

SoftMotion: DriveInterface: InfranorCAN

Last update: 14.03.2008

Hardware interface	CAN; must support 3S_CANdrv.lib
Supported drives	Infranor CD1-k, BD1/k, BD2/k
Runtimes	x86
Author	Hilmar Panzer
Components	InfranorCANDrive.lib; 3S_CanDrv.lib; SM_CAN.lib; SysLibCallback.lib; SysLibFile.lib
Version	1.9.4.1

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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); 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 yes	V/- no	CONF yes
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The cyclically sent data must consist of: fSetPosition and optionally fSetVelocity.

The received data can consist of: fActPosition and/or fActVelocity.

1.4 Additional structure *InfranorCAN_AXIS_REF*

name	Type	
byHomingCount	BYTE	internal use: cycles since homing is done
bOldLimitActive	BOOL	internal use
fVelocityAtLimit	LREAL	internal use
siRegulatorOnCount	SINT	internal use
bCaptureInput1FallEdge	BOOL	Trigger1 reacts on rising (TRUE) or falling (FALSE) edge
bCaptureInput2FallEdge	BOOL	Trigger2 reacts on rising (TRUE) or falling (FALSE) edge
strConfigFile	STRING	full name and path of config file
acit		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) 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** (configure with object 0x6098 etc)
- **latching:** CAPTURE input (TriggerNumber = 1), INDEX input (TriggerNumber = 2). edge selection via InfranorCAN_AXIS_REF.bCaptureInput1/2FallEdge.
- **limit switches** should be connected to the drive. When the homing method is not active, an error is set if one of them gets FALSE.
- **configuration from file**
- **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>
Control Word (6040), OpMode (6060)	3	71	0,568 ms	0,284 ms	0,142 ms	0,071 ms
Set data (60C1) without/with velocity	4/8	79/111	0,632 ms/ 0,888 ms	0,316 ms/ 0,444 ms	0,158 ms/ 0,222 ms	0,079 ms/ 0,111ms
State Word (6041), capture inputs (3381/3386*)	4	79	0,632 ms	0,316 ms	0,158 ms	0,079 ms
Actual position (6063), optional: actual velocity (606C)	4/8	79/111	0,632 ms/ 0,888 ms	0,316 ms/ 0,444 ms	0,158 ms/ 0,222 ms	0,079 ms/ 0,111ms
overall (no velocity)			2,464 ms	1,232 ms	0,616 ms	0,308 ms
overall (set or act. velocity)			2,720 ms	1,360 ms	0,680 ms	0,340 ms
overall (set and act. velocity)			2,976 ms	1,488 ms	0,744 ms	0,372 ms

* used with new drive version (0x100A >= 12.C)

A cycle between 2 and 20 ms is supported.

max. number of drives	125 kBit/s	250 kBit/s	500 kBit/s	1 MBit/s
2 ms	0/0/0	1/0/0	2/2/2	6/5/5
3 ms	0/0/0	1/1/1	4/3/3	9/8/7
4 ms	1/0/0	2/2/2	6/5/5	12/11/10
5 ms	1/1/1	3/3/2	7/6/6	15/14/13
6 ms	1/1/1	4/3/3	9/8/7	18/17/15
8 ms	2/2/2	6/5/5	12/11/10	25/23/21
10 ms	3/3/2	7/6/6	15/14/13	31/28/26
12 ms	4/3/3	9/8/7	18/17/15	38/34/31