

PFAFF

Electronic Stop

QD55x / QE55x

Series: digital K2

CE

Type

P40K2

Instruction Manual

Part 3

Valid as from revised software 4A_006_0.HEX)

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The **CE** symbol confirms that the respective drive system meets the requirements for partial machines of the following EU directives:

- **EMV Directive 89/336/EEG**
- **Low Voltage Directive 73/23/EEG**

Contents

11.	Survey and list of parameters	11.1 - 11.8
11.1	Explanation of parameter survey	
11.2	Explanation of parameter list	
11.3	Parameter survey	
11.4	List of parameters	
12.	Electrical connections diagram	12.1 - 12.3
13.	Maintenance and repair	13.1 - 13.2

Technical updatings reserved!

11. Survey and List of Parameters

11.1 Explanation of Parameter Survey

The parameter survey is designed as an aid for finding parameters fast. It is practically 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) constituting control 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 connectors with the number of contacts (see connections diagram).

Example for searching a parameter:

Keyword (function): turnback

The parameter survey shows in column 3 the parameter numbers 618, 623, 801.

The turnback 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 panel, used when the parameter concerned can be programmed with the mini operator 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 to which it is set upon delivery ex factory.

Parameters having "either/or" validity (software switches) can merely be set to value I or II. In 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 at <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 (4A_006_4.ENO)

Function	Abbrev'n	Parameter	Input Output	Connection Socket/Contacts
Accelerate	DRZAN	722		
Backtack	RIE	523/584/677		
Backtack inversion	RIV	419/617	E3	X1:3
Backtack suppression	RIUNT	419		
Blower	BLA	668		
Brake	DRZAB	723/758		
Control	REG	758/884/885 886/887/889		
Decorative backtack	ZRIE	505/506/507 508/522/523 530/775		
Delay	VERZ	730/732/739 740		
End backtack	ER	108/109/110 149/604/731 732/740		
Feed reverse	TUM	721/731	E1 A5	X2:3 X2:1
Front backtack	AR	102/103/104 105/106/107 148/739		
Hardware test	HWT	797		
Machine class	MAKL	799		
Needle position	NAPO	115/522/700 701/702/703 705/706/710		
Needle position change-over	NPW	616	E2	X1:1
Needle up without trimming	NHOS	616/710	E2	X1:1
Photocell	LS	111/112/113 199/615		
Presser foot	PF	554/624/651 719/729/730	E4	X4:3
Program	PR	114/115/206 221/304/313 554		
Programming level C	EBC	798		

Residual brake	STBR	718		
Safety switch no run	ANLSP	624/665		
Seam end	NE	114/206/602		
Single stitch	EST	440/617	E3	X1:3
Soft start	SANL	116/117		
Speed	DRZ	105/106/107 110/117/199 221/530/605 606/607/608 609/901		
Speed decrease	DRZAB	723/758		
Speed increase	DRZAN	722		
Speed limitation	DB	221		
Start	START	113/603		
Start delay	STVERZ	729		
Stitch condensation	STVD	105/106/107 108/110/419 617/677/739	A5	X2:1
Stop	STOP	114/115/624 665	E4	X4:3
Stop time	STOPZ	775		
Target stitch	PEIPO	653/789		
Thread trimming	SN	601/604/609 705/706/732 761/901		
Thread wiper	WI	668/715	A3	X3:5
Time needed to switch on	EINZ	715/889		
Timing output	TA	719/721		

11.4 List of Parameters P40K2-02 (4a_006_4.EN)

No.	Function (Meaning)	Level	Range of Values	Standard Value
102	(AR) Front backtack stitches forward	A,B,C	0-9	3
103	(AR) Front backtack stitches backward	A,B,C	0-9	3
104	(AR) Front backtack correction (delayed disabling of feed reverse)	B,C	0-15	0
105	(AR/DRZ/STVD) Speed for front backtack/stitch condensation	B,C	100-6400	1200
106	(AR/DRZ/STVD) Speed for front backtack/stitch condensation I variable (treadle-controlled) II constant (corresponding to <105>)	B,C		II
107	(AR/DRZ/STVD) Speed for front backtack/stitch condensation when <106> = I I limited by <105> II limited by <607>	B,C		II
108	(ER/STVD) End backtack stitches backward	A,B,C	0-9	3
109	(ER) End backtack stitches forward	A,B,C	0-9	3
110	(ER/DRZ/STVD) Speed for end backtack/stitch condensation	B,C	100-6400	1200
111	(LS) Photocell compensation stitches (number of stitches from photocell clear to seam end)	A,B,C	1-255	6
112	(LS) Number of stitches for photocell fade-out on knit fabrics (number of stitches, according to stitch size)	A,B,C	0-255	0
113	(LS/START) Start with photocell I when photocell is dark only II also when photocell is clear	B,C		II
114	(PR/STOP/NE) Stop before seam end after stitch count (last seam section) I yes II no	B,C		II
115	(STOP/NAPO/PR) Needle position at stop (<114> = I) I up (position 2) II down (position 1)	B,C		II
116	(SANL) Soft start stitches	A,B,C	0-255	0
117	(SANL/DRZ) Speed for soft start stitches	B,C	30-640	400
148	(AR) Front backtack I double II single	A,B,C		I
149	(ER) End backtack I double II single	A,B,C		I
199	(DRZ/LS) Speed for photocell compensation stitches	B,C	300-6400	1200

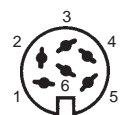
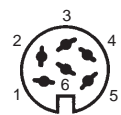
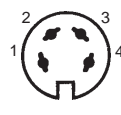
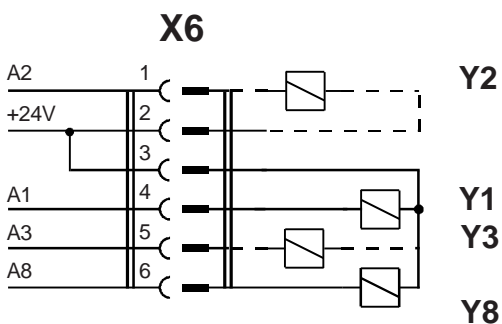
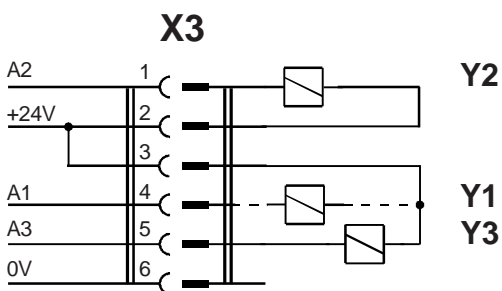
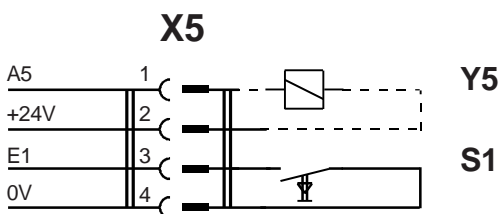
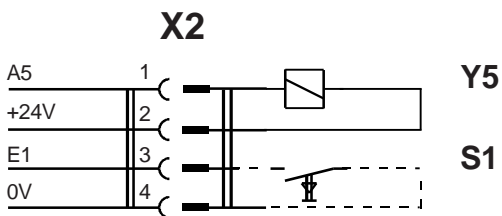
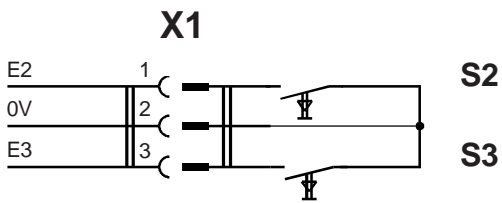
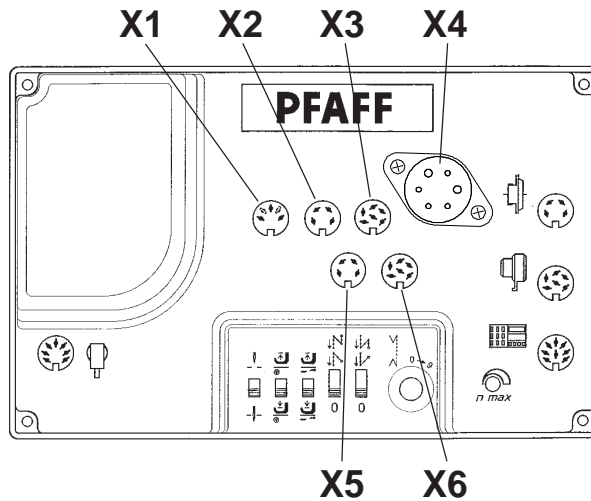
206	(NE/PR) Interrupt/discontinue seam sections at speed = constant (<203> = II) I with treadle -2 II with treadle 0	B,C		II
221	(PR/DB/DRZ) Speed limitation for sewing programs (or sewing program 1)	B,C	300-6400	2000
304	(PR) Stitch compensation at feed reverse for a seam section	B,C	0-150	30
313	(PR) Programs are backtack programs (darning programs) I yes II no	A,B,C		II
419	(RIV/RIUNT/STVD) Function of external key (on operator panel B2) I backtack/stitch condensation inversion II backtack/stitch condensation suppression (flip-flop function)	B,C		I
440	(EST) Key T4 (F4) on operator panel „OC-TOP“ is used for „single stitch“ I yes II no	B,C		II
505	(ZRIE) Number of stitches for front decorative backtack forward (stitch in stitch) (speed = <530>)	A,B,C	0-9	3
506	(ZRIE) Number of stitches for front decorative backtack backward (stitch in stitch) (speed = <530>)	A,B,C	0-9	3
507	(ZRIE) Number of stitches for end decorative backtack backward (stitch in stitch) (speed = <530>)	A,B,C	0-9	3
508	(ZRIE) Number of stitches for end decorative backtack forward (stitch in stitch) (speed = <530>)	A,B,C	0-9	3
522	(NAPO/ZRIE) Needle position when stop occurs during decorative backtack (stitch in stitch) I position 2 (up) II position 1 (down)	B,C		II
523	(RIE/ZRIE) Backtack I decorative backtack (stitch in stitch) II standard backtack	A,B,C		II
530	(DRZ/ZRIE) Speed (max.) for decorative backtack	B,C	100-6400	1000
554	(PF/PR) Presser foot position after seam section stitch count and treadle position > +1 I up II down	B,C		I
584	(RIE) Backtack I four times II double	B,C		II
601	(SN) Trimming I yes II no	B,C		I

602	(NE) Seam end at treadle position I slightly heeled (-1) II fully heeled (-2)	B,C		II
603	(START) Start after seam end I after treadle 0 only II immediate start of operation	B,C		I
604	(SN/ER) Trimming after single end backtack I forward II backward	B,C		I
605	(DRZ) Actual speed in display I yes II no	B,C		II
606	(DRZ) Speed: level 1 (min.)	B,C	30-640	180
607	(DRZ) Speed: level 12 (max.)	B,C	100-10000	1500
608	(DRZ) Speed level curve (treadle characteristic) I linear II not linear	B,C		I
609	(SN/DRZ) Trimming speed 1	B,C	30-300	180
615	(LS) End recognition when photocell goes I from light to dark II from dark to light	B,C		II
616	(NPW/NHOS) Function of external key (input E2) I needle position change-over (NPW) II needle up without trimming (NHOS)	B,C		II
617	(EST/RIV/STVD) Function of external key (input E3) I single stitch (EST) II backtack/stitch condensation inverted (RIV)	B,C		I
624	(ANLSP/STOP/PF) Function of external key (input E4) I stop/safety switch no run II presser foot	B,C		II
651	(PF) Presser foot with automatic descent on machine stop I yes II no	B,C		I
653	(PEIPO) Target stitch before sewing I yes II no	B,C		II
665	(ANLSP/STOP) Run locking/stop I contact closed II contact open	C		I
668	(BLA/WI) Thread wiper/thread clearer I yes II no	B,C		I
677	(RIE/STVD) Stitches for backtack/stitch condensation while sewing without operator panel I as per position of rotary switch in the control system II as per previous setting with operator panel	B,C		I

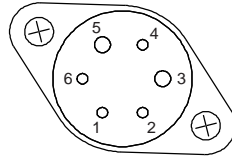
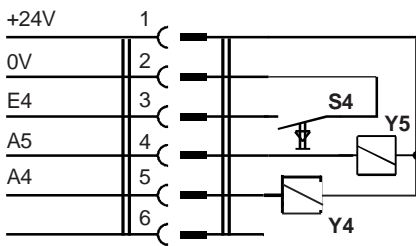
700	(NAPO) Needle position 0 (reference position of the needle) (10000000)	B,C	0-239	0
701	(NAPO) Angular adjustment I with handwheel (teach-in) II by keys (+/-)	B,C		I
702	(NAPO) Needle position 1 (needle down) (01000000)	B,C	0-239	75
703	(NAPO) Needle position 2 (thread take-up lever up) (11000000)	B,C	0-239	213
705	(NAPO/SN) Needle position 5 (end of trimming signal 1) (00100000)	B,C	0-239	125
706	(NAPO/SN) Needle position 6 (start trimming signal 2) (10100000)	B,C	0-239	119
710	(NAPO/NHOS) Needle position 3 (needle up)	B,C	0-239	200
715	(EINZ/WI) Duration (ms) of thread wiper	B,C	0-2550	120
718	(STBR) Timing of residual brake (0 = brake off)	B,C	0-100	0
719	(PF/TA) Timing output A4 (0 = 100% switching on)	B,C	10-100	30
721	(TUM/TA) Timing output A5 (0 = 100% switching on)	B,C	10-100	40
722	(DRZAN) Acceleration ramp 1 gradual 50 steep	B,C	1-50	45
723	(DRZAB) Brake ramp 1 gradual 50 steep	B,C	1-50	25
729	(STVERZ/PF) Start delay after lowering presser foot	B,C	0-2550	120
730	(PF/VERZ) Lift delay for presser foot after seam end	B,C	0-2550	60
731	(TUM/ER) Time required to correct feed reverse at end backtack	B,C	0-2550	60
732	(SN/ER/VERZ) Delay (ms) for trimming after single end backtack	B,C	0-2550	30
739	(AR/STVD/VERZ) Delay (ms) for speed after front backtack/stitch condensation	B,C	0-2550	120
740	(ER/VERZ) Delay before stitch counting for end backtack	B,C	0-2550	40
758	(REG/DRZAB) Deceleration ramp I braking as per <723> II braking with maximal moment	B,C		II
761	(SN) Extension of thread trimming after positioning	B,C	0-2550	0
775	(ZRIE/STOPZ) Stop time (ms) with stitch in stitch backtack (decorative backtack)	B,C	0-2550	100
789	(PEIPO) Angle for target stitch	B,C	0-239	225
797	(HWT) Hardware test	B,C		II

798	(EBC) Programming level C I yes II no	B,C		II
799	(MAKL) Machine class which has been selected	B,C	1-1	1
884	(REG) Proportional amplification of the speed control (in general)	B,C	4-50	25
885	(REG) Integral amplification of the speed control	C	0-100	20
886	(REG) Proportional amplification of the order controllers	C	0-50	15
887	(REG) Differential amplification of the order controllers	C	1-50	20
889	(EINZ/REG) Time required for order controlling (0 = always)	C	0-1000	150
901	(DRZ/SN) Trimming release speed	C	30-500	400
910	(SONST) Quick internal	C	1-50	13

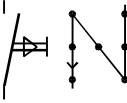
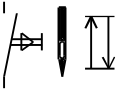

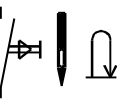
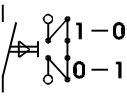

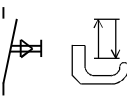
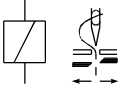
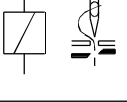
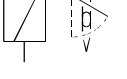
12. Anschlußplan der Steckerplatte P40K2



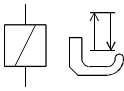
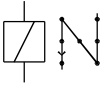
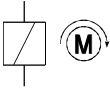
X4



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

S1 	Transportumstellung von Hand / manual feed reverse / mudança do transporte manual / renversement de marche manuel / commutazione trasporto a mano / inversión de transporte manual / handmatige transportomschakeling
S2  <616> = I	Nadelpositionswechsel / needle position change-over / changement de position d'aiguille / troca de posição da agulha / cambio di posizione dell'ago / cambio de posición de aguja / naaldpositie-verwisseling
S2  <616> = II	Nadel hoch ohne Schneiden / needle up without thread trimming / aiguille en haut sans coupe / agulha para cima sem corte de linhas / ago su senza taglio / aguja arriba sin corte / naald omhoog zonder snijden
S3  <617> = I	Einzelstich / single stitch / point unique / ponto unico / punto único / puntada única / afzonderlijke steek
S3  <617> = II	Nachfolgende Riegelfunktion invertieren / invert subsequent backtack function / inverser la prochaine fonction de bridage / invertir o próximo remate / invertire la funzione d'affr. successiva / invertir la próxima función de remate / de volgende strookfunctie omkeren
S4  <624> = I	STOP
S4  <624> = II	Presserfuß heben / presser foot up / pied presseur en haut / calçador em cima / alzapiedino su / prensatelas arriba / drukvoet optillen
Y1 I max 10 A * 	Fadenschneider pneumatisch / pneum. thread trimmer / coupe-fil pneumatique / rasafilo pneumático / cortahilos neumático / corte de linhas pneumático / pneumatische draadsnijder
Y2 I max 10 A * 	Fadenschneider magnet. / magn.thread trimmer / coupe-fil magnétique / rasafilo magnetico / cortahilos magnético / corte de linhas magnético / magnetische draadsnijder
Y3 I max 10 A * 	Fadenwischer / thread wiper / écarteur de fil / retira-linhas / scartafilo / retirahilos / draadwisser

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

<p>Y4 I max 10 A *</p> 	<p>Presserfuß heben / presser foot up / pied presseur en haut / calgador em cima/ alzapiedino su / prensatelas arriba / drukvoet optillen</p>
<p>Y5 I max 10 A *</p> 	<p>Transportumsteller / feed reverse / renversement de marche / mudança do transporte / commutazione trasporto / inversión de transporte / transportomschakelaar</p>
<p>Y8 I max 300 mA</p> 	<p>Maschinenlauf / motor runs / moteur en marche / motor em movimento / motore in moto / motor en marcha / loop van de machine</p>

* 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 (ímãs, 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 (magnet, 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 (magnet, magneetventielen) mag in totaal niet meer dan 4 A bedragen (zie hiervoor hoofdstuk 2. Technische gegevens)

13. Maintenance and Repair



Before starting any maintenance or servicing work, switch the digital K2 off, separate the drive system from mains power (such as by pulling the mains plug) and wait for the motor to stop completely.

General maintenance work may only be performed by properly trained personnel and with due observation of the operating instructions manual.

The following maintenance work is required:

Depending on operating conditions, clean the drive system at least once a week from any lint and dust accumulated. In particular keep the ventilations louvers and cooling fins of the motors clean, especially the cooling fins between the motor and the control box.

Remove any threads caught onto the synchronizer shaft, the belt pulley and the motor shaft.

Check the drive system and its accessories (synchronizer on the sewing machine shaft, speed control unit on the control box) for firm mounting on the stand.

Check the belt tension as well as the wear condition of the belt.
Incorrect belt tension can increase operating noise and vibrations.

Procedure for Checking and Servicing the Clutch

The digital K2 is not free of wear.

In order to ensure as long a service life as possible for the motor (the clutch), it will be convenient to check, clean and lubricate the clutch - depending on operating hours - at least once or several times a year.

Clutch dismounting and remounting is described under chapter 7.1 "Basic Motor (QDx, QEx)".

- The cork lining of the clutch disk should stand out by 0.1 ... 0.15 mm in axial direction from the outer rim of the steel disk. If the projection is less than 0.05 mm, it is required to replace the clutch disk.
- The cork lining of the brake disk should stand out by 0.1 ... 0.15 mm in axial direction from the outer rim of the steel disk. If the projection is less than 0.05 mm, it is required to replace the brake disk.
- Cleaning
Clean the cork linings of the clutch and the brake disk as well as the counter disks with a rag soaked in oil. Never use grease solvents for cleaning purposes.
- Greasing (lubrication)
After cleaning, regrease the clutch and brake disks. For this purpose, use high-temperature resistant grease or oil. Apply a thin layer of lubricant and distribute it evenly.
Lubricants recommended for use include:
Quick special grease No. 451.011 or
Molycote HT 600.
- Assembly
When assembling the clutch and brake unit, make sure:
 - a) that the dust washer is inserted into the center bore of the flange (7 in Fig. 7.2)
 - b) to have the stop washer (19 in Fig. 7.2) filled with grease
 - c) that the plastic rings on the hubs of the clutch and brake disks are firmly seated
 - d) that the clutch and brake disks are so placed on the gear shaft that the air passage holes on both sides are fully aligned
 - e) to perform clutch adjustment as described under 7.1.1.



When removing any covers or replacing any parts other than those that can be taken off by hand, live parts can be exposed.
Also, connection points can be live with electricity.

Before doing any maintenance or repair work or replacing any parts, make sure to separate the drive system from any source of electricity, when opening the drive system is required.

If maintenance or repair work on the open equipment is indispensable while electricity is on, such work may only be performed by specialized personnel duly informed about the hazards involved. The regulations as per EN 50110 must be closely observed.

Checking the control system is permissible only with a high resistance measuring instrument to protect the semi-conductor components from excess voltage.

Repair work and elimination of malfunctions requiring specialized know-how may only be performed by trained personnel authorized by Quick-Rotan.

We wish to point out in particular that under the provisions of the product liability law we are not responsible for any damages caused by our products if such damages are due to:

- improper repair
- use of components not authorized by us
- intervention by a person not authorized by us.