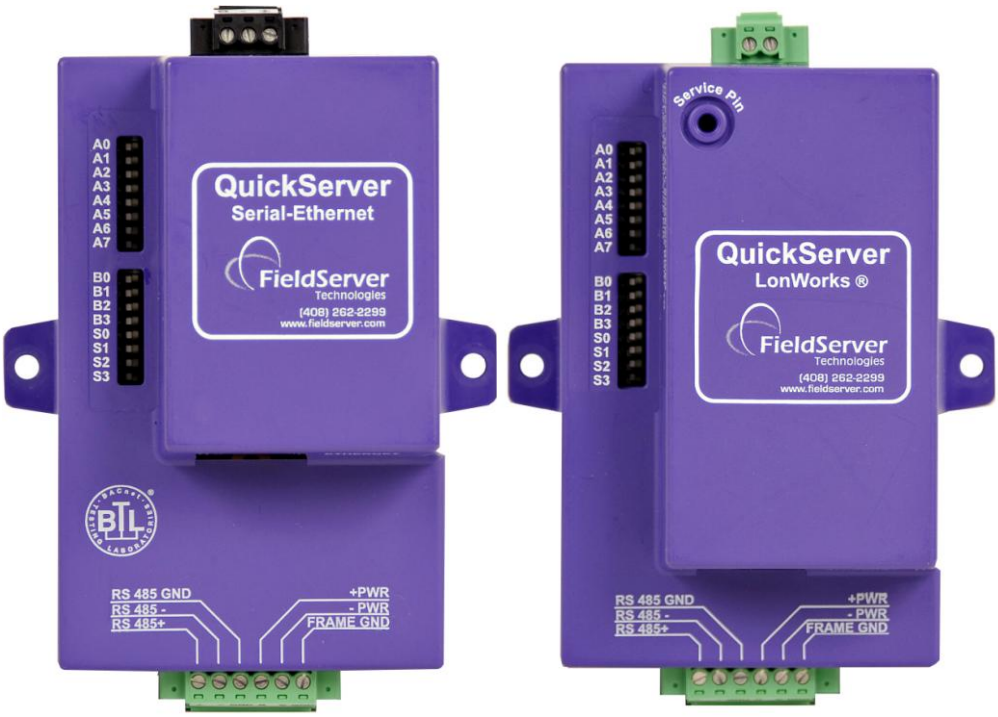
# QuickServer Start-up Guide

## FS-QS-1010/1011




**APPLICABILITY & EFFECTIVITY**

**Effective for all systems manufactured after July 2010**

| | |
|---|---|
| Kernel Version: | 5.19 |
| Document Revision: | 6 |

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# 1 EQUIPMENT SET-UP[1]

QuickServer is a high performance, cost effective Building and Industrial Automation multi-protocol gateway providing protocol translation between serial, Ethernet, and LonWorks devices and networks.

## 1.1 Supplied equipment

**QuickServer Gateway**.

- Preloaded with the two selected drivers (on the FS-QS-1011 one of those drivers is LonWorks). A sample configuration file is also pre-loaded onto the QuickServer.
- All instruction manuals, driver manuals, configuration manuals etc are available on-line at www.fieldserver.com/QS_Support/.

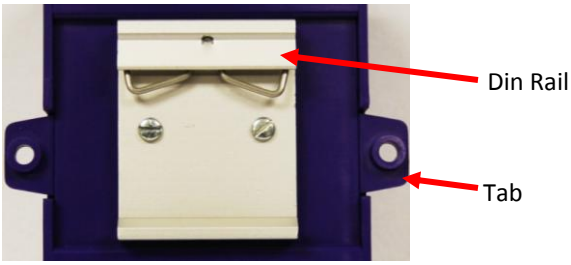
**Accessory kit (Optional)** (Part # FS-8915-36-QS) including:

- 7-ft CAT5 cable with RJ45 connectors at both ends
- Power Supply -110/220V (p/n 69196)
- DIN Rail mounting bracket
- Screwdriver for connecting to terminals
- USB Flash drive loaded with:
  - QuickServer Start-up Guide
  - FieldServer Configuration Manual
  - FieldServer Utilities Manual
  - All FieldServer Driver Manuals
  - Support Utilities
  - Any additional folders related to special files configured for a specific QuickServer
  - Additional components as required - See Driver Manual Supplement for details


## 1.2 Mounting

The following mounting options are available:

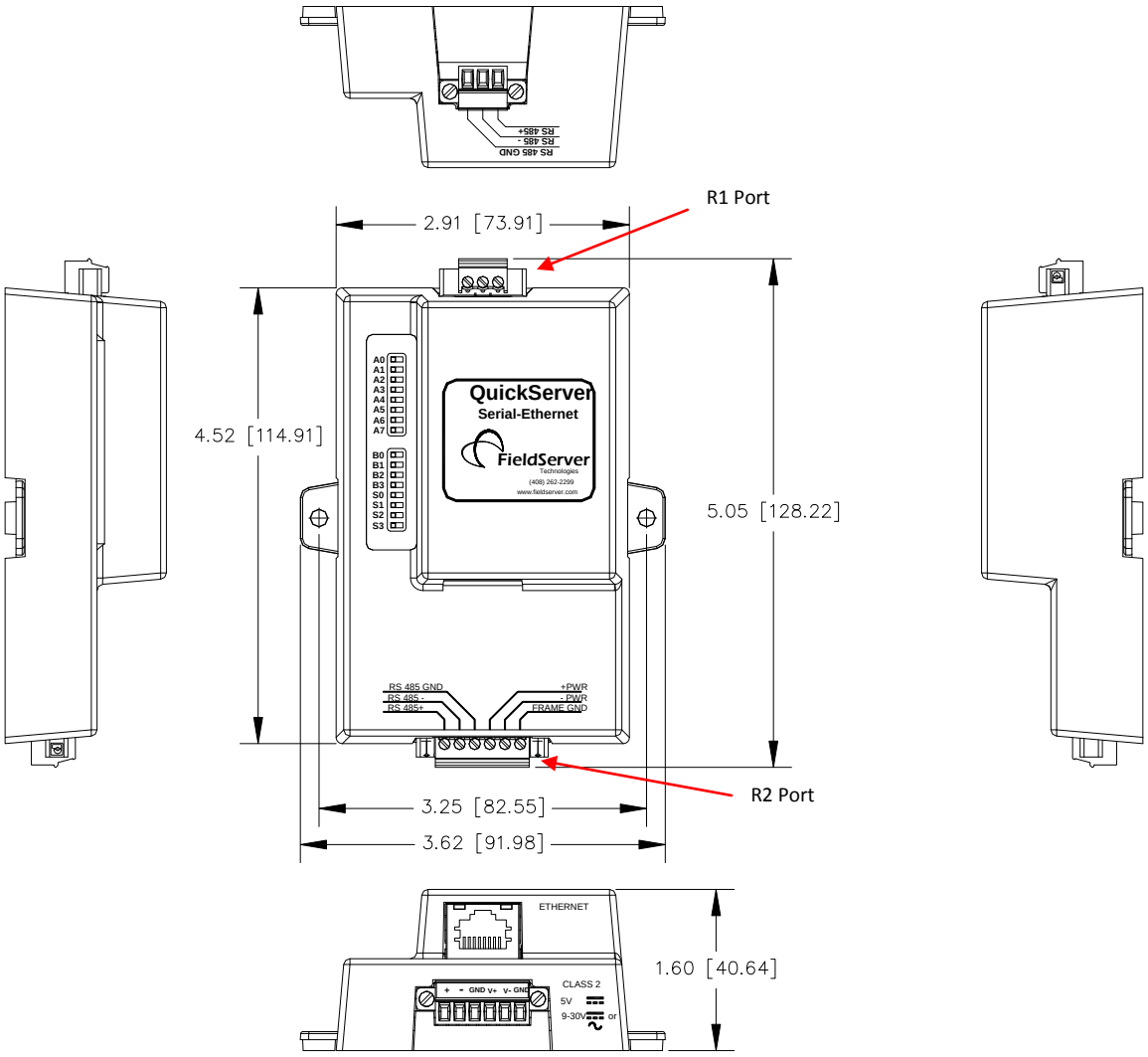
- Product comes with tabs for wall or surface mount. These can be snapped off if not required.
- DIN Rail Mounting Bracket - included in the Accessory Kit or ordered separately (Part # FS-8915-35-QS)



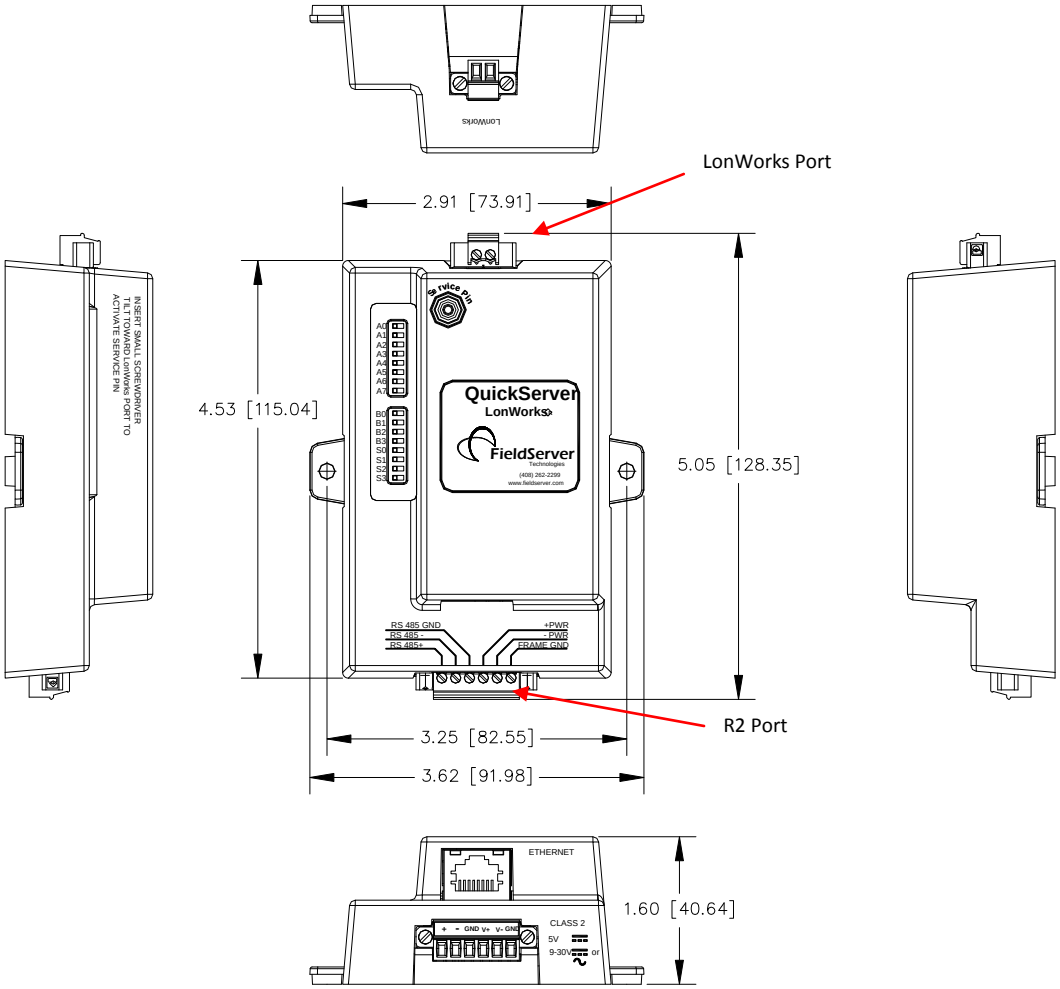

1 LonWorks is a registered trademark of Echelon Corporation
Metasys is a registered trademark of Johnson Controls Inc.
BACnet is a registered trademark of ASHRAE

## 1.3 Dimensions

### 1.3.1 Dimension Drawing FS-QS-1010-XXXX



### 1.3.2 Dimension Drawing FS-QS-1011-XXXX



## 1.4 Wiring

9-30VDC or 9-30V AC must be connected to the terminal block.

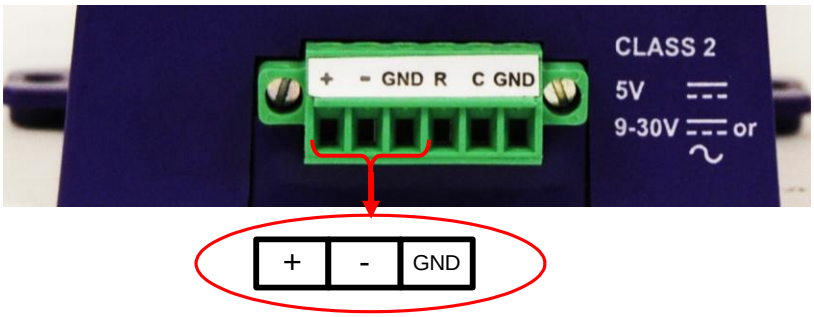
## 1.5 Specifications

| | FS-QS-1010-XXXX[2] | FS-QS-1011-XXXX |
|---|---|---|
| **Available Ports** | One 6-pin Phoenix connector, one RS-485 +/- ground port, power +/- frame ground port<br>One 3-pin RS-485 Phoenix connector, one RS-485 +/- ground port<br>One Ethernet-10/100 port | One 6-pin Phoenix connector, one RS-485 +/- ground port, power +/- frame ground port<br>2-pin FTT-10 LonWorks port<br>One Ethernet-10/100 port |
| Power Requirements | 9-30 VDC or 9-30V AC or 5 VDC,<br>Current draw @ 12V, 150 mA | 9-30 VDC or VAC or 5 VDC,<br>Current draw @ 12V, 279 mA |
| **Surge Suppression** | | |
| EN61000-4-2 ESD EN61000-4-3 EMC EN61000-4-4 EFT | | |
| **Physical Dimensions(excluding the external power supply)** | | |
| (WxDxH): | 5.05 x 2.91 x 1.6 in. (12.82 x 7.39 x 4.06 cm) excluding mounting tabs | |
| Weight: | 0.4 lbs (0.2 Kg) | |
| **Environment:** | | |
| Operating Temperature: | -40°C to 75°C (-40°F to167°F) | |
| Humidity: | 5 - 90% RH (non-condensing) | |
| Approvals: | UL/ULC 916<br>FCC part 15 pending<br>CE Mark pending<br>LonMark pending, BACnet pending, Modbus | |
| (Specifications subject to change without notice) | | |

[2] XXXX at the end of the part number identifies the code for the specific drivers included in the QuickServer. Refer to Appendix D.2

# 2 INSTALLING THE QUICKSERVER

## 2.1 RS-485 Connection R2 port

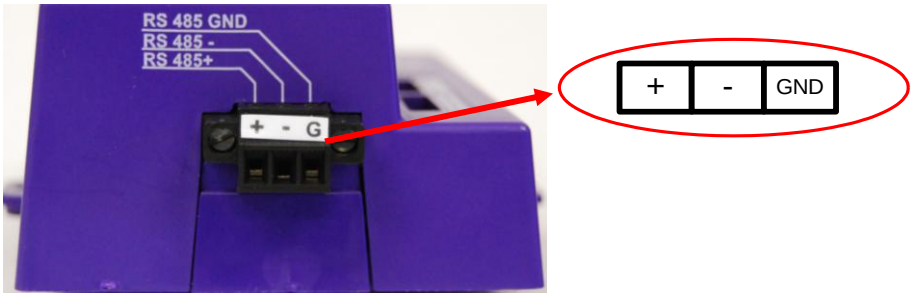



Connect to the 3 pins on the left-hand-side of the 6 pin connector as shown.

## 2.2 RS-485 Connection R1 port

### 2.2.1 RS-485 Connection R1 Port (Only on Non-LonWorks QuickServers)

Connect to the 3-pin connector as shown.

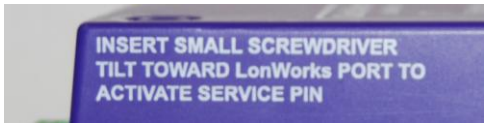



### 2.2.2 QuickServer LonWorks – (FS-QS-1011-XXXX)

Connect the QuickServer to the LonWorks terminal using a twisted pair non-shielded cable.


LonWorks Terminal


LonWorks Service Pin




To commission the QuickServer LonWorks port, insert a small screwdriver in the commissioning hole on the face of the QuickServer's enclosure to access the Service Pin. See the instructions on the QuickServer as to which way to toggle the screwdriver during commissioning.

## 2.3 Configure the DIP Switches

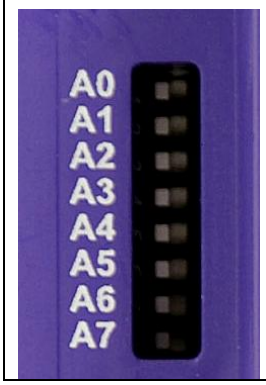
The DIP switches on the QuickServer allow users to set the Baud Rate, Node-ID, and MAC address. If a custom configuration has been purchased, these DIP switches will have been configured at the factory. If doing a self configuration, each of these DIP switches will have to be configured. Although it is technically possible to configure the DIP switches in a variety of ways, it is recommended that the banks are configured as laid out in this manual. It is necessary to restart the QuickServer in order for the DIP switch changes to take effect.

### 2.3.1 Using A0 – A7 to set Node ID/Device Instance.

Refer to Appendix A.1 for configuration example.

The A bank can set the Node-ID/Device Instance for any protocol which requires one.

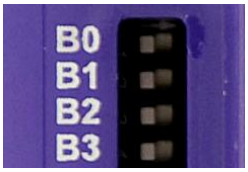
DIP switches A0 – A7 can be also be used to set MAC Address for BACnet MS/TP. See the DIP switch settings for the full range of addresses in Appendix D.4




| Address | 1 | ... | 128 | ... | 255 |
|---|---|---|---|---|---|
| A0 | On | . | Off | . | On |
| A1 | Off | . | Off | . | On |
| A2 | Off | . | Off | . | On |
| A3 | Off | . | Off | . | On |
| A4 | Off | . | Off | . | On |
| A5 | Off | . | Off | . | On |
| A6 | Off | . | Off | . | On |
| A7 | Off | . | On | . | On |

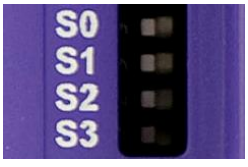
### 2.3.2 Using B0 – B3 to set Baud Rate

Refer to Appendix A.1 for configuration example. The DIP switches B0 – B3 can be set for standard Baud Rates between 110 and 115200 Baud. Refer to Appendix D.5 for DIP switch settings.




### 2.3.3 DIP Switches S0-S3

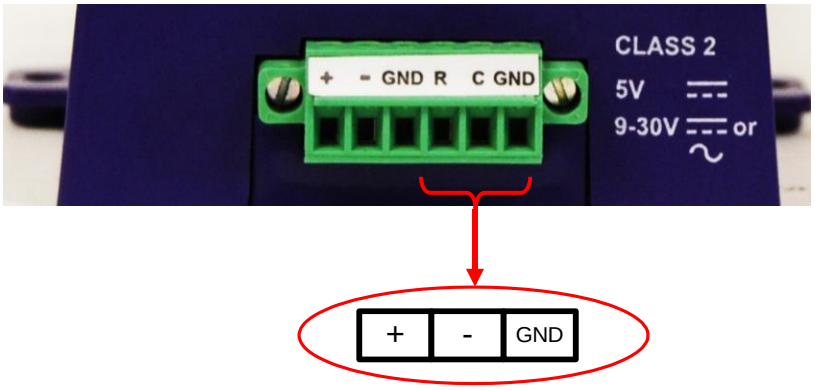
Refer to Appendix A.1 and Appendix A.1.3 for configuration example. The S0 - S3 DIP switch selection is read directly into a Data Array. This Data_Array value can be used for customized operations such as configuration selection.



# 3 OPERATION

## 3.1 Power up the device

Apply power to the device. Ensure that the power supply used complies with the specifications provided in. Ensure that the cable is grounded using the "Frame GND" terminal. The QuickServer is factory set for 9-30VDC/VAC, but can be set to operate at 5VDC.



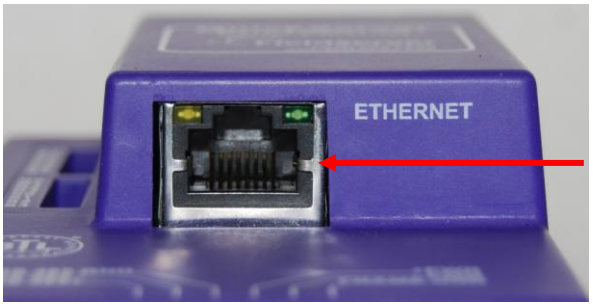




## 3.2 Install and Run the Utility Software

- Download the RUINET Utilities from the FieldServer website or the USB Flash Drive provided (under Utilities section – Install.zip)
- Run Install.zip and follow the installation instructions.
- Once installed, the FieldServer Utilities can be located in the Windows Start menu and as a desktop icon.

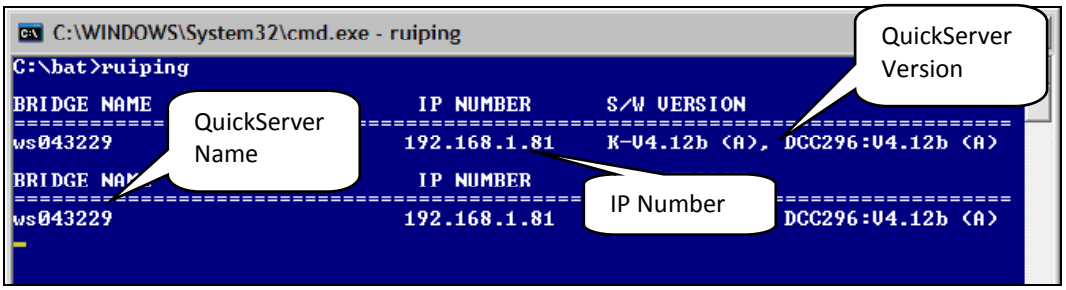
## 3.3 Connect the PC to the QuickServer over the Ethernet port.




Ethernet Port

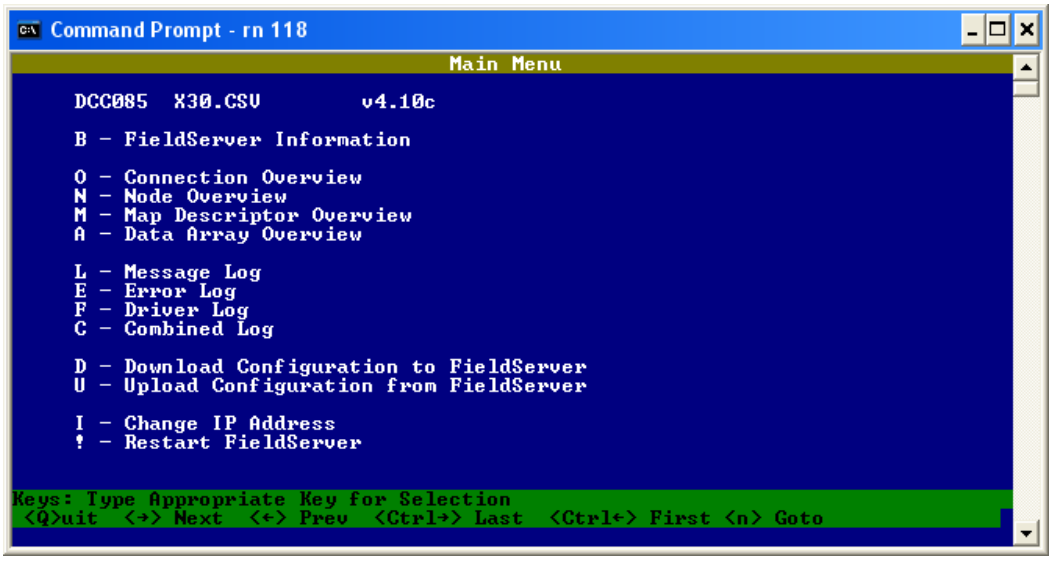
- Disable any wireless Ethernet adapters on the PC/Laptop.
- Disable firewall and virus protection software .
- Connect an Ethernet cable between the PC and QuickServer or connect the QuickServer and the PC to the Hub/switch using a straight cat5 cable.
- The Default IP Address of the QuickServer is **192.168.2.X**, Subnet Mask is **255.255.255.0.** If the PC and the QuickServer are on different IP Networks, assign a Static IP Address to the PC on the 192.168.2.0 network.
- Click on the "RUIPING" Utility. If the IP Address of the QuickServer module appears on the screen, the QuickServer is running.

- Select Start|Programs|FieldServer Utilities; click on the Ruiping Utility. The display should show:




## 3.4 Connect to the QuickServer Using RUI (Ruinet) [3]

- The Remote User Interface utility (RUINET) is the utility that configures the settings and operations of the QuickServer
- Double click on the debugging utility, "RUINET[4]" (Remote User Interface). The following screen will appear: (If Ruinet does not automatically display the main menu, select the QuickServer by typing the 2-digit number to the left of the title name.)




### 3.4.1 I - Change IP Address

From the main menu, press ***"I"*** to enter the Edit IP Address Settings menu.

- Press ***"1"*** to modify the IP address of the Ethernet adapter
- Type in a new IP address in the format XXX.XXX.XXX.XXX (specific to each QuickServer) and press ***<Enter>.***
- If necessary, press ***"2"*** to change the netmask.
- If necessary, press ***"3"*** to change the Gateway.

3 If necessary, refer to Appendix A for troubleshooting tips.
4 A user manual for the Ruinet Utility is available at the Tech Support/Download section at www.fieldserver.com.

# 4 CONFIGURING THE QUICKSERVER

## 4.1 Upload the Sample Configuration File

The configuration of the QuickServer is provided to the QuickServer's operating system via a comma-delimited file called "CONFIG.CSV".

If a custom configuration was ordered, the QuickServer will be programmed with the relevant device registers in the Config.csv file for the first time start-up. If not, the product is shipped with a sample config.csv that shows an example of the drivers ordered. Please see section 4.2 for more information.

In the main menu of the Remote User Interface screen, type "U" to upload the configuration. Then type "U" again. The Remote User Interface Utility will fetch the default configuration and put it into the Configuration File folder (Start|Programs|FieldServerUtilities|Configuration File folder).

## 4.2 Change the Configuration File to Meet the Application

Refer to the FieldServer Configuration Manual in conjunction with the Driver supplements for information on configuring the QuickServer. See www.fieldserver.com/QS_Support/ for specific details.

## 4.3 Download the Updated Configuration file

- Before attempting to send files to the QuickServer, ensure that the files are in the configuration file folder. Refer to the FieldServer Utilities manual for further information.
- From the main menu, type "***D***" to access the "download" menu,
- Type "***L***" (for local filename) to specify the name and extension of the file to be sent to the QuickServer. Hit ***<Enter>*** when done.
- The Remote User Interface Utility will automatically select config.csv for download of csv files. On rare occasions where other files need to be downloaded to the QuickServer type "***O***" for other files, then type "***R***" to specify the remote filename needed on the QuickServer.
- When satisfied that the correct file names are specified, Type "***D***" to download the file to the QuickServer. The Remote User Interface Utility will display a menu showing download progress.

**Note:** the Remote User Interface Utility will indicate when download is complete. DO NOT reset the QuickServer before this message displays as this could corrupt the QuickServer.

- Once download is complete, hit ***<Esc>*** to get back to the main menu and use the "***!***" option (or simply cycle power to the QuickServer) to put the new file into operation. Note that it is possible to do multiple downloads to the QuickServer before resetting it.

## 4.4 Test and Commission the QuickServer

- Connect the QuickServer to the third party device(s), and test the application.
- From the main menu of Ruinet, type "O" to see the number of messages on each protocol.
- In case of problems, refer to Appendix B.1 or the Troubleshooting Guide which can be found at www.fieldserver.com/QS_Support/

# Appendix A. Useful Features

## Appendix A.1. QuickServer DIP Switch configuration

There are 3 DIP switches available on the QuickServer.

- A – Address DIP Switch
- B – Baud rate DIP Switch
- S – Secondary DIP Switch

The following sections describe how to set up the DIP switches in the configuration file. To configure the use of the DIP switches, buffers need to be declared in the "Data Arrays" section which will enable them.

```
Data_Arrays
Data_Array_Name   , Data_Format   , Data_Array_Length   , Data_Array_Function   , Scan_Interval
DA_A              , UINT16        , 1                   , ProtoCarrier_ID_A      , 2s
DA_B              , BAUD          , 1                   , ProtoCarrier_ID_B      , 2s
DA_S              , UINT16        , 1                   , ProtoCarrier_ID_S      , 2s
```

### Appendix A.1.1. Configure DIP switches A0-A7

To configure DIP switches A0-A7 to adjust the Device Id, BACnet MAC address, or both, the dynamic parameters field needs to be added to the configuration file.

```
Dynamic_Parameters
Function                , Data_Array_Name , Data_Array_offset , Descriptor_Name , Low_Limit , High_Limit
Change_Node_ID          , DA_A            , 0                 , Node_Name_A     , 1         , 4194303
Change_System_MAC_Addr  , DA_A            , 0                 , Title_A         , 1         , 254
```

### Appendix A.1.2. Configure DIP switches B0 – B3

To configure DIP switches B0-B3 to adjust the baud rate, the dynamic parameters field needs to be added to the configuration file.

```
Dynamic_Parameters
Function     , Data_Array_Name   , Data_Array_Offset   , Descriptor_Name
Baud_Rate    , DA_BAUD           , 0                   , P1
```

## Appendix A.1.3. Configure DIP switches S0 – S3

The S0 - S3 DIP switch selection is read directly into a Data Array. This Data_Array value can be used for customized operations such as config selection as shown below. In this example, 5 configs will need to be downloaded to the QuickServer: config.csv, profile1.csv, profile2.csv, profile3.csv and profile4.csv. The profile configs will be configured as per FieldServer standard configuration templates.

| Column Title | Function | Legal Values |
|---|---|---|
| Config_Table_Name | Provide name for Config Table | Up to 32 alphanumeric characters |
| Table_Index_Value | A unique value that will be stored if the pattern matches | |
| Table_String | The pattern:<br>"–" is the delimiter which separates tokens in a pattern and should not be considered as part of pattern.<br>"*" means ignore this token | 1-10, 000 |
| Restart_Method* | The specified config or profile is loaded on start-up. If the parameter is configured as On_Change, the QuickServer will restart and reload the specified config every time the Data_Array value changes. Otherwise the config or profile will remain unchanged even if the Data_Array value changes. | On_Change, Never, _ |

```
Data_Arrays
Data_Array_Name   , Data_Format    , Data_Array_Length   , Data_Array_Function   , Scan_Interval
DA_LOAD_CSV       , UINT16        , 1                   , ProtoCarrier_ID_S     , 2s
```

```
Config_Table
Config_Table_Name   , Table_String   , Table_Index_Value
csvfilenames        , profile1.csv   , 1        // Profile config 1
csvfilenames        , profile2.csv   , 2        // Profile config 2
csvfilenames        , profile3.csv   , 3        // Profile config 3
csvfilenames        , profile4.csv   , 4        // Profile config 4
```

```
Dynamic_Parameters
Function   , Data_Array_Name   , Data_Array_Offset   , Config_Table_Name   , Restart_Method
load_csv   , DA_LOAD_CSV       , 2                   , csvfilenames         , On_Change
```

# Appendix B. Troubleshooting Tips

## Appendix B.1. Communicating with the QuickServer over the Network

- Confirm that the network cabling is correct.
- Confirm that the computer network card is operational and correctly configured.
- Confirm that there is an Ethernet adapter installed in the PC's Device Manager List, and that it is configured to run the TCP/IP protocol.
- Check that the IP netmask of the PC matches the QuickServer. The Default IP Address of the QuickServer is 192.168.2.X, Subnet Mask is 255.255.255.0.
  - Go to Start|Run
  - Type in "ipconfig"
  - The account settings should be displayed.
  - Ensure that the IP address is 102.168.2.X and the netmask 255.255.255.0
- Ensure that the PC and QuickServer are on the same IP Network, or assign a Static IP Address to the PC on the 192.168.2.0 network.
- If using Windows XP, ensure that the firewall is disabled.
- Ensure that all other Ethernet cards active on the PC, especially wireless adapters are disabled.
- Refer to the FieldServer Troubleshooting Guide which can be found at www.fieldserver.com/QS_Support/ for further information

## Appendix B.2. Technical support

Before contacting Technical support to report an issue, go to Start|Programs|FieldServer utilities|Tools and run the FST_Diag program. Take a log (See ENote0058 in the folder called Library on the USB Flash Drive). Send this log together with a detailed description of the problem to support@fieldserver.com for evaluation.

Note that while all necessary documentation is shipped with the FieldServer on the USB flash drive, these documents are constantly being updated. Newer versions may be available on the web at www.fieldserver.com/QS_Support/

## Appendix C. Limited 2 year Warranty

FieldServer Technologies warrants its products to be free from defects in workmanship or material under normal use and service for two years after date of shipment. FieldServer Technologies will repair or replace any equipment found to be defective during the warranty period. Final determination of the nature and responsibility for defective or damaged equipment will be made by FieldServer Technologies personnel.

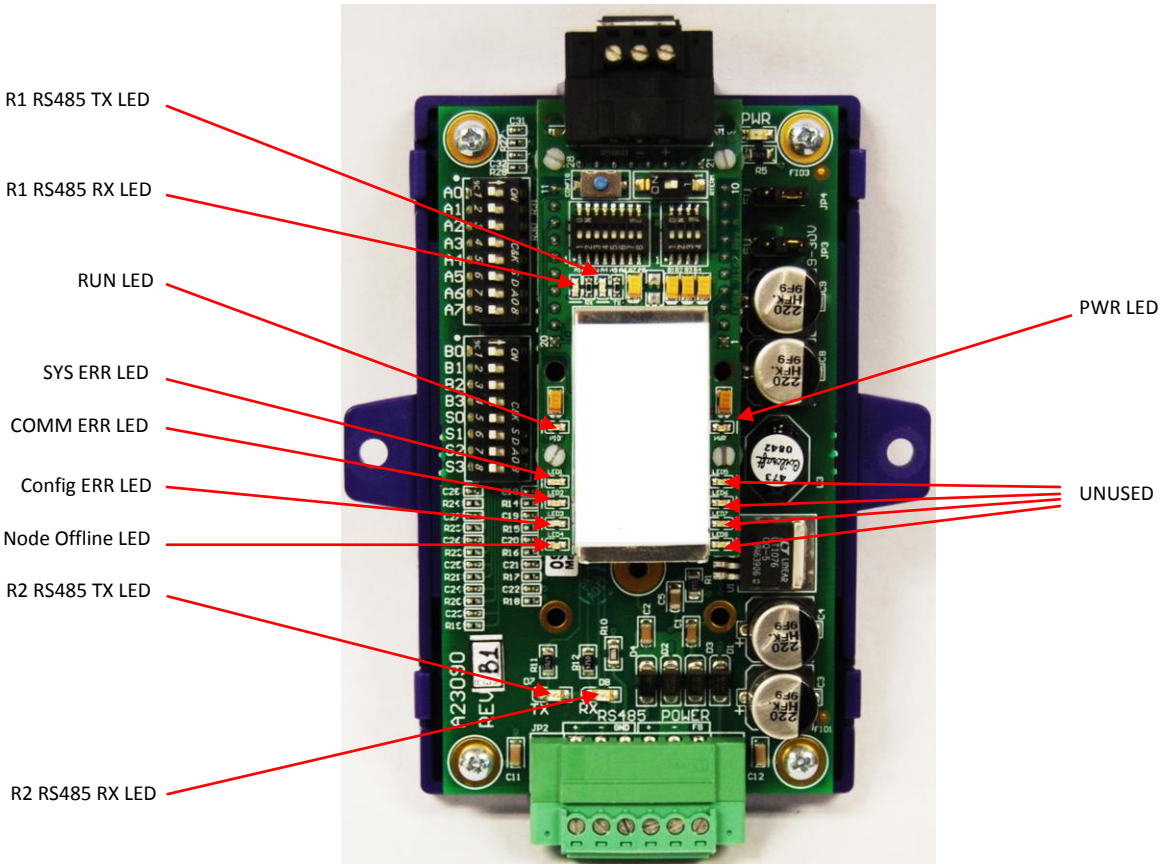
All warranties hereunder are contingent upon proper use in the application for which the product was intended and do not cover products which have been modified or repaired without FieldServer Technologies approval or which have been subjected to accident, improper maintenance, installation or application, or on which original identification marks have been removed or altered. This Limited Warranty also will not apply to interconnecting cables or wires, consumables or to any damage resulting from battery leakage.

In all cases FieldServer Technology's responsibility and liability under this warranty shall be limited to the cost of the equipment. The purchaser must obtain shipping instructions for the prepaid return of any item under this warranty provision and compliance with such instruction shall be a condition of this warranty.

Except for the express warranty stated above, FieldServer Technologies disclaims all warranties with regard to the products sold hereunder including all implied warranties of merchantability and fitness and the express warranties stated herein are in lieu of all obligations or liabilities on the part of FieldServer Technologies for damages including, but not limited to, consequential damages arising out of/or in connection with the use or performance of the product.

# Appendix D. Reference

## Appendix D.1. FS-QS-1010-XXXX LED's




### Appendix D.1.1. LED Functions presented in order of Power-up

| Light | Description |
|---|---|
| **PWR** | This is the power light and should show steady green at all times when the FieldServer is powered. |
| **SYS ERR** | The SYS ERR LED will go on solid 15 seconds after power up. It will turn off after 5 seconds. A steady red light will indicate there is a system error on the FieldServer. If this occurs, immediately report the related "system error" shown in the error screen of the RUI interface to FieldServer Technologies for evaluation. |
| **COMM ERR** | COMM ERR LED will go on solid 15 seconds after power up. It will turn off after 5 seconds. A steady red light will indicate the communications problem if there is a configured node connected to the FieldServer that is offline. To establish the cause of the error, go to the error screen of the RUI interface. |
| **Config ERR** | Config ERR LED will go on solid 15 seconds after power up. It will turn off after 5 seconds. A steady amber light will indicate a configuration error exists in the active configuration. See the Error Screen in the Remote User Interface for a description of the configuration error. |
| **Node Offline** | Node Offline LED will go on solid 15 seconds after power up. It will turn off after 5 seconds. If the Node Offline LED stays on solid, a node offline condition has occurred. |
| **Unused** | 15 seconds after powering up the 4 unused LEDs will turn on solid for 5 seconds, then turn off. |

| Light | Description |
|---|---|
| **RX** | On normal operation of FFP-485, the RX LED will flash when a message is received on the field port of the QuickServer. |
| **TX** | On normal operation of FFP-485, the TX LED will flash when a message is sent on the field port of the QuickServer |
| **RUN** | RUN LED will flash 20 seconds after power up, signifying normal operation. The QuickServer will be able to access RUINET (refer to Section 3.4 for more information) once this LED starts flashing. During the first 20 seconds, the LED should be off |

## Appendix D.2. QuickServer DCC

| Driver | Code |
|---|---|
| BACnet/IP – BACnet MS/TP | 0285 |
| BACnet/IP – LonWorks | 0131 |
| JCI Metasys N2 – LonWorks | 0097 |
| JCI Metasys N2– BACnet MS/TP | 0309 |
| JCI Metasys N2– BACnet/IP | 0122 |
| Modbus RTU – BACnet MS/TP | 0367 |
| Modbus RTU – BACnet/IP | 0104 |
| Modbus RTU – JCI Metasys N2 | 0038 |
| Modbus RTU – LonWorks | 0085 |
| Modbus TCP – BACnet/IP | 0237 |
| Modbus TCP – LonWorks | 0154 |
| Modbus TCP – BACnet MS/TP | 0419 |
| Modbus TCP – JCI Metasys N2 | 0117 |
| SNMP – BACnet/IP | 0333 |
| SNMP – LonWorks | 0337 |

## Appendix D.3. Compliance with UL Regulations

For UL compliance, the following instructions must be met when operating the QuickServer.

- The units shall be powered by listed LPS or Class 2 power supply suited to the expected operating temperature range.
- The interconnecting power connector and power cable shall:
  - Comply with local electrical code.
  - Be suited to the expected operating temperature range.
  - Meet the current and voltage rating for the QuickServer/Net
- Furthermore, the interconnecting power cable shall:
  - Be of length not exceeding 3.05m (118.3”)
  - Be constructed of materials rated VW-1 or FT-1 or better.
- If the unit is to be installed in an operating environment with a temperature above 65 °C, it should be installed in a Restricted Access Area requiring a key or a special tool to gain access

- This device must not be connected to a LAN segment with outdoor wiring.

## Appendix D.4. Address DIP Switch Settings

| Address | A0 | A1 | A2 | A3 | A4 | A5 | A6 | A7 |
|---|---|---|---|---|---|---|---|---|
| 0 | Off | Off | Off | Off | Off | Off | Off | Off |
| 1 | On | Off | Off | Off | Off | Off | Off | Off |
| 2 | Off | On | Off | Off | Off | Off | Off | Off |
| 3 | On | On | Off | Off | Off | Off | Off | Off |
| 4 | Off | Off | On | Off | Off | Off | Off | Off |
| 5 | On | Off | On | Off | Off | Off | Off | Off |
| 6 | Off | On | On | Off | Off | Off | Off | Off |
| 7 | On | On | On | Off | Off | Off | Off | Off |
| 8 | Off | Off | Off | On | Off | Off | Off | Off |
| 9 | On | Off | Off | On | Off | Off | Off | Off |
| 10 | Off | On | Off | On | Off | Off | Off | Off |
| 11 | On | On | Off | On | Off | Off | Off | Off |
| 12 | Off | Off | On | On | Off | Off | Off | Off |
| 13 | On | Off | On | On | Off | Off | Off | Off |
| 14 | Off | On | On | On | Off | Off | Off | Off |
| 15 | On | On | On | On | Off | Off | Off | Off |
| 16 | Off | Off | Off | Off | On | Off | Off | Off |
| 17 | On | Off | Off | Off | On | Off | Off | Off |
| 18 | Off | On | Off | Off | On | Off | Off | Off |
| 19 | On | On | Off | Off | On | Off | Off | Off |
| 20 | Off | Off | On | Off | On | Off | Off | Off |
| 21 | On | Off | On | Off | On | Off | Off | Off |
| 22 | Off | On | On | Off | On | Off | Off | Off |
| 23 | On | On | On | Off | On | Off | Off | Off |
| 24 | Off | Off | Off | On | On | Off | Off | Off |
| 25 | On | Off | Off | On | On | Off | Off | Off |
| 26 | Off | On | Off | On | On | Off | Off | Off |
| 27 | On | On | Off | On | On | Off | Off | Off |
| 28 | Off | Off | On | On | On | Off | Off | Off |
| 29 | On | Off | On | On | On | Off | Off | Off |
| 30 | Off | On | On | On | On | Off | Off | Off |
| 31 | On | On | On | On | On | Off | Off | Off |
| 32 | Off | Off | Off | Off | Off | On | Off | Off |
| 33 | On | Off | Off | Off | Off | On | Off | Off |
| 34 | Off | On | Off | Off | Off | On | Off | Off |
| 35 | On | On | Off | Off | Off | On | Off | Off |
| 36 | Off | Off | On | Off | Off | On | Off | Off |
| 37 | On | Off | On | Off | Off | On | Off | Off |
| 38 | Off | On | On | Off | Off | On | Off | Off |
| 39 | On | On | On | Off | Off | On | Off | Off |
| 40 | Off | Off | Off | On | Off | On | Off | Off |

| Address | A0 | A1 | A2 | A3 | A4 | A5 | A6 | A7 |
|---|---|---|---|---|---|---|---|---|
| 41 | On | Off | Off | On | Off | On | Off | Off |
| 42 | Off | On | Off | On | Off | On | Off | Off |
| 43 | On | On | Off | On | Off | On | Off | Off |
| 44 | Off | Off | On | On | Off | On | Off | Off |
| 45 | On | Off | On | On | Off | On | Off | Off |
| 46 | Off | On | On | On | Off | On | Off | Off |
| 47 | On | On | On | On | Off | On | Off | Off |
| 48 | Off | Off | Off | Off | On | On | Off | Off |
| 49 | On | Off | Off | Off | On | On | Off | Off |
| 50 | Off | On | Off | Off | On | On | Off | Off |
| 51 | On | On | Off | Off | On | On | Off | Off |
| 52 | Off | Off | On | Off | On | On | Off | Off |
| 53 | On | Off | On | Off | On | On | Off | Off |
| 54 | Off | On | On | Off | On | On | Off | Off |
| 55 | On | On | On | Off | On | On | Off | Off |
| 56 | Off | Off | Off | On | On | On | Off | Off |
| 57 | On | Off | Off | On | On | On | Off | Off |
| 58 | Off | On | Off | On | On | On | Off | Off |
| 59 | On | On | Off | On | On | On | Off | Off |
| 60 | Off | Off | On | On | On | On | Off | Off |
| 61 | On | Off | On | On | On | On | Off | Off |
| 62 | Off | On | On | On | On | On | Off | Off |
| 63 | On | On | On | On | On | On | Off | Off |
| 64 | Off | Off | Off | Off | Off | Off | On | Off |
| 65 | On | Off | Off | Off | Off | Off | On | Off |
| 66 | Off | On | Off | Off | Off | Off | On | Off |
| 67 | On | On | Off | Off | Off | Off | On | Off |
| 68 | Off | Off | On | Off | Off | Off | On | Off |
| 69 | On | Off | On | Off | Off | Off | On | Off |
| 70 | Off | On | On | Off | Off | Off | On | Off |
| 71 | On | On | On | Off | Off | Off | On | Off |
| 72 | Off | Off | Off | On | Off | Off | On | Off |
| 73 | On | Off | Off | On | Off | Off | On | Off |
| 74 | Off | On | Off | On | Off | Off | On | Off |
| 75 | On | On | Off | On | Off | Off | On | Off |
| 76 | Off | Off | On | On | Off | Off | On | Off |
| 77 | On | Off | On | On | Off | Off | On | Off |
| 78 | Off | On | On | On | Off | Off | On | Off |
| 79 | On | On | On | On | Off | Off | On | Off |
| 80 | Off | Off | Off | Off | On | Off | On | Off |
| 81 | On | Off | Off | Off | On | Off | On | Off |
| 82 | Off | On | Off | Off | On | Off | On | Off |
| 83 | On | On | Off | Off | On | Off | On | Off |
| 84 | Off | Off | On | Off | On | Off | On | Off |
| 85 | On | Off | On | Off | On | Off | On | Off |

| Address | A0 | A1 | A2 | A3 | A4 | A5 | A6 | A7 |
|---|---|---|---|---|---|---|---|---|
| 86 | Off | On | On | Off | On | Off | On | Off |
| 87 | On | On | On | Off | On | Off | On | Off |
| 88 | Off | Off | Off | On | On | Off | On | Off |
| 89 | On | Off | Off | On | On | Off | On | Off |
| 90 | Off | On | Off | On | On | Off | On | Off |
| 91 | On | On | Off | On | On | Off | On | Off |
| 92 | Off | Off | On | On | On | Off | On | Off |
| 93 | On | Off | On | On | On | Off | On | Off |
| 94 | Off | On | On | On | On | Off | On | Off |
| 95 | On | On | On | On | On | Off | On | Off |
| 96 | Off | Off | Off | Off | Off | On | On | Off |
| 97 | On | Off | Off | Off | Off | On | On | Off |
| 98 | Off | On | Off | Off | Off | On | On | Off |
| 99 | On | On | Off | Off | Off | On | On | Off |
| 100 | Off | Off | On | Off | Off | On | On | Off |
| 101 | On | Off | On | Off | Off | On | On | Off |
| 102 | Off | On | On | Off | Off | On | On | Off |
| 103 | On | On | On | Off | Off | On | On | Off |
| 104 | Off | Off | Off | On | Off | On | On | Off |
| 105 | On | Off | Off | On | Off | On | On | Off |
| 106 | Off | On | Off | On | Off | On | On | Off |
| 107 | On | On | Off | On | Off | On | On | Off |
| 108 | Off | Off | On | On | Off | On | On | Off |
| 109 | On | Off | On | On | Off | On | On | Off |
| 110 | Off | On | On | On | Off | On | On | Off |
| 111 | On | On | On | On | Off | On | On | Off |
| 112 | Off | Off | Off | Off | On | On | On | Off |
| 113 | On | Off | Off | Off | On | On | On | Off |
| 114 | Off | On | Off | Off | On | On | On | Off |
| 115 | On | On | Off | Off | On | On | On | Off |
| 116 | Off | Off | On | Off | On | On | On | Off |
| 117 | On | Off | On | Off | On | On | On | Off |
| 118 | Off | On | On | Off | On | On | On | Off |
| 119 | On | On | On | Off | On | On | On | Off |
| 120 | Off | Off | Off | On | On | On | On | Off |
| 121 | On | Off | Off | On | On | On | On | Off |
| 122 | Off | On | Off | On | On | On | On | Off |
| 123 | On | On | Off | On | On | On | On | Off |
| 124 | Off | Off | On | On | On | On | On | Off |
| 125 | On | Off | On | On | On | On | On | Off |
| 126 | Off | On | On | On | On | On | On | Off |
| 127 | On | On | On | On | On | On | On | Off |
| 128 | Off | Off | Off | Off | Off | Off | Off | On |
| 129 | On | Off | Off | Off | Off | Off | Off | On |
| 130 | Off | On | Off | Off | Off | Off | Off | On |

| Address | A0 | A1 | A2 | A3 | A4 | A5 | A6 | A7 |
|---|---|---|---|---|---|---|---|---|
| 131 | On | On | Off | Off | Off | Off | Off | On |
| 132 | Off | Off | On | Off | Off | Off | Off | On |
| 133 | On | Off | On | Off | Off | Off | Off | On |
| 134 | Off | On | On | Off | Off | Off | Off | On |
| 135 | On | On | On | Off | Off | Off | Off | On |
| 136 | Off | Off | Off | On | Off | Off | Off | On |
| 137 | On | Off | Off | On | Off | Off | Off | On |
| 138 | Off | On | Off | On | Off | Off | Off | On |
| 139 | On | On | Off | On | Off | Off | Off | On |
| 140 | Off | Off | On | On | Off | Off | Off | On |
| 141 | On | Off | On | On | Off | Off | Off | On |
| 142 | Off | On | On | On | Off | Off | Off | On |
| 143 | On | On | On | On | Off | Off | Off | On |
| 144 | Off | Off | Off | Off | On | Off | Off | On |
| 145 | On | Off | Off | Off | On | Off | Off | On |
| 146 | Off | On | Off | Off | On | Off | Off | On |
| 147 | On | On | Off | Off | On | Off | Off | On |
| 148 | Off | Off | On | Off | On | Off | Off | On |
| 149 | On | Off | On | Off | On | Off | Off | On |
| 150 | Off | On | On | Off | On | Off | Off | On |
| 151 | On | On | On | Off | On | Off | Off | On |
| 152 | Off | Off | Off | On | On | Off | Off | On |
| 153 | On | Off | Off | On | On | Off | Off | On |
| 154 | Off | On | Off | On | On | Off | Off | On |
| 155 | On | On | Off | On | On | Off | Off | On |
| 156 | Off | Off | On | On | On | Off | Off | On |
| 157 | On | Off | On | On | On | Off | Off | On |
| 158 | Off | On | On | On | On | Off | Off | On |
| 159 | On | On | On | On | On | Off | Off | On |
| 160 | Off | Off | Off | Off | Off | On | Off | On |
| 161 | On | Off | Off | Off | Off | On | Off | On |
| 162 | Off | On | Off | Off | Off | On | Off | On |
| 163 | On | On | Off | Off | Off | On | Off | On |
| 164 | Off | Off | On | Off | Off | On | Off | On |
| 165 | On | Off | On | Off | Off | On | Off | On |
| 166 | Off | On | On | Off | Off | On | Off | On |
| 167 | On | On | On | Off | Off | On | Off | On |
| 168 | Off | Off | Off | On | Off | On | Off | On |
| 169 | On | Off | Off | On | Off | On | Off | On |
| 170 | Off | On | Off | On | Off | On | Off | On |
| 171 | On | On | Off | On | Off | On | Off | On |
| 172 | Off | Off | On | On | Off | On | Off | On |
| 173 | On | Off | On | On | Off | On | Off | On |
| 174 | Off | On | On | On | Off | On | Off | On |
| 175 | On | On | On | On | Off | On | Off | On |

| Address | A0 | A1 | A2 | A3 | A4 | A5 | A6 | A7 |
|---|---|---|---|---|---|---|---|---|
| 176 | Off | Off | Off | Off | On | On | Off | On |
| 177 | On | Off | Off | Off | On | On | Off | On |
| 178 | Off | On | Off | Off | On | On | Off | On |
| 179 | On | On | Off | Off | On | On | Off | On |
| 180 | Off | Off | On | Off | On | On | Off | On |
| 181 | On | Off | On | Off | On | On | Off | On |
| 182 | Off | On | On | Off | On | On | Off | On |
| 183 | On | On | On | Off | On | On | Off | On |
| 184 | Off | Off | Off | On | On | On | Off | On |
| 185 | On | Off | Off | On | On | On | Off | On |
| 186 | Off | On | Off | On | On | On | Off | On |
| 187 | On | On | Off | On | On | On | Off | On |
| 188 | Off | Off | On | On | On | On | Off | On |
| 189 | On | Off | On | On | On | On | Off | On |
| 190 | Off | On | On | On | On | On | Off | On |
| 191 | On | On | On | On | On | On | Off | On |
| 192 | Off | Off | Off | Off | Off | Off | On | On |
| 193 | On | Off | Off | Off | Off | Off | On | On |
| 194 | Off | On | Off | Off | Off | Off | On | On |
| 195 | On | On | Off | Off | Off | Off | On | On |
| 196 | Off | Off | On | Off | Off | Off | On | On |
| 197 | On | Off | On | Off | Off | Off | On | On |
| 198 | Off | On | On | Off | Off | Off | On | On |
| 199 | On | On | On | Off | Off | Off | On | On |
| 200 | Off | Off | Off | On | Off | Off | On | On |
| 201 | On | Off | Off | On | Off | Off | On | On |
| 202 | Off | On | Off | On | Off | Off | On | On |
| 203 | On | On | Off | On | Off | Off | On | On |
| 204 | Off | Off | On | On | Off | Off | On | On |
| 205 | On | Off | On | On | Off | Off | On | On |
| 206 | Off | On | On | On | Off | Off | On | On |
| 207 | On | On | On | On | Off | Off | On | On |
| 208 | Off | Off | Off | Off | On | Off | On | On |
| 209 | On | Off | Off | Off | On | Off | On | On |
| 210 | Off | On | Off | Off | On | Off | On | On |
| 211 | On | On | Off | Off | On | Off | On | On |
| 212 | Off | Off | On | Off | On | Off | On | On |
| 213 | On | Off | On | Off | On | Off | On | On |
| 214 | Off | On | On | Off | On | Off | On | On |
| 215 | On | On | On | Off | On | Off | On | On |
| 216 | Off | Off | Off | On | On | Off | On | On |
| 217 | On | Off | Off | On | On | Off | On | On |
| 218 | Off | On | Off | On | On | Off | On | On |
| 219 | On | On | Off | On | On | Off | On | On |
| 220 | Off | Off | On | On | On | Off | On | On |

| Address | A0 | A1 | A2 | A3 | A4 | A5 | A6 | A7 |
|---|---|---|---|---|---|---|---|---|
| 221 | On | Off | On | On | On | Off | On | On |
| 222 | Off | On | On | On | On | Off | On | On |
| 223 | On | On | On | On | On | Off | On | On |
| 224 | Off | Off | Off | Off | Off | On | On | On |
| 225 | On | Off | Off | Off | Off | On | On | On |
| 226 | Off | On | Off | Off | Off | On | On | On |
| 227 | On | On | Off | Off | Off | On | On | On |
| 228 | Off | Off | On | Off | Off | On | On | On |
| 229 | On | Off | On | Off | Off | On | On | On |
| 230 | Off | On | On | Off | Off | On | On | On |
| 231 | On | On | On | Off | Off | On | On | On |
| 232 | Off | Off | Off | On | Off | On | On | On |
| 233 | On | Off | Off | On | Off | On | On | On |
| 234 | Off | On | Off | On | Off | On | On | On |
| 235 | On | On | Off | On | Off | On | On | On |
| 236 | Off | Off | On | On | Off | On | On | On |
| 237 | On | Off | On | On | Off | On | On | On |
| 238 | Off | On | On | On | Off | On | On | On |
| 239 | On | On | On | On | Off | On | On | On |
| 240 | Off | Off | Off | Off | On | On | On | On |
| 241 | On | Off | Off | Off | On | On | On | On |
| 242 | Off | On | Off | Off | On | On | On | On |
| 243 | On | On | Off | Off | On | On | On | On |
| 244 | Off | Off | On | Off | On | On | On | On |
| 245 | On | Off | On | Off | On | On | On | On |
| 246 | Off | On | On | Off | On | On | On | On |
| 247 | On | On | On | Off | On | On | On | On |
| 248 | Off | Off | Off | On | On | On | On | On |
| 249 | On | Off | Off | On | On | On | On | On |
| 250 | Off | On | Off | On | On | On | On | On |
| 251 | On | On | Off | On | On | On | On | On |
| 252 | Off | Off | On | On | On | On | On | On |
| 253 | On | Off | On | On | On | On | On | On |
| 254 | Off | On | On | On | On | On | On | On |
| 255 | On | On | On | On | On | On | On | On |

Appendix D.5. Baud DIP Switch Settings

| Baud | B0 | B1 | B2 | B3 |
|---|---|---|---|---|
| Auto[5] | Off | Off | Off | Off |
| 110 | On | Off | Off | Off |
| 300 | Off | On | Off | Off |
| 600 | On | On | Off | Off |
| 1200 | Off | Off | On | Off |
| 2400 | On | Off | On | Off |
| 4800 | Off | On | On | Off |
| 9600 | On | On | On | Off |
| 19200 | Off | Off | Off | On |
| 20833 | On | Off | Off | On |
| 28800 | Off | On | Off | On |
| 38400 | On | On | Off | On |
| 57600 | Off | Off | On | On |
| 76800 | On | Off | On | On |
| 115200 | Off | On | On | On |

5 Auto-baud is only supported for BACnet MS/TP