EINGÄNGE (INPUTS) („X" gegen Masse) („X" to ground)

Benennung DESCRIPTION	Baugruppe „B"	Adr LP/Ein
tamp. units down	1X	1 0
drive (work)	1X	1 1
satellite forw.	2X	1 2
left tamp. u. upper pos.	10G5 Re6	X 1 3
right tamp. u. upper pos.	10G7 Re7	X 1 4
left tamp. u. below middle pos.	10G6 Re3	X 1 5
right tamp. u. below middle pos.	10G7 Re3	X 1 6
left tamp. u. lower pos.	10G8 Re4	X 1 7
right tamp. u. lower pos.	10G7 Re2	X 1 8
tamping syst. „on"	2X	1 9
penetration assist „off"	2X	1 A
satellite in front of middle pos.	10G8 Re3	X 1 B
satellite front pos.	10G8 Re2	X 1 C
only left tamp. u. (impuls)	51X	1 D
only right tamp. u. (impuls)	51X	1 E
= delayed output Q1F	X	1 F
lining & lev. start by units-down	2X	2 0
2. sign. satell. front pos.	1X	2 1
satellite rear pos.	1X	2 2
reverse drive	51X	2 3
track sensor left clamp u.	1X	2 4
track sensor right clamp u.	1X	2 5
squeeze man. contr.	51X	2 6
auto cycle 1X	2X	2 7
auto cycle 2X	2X	2 8
clamp units to upper pos.	2X	2 9
close clamps if satell. stops	2X	2 A
clamps allw. closed (forw. = b.p.)	2X	2 B
left clamp u. down	2X	2 C
right clamp u. down	2X	2 D
auto levelling „on"	2X	2 E
track sensors for clamps „off"	2X	2 F
lining & lev. start t.u. middle pos.	2X	3 0
levelling lift & hold mode	2X	3 1
left lift limitation	6U2	X 3 2
right lift limitation	6U2	X 3 3
satellite backward	2X	3 4
left sensor for auto pos.	1X	3 5
auto position „on"	2X	3 6
drive step by step	2X	3 7
drive continuous	2X	3 8
3 point lining „on"	2X	3 9
close clamps by tamp u. down	2X	3 A
lining unit man. contr. to left	2X	3 B
lining unit man. contr. to right	2X	3 C
auto lining „on"	2X	3 D
lining without tamping	2X	3 E
Satellite Hy-drive engaged	1X	3 F

Benennung DESCRIPTION	Baugruppe „B"	Adr LP/Ein
COMPACTOR ON	2X	4 0
COMPACTOR UP	2X	4 1
L.H. COMP ONLY	2X	4 2
R.H. COMP ONLY	2X	4 3
LIMIT S. COMPR. UPPER LIMIT LEFT	X	4 4
LIMIT S. COMPR. UPPER LIMIT RIGHT	X	4 5
COMPR. L.H. NOT LOWER	X	4 6
COMPR. R.H. NOT LOWER	X	4 7
front tens. bogie in upper pos. (V50)	1X	4 8
rear lev. pick-up in upper pos. (V31)	1X	4 9
COMP. L.H. LOCKED FRONT	X	4 A
COMP. R.H. LOCKED FRONT	X	4 B
left clamps u. lift or stop	2X	4 C
right clamps u. lift or stop	2X	4 D
bogie tension to left	2X	4 E
bogie tension to right	2X	4 F
front jointflaps open or close	51X	5 0
rear jointflaps open or close	51X	5 1
satell. l/r movem. auto mode „on"	2X	5 2
satell. man. contr. to left	2X	5 3
satell. man. contr. to right	2X	5 4
satell. movem. sign. to right	1X	5 5
satell. movem. sign. to left	1X	5 6
plough down (extra)	33X	5 7
	X	5 8
right sensor for auto pos.	1X	5 9
tamping units locked (V35)	1X	5 A
	X	5 B
Sonderausrüst.	X	5 C
	X	5 D
	X	5 E
	X	5 F
sensor distance expired (auto-p.)	6U4	X 7 0
satell. distance expired	6U4	X 7 1
auto position „stop"	52X	7 2
sensor mode 1 v 2	52X	7 3
sensor mode 1 ∧ 2	52X	7 4
distance mode MEM (n-1)	52X	7 5
distance mode MEM (const.)	52X	7 6
distance mode „const."	52X	7 7
Q78 →		X 7 8
Q79 →		X 7 9
Q7A →		X 7 A
Q7B →		X 7 B
Q7C →		X 7 C
Q7D →		X 7 D
Q7E →		X 7 E
		X 7 F

Benennung DESCRIPTION	Baugruppe „B"	Adr LP/Ein
COMPACTOR L.H. LOCKED REAR	1	X 9 0
COMPACTOR R.H. LOCKED REAR	1	X 9 1
SQUEEZING FRONT ONLY	51	X 9 2
SQUEEZING REAR ONLY	51	X 9 3
		X 9 4
connected to ground only 09-16 type		X 9 5
		X 9 6
		X 9 7
SUBROUTINES	Q =	X 9 8
		X 9 9
		X 9 A
		X 9 B
		X 9 C
		X 9 D
		X 9 E
		X 9 F
		X A 0
		X A 1
		X A 2
		X A 3
		X A 4
		X A 5
		X A 6
		X A 7
		X A 8
		X A 9
		X A A
		X A B
		X A C
		X A D
		X A E
		X A F

AUSGÄNGE (OUTPUTS)

← SIGNAL

- Q10 left tamp. u. down, anal. contr. — 10U6-12d — =6F∧6E∧5A (10)
- Q11 right tamp. u. down, anal. contr. — 10U7-12d — =6F∧6D∧5B (12)
- Q12 cycle clock — Latch Ein = 08∧01, Halten = 38∧06v(38∧0F) (12)
- Q13 left clamps u. lift or stop — ident. Q02 (3)
- Q14 right clamps u. lift or stop — ident. Q03 (3)
- Q15
- Q16 track lowering left (servo) — 6U2-18d — =2C v2E∧08∧02 v2E∧05∧3E (12)
- Q17 track lowering right (servo) — 6U3-18d — =20 v2E∧07∧03 v2E∧05∧3E (13)
- Q18 (12)
- Q19 mach. stationary mode — =04 (7)
- Q1A
- Q1B (12)
- Q1C track lifting left (servo) — 6U2-4b — =(29v4C)∧0B (11)
- Q1D track lifting right (servo) — 6U3-4b — =(29v4D)∧0B (11)
- Q1E proc. run indic. — on 2b66 (13)
- Q1F time stage (ZG 5/6 on B7) — on = 1C v22 — X1F (13)

← SIGNAL

- QL20 move satellite to left — 1s75 — =19∧53 v19∧52∧08∧56 (18)
- QL21 move satellite to right — 1s76 — =19∧54 v19∧52∧08∧55 (18)
- QL22 squeeze left, inside — 1s62 — =9C (16)
- QL23 squeeze right, inside — 1s63 — =9D (15)
- QL24 brake (5bar) satell. drive — 1s443 — =0F∧1B∧1C∧12∧65∧68∧86' v0B∧34 v3E∧10 v00 (17)
- QL25 by-pass, satell. drive — 1s451 — =37∧11 (NO CURRENT = BYPASS) v09∧38 v0Bv(3E∧10)v3F v3E∧10 (17)
- QL26 brake (2bar) satell. drive — 1s452 — =0F∧1C∧1F (16)
- QL27 front jointflaps, open — 1s57 — =66 (16)
- QL28 rear jointflaps, open — 1s46 — =67 only 09-32 (17)
- QL29 clamps, closed (A) — 1s29 — =(0Bv05v06∧(2Bv62)) [illegible] ∧ 09 (19)
- QL2A clamps, closed (B) — 1s28 — ident. QL29 (19)
- QL2B left clamps unit down — 1s8 — ident. Q16 (13)
- QL2C right clamps unit down — 1s9 — ident Q17 (13)
- QL2D tamp. action counter — 18g9 — =0B∧01 (20)
- QL2E left clamps unit up — 1s3 — =(29v4C)∧0B v05 (15)
- QL2F right clamps unit up — 1s4 — =(29v4D)∧0B v07 (19)

← SIGNAL

- QL30 assist cyl. satell. forw. — 1s41 — =085' (21)
- QL31 plough down — 1s247 — =57∧23 (21)
- QL32 clamps, open (A) — 1s453 — =28∧62 v2Cv2Dv29v4Cv4D (23)
- QL33 clamps, open (B) — 1s454 — ident. QL32 (23)
- QL34 lining unit „stop" to left — 1s455 — =02 (3)
- QL35 lining unit „stop" to right — 1s456 — =03 (3)
- QL36 satell. slowly backward — =34∧08∧(22v1F) v09∧37∧60 — 1s389 (on prop circ. too) (22)
- QL37 drive pump, enable — =04 — 1s387 (on drive circ too) (7)
- QL38 bogie tension to left, Meas. — 1s270 — =4E (20)
- QL39 bogie tension to right, Meas. — 1s271 — =4F (20)
- QL3A COMPACTOR UP L.H. — 1s35 — =13∧41 v QL3C∧44 (21)
- QL3B COMPACTOR UP R.H. — 1s37 — =14∧41 v QL3D∧45 (21)
- QL3C COMPACTOR DOWN L.H. — 1s34 — =(10∧3E)v0B∧40∧43 (21)
- QL3D COMPACTOR DOWN, R.H. — 1s36 — =(10∧3E)v0B∧40∧42 (21)
- QL3E COMPACTOR HY-DRIVE ON, LH — 1s430 — =40∧47∧43 (22)
- QL3F COMPACTOR HY-DRIVE ON, R.H. — 1s431 — =40∧47∧42 (22)

← SIGNAL

- Q40 contr. sign. to a recorder — ein = 0B∧01, halten = 0F (14)
- Q41 satellite slowly forw. — 10U8-Re5 — =61∧58 (24)
- Q42 rev. drive, latch — 18U1 (C4) — LATCH on = 09, hold = 08 (23)
- Q43
- Q44 start: sensor dist. (auto pos) — 6U4 10b — =78∧01 (24)
- Q45 start: satell. dist. — 6U4 14d — =(27v28)∧(01v08) (25)
- Q46 MEM impuls (auto pos.) — 6U4 16b — =08∧15∧(27v28)∧76 (25)
- Q47 dist. mode „const." — 6U4 30d — =77 (25)
- Q48 LED sensor 1 — 52h1 — =35v7B (25)
- Q49 LED sensor 2 — 52h2 — =59v7B (25)
- Q4A auto sign. tamp. u. down — 6U4 X72 — =Q64 (15)
- Q4B COMPACTOR NOT LOCKED — =4Av90 v4Bv91 (25)
- Q4C mach. in lifting mode — =06v07 (4)
- Q4D
- Q4E
- Q4F

← SIGNAL

- Q50
- Q51
- Q52
- Q53
- Q54
- Q55
- Q56
- Q57
- Q58
- Q59
- QL5A SQUEEZING FRONT, BLOCKED — 1s323 — =9E (31)
- QL5B SQUEEZING REAR, BLOCKED — 1s324 — =9F (31)
- QL5C squeeze, left outside — 1s7 — =26∧6E∧(01v(27∧28)) v01∧0B∧6E∧(27v28) v70∧6E (only 09-32) (14)
- QL5D squeeze, right outside — 1s7 — =26∧6D∧(01v(27∧28)) v01∧0B∧6D∧(27v28) v7D∧6D (only 09-32) (14)
- QL5E 3 point lining fork down — 1s181 — =39 (14)
- QL5F SAT-SUPPORT BLOCKED — 1s362 — =QL29 (19)

← SIGNAL

- Q70
- Q71
- Q72
- Q73
- Q74
- Q75
- Q76
- Q77
- Q78 auto pos. sens. 1. impuls — on = (35v59)∧73 v74∧35∧59 ∧36∧38∧0B; hold = (0Cv0B)∧36∧38 — X78 (28)
- Q79 pos. sensor, gap. 1-2 — Latch on = 78∧35∧59, hold = 78 — X79 (30)
- Q7A latch pos. sensor 2. impuls — on = (35v59)∧73 v74∧35∧59 ∧78∧79 v95; hold = 78 v 95 — X7A (28)
- Q7B all sens. imp. o.k. — =78∧79∧7A — X7B (27)
- Q7C dist. mode — =75v76v77 — X7C (27)
- Q7D penetration ass. close — =15∧16∧0B∧01∧7E∧(27v28)∧1A — X7D (26)
- Q7E penetration ass. open — Latch on = Q81, hold = Q82 — X7E (26)
- Q7F

Q80–Q87 = time delay

- Q80 delay for Q0F — sec — set = 38∧6F∧[illegible] v38∧6F∧[illegible]
- Q81 delay for Q10 — set = 10 (26)
- Q82 delay for Q7E — set = 7E (26)
- Q83 1 sec delay — =11∧13∧14∧08∧23 (1.009) (27)
- Q84 delay, tamp. u. up — set = (66v67)∧0B (27)
- Q85 delay for QL30 — set = 0F∧18∧34 (30)
- Q86 delay for QL24 — =0F∧34 (17)
- Q87 — 0.5 sec
- Q88 EXT. RAM MEMORY — X88
- Q89 RAM for Q00 — X89
- Q8A RAM for Q05 — X8A
- Q8B — X8B
- Q8C — X8C
- Q8D — X8D
- Q8E — X8E
- Q8F — X8F

UNTERPROGRAMME (SUBROUTINES) — X und Q verbunden (X and Q wired)

← SIGNAL

- Q00 flip-flop for auto cycle — clock = 28∧0B; Reverse (28v23v12)∧00 — X00 (2)
- Q01 subr. tamp. u. lower pos. — =17∧18 v17∧6D v18∧6E — X01 (2)
- Q02 latch, left clamp u. lift & stop — on = 4C, hold = 29∧2C — X02 (3)
- Q03 latch, right clamp u. lift & stop — on = 4D, hold = 29∧2D — X03 (3)
- Q04 subr. mach. driving — =08 v09 — X04 (7)
- Q05 lift & lin. start enable — =20∧03 v30∧06∧15 v3C∧08∧16 v3E∧10; LATCH, on = 31∧(15v16)∧0F, hold = 06(28∧0C)∧6F — X05 (5)
- Q06 auto start, levell. left — =2E∧05∧6E∧32∧68∧49∧(24v2F)∧02 — X06 (4)
- Q07 auto start, levell. right — =2E∧05∧6E∧33∧[illegible]∧(25v2F)∧03 — X07 (4)

← SIGNAL

- Q08 subr. for driving — =37∧11∧6F v38∧05∧(22v5F) — X08 (6)
- Q09 subr. rev. driving — =(37v38)∧11∧23∧13∧14∧0B5∧36 — X09 (6)
- Q0A auto start, lining — =05∧30∧[(24∧25)v2F]∧(4Ev4F) — X0A (7)
- Q0B subr. tamp u. down — =19∧10∧23∧04∧3E∧27 v0E∧3E∧19∧(10v54∧72) — X0B (8)
- Q0C latch, start cond. auto cycle — on = 35∧13 v0F∧(13v21)∧25∧10; hold = 31v(2E∧C3) — X0C (9)
- Q0D end of tamping (auto cycle) — =(27v28)∧01∧69 — X0D (7)
- Q0E latch for auto cycle — on = 13∧14∧0C; hold = (27v28)∧(20v64)∧00∧22 — X0E (10)
- Q0F satel. forw. (auto cycle) — =Q80'∧11∧3E v3E∧10∧11∧38 — X0F (21)

← SIGNAL

- Q60 — X60
- Q61 prop. sign. satell. forward — =(12v0F)∧34∧5F∧09 — X61 (9)
- Q62 subr. for clamps logic — =37∧2A∧04 v38∧2A∧(1Cv0Bv05) v3A∧(03v05) — X62 (11)
- Q63 latch, subr. for Q6F — X63 (24)
- Q64 latch, auto pos. sign. „down" — on = [illegible]∧35∧08∧11; hold = [illegible]3E∧11∧33∧(0Cv0E) — X64 (15)
- Q65 latch for QL24 — on = 1B; hold = (65∧3E)v(10∧3E) — X69 (16)
- Q66 flip-flop for X50 — clock = X50 — X66 (16)
- Q67 flip-flop for X51 — clock = X51, only 09-32 — X67 (17)

← SIGNAL

- Q68 latch for Q08 and Q41 — ein = 11∧1C∧38; halten = 38∧11 — X68 (30)
- Q69 tamp. time expired, Q0D — time elaps. = (ZG1/2) INPUT 7; time set = Q0D 69 (ZGV2); time set = PROZ. RAM F — X69 (7)
- Q6A mem. for Q66 (int.) — X6A
- Q6B mem. for Q67 — X6B
- Q6C horn sign. rev. drive, START — =(37v38)∧11∧23∧13∧14∧0B3∧36 — X6C (6)
- Q6D latch, only l. tamp u. down — on = 1D, hold = 6F — X6D
- Q6E latch, only r. tamp u. down — on = 1E, hold = 6F — X6E
- Q6F delay, tamp. u. up (Q10, Q11) — =06 v26(27v28)∧(15v16); LATCH, ON = (66v67)∧0B; HOLD = [illegible] — X6F (24)

SUBROUTINES

- Q98 — X98
- Q99 — X99
- Q9A — X9A
- Q9B LATCH, SQUEEZING — ON = 19∧(92v93); LATCH 19∧9C∧9D (31)
- Q9C SQUEEZING L.H. — =26∧(01v(27∧28)) v01∧0B∧(27v28) v7D ∧6E — X9C (14)
- Q9D SQUEEZING R.H. — =26∧(01v(27∧28)) v01∧0B∧(27v28) v7D ∧6D — X9D (14)
- Q9E SQUEEZING BLOCKED, FRONT — =9B∧92 — X9E (31)
- Q9F SQUEEZING BLOCKED, REAR — =9B∧93 — X9F (31)

∧ = and
v = or
x̄ = x not
Latch = hold mode
(23) = progr. sheet nr.

on all coils protection device

siehe I/O Plan (see I/O circuit)

Leistungsausg. (Power output) power output layout

LOGIC PLAN OF CSM

program logic — EL-09-T035

P500/Pg. 13 2764