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OMRON FINS Ethernet Communication Interface API

The DASTEC Corporation **OMRON FINS Ethernet Communication Interface API** allows the user to implement bi-directional communications to exchange data between applications running on a Windows/WinCE-based system with other peer devices supporting the OMRON FINS Ethernet protocol. The peer devices can be OMRON C, CV, CS1 or CJ1-Series PLC(s), other host computers or even other system applications using the API.

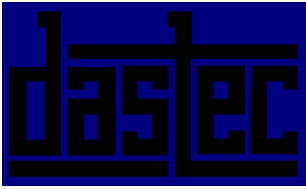
The **OMRON FINS Ethernet Communication Interface API** enables a system to act as a client to other OMRON FINS peers, initiating read and write operations on behalf of the system applications. The API also allows the system to emulate an OMRON C, CV, CS1 or CJ1 Series PLC to respond to read and write requests and thus acts as a “virtual PLC” to other OMRON FINS peers. The API is available for different Windows/WinCE-based systems/platforms and can be used with C/C++ or Visual Basic.

The API consists of two component functionalities, client side and server side. The client side functionality is implemented with a single API DLL. Server side functionality is implemented with a DLL/executable pair. Together these components manage all aspects of the protocol and data exchange including responding to peers with proper acknowledgements, error/success codes and protocol data byte ordering. The system application need only to deal with the data values exchanged in native byte order. The user can employ either the API’s client, server or both functionalities with minimal code implementation.

The **OMRON FINS Ethernet Communication Interface API** supports the following FINS protocol commands:

- Memory Area Read
- Memory Area Write

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Client API Functionality

To exchange data with OMRON FINS Ethernet peers, a system application can initiate read and/or write operation(s) to peers by simply calling the client DLL functions. The functions include the ability to create handle(s) for the peer device(s) and then using those handle(s) to call DLL read and write functions. Operation results are returned directly to the calling application, as is data in the case of read operations.

Client API Supports:

- Defining of multiple device(s) representing OMRON C, CV, CS1 or CJ1 Series peers.
- Functions to read data from and write data to defined device(s).
- Bit/flag data can be read/written as packed bits or bytes.
- Word data can be read/written as 16-bit, 32-bit or as ASCII values.
- Multiple user applications can use the client API simultaneously.

Server API Functionality

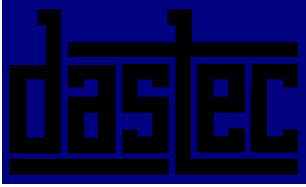
Using the server executable program provided as part of the API, a system can appear as an OMRON FINS Ethernet device (C, CV, CS1 or CJ1 Series PLC) on the network. By managing all OMRON FINS communication operations, the server executable receives and responds to both read and write requests from peer devices. Data written by peers is stored into separate databases maintained by the server executable for different OMRON memory areas (CIO and DM). The data received is stored in the byte order appropriate for the system's processor. The data for read requests received from peers is retrieved and returned from these databases as well.

No user programming is required for the system to act in this server mode. Peers can read and write to the system as if it were an OMRON FINS PLC with no user application programs running. Applications have access to the server's databases indirectly through specific API DLL functions calls or directly via shared memory access. In this way, the user applications obtain data written from peers and can update the system's "virtual PLC's" data so that peers can retrieve it.

Server API Supports:

- OMRON Memory Areas: CIO and DM. A separate database is maintained for each memory area.
- Adjustable database sizes.
- Access to databases via function calls and/or through shared memory.
- Multiple user applications can access the server databases simultaneously.

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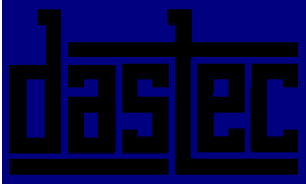


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Specifications:

- Supported Platform:
 - Any computer running Windows 98/NT/2000/XP operating system
 - WinCE (Currently)
 - Intelligent Instrumentation EDAS CE and LANpoint CE
- Supported OMRON FINS protocol commands:
 - Memory Area Read
 - Memory Area Write
- Supports multiple, multi-thread user applications simultaneously
- Client API Supports
 - Defining of multiple device(s) representing OMRON C, CV, CS1 or CJ1 Series peers.
 - Read data from and write data to defined device(s) via different function calls.
 - OMRON Memory Area: Auxiliary (A), Action (AC), Auxiliary Relay (AR), CIO, Counter (CNT), DM, Data Register (DR), Expansion DM (E), CPU Bus Link (G), Holding Relay (HR), Index Register (IR), Link Relay (LR), Step (ST), Timer (TIM), Temp Relay (TR) and Work (W).
 - Bit/flag data can be read/written as packed bits or bytes.
 - Word data can be read/written as 16-bit, 32-bit or as ASCII values.
 - Multiple user applications can use the client API simultaneously.
- Server API Supports:
 - OMRON Memory Areas: CIO and DM.
 - Separate databases maintained for each memory area.
 - Adjustable database sizes: 0 - 65536 (1000 default).
 - CIO data can be exchanged as packed bits or as bytes.
 - DM data can be exchanged as 16-bit, 32-bit or as ASCII values.
 - Access to databases by multiple applications.
 - Access to databases via function calls or through shared memory.

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Ordering Information:

Product Name: **OMRON FINS Ethernet Communication Interface API**

Platform Part Numbers:

- Computer running Windows 98/NT/2000/XP
Part No: WinPC-OMRNUDPAPI
- WinCE
 - Intelligent Instrumentation EDAS CE and LANpoint CE
Part No: IIIWinCE-OMRNUDPAPI

Software package includes 3-1/2" diskette and User's manual (electronic image)

Contact DASTEC about other supported platforms or to inquire about supporting other platforms.

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