

SoftMotion: DriveInterface: Isel

Last update: 04.12.2008

Hardware interface	CAN; must support 3S_CANdrv.lib
Supported drives	Isel UVE8112
Runtimes	All Softmotion supported Runtimes
Author	Edwin Schwellinger
Components	IselDrive.lib; 3S_CanDrv.lib; SM_CAN.lib; SysLibCallback.lib; SysLibFile.lib
Version	1.9.4.7

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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 yes	PV/PV no	V/- no	CONF no
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The cyclically sent data must consist of: fSetPosition.

The received data can consist of: fActPosition.

1.4 Additional structure Isel_AXIS_REF

name	Type
eType	IselDriveType Drive Type
byDriveState	BYTE internal use: state of drive
byDriveStateRef	BYTE internal use: state of drive in homing
wStatusWord	WORD Status word 16#6041
byModeofOperation	BYTE Mode of Operation 16#6060
wControlWord	WORD Control word 16#6040
wStatusWordOld	WORD internal use
strConfigFile	STRING full name and path of config file

acit		internal use
srcan		internal use
swcan		internal use
crap		internal use
pParameterlist		internal use
wOldControl	WORD	internal use
byOldOpMode	BYTE	internal use
Data		internal use
bOldLimitState		internal use
byDigInputs	BYTE	Digital Inputs (Bit 0 Negativ-Endschalter, Bit 1 Positiv-Endschalter)

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** (first configure Object 16#6098, 16#6099.16#609A)
- **software limit switches**
- **configuration from dialogs in PLC config**
- supported **SYNC generators** (to be set in PLC Configuration, AxisGroup)
- configured parameters during startup
- Hardware limit switches / move free from them / show Error in Axis fbeFBError historie

Object 0x2054 "Endswitch Bridge" ist written via SDO for the move out of the hwl limit and on falling edge of the hwl limit switch reenabled

to Reset the Limitsw-error use MC_Reset and Drive has to be reenabled

Setting for Scaling (4000Inc) per turn.

Encoderauflösung
(= Encoderlinien x 4)

4000 Inc

1 Umdrehung der Motorseite

Getriebeübersetzung

1 Uein (Motorseite)

1 Uab (Abtriebseite)

Umrechnungsfaktor

1 Inc

Vorschubkonstante

1296000

1 Umdrehung der Abtriebseite

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>
Control Word, operation mode ,set position	8	111	0,888 ms	0,444 ms	0,222 ms	0,111 ms
Status Word, operation_mode _display , actposition	8	111	0,888 ms	0,444 ms	0,222 ms	0,111 ms
overall			1,776 ms	1,888 ms	0,222 ms	0,222ms

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
<i>1 ms</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>3</i>
<i>2 ms</i>	<i>0</i>	<i>1</i>	<i>3</i>	<i>7</i>
<i>3 ms</i>	<i>1</i>	<i>2</i>	<i>5</i>	<i>11</i>
4 ms	1	3	7	15