Data Sheet 10/68-8.25-EN Rev. A

EBS862 (Contrac)
Power Electronic Unit

For continuous control of Contrac actuators RHD(E) ... and RSD(E) ...

Microprocessor-controlled power electronic unit with integrated frequency converter

Voltage supply 230 V AC

Conventional signal interface (0 / 4 ... 20 mA / 24 V)

Digital communication via RS232 and HART

Additional functions such as process controller, maintenance computer, programmable characteristics

Rack installation, protection class IP 20

Torque and speed variation

Continuous positioning

Simple installation and commissioning

Simple configuration and parameter setting via graphical user interface

High response sensitivity

Reliable for short positioning times

Power and productivity
for a better world™

Contents

1 Concept 3
2 Technical data 3
2.1 General information 4
3 Electrical connection 4
3.1 Standard actuators 4
3.2 Ex actuators 5
4 Dimensions 6
4.1 Power Electronic Unit 6
4.2 Fuses 8
5 Ordering information 9
5.1 Standard actuators 9
5.2 Ex actuators 10

1 Concept

Compact actuator for the operation of final control elements with preferably 90° rotary movement such as flaps, cocks, etc.

The torque is transferred via a lever / linkage bar assembly or the actuator is directly coupled to the cock flange.

A special 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.

Important
The ANSI information appears in parentheses after the SI-information.

2 Technical data

Supply voltage (standard actuators)	230 V AC (190 … 260 V); 47.5 … 63 Hz; 1 Ph		
Supply voltage (Ex actuators)	230 V AC (190 … 253 V); 47.5 … 63 Hz; 1 Ph		
Current at electronic unit [A] (AC 230 V AC)		$I_{max.}$ at 230 V	
	RHD(E)2500-10	5.3 A	
	RHD(E)4000-10	10.0 A	
	RHD8000-12	8.0 A	
	RHDE8000-15	8.0 A	$I_{pos.}$ (230 V)
	RHD(E)16000-30	12.5 A	approx. 40 … 50% of $I_{max.}$
	RSD(E)50-10.0	6.4 A	
	RSD100-10.0	12.5 A	
	RSD200-5.0	13.0 A	
External fuse	safety fuse 35 A (Lindner) + thermal circuit breaker 16 A (ETA) (fuse and circuit breaker are part of shipment)		
External fuse for heat supply	2 ... 6 A; medium time-lag		
Analog input	0 / 4 … 20 mA		
Analog output	0 / 4 … 20 mA, galvanically isolated		
3 binary inputs BE 1 … BE 3 (DI 1 … DI 3)	Binary 0: -3 … 5 V or open, galvanically separated Binary 1: 12 … 35 V, galvanically separated		
3 binary outputs BA 1 ... BA 3 (DO 1 … DO 3)	Potential free relay contact, max. 60 V, 150 mA		
Digital communication	RS232 for commissioning and service, optionally FSK / HART®		
Default settings	Behavior in 0 / 100 % end position:	Hold with rated torque / end positions	
	set point function:	linear, set point = position value	
	set point input:	4 … 20 mA	
	function selection:	positioner, parameter: setpoint	
	actual value:	4 … 20 mA	
	digital input:	BE 1 (DI 1) M / A selection;	
		BE 2 / 3 (DI 2 / 3) manual intervention +/ -	
	digital output:	BA 1 (DO 1) ready for operation;	
		BA 2 / 3 (DO 2 / 3) end position signal 0 / 100 %	
	positioning time-out	not activated for standard actuators	
		always activated for actuators in explosion proof design	
Voltage output U_V	24 V, 15 mA, galvanically isolated; e.g., for scanning external contacts		
Transmitter (optional)	Supply for 2-wire transmitter with activated process controller in Contrac		
Individual settings	See data sheet 10/68-2.40 or upon request		

2.1 General information

	Power Electronic Unit EBS862 (Contrac)
Protection Class	IP 20
Humidity	≤ 75 % annual average (condensation not permitted)
Rack inlet temperature	0 … 45 °C (32 … 110 °F)
Mounting position	at vertical support, cable glands at the bottom
Coating	2-layer component epoxy (RAL 9005, black)
Cable between actuator and electronic unit	max. cable length: 470 m (1542 ft) , depending on actuator model and cable gauge; for additional information, refer to the operating instructions for the electronic unit
Electrical connection	mains supply via terminals; others via pluggable terminals
Weight; approx.	40 kg (88 lb)

3 Electrical connection

3.1 Standard actuators

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

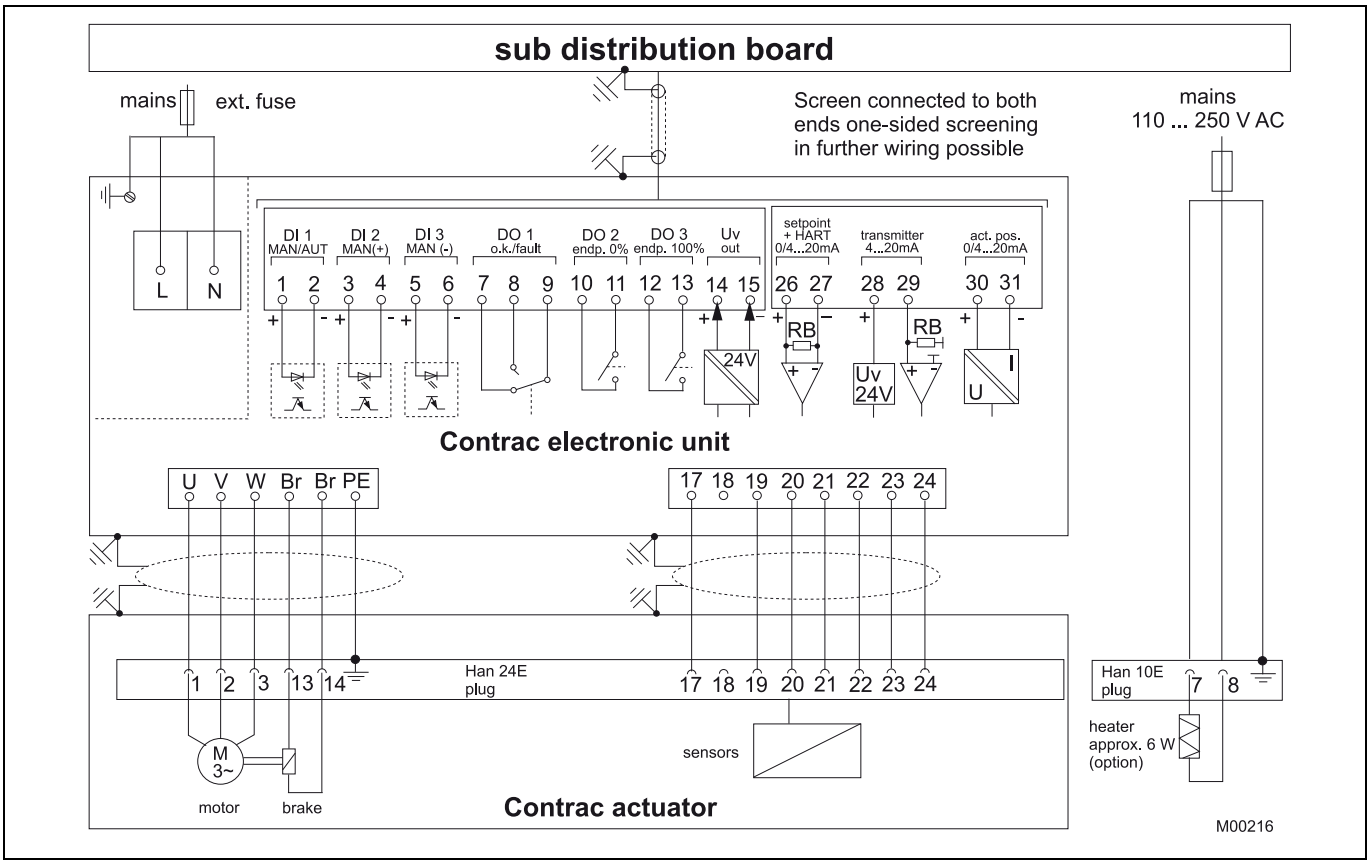

Fig. 1

3.2 Ex actuators

Important

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

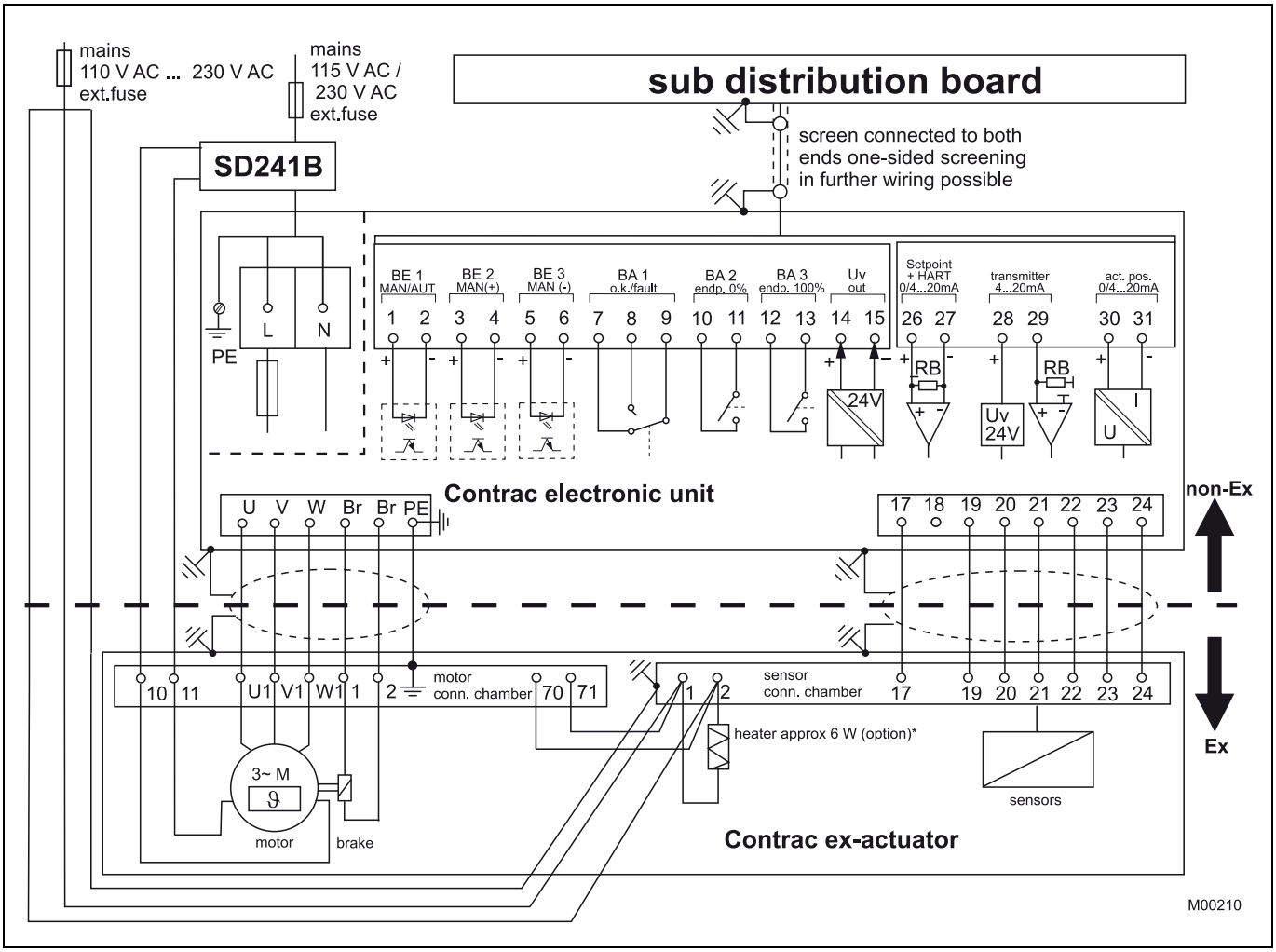

Fig. 2: Electrical connection: Ex actuator analog / binary

Important

* 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 Power Electronic Unit

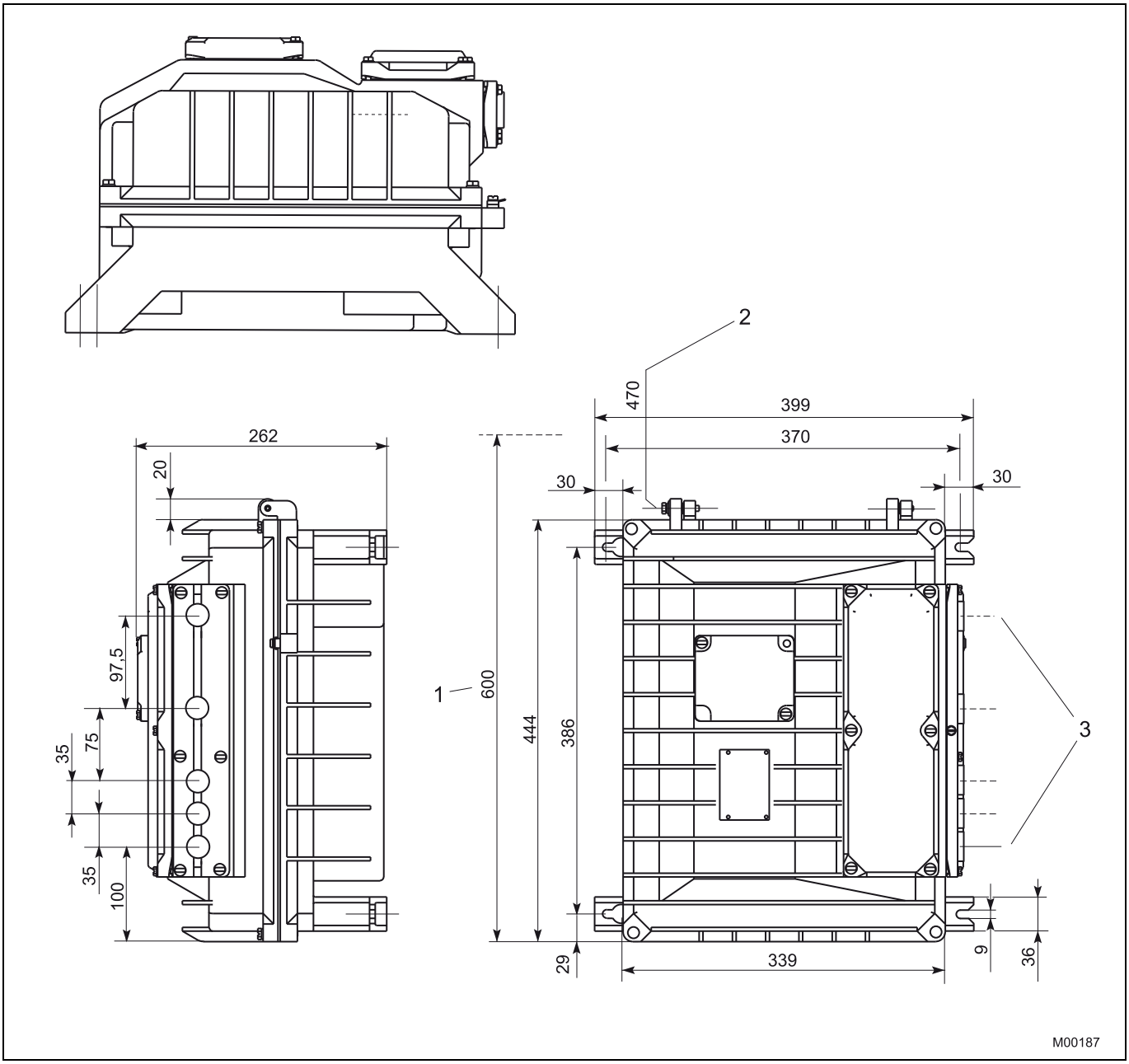

Fig. 3: Dimensions in mm

1 front section open, rotated 90°
2 rotational radius
3 tap holes

Max. cable gauge		Tap holes for cable glands	
mains; motor	solid wire: 6 mm²		metric
	flexible: 4 mm²	mains	1 x M20 x 1.5
signal	solid wire: 4 mm²	signal	3 x M20 x 1.5
	flexible: 2,5 mm²	motor	1 x M25 x 1.5

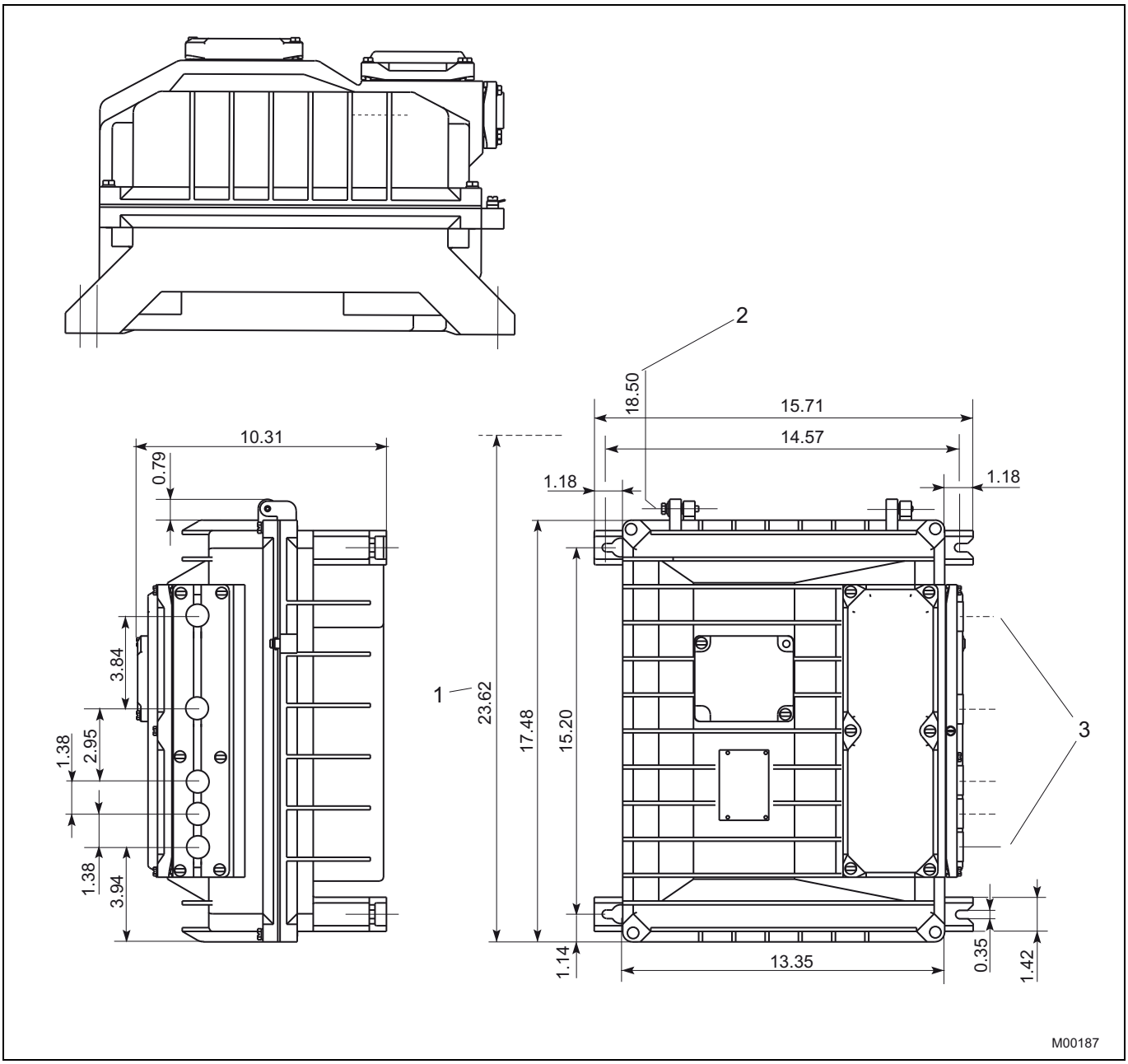

Fig. 4: Dimensions in inches

1 front section open, rotated 90°
2 rotational radius
3 tap holes

Max. cable gauge		Tap holes for cable glands	
mains; motor	solid wire: 10 AWG		metric
	flexible: 12 AWG	mains	1 x M20 x 1.5
signal	solid wire: 12 AWG	signal	3 x M20 x 1.5
	flexible: 14 AWG	motor	1 x M25 x 1.5

4.2 Fuses

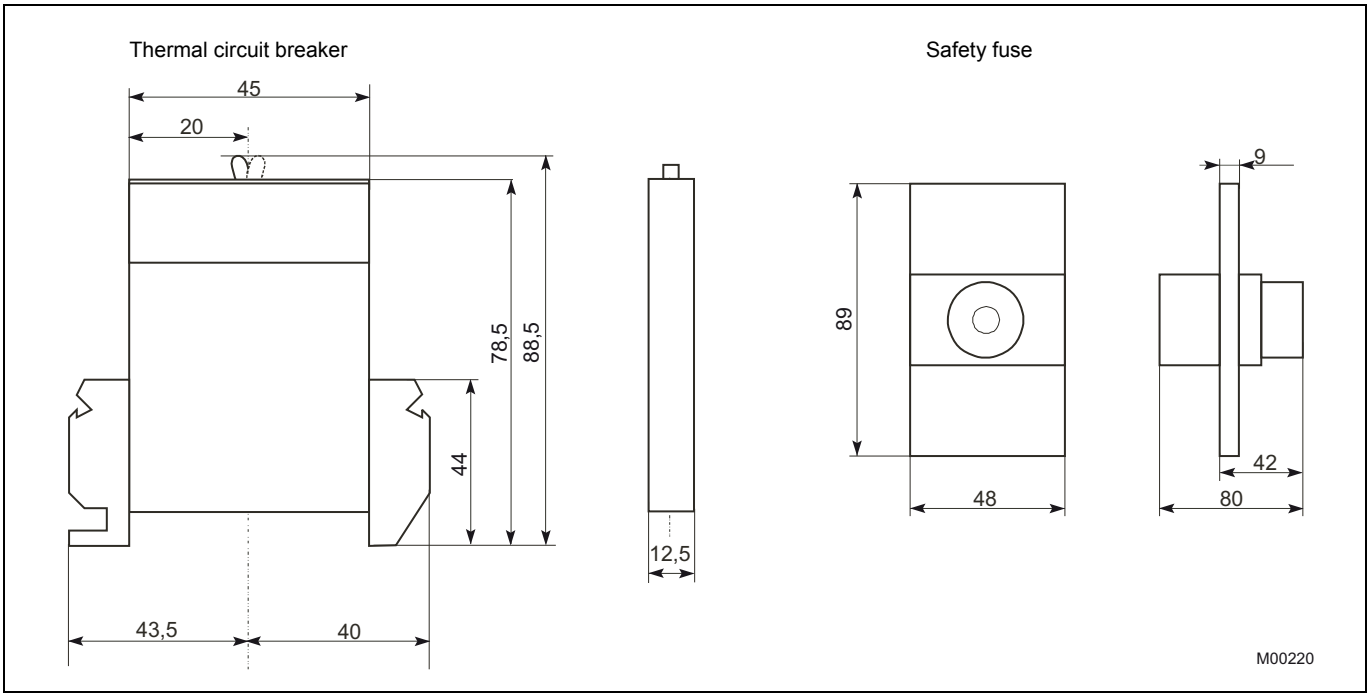

Fig. 5: Dimensions in mm

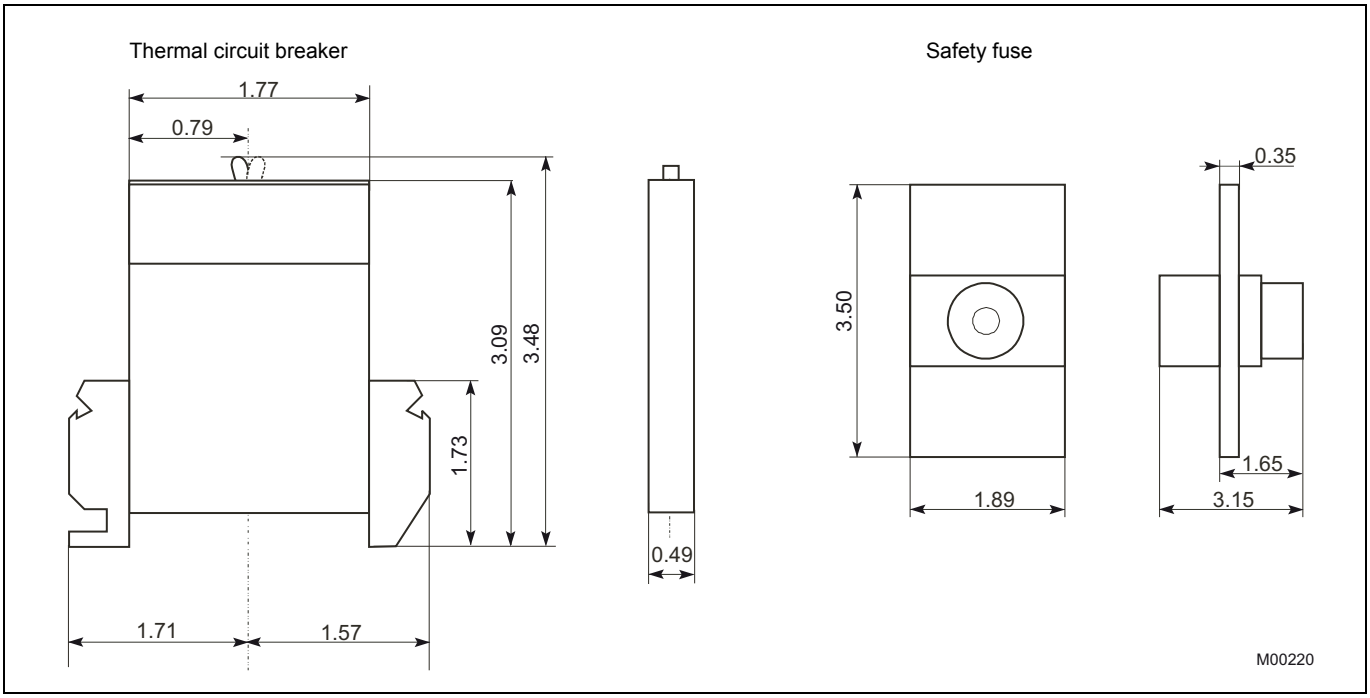

Fig. 6: Dimensions in inches

5 Ordering information

5.1 Standard actuators

Electronic Unit					Variant digit No.	1 - 8	9	10	11	12	Code			
EBS862					Catalog No.	**V68862A-**								
Suitable for														
Linear Actuator	Force		Speed		Stroke									
RSD50-10,0/120	50 kN (11240 lbs)		10.0 mm/s	(2.5 s/in)	120 mm (4.7 in)		3	0	7	3				
RSD50-10,0/300	50 kN (11240 lbs)		10.0 mm/s	(2.5 s/in)	300 mm (11.8 in)		9	1	7	3				
RSD100-10,0/150	100 kN (22500 lbs)		10.0 mm/s	(2.5 s/in)	150 mm (5.9 in)		2	1	7	4				
RSD100-10,0/300	100 kN (22500 lbs)		10.0 mm/s	(2.5 s/in)	300 mm (11.8 in)		9	1	7	4				
RSD200-5,0/180	200 kN (45000 lbs)		5.0 mm/s	(5.0 s/in)	180 mm (7.08 in)		5	4	7	5				
RSD200-5,0/300	200 kN (45000 lbs)		5.0 mm/s	(5.0 s/in)	300 mm (11.8 in)		9	1	7	5				
Part-Turn Actuator	Torque		Speed											
RHD2500-10	2500 Nm	(1900 ft-lbs)	9.0 °/s				0	1	1	5				
RHD4000-10	4000 Nm	(3000 ft-lbs)	9.0 °/s				0	1	1	6				
RHD8000-12	8000 Nm	(6000 ft-lbs)	7.5 °/s				0	1	7	0				
RHD16000-30	16000 Nm	(12000 ft-lbs)	3.0 °/s				0	1	1	8				
Special features of Electronic Unit														
Select at least one feature per group														
Supply voltage	230 V AC 1 Ph										380			
Frequency	50 Hz										382			
	60 Hz										383			
Digital communication	RS 232										384			
	RS 232 + HART										385			
Ambient temperature range	-30 ... 50 °C (-20 .... 130 °F)										341			
of actuator	-10 ... 65 °C (15 ... 150 °F)										344			
Settings of electronic unit	Standard settings				(see techn. data)						390			
	Customer specific settings				(see data sheet 10/68-2.40 EN)						391			

Additional ordering information				
	Code			
Anti-condensation heater in actuator "ON"	359			
Identification on data label (alphanumeric, max. 32 characters)	295			
Data label with US units	253			
F. No. of associated actuator on data label of electronic unit	297			
Factory certificate 2.1 acc. to EN 10204	291			
Certificate B acc. to EN 10204	292			
Operating instruction (specify total quantity required, 1 copy without extra charge)				
German (no specification for 1 copy)	Z1D			
English (always state Code-No.)	Z1E			

5.2 Ex actuators

Electronic Unit					Variant digit No.	1 - 8	9	10	11	12	Code			
EBS862					Catalog No.	**V68862A-**								
Suitable for														
Linear Actuator	Force		Speed		Stroke									
RSDE50-10,0/120	50 kN (11000 lbs)		10.0 mm/s	(2.5 s/in)	120 mm	(4.7 in)	3	0	8	4				
RSDE50-10,0/300	50 kN (11000 lbs)		10.0 mm/s	(2.5 s/in)	300 mm	(11.8 in)	9	1	8	4				
RSDE100-10,0/150	100 kN (22000 lbs)		10.0 mm/s	(2.5 s/in)	150 mm	(5.9 in)	2	1	8	6				
RSDE100-10,0/300	100 kN (22000 lbs)		10.0 mm/s	(2.5 s/in)	300 mm	(11.8 in)	9	1	8	6				
Part-Turn Actuator	Torque		Speed											
RHDE2500-10	2500 Nm	(1850 ft-lbs)	9.0 °/s				0	1	5	9				
RHDE4000-10	4000 Nm	(2950 ft-lbs)	9.0 °/s				0	1	6	0				
RHDE8000-15	8000 Nm	(5900 ft-lbs)	6.0 °/s				0	1	6	8				
RHDE16000-30	16000 Nm	(11800 ft-lbs)	3.0 °/s				0	1	6	9				
Special features of Electronic Unit														
Select at least one feature per group														
Supply voltage	230 V AC 1 Ph										380			
Frequency	50 Hz										382			
	60 Hz										383			
Digital communication	RS 232										384			
	RS 232 + HART										385			
Ambient temperature range	-25 ... 60°C (-13 ... 140°F)				(only for part turn actuators Ex)						346			
of actuator	-30 ... 40°C (-22 ... 104°F)				(only for part turn actuators Ex)						347			
	-20 ... 60°C (-4 ... 140°F)				(only for linear actuators Ex)						348			
Settings of electronic unit	Standard settings				(see techn. data)						390			
	Customer specific settings				(see data sheet 10/68-2.40 EN)						391			

Additional ordering information				
		Code		
Anti-condensation heater in actuator "ON"		359		
Identification on data label	(alphanumeric, max. 32 characters)	295		
Data label with US units		253		
F. No. of associated actuator on data label of electronic unit		297		
Factory certificate 2.1 acc. to EN 10204		291		
Certificate B acc. to EN 10204		292		
Operating instruction	(specify total quantity required, 1 copy without extra charge)			
German	(no specification for 1 copy)	Z1D		
English	(always state Code-No.)	Z1E		

Contact us

ABB Ltd.
Process Automation
Salterbeck Trading Estate
Workington, Cumbria
CA14 5DS
UK
Phone: +44 (0)1946 830 611
Fax: +44 (0)1946 832 661

ABB Inc.
Process Automation
125 E. County Line Road
Warminster, PA 18974
USA
Phone: +1 215 674 6000
Fax: +1 215 674 7183

ABB Automation Products GmbH
Process Automation
Schillerstr. 72
32425 Minden
Germany
Phone: +49 551 905-534
Fax: +49 551 905-555

www.abb.com

Note
We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents - in whole or in parts – is forbidden without prior written consent of ABB.

Copyright© 2010 ABB
All rights reserved

10/68-8.25-EN Rev. A 12.2010 | 3KXE181006R1001

Power and productivity
for a better world™