SEW EURODRIVE

High-performance 48V drive solutions

For mobile and decentralized motion and processing tasks

DC 48 V

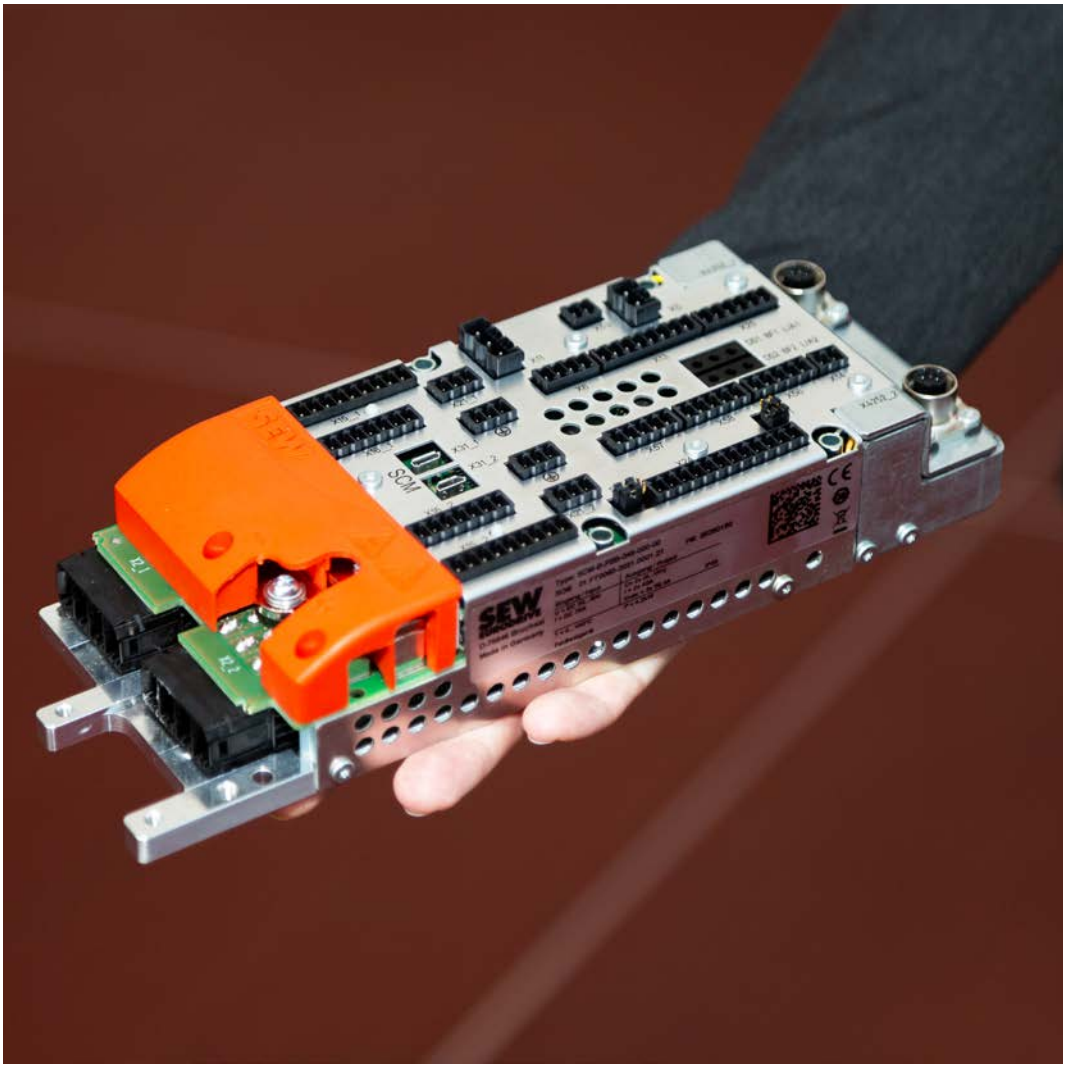
SCM decentralized controllers

Developed based on customer requirements
Geared to target applications

We have developed the new DC 48 V multi-axis servo controller solutions for mobile and decentralized applications specifically for our customers and based on their requirements.

Our SCM decentralized controllers provide a unique solution for mobile and decentralized transportation and processing tasks in the protective extra-low voltage range.

1



1 Compact, high-performance powerhouses – SCM decentralized controllers

2 SCM compact in IP20 with 2 axes – extremely compact with the full range of functions

3 SCM compact in IP20 with multi-axis design – the name says it all

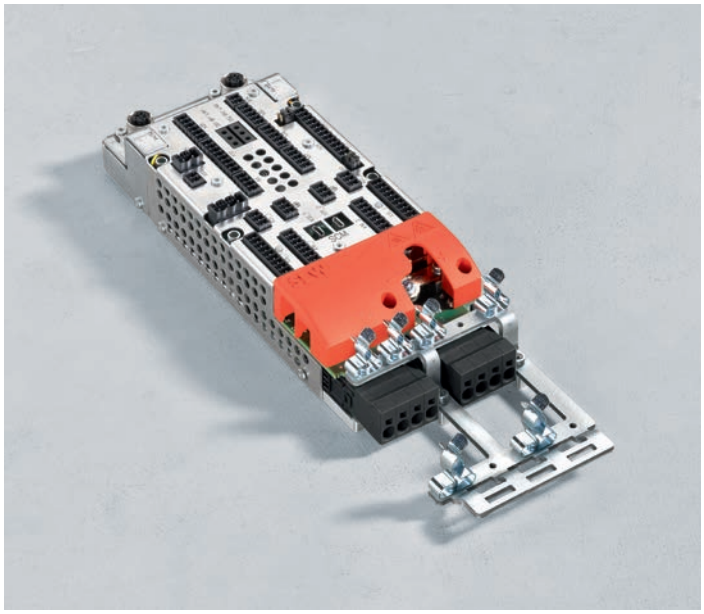
4 SCM standard in IP54 with 4 axes – minimal installation and maintenance outlay

5 SCM flexible in IP54 with 4 axes – for very compact installation spaces and flexible connection technology

Features

- Protective extra-low voltage up to DC 20 – 60 V
- High-performance current, speed and position control
- Integrated DC 24 V supply for entire mobile units
- Plug-in interfaces
- IP54 design – 4 axes
- IP20 design – 2 axes, scalable to 4, 6 or 8 axes
- Standardized EnDat 2.2 motor encoder protocol and resolver, with option of additional second distance encoder
- Control of working and holding brakes
- Integrated input and output functions
- Plug-in interfaces for power supply, motor and encoder
- Option of carrying out wiring work and changing cable lengths in the field, depending on the design

2



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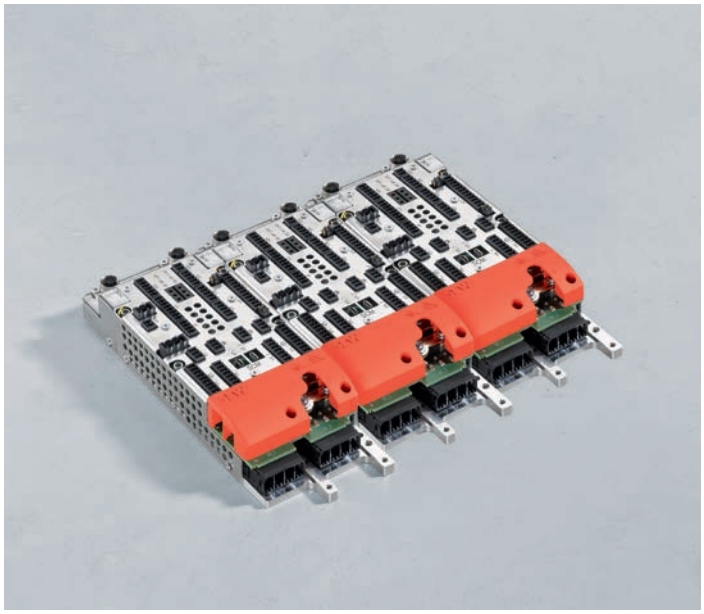

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5

For your machine and plant automation

Small installation space
Scalable multi-axis concept based on DC 48 V technology with an extremely compact design.

High performance
Exceptionally short cycle times pave the way for excellent dynamics and high load inertia ratios.

Impressive power
High maximum and continuous currents for rapid acceleration processes and short cycle times in the application.

Input and output functions
Numerous integrated input and output functions, including control of holding and working brakes.

Variety of power supply solutions
Use of batteries, sliding contacts, MOVITRANS® contactless energy transfer and the MOVI-DPS® energy storage unit results in excellent adaptability.

Perfect coordination
The MOVI-C® CONTROLLER makes light work of multi-axis and kinematically complex movements.

Straightforward servicing
Service operations facilitated by decentralized technology, simple plug-in connectivity and a single-cable solution.

DC 24 V voltage supply for peripherals
Integrated DC 24 V power supply unit for external electronics components.

SCM compact in IP20 – connections

Status LEDs

EtherCAT®
communication interface port

2 digital inputs and
2 digital outputs

Energy storage monitoring

"Power slaving" / remote disconnection of DC 24 V power supply unit

Port for safe disconnection
STO PL e

DC 24 V for supplying peripherals

Grounding of unused
brake cores

Service interface (USB)

Connector for motor connection

DC 20 – 60 V connection

DC 5 V output

3 analog inputs

8 digital inputs and
2 digital outputs

S1 + S2 – function selection
for analog inputs

Two-wire or three-wire brake
connection

Connection to safety controller
for safe speed / direction of
rotation (SLS/SDI)

Resolver connection with
temperature evaluation

Digital encoder input
(EnDat 2.2. SSI)

DC link connection option

Typical applications and market trends

Useful information:
Market trends analyzed and summarized for you

There is a very clear trend toward modularizing machinery and toward smaller decentralized and semi-mobile units. Cutting-edge power supply systems incorporating energy storage units are extremely popular.

As a basis for Industry 4.0 solutions, and also as a result of new business models, small, lean and flexible automation solutions are in high demand. The combination of shrinking batch sizes and higher product throughputs calls for highly dynamic and thus extremely powerful drive units with a very small footprint.

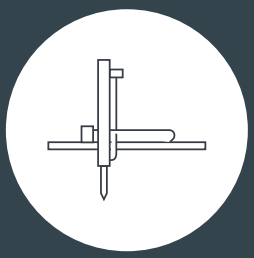
Mechanical and plant engineering companies and their customers are facing increasingly diverse issues, so they need drive and automation solutions that are easy to integrate and service.

To address this complexity, suppliers are becoming strategic partners. They are expected to provide not only the relevant software and hardware solutions and interfaces, but also the kind of global service network that SEW-EURODRIVE offers.

SCM solutions –
suitable for all kinds of industries

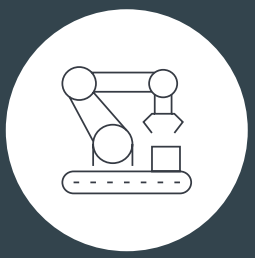
- Automation solutions for production and processing machinery (loading and unloading metal, plastic, wood, etc.)
- Product/carrier transport to/through packaging and food processing machinery
- Handling and robotics solutions across wide-ranging branches of industry
- Intralogistics machine modules
- Battery-powered construction vehicles and machinery
- Auxiliary units for municipal, fire service, airport and cleaning vehicles
- Special solutions based on sheet metal / steel, such as pigging applications
- Mobile off-highway applications
- Many other solutions

Gantry and
handling robots



Mover solutions

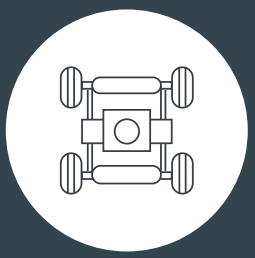
Collaborative
robot solutions



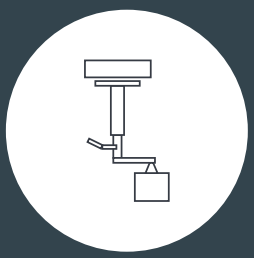
Solutions for AGVs/AMRs

Mobile battery-powered construction
vehicles and machinery

Pigging applications



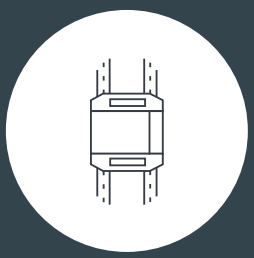
Manipulators



Pallet shuttles

Shuttles for heavy loads and highly
dynamic container shuttles

Baggage transportation
and sorting systems

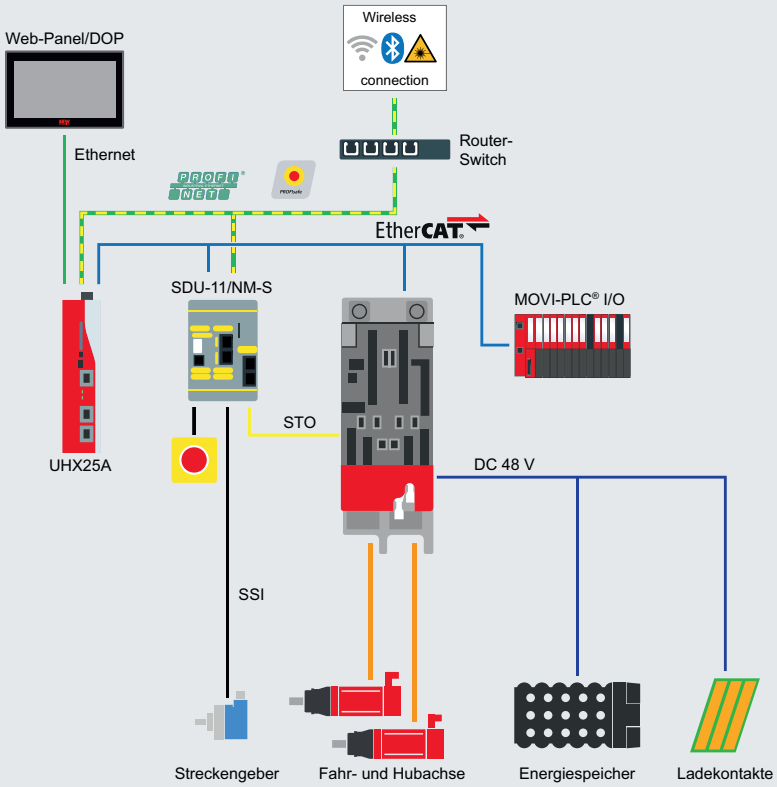


Agricultural robots

Pallet-free, automatic
parking garage systems

Examples of system solutions for mobile machine modules

Intralogistics pallet shuttle



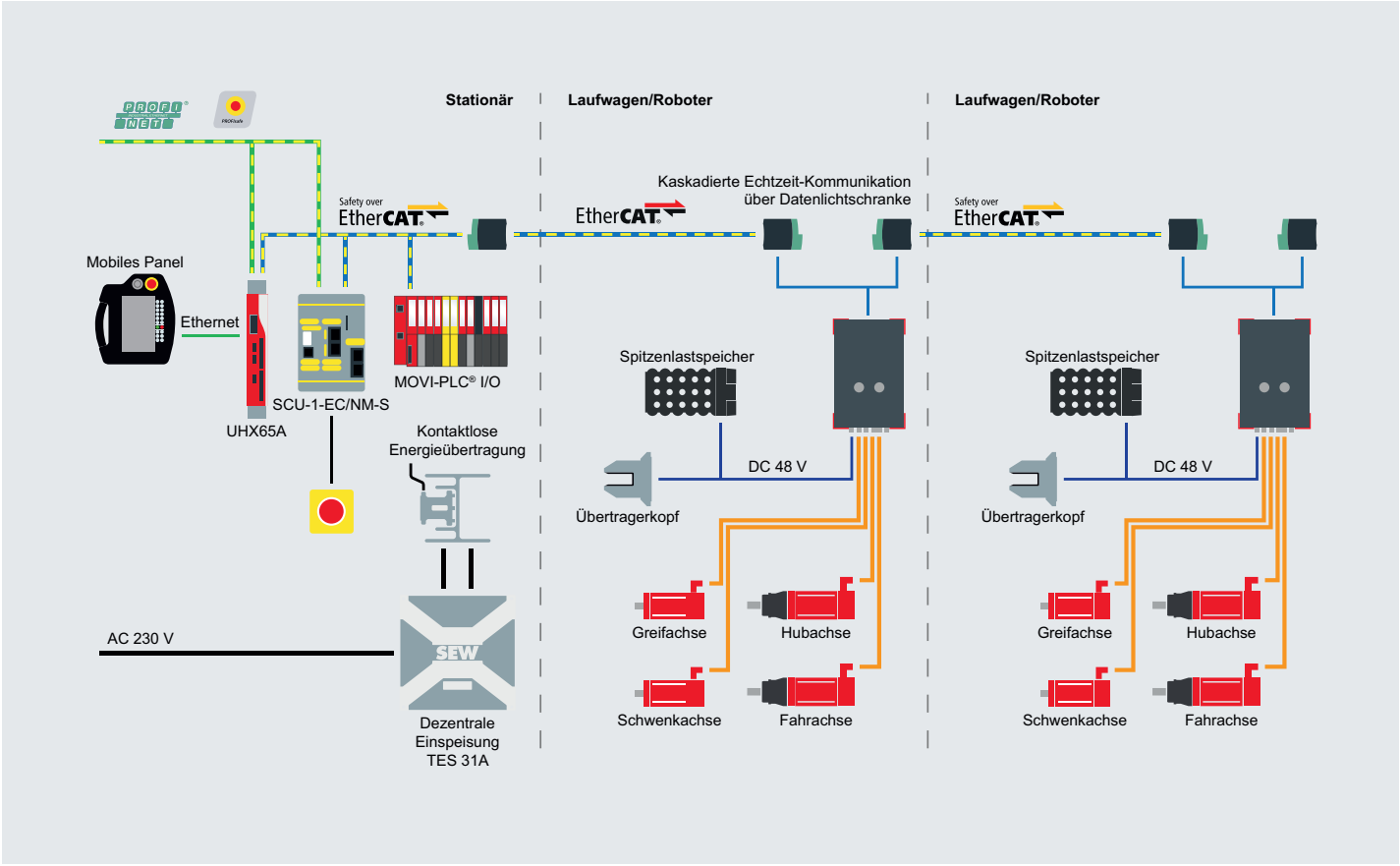
Operation

- Highly dynamic pallet shuttle with travel axis and lifting axis
- Supercapacitors as energy storage bundle with double-layer capacitors
- Point-based contact charging
- EtherCAT® master functionality and PROFINET/PROFIsafe slave functionality
- Servomotors suitable for industrial use with DC 48 V technology and high-performance planetary gear units

Added value for you

- Safe position monitoring (SPL) for safe software limit switches
- Integrated voltage supply and evaluation of external sensor technology
- Integrated safety functions and distance encoder evaluation
- Integrated safe interface connection to higher-level control systems
- Direct link between safe controller and non-safe controller via EtherCAT®

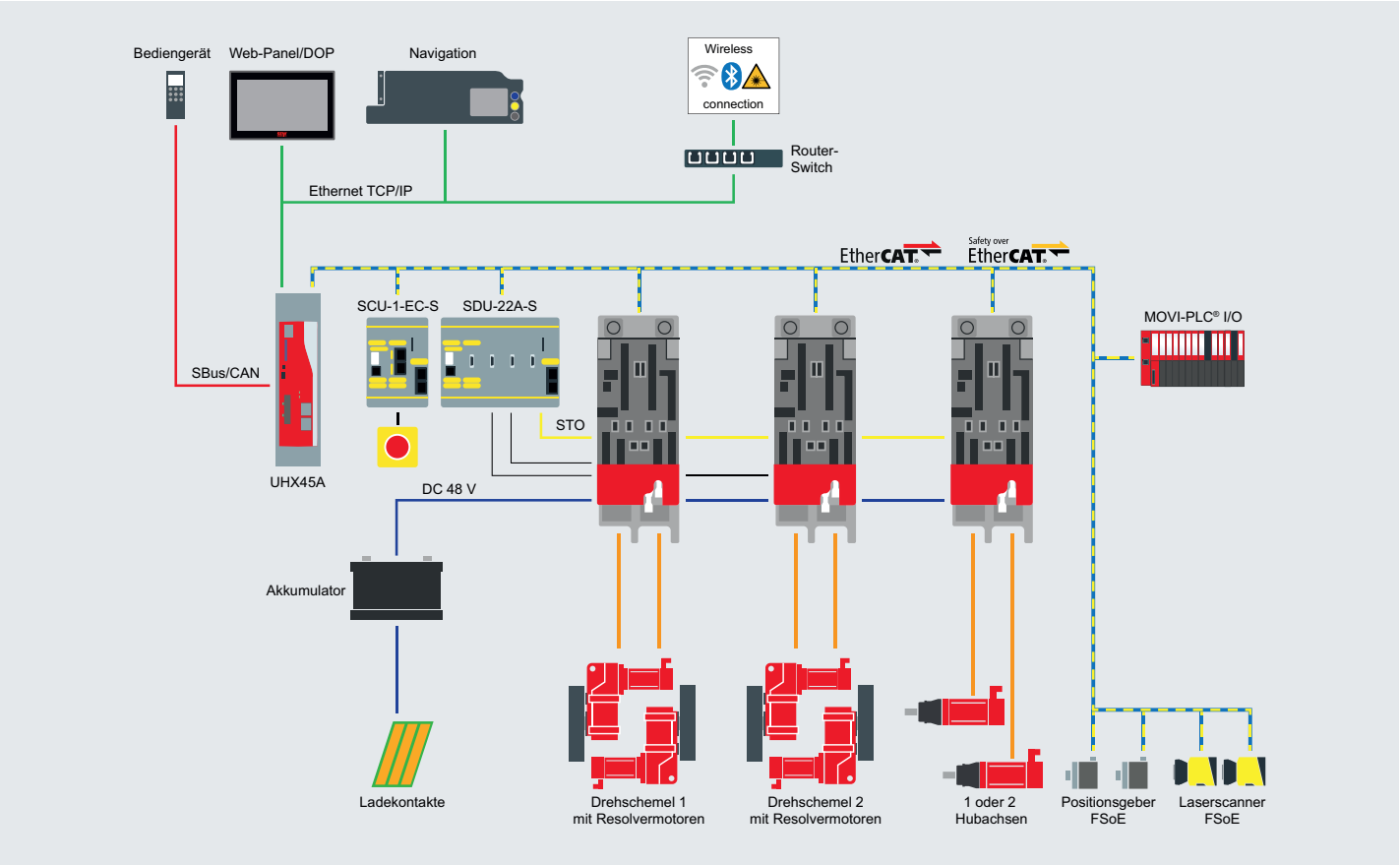
Gantry robot with two carriages



Operation	– Extremely flexible gantry robot for 1 – 4 carriages – 4 axes per carriage – Supercapacitors as energy and peak load storage units – MOVITRANS® contactless energy transfer system – Real-time capable and deterministic data transmission via light – Simultaneous stationary calculation of robot kinematics – Decentralized energy supply
Added value for you	– Cable-carrier-free gantries with long travel paths are possible. – Extremely flexible product loading and unloading when using e.g. processing machinery – Robot has minimal space and weight requirements – Peak load reduction and energy-efficient solution – Smaller control cabinet and reduced footprint – Machine protection thanks to centralized collision monitoring

Example of a system solution for automating an AGV/AMR

Double swivel base vehicle



Operation

- Double swivel base vehicle for heavy loads with high degrees of freedom during travel
- Number of axes can be varied, including lifting, roller table, etc.
- Energy transfer via charging contacts or MOVITRANS® contactless energy transfer with flat pick-up
- Connection to navigation computer with Ethernet
- Contactless data transmission (WLAN, light, etc.)
- Includes integrated Safe Limited Speed (SLS) function

Added value for you

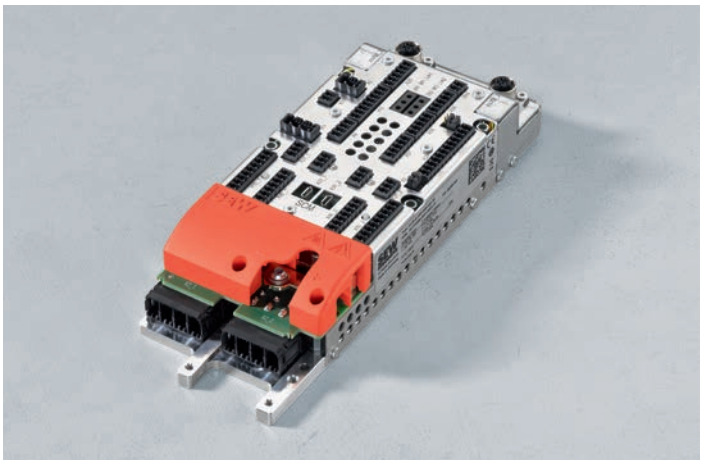
- Vehicle can be designed without a boost converter in the case of protective extra-low voltage
- Direct connection of safe and non-safe actuator and sensor technology via EtherCAT® (FSoE)
- Incorporation of further third-party components via integrated bus systems and optional drivers
- Visualization is possible using an integrated visualization editor.
- Exceptionally compact design
- High transmission speed thanks to direct access to sensor/actuator level (including safety)

Overview of system components

SCM compact

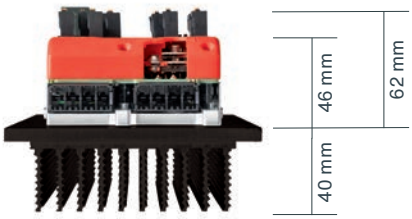
IP20 design

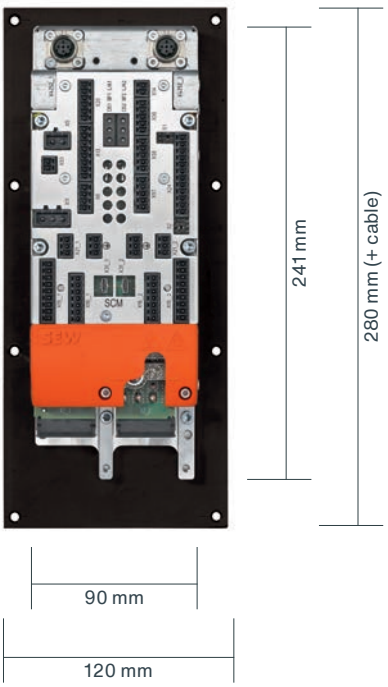
Extremely compact with the full range of functions



The SCM compact in IP20 with 2 axes is exceptionally compact and can optionally be equipped with a feed-through heat sink.

In the design without this heat sink, mounting and cooling are carried out via the cooling plate, directly in your machine. A DC 24 V power supply unit is integrated and can also be used to supply the peripherals. Developed for incorporation into the customer's machine structure, this SCM is highly versatile.

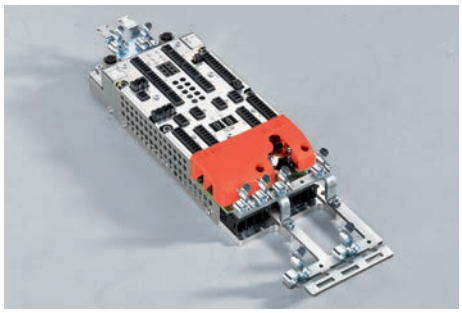




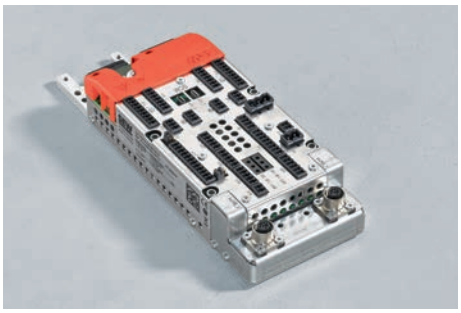
Number of axes	2
Nominal voltage	DC 48 V
Voltage range	DC 20 – 60 V
Nominal current consumption	100 A
Parameterization interface	EtherCAT® and service interface
Nominal current (axis)	37 A
Peak current (axis)	56.5 A
Encoder type	EnDat 2.2 / resolver
Brake control	24 (two-wire and three-wire)
Ambient conditions	0 – 50 °C / IP20 (-30 °C – 0 °C on request)
Voltage output	24+ / DC -10% V / 12 A
Storage bundle diagnostics	Voltage/ temperature monitoring
Safety functions	STO PL e
Fieldbus interface	EtherCAT® slave
Weight without heat sink	0.95 kg

Connections / functions

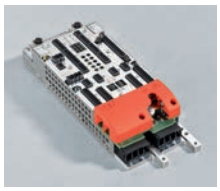
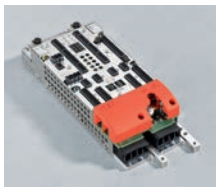
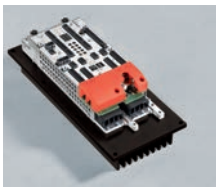
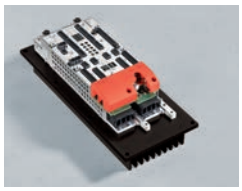
Pre-fabricated cables are available for electrical connection to the motors. The connection of peripherals can be customized using the signal connector accessory set. A shield connection accessory set is available for shield connection directly on the device.



Motor connections / functions
- Motor axis 1 – 2 (power, brake, feedback)
- DC supply

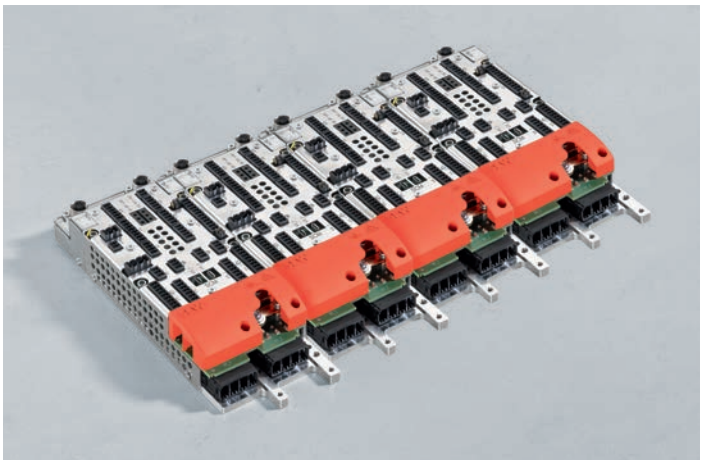


Signal connections / functions
- Digital inputs/outputs
- Safe disconnection (STO)
- EtherCAT® OUT
- DC 24 V output
- EtherCAT® IN
- Analog inputs

Applications / areas of use	– Particularly suitable for machine integration – Ideal when the installation space is very tight – Version without a heat sink can be mounted directly on the machine			
Heat sink	Cold-plate design		With feed-through heat sink	
Design				
	2 axes with DC 24 V power supply unit	2 axes without DC 24 V power supply unit	2 axes with DC 24 V power supply unit	2 axes without DC 24 V power supply unit
Type designation	SCM-B-P2B-048-000-00	SCM-B-P2B-X48-000-00	SCM-B-C2B-048-000-00	SCM-B-C2B-X48-000-00
Part number	28280180	28280199	28280202	28280210
Signal connector accessory set	28284100			
Shield connection accessory set	28284097			

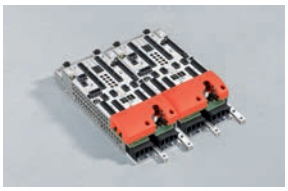
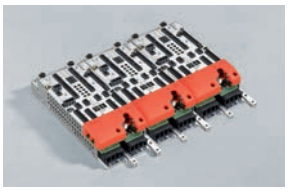
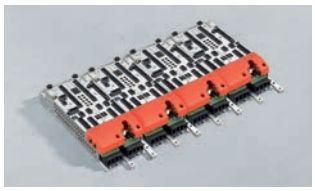
SCM compact

IP20 design
Multi-axis design

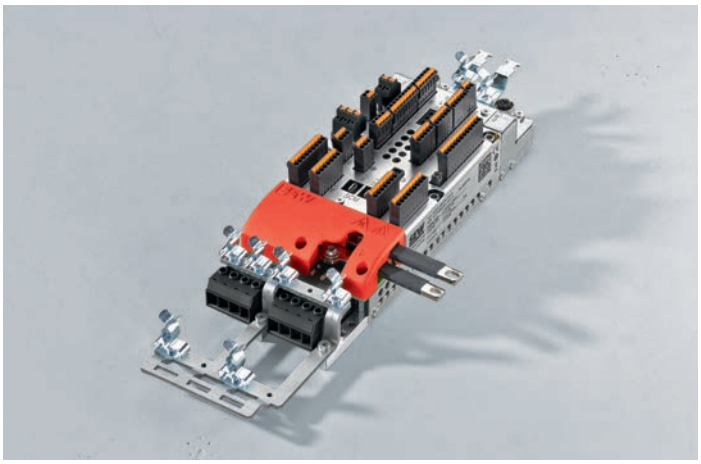


Several SCM compact controllers in the IP20 design can be combined using the DC link connection to create a multi-axis design for up to 8 axes.

The various designs can also be used in any combination. To optimize the power supply and ensure stable energy exchange between the axes, the voltage DC link can be combined with DC link connection accessories. If devices are not located directly next to each other, a DC link connection with market-standard cable lugs is possible.

Design	 4 axes with 1 × 24 V power supply unit	 6 axes with 1 × 24 V power supply unit	 8 axes with 1 × 24 V power supply unit
Part number	1 × 28280180 1 × 28280199	1 × 28280180 2 × 28280199	1 × 28280180 3 × 28280199
Signal connector accessory set	2 × 28284100	3 × 28284100	4 × 28284100
Shield connection accessory set	2 × 28284097	3 × 28284097	4 × 28284097
DC link connection accessory set	1 × 28280245	2 × 28280245	3 × 28280245

SCM compact accessories



Shield connection accessory set **Part number: 28284097**

Shield connection is possible with the help of the accessory set.
This set is screwed to the power side and the signal side.
The accessory set consists of:
– 1 × power shield connection plate, including screws
– 1 × signal shield connection plate, including screws and shield terminals

Signal connector accessory set **Part number: 28284100**

A set including all signal connectors is available for connecting the signals.
The accessory set consists of:
– 1 × 24 V peripheral supply – 2-pole
– 1 × 24 V jumper – 3-pole
– 1 × 5 V peripheral supply – 2-pole
– 1 × power supply unit lock – 2-pole
– 1 × STO – 4-pole
– 3 × analog inputs – 5-pole
– 1 × I/O connector – 6-pole
– 1 × I/O connector – 12-pole
– 1 × energy storage unit, diagnostics – 8-pole

DC link connection accessory set **Part number: 28280245**

The DC link connection for a multi-axis design without heat sink is fitted as an extra. The accessory set consists of:
– 2 × copper rails

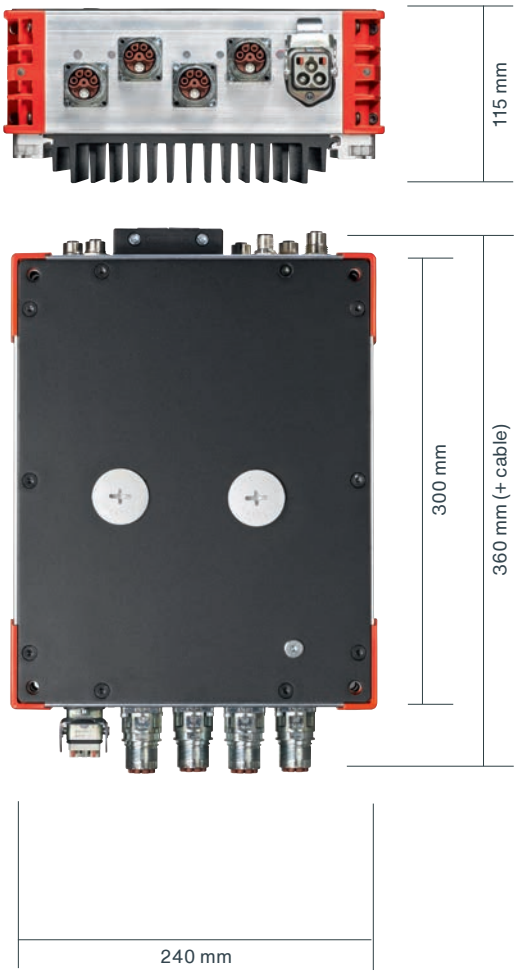
SCM standard

IP54 design

For minimal installation work and easy servicing

All connections and basic functions can be plugged in from the outside.

The SCM standard in IP54 with 4 axes is especially straightforward to install in the machine. This is because all connections and basic functions can be plugged in from the outside, which also simplifies servicing. Thanks to the protective extra-low voltage, devices can be replaced without the involvement of a qualified electrician. A DC 24 V power supply unit is integrated and can also be used to supply the peripherals.



Number of axes	4
Nominal voltage	DC 48 V
Voltage range	DC 20 – 60 V
Nominal current consumption	70 A
Parameterization interface	USB, EtherCAT®
Nominal current (axis)	30 A
Peak current (axis)	56.5 A
Encoder type	EnDat 2.2
Brake control	24 (two-wire)
Ambient conditions	0 – 40 °C / IP54
Voltage output	24+ / DC -10% V / 10 A
Storage bundle diagnostics	Voltage/ temperature monitoring
Safety functions	STO PL e
Additional fieldbus interface	EtherCAT® slave
Weight	7.2 kg

Connections / functions

Plug connectors ensure extremely quick and easy connection of the power side. High-quality pre-fabricated cables are provided in your required length.

On the signal side, peripherals are primarily connected using plug connectors. A cable bushing is provided for additional functions.

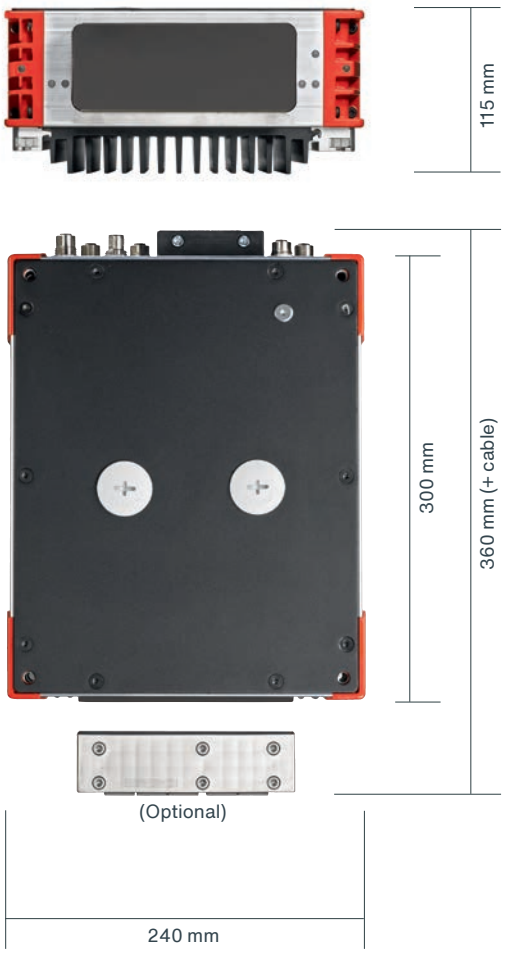
Connections / functions Power	– Motor axis 1 – 4 (hybrid: power + brake + feedback) – DC supply
Connections / functions Signal	– Digital inputs/outputs – Safe disconnection (STO) – EtherCAT® OUT – DC 24 V output – EtherCAT® IN – Cable bushing for further functions/connections
Applications / areas of use	– For machinery in industrial use with degree of protection IP54 – Rapid installation thanks to exclusive use of plug connections – For use where there is no protective environment for the electronics in the machine
Design	4 axes
Type designation	SCM-B-K4B-048-000-00
Part number	28280237

SCM flexible

IP54 design
For very compact installation spaces

The SCM flexible in IP54 with 4 axes is designed for tight installation spaces and offers a nominal current of 37 A per axis.

Using connectors for motor connections on the inside means it can be used even when a limited amount of space is available. To enable flexible and highly compact electrical connection of the power side, the controller has been prepared for an Icotek® cable bushing. These preparations can also be used for your own cable entries. The SCM flexible is supplied with a cover plate fitted. A DC 24 V power supply unit that can also be used to supply the peripherals is integrated.



Number of axes	4
Nominal voltage	DC 48 V
Voltage range	DC 20 – 60 V
Nominal current consumption	190 A
Parameterization interface	USB, EtherCAT®
Nominal current (axis)	37 A
Peak current (axis)	56.5 A
Encoder type	EnDat 2.2 / resolver
Brake control	24 (two-wire and three-wire)
Ambient conditions	0 – 40 °C / IP54
Voltage output	24+ / DC -10% V / 10 A
Storage bundle diagnostics	Voltage/ temperature monitoring
Safety functions	STO PL e
Fieldbus interface	EtherCAT® slave
Weight	7.2 kg

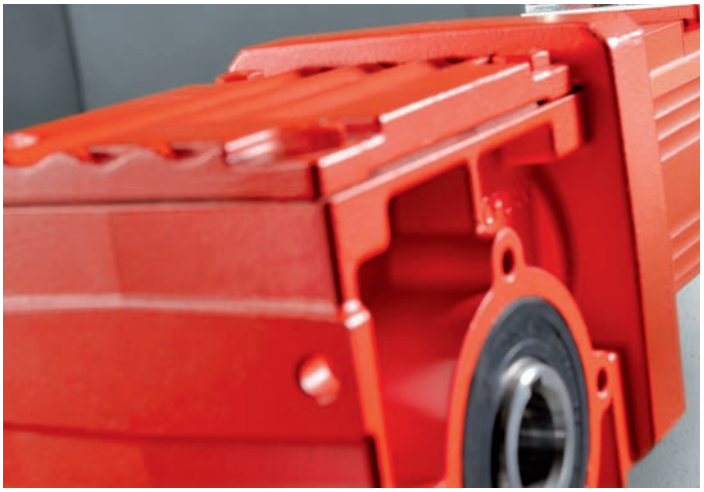
Connections / functions

Peripherals are primarily connected using plug connectors. A cable bushing is provided for additional functions.

Connections/functions Power	– Motor axis 1 – 4 (power + brake, feedback) – DC supply
Connections/functions Signal	– Digital inputs/outputs – Safe disconnection (STO) – EtherCAT® OUT – DC 24 V output – EtherCAT® IN – Cable bushing for further functions/connections
Applications / areas of use	– For machinery in industrial use with degree of protection IP54 – With cable bushing for particularly tight installation spaces – Adjustable cable lengths – For use where there is no protective environment for the electronics in the machine
Design	4 axes
Type designation	SCM-B-D4B-048-000-00
Part number	28280229

Example showing Icotek® cable bushing with EMC-compliant shield connection Type: EMV-KEL-DS 24/10

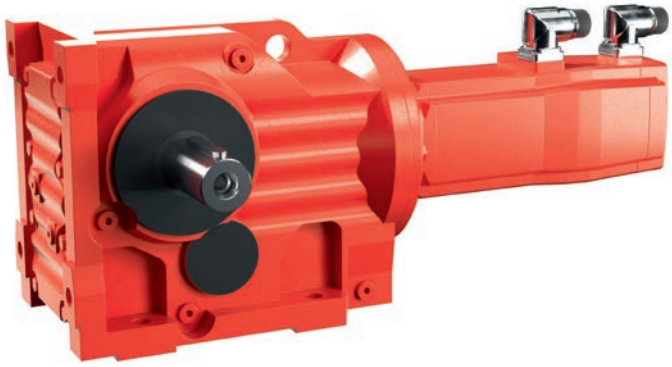
Motors and gear units

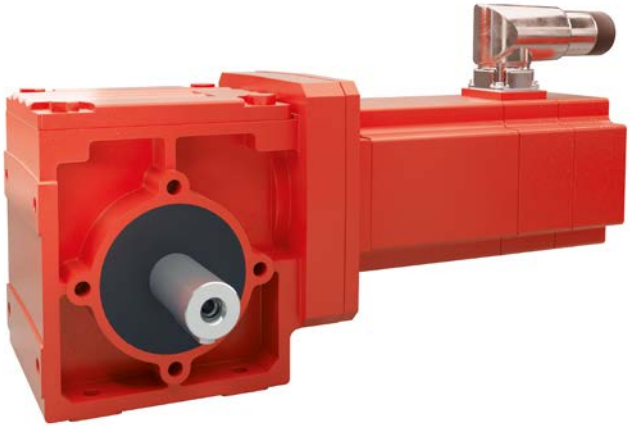


Servomotors for use with the SCM decentralized controller can be combined with SEW-EURODRIVE's modular gear unit system. Servomotors with a working or holding brake can be selected. The EnDat 2.2 encoder system or a resolver is available for motor feedback.

Type	CMP40M	CMP50S	CMP50M	CM3C63M (M23 connector)	CM3C63M (M40 connector)	Unit
Speed class	4500	4500	3000	4500	4500	U/min^{-1}
Standstill torque	0.75	1.3	2.3	2.5	4.2	Nm
Standstill current	9.62	15.8	17.3	23	37.9	A
Maximum torque	3.5	4	6.8*	6.0*	6.0*	Nm
Maximum current	56.5	56.5	56.5*	56.5*	56.5*	A
Nominal voltage	48	48	48	48	48	DC V

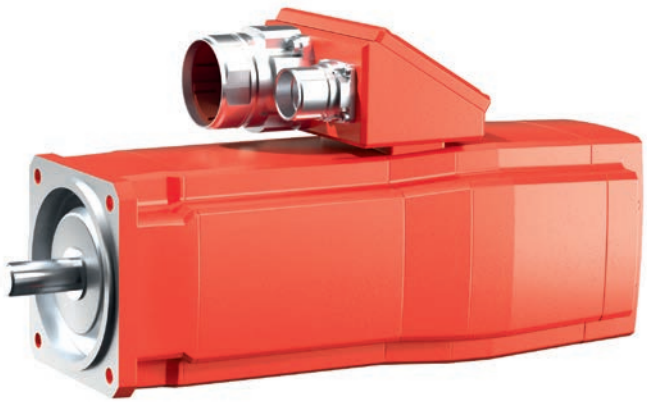
* Depending on the drive electronics used

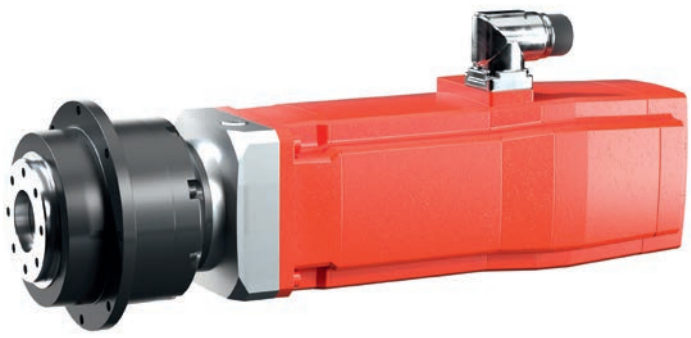




Description	Extremely dynamic and precise synchronous servomotors are also impressively powerful. They can be used as direct mounting solutions or be combined with the SEW-EURODRIVE modular gear unit system using adapters.
Encoder systems	– EnDat 2.2 multi-turn encoder (AH0E, AH1E) – Resolver (RH1M)*
Brake (optional)	– Working brake in the case of CM3C63M.. (BZ05, BZ05D) servomotors – Holding brake in the case of CM3C63M.. / CMP.. (BK) servomotors
Gear unit	– SEW-EURODRIVE modular gear unit system for direct mounting – Coupling/adapter solutions

* Optionally with FS-compliant safe mounting





Cables

Single-cable solution

We offer single-cable solutions in variable lengths that are compatible with cable carriers for SCM standard and SCM compact decentralized controllers.

Connection type	Motor type	Encoder type	Connector size	Interlocking
Single-cable solution				
	CMP40M CMP50S CMP50M CM3C63M	EnDat 2.2	Power: M23 Signal: M23	Standard: SpeedTec

Part number	Cable type	Length / installation type	A-side (motor)	B-side (SCM)
SCM standard in IP54 (single-cable solution)				
28149920	1.5 mm² hybrid cable	Variable / cable carrier	M23 connector	M23 connector
28149939	4.0 mm² hybrid cable	Variable / cable carrier	M23 connector	M23 connector
SCM compact in IP20 (single-cable solution)				
28149947	1.5 mm² hybrid cable	Variable / cable carrier	M23 connector	3 × Phoenix COMBICON
28149955	4.0 mm² hybrid cable	Variable / cable carrier	M23 connector	3 × Phoenix COMBICON

Two-cable solution

We offer two-cable solutions in variable lengths that are compatible with cable carriers for SCM compact decentralized controllers.

Connection type	Motor type	Encoder type	Connector size	Interlocking
Two-cable solution				
	CMP40M CMP50S CMP50M CM3C63M	EnDat 2.2 Resolver	Power: M23 Signal: M23	Standard: SpeedTec
	CM3C63M	EnDat 2.2 Resolver	Power: M23 Signal: M23	Optional: SpeedTec-ready

Part number	Cable type	Length / installation type	A-side (motor)	B-side (SCM)
SCM compact in IP20 (two-cable solution)				
28148568	1.5 mm² brakemotor cable	Variable / cable carrier	M23 connector	2 × Phoenix COMBICON
28148541	4.0 mm² brakemotor cable	Variable / cable carrier	M23 connector	2 × Phoenix COMBICON
28148533	6.0 mm² brakemotor cable	Variable / cable carrier	M40 connector (CM3C63M)	2 × Phoenix COMBICON
28148525	Resolver cable	Variable / cable carrier	M23 connector	1 × Phoenix COMBICON
28148517	EnDat 2.2 encoder cable	Variable / cable carrier	M23 connector	1 × Phoenix COMBICON

Control technology

Added value for you with SEW-EURODRIVE control technology and MOVI-C® CONTROLLERS

- The MOVI-C® CONTROLLER family provides a fully comprehensive controller portfolio with standardized functions and features
- Control solutions for complex motion tasks, including multi-axis control and robotics, automation tasks and real-time visualization
- Flexibility through connection to widely used control systems in the machine as a whole or the line/system
- Time saving as a result of quick and easy startup thanks to centralized data storage and a plug-in storage module
- Resulting possibility of e.g. a simple axis replacement function
- FSoE safety routing and web visualization

- User-friendly programming environment in the IEC editor based on CODESYS 3.x
- Just one software tool for creating applications and visualizations
- Scalable controller hardware with long-term availability for implementing flexible machine and system topologies

The module and machine controllers from our MOVI-C® modular automation system are designed specifically for your mobile and decentralized applications. They can be used for a wide range of motion control and automation tasks. Operated autonomously or via fieldbus interfaces (PROFINET, EtherNet/IP™ or Modbus TCP), they can also be connected to higher-level controllers.

UHX25A standard performance class

- Number of axes: 2 interpolated and 8 not interpolated
- CPU technology: Dual-core ARM Cortex-A7, 1 GHz
- Ethernet interface and CAN slave
- System bus: EtherCAT® master
- Fieldbus slave: PROFINET slave, EtherNet/IP™
- OPC UA: server/client
- Memory: 512 MB SD card

UHX45A advanced performance class

- Number of axes: 6 interpolated and 16 not interpolated
- CPU technology: Dual-core ARM Cortex-A7, 1 GHz
- 2 × Ethernet interface and CAN slave
- System bus: EtherCAT® master
- Fieldbus slave: PROFINET slave, EtherNet/IP™
- OPC UA: server/client
- Memory: 512 MB SD card

UHX65A progressive performance class

- Number of axes: 16 interpolated and 32 not interpolated
- CPU technology: Intel Atom® E3815; 1.46 GHz, Intel Atom® E3825; 2 × 1.366 GHz, Intel Atom® E3845; 4 × 1.91 GHz
- Ethernet interface: 3
- System bus: EtherCAT® master
- Fieldbus slave: PROFINET slave, EtherNet/IP™, PROFINET IO master, EtherNet/IP scanner
- OPC UA: server/client
- Memory: CFast; 2 GB

Safety controllers

We offer SCU/SDU safety controllers with appropriate input and output modules. They also benefit from full end-to-end integration in the overall system via EtherCAT®/ FSoE.

SCU-1-EC-S
safety controller

- Freely programmable and configurable FSoE master module for operation on EtherCAT® networks
- Suitable for up to PL e / SIL 3
- 14 safe inputs and many further safe and non-safe outputs

SCU-1-EC/NM-S
safety controller

- Freely programmable and configurable FSoE master module for operation on EtherCAT® networks
- Suitable for up to PL e / SIL 3
- 14 safe inputs and many further safe and non-safe outputs
- With integrated PROFINET/PROFIsafe fieldbus interface

SDU11-S
safety controller

- Safety controller as an FSoE slave module and for safe speed and position of 1 axis
- Suitable for up to PL e / SIL 3
- 14 safe inputs and many further safe and non-safe outputs

Added value for you with SCU/SDU safety controllers

- Simple, centralized and clearly structured programming and parameterization in the EtherCAT® environment
- Programming centered around a function block diagram, with the possibility of creating macros
- Rapid response times (4 ms deterministic for Fast Channel Task)
- Wide-ranging connectivity options in the EtherCAT®/FSoE network
- Open safe and non-safe fieldbus interfaces to PROFINET/PROFIsafe
- Certified special functions for all kinds of sectors
- With safe additional encoder monitoring, depending on the design
- Automatic creation of a wiring diagram
- Comprehensive diagnostic and debugging options

SDU-11/NM-S safety controller

- PROFINET/PROFIsafe slave module for safe speed and position of 1 axis for further evaluation in a PROFINET/PROFIsafe master module
- Suitable for up to PL e / SIL 3
- 14 safe inputs and many further safe and non-safe outputs
- With integrated EtherCAT® fieldbus interface

SDU-22A-S safety controller

- Safety controller as an FSoE slave module for safe speed and position of 2 axes
- Suitable for up to PL e / SIL 3
- 2 safe analog inputs (voltage and current)
- 14 safe digital inputs and many further safe and non-safe outputs

SIO-1-S I/O extension

- FSoE slave module for decentralized extension of an FSoE master module (SCU master – modules)
- Independent intelligent pre-processing possible in the case of distributed systems
- 14 safe inputs and many further safe and non-safe outputs

Visualization solutions

Added value for you with stationary and mobile HMIs	– Comprehensive hardware portfolio, ranging from mobile handheld units, monitors and DOPs to web panels – Excellent readability thanks to high-resolution displays – Web panels are easy to use, even when wearing gloves – Straightforward incorporation of SEW-EURODRIVE DOP panels
Added value for you with MOVIKIT® Visualization	– MOVIKIT® Visualization makes it possible to create any number of complex user interfaces based on available visualization elements and can be depicted as a target or web visualization – Shorter development time – Visualization frameworks and existing objects are reused – Scalable and adaptable – any device with a web browser can be used as the HMI client without the need for additional software – Engineering tool (IEC Editor) with a visualization editor for creating specific graphic user interfaces (HMIs) and for programming real-time applications
Added value for you with the MOVI-PLC® I/O system	– High-performance, deterministic bus communication via EtherCAT® – Easy installation/servicing – Space-saving connection technology – Clear labeling – Clear status and diagnostic displays – Safe and non-safe functions in a single system – Perfectly incorporated into SEW-EURODRIVE's automation portfolio

WOP11D-70-0 web operator panel and WOP11D-100-0 panel

- 7" and 10"
- Chromium-based HTML5 web browser
- i.MX8 quad-core CPU
- 7" variant with WSVGA resolution (1024 × 600)
- 10.1" variant with WXGA resolution (1280 × 800)
- Luminance: 420 cd/m²
- Capacitive touchscreen (PCAP)

DOP11C-51 drive operator

- 800 × 400 pixels, touchscreen display (64 colors, 5" TFT display) with LED backlighting
- ARM9 (400 MHz), 128 MB (DDR2) main memory
- 200 MB application memory
- 2 serial interfaces, 9-pole (RS232/RS422/RS485)
- 1 × Ethernet, 10/100 Mbit
- IP65

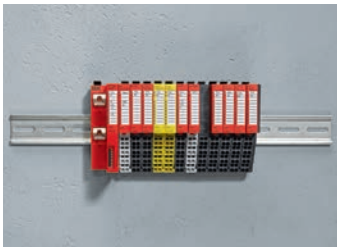
DOP21C-T70 handheld terminal

- 7" TFT display with WSVGA 600 × 1024 resolution
- 21 buttons and 4 status LEDs
- Key switch
- 2-channel emergency stop
- 3-stage enabling pushbutton
- Windows 10 IoT Enterprise operating system

MOVIKIT® Visualization

- Thanks to a visualization editor integrated in the IEC Editor, any number of complex user interfaces can be created based on available visualization elements (library)
- Direct access to the controller variables eliminates the need for data exchange project planning
- The visualization concept runs on the entire MOVI-C® CONTROLLER portfolio and on systems based on Windows 10
- Available functions: alarm management, user administration, recipe management and language switching

MOVI-PLC® I/O system C



- Connection of external, digital and analog sensors and actuators in functionally safe (DI/DO) and normal designs
- Bus coupler
- Modules for power supply, distribution and accessories
- Analog input and output modules
- Digital input and output modules
- Flexible addition of safety modules

Energy transfer and power supply

Added value for you with the MOVITRANS® contactless energy transfer system	– TES decentralized supply unit without control cabinet – Compact structure with a high power density – Exclusive use of plug-in connection cables – Very high efficiency – Contactless, wear-free energy transfer – Power supplied to points and track segments – Hybrid concepts make a continuous power supply possible
Added value for you with MOVI-DPS® energy and peak load storage solutions	– Temporary power supply solutions are possible – Enhanced reliability and quality of supply – Reduced peak power requirement in the supply unit – Using braking energy reduces power consumption. – High peak power levels can be achieved for short periods. – MOVI-DPS® solutions are compact, benefit from self-protection and have excellent thermal connections. – None of the costs or space requirements associated with a braking resistor

MOVITRANS® contactless energy transfer system
MOVI-DPS® energy and peak load storage solutions

TES decentralized supply unit

- Inductive energy supply, e.g. TES30A080-EF4-5B3-D
- Power: 3 – 16 kW
- Input voltage: 1 × 230 V or 3 × AC 380 – 500 V
- Output current: 30, 60 or 85 A
- IP54 degree of protection and minimal space requirements (without control cabinet)
- Efficiency: 98%
- System frequency B: 50 kHz

TFS field plate

- TFS10A110-2-30-I-B-0 MOVITRANS® field plate
- Inductive, point-based charging
- High charging capacity of up to 11 kW
- Suitable for use with forklifts
- Can be fitted in the floor or on charging pads
- System frequency B: 50 kHz

TDM 80E pick-up

- TDM80E110-D06-B03-0 flat pick-up with direct connection
- Adjustable output voltage up to max. DC 60 V
- Incorporation via EtherCAT®
- System frequency B: 50 kHz
- Nominal power: 11 kW for 4 mins (cycle duration 10%)
- Nominal current of field plate: 30 A

DM90C pick-up and transmission paths

- TDM90C002-D05-B03-0 U-shaped pick-up
- Maximum output voltage: DC 60 V
- System frequency B: 50 kHz
- The pick-up with direct connection controls the voltage and current at the output
- An EKV energy storage unit is required at the output of the pick-up

Energy and peak load storage solutions

- DC 60 V storage bundle, e.g. EKV013A-06P100-00
- Energy storage or peak load buffering using double-layer capacitors
- Fast and direct energy intake and output
- A high number of charging cycles is possible
- Storage modules with 100-F or 350-F cells can be connected
- An additional signal cable can be connected to monitor the storage voltage and the temperature

Software solutions

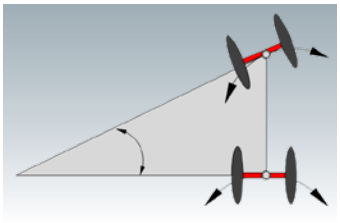
Description	– Pre-fabricated software modules make starting a project quick and easy. – Implementation takes place in our IEC Editor based on CODESYS. – Suitable for and compatible with SEW-EURODRIVE's MOVI-C® CONTROLLERS.
Added value for you	– Time savings – Cost savings – Operational reliability
Examples of path-planning kinematic systems	Robots / automated guided vehicles / mobile assistance systems – A variety of kinematics, easy to parameterize – Swivel base drives – Precise and dynamic forward and reverse travel – Optimum wheel coordination based on exact mathematical derivation – Safe kinematics based on SARC (Safe Arithmetic Calculation) functionality
Examples of synchronous applications	Flying saw and further cam applications

Examples of framework and software modules

Powertrain framework with LK20 / LK40 performance class

- LK20: incorporation of 2 MultiMotion drives for transverse and rotational speed
- LK40: incorporation of 4 MultiMotion drives for transverse, lateral and rotational speed
- Incorporation of drivers
- Incorporation of kinematics
- Incorporation of safety
- HMI templates

LK20 / LK40 kinematics modules



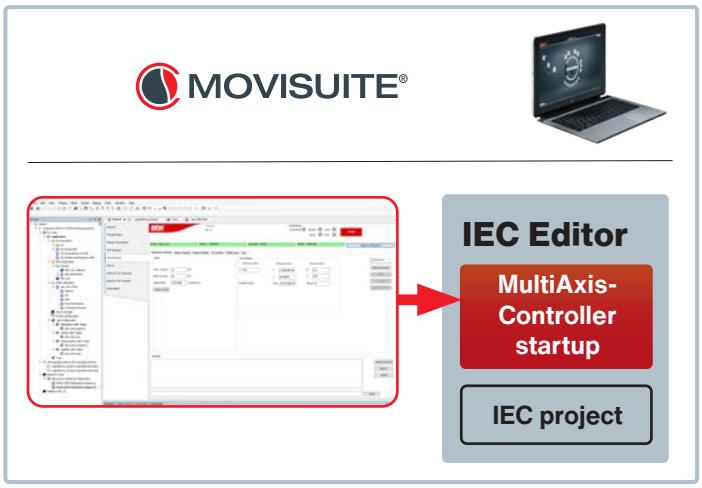
- Interface for using the LK20 / LK40 2D travel kinematics program module
- LK20: for MultiMotion applications based on transverse and rotational speed, adapted to customer-specific mechanics
- LK40: for MultiMotion applications based on transverse, lateral and rotational speed, adapted to customer-specific mechanics
- Disclosure of physical formulas

Connection of third-party assemblies

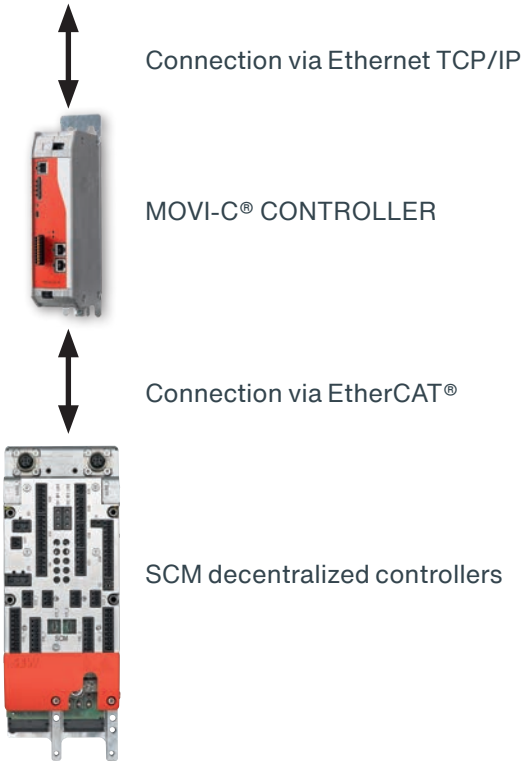
- Interface for using the program module
- CAN connection Master 2 PDO bidirectional

Startup interface

MultiAxisController startup

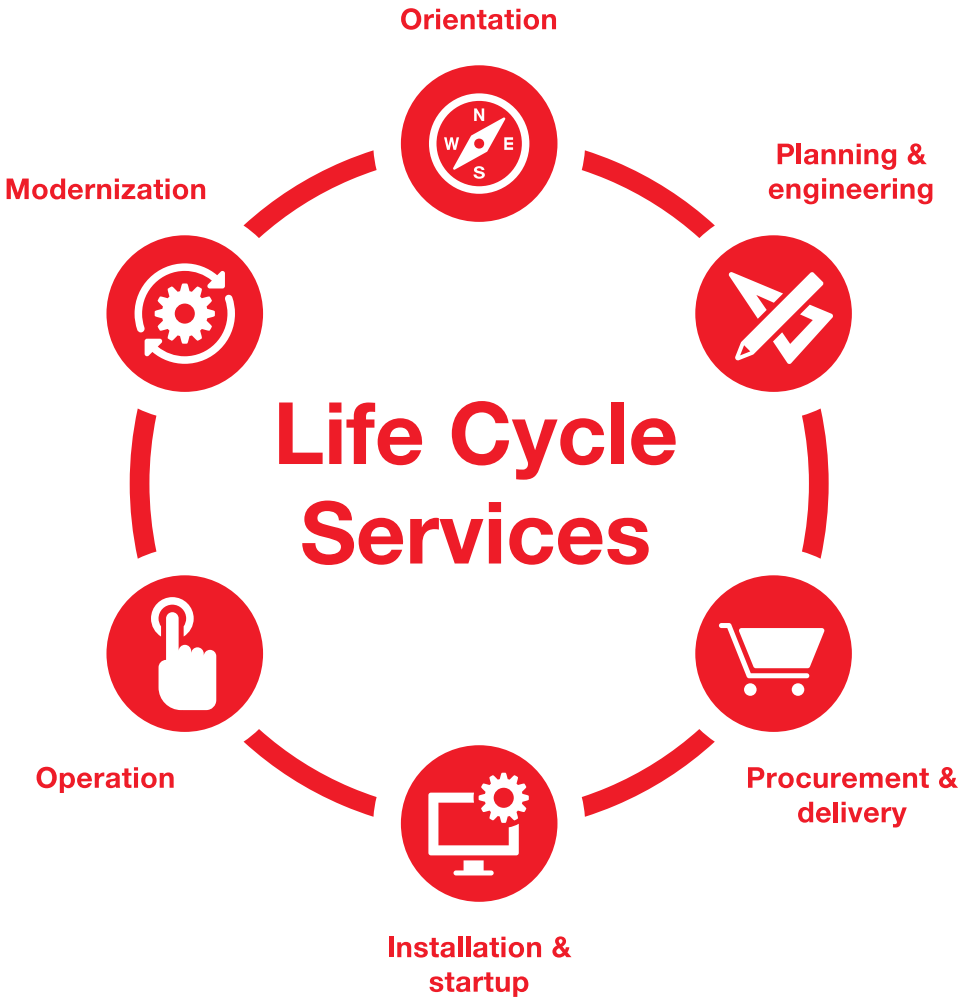


- With MOVISUITE® engineering software, applications are configured, parameterized and started up via an intuitive user interface.
- The MultiAxisController startup plug-in is integrated in the IEC Editor and makes use of MOVIKIT® software modules from SEW-EURODRIVE that are generated by MOVISUITE®.
- Users program the application and define how it works. MOVIKIT® and further SCM-specific software modules can be used.



Description	In our MOVISUITE® engineering interface (in the IEC Editor), SCM solutions benefit from very easy, intuitive startup using the MultiAxisController startup plug-in.
Added value for you	– Integrated into MOVISUITE® engineering software – Extremely easy startup of axes – Integrated trace functions across axes – Manual operation – Export/import of data sets – Startup of powertrain framework – Startup of SEW Automation Framework (AFW)

Services



At SEW-EURODRIVE, we believe that Life Cycle Services encompass services, tools and resources throughout the entire system life cycle. This starts in the initial orientation phase and continues all the way through to the operation and modernization of your machinery and systems.

System planning	– Defining and developing drive and automation solutions – Checking whether third-party components can be used – Defining interfaces – Working with customers to prepare requirement specifications – Developing ETO (Engineer-To-Order) solutions
Checking	– Checking the wiring and parameterization of drive amplifiers
Startup	– Startup of drive amplifiers – Manual operation – Export/import of data sets

Driving the world.

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