

## SoftMotion: DriveInterface: KEBcombicom

**Last update: 04.12.2007**

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	1.9.4.0

### CONTENT

<b>1</b>	<b>PARAMETERS IN PLC CONFIG</b>	<b>2</b>
1.1	BusInterface .....	2
1.2	AxisGroup .....	2
1.3	supported Drive.wControlType.....	2
1.4	Additional structure <i>KEBcombicom_AXIS_REF</i> .....	2
<b>2</b>	<b>FEATURES</b>	<b>4</b>
<b>3</b>	<b>CAN-TRAFFIC</b>	<b>5</b>

## 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