

The logo for 'adic' is displayed in white lowercase letters on a black rectangular background.

# SOFTWARE BACKUP

## AML/2

AUTOMATED

MIXED-MEDIA

LIBRARY

/2

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from Release 2.2.0 F

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Order no. DOC B00 014

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# 1 Description

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A software-backup is necessary after each change on the AML-system. Change means also the reteaching of a drive or another unit.

After a small change or correction only the changed file must be saved.

The service technician is responsible for the actual backup.

The backup-diskettes and the System-Logbook are located under the keyboard of the AMU-PC.



### Information

**Please don't change any values in the grey fields!**

## Backup diskettes

### Diskette 1 - Robot & Tower software

In error situation, please check the files (size, creation date)

Directory	Filename
ROBOT1\MOOG\ and ROBOT2\MOOG\         	140HLP.DEF
	BA1G100.PRS
	BA1G131.PRS
	BA2G100.PRS
	BA3G60.PRS
	BA4G29.PRS
	BA5G8.PRS
	BA6G9.PRS
	BOSCHTRM.CFG
	BOSCHTRM.EXE
BIQ140-.001	

<b>Directory</b>	<b>Filename</b>
	BIQ140E.002
	BIQ140E.003
	BIQ140E.004
	A1G100.PRS
	A1G131.PRS
	A2G100.PRS
	A3G60.PRS
	A4G29.PRS
	A5G8.PRS
	A6G9.PRS
ROBOT1\ and ROBOT2\ 	MPRHO3.BIN
	KONFIG.DAT
	SLW3480.DAT
	SLW3490.DAT
	SLWOD11.DAT
	SLWODR.DAT
	SLWODJU.DAT
	SLWVHS.DAT
	SLWDLT.DAT
	VERSION.DAT
	SLWDUMMY.DAT

## Description

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Directory	Filename
ROBOT\	IQ_ROBO.P2X
	AMULESES.IRD
	AMUSCHRS.IRD
	EXPROG.DAT
	INIT.IRD
	KOPPLUNG.DAT
	PERMAN.IRD
	SBCODE.IRD
	SLW3480A.IRD
	SLW3480.IRD
	SLW5190.IRD
	SLW3490.IRD
	SLW7480.IRD
	SLW7490.IRD
	SLW8MM.IRD
	SLWOD11.IRD
	SLW5190.IRD
	SLWD2.IRD
	SLWDLT.IRD
	SLWDUMMY.IRD
	SLWNTP.IRD
	SLWODJU.IRD
	SLWVHS.IRD
	SLWODR.IRD
	SLWPHIL.IRD
	SNEWGRIP.IRD
SRACK.IRD	
STEACH.IRD	
STEST.DAT	
STEST.IRD	

Directory	Filename
TOWER\	AMULESE.IRD
	AMUSCHR.IRD
	EXPROG.DAT
	INIT.IRD
	KOPPLUNG.DAT
	PERMAN.IRD
	QTURM1.IRD
	QTURM2.IRD
	QTURM3.IRD
	TEST.DAT
	TEST.GER
	TEST.IRD
	IQ_TURM.P2X
TOWER1-3\ and TOWER4-6\ 	MPRHO3.BIN
	KONFIG.DAT
TOWER1-3\MOOG\ and TOWER4-6\MOOG\ 	140HLP.DEF
	BIQ140-.001
	BIQ140E.002
	BIQ140E.003
	BIQ140E.004
	BHTURM.PRS
	BNTURM.PRS
	BOSCHTRM.CFG
	BOSCHTRM.EXE
	HTURM.PRS
	NTURM.PRS



## Description

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### Diskette 2 - AMU Installation Diskette

- AMU\*.ZIP
- INSTALL.CMD
- PKUNZIP2.EXE

### Diskette 3 - actual updates from AMU software

- Directory \SYSTEM\  
- AMUCONF.INI  
- AMUCONST.INI  
- CONFIG.SYS  
- (CONCONT.INI)  
- KRNREFPT.R01  
- (KRNREFPT.R02)  
- STARTUP.CMD  
- Directory \CM\

Directory	Filename	Communication Type
C:\CMLIB\ 	AMU3270.*	EXCP
	AMU62S.*	LU 6.2 Single Session
	AMU62SC.*	LU 6.2 Single Session with additional Coax
	AMU62P.*	LU 6.2 Parallel Session
	AMU62PC.*	LU 6.2 Parallel Session with additional Coax
	BOCA.*	only DCAF connection
C:\IBMCOM	PROTOCOL.INI	LAN Adapter and Protocol Support
C:\TCPIP\BIN	SETUP.CMD STARTUP.CMD	TCP/IP

### Diskette 4 - Backup of the database



## 2 KONFIG.DAT from version 2.2.0C (robot)

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Customer: \_\_\_\_\_  
 Installed: \_\_\_\_\_  
 Changes: \_\_\_\_\_  
 actual Version: \_\_\_\_\_

### 2.1 Robot 1

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Pos.	Line	Parameter	Default	Actual	Information
Addresses					
1	22	T_ADR_RHO	O01		Logical address of the control unit (same syntax as AMU configuration: O01).
2	23	T_ADR_AMU	A01	A01	AMU address
3	24	T_EA1_TYP	E0		Type of the first I/O unit (same syntax as AMU: E0, E1, ...). The I/O unit/B control runs on the robot control.
4	25	T_EA2_Typ	-		Type of the second I/O unit.
5	26	G_EA1_Nr	1		Logical number of the first I/O unit. E001... means value 1
6	27	G_EA2_Nr	0		Logical number of the second I/O unit.
7	31	G_ROBOTNR	1		Logical number of the robot. 1 = robot 1 2 = robot 2

## KONFIG.DAT from version 2.2.0C (robot)

Pos.	Line	Parameter	Default	Actual	Information
Configuration of cartridge types C0 - 1/2" cartridge 34x0 C1 - cartridge TK O0 - optical disk Reflection O1 - optical disk 512 V0 - VHS cartridges V3 - D2 small cartridges V4 - D2 medium cartridges  Use for each media type always the affiliated values, eg media type 1 -> Offset media type 1, barcode recognition media type 1 etc.					
8	35	Z_Cart_Typ1	--		media type 1
9	36	Z_Cart_Typ2	--		media type 2
10	37	Z_Cart_Typ3	--		media type 3
Calibration point coordinates (right arm) of media type 1 (NewGrip) The NewGrip position is located on the robot console. The controller needs for the media handling the arm values: Positions 11 - 14 -> coordinates for right arm (media type 1) Positions 159 - 162 -> coordinates for left arm (media type 1)					
11	41	FP_NewGrip[1].X_K	380.0		scanner: x-coordinate (in mm) vision system default: 395.0
12	42	FP_NewGrip[1].Y_K	-214.0		scanner: y-coordinate (in mm) vision system default: 0.0
13	43	FP_NewGrip[1].Z_K	100.0		scanner: z-coordinate (in mm) vision system default: 80.0
14	44	FP_NewGrip[1].R_K	135.0		scanner: r-coordinate (in °) Use only the default value vision system default: 0
Calibration point coordinates of media type 2 (NewGrip)					
15	48	FP_NewGrip[2].X_K	380.0		x-coordinate (in mm)
16	49	FP_NewGrip[2].Y_K	-214.0		y-coordinate (in mm)
17	50	FP_NewGrip[2].Z_K	100.0		z-coordinate (in mm)
18	51	FP_NewGrip[2].R_K	135.0	135.0	r-coordinate (in °)
Calibration point coordinates of media type 3 (NewGrip)					
19	55	FP_NewGrip[3].X_K	380.0		x-coordinate (in mm)
20	56	FP_NewGrip[3].Y_K	-214.0		y-coordinate (in mm)
21	57	FP_NewGrip[3].Z_K	100.0		z-coordinate (in mm)
22	58	FP_NewGrip[3].R_K	135.0	135.0	r-coordinate (in °)

## KONFIG.DAT from version 2.2.0C (robot)

Pos.	Line	Parameter	Default	Actual	Information
Offset <b>barcode</b> recognition for <b>rack</b> (tower or linear shelf) media type 1 [1/100 mm]					
23	62	FG_X_BC_Rack[1]	0		positive x-val. = gripper forward
24	63	FG_Y_BC_Rack[1]	0		positive y-value = gripper left
25	64	FG_Z_BC_Rack[1]	0		positive z-value = gripper up
Offset <b>barcode</b> recognition for <b>rack</b> (tower or linear shelf) media type 2 [1/100 mm]					
26	68	FG_X_BC_Rack[2]	0		positive x-val. = gripper forward
27	69	FG_Y_BC_Rack[2]	0		positive y-value = gripper left
28	70	FG_Z_BC_Rack[2]	0		positive z-value = gripper up
Offset <b>barcode</b> recognition for <b>rack</b> (tower or linear shelf) media type 3 [1/100 mm]					
29	74	FG_X_BC_Rack[3]	0		positive x-val. = gripper forward
30	75	FG_Y_BC_Rack[3]	0		positive y-value = gripper left
31	76	FG_Z_BC_Rack[3]	0		positive z-value = gripper up
Offset <b>barcode</b> recognition for <b>I/O unit</b> media type 1 [1/100 mm]					
32	80	FG_X_BC_EA[1]	0		positive x-val. = gripper forward
33	81	FG_Y_BC_EA[1]	0		positive y-value = gripper left
34	82	FG_Z_BC_EA[1]	0		positive z-value = gripper up
Offset <b>barcode</b> recognition for <b>I/O unit</b> media type 2 [1/100 mm]					
35	86	FG_X_BC_EA[2]	0		positive x-val. = gripper forward
36	87	FG_Y_BC_EA[2]	0		positive y-value = gripper left
37	88	FG_Z_BC_EA[2]	0		positive z-value = gripper up
Offset <b>barcode</b> recognition for <b>I/O unit</b> media type 3 [1/100 mm]					
38	92	FG_X_BC_EA[3]	0		positive x-val. = gripper forward
39	93	FG_Y_BC_EA[3]	0		positive y-value = gripper left
40	94	FG_Z_BC_EA[3]	0		positive z-value = gripper up

## KONFIG.DAT from version 2.2.0C (robot)

Pos.	Line	Parameter	Default	Actual	Information
Offset gripper <b>handling</b> for <b>rack</b> (tower or linear shelf) media type 1 [1/100 mm]					
41	98	FG_X_DelRack[1]	0		positive x-val. = gripper forward
42	99	FG_Y_DelRack[1]	0		positive y-value = gripper left
43	100	FG_Z_DelRack[1]	0		positive z-value = gripper up
Offset gripper <b>handling</b> for <b>rack</b> (tower or linear shelf) media type 2 [1/100 mm]					
44	104	FG_X_DelRack[2]	0		positive x-val. = gripper forward
45	105	FG_Y_DelRack[2]	0		positive y-value = gripper left
46	106	FG_Z_DelRack[2]	0		positive z-value = gripper up
Offset gripper <b>handling</b> for <b>rack</b> (tower or linear shelf) media type 3 [1/100 mm]					
47	110	FG_X_DelRack[1]	0		positive x-val. = gripper forward
48	111	FG_Y_DelRack[1]	0		positive y-value = gripper left
49	112	FG_Z_DelRack[1]	0		positive z-value = gripper up
Offset gripper <b>handling</b> for <b>I/O unit</b> media type 1 [1/100 mm]					
50	116	FG_X_DelEA[1]	0		positive x-val. = gripper forward
51	117	FG_Y_DelEA[1]	0		positive y-value = gripper left
52	118	FG_Z_DelEA[1]	0		positive z-value = gripper up
Offset gripper <b>handling</b> for <b>I/O unit</b> media type 2 [1/100 mm]					
53	122	FG_X_DelEA[2]	0		positive x-val. = gripper forward
54	123	FG_Y_DelEA[2]	0		positive y-value = gripper left
55	124	FG_Z_DelEA[2]	0		Positive z-value = gripper up
Offset gripper <b>handling</b> for <b>I/O unit</b> media type 3 [1/100 mm]					
56	128	FG_X_DelEA[3]	0		positive x-val. = gripper forward
57	129	FG_Y_DelEA[3]	0		positive y-value = gripper left
58	130	FG_Z_DelEA[3]	0		positive z-value = gripper up

## KONFIG.DAT from version 2.2.0C (robot)

Pos.	Line	Parameter	Default	Actual	Information
Assignment of the drive types Same syntax as AMU configuration: eg D3, D8, D9, DO... Use for each drive type always the affiliated offsets. Not used drive types you have to fill up with „-“.					
59	134	T_UNITTYPE1	--		drive type 1
60	135	T_UNITTYPE2	--		drive type 2
61	136	T_UNITTYPE3	--		drive type 3
62	137	T_UNITTYPE4	--		drive type 4
Parameters 63 - 98: All parameters FG_Z_O... are only for OD drives. They specify the offset for <b>Put</b> and <b>Get</b> of side B. Offset gripper handling and barcode recognition for drive type 1 [1/100 mm]					
63	141	FG_X_Put_LW[1]	0		positive x-val. = gripper forward <b>(Put)</b>
64	142	FG_Y_Put_LW[1]	0		positive y-value = gripper left <b>(Put)</b>
65	143	FG_Z_Put_LW[1]	0		positive z-value = gripper up <b>(Put)</b>
66	144	FG_X_Get_LW[1]	0		positive x-val. = gripper forward <b>(Get)</b>
67	145	FG_Y_Get_LW[1]	0		positive y-value = gripper left <b>(Get)</b>
68	146	FG_Z_Get_LW[1]	0		positive z-value = gripper up <b>(Get)</b>
69	147	FG_Z_ODB_LW[1]	0		positive z-value = gripper up <b>(Get OD side B)</b>
70	148	FG_Z_ODP_LW[1]	0		positive z-value = gripper up <b>(Put OD B-side)</b>
71	149	FZ_Unload[1]	N		Y = gripper presses unload button <b>(Get)</b> , N = gripper does not press the unload button (only for OD, VHS, DLT)
Offset gripper handling and barcode recognition for drive type 2 [1/100 mm]					
72	153	FG_X_Put_LW[2]	0		positive x-val. = gripper forward <b>(Put)</b>
73	154	FG_Y_Put_LW[2]	0		positive y-value = gripper left <b>(Put)</b>
74	155	FG_Z_Put_LW[2]	0		positive z-value = gripper up <b>(Put)</b>

## KONFIG.DAT from version 2.2.0C (robot)

Pos.	Line	Parameter	Default	Actual	Information
75	156	FG_X_Get_LW[2]	0		positive x-value (in 1/100 mm) = gripper forward ( <b>Get</b> )
76	157	FG_Y_Get_LW[2]	0		positive y-value (in 1/100 mm) = gripper left ( <b>Get</b> )
77	158	FG_Z_Get_LW[2]	0		positive z-value (in 1/100 mm) = gripper up ( <b>Get</b> )
78	159	FG_Z_ODB_LW[2]	0		positive z-value (in 1/100 mm) = gripper up ( <b>Get</b> OD side B)
79	160	FG_Z_ODP_LW[2]	0		positive z-value (in 1/100 mm) = gripper up (put OD side B)
80	161	FZ_Unload[2]	N		Y = gripper presses unload button ( <b>Get</b> ), N = gripper does not press the unload button (only for OD, VHS, DLT)
Offset gripper handling and barcode recognition for drive unit type 3 [1/100 mm]					
81	165	FG_X_Put_LW[3]	0		positive x-val. = gripper forward ( <b>Put</b> )
82	166	FG_Y_Put_LW[3]	0		positive y-value = gripper left ( <b>Put</b> )
83	167	FG_Z_Put_LW[3]	0		positive z-value = gripper up ( <b>Put</b> )
84	168	FG_X_Get_LW[3]	0		positive x-val. = gripper forward ( <b>Get</b> )
85	169	FG_Y_Get_LW[3]	0		positive y-value = gripper left ( <b>Get</b> )
86	170	FG_Z_Get_LW[3]	0		positive z-value = gripper up ( <b>Get</b> )
87	171	FG_Z_ODB_LW[3]	0		positive z-value = gripper up ( <b>Get</b> OD B-side)
88	172	FG_Z_ODP_LW[3]	0		positive z-value = gripper up ( <b>Put</b> OD B-side)
89	173	FZ_Unload[3]	N		Y = gripper presses unload button ( <b>Get</b> ) N = gripper does not press the unload button (only for OD, VHS, DLT)



## KONFIG.DAT from version 2.2.0C (robot)

Pos.	Line	Parameter	Default	Actual	Information
Offset gripper handling and barcode recognition for drive type 4 [1/100 mm]					
90	177	FG_X_Put_LW[4]	0		positive x-val. = gripper forward <b>(Put)</b>
91	178	FG_Y_Put_LW[4]	0		positive y-value = gripper left <b>(Put)</b>
92	179	FG_Z_Put_LW[4]	0		positive z-value = gripper up <b>(Put)</b>
93	180	FG_X_Get_LW[4]	0		positive x-val. = gripper forward <b>(Get)</b>
94	181	FG_Y_Get_LW[4]	0		positive y-value = gripper left <b>(Get)</b>
95	182	FG_Z_Get_LW[4]	0		positive z-value = gripper up <b>(Get)</b>
96	183	FG_Z_ODB_LW[4]	0		positive z-value = gripper up <b>(Get OD side B)</b>
97	184	FG_Z_ODP_LW[4]	0		positive z-value = gripper up <b>(Put OD side B)</b>
98	185	FZ_Unload[4]	N		Y = gripper presses unload button <b>(Get)</b> , N = gripper does not press the unload button (only for OD, VHS, DLT)
99	189	D_Z_TO_V	0.27164		Relation between z- and v-axis.  Enter all values in mm and with 5 digits after the point.  Formulas: max. z-axis = Z_max („MPRH3.BIN“ P204, 3. axis)  max. v-axis = V_max („MPRHO3.BIN“ P204, 6. axis)  $D\_Z\_TO\_V = \frac{Z\_max - 12}{(Z\_max - 12) + V\_max}$  for D2 medium handling:  $D\_Z\_TO\_V = \frac{Z\_max - 30}{(Z\_max - 30) + V\_max}$

## KONFIG.DAT from version 2.2.0C (robot)

Pos.	Line	Parameter	Default	Actual	Information
100	190	D_Y_Elb	0		only for scanner gripper: positive y-coordinate (in mm) in world coordinates for drive gripper with medium use for touchless movement on track (eg tower covering) 0 = normal processing
Coordinates (in mm) for special handling of drives on the start of track (only scanner gripper)					
101	191	D_X_Col	0		x-coordinate for begin handling area (only for special handling in the back area)
102	192	D_Y_Col	0		y-coordinate handling area (only for special handling in the back area)
Software limits (depending on your system)					
103	196	G_X_MAXLIMIT	290000		Depends on the length of the system. Handling at the end of the system (I/O unit) must be possible. You get this value with the test program on the PHG. value = x-axis + h-axis
104	197	G_X_MINLIMIT	scanner: 25000 vision -50000		minimal x-coordinate of AMU
105	198	G_Z_MAXLIMIT	142000		maximal z-coordinate of AMU  G_Z_MAXLIMIT = V_max + Z_max „MPRHO3.BIN“ P204 3. axis (v), 6. axis (z)
106	199	G_Z_MINLIMIT	-4500	-4500	minimal z-coordinate of AMU
107	201	G_H_SAVEELBO	100		Maximal h-coordinate for a secure arm change. You get this value with the test program on the PHG: media in gripper, arm in straight position, drive to the first obstacle (eg the I/O unit).
108	202	G_UMSCHLAG	1		Definition of the robot arm for front handling: 0 = arm not defined 1 = left arm 2 = right arm
109	203	G_FIRSTOWER	1		Number of first connected Quadro tower

## KONFIG.DAT from version 2.2.0C (robot)

Pos.	Line	Parameter	Default	Actual	Information
Speed and Acceleration					
110	207	D_ACCEL	1500.0		Acceleration of point-to-point-movement: min. 100 / max. 1500
111	208	D_V_PTP	1.0	1.0	Speed of point-to-point-movement: min. 0.01 / max. 1.0
112	209	D_V_LINEAR	1000.0	1000.0	Fast speed for linear interpolation (during handling): max. 1000
113	210	D_V_HANDL	250.0		Slow speed for linear interpolation (during handling): min. 10 / max. 250
114-115	211-212	reserve	0	0	reserve
Diagnosis					
116	216	G_PHGECHO	1		0 = PHG not connected, normal working conditions, 1 = PHG necessary, tests possible, 2 = PHG connected, only test mode, stand-alone 3 = PHG connected, only test mode, stand-alone without gripper
Timeout					
117	220	D_TIME1	140	140	time-out Quadro tower (in sec)
118	221	D_TIME2	140		time-out I/O unit (in sec) 10 = I/O unit/B
119	222	D_TIME3	100	100	time-out reference move (in sec)
120	223	D_WARTE_KEEP	60		time-out for <b>Keep</b> (in sec)
121-122	224-225		0	0	reserve

## KONFIG.DAT from version 2.2.0C (robot)

Pos.	Line	Parameter	Default	Actual	Information
Vision parameters (☞ gripper data sheet)					
123	229	G_D2_BC	0		Switch for barcode read on D2 medium with very long label (use only in case of problems with the long label)
124	230	G_GRAU_JN	0		AML/2 vision system IRIS software: 0 = version 1.5.x 1 = version 1.6.x Fill in parameters 137 -138 2 = version 1.7.x Fill in parameters 137 - 138.
125	231	G_TPE_B	scanner 0 vision 1		Barcode types: 0 = Scanner 1 = Code 39 2 = STK code
126	232	G_TPE_T	scanner 4 vision 2		2 = vision system 4 = scanner
127	233	G_BC_ORIENT	2		Barcode orientation, depending on the employed labels: 0 = scanner 2 = up 4 = down
128	234	reserve	0	0	reserve
129	235	G_g_thr_B	6		Gradient threshold for barcode recognition. with scanner not in use
130	236	G_m_thr_B	6		Bar width threshold for barcode recognition. with scanner not in use
131	237	G_g_thr_T	32		Gradient threshold for teach-in. with scanner not in use
132	239	D_scale_x_T	15.00		Pixel scaling, x-coordinate of camera (in pixel/mm). with scanner not in use
133	240	D_scale_y_T	15.00		Pixel scaling, y-coordinate of camera (in pixel/mm). with scanner not in user
134	241	D_ref_area_T	15000.0		Reference area of the teachlabel (in sq.pixel). with scanner not in use

## KONFIG.DAT from version 2.2.0C (robot)

Pos.	Line	Parameter	Default	Actual	Information
135	242	D_direct_B	1		1 = unidirectional barcode recognition 2 = bidirectional barcode recognition Use only, if two directions of barcode are in your system! with scanner not in use
136	243	G_BCErrIgn	1		Reaction on barcode-reading error. 0 = cancel on error 1 = ignore error and continue
137	245	G_GRAU_VER	0		Mean grey level in vertical direction. 0 = scanner
138	246	G_SIGMA_VER	0		Standard deviation of grey level in vertical direction. 0 = scanner
139	247	reserve	0		reserve
140	248	reserve	0		reserve
141-143	250-252	reserve	0	0	reserve
Window definitions for vision system (with scanner not in use)					
144	256	G_Win_X1_B_V	184		vertical upper left corner x
145	257	G_Win_Y1_B_V	0		vertical upper left corner y
146	258	G_Win_X2_B_V	324		vertical lower right corner x
147	259	G_Win_Y2_B_V	510		vertical lower right corner y
148-149	261-262	reserve	0		reserve
150	263	G_Y_CAM_OLD	0		parameter 154 on release change to 2.1.0F
151	264	G_X_OFF_OLD	200		parameter 156 on release change to 2.1.0F
152	266	G_Win_W_T	510		width of teach-in window for STK barcode: 172
153	267	G_Win_H_T	510		height of teach-in window for STK barcode: 172

## KONFIG.DAT from version 2.2.0C (robot)

Pos.	Line	Parameter	Default	Actual	Information
Teach sensor/camera offset (☞ gripper data sheet)					
154	271	G_Y_CAMERA	0		camera offset horizontal (in 1/100 mm)
155	272	G_Z_CAMERA	0		camera offset vertical (in 1/100 mm)
Gripper offset (☞ gripper data sheet)					
156	274	G_X_OFFSET	0		grripper offset x-coordinate (in 1/100 mm)
157	275	G_Y_OFFSET	0		grripper offset y-coordinate (in 1/100 mm)
158	276	G_Z_OFFSET	0		grripper offset z-coordinate (in 1/100 mm)
Calibration point coordinates (left arm) of media type 1 The calibration point coordinates (left arm) of the other media types result from the following parameters.					
159	280	FP_NewGripL[1].X_K	366.0		x-coordinate (in mm)
160	281	FP_NewGripL[1].Y_K	228.0		y-coordinate (in mm)
161	282	FP_NewGripL[1].Z_K	88.0		z-coordinate (in mm)
162	283	FP_NewGripL[1].R_K	-135.0	-135.0	r-coordinate (in °)
Additional offset value for <b>PUT</b> (positive y-value (1/100mm) = gripper left)					
163	284	FG_Y_PRaOff[1]	0		media 1 on rack
164	285	FG_Y_PIEOff[1]	0		media 1 on I/O unit
165	286	FG_Y_PRaOff[2]	0		media 2 on rack
166	287	FG_Y_PIEOff[2]	0		media 2 on I/O unit
167	288	FG_Y_PRaOff[3]	0		media 3 on rack
168	289	FG_Y_PIEOff[3]	0		media 3 on I/O unit
Check sum					
169	293	G_SUMME	169		number of positions in this file

## 2.2 Robot 2

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Pos.	Line	Parameter	Default	Actual	Information
Addresses					
1	22	T_ADR_RHO	O01		Logical address of the control unit (same syntax as AMU configuration: O01).
2	23	T_ADR_AMU	A01	A01	AMU address
3	24	T_EA1_TYP	E0		Type of the first I/O unit (same syntax as AMU: E0, E1, ...). The I/O unit/B control runs on the robot control.
4	25	T_EA2_Typ	-		Type of the second I/O unit.
5	26	G_EA1_Nr	1		Logical number of the first I/O unit. E001... means value 1
6	27	G_EA2_Nr	0		Logical number of the second I/O unit.
7	31	G_ROBOTNR	1		Logical number of the robot.  1 = robot 1 2 = robot 2

## KONFIG.DAT from version 2.2.0C (robot)

Pos.	Line	Parameter	Default	Actual	Information
Configuration of cartridge types C0 - 1/2" cartridge 34x0 C1 - cartridge TK O0 - optical disk Reflection O1 - optical disk 512 V0 - VHS cartridges V3 - D2 small cartridges V4 - D2 medium cartridges  Use for each media type always the affiliated values, eg media type 1 -> Offset media type 1, barcode recognition media type 1 etc.					
8	35	Z_Cart_Typ1	--		media type 1
9	36	Z_Cart_Typ2	--		media type 2
10	37	Z_Cart_Typ3	--		media type 3
Calibration point coordinates (right arm) of media type 1 (NewGrip) The NewGrip position is located on the robot console. The controller needs for the media handling the arm values: Positions 11 - 14 -> coordinates for right arm (media type 1) Positions 159 - 162 -> coordinates for left arm (media type 1)					
11	41	FP_NewGrip[1].X_K	380.0		scanner: x-coordinate (in mm) vision system default: 395.0
12	42	FP_NewGrip[1].Y_K	-214.0		scanner: y-coordinate (in mm) vision system default: 0.0
13	43	FP_NewGrip[1].Z_K	10.0		scanner: z-coordinate (in mm) vision system default: 80.0
14	44	FP_NewGrip[1].R_K	135.0		scanner: r-coordinate (in °) Use only the default values vision system default: 0
Calibration point coordinates of media type 2 (NewGrip)					
15	48	FP_NewGrip[2].X_K	380.0		x-coordinate (in mm)
16	49	FP_NewGrip[2].Y_K	-214.0		y-coordinate (in mm)
17	50	FP_NewGrip[2].Z_K	100.0		z-coordinate (in mm)
18	51	FP_NewGrip[2].R_K	135.0	135.0	r-coordinate (in °)
Calibration point coordinates of media type 3 (NewGrip)					
19	55	FP_NewGrip[3].X_K	380.0		x-coordinate (in mm)
20	56	FP_NewGrip[3].Y_K	-214.0		y-coordinate (in mm)
21	57	FP_NewGrip[3].Z_K	100.0		z-coordinate (in mm)
22	58	FP_NewGrip[3].R_K	135.0	135.0	r-coordinate (in °)
Offset <b>barcode</b> recognition for <b>rack</b> (tower or linear shelf) media type 1 [1/100 mm]					
23	62	FG_X_BC_Rack[1]	0		positive x-val. = gripper forward
24	63	FG_Y_BC_Rack[1]	0		positive y-value = gripper left
25	64	FG_Z_BC_Rack[1]	0		positive z-value = gripper up



## KONFIG.DAT from version 2.2.0C (robot)

Pos.	Line	Parameter	Default	Actual	Information
Offset <b>barcode</b> recognition for <b>rack</b> (tower or linear shelf) media type 2 [1/100 mm]					
26	68	FG_X_BC_Rack[2]	0		positive x-val. = gripper forward
27	69	FG_Y_BC_Rack[2]	0		positive y-value = gripper left
28	70	FG_Z_BC_Rack[2]	0		positive z-value = gripper up
Offset <b>barcode</b> recognition for <b>rack</b> (tower or linear shelf) media type 3 [1/100 mm]					
29	74	FG_X_BC_Rack[3]	0		positive x-val. = gripper forward
30	75	FG_Y_BC_Rack[3]	0		positive y-value = gripper left
31	76	FG_Z_BC_Rack[3]	0		positive z-value = gripper up
Offset <b>barcode</b> recognition for <b>I/O unit</b> media type 1 [1/100 mm]					
32	80	FG_X_BC_EA[1]	0		positive x-val. = gripper forward
33	81	FG_Y_BC_EA[1]	0		positive y-value = gripper left
34	82	FG_Z_BC_EA[1]	0		positive z-value = gripper up
Offset <b>barcode</b> recognition for <b>I/O unit</b> media type 2 [1/100 mm]					
35	86	FG_X_BC_EA[2]	0		positive x-val. = gripper forward
36	87	FG_Y_BC_EA[2]	0		positive y-value = gripper left
37	88	FG_Z_BC_EA[2]	0		positive z-value = gripper up
Offset <b>barcode</b> recognition for <b>I/O unit</b> media type 3 [1/100 mm]					
38	92	FG_X_BC_EA[3]	0		positive x-val. = gripper forward
39	93	FG_Y_BC_EA[3]	0		positive y-value = gripper left
40	94	FG_Z_BC_EA[3]	0		positive z-value = gripper up

## KONFIG.DAT from version 2.2.0C (robot)

Pos.	Line	Parameter	Default	Actual	Information
Offset gripper <b>handling</b> for <b>rack</b> (tower or linear shelf) media type 1 [1/100 mm]					
41	98	FG_X_DelRack[1]	0		positive x-val. = gripper forward
42	99	FG_Y_DelRack[1]	0		positive y-value = gripper left
43	100	FG_Z_DelRack[1]	0		positive z-value = gripper up
Offset gripper <b>handling</b> for <b>rack</b> (tower or linear shelf) media type 2 [1/100 mm]					
44	104	FG_X_DelRack[2]	0		positive x-val. = gripper forward
45	105	FG_Y_DelRack[2]	0		positive y-value = gripper left
46	106	FG_Z_DelRack[2]	0		positive z-value = gripper up
Offset gripper <b>handling</b> for <b>rack</b> (tower or linear shelf) media type 3 [1/100 mm]					
47	110	FG_X_DelRack[1]	0		positive x-val. = gripper forward
48	111	FG_Y_DelRack[1]	0		positive y-value = gripper left
49	112	FG_Z_DelRack[1]	0		positive z-value = gripper up
Offset gripper <b>handling</b> for <b>I/O unit</b> media type 1 [1/100 mm]					
50	116	FG_X_DelEA[1]	0		positive x-val. = gripper forward
51	117	FG_Y_DelEA[1]	0		positive y-value = gripper left
52	118	FG_Z_DelEA[1]	0		positive z-value = gripper up
Offset gripper <b>handling</b> for <b>I/O unit</b> media type 2 [1/100 mm]					
53	122	FG_X_DelEA[2]	0		positive x-val. = gripper forward
54	123	FG_Y_DelEA[2]	0		positive y-value = gripper left
55	124	FG_Z_DelEA[2]	0		Positive z-value = gripper up
Offset gripper <b>handling</b> for <b>I/O unit</b> media type 3 [1/100 mm]					
56	128	FG_X_DelEA[3]	0		positive x-val. = gripper forward
57	129	FG_Y_DelEA[3]	0		positive y-value = gripper left
58	130	FG_Z_DelEA[3]	0		positive z-value = gripper up

## KONFIG.DAT from version 2.2.0C (robot)

Pos.	Line	Parameter	Default	Actual	Information
Assignment of the drive types Same syntax as AMU configuration: eg D3, D8, D9, DO... Use for each drive type always the affiliated offsets. Not used drive types you have to fill up with „-“.					
59	134	T_UNITTYPE1	--		drive type 1
60	135	T_UNITTYPE2	--		drive type 2
61	136	T_UNITTYPE3	--		drive type 3
62	137	T_UNITTYPE4	--		drive type 4
Parameters 63 - 98: All parameters FG_Z_O... are only for OD drives. They specify the offset for <b>Put</b> and <b>Get</b> of side B. Offset gripper handling and barcode recognition for drive type 1 [1/100 mm]					
63	141	FG_X_Put_LW[1]	0		positive x-val. = gripper forward <b>(Put)</b>
64	142	FG_Y_Put_LW[1]	0		positive y-value = gripper left <b>(Put)</b>
65	143	FG_Z_Put_LW[1]	0		positive z-value = gripper up <b>(Put)</b>
66	144	FG_X_Get_LW[1]	0		positive x-val. = gripper forward <b>(Get)</b>
67	145	FG_Y_Get_LW[1]	0		positive y-value = gripper left <b>(Get)</b>
68	146	FG_Z_Get_LW[1]	0		positive z-value = gripper up <b>(Get)</b>
69	147	FG_Z_ODB_LW[1]	0		positive z-value = gripper up <b>(Get OD side B)</b>
70	148	FG_Z_ODP_LW[1]	0		positive z-value = gripper up <b>(Put OD B-side)</b>
71	149	FZ_Unload[1]	N		Y = gripper presses unload button <b>(Get)</b> , N = gripper does not press the unload button (only for OD, VHS, DLT)
Offset gripper handling and barcode recognition for drive type 2 [1/100 mm]					
72	153	FG_X_Put_LW[2]	0		positive x-val. = gripper forward <b>(Put)</b>
73	154	FG_Y_Put_LW[2]	0		positive y-value = gripper left <b>(Put)</b>
74	155	FG_Z_Put_LW[2]	0		positive z-value = gripper up <b>(Put)</b>

## KONFIG.DAT from version 2.2.0C (robot)

Pos.	Line	Parameter	Default	Actual	Information
75	156	FG_X_Get_LW[2]	0		positive x-value (in 1/100 mm) = gripper forward ( <b>Get</b> )
76	157	FG_Y_Get_LW[2]	0		positive y-value (in 1/100 mm) = gripper left ( <b>Get</b> )
77	158	FG_Z_Get_LW[2]	0		positive z-value (in 1/100 mm) = gripper up ( <b>Get</b> )
78	159	FG_Z_ODB_LW[2]	0		positive z-value (in 1/100 mm) = gripper up ( <b>Get</b> OD side B)
79	160	FG_Z_ODP_LW[2]	0		positive z-value (in 1/100 mm) = gripper up (put OD side B)
80	161	FZ_Unload[2]	N		Y = gripper presses unload button ( <b>Get</b> ), N = gripper does not press the unload button (only for OD, VHS, DLT)
Offset gripper handling and barcode recognition for drive unit type 3 [1/100 mm]					
81	165	FG_X_Put_LW[3]	0		positive x-val. = gripper forward ( <b>Put</b> )
82	166	FG_Y_Put_LW[3]	0		positive y-value = gripper left ( <b>Put</b> )
83	167	FG_Z_Put_LW[3]	0		positive z-value = gripper up ( <b>Put</b> )
84	168	FG_X_Get_LW[3]	0		positive x-val. = gripper forward ( <b>Get</b> )
85	169	FG_Y_Get_LW[3]	0		positive y-value = gripper left ( <b>Get</b> )
86	170	FG_Z_Get_LW[3]	0		positive z-value = gripper up ( <b>Get</b> )
87	171	FG_Z_ODB_LW[3]	0		positive z-value = gripper up ( <b>Get</b> OD B-side)
88	172	FG_Z_ODP_LW[3]	0		positive z-value = gripper up ( <b>Put</b> OD B-side)
89	173	FZ_Unload[3]	N		Y = gripper presses unload button ( <b>Get</b> ) N = gripper does not press the unload button (only for OD, VHS, DLT)

## KONFIG.DAT from version 2.2.0C (robot)

Pos.	Line	Parameter	Default	Actual	Information
Offset gripper handling and barcode recognition for drive type 4 [1/100 mm]					
90	177	FG_X_Put_LW[4]	0		positive x-val. = gripper forward <b>(Put)</b>
91	178	FG_Y_Put_LW[4]	0		positive y-value = gripper left <b>(Put)</b>
92	179	FG_Z_Put_LW[4]	0		positive z-value = gripper up <b>(Put)</b>
93	180	FG_X_Get_LW[4]	0		positive x-val. = gripper forward <b>(Get)</b>
94	181	FG_Y_Get_LW[4]	0		positive y-value = gripper left <b>(Get)</b>
95	182	FG_Z_Get_LW[4]	0		positive z-value = gripper up <b>(Get)</b>
96	183	FG_Z_ODB_LW[4]	0		positive z-value = gripper up <b>(Get OD side B)</b>
97	184	FG_Z_ODP_LW[4]	0		positive z-value = gripper up <b>(Put OD side B)</b>
98	185	FZ_Unload[4]	N		Y = gripper presses unload button <b>(Get)</b> , N = gripper does not press the unload button (only for OD, VHS, DLT)
99	189	D_Z_TO_V	0.27164		Relation between z- and v-axis.  Enter all values in mm and with 5 digits after the point.  Formulas: max. z-axis = Z_max („MPRH3.BIN“ P204, 3. axis)  max. v-axis = V_max („MPRHO3.BIN“ P204, 6. axis)  $D\_Z\_TO\_V = \frac{Z\_max - 12}{(Z\_max - 12) + V\_max}$  for D2 medium handling:  $D\_Z\_TO\_V = \frac{Z\_max - 30}{(Z\_max - 30) + V\_max}$

## KONFIG.DAT from version 2.2.0C (robot)

Pos.	Line	Parameter	Default	Actual	Information
100	190	D_Y_Elb	0		only for scanner gripper: positive y-coordinate (in mm) in world coordinates for drive gripper with medium use for touchless movement on track (eg tower covering) 0 = normal processing
Coordinates (in mm) for special handling of drives on the start of track (only scanner gripper)					
101	191	D_X_Col	0		x-coordinate for begin handling area (only for special handling in the back area)
102	192	D_Y_Col	0		y-coordinate handling area (only for special handling in the back area)
Software limits (depending on your system)					
103	196	G_X_MAXLIMIT	290000		Depends on the length of the system. Handling at the end of the system (I/O unit) must be possible. You get this value with the test program on the PHG. value = x-axis + h-axis
104	197	G_X_MINLIMIT	scanner: 25000 vision -50000		minimal x-coordinate of AMU
105	198	G_Z_MAXLIMIT	142000		maximal z-coordinate of AMU  G_Z_MAXLIMIT = V_max + Z_max „MPRHO3.BIN“ P204 3. axis (v), 6. axis (z)
106	199	G_Z_MINLIMIT	-4500	-4500	minimal z-coordinate of AMU
107	201	G_H_SAVEELBO	100		Maximal h-coordinate for a secure arm change. You get this value with the test program on the PHG: media in gripper, arm in straight position, drive to the first obstacle (eg the I/O unit).
108	202	G_UMSCHLAG	1		Definition of the robot arm for front handling: 0 = arm not defined 1 = left arm 2 = right arm
109	203	G_FIRSTOWER	1		Number of first connected Quadro tower

## KONFIG.DAT from version 2.2.0C (robot)

Pos.	Line	Parameter	Default	Actual	Information
Speed and Acceleration					
110	207	D_ACCEL	1500.0		Acceleration of point-to-point-movement: min. 100 / max. 1500
111	208	D_V_PTP	1.0	1.0	Speed of point-to-point-movement: min. 0.01 / max. 1.0
112	209	D_V_LINEAR	1000.0	1000.0	Fast speed for linear interpolation (during handling): max. 1000
113	210	D_V_HANDL	250.0		Slow speed for linear interpolation (during handling): min. 10 / max. 250
114-115	211-212	reserve	0	0	reserve
Diagnosis					
116	216	G_PHGECHO	1		0 = PHG not connected, normal working conditions, 1 = PHG necessary, tests possible, 2 = PHG connected, only test mode, stand-alone 3 = PHG connected, only test mode, stand-alone without gripper
Timeout					
117	220	D_TIME1	140	140	time-out Quadro tower (in sec)
118	221	D_TIME2	140		time-out I/O unit (in sec) 10 = I/O unit/B
119	222	D_TIME3	100	100	time-out reference move (in sec)
120	223	D_WARTE_KEEP	60		time-out for <b>Keep</b> (in sec)
121-122	224-225		0	0	reserve

## KONFIG.DAT from version 2.2.0C (robot)

Pos.	Line	Parameter	Default	Actual	Information
Vision parameters (☞ gripper data sheet)					
123	229	G_D2_BC	0		Switch for barcode read on D2 medium with very long label (use only in case of problems with the long label)
124	230	G_GRAU_JN	0		AML/2 vision system IRIS software: 0 = version 1.5.x 1 = version 1.6.x Fill in parameters 137 -138 2 = version 1.7.x Fill in parameters 137 - 138.
125	231	G_TPE_B	1		Barcode types: 0 = Scanner 1 = Code 39 2 = STK code
126	232	G_TPE_T	scanner 4 vision 2		2 = vision system 4 = scanner
127	233	G_BC_ORIENT	2		Barcode orientation, depending on the employed labels: 0 = scanner 2 = up 4 = down
128	234	reserve	0	0	reserve
129	235	G_g_thr_B	6		Gradient threshold for barcode recognition. with scanner not in use
130	236	G_m_thr_B	6		Bar width threshold for barcode recognition. with scanner not in use
131	237	G_g_thr_T	32		Gradient threshold for teach-in. with scanner not in use
132	239	D_scale_x_T	15.00		Pixel scaling, x-coordinate of camera (in pixel/mm). with scanner not in use
133	240	D_scale_y_T	15.00		Pixel scaling, y-coordinate of camera (in pixel/mm). with scanner not in user
134	241	D_ref_area_T	15000.0		Reference area of the teachlabel (in sq.pixel). with scanner not in use



## KONFIG.DAT from version 2.2.0C (robot)

Pos.	Line	Parameter	Default	Actual	Information
135	242	D_direct_B	1		1 = unidirectional barcode recognition 2 = bidirectional barcode recognition Use only, if two directions of barcode are in your system! with scanner not in use
136	243	G_BCErrIgn	1		Reaction on barcode-reading error. 0 = cancel on error 1 = ignore error and continue
137	245	G_GRAU_VER	0		Mean grey level in vertical direction. 0 = scanner
138	246	G_SIGMA_VER	0		Standard deviation of grey level in vertical direction. 0 = scanner
139	247	reserve	0		reserve
140	248	reserve	0		reserve
141-143	250-252	reserve	0	0	reserve
Window definitions for vision system (with scanner not in use)					
144	256	G_Win_X1_B_V	184		vertical upper left corner x
145	257	G_Win_Y1_B_V	0		vertical upper left corner y
146	258	G_Win_X2_B_V	324		vertical lower right corner x
147	259	G_Win_Y2_B_V	510		vertical lower right corner y
148-149	261-262	reserve	0		reserve
150	263	G_Y_CAM_OLD	0		parameter 154 on release change to 2.1.0F
151	264	G_X_OFF_OLD	200		parameter 156 on release change to 2.1.0F
152	266	G_Win_W_T	510		width of teach-in window for STK barcode: 172
153	267	G_Win_H_T	510		height of teach-in window for STK barcode: 172

## KONFIG.DAT from version 2.2.0C (robot)

Pos.	Line	Parameter	Default	Actual	Information
Teach sensor/camera offset (☞ gripper data sheet)					
154	271	G_Y_CAMERA	0		camera offset horizontal (in 1/100 mm)
155	272	G_Z_CAMERA	0		camera offset vertical (in 1/100 mm)
Gripper offset (☞ gripper data sheet)					
156	274	G_X_OFFSET	0		grripper offset x-coordinate (in 1/100 mm)
157	275	G_Y_OFFSET	0		grripper offset y-coordinate (in 1/100 mm)
158	276	G_Z_OFFSET	0		grripper offset z-coordinate (in 1/100 mm)
Calibration point coordinates (left arm) of media type 1 The calibration point coordinates (left arm) of the other media types result from the following parameters.					
159	280	FP_NewGripL[1].X_K	366.0		x-coordinate (in mm)
160	281	FP_NewGripL[1].Y_K	228.0		y-coordinate (in mm)
161	282	FP_NewGripL[1].Z_K	88.0		z-coordinate (in mm)
162	283	FP_NewGripL[1].R_K	-135.0	-135	r-coordinate (in °)
Additional offset value for <b>PUT</b> (positive y-value (1/100mm) = gripper left)					
163	284	FG_Y_PRaOff[1]	0		media 1 on rack
164	285	FG_Y_PIEOff[1]	0		media 1 on I/O unit
165	286	FG_Y_PRaOff[2]	0		media 2 on rack
166	287	FG_Y_PIEOff[2]	0		media 2 on I/O unit
167	288	FG_Y_PRaOff[3]	0		media 3 on rack
168	289	FG_Y_PIEOff[3]	0		media 3 on I/O unit
Check sum					
169	293	G_SUMME	169		number of positions in this file

### 3 Parameter Files for Handling on Drives

#### 3.1 SLW 3490.DAT/LW3490.DAT

Correction values for drives, defined at pos. 59 - 62 in KONFIG.DAT with D9. IBM 3490, Siemens 3590

Customer: \_\_\_\_\_  
 Installed: \_\_\_\_\_  
 Changes: \_\_\_\_\_

Line	Default	R 1	R2	Description
9	0			Release Emergency unload 0 = unload allowed 1 = unload not allowed
10	0.0			X-offset for press the unload button [mm]. Positive x-value = gripper forward
11	0.0			Y-offset for press the unload button [mm]. Positive y-value = gripper left
12	0.0			Z-offset for press the unload button [mm]. Positive z-value = gripper up
13	0.0			X-offset for the keep after an unload from the feed-position[mm]. Positive x-value = gripper forward
14	0.0			Y-offset for the keep after an unload from the feed-position [mm]. Positive y-value = gripper left
15	0.0			Z-offset for the keep after an unload from the feed-position [mm]. Positive z-value = gripper up
16	0.0			X-offset for the touch during keep for media recognition [mm]. Positive y-value = gripper forward
17	0.0			Z-offset for the last touch (keep) after the the keep timed out [mm]. Positive z-value = gripper up
18	0.0			Z-offset for the last touch (keep) after Crash during first try [mm]. Positive z-value = gripper up default = 4mm (parameter will be added)
19	0			Z-offset for endpos after GET [mm] set to -50 if you use the device keeper

### 3.2 SLW 3490A.DAT

Correction values for drives, defined at pos. 59 - 62 in KONFIG.DAT with 7.  
 Drives with ACL : IBM 3480, Siemens 3580 or a second type 3x90 with other  
 Loader or unload button position.

Customer: \_\_\_\_\_  
 Installed: \_\_\_\_\_  
 Changes: \_\_\_\_\_

Line	Default	R 1	R2	Description
9	0			Release Emergency unload 0 = unload allowed 1 = unload not allowed
10	0.0			X-offset for press the unload button [mm]. Positive x-value = gripper forward
11	0.0			Y-offset for press the unload button [mm]. Positive y-value = gripper left
12	0.0			Z-offset for press the unload button [mm]. Positive z-value = gripper up
13	0.0			X-offset for the keep after an unload from the feed-position[mm]. Positive x-value = gripper forward
14	0.0			Y-offset for the keep after an unload from the feed-position [mm]. Positive y-value = gripper left
15	0.0			Z-offset for the keep after an unload from the feed-position [mm]. Positive z-value = gripper up
16	0.0			X-offset for the touch during keep for media recognition [mm]. Positive y-value = gripper forward
17	0.0			Z-offset for the last touch (keep) after the the keep timed out [mm]. Positive z-value = gripper up
18	0.0			Z-offset for the last touch (keep) after Crash during first try [mm]. Positive z-value = gripper up default = 4mm (parameter will be added)
19	0.0			Z-offset for endpos after GET [mm] set to -50 if you use the device keeper

### 3.3 SLW 3480.DAT/LW3480.DAT

---

Correction values for drives, defined at pos. 59 - 62 in KONFIG.DAT with D8.  
 Drives with flap : IBM 3480, Siemens 3580

Customer: \_\_\_\_\_

Installed: \_\_\_\_\_

Changes: \_\_\_\_\_

Line	Parameter	Default	R 1	R 2	Description
10	X_Versatz	0.0			X-offset for closing the flap [mm]. Positive x-value = gripper forward
11	Z_Versatz1	0.0			Z-offset for closing the flap in the top position [mm]. Positive z-value = gripper up
12	Z_Versatz2	0.0			Z-offset for closing the flap in the down position [mm]. Positive z-value = gripper up
13	X_Offset	0.0			X-offset for press the unload button [mm]. Positive x-value = gripper forward
14	Y_Offset	0.0			Y-offset for press the unload button [mm]. Positive y-value = gripper left
15	Z_Offset	0.0			Z-offset for press the unload button [mm]. Positive z-value = gripper up
16	D_V_Close	1.0			velocity factor for closing the flap (only for system with scanner software)

### 3.4 SLW8MM.DAT

Correction values for drives, defined at pos. 59 - 62 in KONFIG.DAT with DF for (mm tape drives).

Customer: \_\_\_\_\_  
 Installed: \_\_\_\_\_  
 Changes: \_\_\_\_\_

Line	Parameter	Default	R 1	R 2	Description
9	D_X_Schieb	0.0			X-offset for <b>PUT</b> the Cartridge in drive [mm]. positive x-value = gripper forward
10	D_Z_Schieb	0.0			Z-offset for <b>PUT</b> the Cartridge in drive [mm]. positive x-value = gripper up
11	D_X_Eject	0.0			X-offset for press the unload button [mm]. Positive x-value = gripper forward
12	D_Y_Eject	0.0			Y-offset for press the unload button [mm]. Positive y-value = gripper left
13	D_Z_Eject	0.0			Z-offset for press the unload button [mm]. Positive z-value = gripper up

### 3.5 SLWVHS.DAT

---

Correction values for drives, defined at pos. 59 - 62 in KONFIG.DAT with DV for VHS Metrum RSP-2150.

Customer: \_\_\_\_\_

Installed: \_\_\_\_\_

Changes: \_\_\_\_\_

Line	Parameter	Default	R 1	R 2	Description
9	D_X_Schieb	0.0			X-offset for <b>PUT</b> the Cartridge in drive [mm]. positive x-value = gripper forward
10	D_X_Eject	0.0			X-offset for press the unload button [mm]. Positive x-value = gripper forward
11	D_Y_Eject	0.0			Y-offset for press the unload button [mm]. Positive y-value = gripper left
12	D_Z_Eject	0.0			Z-offset for press the unload button [mm]. Positive z-value = gripper up

### 3.6 SLWODR.DAT

Correction values for drives, defined at pos. 59 - 62 in KONFIG.DAT with DO for Optical Disk Drives Reflection RF 7010E.

Customer: \_\_\_\_\_

Installed: \_\_\_\_\_

Changes: \_\_\_\_\_

Line	Parameter	Default	R 1	R 2	Description
9	D_X_Schieb	0.0			X-offset for <b>PUT</b> the Cartridge in drive for side A and B [mm]. positive x-value = gripper forward
10	D_Z_Schieb_U	0.0			Z-offset for <b>PUT</b> the Cartridge in drive for side A [mm]. positive z-value = gripper up
11	D_Z_Schieb_O	0.0			Z-offset for <b>PUT</b> the Cartridge in drive for B side [mm]. positive z-value = gripper up
12		0.0			X-offset for press the unload button [mm]. Positive x-value = gripper forward
13		0.0			Y-offset for press the unload button [mm]. Positive y-value = gripper left
14		0.0			Z-offset for press the unload button during the <b>GET</b> of the A side [mm]. Positive z-value = gripper up
15		0.0			Z-offset for press the unload button during the <b>GET</b> of the side B [mm]. Positive z-value = gripper up



### 3.7 SLWOD11.DAT

---

Correction values for drives, defined at pos. 59 - 62 in KONFIG.DAT with DP for Optical Disk Drives IBM 3595 OAD. (for media optical disk 512)

Customer: \_\_\_\_\_

Installed: \_\_\_\_\_

Changes: \_\_\_\_\_

Line	Parameter	Default	R 1	R 2	Description
9	D_X_Schieb	0.0			X-offset for <b>PUT</b> the Cartridge in drive for side A and B [mm]. positive x-value = gripper forward
10	D_Z_Schieb_U	0.0			Z-offset for <b>PUT</b> the Cartridge in drive for side A [mm]. positive z-value = gripper up
11	D_Z_Schieb_O	0.0			Z-offset for <b>PUT</b> the Cartridge in drive for B side [mm]. positive z-value = gripper up
12		0.0			X-offset for press the unload button [mm]. Positive x-value = gripper forward
13		0.0			Y-offset for press the unload button [mm]. Positive y-value = gripper left
14		0.0			Z-offset for press the unload button during the <b>GET</b> of the A side [mm]. Positive z-value = gripper up
15		0.0			Z-offset for press the unload button during the <b>GET</b> of the side B [mm]. Positive z-value = gripper up

### 3.8 SLWODJU.DAT

Correction values for drives, defined at pos. 59 - 62 in KONFIG.DAT with DJ for Optical Disk Juke box IBM3595.

Customer: \_\_\_\_\_

Installed: \_\_\_\_\_

Changes: \_\_\_\_\_

Line	Parameter	Default	R 1	R 2	Description
9	D_X_Schieb	0.0			X-offset for <b>PUT</b> the Cartridge in drive for side A and B [mm]. positive x-value = gripper forward
10	D_Z_Schieb_U	0.0			Z-offset for <b>PUT</b> the Cartridge in drive for side A [mm]. positive z-value = gripper up
11	D_Z_Schieb_O	0.0			Z-offset for <b>PUT</b> the Cartridge in drive for B side [mm]. positive z-value = gripper up

### 3.9 SLWDUMMY.DAT

Correction values for drives, defined at pos. 59 - 62 in KONFIG.DAT with DD for new drives for 3480 cartridges with 0° handling.

Customer: \_\_\_\_\_

Installed: \_\_\_\_\_

Changes: \_\_\_\_\_

Line	Parameter	Default	R 1	R 2	Description
8	D_X_PUT_1	120.0			x-value for moving the cartridge into the drive at <b>Put</b>
9	D_Vel_Fact	1.0			factor for velocity to move cartridge into drive
10	D_X_PUT2	50.0			y-value for pushing cartridge into the drive
11	G_Push_Vel	50			velocity for pushing cartridge into the drive
12	D_Z_PUT	0.0			z-value for pushing cartridge into the drive
13	D_Wait_Push	0.0			x-value for moving to the drive to <b>GET</b> the cartridge
14	D_X_GET 1	130.0			wait time before gripper is closed after detecting the cartridge with the CASS_DA sensor
15	D_Wait_Get	0.3			x-value for moving to the first button
16	D_X_EJECT11	10.0			y-value for moving to the first button
17	D_Y_EJECT11	10.0			z-value for moving to the first button
18	D_Z_EJECT11	10.0			z-value for pressing the first button
19	D_X_EJECT12	10.0			1 = press a second button
20	G_Scnd_Btn	0			y-value for moving to the first button
21	D_X_EJECT21	0.0			x-value for moving to the 2nd button
22	D_Y_EJECT21	0.0			y-value for moving to the 2nd button
23	D_Z_EJECT21	0.0			z-value for moving to the 2nd button
24	D_X_EJECT22	10.0			x-value for pressing the 2nd button

### 3.10 SLWSTK90.DAT

Correction values for drives, defined at pos. 59 - 62 in KONFIG.DAT with DL.  
 Drives with flap : STK 9490 Timberline

Customer: \_\_\_\_\_  
 Installed: \_\_\_\_\_  
 Changes: \_\_\_\_\_

Line	Parameter	Default	R 1	R 2	Description
10	X_Versatz	0.0			X-offset for closing the flap [mm]. Positive x-value = gripper forward
11	Z_Versatz1	0.0			Z-offset for closing the flap in the top position [mm]. Positive z-value = gripper up
12	Z_Versatz2	0.0			Z-offset for closing the flap in the down position [mm]. Positive z-value = gripper up
13		1.0			1=close flap at PUT

### 3.11 SLW5190/LW5190.DAT

---

Correction values for drives, defined at pos. 59 - 62 in KONFIG.DAT with DU. ap  
: TANDEM 5190

Customer: \_\_\_\_\_

Installed: \_\_\_\_\_

Changes: \_\_\_\_\_

Line	Parameter	Default	R 1	R 2	Description
5	D_Push_Fact	1.0			factor for velocity to push the cartridge into the drive
6	D_Delay	0.0			delay time after pushing the cartridge into the drive
7	D_Push_Z	0.0			Z-movement during push into the drive, to avoid contact with the drive (special for handling Overland drives)

### 3.12 SLW 7480.DAT

Correction values for drives, defined at pos. 59 - 62 in KONFIG.DAT with D2.  
Hitachi drive 7480, COMPAREX 6380 or Fujitsu M2488E

Customer: \_\_\_\_\_  
 Installed: \_\_\_\_\_  
 Changes: \_\_\_\_\_

Line	Default	R 1	R2	Name	Description
10	0			G_Fuj	drive type 0 = Hitachi 7480 1 = Fujitsu 2488E
11	1.0			D_Push_Fact :	factor of the speed during the put in the drive
12	0.0			D_P_Delay	Wait time in seconds after the pushing
13	0.8			D_G_Delay	Wait time in seconds after cartridge recognition during get
14	0.0			D_Push_X	X-offset for the pushing [mm]. Positive x-value = gripper forward
15	0.0			D_Push_Z	Z-offset for the pushing [mm]. Positive z-value = gripper up
16	0.0			D_Chk_X	<b>Only for Fujitsu:</b> X-offset for the check that cartridges is loaded [mm]. Positive x-value = gripper forward
17	0.0			D_Chk_Z	<b>Only for Fujitsu:</b> Z-offset for the check that cartridges is loaded [mm]. Positive z-value = gripper up
18	1.0			D_De-Chek	<b>Only for Fujitsu:</b> Wait time after pushing until the cartridge check [s].
19	0.5			D_De-Push2	<b>Only for Fujitsu:</b> Wait time after detected re eject during put until the next recovery pushing [s].

## 4 Parameters of the Robot Amplifier

Customer: \_\_\_\_\_ Installed: \_\_\_\_\_  
 \_\_\_\_\_ Changes: \_\_\_\_\_

### Parameters of the Robot Amplifier (10 MHz) MOOG

Parameter	Com.	Axis 1	R 1	R 2	Axis 2	R 1	R 2
Drive Initialization							
RHO Sample Period	ms	20			20		
Controller Type		T161 212			T161 211		
Motor ID	M	D313 L15			D313 L05		
KT	Nm/A	0.4			0.31		
No Motor Poles		8			8		
Current Limit	A	15			6,5		
max. Speed	RPM						
Parameter							
Velocity Loop Gain	Nm/ (Rad/s)	SP	0.07		0.02		
Integral Time Const.	s	SI	0.015		0.015		
Position Loop Gain	(Rad/s) / Rad	SG	17		17		
2nd Ord. Filter Frequency	Hz	SW	250		250		
2nd Filter Damping		SZ	0.7		0.7		
Acceleration	Rad/s <sup>2</sup>	SA	300000		300000		
Maximum Speeds		SL					
Automatic Mode Max.	RPM		4520	3450		4600	
Manual Mode Max.	RPM		4520	3450		4600	
Emerg. Braking Speed	RPM		1			1	
Torque Limit		ST					
Automatic Torque Limit	Nm		2,5			1,6	
Manual Torque Limit	Nm		0,5			0.3	
Emergency Torque Limit	Nm		2,5			1,6	
Emergency Deceleration	Rad/s <sup>2</sup>	SE	2000	2094		3141	
Posn. Scaling	Rev/10V	SR	1			1	
Vel. Scaling	RPM/10V	SN	10000			10000	
Options							
CAN Direrction of Rotation		OD	Plus			Minus	
Home Position Offset		OO	0			0	
CAN Position Scaling		OR	16384			16384	
Information							
You cannot enter any of the following factors!							
Gear factor			131	100		100	
Transmission	mm/Rev, °/Rev		2,75	3,6		3,6	
File name on diskette			A1G131. PRS	A1G100. PRS		A2G100.PRS	



### Parameters of the Robot Amplifier 16 MHz (BOSCH)

Parameter	Com.	Axis 1	R 1	R 2	Axis 2	R 1	R 2
Software Version	LV	B80860-001			B80860-001		
User Version	C	1			2		
Controller Type		SM 4,7/20-GC			SM 3,5/8-GC		
Motor ID	ms	SM	sg-ax1.016.060		sg-ax1.006.072		
Following Error	SF	400			400		
Static Loop Error	SS	Disabled (1023)			Disabled (1023)		
Signal on Tp10	OTA	3			3		
Signal on Tp3	OTB	0			0		
Input Offset	OI	(0.0)			(0.0)		
Can Position Scaling	OR	Revs/16384			Revs/16384		
Actual Pos. Offset	OO	(0.0)			(0.0)		
Pos. Compensator Type	OC	Non-Decimated			Non-Decimated		
Vel. Compensator Type	OC	2nd ord. filter			2nd ord. filter		
Reference Source	OR	CAN			CAN		
Can Direction Flg	OD	Plus			Minus		
No Motor Poles	SM	8			8		
Calc. Factor Kr	SM	3.419E-1			2.620E-1		
Motor Current Limit	SM	1.498E 1			6.480E 0		
Peak Torque							
Velocity Scaling	SN	1.000E 4			1.000E 4		
Position Scaling	SR	1.000E 0			1.000E 0		
Velocity Loop Gain	SP	6.999E-2			1.999E-2		
Ti	s	SI	1.440E-2		1.440E-2		
Position Loop Gain	SG	1.690E 1			1.690E 1		
Torque Filter Freq.	Hz	SW	2.499E 2		2.499E 2		
Torque Filter Zeta		SZ	7.000E-1		7.000E-1		
Emergency Deceleration		SE	1.983E 3   2.080E 3		3.136E 3		
Auto. Current Limit	A	ST	7.095E 0		5.852E 0		
Man. Current Limit	A	ST	1.387E 0		1.083E 0		
Emer. Current Limit	A	ST	7.095E 0		5.852E 0		
Auto. Mode Max RPM	RPM	SL	4.519E 3   3.450E 3		4.599E 3		
Man. Mode Max RPM	RPM	SL	4.519E 3   3.450E 3		4.599E 3		
Emer.Braking Speed	RPM	SL	1.000E 0		1.000E 0		
R2ph		SM	4.4950E 0		1.3900E 1		
L2ph		SM					
Maximum Motor RPM		LM	8.000E 3		1.050E 4		
Motor Rated RPM		LM	4.900E 3		4.900E 3		
Comm. Cycle Period	ms	SC	1.999E-2		1.999E-2		
Pos'n Limit Switches		OL					
CClkwise Limit Pos'n		OL	99999999		99999999		
Clkwise Limit Pos'n		OL	99999999		99999999		
Thermal Protection		OW	Disabled		Disabled		
Gear factor			131	100	100		
Transmission	°/RPM		2,75	3,6	3,6		
MCO Jumper			L2-L3		L1-L2		
File Name on Diskette			BA1G131. PRS	BA1G100. PRS	BA2G100.PRS		



## Parameters of the Robot Amplifier

### Parameters of the Robot Amplifier (10 MHz) MOOG

Parameter	Com.	Axis 3	R 1	R 2	Axis 4	R 1	R 2
Drive Initialization							
RHO Sample Period	ms	20			20		
Controller Type		T161 211			T161 211		
Motor ID	M	D312 L05			D312 L05		
KT	Nm/A	0.26			0.26		
No Motor Poles		8			8		
Current Limit	A	2.6			2.6		
max. Speed	RPM						
Parameter							
Velocity Loop Gain	Nm/ (Rad/s)	SP	0.006		0.0055		
Integral Time Const.	s	SI	0.02		0.02		
Position Loop Gain	(Rad/s) / Rad	SG	17		17		
2nd Ord. Filter Frequency	Hz	SW	250		250		
2nd Filter Damping		SZ	0.7		0.7		
Acceleration	Rad/s <sup>2</sup>	SA	300000		300000		
Maximum Speeds							
Automatic Mode Max.	RPM	SL	8050		4059		
Manual Mode Max.	RPM		1725		846		
Emerg. Braking Speed	RPM		100		1		
Torque Limit							
Automatic Torque Limit	Nm	ST	0.585		0.585		
Manual Torque Limit	Nm		0,15		0.1		
Emergency Torque Limit	Nm		0,585		0,585		
Emergency Deceleration	Rad/s <sup>2</sup>	SE	10470		286		
Posn. Scaling	Rev/10V	SR	1		1		
Vel. Scaling	RPM/10V	SN	10000		10000		
Options							
CAN Direrction of Rotation		OD	Plus		Plus		
Home Position Offset		OO	0		0		
CAN Position Scaling		OR	8192		16384		
Information							
You cannot enter any of the following factors!							
Gear factor			60		29,41		
Transmission	mm/Rev, °/Rev		6		12,24		
File name on diskette			A3G60.PRS		A4G29.PRS		



### Parameters of the Robot Amplifier 16 MHz (BOSCH)

Parameter	Com.	Axis 3	R 1	R 2	Axis 4	R 1	R 2
Software Version	LV	B80860-001			B80860-001		
User Version	C	3			4		
Controller Type		SM 3,5/8-GC			SM 3,5/8-GC		
Motor ID	ms	SM	sg-x0.002.091		sg-x0.002.091		
Following Error	SF	400			400		
Static Loop Error	SS	Disabled (1023)			Disabled (1023)		
Signal on Tp10	OTA	3			3		
Signal on Tp3	OTB	0			0		
Input Offset	OI	(0.0)			(0.0)		
Can Position Scaling	OR	Revs/8192			Revs/16384		
Actual Pos. Offset	OO	(0.0)			(0.0)		
Pos. Compensator Type	OC	Non-Decimated			Non-Decimated		
Vel. Compensator Type	OC	2nd ord. filter			2nd ord. filter		
Reference Source	OR	CAN			CAN		
Can Direction Flg	OD	Plus			Plus		
No Motor Poles	SM	8			8		
Calc. Factor Kr	SM	2.520E-1			2.520E-1		
Motor Current Limit	SM	2.600E 0			2.600E 0		
Peak Torque							
Velocity Scaling	SN	1.000E 4			1.000E 4		
Position Scaling	SR	1.000E 0			1.000E 0		
Velocity Loop Gain	SP	5.999E-3			5.499E-3		
Ti	s	SI	1.980E-2		1.980E-2		
Position Loop Gain	SG	1.690E 1			1.690E 1		
Torque Filter Freq.	Hz	SW	2.499E 2		2.499E 2		
Torque Filter Zeta		SZ	7.000E-1		7.000E-1		
Emergency Deceleration		SE	1.046E 4		2.560E 2		
Auto. Current Limit	A	ST	2.600E 0		2.600E 0		
Man. Current Limit	A	ST	3.939E-1		3.939E-1		
Emer. Current Limit	A	ST	2.600E 0		2.600E 0		
Auto. Mode Max RPM	RPM	SL	8.050E 3		4.059E 3		
Man. Mode Max RPM	RPM	SL	1.725E 3		8.460E 2		
Emer.Braking Speed	RPM	SL	1.000E 2		1.000E 0		
R2ph		SM	5.039E 1		5.039E 1		
L2ph		SM					
Maximum Motor RPM		LM	1.199E 4		1.199E 4		
Motor Rated RPM		LM					
Comm. Cycle Period	ms	SC	1.999E-2		1.999E-2		
Pos'n Limit Switches		OL					
CCLKwise Limit Pos'n		OL	99999999		99999999		
CLKwise Limit Pos'n		OL	99999999		99999999		
Thermal Protection		OW	Disabled		Disabled		
Gear factor			60		29,41		
Transmission	°/RPM		6		12.24		
MCO Jumper			L1-L2		L1-L2		
File name on diskette			BA3G60.PRS		BA4G29.PRS		

## Parameters of the Robot Amplifier

### Parameter of the Robot Amplifier (10 MHz) MOOG

Parameter	Com.	Axis 5	R 1	R 2	Axis 6	R 1	R 2
Drive Initialization							
RHO Sample Period	ms	20			20		
Controller Type		T161 213			T161 213		
Motor ID	M	D315 L10			D314 L20		
KT	Nm/A	0.59			0.62		
No Motor Poles		12			12		
Current Limit	A	25			306		
max. Speed	RPM	5800					
Parameter							
Velocity Loop Gain	Nm/ (Rad/s)	SP	0.2		0.15		
Integral Time Const.	s	SI	0.1		0.015		
Position Loop Gain	(Rad/s) / Rad	SG	17		17		
2nd Ord. Filter Frequency	Hz	SW	250		250		
2nd Filter Damping		SZ	0.7		0.7		
Acceleration	Rad/s <sup>2</sup>	SA	300000		300000		
Maximum Speeds							
Automatic Mode Max.	RPM	SL	3763		3191		
Manual Mode Max.	RPM		251		319		
Emerg. Braking Speed	RPM		1		100		
Torque Limit							
Automatic Torque Limit	Nm	ST	11.25		16.1		
Manual Torque Limit	Nm		2		6.5		
Emergency Torque Limit	Nm		11.25		16.1		
Emergency Deceleration	Rad/s <sup>2</sup>	SE	459		1164		
Posn. Scaling	Rev/10V	SR	1		1		
Vel. Scaling	RPM/10V	SN	10000		10000		
Options							
CAN Direrction of Rotation		OD	Minus		Minus		
Home Position Offset		OO	0		0		
CAN Position Scaling		OR	16384		16384		
Information							
You cannot enter any of the following factors!							
Gear factor			8		9,25		
Transmission	mm/Rev, °/Rev		27,5		21,6		
File name on diskette			A5G8.PRS		A6G9.PRS		



### Parameter of the Robot Amplifier 16 MHz (BOSCH)

Parameter	Com.	Axis 5	R 1	R 2	Axis 6	R 1	R 2
Software Version	LV	B80860-002			B80860-001		
User Version	C	5			6		
Controller Type		SM 6,5/30-GC16			SM 3,5/8-GC		
Motor ID	ms	SM	sg-a3.055.049		sg-x0.002.091		
Following Error	SF	Disabled			Disabled		
Static Loop Error	SS	Disabled (1023)			Disabled (1023)		
Signal on Tp10	OTA	3			3		
Signal on Tp3	OTB	1			1		
Input Offset	OI	(0.0)			(0.0)		
Can Position Scaling	OR	Revs/16384			Revs/16384		
Actual Pos. Offset	OO	(0.0)			(0.0)		
Pos. Compensator Type	OC	Non-Decimated			Non-Decimated		
Vel. Compensator Type	OC	2nd ord. filter			2nd ord. filter		
Reference Source	OR	CAN			CAN		
Can Direction Flg	OD	Minus			Minus		
No Motor Poles	SM	12			12		
Calc. Factor Kr	SM	4.500E-1			5.360E-1		
Motor Current Limit	SM	2.996E 1			2.996E 1		
Peak Torque		1.350E 1			1.610E 1		
Velocity Scaling	SN	1.000E 4			1.000E 4		
Position Scaling	SR	1.000E 0			1.000E 0		
Velocity Loop Gain	SP	1.999E-2			1.499E-1		
Ti	s	SI	1.000E-1		1.440E-2		
Position Loop Gain	SG	1.690E 1			1.690E 1		
Torque Filter Freq.	Hz	SW	2.499E 2		2.499E 2		
Torque Filter Zeta		SZ	7.000E-1		7.000E-1		
Emergency Deceleration		SE	4.480E 2		1.151E 3		
Auto. Current Limit	A	ST	2.736E 1		2.975E 1		
Man. Current Limit	A	ST	4.891E 0		1.198E 1		
Emer. Current Limit	A	ST	2.736E 1		2.975E 1		
Auto. Mode Max RPM	RPM	SL	3.762E 3		3.190E 3		
Man. Mode Max RPM	RPM	SL	2.509E 2		3.189E 2		
Emer.Braking Speed	RPM	SL	6.000E 1		1.000E 2		
R2ph		SM	8.549E-1		5.023E 0		
L2ph		SM	4.105E 0		5.500E 0		
Maximum Motor RPM		LM	1.199E 4		3.799E 3		
Motor Rated RPM		LM	4.900E 3		4.900E 3		
Comm. Cycle Period	ms	SC	6.000E 3		1.999E-2		
Pos'n Limit Switches		OL	Diabled		Diabled		
CClkwise Limit Pos'n		OL	99999999		99999999		
Clkwise Limit Pos'n		OL	99999999		99999999		
Thermal Protection		OW	Diabled		Diabled		
Gear factor			8		9,25		
Transmission	°/RPM		27,56		21,6		
MCO Jumper			L2-L3		L1-L2		
File name on diskette			BA5G8.PRS		BA6G9.PRS		

## 5 Machine Parameters RHO3 (robot)

AML/2 robot for the operating system from TO02F/TO03G/TO05L)

Customer: \_\_\_\_\_  
 Robot-Nr.: \_\_\_\_\_  
 Installed: \_\_\_\_\_  
 Changes: \_\_\_\_\_

Parameter	Description	Default	Robot 1	Robot 2
P000	GENERAL SYSTEM PARAMETERS			
P010	SELECT LANGUAGE German (0), English (1)	0		
P013	Timer PIC 250 T2	1000	3000	3000
P100	S P E E D S			
P109	1. red. ref. pkt speed in °/s or mm/s			
	A_1	4.8	4.8	4.8
	A_2	6.4	6.4	6.4
	A_3	10.0	10.0	10.0
	A_4	20.1	20.1	20.1
	A_5	50.0	50.0	50.0
	A_6	50.0	50.0	50.0
P110	2. red. ref. pkt speed in °/s or mm/s			
	A_1	0.97	0.97	0.97
	A_2	1.28	1.28	1.28
	A_3	2.0	2.0	2.0
	A_4	2.0	2.0	2.0
	A_5	10.0	10.0	10.0
	A_6	10.0	10.0	10.0
P200	P O S I T I O N S			
P202	SOFTWARE LIMIT SWITCH POSITIVE WC in ° or mm			
	X_K	800.10	800.10	800.10
	Y_K	800.10	800.10	800.10
	Z_K	410.00	410.00	410.00
	C_K	125.10	125.10	125.10
	H_K	99999.90		
	V_K	9999.99		

## Machine Parameters RHO3 (robot)

Parameter	Description	Default	Robot 1	Robot 2
P203	SOFTWARE LIMIT SWITCH NEGATIVE WC in ° or mm			
	X_K	-550.0	-550.0	-550.0
	Y_K	-800.10	-800.10	-800.10
	Z_K	-0.10	-0.10	-0.10
	C_K	-125.10	-125.10	-125.10
	H_K	-99999.9		
	V_K	-9999.99		
P204	SOFTWARE LIMIT SWITCH POSITIVE JC in ° or mm			
	A_1	120.10	120.10	120.10
	A_2	150.10	150.10	150.10
	A_3	410.00	410.00	410.00
	A_4	125.10	125.10	125.10
	A_5	99999.90		
	A_6	9999.99		
P205	SOFTWARE LIMIT SWITCH NEGATIVE JC in ° or mm			
	A_1	-120.10	-120.10	-120.10
	A_2	-150.10	-150.10	-150.10
	A_3	-0.10	-0.10	-0.10
	A_4	-125.10	-125.10	-125.10
	A_5	-99999.90		
	A_6	-9999.99		
P207	REFERENCE POINT POSITION in ° or mm			
	A_1	0.00		
	A_2	0.00		
	A_3	395.00		
	A_4	0.00		
	A_5	0.00		
	A_6	0.00		
P208	REFERENCE POINT OFFSET in ° or mm			
	A_1	0.00	0.00	0.00
	A_2	0.00	0.00	0.00
	A_3	0.00	0.00	0.00
	A_4	0.00	0.00	0.00
	A_5	0.00		
	A_6	0.00	0.00	0.00
P300	KIN. - SUBJ. SYSTEM - PARAMETERS			

## Machine Parameters RHO3 (robot)

Parameter	Description	Default	Robot 1	Robot 2
P307	LENGTH OF AXIS in mm, DEVIATION OF ANGLES in mm/100 mm			
	axis length 1	430.00		
	axis length 2	370.00		
	axis length 3	215.00	215.00	215.00
	axis length 4	10000.00	10000.00	10000.00
	axis length 5	0.00	0.00	0.00
P310	OFFSET OF WORLD COORDINATE SYSTEM in mm			
	X_0	0.00		
	Y_0	0.00		
	Z_0	0.00	0.00	0.00
	01_0	0.00		
	02_0	0.00	0.00	0.00
	03_0	0.00	0.00	0.00
P400	MEASURING SYSTEM PARAMETERS			
P401	CONSTRUCTION OF MEASURING SYSTEM BOARD			
	ROBI_1			
	Axis1			
	MS-CONVERSION FACTOR (Gearfactor 131)	5961.96		
	MS-CONVERSION FACTOR (Gearfactor 100)	4551.11		
P402	REFERENCING DIRECTION -1 = negative 0 = no referencing +1 = positive			
	ROBI_1			
	A_1	1		
	A_2	1		
	A_3	1	1	1
	A_4	-1		
	A_5	-1	-1	-1
	A_6	-1	-1	-1

**Communication Parameter Rho Control - Barcode Read System**

MODE, 9, MODE, 1, MODE, 4 (Default settings read/write SER\_2)

	<b>Scanner (Default)</b>	<b>Vision (Rel. 1.7.2)</b>	<b>Vision (Rel. 1.5, 1.6)</b>	<b>Robot 1</b>	<b>Robot 2</b>
Protocol	4	7	7		
Interface	1	1	1	1	1
Baudrate	9600	9600	9600	9600	9600
Stop-Bit number	1.0	1.0	2.0		
Parity (0, 1, 2)	2 (even)	2 (even)	0 (no)		
Wordlength	7	7	7	7	7
Soft_Hardw. hsk	1	1	1	1	1
Timeout read	5000	20000	20000		
Timeout write	5000	20000	20000		

**Communication Parameter Rho Control - AMU**

MODE, 9, MODE, 1, MODE, 3 (Default settings read/write SER\_1)

	<b>Default</b>	<b>Robot 1</b>	<b>Robot 2</b>
Protocol	8	8	8
Interface	0	0	0
Baudrate	9600		
Stop-Bit number	1.0	1.0	1.0
Parity (0, 1, 2)	2 (even)	2 (even)	2 (even)
Wordlength	8	8	8
Soft_Hardw. hsk	1	1	1



## 6 Configuration File for Tower Control AML/2

KONFIG.DAT Version 2.2.0

Customer: \_\_\_\_\_  
 Tower Control-No.: \_\_\_\_\_  
 Installed: \_\_\_\_\_  
 Changes: \_\_\_\_\_

Pos	Line	Parameter	Default	1	2	3	Description
1	25	T_ADR_RHO	O02				Logical address of control unit from the AMU-configuration (e.g. O02).
2	26	T_ADR_AMU	A01	A01	A01	A01	Address AMU.
3	27	G_Adr_QT1	1				Number of 1st Quadro tower of this AMU (same number as at Graphical Configuration ).
4	28	G_Adr_QT2	0				Number of 2nd Quadro tower of this AMU (same number as at Graphical Configuration ). 0 = no 2nd Quadro tower
5	29	G_Adr_QT3	0				Number of 3rd Quadro tower of this AMU (same number as at Graphical Configuration ). 0 = no 3rd Quadro tower
6 - 9		Reserve	0	0	0	0	
10	34	D_Vers_HT1	-55.000				Offset of the 1st main tower of the Quadro tower. Please use the test program for adjusting.
11	35	D_Vers_NT1	85.000				Offset of the 1st auxillary tower of the Quadro tower. Please use the test program for adjusting.
12	36	D_Vers_HT2	-55.000				Offset of the 2nd main tower of the Quadro tower. Please use the test program for adjusting.
13	37	D_Vers_NT2	85.000				Offset of the 2nd auxillary tower of the Quadro tower. Please use the test program for adjusting.
14	38	D_Vers_HT3	-55.000				Offset of the 3rd main tower of the Quadro tower. Please use the test program for adjusting.
15	39	D_Vers_NT3	85.000				Offset of the 3rd auxillary tower of the Quadro tower. Please use the test program for adjusting.
16	40	D_TIME1	180.0				Max. wait time for robot to access the turned tower.
17	41	D_TIME2	60.0	60.0	60.0	60.0	Max. wait time for robot to release the tower.
18	42	D_Speed	0.9	0.9	0.9	0.9	Max. speed of the Quadro tower.

## Configuration File for Tower Control AML/2

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Pos	Line	Parameter	Default	1	2	3	Description
19	43	G_Anz_Robo	1				Number of robots in the system (1 or 2)
20	44	G_PHG_Echo	1				0: PHG not connected, normal working conditions with AMU, test possible 1: PHG necessary, test possible, AMU necessary 2: Stand-alone test with PHG

## 7 Machine Parameter RHO3 (tower)

AML/2 tower for the operating system from TO02F/TO03G/TO05L

Customer: \_\_\_\_\_  
 Installed: \_\_\_\_\_  
 Changes: \_\_\_\_\_

Parameter	Description	Default	Control 1	Control 2	Control 3
P000	General System Parameters				
P001	Number of Kinematics	3			
P010	Select language German (0), English (1)	0			

### Communication Parameter Rho Control - AMU

MODE , 9 , MODE , 1 , MODE , 3 (default settings read/write SER\_1)

	Default	Control 1	Control 2	Control 3
Protocol	8	8	8	8
Interface	0	0	0	0
Baudrate	9600			
Stop-Bit number	1.0	1.0	1.0	1.0
Parity (0, 1, 2)	2 (even)	2 (even)	2 (even)	2 (even)
Wordlength	8	8	8	8
Soft_Hardw. hsk	1	1	1	1



## 8 Parameters of the Tower Amplifier

Customer: \_\_\_\_\_ Installed: \_\_\_\_\_  
 \_\_\_\_\_ Changes: \_\_\_\_\_

### Parameter of the Tower Amplifier (10 MHz) MOOG

Parameter	Com.	Main tower	1	2	3	Aux. tower	1	2	3
Drive Initialization									
RHO Sample Period	ms		20			20			
Controller Type			T161 213			T161 213			
Motor ID		M	D315 L10			D315 L10			
KT	Nm/A		0.59			0.59			
No Motor Poles			12			12			
Current Limit	A		25			25			
max. Speed	RPM		5800			5800			
Parameter									
Velocity Loop Gain	Nm/(Rad/s)	SP	0.4			0.2			
Integral Time Const.	s	SI	0.025			0.025			
Position Loop Gain	(Rad/s) / Rad	SG	6			6			
2nd Ord. Filter Frequency	Hz	SW	250			250			
2nd Filter Damping		SZ	0.7			0.7			
Acceleration	Rad/s <sup>2</sup>	SA	300000			300000			
Maximum Speeds		SL							
Automatic Mode Max.	RPM		4145			3915			
Manual Mode Max.	RPM		2303			2175			
Emerg. Braking Speed	RPM		1			1			
Torque Limit		ST							
Automatic Torque Limit	Nm		8			4			
Manual Torque Limit	Nm		4			2.3			
Emergency Torque Limit	Nm		8			4			
Emergency Deceleration	Rad/s <sup>2</sup>	SE	2097			1981			
Posn. Scaling	Rev/10V	SR	1			1			
Vel. Scaling	RPM/10V	SN	10000			10000			
Options									
CAN Direrction of Rotation		OD	Minus			Minus			
Home Position Offset		OO	0			0			
CAN Position Scaling		OR	16384			16384			
<b>Information</b>									
<b>You cannot enter any of the following factors!</b>									
Gear factor			600,75			567.375			
Transmission	mm/Rev, °/Rev								
File name on diskette			HTURM.PRS			NTURM.PRS			



## Parameters of the Tower Amplifier

### Parameter of the Tower Amplifier 16 MHz (BOSCH)

Parameter	Com	Main tower	1	2	3	Aux. tower	1	2	3
Software Version	LV	B80860-002				B80860-002			
User Version	C	1				2			
Controller Type		SM 6,5/30-GC16				SM 6,5/30-GC16			
Motor ID	SM	sg-a3.055.049				sg-a3.055.049			
Following Error	SF	Disabled				Disabled			
Static Loop Error	SS	Disabled				Disabled			
Signal on Tp10	OTA	3				3			
Signal on Tp3	OTB	1				1			
Input Offset	OI	(0.0)				(0.0)			
Can Position Scaling	OR	Revs/16384				Revs/16384			
Actual Pos. Offset	OO	(0.0)				(0.0)			
Pos. Compensator Type	OC	Non-Decimated				Non-Decimated			
Vel. Compensator Type	OC	2nd ord. filter				2nd ord. filter			
Reference Source	OR	CAN				CAN			
Can Direction Flg	OD	Minus				Minus			
No Motor Poles	SM	12				12			
Calc. Factor Kr	SM	4.500E-1				4.500E-1			
Motor Current Limit	SM	2.996E 1				2.996E 1			
Peak Torque		1.350E 1				1.350E 1			
Velocity Scaling	SN	1.000E 4				1.000E 4			
Position Scaling	SR	1.000E 0				1.000E 0			
Velocity Loop Gain	SP	3.999E-1				1.999E-1			
Ti	s	SI	2.500E-2			2.500E-2			
Position Loop Gain		SG	6.000E 0			6.000E 0			
Torque Filter Freq.	Hz	SW	2.499E 2			2.499E 2			
Torque Filter Zeta		SZ	7.000E-1			7.000E-1			
Emergency Deceleration		SE	2.080E 3			1.951E 3			
Auto. Current Limit	A	ST	1.766E 1			9.783E 1			
Man. Current Limit	A	ST	8.873E 0			5.579E 0			
Emer. Current Limit	A	ST	1.766E 1			9.783E 1			
Auto. Mode Max RPM	RPM	SL	4.144E 3			3.915E 3			
Man. Mode Max RPM	RPM	SL	2.302E 3			2.174E 3			
Emer.Braking Speed	RPM	SL	6.000E 1			6.000E 1			
R2ph		SM	8.699E-1			8.599E-1			
L2ph		SM	4.105E 0			4.105E 0			
Maximum Motor RPM		LM	6.000E 3			6.000E 3			
Motor Rated RPM		LM	4.900E 3			4.900E 3			
Comm. Cycle Period		SC	1.999E-2			1.999E-2			
Pos'n Limit Switches		OL	Disabled			Disabled			
CCLKwise Limit Pos'n		OL	99999999			99999999			
CLKwise Limit Pos'n		OL	99999999			99999999			
Thermal Protection		OW	Disabled			Disabled			
Gear factor / Tansmission			600.75			567.375			
MCO Jumper			L2-L3			L2-L3			
File name on diskette			BHTURM.PRS			BNTURM.PRS			

## Parameters of the Tower Amplifier

### Parameter of the Tower Amplifier (10 MHz) MOOG

Parameter		com.	Main tower	4	5	6	Aux. tower	4	5	6
Drive Initialisation										
RHO Sample Period	ms		20				20			
Controller Type			T161 213				T161 213			
Motor ID		M	D315 L10				D315 L10			
KT	Nm/A		0.59				0.59			
No Motor Poles			12				12			
Current Limit	A		25				25			
max. Speed	RPM		5800				5800			
Parameter										
Velocity Loop Gain	Nm/ (Rad/s)	SP	0.4				0.2			
Integral Time Const.	s	SI	0.025				0.025			
Position Loop Gain	(Rad/s) / Rad	SG	6				6			
2nd Ord. Filter Frequency	Hz	SW	250				250			
2nd Filter Damping		SZ	0.7				0.7			
Acceleration	Rad/s <sup>2</sup>	SA	300000				300000			
Maximum Speeds										
Automatic Mode Max.	RPM	SL	4145				3915			
Manual Mode Max.	RPM		2303				2175			
Emerg. Braking Speed	RPM		1				1			
Torque Limit										
Automatic Torque Limit	Nm	ST	8				4			
Manual Torque Limit	Nm		4				2.3			
Emergency Torque Limit	Nm		8				4			
Emergency Deceleration	Rad/s <sup>2</sup>	SE	2097				1981			
Posn. Scaling	Rev/10V	SR	1				1			
Vel. Scaling	RPM/ 10V	SN	10000				10000			
Options										
CAN Direrction of Rotation		OD	Minus				Minus			
Home Position Offset		OO	0				0			
CAN Position Scaling		OR	16384				16384			
<b>Information</b>										
<b>You cannot enter any of the following factors!</b>										
Gear factor			600,75				567.375			
Transmission	mm/Rev, °/Rev									
File Name on Diskette			HTURM.PRS				NTURM.PRS			



## Parameters of the Tower Amplifier

### Parameter of the Tower Amplifier 16 MHz (BOSCH)

Parameter	com.	Main tower	4	5	6	Aux. tower	4	5	6
Software Version	LV	B80860-002				B80860-002			
User Version	C	1				2			
Controller Type		SM 6,5/30-GC16				SM 6,5/30-GC16			
Motor ID	SM	sg-a3.055.049				sg-a3.055.049			
Following Error	SF	Disabled				Disabled			
Static Loop Error	SS	Disabled				Disabled			
Signal on Tp10	OTA	3				3			
Signal on Tp3	OTB	1				1			
Input Offset	OI	(0.0)				(0.0)			
Can Position Scaling	OR	Revs/16384				Revs/16384			
Actual Pos. Offset	OO	(0.0)				(0.0)			
Pos. Compensator Type	OC	Non-Decimated				Non-Decimated			
Vel. Compensator Type	OC	2nd ord. filter				2nd ord. filter			
Reference Source	OR	CAN				CAN			
Can Direction Flg	OD	Minus				Minus			
No Motor Poles	SM	12				12			
Calc. Factor Kr	SM	4.500E-1				4.500E-1			
Motor Current Limit	SM	2.996E 1				2.996E 1			
Peak Torque		1.350E 1				1.350E 1			
Velocity Scaling	SN	1.000E 4				1.000E 4			
Position Scaling	SR	1.000E 0				1.000E 0			
Velocity Loop Gain	SP	3.999E-1				1.999E-1			
Ti	s	SI	2.500E-2			2.500E-2			
Position Loop Gain		SG	6.000E 0			6.000E 0			
Torque Filter Freq.	Hz	SW	2.499E 2			2.499E 2			
Torque Filter Zeta		SZ	7.000E-1			7.000E-1			
Emergency Deceleration		SE	2.080E 3			1.951E 3			
Auto. Current Limit	A	ST	1.766E 1			9.783E 1			
Man. Current Limit	A	ST	8.873E 0			5.579E 0			
Emer. Current Limit	A	ST	1.766E 1			9.783E 1			
Auto. Mode Max RPM	RPM	SL	4.144E 3			3.915E 3			
Man. Mode Max RPM	RPM	SL	2.302E 3			2.174E 3			
Emer.Braking Speed	RPM	SL	6.000E 1			6.000E 1			
R2ph		SM	8.699E-1			8.599E-1			
L2ph		SM	4.105E 0			4.105E 0			
Maximum Motor RPM		LM	6.000E 3			6.000E 3			
Motor Rated RPM		LM	4.900E 3			4.900E 3			
Comm. Cycle Period		SC	1.999E-2			1.999E-2			
Pos'n Limit Switches		OL	Disabled			Disabled			
CCLKwise Limit Pos'n		OL	99999999			99999999			
CLKwise Limit Pos'n		OL	99999999			99999999			
Thermal Protection		OW	Disabled			Disabled			
gear factor / tansmission			600.75			567.375			
MCO Jumper			L2-L3			L2-L3			
File Name on Diskette			BHTURM.PRS			BNTURM.PRS			



## Parameters of the Tower Amplifier

### Parameter of the Tower Amplifier (10 MHz) MOOG

Parameter		Com.	Main tower	7	8	9	Aux. tower	7	8	9
Drive Initialization										
RHO Sample Period	ms		20				20			
Controller Type			T161 213				T161 213			
Motor ID		M	D315 L10				D315 L10			
KT	Nm/A		0.59				0.59			
No Motor Poles			12				12			
Current Limit	A		25				25			
max. Speed	RPM		5800				5800			
Parameter										
Velocity Loop Gain	Nm/ (Rad/s)	SP	0.4				0.2			
Integral Time Const.	s	SI	0.025				0.025			
Position Loop Gain	(Rad/s)/ Rad	SG	6				6			
2nd Ord. Filter Frequency	Hz	SW	250				250			
2nd Filter Damping		SZ	0.7				0.7			
Acceleration	Rad/s <sup>2</sup>	SA	300000				300000			
Maximum Speeds		SL								
Automatic Mode Max.	RPM		4145				3915			
Manual Mode Max.	RPM		2303				2175			
Emerg. Braking Speed	RPM		1				1			
Torque Limit		ST								
Automatic Torque Limit	Nm		8				4			
Manual Torque Limit	Nm		4				2.3			
Emergency Torque Limit	Nm		8				4			
Emergency Deceleration	Rad/s <sup>2</sup>	SE	2097				1981			
Posn. Scaling	Rev/10V	SR	1				1			
Vel. Scaling	RPM/ 10V	SN	10000				10000			
Options										
CAN Direction of Rotation		OD	Minus				Minus			
Home Position Offset		OO	0				0			
CAN Position Scaling		OR	16384				16384			
<b>Information</b>										
<b>You cannot enter any of the following factors!</b>										
Gear factor			600,75				567.375			
Transmission	mm/Rev, °/Rev									
File Name on diskette			HTURM.PRS				NTURM.PRS			



Parameters of the Tower Amplifier 16 MHz (BOSCH)

Parameter	Com	Main tower	7	8	9	Aux. tower	7	8	9
Software Version	LV	B80860-002				B80860-002			
User Version	C	1				2			
Controller Type		SM 6,5/30-GC16				SM 6,5/30-GC16			
Motor ID	SM	sg-a3.055.049				sg-a3.055.049			
Following Error	SF	Disabled				Disabled			
Static Loop Error	SS	Disabled				Disabled			
Signal on Tp10	OTA	3				3			
Signal on Tp3	OTB	1				1			
Input Offset	OI	(0.0)				(0.0)			
Can Position Scaling	OR	Revs/16384				Revs/16384			
Actual Pos. Offset	OO	(0.0)				(0.0)			
Pos. Compensator Type	OC	Non-Decimated				Non-Decimated			
Vel. Compensator Type	OC	2nd ord. filter				2nd ord. filter			
Reference Source	OR	CAN				CAN			
Can Direction Flg	OD	Minus				Minus			
No Motor Poles	SM	12				12			
Calc. Factor Kr	SM	4.500E-1				4.500E-1			
Motor Current Limit	SM	2.996E 1				2.996E 1			
Peak Torque		1.350E 1				1.350E 1			
Velocity Scaling	SN	1.000E 4				1.000E 4			
Position Scaling	SR	1.000E 0				1.000E 0			
Velocity Loop Gain	SP	3.999E-1				1.999E-1			
Ti	s	SI	2.500E-2			2.500E-2			
Position Loop Gain	SG	6.000E 0				6.000E 0			
Torque Filter Freq.	Hz	SW	2.499E 2			2.499E 2			
Torque Filter Zeta		SZ	7.000E-1			7.000E-1			
Emergency Deceleration		SE	2.080E 3			1.951E 3			
Auto. Current Limit	A	ST	1.766E 1			9.783E 1			
Man. Current Limit	A	ST	8.873E 0			5.579E 0			
Emer. Current Limit	A	ST	1.766E 1			9.783E 1			
Auto. Mode Max RPM	RPM	SL	4.144E 3			3.915E 3			
Man. Mode Max RPM	RPM	SL	2.302E 3			2.174E 3			
Emer.Braking Speed	RPM	SL	6.000E 1			6.000E 1			
R2ph		SM	8.699E-1			8.599E-1			
L2ph		SM	4.105E 0			4.105E 0			
Maximum Motor RPM		LM	6.000E 3			6.000E 3			
Motor Rated RPM		LM	4.900E 3			4.900E 3			
Comm. Cycle Period		SC	1.999E-2			1.999E-2			
Pos'n Limit Switches		OL	Disabled			Disabled			
CCLkwise Limit Pos'n		OL	99999999			99999999			
Clkwise Limit Pos'n		OL	99999999			99999999			
Thermal Protection		OW	Disabled			Disabled			
Gear factor / Tansmission			600.75			567.375			
MCO Jumper			L2-L3			L2-L3			
File name on diskette			BHTURM.PRS			BNTURM.PRS			