

# **MINI-SERVO**

**QE3760**

**CE**

**Type**

# **PE360MSE**

**Instruction Manual**

**Part 3**

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**Englisch 2001-08-16**

# Contents

## Page

### Part 3

<b>11.</b>	Survey and List of Parameters	11.1 - 11.9
11.1	Explanation of Parameter Survey	
11.2	Explanation of Parameter List	
11.3	Parameter Survey	
11.4	List of Parameters	
<b>12.</b>	Electrical Connections Diagram	12.1 - 12.5

**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 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 PE360MSE (2A\_348\_2.ENO)

Function	Abbrev'n	Parameter	Input Output	Connection Socket/Contacts
Accelerate	DRZAN	722		
Auxiliary drive	ZUSAN	805/808/892 893		
Backtack	RIE	107/110		
Band supply	BZUF	474/475		
Brake	DRZAB	723/851		
Chopper	MESSE	486/537/714		
Control	REG	880/881/884 885/886/887 889/890/891 892/893/894 975/990		
Defect search	HWT	797		
Delay	VERZ	189/190/545 716/717/730 779		
Direction of rotation	DRR	800/805/808		
End backtack	ER	110		
Engine	MOT	897		
Feed reverse	TUM	721		
Flip-Flop	FF	486		
Front backtack	AR	105/106/107		
Gather setting	RAFF	950/951/952 954		
Hardware test	HWT	797		
Machine class	MAKL	790		
Needle position	NAPO	521/700/701 702/703		
Operator panel	BDF	681		
Photocell	LS	112/161/615		
Presser foot	PF	719/729/730		
Program	PR	206/851		
Programming level C	EBC	798		

Residual brake	STBR	718
Scissors	SCHER	486
Seam end	NE	206
Speed	DRZ	105/106/107 110/605/606 607/609/676 850
Speed decrease	DRZAB	723/851
Speed increase	DRZAN	722
Speed limitation	DB	676
Start	START	161
Start delay	STVERZ	474/729
Starting block	ANLSP	665
Stepper motor	SMOT	489/805/808 855/856/858 859/862/863 870/871/873 908/950/951 952/954/956 957/972/974 976/977
Stitch condensation	STVD	105/106/107 110
Stop	STOP	206/665
Thread tension release	FSL	636/749/779
Thread trimming	SN	609/714/717
Thread wiper	WI	715/716
Time needed to switch on	EINZ	475/537/714 715/749/889
Timing output	TA	719/721
Vacuum	SAUG	545

## 11.4 List of Parameters PE360MSE (2A\_348\_2.EN)

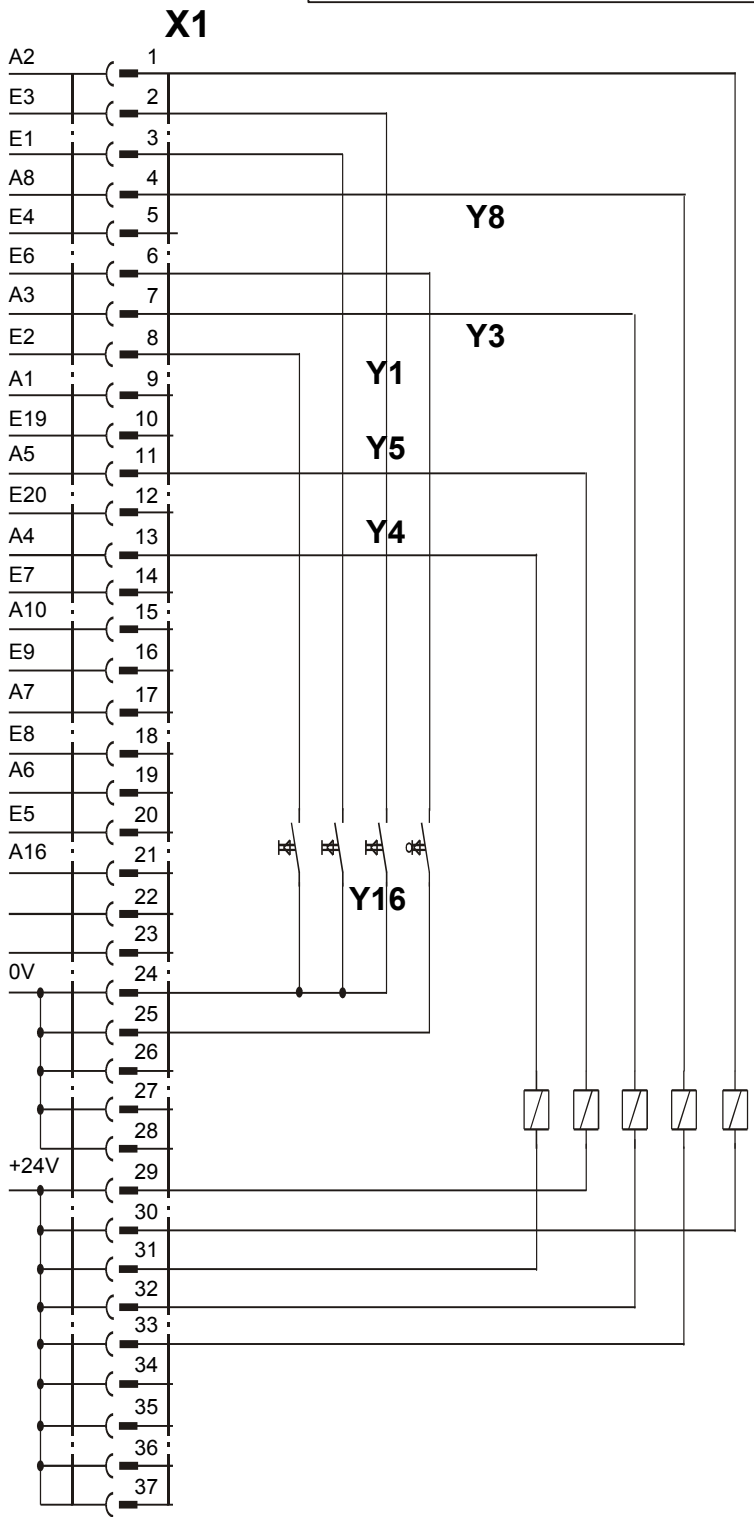
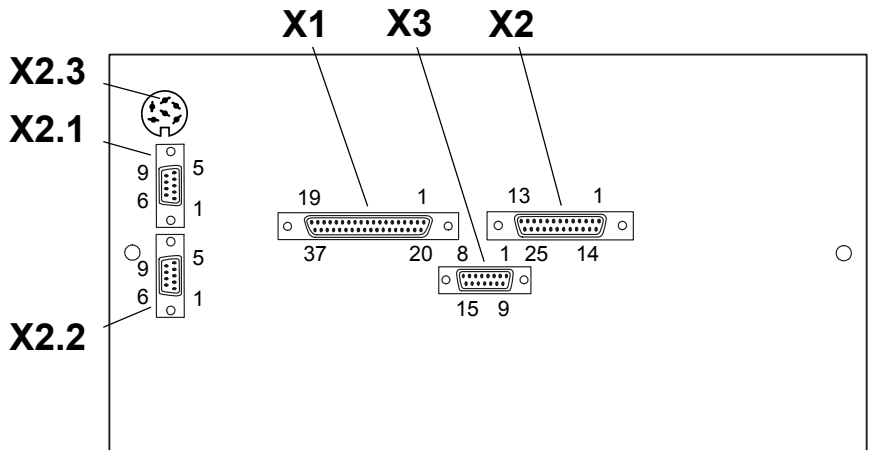
No.	Function(Meaning)	Level	Range Values	of Value	Standard
105	(AR/DRZ/STVD) Speed for front backtack / stitch condensation (00000011)	B,C	100 - 9900	1500	Kl. 1
106	(AR/DRZ/STVD) Speed for front backtack / stitch condensation I variable (treadle-controlled) II constant (corresponding to <105>)	B,C		II	Kl. 1
107	(AR/RIE/DRZ/STVD) Speed for front backtack / stitch condensation when <106> = I I limited by <105> II limited by <607>	B,C		II	Kl. 1
110	(ER/RIE/DRZ/STVD) Speed for end backtack / stitch condensation	B,C	100 - 9900	1500	Kl. 1
112	(LS) Number of stitches for light barrier fade-out on knit fabrics (according to stitch size)	B,C	0 - 255	0	Kl. 1
161	(LS/START) Start delay for start of photocell	B,C	0 - 2550	100	Kl. 1
189	(VERZ) Delay t1	B,C	0 - 2550	200	Kl. 1
190	(VERZ) Delay t2	B,C	0 - 2550	200	Kl. 1
206	(NE/PR/STOP) Interrupt/discontinue seam sections at speed = constant (<203> = II) I with treadle -2 II with treadle 0	B,C		II	Kl. 1
474	(BZUF/STVERZ) tape feed start delayed (00000111)	B,C	0 - 255	1	Kl. 1
475	(BZUF/EINZ) tape advance duration on manual start (at button F4 on OC-TOP)	B,C	0 - 2550	250	Kl. 1
486	(FF/SCHERE/MESSER) function of output „Ax“ I cutter II chopper (rapid shears)	B,C		II	Kl. 1
489	(SMOT) number of steps after stepping motor 1 zero position	B,C	0 - 100	0	Kl. 1
521	(NAPO) Needle position at stop before seam end I position 2 (up) II position 1 (down)	A,B,C		I	Kl. 1
537	(EINZ/MESSER) Chopper duty cycle (ms)	B,C	10 - 2550	80	Kl. 1
545	(SAUG/VERZ) Delay (ms) to vacuum off	B,C	0 - 2550	200	Kl. 1
605	(DRZ) Actual speed in display I yes II no	B,C		II	Kl. 1
606	(DRZ) Speed: level 1 (min.)	B,C	30 - 640	200	Kl. 1
607	(DRZ) Speed: level 12 (max.)	B,C	100 - 10000	5500	Kl. 1
609	(SN/DRZ) Trimming speed 1	B,C	30 - 300	200	Kl. 1
615	(LS) End recognition when photocell goes I from light to dark II from dark to light	B,C		I	Kl. 1
636	(FSL) Thread tension release I yes II no	B,C		I	Kl. 1
665	(ANLSP/STOP) Run locking/stop I contact closed II contact open	C		I	Kl. 1

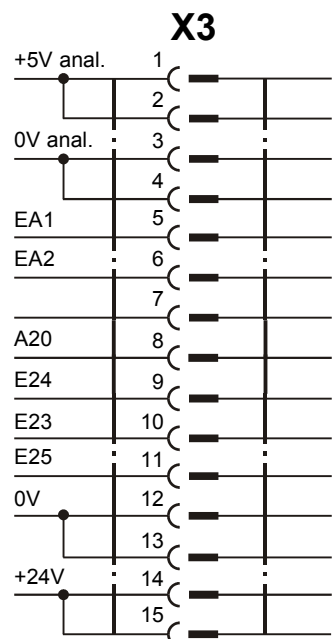
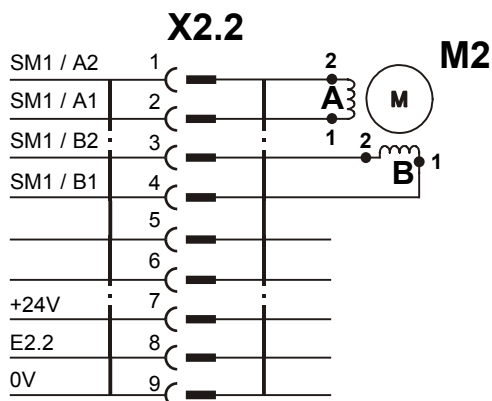
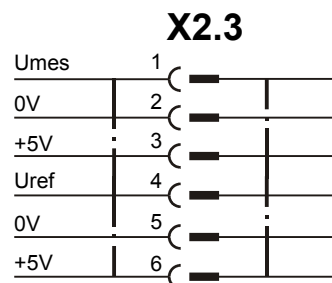
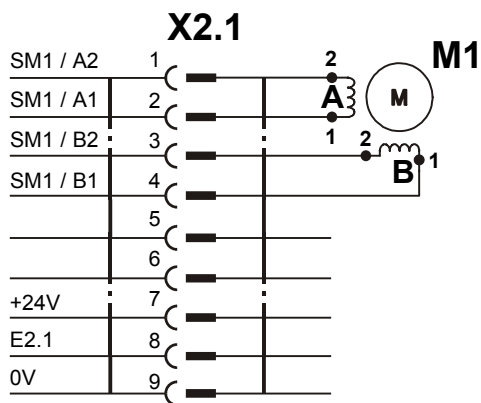
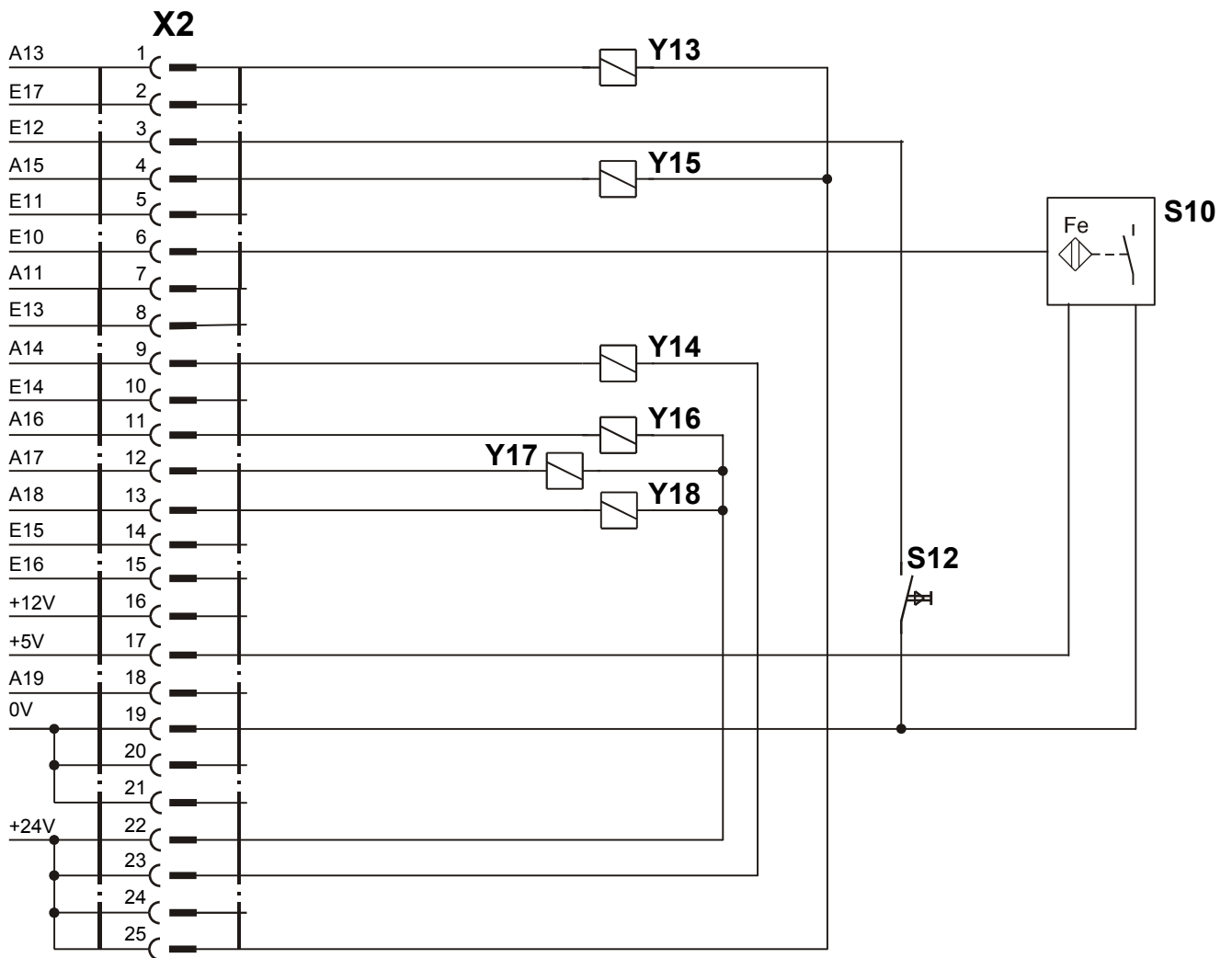
676	(DRZ/DB) Speed adjustment via potentiometer possible I yes II no	B,C		II	KI. 1
681	(BDF) Operator panel push-button locked I yes II no	B,C		II	KI. 1
700	(NAPO) Needle position 0 (reference position of the needle)	B,C	0 - 127	0	KI. 1
701	(NAPO) Angular adjustment I with handwheel (teach-in) II by keys (+/-)	C		I	KI. 1
702	(NAPO) Needle position 1 (needle down) (00010111)	B,C	0 - 127	40	KI. 1
703	(NAPO) Needle position 2 (thread take-up lever up)	B,C	0 - 127	100	KI. 1
714	(EINZ/SN/MESSER) Duration (ms) for chainstitch trimming or chopper	B,C	0 - 2550	100	KI. 1
715	(EINZ/WI) Duration (ms) of thread wiper	B,C	0 - 2550	60	KI. 1
716	(VERZ/WI) Delay in start-up time (ms) for thread wiper	B,C	0 - 2550	30	KI. 1
717	(SN/VERZ) Delay in start-up time (ms) for trimming method when the machine is not activated by the treadle	B,C	0 - 2550	100	KI. 1
718	(STBR) Timing of residual brake (0 = brake off)	C	0 - 100	0	KI. 1
719	(PF/TA) Timing output A4 (0 = 100% switching on)	B,C	0 - 100	50	KI. 1
721	(TUM/TA) Timing output A5 (0 = 100% switching on)	B,C	0 - 100	50	KI. 1
722	(DRZAN) Acceleration ramp 1 gradual 50 steep	B,C	1 - 50	45	KI. 1
723	(DRZAB) Brake ramp 1 gradual 50 steep	B,C	1 - 50	20	KI. 1
729	(STVERZ/PF) Start delay after lowering presser foot	B,C	0 - 2550	130	KI. 1
730	(PF/VERZ) Lift delay for presser foot after seam end	B,C	0 - 2550	30	KI. 1
749	(EINZ/FSL) Duration (ms) of thread tension release	B,C	0 - 2550	70	KI. 1
779	(FSL/VERZ) Delay (ms) until thread tension release on	B,C	0 - 2550	200	KI. 1
790	(MAKL) Program selection for machine classes by operators box	B,C	1 - 3	1	KI. 1
797	(HWT) Hardware test I yes II no	B,C		II	KI. 1
798	(EBC) Programming level C I yes II no	B,C		II	KI. 1
800	(DRR) Direction of motor rotation viewed from belt pulley I left-hand rotation II right-hand rotation	B,C		II	KI. 1
805	(DRR/ZUSAN/SMOT) Rotational direction of auxiliary drive I lefthand rotation II righthand rotation	B,C		II	KI. 1

808	(DRR/ZUSAN/SMOT) Rotating direction of auxiliary drive 2 I lefthand rotation II righthand rotation	B,C		I	Kl. 1
850	(DRZ) Maximum motor speed	C		4500	Kl. 1
851	(PR/DRZAB) Brake ramp for stitch-count seams I steep II gradual	C		I	Kl. 1
855	(SMOT) maximum speed of stepping motor 2	B,C	100 - 9900	3500	Kl. 1
856	(SMOT) Start-/stopping speed of stepping motor 2	B,C	10 - 1000	400	Kl. 1
858	(SMOT) acceleration of stepping motor 2	B,C	1 - 20	10	Kl. 1
859	(SMOT) reduction ratio of main motor / stepping motor 2	B,C	1 - 10	1	Kl. 1
862	(SMOT) maximum current of stepping motor 2 (255 = 3.6 A)	B,C	1 - 255	170	Kl. 1
863	(SMOT) stationary current of stepping motor 2 (255 = 3.6 A)	C	0 - 255	70	Kl. 1
870	(SMOT) maximum speed of stepping motor 1	B,C	0 - 9900	3500	Kl. 1
871	(SMOT) Start-/stopping speed of stepping motor 1	B,C	10 - 1000	400	Kl. 1
873	(SMOT) acceleration of stepping motor 1	B,C	10 - 2550	10	Kl. 1
880	(REG) Starting current max. [A]	C	1 - 10	5	Kl. 1
881	(REG) adaption of positioning characteristics of motor to machine to avoid vibration	B,C	1 - 12	6	Kl. 1
884	(REG) Proportional amplification of the speed control (in general)	C	4 - 50	11	Kl. 1
885	(REG) Integral amplification of the speed control	C	0 - 100	30	Kl. 1
886	(REG) Proportional amplification of the order controllers	C	1 - 50	20	Kl. 1
887	(REG) Differential amplification of the order controllers	C	1 - 100	30	Kl. 1
889	(EINZ/REG) Time required for order controlling (0 = always)	C	0 - 1000	400	Kl. 1
890	(REG) Proportional amplification of the superior order controllers for the residual brake	C	1 - 50	25	Kl. 1
891	(REG) Proportional amplification of the lower speed controllers for the residual brake	C	1 - 50	20	Kl. 1
892	(REG/ZUSAN) Proportional amplification of speed control for auxiliary drive	C	0 - 50	1	Kl. 1
893	(REG/ZUSAN) Integral amplification of speed control for auxiliary drive	C	0 - 100	4	Kl. 1
894	(REG) Rotational direction of motor and synchronizer I different II same	C		I	Kl. 1
897	(MOT) MINI motor version I long II short	C		II	Kl. 1
898	(SONST) Number of motor poles I 4 poles II 6 poles	C		II	Kl. 1
908	(SMOT) number of steps after stepping motor 2 zero position	B,C	0 - 100	0	Kl. 1

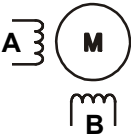
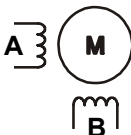
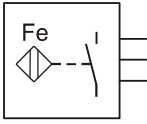
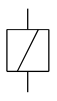

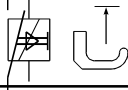


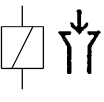
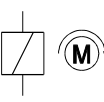
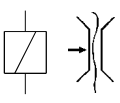
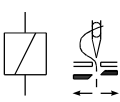
934	(SONST) Selector for the displaychoice in the diagnosis mode (<933>=I)	B,C	0 - 5	0	KI. 1
950	(SMOT/RAFF) gathering value 1 of stepping motor axis 1	C	1 - 100	54	KI. 1
951	(SMOT/RAFF) gathering value 2 of stepping motor axis 1	C	1 - 100	38	KI. 1
952	(SMOT/RAFF) gathering value 3 of stepping motor axis 1	C	0 - 255	3	KI. 1
954	(SMOT/RAFF) gathering value 5 of stepping motor axis 1	B,C	0 - 255	4	KI. 1
956	(SMOT) maximum current of stepping motor 1 (255 = 3.6 A)	B,C	0 - 255	170	KI. 1
957	(SMOT) stationary current of stepping motor 1 (255 = 3.6 A)	C	0 - 255	70	KI. 1
972	(SMOT) number of stepping motor axes 0 none 1 one (only the first) 2 one (only the second) 3 two	B,C	0 - 3	0	KI. 1
974	(SMOT) approach ref. position with stepping motor 2 after mains on I automatically II via input signal	C	1 - 127	50	KI. 1
975	(REG) integral gain for stepping motor 1 and stepping motor 2	C	1 - 127	3	KI. 1
976	(SMOT) stepping motor 1 - mode 1 full step 2 half step 3 quarter step 4 eighth step	B,C	1 - 3	2	KI. 1
977	(SMOT) stepping motor 2 - mode 1 full step 2 half step 3 quarter step 4 eighth step	B,C	1 - 3	2	KI. 1
990	(REG) Distance to position at switch over from speed control to position control	C	1 - 127	12	KI. 1

# 12. Electrical Connections Diagram PE360MSE

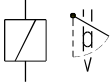
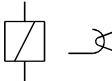
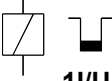
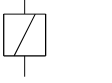
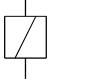




Bedeutung der Magnete bzw. Magnetventile, Taster / Meaning of magnets and/or solenoids and keys  
 Signification des aimants resp. solenoides et touches / Significação dos ímãs e/ou as solenoidas e teclas  
 Significato dei magneti, delle valvole magnetiche e dei tasti / Significación de los imanes y/o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

<b>M1</b> 	Schrittmotor 1 für Obertransport / stepping motor 1 for top feed / moteur pas á pas 1 pour transport supérieur / motor de impulsos 1 para transporte superior / motore a impulsu 1 per trasporto superiore / motor paso a paso 1 para transporte superior / stappenmotor 1 voor de boventransport
<b>M2</b> 	Schrittmotor 2 für Differentialtransport / stepping motor 2 for differential transport / moteur pas á pas 2 pour differential transport / motor de impulsos 2 para differential transport / motore a impulsu 2 per differential transport / motor paso a paso 2 para transportador de differential / stappenmotor 2 voor de differentialtransport
<b>S10</b> 	Anlaufsperr (Überwachung Fadenschneider) / no run (safety switch UT) / Verrouillage de remise en marche / Bloqueio de arranque / Blocco avviamento / STOP/Bloqueo de repuesta en marcha / Startblokkering
<b>S12</b>	Hacker / chopper / chopper / guilhotina / taglio / guillotina / afhakker
<b>Y1</b> I max 8 A * <486>=I 	Hacker / chopper
<b>Y1</b> I max 8 A * <486>=II 	Schere vorwärts / sissors forwards 
<b>Y3</b> I max 8 A * 	Schere rückwärts / sissors backwards
<b>Y4</b> I max 8 A * 	Presserfuß heben / presser foot up / pied presseur en haut / calcador em cima / alzapiedino su / prensatelas arriba / drukvoet optillen
<b>Y5</b> I max 8 A * 	Kette saugen / vacuum chain / aspiration de chaînette / aspirar de cadeia / aspirare catenella / aspirar cadeneta / zuigen van een ketting
<b>Y8</b> I max 8 A * 	Motor läuft / motor runs / moteur en marche / motor em movimento / motore in moto / motor en marcha / loop van de machine
<b>Y13</b> I max 8 A * <790> = 2 	Fadenspannungslösen / thread tension release / détendeur de fil / soltar tensão da linha / sbloccaggio tendifilo / detensión del hilo / verbreken van de draadspanning
<b>Y14</b> I max 8 A * <790> = 2 	Fadenschneider / thread trimmer / coupe-fil / corte de linhas / rasafilo / cortahilos / draadsnijder

Bedeutung der Magnete bzw. Magnetventile, Taster / Meaning of magnets and/or solenoids and keys  
 Signification des aimants resp. solenoides et touches / Significação dos imãs 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

<b>Y15</b> I max 8 A * <790> = 2		Fadenwischer / thread wiper / écarteur de fil / retira-linhas / scartafilo / retirahilos / draadwisser
<b>Y15</b> I max 8 A * <790> = 3		Fadenzieher für Sticksicherung / thread puller for stitch lock / tire-fil / tirar de linhas / tirafilo / tirahilos / draadtrekker
<b>Y16</b> I max 100 mA 1/U		Zählsignal / count signal / signal de comptage / sinal de contagem / segnale conteggio / señal del contador / telsignaal
<b>Y17</b> I max 100 mA FA		480 Impulse pro Umdrehung / 480 pulses per revolution / 480 impulsions/révolution / 480 impulsos/rotação / 480 impulsi/giro / 480 impulsos/revolución / 480 pulsen per omwenteling
<b>Y18</b> I max 100 mA FB		480 Impulse pro Umdrehung / 480 pulses per revolution / 480 impulsions/révolution / 480 impulsos/rotação / 480 impulsi/giro / 480 impulsos/revolución / 480 pulsen per omwenteling

- \* 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).