

FutureNow FNIP-16/32xDI

Installation and Operation Manual

16 or 32 Channel Digital Inputs Module
/Surface and DIN Rail mountable/

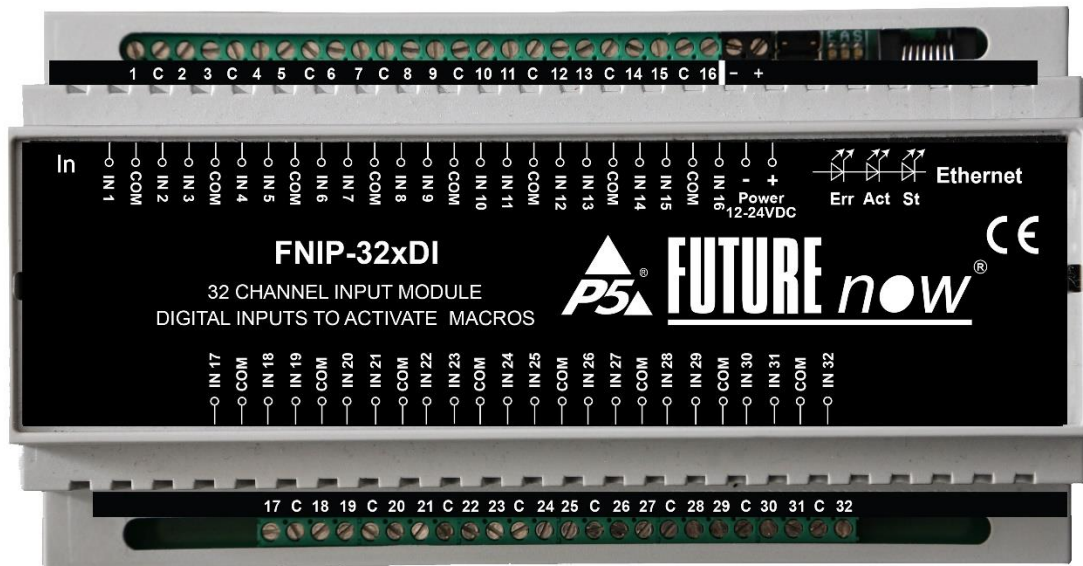


Figure 1. The FNIP-32xDI Digital Inputs Module

OVERVIEW

The FNIP-16xDI and FNIP-32xDI digital input modules are designed to control any output on any module within the network whenever an input is activated. With 16 or 32 inputs, they connect to momentary switches, FN-Touchpad4s, or contact sensors to trigger actions across your network.

Easy to install on a DIN rail, the FNIP-16xDI and FNIP-32xDI come with a built-in web server for quick setup and monitoring. They can be easily integrated into third-party systems, allow firmware updates, and let you activate stored scenes from any input. They also allow sending custom commands to other third party devices on the network.

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INSTALLATION

WARNING!

This equipment shall be installed in a closed cabinet with no access to live parts. Only the top enclosure of the equipment (where the label is affixed) is allowed to be accessed by the operator.

Since the module is connected to mains/line voltage, it must be installed by a qualified electrician in accordance with local electrical codes.

Turn off power (main circuit breaker) before installation.

Wiring

A typical wiring diagram of the FNIP-32xDI is shown in figure 2. For the FNIP-16xDI, only the connections on the top part of the device (inputs 1-16) are present.

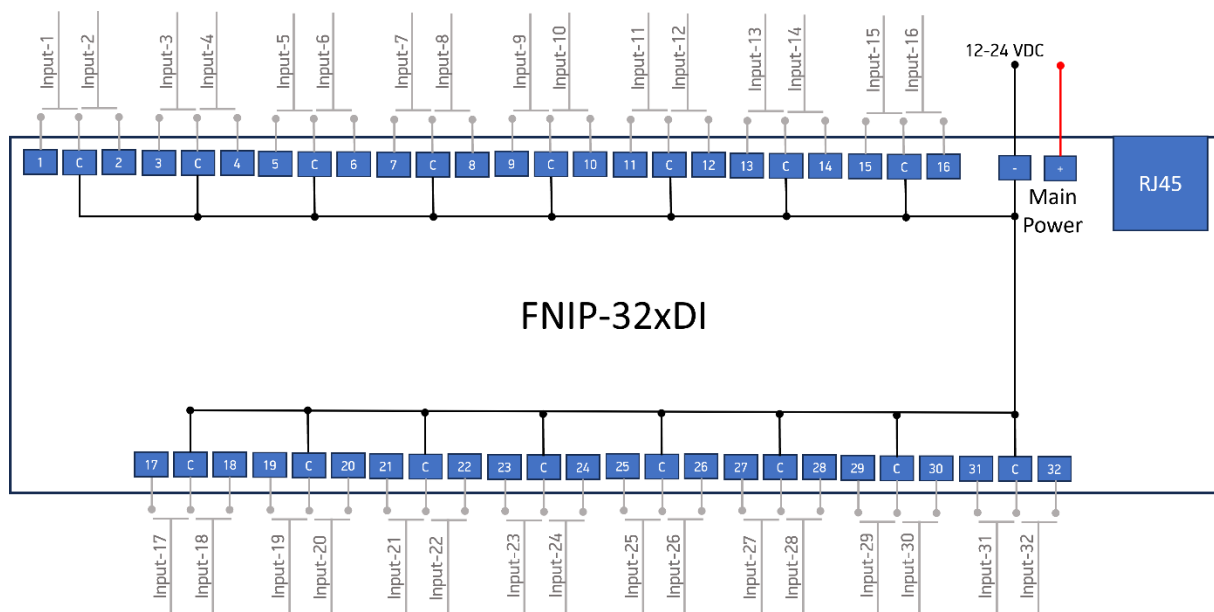


Figure 2. Wiring diagram

Recommended wire types

- Ethernet cable: Twisted pair, CAT5 or better.
- Inputs: A pair of low or high voltage cables.

Power requirements

The module must be powered by 12 - 24V DC. Please pay attention to the correct polarity!

Ethernet connection

Connect the module to the LAN via the RJ45 Ethernet socket.

Inputs

There are 32 inputs on the FNIP-32xDI and 16 inputs on the FNIP-16xDI.

You can connect momentary switches, or the FN-Touchpad4 touchpads, or sensors across the input terminals.

WARNING! Avoid supplying voltage on these terminals!

Status LED Indicators

In order to make installation and debugging easier, communication and channel status are displayed via LEDs. (Remove cover to see the LEDs)

Communication LEDs

Con LED

The Con LED is on when the module is connected to the Ethernet network.

Act LED

It indicates that communication via Ethernet is in progress.

St LED

This status LED indicates that the bootloader of the module is active. This should only happen during firmware update.

Please never disconnect power from the module while the St LED is on!

If this LED stays on after the firmware update, please contact your distributor!

CONFIGURATION

Configuration can be done either via the built-in website or via TCP/IP connection.

Configuration via the web interface

The FNIP-16/32xDI automatically receives an IP address from a DHCP server.

In the lack of a DHCP server or when DHCP option is disabled on the network configuration page of the module, the default IP address of 192.168.1.25 will be assigned. The same IP address will be assigned when connecting the module directly to your computer using an Ethernet cross cable (no DHCP server).

Use the FNIP Manager or other network discovery software to find all FutureNow IP devices on your network.

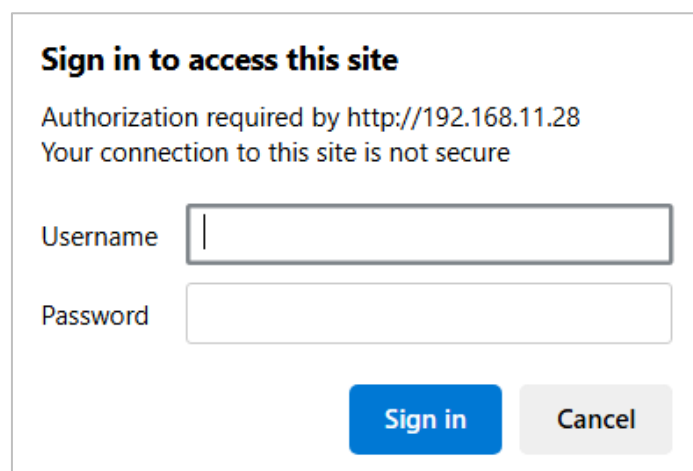
Connecting to the module's web server

Connect to the web interface of the module by using a web browser. Clicking on one of the units found by the FNIP Manager or the FNIP Network Discovery Tool will automatically do that for you.

You can also access the module's internal website from an Internet browser using the host name (FNIP16xDI or FNIP-32xDI by default) or the IP address.

Authentication

Once connected to the module's website, you will be asked to identify yourself, as seen in figure 3.

A screenshot of a web browser's authentication window. The title is "Sign in to access this site". Below the title, it says "Authorization required by http://192.168.11.28" and "Your connection to this site is not secure". There are two input fields: "Username" and "Password". Below the input fields are two buttons: "Sign in" (blue) and "Cancel" (grey).

Sign in to access this site

Authorization required by http://192.168.11.28
Your connection to this site is not secure

Username

Password

Sign in **Cancel**

Figure 3. Authentication Window

The default user name: **admin**

The default password: **futurenow**

The default user has administrator rights and offer access to all settings and functions.

You can use the tabs on the top of the screen to navigate between the different control and configuration pages.

Network settings

To make basic network settings click the **Network** tab. The network configuration page is shown in Figure 4.

You can choose between using DHCP or static IP address here.

Enable HTTP authentication

HTTP authentication can be disabled to make HTTP communication easier.

Enable broadcast messages

All FNIP modules periodically send out heartbeat broadcast messages with basic information about themselves. This helps discovery tools and mobile apps to find them. These broadcasts can be disabled if constant traffic on the network is a problem.

Please note disabling broadcast messages will hinder the Discovery Tool and the setup of the mobile applications.

[Input](#) [Network](#) [Settings](#) [Triggers](#) [Users](#) [Firmware](#) [Logout](#)

Network settings:

Host Name:

☒ Enable DHCP

☒ Enable TCP

☒ Enable HTTP Authentication

☒ Enable Broadcast Messages

TCP Port:

IP Address:

Gateway:

Subnet Mask:

Primary DNS:

Secondary DNS:

Multicast Address: 224.5.5.

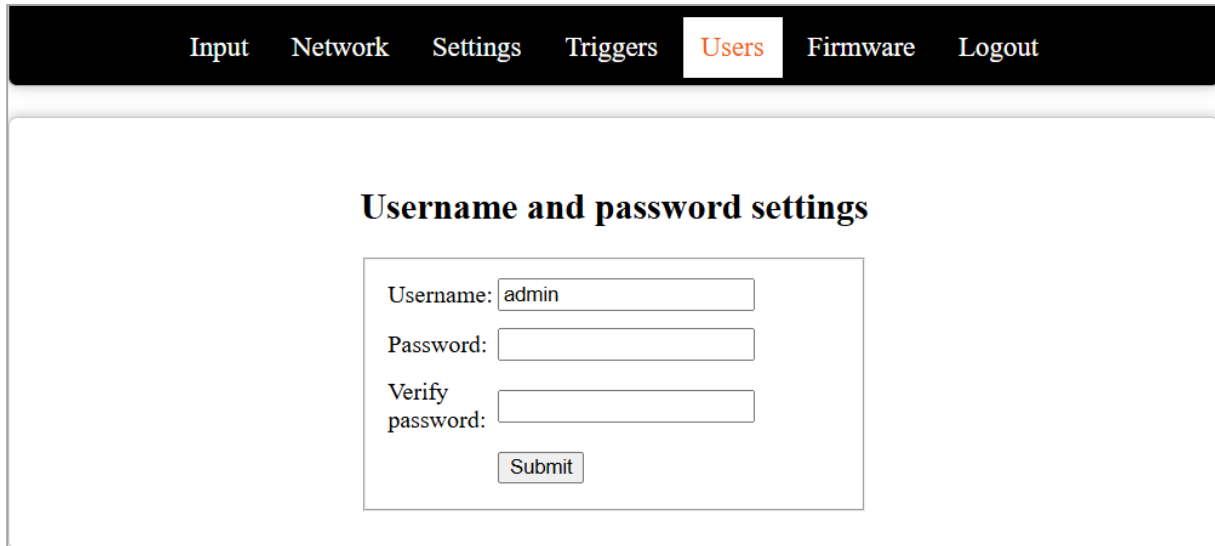
MAC Address: D8:47:8F:38:61:B0

TCP connections: 0/4

Figure 4. Network Configuration Page

Users

The **Admin** User has access to all functions. You can change the admin password here as shown in figure 5.



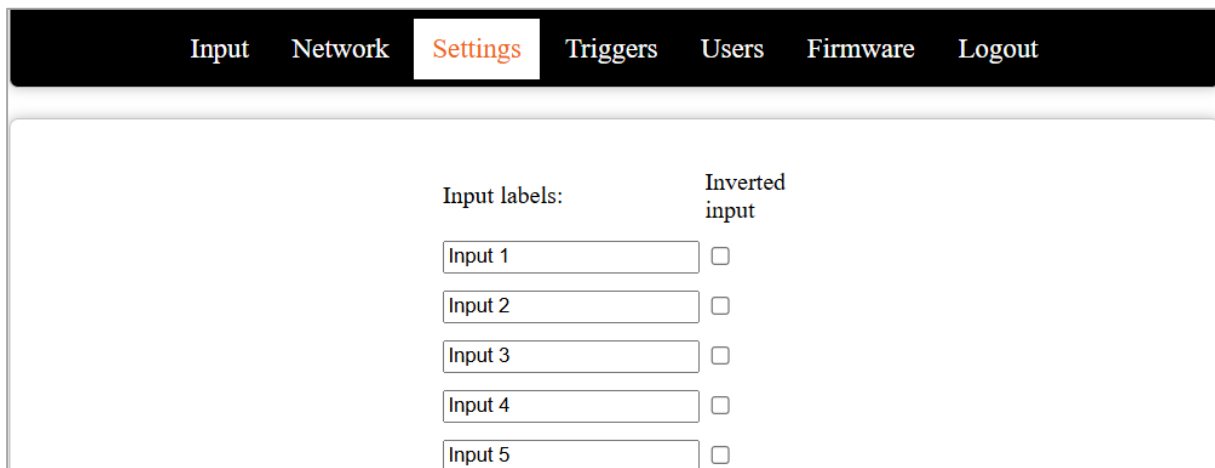
The screenshot shows the 'Users' tab selected in the top navigation bar. The main content area is titled 'Username and password settings'. It contains a form with the following fields:

- Username:
- Password:
- Verify password:
-

Figure 5. User Configuration Page

Settings

On the **Settings** page the inputs can be renamed. Inverted Input mode can also be set here as shown in figure 6.



The screenshot shows the 'Settings' tab selected in the top navigation bar. The main content area contains two columns: 'Input labels:' and 'Inverted input'. The 'Input labels:' column has five text input fields labeled 'Input 1' through 'Input 5'. The 'Inverted input' column has five checkboxes, one for each input label.

Input labels:	Inverted input
Input 1	☐
Input 2	☐
Input 3	☐
Input 4	☐
Input 5	☐

Figure 6. Settings Page

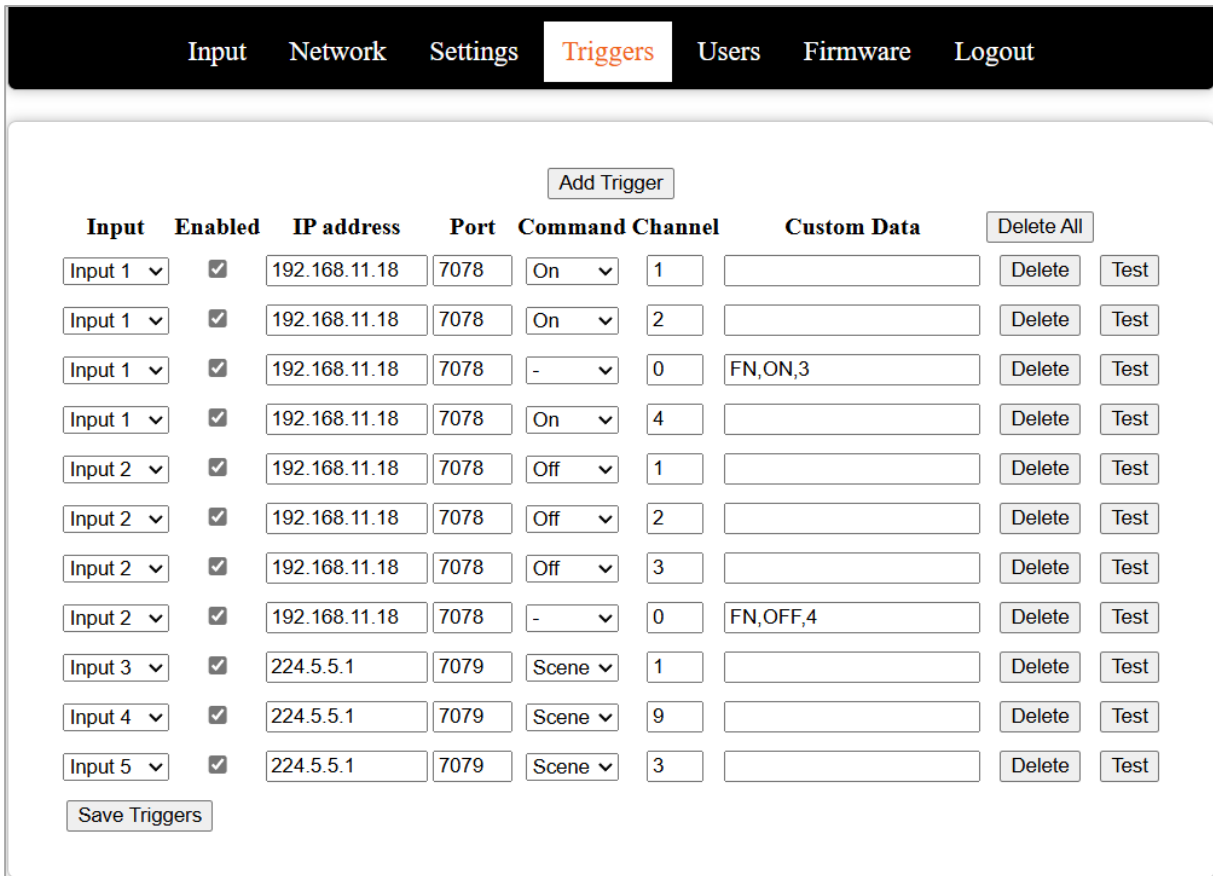
Triggers

In the FNIP-16/32-DI, triggers can be set up for each input. Triggers send commands to other FNIP devices on the network when the corresponding input is activated.

Multiple triggers can be assigned to the same input, and FNIP scene commands can also be sent. Additionally, custom commands can be sent to third party devices on the network (e.g., a TV), with a maximum of 18 characters allowed for each custom command.

A total of 50 triggers can be defined.

The Triggers Page is shown in figure 7 below.

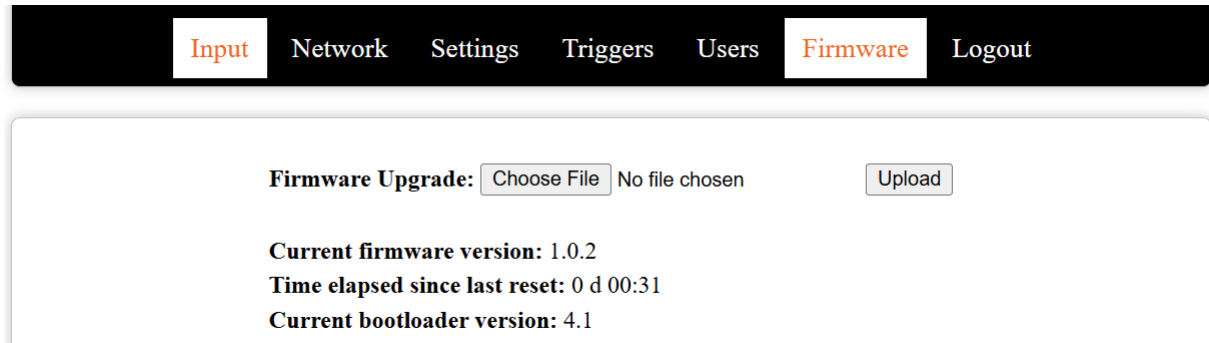


Input	Enabled	IP address	Port	Command	Channel	Custom Data	Delete All
Input 1 ▼	✓	192.168.11.18	7078	On ▼	1		Delete Test
Input 1 ▼	✓	192.168.11.18	7078	On ▼	2		Delete Test
Input 1 ▼	✓	192.168.11.18	7078	- ▼	0	FN,ON,3	Delete Test
Input 1 ▼	✓	192.168.11.18	7078	On ▼	4		Delete Test
Input 2 ▼	✓	192.168.11.18	7078	Off ▼	1		Delete Test
Input 2 ▼	✓	192.168.11.18	7078	Off ▼	2		Delete Test
Input 2 ▼	✓	192.168.11.18	7078	Off ▼	3		Delete Test
Input 2 ▼	✓	192.168.11.18	7078	- ▼	0	FN,OFF,4	Delete Test
Input 3 ▼	✓	224.5.5.1	7079	Scene ▼	1		Delete Test
Input 4 ▼	✓	224.5.5.1	7079	Scene ▼	9		Delete Test
Input 5 ▼	✓	224.5.5.1	7079	Scene ▼	3		Delete Test

Save Triggers

Figure 7. Triggers page

Firmware Upgrade



The screenshot shows a web interface for a P5 module. At the top is a black navigation bar with white text links: Input, Network, Settings, Triggers, Users, Firmware (highlighted in orange), and Logout. Below the navigation bar is a white content area. In the center of this area, it says "Firmware Upgrade:" followed by a "Choose File" button, the text "No file chosen", and an "Upload" button. Below these elements, three lines of status information are displayed: "Current firmware version: 1.0.2", "Time elapsed since last reset: 0 d 00:31", and "Current bootloader version: 4.1".

Figure 8. Firmware upgrade page

Upgrading the firmware in the module is possible via the network.

On the **Firmware** page click browse and find the new firmware on your PC. The latest firmware versions are always downloadable from the website of P5. Then click **Upload**. The **St** LED turns on and stays on or blinks during firmware update. After uploading the new firmware – which takes about a minute – the module will automatically restart.

The version of the current firmware and the time since the last reset is also displayed on this page.

Resetting to factory defaults

Holding the reset button for at least than 2 sec while powering up the module will set all the settings to factory defaults.

OPERATION

Operation via the local inputs

The inputs can be activated by shorting the appropriate input terminal to the input common terminal.

Operation via TCP

To achieve the easiest integration with most controllers used in home and commercial applications, the module can be controlled by raw TCP protocol using simple ASCII based commands.

The TCP/IP communication can be enabled/disabled via the Network settings screen.

The TCP Communication Protocol Description is available upon request.

Event notifications

Automatic event notifications are sent to clients via the open socket connections whenever the status of an input or output changes.

The TCP/IP communication can be enabled/disabled via the Network settings page.

Basically, any third-party controller that can implement the FNIP-16/32xDI's simple communication protocol can control the module. The following controllers are the most widely used:

- Control4
- AMX
- Crestron
- RTI
- Savant
- Extron
- biamp
- Fibaro
- Home Assistant
- QSYS
- Lightware

Software modules/plugin-ins for the above controllers are available or P5 will provide full assistance in creating them.

Besides these special-purpose controllers, there are many applications for embedded industrial PC boards, PCs and smartphones running Linux, Windows, Mac OS.

TECHNICAL SPECIFICATIONS

Power Requirement		
Main Power	12 – 24 VDC (10.8V - 36V DC), max 60 mA @ 12V, 40 mA @ 24V	
Inputs		
Type	16 or 32 x digital inputs with common GND, noise protected	
Communication		
Control	TCP (simple ASCII TCP commands) Build-in web server (HTTP) Local inputs (dry contacts) for momentary switches	
Interoperability	Drivers available for most systems	
Connectors		
Input terminals	1.5mm² screw terminals	
LAN (10Mbps)	RJ45 Ethernet Connector	
Environmental		
Operating Temperature	0 °C – 40 °C (32 °F – 104 °F)	
Storage Temperature	-20 °C – 60 °C (-4 °F – 140 °F)	
Humidity	Up to 93% (non-condensing)	
Physical		
Dimensions (H x W x D)	157 mm x 86 mm x 57 mm (9 DIN unit width)	
Weight	0.20 kg	
Installation	Standard DIN Rail Mount	
Approvals	Package Content	Warranty
CE	FNIP-16xDI or FNIP-32xDI	2 years

REFERENCES

FNIP Search Utility: [FNIP Manager](#) (Registration needed on www.p5.hu)

FNIP-16/32xDI TCP Communication Protocol Description :

(Please email us at support@p5.hu to request the Communication Protocol Description)

CONTACT DETAILS

support@p5.hu

<http://p5.hu/index.php/support/contact-technical-support>