Efka vario dc

CONTROL

DA82GL3302

with control panel V810

PARAMETER LIST

CONNECTION DIAGRAM
TIMING DIAGRAMS

No. 402230   english

| Contents	Page

1. Starting Service

When putting the control into operation, carry out the following programming steps:

- **The correct installation of the drive, the position transmitter and accompanying devices, if necessary**
- **The correct adjustment of the direction of rotation of the motor with parameter 161**
- **The setting of the reference position with parameter 170**
- **The setting of the positions with parameter 171**
- **The correct setting of the positioning speed with parameter 110 and/or 116**
- **The correct maximum speed compatible with the sewing machine with parameter 111**
- **The setting of the remaining relevant parameters**
- **Start sewing in order to save the set values**

See instruction manual for details!

2. Socket Connectors

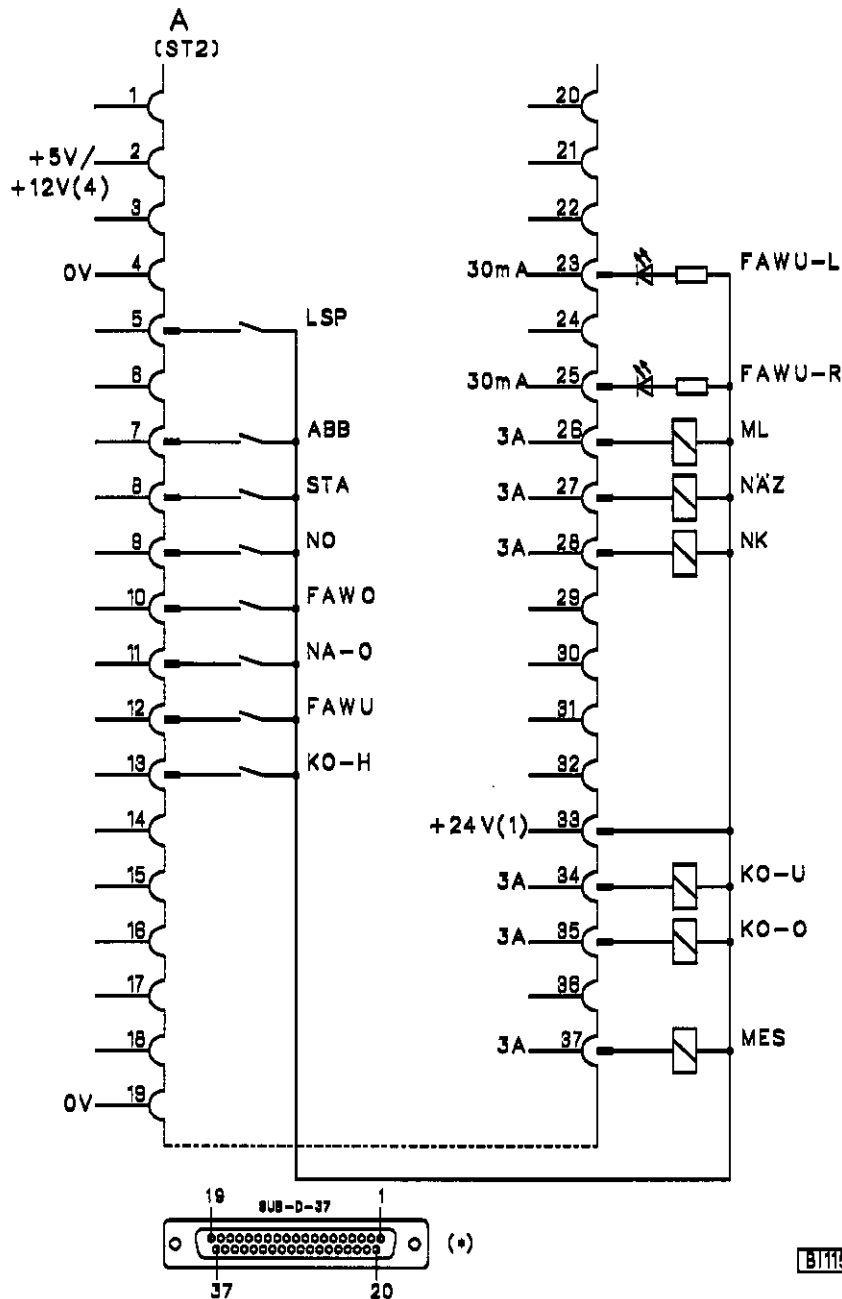## 2.1 Position on the Control
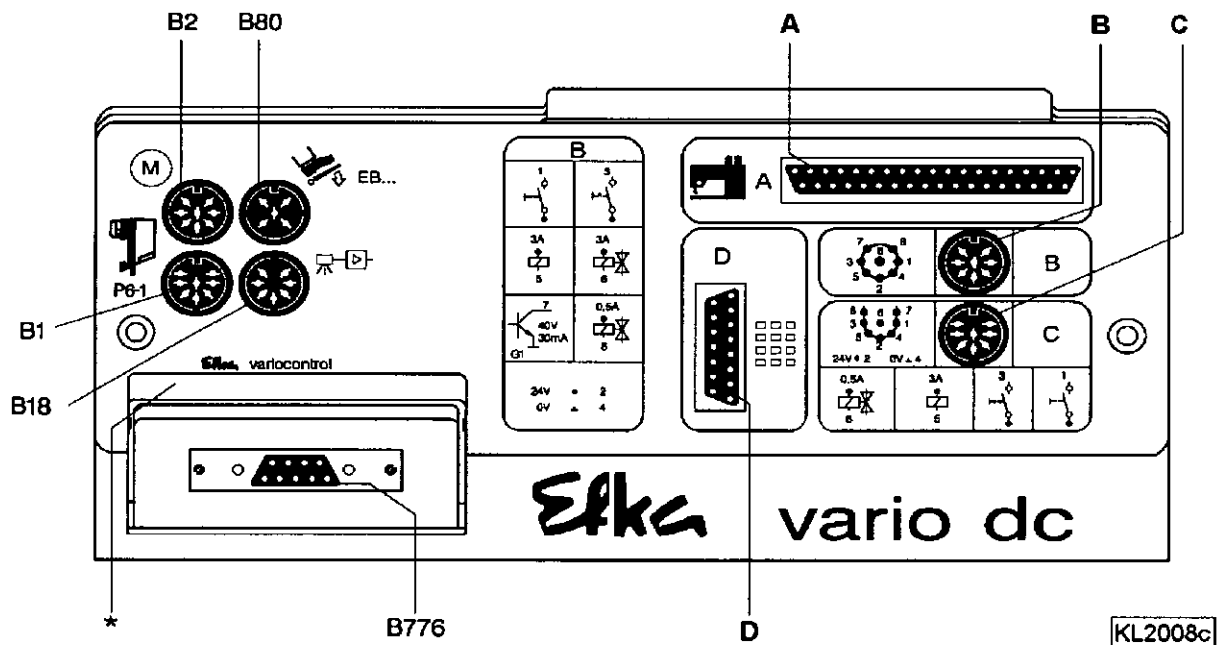
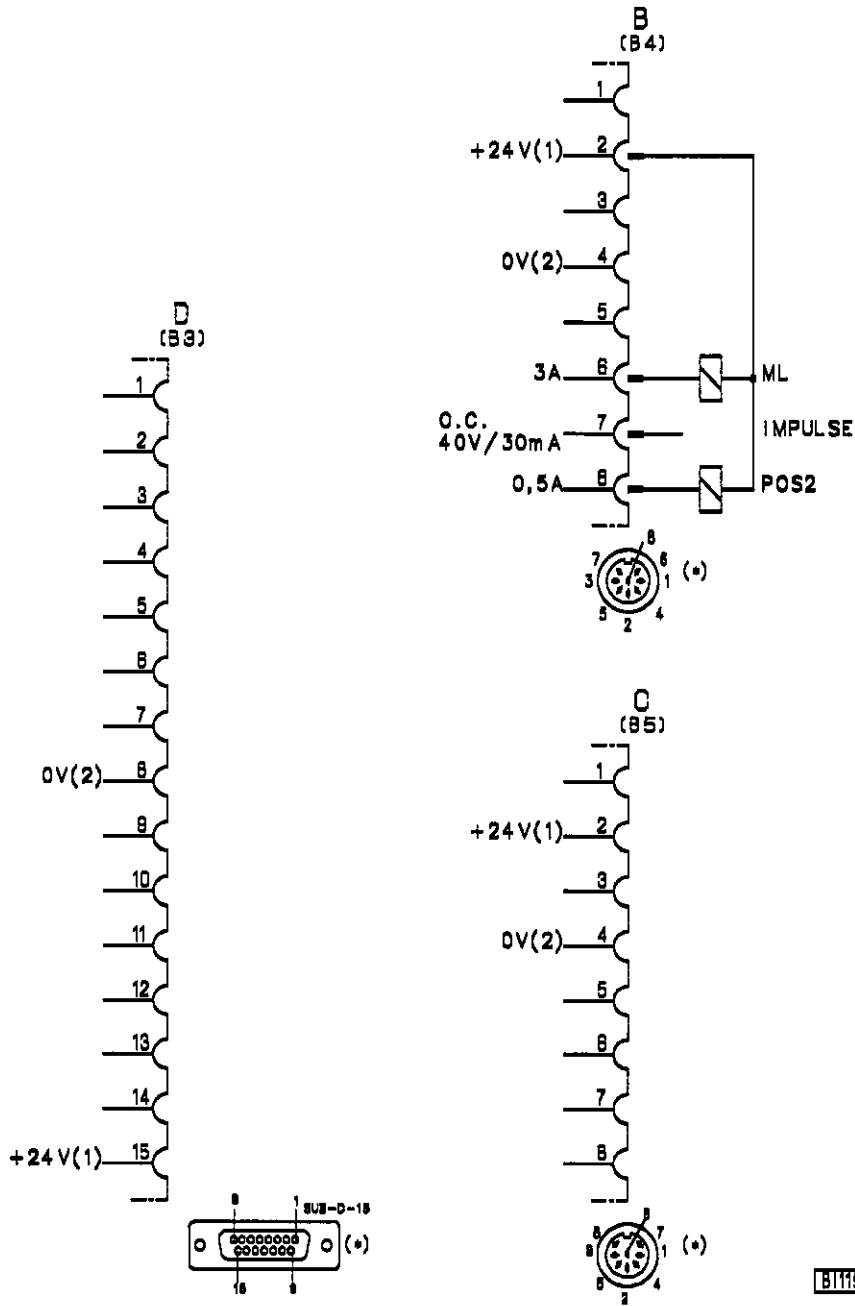| B1 | - Position transmitter |
B2	- Commutation transmitter for d.c. motor
A (ST2)	- Inputs and outputs
B (B4)	- Outputs
C (B5)	- Inactive
D (B3)	- Inactive
B18	- Inactive
B80	- Actuator
B776	- Control panel Variocontrol (as shown: 9/25-pole adapter plugged in)

*)   Type designation

2.2 Connection Diagram

FAWU-L	- Thread monitor at the bottom left	LSP	- Machine run blockage
FAWU-R	- Thread monitor at the bottom right	ABB	- Abortion key
ML	- Machine running	STA	- Start key
NÄZ	- Sewing cycle	NO	- Cam
NK	- Needle cooling	FAWO	- Needle thread monitor
KO-U	- Clamp down	NA-O	- Needle up
KO-O	- Clamp up	FAWU	- Bobbin thread monitor
MES	- Knife	KO-H	- Clamp back

1)   Nominal voltage 24V, no-load voltage max. 36V
4)   Nominal voltage +5V, 250 mA (can be changed to 12V, 250 mA after opening the cover)
      Attention! See instruction manual chapter "Supply Voltage 5V and/or 12V"!
*)   Front view of the socket (component side) and/or rear view (soldering side) of the plug

B
(B4)

1
+24V(1) — 2
3
0V(2) — 4
5
3A — 6 — ML
O.C. 40V/30mA — 7 — IMPULSE
0,5A — 8 — POS2

(∗)

D
(B3)

1
2
3
4
5
6
7
0V(2) — 8
9
10
11
12
13
14
+24V(1) — 15

SUB-D-15

(∗)

C
(B5)

1
+24V(1) — 2
3
0V(2) — 4
5
6
7
8

(∗)

B11155a

⚠

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

ML   - Machine running
IMPULSE   - Generator impulses (512 impulses/rotation)
POS2   - Position 2

1)   Nominal voltage 24V, no-load voltage max. 36V
2)   0V connection of the load circuit
∗)   Front view of the socket (component side) and/or rear view (soldering side) of the plug
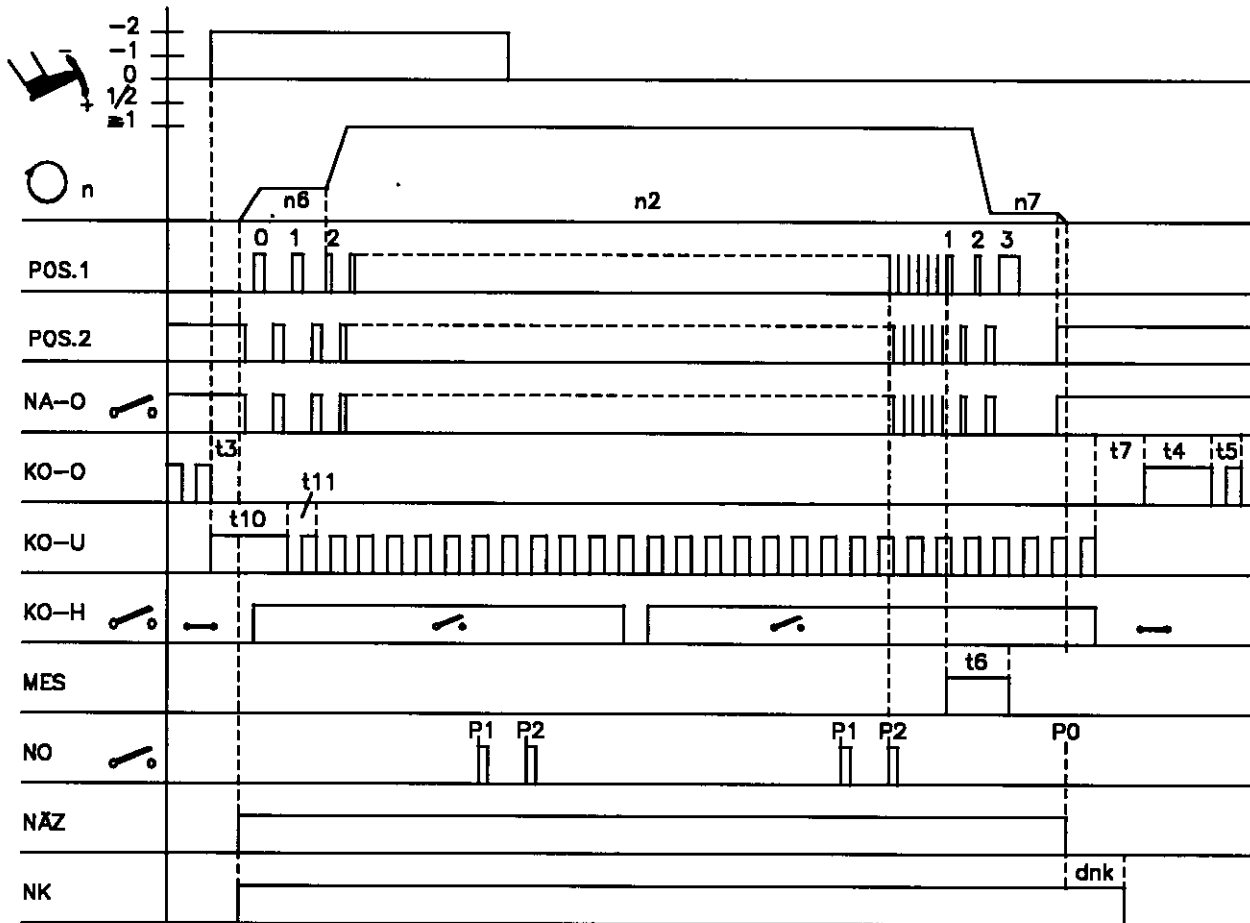
3. Timing Diagrams

Single sewing cycle
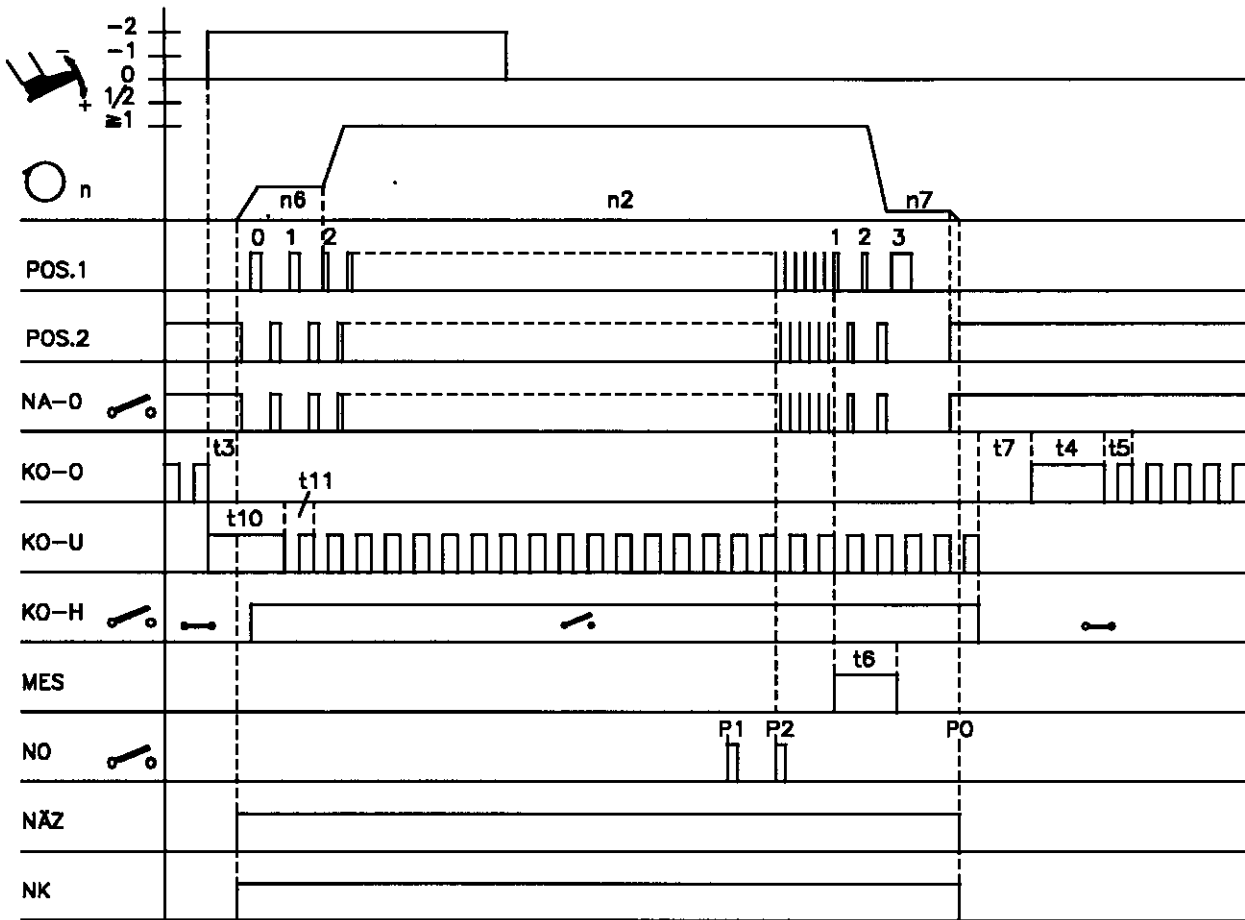
0260/ABLAUF2

Abbre-viation	Function		Parameter	Push-button V810
	Softstart	On		Pushb. 1
P1	Starting point of the measuring section for the determination of the seam end			
P2	End point of the measuring section			
P0	Seam end determined between point P1 and P2			
n2	Maximum speed		111	
n6	Softstart speed		115	
n7	Trimming speed		116	
KO-O	Signal clamp up			
KO-U	Signal clamp down			
KO-H	Input for clamp back			
MES	Signal for knife			
NO	Input of the sensor signal generated on the cams			
NA-O	Input for needle up			
NÄZ	Sewing cycle			
NK	Needle cooling			
t3	Start delay from clamp up		202	
t4	Full power from clamp up		203	
t5	Holding power from clamp up		204	
t6	Operating time of knife		205	
t7	Activation delay for clamp lift at the seam end		206	
t10	Full power of signal clamp down		212	
t11	Holding power of signal clamp down		213	

Double sewing cycle
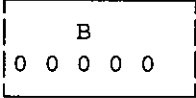
0260/ABLAUF3

Abbre-viation	Function		Parameter	Push-button V810
	Softstart	On		Pushb. 1
	Double cycle	On		Pushb. 2
P1	Starting point of the measuring section for the determination of the seam end			
P2	End point of the measuring section			
PO	Seam end determined between point P1 and P2			
n2	Maximum speed		111	
n6	Softstart speed		115	
n7	Trimming speed		116	
KO-O	Signal clamp up			
KO-U	Signal clamp down			
KO-H	Input for clamp back			
MES	Signal for knife			
NO	Input of the sensor signal generated on the cams			
NA-O	Input for needle up			
NÄZ	Sewing cycle			
NK	Needle cooling			
t3	Start delay from clamp up		202	
t4	Full power from clamp up		203	
t5	Holding power from clamp up		204	
t6	Operating time of knife		205	
t7	Activation delay for clamp lift at the seam end		206	
t10	Full power of signal clamp down		212	
t11	Holding power of signal clamp down		213	
dnk	Switch-off delay of needle cooling		183	

4. Parameter List

4.1 OPERATOR LEVEL

Parameter	Designation	Unit	max	min	Preset	Ind. Prg. No.
| F-000 | Buttonhole counting ON/OFF (function possible only whenever machine speed display, parameter 139, is off)<br><br>```
 B          Display V810
0 0 0 0 0
``` | ON/OFF | | | ON | B |
F-001	Reset buttonhole counting	ON/OFF			OFF	A

F-020	Setting aid for the **knife** and the thread trimmer which is mechanically connected to the **clamp**. The following functions are possible only if the drive is in **position 2** and the **clamp** is in position **back**!
	
	Pushbutton + ON
	Pushbutton 3 righthand arrow On
	            clamp up On
	            clamp down Off
	Pushbutton 3 righthand arrow Off
	            clamp up Off
	            clamp down On
	Pushbutton 4 righthand arrow On
	            knife On
	Pushbutton 4 righthand arrow Off
	            knife Off
	
	Only one function can be activated at a time!
		ON/OFF			OFF	A

F-085	Number of buttonholes for bobbin thread monitor F-195 = 1...3 => Buttonholes remaining after thread monitor signal F-195 = 4 => Full number of buttonholes		3000	0	0	A

4.2 TECHNICIAN LEVEL

Code no. 1907 with Variocontrol operation

Parameter	Designation	Unit	max	min	Preset	Ind. Prg. No.
Group 0	**Stitches/Countings**					
100	Number of softstart stitches		20	0	1	A
Group 1	**Speeds**					
F-110 n1	Positioning speed	RPM	390	70	390	A
F-111 n2-	Upper limit of the setting range of the maximum speed	RPM	5000	n2_	4000	A
F-115 n6	Softstart speed	RPM	2500	70	1300	A
F-116 n7	Trimming speed	RPM	900	100	400	A
Group 2						
F-121 n2_	Lower limit of the setting range of the maximum speed	RPM	n2	400	400	A
F-122	Delay stitches at the start of sewing until activation of the needle thread monitor		254	0	15	A
F-123	Delay stitches in the seam until activation of the needle thread monitor		254	0	2	A
F-124	Number of stitches until knife On before the seam end		254	0	5	A
F-127	Acoustic signal ON/OFF	ON/OFF			OFF	A
F-139	Display of actual machine speed	ON/OFF			OFF	A
Group 5	**Time Functions**					
F-153	Braking power at machine standstill		50	0	20	A
Group 6	**D.C. Motor**					
161 drE	Direction of rotation of the motor 0 = Clockwise rotation 1 = Counterclockwise rotation		1	0	1	A

TECHNICIAN LEVEL

Code no. 1907 with Variocontrol operation

Parameter	Designation	Unit	max	min	Preset	Ind. Prg. No.
Group 7	**Service Functions**					
F-170 Sr1	Setting the reference position Position 0: Thread lever shortly before the upper dead center; insert timing pin into slot on the arm shaft					A

F-171 Sr2	Setting the needle positions
	
	1 = Position 1 (leading edge)
	    needle down position (lower dead center)
	1A = Position 1 (trailing edge)
	2 = Position 2 (leading edge)
	    thread lever shortly before the upper dead
	    center, insert timing pin into slot on the
	    arm shaft (position 0)
	2A = Position 2 (trailing edge)
	
	3 = Position 2 (leading edge)
	3A = Position 2 (trailing edge)
			510
			
			510
			510
			
			510
			
			510
			510
				0
				
				0
				0
				
				0
				
				0
				0
					250
					
					350
					0
					
					50
					
					0
					0
						A
						
						A
						A
						
						A
						
						A
						A

F-172 Sr3	Display of the position windows Pos. 1 to 1A (left arrow above pushbutton 4 On) Pos. 2 to 2A (right arrow above pushbutton 4 On) **Function will be active only after the sewing has been started once!**					
F-173 Sr4	Checking of the signal outputs and inputs using the control panel V810 01 = Clamp down (A/34) 02 = Clamp up (A/35) 03 = Knife (A/37) 04 = Sewing cycle (A/27) 05 = Needle cooling (A/28) 06 = Machine running (A/26, B/6) 07 = LED righthand bobbin thread monitor (A/25) 08 = LED lefthand bobbin thread monitor (A/23) By actuating the switches connected to the control the function of these switches is checked and displayed with "ON/OFF".					A
F-179	Display of control program number with index ans identification number. When pressing the " > >" button, the data will be displayed in succession.					A

TECHNICIAN LEVEL

Code no. 1907 with Variocontrol operation

Parameter	Designation	Unit	max	min	Preset	Ind. Prg. No.
Group 8	**Functions of Specific Types**					
F-180	Correction (+) of the run-out stitches at the buttonhole end		10	0	0	B
F-181	Correction (-) of the run-out stitches at the buttonhole end		10	0	0	B
F-183 dnk	Switch-off delay of needle cooling after stop	ms	5000	0	2500	A
F-185	Function of the output needle cooling 1 = Needle cooling 2 = Reserved for option		2	1	1	A
Group 9	**Switching Machine Systems**					
F-195	Bobbin thread monitor 0 = Bobbin thread monitor Off 1 = Optical bobbin thread monitor; clamp down after counting 2 = Optical bobbin thread monitor; clamp up after counting 3 = Function as with setting 1 4 = Bobbin thread control by buttonhole counting (number of buttonholes according to setting with parameter F085)		4	0	4	A

4.3 SUPPLIER LEVEL

Code no. 3112 with Variocontrol operation

Parameter	Designation	Unit	max	min	Preset	Ind. Prg. No.
Group 0	**Time Functions**					
F-200 t1	Start delay after buttonhole end until buttonhole start	ms	500	0	200	A
F-202 t3	Start delay from position clamp up	ms	500	0	80	A
F-203 t4	Duration of full power for signal clamp up	ms	600	0	200	A
F-204 t5	Holding current for signal clamp up Stages 0, 1...7 Stage 0 = 100% Stage 1 = 12.5% Stage 7 = 87.5%		7	0	0	A
F-205 t6	Operating time of the knife	ms	500	0	70	A
F-206 t7	Activation delay for clamp lift at the seam end	ms	800	0	50	A
F-207	Braking effect when modifying the preset value ≤ 4 stages		255	1	25	A
F-208	Braking effect when modifying the preset value ≥ 5 stages		255	1	60	A
Group 1	**Time Functions**					
F-212 t10	Duration of full power for signal clamp down	ms	600	0	200	A
F-213 t11	Holding power for signal clamp down Stages 0, 1...7 Stage 0 = 100% Stage 1 = 12.5% Stage 7 = 87.5%		7	0	0	A
Group 2	**Speeds**					
F-220	Accelerating power of the drive		255	5	32	A

SUPPLIER LEVEL

Code no. 3112 with Variocontrol operation

Parameter	Designation	Unit	max	min	Preset	Ind. Prg. No.
Group 3	**Switching Functions**					
F-231	Execution of the first stitch after power ON at positioning speed	ON/OFF			ON	A
F-232	Display of the run-out stitches	ON/OFF			ON	A
F-233	Stop segment at speed n7 > 340 RPM (correction value for accurate positioning)		100	0	6	A
F-235	Correction value for run at n7 before the stop		100	0	35	A
Group 8						
F-281	New sewing start after machine start blockage ON = Only with pedal in position 0 OFF = Immediate start	ON/OFF			ON	A
F-282	Functioning of the switch for machine start blockage 1 = Break contact (N.C.) 0 = Make contact (N.O.)		1	0	0	A
F-283	Function machine start blockage 0 = Function off 1 = Blockage 1, without positioning 2 = Blockage 2, with positioning		2	0	0	A

4.4 STATUS DISPLAYS

Display	Designation
InF A1	Pedal not in neutral position, when switching the machine on.
InF A3	The position to which all position values refer has not been stored (reference position is missing).
InF A4	Control panel cannot be clearly identified.
InF E1	Position transmitter not connected and/or defective, or mains voltage too low.
InF E2	Mains voltage too low or power off > on too short.
InF E3	Machine locks or does not reach the desired speed.
InF E4	Control disturbed by deficient grounding or loose contact.
InF H1	Commutation transmitter cord or frequency converter disturbed.
InF H2	Processor disturbed.
InF P1	Error when determining the run-out stitches; number of run-out stitches too low.
InF P2	Error when determining the run-out stitches; number of run-out stitches too high.

```
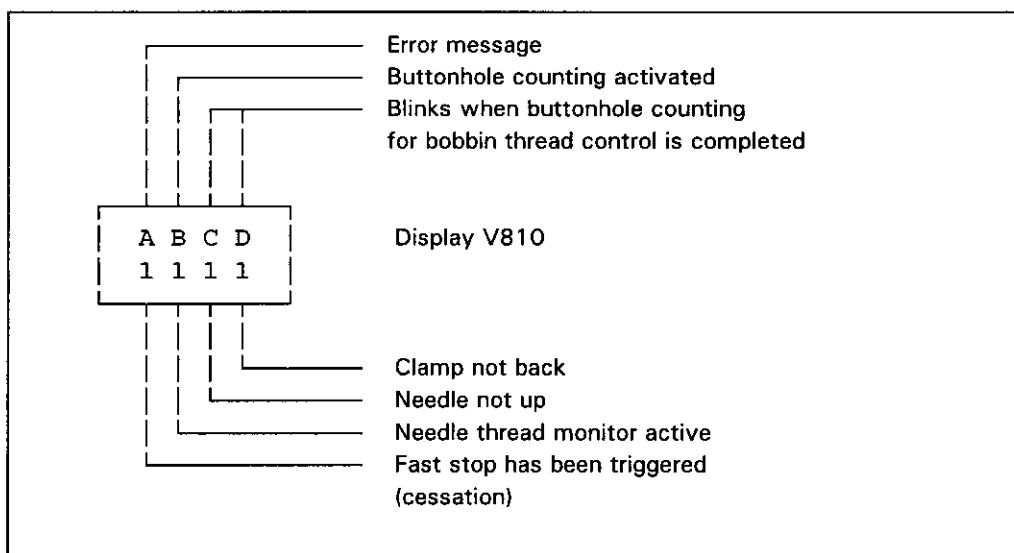                        ┌─────────────────── Error message
        │  ┌──────────────── Buttonhole counting activated
        │  │  ┌───────────── Blinks when buttonhole counting
        │  │  │ │            for bobbin thread control is completed
        │  │  │ │
    ┌───┴──┴──┴─┴──┐
    │  A  B  C  D  │        Display V810
    │  1  1  1  1  │
    └───┬──┬─┬─┬───┘
        │  │ │ │
        │  │ │ └────────── Clamp not back
        │  │ └──────────── Needle not up
        │  └─────────────── Needle thread monitor active
        └────────────────── Fast stop has been triggered
                            (cessation)
```

4.5 Insertable Strips for Variocontrol V810

H▷—▶▷	2x ○ ▨	▣↓	⫽			☰R	Kl.577

KL2314

For your notes

For your notes