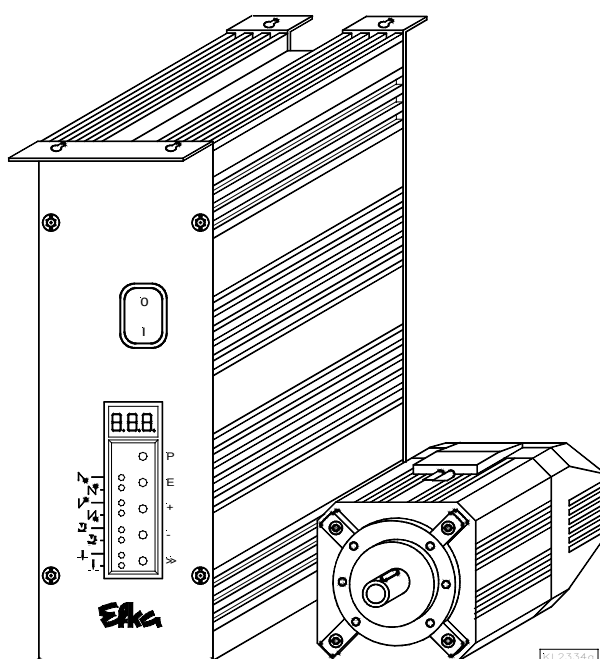


EFKA dc 1550

CONTROL

AB323A5221



LIST OF PARAMETERS

CONNECTION DIAGRAM
TIMING DIAGRAMS

No. 402309

English

EFKA
FRANKL & KIRCHNER
GMBH & CO KG

EFKA
EFKA OF AMERICA INC.

EFKA
EFKA ELECTRONIC MOTORS
SINGAPORE PTE. LTD.

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1 Putting into Service

Before putting the control into service, the following must be ensured, checked and/or adjusted:

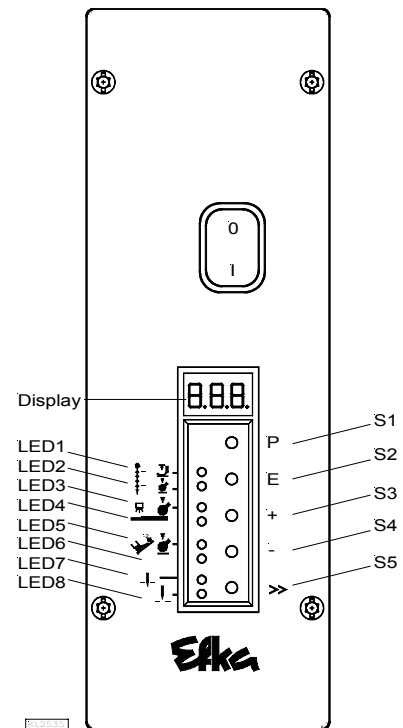
- **The correct installation of the drive, position transmitter and accompanying devices, if necessary**
- **If necessary, the correct adjustment of the direction of motor rotation by means of parameter 161**
- **The correct selection of the functions of keys (inputs) by means of parameters 240...249**
- **The setting of the transmission ratio between motor shaft and machine shaft by means of parameter 272**
- **The setting of the type of position sensor by means of parameter 270**
- **If necessary, the setting of the number of angular degrees after the sensor position by means of parameter 271**
- **If necessary, the setting of the positions by means of parameter 171
(possible with all settings of parameter 270)**
- **The correct positioning speed by means of parameter 110**
- **The correct maximum speed compatible with the sewing machine by means of parameter 111**
- **The setting of the remaining relevant parameters**
- **Start sewing in order to save the set values**

See instruction manual for details!

2 Operating Elements and Socket Connectors

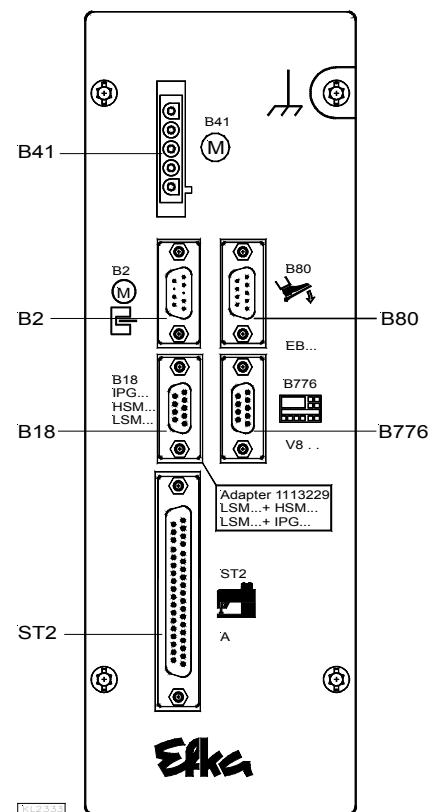
2.1 Position of Operating Elements and Displays

- S1** **P key**
 ■ Call or exit programming mode
- S2** **E key**
 ■ Foot lifting pressure or puller in StartCycle On / Off
 ■ Enter key for modifications in the programming mode
- S3** **+ key**
 ■ JointSystem On / Off
 ■ Increase of the value indicated in the programming mode
- S4** **- key**
 ■ Puller with pedal in pos -2 On/Off
 ■ Decrease of the value indicated in the programming mode
- S5** **>> key**
 ■ Basic position 1 or 2
 ■ Shift key in the programming mode
- LED1** Foot lifting pressure in StartCycle On / Off
LED2 Puller in StartCycle On / Off
LED3 JointSystem On / Off
LED4 No function
LED5 Puller with pedal in pos -2 On/Off
LED6 No function
LED7 Indicator for basic position "needle position 1"
LED8 Indicator for basic position "needle position 2"
- Display** 3 digits



2.2 Position of the Socket Connectors

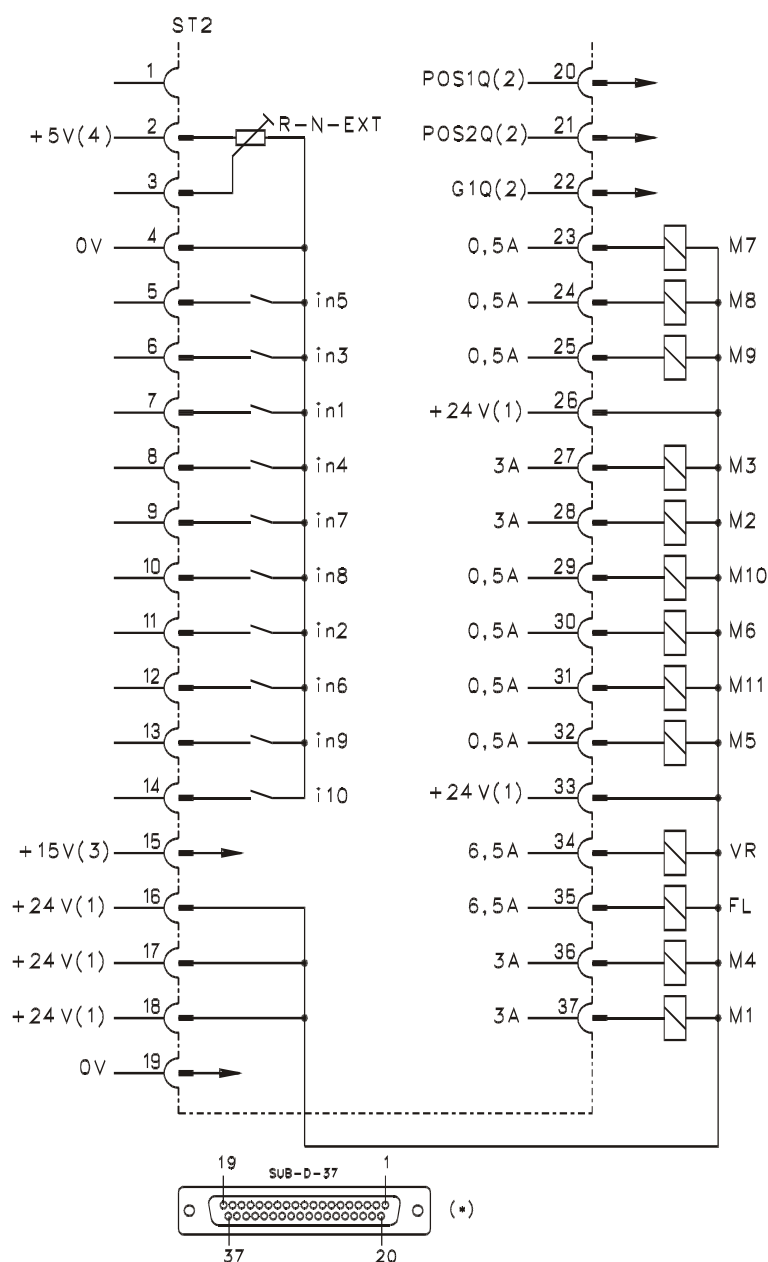
- B2** Socket for commutation transmitter
- B18** Socket for
 - Light barrier module LSM002
 - Hall sensor module HSM001
 - Pulse encoder IPG001
 - EFKANET
 (Adapter cord 1113229 in case of multiple assignment)
- B41** Socket for motor power supply
- B80** Socket for actuator
- B776** Socket for V810/V820 control panel
- ST2** Socket for solenoid inputs and outputs /
 solenoid valves / displays / keys and switches



2.3 Connection Diagram

Inputs switched to 0V

Parameter 290 = 1



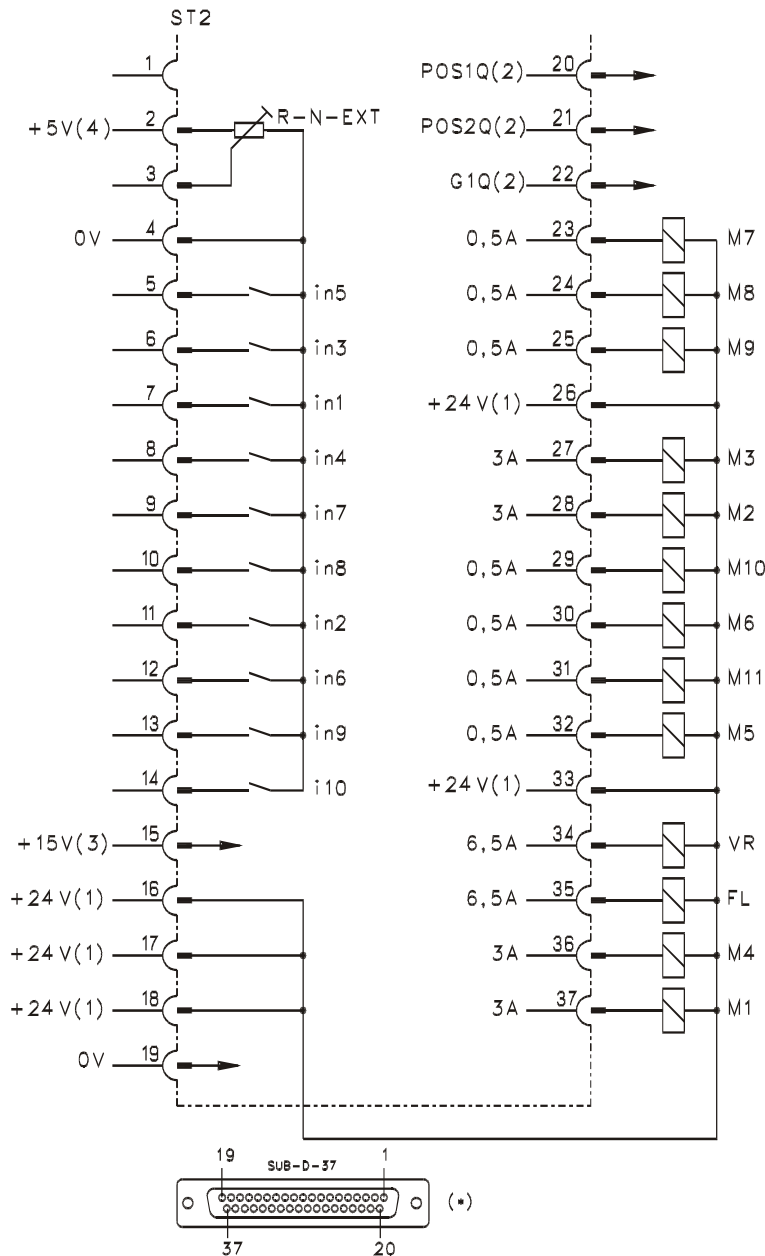
ATTENTION!

When connecting the outputs, ensure that a total power of 96VA constant load will not be exceeded!

in1	- Input 1 (JointSystem)	i10	- Input 10	M9	- Output 9 (sewing foot pressure)
in2	- Input 2	M1	- Output 1	M10	- Output 10 (Step-Out)
in3	- Input 3	M2	- Output 2	M11	- Output 11 (vacuum suction)
in4	- Input 4	M3	- Output 3	FL	- Sewing foot lifting
in5	- Input 5	M4	- Output 4	VR	- Backtacking
in6	- Input 6	M5	- Output 5 (motor running)	POS1	- Position 1
in7	- Input 7	M6	- Output 6	POS2	- Position 2
in8	- Input 8	M7	- Output 7 (puller)	GEN	- 512 generator impulses
in9	- Input 9	M8	- Output 8 (needle cooling)	R-N-EXT	- External potentiometer for speed limitation (50k Ω)

Inputs switched to 0V

Parameter 290 = 2



BI1153c

**ATTENTION!**

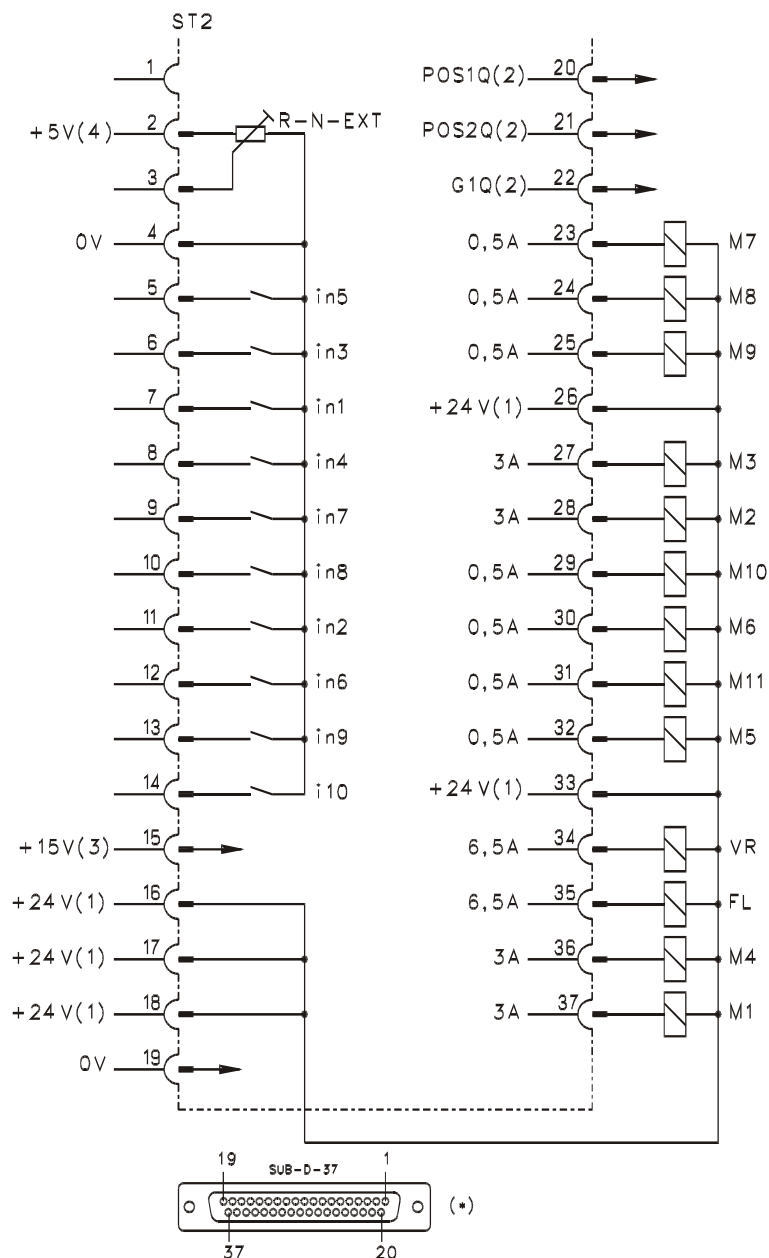
When connecting the outputs, ensure that a total power of 96VA constant load will not be exceeded!

in1 - Input 1 (**sensor 1**)
 in2 - Input 2 (**sensor 2**)
 in3 - Input 3 (**ext. key 1**)
 in4 - Input 4 (**ext. key 2**)
 in5 - Input 5 (**ext. key 3**)
 in6 - Input 6 (**ext. key 4**)
 in7 - Input 7 (**ext. key 5**)
 in8 - Input 8
 in9 - Input 9

i10 - Input 10
 M1 - Output 1 (**knife**)
 M2 - Output 2
 M3 - Output 3 (**SkipSpreader**)
 M4 - Output 4 (**lift stop guide**)
 M5 - Output 5 (**motor running**)
 M6 - Output 6 (**puller 2**)
 M7 - Output 7 (**puller 1**)
 M8 - Output 8 (**needle cooling**)

M9 - Output 9
 M10 - Output 10 (**Step-Out**)
 M11 - Output 11
 FL - Sewing foot lifting
 VR - Backtacking
 POS1 - Position 1
 POS2 - Position 2
 GEN - 512 generator impulses
 R-N-EXT - External potentiometer for speed limitation (50kΩ)

Inputs switched to +24V



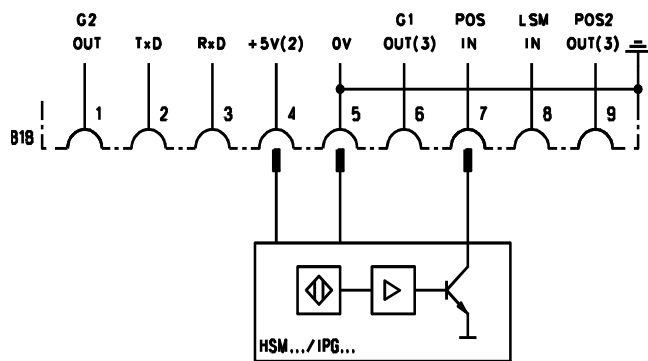
B11153c

**ATTENTION!**

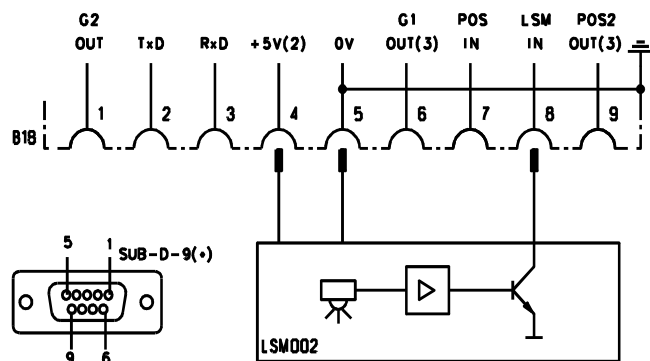
When connecting the outputs, ensure that a total power of 96VA constant load will not be exceeded!

- 1) Nominal voltage 24V, no-load voltage max. 30V momentarily after power on
- 2) Transistor output with open collector max. 40V, 10mA
- 3) Nominal voltage 15V, $I_{\max} = 30\text{mA}$
- 4) Nominal voltage 5V, $I_{\max} = 20\text{mA}$
- *) Front view of the socket (component side) and/or rear view of the plug (soldering side)

Connection of a HSM001 Hall sensor module or an IPG001 pulse encoder



Connection of a LSM002 light barrier module

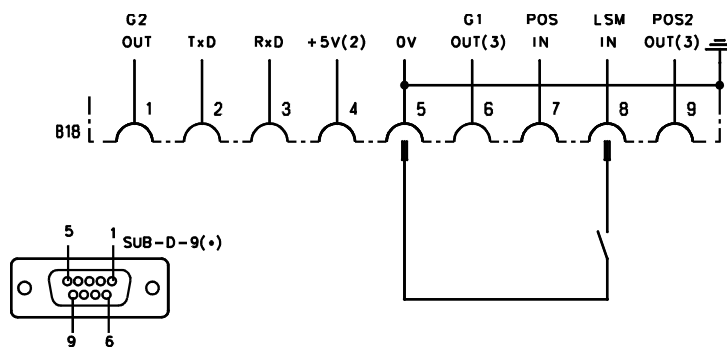


B1174

Adapter cord 1113229 in case of multiple assignment of socket B18!

- | | |
|-----------|--|
| POS2 OUT | - Output for position 2 |
| POS IN | - Input for positions |
| G1/G2 OUT | - Output of generator impulses |
| TXD/RXD | - Serial transmission lines |
| LSM IN | - Possibility of connecting a light barrier module to socket B18/8
(If parameter 239 = 0, the light barrier function is selected.
Identification of the signal when switched to 0V.) |
| LSM002 | - Reflection light barrier module |
| HSM... | - Hall sensor module |
| IPG... | - Pulse encoder |

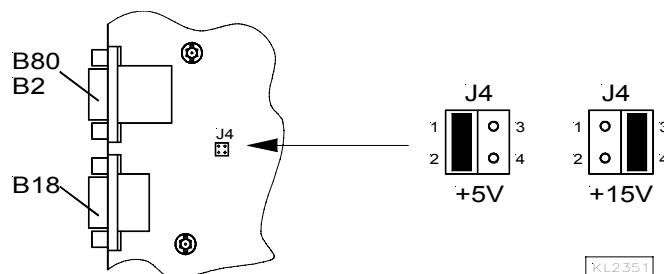
If parameter 239 is set to >0, a key can be operated on the input of socket B18/8.



B1159

There is a supply voltage of +5V for external devices on the B18/4 socket. After opening the cover, this voltage can be changed to +15V by replugging a multipole connector J1 on the printed circuit board.

- +5V = Connect lefthand pins 1 and 2 with jumper (factory setting)
- +15V = Connect righthand pins 3 and 4 with jumper



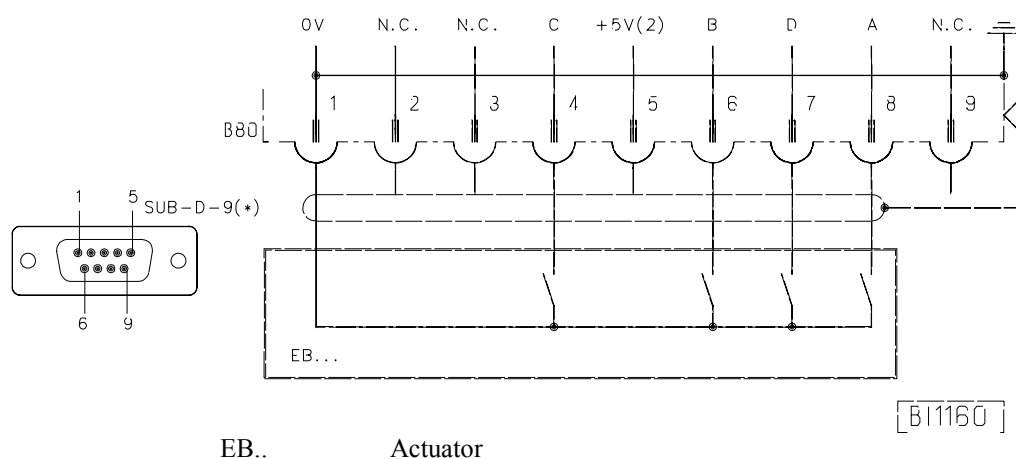
KL2.351



ATTENTION!

Before opening the cover, turn power off!

- 1) Nominal voltage +15V, 100mA (repluggable to +5V, 100mA)
- 2) Transistor output with open collector max. 40V, 10mA
- *) Front view of the socket (component side) and/or rear view of the plug (soldering side)



Pedal step →	-2	-1	0	½	1	2	3	4	5	6	7	8	9	10	11	12
Input A	L	L	H	H	H	L	L	H	H	L	L	H	H	L	L	H
Input B	L	H	H	L	L	L	H	H	H	H	L	L	L	L	H	H
Input C	H	H	H	H	L	L	L	L	L	L	L	L	H	H	H	H
Input D	H	H	H	H	H	H	H	H	L	L	L	L	L	L	L	L

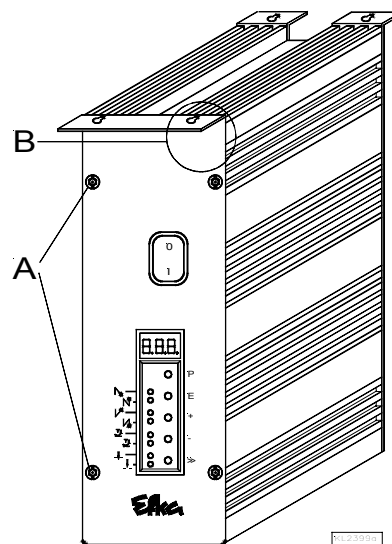
2.4 Connection of a Sewing Light with Transformer



ATTENTION!

Before opening the cover, turn power off!

- Switch off the control and remove mains plug from outlet
- Unscrew the control unit from the machine table
- Loosen 2 screws (A) each at the front and at the rear
- Open the left part of the housing
- Pull the sewing light cable through the cable bushing
- Area (B): Connect strands with clamp on the printed circuit board
- Insert earth lead into plug-in device on the housing part
- Close and screw-connect the housing
- Mount the control unit on the machine table

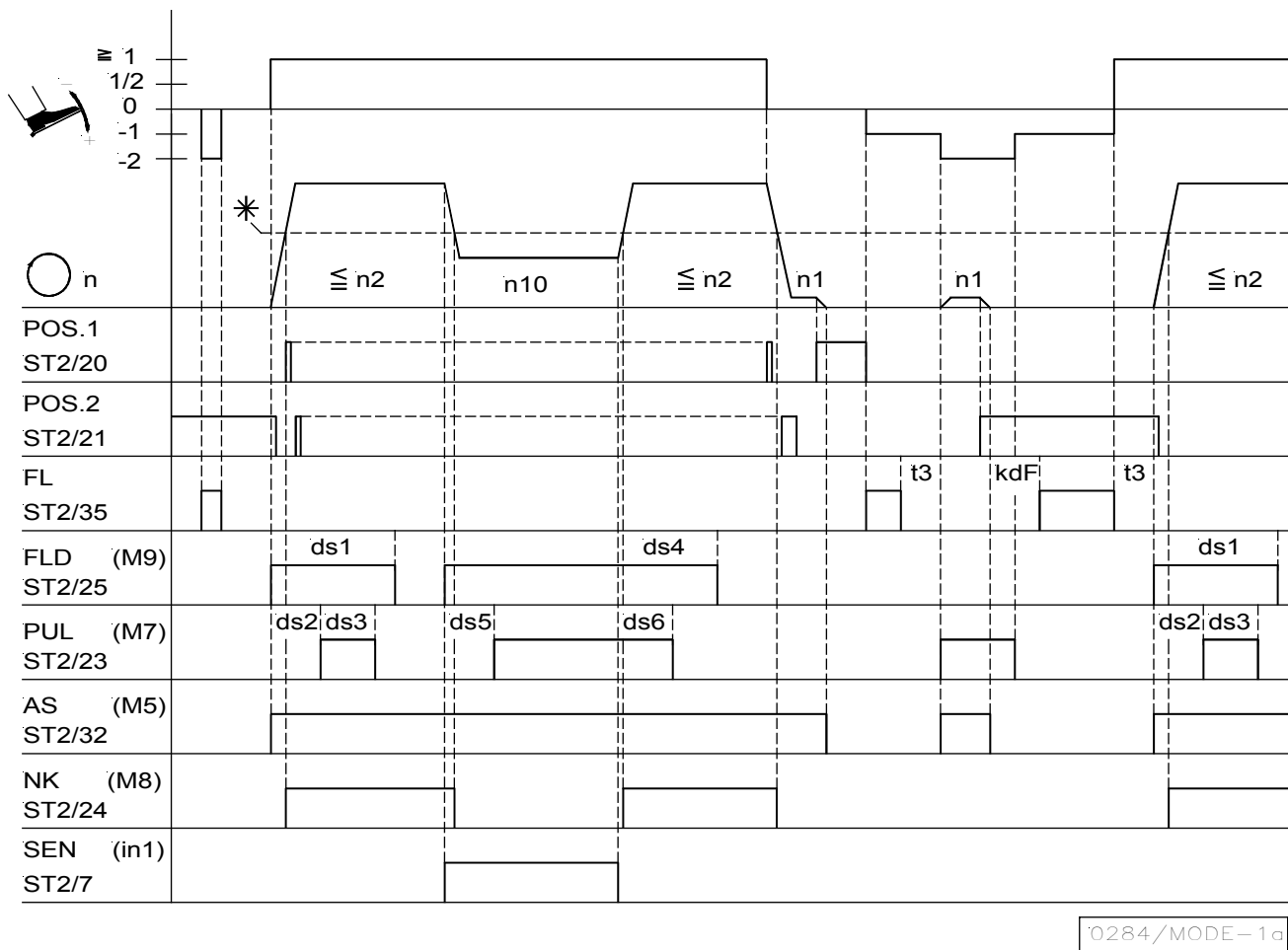


CAUTION!

When the sewing light is connected, it is always current-carrying (230V), even if the control unit is switched off! Only one sewing light with transformer can be connected to the control unit!

3 Timing Diagrams

Function for mode 1 (parameter 290 = 1)



0284/MODE-1 a

Mark	Function	Parameter	Control	V810	V820
Fam	Mode 1 Foot lift pressure and puller in StartCycle On JointSystem On/Off Puller with pedal in pos. -2 On/Off Basic position down	290 = 1	E key + key - key >> key	1 key 2 key 3 key 4 key	1 key 2 key 3 key 4 key
n1	Positioning speed	110			
n2	Maximum speed	111			
n10	High lift walking speed	117			
n9 *)	Triggering speed for needle cooling	122			
ds1	Feeding section for sewing foot pressure at the start of the seam	001			
ds2	Feeding section for puller delayed at the start of the seam On	002			
ds3	Feeding section for puller lifting at the start of the seam On	003			
ds4	Feeding section for delayed sewing foot pressure Off	004			
ds5	Feeding section for delayed puller lifting On	005			
ds6	Feeding section for puller On	006			
t3	Start delay from lifted sewing foot	202			
t4	Full power of sewing foot lifting	203			
t5	Pulsing of sewing foot lifting	204			
kdF	Switch-on delay of sewing foot lifting	288			

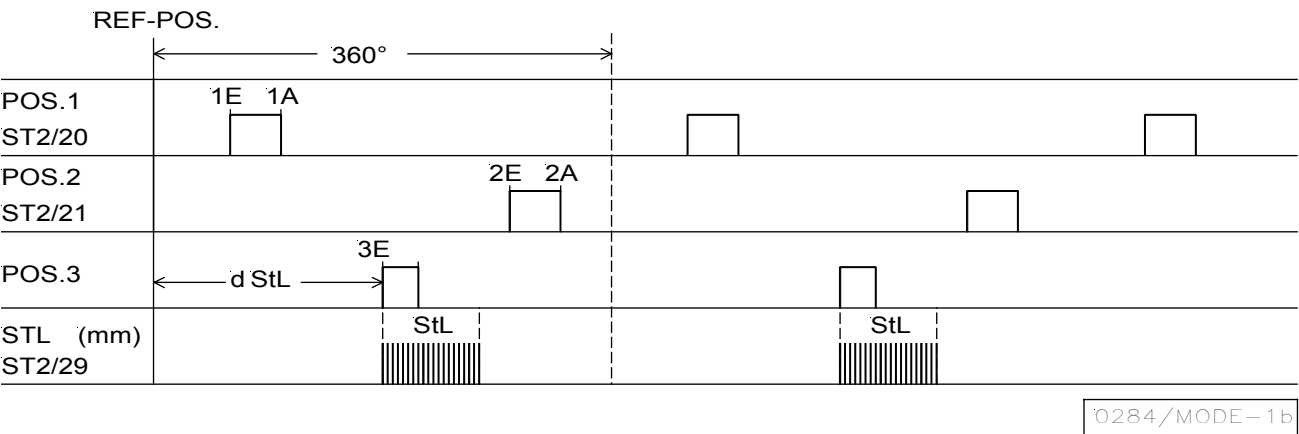
Explanation of further letter symbols:

POS.1 = Position 1 (needle down)
 POS.2 = Position 2 (needle up)
 FL = Signal for sewing foot lifting
 FLD = Signal for sewing foot pressure
 PUL = Signal for puller lifting

AS = Signal for suction
 NK = Signal for needle cooling
 SEN = Sensor for JointSystem
 ds1...ds6 = Unit in mm

Function for mode 1 (parameter 290 = 1)

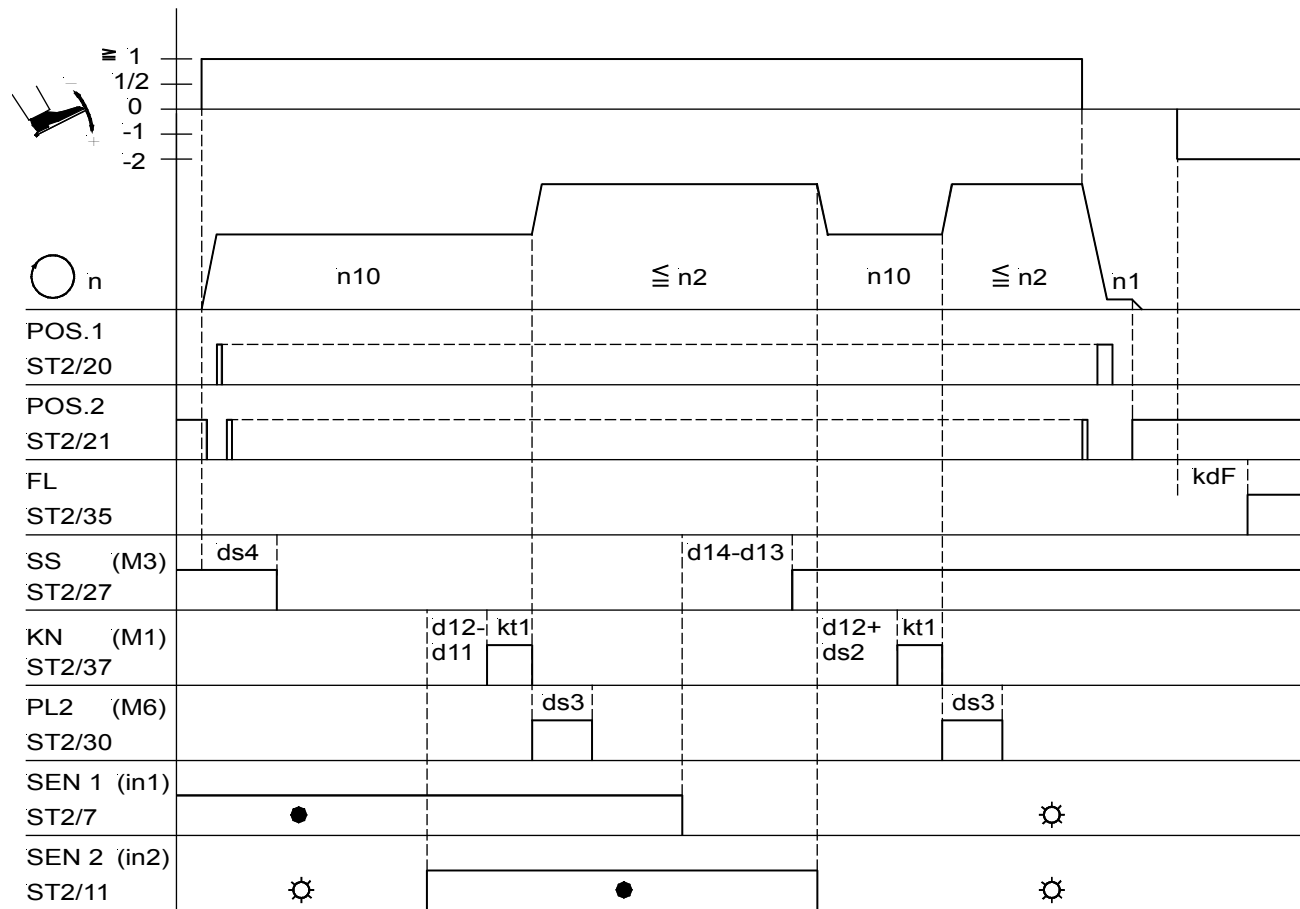
Setting the Stitch Length



Mark	Function	Parameter
Fam StL	Mode 1 Stitch length in mm (1mm = 20 impulses for puller motor)	290 = 1 000
REF-POS.	Reference position	170
1E	Position 1 (leading edge)	171
1A	Position 1 (trailing edge)	171
2E	Position 2 (leading edge)	171
2A	Position 2 (trailing edge)	171
3E dStL	Position 3 (leading edge)	455

Function for mode 2 (parameter 290 = 2)

Pneumatic operation



0284/MODE-2a

Mark	Function	Parameter	Control	ext. key strip
FAM SmP	Mode 2 Pneumatic operation Manual material feed using puller 1 with needle up and lifted sewing foot Cutting + spreader function Off / Skip stitch function On Spreader function On/Off Manual trimmer (cutting) Lift/lower puller	290 = 2 040 = 2		Key 1 Key 2 Key 3 Key 4 Key 5
n1 n2 n10	Positioning speed Maximum speed High lift walking speed	110 111 117		
ds2 ds3 ds4 d11 d12 d13 d14 kt1 kdF	Distance from sensor 2 uncovered to knife On Activation of puller lifting after autom. trimming Distance from sensor 1 covered to spreader Off Waistband up to trimming at the start Distance from sensor 2 to knife Skip stitch at the end Offset for skip stitch Knife ON period Switch-on delay of sewing foot lift	002 003 004 011 012 013 014 281 288		

The basic position is controlled using sensor 1. If the sensor is covered, the drive stops in position 1. Otherwise the drive stops in position 2.

Explanation of further letter symbols:

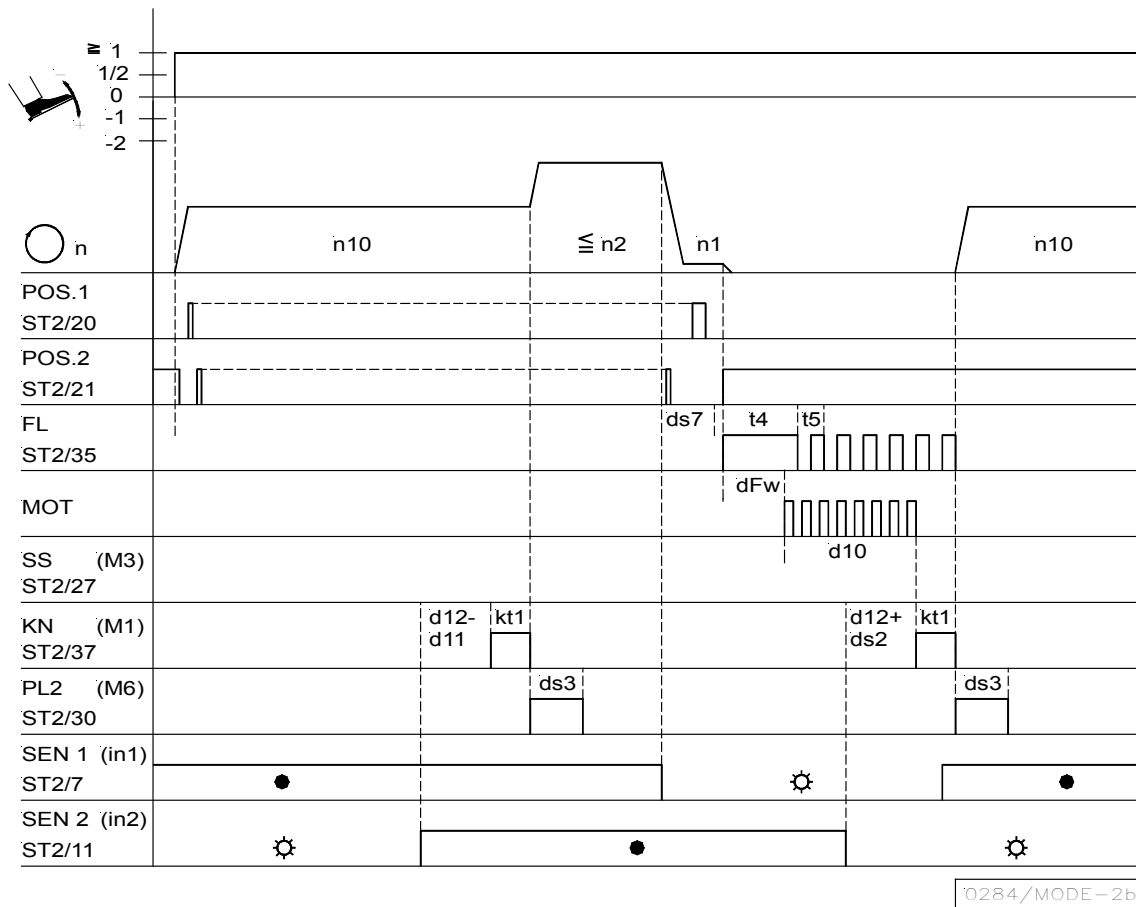
OS.1 = Position 1 (needle down)
SS = Signal for SkipSpreader
SEN1 = Input for sensor 1

POS.2 = Position 2 (needle up)
KN = Signal for knife
SEN2 = Input for sensor 2

FL = Signal for sewing foot lift
PL2 = Signal for "lift puller 2"
ds2...d14 = Unit in mm

Function for mode 2 (parameter 290 = 2)

Motor operation



0284/MODE-2b

Mark	Function	Parameter	Control	ext. key strip
FAm SmP	Mode 2 Motor operation Manual material feed using puller 1 with needle up and lifted sewing foot Cutting + spreader function Off / Skip stitch function On Spreader function On/Off Manual trimmer (cutting) Lift/lower puller	290 = 2 040 = 1		Key 1 Key 2 Key 3 Key 4 Key 5
n1 n2 n10	Positioning speed Maximum speed High lift walking speed	110 111 117		
ds2 ds3 ds7 d10 d11 d12 d13 d14 t3 t4 t5 dFw kt1	Distance from sensor 2 uncovered to knife On Activation of puller lifting after autom. trimming Distance from sensor 1 uncovered to stop in position 2 Material feed after stop (motor operation) Waistband up to trimming at the start Distance from sensor 2 to knife Skip stitch at the end Offset for skip stitch Start delay from lifted sewing foot Full power of sewing foot lifting Pulsing of sewing foot lifting Delay time from stop in position 2 to puller motor On Knife ON period	002 003 007 010 011 012 013 014 202 203 204 209 281		

The basic position is controlled using sensor 1. If the sensor is covered, the drive stops in position 1. Otherwise the drive stops in position 2.

Explanation of further letter symbols:

OS.1 = Position 1 (needle down)

POS.2 = Position 2 (needle up)

FL = Signal for sewing foot lift

SS = Signal for SkipSpreader

KN = Signal for knife

PL2 = Signal for "lift puller 2"

SEN1 = Input for sensor 1

SEN2 = Input for sensor 2

ds2...d14 = Unit in mm

MOT = Stepping motor

4 List of Parameters

4.1 Preset Values Depending on Mode

All preset values of the different modes are listed in the table below. The parameters marked with “---” are not available and cannot be called up. When switching the mode by means of parameter 290, all values change automatically.

Operator Level

Setting the functional sequence using parameter 290								
Parameter	Letter symbol	Mode 1	Mode 2					
000	StL	3.2	3.2					
001	dS1	20.0	9.0					
002	dS2	15.0	2.0					
003	dS3	15.0	3.0					
004	dS4	30.0	5.0					
005	dS5	15.0	2.0					
006	dS6	15.0	3.0					
007	dS7	15.0	3.0					
008	dS8	---	15.0					
009	dS9	---	50.0					
010	d10	---	50.0					
011	d11	---	20.0					
012	d12	---	50.0					
013	d13	---	20.0					
014	d14	---	50.0					
015	d15	30.0	---					
016	d16	---	0					
017	d17	---	0					
018	t18	0	0					
040	SmP	---	1					
041	m2P	---	1					

Technician Level

Setting the functional sequence using parameter 290								
Parameter	Letter symbol	Mode 1	Mode 2					
100	SSc	2	2					
110	** n1	200	200					
111	** n2-	4000	4000					
115	** n6	500	500					
117	** n10	1000	1000					
119	nSt	2	2					
121	** n2_	400	400					
122	** n9	2000	2000					
139	nIS	0	0					
153	brt	10	10					
155	LSG	1	1					
156	t05	0	0					
161	der	1	1					

**) When programming the 3-digit or 4-digit control parameter values (without control panel), the 2-digit or 3-digit value displayed must be multiplied by 10.

Supplier Level

Setting the functional sequence using parameter 290								
Parameter	Letter symbol	Mode 1	Mode 2					
201	t2	80	80					
202	t3	50	50					
203	t4	500	500					
204	t5	40	40					
207	br1	20	20					
208	br2	30	30					
209	dFw	0	0					
211	tFL	60	60					
214	rAt	80	80					
215	** FrG	---	2000					
216	ASt	---	0					
219	br3	10	10					
220	ALF	20	20					
221	** dGn	100	100					
222	tGn	120	120					
223	** dG2	1600	1600					
224	dGF	1	1					
225	br4	27	27					
231	Sn1	0	0					
236	FLP	0	0					
238	EnP	1	1					
239	FEL	0	0					
240	in1	56	59					
241	in2	58	60					
242	in3	0	0					
243	in4	0	0					
244	in5	0	0					
245	in6	0	0					
246	in7	0	0					
247	in8	0	0					
248	in9	0	0					
249	i10	0	0					
254	EF-	100	100					
269	PSv	15	15					
270	PGm	0	0					
272	trr	100	100					
281	kt1	---	100					
288	kdF	380	380					
290	Fam	1	2					
291	810	1	---					
293	tF1	0	0					
294	tF2	0	0					
295	nAm	0	0					
297	m11	0	0					
455		120	120					

**) When programming the 3-digit or 4-digit control parameter values (without control panel), the 2-digit or 3-digit value displayed must be multiplied by 10.

4.2 Operator Level

Parameter	Designation	Unit	max	min	Preset	Ind.
000 StL	Pa. 290 = 1, 2 Stitch length by means of external puller motor	mm	50.0	0	*)	A
001 dS1	Pa. 290 = 1 Activation of sewing foot pressure signal at the start of the seam (StartCycle)	mm	50.0	0	*)	A
002 dS2	Pa. 290 = 1 Delay until puller lifting at the start of the seam (StartCycle) Pa. 290 = 2 Distance ds2 sensor 2 uncovered to knife On	mm	50.0	0	*)	A
003 dS3	Pa. 290 = 1 Activation of puller lifting at the start of the seam (StartCycle) Pa. 290 = 2 Activation of puller lifting after automatic trimming	mm	200.0	0	*)	B
004 dS4	Pa. 290 = 1 Switch-off delay for sewing foot pressure (JointSystem) Distance ds4 sensor 1 covered to spreader Off (closed)	mm	50.0	0	*)	A
005 dS5	Pa. 290 = 1 Delay until puller lifting (JointSystem)	mm	50.0	0	*)	A
006 dS6	Pa. 290 = 1 Delay until puller lowering (JointSystem)	mm	50.0	0	*)	A
007 dS7	Pa. 290 = 1 Delay until signal M11 Off (vacuum suction) Pa. 290 = 2 Distance ds7 sensor 1 uncovered to stop in position 2	mm	50.0	0	*)	A
008 dS8	Pa. 290 = 2 Delay until puller 2 lowers	mm	50.0	0	*)	B
009 dS9	Pa. 290 = 2 Material feed during preparation (motor operation)	mm	100.0	0	*)	B
010 d10	Pa. 290 = 2 Material feed after stop (motor operation)	mm	100.0	0	*)	B
011 d11	Pa. 290 = 2 Waistband up to trimming at the start	mm	Pa.012	0	*)	B
012 d12	Pa. 290 = 2 Distance from sensor 2 to knife	mm	100.0	Pa.011	*)	B
013 d13	Pa. 290 = 2 Skip stitch at the end	mm	Pa.014	0	*)	B
014 d14	Pa. 290 = 2 Offset for skip stitch	mm	100.0	Pa.013	*)	B
015 d15	Pa. 290 = 1 Delay speed release in JointSystem	min	100.0	0	*)	B
016 d16	Pa. 290 = 2 Debouncing for sensor 1	mm	100.0	0	*)	B
017 d17	Pa. 290 = 2 Debouncing for sensor 2	mm	100.0	0	*)	B
018 t18	Switch-off delay for needle cooling after stop	sec	60.0	0	*)	B
040 SmP	Switch motor / pneumatic 1 = motor operation 2 = pneumatic operation		2	1	*)	B
041 m2P	Function for 2nd puller		2	1	*)	B

*) See table at the beginning of the Parameter List for preset values!

4.3 Technician Level

Code no. 190 with control operation

Code no. 1907 with control panel operation

Parameter	Designation	Unit	max	min	Preset	Ind.
100 SSc	Number of softstart stitches	stitches	254	0	*)	A
110 n1	Positioning speed	RPM	390 **)	70	*)	A
111 n2-	Upper limit setting range of the maximum speed	RPM	9900 **)	n2_	*)	A
115 n6	Softstart speed	RPM	1500 **)	70	*)	A
117 n10	High lift walking speed	RPM	9900 **)	400	*)	A
119 nSt	Speed stage graduation 1 = linear 2 = slightly progressive 3 = highly progressive		3	1	*)	A
121 n2_	Lower limit setting range of the maximum speed	RPM	n2- **)	400	*)	A
122 n9	Triggering speed for needle cooling	RPM	9900 **)	200	*)	A
139 nIS	Display of machine speed On/Off		1	0	*)	A
153 brt	Braking power at machine standstill		50	0	*)	A
155 LSG	Mode signal "run" 0 = Signal Off. 1 = Signal "run" On. 2 = Signal "run" enabled when the speed is >3000 RPM. 3 = Signal with pedal <> 0. 4 = Signal enabled only after motor synchronization (one rotation at positioning speed after power On)		4	0	*)	A
156 t05	Switch-off delay for the signal "run" or signal with pedal in pos. 0 (neutral)	ms	2550 **)	0	*)	A
161 drE	Direction of motor rotation 0 = Clockwise rotation 1 = Counterclockwise rotation		1	0	*)	A
170 Sr1	Setting the reference position: - Press the E key. - Press the >> key. - Turn handwheel until symbol on display goes off. Then set the handwheel to the reference position. - Press the P key twice.					
171 Sr2	Setting the needle positions: 1E = Start position 1 2E = Start position 2 1A = End position 1 2A = End position 2	degrees	359	0	56 289 115 249	A A A A
172 Sr3	Display on the control: Pos. 1 to 1A (LED 7 lights up) Pos. 2 to 2A (LED 8 lights up)					
172 Sr3	Display on the V810 control panel: Pos. 1 to 1A (lefthand arrow above the 4 key On) Pos. 2 to 2A (righthand arrow above the 4 key On)					
172 Sr3	Display on the V820 control panel: Pos. 1 to 1A (lefthand arrow above the 7 key On) Pos. 2 to 2A (righthand arrow above the 7 key On)					

*) See table at the beginning of the Parameter List for preset values!

**) When programming the 3-digit or 4-digit control parameter values (without control panel), the 2-digit or 3-digit value displayed must be multiplied by 10.

Technician Level

Code no. 190 with control operation

Code no. 1907 with control panel operation

Parameter	Designation	Unit	max	min	Preset	Ind.
173	Sr4	Checking of the signal outputs and inputs using the incorporated control panel or the V810/V820 control panels 01 = Backtacking on socket ST2/34 02 = Sewing foot lift on socket ST2/35 03 = Output M1 on socket ST2/37 04 = Output M3 on socket ST2/27 05 = Output M2 on socket ST2/28 06 = Output M4 on socket ST2/36 07 = Output M5 on socket ST2/32 08 = Output M11 on socket ST2/31 09 = Output M6 on socket ST2/30 10 = Output M9 on socket ST2/25 11 = Output M8 on socket ST2/24 12 = Output M7 on socket ST2/23 13 = Output M10 on socket ST2/29 OFF/ON = By actuating the switches connected to the control, the function of these switches is checked and displayed on the control. OFF is displayed with open switch and the activated input in1...i10 with closed switch.				
179	Sr5	Control program number with index and identification number. Upon pressing the appropriate key the data will be displayed in succession. V810 control panel display example: Press the E key → Display e. g. Sr [°] Press the >> key → Display e. g. 5221A Press the E key → Display e. g. 010823 Press the E key → Display e. g. 15 Press the E key → Display e. g. 1F68 Press the P key twice→ Display Ab323A V820 control panel display example: Press the E key → Display F-179 Sr5 [°] Press the >> key → Display e. g. PrG 5221A Press the E key → Display e. g. dAt 01082315 Press the E key → Display e. g. chk 1F68 Press the E key → Display e. g. 132650210015 Press the E key → Display e. g. Skn 01047543 Press the P key twice→ Display 4000 Ab323A See instruction manual for control display example.				

4.4 Supplier Level

Code no. 311 with control operation

Code no. 3112 with control panel operation

Parameter		Designation	Unit	max	min	Preset	Ind.
201	t2	Sewing foot lift switch-on delay with half heelback	ms	500	20	*)	A
202	t3	Start delay after disabling the sewing foot lift signal	ms	500	0	*)	A
203	t4	Time of full power of sewing foot lifting	ms	600	0	*)	A
204	t5	Holding power for sewing foot lifting 1...100% 1% ➡ low holding power 100% ➡ high holding power	%	pa. 254	1	*)	A
207	br1	Braking effect when modifying the preset value ≤ 4 stages (indicated values only with transmission ratio 1:1)		55	1	*)	A
208	br2	Braking effect when modifying the preset value ≥ 5 stages (indicated values only with transmission ratio 1:1)		55	1	*)	A
209	dFw	Delay time from stop in position 2 to puller motor On	ms	2550 **)	0	*)	A
211	tFL	Sewing foot lift switch-on delay with thread wiper Off	ms	500	0	*)	A
214	rAt	Transmission ration / steps		160	40	*)	A
215	Frq	Frequency for puller control at standstill	Hz	5000 **)	500	*)	B
216	ASt	Speed limitation n9 by means of stitches at each sewing start	stitches	255	0	*)	B
219	br3	Positioning power at stop of the drive		55	1	*)	A
220	ALF	Accelerating power of the drive (indicated values only with transmission ratio 1:1)		55	1	*)	A
221	dGn	Speed gate 1	RPM	990 **)	50	*)	A
222	tGn	Speed gate damping period (effective only if parameter 224 = 0)	ms	990	0	*)	A
223	dG2	Speed gate 2	RPM	4500 **)	200	*)	A
224	dGF	Speed gate 2 On/Off		1	0	*)	A
225	br4	Setting the braking curve for the light barrier and machine run blockage (transmission ratio 1:1)		27	1	*)	A
231	Sn1	Execution of the first stitch after Power On at positioning speed		1	0	*)	A
236	FLP	0 = Sewing foot lift possible in all positions 1 = Sewing foot lift possible in position 2 2 = Sewing foot lift at the seam end stored with pedal backward. Storing undone with pedal slightly forward.		2	0	*)	A
238	EnP	Software debouncing for all inputs: 0 = No debouncing 1 = With debouncing		1	0	*)	A
239	FEL	Selection of the input function on socket B18/5 0 = Light barrier function, if 009 = 1 All other functions as with parameter 240.		60	0	*)	A

*) See table at the beginning of the Parameter List for preset values!

**) When programming the 3-digit or 4-digit control parameter values (without control panel), the 2-digit or 3-digit value displayed must be multiplied by 10.

Supplier Level

Code no. 311 with control operation

Code no. 3112 with control panel operation

Parameter	Designation	Unit	max	min	Preset	Ind.
240 in1	Selection of the input functions on socket ST2/7 for input 1 0 = No function 1 = Needle up/down 2 = Needle up 3 = Single stitch (basting stitch) 4 = Full stitch 5 = Needle to position 2 6 = Machine run blockage effective with open contact 7 = Machine run blockage effective with closed contact 8 = Machine run blockage unpositioned effective with open contact 9 = Machine run blockage unpositioned effective with closed contact 10..11 = No function 12 = Sewing foot lifting with pedal in position 0 (neutral) 13..32 = No function 33 = Speed n9 pedal controlled 34 = Automatic speed n9 can be suspended by pressing the pedal to pos. 0 (neutral) 35 = Automatic speed n9 can be interrupted by pressing the pedal to pos. -2 36 = Automatic speed n9 without pedal 37..43 = No function 44 = Function like pressing the pedal to pos. -2 45..53 = No function 54 = Function like pressing the pedal to step 12. If the start backtack or softstart function is activated, it will be completed. 55 = No function 56 = JointSystem function 57 = No function 58 = Signal M11 (vacuum suction) On/Off 59 = Sensor 1 60 = Sensor 2		60	0	*)	A
241 in2	Selection of input function on socket ST2/11 for input 2 0 = No function All other functions of the keys as with parameter 240		60	0	*)	A
242 in3	Selection of input function on socket ST2/6 for input 3 0 = No function All other functions of the keys as with parameter 240		60	0	*)	A
243 in4	Selection of input function on socket ST2/8 for input 4 0 = No function All other functions of the keys as with parameter 240		60	0	*)	A
244 in5	Selection of input function on socket ST2/5 for input 5 0 = No function All other functions of the keys as with parameter 240		60	0	*)	A
245 in6	Selection of input function on socket ST2/12 for input 6 0 = No function All other functions of the keys as with parameter 240		60	0	*)	A
246 in7	Selection of input function on socket ST2/9 for input 7 0 = No function All other functions of the keys as with parameter 240		60	0	*)	A

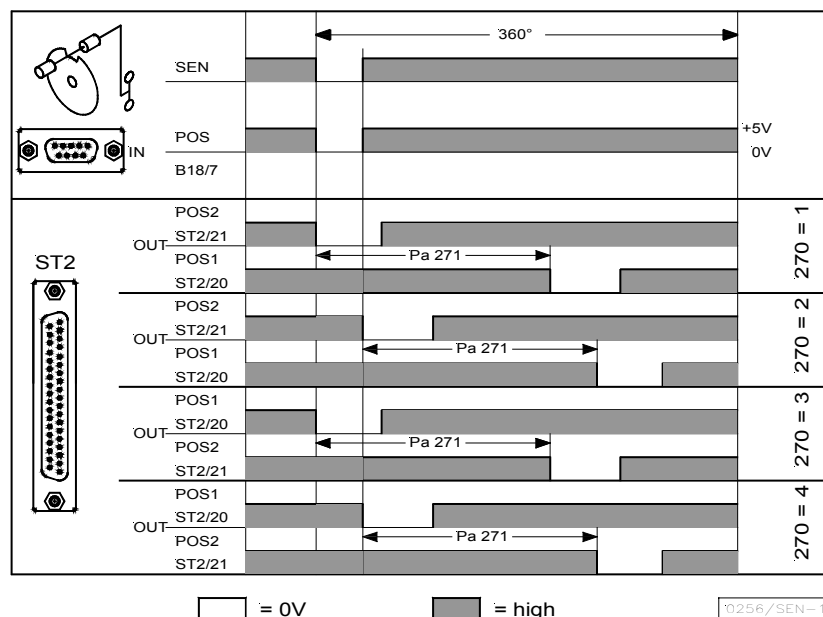
*) See table at the beginning of the Parameter List for preset values!

Supplier Level

Code no. 311 with control operation

Code no. 3112 with control panel operation

Parameter	Designation	Unit	max	min	Preset	Ind.
247 in8	Selection of input function on socket ST2/10 for input 8 0 = No function All other functions of the keys as with parameter 240		60	0	*)	A
248 in9	Selection of input function on socket ST2/13 for input 9 0 = No function All other functions of the keys as with parameter 240		60	0	*)	A
249 i10	Selection of input function on socket ST2/14 for input 10 0 = No function All other functions of the keys as with parameter 240		60	0	*)	A
254 EF-	Upper limit (pa. 204) duty ratio for sewing foot lift 1...100	%	100	1	*)	A
269 PSv	Positioning shift	degrees	100	0	*)	A
270 PGM	Connection of a sensor e. g. light barrier sensor to light barrier socket B18/7. Selection of the desired function! 0 = The positions are generated by means of the transmitter incorporated in the motor and can be set by means of parameter 171. 1 = Setting the sensor to position 2. Set position 1 using parameter 271, starting from leading edge position 2. 2 = Setting the sensor to position 2. Set position 1 using parameter 271, starting from trailing edge position 2. 3 = Setting the sensor to position 1. Set position 2 using parameter 271, starting from leading edge position 1. 4 = Setting the sensor to position 1. Set position 2 using parameter 271, starting from trailing edge position 1. 5 = No position sensor available. The drive stops unpositioned. The thread trimmer function is suppressed with this setting.		5	0	*)	A



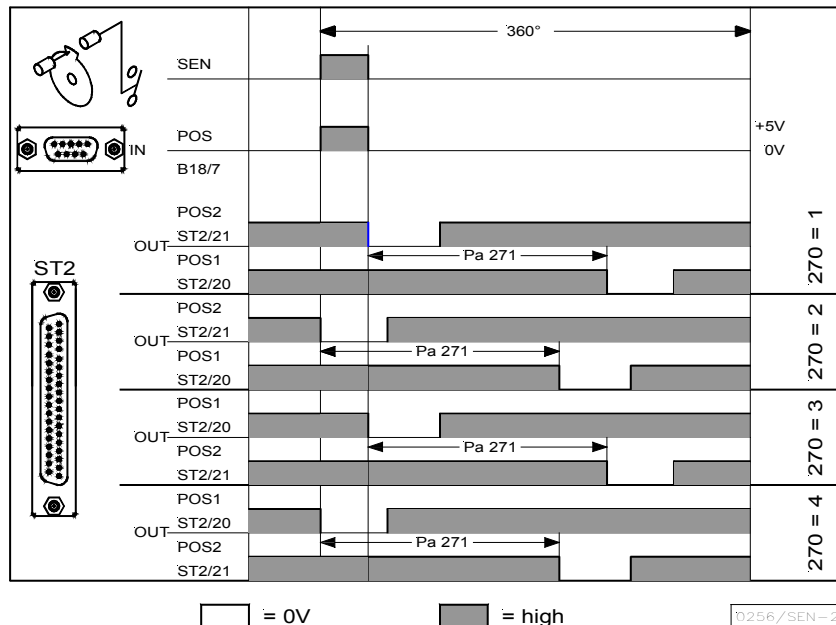
*) See table at the beginning of the Parameter List for preset values!

Supplier Level

Code no. 311 with control operation

Code no. 3112 with control panel operation

Parameter	Designation	Unit	max	min	Preset	Ind.
270 PGM	Connection of a sensor e. g. light barrier sensor to light barrier socket B18/7. Selection of the desired function! 0 = Function as in table on previous page! 1 = Setting the sensor to position 2. Set position 1 using parameter 271, starting from trailing edge position 2. 2 = Setting the sensor to position 2. Set position 1 using parameter 271, starting from leading edge position 2. 3 = Setting the sensor to position 1. Set position 2 using parameter 271, starting from trailing edge position 1. 4 = Setting the sensor to position 1. Set position 2 using parameter 271, starting from leading edge position 1. 5 = Function as in table on previous page!		5	0	*)	A



Parameter	Designation	Unit	max	min	Preset	Ind.
272 trr	Transmission ratio between motor shaft and machine shaft (calculation formula see instruction manual!) The transmission ratio should be determined and indicated as precisely as possible!		255	020	*)	A
281 kt1	ON period for knife	ms	2550 **)	0	*)	A
288 kdF	Delay time until sewing foot On	ms	2550 **)	0	*)	A
290 FAM	1 = TCB928 feed-off-the-arm machine 1...= TC291		1	1	*)	A

Note

When selecting the trimming mode by means of parameter 290, the connected V810 or V820 control panel is automatically sensed and the corresponding slide-in strip number is selected by means of parameter 291 and 292, respectively. Should a different strip be inserted, its number can be set by means of parameter 291 and 292, respectively, after having selected the trimming mode.

*) See table at the beginning of the Parameter List for preset values!

Supplier Level

Code no. 311 with control operation

Code no. 3112 with control panel operation

Parameter	Designation	Unit	max	min	Preset	Ind.
291 810	Select slide-in strip number for the V810 control panel (corresponds to slide-in strip no. 11)		1	1	*)	A
292 820	Select slide-in strip number for the V820 control panel (no special strip)		1	1	*)	A
293 tF1	Selection of the input function by means of the (A) key "F1" on the V810/V820 control panel 0 = No function 1 = Needle up/down 2 = Needle up 3 = Single stitch (basting stitch) 4 = Full stitch 5 = Needle to position 2 6...19 = No function		19	0	*)	A
294 tF2	Selection of the input function by means of the (B) key "F2" on the V810/V820 control panel Functions of the key as with parameter 293		19	0	*)	A
295 nAM	Switch proximity switches for inputs in2, in7, in8, in9		1	0	*)	A
297 M11	Functions of signal M11 0 = Function according to setting of parameter 290. 1 = Signal M11 is switched on whenever the light barrier is uncovered (pa. 131 = 1) or covered (pa. 131 = 0) 2 = Signal M11 is switched on whenever the light barrier is covered (pa. 131 = 1) or uncovered (pa. 131 = 0) 3 = Signal M11 is switched on only after light barrier uncovered and/or covered until seam end 4 = Signal M11 is switched on as with setting 3. Signal M5 (machine running), however, is switched off while signal M11 is issued. When signal M11 is issued, signal M6 (machine at standstill) is also immediately issued. 5 = Signal M11 is switched on from "light barrier sensing", "pedal in pos. -2" or "hemmer foot signal" key off" onwards. 6 = Signal M11 is On, when the key on input in 2 is open. Signal M11 is switched off after the section set by means of parameter 007 has been executed, when the key on input in2 is closed. At drive standstill, signal M11 is switched off immediately.		6	0	*)	A
455	Starting point of pulse output at ST2/29: 3E = Beginning of position 3 (leading edge)	degrees	359	0	*)	A

*) See table at the beginning of the Parameter List for preset values!

5 Error Displays

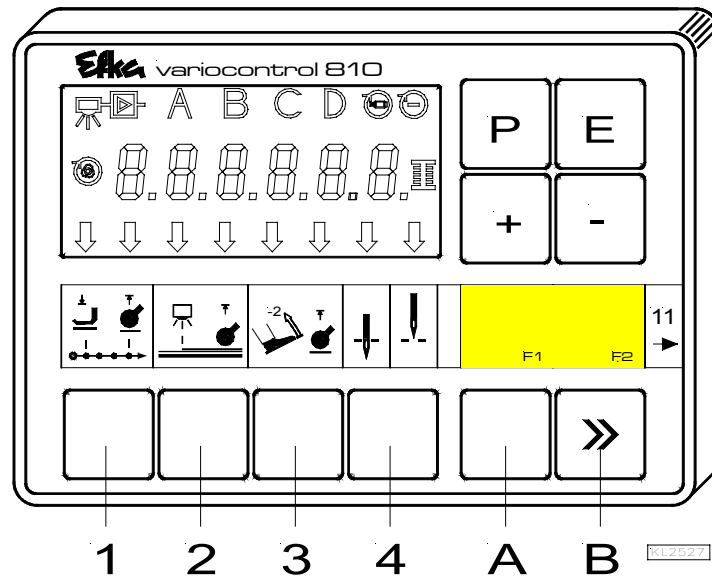
General Information			
On the control	On the V810	On the V820	Signification
A1	InF A1	InFo A1	Pedal not in neutral position, when turning the machine on
A2	-StoP- blinking	-StoP- blinking + symbol display	Machine run blockage
A3	InF A3	InFo A3	Reference position is not set
A6	InF A6	InFo A6	Light barrier monitoring
A7	Symbol blinking	Symbol blinking	Bobbin thread monitor

Programming Functions and Values (Parameters)			
On the control	On the V810	On the V820	Signification
Returns to 000 or to last parameter number	Returns to 0000 or to last parameter number	Like V810 + display InFo F1	Wrong code number or parameter number input

Serious Condition			
On the control	On the V810	On the V820	Signification
E1	InF E1	InFo E1	After power On, position transmitter or commutation transmitter defective, or connecting cables have been changed by mistake. During operation or after a sewing cycle, only position transmitter defects can be identified.
E2	InF E2	InFo E2	Line voltage too low, or time between power off and power on too short.
E3	InF E3	InFo E3	Machine blocked or does not reach the desired speed.
E4	InF E4	InFo E4	Control disturbed by deficient grounding or loose contact.
E9	InF E9	InFo E9	EEPROM defective.

Hardware Disturbance			
On the control	On the V810	On the V820	Signification
H1	InF H1	InFo H1	Commutation transmitter cord or frequency converter disturbed.
H2	InF H2	InFo H2	Processor disturbed

6 Operating Elements of the V810 Control Panel



Function Assignment to the Keys

P key = Call or exit of programming mode

E key = Enter key for modifications in the programming mode

+ key = Increase of the value indicated in the programming mode

- key = Decrease of the value indicated in the programming mode

1 key = Functions Off / both arrows Off

Foot lift pressure in StartCycle On / lefthand arrow On

Puller in StartCycle On / righthand arrow On

Foot lift pressure and puller in StartCycle On / both arrows On

2 key = JointSystem On/Off / lefthand arrow On/Off

3 key = Puller with heelback On/Off / lefthand arrow On/Off

4 key = Basic position needle down (POSITION 1) / needle up (POSITION 2)

A key = Different input functions can be assigned to the A key using parameter 293

B key = Different input functions can be assigned to the B key using parameter 294



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