TML_LIB - MOTION CONTROL LIBRARY FOR C#, C/C++, VB, DELPHI PASCAL

EMBED TECHNOSOFT DRIVES INTELLIGENCE INTO PC BASED CONTROL ARHITECTURE

Technology is moving fast and time-to-market window narrows. To capitalise on the power of embedded intelligence in Technosoft Drives and on the extreme flexibility of Technosoft Motion Language (TML), Technosoft introduces the TML_LIB libraries for its Intelligent Servo Drives and Motors.

TML_LIB is a collection of functions and function blocks that allow you to implement motion control applications on a host PC, in order to run our MotionChip™ technology-based Intelligent Drives / Motors.

The library allows you to focus on the main aspects related to your specific application, and to easily use the drive and execute motion commands, by calling appropiate functions from the library. Also, you can choose the right arhitecture for your application, centralized or distributed. In a centralized arhitecture the PC handles all the aspects of the motion application and the drive acts as a slave while in a distributed one the PC manages only the high level states of the application and the motion sequences are embed in the drive / motor memory.

The powerful motion control features of Technosoft Intelligent Drives/ Motors are based on their high-level progammability in Technosoft Motion Language. TML_LIB offers you access to TML functionality, without the need to use the TML commands. To some extent, TML_LIB as compared to TML is similar to programming in high-level languages, as compared to the assembly language.

FEATURES

- Easy to embed in applications developed using C#, C/C++, Visual Basic, Delphi Pascal
- Works under Windows or Linux operating system
- x86 and x86-64 versions available
- Suited for single-thread or multi-thread applications
- Supports new motion modes and features of Technosoft Drives / Motors
- Can control all Technosoft Drives / Motors via RS-232, RS-485, CAN (2.0A and 2.0B), Ethernet*
- Ready to run examples included in the package

HARDWARE REQUIREMENTS

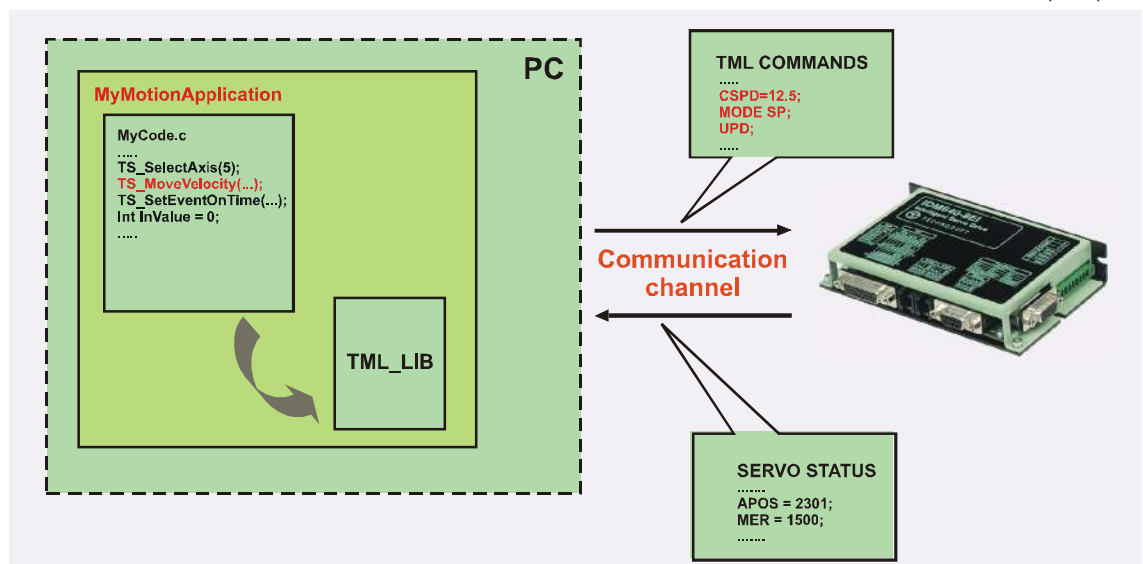In order to use TML_LIB you must have the following minimal hardware configuration:

- One or more Technosoft Intelligent Drives / Motors
- A PC equiped with a communication interface (RS-232, RS-485, CAN, Ethernet*)

SOFTWARE REQUIREMENTS

The software required for implementing an application in the previous configuration consists of:

- TML_LIB library for the control of Technosoft Drives / Motors
- EasyMotion Studio for configuration and tuning of Intelligent Drives / Motors
- Development environment suited for your preferred programming language

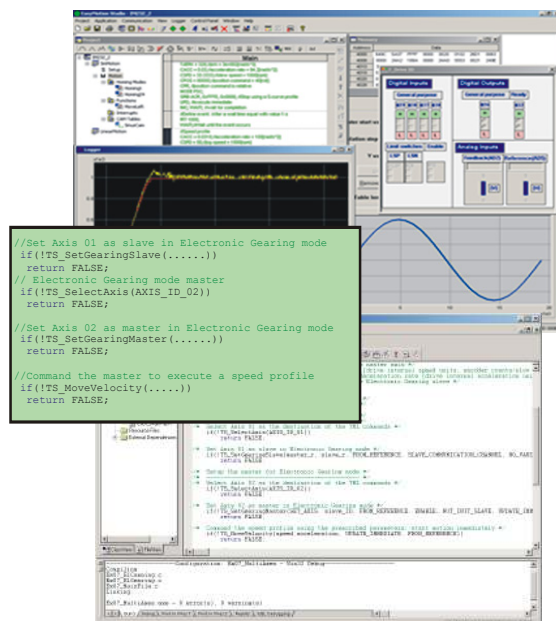*RS232 to Ethernet adaptor required

Your **Next** **Intelligent** **Move**

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TML_LIB FUNCTIONS*

	Function block	Description
Comm	**TS_OpenChannel**	Opens the communication channel selected (RS-232, RS-485, CAN, Ethernet)
	TS_SelectChannel	Selects the active communication channel
	TS_CloseChannel	Closes the communication channel selected
Motion	**TS_MoveAbsolute**	Commands an absolute positioning with trapezoidal speed profile to the selected axis
	TS_MoveRelative	Commands a relative positioning with trapezoidal speed profile to the selected axis
	TS_MoveSCurveAbsolute	Commands an absolute positioning with an S-curve profile for speed, and trapezoidal profile for acceleration
	TS_MoveSCurveRelative	Commands a relative positioning with an S-curve profile for speed, and trapezoidal profile for acceleration
	TS_MoveVelocity	Commands a trapezoidal speed profile to the selected axis
	TS_PVTSetup	Programs the drive/motor to work in PVT motion mode
	TS_SendPVTPoint	Sends a PVT point to the drive/motor
	TS_PTSetup	Programs the drive/motor to work in PT motion mode
	TS_SendPTPoint	Sends a PT point to the drive/motor
	TS_SetGearingMaster	Configures and activates electronic gearing mode between Technosoft drives
	TS_SetCammingMaster	Configures and activates electronic camming mode between Technosoft drives
	TS_Stop	Commands a stop motion to the selected drive
Administrative	**TS_POWER**	Enables/disables the power stage of the drive on the selected axis
	TS_ReadStatus	Returns the drive/motor status information
	TS_SendDataToHost	Enables the axis to send the status automatically to the host
	TS_SetLongVariable	Writes a long-type value in the specified location on the selected axis
	TS_SetFixedVariable	Writes a fixed-type value in the specified location on the selected axis
	TS_SetIntegerVariable	Writes an integer-type value in the specified location on the selected axis
	TS_GetLongVariable	Reads the value of a long-type variable from the selected axis
	TS_GetFixedVariable	Reads the value of a fixed-type variable from the selected axis
	TS_GetIntegerParameter	Reads the value of an integer-type variable from the selected axis
	TS_CALL	Calls a TML function stored in the non-volatile memory of the drive
	TS_DownloadSWFile	Downloads the setup information and TML application

*Partial function list - the complete list of the library functions can be found in the TML user manual


```
//Set Axis 01 as slave in Electronic Gearing mode
if(!TS_SetGearingSlave(.....))
  return FALSE;
// Electronic Gearing mode master
if(!TS_SelectAxis(AXIS_ID_02))
  return FALSE;

//Set Axis 02 as master in Electronic Gearing mode
if(!TS_SetGearingMaster(.....))
  return FALSE;

//Command the master to execute a speed profile
if(!TS_MoveVelocity(.....))
  return FALSE;
```

Ordering Information

P034.001.E002	**EasyMotion Studio software**
P040.001.E101	**TML Motion Libraries for Windows**
P040.001.E111	**TML Motion Libraries for Linux**

TECHNOSOFT PRODUCTS COMPATIBLE WITH TML_LIB

IPS110	DC / Stepper Minidrive, 45V, 0.5A
PIM2401	Plug-in Control Module, 24V, 1A
PIM2403	Plug-in Control Module, 24V, 3A
ISCMxx05	Servo Control Modules, 48/80V, 5A
IPS210	DC / Stepper Minidrive, 24V, 0.5A
ISM4803	Servo Module, 48V, 3A
ISCMxx05	Servo Control Modules, 48/80V, 5A, DIN
IBL2401	Servo Drive, 24V, 1A
IBL2403	Servo Drive, 24V, 3A
IDM240	Servo Drive, 48V, 5A
IDM640	Servo Drive, 80V, 8A
IDM680	Servo Drive, 80V, 8A
IDM3000	Servo Drive, 325V, 10A
IM23x	Intelligent Servo Motors Size 23, 0.1-0.3Nm
IS23x-MA	Intelligent Step Motors Size 23, 0.5-1.8Nm
	RS232 to Ethernet adaptor for Technosoft drives