



Farenhyt Black Series FACP Serial Driver FS-8705-46

Chipkin - Enabling Integration

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1 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

FieldServer Mode	Nodes	Comments
Passive Client	Many	Normally at a site the FACP's are connected together and the gateway is connected to the printer port of Panel 1

2 Driver Scope of Supply

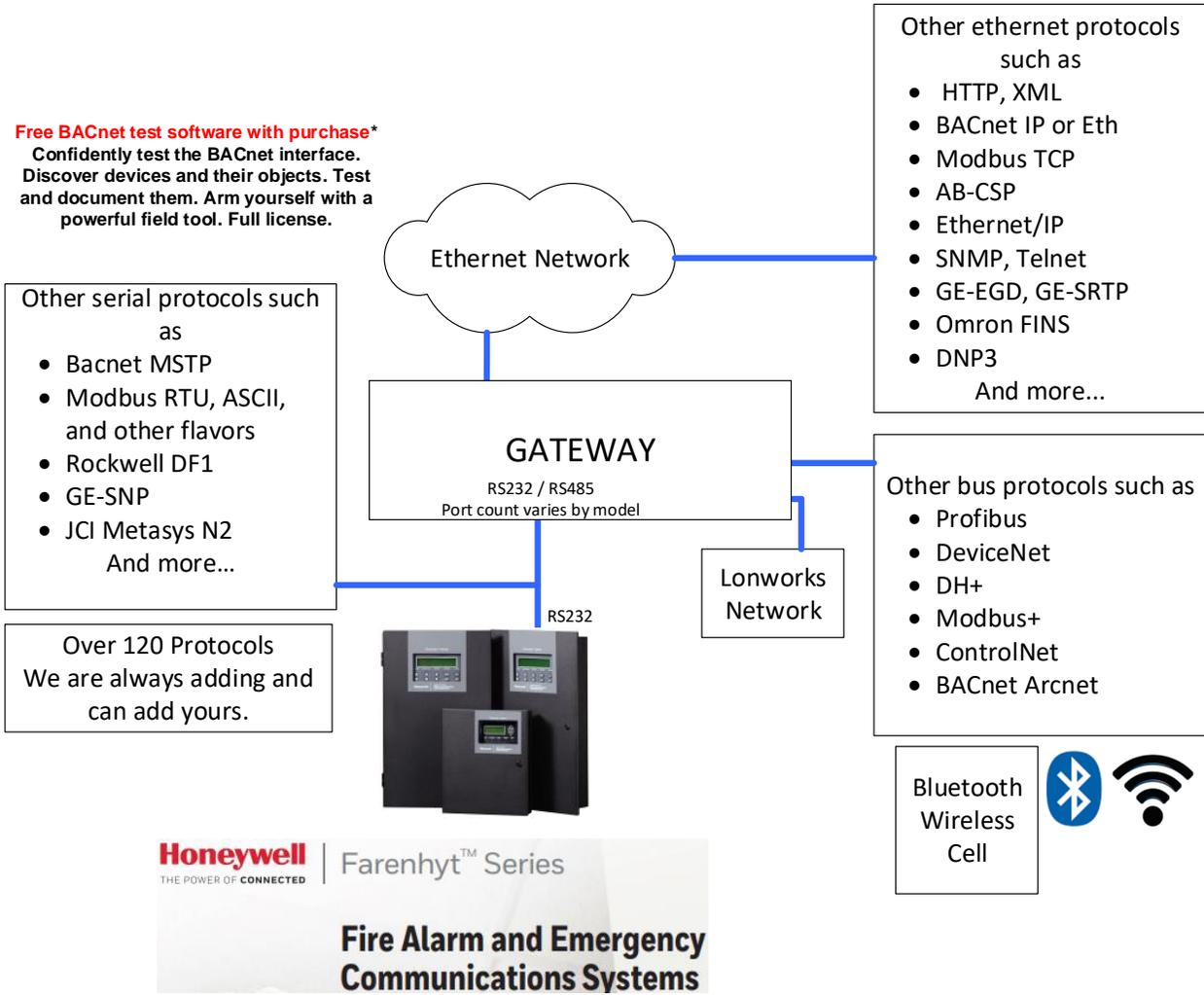
2.1 Supplied with this driver

FieldServer Technologies PART #	Description
Cables	No specific cables are shipped with this driver.
FS-8705-46	Driver Manual.

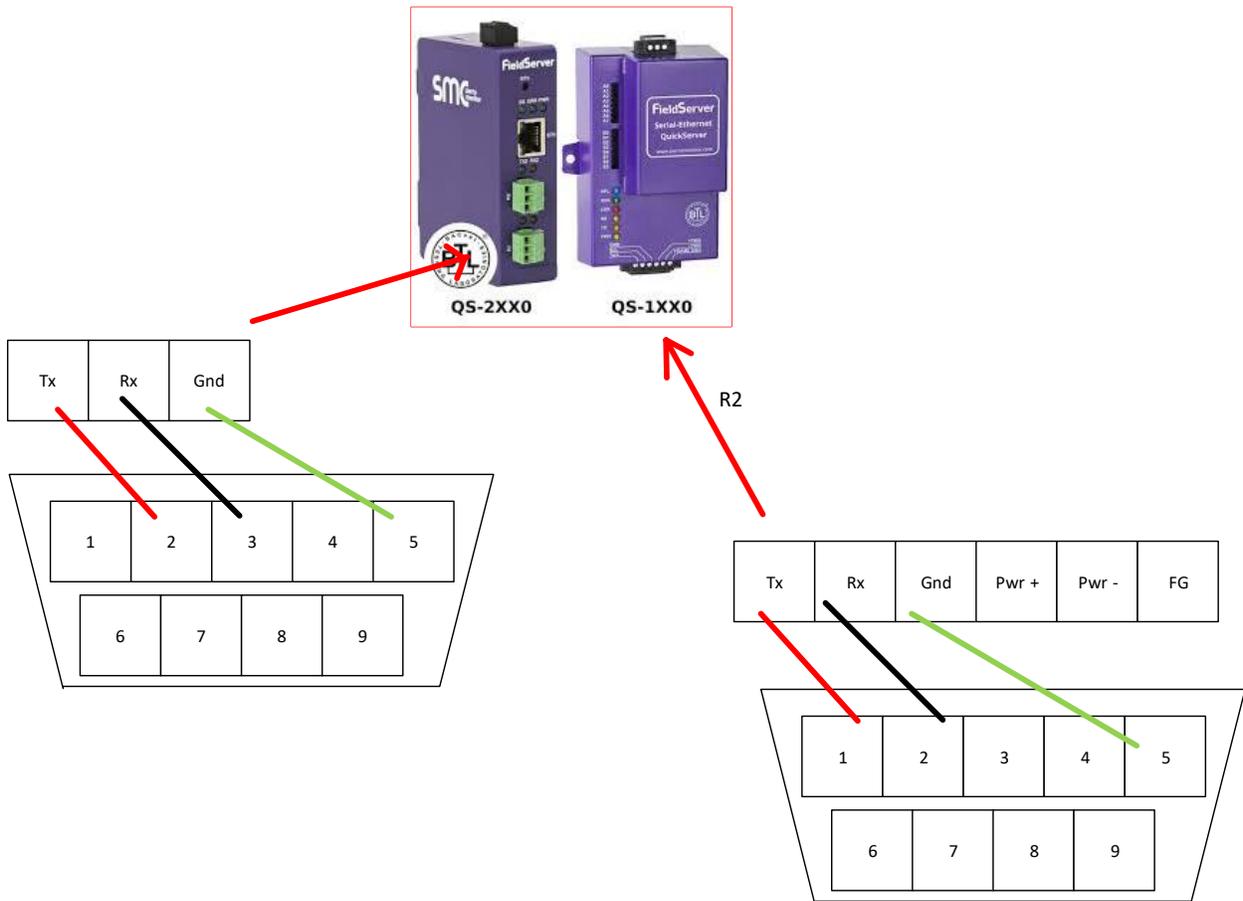
3 Hardware Connections

3.1 Block Diagram

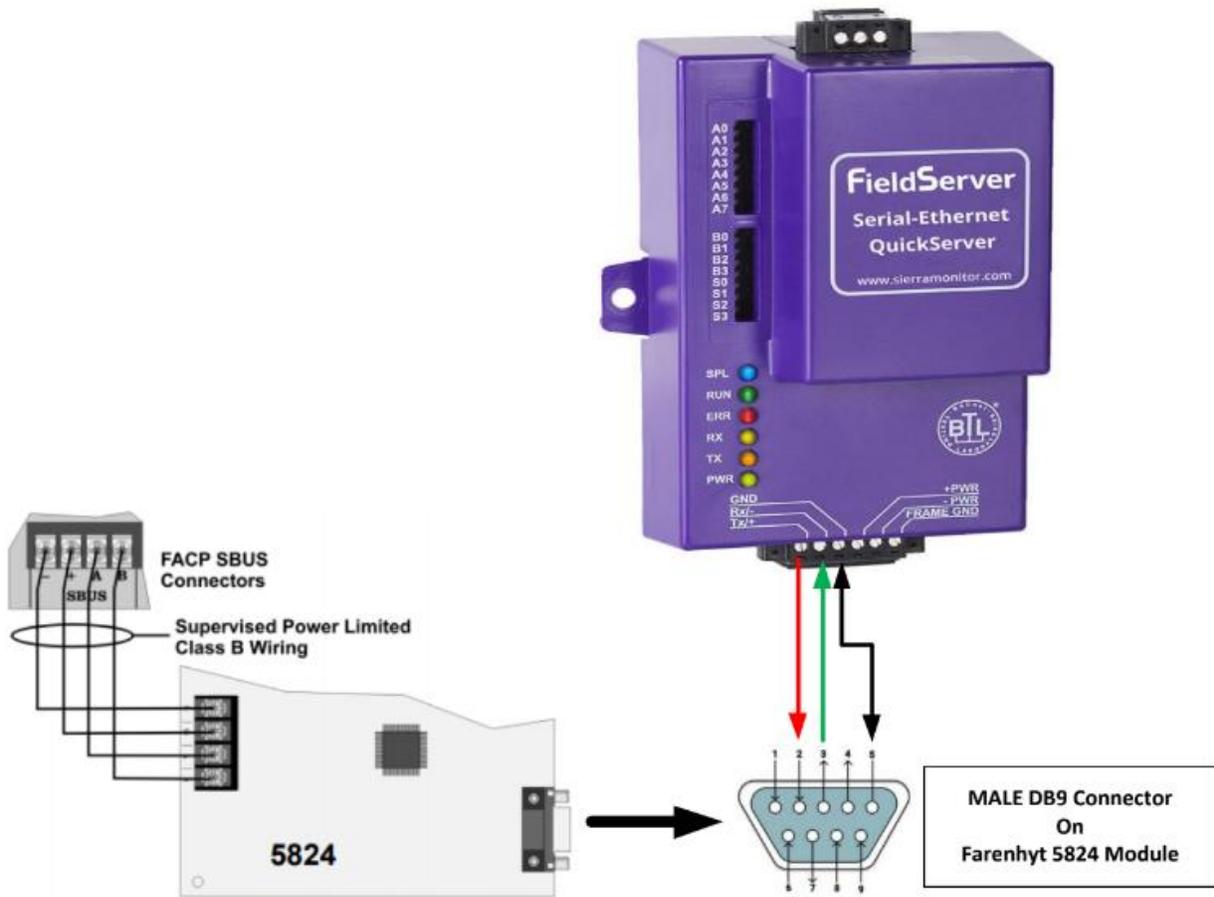
Multiple WorkStation protocols and connection supported. See list of FieldServer Drivers.



3.2 Cable Connections



3.3 Terminations



3.4 Fanrenhyt Printer Port Configuration

Select RS232 in the FACP configuration and set the baud etc.

We use HFSS (Honeywell Fire Software Suite) and please see screenshot below. You will click on the 5824 Serial/Parrelel Gateway in the config and select "Edit SBUS Module..." which will bring up this screen.

Edit SBUS Module

Module ID

Module Type 5824-Serial/Parallel/IO

Module Name

Supervise Parallel/Serial Port

Enable Event Logging

Network

- Site 1
- Site 2

Printer Port Selection

Parallel Port

Serial Port

Serial Port Options

Baud Rate

Data Bits

Stop Bits

Parity

4 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.

4.1 Data Arrays

Section Title		
Data_Arrays		
Column Title	Function	Legal Values
Data_Array_Name	Provide name for Data Array	Up to 15 alphanumeric characters
Data_Array_Format	Provide data format. Each Data Array can only take on one format.	Recommended: FLOAT Also Supported: Float, Uint32, SInt16, Packed_Bit, Byte, Packed_Byte, Swapped_Byte
Data_Array_Length	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.	1-10,000

4.1.1 Data Arrays – Example

```
// Data Arrays
Data_Arrays
Data_Array_Name,          Data_Format,          Data_Array_Length,
metoneFARENHYT FACP ,    UNT16,                200
DA_DATA,                  FLOAT,                200
```

4.2 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

<u>Name</u>	<u>Type</u>	<u>Length</u>
P1M97FHYTmods	UINT16	200
P1M97FHYTsens	UINT16	200
PxMyyFHYTmods PxMyyFHYTsens Panel x Loop yy		
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> Repeat these 2 for each FACP panel networked to Panel 1. One pair of these DA's for each Loop in the system. Eg., M97 eg. M01 </div>		
PHYTzones	UINT16	200
PHYTsys	UINT16	200
PHYTstats	UINT16	200

4.3 Client Side Nodes

Create one connection for each trunk of FARENHYT FACP Counters.

Section Title		
Connections		
Column Title	Function	Legal Values
Port	Specify which port the device is connected to the FieldServer	R1-R2
Protocol	Specify protocol used	FANRENHYT
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

4.4 Client Side Connection Descriptions – Example

```
// Client Side Connections

Connections

Port,          Baud    Parity,    Data_Bits,  Stop_Bits,  Protocol
R1,           9600    None,      8,          1,          FARENHYT
```

4.5 Client Side Nodes

Create one Node per FACP in the network only.

Section Title		
Nodes		
Column Title	Function	Legal Values
Node_Name	Provide name for node	Up 12 of the max of 32 alphanumeric characters possible to specify the Node name.
Node_ID	Not used directly by the driver	1-255
Protocol	Specify protocol used	FANRENHYT

4.5.1 Client Side Nodes – Example

```
// Client Side Nodes

Nodes

Node_Name,    Node_ID,    Protocol,    Connection
FACP,         1,          FARENHYT    R2
```

4.6 Client Side Map Descriptors

4.6.1 FieldServer Related Map Descriptor Parameters

Column Title	Function	Legal Values
Map_Descriptor_Name	Name of this Map Descriptor	Up to 32 alphanumeric characters
Data_Array_Name	Name of Data Array where data is to be stored in the FieldServer	One of the Data Array names from "Data Array" section above
Data_Array_Offset	Starting location in Data Array	0 to maximum specified in "Data Array" section above
Function	Function of Client Map Descriptor.	Passive (waits for incoming message)

4.7 Driver Related Map Descriptor Parameters

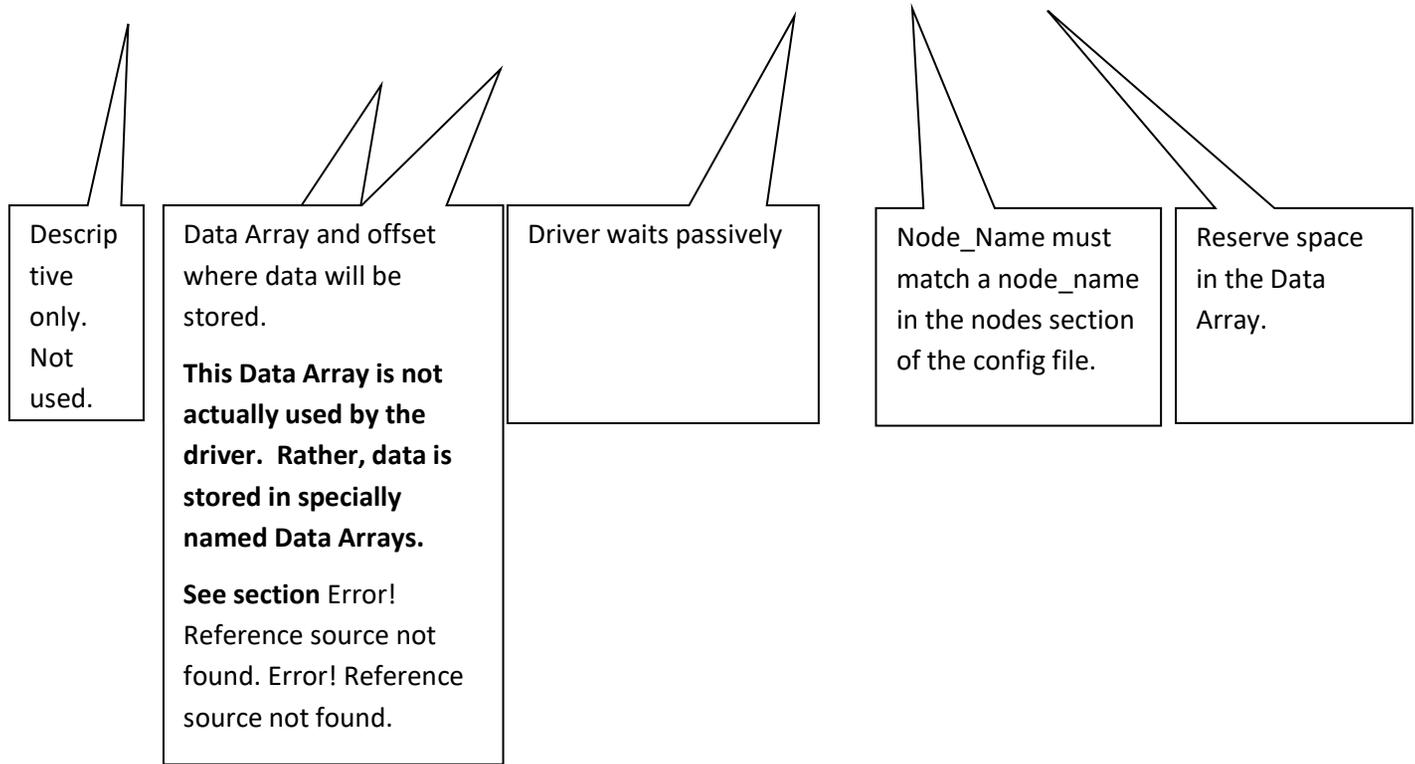
Column Title	Function	Legal Values
Node_Name	Name of Node to fetch data from	One of the node names specified in "Client Node Descriptor" above
Data_Type	This commonly used parameter is not used by this driver.	
Length	This commonly used parameter is not used by this driver.	Set to 1
Address	This commonly used parameter is not used by this driver.	

4.8 Examples

4.8.1 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
```



5 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.

6 Revision History

Date	Resp	Format	Driver Ver.	Doc. Rev.	Comment
Jun 2020	PMC		0.00	0	Created.
8 March 2021	PMC		1.02	1	Update on DA names Update connection wiring Add notes about FACP 232 configuration
14 May 2021	YC		1.02	2	Document format updated

Appendix A. How Data is Stored

Data is stored in Data Arrays with special names. See section **Error! Reference source not found. Error! Reference source not found.**

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

Appendix B. Common Alarms and Troubles

The driver calculates Common Alarms and Troubles on a per loop / card basis as well as on a per panel basis. This data can be served using BACnet or any of our other protocols. The feature is always present and enabled and it's simply a matter of you deciding if you want to serve the data,

This common alarm and trouble data is stored in the specially named data array used to report driver stats. Data Array Name = FHTYstats.

Details

Offset 30 - Panel 1 common alarm
Offset 31 - Panel 1 common trouble
Offset 32 - Panel 2 common alarm
Offset 33 - Panel 2 common trouble
Offset 34 - Panel 3 common alarm
Offset 35 - Panel 3 common trouble
Offset 36 - Panel 4 common alarm
Offset 37 - Panel 4 common trouble

Offset 40 - Panel 1 Loop / Card 01 - common alarm
Offset 41 - Panel 1 Loop / Card 01 - common trouble
Offset 42 - Panel 1 Loop / Card 02 - common alarm
Offset 43 - Panel 1 Loop / Card 02 - common trouble
Etc

Offset 50 - Panel 2 Loop / Card 01 - common alarm
Offset 51 - Panel 2 Loop / Card 01 - common trouble
Offset 52 - Panel 2 Loop / Card 02 - common alarm
Offset 53 - Panel 2 Loop / Card 02 - common trouble
Etc

Offset 60 - Panel 3 etc

Appendix C. 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 re-announce themselves. However we recommend the synch be done, when there are no off-normal states in the FACP.

Appendix D. 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 driver creates a file called **sysstring.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.

Emergency System Overridden

Emergency System Overridden Restore

Correct order. This has to do with comparing the strings in the tables to the event string in the message.

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.

Emergency System Overridden

Emergency System Overridden Restore

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.

Appendix E. 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”

Error Message	Explanation and corrective action
<p>We have shown place holders for the parts of the message which change.</p> <p>%s is a place holder for a text string.</p> <p>%d is a place holder for a number</p> <p>%c is a place holder for an alpha character.</p>	<p><i>FYI</i> messages are informational and do not require a corrective action. Simply use them to confirm configuration / behaviors are what you expect.</p>
<p>FHYT01 FYI System Reset Action</p>	<p>Printed whenever a System Reset is received. It clears all the data in the arrays used by the driver.</p>
<p>FHYT02 Err Cant recognize event=<%s></p>	<p>Report to Tech Support*</p>
<p>FHYT03 FYI Creating file=%s</p>	<p>This message is part of the auto configuration system.</p>
<p>FHYT04 Max %d System Messages</p>	<p>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.</p> <p>Possibly the file is corrupt, out of date.</p> <p>Possibly there are more strings than that version of firmware will permit.</p> <p>If you cannot resolve this then report to Tech Support*</p>
<p>FHYT05 FYI Sys Message Not Found. <%s></p>	<p>An event reported to the printer port contained a system event whose wording is not recognized. The event string is shown with the error message.</p> <p>We expect you should not see this message. If you do this then report to Tech Support*</p>

	<p>Possibly need a firmware update as this problem indicates a mismatch between the driver and the panel.</p> <p>Possibly sysstring.ini is corrupt or did not load properly. When system strings are loaded a file called sysstring.txt is created. It contains all the system strings that have been loaded from sysstring.ini. You can retrieve and inspect the txt file.</p> <p>Possibly an older version of sysstring.ini is being used. Possibly corrupt.</p> <p>Possible that sysstring.ini is not present. Use the file transfer (general tab) to retrieve the file – see if the process reports that the file could not be found.</p>
<p>FHYT06 FYI Autoconfig based on CDR file=%s</p>	<p>Ignore</p>
<p>FHYT07 Err Cannot identify the panel number. Assume=1</p>	<p>Ignore if you only have one panel numbered as panel 1. This message is printed when the panel number cannot be extracted from the event. Probably because it is not present in the message.</p> <p>You should not see this error. Report to Tech Support*</p>
<p>FHYT08 Err Actionword=<%s> unknown.</p>	<p>This message is printed when an event is received but which is being ignored because the driver cannot tell if it is an alarm, trouble etc.</p> <p>You should not see this error. Report to Tech Support*</p>
<p>FHYT09 Err Store Failed DA with name=%s rqd.</p>	<p>You can try and resolve this yourself. It is printed when the driver parses an event but cannot find a place to store the event data. Event data is stored in Data Arrays. They have special names (see 3.1)</p> <p>Let's say you don't have an array called P1_FHYT_SYS then there is nowhere to</p>

	store system event (eg battery low) for panel 1. If you cannot resolve this then report to Tech Support*
FHYT10 Err Cant recognize action word for zone <%s>.	You should not see this error. Report to Tech Support*
FHYT11 Err Store: Failed DA with name=%s rqd.	See FHYT09
FHYT12	See FHYT10

Appendix F. Driver Operational Stats

This driver does not expose any operational stats. Most drivers do.