PFAFF® Industrial

EcoDrive P310 ED

INSTRUCTION MANUAL

Part 3

Parameter list and connection plan

296-12-18 638/002
Betriebsanleitung engl. 06.09

List of Contents Part 3

11. Survey and List of Parameters

11.1 Explanation of Parameter Survey

The parameter survey is designed as an aid for finding parameters quickly. It is a summary of references for the parameter list. Listed behind each reference are all parameters which exert an influence on the function described by the reference.

The parameter survey is divided into five columns:
Column 1 shows the references (functions) to which parameters are assigned.
Column 2 shows the abbreviations of the respective functions.
Column 3 shows all parameters (setting numbers) belonging to the respective reference.
Column 4 shows, for each function (reference) which controls inputs or outputs, the applicable indications such as Ex or Ax which can also be found on the connections diagram.
Column 5 shows, for each function (control inputs (Ex) or control outputs (Ax)), the respective plugs with the number of contacts (see connections diagram).

Example for searching a parameter:
Keyword (function): inverse rotation
The parameter survey shows in column 3 the parameter numbers 618, 801.

Suppose that the inverse rotation function is to be enabled. The parameter list shows this function under parameter number 618.

11.2 Explanation of Parameter List

The parameter list is divided into 5 columns. These comprise, in
column 1: the parameter number,
column 2: is the explanation (meaning) of the parameters and the coding system of row 1 of the keys of the mini operator's panel, used when the parameter concerned can be programmed with the mini operator's panel,
column 3: the programming level (A, B, C) on which the parameter in question can be accessed,
column 4: the range of values within which the parameter in question can be set,
column 5: the value of the parameter in question is set on delivery ex factory.

Parameters having "either/or" validity (software switches) can merely be set to value I or II. In the case of such parameters, column 4 is empty.
Parameter numbers in acute brackets; e.g. <105>, mean the value (content) set for the parameter in question.

Example:
107 Speed for front backtack when <106> = I
I limited by <105>
II limited by <607>

Explanation:
Parameter 107 is valid only the the value (content) of parameter <106> = I.
If parameter 107 is set to I (<107> = I), then the speed for the front backtack is limited by parameter 105, e.g. <105> = 1500. If parameter 107 is set to II (<107> = II), then the speed for the front backtack is limited by the value of parameter 607, e.g. <607> = 4000.

11.3 Parameter survey P310ED 1_912_24 (PARAM.ENO)

Function	Abbrev'n	Parameter	Input Output	Connection Socket/Contacts
Accelerate	DRZAN	722		
Backtack	RIE	105/110		
Blower	BLA	668		
Brake	DRZAB	723		
Catcher	FANG	707		
Chopper	MESSE	105/110		
Control	REG	880/884/885 886/887/889 890/898/900		
Defect search	HWT	797		
Delay	VERZ	623/642/643 730/761/770 939		
Direction of rotation	DRR	800		
Display	ANZ	605/933		
Edge trimmer	KS	356/387		
End backtack	ER	110		
Engine	MOT	897		
Feed reverse	TUM	301/643/721 939		
Front backtack	AR	105/106		
Hardware test	HWT	797		
Inverse rotation	RDR	618/623/801		
Linear motor	LINMOT	668		
Machine class	MAKL	799		
Machine run	ML	387		
Needle position	NAPO	521/700/702 703/705/706 707		
Number of stitches	STZA	111/112/760		
ON period	EINZ	715/889		
Photocell	LS	111/112/199 615		

Presser foot	PF	356/642/651 668/719/729 730/770
Programming level C	EBC	798
Residual brake	STBR	718
Seam end	NE	110
Seam start	NA	105
Soft start	SANL	116/117
Speed	DRZ	105/106/110 117/199/605 606/607/608 609/901
Speed decrease	DRZAB	723
Speed increase	DRZAN	722
Start delay	STVERZ	729
Starting block	ANLSP	452
Stepper motor	SMOT	1000/1001
Stitch condensation	STVD	105/106/110
Stitchcounter	STZ	760
Stop	STOP	452
Target stitch	PEIPO	789
Thread monitor	FW	382/660/760
Thread puller	FZ	761
Thread tension release	FSL	538/707/761
Thread trimming	SN	609/705/706 734/901
Thread wiper	WI	668/715
Time needed to switch on	EINZ	715/889
Timing output	TA	538/642/643 705/719/721 734
Vacuum	SAUG	105/110/356

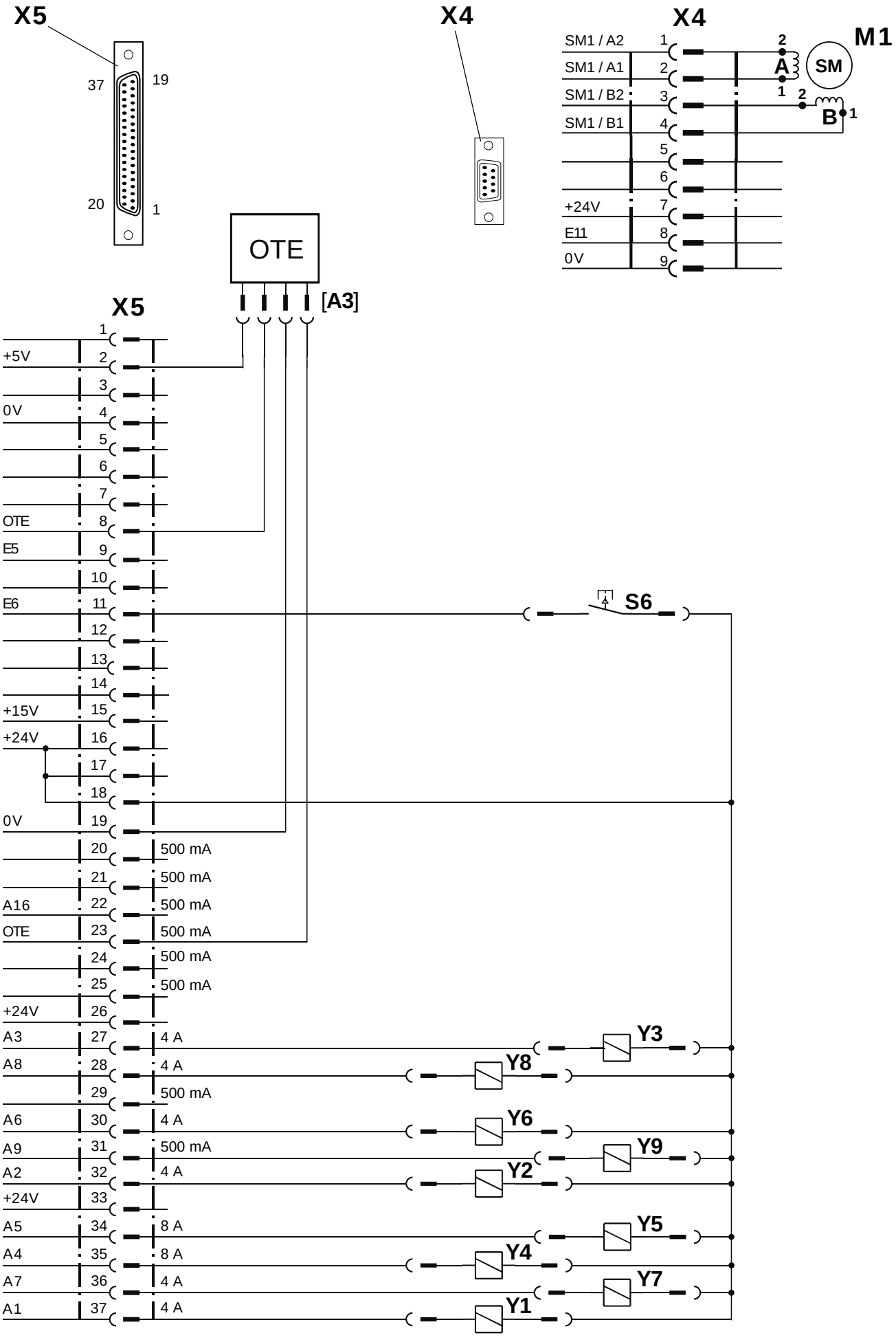
11.4 List of Parameters P310ED 1_912_24 (PARAM.EN)

No.	Function (Meaning)	Level	Range of Values	Value	Standard
105	(AR/RIE/DRZ/MESSER/NA/SAUG/STVD) Speed for front backtack / stitch condensation	B,C	0300 - 1500	1000	Kl. 1
110	(ER/RIE/DRZ/MESSER/NE/SAUG/STVD) Speed for end backtack / stitch condensation	B,C	0300 - 1500	1000	Kl. 1
116	(SANL) Soft start stitches	B,C	0000 - 0030	0	Kl. 1
117	(SANL/DRZ) Speed for soft start stitches	B,C	0030 - 1000	400	Kl. 1
382	(FW) Switching threshold of the analogue input for the thread monitor	B,C	0000 - 0100	15	Kl. 1
387	(ML/KS) Output (motor run) is active 1 With Pedal = 1D (Motor running) 0 With Pedal = 1 (Lower presser foot)	B,C		1	Kl. 1
452	(ANLSP/STOP) Input „run locking“ 1 yes 0 no (without function)	B,C		1	Kl. 1
521	(NAPO) Needle position at stop before seam end 1 position 2 (up) 0 position 1 (down)	B,C		1	Kl. 1
538	(FSL/TA) Timing of output (thread tension release) (0 = 100%)	B,C	0010 - 0050	30	Kl. 1
605	(DRZ/ANZ) Actual speed in display (<725>) 1 yes 0 no	B,C		0	Kl. 1
606	(DRZ) Speed: level 1 (min.)	B,C	0030 - 0300	180	Kl. 1
607	(DRZ) Speed: level 12 (max.)	B,C	0300 - 3500	2500	Kl. 1
609	(SN/DRZ) Trimming speed 1	B,C	0060 - 0300	180	Kl. 1
615	(LS) End recognition when photocell goes 1 from light to dark 0 from dark to light	B,C		1	Kl. 1
618	(RDR) Inverse rotation after seam end 1 yes 0 no	B,C		1	Kl. 1
623	(RDR/VERZ) Delay in start-up time (ms) for inverse rotation	B,C	0000 - 2000	30	Kl. 1
651	(PF) Presser foot with automatic descent on machine stop 1 yes 0 no	B,C		0	Kl. 1
660	(FW) Bobbin thread monitoring 0 without (= *II*) 1 via a sensor (= **I*) 2 by a stitch count	A,B,C	0000 - 0002	0	Kl. 1
668	(BLA/LINMOT/PF/WI) Thread wiper/thread clearer 1 yes 0 no	B,C		1	Kl. 1
700	(NAPO) Needle position 0 (reference position of the needle)	B,C	0000 - 0255	0	Kl. 1 *
702	(NAPO) Needle position 1 (needle down)	B,C	0000 - 0255	80	Kl. 1
703	(NAPO) Needle position 2 (thread take-up lever up)	B,C	0000 - 0255	226	Kl. 1
705	(NAPO/SN/TA) Needle position 5 (end of trimming signal 1 (magnetic thread trimmer) / clock pulses start of the trimming signal 1)	B,C	0000 - 0255	200	Kl. 1
706	(NAPO/SN) Needle position 6 (start trimming signal 2 (pneumatic thread trimmer))	B,C	0000 - 0255	80	Kl. 1
707	(NAPO/FSL/FANG) Needle position 9 (thread tension release or thread catcher start)	B,C	0000 - 0255	164	Kl. 1

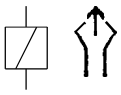
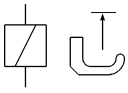
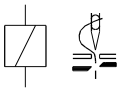
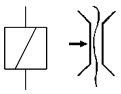
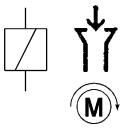
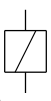
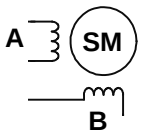
715	(EINZ/WI) Duration (ms) of thread wiper	B,C	0000 - 2000	90	Kl. 1
718	(STBR) Timing of residual brake (0 = brake off)	B,C	0000 - 0100	0	Kl. 1
719	(PF/TA) Timing output (lifting presser foot) (0 = 100% switched on)	B,C	0010 - 0060	40	Kl. 1
722	(DRZAN) Acceleration ramp 1 gradual 50 steep	B,C	0001 - 0060	50	Kl. 1
723	(DRZAB) Brake ramp 1 gradual 50 steep	B,C	0001 - 0060	40	Kl. 1
729	(STVERZ/PF) Start delay after lowering presser foot	B,C	0010 - 2000	150	Kl. 1
730	(PF/VERZ) Lift delay for presser foot after seam end	B,C	0000 - 2000	50	Kl. 1
734	(SN/TA) Timing output (thread trimmer) (0=100% switched on)	B,C	0010 - 0060	40	Kl. 1
760	(FW/SPFW/STZ/STZA) - Stitch count for the remnant thread after the bobbin thread monitor responds with direct bobbin thread monitoring - Multiplicator for the fixed value (200) for determining the start value of the stitch counter with indirect bobbin thread monitoring	A,B,C	0000 - 0250	5	Kl. 1
761	(FSL/FZ/VERZ) Prolongation thread tension release / thread puller	B,C	0000 - 0080	0	Kl. 1
770	(PF/VERZ) Lifting delay of presser foot at threadle- position „-1“	C	0010 - 0250	80	Kl. 1
789	(PEIPO) Needle position 10 (target stitch)	B,C	0000 - 0255	239	Kl. 1
797	(HWT) Hardware test 1 yes 0 no	C		0	Kl. 1
798	(EBC) Programming level C 1 yes 0 no	A,B,C	0000 - 0020	1	Kl. 1
799	(MAKL) Machine class which has been selected	C	0001 - 0001	1	Kl. 1
800	(DRR) Direction of motor rotation viewed from belt pulley 1 left-hand rotation 0 right-hand rotation	C	0000 - 0001	0	Kl. 1 *
801	(RDR) Reverse rotation angle after seam end	B,C	0010 - 0212	16	Kl. 1
880	(REG) Starting current max. [A]	C	0001 - 0030	10	Kl. 1
884	(REG) Proportional amplification of the speed control (in general)	B,C	0001 - 0024	10	Kl. 1
885	(REG) Integral amplification of the speed control	C	0010 - 0080	50	Kl. 1
886	(REG) Proportional amplification of the order controllers	C	0001 - 0015	8	Kl. 1
887	(REG) Differential amplification of the order controllers	C	0001 - 0015	8	Kl. 1
889	(EINZ/REG) Time required for order controlling (0 = always)	C	0000 - 2500	400	Kl. 1
890	(REG) Proportional amplification of the superior order controllers for the residual brake	C	0001 - 0025	15	Kl. 1
897	(MOT) MINI motor version 1 long 0 short	C	0000 - 0001	0	Kl. 1 *
898	(REG) Current limiting for the motor 1 = 15A 0 = 10A	C		0	Kl. 1
900	(REG) Additional P-Amplification of the speed control	B,C	0001 - 0024	12	Kl. 1

901	(DRZ/SN) Trimming release speed	B,C	0030 - 0500	300	Kl. 1
933	(ANZ) Display change-over 1 diagnosis 0 normal display	C		0	Kl. 1
1000	(SMOT) Count of stepping motors	B,C	0000 - 0001	1	Kl. 1
1001	(SMOT) Starting angle stepper	B,C	0000 - 0255	110	Kl. 1
1003	(SMOT) Transport roller radius	C	0005 - 0050	11	Kl. 1
1100	(SMOT) Incremental motor 1 operating mode (puller, differential adjustment, etc.) 1 = Puller intermittent with transport at seam end 2 = Differential feed 3 = Electric shaft 4 = Electric shaft with transport at seam end	C	0000 - 0001	1	Kl. 1
1101	(SMOT) Rotational direction SM1 0 = anticlockwise 1 = clockwise	C		1	Kl. 1
1102	(SMOT) SM1 increment mode 1 = Full increment 2 = Half-increment 3 = Quarter-increment 4 = Eighth-increment	C	0001 - 0004	2	Kl. 1
1103	(SMOT) SM1 % maximum current	C	0001 - 0100	90	Kl. 1
1104	(SMOT) SM1 % power reduction	C	0000 - 0060	50	Kl. 1
1105	(SMOT) SM1 start/stop time (time for 1 increment at start / stop rpm)	C	0010 - 4000	250	Kl. 1
1106	(SMOT) Roof time (time for 1 increment in roof) SM1	C	0010 - 4000	820	Kl. 1
1107	(SMOT) SM1 acceleration (% increase from start / stop up to roof) SM1	C	0001 - 0050	8	Kl. 1
1108	(SMOT) SM1 braking increments (number of braking increments)	C	0001 - 0050	5	Kl. 1
1110	(SMOT) Offset after reference run	C	0000 - 0030	5	Kl. 1
1111	(SMOT) Stepping motor 1 adjustment range	C	0000 - 0100	100	Kl. 1

12. Electrical Connections Diagram Q310ED



Bedeutung der Magnete bzw. Magnetventile, Taster / Meaning of magnets and/or solenoids and keys
Signification des aimants resp. solenoides et touches / Significação dos imaõs e/ou as solenoidas e teclas
Significato dei magneti, delle valvole magnetiche e dei tasti / Significación de los imanes y/o los solenoides
y pulsadores / Betekenis van de magneten resp. magneetkleppen, toetsen

S6  **STOP**	Umlegesicherung / Anlaufsperre / safety device / approach barrier
Y1 I max 4 A ✱ 	Stützrolle / Supporting roller
Y2 I max 4 A ✱ 	Kantenschneider / edge trimmer
Y3 I max 4 A ✱ 	Ausblasen / blowing out
Y4 I max 8 A ✱ 	Presserfuß heben / lifting presser foot / relevage du pied presseur / levantar do calcador / sollevamento del alzapiedino / elevación de prensatelas / drukvoet optillen
Y5 I max 8 A ✱ 	Andruckrolle / pressing roller
Y6 I max 4 A ✱ 	Fadenschneider / thread trimmer / coupe-fil / corte de linhas / rasafilo / cortahilos / draadsnijder
Y7 I max 4 A ✱ 	Fadenspannungslösen / thread tension release / détendeur de fil / soltar tensão da linha / sbloccaggio tendifilo / detensión del hilo / verbreken van de draadspanning
Y8 I max 4 A ✱ 	Saugen - Motorlauf / vacuming - motor runs
Y9 I max 500 mA 	Anschlag / lineal
M1 	Schrittmotor 1 / stepping motor 1 / moteur pas á pas 1 / motor de passo 1 / motore step 1 motor de pasos 1 / stappen motor 1

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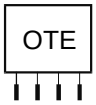
Signification des aimants resp. solenoides et touches / Significação dos imaõs e/ou as solenoidas e teclas
Significato dei magneti, delle valvole magnetiche e dei tasti / Significación de los imanes y/o los solenoides
y pulsadores / Betekenis van de magneten resp. magneetkleppen, toetsen

[A3] 	Oberteilerkennung / sewing machine identify unit

- ✱ Die Summe der Lastströme aller gleichzeitig eingeschalteten Stellglieder (Magnete, Magnetventile) darf den Wert von 4A nicht überschreiten (siehe hierzu Kapitel 2. Technische Daten).
- ✱ The total of load currents of all servos activated simultaneously (solenoids, solenoid valves) is not allowed to exceed 4 amps (see also section 2. Technical Specifications).
- ✱ Le total des courants de charge de tous les vérins (aimants, électro-vannes) activés simultanément ne doit pas dépasser 4 A (voir aussi le chapitre 2. "caractéristiques techniques").
- ✱ A soma das correntes sob carga de todos os actuadores ligados ao mesmo tempo (ímans, solenóides) não pode ultrapassar o valor de 4A (ver também capítulo 2. Dados Técnicos).
- ✱ La somma delle correnti di carico di tutti gli attuatori inseriti contemporaneamente (magneti, elettrovalvole) non deve essere superiore a 4 A (vedere il capitolo 2. Dati Tecnici).
- ✱ La suma de las corrientes bajo carga de todos los elementos de todos los componentes de regulación conectados simultáneamente (imanes, válvula magnética) no podrá sobrepasar el valor de 4A (véase también el capítulo 2. de datos técnicos).
- ✱ De belastingsstroom van alle tegelijkertijd ingeschakelde bedieningsschakels (magneten, magneetventielen) mag in totaal niet meer dan 4 A bedragen (zie hiervoor hoofdstuk 2.Technische gegevens).

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