

EWELLIX

A Schaeffler Company

Control units





Control units

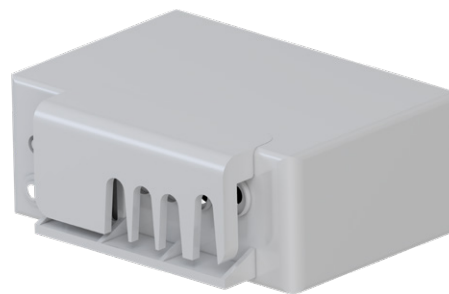
Up to 6 channels

Chapter contents

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SEM 24

BCU

Control unit



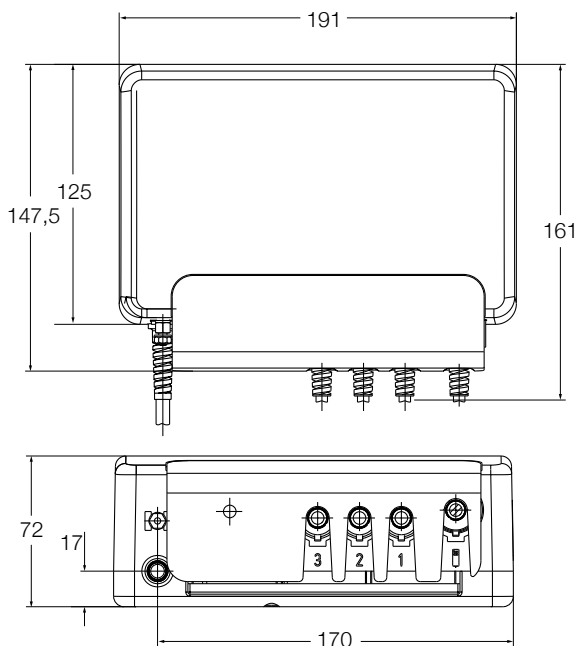
Benefits

- Compact 3-channel actuator control unit
- Single fault safety
- Overload and over-temperature protection
- Approved for medical applications
- Easy to clean
- Low standby current

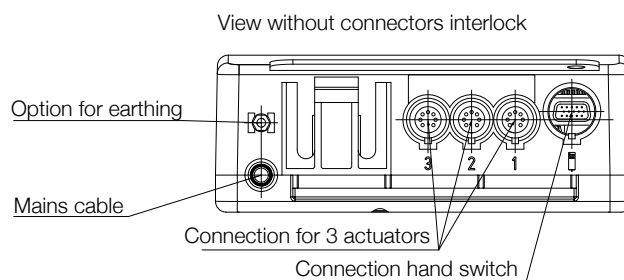
Technical data

	Unit	BCU 5	BCU 8
Motor ports (DIN8)	#	3	3
Operating device ports (HD15)	#	1	1
Battery ports	#	0	0
Limit switch ports	#	0	0
Single fault safety	yes/no	yes	yes
Encoder processing	yes/no	no	no
Input voltage	V AC	120	230
Frequency	Hz	60	50
Input current (max)	A	2,5	1,3
Standby power	W	1,2	1,5
Output voltage	V DC	24	24
Output current (max)	A	7	7
Duty cycle: intermittent	min.	1 min./9 min.	1 min./9 min.
Duty cycle: short time	min.	2	2
Ambient temperature	°C	0 to +40	0 to +40
Humidity	%	5 to 85	5 to 85
Degree of protection	IP	×4	×4
Approvals		IEC 60601-1(ed.3)	IEC 60601-1(ed.3)
Weight	kg	2,3	2,3

Dimensional drawing



Connecting diagrams



Suitable control units and accessories

	Columns							Operating switches				
	RU20, RU21, RU22	MAX 10, MAX 30	ECOMAG	THG 10	TLG 10	TLT 10	TFG 10	CPMT1	TXG 10	EHA3	STJ	STE
BCU 5	•	•	•	•	•	•	•	•	•	•	•	•
BCU 8	•	•	•	•	•	•	•	•	•	•	•	•

Hand switch
 Foot switch
 Desk switch

Ordering key

B
C
U
3 -

3
1
0
0 -
 0
0
0
0

BCU control unit _____

Voltage _____

5 120 V AC, 60 Hz, class I

8 230 V AC, 50 Hz, class II

Mains power supply cable _____

2J Class II, straight 3,5 m, 2-pole plug, EU (for voltage type 8)

2H Class II, straight 3,5 m, 2-pole plug, UK (for voltage type 8)

2L Class I, straight 3,5 m, 3-pole plug, UL (for voltage type 5)

B
C
P

 -

0
0
0
0 -
 0
0
0
0

Each BCU needs a BCP _____

BCU parameterization _____

Functionality _____

11 All channels individually

21 Channel 2+1

30 All channels simultaneously

T1 Trendelenburg

Motors _____

A	ECO2, ECO3, ECO4, ECO5	3,7 A	Actuator 1	-
C	TLT10 ¹⁾ , TXG10 (EXG)	4,7 A	Actuator 2	-
E	TFG, ECO6, ECO8, ECO9	5,7 A	Actuator 3	-
M	MAX10, MAX30, THG10, TLG10	6,7 A		
R	RU20, RU21, RU22	8,5 A		
S	CPMT1-1 ²⁾	8,5 A		
T	CPMT1-2 ²⁾	8,5 A		

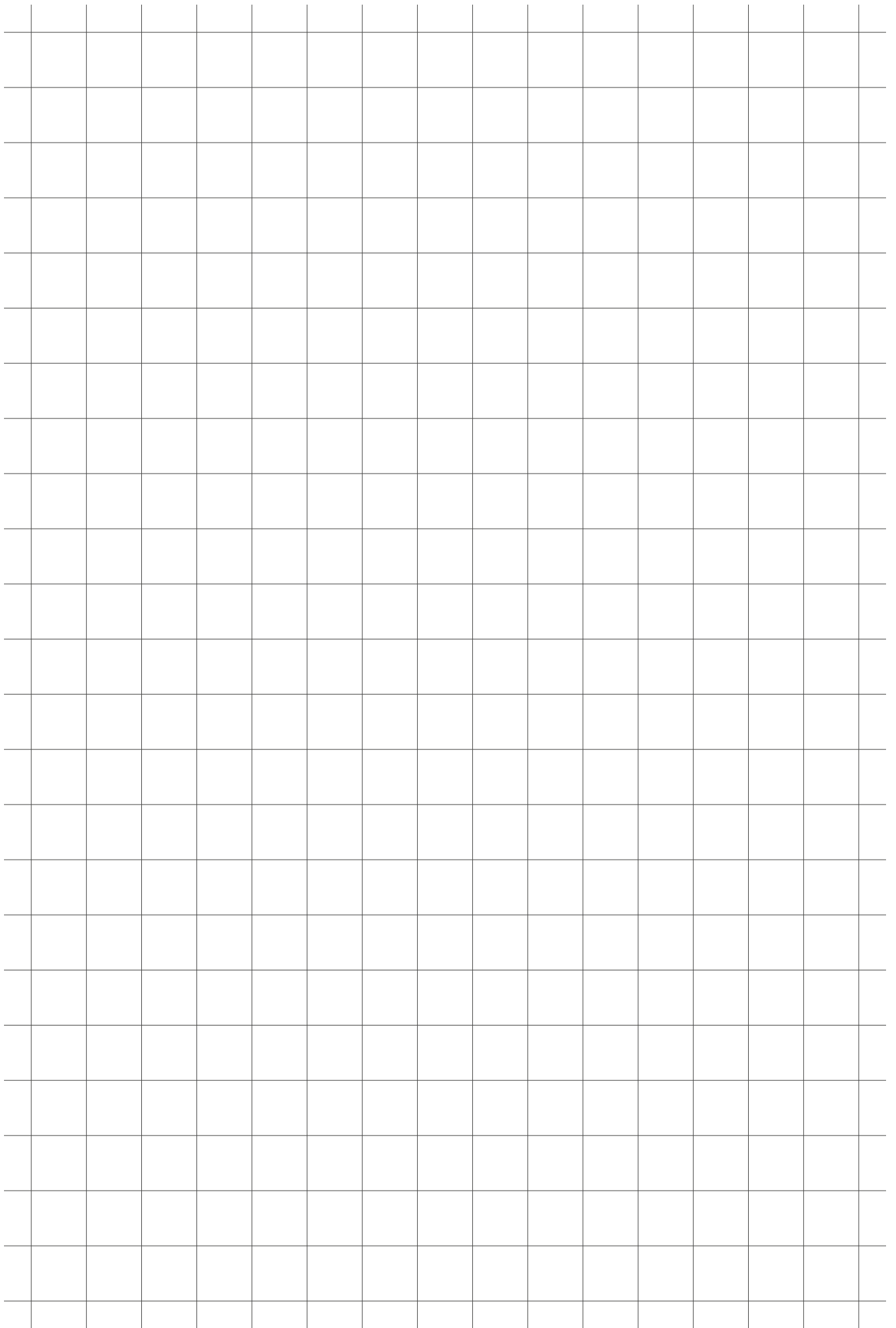
Soft start/stop _____

0 Hard

3 Medium

6 Soft (on request)

¹⁾ TLT is a 2-motor actuator. If simultaneous run is needed, BCP21-CC... is recommended.
²⁾ Reduced lift capability : CPMT1-1 up to 3 000 N, CPMT1-2 up to 4 000 N



VCU

Control unit



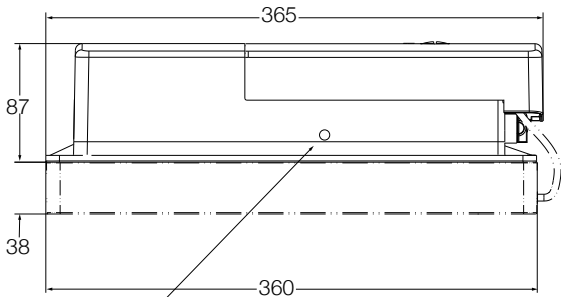
Benefits

- Compact 5-channel actuator control unit
- Single fault safety
- Overload and over-temperature protection
- Approved for medical applications
- Easy to clean
- Low standby current

Technical data

	Unit	VCU 5	VCU 8	VCU 9
Motor ports (DIN8)	#	3 or 5	3 or 5	3 or 5
Operating device ports (HD15)	#	2	2	2
Battery ports (DSub9)	#	1	1	1
Limit switch ports (HD15)	#	2	2	2
Single fault safety	yes/no	yes	yes	yes
Encoder processing	yes/no	no	no	no
Input voltage	V AC	120	230	230
Frequency	Hz	60	50	50
Input current (max)	A	2,5 resp. 6,5	1,3 resp. 3,3	1,3 resp. 3,3
Standby power	W	2,6 resp. 3,9	2,6 resp. 3,9	2,6 resp. 3,9
Output voltage	V DC	24	24	24
Output current (max)	A	7 resp. 18	7 resp. 18	7 resp. 18
Duty cycle: intermittent	min.	1 min./9 min.	1 min./9 min.	1 min./9 min.
Duty cycle: short time	min.	2	2	2
Ambient temperature	°C	+5 to +40	+5 to +40	+5 to +40
Humidity	%	5 to 85	5 to 85	5 to 85
Degree of protection	IP	×4	×4	×4
Approvals	EN/UL	EN 60601-1 UL 60601-1	EN 60601-1 UL 60601-1	EN 60601-1 UL 60601-1
Weight without battery	kg	2,4 resp. 3,8	2,4 resp. 3,8	2,4 resp. 3,8
Weight with battery	kg	5,4 resp. 8,8	5,4 resp. 8,8	5,4 resp. 8,8

Dimensional drawing



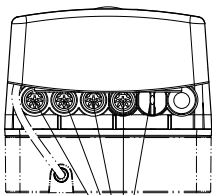
Operating voltage display (LED)

Suitable control units and accessories

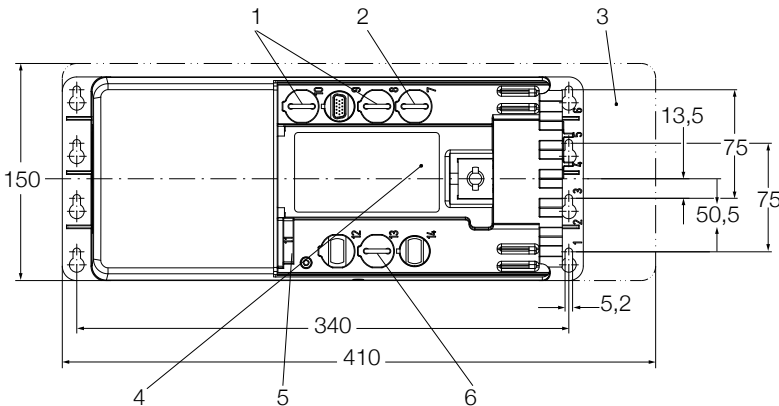
	Columns					Operating switches							
	RU20, RU21, RU22	RU23, RU24, RU25	MAX 10, MAX 30	ECOMAG	THG 10	TLG 10	TLT 10	TFG 10	TXG 10	CPMT1	EHA3	STJ	STE
VCU 5	•	•	•	•	•	•	•	•	•	•	•	•	•
VCU 8	•	•	•	•	•	•	•	•	•	•	•	•	•
VCU 9	•	•	•	•	•	•	•	•	•	•	•	•	•

Hand switch
 Foot switch
 Desk switch

Connecting diagrams



Bis zu 5 Anschlüsse mit DIN8 Stecker



1. Two connections for HD15 operating devices
2. HD15 limit switch connection
3. Additional space for mounting
4. Data plate software
5. Mains connection
6. D-Sub 9 battery connection (optional)

Pinning of HD15 limit switch connection

Function	Pin	Wire color (ZKA-160627-2500)	Connecting diagram
24 V DC (common)	1,3,5,7,9	white/yellow, white/green, grey-pink, black, blue	
Switch 1	2	brown-green	
Switch 2	4	red-blue	
NC	6,8,10,11,12,14	violet, red, pink, grey, yellow, brown	
20-40 V DC, max. 50 mA	13	green	
GND	15	white	

Accessories

	Plug	Designation	Order number
Mains cable, 2 pole	Euro	ZKA-160608-3500	0105726
Mains cable, 3 pole	Schuko	ZKA-160637-3500	0118821
Mains cable, 3 pole	SEV	ZKA-160638-3500	0118822
Mains cable, 3 pole	UL	ZKA-160639-3500	0105588
Mains cable, 3 pole	UK	ZKA-160609-3500	0105631
Mains cable, 3 pole	UL, hospital grade	ZKA-160640-3500	0118823
Mains cable, 3 pole	Australian, China	ZKA-160661-3500	0129953
Battery pack 2,7 Ah		ZBA-160208-0400	0118806
Rack for 4,5 Ah battery		ZBA-160207-1000	0121266
Detachable battery 4,5 Ah		ZBA-160209	0119846

Ordering key

VCU - 003 - 0 - 000

VCU control unit

Voltage

- 5 120 V AC, 60 Hz, class I
- 8 230 V AC, 50 Hz, class II
- 9 230 V AC, 50 Hz, class I

Number of channels

- 3 3 channels
- 5 5 channels

Option 1

- 1 No option (only VCUx3)
- 2 Prepared for mounting of battery

Transformer

- 1 7 A transformer
- 3 18 A transformer (for 5-channel version only)

VCP - - 0 - 000

Each VCU needs a VCP

VCU parameterization

Functionality

- 11 All channels individually
- 21 2 channels simultaneously + 1 or 3 individually
- 22 2 + 2 channels simultaneously + 1 individually
- 30 All channels simultaneously, only 3-channel version
- 41 4 channels simultaneously + 1 individually, only 5-channel version
- 50 All channels simultaneously, only 5-channel version
- T1 Trendelenburg (2 channels) + 1 or 3 individually

Actuators

A	ECO2, ECO3, ECO4, ECO5	3,7 A	Actuator 1	-
C	TLT10 ¹⁾ , TXG10 (EXG)	4,7 A	Actuator 2	-
E	TFG, ECO6, ECO7, ECO8, ECO9	5,7 A	Actuator 3	-
M	MAX10, MAX30, TLG10, THG10	6,7 A	Actuator 4	- ²⁾
R	RU20, RU21, RU22	8,5 A	Actuator 5	- ²⁾
S	CPMT1-1 ³⁾	11,7 A		
T	CPMT1-2 ³⁾	10,2 A		
U	RU23, RU24, RU25	11,7 A ⁴⁾		

Softstart

- 0 Hard= start 0 ms, stop 0 ms
- 3 Medium= start 400 ms, stop 200 ms

The SCU solution offers many more possibilities than those given in the type keys. Please feel free to ask for more functions like "virtual limit switches", "external limit switches" and so on.

¹⁾ TLT is a 2-motor actuator. If simultaneous run is needed, VCP21-CC... is recommended

²⁾ for VCUx3: insert zero

³⁾ Reduced lift capability: CPMT-1 up to 3 000 N, CPMT-2 up to 4 000 N when using transformer with 7A

⁴⁾ Reduced lift capability: only 8.5A when using transformer with 7A

SCU

Control unit



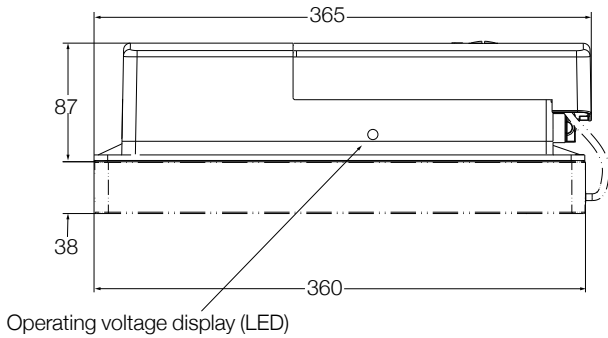
Benefits

- Compact 6-channel actuator control unit
- Single fault safety
- Overload and over-temperature protection
- Approved for medical applications
- Easy to clean
- Low standby current
- Remote control RS232

Technical data

	Unit	SCU 1	SCU 5	SCU 9
Motor ports (DIN8)	#	6	3 or 6	3 or 6
Operating device ports (HD15)	#	3	3	3
Battery ports (DSub9)	#	1	1	1
Limit switch ports (HD15)	#	4	4	4
Single fault safety	yes/no	yes	yes	yes
Encoder processing	yes/no	yes	yes	yes
Input voltage	V	24 DC	120 AC	230 AC
Frequency	Hz	N/A	60	50
Input current (max)	A	30	6,5	3,3
Standby power	W	0,8	4,3	4,3
Output voltage	V DC	24	24	24
Output current (max)	A	30	18	18
Duty cycle: intermittent	min.	1 min./9 min.	1 min./9 min.	1 min./9 min.
Duty cycle: short time	min.	2	2	2
Ambient temperature	°C	+5 to +40	+5 to +40	+5 to +40
Humidity	%	5 to 85	5 to 85	5 to 85
Degree of protection	IP	×4	×4	×4
Approvals	EN/UL	EN 60601-1 UL 60601-1	EN 60601-1 UL 60601-1	EN 60601-1 UL 60601-1
Weight without battery	kg	1,2	3,8	3,8
Weight with battery	kg	4,2	6,8	6,8

Dimensional drawing

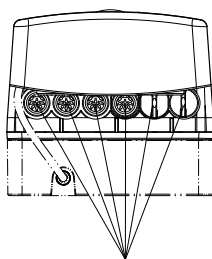


Suitable control units and accessories

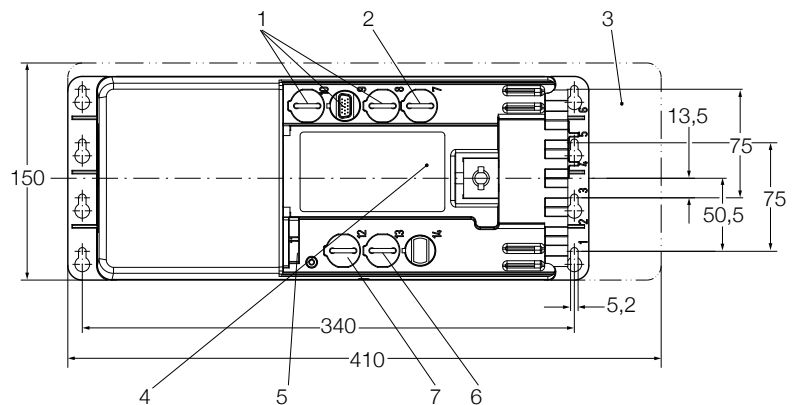
	Columns										Operating switches		
	RU20, RU21, RU22	RU23, RU24, RU25	MAX 10, MAX 30	ECO4F, ECO5F, ECO8F, ECO9F	CAJA35C	THG 10	TLG 10	TLT 10	TFG 10	CPMT1	EHA3	STJ	STE
SCU 1	•	•	•	•	•	•	•	•	•	•	•	•	•
SCU 5	•	•	•	•	•	•	•	•	•	•	•	•	•
SCU 9	•	•	•	•	•	•	•	•	•	•	•	•	•

Hand switch
 Foot switch
 Desk switch

Connecting diagrams



Up to 6 connections with DIN8 plug



1. Two connections for HD15 operating devices
2. HD15 limit switch connection
3. Additional space for mounting
4. Data plate software
5. Mains connection
6. D-Sub 9 battery connection (optional)
7. Communication interface (optional)

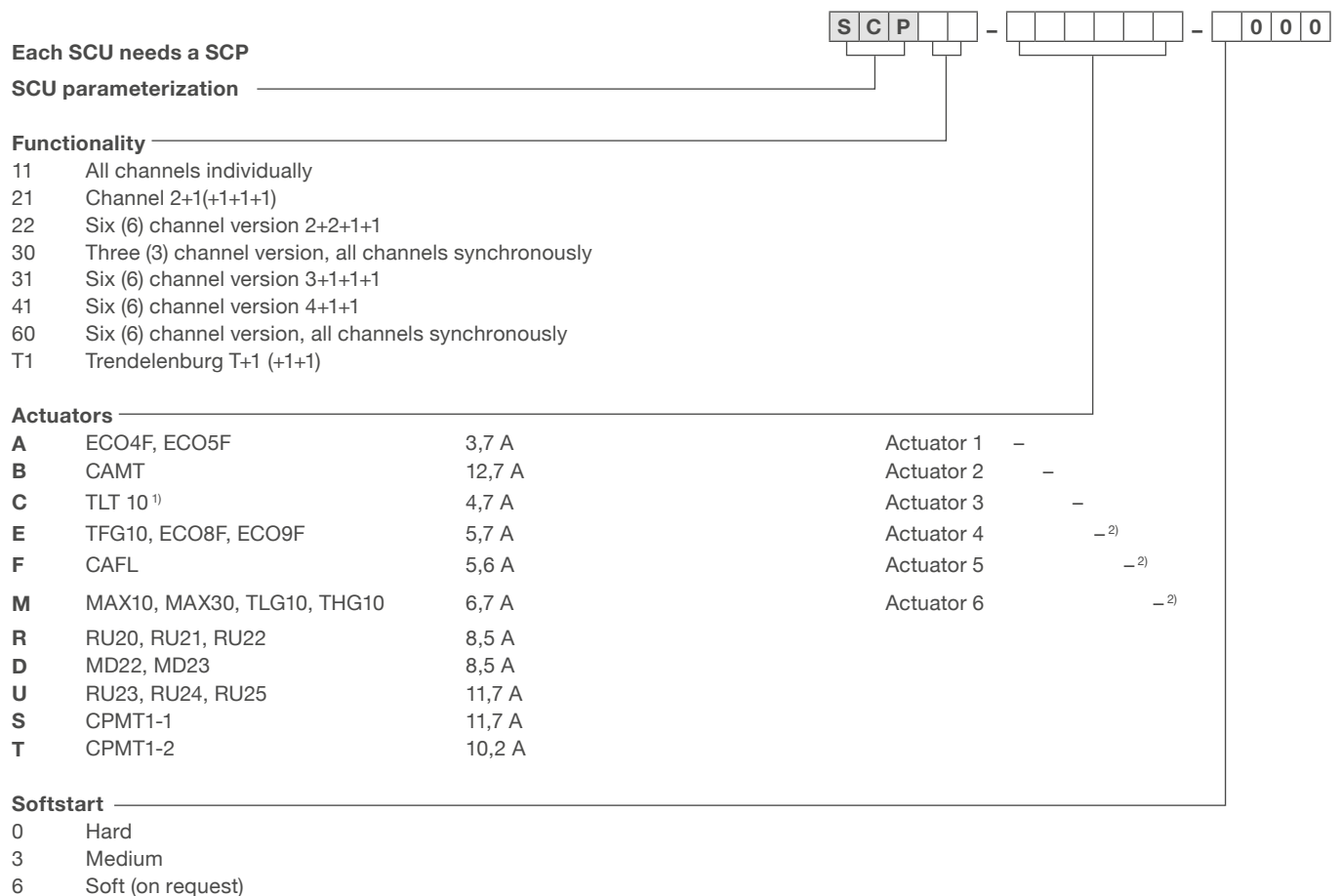
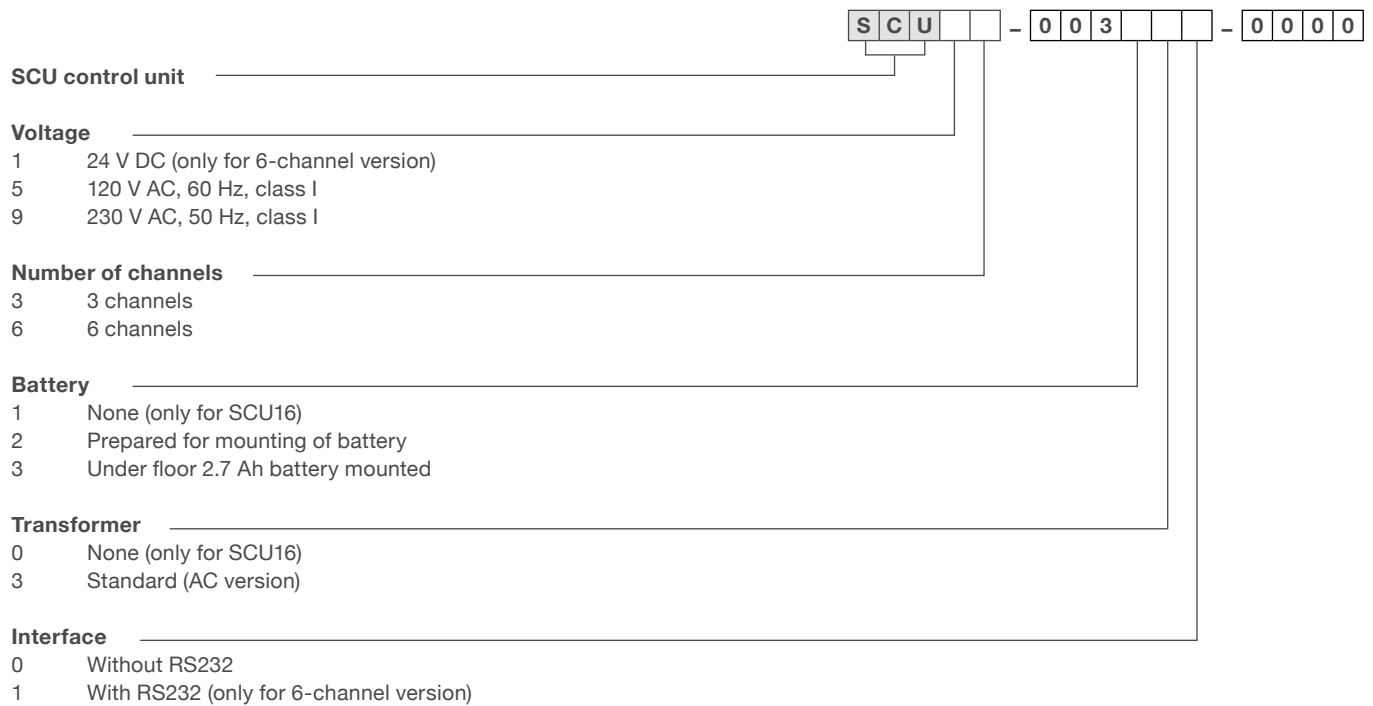
Pinning of HD15 limit switch connection on request (needs a customized SCP)

Function	Pin	Wire color (ZKA-160627-2500)	Connecting diagram
Switch 1	2	brown/green	
Switch 2	4	red/blue	
Switch 3	6	violet	
Switch 4	8	red	
24 V DC (com)	1, 3, 5, 7	white/yellow, white/green, grey/pink, black	
Optional external power supply for binary outputs	9	blue	
Binary output 1 (22-40 V DC/1 A)	10	pink	
Binary output 2 (22-40 V DC/1 A)	11	grey	
GND for binary outputs	12	yellow	
20-24 V DC, max. 50 mA	13	green	
5 V DC pulsed	14	brown	
GND	15	white	

Accessories

	Plug	Designation	Order number
Mains cable, 3 pole	Schuko	ZKA-160637-3500	0118821
Mains cable, 3 pole	SEV	ZKA-160638-3500	0118822
Mains cable, 3 pole	UL	ZKA-160639-3500	0105588
Mains cable, 3 pole	UK	ZKA-160609-3500	0105631
Mains cable, 3 pole	UL, hospital grade	ZKA-160640-3500	0118823
Mains cable, 3 pole	Australian, China	ZKA-160661-3500	0129953
Battery pack 2,7 Ah		ZBA-160208-0400	0118806
Rack for 4,5 Ah battery		ZBA-160207-1000	0126155
Detachable battery 4,5 Ah		ZBA-160209	0126154

Ordering key



The SCU solution offers many more possibilities than those given in the type keys. Please feel free to ask for more functions like “virtual limit switches”, “external limit switches” and so on.

¹⁾ TLT is a 2-motor actuator. If simultaneous run is needed, VCP21-CC... is recommended

²⁾ For SCUx3: insert zero

MCU

Control unit

Benefits

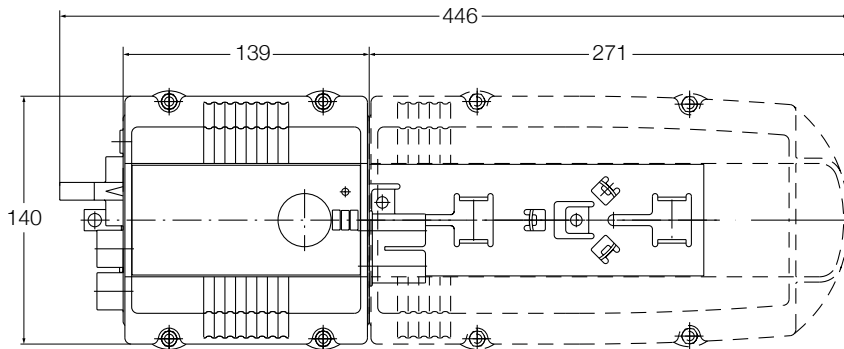
- Suitable for mobile applications
- LED indication for battery charge level
- Audible signal for low charge condition



Technical data

	Unit	MCU
Motor ports	#	2
Operating device ports	#	1
Battery ports	#	1
Limit switch ports	#	0
Single fault safety	yes/no	no
Encoder processing	yes/no	no
Input voltage	V DC	28
Frequency	Hz	N/A
Input current (max)	A	0,5
Standby power	W	N/A
Output voltage	V DC	24
Output current (max)	A	9,5
Duty cycle: intermittent	min.	1 min./9 min.
Duty cycle: short time	min.	N/A
Ambient temperature	°C	+10 to +40
Humidity	%	85
Degree of protection	IP	TM4
Approvals	EN/UL	EN 60601-1/EN 60601-1-2/ UL 2601/EN ISO 10535
Weight	kg	4,9

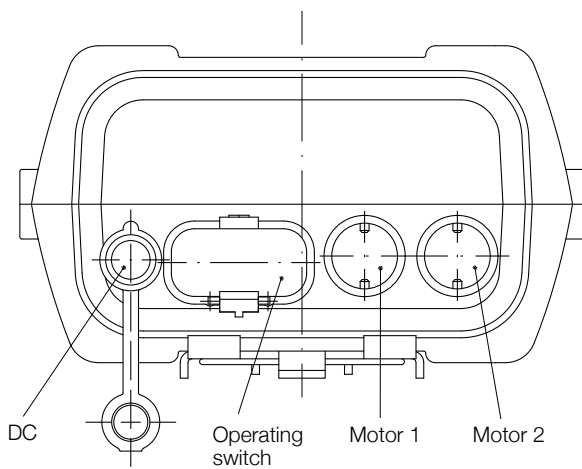
Dimensional drawing



Suitable control units and accessories

	Linear actuators			Columns		Operating switches		
	MAX1	MAX3	ECOMAG	THG	TLG	EHA 1	STF	STA
MCU	•	•	•	•	•	•	•	•
	Hand switch		Foot switch		Desk switch			

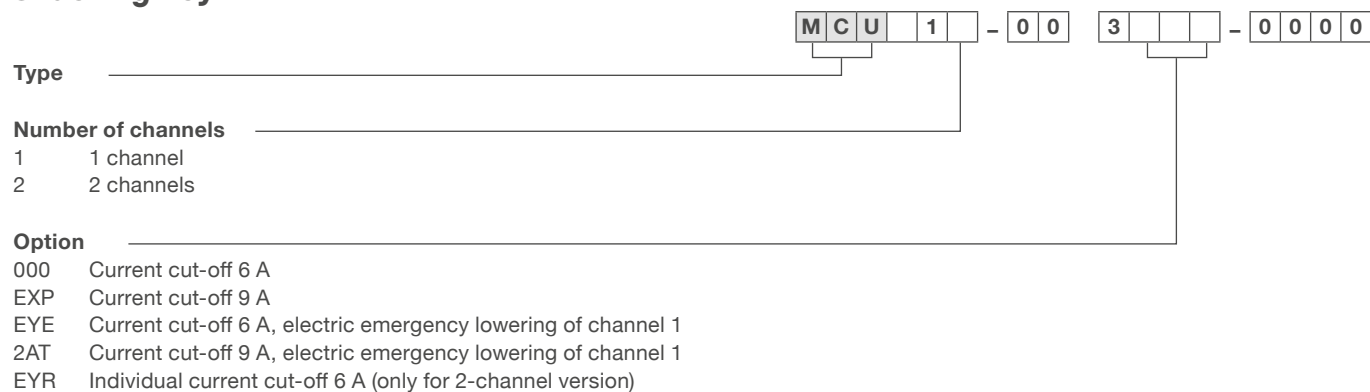
Connecting diagrams

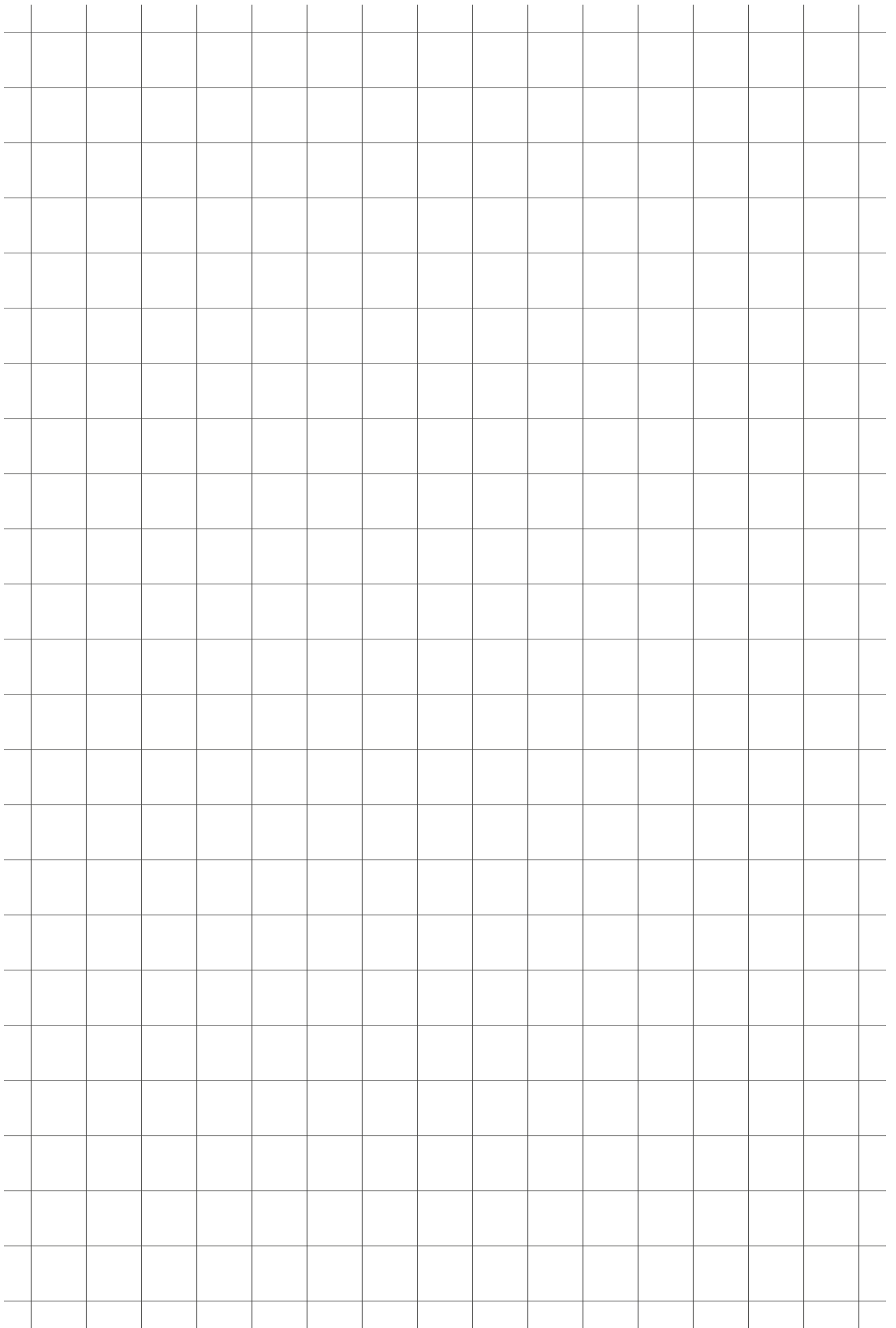


Accessories

Description	Plug	Designation	Order number
Battery unit 4,5 Ah		ZBA-142211	0100667
Mains adapter 100-240 V AC	Euro	ZDV-142378-2500	0132841
Mains adapter 100-240 V AC	UL	ZDV-142381-2500	0132843
Mains adapter 100-240 V AC	UK	ZDV-142380-4000	0132842
Wall charging station		ZLA-142221	0126159
Tool for connectors (Jack/D-Sub/Mains)		ZWS-140375	0125322

Ordering key





COMPACT

Control unit



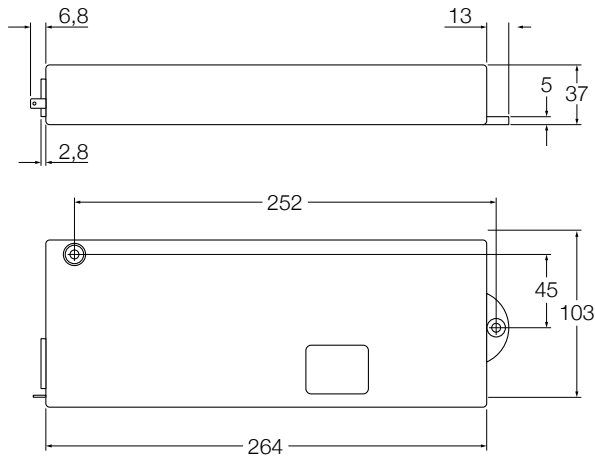
Benefits

- Synchronized movement of 3 actuators possible
- Up to 4 memory positions (depending on handset)
- Linking possibility of up to 4 control boxes
- Enhanced drive comfort
- Adjustable container – and shelf-stop positions
- Low speed area
- High efficient switch mode power supply (SMPS)
- Low standby power consumption, low field emission

Technical data

	Unit	COMPACT
Motor ports (DIN8)	#	3
Operating device ports (DIN7)	#	1
Battery ports	#	0
Limit switch ports (LogicConnector DATA)	#	1
Single fault safety	yes/no	no
Encoder processing	yes/no	yes
Supply voltage / Frequency	V AC/Hz	EU: 207 - 254,4 / 50 US: 90 -127 / 50-60
Nominal voltage / Frequency	V AC/Hz	EU: 230 / 50 US: 120 / 60
Input current (max)		
120 V AC	A	10
230 V AC	A	5
Standby power	W	0,5
Output voltage (rated)	V DC	24
Output sum current (rated)	A	15
Output current per channel (max)	A	8
Ambient temperature	°C	0 to +30
Humidity	%	5 to 85
Degree of protection	IP	20
Protection class	–	I
Approvals	EN/UL	EN 60335-1 / UL 60950-1
Weight	kg	0,5

Dimensional drawing



Suitable control units and accessories

	Operating switches				
	TFG10	TXG10	TOUCH-JD-MDF-4M2-LD	HSM-OD-2-LD	HSF-MDF-4M4-LD
COMPACT	•	•	•	•	•

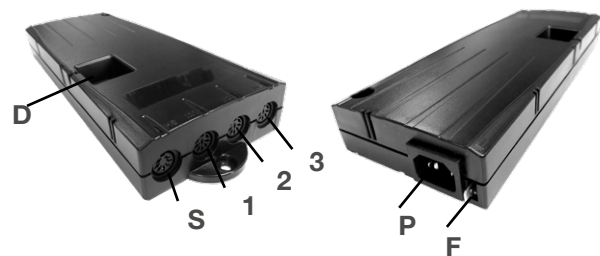
 Hand switch

 Foot switch

 Desk switch

Switching cycles

High-Power cycle:	20 s Up	19 A @20 V, 380 W
	20 s Down	7 A @33 V, 231 W
	Pause:	9 min
Normal cycle 1/9:	30 s Up:	15 A @ 24 V, 360 W
	30 s Down:	7 A @ 33 V, 231 W
	Pause:	9 min
Normal cycle 2/18	2 min run:	7 A @ 33 V, 231 W
	Pause:	18 min



- 1 Motor socket 1 (M1)
- 2 Motor socket 2 (M2)
- 3 Motor socket 3 (M3)
- S Handswitch socket (HS)
- P Mains socket
- F Functional earth
- D LogicConnector DATA for sensors, squeeze lines and cascading

Desk switches

Description	Designation	Order number
Extra simple desk switch (up/down)	HSM-OD-2-LD	123247
Desk switch with display for 2 motorgroups (up/down and memory)	HSF-MDF-4M4-LD	123246
Desk switch with smart touch display (up/down and memory)	TOUCH-UD-MDF-4M2-LD	131740

Accessories

Description	Designation	Order number
Mains cable straight 3 m, Schuko plug (Germany, France, ...)	LOG-CBL-PWK	131665
Mains cable straight 3 m, UK plug (UK)	LOG-CBL-PWK-UK	131825
Mains cable straight 3 m, UL plug (US)	LOG-CBL-PWK-US-SJT	131666
Cascading cable 0,5 m length	LOG-CBL-HT-SYNC-500	131678
Cascading cable 1,5 m length	LOG-CBL-HT-SYNC-1500	132061

Ordering key



Type

Number of used motors (optional, depending on parameter)

3 motors (no additional designation required)

2 2 motors

1 1 motor

Actuator type

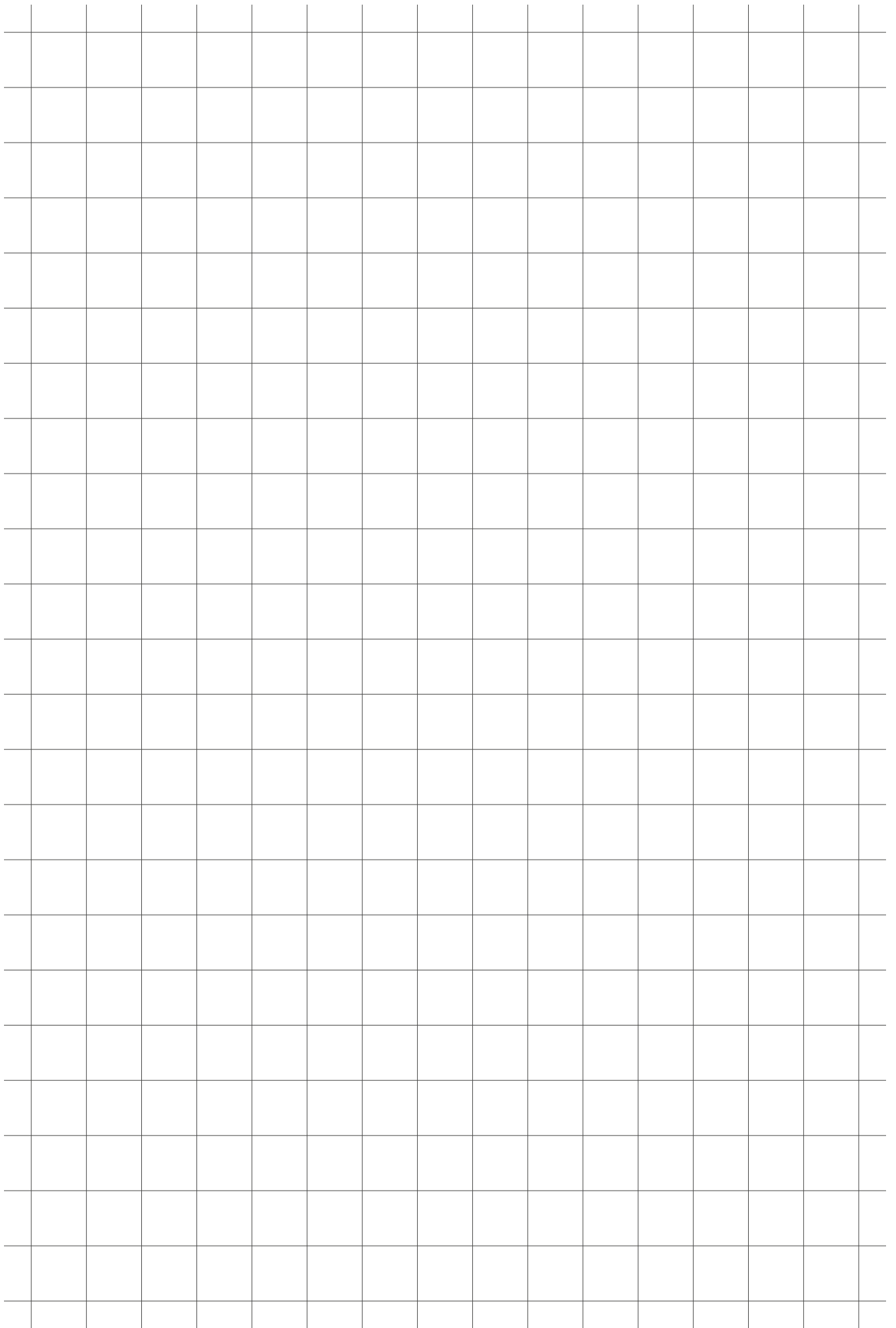
TFG TFG10

TXG TXG10

Voltage

US 120 VAC, 60 Hz, class I

EU 230 VAC, 50 Hz, class I



SEM

Control unit



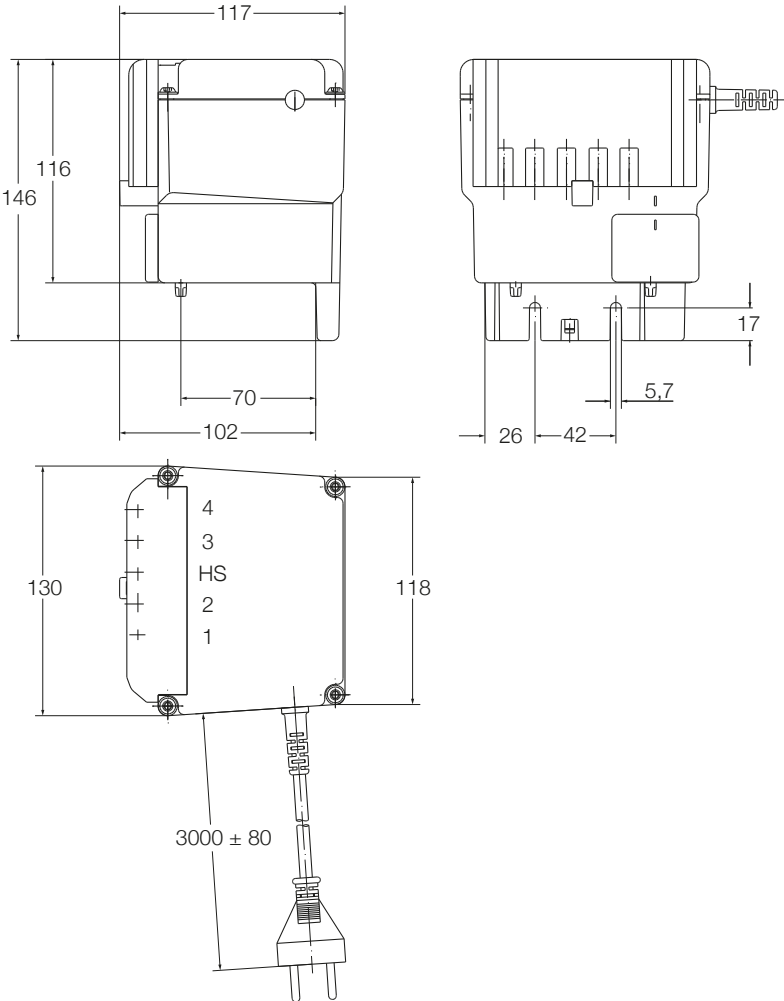
Benefits

- Controls up to 4 actuators
- Suitable for homecare and nursing beds

Technical data




	Unit	SEM1
Motor ports	#	4
Operating device ports	#	1
Input voltage/Frequency	V AC	230/50 HZ
	V AC	120/60 HZ
Output voltage rating	V DC	24
Output current (max)	A (DC)	5
Duty cycle	min.	1 min./9 min.
Ambient temperature	°C	+10 to +40
Degree of protection	IP	×4
Approvals	UL	UL60601-1 (1st edition)
Weight	kg	1,8

Dimensional drawing

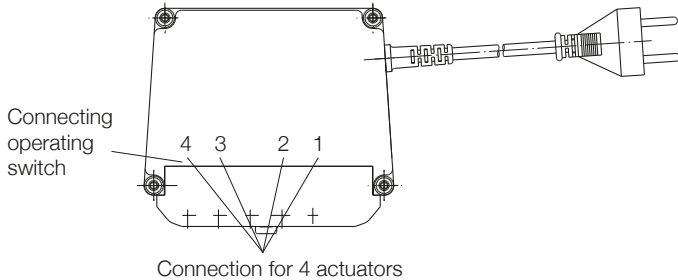


Suitable control units and accessories

	Linear Actuators	Operating switches
	ECOMAG	EHE1
SEM1	•	•

-  Hand switch
-  Foot switch
-  Desk switch

Connecting diagrams





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