



MIU-40 v 3.4



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Introduction

The Traf-Sys MIU-40 data controller is a stand-alone device designed to process and log data from wired Traf-Sys sensors. The MIU-40 receives contact-closure relay signals from sensors, processes the data and makes the data available via a command/response interface through the built-in serial data port.

The serial data port can be connected to a number of different devices for remote accessibility. The following are ways that the MIU-40 can be connected: direct to a pc serial port, modem or serial to IP network converter.

Each of the 40 sensor ports on the MIU-40 will provide power to the sensors and a relay signal back to the MIU-40 for processing data. The MIU-40 can support up to 40 entrances and stores up to 9 days of data.

Connecting to the MIU-40

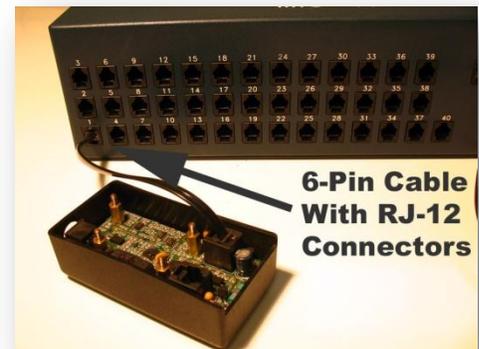
There are two types of connection ports on the MIU-40, sensor ports and a single data port. The sensor ports are used to power sensors and relay data back to the MIU-40. The data port is a single serial interface that will allow you to retrieve data from the MIU-40.

Sensor Ports

Sensor ports are numbered 1 through 40 on the front of the MIU-40. Each sensor port can be used to handle multiple sensors in a daisy-chain configuration. This allows you to wire an entrance that would require multiple sensors with a single run of cable.

Each sensor port is an RJ-12 port with 6 connections. You must use wiring that has at least 6 conductors for your home-run wiring. All wiring to the MIU-40 is straight-through end-to-end.

The 40 LEDs that appear on the front of the MIU-40 indicate activity on each of the ports. You will see each LED flash for the corresponding port when data is being sent to the MIU-40. If the LED should appear solid, this indicates that there is a short in the wiring to this port and you should check your pairs to make sure the wiring is straight-through end-to-end.



The Data Port

There is one data port available on the front of the MIU-40. This port uses a RJ-12 jack, but is actually a RS-232 serial port. There are several different ways to connect to the data port.

Direct-to-PC Connection

You can connect the MIU-40 directly to a PC using a serial connection. The MIU-40 can be used with a female DB-9 to RJ-45 adapter to connect directly to the serial port on a PC.

If you don't have a female DB-9 to RJ45 connector, you can order one by contacting sales@trafsys.com, or you can configure your own by using the following pin-out.



DB-9 to RJ45 Pin-out (Serial Connection)

The pin-out for the MIU-40 female DB-9 to RJ45 adapter is as follows:

2 - Yellow

3 - Red

5 - Black

Ethernet Adapter Connection

The MIU-40 can be used with a serial-to-IP Ethernet adapter to make your data available over a Local Area Network. The Serial-to-IP converter requires a male DB-9 to RJ45 adapter for connectivity.

If you need a serial to IP converter, you can order one from sales@trafsys.com.

These devices can be configured to work with Traf-Sys software. For specific configuration details, see the instructions for setting up a serial-to-IP converter.

The male DB-9 to RJ45 adapter is included with the pre-configured serial to IP converter, but if you need to configure your own, you can use the following pin-out.



Male DB-9 to RJ45 Pin-out (Serial-to-IP Converter Connection)

The pin-out for the MIU-40 male DB-9 to RJ45 adapter is as follows:

- 2 - Red
- 3 - Yellow
- 5 - Black

Modem Connection

The MIU-40 can be connected to an external modem to make your data remotely available through a shared or dedicated phone line. This will allow you to communicate with the MIU-40 over a phone line using a modem-to-modem connection.



To connect the data port to a modem, you will need a male DB-25 to RJ45 adapter. You can order these adapters and pre-configured modems from sales@trafsys.com.

The male DB-25 to RJ45 adapter is included with the pre-configured external modem, but if you need to configure your own, you can use the following pin-out.

Male DB-25 to RJ45 Pin-out (External Modem Connection)

The pin-out for the MIU-40 male DB-25 to RJ45 adapter is as follows:

- 2 – Yellow
- 3 – Red
- 7 – Black

The Keypad and Display

The keypad and display provide a built-in interface to the internal memory of the MIU-40. Through this interface, you can view the live traffic data, live sensor status, historical traffic data, historical sensor status, configure sensor ports and set the date/time on the unit without the need for a computer with software.

When you first turn on the MIU-40, the main menu will show the following: 1- HS Data, 2-LV Data, 3-HS Stat, 4-LV



Stat. These are your options for viewing the Historical Data, Live Data, Historical Status and Live Status respectively. You can get to other menus from this menu by using keys 4 through 9.

Hs Data

At the main menu, press “1” to reach this selection.

This selection allows you to view all available historical data written to memory in the MIU-40. The top row will show you the date and time in 5-minute increments. Use the arrow keys to change the date and time so you can view the pedestrian traffic data for that period. You will only be able to see data for one port at a time. The first number in the second row designates the port you are reading from. The inbound counts are to the right of the “I” on the second row and the outbound counts are to the right of the “O” on the second row. To change the port press the left or right arrow until this number is underlined. Then, you can use the up and down arrows to change this value.

Click the “End” key to exit this menu.

Lv Data

At the main menu, press “2” to reach this selection.

This selection allows you to view the counts as they are occurring for the most current record. This record has not yet been written to memory so the values may change until they are written to the historical log.

On the first row, you will see the current date and time for the MIU-40. The second row will show you the port number, the current inbound counts and the current outbound counts. You can change the port number using the up and down arrows on the keypad.

Click the “End” key to exit this menu.

Hs Stat

At the main menu, press “3” to reach this selection.

This selection allows you to view all available historical status data written to memory in the MIU-40. The status data is data that shows the health of the sensors on each port. Each sensor will send a pulse called a Heartbeat every 5 minutes. The purpose of this status indicator is to let the system know that the sensor is still alive and able to count. If a sensor does not detect any counts for a full hour, it will send a “No Activity” pulse. This can be used to determine if you may have sensors that are improperly calibrated or are unable to detect counts. If you see “No Activity” counts where there should be activity, then you may have a sensor problem. The third status indicator is the “Garbage” indicator. This lets the system know that there may be a sensor configuration error. The “Garbage” indicator shows the number of counts that the MIU was unable to classify or record. This may be due to an incorrectly configured sensor on the port.

The top row will show you the date and time in 1 hour increments. Use the arrow keys to change the date and time so you can view the sensor status data for that period. You will only be able to see data for one port at a time. The first number in the second row designates the port you are reading from. The second number shows the “No Activity” indicator. The second number shows the “Heartbeat” indicator and the third shows the “Garbage” indicator.

Click the “End” key to exit this menu.

Lv Stat

At the main menu, press “4” to reach this selection.

This selection allows you to view the sensor status indicators as they are occurring for the most current record. This record has not yet been written to memory so the values may change until they are written to the historical log.

On the first row, you will see the current date and time for the MIU-40. The second row will show you the port number, the current “No Activity” stats, the current “Heartbeat” stats, and the current “Garbage” stats. You can change the port number using the up and down arrows on the keypad.

Click the “End” key to exit this menu.

Display

At the main menu, press “5”, then “1” to reach this selection.

This selection allows you to view the current date/time on the MIU-40.

Click the “End” key twice to exit this menu.

Time

At the main menu, press “5”, then “2” to reach this selection.

This selection allows you to edit the current time on the MIU-40. Use the numeric keypad to enter the current time. If you make a mistake, you can use the left arrow key to delete your last entry.

Once your changes are made, you can apply them by pressing the “Entr” key.

Click the “End” key twice to exit this menu.

Date

At the main menu, press “5”, then “3” to reach this selection.

This selection allows you to edit the current date on the MIU-40. Use the numeric keypad to enter the current date. If you make a mistake, you can use the left arrow key to delete your last entry.

Once your changes are made, you can apply them by pressing the “Entr” key.

Click the “End” key twice to exit this menu.

V&SN

At the main menu, press “6”, then “1” to reach this selection.

This selection allows you to view the current version and serial number of the MIU-40. Check the version number to make sure it matches this document. If it is older you may want to request an update from sales@trafsys.com.

Click the “End” key twice to exit this menu.

Vw Err

At the main menu, press “6”, then “2” to reach this selection.

This selection allows you to view the current reset count on the MIU-40 and any “Out of Spec” pulses read by the MIU-40. The reset count is an indicator of how many times the unit has been reset or lost power. The “Out of Spec” pulse is a pulse read by the MIU-40 that did not fit the specifications for any of the normal data categories. A large number of “Out of Spec” counts could indicate an improperly configured sensor connected to the MIU-40.

There are 4 columns on this screen. The first column will show the reset counts. The second column will show the number of pulses less than 100 ms and greater than 100 ms respectively. The third column will show the number of pulses greater than 200 ms and greater than 300 ms respectively. The fourth column will show the number of pulses greater than 400 ms and greater than 500 ms respectively.

Click the “End” key twice to exit this menu.

Cl Err

At the main menu, press “6”, then “3” to reach this selection.

This selection allows you to reset the error counts on the MIU-40. This includes the reset count and any “Out of Spec” counts that were recorded. When pressed, it will ask you to confirm you want to clear the reset count by pressing “1”. Press “1” to clear the reset count or “End” to cancel. Next, it will ask you to confirm you want to clear the OOS (“Out of Spec”) count by pressing “1”. Press “1” to clear the “Out of Spec” counts or “End” to cancel.

Click the “End” key twice to exit this menu.

Beep

At the main menu, press “6”, then “4” to reach this selection.

This selection allows you to put the MIU-40 into “Beep Mode”. In “Beep Mode”, the MIU-40 will generate an audible tone when activity is detected from any of the ports. Beeps will be generated for both inbound and outbound counts as well as any status signals.

Use the up arrow or the down arrow to toggle “Beep Mode” on or off. Once your selection is made, press the “Entr” key to apply it.

Click the “End” key twice to exit this menu.

Sense

At the main menu, press “7”, then “1” to reach this selection.

This selection allows you to see the activity on all 40 ports as it occurs. The display will show a horizontal line for each port on the MIU-40. When that port receives activity, the line will move lower than its previous position.

Click the “End” key twice to exit this menu.

LoopBk

At the main menu, press “7”, then “2” to reach this selection.

This selection allows you to perform a Loopback test on the data port of the MIU-40. A loopback test is used to test a serial port to see if it is working properly. To perform this test, you will need a DB-9 to RJ45 adapter connected to a loopback adapter. Connect the loopback adapter to the data port on the MIU-40 and run the test.

You can run this test if you suspect that the data port on the MIU-40 isn’t working properly.

Click the “End” key twice to exit this menu.

WD

At the main menu, press “7” then “3” to reach this selection.

This selection allows you to test the Watchdog Reset feature on the MIU-40. The Watchdog Reset feature will reset the MIU-40 daily to make sure the system continues working properly.

Click the “End” key twice to exit this menu.

Sensor Configure

At the main menu, press “8” then “1” to reach this selection.

This selection allows you to configure each port on the MIU-40 for specific sensors. You should only change these values if you intend to use a beam device. Use the left and right arrows to change the port number and the up and down arrows to change the sensor setting. By default, the ports will all be set to “Sensor”. This selection separates the pulses from the sensors into different categories, such as inbound, outbound and heartbeat. The other two selections are for beam sensors which can only create a single pulse for each beam break. These selections are Beam Open and Beam Closed. The type of beam selection you use depends on the technology of your beam.

Use the “Entr” key to apply any changes.

Click the “End” key twice to exit this menu.

Sensor Data Store Rate

At the main menu, press “8” then “2” to reach this selection.

This selection allows you to modify the data rate at which historical records are written. **WARNING:** You will lose all data stored on the MIU-40 if you modify this setting. By default, the rate is set to 5 minutes. Only change this setting if you require 1 minute records and are creating your own communication software for the MIU-40. All Traf-Sys software is configured to use 5 minute records for the MIU-40.

Specifications

The MIU-40 features the following specifications:

- Internal Power Supply
 - Output: 24V DC 3A
- Maximum Supported Sensors
 - Surround Sensors: 70 sensors @ 40 mA
 - Thermal Sensors: 38 sensors @ 70 mA