ECO **ETS – ASSEMBLY BUDDY**

AUTOMATIC SWING DOOR DRIVE

■ SYSTEM TECHNOLOGY FOR THE DOOR

ECO

ELECTROMOTIVE SWING DOOR DRIVES ECO **ETS**

Single-leaf swing door drives ▪ for standard and external doors

Types of doors

Tests / standards

CE DIN 18 650 EN 16 005

ETS 42
(EN 2 – 4)

ETS 73
(EN 3 – 7)

Single-leaf swing door drives ▪ for fire and smoke protection doors

Types of doors

Tests / standards

F CE DIN 18 650 EN 16 005 DIN 18263-4

ETS 42-R[1)]
(EN 2 – 4)

ETS 64-R
(EN 3 – 6)

Single-leaf swing door system
for fire and smoke protection doors (and Invers)
ETS 42-R [1)]
ETS 64-R
ETS 64-R (GSD)
ETS 64-R IRM
ETS 64-R IRM (GSD)

Slide rail for ETS
GS-**ETS** 620-ÖB[2)]
GS-**ETS** 830[3)]

Normal arm for ETS
NG-**ETS** 250[4)]
NG-**ETS** 400[5)]

R = Fire protection, GSD = Version with slide rail pushing (BG transom installation), GSZ = Version slide rail pulling (BS-normal installation), IRM = Integrated smoke detector, NG = Version with standard arm pushing (BG transom installation), SRI = Integrated closing sequence control

1) From 2020 **2)** Type of installation GSZ or GSD (up to 30 mm lintel depth / fire protection door) **3)** Type of installation SZ, GSD or leaf installation (up to 200 mm lintel depth / no fire protection door) **4)** For lintel up to 250 mm (fire protection door) **5)** For lintel up to 400 mm (not fire protection door)

Double-leaf drives ▪ for fire and smoke protection doors

Types of doors

Tests / standards

ETS 64-R IRM-SRI

Double-leaf drives
for fire protection doors (complete sets)
ETS 64-R IRM-SRI (NG)
ETS 64-R IRM-SRI (GSD)
ETS 64-R IRM-SRI (GSZ)

Double-leaf drives
for standard and external doors
ETS 42-2
ETS 73-2

CABLE CLUTTER – WHERE'S THE MISTAKE?

We won't leave you alone.

From now on, you'll always have him by your side,
the functional ECO **ETS** – Assembly Buddy.

And if we were not able to answer all your questions,
please do not hesitate to contact us.

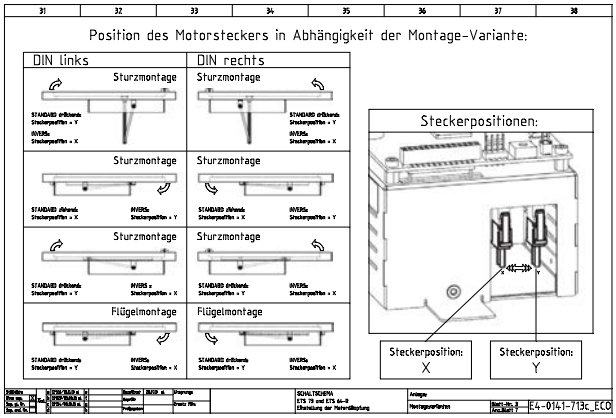
Your ECO contact for intelligent door management

+49 2373 9276 - 899
eco-service@eco-schulte.de

SHORT MANUAL ETS 73 AND ETS 64

1. Position the motor plug

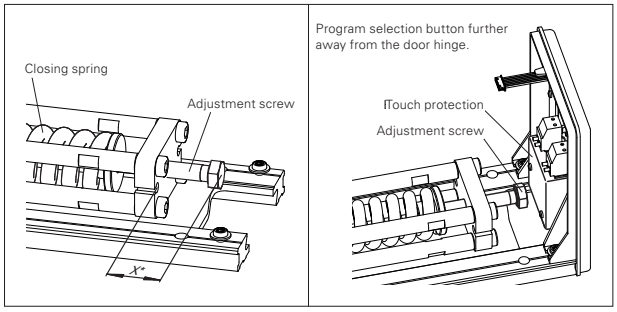
Depending on the application (mounting variant) the position of the motor plug must be adapted. See table:



2. Force of the closing spring

The right preload of the spring (measure X) must be adjusted accorting to the table!

Standard drive					
EN-Class	EN 3	EN 4	EN 5	EN 6	EN 7
Leaf width	950 mm	1.100 mm	1.250 mm	1.400 mm	1.600 mm
Closing torque 0…4°	18 Nm	26 Nm	37 Nm	54 Nm	87 Nm
Standard arm					
Measure X*	37 mm	34 mm	29 mm	23 mm	20 mm
Sliding rail pull					
Measure X*	34 mm	30 mm	23 mm	15 mm	12 mm
Sliding rail push					
Measure X*	32 mm	29 mm	22 mm	14 mm	12 mm

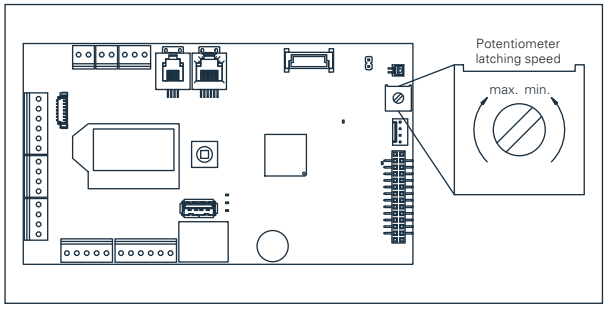


* Measure X is an approximate value for lintel depth 0 mm. The force that is needed to open a door manually must not exceed 150 Nm. The force has to be measured as a static force on the main closing edge (right angle to the door leaf) in a height of 1.000 mm ± 19 mm.

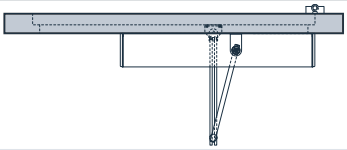
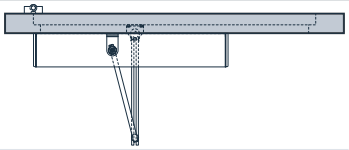
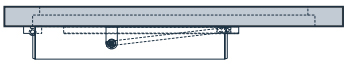
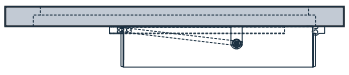
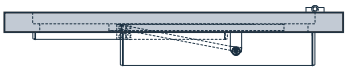
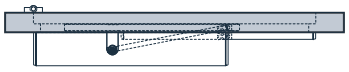
3. Area for the latching function

The mechanical latching speed can be adjusted via Poti (on the board, blue).

Important! the door has to close safely when it is currentless. Raise the latching spped if needed (see point 2).

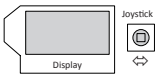


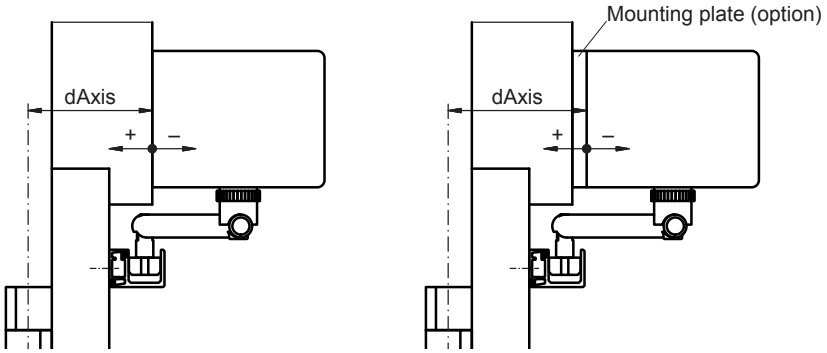
4. Mounting variants

DIN left		DIN right	
Lintel mounting		**Lintel mounting**	
STANDARD pushing: plug position = Y	INVERSE: plug position = X	STANDARD pushing: plug position = Y	INVERSE: plug position = X
Lintel mounting		**Lintel mounting**	
STANDARD pulling: plug position: X	INVERSE: plug position = Y	STANDARD pulling: plug position = X	INVERSE: plug position = Y
Lintel mounting		**Lintel mounting**	
STANDARD pushing: plug position = Y	INVERSE: plug position = X	STANDARD pushing: plug position = Y	INVERSE: plug position = X
Leaf mounting		**Leaf mounting**	
STANDARD pushing: plug position = Y	INVERSE: plug position = X	STANDARD pushing: plug position = Y	INVERSE: plug position = X

SHORT MANUAL ETS 73 AND ETS 64

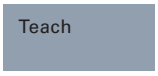
5. Commissioning

Procedure	
1. Switch on drive on the side cap (Power-up). First acknowledge the fire alarm for the fire protection variants.	
2. Adjust display direction via joystick: Move down the joystick once ⇨ display direction turns into readable position.	Press Down
3. Adjust linkage type Rod: Move joystick left / right (see parameter chapter 7.1). Confirm the right linkage type with OK: Shortly push the joystick in resting position.	Rod STD-PH
4. Adjustment of the distance dAxis (Distance in cm between roatation axis of the hinge and the drive's mounting level ⇨ see illustration below) **Note:** dAxis is a reference value. dAxis must be adapted to the mounting circumstances.	dAxis 5 cm
5. Adjust opening angle Ao and confirm via OK. ⚠ Attention: Steps 4 and 5 are affected by the mounting measures to the hinge.	Ao 95°
6. If available: Chose low energy (low energy operation) and confirm via OK. If low energy: Adjust leaf width and weight and confirm with OK.	Low En OFF Width 85 cm Weight 75 kg
7. Adjust opening speed Vo and confirm with OK.	Vo 6
8. Adjust closing speed Vc and confirm with OK.	Vc 4
9. If required: Adjust inverse operation (opening by spring force) and confirm with OK.	Invers OFF

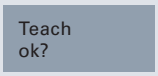


Procedure

10. Chose set up procedure (Teach) and confirm with OK.

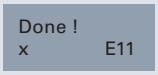


11. Start the set up procedure (Teach) and confirm with OK.



12. The set up procedure starts automatically after 10 seconds (or directyl by moving the joystick ⇦⇧⇨⇩, without OK). The drive beeps during the set up process.
Following learning trip is made:
- Inverse: First, the closed position is searched at creep spped.
- Creep spped in opening direction
- Creep speed in closing direction

13. The following message is displayed at the end of the learning trip:

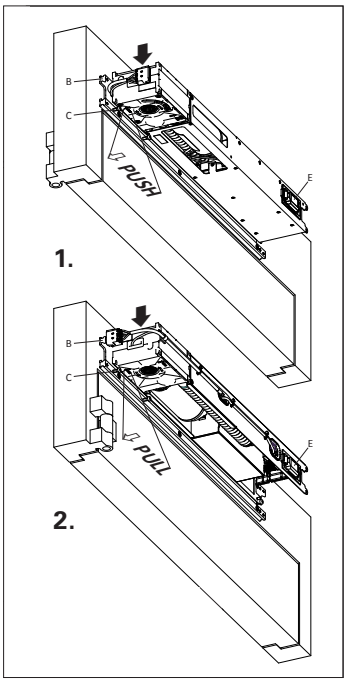


14. Display should now show the following:
E11 shows that the set up process is not yet finished.

15. Use the opening command to open and close the door leaf. This opens and closes at normal speed (withouth obstacle detection).
Note: Door leaf must not be obstructed.
Display should now show the following: The set up process is now complete.

Note:
A new set up process is necessary if:
- the spring tension was changed
- the leaf weight was changed
- the linkage type was changed
- the opening angle Ao was changed
- the Teach was obstructed before 20° opening angle
- the axis distance (dAxis) was changed
- the parameter inverse was changed.

SHORT MANUAL ETS 42



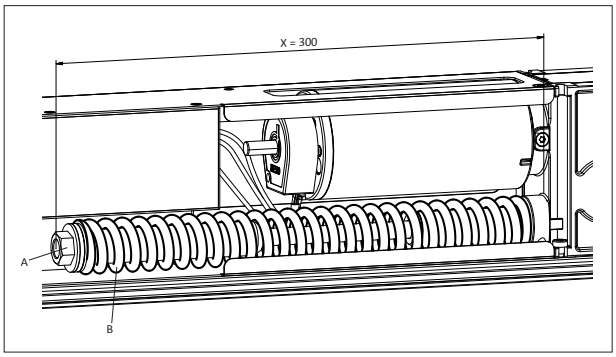
1. Mounting drive

1. For standard arm RS and Slide rail RG pushing:
For standard arm RS and Slide rail RG pushing: Hang the drive module (with designation PUSH pointing to chassis profile (B)) on the two pre-assembled screws (C). The position of the control unit (E) must be adjusted accordingly in advance.

2. For Slide rail pulling:
ng the drive module (with designation PULL pointing to chassis profile (B)) on the tow pre-assembled screws (C).

2. Adjustment Closing force spring and Poti

The closing spring (B) is preloaded to dimension X=300 mm on delivery. In exceptional cases, the spring tension (Dimension X) can be adjustet between 300 mm and max. 267 mm (without pre-assembled linkage).



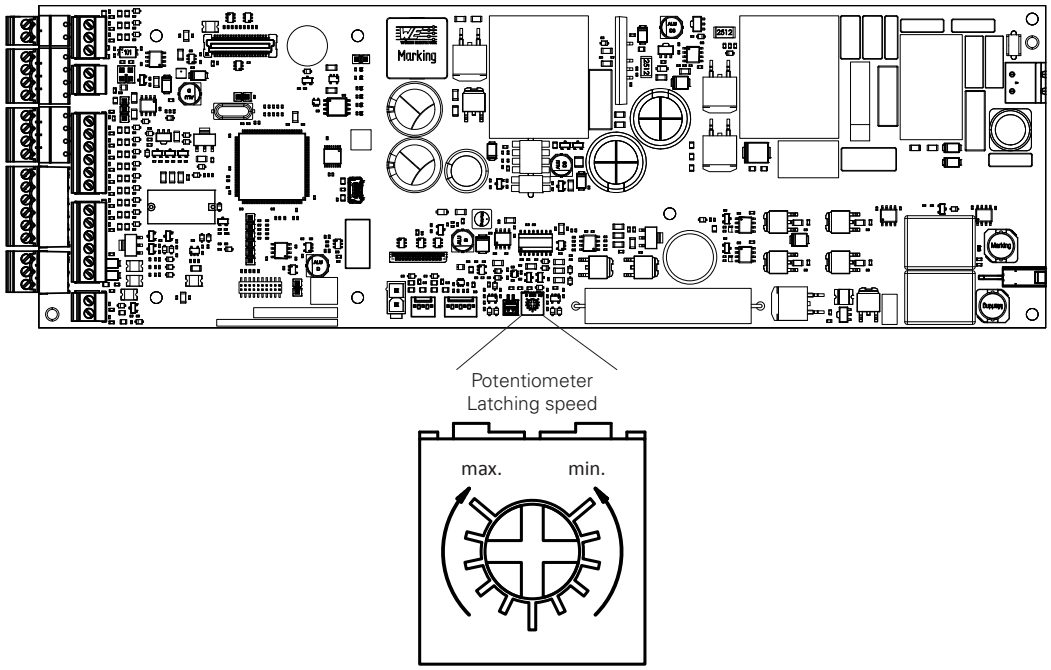
Note: The correct closing spring preload must be set before the automatic setup procedure! In general, the closing spring of the standard drive can be set weaker. Any existing door lock must close correctly. Otherwise adjust closing spring preload or latching speed dampin (potentiometer) accordingly.

3. Latching speed

If the system is in a currentless condition or in MANUAL mode, the motor acts as an attenuator and leads to an even closing speed until the closed position is reached.

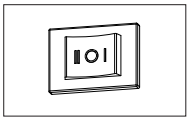
So that the door leaf can be opened and closed in currentless condition or falls into the door lock reliably in the MANUAL operating mode, the drive is equipped with a slam function. The potentiometer can be used to adjust the motor damping (shortly before the close position) so that the compression spring exerts sufficient force to push the door leaf into the door lock.

4. Control print



5. Operating modes

The following operating modes can be selected using the program selection switch (A):



AUTOMATIC (I)

- Automatic opening via opening elements inside/outside + Key.
- Automatic closing after the adjustable hold-open time has elapsed.

HAND (0)

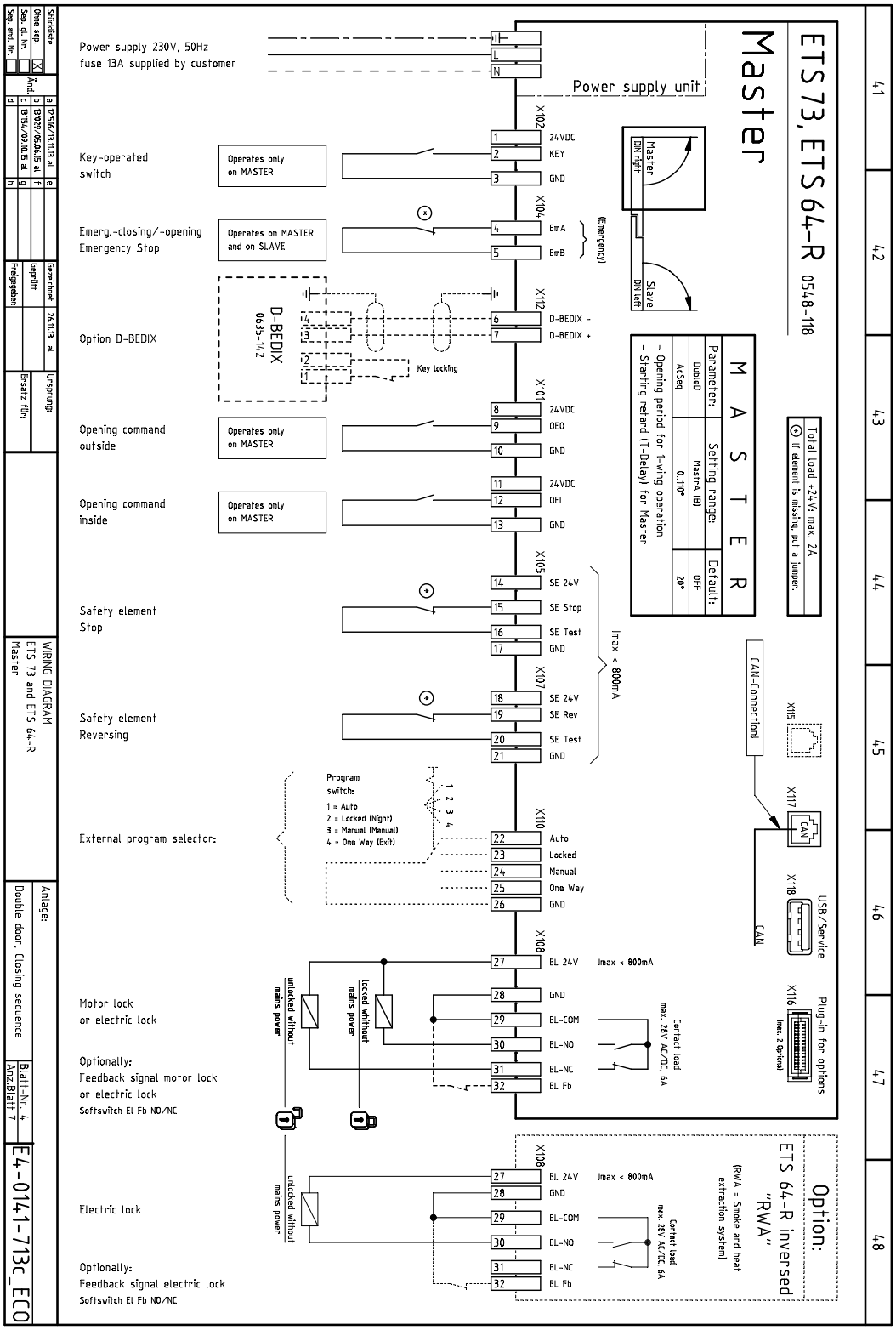
- The drive and the operating elements are switched off
- The door leaf can be opened manually
- The door leaf is closed from every position by spring force (Inverse = Spring opening, if not locked)

OFFEN (II)

- The door leaf opens automatically and stays in OPEN-position.

CABLE PLAN

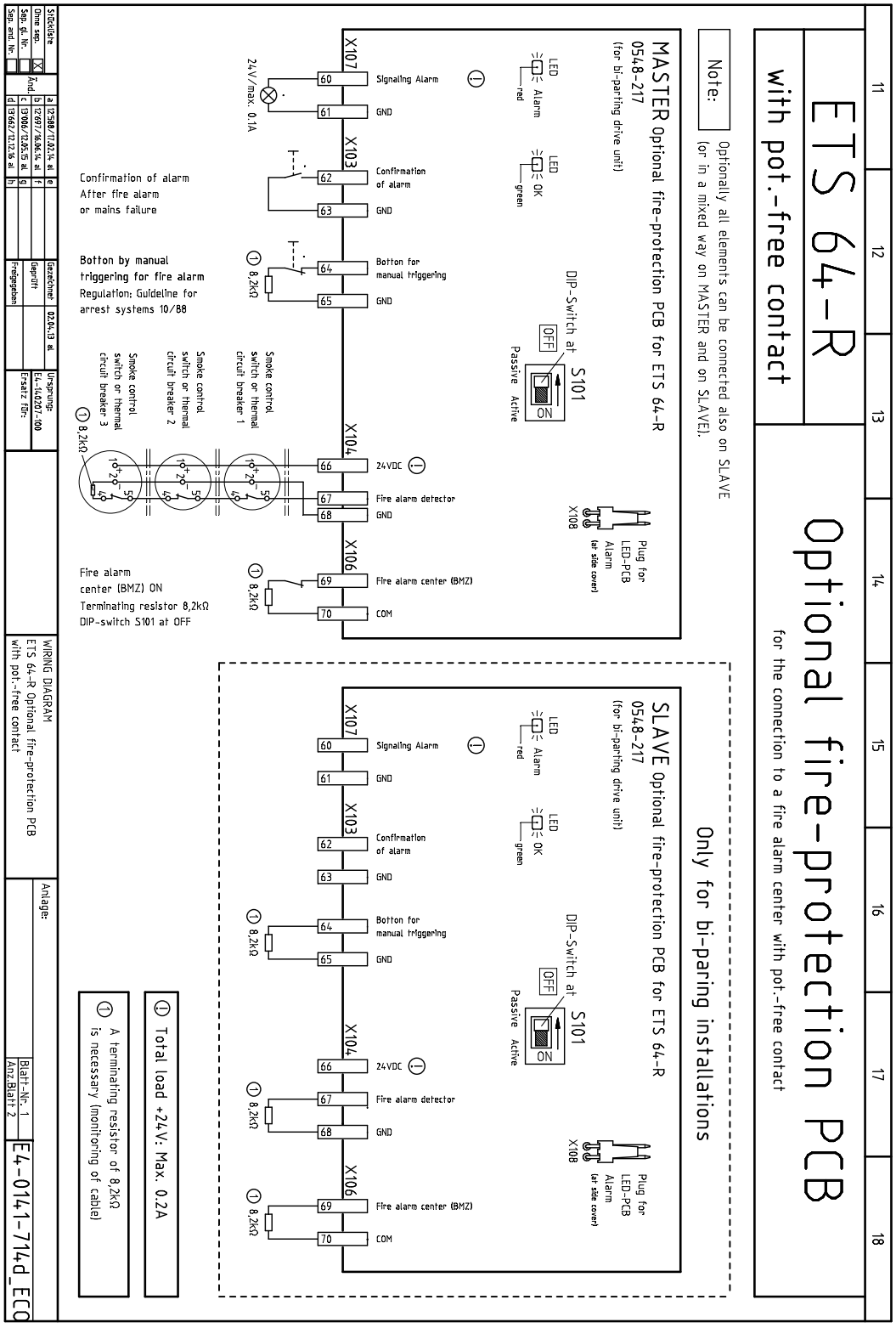
ECO **ETS 73 MASTER**
ECO **ETS 64-R MASTER**



CABLE PLAN

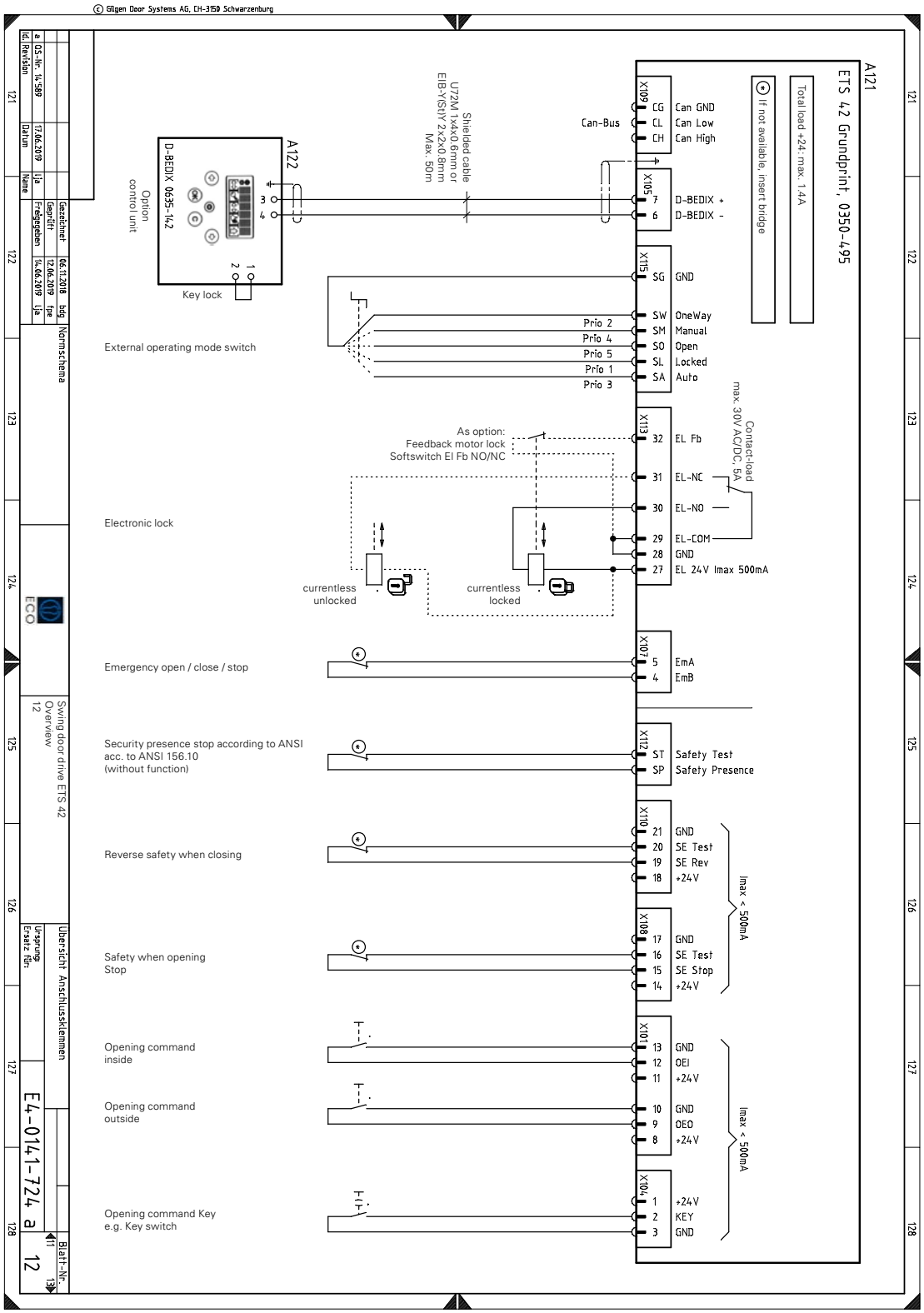
ECO **ETS 64-R**

WITH 24V/48V SIGNAL



CABLE PLAN

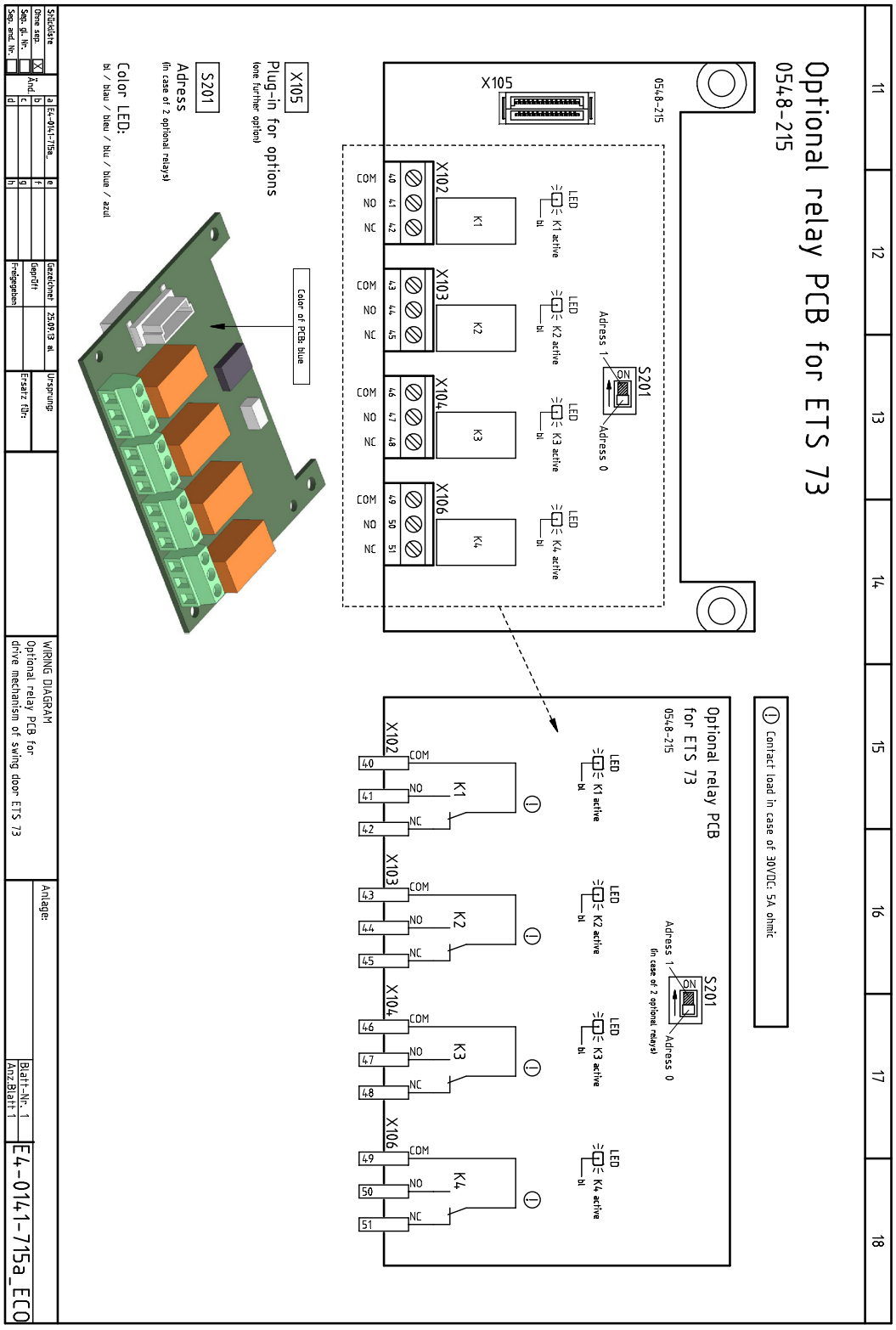
ETS 42



CABLE PLAN

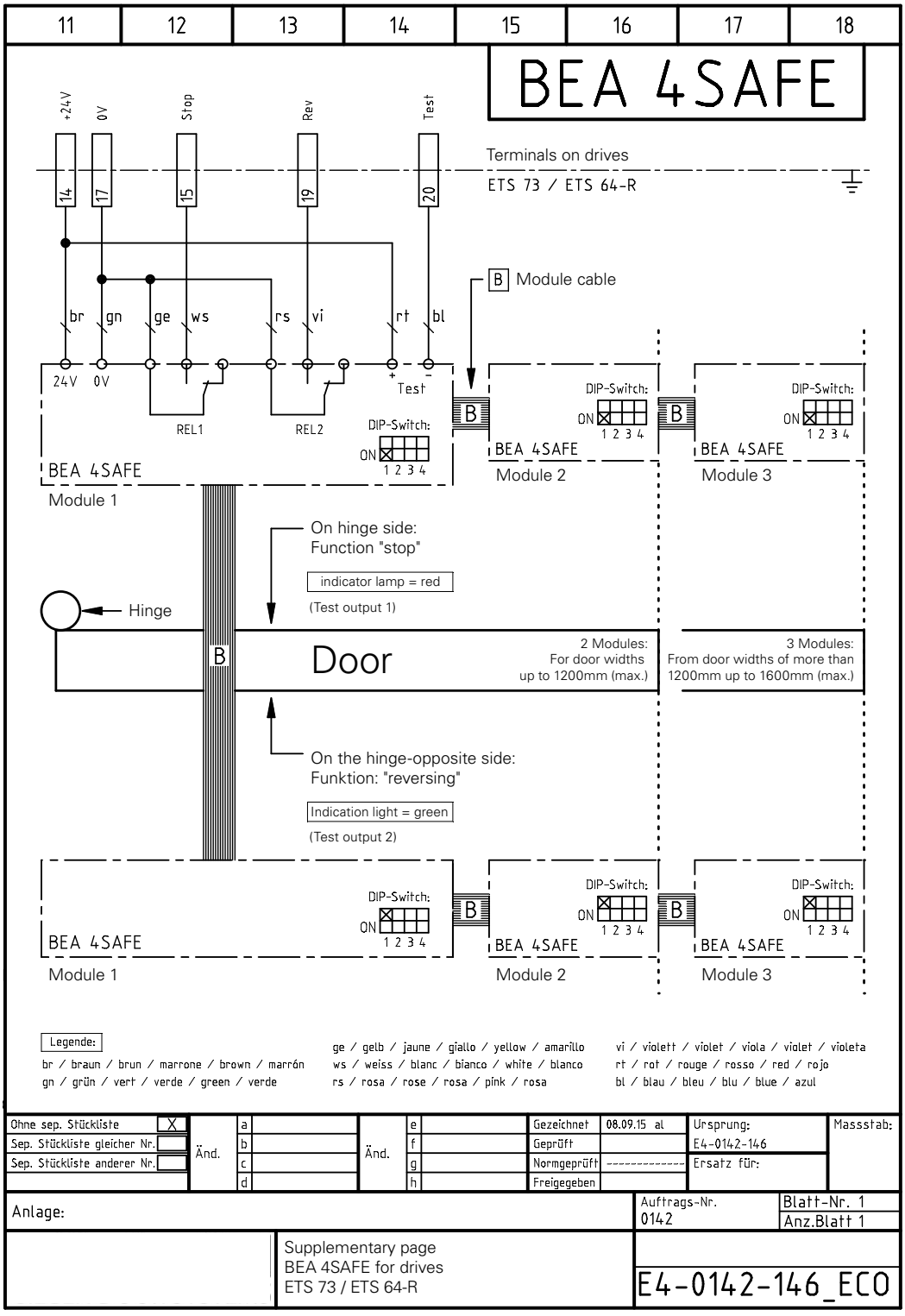
ECO **ETS 73**

OPTIONAL PRINT



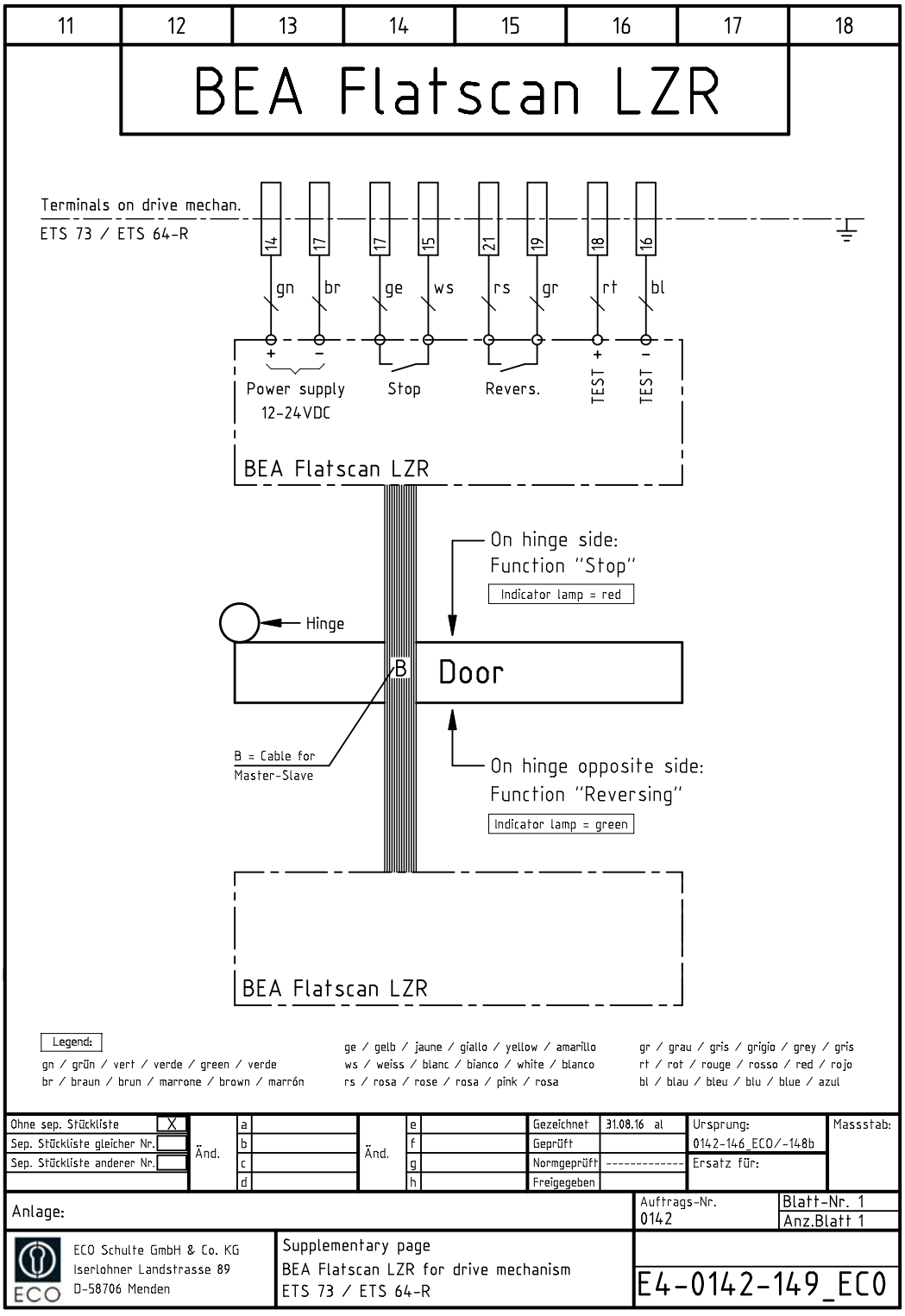
CABLE PLAN **ETS 73 ▪ ETS 64 ▪ ETS 42**

BEA 4 SAFE (SENSOR BAR)



CABLE PLAN **ETS 73 ▪ ETS 64 ▪ ETS 42**

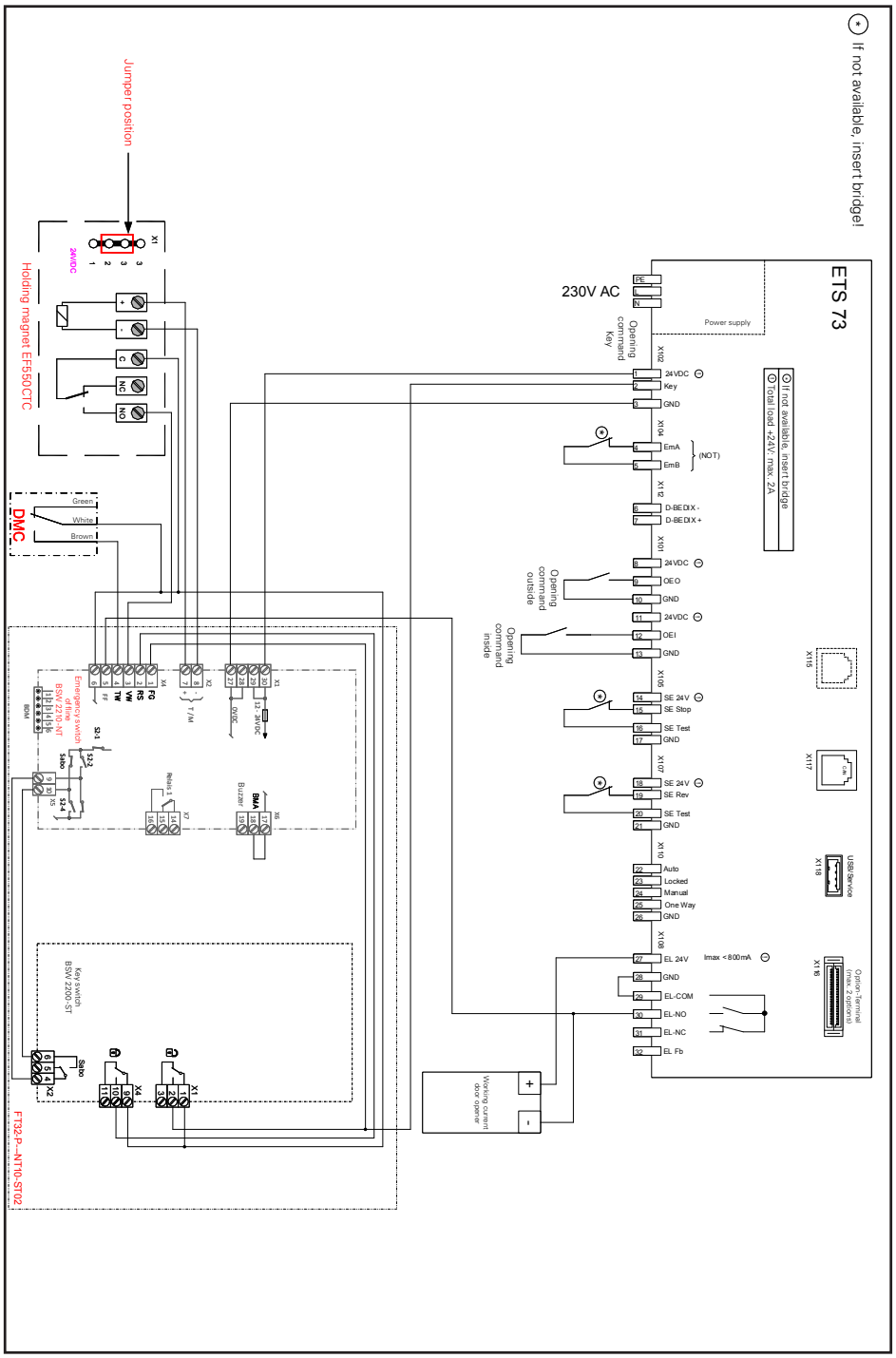
BEA FLATSCAN LZR (LASER SENSOR)



CABLE PLAN

ETS 73 ▪ ETS 64 ▪ ETS 42

ESCAPE ROUTE TERMINAL "OFFLINE"
WITH **ETS**, SURFACE HOLDING MAGNET AND E-STRIKE

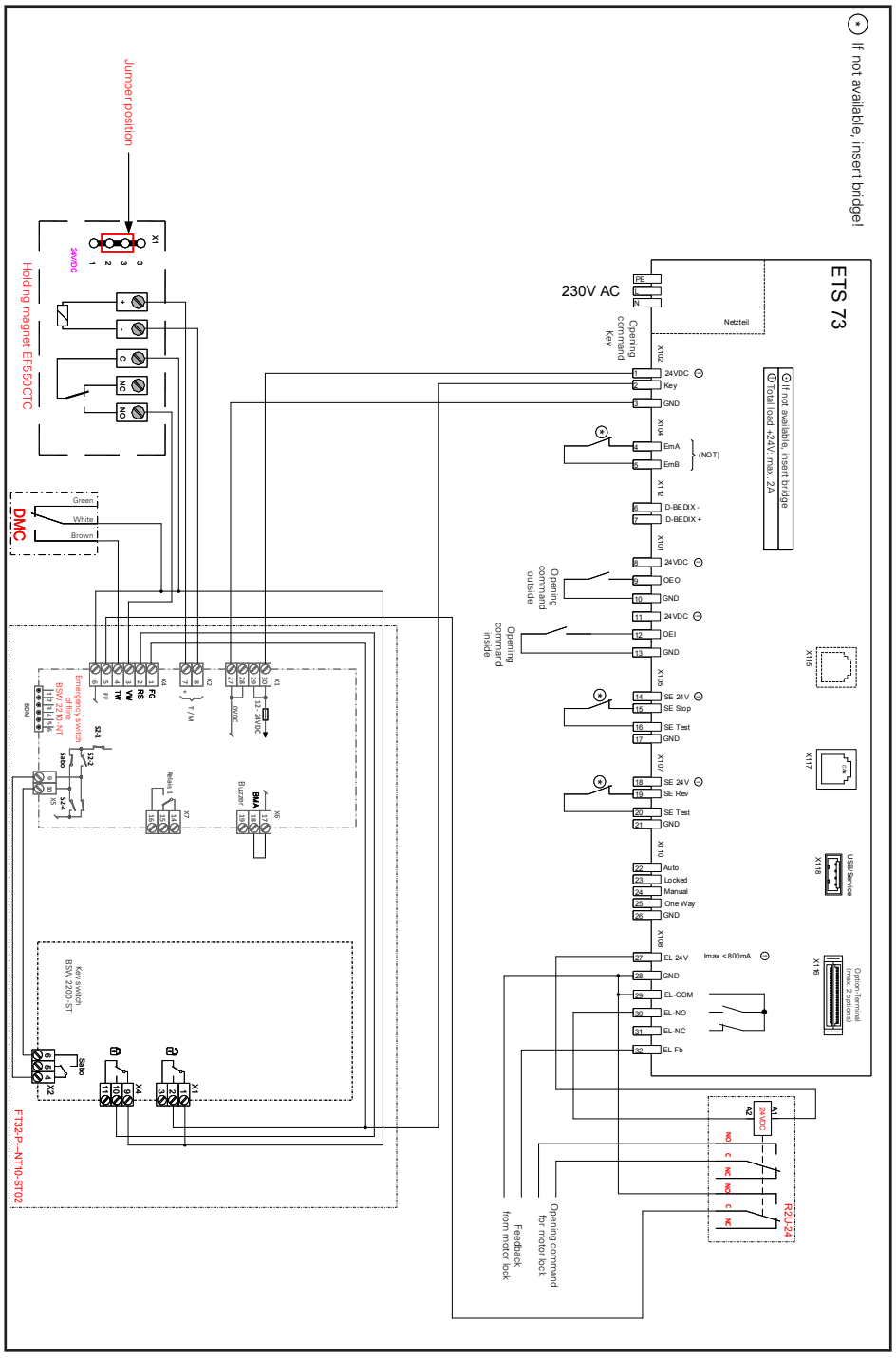


CABLE PLAN

ETS 73 ▪ ETS 64 ▪ ETS 42

ESCAPE ROUTE TERMINAL "OFFLINE"

WITH **ETS**, MOTOR LOCK AND SURFACE HOLDING MAGNET

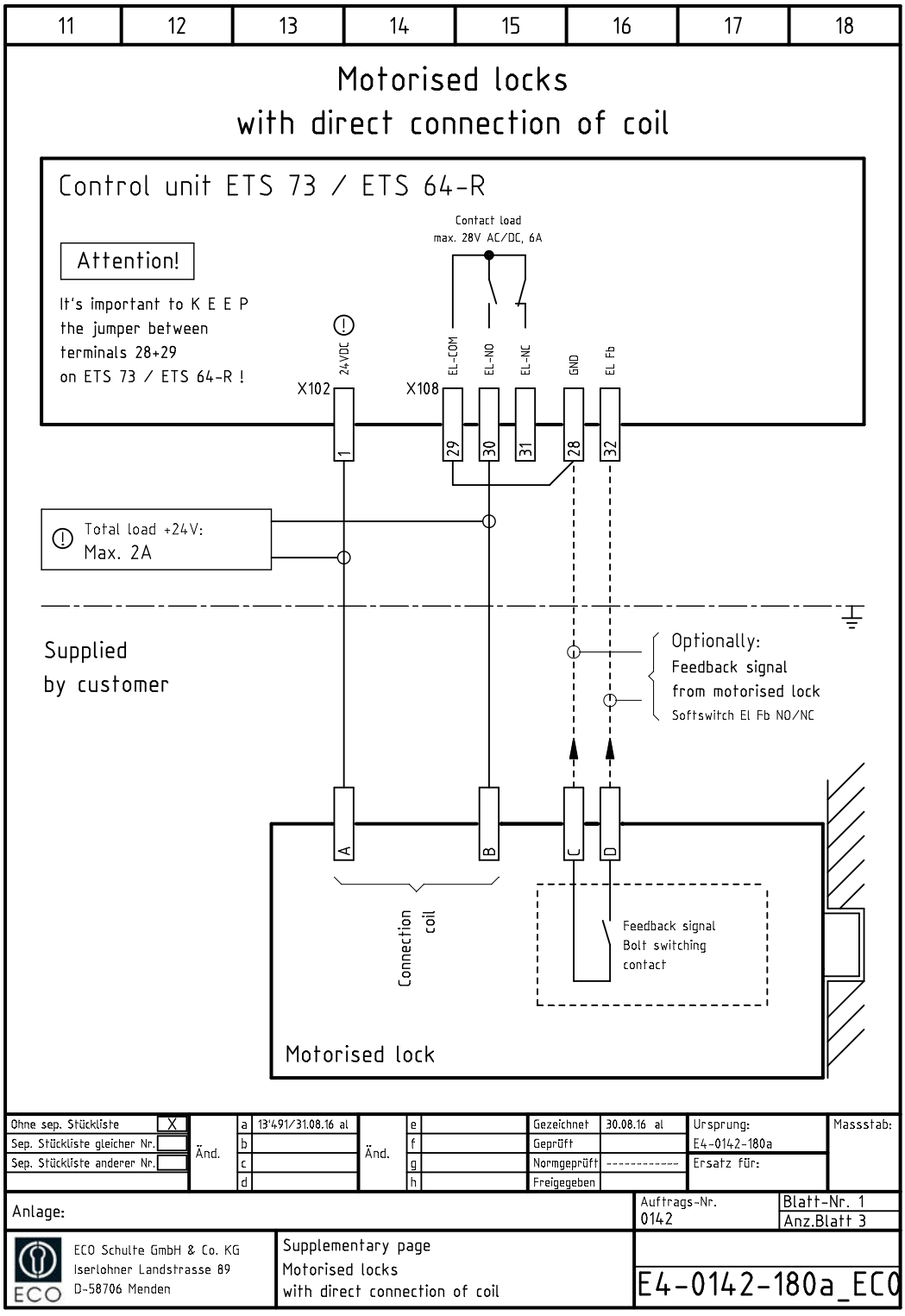


* Accessorie R2U-24 is required for this solution.

CABLE PLAN

MOTOR LOCKS

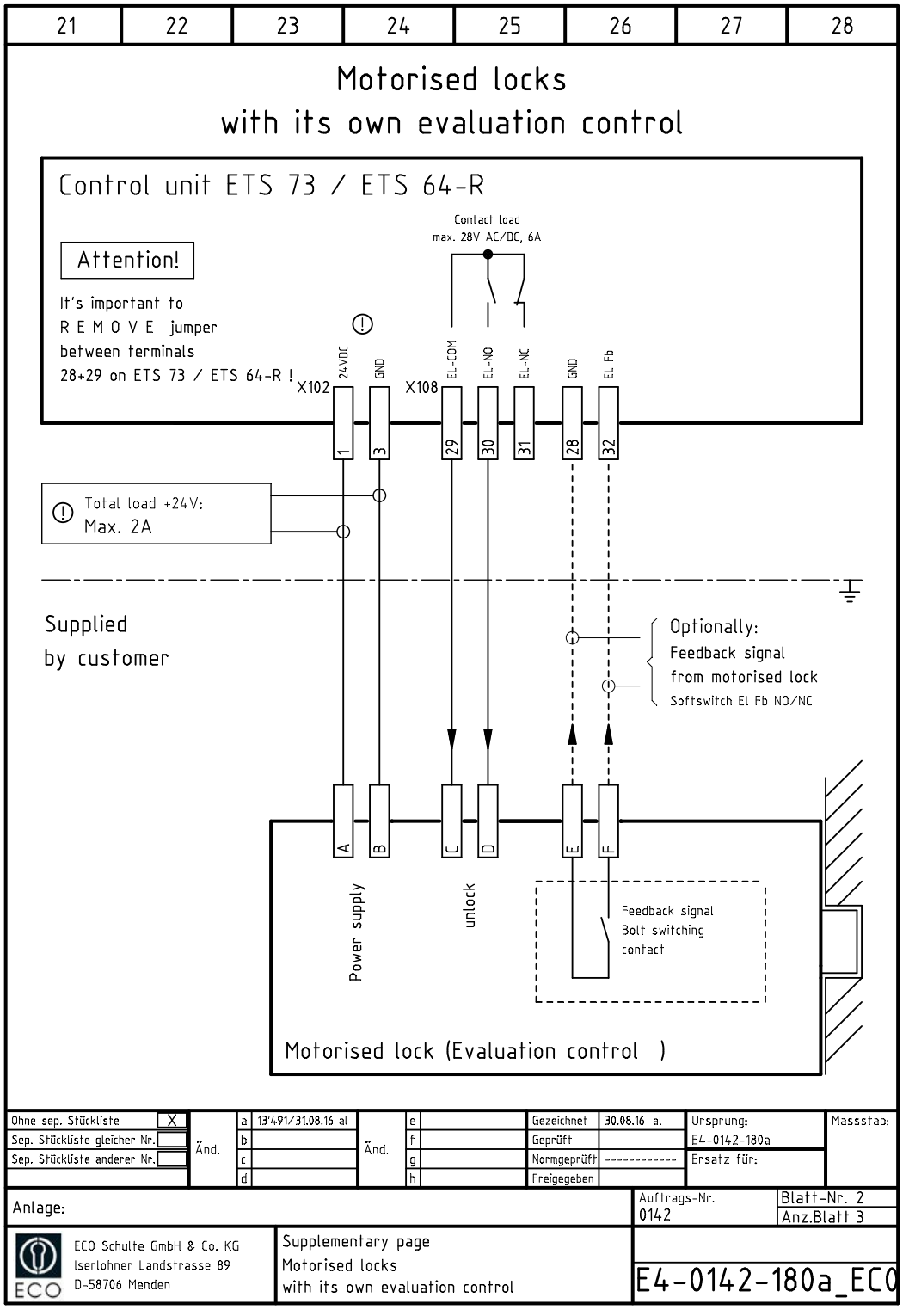
WITH DIRECT CONNECTION OF THE COIL



CABLE PLAN

MOTOR LOCKS

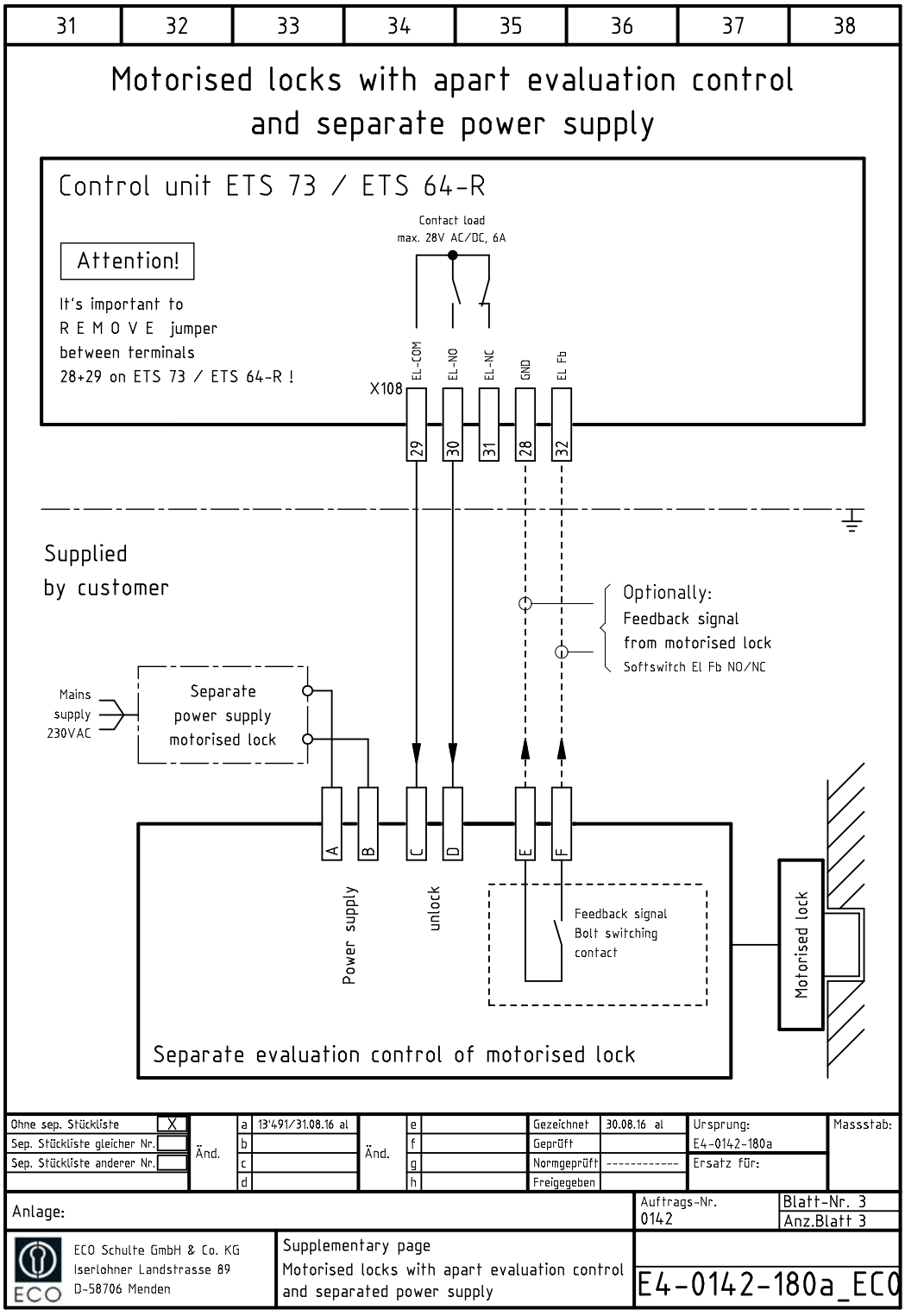
WITH OWN EVALUATION CONTROL



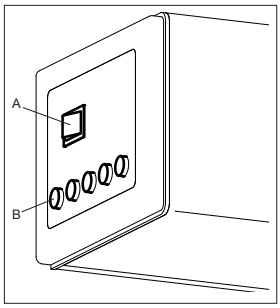
CABLE PLAN

MOTOR LOCKS

WITH SEPARATE EVALUTATION CONTROL AND POWER SUPPLY



OPERATION



Modes of operation

Following modes of operation are choosable via program selection button.

AUTOMATIC
Automatic opening via opening elements inside / outside + Key.
Automatic closing after the adjustable hold open time.

NIGHT
The door leaf only opens via the opening element Key (Key switch outside)

OPEN
Door leaf opens automatically and remains in the OPEN-position.

HAND
The drive and the control elements are switched off.
The door leaf can be opened manually.
The door leaf is closed from every position via spring force (Invers = Spring opening, if not locked)

EXIT
The door leaf only opens via opening elements inside and Key

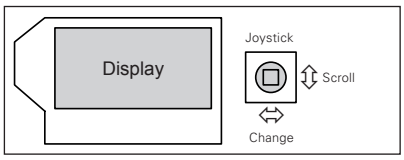
Set up process (Teach)
Close the door leaf completely (Inverse = open). Push the buttons HAND and EXIT together for at least 5 seconds. All mistakes are deleted and the set up proces starts.

Settings

The parameters can be changed via display and joystick on the control device.

The movements of the joystick have the following effects:

- Move joystick straig up/down:
  ⇨ Scroll through display
- Move joystick horizontal to the left/right:
  ⇨ Change settings
- Shortly push the joystick in resting position:
  ⇨ Confirm: OK
- Joystick combination ⇦ ⇦ ⇦ ⇨ ⇨ ⇨
  Open passwort protected areas



CONNECTIONS

Product	Connections	Illustration
E-Strike (FS/RS)	Terminals 27 - 30 Currentless locked	
E-Strike E-Strike for escape routes	Terminals 27 - 31 Currentless unlocked	
Dead bolt switch contact (RSK)	NC contacts from RSK to terminals 28 and 32 In the "Config menu" set EL-FB to N.C. If the lock is locked, **ETS** does not start.	

Contactless surface button (BFT)

Opening command inside		Opening command outside	
ETS	**BFT**	**ETS**	**BFT**
13	blue	10	blue
12	purple	9	purple
13	brown	10	brown
11	red	8	red

Contactless motion detector (Magic Switch)

Opening command inside		Opening command outside	
ETS	**Magic Switch**	**ETS**	**Magic Switch**
13	Power -	10	Power -
11	Power +	8	Power +
13	COM	10	COM
12	NO	9	NO

Radar

Opening command inside		Opening command outside	
ETS	**Radar**	**ETS**	**Radar**
11	1	8	1
13	2	10	2
13	3	10	3
12	4	9	4

Product	Connections				Illustration
Control panel Bedix	**ETS**	**Bedix**	**Cable specification**		
	6	4	shielded cable U72M or		
	7	3	EIB-Y(St)Y 2x2x0,8 mm, twisted wires		

Note: Always use a seperate cable for the Bedix and connect all wires. Double if necessary

Radio transmitter and receiver for rocker large surface button (GFT)	**Transmitter**	**GFT**	**Receiver**	**ETS**	
	blue	black (COM)	+ (1)	1 (24V)	
	brown	blue (N.O)	- (2)	3 (GND)	
			COM (3)	3 (GND)	
			N.O (5)	2 (KEY)	

Teach in transmitter / receiver:

1. Set the receiver to operating mode 3:
Push programming button 3 x approx. 1 sec. until the LED fl ashes as follows: 3 x short - break - 3 x short

2. Keep the transmitter / button (GFT) pressed until the LED on the receiver shows 4 sec. continuous light, then the LED fl ashes again. Now release the button (GFT) (this transmitter is now taught-in).

3. Same procedure for other transmitters / buttons as above (pos. 2).

4. Press the programming button on the receiver once = operating mode, LED off.

5. Test the function on the GFT, blue LED must be lit on the **ETS**.
Light up = opening command.

Any opening button (ECO **GFT, ER GFT etc.)**	**Opening command inside**		
	ETS	**Button**	
	12	NO	
	13	COM	

Key switch ST-02-UP (HPZ) At switch position 0 (standard) “automatic (all control elements) is active. At switch position 1, one of the following functions can be selected.	**Key switch**	**ETS-Functions**			
		Night (Key)	**Hand (manual)**	**One way (only OEI)**	
	COM	26	26	26	
	NO	23	24	25	
	NC	22	22	22	

SETTINGS

DRIVE PARAMETERS (PARAMETER)

Parameter	Description	Setting range	Default
Vo	Velocity open (velocity open)	0…14 (5…50°/s)	6
Vc	Velocity close (velocity close)	0…14 (5…0°/s)	4
TOEx	Hold open time opening element inside/outside (time hold opening element inside/outside)	0…60s	3s
TKey	Hold open time Key (time hold opening element Key)	0…180s	5s
TDelay	Start-up delay (time delay lock)	0,0…4,0s	0,2s
FDelay	Relief force when unlocking (force delay), only works if TDelay is >0.	0,0…7,0A	OFF
TLock	Door hold-up time (time press close)	0,0…4,0s	0,5s
FLock	Pressing force while locking (force lock), only works when TLock is >0.	0,0…7,0A	2,0A
FSlam	Slam function (force slam)	0…10	OFF
FWind	Obstacle detection optimised for external doors. (force wind)	OFF OPEN CLOSE BOTH	OFF
Fo	Opening force (force open)	0…9	4
Fc	Closing force (force close)	0…9	4
Foh	Hold open force (force open hold)	0…9	0
Fch	Locking force (force close hold) ⇨ automatically sets FLock and FDelay if they are 0	0,0…3,5A	0
Ao	Opening angle of the door (angle open) If the opening angle is changed in the OPEN mode, the operating mode must be changed to HAND to close the door.	20…(190°) Rod dep.	95° *
Rod	Linkage types (Rod) Standard arm pressing Sliding rail pulling Sliding rail pushing Leaf mounting pushing Without linkage pushing Without linkage pulling	 STD-PH SLI-PL SLI-PH WIN-PH DIR-PH DIR-PL	STD-PH *
Invers	Inverse-Application: In case of power failure/error, the door leaf is opened from any position by spring force (if not locked). Position of the motor plug is reversed to the standard drive. The electric lock/holding magnet must be connected in reverse to the standard drive (see wiring diagram E4-0141-713).	OFF ON	OFF *
dAxis	Distance between door hinge rotation axis and the drives mounting level (distance Axis). dAxis is a guide value. Depending on the mounting situation, dAxis must be adapted accordingly.	-8…+25cm Rod dep.	0/+8cm Rod dep. *
Fos	Limitation of the opening force. Must not be increased in Germany!	5…14A	5A

***** Note: A new set-up process (Teach) is required.

SETTINGS

MULTI-LEAF SYSTEMS (DOUBLE DOOR)

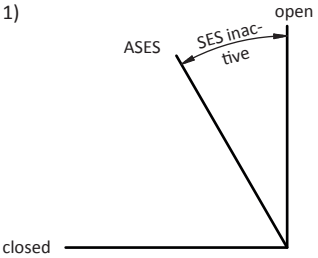
Parameter	Description	Setting range	Default
DubleD	Roll for closing sequence control (Master/Slave) and Sluice-side (A/B)	OFF MastrA SlaveA MastrB SlaveB	OFF
AoSeq	Opening sequence delay angle (slave) (only visible if DoubleD is active)	0…110°	20°
AcSeq	Closing sequence delay angle (Master) (only visible if DoubleD is active)	0…110°	20°
InterL	Sluice	OFF SideA SideB	OFF
ILAuto	Sluice operating mode AUTOMAT (only visible if InterL is active)	Inacti Active	Active
ILExit	Sluice operation mode EXIT (only visible if InterL is active)	Inacti Active	Active
ILNigt	Sluice operating mode NIGHT (only visible if InterL is active)	Inacti Active	Active
ILType	Safety: Two doors work as a sluice (in all operating modes). The second door only opens if the first one is closed. Has to be set on both doors. Spital: Automatic sequence -> When an opening command is given, the door that receives the the opening command is opened. After this door is closed again, the second door opens automatically. NL: The second dor only opens if the first one is closed or when the override time runs out.	Safety Spital NL	Safety
TOverd	Only visible in ILType NL When the override time runs out, the sluice function is cancelled. As soon as both doors are closed, the sluice function is switched on again.	OFF 1…60s	OFF
RdrOEI	OFF: Radar OEO/OEI switches normally, door closes when both are inactive. ON: With OEO the (OEI) radar inside the sluice is masked out, so that it won't hold oben the door in tight sluices.	OFF ON	OFF
ILCdRc	Acitve: The opening commands are buffered and executed when the second door is closed. Inactive: The opening commands are only accepted and executed as soon as the second door is closed.	Active Inacti	Active

SETTINGS

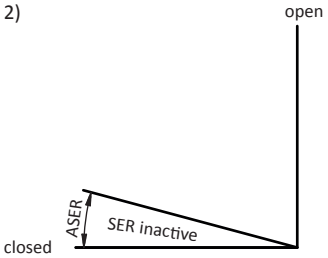
CONFIGURATION (CONFIG)

Parameter	Description	Setting range	Default
Servo	Support for manual opening. KEY opens automatically. Adjustable in 5 steps, depending on leaf width and leaf weight.	OFF 1…5	OFF
APuGo	Release angle Push&Go (angle push & go)	OFF, 2…10°	OFF
ASES	1) Blanking point Safety Element Stop (angle safety element stop). ASES will be set to Ao automatically if Ao is changed.	45°…Ao	95° Ao dep. (95°)
ASER	2) Blanking area Safety Element Reversing (angle safety element reversing).	0…60°	0°
SeOpCo	Obstinate opening (safety element open continue). After a Safety Element Stop while opening, the door should continue opening (instead of closing) as soon as SES is inactive.	OFF ON	OFF
SeOpTi	Waiting time until the drive despite SeOpCo = ON (safety element opening time) Closes if an obstacle blocks the door (only visible when SeOpCo = ON).	PERMAN 1…60 s	20 s
SESClo	Safety Element Stop while closing active/inactive (safety element stop closing)	ACTIVE INACTI	INACTI
EMY-IN	Configuration of Emergency-Clamp (Opener contact) (emergency input)	CL-SPR (spring) STOP OPEN CL-MOT (motor)	CL-SPR
OExStp	Step-switch function (opening element step)	OFF OEI OEO KEY RADIO	OFF
FPReset	Acknowledgement of the fire alarm via fire alarm center (only allowed if the door is in visual range of the fire alarm center)	OFF ON	OFF
RC 0.1	Parameterizable relais output 1 on option print 1 (relay contact) (only visible if relais print 0 is plugged in)	CLOSED OPENING OPEN CLOSING ERROR PSAUTO PSNIGHT PSEXIT PSOPEN PSMANU GONG LOCKED SIX30S FP_RDY EMY_AL	CLOSED
RC 0.2	Parameterizable relais output 2 on option print 1 (relay contact) (only visible if relais print 0 is plugged in)		OPEN
RC 0.3	Parameterizable relais output 3 on option print 1 (relay contact) (only visible if relais print 0 is plugged in)		ERROR
RC 0.4	Parameterizable relais output 4 on option print 1 (relay contact) (only visible if relais print 0 is plugged in)		GONG
RC 1.1	Parameterizable relais output 1 on option print 2 (relay contact) (only visible if relais print 1 is plugged in)		OPENING
RC 1.2	Parameterizable relais output 2 on option print 2 (relay contact) (only visible if relais print 1 is plugged in)		CLOSING
RC 1.3	Parameterizable relais output 3 on option print 2 (relay contact) (only visible if relais print 1 is plugged in)		PSAUTO
RC 1.4	Parameterizable relais output 4 on option print 2 (relay contact) (only visible if relais print 1 is plugged in)		LOCKED

1)



2)



Parameter	Description	Setting range	Default
Unlock	Impulse/permanent unlock (impulse unlock)	IMPULS PERMAN	IMPULS
UnloCl	Retract (unlock) the motor lock before closing and lock it when the door leaf is closed.	INACTI PERMAN	INACTI
EL-Fb	Feedback of electronic lock (electric lock feed back) N.O. ⇨ Contact open when unlocked (-), closed if locked (+) N.C. ⇨ Contact open when locked (+), closed when unlocked (-) (+) and (-) show the state in diagnostic-menu.	OFF N.O. N.C.	OFF
LockAU	Operation mode AUTOMAT locked (locked automat) (only visible when Unlock = Perman)	UNLOCK LOCK	UNLOCK
LockEX	Operating mode AUSGANG locked (locked exit) (only visible when Unlock = Perman)	UNLOCK LOCK	LOCK
LockMA	Operating mode HAND locked (locked manual) (only visible when Unlock = Perman)	UNLOCK LOCK	UNLOCK
LcdDir	Orientation display (LCD direction)	0…1	0
MovCon	Permanent test Open/Closed (moving continuous)	OFF ON-FLT ON-PRM	OFF
OExMAN	Accepting open-commands when the door was opened manually (only when APuGo = OFF) (opening element inside/outside manual)	OFF ON	OFF
OEOSIR	Security element on hinge-opposite side as opening element. Note: For teaching the LZR-FLATSCAN this parameter must be switched off.	OFF ON	OFF
PSKIZe	Zero position of the program position (operating mode); fixed program position, which can only be changed via terminals on the controller (program selection button in theSide cover inactive). Use for external program switch (only four terminals) or control of the program positions via terminals on the controller. (program selection terminal zero)	NO ACT PSOPEN PSHAND PSAUTO PSEXIT PSNIGT	NO ACT
SCBloc	Locking the program selection button in the side cover (side cover block) Toggle = lock / unlock (press active program key for at least 5 seconds). Time = Lock (automatically after 5 minutes without pressing the program buttons), Unlock (press the active program button for at least 5 seconds).	OFF TOGGLE TIME	OFF
Buzzer	Buzzer signals door leaf movement (persons with visual impairment/accessibility)	OFF BOTH OPEN CLOSE	OFF

ERROR CODES (DISPLAY)

MISBEHAVIOUR WITH ERROR-NO

Drive

No.		Description	Cause	Solution	Testing time	Reaction
E1	03	Encoder	Canal A + B lost	▪ Check encoder connection ▪ Check motor cable ▪ Rotation direction of the motor doesn't correspond with the linkage. ▪ Door is blocked ▪ Check if the Jumper is on X106	While driving	H
	04		Short of A + B			
	05		Disruptions			
	06		Motor wire plugged wrong		Before starting	
	07		No canal A			
	08		No canal B			
	09		No canal A + B			
	10		Short of A + B			
E2	01	Motor power	Power too high	▪ Check motor cable ▪ Check if the Jumper is on X106	Before starting	H
	02		▪ Power too low ▪ Jumper missing			
E3	01	Damping	Test failed once	▪ Set drive to operating mode HAND and cauiously try if the door closes with damping. ▪ If not, replace hardware ▪ If yes, check/correct friction of the door leaf and the closing spring preload.	Before closing, after starting up and then every 24 hours.	W
	02		▪ Test failed twice ▪ Damping defective or opening beyond heart curve peak			Drive continues running, buzzer active.
E4	01	Reference switch	Detected in open-position	▪ Check the connection and switching point of the refernece switch. ▪ Reference switch must be actuated in closed position (switching contact open).	Open position	F
	02		Not detected in closed-position		Before the first set up ride	A
	03		Not detected in open-position			
E5	00	Power limitation	▪ Overload of the control ▪ Maximum power is limited	▪ Check/correct friction of the door leaf and the closing spring preload.	Permanently	A

Operating

No.		Description	Cause	Solution	Testing time	Reaction
E10	01	Fullteach required	Parameter Ao, Rod, Invers or dAxis changed	Proceed Teach	When changing the drive configuration	H
	02		Minimum opening angle not reached	Check locking/electronic lock	During the Teach	
E11	01	Halfteach required (Opening)	Parameter Vo changed	Proceed complete, unobstructed opening cycle	When changing the ride parameters	W
	02	Halfteach required (Closing)	Parameter Vc or FSlam changed	Proceed complete, unobstructed closing cycle		
E14	01	Locking/ Electronic lock	Door leaf stucks in the locking/ electronic lock.	Check function of locking/electronic lock	When opening from close-position	H
	02		Inverse-operation has no locking or locking force Fch is not adjusted	Adjust/increase locking force	At the end of the Teach	W
E15	01	Obstacle in opening direction	Too many obstacles encountered in a row	▪ Check system ▪ Remove obstacle ▪ Move door leaf to target position	Permanently	H, A Restart after 60 s
	02	Obstacle in closing direction				
E16	01	Temperature	Temperature on output range has reached 81°C	Observe the limits of use.	Permanently	A Drive running reduced
	02		Temperature on output range has reached 91°C			A Drive stands still

ERROR CODES (DISPLAY)

FAILURE WITH ERROR NUMBER

Safety elements

No.		Description	Cause	Solution	Testing time	Reaction
E20	01	SER Test	SER Test signal unsuccessful	▪ SER short against ground ▪ Check wiring of sensor or bridge	Before closing	A
	02		SER too slow	▪ SER reacts too slow ▪ Check wiring of the sensor ▪ Check for reverse polarity of test signal		
E21	01	SES Test	SES Test signal unsuccessful	▪ SES short agains ground ▪ Check wiring of sensor or bridge	Before opening	A
	02		SES too slow	▪ SES reacts too slow ▪ Check wiring of the sensor ▪ Check for reverse polarity of test signal		
E22	01	EMY Test	EMY input to 24V	▪ Check EMY bridge ▪ Check wiring on EMY	Permanently	H

Power supply

No.		Description	Cause	Solution	Testing time	Reaction
E30	01	30V Error	30V too low	▪ power failure ▪ Motor overload ▪ Check power supply ▪ Replace hardware	Permanently	A
	02		30V too high			
	03		Error when switching on			
E31	01	24V General	Error when switching on	Overload, short of the 24V-inputs (exclusive electric lock, Safety Elements)	Permanently	A Restart after 10s.
	02		Overvoltage/Undervoltage			
E32	01	24V Safety	Overvoltage/Undervoltage	Overload, short of Safety Elements	Permanently	A Restart after 10s.
E33	01	24V E-Lock	▪ Error ▪ Overvoltage/Undervoltage	Überlast, Kurzschluss Elektroschloss	Permanently	A Restart after 10s.
	02		▪ Early warning ▪ Overvoltage/Undervoltage			
E34	01	24V CAN	Overvoltage/Undervoltage	Overload, short of external supply CAN	Permanently	A Restart after 10s.

System

No.		Description	Cause	Solution	Testing time	Reaction
E50	01…99	System error	Unexpected hard- or soft-ware event	▪ Switch on/ off drive ▪ Perform factory reset ▪ Perform software update ▪ Contact manufacturer	Permanetly	W or F or H
E51	01…99	System error	Unexpected hard- or soft-ware event	▪ Switch on/ off drive ▪ Perform factory reset ▪ Perform software update ▪ Contact manufacturer	Permanetly	W or F or H
E52	01…99	System error	Unexpected hard- or soft-ware event	▪ Switch on/ off drive ▪ Perform factory reset ▪ Perform software update ▪ Contact manufacturer	Permanetly	W or F or H

Options

No.		Description	Cause	Solution	Testing time	Reaction
E60	00	Relaisprint 0	Option print has been removed, redirected or is defective	▪ Check if option exists ▪ Falls If defective: Replace or remove from configuration ▪ Note: ▪ Deleting the error 60 ▪ ⇨ see mounting instruction ECO **ETS** (Chapter 13.7.1)	Permanently	W
	10	Relaisprint 1				W
	20	Radio print				W
	30	Fire protection print				A

Closing sequence control / Sluice

No.		Description	Cause	Solution	Testing time	Reaction
E70	xx	CAN-Bus-configuration	CAN-Address xx existing two times.	Define closing sequence or sluice roll correctly.	Permanently	W
E71	01	CAN-Connection	No CAN-Connection	▪ Plug in, control or replace CAN-Cable ▪ Control if all CAN-Participants are switched on	Permanently	W

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