DF125

JUN / 24 DF125

PPP Router







Specifications and information are subject to change without notice. Up-to-date address information is available on our website.

web: www.smar.com/contactus.asp

AVOIDING ELECTROSTATIC DISCHARGES



ATTENTION

Electrostatic discharges may damage semiconductor electronic components in printed circuit boards. They usually occur when touching components or connector pins from modules and racks, without wearing the appropriate equipment to prevent discharges. It is recommended to take the following precautions:

• Before handling modules and racks, remove the electrostatic charge from your body by wearing a proper wristband or touching grounded devices;

Avoid touching electronic components or connector pins from racks and modules.

DF125 – PPP ROUTER (POINT-TO-POINT PROTOCOL)

Description

Telecommunications structures used in large-area plants typically provide communication in remote areas with RTUs (Remote Terminal Unit) via serial MODEMs.

The DF125 is designed to be connected between the MODEM's serial interface and the RTU's ethernet local area network (LAN), providing PPP (Point-to-Point Protocol) router functionality that allows IP connectivity of the RTUs to the MTU (Main Terminal Unit).

To accomplish this, via AT commands through the serial port, the DF125 configures and requests the MODEM to establish a PPP connection with a server in the MTU. From then on, all protocols used by Smar RTU can be encapsulated via serial PPP protocol and transmitted via telecommunications structure.

Main features

- PPP over the serial port
- IP address translation
- Webserver configuration
- Low power consumption
- DFI302 modular design



Figure 1 - PPP Router Module - DF125

The DF125 is a key element to connect the Smar RTU infrastructure with the telecommunications system used in large plants, enabling serial PPP encapsulation of all protocols used by Smar RTU.

In wide area plants the control system is usually divided into a Main Terminal Unit, a Telecommunications System and several Remote Terminal Units, aiming at standalone and local process intervention, in addition to its simple monitoring.

The RTU's are normally used as standalone equipment and implemented to perform local control for immediate action upon abnormal process behavior at low power and high connectivity.

The telecom system is the important solution to address the long distances issue introduced by such applications. Various scenarios are known and implemented in different locations, e.g. satellite communication, fiber optics, radio network, GSM/GPRS, 3G, Tetra, etc.

Finally, the MTU is the concentrator of all data coming from different RTUs via telecom and compiled into a single database. The MTU is also implemented to operate, configure, and maintain all RTUs remotely based on various protocols.

Standard OPC and Foundation Fieldbus High Speed Ethernet (FF HSE) communication protocols are used to provide all means to send/receive data to/from RTUs.

In the case of narrowed network bandwidths, specific protocols can also be implemented, such as DNP3 which will target data collection from RTUs where the network cannot be accessed 100% of the time in a shared environment (supervision, control, and voice).



Figure 2 – System overview using MTU, RTU and DF125

Installation and Configuration

Installation

DF125 modules use the same modular concept as the DFI302 line, designed to be interchangeable in standard Smar racks. See Mounting the module in the rack topic for installation details.

The DF125 can be installed on the DF9 (Individual Support for Module), fitted to the DIN rail.

The DF125 module needs an external power supply, as it is not powered via rack. See the requirements for the power supply in the Technical Specifications topic. Power supplies from different manufacturers may be used, as long as they meet the minimum quality and safety requirements.



Figure 3 – DF125 – Power supply connector

NOTE Before installing the DF125 in the rack or DF9, it is necessary to configure the IP. Thus, the DIP switches will be accessible.

Connection with controller and modem

After installing the modules that compose the system, it is necessary to connect the ETH1 port of the DF125 to the ETH1 port of the DF63-RTU controller, using an Ethernet cable.

Connect the DF125 to the telecom system modem using a standard RS232 serial cable.

See the connection diagram in the following figure.



Figure 4 – Connection diagram between DF125, DF63-RTU controller and modem

DF125 RS-232 Connector

See in the following table the description of the DB9 connector pins of the DF125 serial port.

| DB9 Connector Male | Pin | Signal | Signal Name | Direction of Signals in the DF125 |
|-----------------------|-----|--------|---------------------|--------------------------------------|
| | 1 | DCD | Data Carrier Detect | Input |
| | 2 | RXD | Receive Data | Input |
| | 3 | TXD | Transmit Data | Output |
| 6 • 1 | 4 | DTR | Data Terminal Ready | Output |
| 7 • • 3 8 • • • • | 5 | GND | Ground | - |
| 9 • • 4 | 6 | DSR | Data Set Ready | Input |
| | 7 | RTS | Request to Send | Output |
| | 8 | CTS | Clear to Send | Input |
| | 9 | RI | Ring Indicator | Input |

Configuration

Through DIP Switches and the DF125 webserver, it is possible make configurations to meet the user's needs.

The configuration options through the DIP switches are described below. On the side of the module there is a label with this information.

| S 1 | S2 | ETH1 IP Selection | | | |
|------------|-------------------------|-------------------------------|-----|------------------|--|
| OFF | OFF | Last Stored IP | | | |
| ON | OFF | Factory IP = 192.168.0.128/24 | | | |
| | | | | | |
| S3 | S3 Reserved S4 Reserved | | | | |
| OFF | Normal C | peration | OFF | Normal Operation | |

To access the switches, the module must be outside the rack or DF9.

IMPORTANT

The DIP switches **S3** and **S4** must always be **OFF** and **OFF** for normal operation. Other settings for these switches are reserved for Smar's use.

IMPORTANT

Before changing the DIP switches for IP configuration of the ETH1 port, it is important that the module is turned off. The new configuration will take effect when the module is re-energized.

If the user is already known the IP of the DF125 ETH1 port, through a PC connected to this port and configured on the same subnet, it is possible to type this IP on an http browser and access the DF125 web server to configure it. In this case, you can go straight to the description of the web server pages below.

However, if it is the first time to configure the DF125, or if you do not know what the IP of ETH1 port is, the user can follow the steps below to start the configuration from the factory IP:

Configure DF125 to force factory fixed IP on ETH1 port

To do so, de-energize the DF125 and configure its DIP Switches in "Factory IP = 192.168.0.128/24" mode. Then re-energize the DF125. It will start with the fixed IP 192.168.0.128/24 on the ETH1 port.

Connect the ETH1 port of the DF125 to a PC on the same subnet

Configure a PC ethernet port on the same subnet as the factory IP of the DF125's ETH1 port. Example:

IP = 192.168.0.127 and Subnet mask = 255.255.255.0 (or 192.168.0.127/24) This PC ethernet port must be connected to the DF125's ETH1 port using an ethernet cable.

Access to the DF125 webserver

Launch the html browser and enter the router IP. The administrative home page is displayed.

Initially, enter the default login and password: smar/smar. These items can be changed in the **Security** menu which will be explained later.

| ← → C △ ▲ Não seguro 192.168.0.128/login | × |
|--|---|
| Smar Technology Company | : |
| Smar Technology Company | |
| Technology Company | |
| Technology Company | |
| | |
| | |
| Login Name | |
| | |
| Password | |
| | |
| | |
| Lögin | |
| | |
| | |
| | |
| | |
| | |

DF125. The following window will open. In the side menu, on the left, the DF125 webserver options are shown.



In Information, the equipment's general information is shown, for example, firmware version.

| S Smar - WebServer × + | | | | | ` | ~ — 🛯 × |
|---|--------------------|-----------|---|--------------------------------------|-------------------|-----------|
| ← → C △ ▲ Não seguro 192.168.0.128/im | formations | | | | @. (c) : | 🔄 😊 🗯 📵 E |
| | Welcome to DF125 w | ebserver | S | erial Number: 3 | | |
| Smar Technology Company | ≣ In | formation | | | | _ |
| A Home | | Di | stribution version 1. DF125-AppPacl | 0.0.2 build 2021110 <_V1.0.3.1.aa | 3 | |
| i Information | | | 0.5. version (| 4.9.220 | | |
| 🌣 Setup 👻 | | | Firmware_V0.0 DF125_monV2020ai-ins-2 | 0.0.15 | | |
| ■ Security ◄ | | | PPP_V1.0.0 Watchdog_V0.4 | 0.20 | | |
| ■ Internet 👻 | | | smar-webap1-1.0.3-b20211111 | Intall20211123-11:16 | | |
| 📰 Diagnostics 🗸 | | | | | | |
| | | | | | | |
| | | | | | | |
| 192.168.0.128/momations | | | | Smar | Foundation Fieldb | us |

In **Setup** \rightarrow **Network**, the IP and network mask settings of the DF125 and the IP address of the RTU can be changed. See following figure:

| S Smar - WebServer x + | | | | v - B X |
|---------------------------------|----------------------------|-------------------|-----------------|---------------------|
| < | Welcome to DF125 webserver | Se | erial Number: 3 | чен 🖌 и 🦉 : |
| Smar Technology Company | | vork | | |
| A Home | | Network Confi | igurations | |
| i Information | | LAN Configuration | | |
| 🌣 Setup 👻 | | IP Address | 192.168.0.128 | |
| Network | | Netmask | 255.255.255.0 | |
| Time & Date | | RTU Configuration | | |
| Modem | | IP Address | 192.168.0.120 | |
| RS 232 | | Save | Cancel | |
| Save / Restore | | | | |
| Firmware Update | | | | |
| 192.168.0.128/setup/networkinfo | | | Smar | Foundation Fieldbus |

Enter the desired values in the appropriate fields and click Save.

The network settings saved by the user via webserver are stored non-volatilely, in a file in flash memory, and will not be lost even after the module is turned off and on again. These LAN settings can also be saved in the same way via DFBatch or telnet.

The configuration saved for LAN is the IP configuration for ethernet port ETH1, but it is possible to temporarily force another fixed IP for this port according to the configuration of DIP switches **S1** and **S2**, as follows:

• If the DF125 starts with the DIP Switches in "Last Stored IP" mode:

This is the normal mode of operation. The ETH1 port will always assume the last IP saved via webserver, DFBatch or telnet.

- If the DF125 starts with the DIP Switches in "Factory IP" mode = 192.168.0.128/24":
 - The ETH1 port will assume the fixed IP 192.168.0.128/24. This mode is useful for configuration when the user does not know the last IP saved, as it allows accessing the module through that known IP and configuring a new desired IP via webserver, DFBatch or telnet. It is worth remembering that the new saved IP will only be assumed by ETH1 port when the module is restarted with the DIP Switches in "Last Stored IP" mode.
- It is important to note that the IP configuration of DIP switches **S1** and **S2** does not change the LAN settings previously saved via webserver, DFBatch or telnet. The configuration of these switches only selects where the IP values that the ETH1 port will assume at startup will come from, between the two possibilities: using the last value saved by the user or using the fixed value 192.168.0.128/24.

| S Smar - WebServer × + ← → C △ ▲ Não seguro 192.168.0.128/setup/d | datetimeinfo | | | | | | <!--</th--><th>- ¤ ×</th> | - ¤ × |
|--|--------------|---------------------|----------------|--------------|---|--------|--|-------|
| Wel | lcome to DF1 | 25 webserver | Se | rial Number: | 3 | | | |
| Smar Technology Company | ≡ | Setup / Time & Date | | | | | | _ |
| A Home | | | Time & Date Co | nfiguration | | | | |
| i Information | | Date (mm/dd/yyyy) | | 12/27/2021 | | | | |
| 🌣 Setup 👻 | | Time (hh:mm:ss) | | 22 | 1 | 22 | | |
| Network | | | | | | | | |
| Time & Date | | | Save | Cancel | | | | |
| Modem | | | | | | | | |
| RS 232 | | | | | | | | |
| Save / Restore | 1 | | | | | | | |
| Firmware Update | | | | | | | | |
| 192.168.0.128/setup/datetimeinfo | | | | Smar | | Founda | tion Fieldbus | |

In **Setup** \rightarrow **Time & Date** the configuration of date and time can be changed.

In **Setup** \rightarrow **Modem**, the user must fill in the fields if they need this data.

Dial Prefix:

This field is used to configure the number to be added before the dial number. It is advisable to consult the manual, or the manufacturer of the modem used before changing this setting.

Custom initialization

Configuration of AT commands that will be used for a specific modem configuration. It is advisable to consult the manual, or the manufacturer of the modem used before changing this setting.

| S Smar - WebServer x + | tro ferademiafa | | | | × م ب | - ¤ × |
|--------------------------------|----------------------------|-----------------------|-------------|----------------|---------------------|-------|
| < | Welcome to DF125 webserver | | Se | rial Number: 3 | ч E н | |
| Smar Technology Company | ≡ Setup / I | Modem | | | | |
| A Home | | | Modem Confi | iguration | | |
| i Information | | Activate | | Enable | | |
| 🌣 Setup 👻 | | Dial prefix | | | | |
| Network | | Custom initialization | | | | |
| Time & Date | | | Save | Cancel | | |
| Modem | | | | | | |
| RS 232 | | | | | | |
| Save / Restore | | | | | | |
| Firmware Update | | | | | | |
| 192.168.0.128/setup/moderninfo | | | | Smar | Foundation Fieldbus | |

In **Setup** \rightarrow **RS232**, the RS232 serial port settings can be changed. It is advisable to consult the manual, or the manufacturer of the modem used before changing this setting.

| S Sha Webbyer | | | | × | - D × |
|--|------------------------|------------|------------------|---------------------|---------|
| ← → C △ ▲ Não seguro 192.168.0.128/setup/rs232 | 2info | | | Q (c) \$\$ | 🖻 🗯 🚯 🗄 |
| Welco | ome to DF125 webserver | 2 | Serial Number: 3 | | |
| Smar Technology Company | ■ Setup / RS232 | | | | |
| 📽 Home | | RS232 Conf | igurations | | |
| i Information | Baudrate | | 9600 | ~ | |
| 🕏 Setup 👻 | Data | | 8 bits | ~ | |
| Network | Parity | | None | ~ | |
| Time & Date | Stop | | 1 bit | ~ | |
| Modem | | | | | |
| RS 232 | | Save | Cancel | | |
| Save / Restore | | | | | |
| Firmware Update | | | | | |
| 192.168.0.128/setup/rs232/nfo | | | Smar | Foundation Fieldbus | |

In Setup \rightarrow Save & Restore it is possible to save the current configuration on the user's local machine through the option Save current configuration to disk.

Through the **Load configuration from disk** option, the user chooses a file that has the desired configuration. Just click **Load** to do so.

To restore the configuration to factory data, click **Restore** in the **Restore the configuration to factory default** option. The database will be deleted and a new one will be created with the default data.



In **Setup** \rightarrow **Firmware Update** the user can update the firmware. It is important to note that this operation is performed only through the local Ethernet port. It cannot be done by PPP connection on RS232 port.

Only use firmware provided by Smar. Check if the firmware to be loaded has specific installation instructions.

The firmware files must be stored in a directory on a machine that allows them to be read via FTP (File Transfer Protocol). For this it is necessary to have an FTP server configured with the firmware directory path, in addition to a username and password that will have access to the firmware via FTP. The DF125 must have access, via its local ethernet port, to the machine with the FTP server. Consult the manual of the FTP server used to know how to configure it.

The fields on the firmware update web page must be configured as follows:

- FTP Server IP: It is the IP address of the machine where the FTP server is.
- **Remote Path**: It is the path, for FTP access, of the directory where the firmware is. This path must be configured on the FTP server.
- **Firmware Name**: It is the name of the firmware file to be loaded on the DF125 and has a **pkg** extension. Firmware files will be provided by Smar. Check if there are specific instructions for the firmware version which will be loaded.
- **FTP User**: It is the name of the user that has access, via FTP, to the firmware directory and must be registered in the FTP server settings.
- **FTP Password**: It is the user's password to allow access, via FTP, to the firmware and must be registered in the FTP server settings.

DF125 – PPP Router

| S Smar - WebServer x + | Mathue Theoreman constants | | | v – ø > |
|-------------------------------------|----------------------------|-------------------|------------------------------|--------------------|
| | Welcome to DF125 webserve | r | Serial Number: 3 | ч с н ч м ф |
| Smar Technology Company | ≡ Setup | / Firmware Update | | |
| A Home | | Firmware Upda | ate Configuration | |
| i Information | | FTP Server IP | 192.168.0.202 | |
| ✿ Setun ▼ | | Remote Path | / | |
| | _ | Firmware Name | DF125-SP-V1025az-T1032aa.pkg | |
| Network | | FTP User | smar | |
| Time & Date | | FTP Password | •••• | |
| Modem | | FT | P Status | _ |
| RS 232 | | Press FTP Verify | to check the settings | |
| Save / Restore | | Verify FTP Server | Update Firmware | |
| Firmware Update | | | | |
| 192.168.0.128/setup/firmware-update | | | Smar Four | ndation Fieldbus |

After connecting the PC to the local Ethernet port of the DF125 and having filled in the FTP server and firmware data, click **Verify FTP Server**. Then, click **Update Firmware**.

In **Setup** \rightarrow **Restart** the user can restart the DF125, just click the **Restart** button.

| S Smar - WebServer × + | | | ✓ – B × |
|--|---------------------------|--|---------------------|
| ← → C ☆ ▲ Não seguro 192.168.0.128/set | up/restart | | Q 🖻 🛊 🎯 🛊 🚳 🗄 |
| li li | elcome to DF125 webserver | Serial Number: 3 | |
| Technology Company | | | |
| A Home | | | |
| i Information | | DF125 Reboot Options | |
| 🌣 Setup 👻 | | Choose one report option and press report bottom | |
| Network | | No additional options | |
| Time & Date | | | |
| Modem | | | |
| RS 232 | | | |
| Save / Restore | | | |
| Firmware Update | | | |
| Restart | | | |
| 192.168.0.128/setup/restart ity - | | Smar | Foundation Fieldbus |

In Security \rightarrow Administration Rights the user can change the Login data. Click Save to finish.

| S Smar - WebServer x + | | | ✓ - Ø × |
|----------------------------|-------------------------|---------------------|---|
| Velc | come to DF125 webserver | Serial Number: 3 | чен • и • • • • • • • • • • • • • • • • • |
| Smar Technology Company | | | |
| A Home | | Login Configuration | |
| i Information | Login Name | smar | |
| 🌣 Setup 👻 | Password | | |
| ■ Security ▼ | Password Confirm | 1 | |
| Administration Rights | | Save Cancel | |
| ≣ Internet ◄ | | | |
| Diagnostics • | | | |
| | | | |
| 92.168.0.128/setup/login | | Smar | Foundation Fieldbus |

In **Internet** \rightarrow **Account**, the user can change the necessary settings so that the DF125 can establish a connection with the Modem and have access to the network/internet.

- Phone number:
 - Number that the DF125 must dial to connect to the network/internet.
- Username/ password: Password and username used when connecting to the network/internet.
- Authentication:
- Authentication mode that will be used for the connection.
- Outgoing mail server (SMTP)
 - SMTP server address.
- Account E-mail address: E-mail address that is associated with the username and password provided to perform the connection.

It is advisable to consult the manual, or the manufacturer of the modem used before changing this setting.

| S Smar - WebServer × + ← → C △ Não seguro 192.168.0.128/setur | p/accountinfo | | | 、 - ロ > Q 台 会 ⑤ 第 ⑥ |
|---|---------------|---|---|------------------------|
| We | lcome to DF | 25 webserver | Serial Number: 3 | |
| Smar Technology Company | ≡ | Setup / Account | | |
| A Home | | Ac | count Configurations | |
| i Information | | Phone number | *99# | |
| 💠 Setup 👻 | | Username | | |
| ≣ Security ▼ | | Password Authentication | None O PAP O F | AP/CHAP |
| Internet • | | Outgoing mail server (SMTP) | | |
| Account | | Account E-Mail address Note: if the product is configured to send e-mail | please fill a valid e-mail address above. | |
| Diagnostics • | | (| Save | |
| | | | | |
| 92.168.0.128/setup/accountinfo | | | Smar | Foundation Fieldbus |

In **Diagnostics** \rightarrow **Log** the user can check the log information in the system. This LOG is recycled by the Linux operating system.



In **Diagnostics** is also possible to check status information of the **Network, Switch** (DIP Switches), and **Routing Table**. See the following figures.

| C O A Não seguro 192.1 | 68.0.128/diagnostics/network-status Nelcome to DE125 webser | r | Serial Number: 3 | Q. (c) |
|--------------------------|--|------------------------|-------------------|---------------------|
| Smar chnology Company | | twork Status | | |
| Home | | LAN Status | | |
| Information | | Ethernet Address (MAC) | 00:30:5c:21:00:03 | |
| Onton | | Current IP Address | 192.168.0.128 | |
| Setup • | | Current Netmask | 255.255.255.0 | |
| Security - | | Default Gateway | | |
| Internet - | | RTU Status | | |
| | | State | Not Connected | |
| Diagnostics | | IP Address | 192.168.0.120 | |
| Log | | MODEM Status | | |
| Network Status | | Port | External | |
| Switch Status | | State | Not Connected | |
| Deuting Table | | IP Address | | |
| Routing Table | | Netmask | | |
| | | Default Gateway | | |
| | | Primary DNS | | |
| | | Secondary DNS | | |
| | | | | |
| | | | | |
| | | | Smar | Foundation Fieldbus |



| S Smar - WebServer x + | ting table | | | | | v A M A | - 0 |
|----------------------------|--------------------|-------------|--------------------|------------------|----------|-------------|-----|
| Welcome | to DF125 webserver | | Serial | Number: 3 | | | |
| SMAR Technology Company | Diagnostics / Rc | outing Tab | ble | | | | |
| A Home | | Rou | uting Table Inforr | mation | | | |
| i Information | | | | | | | |
| ✿ Setup ▼ | Kernel IP ro | uting table | | | | | |
| + octup | Destination | Gateway | Genmask | Flags Metric Ref | Use | | |
| In the security | 192.168.0.0 | 0.0.0.0 | 255.255.255.0 | U 0 0 | 0 eth0 | | |
| ≣ Internet ▼ | | | | | | | |
| ■ Diagnostics - | | | | | | | |
| Log | | | | | | | |
| Network Status | | | | | | | |
| Switch Status | | | | | | | |
| Routing Table | | | | Smar | Foundati | on Fieldbus | |

Technical Specifications

| SERIAL PORT | | |
|-------------|------------------|--|
| Baud Rate | Up to 115200 bps | |
| Standard | EIA-232 | |
| Isolation | 2 kV | |

| POWER SUPPLY | | |
|---------------------------------|--------------------------------|--|
| Power Supply* | 10 to 35 Vdc (100 mA @ 24 Vdc) | |
| Power Supply Isolation 1500 Vdc | | |

*Protection against power supply with reversed polarity if the voltage is within the operating range.

| PROTECTION DEVICE | | |
|-------------------|---------------------|--|
| Slow Blow Fuse | 5x20mm 4A - 250V | |

| ELECTRICAL CERTIFICATION (PENDING) | | |
|---|-----------------------|--|
| The DF125 is designed to meet the IEC 61326:2012 standard for electrical certification. | | |
| ENCLOSE | | |
| Electrostatic discharge (IEC61000-4-2) | 4 kV/8 kV contact/air | |
| EM field (IEC61000-4-3) | 10 V/m | |
| Rated power frequency magnet field (IEC61000-4-8) | 30 A/m | |
| DC POWER | | |
| Burst (IEC61000-4-4) | 2 kV | |
| Surge (IEC61000-4-5) | 1 kV/2 kV | |
| Conducted RF (IEC61000-4-6) | 3 V | |

| INDICATION LEDs | | | |
|-----------------|-------|--|--|
| LED | COLOR | DESCRIPTION | |
| ON | Green | Module turned on. On: indicates that the module is turned on. Blinking or off: Indicates start, fault, or diagnostic and maintenance modes. | |
| LINE | Green | PPP connection status. Blinking: Trying to establish PPP connection. On: PPP connection established. | |
| ST | Green | Status. Reserved. | |
| MODE | Green | Modem connection status. Blinking: Trying to establish serial communication with the modem. Off: PPP connection established if the LINE LED is on. | |
| LACT | Green | Ethernet Port - Link/Activity. On: Indicates the presence of link Off: Indicates missing link. Blinking: indicates the presence of link with activity of data transmission or reception. | |
| L100 | Green | Ethernet Port - Speed. On: indicates 100Mbits/s Off: indicates 10Mbis/s, if there is link. | |
| RX | Green | Serial port - data reception | |
| ТХ | Green | Serial port - data transmission | |

| ETHERNET PORTS* | | | | |
|-----------------|----------|-----------------------|--------------------------------|--|
| PORT | PROTOCOL | DESCRIPTION | APPLICATION | |
| 4987 | UDP | SE | | |
| 4988 | TCP | (Smar Ethernet) | | |
| 1089 | UDP | | Download and Configuration via | |
| 1090 | UDP | HSE | System302 | |
| 1091 | UDP | (High Speed Ethernet) | | |
| 3622 | UDP | | | |
| 123 | TCP | SNTP | | |
| 502 | TCP | Modbus | | |
| 80 | TCP | HTTD | | |
| 8080 | TCP | | Diagnostics | |
| 23 | TCP | Telnet | | |
| 161 | UDP/TCP | SNMP | | |
| 162 | UDP/TCP | SNMP Trap | | |
| 20000 | UDP | DNP3 | HMI Supervision | |

*DF125 is already configured to support the ports and protocols in this table.

| ENVIRONMENTAL CONDITIONS | | |
|--------------------------|------------------------------------|--|
| Operating Temperature | -40 °C to 80 °C (-22 °F to 176 °F) | |
| Storage Temperature | -40 °C to 85 °C (-40 °F to 185 °F) | |
| Relative humidity | 5 – 95% | |

| DIMENSIONS AND WEIGHT | | |
|------------------------|-----------------------|--|
| Dimensions (H X W X D) | 141,5 x 41 x 141,8 mm | |
| Weight | 0.318 kg | |

| SERIAL CABLE | |
|-----------------|---------------------|
| RS-232 Standard | Maximum length: 10m |

Dimensional Drawing



Measurements are in millimeters and in inches in parentheses.

Installing Modules in the Rack

Follow the steps below to install a module in the rack.

| | Attach the top of the module (with a 45° inclination) to the module support located on the upper part of the rack. |
|---|--|
| 2 | Mounting detail. |
| 3 | Push the module fixing it to the module connector. |
| 4 | Next, fix the module to the rack using a screwdriver, and fasten the fixation screw at the bottom of the module. |

Appendix

| CMOOK | SRF – SERVICE REQUEST FORM | |
|--|---|--------------|
| Sillar | DFI302 – Fieldbus Universal Bridge | Proposal №: |
| | COMPANY INFORMATION | |
| Company: | | |
| Unit: | | |
| Invoice: | | |
| COMMERCIAL CONTACT | | |
| Full Name: | | |
| Phone: | | Fax: |
| | | |
| | | |
| Phone: | | Extension: |
| E-mail: | | |
| | EQUIPMENT DATA | |
| Model | | |
| Serial Number: | | |
| | | |
| | PROCESS DATA | |
| Process Type (Ex. boiler control): _ | | |
| Operation Time: | | |
| Failure Date: | | |
| | FAILURE DESCRIPTON | |
| (Ple | ease, describe the failure. Can the error be reproduced? Is it r | repetitive?) |
| | · · · · · · · · · · · · · · · · · · · | |
| | | |
| | | |
| | | |
| | | |
| | OBSERVATIONS | |
| | | |
| | | |
| | | |
| | | |
| 0 | USER INFORMATION | |
| Company: | | |
| Contact: | | |
| Section: | | |
| Title: | Signature: | |
| Phone: | | Extension: |
| E-mail: | | Date:/// |
| For warranty or non-warranty repair, pleas Further information about address and co | se contact your representative. ontacts can be found on https://www.smar.com.b/en/contact-us | |