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FICHA TÉCNICA DE PRODUTO

PRODUCT DATASHEET

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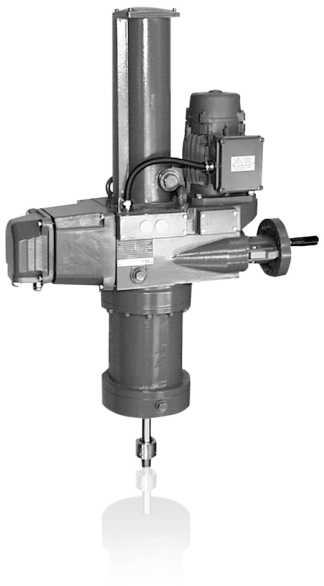
Data Sheet 10/68-2.91-EN Rev. A

RSDE10 / RSDE20 (Contrac)
Electrical Linear Actuator



For continuous positioning, In explosion-proof design, Rated force 10 kN / 20 kN (2200 lbf / 4400 lbf)

Electrical actuator for continuous positioning or step control

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

Explosion protection acc. to ATEX

Three-phase asynchronous motor, hermetically sealed

Connection areas with increased safety

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 separate, microprocessor-controlled power electronics

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

Contents

1 Ex design

This data sheet provides information about explosion-proof actuators. For additional information regarding the relevant Contrac power electronic unit and the motor temperature monitoring unit, refer to the corresponding data sheet.

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.

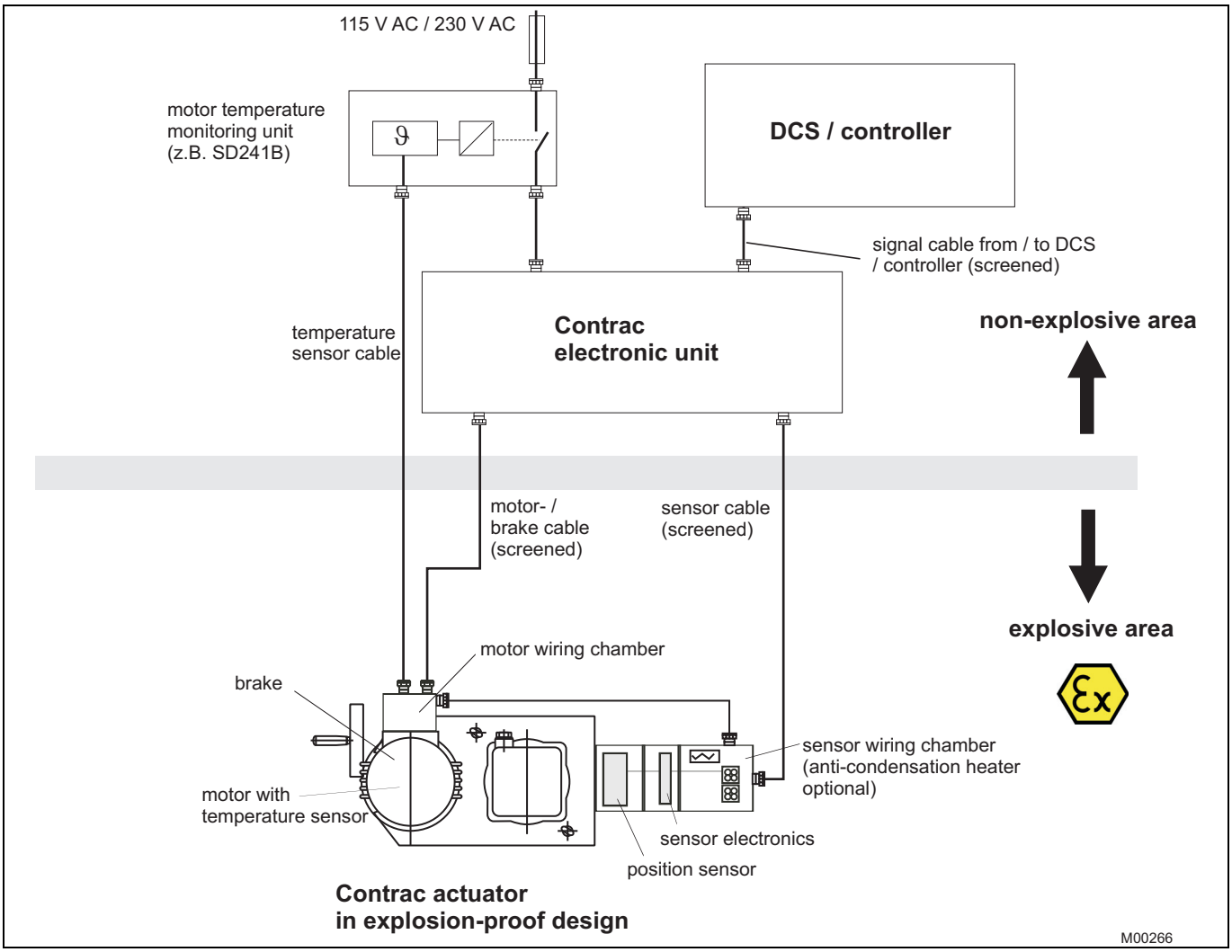


Fig. 1: Ex design

2 Technical data

2.1 Actuator

Model	RSDE10-5.0	RSDE10-10,0	RSDE20-5.0	RSDE20-7,5
Rated force	10 kN (2200 lbf) (adjustable to 0.5 / 0.75 or 1x rated force)		20 kN (4400 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 inches) / max. 0 … 100 mm (0 … 4 inches) or min.: 0 … 50 mm (0 … 1.97 inch) / max. 0 … 300 mm (0 … 11.8 inch)			
Weight (100 mm stroke) Weight (300 mm stroke)	approx. 57 kg (126 lb) approx. 82 kg (181 lb)			approx. 60 kg (132 lb) approx. 85 kg (187 lb)
Related electronics	For field installation: Model EBN853 [1] For rack installation: Model EBS852 [2]			
Thermal motor monitoring	With motor temperature monitoring equipment SD241B [3] or similarly certified tripping unit for PTC thermistor detectors			
Motor type	BD 80 K-4B			BD 80L-4B
Sensors	Position and temperature sensors always available			

1) Data Sheet EBN853: 10/68-8 27
2) Data Sheet EBS852: 10/68-8 24
3) Data Sheet SD241B: 10/68-8 30

2.2 General information

	RSDE10 / RSDE20
Operating mode	S9; stallproof acc. to IEC 60034-1 / EN 60034-1
Protection Class	IP 66; Ignition protection
Humidity	≤ 95% average; condensation not permitted
Ambient temperature	-20 … 60 °C (-4 … 140 °F) Reduced positioning speed at rated load and below -10 °C (14 °F)
Transport and storage temperature	-20 … 60 °C (-4 … 140 °F)
Mounting position	IMV1; IMV3; IMB5; preferrably IMV1 acc. to IEC 60034-7 / EN 60034-7
Coating	2-layer component epoxy (RAL 9005, black)
Anti-condensation heater	Motor winding Directly from the electronic unit Signal space: Separate heating resistor; separate power supply or power feed from Contrac electronic unit
Power supply for motor and sensors	Only via Contrac electronic unit (refer to the data sheet for the electronic unit)
Electrical connection	Terminals in EEx e area; isolated for motor and signals connecting cable electronics – actuator optional (see ordering information of electronics)

2.3 Explosion-protection information

Explosion-proof Contrac actuators are classified as type II devices for operation in potentially explosive areas for days and device category 2. They are designed for use in Ex zones 1 and 21. Can also be used in zones 2 and 22 (for gas and dust atmosphere).

Applicable standards

- EN 50 014
- EN 50 018
- EN 50 019
- EN 50 020
- EN 50 281-1-1
- EN 13 463-1
- EN 13 463-5
- EN 13 463-8

Explosion-protection for actuator components

Actuator components	Explosion protection
Motor with brake	II GD EEx de IIB T4
Gearing	II 2GD ck T4
Actuator sensor	II 2G EEx [ib] ib IIC T4
Anti-condensation heater	II 2G EEx d II C
Connection areas	II 2G/D EEx e II B T4
Full identification	II 2 GD ck EEx de [ib] ib II B T4 or IP6x T=130 °C ZELM 04 ATEX 0209 X

2.4 Terminals in EEx D area

	Motor / brake	Signals
Conductor cross-section	max. 2.5 mm^2 (14 AWG)	max. 2.5 mm^2 (14 AWG)

2.5 Tapped holes for cable glands

Tap holes for cable glands			
	metric	optional adapters for*	
Signals	M20 x 1.5 (2 x)	PG 16 (2 x)	NPT ½" (2 x)
Motor	M25 x 1.5 (1 x)	PG 21 (1 x)	NPT ¾" (1 x)
Temperature sensor	M20 x 1.5 (1 x)	PG 16 (2 x)	NPT ½" (2 x)

* adapter for PG or NPT thread must be ordered separately

The onsite cable glands for the motor and signals must be in EEx e design and provide shield connection.

Note

Use only the proper cable for the electrical connection between the Contrac actuator in the Ex area and the components in the Ex-free area. For the motor/brake line, the sensor lead and the signal line from/to the control system/controller, cables must be shielded.

Connect the shield for the motor/brake line and sensor lead on both sides (on the actuator and at the Contrac power electronic unit).

For the connection between the motor and motor temperature monitoring unit and for the network connection, cables do not have to be shielded.

3 Electrical connection

3.1 Power Electronic Unit EBN853 (Contrac)

3.1.1 Analog / Digital

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

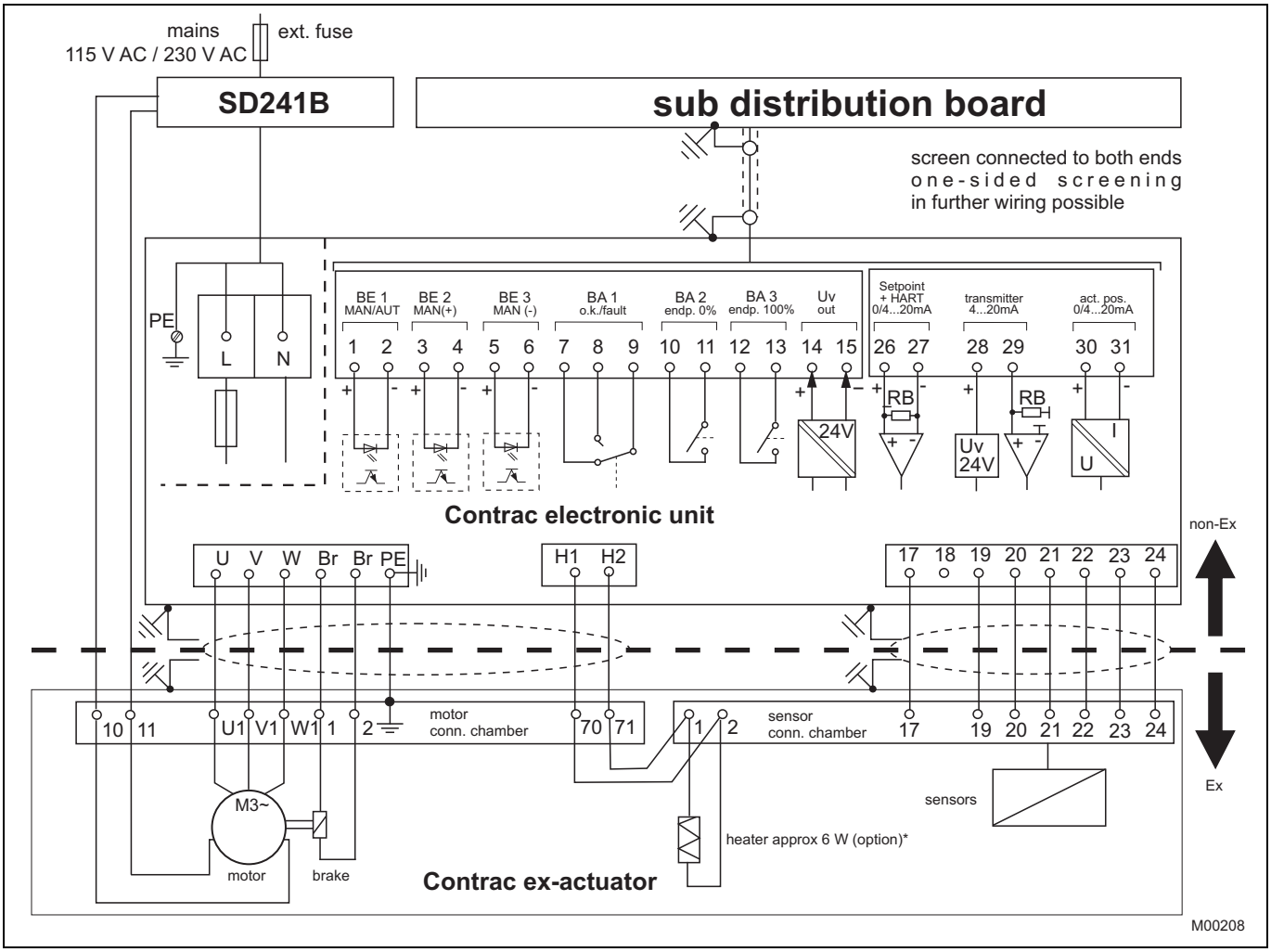


Fig. 2: Electrical connection: Ex actuator analog / digital

Installation information on the cable harness for actuators in Ex design
The electrical connection between the Contrac electronic unit and the Contrac actuator can be established using the cable harness (order code 695). The cable harness is not part of the Ex prototype test certificate and must therefore be tested for safety-relevant functionality within the complete installation by the installer or operator.

If the specified cable harness does not meet all safety-relevant requirements, the proper installation material must be used.

For the specified motor connecting cable, the screen must be connected at both ends and grounded.

3.1.2 PROFIBUS DP

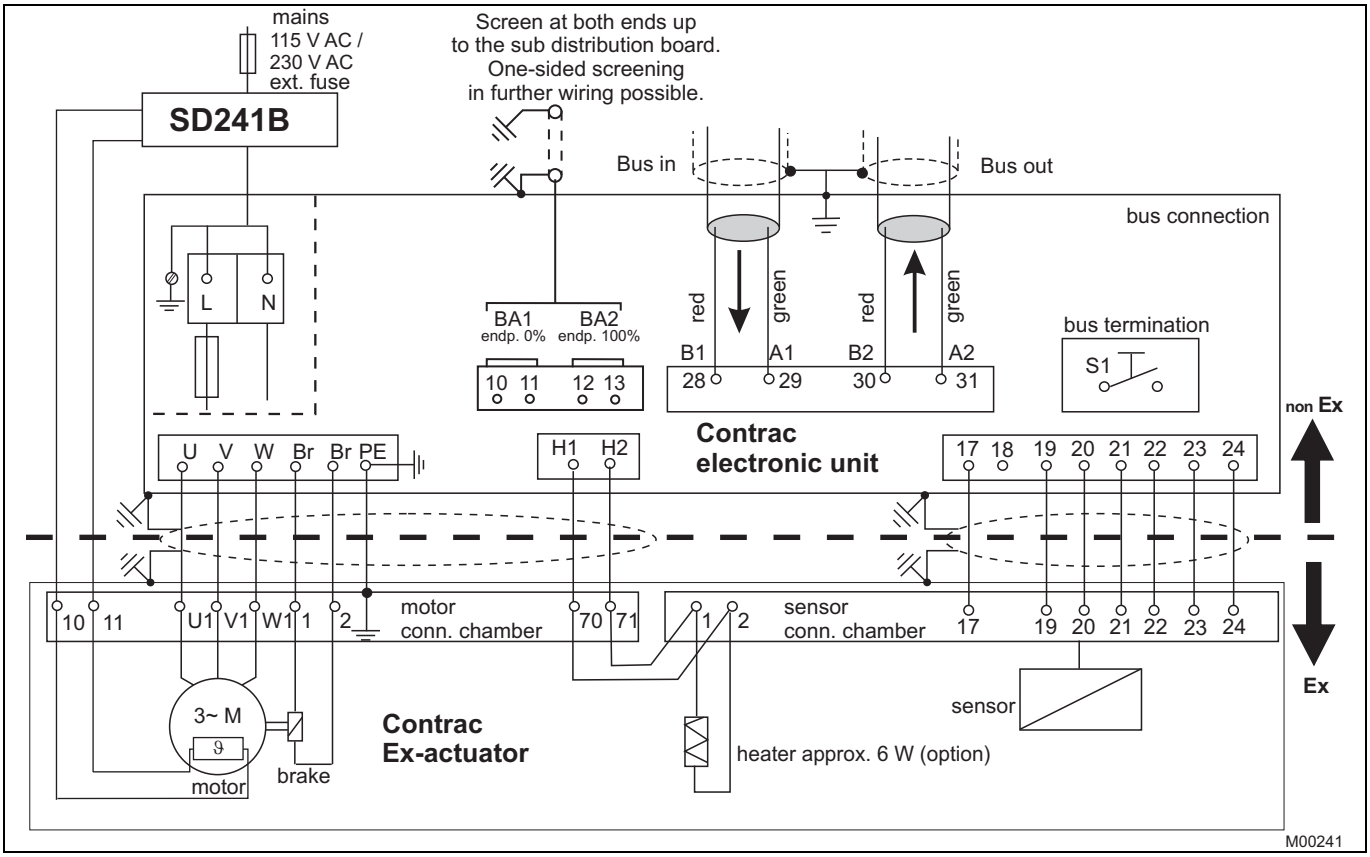


Fig. 3: Electrical connection: PROFIBUS DP option

Installation information on the cable harness for actuators in Ex design

The electrical connection between the Contrac electronic unit and the Contrac actuator can be established using the cable harness (order code 695). The cable harness is not part of the Ex prototype test certificate and must therefore be tested for safety-relevant functionality within the complete installation by the installer or operator.

If the specified cable harness does not meet all safety-relevant requirements, the proper installation material must be used.

For the specified motor connecting cable, the screen must be connected at both ends and grounded.

3.2 Power Electronic Unit EBS852 (Contrac)

3.2.1 Analog / Digital

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

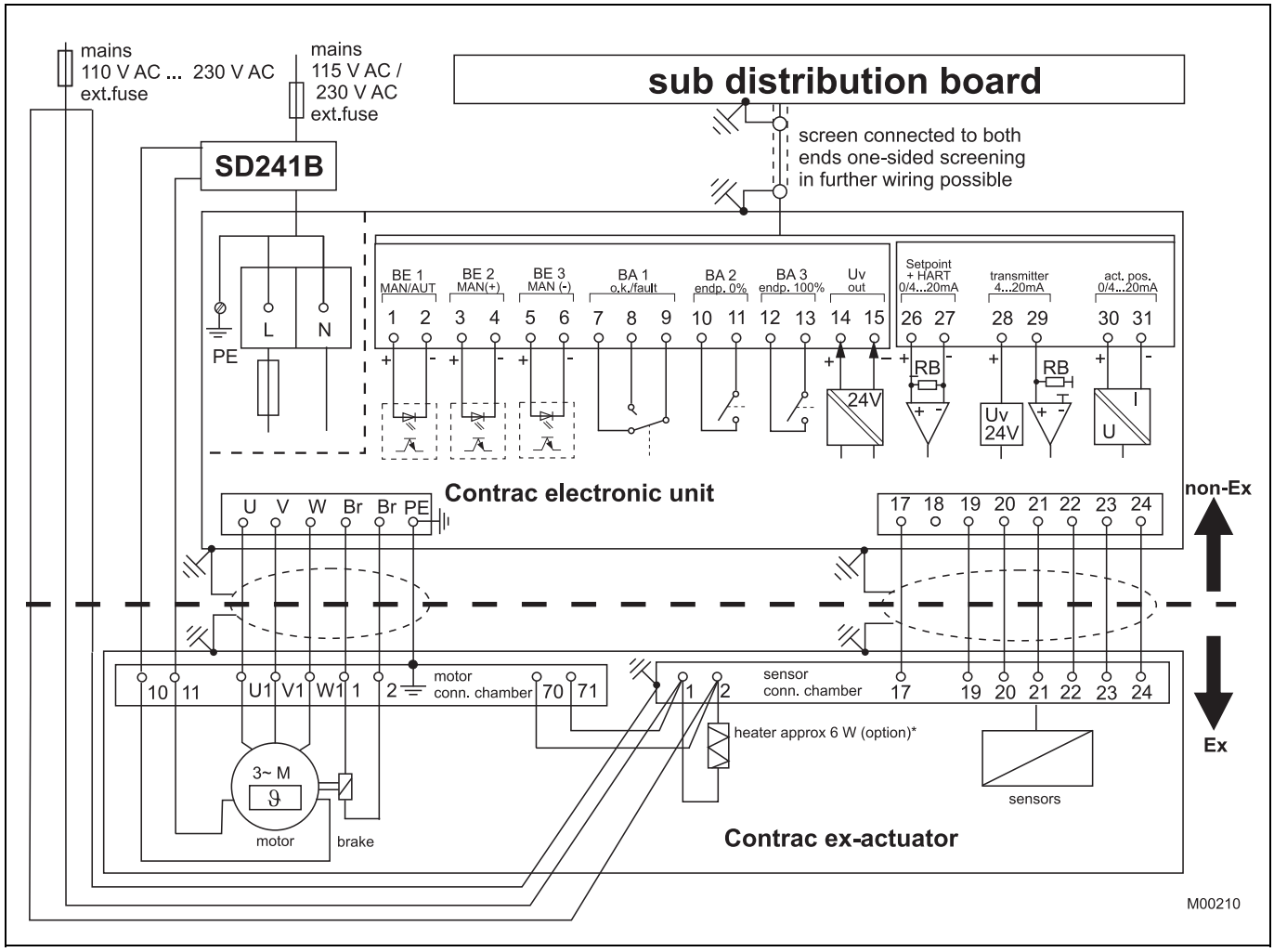


Fig. 4: Electrical connection: Ex actuator analog / binary

Note
* For separate heat supply, protect the heater with 2 … max. 6 A medium time-lag fuses (e.g., Neozed D01CE14).

Installation information on the cable harness for actuators in Ex design
The electrical connection between the Contrac electronic unit and the Contrac actuator can be established using the cable harness (order code 695). The cable harness is not part of the Ex prototype test certificate and must therefore be tested for safety-relevant functionality within the complete installation by the installer or operator.

If the specified cable harness does not meet all safety-relevant requirements, the proper installation material must be used.

For the specified motor connecting cable, the screen must be connected at both ends and grounded.

4 Dimensions

4.1 Linear actuator

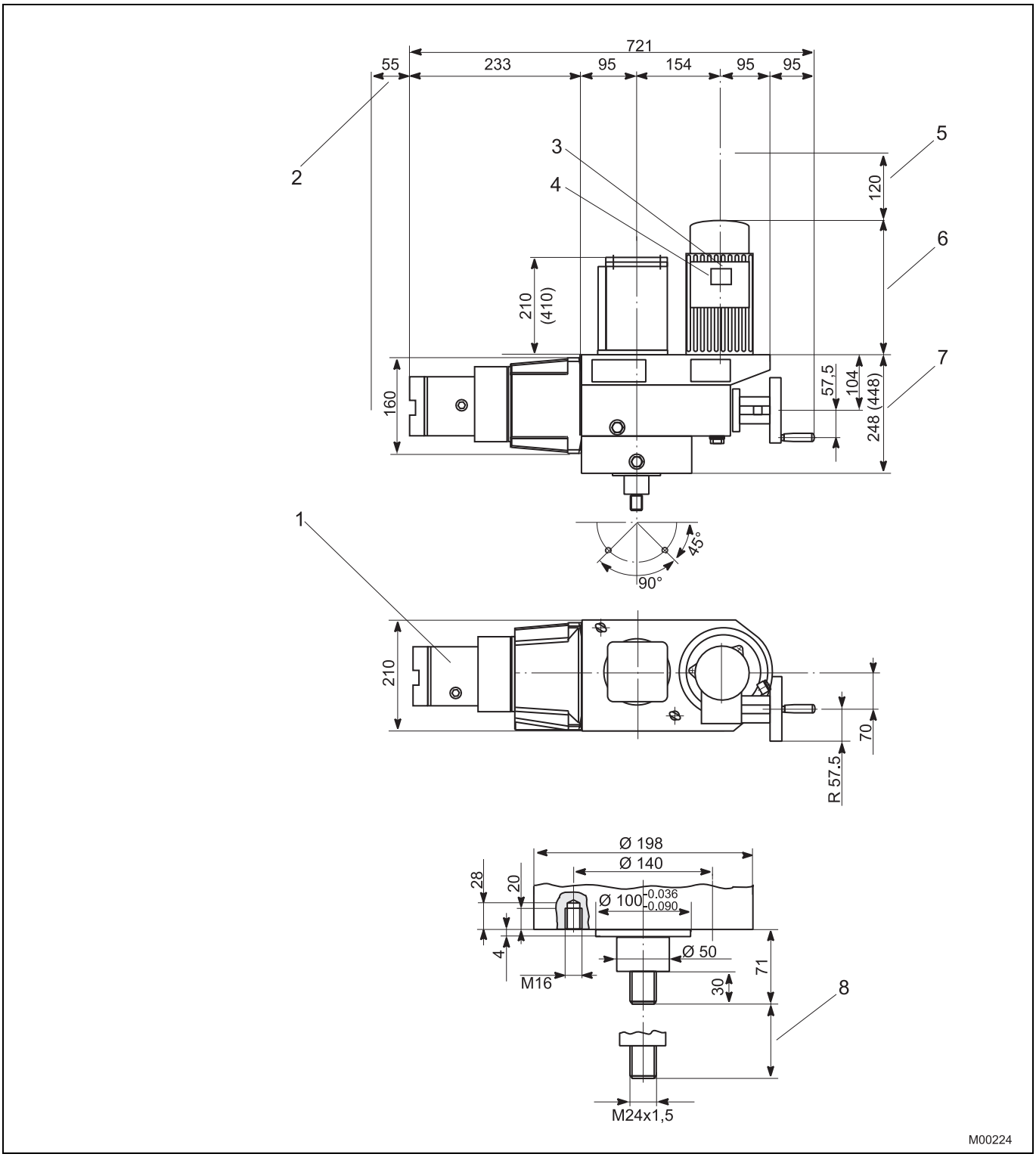


Fig. 5 Dimensions in mm

1 2 x M20 x 1.5 for signals (for optional use)
2 Space for cover removal
3 M20 x 1.5 (temperature sensor)
4 M25 x 1.5 (motor / brake)
5 Space for motor removal
6 max. 235 mm (max. 280 mm with RSDE20-7.5)
7 Value in parentheses for version with 300 mm stroke
8 100 mm (300 mm) stroke

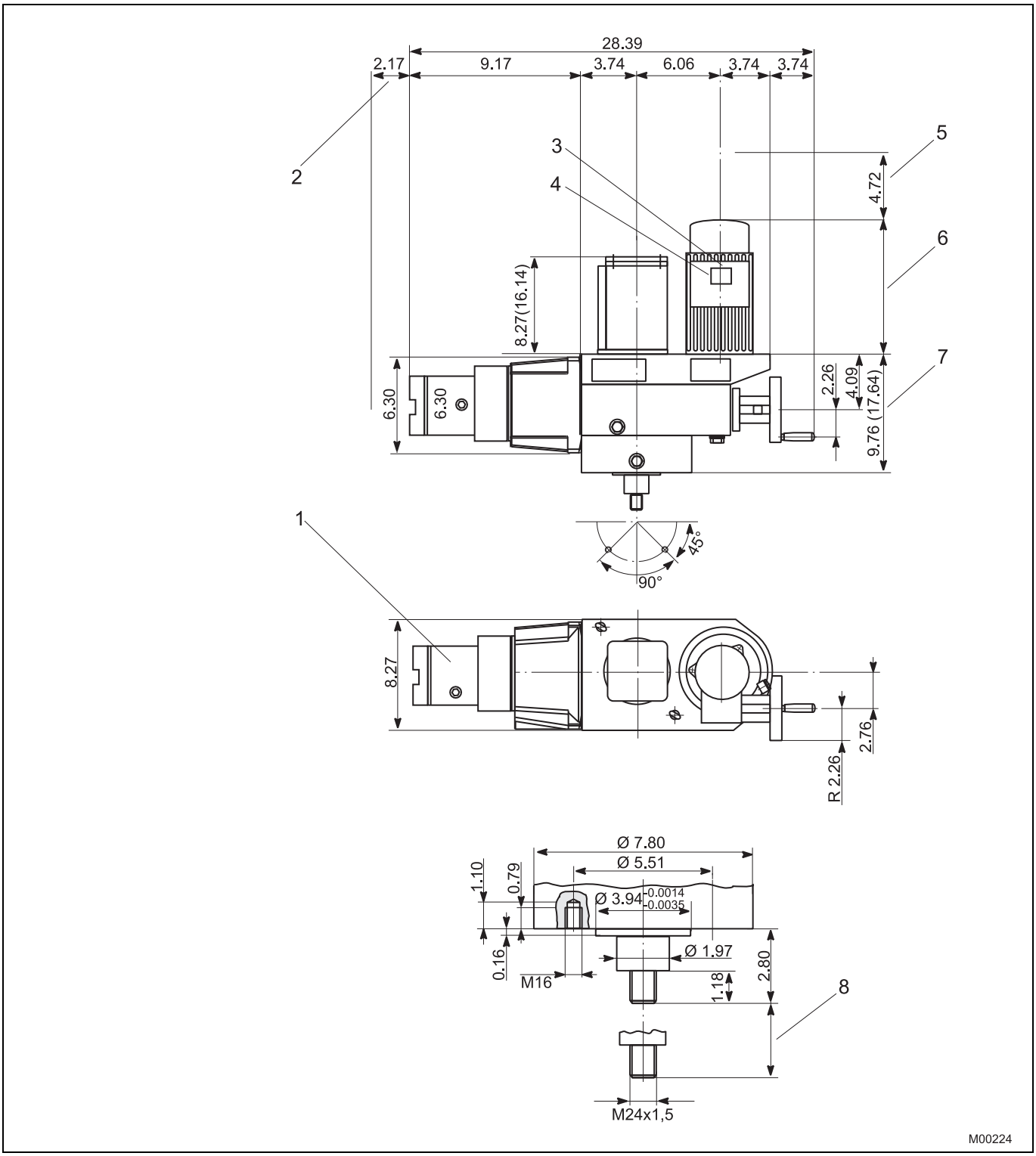


Fig. 6 Dimensions in inches

1 2 x M20 x 1.5 for signals (for optional use)
2 Space for cover removal
3 M20 x 1.5 (temperature sensor)
4 M25 x 1.5 (motor / brake)
5 Space for motor removal
6 max. 9.25 inch (max. 11.02 inches with RSDE20-7.5)
7 Value in parentheses for version with 11.8 inch stroke
8 3.94 inch (11.8 inch) stroke

5 Ordering information

Linear Actuator			Variant digit No.	1 - 7	8	9	10	11	Code		
RSDE10 -5,0, RSDE10-10,0			Catalog No.	**V68635-**							
Rated force	10 kN (2200 lbs)	(adjustable to 50%/75%/100%)									
RSDE20 -5,0, RSDE20-7,5			Catalog No.	**V68645-**							
Rated force	20 kN (4400 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 RSDE10-5,0					1	0			
10.0 mm/s (2.5 s/in)	(adjustable to 10.0 ... 0.1 mm/s)	only for RSDE10-10,0					1	1			
5.0 mm/s (5.0 s/in)	(adjustable to 5.0 ... 0.1 mm/s)	only for RSDE20-5,0					1	2			
7.5 mm/s (3.4 s/in)	(adjustable to 7.5 ... 0.1 mm/s)	only for RSDE20-7,5					1	3			
Special actuator features											
Select at least one feature per group											
Electrical connection	terminals in EEx con. chamber								269		
Ambient temperature range	-20 ... 60 °C (-4 ... 140 °F)								348		

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			
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			

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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