

SoftMotion: DriveInterface: KEBcombicom

Last update: 16.04.2007

Hardware interface	CAN; must support 3S_CANdrv.lib
Supported drives	KEB F5-S, F5-M, F5-G (open loop)
Runtimes	all
Author	Hilmar Panzer
Components	KEBcombicomDrive.lib; 3S_CanDrv.lib; SM_CAN.lib; SysLibCallback.lib; SysLibFile.lib
Version	1.9.3.0

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1 Parameters in PLC config

1.1 BusInterface

wParam1	Not used
wParam2	Not used
dwParam1	Not used
dwParam2	Not used

1.2 AxisGroup

wParam1	CAN channel No (typically 0)
wParam2	Baudrate in kBit (125, 250, 500, 1000)
wParam3	SYNC generator: 0: PLC generates SYNC (only possible if PLC is highly precise); 1: not supported by the drive 2: SYNC device generates SYNC (additional hardware needed)
wParam4	Not used
dwParam1	Reserved
dwParam2	Reserved
dwParam3	Not used
dwParam4	Not used

1.3 supported Drive.wControlType

T / - no	V/V no	V/P no	P/P no	PV/PV yes	V/- no	CONF no
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The cyclic send data must consist of: fSetPosition, fSetVelocity.

The cyclic receive data must consist of: fActPosition, fActVelocity.

1.4 Additional structure *KEBcombicom_AXIS_REF*

name	Type	
wStatusWord, wControlWord	WORD	status and control word received/sent from/to drive
dwSetPosition, dwActPosition	DWORD	Set position, act position received/sent from/to drive
iSetVelocity, iActVelocity	INT	Set velocity, act velocity received/sent from/to drive
wErrorResetCounter, wHomingCounter	WORD	internal use
bOldStartReference, bSetQuickstop	BOOL	internal use

byDriveState	BYTE	internal use
strConfigFile	STRING	Path and file name of ASCII configuration file
acit		Initialization telegrams
srcan	SMC_ReadCANParameter	internal use
swcan	SMC_WriteCANParameter	internal use
crap	SMC_CANReadAllParams	internal use
pParameterlist	POINTER TO CAN_InitTelegram	internal use

2 **Features**

- **RegulatorOn, DriveStart**
- Detecting and acknowledging **errors**
- **reading/writing** SoftMotion and **drive parameters** (to access index 0xaabb subindex 0xcc with length 0xdd in byte (only necessary for writing) either use MC_Read/Write(Bool)Parameter with parameter number -16#ddaabbcc)
- any **gearing factors** (dwRatioTechUnitsDenom/iRatioTechUnitsNum)
- **linear/rotary axes**
- **controlling modes:** position
- drive internal **homing**
Note: when the homing is interrupted by MC_Stop, a quickstop inside the drive is performed (ramps inside the drive are used), before the trajectory mode is applied again
- **limit switches** should be connected to the drive. If configured in the drive, an error is set if one of them gets FALSE.
- **configuration from dialogs in PLC config**
- supported **SYNC generators** (to be set in PLC Configuration, AxisGroup): PLC, SYNC-Device

3 CAN-Traffic

base load:

<i>Telegram</i>	<i>Data bytes</i>	<i>Bit length</i>	<i>125 kBit/s</i>	<i>250 kBit/s</i>	<i>500 kBit/s</i>	<i>1 MBit/s</i>
SYNC	0	47	0,376 ms	0,188 ms	0,094 ms	0,047 ms
SDO	8	111	0,888 ms	0,444 ms	0,222 ms	0,111 ms
overall			1,264 ms	0,632 ms	0,316 ms	0,158ms

per drive :

<i>Telegram</i>	<i>Data bytes</i>	<i>Bit length</i>	<i>125 kBit/s</i>	<i>250 kBit/s</i>	<i>500 kBit/s</i>	<i>1 MBit/s</i>
PDO (set position, set velocity, control word)	8	111	0,888 ms	0,444 ms	0,222 ms	0,111 ms
PDO (act position, act velocity, status word)	8	111	0,888 ms	0,444ms	0,222 ms	0,111ms
overall			1,776 ms	0,888 ms	0,444ms	0,222 ms

According to that, the following table shows the maximum number of drives per cycle time:

Max. number of drives	125 kBit/s	250 kBit/s	500 kBit/s	1 MBit/s
2 ms	0	1	3	7
3 ms	0	2	5	12
4 ms	1	3	7	16
6 ms	2	5	12	24
8 ms	3	7	16	32