

6.	Standard Interface for CNC	6 - 2
6.1	Free flag areas	6 - 2
6.2	Flag indicator SYSAWA - SYSAWE	6 - 3
6.3	Flag area keys PLC < --- > CNC	3 - 6
6.4	Flag area PLCCNCA - PLCCNCE	6 -17
6.5	Axis-referred status flags of SERCOS/CAN drives	6 -32
6.6	Axis-referred regulator release flags of SERCOS/CAN drives	6 -35
6.7	Reserved flag areas	6 -36

6. Standard interface for CNC

6.1 Free flag areas

The flags are divided into the following areas:

Flag area **M1.1 - M32.16**

Freely for the user. The flags are reset in the switching on routine.

Flag area **SPSPROA - SPSPROE**

Reserved for flag operating panel < —> PLC

The flags are not reset in the switching on routine.

Register BILDNR, shows the number of the selected picture on the operating panel (presently not actively)

Within the area SPSPROA - flag area CNC end (at present M159.16) are flags, which are used by the PROMA pictures of the standard surface CNC.

In the area flags PLC < —> PROMA (at present M160.1) SPSPROE are flags, which of the PROMA pictures of the user surface e.g. BWO900 are used.

Flag area **KANF - KENDE**

Freely for users. The flags are reset in the switching on routine.

Flag area **KUNDEA - KENDEE**

Remanent flags. Freely for users. The flags are not reset in the switching on routine.

6.2 Flag area SYSAWA - SYSAWE

The flags are placed from the system to the order. The user can do these flags use or test. The flags are reset in the switching on routine.

This area is divided into the following subranges:

Flag area **TIMER1 - TIMER-END**

reserved for timer building blocks.

Flag area **Z1 - Z20**

reserved for counting modules.

Flag area **TOGG1 - TOGG20**

reserved for Toggle Flip Flop building blocks.

Flag area **TRIG1 - TRIG20**

reserved for trigger modules.

Flag area **RS1 - RS20**

reserved for RS Flip Flop building blocks.

Flag area **SK1 - SK20**

reserved for step chain building blocks

Flag area **AX1AG - AX8AG**

The indicator AX1AG is setting H, if the 1. axis selected by the operating console actual.

Flag area **REFE1 - REFE8**

The indicator REFE1 is setting H, if the point of reference of the 1. axis taken and the basic position started actual. The flags can be queried by the user.

6.2 Flag area SYSAWA - SYSAWE (continued)

Flag area **STARF1 - STARF8**

The flag STARF1 is setting H, if the travel of point of reference of the 1. axis runs.
The flags can be queried by the user.

Flag area **STORF1 - STORF8**

The flag STORF1 is setting H, if the travel of point of reference of the 1. axis stopped actual.
The flags can be queried by user.

Flag area **APFA - APFE**

In this area are flags and registers for absolute and relative relative start 1. - 8. axis defines.

An absolute absolute for e.g. the 1. axis is started as follows:

- Position in register APFP1 write
- Feed in register APFVS1 write (option)
- Indicator VSS1 settings, i.e. feed is transferred at CNC, otherwise drives the axis with the feed off P12121
- Flag APF1 settings, i.e. absolute absolute will drive started
- If flag APF1 again reset actual, actual the absolute position achieves.

A relative relative for e.g. the 1. axis is started as follows:

- Position in register RPFP1 write
- Feed in register APFVS1 write (option)
- Indicator VSS1 settings, i.e. feed is transferred at CNC, otherwise drives the axis with the feed off P12121
- Flag RPF1 settings, i.e. absolute absolute will drive started
- If flag RPF1 again reset actual, actual the absolute position achieves.

If flag A/R-PFL = H becomes setting actual, the absolute or relative positioning of all axes aborted.

If flag APFL1 = H becomes setting actual, the absolute position of the 1. axis aborted.

If flag RPFL1 = H becomes setting actual, the relative position of the 1. axis aborted.

6.2 Flag area SYSAWA - SYSAWE (continued)

Flag area **PARFANF - PARFEND**

Reserved for parameters, which will transfer when describing the CNC --> PLC.
The flags are reset in the switching on routine.

Example:

In the CNC actual for each parameter of P400 - P449 in the status byte 2 bits 1 (parameter is transferred when describing to the PLC) settinged.

If P400 is described, this parameter in the flag block becomes starting from P400E stored.

If P449 is described, this parameter in the flag block becomes starting from P449E stored.

The block contains reception bits, parameter number, value, status and exponent.

Flag area **ME1 - ME499**

In the interface program 499 flags (ME1 - ME499) are prepared for messages.

If flag ME1 = H,

the message No. appears in the message line on the operating panel: 3001

If flag ME499 = H,

the message No. appears in the message line on the operating panel: 3499

The flag ME1 has the highest priority with the display,

The flag ME499 has the lowest priority with the display.

Flag area **M00_K1 - MFEND**

Reserved for m-functions

Per channel 1000 M-function-flags are defined.

1. channel M00_K1 - M999_K1

If transferred in the NC program a M-function programmed actual, these to the PLC and the suitable M-function flag settinged.

The transfer to the PLC takes place by INTERRUPTS, i.e. the M-function flag is settinged during PLC program run.

6.3 Flag area keys

CNC → PLC

The flags are setting and reset of the CNC over parameters.

Flag	Status	Meaning:	Key on the operating panel pushed
CNCTA1	H	1. axis	
CNCTA2	H	2. axis	
CNCTA3	H	3. axis	
CNCTA4	H	4. axis	
CNCTA5	H	5. axis	
CNCTA6	H	6. axis	
CNCTA7	H	7. axis	
CNCTA8	H	8. axis	
CNCTA9		-	
CNCTA10		-	
CNCTA11		-	
CNCTA12		-	
CNCTA13	H	Hand +	
CNCTA14	H	Hand -	
CNCTA15	H	Start	
CNCTA16	H	Stop	
CNCTA17		-	
CNCTA18		-	
CNCTA19		-	
CNCTA20	H	Nr. 20	(graphic/normally)
CNCTA21	H	Nr. 21	(info ?)
CNCTA22		Nr. 22	-
CNCTA23	H	Nr. 23	(diagnosis !)
CNCTA24		Nr. 24	-
CNCTA25		Nr. 25	-
CNCTA26		Nr. 26	-
CNCTA27		Nr. 27	-
CNCTA28		Nr. 28	-
CNCTA29		Nr. 29	-

6.3 Flag area keys (continued)

CNC → PLC

The flags are setting and reset of the CNC over parameters.

Flag	Status	Meaning:	Key on the operating panel pushed
CNCTA30	H	Hand	
CNCTA31	H	Cont	
CNCTA32	H	Step	
CNCTA33	H	Handwheel	
CNCTA34	H	Home	
CNCTA35	H	Automatic/F	
CNCTA36		-	
CNCTA37	H	Automatic/P	
CNCTA38	H	Editor On	
CNCTA39	H	Editor Off	

6.3 Flag area keys (continued)

CNC → PLC

The flags are setting and reset of the CNC over parameters.

Flag	Status	Meaning:	Key on the operating panel pushed
TA1	H	1. PLC key	
TA2	H	2. PLC key	
TA3	H	3. PLC key	
TA4	H	4. PLC key	
TA5	H	5. PLC key	
TA6	H	6. PLC key	
TA7	H	7. PLC key	
TA8	H	8. PLC key	

6.3 Flag area keys (continued)

CNC → PLC

The flags are setting and reset of the CNC over parameters.

Flag	Status	Meaning:	PLC key in the touch screen
TA9	H	9. PLC key	
TA10	H	10. PLC key	
TA11	H	11. PLC key	
TA12	H	12. PLC key	
TA13	H	13. PLC key	
TA14	H	14. PLC key	
TA15	H	15. PLC key	
TA16	H	16. PLC key	
TA17	H	17. PLC key	
TA18	H	18. PLC key	
TA19	H	19. PLC key	
TA20	H	20. PLC key	
TA21	H	21. PLC key	
TA22	H	22. PLC key	
TA23	H	23. PLC key	
TA24	H	24. PLC key	
TA25	H	25. PLC key	
TA26	H	26. PLC key	
TA27	H	27. PLC key	
TA28	H	28. PLC key	
TA29	H	29. PLC key	
TA30	H	30. PLC key	
TA31	H	31. PLC key	
TA32	H	32. PLC key	
TA33	H	33. PLC key	
TA34	H	34. PLC key	
TA35	H	35. PLC key	
TA36	H	36. PLC key	
TA37	H	37. PLC key	
TA38	H	38. PLC key	
TA39	H	39. PLC key	
TA40	H	40. PLC key	

6.3 Flag area keys (continued)

PLC → CNC

The flags are setting and reset of the CNC over parameters.

Flag	Status	Meaning:	LED in the PLC key on the operating panel on
LED1	H	1. PLC key	
LED2	H	2. PLC key	
LED3	H	3. PLC key	
LED4	H	4. PLC key	
LED5	H	5. PLC key	
LED6	H	6. PLC key	
LED7	H	7. PLC key	
LED8	H	8. PLC key	

6.3 Flag area keys (continued)

PLC → CNC

The flags are setting and reset of the CNC over parameters.

Flag	Status	Meaning:	LED in the PLC key in the touch screen on
LED9	H	9. PLC key	
LED10	H	10. PLC key	
LED11	H	11. PLC key	
LED12	H	12. PLC key	
LED13	H	13. PLC key	
LED14	H	14. PLC key	
LED15	H	15. PLC key	
LED16	H	16. PLC key	
LED17	H	17. PLC key	
LED18	H	18. PLC key	
LED19	H	19. PLC key	
LED20	H	20. PLC key	
LED21	H	21. PLC key	
LED22	H	22. PLC key	
LED23	H	23. PLC key	
LED24	H	24. PLC key	
LED25	H	25. PLC key	
LED26	H	26. PLC key	
LED27	H	27. PLC key	
LED28	H	28. PLC key	
LED29	H	29. PLC key	
LED30	H	30. PLC key	
LED31	H	31. PLC key	
LED32	H	32. PLC key	
LED33	H	33. PLC key	
LED34	H	34. PLC key	
LED35	H	35. PLC key	
LED36	H	36. PLC key	
LED37	H	37. PLC key	
LED38	H	38. PLC key	
LED39	H	39. PLC key	
LED40	H	40. PLC key	

6.3 Flag area keys (continued)

Function pictures

Over the menu option machine functions on the control surface, can be called the function pictures. At present 10 function pictures are available with the numbers 1-10. The selection of a function picture can be executed with the soft key keys function picture forwards and function picture back.

In the function picture can be selected with the cursor keys up and down between five functions.

Example:

In the function picture 1 actual the 1. function selected. Through the soft key left the flag F1T1P = 1 press an executing are settinged. When releasing the soft key key or when leaving the function pictures the flag F1T1P = 0 is settinged.

In the function picture 1 actual the 1. function selected. Through the soft key on the right the flag F1T6P = 1 press an executing are settinged. When releasing the soft key key or when leaving the function pictures the flag F1T6P = 0 is settinged.

Pro function picture is displayed a heading.

In function picture... becomes of the file TEXT.100

Text no... displayed.

Function picture 1	Text no.1001
Function picture 2	Text no.1002
Function picture 3	Text no.1003
Function picture 4	Text no.1004
Function picture 5	Text no.1005
Function picture 6	Text no.1006
Function picture 7	Text no.1007
Function picture 8	Text no.1008
Function picture 9	Text no.1009
Function picture10	Text no.1010

6.3 Flag area keys (continued)

The flags are settinged and reset by the operating panel.

Flag for function picture 1

Flag	Status	Meaning
FKT1_1	L	the file TEXT.100 text NR becomes off. 1 displayed
FKT1_1	H	the file TEXT.100 text NR becomes off. 257 (256 +1) displayed
F1COL1	L	text in black writing with grey background
F1COL1	H	text in black writing with green background
F1T1P	H	in function picture 1 actual function 1 selected and the soft key key executing left pushed.
FKT1_2	L	the file TEXT.100 text NR becomes off. 2 displayed
FKT1_2	H	the file TEXT.100 text NR becomes off. 258 (256 +2) displayed
F1COL2	L	text in black writing with grey background
F1COL2	H	text in black writing with green background
F1T2P	H	in function picture 1 actual function 2 selected and the soft key key executing left pushed.
FKT1_3	L	the file TEXT.100 text NR becomes off. 3 displayed
FKT1_3	H	the file TEXT.100 text NR becomes off. 259 (256 +3) displayed
F1COL3	L	text in black writing with grey background
F1COL3	H	text in black writing with green background
F1T3P	H	in function picture 1 actual function 3 selected and the soft key key executing left pushed.
FKT1_4	L	the file TEXT.100 text NR becomes off. 4 displayed
FKT1_4	H	the file TEXT.100 text NR becomes off. 260 (256 +4) displayed
F1COL4	L	text in black writing with grey background
F1COL4	H	text in black writing with green background
F1T4P	H	in function picture 1 actual function 4 selected and the soft key key executing left pushed.

6.3 Flag area keys (continued)

Flag for function picture 1 (continued)

Flag	Status	Meaning
FKT1_5	L	the file TEXT.100 text NR becomes off. 5 displayed
FKT1_5	H	the file TEXT.100 text NR becomes off. 261 (256 +5) displayed
F1COL5	L	text in black writing with grey background
F1COL5	H	text in black writing with green background
F1T5P	H	in function picture 1 actual function 5 selected and the soft key key executing left pushed.
FKT1_6	L	the file TEXT.100 text NR becomes off. 6 displayed
FKT1_6	H	the file TEXT.100 text NR becomes off. 262 (256 +6) displayed
F1COL6	L	text in black writing with grey background
F1COL6	H	text in black writing with green background
F1T6P	H	in function picture 1 actual function 6 selected and the soft key key executing left pushed.
FKT1_7	L	the file TEXT.100 text NR becomes off. 7 displayed
FKT1_7	H	the file TEXT.100 text NR becomes off. 263 (256 +7) displayed
F1COL7	L	text in black writing with grey background
FCOL7	H	text in black writing with green background
F1T7P	H	in function picture 1 actual function 7 selected and the soft key key executing left pushed.
FKT1_8	L	the file TEXT.100 text NR becomes off. 8 displayed
FKT1_8	H	the file TEXT.100 text NR becomes off. 264 (256 +8) displayed
F1COL8	L	text in black writing with grey background
F1COL8	H	text in black writing with green background
F1T8P	H	in function picture 1 actual function 8 selected and the soft key key executing left pushed.

6.3 Flag area keys (continued)

Flag for function picture 1 (continued)

Flag	Status	Meaning
FKT1_9	L	the file TEXT.100 text NR becomes off. 9 displayed
FKT1_9	H	the file TEXT.100 text NR becomes off. 265 (256 + 9) displayed
F1COL9	L	text in black writing with grey background
F1COL9	H	text in black writing with green background
F1T9P	H	in function picture 1 actual function 9 selected and the soft key key executing left pushed.
FKT1_10	L	the file TEXT.100 text NR becomes off. 10 displayed
FKT1_10	H	the file TEXT.100 text NR becomes off. 266 (256+10) displayed
F1COL10	L	text in black writing with grey background
F1COL10	H	text in black writing with green background
F1T10P	H	in function picture 1 actual function 10 selected and the soft key key executing left pushed.

6.3 Flag area keys (continued)

Flag for function picture 2

Flag	Status	Meaning
FKT2_1	L	the file TEXT.100 text NR becomes off. 11 displayed
FKT2_1	H	the file TEXT.100 text NR becomes off. 267 (256+11) displayed
F2COL1	L	text in black writing with grey background
F2COL1	H	text in black writing with green background
F2T1P	H	in function picture 2 actual function 1 selected and the soft key key executing left pushed.
FKT2_2	L	the file TEXT.100 text NR becomes off. 12 displayed
FKT2_2	H	the file TEXT.100 text NR becomes off. 268 (256+12) displayed
F2COL2	L	text in black writing with grey background
F2COL2	H	text in black writing with green background
F2T2P	H	in function picture 2 actual function 2 selected and the soft key key executing left pushed.

The further function pictures have the suitable flags.

6.4 Flag area PLCCNCA - PLCCNCE

Reserved for flag CNC < —> PLC

Flag	Status	Meaning
BPNI0		-
ME3000		-
TPE/A		-
ME2120		-
ANZIHIS	H	turquoise colored messages do not become in message history displayed
FAMEANZ	H	driving messages of CNC e.g. reference position starting becomes not displayed
HISTLOE	H	stored messages in History are reset

6.4 Flag area PLCCNCA - PLCCNCE (continued)

Channel-specific flags CNC —> PLC

The flags are settinged and reset by the PLC reason program

Flag	Status	Meaning
KA1	H	channel 1 actual selected
FRKA	H	release channel step up (flag must be settinged and reset by the user).
KAN1AG	H	channel 1 actual logged on

6.4 Flag area PLCCNCA - PLCCNCE (continued)

Channel-specific flags CNC → PLC

Flag	Status	Meaning	Parameter
HAND_K1	H	operating mode HAND selected	(P8683=1)
AUTF_K1	H	operating mode AUTOSEQUENTIAL BLOCK selected	(P8683=2)
AUTE_K1	H	operating mode AUTOSINGLE BLOCK selected	(P8683=4)
AUTP_K1	H	operating mode AUTO POSITIONING selected	(P8683=8)
BAWHAK1	H	for a PLC program run with operating mode change → HAND	
BAWAUK1	H	for a PLC program run with operating mode change → AUTOMATIC	
BAWSK1	H	operating mode change → HAND actual closed (flag must be settinged and reset by the user).	
BAWASK1	H	operating mode change → AUTO actual closed (flag must be settinged and reset by the user).	
TASTOK1	H	for a PLC Program run, if key STOP pushed actual.	
TASTAK1	H	for a PLC Program run, if key START pushed actual.	
TSTOPK1	H	if key STOP pushed actual	(P8682=1)
TSTARK1	H	if key START pushed actual	(P8682=2)
THANDK1	H	if key HAND pushed actual	(P8681=1)
FELOEK1	H	for a PLC Program run, if key hand pushed actual	
FSYSTK1	H	if error of the Interpolator with priority 1 pends i.e.. in P8500 is an error number e.g.: M2001 error limit axis X	

6.4 Flag area PLCCNCA - PLCCNCE (continued)

Channel-specific flags CNC → PLC

Flag / Register	Status	Meaning	Parameter
TFA_K1	H	transformation off / type of coordinate G47 actual actively	(P8689=47)
G48_K1	H	type of coordinate G48 actual actively	(P8681=48)
G49_K1	H	type of coordinate G49 actual actively	(P8681=49)
G00_K1	H	type of interpolation G00 actual actively	(P8940= 0)
G01_K1	H	type of interpolation G01 actual actively	(P8681= 1)
G02_K1	H	type of interpolation G02 actual actively	(P8681= 2)
G03_K1	H	type of interpolation G03 actual actively	(P8681= 3)
KONT_K1	H	driving mode continuously actual actively	(P8750= 1)
STEP_K1	H	driving mode step-by-step operation actual actively	(P8750= 2)
HARA_K1	H	driving mode handwheel actual actively	(P8750= 3)
PART_K1	H	driving mode sections actual actively	(P8750= 4)
HOME_K1	H	driving mode home actual actively	(P8750= 5)
ANAK_K1	H	automatic mode actual actively or does not terminate	(P8685= 0)
AASP_K1	H	automatic mode actual actively and stop is on	(P8685= 1)
AAST_K1	H	automatic mode actual actively and start is on	(P8685= 2)
HAND PK1	H	manual driving + direction actual actively	(P8752= 1)
HAND MK1	H	manual driving - direction actual actively	(P8652= 2)
RAGWAK1	R	here is the logical axis number the selected axis.	(P8751=1-8)
REFALK1	H	all points of reference of the logged on axes in the channel are available.	
TSPI_K1	R	here is the number of the tool, at present in the spindle the actual.	(P8100)
TNEU_K1	R	here is the number of the tool, into the spindle to be exchanged again the command.	(P8050)
PSPI_K1	R	here is the workstation number of the tool, at present in the spindle the actual.	(P8102)
TIRE_K1	R	here is the workstation number of the tool into the spindle to be exchanged again the command.	(P8052)

6.4 Flag area PLCCNCA - PLCCNCE (continued)

Channel-specific flags PLC → CNC

The flags must be settinged and reset by the user.

The transfer to the CNC is made in the reason program by system call.

Flag / Register	Status	Meaning	Parameter
REOK_K1	H	regulator release of all axes in the channel is settinged	KAN 1 P8700
KAFR_K1	H	driving release of all axes in the channel is settinged	KAN 1 P8701
SICHA_K1	H	safety stop of all axes in the channel is settinged	KAN 1 P8702
BA_K1	R	operating mode 1 = HAND 2 = AUTOSEQUENTIAL BLOCK 4 = AUTOSINGLE BLOCK 8 = AUTO POSITIONING BLOCK the values for the register BA_K1 become off the flags HAND_K1, AUTF_K1, AUTE_K1 and AUTP_K1 automatically in an educated manner.	KAN 1 P8703
STARTK1	H L	automatic program is started. automatic program is stopped. (start number is in P8800)	KAN 1 P8704
ABBRUK1	H	NC program is aborted.	KAN 1 P8705
SAFREK1	H	block release for NC program is settinged.	KAN 1 P8706
NPA1K1	H	emergency program 1 is called. (program and record number in accordance with P8820, P8821)	KAN 1 P8710

6.4 Flag area PLCCNCA - PLCCNCE (continued)

Channel-specific flags PLC → CNC

Flag	Status	Meaning	Parameter
NPA2K1	H	emergency program 2 is called. (program and record number in accordance with P8822 P8823)	KAN 1 P8711
BSP22K1	H	with M-function M22 on conditioned jump becomes after program and record number executed. (program and record number in accordance with P8830 P8831)	KAN 1 P8712
UPA27K1	H	with M-function M27 conditioned jump becomes after program and record number executed (program and record number in accordance with p8834, p8835)	KAN 1 P8713
TRWLOK1	H	trigger for remainder path will reset released.	KAN 1 P8715
TSWMTK1	H	trigger software sensor is released.	KAN 1 P8716

6.4 Flag area PLCCNCA - PLCCNCE (continued)

Axis-specific flags PLC → CNC

The flags must be settinged and reset by the user.

The transfer to the CNC is made in the reason program by system calls.

Flag	Status	Meaning	Parameter
REPOP1		1. Axis on reference position drive +	P12130/1
REPOM1		1. Axis on reference position drive -	P12130/2
REPOF1		1. Axis reference position release	P12130/3
REPOS1		1. Axis reference position setting	P12130/4
MEPOP1		1. Axis on measuring position drive +	P12131/1
MEPOM1		1. Axis on measuring position drive -	P12131/2
MEPOF1		1. Axis measuring position release	P12131/3
MEPOS1		1. Axis measuring position setting	P12131/4
NOPOA1		1. Axis emergency position absolutely drive	P12132/1
NOPOR1		1. Axis emergency position relatively drive	P12132/2
GRPOA1		1. Axis basic position absolutely drive	P12132/3
GRPOR1		1. Axis basic position relatively drive	P12132/4
FEPO1		1. Axis fixed position drive	P12133/1
PEPO1		1. Axis pendulum position drive	P12133/2
-			P12133/3
-			P12133/4
SPEP1		1. Axis spindle on +	P12134/1
SPEM1		1. Axis spindle on -	P12134/2
-			P12134/3
-			P12134/4
ELP1		1. Axis end position achieves +	P12135/1
ELM1		1. Axis end position achieves -	P12135/2
-			P12135/3
-			P12135/4
SLOP11		1. Axis slop 1	P12136/1
SLOP21		1. Axis slop 2	P12136/2
-			P12136/3
-			P12136/4

6.4 Flag area PLCCNCA - PLCCNCE (continued)

Axis-specific flags PLC → CNC

Flag	Status	Meaning	Parameter
FASPP1		1. Axis driving barrier +	P12137/1
FASPM1		1. Axis driving barrier -	P12137/2
FASOD1		1. Axis stops without dynamic function	P12137/3
-			P12137/4
SIMMA1		1. Axis simulation with output voltage	P12138/1
-			P12138/2
-			P12138/3
-			P12138/4
GSMM1		1. Axis controlled with measuring system	P12139/1
GSOM1		1. Axis controlled without measuring system	P12139/2
-			P12139/3
-			P12139/4
NGMW1		1. Axis adjusted with restarting	P12140/1
NGOW1		1. Axis adjusted without restarting	P12140/2
NGFB1		1. Axis adjusted with driving instruction	P12140/3
-			P12140/4
GEKL1		1. Axis clamped	P12141/1
GKAE1		1. Axis clamped, display frozen	P12141/2
-			P12141/3
-			P12141/4
AUSGU1		1. Axis output monitoring	P12142/1
-			P12142/2
-			P12142/3
-			P12142/4
ATEIN1		1. Axis drive on	SERCOS/CAN P12144/1
ATFRG1		1. Axis drive release	SERCOS/CAN P12144/2
ATSR31		1. Axis drive control word Byte 3	SERCOS/CAN P12144/3
ATSR41		1. Axis drive control word Byte 4	SERCOS/CAN P12144/4

6.4 Flag area PLCCNCA - PLCCNCE (continued)

Axis-specific flags CNC → PLC

The flags are setting and reset by the PLC reason program over system call.

Flag	Status	Meaning	Parameter
REF1		1. Axis point of reference started	P12180/1
REFS1		1. Axis switch of point of reference	P12180/2
-			P12180/3
-			P12180/4
MEGT1		1. Axis measuring position taken	P12181/1
MES1		1. Axis measuring input switch	P12181/2
-			P12181/3
-			P12181/4
NOPOE1		1. Axis emergency position achieves	P12182/1
-			P12182/2
GRPOE1		1. Axis reason of position achieves	P12182/3
-			P12182/4
FEPOE1		1. Axis fixed position achieves	P12183/1
PEPOE1		1. Axis pendulum position achieves	P12183/2
-			P12183/3
-			P12183/4
DREZE1		1. Axis speed achieves	P12184/1
-			P12184/2
-			P12184/3
-			P12184/4
SWELP1		1. Axis software end position +	P12185/1
SWELM1		1. Axis software end position -	P12185/2
-			P12185/3
-			P12185/4
ACHFA1		1. Axis drives	P12186/1
-			P12186/2
-			P12186/3
-			P12186/4

6.4 Flag area PLCCNCA - PLCCNCE (continued)

Axis-specific flags CNC → PLC

Flag	Status	Meaning	Parameter
FB+1		1. Axis driving instruction +	P12187/1
FB-1		1. Axis driving instruction -	P12187/2
-			P12187/3
-			P12187/4
K1E1		1. Axis area monitoring 1 position achieves	P12188/1
K1B1E1		1. Axis area monitoring 1 position area 1 achieves	P12188/2
K1B2E1		1. Axis area monitoring 1 position area 2 achieves	P12188/3
K1EL1		1. Axis area monitoring 1 end position achieves	P12188/4
K2E1		1. Axis area monitoring 2 position achieves	P12189/1
K2B1E1		1. Axis area monitoring 2 position area 1 achieves	P12189/2
K2B2E2		1. Axis area monitoring 2 position area 2 achieves	P12189/3
K2EL2		1. Axis area monitoring 2 end position achieves	P12189/4
REPOE1		1. Axis relative position achieves	P12191/1
-			P12191/2
-			P12191/3
-			P12191/4
ABPOE1		1. Axis absolute position achieves	P12192/1
-			P12192/2
-			P12192/3
-			P12192/4
ATPOW1		1. Axis drive status SCBIT15 SERCOS/CAN	P12194/1
ATCMK1		1. Axis drive status SCBIT16 SERCOS/CAN	P12194/2
ATSSB1		1. Axis drive status Byte 3 SERCOS/CAN	P12194/3
ATSSB2		1. Axis drive status Byte 4 SERCOS/CAN	P12194/4
MELNR1		1. Axis message number (of Interpolator generates)	P12197/1
-			P12197/2
-			P12197/3
-			P12197/4

6.4 Flag area PLCCNCA - PLCCNCE (continued)

Axis-specific flags CNC → PLC

Flag	Status	Meaning	Parameter
KANNR1		1. Axis channel number selected	P12198/1
KANAX1		1. Axis channel number	P12198/2
-			P12198/3
-			P12198/4
LANR1		1. Axis logical axis number	P12199/1
- -			P12199/2
- -			P12199/3
- -			P12199/4

Axis-specific flags PLC → CNC

Axis-specific flags CNC → PLC

Flag according to axis 1

Axis 2
Axis 3
Axis 4
Axis 5
Axis 6
Axis 7
Axis 8

6.4 Flag area PLCCNCA - PLCCNCE (continued)

Axis-specific flags CNC → PLC

Flags	Status	Meaning
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AAGWK1	H	1. Axis actual in the selected channel available
AAGWK2	H	2. Axis actual in the selected channel available
AAGWK3	H	3. Axis actual in the selected channel available
AAGWK4	H	4. Axis actual in the selected channel available
AAGWK5	H	5. Axis actual in the selected channel available
AAGWK6	H	6. Axis actual in the selected channel available
AAGWK7	H	7. Axis actual in the selected channel available
AAGWK8	H	8. Axis actual in the selected channel available

6.4 Flag area PLCCNCA - PLCCNCE (continued)

Axis-specific flags CNC → PLC

Flags	Status	Meaning: at the operating panel the message appears
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HWARP1	H	2101 HARDWARE END POSITION + ACHSE:1
HWARP2	H	2101 HARDWARE END POSITION + ACHSE:2
HWARP3	H	2101 HARDWARE END POSITION + ACHSE:3
HWARP4	H	2101 HARDWARE END POSITION + ACHSE:4
HWARP5	H	2101 HARDWARE END POSITION + ACHSE:5
HWARP6	H	2101 HARDWARE END POSITION + ACHSE:6
HWARP7	H	2101 HARDWARE END POSITION + ACHSE:7
HWARP8	H	2101 HARDWARE END POSITION + ACHSE:8

HWARM1	H	2101 HARDWARE END POSITION - ACHSE:1
HWARM2	H	2101 HARDWARE END POSITION - ACHSE:2
HWARM3	H	2101 HARDWARE END POSITION - ACHSE:3
HWARM4	H	2101 HARDWARE END POSITION - ACHSE:4
HWARM5	H	2101 HARDWARE END POSITION - ACHSE:5
HWARM6	H	2101 HARDWARE END POSITION - ACHSE:6
HWARM7	H	2101 HARDWARE END POSITION - ACHSE:7
HWARM8	H	2101 HARDWARE END POSITION - ACHSE:8

6.4 Flag area PLCCNCA - PLCCNCE (continued)

Axis-specific flags CNC → PLC

Flag	Status	Meaning	Parameter
SPIRR1	2	1. Spindle reset right	P11650
SPIRR2	2	2. Spindle reset right	P11670
SPIRL1	-2	1. Spindle reset left	P11650
SPIRL2	-2	2. Spindle reset left	P11670
SPIRE1	1	1. Spindle reset right	P11650
SPIRE2	1	2. Spindle reset right	P11670
SPIRLE1	-1	1. Spindle reset left	P11650
SPIRLE2	-1	2. Spindle reset left	P11670
SPIDZE1	H	1. Spindle speed achieves	P11651/1
SPIDZE2	H	2. Spindle speed achieves	P11671/1
SPIRPE1	H	1. Spindle resetting position achieves	P11651/2
SPIRPE2	H	2. Spindle resetting position achieves	P11671/2
SPIIFT1	H	1. Spindle runs	P11651/3
SPIIFT2	H	2. Spindle runs	P11671/3
SPIDZN1	H	1. Spindle speed zero	P11651/4
SPIDZN2	H	2. Spindle speed zero	P11671/4
KOP1	1	1. Coupling on	P11495
KOPSYN1	2	1. Coupling Synchronisation on	P11495
KOPE1	1	1. Coupling switched on	P11496
KOPSYE1	2	1. Axis coupling synchronisation executed	P11496
KOP2	1	2. Coupling on	P11515
KOPSYN2	2	2. Coupling Synchronisation on	P11515
KOPE2	1	2. Coupling switched on	P11516
KOPSYE2	2	2. axis coupling synchronisation executed	P11516

6.4 Flag area PLCCNCA - PLCCNCE (continued)

Flags CNC → PLC remanent

The flags are setting by the PLC reason program.

Flag	Status	Meaning
AA1	H	1. Axis actual logged on
AA2	H	2. Axis actual logged on
AA3	H	3. Axis actual logged on
AA4	H	4. Axis actual logged on
AA5	H	5. Axis actual logged on
AA6	H	6. Axis actual logged on
AA7	H	7. Axis actual logged on
AA8	H	8. Axis actual logged on
RPFPA1	H	1. Axis reference logic release in positive direction of travel
RPFPA2	H	2. Axis reference logic release in positive direction of travel
RPFPA3	H	3. Axis reference logic release in positive direction of travel
RPFPA4	H	4. Axis reference logic release in positive direction of travel
RPFPA5	H	5. Axis reference logic release in positive direction of travel
RPFPA6	H	6. Axis reference logic release in positive direction of travel
RPFPA7	H	7. Axis reference logic release in positive direction of travel
RPFPA8	H	8. Axis reference logic release in positive direction of travel
RPFMA1	H	1. Axis reference logic release in negative direction of travel
RPFMA2	H	2. Axis reference logic release in negative direction of travel
RPFMA3	H	3. Axis reference logic release in negative direction of travel
RPF-M4	H	4. Axis reference logic release in negative direction of travel
RPFMA5	H	5. Axis reference logic release in negative direction of travel
RPFMA6	H	6. Axis reference logic release in negative direction of travel
RPFMA7	H	7. Axis reference logic release in negative direction of travel
RPFMA8	H	8. Axis reference logic release in negative direction of travel
RFRF1	R	1. Axis the sequence number during reference travel
RFRF2	R	2. Axis the sequence number during reference travel
RFRF3	R	3. Axis the sequence number during reference travel
RFRF4	R	4. Axis the sequence number during reference travel
RFRF5	R	5. Axis the sequence number during reference travel
RFRF6	R	6. Axis the sequence number during reference travel
RFRF7	R	7. Axis the sequence number during reference travel
RFRF8	R	8. Axis the sequence number during reference travel

6.5 Axis-referred status flags of SERCOS/CAN drives

These flags in an educated manner of the CNC → PLC interface flags, which will transfer from the drive over the Interpolator to the PLC.

Flag	Status	Meaning
SER_01	H	1. Axis with SERCOS drive
SER_02	H	2. Axis with SERCOS drive
SER_03	H	3. Axis with SERCOS drive
SER_04	H	4. Axis with SERCOS drive
SER_05	H	5. Axis with SERCOS drive
SER_06	H	6. Axis with SERCOS drive
SER_07	H	7. Axis with SERCOS drive
SER_08	H	8. Axis with SERCOS drive
ASBB_01	H	1. Axis drive control part ready for use
ASBB_02	H	2. Axis drive control part ready for use
ASBB_03	H	3. Axis drive control part ready for use
ASBB_04	H	4. Axis drive control part ready for use
ASBB_05	H	5. Axis drive control part ready for use
ASBB_06	H	6. Axis drive control part ready for use
ASBB_07	H	7. Axis drive control part ready for use
ASBB_08	H	8. Axis drive control part ready for use
ALBB_01	H	1. Axis drive service section ready for use
ALBB_02	H	2. Axis drive service section ready for use
ALBB_03	H	3. Axis drive service section ready for use
ALBB_04	H	4. Axis drive service section ready for use
ALBB_05	H	5. Axis drive service section ready for use
ALBB_06	H	6. Axis drive service section ready for use
ALBB_07	H	7. Axis drive service section ready for use
ALBB_08	H	8. Axis drive service section ready for use
ABAF_01	H	1. Axis drive ready for use / drive release
ABAF_02	H	2. Axis drive ready for use / drive release
ABAF_03	H	3. Axis drive ready for use / drive release
ABAF_04	H	4. Axis drive ready for use / drive release
ABAF_05	H	5. Axis drive ready for use / drive release
ABAF_06	H	6. Axis drive ready for use / drive release
ABAF_07	H	7. Axis drive ready for use / drive release
ABAF_08	H	8. Axis drive ready for use / drive release

6.5 Axis-referred status flags of SERCOS/CAN drives (continued)

Flag	Status	Meaning
ATOK_01	H	1. Axis drive OK
ATOK_02	H	2. Axis drive OK
ATOK_03	H	3. Axis drive OK
ATOK_04	H	4. Axis drive OK
ATOK_05	H	5. Axis drive OK
ATOK_06	H	6. Axis drive OK
ATOK_07	H	7. Axis drive OK
ATOK_08	H	8. Axis drive OK

6.5 Axis-referred status flags of SERCOS/CAN drives (continued)

Flag	Status	Meaning
SZSA_01 - - -	R	1. Axis supervisor state SERCOS/CAN
SZSA_02 - - -	R	2. Axis supervisor state SERCOS/CAN
SZSA_03 - - -	R	3. Axis supervisor state SERCOS/CAN
SZSA_04 - - -	R	4. Axis supervisor state SERCOS/CAN
SZSA_05 - - -	R	5. Axis supervisor state SERCOS/CAN
SZSA_06 - - -	R	6. Axis supervisor state SERCOS/CAN
SZSA_07 - - -	R	7. Axis supervisor state SERCOS/CAN
SZSA_08	R	8. Axis supervisor state SERCOS/CAN

6.6 Axis-referred regulator release flags of SERCOS/CAN drives

These flags contain interlocks and permit (if H) over the flag interface PLC → CNC the releases for SERCOS/CAN drives.

Flag	Meaning
RGFR_01	1. Axis regulator release
RGFR_02	2. Axis regulator release
RGFR_03	3. Axis regulator release
RGFR_04	4. Axis regulator release
RGFR_05	5. Axis regulator release
RGFR_06	6. Axis regulator release
RGFR_07	7. Axis regulator release
RGFR_08	8. Axis regulator release

6.7 Reserved flag areas

Flag area **SYSAWRA** - **SYSAWRE**

Remanent flags, reserved for system, flag are not reset in switching on routine.

Flag area **AWLANF** - **AWLEND**

Flags reserved for system, flag are reset in switching on routine.

Flag area **AWLREMA** - **AWLREME**

Remanent flags reserved for system, flag are not reset in switching on routine.