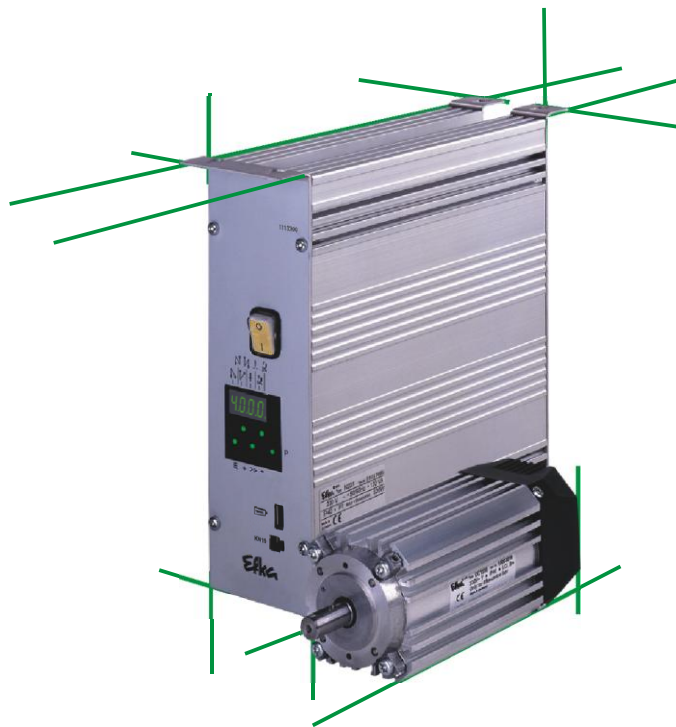


EFKA

dc1550

CONTROL

DA321G5321



List of Parameters

- Connection Diagrams
- Timing Diagrams

No. 402314

English

Important Notes

The particulars used in various figures and tables, such as type, program number, speed, etc., serve as examples. They may differ from those in your display.

For current versions of the Instructions for Use and Lists of Parameters, necessary for operating EFKA drives in accordance with regulations, please refer to the EFKA web site www.efka.net, page "**Downloads**".

On our web site you will also find the following supplementary instructions for this control:

- ✘ General instructions for use and programming
- ✘ Use with USB Memory Stick
- ✘ Use of the C200 compiler
- ✘ Adapter cords

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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 using parameter **161**
- The correct positioning speed using parameter **110**
- The correct maximum speed compatible with the sewing machine using parameter **111**
- The setting of the positions
- The setting of the remaining relevant parameters
- Start sewing in order to save the set values

2 Setting and Putting into Service with the Aid of the Fast Installation Routine (SIR)

The Fast Installation Routine (SIR) passes through all parameters necessary for programming the functional sequence and the positions.

Input parameter 500 (call-up SIR) →

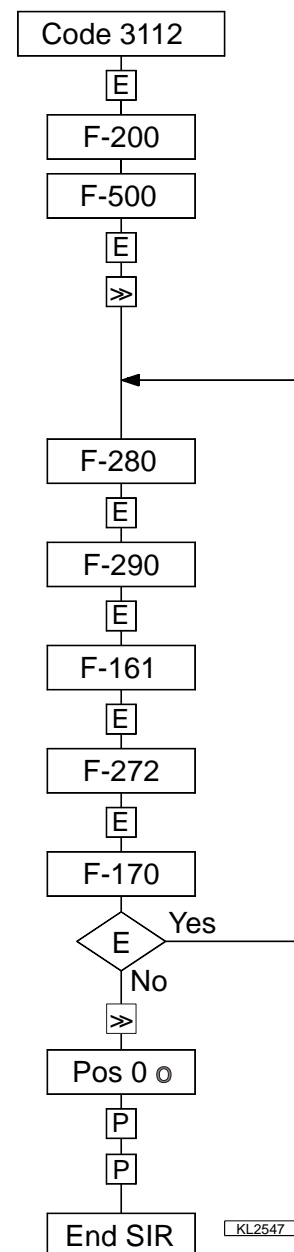
Display of the select resistor

Enter machine model for the select resistor detected

Parameter for direction of motor rotation

Parameter for transmission ratio
(Important! The transmission ratio should be determined and indicated as precisely as possible.)

Setting the reference position

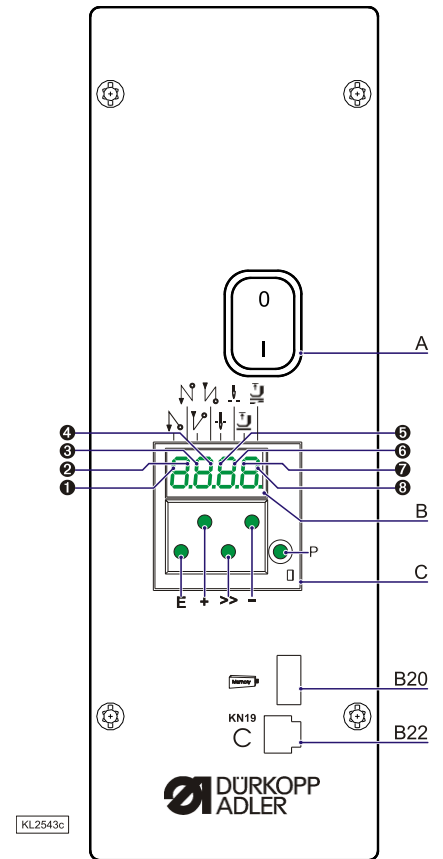


The values can be varied by pressing key +/- . When the parameter is displayed on the V810 control panel, press the E key once more for the value to be displayed.

3 Operating Elements and Socket Connectors

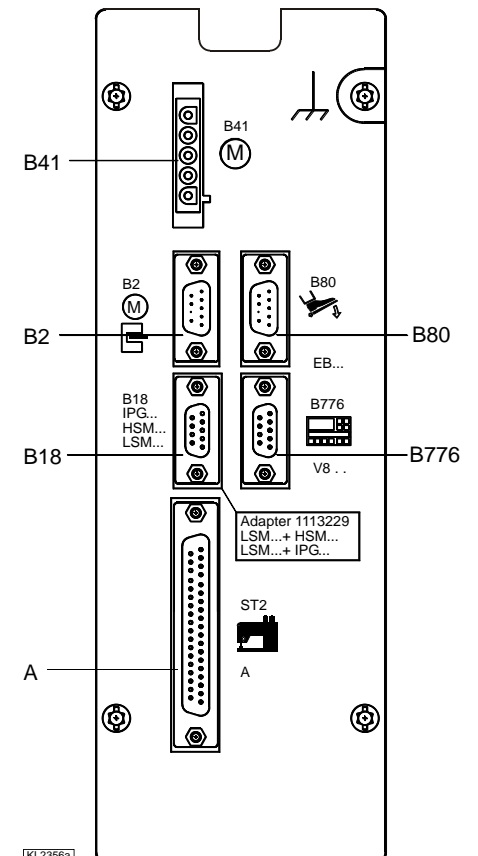
3.1 Positions of the Front Side

A	Power switch
B	Display (4 digit 7 segment display)
C	Control panel (onboard module)
Key	
P	Call or exit programming mode
E	Start backtack single / double / off Enter key for modifications in the programming mode
+	End backtack single / double / off In the programming mode - increase of the value indicated
>>	Basic position 1 or 2 In programming mode as shift key
-	Automatic sewing foot lifting at stop in the seam On/Off Automatic sewing foot lifting after thread trimming On/Off In the programming mode - decrease of the value indicated
The upper vertical segments of the 4 digit 7 -segment display indicate the switching states of backtacking, foot lifting and basic position.	
1	Single start backtack
2	Double start backtack
3	Single end backtack
4	Double end backtack
5	Basic position "needle position 1"
6	Basic position "needle position 2"
7	Automatic sewing foot lifting at stop in the seam
8	Automatic sewing foot lifting after the thread trimming operation
Connector	
B20	USB Memory Stick
B22	Socket C knee switch
(C)	



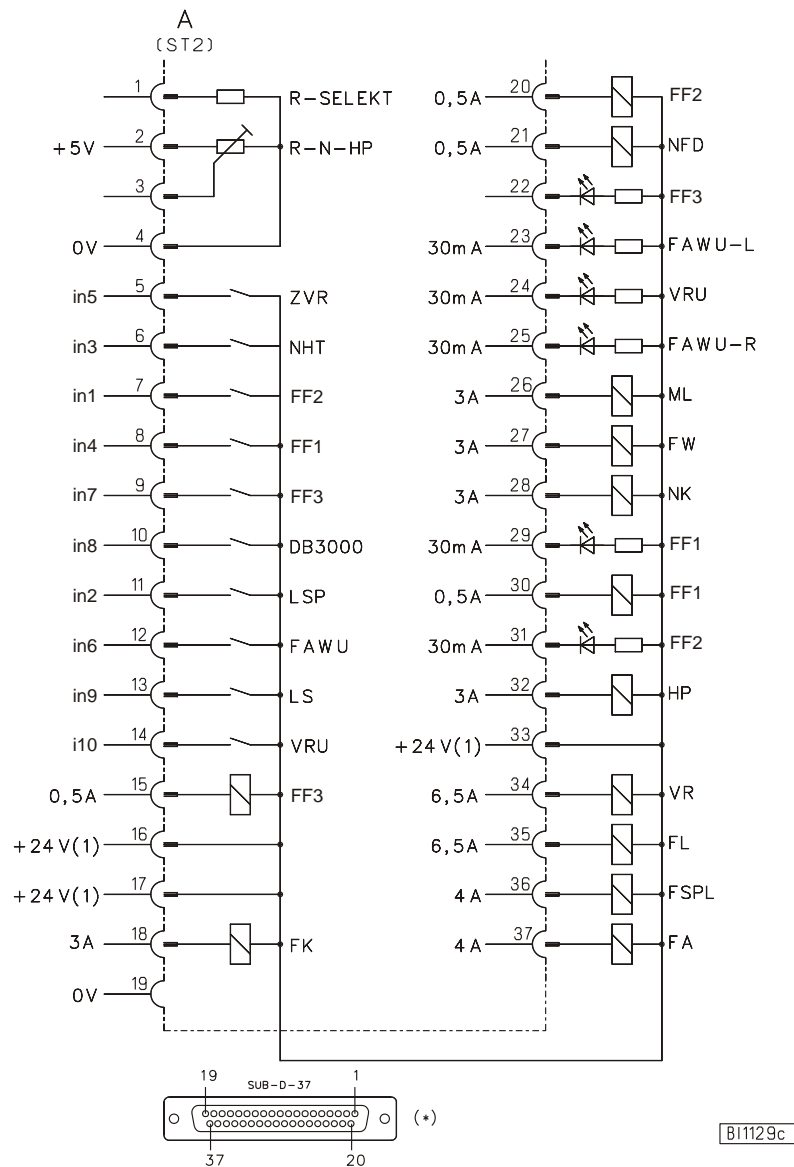
3.2 Positions of the rear side

Connector	
B2	Commutation transmitter
B18	Light barrier module LSM002 - Hall sensor module HSM001 - Pulse encoder IPG001 - EFKANET (Adapter cord 1113229 in case of multiple assignment)
B41	Motor power supply
B80	Actuator
B776	V810/V820/V850 control panel
A	Socket for inputs and outputs e. g. solenoids, solenoid valves, displays, keys and switches (ST2)



3.3 Connection Diagrams

Socket ST2 corresponds to socket A



BI1129c



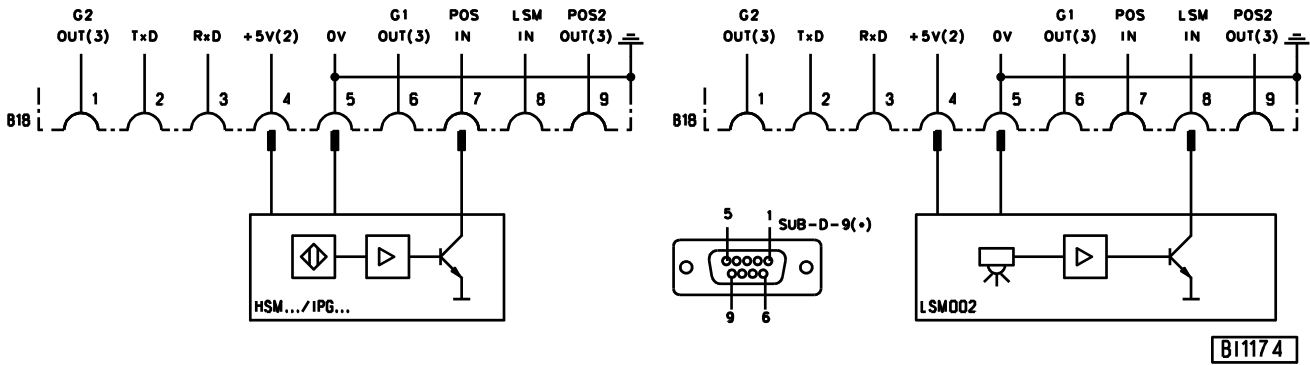
ATTENTION

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

DB3000	Speed limitation bit 3000 min ⁻¹	in8		LS	Light barrier	in9	
FA	Thread trimmer		M1	LSP	Machine run blockage	in2	
FAWU	Thread monitor bottom	in6		ML	Motor running		M14
FAWU-L	Thread monitor bottom left		M7	NFD	Sewing foot pressure		M17
FAWU-R	Thread monitor bottom right		M9	NHT	Needle up/down	in3	
FF1	Function module A	in4	M6	NK	Needle cooling		M2
FF2	Function module B	in1	M16	R-N-HP	Set value potentiometer for speed limitation depending on high lift		
FF3	Function module C	in7	M30	R-SELEKT	Resistance for machine select		
FK	Thread clamp		M31	VR	Backtacking		
FL	Sewing foot lifting			VRU	Backtack suppression / recall	i10	M8
FSPL	Thread tension release		M4	ZVR	Intermediate Backtack	in5	
FW	Thread wiper		M3				
HP	High lift for walking foot		M5				

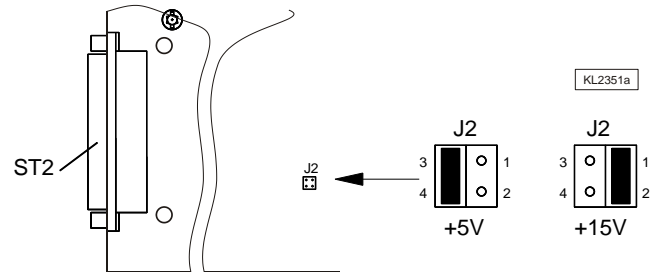
1) Nominal voltage +24 V, no-load voltage max. 30 V momentarily after power on. Parameters 405 – 408 can be used to switch from 24 V to 30 V.

*) View: Front view of the control (component side) and/or rear view of the outgoing connecting cable

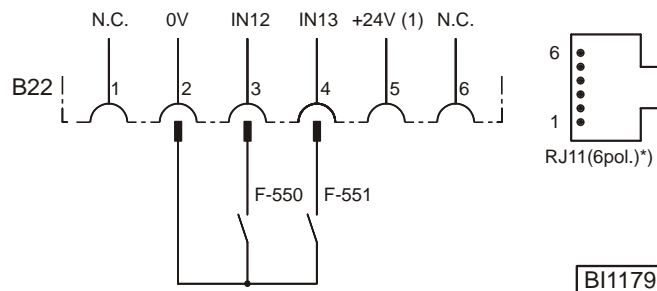


POS2 OUT	Output for position 2	LSM IN	Possibility of connecting a light barrier module to socket B18/8
POS IN	Input for positions (e. g. connection of a sensor)	LSM002	Reflection light barrier module
G1/G2 OUT	Output of generator impulses	HSM001	Hall sensor module
TXD/RXD	Serial transmission lines	IPG...	Pulse encoder

There is a supply voltage of +5V on the B18/4 socket for external devices. These can be changed to +15V by opening the cover and moving the connector on a jumper J2 on the circuit board.
 +5V = Connect left pins 3 and 4 with a jumper (factory setting)
 +15V = Connect right pins 1 and 2 with a jumper

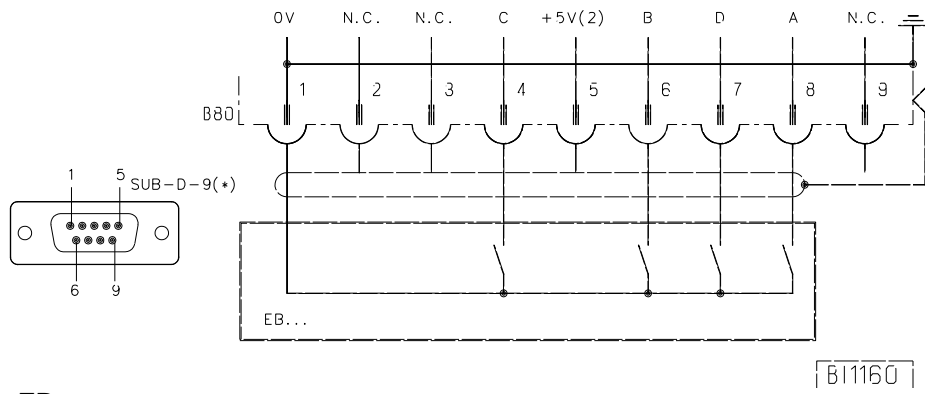


ATTENTION
Before opening the cover, always disconnect the power!



IN12	Input 12, function programmable using parameter 550	IN13	Input 13, function programmable using parameter 551
------	---	------	---

- 1) Nominal voltage +24 V, no-load voltage max. 30 V momentarily after power on. Parameters 405 – 408 can be used to switch from 24 V to 30 V.
 - 2) Nominal voltage +5V, I_{max} 100mA (switchable to +15V, I_{max} 100mA)
 - 3) Logic level output, specification according to HC74...
- *) View: Front view of the control (component side) and/or rear view of the outgoing connecting cable



EB.. = actuator

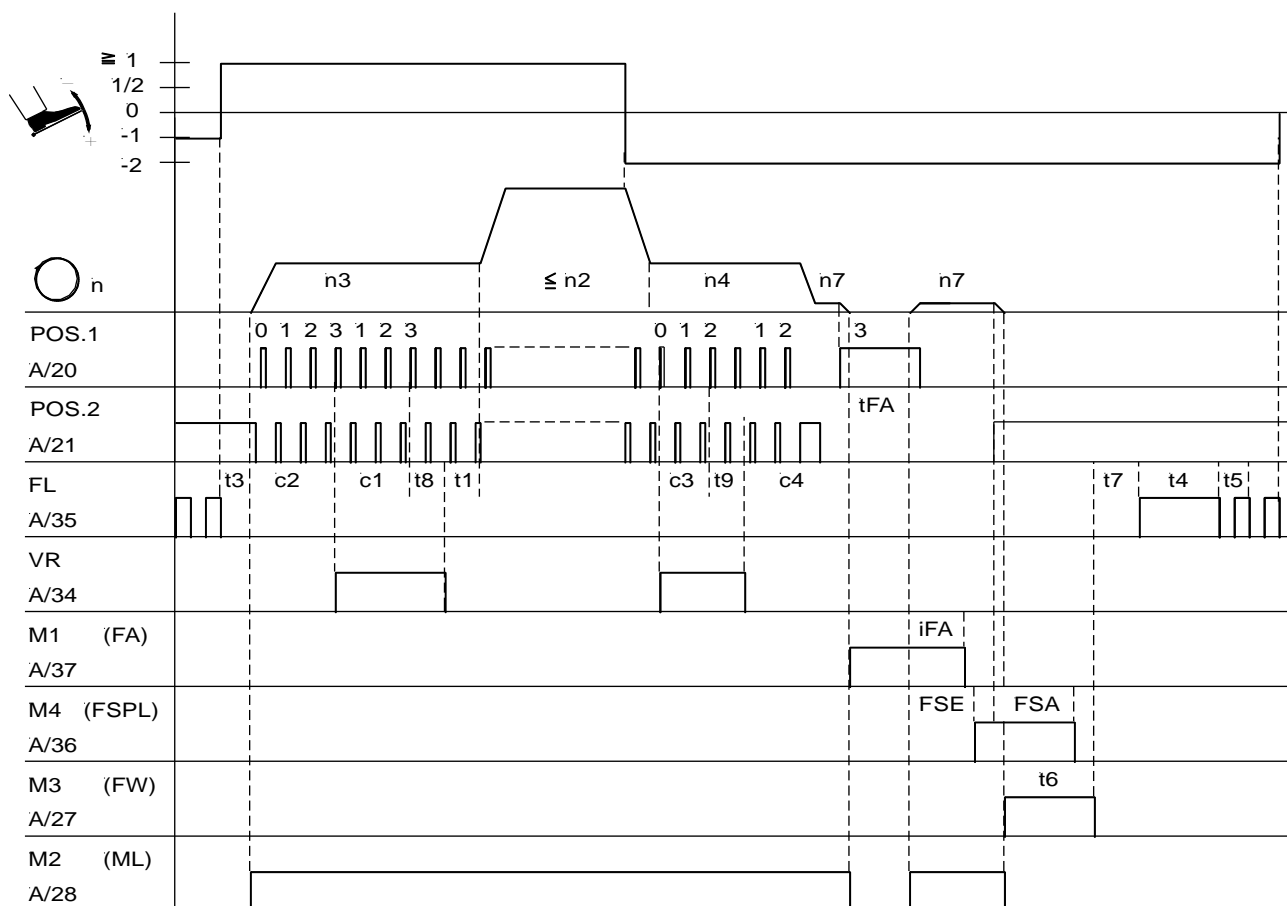
Pedal step →	-2	-1	0	½	1	2	3	4	5	6	7	8	9	10	11	12
Input A	L	L	H	H	H	L	L	H	H	L	L	H	H	L	L	H
Input B	L	H	H	L	L	L	H	H	H	H	L	L	L	L	H	H
Input C	H	H	H	H	L	L	L	L	L	L	L	L	H	H	H	H
Input D	H	H	H	H	H	H	H	H	L	L	L	L	L	L	L	L

2) Nominal voltage +5 V, I_{max} 20 mA

*) View: Front view of the control (component side) and/or rear view of the outgoing connecting cable

4 Timing Diagrams

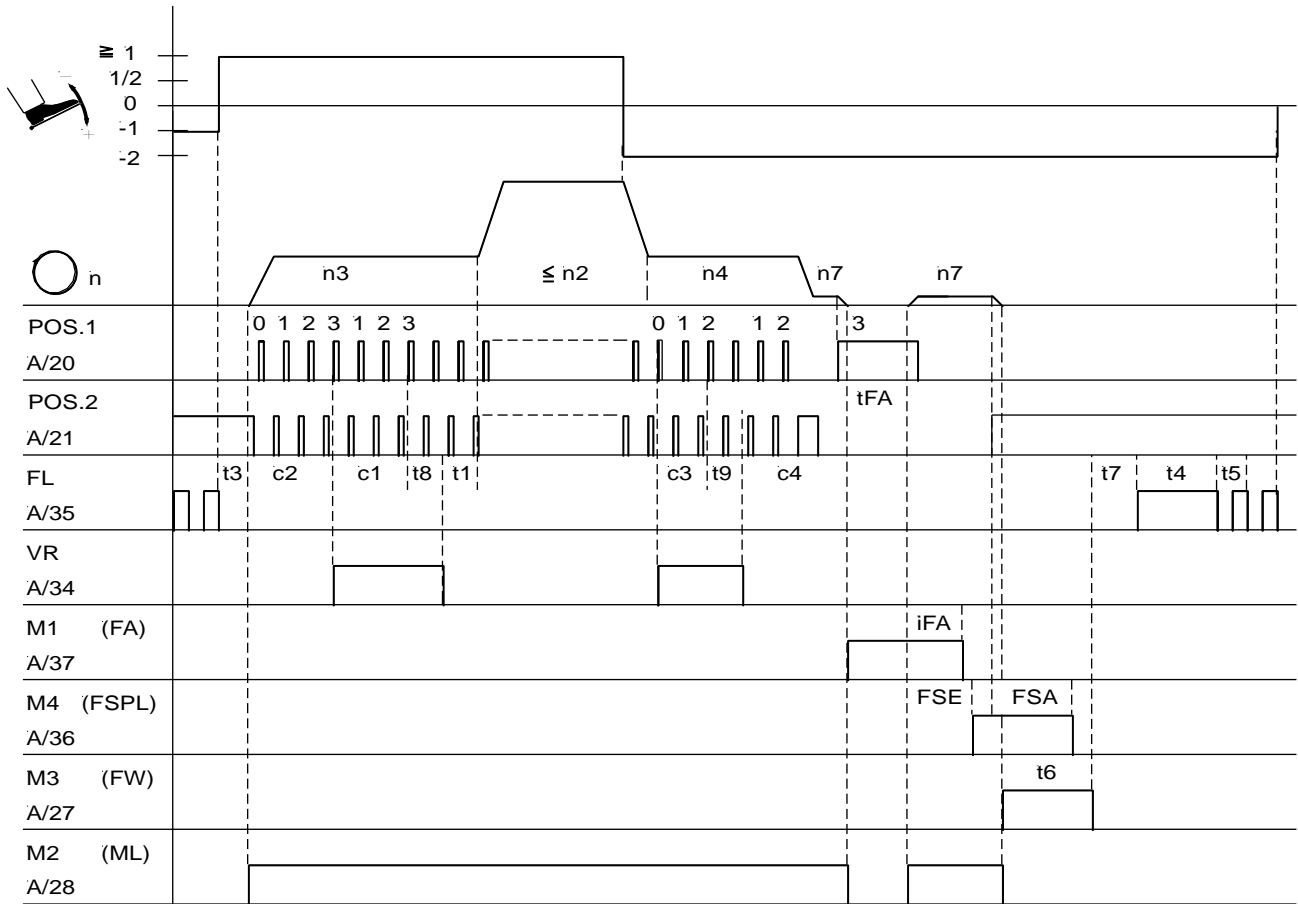
Trimming from full machine run



0267/FALAUFL

Mark	Function	Parameter	Control	V810	V820/V850
	Double start backtack with stitch correction	On	Key S2	Key 1	Key 1
	Double end backtack with stitch correction	On	Key S3	Key 2	Key 4
n2	Maximum speed	111			
n3	Start backtack speed	112			
n4	End backtack speed	113			
n7	Trimming speed	116			
c2	Start backtack stitches forward	000			
c1	Start backtack stitches backward	001			
c3	End backtack stitches backward	002			
c4	End backtack stitches forward	003			
t8	Start backtack stitch correction	150			
t9	End backtack stitch correction	151			
iFA	Engagement angle of thread trimmer	190			
FSA	Switch-off delay of thread tension release	191			
FSE	Engagement angle of thread tension release	192			
tFA	Stopping time for thread trimming	193			
t1	Delay until speed release after start backtack	200			
t3	Start delay from lifted sewing foot	202			
t4	Full power of sewing foot lifting	203			
t5	Pulsing of sewing foot lifting	204			
t6	Thread wiper ON period	205			
t7	Sewing foot switch-on delay after thread wiper	206			

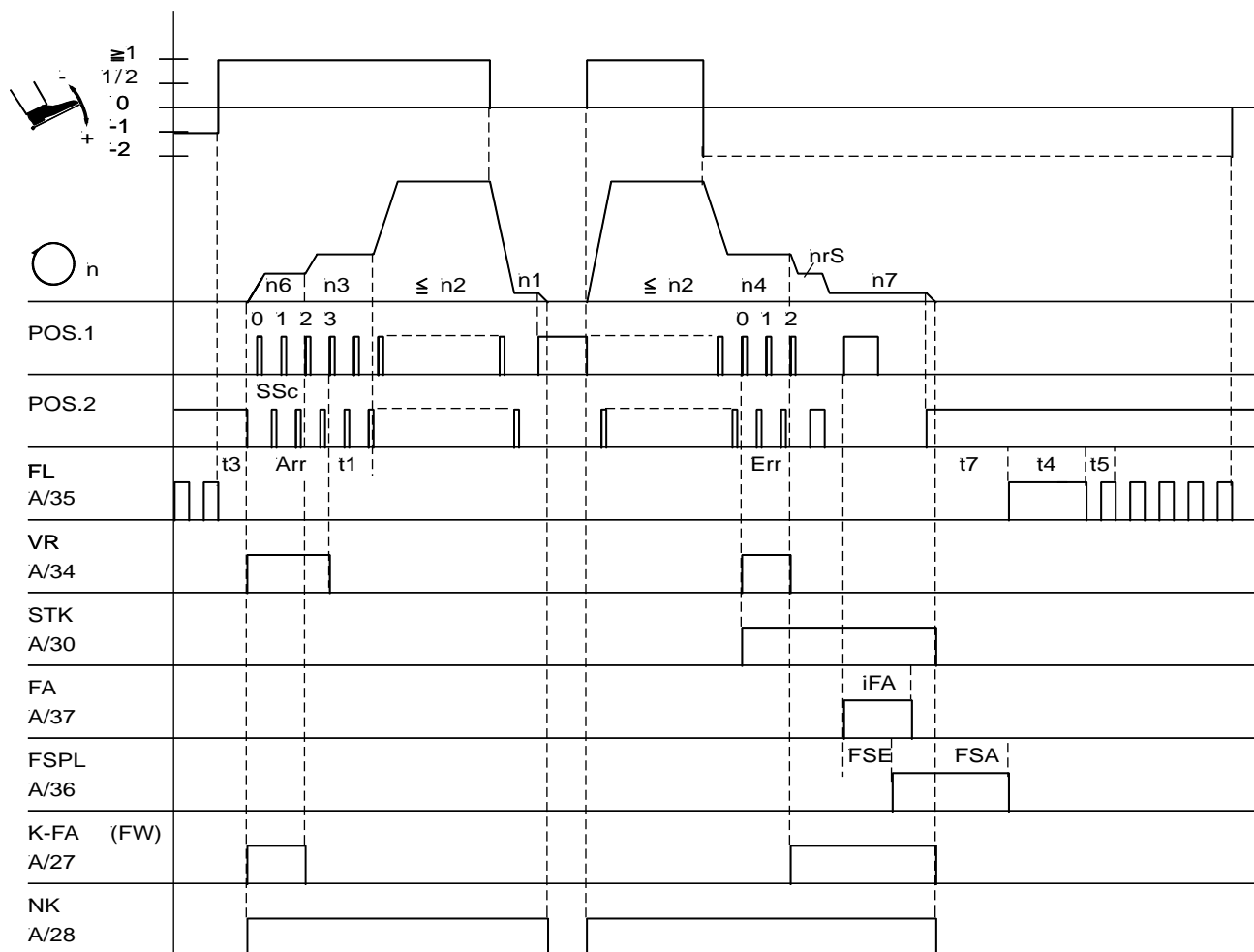
Machine run with intermediate stop



0267/FALAUFL

Mark	Function	Parameter	Control	V810	V820/V850
	Double start backtack with stitch correction	On	Key S2	Key 1	Key 1
	Double end backtack with stitch correction	On	Key S3	Key 2	Key 4
n1	Positioning speed	110			
n2	Maximum speed	111			
n3	Start backtack speed	112			
n4	End backtack speed	113			
n7	Trimming speed	116			
c1	Start backtack stitches backward	001			
c3	End backtack stitches backward	002			
iFA	Engagement angle of thread trimmer	190			
FSA	Switch-off delay of thread tension release	191			
FSE	Engagement angle of thread tension release	192			
tFA	Stopping time for thread trimming	193			
t1	Delay until speed release after start backtack	200			
t3	Start delay from lifted sewing foot	202			
t4	Full power of sewing foot lifting	203			
t5	Pulsing of sewing foot lifting	204			
t6	Thread wiper ON period	205			
t7	Sewing foot switch-on delay after thread wiper	206			

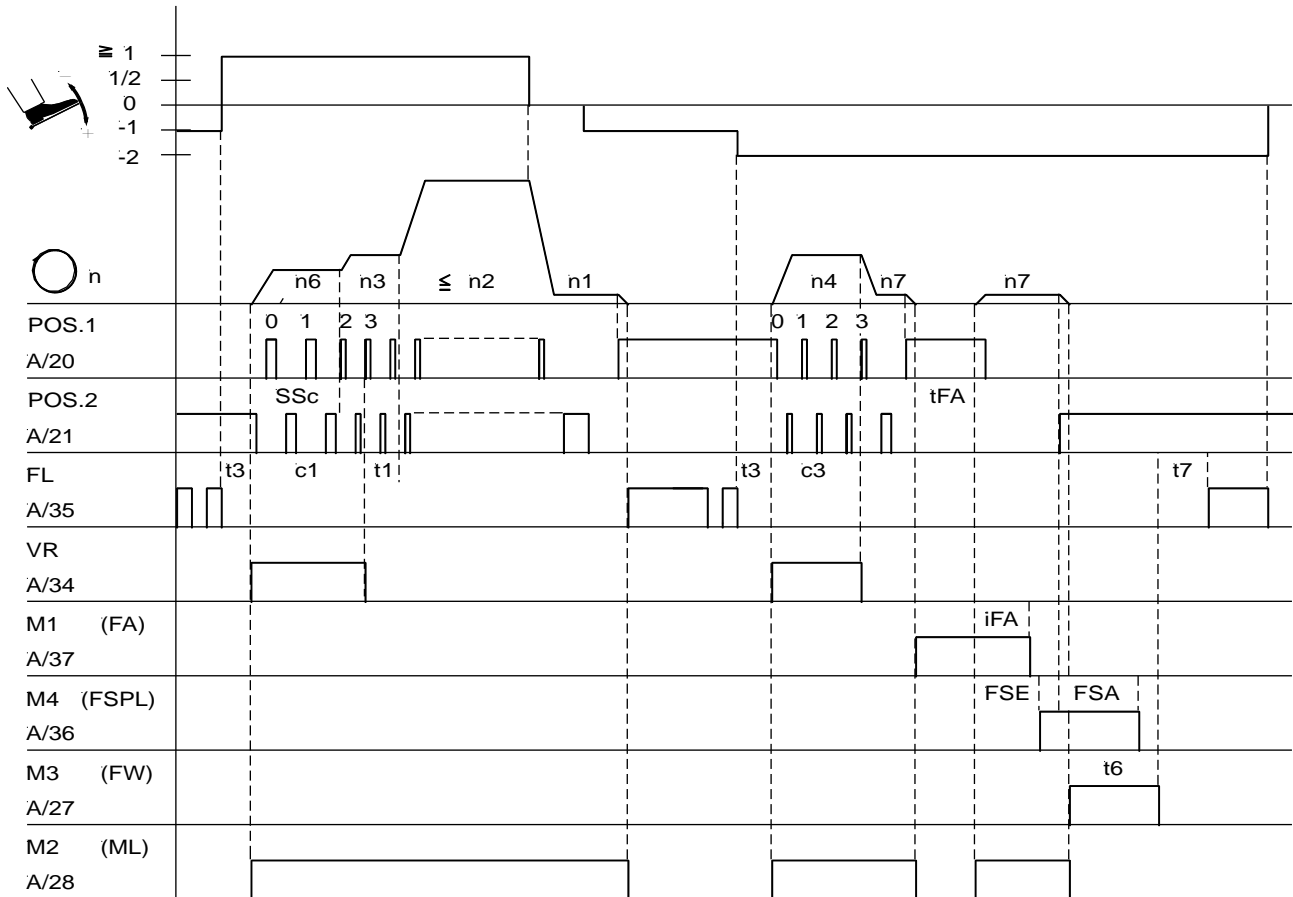
Machine run with intermediate stop and short trimmer



0214/FAKURZ

Mark	Function	Parameter	Control	V810	V820/V850
	Single start backtack Single end backtack Trimming stitch forwards with output of signal for stitch shortening during the soft start and signal for short trimmer function on. Thread wiper function Off.	On On 136 = 3	Key S2 Key S3	Key 1 Key 2	Key 1 Key 4
n1	Positioning speed	110			
n2	Maximum speed	111			
n3	Start backtack speed	112			
n4	End backtack speed	113			
n6	Softstart speed	115			
n7	Trimming speed	116			
nrS	Speed for backtack synchronization of the end backtack, or of the short trimmer	124			
Arr	Start backtack stitches backward	001/051			
Err	End backtack stitches backward	002/052			
SSc	Softstart stitches	100			
iFA	Engagement angle of thread trimmer	190			
FSA	Switch-off delay of thread tension release	191			
FSE	Engagement angle of thread tension release	192			
t1	Delay until speed release after start backtack	200			
t3	Start delay from lifted sewing foot	202			
t4	Full power of sewing foot lifting	203			
t5	Holding power of the sewing foot lifting	204			
t6	Thread wiper ON period	205			
t7	Delay for sewing foot lifting after thread wiping	206			

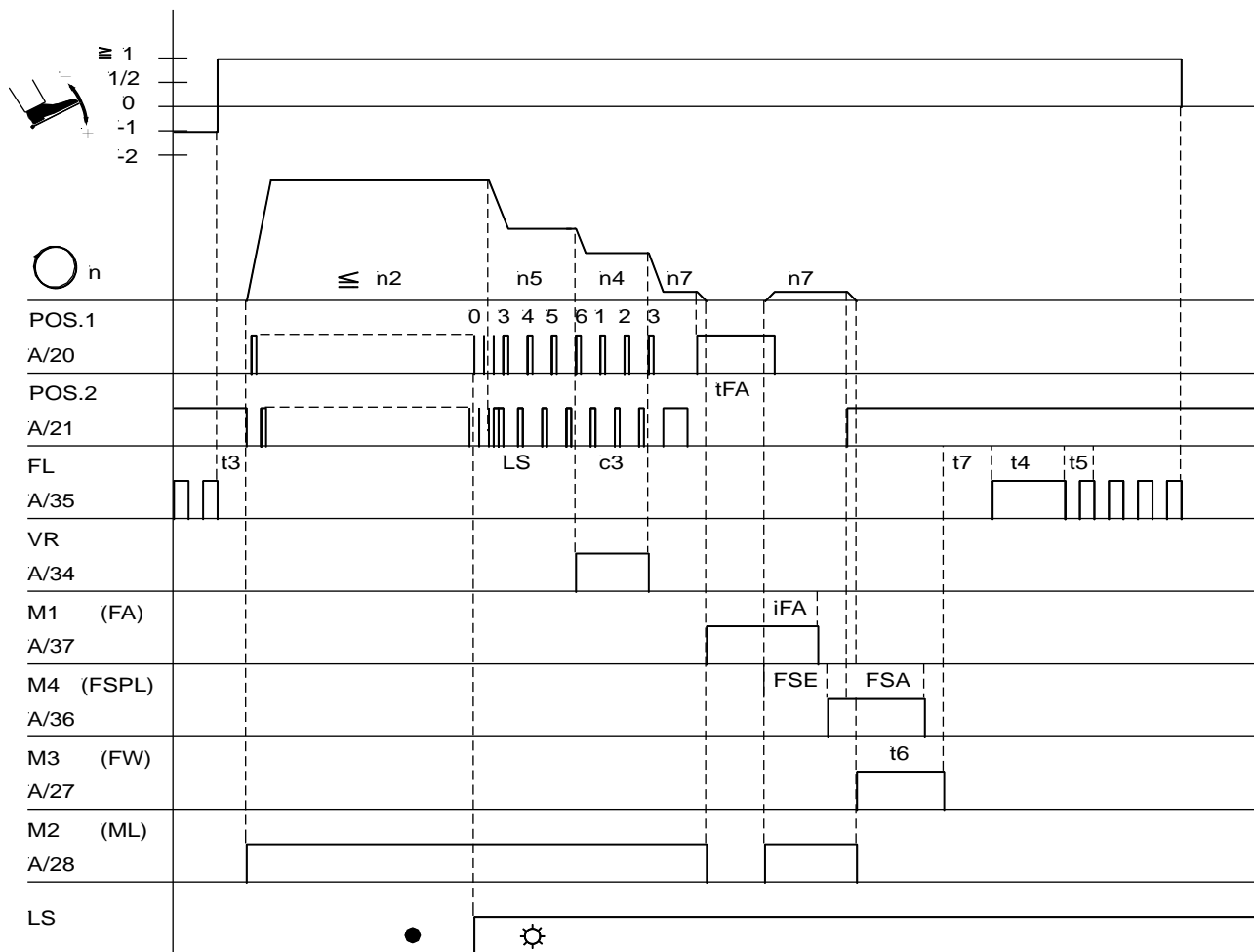
Trimming from intermediate stop



0267/FAZW

Mark	Function	Parameter	Control	V810	V820/V850
	Single start backtack	On	Key S2	Key 1	Key 1
	Single end backtack	On	Key S3	Key 2	Key 4
	Softstart	134 = 1			
n1	Positioning speed	110			
n2	Maximum speed	111			
n3	Start backtack speed	112			
n4	End backtack speed	113			
n6	Softstart speed	115			
n7	Trimming speed	116			
c1	Start backtack stitches backward	001			
c3	End backtack stitches backward	002			
SSc	Softstart stitches	100			
iFA	Engagement angle of thread trimmer	190			
FSA	Switch-off delay of thread tension release	191			
FSE	Engagement angle of thread tension release	192			
tFA	Stopping time for thread trimming	193			
t1	Delay until speed release after start backtack	200			
t3	Start delay from lifted sewing foot	202			
t6	Thread wiper ON period	205			
t7	Sewing foot switch-on delay after thread wiper	206			

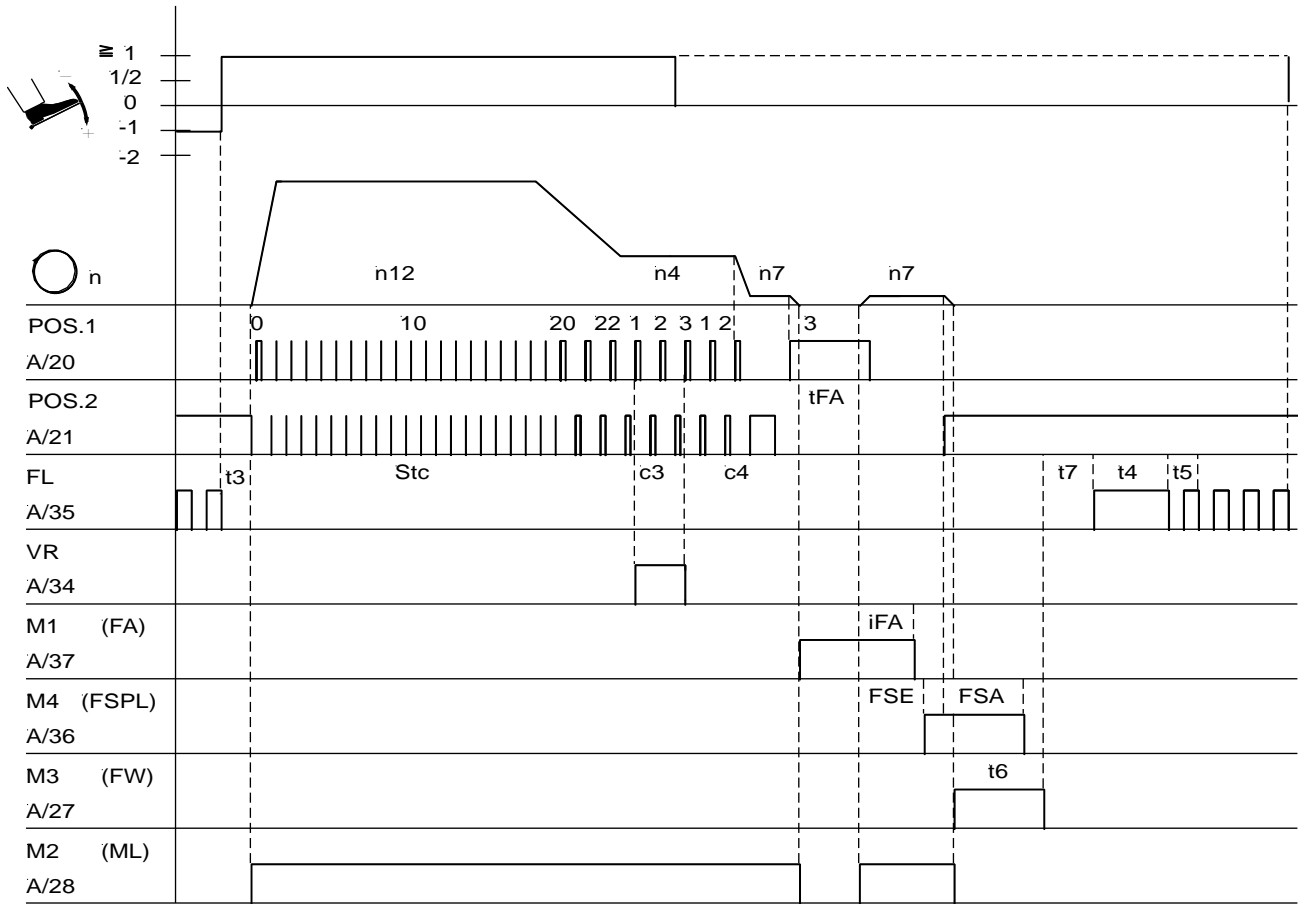
End detection by light barrier



0267/ENEELS

Mark	Function	Parameter	Control	V810	V820/V850
	Single start backtack	Off	Key S2	Key 1	Key 1
	Single end backtack	On	Key S3	Key 2	Key 4
	Light barrier	009 = 1			
	Light barrier covered/uncovered	131 = 1			
n2	Maximum speed	111			
n3	Start backtack speed	112			
n5	Speed after light barrier sensing	114			
n7	Trimming speed	116			
c3	End backtack stitches backward	002			
LS	Light barrier compensating stitches	004			
iFA	Engagement angle of thread trimmer	190			
FSA	Switch-off delay of thread tension release	191			
FSE	Engagement angle of thread tension release	192			
tFA	Stopping time for thread trimming	193			
t3	Start delay from lifted sewing foot	202			
t4	Full power of sewing foot lifting	203			
t5	Pulsing of sewing foot lifting	204			
t6	Thread wiper ON period	205			
t7	Sewing foot switch-on delay after thread wiper	206			

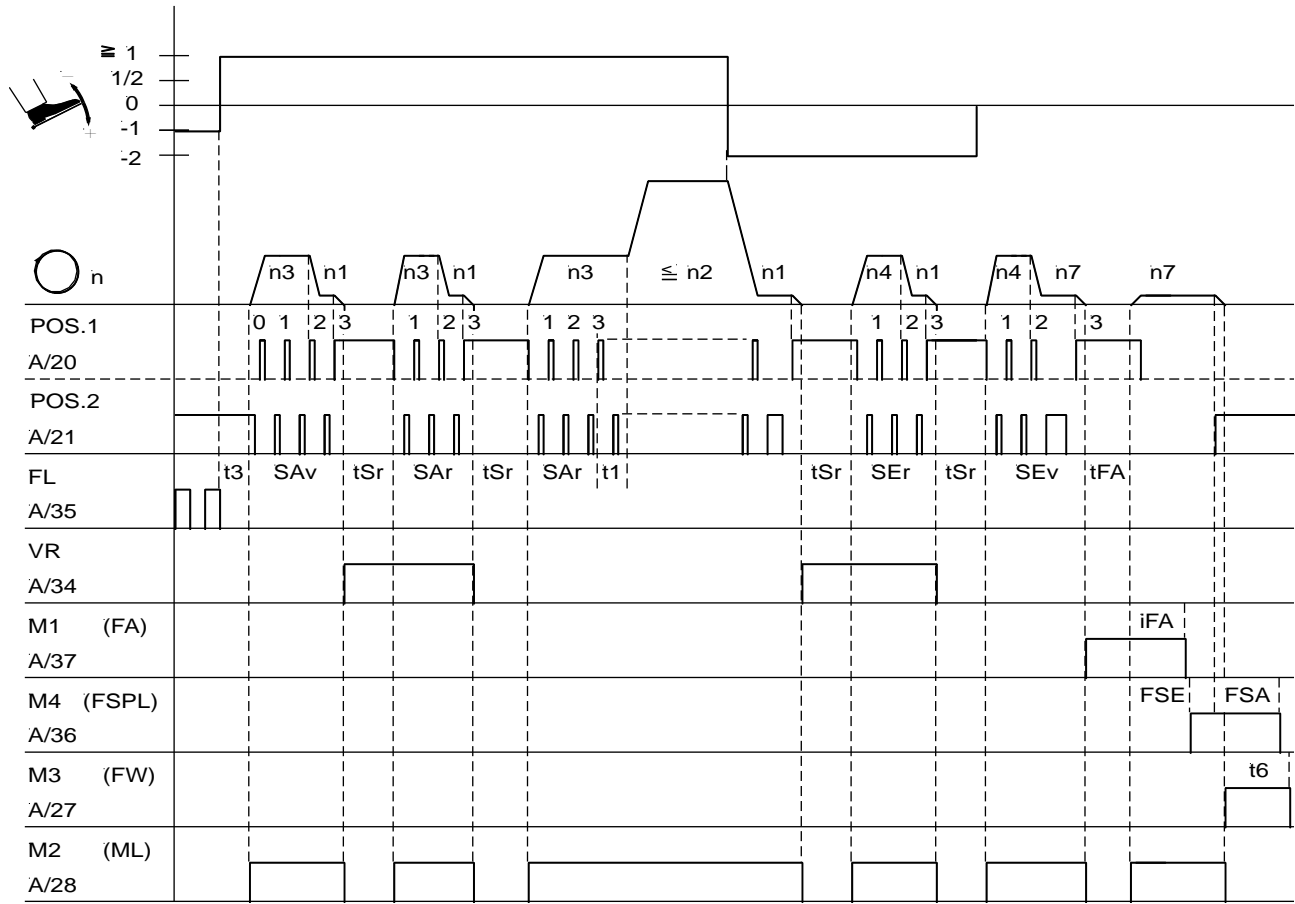
Seam end by stitch count



0267/ENDEZAE

Mark	Function	parameter	Control	V810	V820/V850
	Single start backtack	Off	Key S2	Key 1	Key 1
	Single end backtack	On	Key S3	Key 2	Key 4
	Stitch count	015 = 1			
	Stitch count speed mode (limited speed)	141 = 2			
n4	End backtack speed	113			
n7	Trimming speed	116			
n12	Automatic speed for stitch count	118			
c3	End backtack stitches backward	002			
c4	End backtack stitches forward	003			
Stc	Number of stitches for a seam with stitch counting	007			
iFA	Engagement angle of thread trimmer	190			
FSA	Switch-off delay of thread tension release	191			
FSE	Engagement angle of thread tension release	192			
tFA	Stopping time for thread trimming	193			
t3	Start delay from lifted sewing foot	202			
t4	Full power of sewing foot lifting	203			
t5	Pulsing of sewing foot lifting	204			
t6	Thread wiper ON period	205			
t7	Sewing foot switch-on delay after thread wiper	206			

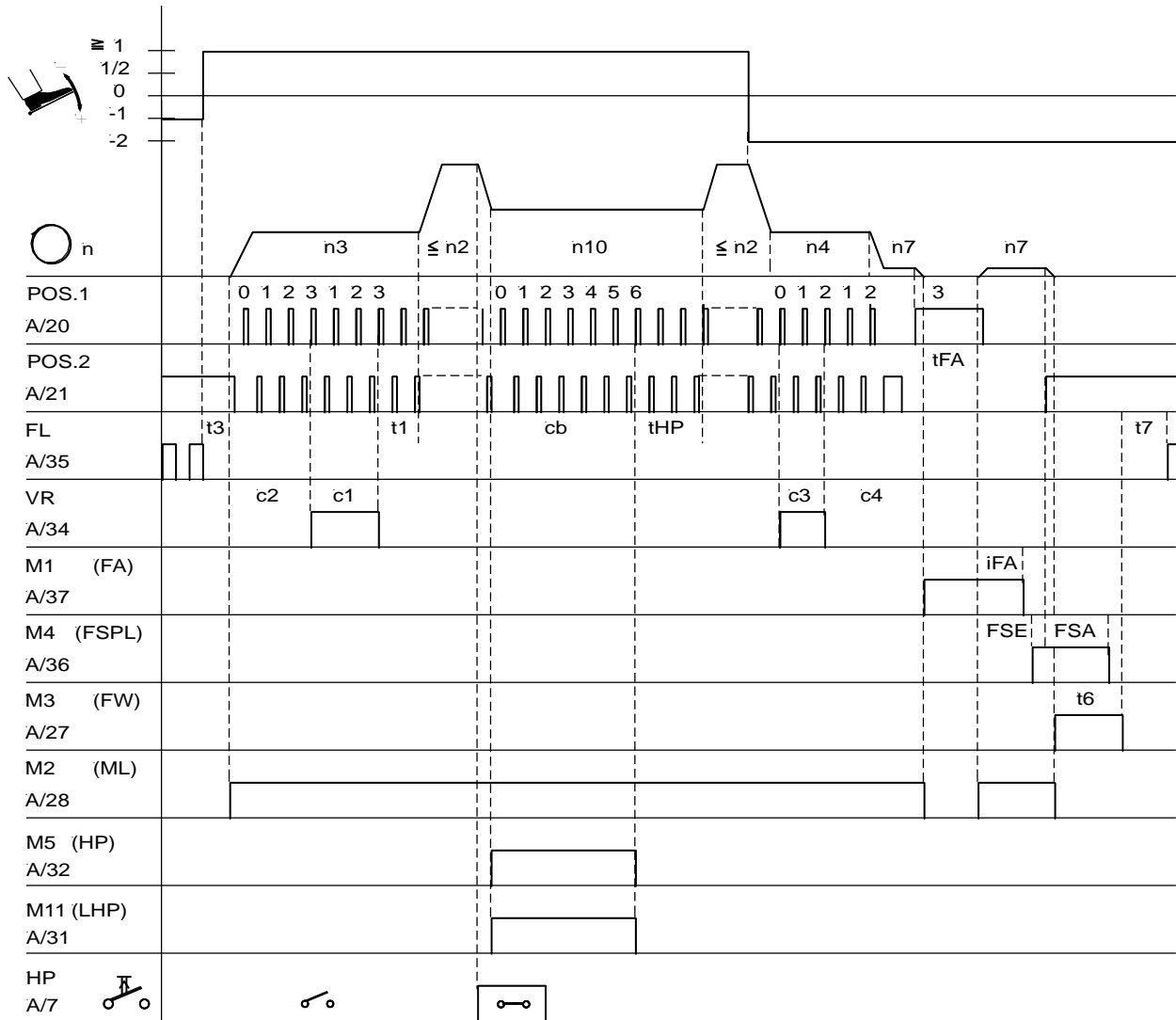
Machine run with ornamental backtack



0267/LAUFZVR

Mark	Function	Parameter	Control	V810	V820/V850
	Double start backtack	On	Key S2	Key 1	Key 1
	Double end backtack	On	Key S3	Key 2	Key 4
	Ornamental backtack	135 = 1			
n1	Positioning speed	110			
n2	Maximum speed	111			
n3	Start backtack speed	112			
n4	End backtack speed	113			
n7	Trimming speed	116			
SAv	Number of stitches for initial ornamental backtack forwards	080			
SAr	Number of stitches for initial ornamental backtack backwards	081			
SEr	Number of stitches for final ornamental backtack backwards	082			
SEv	Number of stitches for initial ornamental backtack forwards	083			
iFA	Engagement angle of thread trimmer	190			
FSA	Switch-off delay of thread tension release	191			
FSE	Engagement angle of thread tension release	192			
tFA	Stopping time for thread trimming	193			
t1	Delay until speed release after start backtack	200			
t3	Start delay from lifted sewing foot	202			
t6	Thread wiper ON period	205			
tSr	Stop time for ornamental backtack	210			

Machine run with high lift for walking foot



0267/LAUFHUB

Mark	Function	parameter	Control	V810	V820/V850
	Double start backtack	On	Key S2	Key 1	Key 1
	Double end backtack	On	Key S3	Key 2	Key 4
	High lift for walking foot operational mode not stored	138 = 0			
	Output B high lift for walking foot	255 = 11			
n2	Maximum speed	111			
n3	Start backtack speed	112			
n4	End backtack speed	113			
n7	Trimming speed	116			
n10	High lift walking speed	117			
c2	Start backtack stitches forward	000			
c1	Start backtack stitches backward	001			
c3	End backtack stitches backward	002			
c4	End backtack stitches forward	003			
thP	High lift walking speed run-out time	152			
iFA	Engagement angle of thread trimmer	190			
FSA	Switch-off delay of thread tension release	191			
FSE	Engagement angle of thread tension release	192			
tFA	Stopping time for thread trimming	193			
t1	Delay until speed release after start backtack	200			
t3	Start delay from lifted sewing foot	202			
t6	Thread wiper ON period	205			
t7	Sewing foot switch-on delay after thread wiper	206			
cb	Stitch count output B high lift for walking foot	258			

5 List of Parameters

5.1 Operator Level

parameter	Designation	Unit	Limits		Preset for					Ind.	
			max	min	100Ω	220Ω		680Ω	1000Ω		
000	c2	Number of stitches of start backtack forward	Stitches	254	0	2	3		2	2	A
001	c1	Number of stitches of start backtack backward	Stitches	254	0	4	3		2	4	A
002	c3	Number of stitches of end backtack backward	Stitches	254	0	3	2		2	3	A
003	c4	Number of stitches of end backtack forward	Stitches	254	0	3	3		5	3	A
004	LS	Light barrier compensating stitches (for long stitch length)	Stitches	254	0	4	4		4	4	A
005	LSF	Number of stitches of the light barrier filter for knitted fabrics	Stitches	254	0	0	0		0	0	A
006	LSn	Number of light barrier seams		15	1	1	1		1	1	A
007	Stc	Number of stitches for the seam with stitch counting	Stitches	254	0	10	10		10	10	A
008	-F-	A parameter from the technician level is assigned to key 9 on the V820/V850 control panel 1 = Softstart On/Off 2 = Ornamental backtack On/Off 3 = High lift for walking foot (only if parameter 250 or 255 = 11) latching = ON / push = OFF 4 = Needle cooling ON/OFF (only if parameter 185 = 1) 5 = Signal A1 and/or A2 On/Off with slide-in strip 1...4 (left-hand arrow = A1, right-hand arrow = A2)		5	1	2	2		2	2	A
009	LS	Light barrier On/Off		1	0	0	0		0	0	A
010	cLS	Light barrier compensation stitches (for long stitch length)	Stitches	254	0	8	8		8	8	A
013	FA	Thread trimmer On/Off		1	0	0	0		0	0	H
014	FW	Thread wiper On/Off		1	0	0	0		0	0	A
015	StS	Stitch counting On/Off		1	0	0	0		0	0	A
023	AFL	Automatic sewing foot lifting with pedal forward at the seam end, if light barrier or stitch counting is On 0 = Automatic sewing foot Off 1 = Automatic sewing foot On		1	0	0	0		0	0	A
024	FLS	Sewing foot lifting function for standing operation 0 = Function Off 1 = Function on only in the seam 2 = Function on only at seam end 3 = Function on in the seam and at the seam end	3	0	0	0	0		0	0	F
026	APd	Characteristic of the "analog pedal" 0 = Analog function off 1 = 12-level, like previous pedal function 2 = continuously variable 3 = 24-level 4 = 60-level (progressive) 5 = 60-level (progressive)	5	0	4	4	4		4	4	L
060	3Er	Triple end backtack 0 = Function OFF, only doubled backtack possible 1...254 = Function ON, value = number of stitches in the third backtack segment	Stitches	254	0	0	0		0	0	H
080	SAv	Number of stitches for initial ornamental backtack forwards	Stitches	254	0	3	3		2	3	A
081	SAr	Number of stitches for initial ornamental backtack backwards	Stitches	254	0	3	3		2	3	A
082	SEr	Number of stitches for final ornamental backtack backwards	Stitches	254	0	3	3		2	3	A

Parameter	Designation	Unit	Limits		Preset for					Ind.	
			max	min	100Ω	220Ω		680Ω	1000Ω		
083	SEv	Number of stitches for initial ornamental backtack forwards	Stitches	254	0	3	3		2	3	A
085	cFw	Stitch count for bobbin thread monitor, parameter 195 = 1 to 3	Stitches	5000	0	0	0		0	0	A
086	ca	Stitch count A for bobbin thread monitor, parameter 195 = 4 When the corresponding key is pushed, the following functions are initiated: > 1 Sec. Thread monitor function is deactivated. < 1 sec. counter is set to predefined value.		65000	0	100	100		100	100	M ***)
087	cb	Stitch count B for bobbin thread monitor, parameter 195 = 4		65000	0	200	200		200	200	M ***)
088	cc	Stitch count C for bobbin thread monitor, parameter 195 = 4		65000	0	300	300		300	300	M ***)
089	chr	Intermediate backtack/Intermediate ornamental backtack 0 = Intermediate backtack ≥1 = Stitch count for intermediate ornamental backtack	Stitches	255	0	0	0		0	0	G
090	WAr	Number of repetitions of the start backtack		255	0	0	0		0	0	A
091	WEr	Number of repetitions of the end backtack		255	0	0	0		0	0	A
092	cb1	Number of "catch backtack" stitches forwards		254	0	0	0		0	0	A
093	cb2	Number of "catch backtack" stitches backwards		254	0	0	0		0	0	A
095	nk	Needle cooling On/Off		1	0	1	1		1	1	G
096	vct	Forward section for intermediate ornamental backtack on/off		1	1	1	1		1	1	G

***) The 4-digit value displayed on the controller must be multiplied by 10.

5.2 Technician Level

(Code 190 when operating at the controller or 1907 when operating at the control panel)

Parameter	Designation	Unit	Limits		Preset for					Ind.	
			max	min	100Ω	220Ω		680Ω	1000Ω		
100	SSc	Number of softstart stitches	Stitches	254	0	2	2		1	1	A
110	n1	Positioning speed	RPM	390	70	180	100		150	150	A
111	n2-	Upper limit setting range of the maximum speed	RPM	6000	n2_	1000	200		1000	1000	H
112	n3	Start backtacking speed	RPM	6000	200	1700	400		800	1200	A
113	n4	End backtacking speed	RPM	6000	200	1700	400		800	1200	A
114	n5	Speed after light barrier sensing	RPM	6000	200	1700	400		800	1200	A
115	n6	Softstart speed	RPM	1500	70	800	250		400	400	A
116	n7	Trimming speed	RPM	500	70	180	100		150	150	A
117	n10	High lift walking speed	RPM	6000	400	2000	400		800	2000	A
118	n12	Automatic speed for stitch counting	RPM	6000	400	3000	400		800	1200	A
119	nSt	Speed stage graduation 1 = linear 2 = slightly progressive 3 = highly progressive		3	1	1	1		1	1	E
120	nnk	If this speed is exceeded, needle cooling is started if parameter 185 is set to "3"	RPM	6000	0	3000	3000		3000	3000	A
121	n2_	Lower limit setting range of the maximum speed	RPM	n2-	200	200	200		200	200	H
123	tnS	Backtack synchronization time for end backtack	ms	500	0	0	0		0	40	A
124	nrS	Speed for backtack synchronization of the end backtack, or of the short trimmer	RPM	3000	150	1700	400		800	500	A
125	n2A	Start backtack speed 2 (only if parameter 284 = ON)	RPM	3000	200	600	600		600	600	A
126	n2E	End backtack speed 2 (only if parameter 284 = ON)	RPM	3000	200	600	600		600	600	A
127	AkS	Acoustic signal On/Off		1	0	0	0		0	0	A
128	Asd	Start delay, when command "start" is given by covering the light barrier (see parameter 129)	ms	2000	0	0	0		0	0	A
129	ALS	Autostart with light barrier on/off: Machine run started by darkening of the light barrier, without previous release of the pedal to the basic position. Additional prerequisites: - Parameter 132 = 1 - Light barrier detection function turned on at control panel - Starting of the first seam segment "normal" (pedal in basic position) - Darken light barrier - Move pedal forwards - Leave pedal forwards Deactivate this function by returning the pedal to the basic position.		1	0	0	0		0	0	A
130	LSF	Light barrier filter on/off for knitted fabrics		1	0	0	0		0	0	A
131	LSd	0 = Light barrier sensing "covered" 1 = Light barrier sensing uncovered		1	0	1	1		1	1	A

Technician Level (Code 190 when operating at the controller or 1907 when operating at the control panel)

Parameter	Designation	Unit	Limits		Preset for					Ind.	
			max	min	100Ω	220Ω	680Ω	1000Ω			
132	LSS	0 = Machine start possible with light barrier uncovered or covered. 1 = Machine start blocked with light barrier uncovered if parameter 131 = 1. Machine start blocked with light barrier darkened if parameter 131 = 0.		1	0	1	1		1	1	A
133	LSE	Thread trimming operation, when completing the seam after light barrier sensing On/Off		1	0	1	1		1	1	A
134	SSt	Softstart On/Off		1	0	1	1		1	1	A
135	SrS	Ornamental backtack On/Off		1	0	0	0		0	0	A
136	FAR	Mode for thread trimming (Switch output A/27 for FW or KFA) 0 = Trimming stitch forwards and thread wiper function on. 1 = Trimming stitch backwards and thread wiper function on. 2 = Trimming stitch forwards with signal short thread trimmer on. Thread wiper function Off. 3 = Cutting stitch forwards with output of signal for stitch shortening during the soft start and signal for short trimmer function on. Thread wiper function Off. 4 = Cutting stitch forwards with output of signal for stitch shortening during soft start. Thread wiper function Off.		4	0	0	0		1	0	H
137	SLU	Stitch length during backtack 0 = Long stitch length 1 = Normal stitch length		1	0	1	1		0	0	A
138	hPr	0 = High Lift for Walking Foot Operational Mode Not Stored 1 = high lift for walking foot ratcheting		1	0	0	0		0	0	A
139	nIS	Display of machine speed On/Off		1	0	0	0		0	0	A
141	SGn	Speed status for the seam with stitch counting 0 = Speed controllable by the pedal up to the set maximum speed (parameter 111) 1 = fixed speed (parameter 118) without influence by the pedal (machine stop by pressing the pedal to the basic position) 2 = Limited speed controllable by the pedal up to the set limit (parameter 118) 3 = At fixed speed (parameter 118) can be interrupted by full heelback 4 = At fixed speed (parameter 110) can be interrupted by full heelback		4	0	1	1		1	1	A
142	SFn	Speed status for the free seam and for the seam with light barrier 0 = Speed controllable by the pedal up to the set maximum speed (parameter 111) 1 = fixed speed (parameter 118) without influence by the pedal (machine stop by pressing the pedal to the basic position) 2 = Limited speed controllable by the pedal up to the set limit (parameter 118) 3 = At fixed speed (parameter 118) can be interrupted by full heelback		3	0	0	0		0	0	A
143	nFS	Switching point for speed-dependent thread tension (parameter 198 = 2 or 3).	RPM	6000	0	3000	3000		3000	3000	H

Technician Level (Code 190 when operating at the controller or 1907 when operating at the control panel)

Parameter	Designation	Unit	Limits		Preset for					Ind.	
			max	min	100Ω	220Ω	680Ω	1000Ω			
145	StL	Long stitch length with speed limitation. Key on input in 2, 3, 5, 6, 8...i10, 12, 13 = 22 or function modules A, B, C= 0 = Long stitch length without speed limitation 1 = Long stitch length with speed limitation (DB2000) 2 = Long stitch length with speed limitation (DB3000)	h	2	0	0	0	0	0	0	A
146	Sr	Operating hours before service in steps of 10 (operating hours recording enabled if set at "0").	h	99999	0	0	0	0	0	0	A
147	oSe	Selection of the output for flashing if the time until next service is exceeded. 0 = Standard output arrangement 1 – 12 = M1 – M12		12	0	0	0	0	0	0	A
150	t8	Stitch correction of the double start backtack (prolongation of the stitch regulator ON period /not effective with ornamental backtack)	ms	500	0	0	0	0	0	0	A
151	t9	Stitch correction of the double end backtack (prolongation of the stitch regulator ON period / not effective with ornamental backtack)	ms	500	0	0	0	0	0	0	A
152	thP	High lift walking speed run-out time	ms	500	80	100	100	100	100	100	A
153	brt	Braking power at machine standstill		50	0	6	6	6	6	6	A
154	FKL	Thread clamp function 0 = Thread clamp Off 1 = Thread clamp 1. Signal from (Pa.155) to (Pa.156) 2. Signal from (Pa.157) to (Pa.158) Sewing foot lifting from (Pa. 159) to (Pa. 160) (Sewing foot clocking as Pa.334) 2 = Thread clamp from 212° to 242° 3 = Thread clamp from 193° to 222° 4 = Thread clamp from 173° to 273° 5 = Thread clamp from 70° to 139° 6 = Thread clamp from 49° to 110° 7 = Thread clamp from 49° to 190° 8 = Thread clamp from 90° to 200° Sewing foot lifting from 50° to 80° The thread clamp functions are carried out at a fixed speed of 250 RPM.		7	0	2	0	0	0	0	H H H H H H L
155	k1	Thread clamp signal 1 ON	Degree	359	0	0	0	0	0	90	N
156	k1_	Thread clamp signal 1 OFF	Degree	359	0	0	0	0	0	200	A
157	k2	Thread clamp signal 2 ON	Degree	359	0	0	0	0	0	0	H
158	k2_	Thread clamp signal 2 OFF	Degree	359	0	0	0	0	0	0	H
159	NF	Sewing foot lifting - activation angle	Degree	359	0	0	0	0	0	50	H
160	NF_	Sewing foot lifting - deactivation angle	Degree	359	0	0	0	0	0	80	H
161	drE	Direction of motor rotation 0 = Clockwise rotation 1 = Counterclockwise rotation		1	0	1	1	1	1	1	A
162	t12	Time of full power for the thread clamp	ms	600	0	100	100	100	100	100	G
163	t13	Holding power for thread clamp 1...100% 1% → low holding power 100% → high holding power	%	100	1	100	100	100	100	100	G
164	t14	full power time for thread tension release	ms	600	0	100	100	100	100	100	H

Technician Level (Code 190 when operating at the controller or 1907 when operating at the control panel)

Parameter	Designation	Unit	Limits		Preset for					Ind.
			max	min	100Ω	220Ω	680Ω	1000Ω		
165	t15	100%	100	1	100	100		100	100	H
170	Sr1	Setting the reference position: ****) - Press the E key - Press the >> key. - Turn handwheel until symbol on display goes off. Then use the handwheel to select the reference point matching the machine class. See table for parameter 290 .								A
171	Sr2	Setting the needle positions: ****) Press the E key Press the >> key 1E = position 1 (leading edge) Press the E key 2E = position 2 (leading edge) Press the E key 1A = position 1 (trailing edge) Press the E key 2A = position 2 (trailing edge) (when changing the value, turn the handwheel or press the +/- keys) Press the P key twice, Settings are completed!	Degrees	359	0	000	105	025	042	H
172	Sr3	Display on the control: Pos. 1 to 1A (LED segment 5 lights up) Pos. 2 to 2A (LED segment 6 lights up)								
172	Sr3	Display on the V810 control panel: Pos. 1 to 1A (left-hand arrow above key 4 On) Pos. 2 to 2A (right-hand arrow above key 4 On)								
172	Sr3	Display on the V820/V850 control panel: Pos. 1 to 1A (left-hand arrow above key 7 On) Pos. 2 to 2A (right-hand arrow above key 7 On)								
173	Sr4	Checking of the signal outputs and inputs using the incorporated control panel or the V810/V820/V850 control panels - Select the desired output using the +/- keys - Actuate the selected output using the >> key OUT VR = Backtacking on socket A/34 OUT FL = Sewing foot lift on socket A/35 OUT 1 = Thread trimmer on socket A/37 OUT 2 = Needle cooling on socket A/28 OUT 3 = Thread wiper on socket A/27 OUT 4 = Thread clamp release on socket A/36 OUT 5 = High lift for walking foot for walking foot on socket A/32 OUT 6 = Output A (FF1) on socket A/30 OUT 7 = LED thread monitor left on socket A/23 OUT 8 = LED backtack suppression/cancellation on socket A/24 OUT 9 = LED thread monitor right on socket A/25 OUT 10 = LED for output A on socket A/29 OUT 11 = LED for output B on socket A/31 OUT 30 = Output C (FF3) on socket A/15 OUT 31 = Thread clamp on socket A/18 OUT 14 = Motor running on socket A/26 OUT 16 = Output B (FF2) on socket A/20 OUT 17 = Sewing foot pressure on socket A/21 OUT 18 = LED for output C on socket A/22 OFF/ON = When actuating the switch connected to the controller, its function is checked and the number assigned with the input is shown on the display (e.g. i06).								

****) See instruction manual for comprehensive instructions for operation!

Technician Level(Code 190 when operating at the controller or 1907 when operating at the control panel)

Parameter	Designation	Unit	Limits		Preset for					Ind.	
			max	min	100Ω	220Ω		680Ω	1000Ω		
176	Sr6	Service routine for total operating hours display. The process is as with display example of parameter 177.									A
177	Sr7	Service routine for display of hours since the last service. Example display on the V810 control panel: Press the E key → Display Sr7 [°] Press the >> key → Display hoUr Press the E key → Display 000000 Press the E key → Display Min Press the E key → Display 00 Press the E key → Display SEc Press the E key → Display 00 Press the E key → Display MSEc Press the E key → Display 000 Press the E key → Display rES F2 Press the P key twice → Display e. g. dA321G Example display on the V820/V850 control panel: Press the E key → Display F-177 Sr7 [°] Press the >> key → Display hoUr 000000 Press the E key → Display Min 00 Press the E key → Display Sec 00 Press the E key → Display MSEc 000 Press the E key → Display rES F2 Press the P key twice → Display e. g. dA321G See instruction manual for example of display on the controller.								A	
179	Sr5	Program number of the controller with index and identification number. The data is displayed in sequence by keystroke. Example display on the control: Press the E key → Display Sr5 Press the >> key → Prog. no. 53 Press the E key → Prog. no. 21 Press the E key → Index A Press the E key → Ident. no. 98 (1+2) Press the E key → Ident. no. 04 (3+4) Press the E key → Ident. no. 01 (5+6) Press the E key → Ident. no. 16 (7+8) Press the P key twice → Display dA321G Example display on the V810 control panel: Press the E key → Display Sr [°] Press the >> key → Display e. g. 5321A Press the E key → Display e. g. 981019 Press the E key → Display e. g. 15 Press the P key twice → Display dA321G Example display on the V820/V850 control panel: Press the E key → Display F-179 Sr5 [°] Press the >> key → Display e. g. 5321A Press the E key → Display e. g. 98101915 Press the P key twice → Display 4000 dA321G									
180	rd	Reverse motor position	Degree s	359	10	14	28		20	63	A
181	drd	Switch-on delay of reverse motor rotation	ms	990	0	0	0		0	0	A
182	Frd	Reverse motor rotation On/Off		1	0	0	0		0	0	A

Technician Level (Code 190 when operating at the controller or 1907 when operating at the control panel)

Parameter	Designation	Unit	Limits		Preset for					Ind.	
			max	min	100Ω	220Ω	680Ω	1000Ω			
183	t05	Power-off delay of needle cooling after stop	ms	2550	0	2500	2500		2500	2500	A
184	chP	Minimum stitch count with high lift for walking foot	Stitches	254	0	0	0		0	0	A
185	Fnk	Function of the needle cooling output 0 = Needle cooling 1 = Undercutter 2 = Speed-dependent needle cooling (the switching speed can be configured with Parameter 120)			3	1	1	1		1	1
186	ctw	Stitch count until transport roller lowered	Stitches	254	0	0	0		0	0	A
187	Stn	Stitch length in the next seam (after the thread trimming operation) 0 = The selected stitch length remains set. 1 = After thread trimming, a switch is made to long stitch length. 2 = After thread trimming, a switch is made to normal stitch length.		2	0	0	0		0	0	A
188	hP	Minimum speed level for high lift for walking foot Minimum maximum speed for HP Assignment of maximum speed (Parameter 111) and minimum speed (Parameter 117 = high lift speed) to the 21 levels of the Speedomat. Display example: 2740 10 11 19 10 = Display of the level up to which the maximum speed is effective. 19 = Display of the level up to which the minimum speed is effective. 11 = Display of the level set on the Speedomat (potentiometer). 2740= Corresponding speed See instruction manual on how to change the setting!		21	1						A
189	hPn	0 = High lift for walking foot with 500ms speed limit (parameter 117) 1 = High lift for walking foot with speed limit (parameter 117)		1	0	1	1		1	1	E
190	iFA	Thread trimmer activation angle. The angle is measured from Position 1 inclusive.	Degree s	359	0	280	315		315	56	A
191	FSA	Switch-off delay of thread tension release	ms	990	0	50	50		50	50	A
192	FSE	Switch-on delay angle of thread tension release	Degree s	359	0	0	0		237	182	A
193	tFA	Thread trimmer stop time	ms	500	0	0	0		0	30	A
194	FAE	Activation delay angle of the thread trimmer	Degree s	359	0	0	0		0	0	A

Technician Level (Code 190 when operating at the controller or 1907 when operating at the control panel)

Parameter	Designation	Unit	Limits		Preset for					Ind.
			max	min	100Ω	220Ω	680Ω	1000Ω		
195	rFw	Bobbin thread monitor mode 0 = No bobbin thread monitor function 1 = Terminal 270 or short seams: Without stop, sewing foot down after thread trimming 2 = Kl. 767 / N291: With stop, sewing foot up after thread trimming 3 = Kl. 767 / N291: With stop, sewing foot down after thread trimming 4 = Thread monitor stitch count (max. 25500 stitches) Stitch count for settings 1-3 = param. 085, dto. 4 = param. 086	4	0	0	0		0	0	G
196	kFn	Coupling of sewing foot, thread tension release, and thread tension reduction. 0 = Coupling of the sewing foot to the thread tension release and thread tension reduction in the seam and after thread trimming off. 1 = Thread tension release and thread tension reduction in the seam during sewing foot lift on. 2 = Thread tension release and thread tension reduction after thread trimming during sewing foot lift on. 3 = Thread tension release and thread tension reduction in the seam and after thread trimming during sewing foot lift on. When parameter 250, 255 is set and/or 275 = 7, thread tension reduction can be turned on/off at any time. The key functions are latching.	3	0	0	0		0	0	A
197	kFh	Coupling of thread tension reduction, high lift for walking foot, and Speedomat 0 = Coupling of thread tension reduction with high lift for walking foot and with the Speedomat off. 1 = The high lift for walking foot for walking foot key is used to turn the thread tension reduction off and the high lift on. The Speedomat has no effect. 2 = When the high lift speed is reached by adjustment of the Speedomat, thread tension reduction is turned off. The high lift for walking foot key has no effect. 3 = When the high lift speed is reached by adjustment of the Speedomat, thread tension reduction is turned off. The high lift for walking foot key has the same effect as for Setting 1. When parameter 250, 255 is set and/or 275 = 7, thread tension reduction can be turned on/off at any time. The key functions are latching.	3	0	0	0		0	0	A
198	MML	Function of output M14 (ST2/26) 1 = Motor running 2 = Thread tension ON n> parameter 143 Thread tension off n< parameter 143 3 = Thread tension ON n< parameter 143 Thread tension off n> parameter 143	3	1	2	2		2	1	H
199	kFk	Coupling of thread clamping with sewing foot lifting	1	0	1	1		1	1	J

5.3 Supplier Level

(Code 311 when operating at the controller or 3112 when operating at the control panel)

Parameter	Designation	Unit	Limits		Preset for					Ind.
			max	min	100Ω	220Ω	680Ω	1000Ω		
200	t1	Delay until speed release after start backtack	ms	500	0	50	50	50	50	A
201	t2	Sewing foot switch-on delay after thread wiper with half heelback	ms	500	20	80	80	80	80	A
202	t3	Start delay after disabling the sewing foot lifting signal	ms	500	0	80	80	120	80	A
203	t4	Time of full power of sewing foot lifting	ms	600	0	200	200	200	200	A
204	t5	Holding power for sewing foot lifting 1...100% 1% → low holding power 100% → high holding power	%	Pa.298	1	40	40	40	40	A
205	t6	Thread wiper time	ms	2550	0	100	100	100	100	A
206	t7	Delay from end of thread wiper until sewing foot lifting On	ms	800	0	50	50	30	30	A
207	br1	Braking effect when varying the preset value ≤ 4 stages		55	1	20	20	20	20	A
208	br2	Braking effect when varying the preset value ≥ 5 stages		55	1	30	30	30	30	A
210	tSr	Stop time for switching the stitch regulator in the ornamental backtack	ms	500	0	100	270	150	100	A
211	tFL	Sewing foot lifting switch-on delay with thread wiper off	ms	500	0	0	0	0	0	H
212	t10	Full engagement time of backtacking	ms	600	0	200	200	200	200	A
213	t11	Holding power for backtacking 1...100% 1% → low holding power 100% → high holding power	%	pa. 299	1	50	50	50	50	A
215	Zrv	0 = Last counted forward segment in start backtack OFF 1 = Last counted forward segment in start backtack On		1	0	1	1	1	1	A
216	FLS	0 = Fast shutoff of the sewing foot lifting off 1 = Fast shutoff of the sewing foot lifting On		1	0	1	1	1	1	A
217	SSL	OFF = stop time after an ornamental backtack at seam start OFF ON = stop time after an ornamental backtack at seam start ON if Parameter 135 / 137 = ON	ON/OFF			OFF	OFF	OFF	OFF	G
219	br3	Positioning strength when drive stops		55	1	10	10	10	10	A
220	ALF	Acceleration capacity of the drive		55	1	20	20	20	20	A
221	dGn	Speed gate 1	RPM	990	50	100	100	100	100	A
222	tGn	Speed gate damping period	ms	990	0	120	120	120	120	A
223	dG2	Speed gate 2	RPM	6000	200	1300	1600	1600	1600	H
224	dGF	Speed gate 2 On/Off		1	0	1	1	1	1	A
225	rEG	0 = Normal machines 1 = Medium-heavy machines		3	0	0	0	0	0	F
231	Sn1	Execution of the first stitch after Power On at positioning speed		1	0	0	0	0	0	E

Supplier level (Code 311 when operating at the controller or 3112 when operating at the control panel)

Parameter	Designation	Unit	Limits		Preset for					Ind.
			max	min	100Ω	220Ω	680Ω	1000Ω		
241	in2	Selection of input function on socket A/11 for input 2 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 = Automatic speed n12 without pedal 11 = Limited speed n12 pedal controlled. 12 = Sewing foot lifting with pedal in position 0 (neutral). 13 = High lift for walking foot with speed limitation n10 (operational mode not stored) 14 = High lift for walking foot (flip-flop 1 with speed limit n10. 15 = Sewing foot pressure (NFD) 16 = Intermediate Backtack 17 = Backtack suppression / recall 18 = Thread tension reduction 19 = Reset bobbin thread monitor if parameter 085 = >0. 20 = Handwheel running in the direction of rotation according to the setting of parameter 161 21 = Handwheel running in the opposite direction of rotation according to the setting of parameter 161 22 = Stitch length (STL) 23 = Transport roller 24 = No function 25 = Fixed speed DB2000 26 = speed limitation n11 (DB3000) 27 = speed limitation n10 (DB2000) 28 = External light barrier (according to setting of parameter 131). 29 = Single stitch with stitch length switching 30 = Emergency stop 31.0.38 No function 39 = Proceed to next pattern in teach-in. 40 = Switch back to the previous pattern in TEACH IN. 41.0.45 No function 46 = Key for output A 47 = Key for output B 48 = Signal A1 is issued 49 = Signal A1 switchable as flip-flop 50 = No function 51 = Signal A2 is issued 52 = Signal A2 switchable as flip-flop 53 = No function 54 = No function 55 = Reversal of the direction of rotation 56 = No function 57 = No function 58 = Intermediate backtack latching 59..77 No function 78 = Switching of the high lift for walking foot function latching/keyed 79..88 No function	88	0	7	7		9	9	F

Supplier level (Code 311 when operating at the controller or 3112 when operating at the control panel)

Parameter	Designation	Unit	Limits		Preset for					Ind.
			max	min	100Ω	220Ω		680Ω	1000Ω	
242	In3	Selection of input function on socket A/6 for input 3 0 = No function. All other functions of the keys as with parameter 241	88	0	2	2		2	2	F
244	in5	Selection of input function on socket A/5 for input 5 0 = No function. All other functions of the keys as with < parameter 241	88	0	16	16		16	16	F
245	in6	Selection of input function on socket A/12 for input 6 0 = No function. All other functions of the keys as with < parameter 241	88	0	18	18		19	19	F
247	in8	Selection of input function on socket A/10 for input 8 0 = No function. All other functions of the keys as with < parameter 241	88	0	26	26		26	26	F
248	in9	Selection of input function on socket A/13 for input 9 0 = No function. All other functions of the keys as with < parameter 241	88	0	23	23		28	28	F
249	i10	Selection of input function on socket A/14 for input 10 0 = No function. All other functions of the keys as with < parameter 241	88	0	17	17		17	17	F
250	FM A	Function module for output A on socket A/30 and input A on socket A/8. 0 = No function 1 = Long stitch length with speed limitation 2 = No function 3 = No function 4 = Single stitch with shortened stitch length 5 = Lift / lower transport roller 6 = Lift / lower material stop 7 = Thread tension reduction 8 = Edge trimmer manual 9 = Edge trimmer automatic 10 = No function 11 = High lift for walking foot (parameter 138 operational mode stored/Operational Mode Not Stored) 12 = Functions for sewing foot pressure reduction: With key on, the following functions are available: - pedal 0 → Clocking of Parameter 334 in effect - pedal >1 → Clocking of Parameter 334 in effect - pedal +1 → Sewing foot is lowered - pedal -1 → Clocking of Parameter 204 in effect - pedal -2 → Clocking of Parameter 204 and/or trimming operation in effect 13 = Handwheel turning in direction set in Parameter 161 14 = Handwheel turning in opposite direction to that set in Parameter 161 15 = Backtack suppression / recall 16 = Single stitch backwards with stitch length switch 17 = DB2000 18 = Ornamental backtack On/Off 19 = No function 20 = Thread puller	20	0	0	1		1	1	H

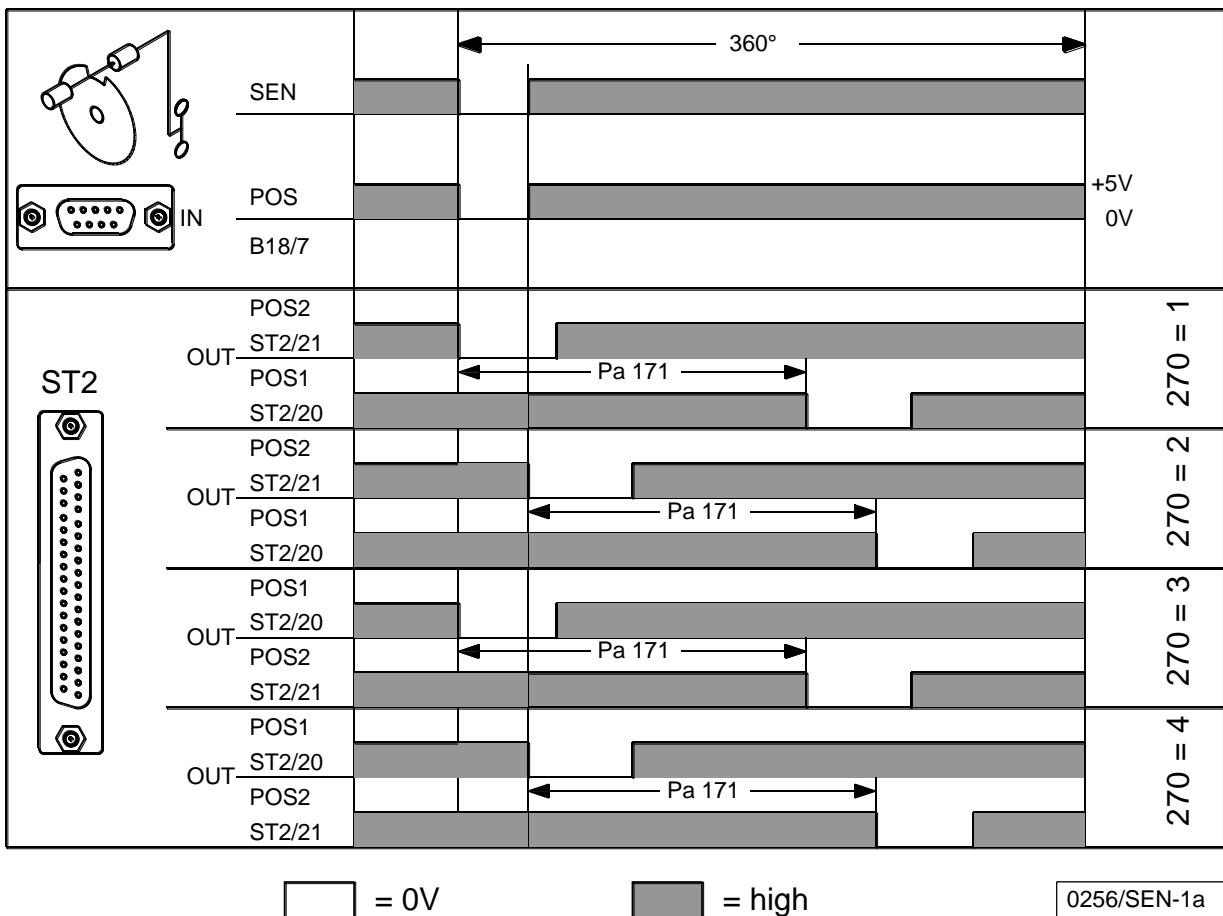
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Supplier level (Code 311 when operating at the controller or 3112 when operating at the control panel)

Parameter	Designation	Unit	Limits		Preset for					Ind.	
			max	min	100Ω	220Ω	680Ω	1000Ω			
260	PLc	Delay over stitch count between lowering of sewing foot and lowering of transport roller in the seam on / off (only for parameter 250 = 5 or 255 = 5). For output A stitch setting with Parameter 253 For output B stitch setting with Parameter 258 0 = Stitch counting delay off 1 = Stitch counting delay on		1	0	0	0		0	0	A
261	FLk	0 = Lift transport roller without sewing foot lifting and backtack 1 = Lift transport roller with sewing foot lifting and backtack 2 = Lift transport roller with sewing foot lifting 3 = Lift transport roller with backtack Only effective if Parameter 250 or 255 = 5		3	0	1	1		1	1	A
262	hPt	0 = Transport roller remains lowered if high lift for walking foot turned on. 1 = Transport roller lifted when high lift for walking foot turned on. Only effective of Parameter 250 = 11 and Parameter 255 = 5 or if Parameter 250 = 5 and Parameter 255 = 11.		1	0	0	0		1	0	A
263	ihr	Actuate increments for the running of the handwheel after key pressed once (function module A on input of socket A/8 or function module B on input of socket A/7)	Incr.	500	0	10	10		10	10	A
264	nhR	Speed for handwheel run	RPM	150	30	50	50		50	50	A
265	dhr	Delay time until continuous running of the handwheel after key held down (function module A on input of socket A/8 or function module B on input of socket A/7) Short actuation: for ≤ preset value of parameter 262. Expiration of configured increments of parameter 260. Longer actuation: if ≥ preset value for parameter 262. Continuous run of the handwheel.	ms	2550	0	200	200		200	200	A
266	LFL	0 = When handwheel is running, the sewing foot lowers 1 = The functions pedal –1 or automatic sewing foot lifting remain in effect		1	0	1	1		1	1	A
267	kFk	Coupling of the sewing foot lifting with the edge trimmer 0 = The state of the edge trimmer (on or off) remains unchanged during sewing foot lifting 1 = The edge trimmer is turned off when the sewing foot is lifted 2 = The edge trimmer is turned off when the sewing foot is lifted and can be turned back on by pressing the key.		2	0	0	0		0	0	K
269	PSv	Positioning shift	Degree s	100	0	15	15		15	40	E

Supplier level (Code 311 when operating at the controller or 3112 when operating at the control panel)

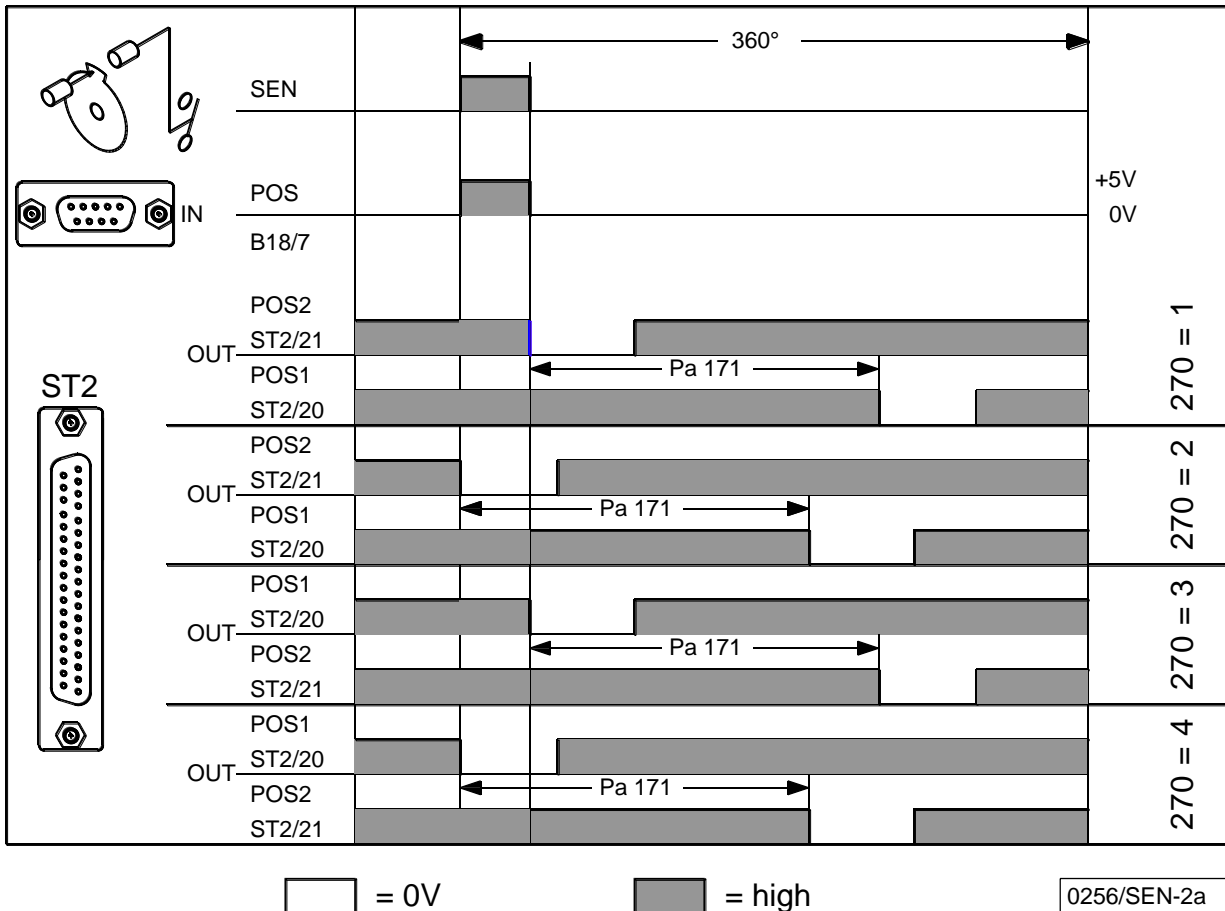
Parameter	Designation	Unit	Limits		Preset for					Ind.
			max	min	100Ω	220Ω	680Ω	1000Ω		
270	PGm	Selection according to position sensor. For layout of socket B18, see chapter "Connection diagram" 0 = The positions are generated using the transmitter incorporated in the motor and can be set using parameter 171 1 = Setting the sensor to position 2. Set position 1 with parameter 171. Measured from leading edge position 2. 2 = Setting the sensor to position 2. Set position 1 with parameter 171. Measured from trailing edge position 2. 3 = Setting the sensor to position 1. Set position 2 with parameter 171. Measured from leading edge position 1. 4 = Setting the sensor to position 1. Set position 2 with parameter 171. Measured from trailing edge position 1. 5 = No position sensor available. The drive stops unpositioned. The thread trimmer function is suppressed with this setting. 6 = The positions are determined by preset values. If necessary, the reference position must be set and the position angle preset values corrected.	6	0	0	6	0	0		A



*OUT (position window) = npn transistor (emitter to 0V) is conductive.
 The width of position window cannot be adjusted!*

Supplier level (Code 311 when operating at the controller or 3112 when operating at the control panel)

Parameter	Designation	Unit	Limits		Preset for					Ind.
			max	min	100Ω	220Ω	680Ω	1000Ω		
270	PGm	Selection according to position sensor. For layout of socket B18, see chapter "Connection diagram"	6	0	0	6		0	0	A
		0. The positions are generated using the transmitter incorporated in the motor and can be set using parameter 171 1. Setting the sensor to position 2. 2. Set position 1 with parameter 171. Measured from trailing edge position 2. Setting the sensor to position 2. 3. Set position 1 with parameter 171. Measured from leading edge position 2. Setting the sensor to position 1. 4. Set position 2 with parameter 171. Measured from trailing edge position 1. Setting the sensor to position 1. Set position 2 with parameter 171. Measured from leading edge position 1. 5. No position sensor available. The drive stops unpositioned. For this setting, no thread trimming is permitted. 6. The positions are determined by preset values. If necessary, the reference position must be set and the position angle preset values corrected.								



OUT (position window) = npn transistor (emitter to 0V) is conductive.
 The width of position window cannot be adjusted!

Supplier level (Code 311 when operating at the controller or 3112 when operating at the control panel)

Parameter	Designation	Unit	Limits		Preset for					Ind.	
			max	min	100Ω	220Ω	680Ω	1000Ω			
283	LSP	Machine run block function 0 = Function off 1 = Block 1, without positioning 2 = Block 2, with positioning		2	0	0	0		1	1	A
284	StP	Start and end backtack can be interrupted by pedal in pos. 0 On/Off		1	0	0	0		0	0	A
287	dbA	speed limitation n11 (DB3000) for manual backtack 0 = Speed limitation Off 1 = speed limitation On		1	0	0	0		0	0	A
288	n9	Manual ornamental backtack speed limit (n9)	RPM	3000	200	1700	400		800	1200	A
289	n11	speed limitation (n11) DB3000	RPM	6000	500	3000	500		1700	3000	A
290	MkA	Machine model mode (max. depending on select resistor) The presets for different machines depend on the specific select resistor and vary based on the value selected here (mode) according to the tables below.		71	0	0	0		0	0	H

Select-dependent preset values (parameter 290 = 0)

parameter	Preset 100R	Preset 220R	Preset 470R	Preset 680R	Preset 1000R	parameter	Preset 100R	Preset 220R	Preset 470R	Preset 680R	Preset 1000R
290	0	0	0	0	0	290	0	0	0	0	0
000	2	3	0	2	2	202	80	80	80	120	80
001	4	3	5	2	4	203	200	200	200	200	200
002	3	2	5	2	3	206	50	50	0	30	30
003	3	3	0	5	3	207	20	20	20	20	20
008	2	2	1	2	2	208	30	30	30	30	30
013	0	0	0	0	0	210	100	270	100	150	100
014	0	0	0	0	0	219	10	10	10	10	10
080	3	3	3	2	3	220	20	20	20	20	20
081	3	3	3	2	3	221	100	100	100	100	100
082	3	3	3	2	3	222	20	120	20	120	20
083	3	3	3	2	3	223	1200	1600	1200	1600	1600
100	2	2	2	1	1	224	1	1	1	1	1
110	180	150	150	150	150	241	7	7	9	9	9
111	1000	1000	1000	1700	1000	242	2	2	2	2	2
112	1700	400	1500	800	1200	245	18	18	19	19	18
113	1700	400	1500	800	1200	248	23	23	28	28	23
114	1700	400	3000	800	1200	250	0	1	0	1	1
115	800	250	800	400	400	251	0	0	0	0	0
116	180	100	150	150	150	252	0	0	0	0	0
117	2000	400	2000	800	2000	253	0	0	0	0	0
118	3000	400	3000	800	1200	254	0	0	0	0	0
123	0	0	0	0	40	255	0	1	0	1	7
124	1700	800	1700	800	500	256	0	0	0	0	0
136	5	0	0	1	0	257	0	0	0	0	0
137	1	1	1	0	0	258	0	0	0	0	0
153	6	6	6	6	6	259	0	0	0	0	0
154	2	0	0	0	0	260	0	0	0	0	0
162	100	100	100	100	100	261	1	1	2	1	1
163	100	100	100	100	100	269	15	15	15	15	40
						270	0	6	0	0	0
170 Reference point						272		1000	1000	1000	1000
171 P1E	POS1	EP	EP	EP	EP	275	0	17	0	17	17
P2E	355	355	35	25	42	283	0	0	0	1	1
P1A	262	262	105	315	326	288	1700	400	1700	800	1200
P2A	70	70	70	85	140	289	3000	500	3000	1700	3000
	338	338	168	15	357	297	0	0	0	180	0
180	14	28	14	20	63	333	0	0	0	0	0
181	0	0	0	0	0	334	85	85	85	85	85
182	0	0	0	0	0	362	0	0	0	0	0
186	0	0	0	0	0	363	100	100	200	100	100
189	1	1	1	1	1	364	100	100	0	100	100
190	280	315	280	315	56	365	100	100	550	100	100
191	50	50	0	50	50	366	2	2	2	2	2
192	0	0	0	237	182	367	0	0	0	0	0
193	0	0	0	0	30	368	1	1	1	1	1
194	0	0	0	0	0	369	0	0	0	0	0
196	0	0	0	0	0	451	355	355	35	25	42
197	0	0	0	0	0	452	70	70	70	85	140
						453	262	262	105	315	326
						454	338	338	168	15	357
						550	13	13	13	13	13
						551	14	14	14	14	14

Reference point (EP = insertion point of needle into needle plate)

Reference point (POS1 = bottom dead center)

Reference point (D = marking on handwheel)

= The value in this cell corresponds to the preset value of mode 0

Select- and machine-dependent preset value (mode can be set with parameter 290)

R-select = 100Ω		Machine model									
Parameter	Preset 100R	271, 272, 273, 274, 275	N291-164162 N291-185182	8967							
290	0	0	1	2							
013	0	=	1	1							
014	0	=	1	1							
110	180	=	150	150							
111	1000	=	4000	3000							
112	1700	=	1200	1200							
113	1700	=	1200	1200							
114	1700	=	1200	1200							
115	800	=	=	500							
116	180	=	150	150							
117	2000	=	=	1500							
123	0	=	40	40							
124	1700	=	500	500							
154	2	=	0	0							
170 Reference point	POS1	=	D	D							
171 P1E	355	=	119	294							
P2E	262	=	308	130							
P1A	70	=	175	329							
P2A	338	=	357	163							
180	14	=	28	20							
181	0	=	=	20							
182	0	=	=	1							
186	0	=	10	10							
190	280	=	126	126							
207	20	=	=	=							
208	30	=	=	=							
219	10	=	=	=							
220	20	=	=	=							
255	0	=	=	11							
270	0	=	6	6							
272	1000	=	=	800							
275	0	=	=	17							

Reference point (EP = insertion point of needle into needle plate)

Reference point (POS1 = bottom dead center)

Reference point (D = marking on handwheel)

= The value in this cell corresponds to the preset value of mode 0

R-select = 220Ω		Machine model									
Parameter	Preset 220R	204-370	205-370	204-102	221						
290	0	1	2	3	4						
013	0	1	1	1	1						
014	0	1	1	1	1						
110	150	=	=	=	200						
111	1000	800	800	650	=						
112	400	=	=	=	=						
113	400	=	=	=	=						
114	400	=	=	=	=						
115	250	=	=	=	=						
116	100	=	=	150	150						
117	400	=	=	=	=						
118	400	=	=	=	=						
123	0	=	=	=	=						
124	800	=	=	=	=						
153	6	=	=	=	=						
170 Reference point	EP	=	=	=	=						
171 P1E	105	=	=	=	128						
P2E	252	=	=	=	305						
P1A	170	=	=	=	170						
P2A	320	=	=	=	355						
180	28	=	=	=	=						
190	315	=	=	=	=						
207	20	5	5	5	5						
208	30	10	10	10	10						
210	270	=	=	=	=						
219	10	2	2	2	4						
220	20	2	2	2	5						
221	100	=	=	=	100						
222	120	=	=	=	=						
223	1600	200	200	200	200						
224	1	=	=	=	=						
242	2	1	1	1	1						
270	6	=	=	=	=						
272	1000	250	250	373	439						

Reference point (EP = insertion point of needle into needle plate)

Reference point (POS1 = bottom dead center)

Reference point (D = marking on handwheel)

= The value in this cell corresponds to the preset value of mode 0

R-select = 470Ω		Machine model										
Parameter	Preset 470R	195-171110	195-171521	195-671110								
290	0	1	2	3								
000	0	=	=	=								
001	5	=	=	=								
002	5	=	=	=								
003	0	=	=	=								
008	1	=	=	=								
013	0	1	1	1								
014	0	=	=	=								
110	150	=	=	=								
111	1000	4000	4000	4000								
112	1500	=	=	=								
113	1500	=	=	=								
114	3000	=	=	=								
115	800	=	=	=								
116	150	180	180	180								
136	0	1	1	1								
170 Reference point	EP	=	=	=								
171 P1E	141	=	=	=								
P2E	260	=	=	=								
P1A	170	=	=	=								
P2A	290	=	=	=								
206	0	=	=	=								
250	0	=	=	=								
251	0	=	=	=								
252	0	=	=	=								
253	0	=	=	=								
254	0	=	=	=								
255	0	=	=	=								
256	0	=	=	=								
257	0	=	=	=								
258	0	=	=	=								
259	0	=	=	=								
260	0	=	=	=								
261	2	=	=	=								
270	0	6	6	6								
272	1000	1052	1052	1052								
362	0	=	80	=								
363	200	=	120	=								
364	0	=	=	=								
365	550	=	300	=								
366	2	=	=	=								
367	0	=	=	=								
368	1	=	=	=								
369	0	=	=	=								

Reference point (EP = insertion point of needle into needle plate)

Reference point (POS1 = bottom dead center)

Reference point (D = marking on handwheel)

= The value in this cell corresponds to the preset value of mode 0

R-select = 680Ω		Machine model											
Parameter	Preset 680R	4180 (1:1)	4280 (1:1,4)	888 (1:1)	888 (1:1,5)	838 (1:1,5)				69	267	269	667
290	0	1	2	3	4	5				10	11	12	13
000	2	=	=	1	1	1				=	=	=	=
001	2	3	3	=	=	=				=	=	=	=
002	2	=	=	=	=	=				=	=	=	=
003	5	2	2	3	3	3				=	=	=	=
013	0	=	1	1	1	1				=	=	=	=
014	0	=	=	=	=	=				=	=	=	=
080	2	=	=	3	3	3				=	=	=	=
081	2	=	=	3	3	3				=	=	=	=
082	2	=	=	3	3	3				=	=	=	=
110	150	=	=	=	=	=				200	150	150	150
111	1700	=	=	=	=	=				=	=	=	1500
112	800	=	=	=	=	=				=	=	=	=
113	800	=	=	=	=	=				=	=	=	=
114	800	=	=	=	=	=				=	=	=	=
115	400	=	=	=	=	=				=	=	=	=
116	150	180	180	180	180	180				=	=	=	=
117	800	=	=	=	=	=				=	=	=	=
123	0	=	=	=	=	=				=	=	=	=
124	800	=	=	=	=	=				=	=	=	=
153	6	=	=	=	=	=				=	=	=	=
170 Reference point	EP	=	=	=	=	=				=	=	=	=
171 P1E	25	=	=	115	115	115				120	120	120	110
P2E	315	=	=	=	=	325				315	315	315	315
P1A	85	=	=	175	175	175				170	180	180	165
P2A	15	=	=	=	=	=				15	15	15	15
180	20	=	=	=	=	30				=	=	=	=
182	0	=	=	1	1	1				=	=	=	=
190	315	=	=	130	130	130				=	=	=	=
191	50	=	=	=	=	=				=	=	=	=
192	237	=	=	130	130	110				=	=	=	=
193	0	=	=	=	=	=				=	=	=	=
194	0	=	=	=	=	=				=	=	=	=
196	0	=	=	2	2	2				=	=	=	=
203	200	=	=	350	350	350				=	=	=	=
207	20	=	=	=	=	=				10	10	10	5
208	30	=	=	=	=	=				15	15	15	10
210	150	=	=	=	=	=				=	=	=	=
219	10	=	=	=	=	=				4	5	5	3
220	20	=	=	=	=	=				20	20	20	10
221	100	=	=	=	=	=				=	=	=	=
222	120	20	20	20	20	20				20	20	20	20
223	1600	=	=	=	=	=				200	200	1000	1000
224	1	=	=	=	=	=				1	1	0	0
241	9	=	=	8	8	8				=	=	=	=
242	2	=	=	1	1	1				=	=	=	=
250	1	=	=	16	16	4				=	=	=	=
269	15	=	=	=	=	=				=	=	=	=
270	0	=	6	=	6	6				6	6	6	6
272	1000	=	722	=	642	642				533	533	536	710
297	180	=	=	60	60	60				=	=	=	=

Reference point (EP = insertion point of needle into needle plate)

Reference point (POS1 = bottom dead center)

Reference point (D = marking on handwheel)

= The value in this cell corresponds to the preset value of mode 0

R-select = 1000Ω		Machine model											
	Preset 1000R	767-FAS 373-RAP-HP,	767-FAS 573-RAP-HP, 767-FA-273	767-KFA 373-RAP-HP	767-LG-73	767-VF-373, 767-AE-73, 467-183081	467-65-FA-273, 467-65-FA-373	768-274 FLP-HP, 768-R374 FLP-HP	768-FA-273 RAP-HP 768-FA-R373 RAP-HP, 768-FA-L373 RAP-HP	367-170315	367-170115	381, 382	
	290	0	0	1	2	3	4	5	6	7	8	9	10
013	0	=	1	1	1	1	1	1	1	1	1	1	1
014	0	=	=	=	=	=	=	=	=	=	=	=	=
111	1000	=	3200	3200	3000	2800	2400	2400	2400	2400	3200	3000	2500
112	1200	=	=	=	=	=	=	=	=	800	=	=	=
113	1200	=	=	=	=	=	=	=	=	800	=	=	=
114	1200	=	=	=	=	=	=	=	=	800	=	=	=
117	2000	=	=	=	=	=	=	=	1600	1600	1800	1800	=
123	40	=	=	=	=	=	=	=	=	=	50	50	=
124	500	=	=	=	=	=	=	=	=	400	400	400	=
136	0	=	=	2	=	=	=	=	=	2	2	1	=
153	6	=	=	=	=	=	=	=	=	=	20	20	=
154	0	=	=	7	=	=	=	=	=	=	=	=	=
170 Reference point	EP	=	=	=	=	=	=	=	=	=	=	=	=
171 P1E	42	=	=	=	=	=	=	=	=	37	21	21	102
P2E	326	=	=	347	=	=	=	=	252	=	=	=	322
P1A	140	=	=	=	=	=	=	=	=	=	=	=	=
P2A	357	=	=	24	=	=	=	=	3	=	3	3	=
180	63	=	=	70	=	=	=	=	=	42	42	42	=
181	0	=	=	10	=	=	=	=	=	=	=	=	=
182	0	=	=	1	=	=	=	=	=	1	1	1	=
186	0	=	=	=	=	=	=	=	=	=	10	10	=
189	1	=	=	=	=	=	=	=	=	=	=	=	=
190	56	=	=	210	=	=	=	=	=	119	161	161	210
191	50	=	=	=	=	=	=	=	=	=	=	=	100
192	182	=	=	217	=	=	=	=	=	140	231	231	70
193	30	=	=	=	=	=	=	=	=	0	=	=	=
194	0	=	=	=	=	=	=	=	=	=	105	105	=
196	0	=	0	0	2	2	=	2	2	2	2	2	=
197	0	=	=	=	=	=	=	=	1	1	1	=	=
207	20	=	=	=	=	=	=	=	=	=	=	=	10
208	30	=	=	=	=	=	=	=	=	=	=	=	15
210	100	=	=	=	=	=	=	=	=	200	=	=	=
219	10	=	=	=	=	=	=	=	=	=	=	=	10
241	9	=	=	=	=	=	=	=	=	=	=	=	=
242	2	=	=	=	=	=	=	=	1	1	=	=	=
261	1	=	=	=	=	=	=	=	3	3	=	=	=
269	40	=	15	15	15	15	15	15	15	15	15	15	=
270	0	=	6	6	6	6	6	6	6	6	6	6	6
272	1000	=	880	880	880	880	663	558	558	558	800	800	704
275	17	=	=	=	=	=	=	=	=	=	=	=	5
288	1200	=	=	=	=	=	=	=	=	2400	=	=	=
297	180	=	0	0	=	=	=	=	=	=	=	=	=

Reference point (EP = insertion point of needle into needle plate)

Reference point (POS1 = bottom dead center)

Reference point (D = marking on handwheel)

= The value in this cell corresponds to the preset value of mode 0

R-select = 1000Ω		Machine model									
	Preset 1000R	327-170115 367-180115	367-170010 367-180010	561-180242	561-180142						
290	0	11	12	13	13						
013	0	1	1	1	1						
111	1000	3500	2800	3000	3000						
112	1200	=	=	=	=						
113	1200	=	=	=	=						
114	1200	=	=	=	=						
117	2000	1800	1800	1400	1800						
123	40	50	50	=	=						
124	500	400	400	=	=						
136	0	1	1	=	=						
153	6	20	20	25	25						
154	0	=	=	=	=						
162	100	=	=	=	=						
163	100	=	=	=	=						
170 Reference point	EP	=	=	=	=						
171 P1E	42	21	21	16	16						
P2E	326	=	=	=	=						
P1A	140	=	=	=	=						
P2A	357	3	3	=	=						
180	63	42	42	55	45						
181	0	=	=	=	=						
182	0	1	1	1	1						
186	0	10	10	=	=						
189	1	=	=	0	0						
190	56	161	161	240	240						
191	50	=	=	=	=						
192	182	231	231	231	231						
193	30	=	=	0	0						
194	0	105	105	=	=						
196	0	2	1	2	2						
197	0	=	=	=	=						
201	80										
210	100	=	=	=	=						
223	1600	1000	1000	=	=						
241 (for machines with tilt sensor)	9	=	=	8	8						
241 (for machines without tilt sensor)	9	=	=	0	0						
242	2	=	=	1	1						
255	7	=	=	=	=						
261	1	=	=	=	=						
269	40	15	15	15	15						
270	0	6	6	=	=						
272	1000	900	800	=	=						
288	1200	=	=	=	=						
333	0	=	=	=	=						
334	85	=	=	=	=						
550	13	=	=	=	=						
551	14	=	=	=	=						

Reference point (EP = insertion point of needle into needle plate)

Reference point (POS1 = bottom dead center)

Reference point (D = marking on handwheel)

= The value in this cell corresponds to the preset value of mode 0

R-select = 1000Ω		Machine model										
	Preset 1000R	7252x i Minerva	867-190322	867-190342	867-190146 (NSB)	867-180445 KFA-AUT	867-190020 867-190040	867-190040-70	867-190342-70			
290	0	19	20	21	22	23	24	25	26			
013	0	1	1	1	1	1	1	1	1			
100	1	=	=	=	2	=	=	=	=			
111	1000	3500	3400	3400	3400	3400	3000	3000	3000			
112	1200	=	=	=	=	=	=	=	=			
113	1200	=	=	=	=	=	=	=	=			
114	1200	=	=	=	=	=	=	=	=			
115	400	=	=	=	250	=	=	=	=			
116	150	=	=	=	140	=	=	=	=			
117	2000	=	1800	1800	1800	1800	=	=	1800			
123	40	=	=	=	=	=	=	=	=			
124	500	=	=	=	=	=	=	=	=			
136	0	=	=	=	2	2	=	=	=			
153	6	=	25	25	25	25	=	=	25			
154	0	=	=	=	8	8	=	=	=			
162	100	=	=	=	=	=	=	=	=			
163	100	=	=	=	50	50	=	=	=			
170 Reference point	EP	=	=	=	=	=	=	=	=			
171 P1E	42	110	16	16	16	=	=	16	=			
P2E	326	315	=	=	=	268	268	=	=			
P1A	140	170	=	=	=	=	=	=	=			
P2A	357	60	=	=	=	=	=	=	=			
180	63	40	45	45	45	45	=	=	45			
181	0	=	=	=	20	=	=	=	=			
182	0	1	1	1	1	1	=	=	1			
186	0	=	=	=	=	=	=	=	=			
189	1	=	0	0	0	0	=	=	0			
190	56	170	240	240	240	240	=	=	240			
191	50	=	=	=	=	=	=	=	=			
192	182	160	231	231	260	260	=	=	231			
193	30	=	0	0	0	0	=	=	0			
194	0	=	=	=	=	=	=	=	=			
196	0	=	2	2	2	2	=	=	2			
197	0	=	=	=	=	=	=	=	=			
201	80	120	=	=	=	=	=	=	=			
210	100	=	=	=	=	=	=	=	=			
223	1600	=	1200	1200	=	=	=	=	=			
Reference point (EP = insertion point of needle into needle plate)												
Reference point (POS1 = bottom dead center)												
Reference point (D = marking on handwheel)												
= The value in this cell corresponds to the preset value of mode 0												

R-select = 1000Ω		Machine model										
	Preset 1000R	7252x i Minerva	867-190322	867-190342	867-190146 (NSB)	867-180445 KFA-AUT	867-190020 867-190040	867-190040-70	867-190342-70			
290	0	19	20	21	22	23	24	25	26			
241 (for machines with tilt sensor)	9	=	8	8	8	=	=	8				
241 (for machines without tilt sensor)	9	=	0	0	0	0	0	0				
242	2	1	1	1	1	=	=	1				
255	7	=	=	=	=	=	=	=				
261	1	=	=	=	=	=	=	=				
269	40	=	15	15	=	=	=	=				
270	0	6	=	=	=	=	=	=				
272	1000	1063	=	=	=	=	=	=				
288	1200	=	=	=	=	=	=	=				
333	0	=	=	=	=	=	=	=				
334	85	=	=	=	35	=	=	=				
550	13	=	=	=	=	=	=	=				
551	14	=	=	=	35	=	=	=				

R-select = 1000Ω		Machine model										
	Preset 1000R	867-190020 867-190040	867-190322	867-190342		867-180445 KFA-AUT	867-190040-70	867-190342-70				
290	0	30	31	32		34	35	36				
111	1000	3000	3400	3400		3400	3000	3000				
117	2000	=	1800	1800		1800	=	1800				
123	40	=	=	=		=	=	=				
124	500	=	=	=		=	=	=				
136	0	=	=	=		=	=	=				
153	6	=	25	25		25	=	25				
154	0	=	=	=		8	=	=				
162	100	=	=	=		=	=	=				
163	100	=	=	=		50	=	=				
170 Reference point	EP	=	=	=		16	=	16				
171 P1E	42	=	16	16		=	=	=				
P2E	326	268	=	=		=	268	=				
P1A	140	=	=	=		=	=	=				
P2A	357	=	=	=								
180	63	=	45	45		45	=	45				
182	0	=	1	1		1	=	1				
189	1	=	0	0		0	=	0				
190	56	=	240	240		240	=	240				
191	50	=	=	=		=	=	=				
192	182	=	231	231		260	=	231				
193	30	=	0	0		0	=	0				
196	0	=	2	2		2	=	2				
197	0	=	=	=		=	=	=				
241 (for machines with tilt sensor)	9	=	8	8		8	=	8				
241 (for machines without tilt sensor)	9	=	8	8		8	=	8				
242	2	=	1	1		1	=	1				
255	7	=	7	7		=	=	=				
270	0	6	6	6		6	6	6				
272	1000	00724	00816	00816		816	724	724				
333	0	=	=	=		=	=	=				
334	85	=	=	=		35	=	=				
550	13	=	=	=		=	=	=				
551	14	=	=	=		=	=	=				
Reference point (EP = insertion point of needle into needle plate)												
Reference point (POS1 = bottom dead center)												
Reference point (D = marking on handwheel)												
= The value in this cell corresponds to the preset value of mode 0												

R-select = 1000Ω		Machine model										
	Preset 1000R	868-190020 868-290020	868-190322 868-290322 868-390322	868-190341 868-290341	868-490322		869-180122 869-280122	869-180322 869-280322	669-180010 869-180020 869-280020	669-180112 869-180122 869-280122	669-180312 869-180322 869-280322	
290	0	40	41	42	43		45	46	47	48	49	
013	0	=	1	1	1		1	1	=	1	1	
111	1000	2500	2500	2500	2500		2800	2800	2800	3000	3000	
117	2000	=	1600	1600	1600		1800	1800	=	1800	1800	
123	40	=	=	=	=		=	=	=	=	=	
124	500	=	=	=	=		=	=	=	=	=	
136	0	=	2	2	2		2	2	=	=	=	
153	6	=	25	25	25		19	19	15	19	19	
154	0	=	=	=	=		=	=	8	=	=	
162	100	=	=	=	=		=	=	=	=	=	
163	100	=	=	=	=		=	=	50	=	=	
170 Reference point	EP	=	=	=	=		=	=	=	=	=	
171 P1E	42	=	16	16	16		16	16	=	16	16	
P2E	326	268	=	=	=		=	=	268	=	=	
P1A	140	=	=	=	=		=	=	=	=	=	
P2A	357	=	=	=	=		=	=	=	=	=	
180	63	=	45	45	15		45	45	=	45	45	
182	0	=	1	1	1		1	1	=	1	1	
189	1	=	0	0	0		0	0	=	0	0	
190	56	=	240	240	240		240	240	=	240	240	
191	50	=	=	=	=		=	=	=	=	=	
192	182	=	231	231	231		231	231	=	231	231	
193	30	=	0	0	0		0	0	=	0	0	
196	0	=	2	2	2		2	2	=	2	2	
197	0	=	=	=	=		=	=	=	=	=	
241	9	=	8	8	8		8	8	=	8	8	
242	2	=	1	1	1		1	1	=	1	1	
255	7	=	=	=	=		=	=	=	=	=	
270	0	6	6	6	6		6	6	6	6	6	
272	1000	100	642	642	642		703	703	703	703	703	
289	3000	=	1600	1600	1500		=	=	=	=	=	
550	13	=	=	=	=		=	=	=	=	=	
551	14	=	=	=	=		=	=	=	=	=	
Reference point (EP = insertion point of needle into needle plate) Reference point (POS1 = bottom dead center) Reference point (D = marking on handwheel) = The value in this cell corresponds to the preset value of mode 0												

R-select = 1000Ω		Machine model										
	Preset 1000R	867-290020 867-290040	867-290322	867-290342	867-490322	867-280445 KFA-AUT	867-290040-70	867-290342-70	867-290342-100			
290	0	50	51	52	53	54	55	56	57			
111	1000	3000	3000	3000	2500	3000	3000	3000	2500			
117	2000	=	1800	1800	1800	1800	=	1800	1800			
123	40	=	=	=	=	=	=	=	=			
124	500	=	=	=	=	=	=	=	=			
136	0	=	2	2	2	2	=	2	2			
153	6	=	25	25	25	25	=	25	25			
154	0	=	=	=	=	8	=	=	=			
162	100	=	=	=	=	=	=	=	=			
163	100	=	=	=	=	50	=	=	=			
170 Reference point	EP	=	=	=	=	=	=	=	=			
171 P1E	42	=	16	16	16	16	=	16	16			
P2E	326	268	=	=	=	=	268	=	=			
P1A	140	=	=	=	=	=	=	=	=			
P2A	357	=	=	=	=	=	=	=	=			
180	63	=	45	45	15	45	=	45	45			
182	0	=	1	1	1	1	=	1	1			
189	1	=	0	0	0	0	=	0	0			
190	56	=	240	240	240	240	=	240	240			
191	50	=	=	=	=	=	=	=	=			
192	182	=	231	231	231	260	=	231	231			
193	30	=	0	0	0	0	=	0	0			
196	0	=	2	2	2	2	=	2	2			
197	0	=	=	=	=	=	=	=	=			
241	9	=	8	8	8	8	=	8	8			
242	2	=	1	1	1	1	=	1	1			
255	7	=	=	=	=	=	=	=	=			
270	0	6	6	6	6	6	6	6	6			
272	1000	642	642	642	642	642	642	642	642			
333	0	=	=	=	=	=	=	=	=			
334	85	=	=	=	=	35	=	=	=			
550	13	=	=	=	=	=	=	=	=			
551	14	=	=	=	=	=	=	=	=			
Reference point (EP = insertion point of needle into needle plate)												
Reference point (POS1 = bottom dead center)												
Reference point (D = marking on handwheel)												
= The value in this cell corresponds to the preset value of mode 0												

R-select = 1000Ω		Machine model										
	Preset 1000R	867-290020 867-290040	867-290322	867-290342		867-280445 KFA-AUT	867-290040-70	867-290342-70			867-392342 LG 867-393342 VF 867-394342 AE (AE=LG+VF)	
	290	0	60	61	62	64	65	66			70	71
111	1000	3000	3000	3000		3000	3000	3000			3000	3000
117	2000	=	1800	1800		1800	=	1800			1800	1800
123	40	=	=	=		=	=	=			=	=
124	500	=	=	=		=	=	=			=	=
136	0	=	2	2		2	=	2			2	2
153	6	=	25	25		25	=	25			25	25
154	0	=	=	=		8	=	=			=	=
162	100	=	=	=		=	=	=			=	=
163	100	=	=	=		50	=	=			=	=
170 Reference point	EP	=	=	=		=	=	=			=	=
171 P1E	42	=	16	16		16	=	16			16	16
P2E	326	268	=	=		=	268	=			=	=
P1A	140	=	=	=		=	=	=			=	=
P2A	357	=	=	=		=	=	=			=	=
180	63	=	45	45		45	=	45			45	45
182	0	=	1	1		1	=	1			1	1
189	1	=	0	0		0	=	0			0	0
190	56	=	240	240		240	=	240			240	240
191	50	=	=	=		=	=	=			=	=
192	182	=	231	231		260	=	231			231	231
193	30	=	0	0		0	=	0			0	0
196	0	=	2	2		2	=	2			2	2
197	0	=	=	=		=	=	=			=	=
241	9	=	8	8		8	=	8			8	8
242	2	=	1	1		1	=	1			1	1
255	7	=	=	=		=	=	=			=	=
267	0										=	2
270	0	6	6	6		6	6	6			6	6
272	1000	724	724	724		724	724	724			642	642
333	0	=	=	=		=	=	=				
334	85	=	=	=		35	=	=				
550	13	=	=	=		=	=	=			=	=
551	14	=	=	=		=	=	=			=	=
Reference point (EP = insertion point of needle into needle plate)												
Reference point (POS1 = bottom dead center)												
Reference point (D = marking on handwheel)												
= The value in this cell corresponds to the preset value of mode 0												

R-select = 4700Ω		Machine model									
	Preset 4700R	767-FAS 373-RAP-HP,	767-FAS 573-RAP-HP, 767-FA-273	767-KFA 373-RAP-HP	767-LG-73	767-VF-373, 767-AE-73, 467-183081	467-65-FA-273, 467-65-FA-373				
	290	0	0	1	2	3	4	5			
013		0	=	1	1	1	1	1			
014		0	=	=	=	=	=	=			
111		1000	=	3200	3200	3000	2800	2400			
112		1200	=	=	=	=	=	=			
113		1200	=	=	=	=	=	=			
114		1200	=	=	=	=	=	=			
117		2000	=	=	=	=	=	=			
123		40	=	=	=	=	=	=			
124		500	=	=	=	=	=	=			
136		0	=	=	2	=	=	=			
153		6	=	=	=	=	=	=			
154		0	=	=	7	=	=	=			
170 Reference point	EP	=	=	=	=	=	=	=			
171 P1E	42	=	=	=	=	=	=	=			
P2E	326	=	=	347	=	=	=	=			
P1A	140	=	=	=	=	=	=	=			
P2A	357	=	=	24	=	=	=	=			
180		63	=	=	70	=	=	=			
181		0	=	=	10	=	=	=			
182		0	=	=	1	=	=	=			
186		0	=	=	=	=	=	=			
189		1	=	=	=	=	=	=			
190		56	=	=	210	=	=	=			
191		50	=	=	=	=	=	=			
192		182	=	=	217	=	=	=			
193		30	=	=	=	=	=	=			
194		0	=	=	=	=	=	=			
196		0	=	0	0	2	2	=			
197		0	=	=	=	=	=	=			
207		20	=	=	=	=	=	=			
208		30	=	=	=	=	=	=			
210		100	=	=	=	=	=	=			
219		10	=	=	=	=	=	=			
241		9	=	=	=	=	=	=			
242		2	=	=	=	=	=	=			
261		1	=	=	=	=	=	=			
269		40	=	15	15	15	15	15			
270		0	=	6	6	6	6	6			
272		1000	=	880	880	880	880	663			
275		17	=	=	=	=	=	=			
288		1200	=	=	=	=	=	=			
297		180	=	0	0	=	=	=			
501		112	=	=	=	=	=	=			
502		55	=	=	=	=	=	=			
503		1	=	=	=	=	=	=			

Reference point (EP = insertion point of needle into needle plate)
 Reference point (POS1 = bottom dead center)
 Reference point (D = marking on handwheel)
 = The value in this cell corresponds to the preset value of mode 0

Supplier level (Code 311 when operating at the controller or 3112 when operating at the control panel)

Parameter	Designation	Unit	Limits		Preset for					Ind.	
			max	min	100Ω	220Ω	680Ω	1000Ω			
291	810	Select the slide-in strip number for the V810 control panel (291 = 0, keys 1...4 are disabled)		8	0	1	1		1	1	A
292	820	Select the slide-in strip number for the V810 control panel V820/V850 (292 = 0, keys 1...0 are disabled)		10	0	1	1		1	1	A
293	tF1	Selection of input function on key (A) („F1“ on the V810/V820/V850 control panel) 0 = No function (key locked) 1 = Needle up/down 2 = Needle up 3 = Single stitch (basting stitch) 4 = Full stitch 5 = Needle to position 2 6 = Output A if parameter 250 > 0 7 = Output B if parameter 255 > 0 8 = Run in direction of rotation 9 = Run against direction of rotation 10...12 = No function 13 = High lift for walking foot with speed limitation n10 (operational mode not stored) 14 = High lift for walking foot with speed limitation n10 (operational mode stored) 15 = No function 16 = Intermediate Backtack 17 = Backtack suppression / recall 18 = No function 19 = Reset bobbin thread monitor		19	0	17	17		17	17	A
294	tF2	Selection of input function on key (B) („F2“ on the V810/V820/V850 control panel) Key functions as for parameter 293		19	0	1	1		1	1	A
297	tFL	Time monitoring of sewing foot lifting (for setting "0", monitoring is off)	sec.	250	0	0	0		180	0	A
298	EF-	Upper limit (pa. 204) ON period of sewing foot lifting 1...100	%	100	1	100	100		100	100	A
299	EV-	Upper limit (pa. 213) duty ratio for backtacking 1...100	%	100	1	100	100		100	100	A
300	AA1	Selectable output for signal A1 0 = No function 1 - 12 = M1 - M12		12	0	0	0		0	0	A
301	So1	Signal A1 is issued 0 = Signal until seam end (according to setting of parameter 320) 1 = Signal over time 2 = Signal until seam end and drive stops 3 = Signal during stitch counting (according to setting of parameter 309)		3	0	0	0		0	0	A
302	tr1	Starting point for signal A1 0 = Start at the beginning of the seam 1 = Start of the signal triggered by light barrier sensing 2 = Start of the signal when the drive stops at the seam end 3 = Start from light barrier covered onwards at the beginning of the seam		3	0	0	0		0	0	A
303	do1	Delay of signal A1 0 = No delay until signal On 1 = Delay over time until signal On 2 = Delay over stitches until signal On		2	0	1	1		1	1	A
304	dt1	Delay time until signal A1 On	ms	2550	0	0	0		0	0	A
305	St1	Power-on duration of signal A1	ms	2550	0	0	0		0	0	A

Supplier level (Code 311 when operating at the controller or 3112 when operating at the control panel)

Parameter	Designation	Unit	Limits		Preset for				Ind.		
			max	min	100Ω	220Ω	680Ω	1000Ω			
306	nA1	Speed mode when signal A1 is On 0 = Pedal controlled speed 1 = Limited speed n9 2 = Limited speed n11		2	0	0	0	0	0	0	A
307	A1	Signal A1 On/Off		1	0	0	0	0	0	0	A
308	dA1	Stitches delaying signal A1	Stitches	999	0	0	0	0	0	0	A
309	cA1	Stitch counting during signal A1	Stitches	999	0	0	0	0	0	0	A
310	AA2	Selectable power transistors for signal A2 0 = No function 1 = Signal on output M1 2 = Signal on output M2 3 = Signal on output M3 4 = Signal on output M4 5 = Signal on output M5 6 = Signal on output M6 7 = Signal on output M7 8 = Signal on output M8 9 = Signal on output M9 10 = Signal on output M10 11 = Signal on output M11 12 = Signal on output VR		12	0	0	0	0	0	0	A
311	So2	Issue signal A2 0 = Signal until seam end (according to setting of parameter 320) 1 = Signal over time 2 = Signal until seam end and drive stops 3 = Signal during stitch counting (according to setting of parameter 309)		3	0	0	0	0	0	0	A
312	tr2	Starting point for signal A2 0 = Start at the beginning of the seam 1 = Start of the signal triggered by light barrier sensing 2 = Start of the signal when the drive stops at the seam end 3 = Start from light barrier covered onwards at the beginning of the seam		3	0	0	0	0	0	0	A
313	do2	Delay of signal A2 0 = No delay until signal On 1 = Delay over time until signal On 2 = Delay over stitches until signal On		2	0	1	1	1	1	1	A
314	dt2	Delay time until signal A2 On	ms	2550	0	0	0	0	0	0	A
315	St2	Power-on duration of signal A2	ms	2550	0	0	0	0	0	0	A
316	nA2	Speed mode when signal A2 is On Pedal controlled speed 0 = Limited speed n9 1 = Limited speed n11		2	0	0	0	0	0	0	A
317	A2	Signal A2 On/Off		1	0	0	0	0	0	0	A
318	dA2	Stitches delaying signal A2	Stitches	999	0	0	0	0	0	0	A
319	cA2	Stitch counting during signal A2	Stitches	999	0	0	0	0	0	0	A
320	bP0	Switch-off time of signals A1 and A2 0 = Signals effective until seam end 1 = Signals effective until pedal is in pos. 0		1	0	0	0	0	0	0	A
321	Std	Suppression of the seam when 0 stitches are set 0 = Suppression Off 1 = Suppression On		1	0	0	0	0	0	0	A
322	dkn	0 = Correction seam Off 1 = Correction seam On 2 = Interruption of seam or pattern by thread trimmer 3 = Seam end in plug program execution		3	0	0	0	0	0	0	L

Supplier level (Code 311 when operating at the controller or 3112 when operating at the control panel)

		Parameter											
A1	301	302	303	304	305	308	309	NA	LS	NE	FA-E	P=0	
A2	311	312	313	314 [ms]	315 [ms]	318 [St]	319 [St]						
	0	1	0	0	0	0	0						
	0	1	1	100	0	0	0		100				
	0	1	2	0	0	10	0		10				
	1	1	0	0	100	0	0		100				
	1	1	1	100	100	0	0		100	100			
	3	1	0	0	0	0	10		10				
	3	1	2	0	0	10	10		10	10			
	3	1	1	100	0	0	10		100	10			
	1	1	2	0	100	10	0		10	100			
	1	2	0	0	100	0	0				100		
	1	2	1	100	100	0	0				100	100	

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- NA = Start of seam
- LS = Light barrier bright or dark on seam end
- LS-D = Light barrier uncovered → covered (parameter 131 = 1 and parameter 132 = 0)
- NE = Seam end
- FA-E = End thread trimming operation
- P=0 = Pedal in pos. 0 (neutral)
- St = Stitches

- Parameter 320 = 0** → Signals enabled according to setting of parameter 301/311.
- Parameter 320 = 1** → Signals enabled until pedal is in pos. 0 (neutral).

Supplier level (Code 311 when operating at the controller or 3112 when operating at the control panel)

		Parameter											
A1	301	302	303	304	305	308	309	NA	LS-D	NE	FA-E	P=0	
A2	311	312	313	314 [ms]	315 [ms]	318 [St]	319 [St]						
	0	0	0	0	0	0	0						1)
	0	0	0	0	0	0	0						2)
	1	0	0	0	100	0	0						
	1	0	1	100	100	0	0						
	3	0	0	0	0	0	10						
	3	0	2	0	0	10	10						
	3	0	1	100	0	0	10						
	1	0	2	0	100	10	0						
	2	0	0	0	0	0	0						1)
	2	0	0	0	0	0	0						2)
	0	0	1	100	0	0	0						
	0	0	2	0	0	10	0						
	1	3	0	0	100	0	0						
	1	3	1	100	100	0	0						
	3	3	0	0	0	0	10						
	3	3	2	0	0	10	10						
	3	3	1	100	0	0	10						
	1	3	2	0	100	10	0						
	2	3	0	0	0	0	0						
	0	3	0	0	0	0	0						
	0	3	1	100	0	0	0						
	0	3	2	0	0	10	0						
	2	3	1	100	0	0	0						
	2	3	2	0	0	10	0						

0256/BILD3

- 1) Seam end after stitch counting or light barrier sensing
- 2) Seam end after pedal in pos. -2

Supplier level (Code 311 when operating at the controller or 3112 when operating at the control panel)

Parameter	Designation	Unit	Limits		Preset for					Ind.	
			max	min	100Ω	220Ω	680Ω	1000Ω			
323	FLn	0 = Sewing foot is not lifted after power On 1 = Sewing foot is lifted after power On This function is only active when TEACH-IN is on	1	0	0	0		0	0	A	
324	ti	0 = TEACH IN Off 1 = TEACH IN On TEACH IN programming is possible only with V820/V850. Execution of the program is also possible without the V820/V850 control panel.	1	0	0	0		0	0	A	
325	cti	Erasing all TEACH IN data - Input code number 3112 after power On - Press the E key - Input parameter 325 - Press the E key - Input 3112 - Press the P key - The display briefly shows "deleted", and a short acoustic signal - Press the P key - all TEACH IN programs have been erased!									
326	EPE	Disabling the P and E keys on the control panels and the P key on the control 0 = Keys P and E are locked 1 = Key P is free and key E is locked 2 = Key P is locked and key E is free 3 = Keys P and E are released	3	0	3	3		3	3	A	
327	EPm	Disabling the keys + / - on the control panels and controller 0 = Keys + and - are locked 1 = Keys + and - are released	1	0	1	1		1	1	A	
328	ob	Disabling the keys E , +, - and >> on the control 0 = Keys E , +, - and >> are disabled 1 = Keys E , +, - and >> are released	1	0	1	1		1	1	A	
330	kA1	Coupling of signal A1 to the interlock and sewing foot lifting 0 = No coupling. 1 = Coupling of signal A1 to the sewing foot lifting 2 = Coupling of signal A1 to the interlock. 3 = Coupling of signal A1 to the interlock and sewing foot lifting	3	0	0	0		0	0	A	
331	A1i	Signal A1 inverted	1	0	0	0		0	0	E	
332	FLd	Mode for full sewing foot lifting engagement and holding power 0 = For the function of sewing foot lifting in the seam, the settings of parameters 203 and 204 apply 1 = Sewing foot lifting in the seam: FL automatic, pa. 333 + 334 FL when pedal, Pa.203 + 204 2 = Sewing foot lifting in the seam: FL automatic, pa. 333 + 334 FL when pedal, Pa. 333 + 334 After seam end, always in force pa.203 + 204	2	0	0	0		0	0	H	
333	t4	Time of full power of sewing foot lifting	ms	600	0	0	0		0	0	A

Supplier level (Code 311 when operating at the controller or 3112 when operating at the control panel)

Parameter	Designation	Unit	Limits		Preset for					Ind.	
			max	min	100Ω	220Ω	680Ω	1000Ω			
334	t5_	Holding power for sewing foot lifting 1...100% 1% → low holding power 100% → high holding power	%	pa. 298	1	85	85		85	85	A
335	kA2	Coupling of signal A2 to the interlock and sewing foot lifting 4 = No coupling. 5 = Coupling of signal A2 with sewing foot lifting 6 = Coupling of signal A2 to the interlock. 7 = Coupling of signal A2 to the interlock and sewing foot lifting		3	0	0	0		0	0	A
336	A2I	Signal A2 inverted		1	0	0	0		0	0	E
362	kd1	Thread trimmer delay time (only for R-select 470 Ω)	ms	5000	0	0	0		0	0	K
363	Kt1	Thread trimmer power-on duration	ms	5000	0	550	550		550	550	K
364	kd2	Thread puller power-on duration	ms	5000	0	100	100		100	100	L
364	kd2	Chain cutter delay time (only for R-select 470 Ω)	ms	5000	0	100	100		100	100	L
365	kt2	Power-on delay after thread pull	ms	5000	0	100	100		100	100	L
365	kt2	Chain cutter power-on duration (only for R-select 470 Ω)	ms	5000	0	100	100		100	100	L
366	ckL	Power-off delay of chain cutter at seam start (only for R-select 470 Ω)	Stitches	254	0	40	40		40	40	K
367	PM	Puller function On/Off		1	0	0	0		0	0	K
368	kSY	Selection of the chain cutting system (only for R-select 470 Ω) 1 = Standard chain stitch cutter 2 = Chain cutter		2	1	1	1		1	1	K
369	Stv	Mode for stitch condensing (only for R-select 470 Ω) 0 = Standard stitch condensing 1 = Stitch condensing inverted		1	0	0	0		0	0	K
397	cPA	Delete compiler parameters 600 to 799			0000	0000	0000		0000	0000	
398	Cn9	Delete V900 data in Flash memory			0000	0000	0000		0000	0000	
399	cFP	Delete all compiler data (code input required)									F
401	EEP	Immediate storage of all changed data - Input code number 3112 after power On - Press the E key - Input parameter 401 - Press the E key -Set display from 0 to 1 -Press the E or P key -All data are stored		1	0	0	0		0	0	A
402	coP	Copy Flash program to another controller		1	0	0	0		0	0	
403	cAr	Delete C200 arrays			0000	0000	0000		0000	0000	

Supplier level (Code 311 when operating at the controller or 3112 when operating at the control panel)

Parameter	Designation	Unit	Limits		Preset for					Ind.
			max	min	100Ω	220Ω		680Ω	1000Ω	
405	vvr	Conversion to 30 V during interlock *)	1	0	0	0		0	0	
406	vFL	Conversion to 30 V during sewing foot lifting *)	1	0	0	0		0	0	
407	vFA	Conversion to 30 V during thread trimming operation *)	1	0	0	0		0	0	
408	30v	General switch from 24 V to 30 V *)	1	0	0	0		0	0	
500	Sir	Call to quick installation routine SIR (see explanation in Chapter 2 on page 5)								
501		High lift for walking foot - measurement value of potentiometer for minimum lift	255	0	Machine-dependent					M
502		High lift for walking foot - measurement value of potentiometer for maximum lift	255	0	Machine-dependent					M
503	MP2	Selecting the potentiometer used 0 = MP20 pot, standard on machines built in 1998 or later 1 = RP20 pot, standard on machines built before 1998	1	0	0	0		0	0	M
504	Fko	Thread clamp at start of seam on / off	1	0	1	1		1	1	N
505	FFL	Presser foot lifting at start of seam on / off	1	0	1	1		1	1	N
550	i12	Selection of input function on socket B22/3 for input 12 0 = No function. All other functions of the keys as with parameter 241	83	0	13	13		13	13	A
551	i13	Selection of input function on socket B22/4 for input 13 0 = No function. All other functions of the keys as with parameter 241	83	0	14	14		14	14	E

*) The switch from 24 V to 30 V may only be used if it can be certain that all actuators and displays connected are suitable for the higher voltage.

6 Error Displays

On the control	On the V810	On the V820/V850	Signification
General Information			
A1	InF A1	InF A1	Pedal not in neutral position when turning the machine on
A2	-StoP- blinking	-StoP- blinking + symbol display	Machine run blockage
A3	InF A3	InF A3	Reference position is not set
A4	InF A4	Power OFF/ON	Machine select of parameter 280 taken over
A5	InF A5	InF A5	Emergency run, identification of an invalid machine select
A6	InF A6	InF A6	Light barrier monitoring
A7	Symbol blinking	Symbol blinking	Bobbin thread monitor
A8	InF A8	InF A8	No stepping motor control connected
A500	FileFI	File Full	Max. number of files (99) on Memory Stick exceeded
A501	noFile	noFile	File not found on Memory Stick
A503	not EQ	not EQ	Data on Memory Stick and in the control is not equal
Operating Hours Counter			
C1	InF C1	InF C1	Operating hours counter has reached or exceeded the service time
C2			Fatal exception error
C3			Program error
Programming Functions and Values (Parameters)			
Returns to 0000 or to last parameter number		Like V810 + display InF F1	Wrong code or parameter number input
Serious Condition			
E1	InF E1	InF E1	The external pulse encoder e.g. IPG... is defective or not connected
E2	InF E2	InF E2	Line voltage too low, or time between power Off and power On too short
E3	InF E3	InF E3	Machine blocked or does not reach the desired speed
E4	InF E4	InF E4	Control disturbed by deficient grounding or loose contact
E7	InF E7	InF E7	24 V power supply unit overload
E8	InF E8	InF E8	Too much data for the EEPROM or flash memory
E9	InF E9	InF E9	EEPROM or flash memory defective
E10	InF E10	InF E10	Short-circuit on output (output FL, VR, M1, M2, M3, M4 or M10)
E11	InF E11	InF E11	Thermal overload of output stage transistor
E12	InF E12: 003	InF E12: 003	Short-circuit on output M5
E12	InF E12: 004	InF E12: 004	Short-circuit on output M9
E12	InF E12: 005	InF E12: 005	Short-circuit on output M11
E12	InF E12: 006	InF E12: 006	Short-circuit on output M7
E12	InF E12: 008	InF E12: 008	Short-circuit on output M8
E12	InF E12: 009	InF E12: 009	Short-circuit on output M6
Programming and Data Transfer			
F1	InF F1	InF F1	Parameter unavailable; wrong code number
F3	InF F3	InF F3	Wrong thread trimming mode selected in TEACH IN
F4	InF F4	InF F4	Invalid slide-in strip selected in TEACH IN
F5	InF F5	InF F5	TEACH IN, wrong program number when switching from one program to the next
F6	InF F6	InF F6	TEACH IN, too much data in EEPROM
F7	InF F7	InF F7	RS232 timeout
F8	InF F8	InF F8	RS232, error in data transfer, NAK received

Hardware Disturbance			
H1	InF H1	InF H1	Commutation transmitter cord or frequency converter disturbed
H2	InF H2	InF H2	Processor disturbed
Free Programming			
U1	InF U1	InF U1	Compiler, invalid code, unknown command
U2	InF U2	InF U2	Invalid system function
U3	InF U3	InF U3	Invalid input/output number
U4	InF U4	InF U4	Too many user variables
U5	InF U5	InF U5	Too many system variables
U6	InF U6	InF U6	User program too large for memory
U7	InF U7	InF U7	Invalid or undefined key in Variocontrol
U8	InF U8	InF U8	Unknown device address
U9	InF U9	InF U9	Fatal exception error

For your notes:



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