Driver Manual
(Supplement to the FieldServer Instruction Manual)

FS-8705-46
Farenhyt Black Series FACP
Serial Driver
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Farenhyt Series Black FACP Driver Description

This serial driver connects via RS232 to the printer port of a Farenhyt Series Black FACP.

The driver is capable of being linked with other FieldServer drivers to form regular FieldServer firmware that can be installed on QuickServer and other FieldServer gateways. Other drivers can access the Farenhyt FACP data and serve using other protocols such as BACnet and Modbus. Over 120 protocols are supported. Any can be linked.

The driver is a passive client driver. It does not poll for data. It waits passively for the panel to transmit data. When an event is sent to the gateway it evaluates the event and turns data points on/off. These points are mapped onto BACnet / Modbus etc objects so the BMS can read them.

The driver cannot be used to simulate a FARENHYT FACP. Because only the passive client side of the protocol is implemented.

Notes on how this driver stores data and how to manage system events are provided in the appendices. They are important.

Max Nodes Supported

<table>
<thead>
<tr>
<th>FieldServer Mode</th>
<th>Nodes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passive Client</td>
<td>Many</td>
<td>Normally at a site the FACP’s are connected together and the gateway is connected to the printer port of Panel 1</td>
</tr>
</tbody>
</table>
## 1 Driver Scope of Supply

### 1.1 Supplied with this driver

<table>
<thead>
<tr>
<th>FieldServer Technologies</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cables</td>
<td>No specific cables are shipped with this driver.</td>
</tr>
</tbody>
</table>
2 Hardware Connections

2.1 Block Diagram

Multiple WorkStation protocols and connection supported. See list of FieldServer Drivers.

- Bacnet MSTP
- Modbus RTU, ASCII, and other flavors
- Rockwell DF1
- GE-SNP
- JCI Metasys N2

Other serial protocols such as
- Over 120 Protocols
- We are always adding and can add yours.

Free BACnet test software with purchase*
- Confidently test the BACnet interface.
- Discover devices and their objects. Test and document them. Arm yourself with a powerful field tool. Full license.

Other ethernet protocols such as
- HTTP, XML
- BACnet IP or Eth
- Modbus TCP
- AB-CSP
- Ethernet/IP
- SNMP, Telnet
- GE-EGD, GE-SRTP
- Omron FINS
- DNP3

Other bus protocols such as
- Profibus
- DeviceNet
- DH+
- Modbus+
- ControlNet
- BACnet Arcnet

Over 120 Protocols
- We are always adding and can add yours.

GATEWAY
RS232 / RS485
Port count varies by model

 Lonworks Network

Ethernet Network

Bluetooth Wireless Cell

RS232

Honeywell | Farenhyt™ Series
Fire Alarm and Emergency Communications Systems
2.2 Cable Connections
2.3 Terminations
3 Configuring the FieldServer as a FARENHYT FACP Passive Client

For a detailed discussion on FieldServer configuration, please refer to the FieldServer Configuration Manual. The information that follows describes how to expand upon the factory defaults provided in the configuration files included with the FieldServer (See “.csv” sample files provided with the FS).

This section documents and describes the parameters necessary for configuring the FieldServer to communicate with FARENHYT FACP

The configuration file tells the FieldServer about its interfaces, and the routing of data required. In order to enable the FieldServer for FARENHYT FACP monitoring and control, the driver’s independent FieldServer buffers need to be declared in the “Data Arrays” section, the destination device addresses need to be declared in the “Client Side Nodes” section, and the data required from the servers needs to be mapped in the “Client Side Map Descriptors” section. Details on how to do this can be found below. Note that in the tables, * indicates an optional parameter, with the bold legal value being the default.
3.1 Data Arrays

<table>
<thead>
<tr>
<th>Section Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data_Arrays</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Column Title</th>
<th>Function</th>
<th>Legal Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data_Array_Name</td>
<td>Provide name for Data Array</td>
<td>Up to 15 alphanumeric characters</td>
</tr>
<tr>
<td>Data_Array_Format</td>
<td>Provide data format. Each Data Array can only take one format.</td>
<td><strong>Recommended</strong>: FLOAT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Also Supported: Float, Uint32, SInt16, Packed_Bit, Byte, Packed_Byte, Swapped_Byte</td>
</tr>
<tr>
<td>Data_Array_Length</td>
<td>Number of Data Objects. Must be larger than the data storage area required by the Map Descriptors for the data being placed in this array.</td>
<td>1-10,000</td>
</tr>
</tbody>
</table>

**1.3.1 Data Arrays – Example**

```c
// Data Arrays

Data_Arrays

Data_Array_Name,       Data_Format,       Data_Array_Length,
metoneFARENHYT FACP ,   UNT16,             200
DA_DATA,               FLOAT,             200
```
3.2 Data Arrays – Specific Names must be used.

This driver stores data in Data Arrays with specific names. If they are not found then the relevant data is discarded. An error message is displayed.

The following Data Arrays should be created:

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1_Fhyt_Modules</td>
<td>UINT16</td>
<td>200</td>
</tr>
<tr>
<td>P1_Fhyt_Sensors</td>
<td>UINT16</td>
<td>200</td>
</tr>
<tr>
<td>P1_Fhyt_Zones</td>
<td>UINT16</td>
<td>200</td>
</tr>
<tr>
<td>P1_Fhyt_Sys</td>
<td>Bit</td>
<td>1000</td>
</tr>
<tr>
<td>DA_Fhyt_Stats</td>
<td>UINT16</td>
<td>100</td>
</tr>
</tbody>
</table>

Repeat these 4 for each FACP networked to Panel 1.
3.3 Client Side Connections

Create one connection for each trunk of FARENHYT FACP Counters.

<table>
<thead>
<tr>
<th>Section Title</th>
<th>Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Column Title</td>
<td>Function</td>
</tr>
<tr>
<td>Port</td>
<td>Specify which port the device is connected to the FieldServer</td>
</tr>
<tr>
<td>Protocol</td>
<td>Specify protocol used</td>
</tr>
</tbody>
</table>
| Baud*         | Specify baud rate | Driver Supports: 110; 300; 600; 1200; 2400; 4800; **9600**; 19200; 28800; 38400; 57600 Baud  
                |              | FACP 1200, **9600** |
| Data_Bits *   | Specify parity | Driver Supports: 7,8  
                |              | Counter supports: 8 |
| Stop_Bits*    | Specify data bits | Driver Supports: 1,2  
                |              | Counter supports: 1 |
| Parity *      | Specify stop bits | Driver Supports: Odd, Even, **None**  
                |              | Counter supports: None |

3.4 Client Side Connection Descriptions - Example

```c
// Client Side Connections

Connections

Port, Baud, Parity, Data_Bits, Stop_Bits, Protocol

R1, 9600, None, 8, 1, FARENHYT
```
3.5 Client Side Nodes

Create one Node per FACP in the network only.

<table>
<thead>
<tr>
<th>Section Title</th>
<th>Nodes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Column Title</td>
<td>Function</td>
</tr>
<tr>
<td>Node_Name</td>
<td>Provide name for node</td>
</tr>
<tr>
<td>Node_ID</td>
<td>Not used directly by the driver</td>
</tr>
<tr>
<td>Protocol</td>
<td>Specify protocol used</td>
</tr>
</tbody>
</table>

Client Side Nodes - Example

```
// Client Side Nodes

Nodes
Node_Name, Node_ID, Protocol, Connection
FACP, 1, FANRENHYT, R2
```
### 3.6 Client Side Map Descriptors

**FieldServer Related Map Descriptor Parameters**

<table>
<thead>
<tr>
<th>Column Title</th>
<th>Function</th>
<th>Legal Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Map_Descriptor_Name</td>
<td>Name of this Map Descriptor</td>
<td>Up to 32 alphanumeric characters</td>
</tr>
<tr>
<td>Data_Array_Name</td>
<td>Name of Data Array where data is to be stored in the FieldServer</td>
<td>One of the Data Array names from “Data Array” section above</td>
</tr>
<tr>
<td>Data_Array_Offset</td>
<td>Starting location in Data Array</td>
<td>0 to maximum specified in “Data Array” section above</td>
</tr>
<tr>
<td>Function</td>
<td>Function of Client Map Descriptor.</td>
<td>Passive (waits for incoming message)</td>
</tr>
</tbody>
</table>
### 3.7 Driver Related Map Descriptor Parameters

<table>
<thead>
<tr>
<th>Column Title</th>
<th>Function</th>
<th>Legal Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Node_Name</td>
<td>Name of Node to fetch data from</td>
<td>One of the node names specified in “Client Node Descriptor” above</td>
</tr>
<tr>
<td>Data_Type</td>
<td>This commonly used parameter is not used by this driver.</td>
<td></td>
</tr>
<tr>
<td>Length</td>
<td>This commonly used parameter is not used by this driver.</td>
<td>Set to 1</td>
</tr>
<tr>
<td>Address</td>
<td>This commonly used parameter is not used by this driver.</td>
<td></td>
</tr>
</tbody>
</table>
3.8 Examples

Map Descriptor Example – This is the only Map Descriptor required.

In this example the current count record will be retrieved. If there is no record to retrieve then the DA_Data[1] will be set to zero, else to 1. 14 data values are extracted and stored in consecutive locations in the Data Array. An appendix contains a listing of what data you will find at each offset.

Map_Descriptors

Map_DESCRIPTOR_NAME , DATA_ARRAY_NAME , DATA_ARRAY_OFFSET , Function , Node_NAME , Length ,
CatchAll , DA_Data , 0 , passive , FACP , 1

Data Array and offset where data will be stored.

This Data Array is not actually used by the driver. Rather, data is stored in specially named Data Arrays.

See section 3.1 Data Arrays – Example

[Grab your reader’s attention with a great quote from the document or use this space to emphasize a key point. To place this text box anywhere on the page, just drag it.]
4 Configuring the FieldServer as to Emulate a FACP

This driver cannot be used to emulate a FARENHYT FACP Counter. For some protocols we implement the client and server sides – like Modbus. In such cases the protocol can be used to emulate a device. We do not normally do this for protocols where we expect our customer will always want the Client functionality. Ask our sales department if you need to emulate a device.
5 Appendices

5.1 Appendix A – How Data is Stored

Data is stored in Data Arrays with special names. See section 1.3.1 Data Arrays – Example

When a Module is in alarm – its corresponding point in the Module Data array will be set to 1.

Ditto for Sensors and Zones

Eg Receive this MODULE message

Manual Pull Alarm Zone 001 [M97:M0003]

Data Array set as follows: P1_Fhyt_Module [ 3 ] = 1

Eg Receive this MODULE message

Manual Pull Alarm Restore Zone 001 [M97:M0003]

Data Array set as follows: P1_Fhyt_Module [ 3 ] = 0

Eg Receive this SENSOR message

Manual Pull Alarm Zone 001 [M97:S0011]

Data Array set as follows: P1_Fhyt_Sensors [ 11 ] = 1

Eg. Receive this ZONE message

Manual Pull Alarm Zone 009

Data Array set as follows: P1_Fhyt_zones [9 ] = 1

Eg. Receive this SYSTEM message

System Power Up

Data Array set as follows: P1_Fhyt_sys [x ] = 1
Find the Value of x in Appendix B

5.1 Appendix B – System Reset & Synch

When a System Reset message is received, the driver will set all the data in the associated data arrays to zero.

To Synch the gateway to the FACP –

- Connect gateway power to FACP power so they boot at the same time.
- Push System Reset – All Active items will reannounce themselves. However we recommend the synch be done, when there are no off-normal states in the FACP.
5.2 Appendix C – Managing System Event Strings

A file called `sysstring.ini` is provided and installed with the driver.

If it is absent then an error will be reported.

If absent then system messages will cause many errors and will result in system data points not being active.

At startup the file is read. This is how the driver learns the text of the Panel System Events.

The file is a simple CSV test file. It must contain at least 4 columns.

The System String file may be edited – suggested only to add or change. Be careful the format must be preserved.

When the file is processed the diver creates a file called `syststring.txt`. It contains a copy of the strings that were processed. It is provided for support and checking reasons. It is not used. File may be uploaded on the gateway – File Transfer – General Files Tab of the web interface.

**IMPORTANT – It is important to the correct operation of the driver that in `sysstring.ini` a longer string must follow the shorter one for each pair.**

<table>
<thead>
<tr>
<th>Emergency System Overridden Restore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency System Overridden</td>
</tr>
</tbody>
</table>

In the following table

**Column 1 = IndexNumber. Number is used in the following way. When a system event occurs, the driver takes the event text (string) and find the corresponding entry in the table. This number is then used as an offset into the Data Array called `P1_Fhyt_Sys`**

A pair of strings must be allocated the same IndexNumber since it’s the same event.

Eg.
Emergency System Overridden
Emergency System Overridden Restore

**Column 2** = DoSystem Reset. This is how the System Reset message is identified. When a message with a ‘1’ in this column is received, the driver will do a system reset.

Column 3 = Is this an activation (off normal) or a restore. Does this message turn the point on or off.

Eg.

<table>
<thead>
<tr>
<th>Emergency System Overridden</th>
<th>Emergency System Overridden Restore</th>
</tr>
</thead>
</table>

Allocate a ‘1’ to turn point on to indicate off-normal
Allocate a ‘0’ to turn point off to indicate normal

**Column 4** = String. This is the string the printer produces.

**Column 5 etc** = Ignored.

Some System Events can only turn On.

There is no restore for them. Only a system reset will turn the point off.

Eg. System Power Up
**Multiple Panels**

Driver supports networked FACP’s.

Driver can only connect to Panel 1’s printer port.

All networked panel events must be vectored to this port.

The driver assumes the default panel is 1.

If there is only one panel, then the data arrays for the other panels may be removed.
5.3 Appendix A - Driver Error Messages

*If the message directs you to contact tech support and provide them with a log file then you should capture a full diagnostic – during which you should reproduce the sequence of actions that caused the problem. How? Google “Chipkin simplified support”

<table>
<thead>
<tr>
<th>Error Message</th>
<th>Explanation and corrective action</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FHYT01 FYI System Reset Action</strong></td>
<td>Printed whenever a System Reset is received. It clears all the data in the arrays used by the driver.</td>
</tr>
<tr>
<td><strong>FHYT02 Err Cant recognize event=&lt;%s&gt;</strong></td>
<td>Report to Tech Support*</td>
</tr>
<tr>
<td><strong>FHYT03 FYI Creating file=%s</strong></td>
<td>This message is part of the auto configuration system.</td>
</tr>
<tr>
<td><strong>FHYT04 Max %d System Messages</strong></td>
<td>The file sysstring.ini is being loaded. It contains system message strings. There are too many to load. The maximum amount permitted is shown in the message. Possibly the file is corrupt, out of date. Possibly there are more strings than that version of firmware will permit. If you can’t resolve this then report to Tech Support*</td>
</tr>
</tbody>
</table>
| **FHYT05 FYI Sys Message Not Found. <%s>** | An event reported to the printer port contained a system event whose wording is
<table>
<thead>
<tr>
<th>Event Code</th>
<th>Description</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>FHYT06 FYI</td>
<td>Autoconfig based on CDR file=%s</td>
<td>Ignore</td>
</tr>
<tr>
<td>FHYT07 Err</td>
<td>Cant identify the panel number. Assume=1</td>
<td>Ignore if you only have one panel numbered as panel 1. This message is printed when the panel number cant be extracted from the event. Probably because its not present in the message. You should not see this error. Report to Tech Support*</td>
</tr>
<tr>
<td>FHYT08 Err</td>
<td>Actionword=&lt;%s&gt; unknown.</td>
<td>This message is printed when an event is received but which is being ignored because the driver cant tell if its an alarm, trouble etc. You should not see this error. Report to Tech Support*</td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>FHYT09</td>
<td>Err Store Failed DA with name=%s rqd.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>You can try and resolve this yourself. It is printed when the driver parses</td>
<td></td>
</tr>
<tr>
<td></td>
<td>an event but can\’t find a place to store the event data. Event data is</td>
<td></td>
</tr>
<tr>
<td></td>
<td>stored in Data Arrays. They have special names (see 3.1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lets say you don\’t have an array called P1_FHYT_SYS then there is no</td>
<td></td>
</tr>
<tr>
<td></td>
<td>where to store system event (eg battery low) for panel 1.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>If you can\’t resolve this then report to Tech Support*</td>
<td></td>
</tr>
<tr>
<td>FHYT10</td>
<td>Err Cant recognize action word for zone &lt;%s&gt;.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>You should not see this error. Report to Tech Support*</td>
<td></td>
</tr>
<tr>
<td>FHYT11</td>
<td>Err Store: Failed DA with name=%s rqd.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>See FHYT09</td>
<td></td>
</tr>
<tr>
<td>FHYT12</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>See FHYT10</td>
<td></td>
</tr>
</tbody>
</table>

**5.4 Appendix B - Driver Operational Stats**

This driver does not expose any operational stats. Most drivers do.
### 5.5 Revision History

<table>
<thead>
<tr>
<th>Date</th>
<th>Resp</th>
<th>Format</th>
<th>Driver Ver.</th>
<th>Doc. Rev.</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020Jun</td>
<td>PMC</td>
<td></td>
<td>0.00</td>
<td>0</td>
<td>Created.</td>
</tr>
</tbody>
</table>