

TCP Open library version 4.0 Readme  
May 2009  
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1. Compatibility

Compatible Software:

- PL7 PRO : version V3.3 or higher.
- UNITY PRO XL, L, M: version V4.0 or higher

Compatible Premium Ethernet Modules:

- Module TSX ETY 110 WS (10 Mb/s) V2.9 or higher  
Provides 1 connection per client
  
- Module TSX ETY 5102 (10/100 Mb/s) V2.8 or higher  
Provides multiple connections - 16 client, 16 server
  
- Module TSX ETY 5103 (10/100 Mb/s) V2.8 or higher  
Provides multiple connections - 16 client, 16 server  
Firmware V3.3 or higher supports a maximum of 64 connections  
(See the "Unity PRO TCP Open Block library" user manual for further  
information on the socket operation of TSX ETY 5103)

2. Installation

Unity Pro installation :

The software pack includes:

DFBs:

- DFB TCP\_CNX           version = V1.2
- DFB TCP\_RECEIVE   version = V1.2
- DFB TCP\_SEND       version = V1.2

and EFs :

- FCT\_\*                   version = V1.1

PL7 installation:

The software pack includes the DFBs :

- DFB TCP\_CNX           version = V1.04
- DFB TCP\_RECEIVE   version = V1.05
- DFB TCP\_SEND       version = V1.02

and the EF library :

- TCPIP\_DFB   version = V1.02

NOTE: The TCP Open library for PL7 PRO has not been updated since TCP Open V2.0.

If for any reason your library installation should fail please follow the steps below to install the library.

--- From your Start command choose:

--- Programs -> Schneider Electric -> Unity Pro -> Types Library Update

--- Then enter the path below for the location of Family.dsc

--- drive:\Data\Profiles\All Users\Application Data\Schneider Electric\Unity Pro\CustomLibSet\V4.1\TcpOpenInstall\FFBInstall\Advanced\FAMILY.DSC

**OR**

Drive:\Data\Profiles\*UserLogonName*\My Documents\Schneider Electric\Unity Pro\TcpOpenInstall\FFBInstall\Advanced\FAMILY.DSC

--- Then click on Install family button

### 3. Enhancement and Fixed Problems in this TCP Open V4.0

- Increase the socket support number from 32 to 64. It allows to open up to 64 connected (client) sockets or listening (server) sockets. This feature only supported in Unity Pro software. User also needs to upgrade the TSX ETY 5103 to V3.3 or higher.
- Fix TCP\_SEND calculates Length incorrectly
- Fix TCP\_RECIEVE calculates Length incorrectly
- Fix TCP\_CNx DFB misses fourth byte of IP address.
- Fix Errors introduced due to no parameters set for the Option\_Type when using FCT\_SETSOCKOPT
- Fix TCP Open Installation screen problems

### 4. Known issue & workaround

- To configure port numbers above 32767 (32K) for the TCP Open functions FCT\_BIND and FCT\_SELECT:

Workaround: The data type of the port parameter is an integer. In order to use port numbers higher than 15 bits (higher than 32K), user needs to use the function block UINT\_TO\_INT to convert the Unsigned Integer format (encoded in 16bits) to Integer. Use the UNIT\_TO\_INT function block before the EF FCT\_BIND, FCT\_SELECT when a port number higher than 32K will be used.

UNIT\_TO\_INT parameter Description:

Input Parameter:

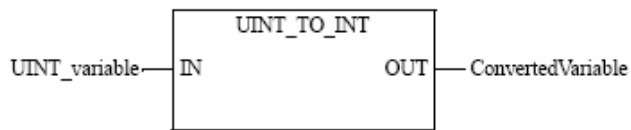
Parameter	Data Type	Meaning
UNIT_variable	UINT	Input Value

Out Parameter:

Parameter	Data Type	Meaning
ConvertedVariable	INT	Output Value

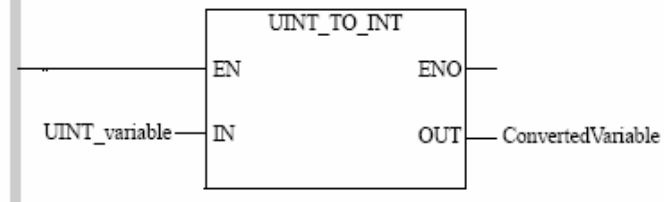
**Representation  
in FBD**

Representation of an Integer application:



**Representation  
in LD**

Representation of an Integer application:



**Representation  
in IL**

Representation of an Integer application:

```
LD UINT_variable
UINT_TO_INT
ST ConvertedVariable
```

**Representation  
in ST**

Representation of an Integer application:

```
ConvertedVariable := UINT_TO_INT (UINT_variable) ;
```

- PLC resource affects opening more than 32 connections simultaneously.  
Workaround: If you need to open more than 32 connections simultaneously then you must initiate the connections over a period of time. As an example, you would simultaneously start 32 connections then once their connection has been established, start the next 16 followed by 8, then 4 then 2 and finally the last socket (one socket will remain as a listening socket).
- TCP\_RECEIVE and TCP\_SEND DFBs, do not calculate the DATA buffer correctly if you are sending/receiving data larger than 240 bytes.
- TCP\_CNx: The public variable IPcnx does not display the correct IP address of the remote device through Unity Pro