

RSD10 / RSD20 (Contra) Electrical Linear Actuator



For continuous positioning,
Rated force 10 kN / 20 kN (2250 lbf / 4500 lbf)

Electrical actuator for continuous positioning or step control

Stallproof without the need of position or torque dependent switch-off

Three-phase asynchronous motor

Sturdy gear unit with highly efficient design

Internal rotary-linear conversion

Hand wheel for emergency operation

Integrated sensors for position and temperature

Signal and power input only via process-controlled power electronic unit in separate field-mount housing

Voltage supply 115 V AC or 230 V AC only via special power electronics

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1 Concept

Compact actuator for the operation of final control elements with preferably linear movement. The actuator thrust rod transfers the force directly to the final control element.

A continuous power electronic unit controls the actuator. The electronic unit serves as the interface between actuator and control system.

During continuous positioning the power electronic unit varies the motor torque steplessly until the actuator force and the restoring

process forces are balanced. High response sensitivity and high positioning accuracy with short positioning time ensure an excellent control quality and a long actuator life.



Note

The ANSI information appears in parentheses after the SI information.

2 Technical data

2.1 Actuator

Model	RSD10-5.0	RSD10-10,0	RSD20-5.0	RSD20-7,5
Rated force	10 kN (2250 lbf) (adjustable to 0.5 / 0.75 or 1x rated force)		20 kN (4500 lbf) (adjustable to 0.5 / 0.75 or 1x rated force)	
Starting force	1.2 x rated force (break-away torque in end positions for short time 2 x rated force)			
Operating speed, adjustable	0.1 ... 5.0 mm/s (254 ... 5 s/inch)	0.1 ... 10.0 mm/s (254 ... 2.5 s/inch)	0.1 ... 5.0 mm/s (254 ... 5 s/inch)	0.1 ... 7.5 mm/s (254 ... 3.4 s/inch)
Stroke	min.: 0 ... 15 mm (0 ... 0.59 inch) / max. 0 ... 100 mm (0 ... 4 inch) or min.: 0 ... 50 mm (0 ... 1.97 inch) / max. 0 ... 300 mm (0 ... 11.8 inch)			
Weight (100 mm stroke)	approx. 57 kg (126 lb)			approx. 60 kg (132 lb)
Weight (300 mm stroke)	approx. 82 kg (181 lb)			approx. 85 kg (187 lb)
Related electronics	For field installation: Model EBN853 ¹⁾ For rack installation: Model EBS852 ²⁾			
Motor type	MCS 71 BA			MCS 80 BA
Sensors	Position and temperature sensor always available			

1) Data sheet EBN853: 10/68-8 27

2) Data sheet EBS852: 10/68-8 24

2.2 General information

	RSD10 ... / RSD20 ...
Operating mode	S9; stallproof acc. to IEC 60034-1 / EN 60034-1
Protection Class	IP 66
Humidity	≤ 95% average; condensation not permitted
Ambient temperature	-10 ... 65° C (15 ... 150° F) -30 ... 50 °C (-20 ... 130 °F) -1 ... 85° C (30 ... 185° F)
Mounting position	any position; preferably IMV 1; IMV 3; IMB 3 acc. to IEC 60034-7 / EN 60034-7 (other mounting positions available upon request)
Coating	2-layer component epoxy (RAL 9005, black)
Anti-condensation heater (optional)	Motor winding: Directly from the electronic unit Signal space: Separate heating resistor; separate power supply or power feed from Contrac electronic unit
Electrical connection	plug with crimp snap-in contacts or terminals connecting cable electronics – actuator optional (see ordering information of electronics)
Power supply for motor and sensors	Only via Contrac electronic unit (refer to the data sheet for the electronic unit)

2.3 24-pole plug on the actuator

	Crimp pins	Terminals (Option)
Cable gauge	Motor, heater: 1.5 mm ² (16 AWG) Signals: 0.5 mm ² (20 AWG)	2.5 mm ² (14 AWG)
Contact surface	Gold-plated	Motor, signal: Gold-plated Heater: Silver-plated

2.4 Tapped holes for cable glands

Tapped holes for cables	optional adapters*	
M20 x 1.5 (2x)	PG 16 (2x)	NPT ½" (2 x)
M25 x 1.5 (1 x)	PG 21 (2x)	NPT ¾" (1 x)

* Adapter for PG or NPT thread must be ordered separately

3 Electrical connection

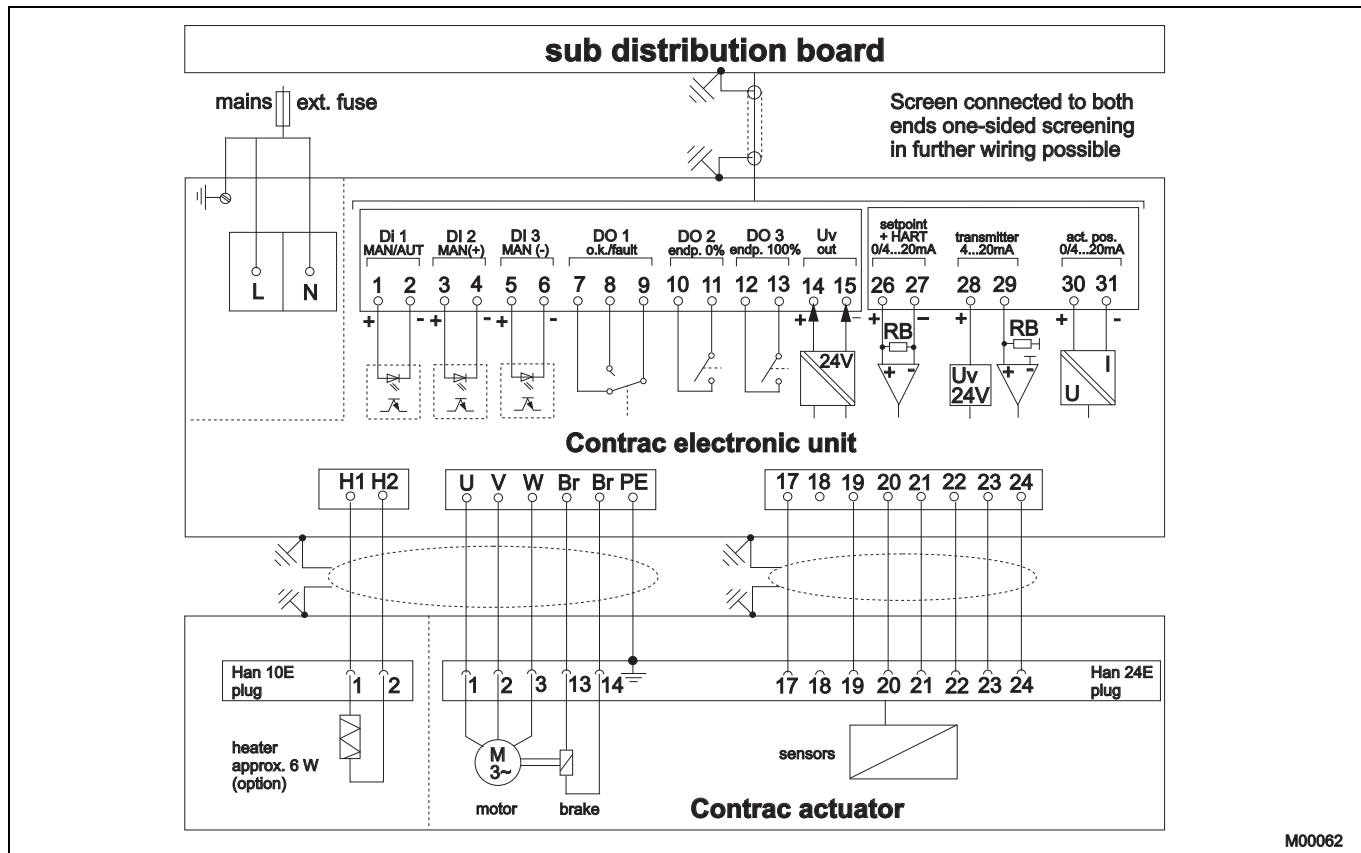
3.1 Power Electronic Unit EBN853 (Contrac)

3.1.1 Analog / digital



Note

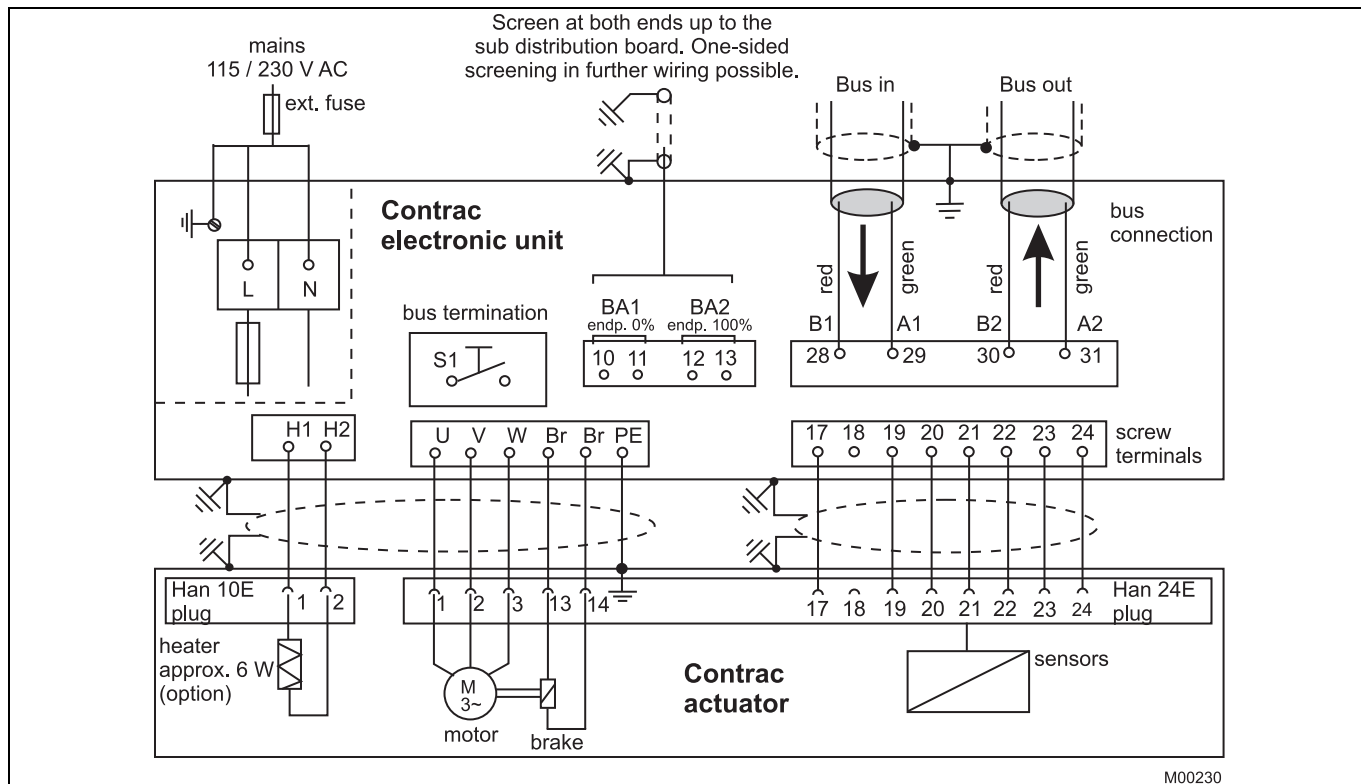
The electrical connection is provided by a plug on the actuator and the terminals on the electronic unit.



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Fig. 1

3.1.2 PROFIBUS DP



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Fig. 2

3.2 Power Electronic Unit EBS852 (Contract)

3.2.1 Analog / digital



Note

The electrical connection is provided by a plug on the actuator and the terminals on the electronic unit.

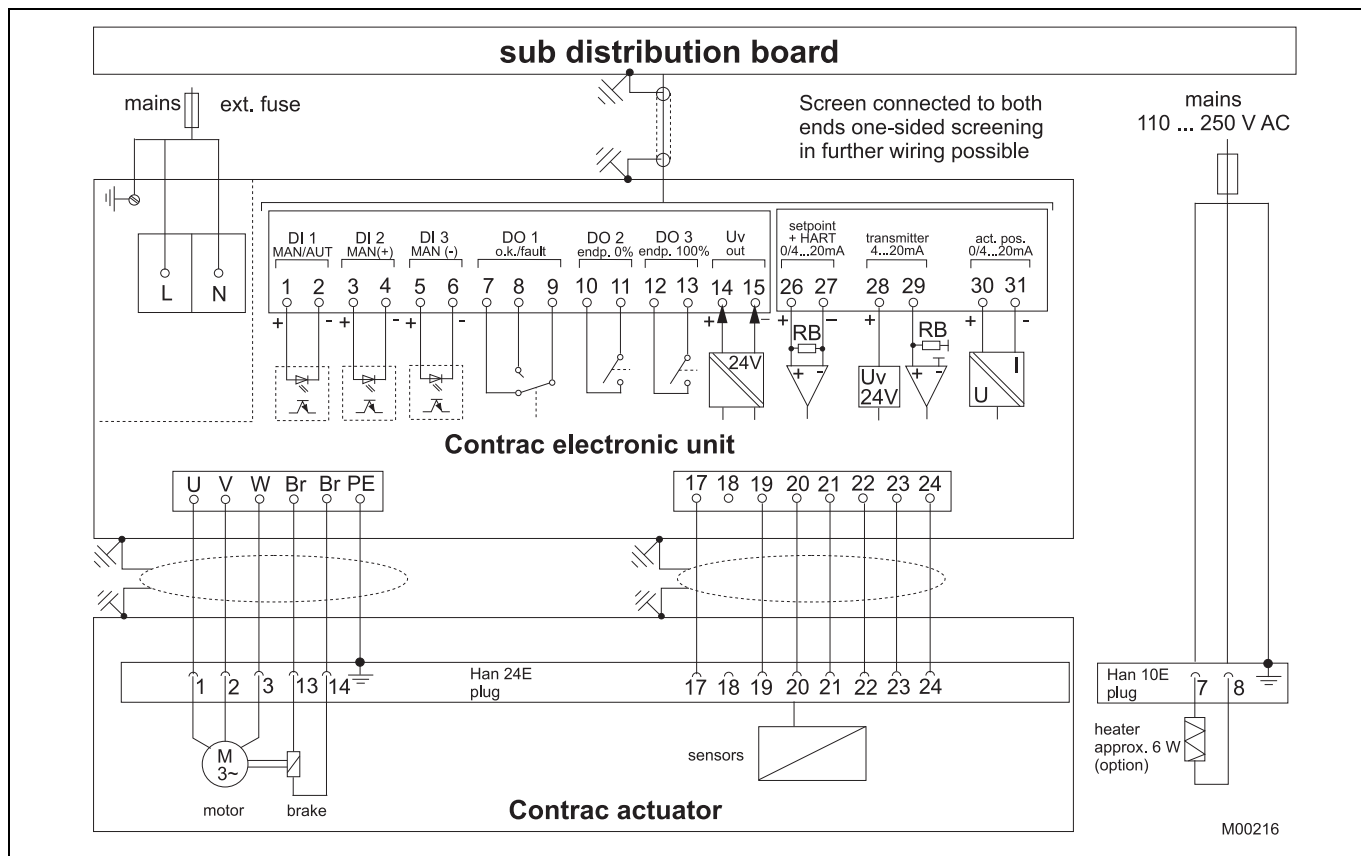
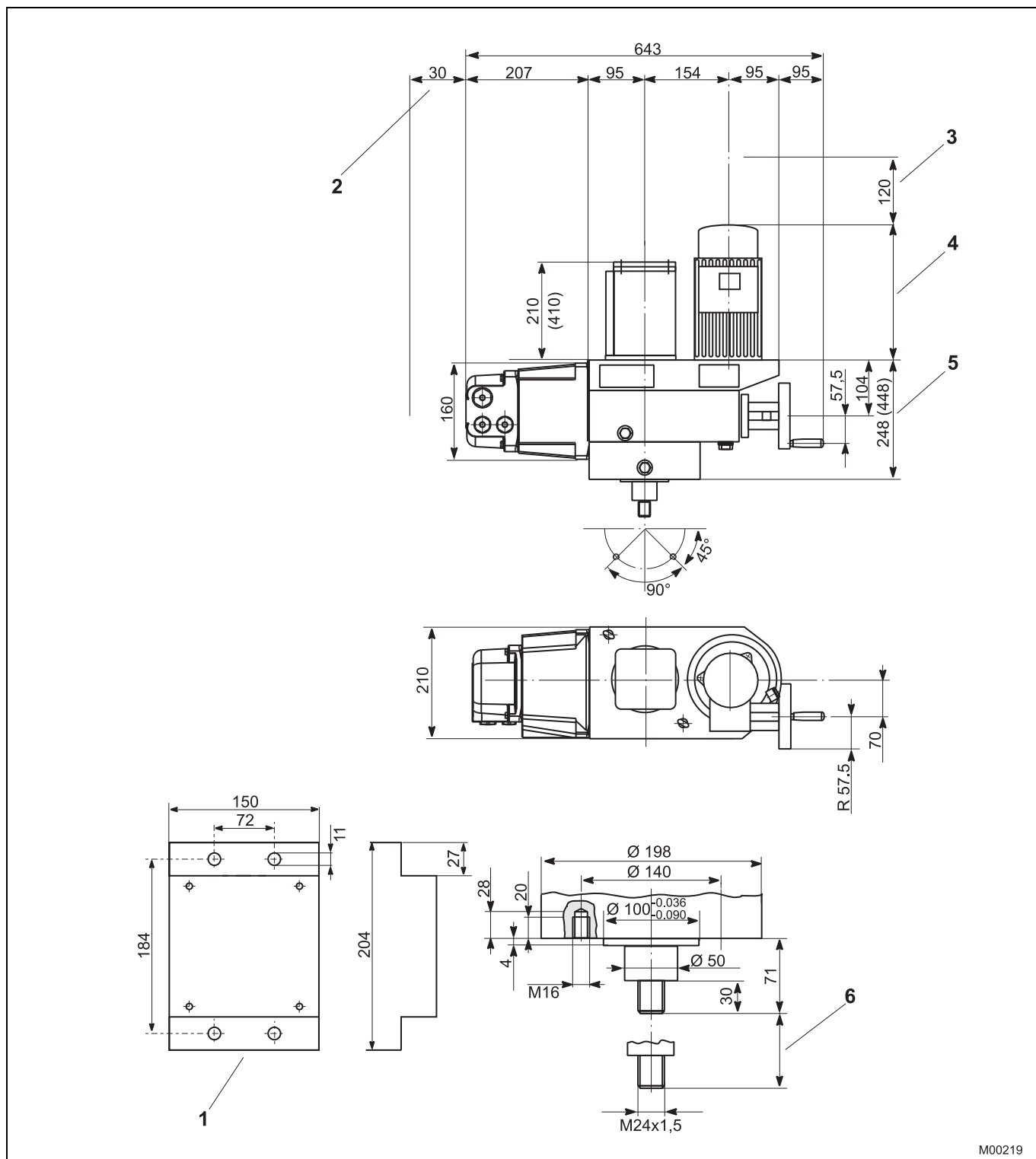


Fig. 3

4 Dimensions

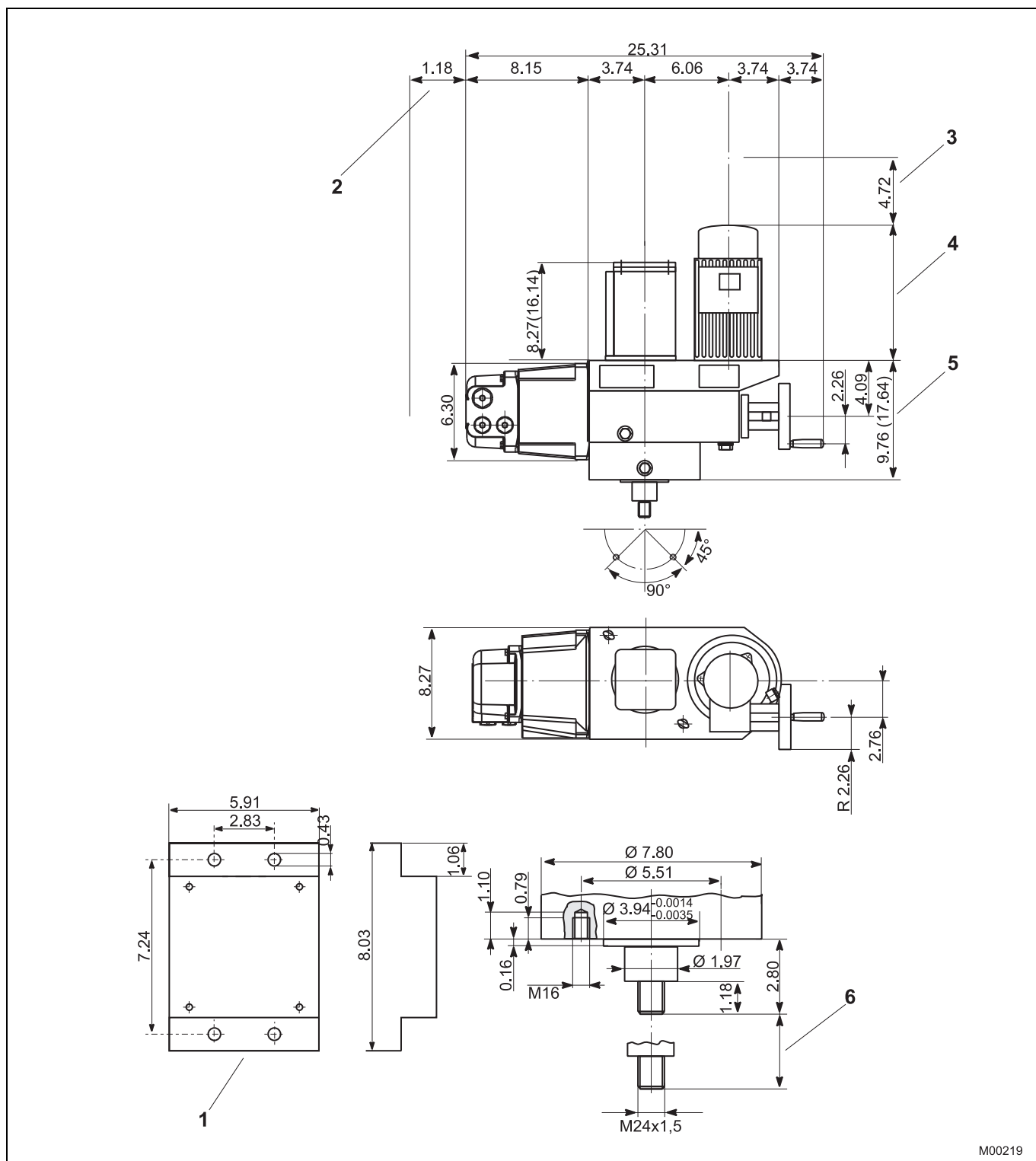
4.1 Linear actuator



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Fig. 4 Dimensions in mm

- | | |
|---|--|
| 1 Plug holder (not to scale) | 2 Space for plug removal |
| 3 Space for motor removal | 4 max. 244 mm (max. 308 mm with RSD20-7.5) |
| 5 Value in parentheses for version with 300 mm stroke | 6 100 mm (300 mm) stroke |



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Fig. 5 Dimensions in mm

- 1 Plug holder (not to scale)
- 2 Space for plug removal
- 3 Space for motor removal
- 4 max. 9.61 inch (max. 12.13 inch with RSD20-7.5)
- 5 Value in parentheses for version with 11.8 inch stroke
- 6 4.0 inch (11.8 inch) stroke

5 Ordering information

Linear Actuator		Variant digit No.	1 - 7	8	9	10	11	Code			
RSD10 -5,0, RSD10-10,0		Catalog No.	V68632-								
Rated force 10 kN (2250 lbs) (adjustable to 50%/75%/100%)											
RSD20 -5,0, RSD20-7,5		Catalog No.	V68642-								
Rated force 20 kN (4500 lbs) (adjustable to 50%/75%/100%)											
Rated stroke											
100 mm (4.0 in)				1	2						
300 mm (11.8 in)				1	6						
Rated speed											
5.0 mm/s (5.0 s/in) (adjustable to 5.0 ... 0.1 mm/s) only for RSD10-5,0								1	0		
10.0 mm/s (2.5 s/in) (adjustable to 10.0 ... 0.1 mm/s) only for RSD10-10,0								1	1		
5.0 mm/s (5.0 s/in) (adjustable to 5.0 ... 0.1 mm/s) only for RSD20-5,0								1	2		
7.5 mm/s (3.4 s/in) (adjustable to 7.5 ... 0.1 mm/s) only for RSD20-7,5								1	3		
Special actuator features											
Select at least one feature per group											
Electrical connection		plug (24-pole) complete, crimped						277			
		plug (24-pole) complete, terminals						278			
		plug bottom part covered					1)	279			
Ambient temperature range		-10 ... 65 °C (15 ... +150 °F)						344			
		-30 ... 50 °C (-20 ... 130 °F)						341			
		-1 ... 85 °C (30 ... 185 °F)						349			

Additional ordering information											
								Code			
Electrical connection thread		Set NPT adapter (joint metric / NPT thread)						680			
		Set PG adapter (joint metric / PG thread)						681			
Anti condensation heater								360			
Identification on data label		(alphanumeric, max. 32 characters)						294			
Data label with US units								253			
Accessories		cover for male plug (24 pole)						337			
Accessories		plug holder						338			
Factory certificate 2.1 acc. to EN 10204								291			
Certificate B acc. to EN 10204								292			
Assembly with valve at ABB		(order and pos. no. of valve required)						481			
Operating instruction		(specify total quantity required, 1 copy without extra charge)									
German		(no specification for 1 copy)						Z1D			
English		(always state Code-No.)						Z1E			

1) female plug with cables to be ordered with electronic unit

Attention!

Electronic unit to be ordered separately

Note: Delivery time for max. 2 pcs. For 3 pcs. or more delivery time on request.

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