

www.phytron.co.uk/SLS

SLS

19" sub rack for stepper motor controllers

Phytron's SLS housings are for up to 8 ZMX⁺ or 4 MSX stepper motor power stages with power supply.

Besides the standard designs we also offer individually configured units, which are designed with phytron's ZMX⁺ and MSX power stages for different stepper motor types.

Application

The SLS was conceived as an all-in-one solution oriented to satisfy the needs of our customers for a 19" format:

Power supply and fans are integrated into the housing according to the requirements in addition to the power stages. With up to 15 A_{PEAK} for each axis, the SLS is prewired, ready for connection, and ideal for demanding multi-axis applications like large manipulators, handling tasks, rapid prototyping or scientific experiments for example in the field of particle accelerators.

In addition, the SLS is the ideal extension for existing controller environments like our modular *phyMOTION*[™] controller, the standard PLC systems or the PC cards with pulse outputs.

In Focus



ServiceBus



EL. Isolated

- Plug-in 3U power Euromodule with power stages
- Integrated supply unit: 115 V_{AC}, 230 V_{AC} or 400 V_{AC}
- Integrated housing fan and fuses
- Stepper motor power stages: ZMX⁺ with 40/70 V motor voltage and ServiceBus
MSX with 60/120 V motor voltage
- Adjustments of the power stages on the front panel
- Interfaces on the rear:
 - Signal connectors
 - Motor connectors
 - Temperature sensitive switch for monitoring the transformer temperature
 - Communication connector: RS 232 or RS 485
 - Additional connectors according to customer requirements

Highlights

Individually designed

The requirements for motor control systems are as individual as its applications.

Depending on customer requirements, the power supply unit is designed with modules and assemblies for signal conditioning and distribution.

Also, a selection of sockets and connectors, pin assignments and cabling are available according to requirements.

Additional functions, e.g. processing and transmission of encoder signals, control of motor brakes or the like can be integrated as needed into the SLS.

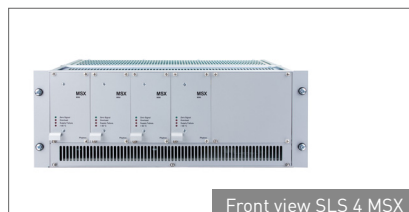
Examples

SLS with ZMX⁺ power stages and ServiceBus

Online parameterisation of the ZMX⁺ power stage during the operation via RS 485.

SLS with MSX high power stages

Phase currents 5 / 10 / 15 A_{PEAK} at 60 to 120 V_{DC} bus voltage.



Front view SLS 4 MSX

Control

Specification

Mechanical

Dimensions (W x H x D)	19" (482.6 mm) x 4 U (177.1 mm) x 370 mm
Weight	Up to 30 kg , depending on the configuration
Mounting	Rack mounting

Features

Mains connection	115 V _{AC} , 230 V _{AC} , 400 V _{AC} +/- 10 %, 48 to 62 Hz
Power stages	1 to 8 ZMX ⁺ with phase currents (with Boost) from either 0 to 1.5 A _{PEAK} or 0 to 9 A _{PEAK} 1 to 4 MSX with phase currents (with Boost) from 0 to 15.4 A _{PEAK} Custom design available
Stepper motors	Suitable for the control of 2 phase stepper motors with 4, (6) or 8 lead wiring
Cable length	Mains: 2 m max. Motor: shielded: 50 m max. Signal: shielded: 100 m max.

Interfaces

Signal connectors	Standard: 25-pole DSUB Optional: depending on the signal conditioning and distribution
Motor connectors	Standard: 6 pole connectors acc. to DIN 43652 Optional: according to customer specification
Optional connectors	For ServiceBus: RS 485, RS 232 For limit switch or Encoder connection For temperature sensitive switch for monitoring the mains transformer temperature For more customer specific applications

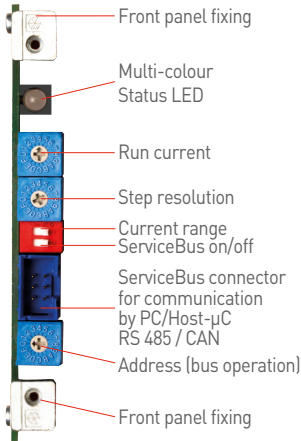
Communication and Programming

Diagnostics via Status LED of the power stages	Ready, Busy, Reset/Disable, Error diagnostics
Parameterisation via ServiceBus (optional)	Setting of all operating parameters of the ZMX ⁺ power stage via ServiceBus interface
Operating software	Phytron ServiceBus-Comm [®] for Windows [®]

Operating Conditions

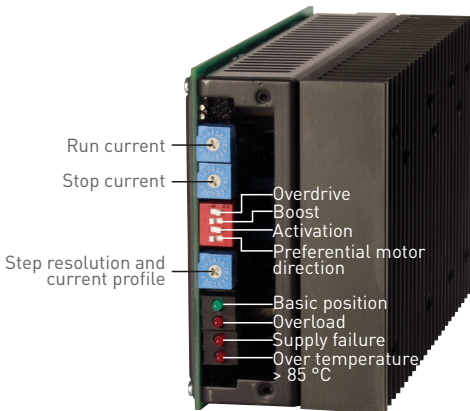
Temperature	Operation: +5 to +40 °C; storage and transport: -25 to +50 °C
Degree of pollution	Level 2
Relative humidity	5 to 85 %, class 2K3 non-condensing
Protection class	IP 20
EMC immunity / EMC emission	Acc. to EN 61000-3-2 Acc. to EN 61000-6-1, -3, -4 Acc. to EN6100-4-2...6, -11
Approval	CE

ZMX+ Power stage



- Stepper motor power stage for bipolar control of 2 phase stepper motors
- Up to 9 A_{PEAK} at 24 - 70 V_{DC}
- Up to 1/512 microsteps
- Switches for basic adjustment
- Parameterising and diagnostic online via ServiceBus
- Inputs: Control pulses, direction, boost, deactivation, reset, step resolution (optional: electrically isolated)
- Error output
- Options:
 - 32/48 pin connector
 - With/without electrical isolation
 - With/without ServiceBus

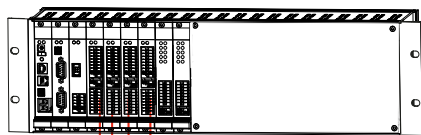
MSX Power stage



- Stepper motor power stage for bipolar control of 2 phase stepper motors
- 3 power ranges at 60 to 120 V_{DC}:
 - MSX 52-120: 5 A_{PEAK} max.
 - MSX 102-120: 10 A_{PEAK} max.
 - MSX 152-120: 15 A_{PEAK} max.
- Step resolution from full step to 1/20 step
- Run and stop current separately adjustable in 16 increments
- Selectable phase current profile settings: conventional, sinusoidal with Current Shaping or BLOW UP
- All inputs include an optocoupler with series for 5 V or 24 V input level: Control pulses, Motor direction, Boost, Activation, Reset (can be enabled by a jumper)
- Outputs: Basic position, Error

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SLS 4 MSX

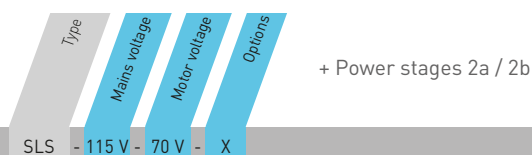


The SLS is optimally suited for use with high power stages in combination with the phyMOTION™ modular 19" sub rack mount controller.

Control

1 Ordering Code Basic Device

The variable elements of the product are displayed in colour.



Options		
Mains voltage	115 V 230 V 400 V	Supply voltage of the SLS
Motor voltage	40 V 70 V 90 V 120 V	Motor voltage ZMX ⁺ power stage Motor voltage ZMX ⁺ power stage Motor voltage MSX power stage Motor voltage MSX power stage
Options	A AS P X	Signal connector IXE-A compatible Special signal connector IXE-A compatible Signal connector phyMOTION™ compatible Signal connector customised

Extent of Supply

- SLS- and power stage manual
- Mating connectors

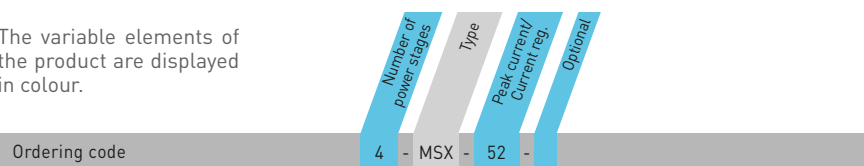
Optional Accessories

- For SLS-ZMX⁺ with ServiceBus:
A CD with ServiceBus-Comm® software,
USB driver (included in delivery)
- Cable assembly
- Mini USB-RS 485 converter

For information about mixed configurations (ZMX⁺ and MSX) please contact our sales team (info@phytron.co.uk).

2a Ordering Code Assembling with MSX

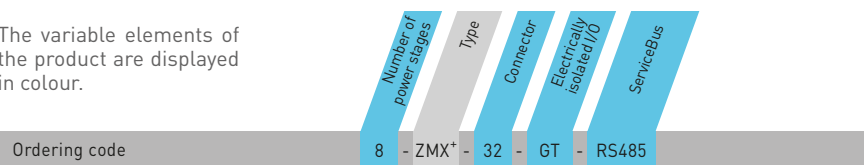
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Options		
Number of power stages	1 to 4	Number of installable MSX power stages
Peak current / Current regulation	52 102 152	5.1 A _{PEAK} with SYNCHROCHOP current regulation 10.3 A _{PEAK} with SYNCHROCHOP current regulation 15.4 A _{PEAK} mit SYNCHROCHOP current regulation
Optional	Reset 24 V	Standard MSX (5 V): without additional designation Reset input activated, 5 V input level 24 V input level

2b Ordering Code Assembling with ZMX⁺

The variable elements of the product are displayed in colour.



Options		
Number of power stages	1 to 8	Number of installable ZMX ⁺ power stages
Connector	32 48	32-pin VG connector DIN 41612 (D) 48-pin VG connector DIN 41612 (F)
Electrically isolated I/O	GT	with electrical isolation without electrical isolation
ServiceBus	RS485 CAN	ServiceBus via RS 485 ServiceBus via CAN without ServiceBus

Configuration Examples

SLS with
4 MSX high power stages

Phase currents 5 / 10 / 15 A_{PEAK} at 60 to 120 V_{DC} bus voltage.

SLS with
8 ZMX⁺ power stages and ServiceBus

Online parameterisation of the ZMX⁺ power stage during the operation via RS 485.

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