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





HIQUEL® HIGH QUALITY ELECTRONICS

# SLS-500-PT100

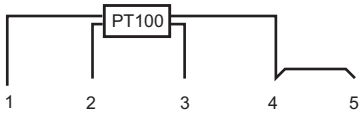

local


remote

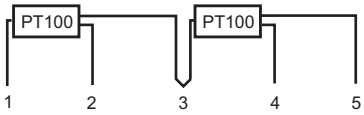
## overview

- 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

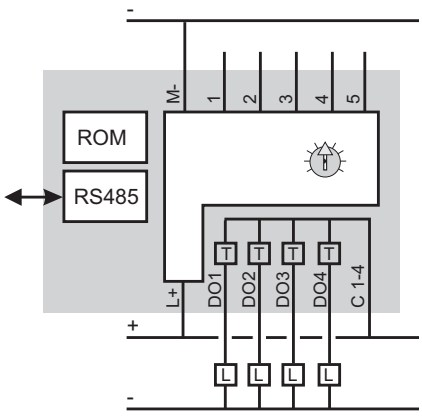
1 PT100 4-wire connection




2 PT100 3-wire connection




**Remark:**
Unused inputs are replaced by connections.




## 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 |

## 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



HIQUEL® HIGH QUALITY ELECTRONICS

# 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

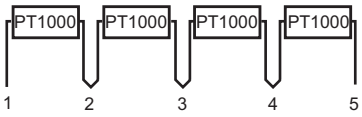

local


remote

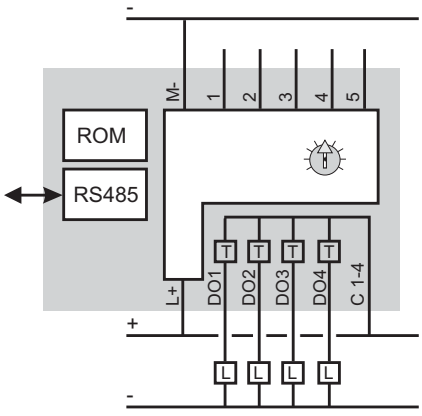
## specification

| | |
|---|---|
| **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 |

4 PT1000 2-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-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





HIQUEL® HIGH QUALITY ELECTRONICS

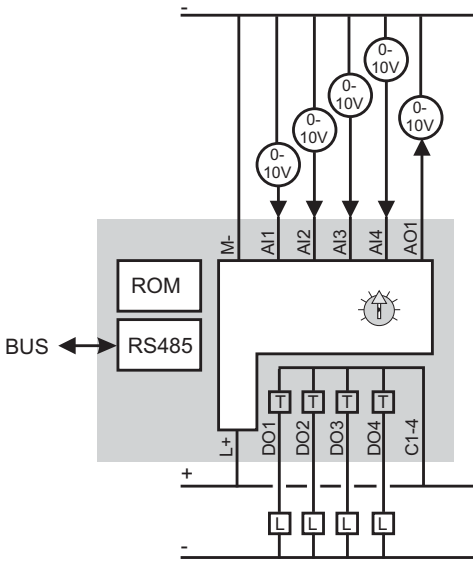
# SLS-500-AU


local


remote

## overview

- 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





HIQUEL® HIGH QUALITY ELECTRONICS

# SLS-500-AI

## overview

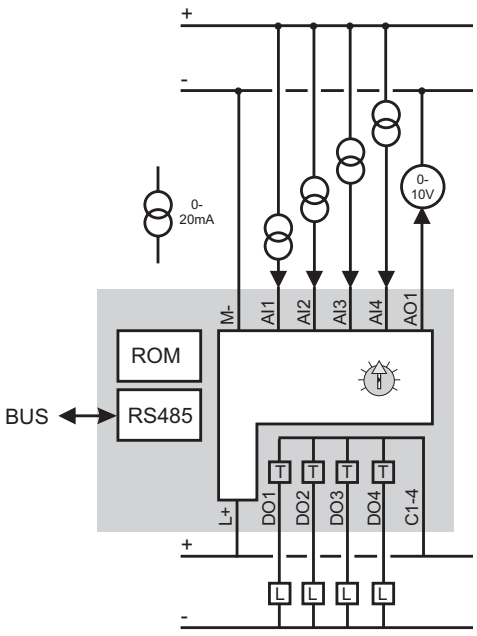
- analogue I/O expansion module
- supply voltage 24V=
- 4 analogue inputs 0-20 mA
- 1 analogue output 0-10 V
- 4 transistor outputs (PNP)
- LED indicators for outputs
- RS485 interface
- 1 potentiometer
- pre-programmable timer functions
- 45mm DIN rail mount housing


local


remote

## 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)



HIQUEL® HIGH QUALITY ELECTRONICS

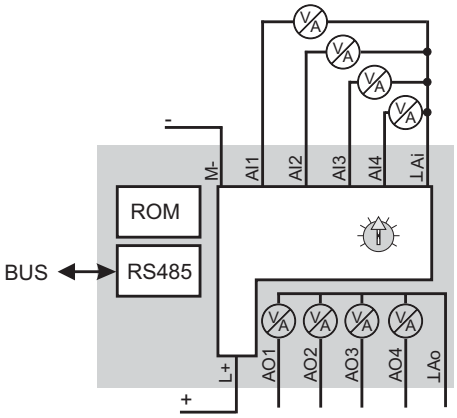
# SLS-500-AU-AU

## overview


local


remote

- **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





HIQUEL® HIGH QUALITY ELECTRONICS

# SLS-500-AI-AI

## overview

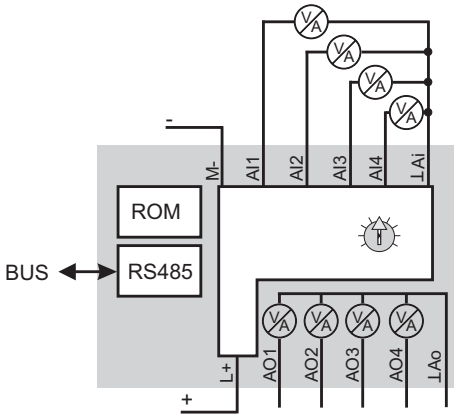
- analogue I/O expansion module
- supply voltage 24V=
- 4 analogue inputs 0-20mA
- 4 analogue outputs 0-20mA
- RS485 interface
- 1 potentiometer
- pre-programmable timer functions
- 45mm DIN rail mount housing


local


remote

## 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

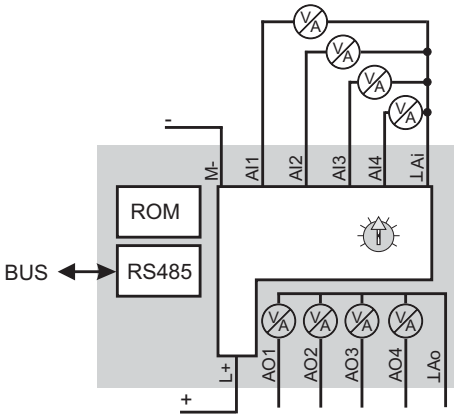
# SLS-500-AI-AU

## overview


local


remote

- **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





HIQUEL® HIGH QUALITY ELECTRONICS

# SLS-500-AU-AI

## overview

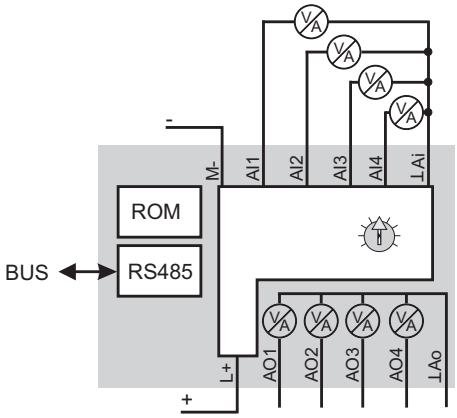
- analogue I/O expansion module
- supply voltage 24V=
- 4 analogue inputs 0-10V
- 4 analogue outputs 0-20mA
- RS485 interface
- 1 potentiometer
- pre-programmable timer functions
- 45mm DIN rail mount housing


local


remote

## 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-SIO

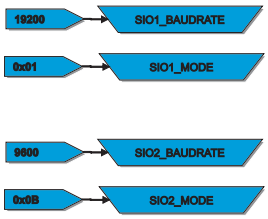
## overview


remote

- **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**

Programming

Title: Initialization




**Possible Baudrates for SIO1 and SIO2**

1200
2400
4800
9600
19200
38400

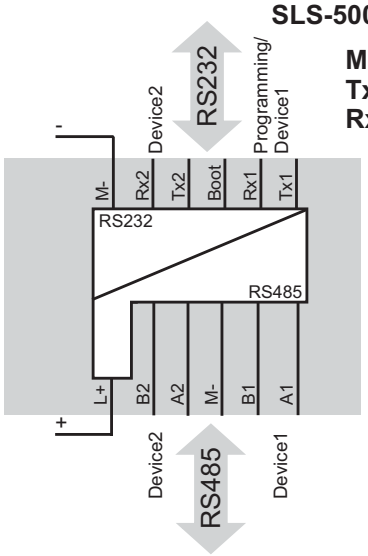
**Possible Modes for SIO1 and SIO2:**

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

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

**SLS-500-SIO Sub-D**

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




## 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 |

## 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





HIQUEL® HIGH QUALITY ELECTRONICS

# 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):**

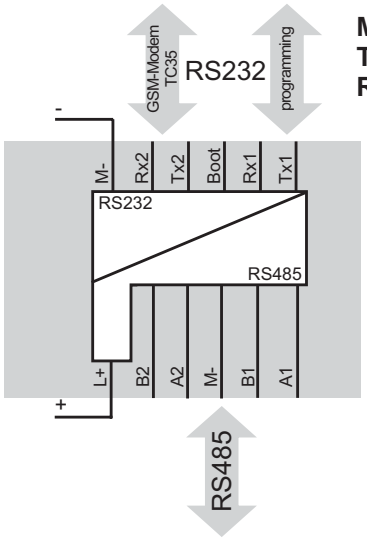
## specification

| | |
|---|---|
| **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**




## 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





HIQUEL® HIGH QUALITY ELECTRONICS

# SLS-500-GW

remote

## overview

- Gateway expansion module
- supply voltage 24V=
- Gateway for EnOceon 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

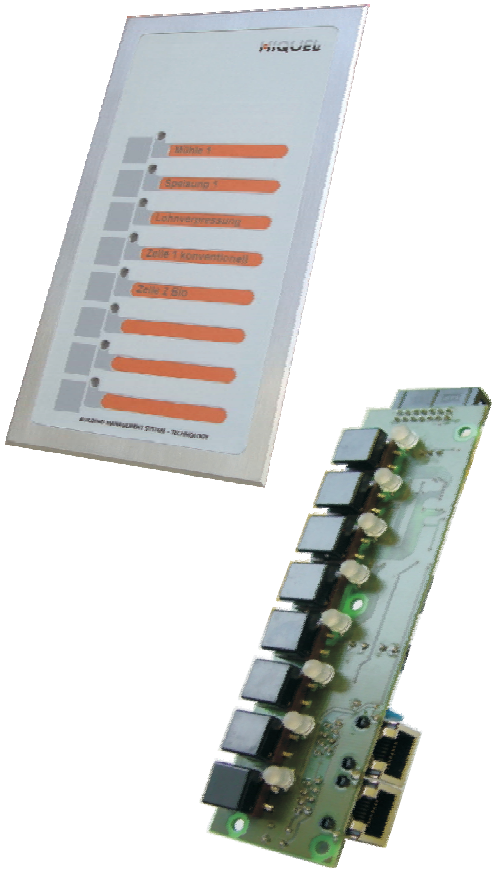




HIQUEL® HIGH QUALITY ELECTRONICS

# SLS-500-T1

## overview



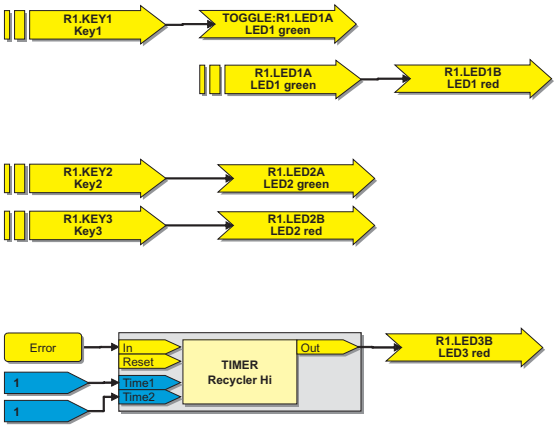
- button and LED expansion module
- supply voltage 24V= over bus connection
- Ideal for industrial and building automation
- 8 free programmable buttons
- 8 free programmable LEDs
- Each LED can display 4 states
- Connectable as an expansion module on every SLS-500-CAN base module
- Free selectable label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



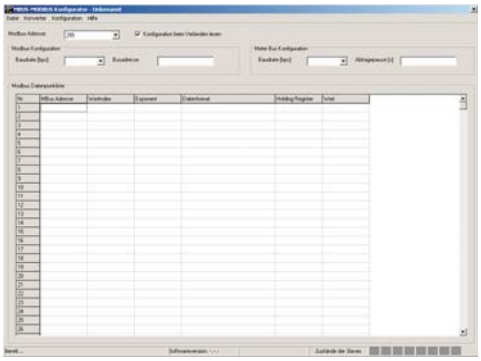


HIQUEL® HIGH QUALITY ELECTRONICS

# SLS-500-MBUS

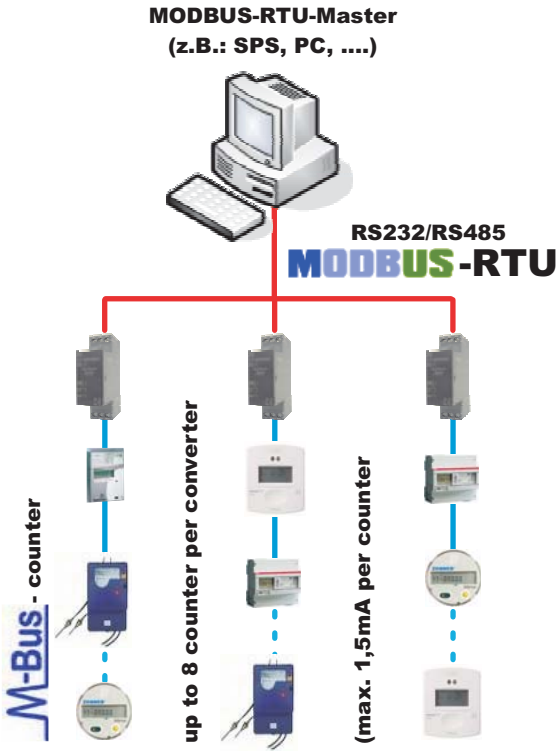
## overview

- **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 | | |

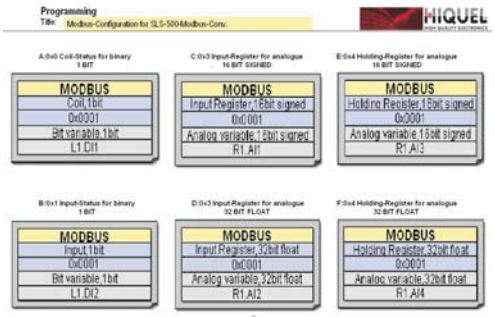
# SLS-500-Modbus

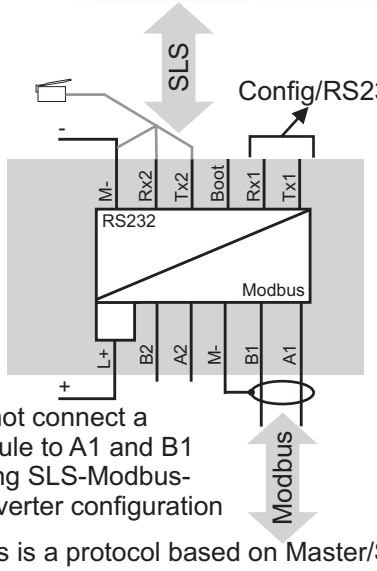
## overview

- **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:
:




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



X01.00

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# 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 ouput 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



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