

Operating instructions for sliding door operator record system 16

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1. General

These operating instructions are intended for the operator of record system 16 automatic sliding doors. The operator is the person responsible for the technical maintenance of this door system.

These instructions describe the use of the record system 16 sliding door operator. They form the basis for satisfactory functioning.

These operating instructions should be read by the door operator before commissioning and the safety instructions observed !

It is recommended to keep these operating instructions close to the automatic sliding door.

Product designation: *Automatic sliding door*

Product name: *record system 16*

Serial number: _____ (please complete when installing)

2. Technical data and operating conditions

Door leaf speeds, etc.

See page 7

Power supply data

Mains voltage:	230 V 50 / 60 Hz
Rated power:	100 W
Fuse protection:	min. 2.5 A slow-acting

Ambient conditions

Temperature range:	-15° to +50° C
Humidity range:	up to 85 % rel. humidity, non-thawing

3. Safety instructions

The record system 16 sliding door operator has been constructed in accordance with the latest state of the art and the recognised technical safety regulations, including limiting of forces and speeds. Nevertheless, danger can arise for the user if not used as intended.

Installation, maintenance and repairs to the record system 16 must only be performed by qualified and authorized personnel (technicians).

Use for the intended purpose

The record system 16 sliding door operator is designed exclusively for normal service with automatic sliding doors in dry areas and must be installed within or on the inside of buildings.

Any other application or use beyond this purpose is not considered use for the intended purpose. The manufacturer bears no liability for any resulting damage; the operator alone shall bear the responsibility.

Use for the intended purpose also includes observation of the operating conditions specified by the manufacturer, in addition to regular care, maintenance and repair.

Unauthorized modifications to the automatic door exclude any liability of the manufacturer for resulting damage.

General safety and accident prevention regulations

In principle, no safety devices (sensors) must be dismantled or placed out of service.

No persons or objects must be present in the opening area/path of the sliding door, in order to avoid crushing and cutting.

The installation is **not** intended to be disconnected from the mains at night!

4. Description of system

4.1 Components

The record system 16 sliding door operator forms part of an electromechanical sliding door system and comprises the following main components:

Control unit STG:	Intelligent, learning, microprocessor-controlled control system
Driving unit ATE:	Low maintenance d.c. geared motor with electronic path measurement and integral thermostatic protective switch
Power supply NET:	Compact 220/230 V power supply with integral input filter and overvoltage protection
Control unit BDE:	As required with convenient, programmable electronic or simple mechanical control unit
Locking VRR (optional):	Electromagnetic 2-point lock with solid, specially hardened locking bolts
Auxiliary battery (optional):	To maintain automatic door functions during a power failure for at least 100 opening and closing cycles
Sensing units:	Aesthetic actuating and self-monitoring safety elements with adjustable sensitivity ensure optimum, smooth and reliable operation of the door system
Running gear:	Patented running gear and counter-wheel systems on ball-bearings with specially hardened, dirt-absorbing and sound-proofed aluminium track section

4.2 Functional description

In the standard "Automatic" mode of operation the door system opens by the response of an actuating device (e.g. radar unit) to persons or objects approaching. The door closes after the door hold-open time, provided no further opening pulse is received or the photocells in the doorway are interrupted.

In the "Automatic locking" mode of operation, the door is only opened by actuation of an optional key-operated contact (SSK). The door closes after the SSK door hold-open time, provided no further opening pulse is received or the photocells in the doorway are interrupted.

An obstacle to the sliding door leaves during **Closing** leads to an immediate re-opening (automatic reverse). The obstacle position is recorded in the door operator and this position is approached slowly when next closing. An obstacle to the sliding door leaves when **Opening** results in an immediate stop.

An optional EMERGENCY STOP or EMERGENCY OPEN push-button near the door initiates either an emergency stop or an emergency opening (provided the door is not locked).

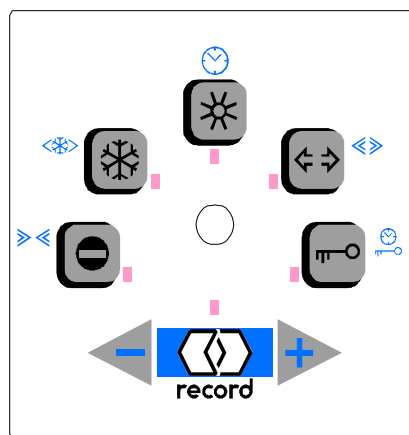
5. Operating instructions

Various control units can be connected to the record system 16. The control unit to select the various modes of operation is situated either on the inner casing of the operator or externally, usually near the door.

5.1 Electronic control unit (BDE-E)

The electronic control unit BDE-E is a convenient input and output unit. It has several control levels. The 1st level contains the standard modes of operation. The significance of the keys can vary depending on the control level.

All LEDs light in turn during the first seconds after the power supply is switched on, followed by display of the current mode of operation.



1st control level (modes of operation)

Key functions:



Automatic operation with total opening width (summer opening):

This mode of operation corresponds to standard operation. The door is opened by an actuating device (e.g. radar). The door closes again after expiration of the hold-open time.



Continuously open: door opens and remains in the open position.



Automatic mode with one-way traffic (shop closing time control):

The door only opens in response to the actuating device on the inside of the door (radar) or by an optional key-operated contact (SSK).



Automatic mode with reduced opening width (winter opening):

The opening width is reduced according to the programming (see page 7).



Automatic locking (if present): The door is locked automatically after closing. Opening to the last opening width effective can only be initiated with the key-operated contact SSK.

Warning: Door opening in the locked condition without auxiliary battery or without manual unlocking is no longer ensured in the event of a **power failure** !

If no locking is provided, the door also closes and remains closed, but is not locked.

The mode of operation activated is indicated in each case by the associated red LED. The current mode is stored in the event of a power failure.

Programming keys:



"record" key





"plus" programming key




"minus" programming key

Auxiliary functions:

If the  key is pressed in the "Locked" status, an **SSK opening** is performed.

If the  key is pressed again in the "Continuously open" status, **manual control** is obtained.

If the  key is pressed for approx. 5 secs, a **new start of the control** is performed (software reset). The settings stored (see page 7) remain in the memory.

2nd level (control blocked)

It is possible to block the control unit to prevent unauthorized use. Blocking and release are performed by pressing 3 keys in turn.

Block BDE-E:    (the  LED lights when blocked)

Release BDE-E:   

3rd level (programming level)

Entry to programming level with key sequence:



LED flashes slowly.

Selection of following menus by pressing relevant key.

The value is displayed while the key remains pressed.

The **value display** is made proportionally in max. 40 increments (partial steps). Divided into 5 LEDs from left to right, starting with LED 1 , whereby every LED is divided into 8 increments. Every constantly lit LED represents 20 %. The range from 0 % to 100 % is therefore covered, similar to a vehicle tachometer.

Example: 75 % winter opening

LEDs fully lit (corresponding to 3 x 20 % = 60 %)
 LED has an on/off ratio of 6/2 (corresponding to 6 increments = 15 %)
 LED remains off Therefore total 60 % + 15 % = 75 %.

Menu functions:

	Programming function	Range	Step width	Standard values
	Closing speed	3 - 50 cm/s	1,25 cm/s	40 cm/s
	Winter opening width *	20 cm - 100%	approx. 1cm steps	62,5%
	Door hold-open time	0 - 20 s	0,5 s	1 s
	Door hold open time-SSK	0 - 20 s	0,5 s	10 s
	Opening speed	3 - 70 cm/s	1,75 cm/s	50 cm/s

* In the "continuously open" mode the change in winter opening width can be observed directly

Setting:

Following menu selection (the LED lights for the menu selected) the value can be changed by pressing the or keys several times.

The current value is displayed while these keys are pressed.

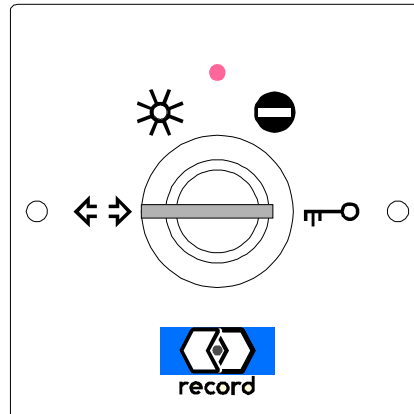
The setting returns to the lowest value at the upper range limit and vice-versa.

Simultaneous operation of the **and** keys resets the values to the **standard values**.

The key must be pressed briefly to leave the programming level. It is also left automatically if no key is pressed for 3 minutes (timeout).

5.2 Mechanical control unit (BDE-M)

The mechanical control unit BDE-M is fitted with a rotary keyswitch, which is used to set the various modes of operation. The keyswitch can be withdrawn in any position.



Modes of operation:



Automatic mode with total opening width (summer opening):

This mode of operation corresponds to standard operation. The door is opened by an actuating device (e.g. radar). The door closes again after the hold-open time.



Continuously open: door opens and remains in the open position.



Automatic mode with one-way traffic (shop closing time control): The door only opens in response to the actuating device on inside of door (radar) or by an optional key-operated contact (SSK).



Automatic locking (if present): The door is locked automatically after closing. Opening with the last opening width effective can only be initiated with the key-operated contact SSK.

Warning: Door opening in the locked condition without auxiliary battery or without manual unlocking is no longer ensured in the event of a power failure !

If no locking is provided, the door also closes and remains closed, but is not locked.

Mode indication:

The BDE-M has only 1 LED, which lights when the mains or battery voltage is applied.

Reset key:

This concealed key is operated using a paper clip approx. 25 mm long. A small hole is provided for this purpose at the centre of the Record logo. If the key is pressed for approx. 5 seconds, a **new start of the control unit** is performed (software reset). The settings stored (see page 7) remain in the memory.

5.3 Emergency opening with power failure

If an auxiliary battery (BAT 16) is present, all functions of the automatic door are maintained until the battery is discharged. This time depends on the weight of the door leaves and the number of openings, but at least 100 opening cycles, including locking and unlocking, are ensured.

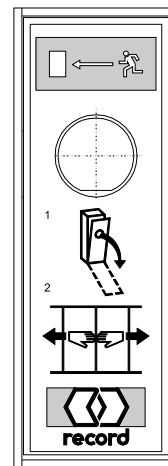
If no auxiliary battery is present, the door stops if the power fails. If it was locked ("Automatic locking" position) it also remains locked when the power is removed.

A In "Automatic locking" mode with manual unlocking (Bowden cable) outside and/or inside, if present

- 1) Unlocking flap opened

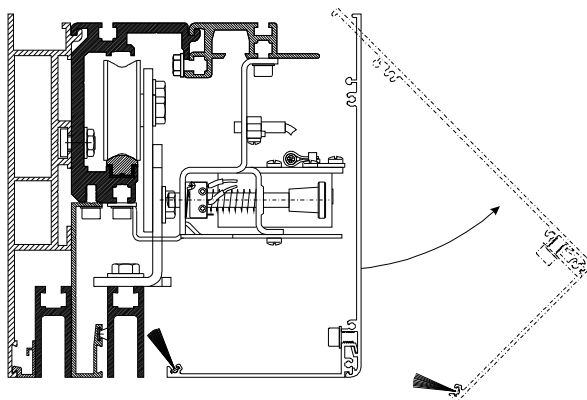
The door is unlocked by pulling the unlocking flap down firmly, but it cannot be locked again.

- 2) Door can be moved by hand

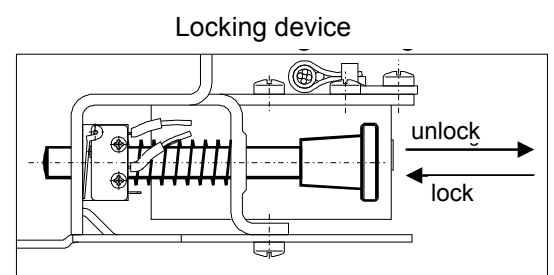


B In "Automatic locking" mode by opening the casing on the inside of the door

- 1) Open casing (fold open)



- 2) Unlock door leaves by manual actuation of the green unlocking bolt



- 3) Door can be moved by hand

6. Care and maintenance instructions

General

The record system 16 sliding door operator is a product of the latest technology. It has been carefully made and only leaves the factory following thorough testing.

Automatic sliding doors should be operated and maintained to ensure safety at all times.

Care

The entire sliding door system including safety photocells can be cleaned with a damp cloth and commercially available cleaning agents. The floor guides should be kept free from dirt. It is recommended to select the "Continuously open" or "Locked" mode of operation for this purpose, so that the door does not continually open and close unnecessarily.

Maintenance, periodic inspection

It is recommended to have a technical safety test with servicing performed by a specialist before first commissioning and as required, but at least twice a year.

Regular testing and servicing by our fully trained personnel therefore offers the best guarantee for a long service life and satisfactory operation. We therefore recommend the signing of a maintenance agreement. Our service department will be pleased to submit a proposal.

If nevertheless a fault should occur, which you cannot eliminate (see section 7) our service organisation or the maintenance personnel of our agents are available.

Service centres

Moen Automatikk AS, Oslo - Tlf: 22 29 16 00 www.k-moen.no

Alternative service centre: _____

7. Action in event of faults

7.1 Fault indication

Various indications are given for an irregularity or fault depending on the control unit connected BDE-E or BDE-M.

When using a mechanical BDE-M

With the BDE-M it is not possible to display a detailed status signal. If a fault occurs, please proceed according to the details on page 12.

When using an electronic BDE-E

An indication is given automatically on the BDE-E for a fault (status signal). This indication is coded.

The status signal and current mode of operation are then displayed alternately every 5 seconds. A status signal can be recognised by the rapid flashing of at least 2 LEDs simultaneously.

Status signals with a "W" are warnings. For these the fault relay contact output is not connected.

Elimination of the irregularity leading to the status signal is performed according to section 7.2.

7.2 Troubleshooting

The majority of faults can be eliminated by consulting the following table. If the fault cannot be eliminated even after working through the table, please contact the service centre. Please also contact the service centre directly when no recommended action is specified in the table.

						Status	Symptom, fault, door behaviour	Cause	Action (consult service if no recommend-action)
1	2	3	4	5	6				
				●	●	03	Door remains open	Actuating device inside active longer than 60 s	
			●			04 W	Door stops	Manual operation	
			●		●	05	Door remains open	Actuating device outside active longer than 60 s	
			●	●		06	Door does not unlock	Unlocking fault	Unlock manually (see section 5.3)
			●	●	●	07*	Door remains open	BDE electronic defective	
		●			●	09	Battery does not function	Battery fuse open	
		●		●		10	Door cannot lock	Obstacle (stone, dirt) between door leaves	Remove obstacle
		●		●	●	11*		Difference in AKI	
		●	●			12	Battery does not function	Battery defective	
		●	●		●	13*W	Door opens independent	Redundancy-test	
		●	●	●		14	Door cannot lock	Lock defective	
		●	●	●	●	15*	Door remains open	EMERGENCY OPEN signal on RED is interrupted	Release EMERGENCY OPEN button
	●				●	17*		Pass over door opening time	
	●			●		18		VAK-contact closed in automatic-mode	
	●			●	●	19*		Difference in mode of operation	
	●		●			20*		Door leaf interception error	
	●		●		●	21*		Door open-switch does not open	
	●		●	●		22*		Door open-switch does not close	
	●		●	●	●	23*		RED-modul defective	
	●	●				24*		Door is closing in hold-open mode	
	●	●			●	25*		RED-connection interrupted	
	●	●		●		26	Peripheral devices take too much power	Electrical overload	
	●	●		●	●	27*	Door remains open	Failure on RED-locking test	
	●	●	●		●	29	Door leaves are not locked	TOS not locked in locked mode	Lock rotary switch on the door leaves
	●	●	●	●		30	Door leaves locked	TOS locked in automatic mode	Unlock rotary switch on the door leaves
	●	●	●	●	●	31	Door stops	EMERGENCY STOP button operated	Release EMERGENCY STOP button
●					●	33	Door remains open	Photocell (ELS) 1 fault, possibly dirty	Wipe over lens of photocell
●				●		34	Door remains open	Photocell (ELS) 2 fault, possibly dirty	Wipe over lens of photocell
●				●	●	35	Door functions	Lock defective	
●			●			36	Door functions	Lock defective	
●			●		●	37	Door stops	Faulty motor current	
●			●	●		38	Door changes to manual control	Excess temperature motor 1	Wait until motor has cooled
●			●	●	●	39	Peripheral devices take too much power	Overload on +24 V supply	
●		●				40	Door changes to manual control	Excess temperature motor 2	Wait until motor has cooled
●		●			●	41	Door stops	Motor 1 thermal sensor defective	
●		●		●		42	Door stops	Motor 2 thermal sensor defective	
						Status	Symptom, fault, door behaviour	Cause	Action (consult service if no

1	2	3	4	5	6				recommend-action)
●		●		●	●	43	Door stops	Incremental transmitter defective	
●		●	●			44 W	Minimum hold-open time increased to 4 secs.	Motor current time product large	Wait until motor has cooled
●		●	●		●	45	Minimum hold-open time increased to 20 secs.	Motor current time product too large	Wait until motor has cooled
●		●	●	●		46	Door stops	Control unit defective	
●		●	●	●	●	47	Door remains open or closed	Ext. safety sensor active longer than 60 s	Remove obstacle from surveillance range of sensor
●	●					48	Door remains open or closed	NSK- or SÖK-contact active	Release contact
●	●				●	49	Door remains open	Alarm "CO48-Ventouse"	
●	●			●		50	Door stops	Control unit defective	
●	●			●	●	51*	Door remains open	Door total open switch does not close	
●	●		●			52*W	Door remains open	Door total open switch does not open	
●	●		●		●	53	Door stops	Interruption Motor 1	
●	●		●	●		54 W	Door jolts possibly while opening	Calibration run	Initiate 3 - 4 opening cycles
●	●		●	●	●	55	Battery operation	Power failure	Reconnect mains
●	●	●				56*		Connecting rod get jammed	
●	●	●			●	57	Door stops	Interruption Motor 2	
●	●	●		●		58	Door functions	FEM-connection interrupted	
●	●	●		●	●	59	Door remains open	ELS sensor active longer than 60 s	Wipe over lens of photocell
●	●	●	●			60	Door stops	Parameter memory defective	
●	●	●	●		●	61	Door remains open	Key operated contact active longer than 60 s	Release key contact
●	●	●	●	●		62 W	Higher-order mode of operation present	Control unit BDE has no priority	Cancel higher-order mode of operation
●	●	●	●	●	●	63 W	Door functions	Collision (only 24V-Version)	

* These status numbers only exist in redundancy-systems

⇒ **A status number with a "W" is a warning !!**