# ProPlex IQ Two 416

# USER MANUAL

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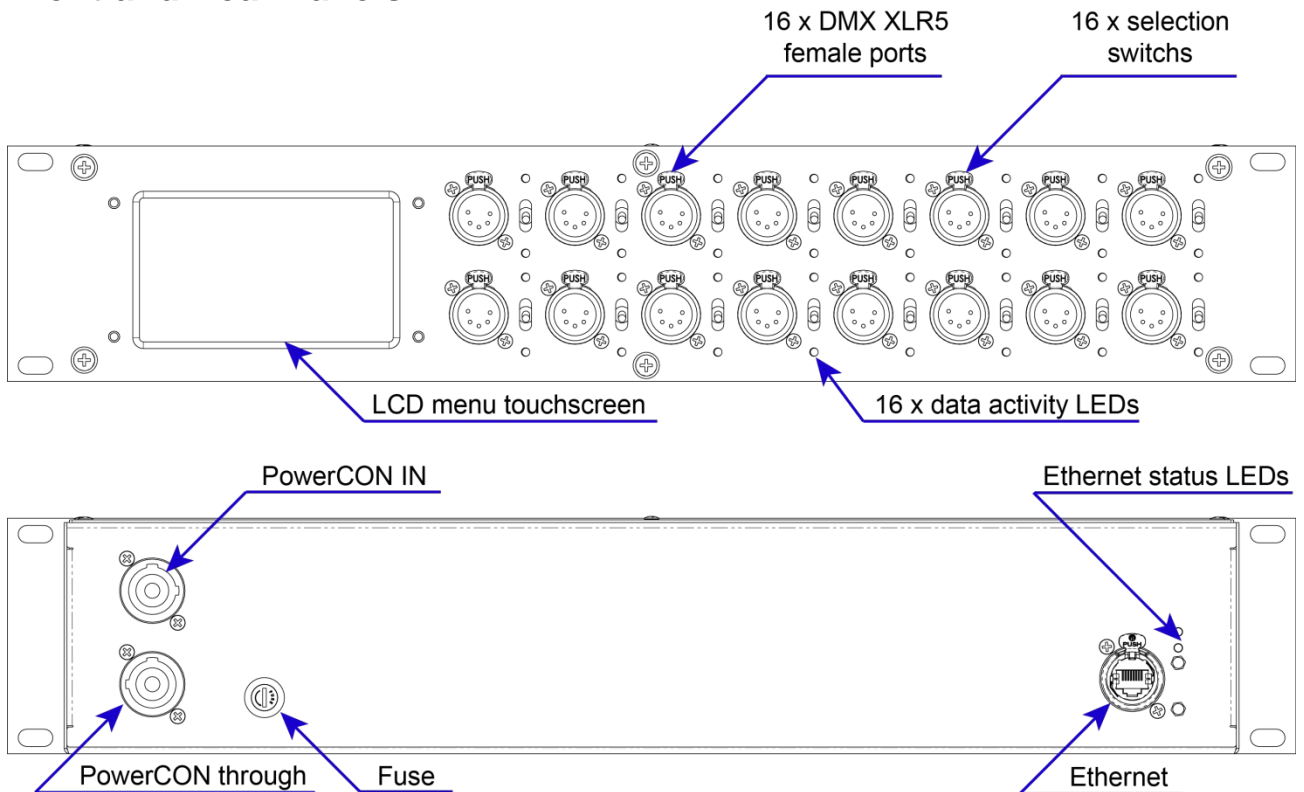e-mail:  techsupport@tmb.com

## Overview

The ProPlex IQ Two 416 is a 16-way Ethernet-DMX node/opto-splitter with the following features:

- Assign 4 ArtNet/sACN universes to 16 DMX outputs.
- Full RDM functionality.
- RDM Manager software available for system setup and feedback.
- Web interface – manage large networks locally or remotely.
- Large touchscreen for quick, easy setup and operation.
- Rugged, tour-ready ProPlex "Blue Box" RackMount chassis.

## Front and Rear Panels



16 x DMX XLR5 female ports

16 x selection switchs

LCD menu touchscreen

16 x data activity LEDs

PowerCON IN

Ethernet status LEDs

PowerCON through

Fuse

Ethernet

# Menu Map

| Level 1 | Level 2 | Level 3 | Level 4 | Notes |
|---|---|---|---|---|
| Node setup | Node name | | | Node name |
| | | Label | | Enter node name label. |
| | Universe format | | | In this menu you can set the universe format for your needs. |
| | | Base 16 (0-15) | | |
| | | Hex (0-F) | | |
| | | Decimal (0-32767) | | |
| | Screen lock time | | | Time after which the screen will automatically get locked. |
| | | 0, 5-600 | | 0- off<br>5- minimum<br>600- maximum<br>Values in seconds |
| | LCD/ LED brightness | | | You can adjust LCD and LED brightness settings for your needs. |
| | | Off | | |
| | | Dimmed | | |
| | | Full | | |
| Protocol setup | Protocol | | | Choose out of the 2 possible data processing protocols. |
| | | ArtNet | | ArtNet protocol |
| | | sACN | | sACN protocol |
| | Easy priority | | | If EASY PRIORITY is ON, when two or more of the same universes are coming in to the node, the console with the higher channel 512 value will have control over the universe. |
| | | Off | | |
| | | On | | |
| | On source loss | | | This setting determines what will happen on source loss |
| | | Hold output | | On source loss holds the last received DMX values when DMX signal is lost. |
| | | Blackout | | After source loss the last value will not be held and there will be a "blackout" as there is no source. |
| | | Stop DMX | | After source loss the outgoing DMX signal will be disabled |
| | Source loss timeout | | | This setting determines after how many seconds will be source loss timeout |
| | | VALUE | | |
| | DMX out refresh rate | | | The refresh rate for outgoing DMX data (actions per second) |
| | | Adaptive | | Adapts to the input data |
| | | 20Hz | | Fixed 20Hz refresh rate |
| | | 30Hz | | Fixed 30Hz refresh rate |
| | | 40Hz | | Fixed 40Hz refresh rate |

| | | | | |
|---|---|---|---|---|
| IP setup | IP address | | | Set the IP address of IQ here |
| | | VALUE | | |
| | Subnet mask | | | Set the subnet mask of IQ here |
| | | VALUE | | |
| | Easy IP | | | This setting will ensure that software will search for all masks, not only for a specified subnet mask |
| Configuration profiles | User cfg. 1 (your name) | | | User configuration profile 1 |
| | Load | | | Button for loading the configuration settings |
| | | Confirm | | |
| | | Retreat | | |
| | Record | | | Button for recording the configuration settings |
| | | Confirm | | |
| | | Retreat | | |
| | Delete | | | Button for deleting the configuration settings |
| | | Confirm | | |
| | | Retreat | | |
| | User cfg. 2 (your name) | | | User configuration profile 2 |
| | Load | | | Button for loading the configuration settings |
| | | Confirm | | |
| | | Retreat | | |
| | Record | | | Button for recording the configuration settings |
| | | Confirm | | |
| | | Retreat | | |
| | Delete | | | Button for deleting the configuration settings |
| | | Confirm | | |
| | | Retreat | | |
| Defaults | Port defaults | | | This setting will restore port defaults |
| | | Load | | |
| | | | Confirm | |
| | | | Retreat | |
| | Protocol defaults | | | This setting will restore protocol defaults |
| | | Load | | |
| | | | Confirm | |
| | | | Retreat | |
| | Touchscreen calibration | | | Setting in case the touchscreen calibration is needed. |
| | | Reset | | |
| | | | Confirm | |
| | | | Retreat | |
| | Factory defaults | | | This setting will restore factory defaults (will reset ALL settings) |
| | | Reset | | |
| | | | Confirm | |
| | | | Retreat | |

# Configuration using LCD Touchscreen

ProPlex IQ Two can be configured locally on the unit by using the touchscreen or remotely through the Ethernet port by accessing the built-in web page with a web browser or with the ProPlex IQ RDM Manager software.
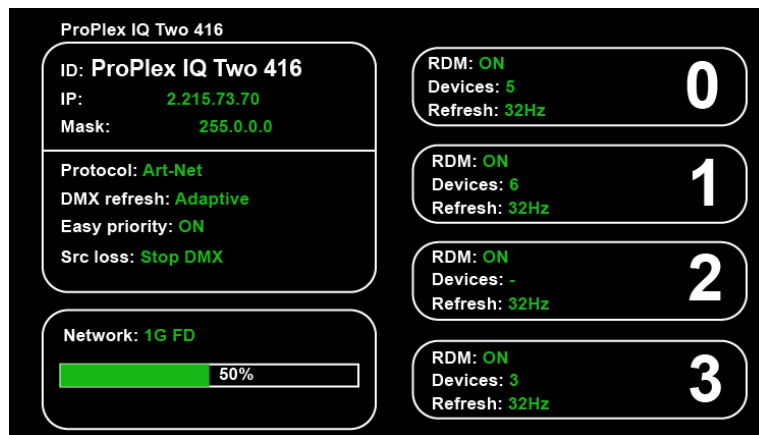
Navigation through menus is done using the LCD touch screen.

When the device is turned on, it shows the following welcome screen:



To begin, press anywhere on the screen and a touch screen calibration screen will appear.

The main status screen is displayed, showing the important information about the IQ Two 416 node.



**Configuration:**
Assigned ID (name) for ProPlex IQ Two fixture
Mask
Protocol
DMX refresh (rate)
Easy priority
Src loss (source loss)

**Status:**
Network (state + information about network speed)
Network usage (%)
**Outputs:**
Information about 4 DMX output groups

**Configuration:**
Fixture ID: (ProPlex IQ Two 1616 example)
DMX refresh: (40Hz example)
IP: (2.145.232.108. example;
Mask: (255.0.0.0 example)
Protocol:  ArtNet example)

**Status:**
Network: (Link down example, when there is network, it shows the network type, 1G FD (1 Gigabit Full Duplex) for example, and it shows the network usage in percent).
Device and version description: (ProPlex IQ Two 1616 v:0.28 example)

**Port information:**
Information of all 16 DMX ports, labeled as A, B, C, etc.

If using the ArtNet protocol, the universes start from universe 0.
When using sACN, numbering begins with universe 1.

# General Information

The ProPlex IQ Two 416 has 2 status LEDs for each DMX port.
Each port has an assigned switch defining which universe the port depends on.
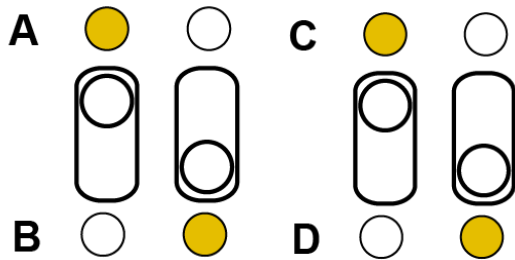


Switch ports 1-8 as A port group or B port group outputs
Switch ports 9-16 as C port group or D port group outputs.


Because there a maximum of four universes are assignable (one universe for each of four port groups), the device can easily be used as a DMX splitter.

For example, you can use the ProPlex IQ 416 as 2x8 port splitters or 4x4 port splitter.
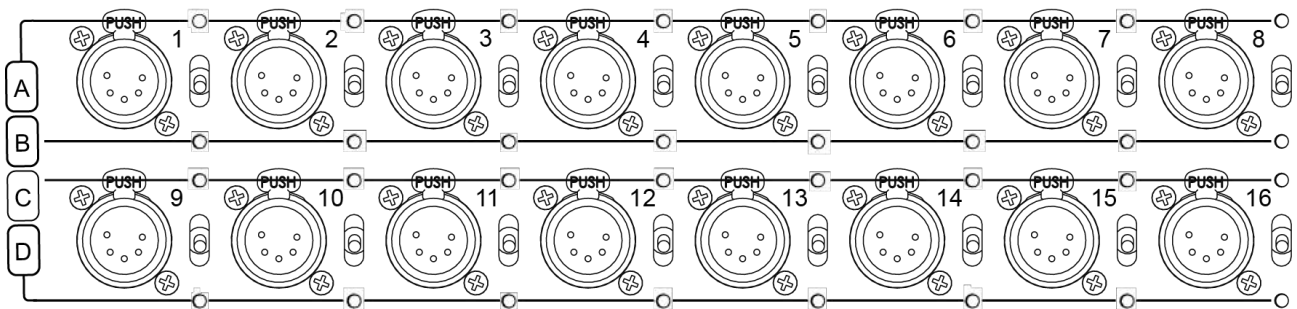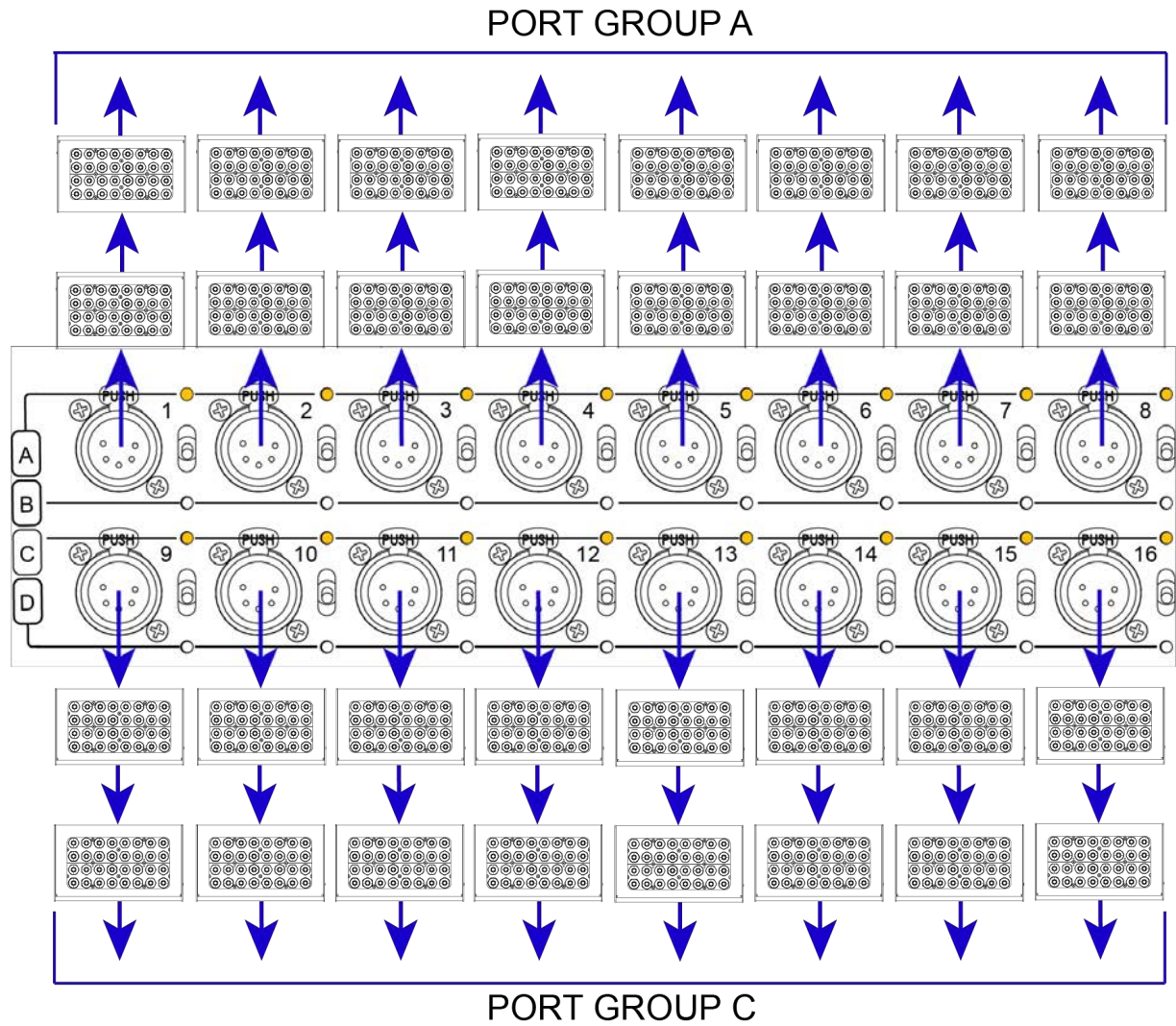


There are four different port groups:  A, B, C and D.

PORT GROUP B　　　PORT GROUP A

PORT GROUP D　　　PORT GROUP C
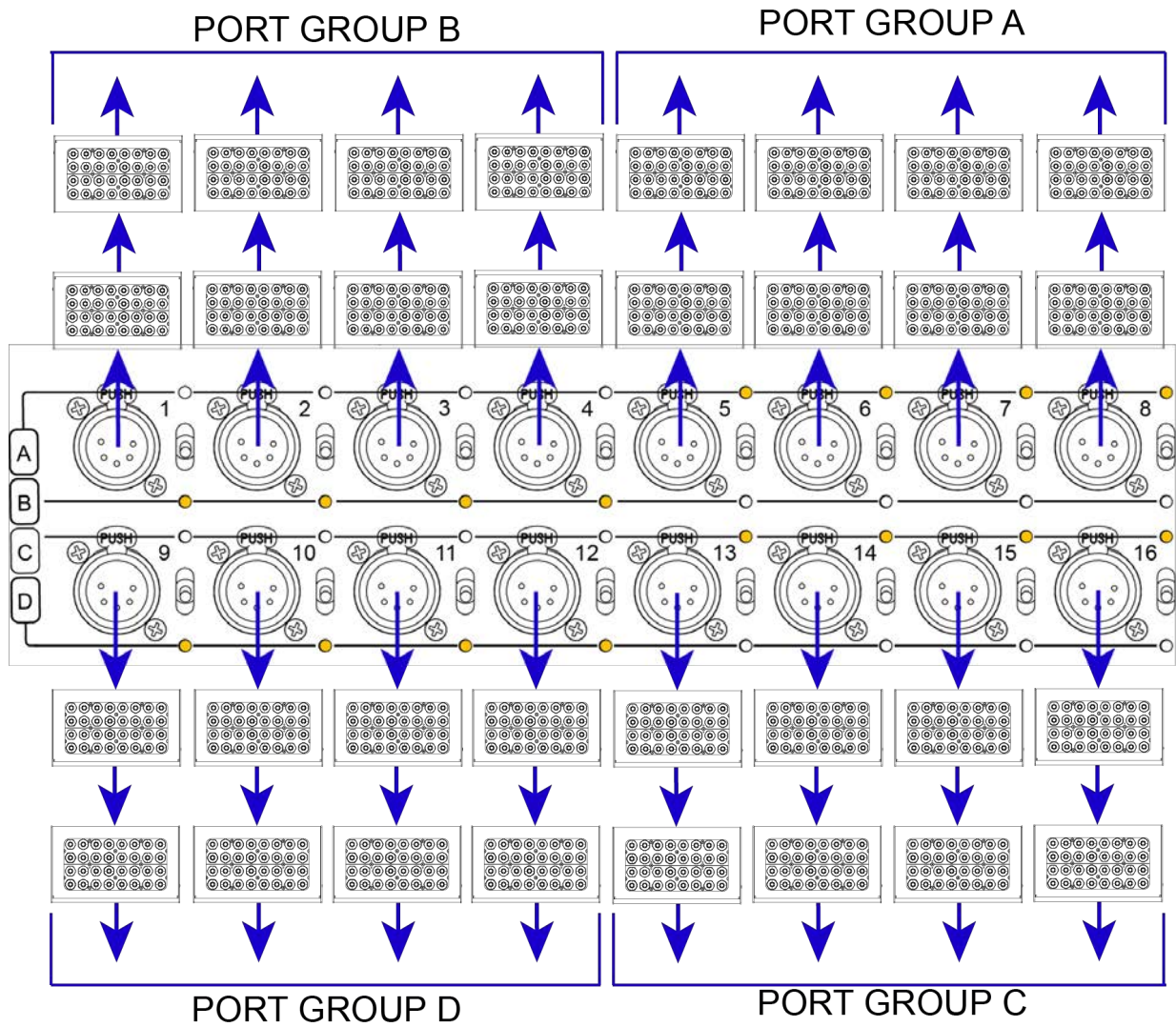
In this example, the ProPlex IQ 416 is set up as four independent splitters.

Ports 1, 2, 3, 4:  Assigned to port group B
Ports 5, 6, 7, 8:  Assigned to port group A
Ports 9, 10, 11, 12:  Assigned to port group D
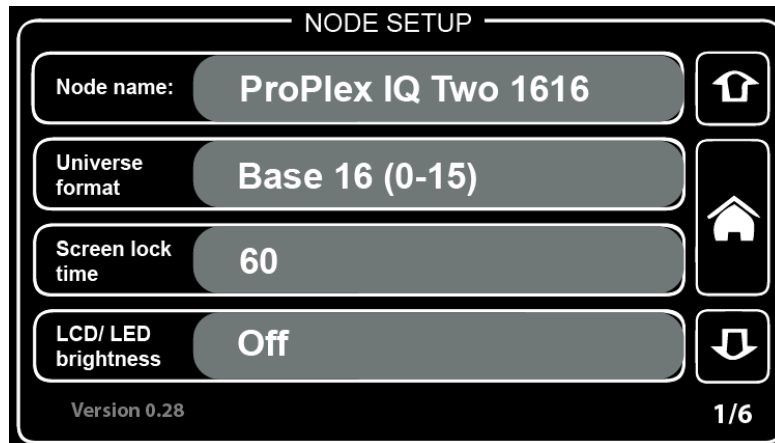Ports 13, 14, 15, 16:  Assigned to port group C

PORT GROUP A

PORT GROUP C

When using the IQ Two 416 as 2x8-port DMX splitter, the configuration will look like this:

Ports 1, 2, 3, 4, 5, 6, 7, 8:  Assigned to port group A
Ports 9, 10, 11, 12, 13, 14, 15, 16:  Assigned to port group C

## Configuration Menu:

By pressing the "Configuration" button, a new configuration submenu will appear.

```
┌─────────────── NODE SETUP ───────────────┐
│  ┌──────────┐ ┌─────────────────────┐ ┌───┐ │
│  │Node name:│ │ ProPlex IQ Two 1616 │ │ ⬆ │ │
│  └──────────┘ └─────────────────────┘ └───┘ │
│  ┌──────────┐ ┌─────────────────────┐ ┌───┐ │
│  │Universe  │ │ Base 16 (0-15)      │ │   │ │
│  │format    │ └─────────────────────┘ │ 🏠 │ │
│  ┌──────────┐ ┌─────────────────────┐ │   │ │
│  │Screen lock│ │ 60                 │ └───┘ │
│  │time      │ └─────────────────────┘        │
│  ┌──────────┐ ┌─────────────────────┐ ┌───┐ │
│  │LCD/ LED  │ │ Off                 │ │ ⬇ │ │
│  │brightness│ └─────────────────────┘ └───┘ │
│     Version 0.28                        1/6  │
└──────────────────────────────────────────────┘
```

There are six pages:

1. Node setup
2. Protocol setup
3. Protocol setup
4. IP setup
5. Configuration profiles
6. Defaults

# Node Setup
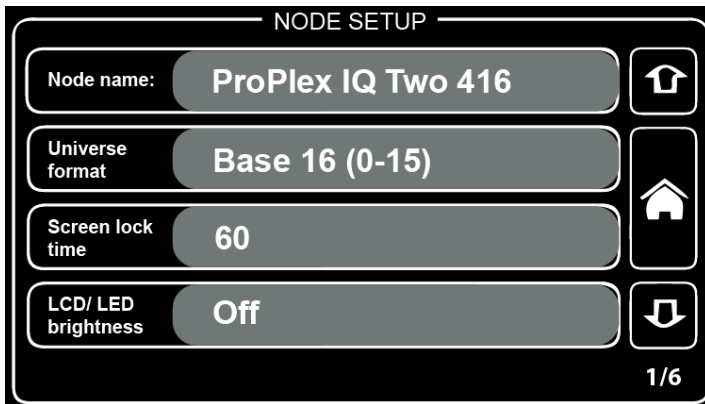


## Node name:
Here the node and default names may be changed (ProPlex IQ Two 416 is default).

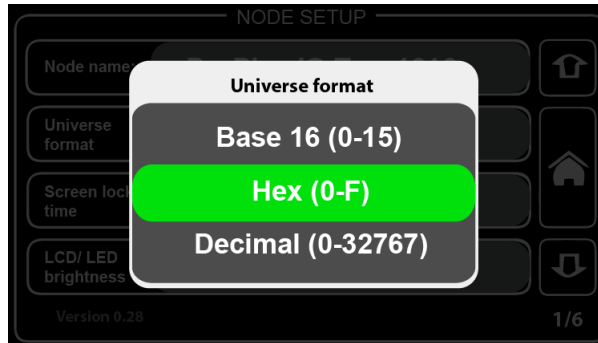By pressing this button, a new window will appear:



Using the virtual keyboard, the name can be changed.

By pressing the shift ( **Level 2 Select key**) button on the virtual keyboard, all letters will change to capital letters and symbols will exchange.
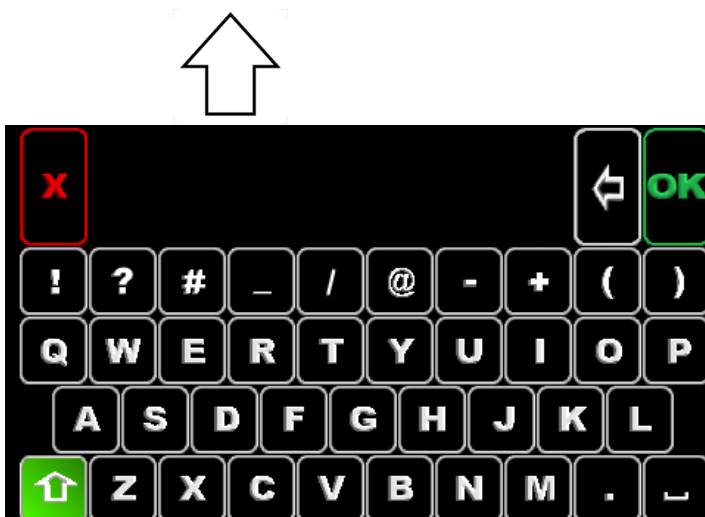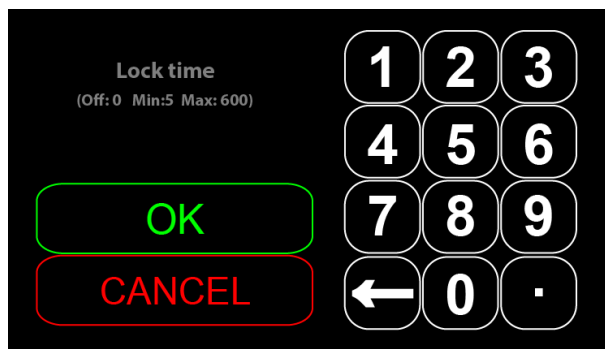
## Universe format:

By pressing the "**Universe format**" section, a new window will appear



In this window, choose the universe format.  By default, the universe format is set at Hex (hexadecimal) but may be changed to Base 16 or decimal counting system.

## Screen lock time:

By pressing the "**Screen lock time**" section, a new window will appear.



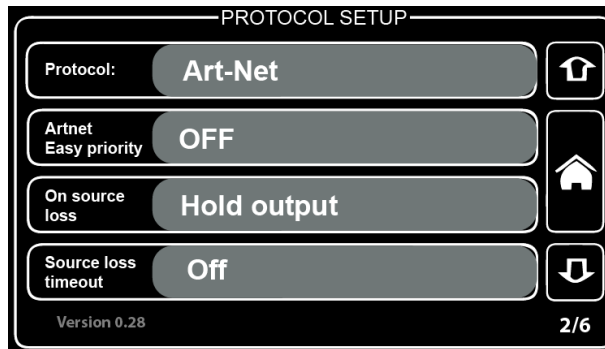Screen lock time:  This setting will change the time after which the ProPlex IQ Two will lock the screen. Enter a value from 5 to 600 (5 to 600 seconds).

## LCD/ LED brightness:

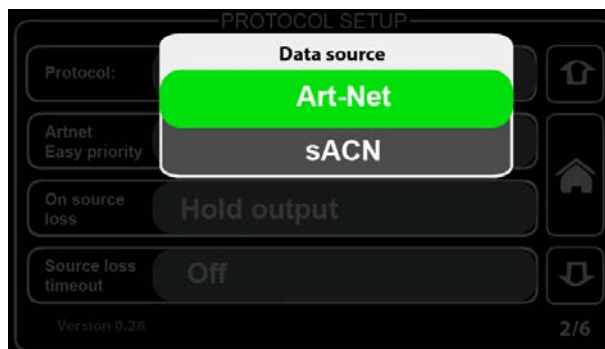By pressing the "**LCD/ LED brightness**" section, a new window will appear.
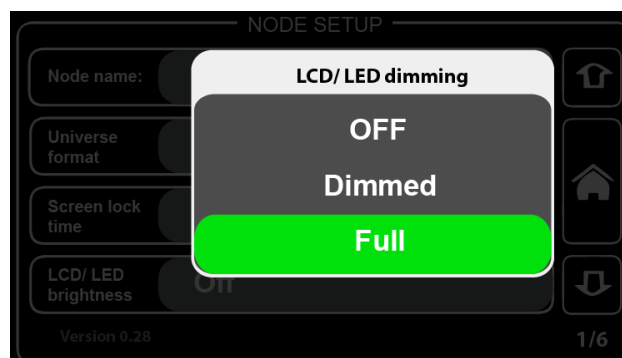


Select from three settings:  OFF, Dimmed, Full.

# Protocol Setup



### Protocol:

By pressing the "**Protocol**" section, a new window will appear.



Select from two "DMX over Ethernet" protocols:  ArtNet and sACN (e1.31).

*What is **ArtNet** and what is **sACN**?*

***ArtNet** is an Ethernet protocol based on the TCP/IP protocol suite.  Its purpose is to allow transfer of large amounts of DMX512 data over a wide area using standard networking technology.*
*.*
***Streaming ACN (sACN)** is a protocol to efficiently transport DMX universes over the network.  It is comparable to ArtNet in many aspects.  The multicast option allows very easy configuration.  sACN is a popular protocol to control large number of RGB LEDs.*

*Both are Ethernet protocols for sending DMX universes over the network, with a few minor differences. ArtNet allows the user to use the RDM protocol.*

*When using the sACN protocol, the universe 0 cannot be used.  The system will show a warning sign if the universe 0 + sACN protocol has been chosen.  Also, it is not possible to use RDM functionality when sACN protocol is used.*

## ArtNet easy priority:

By pressing the "**ArtNet easy priority**" section, a new window will appear.



ArtNet easy priority: ON or OFF.

**Note:** The ArtNet easy priority setting works only when the ArtNet is selected as the data transfer protocol (not sACN).

*What does easy do?* *When easy priority is ON, with two or more of the same ArtNet/ sACN universes coming into the ProPlex IQ fixture, the console with the higher channel 512 value will have control over the universe.*

## On source loss:

By pressing the "**On source loss**" section, a new window will appear.
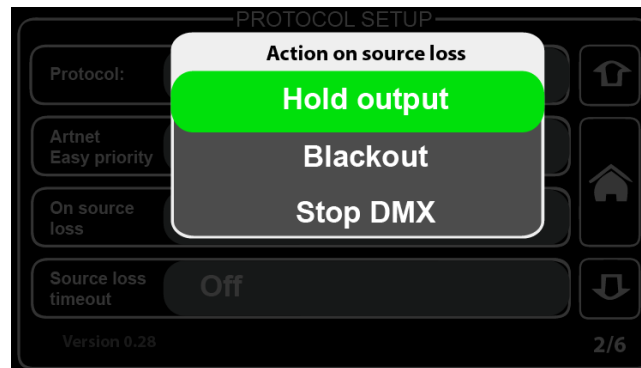


**Hold output** setting: After source loss there is no action at all, old data remains in output.

**Blackout** setting: After DMX source loss, the last value will not be held and there will be a "blackout" (after delay, drop all DMX channels to 0).

**Stop DMX** setting: After source loss, the DMX signal will be disabled (after delay, stop DMX generation at all – fixtures doesn't see DMX anymore and can react accordingly by themselves).
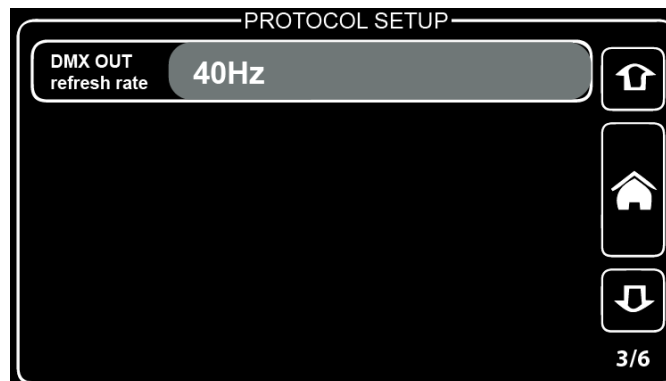
**Source loss timeout:**

By pressing the "**Source loss timeout**" section, a new window will appear.
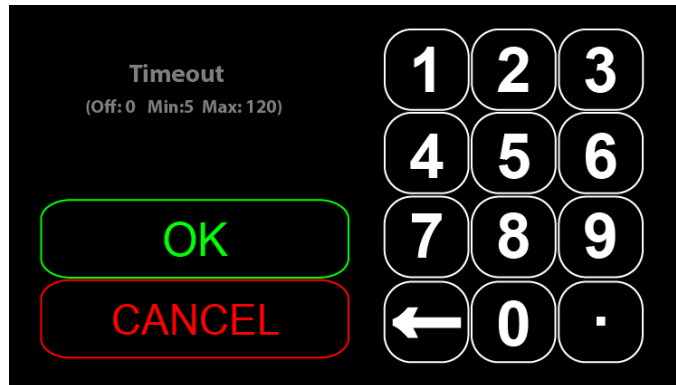


Source loss timeout value:  This setting changes the time after which the ProPlex IQ Two will start the blackout or stop DMX output on source loss.
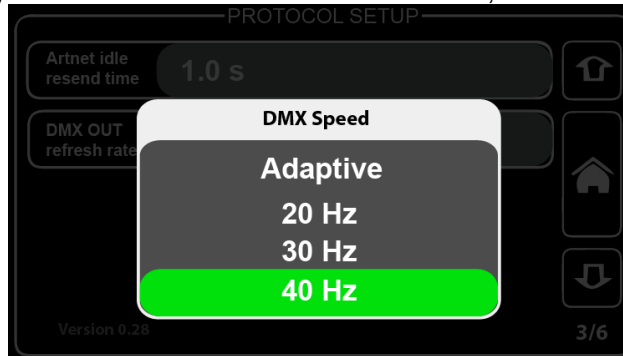
Enter a value from 5 to 120 (5 to 120 seconds).

# Protocol Setup

**DMX OUT refresh rate:**

By pressing the "**DMX OUT refresh rate**" section, a new window will appear.



Select one of four states for "DMX out refresh rate":  Adaptive, 20Hz, 30Hz, 40Hz).

DMX out refresh rate defines how many times per second the information (DMX data) is sent.  For example, when setting is at 40Hz, the color fades will appear more fluid, but it will take more resources from the system than 20Hz setting.

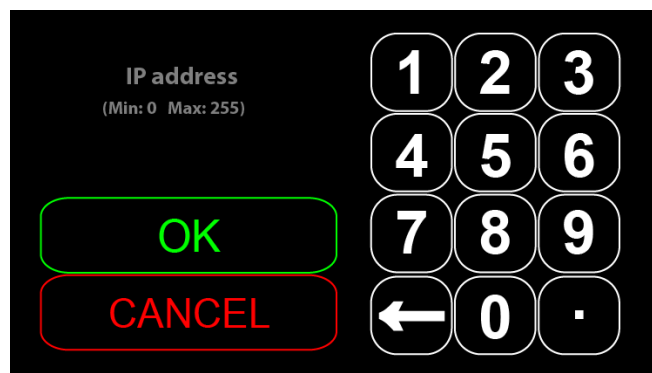Sometimes this setting is called also FPS (frames per second).

**What is "Adaptive" DMX speed setting?**  *DMX speed mode that adapts to ArtNet data speed.  This is the best way to reduce latency and improve response for very fast effects.*
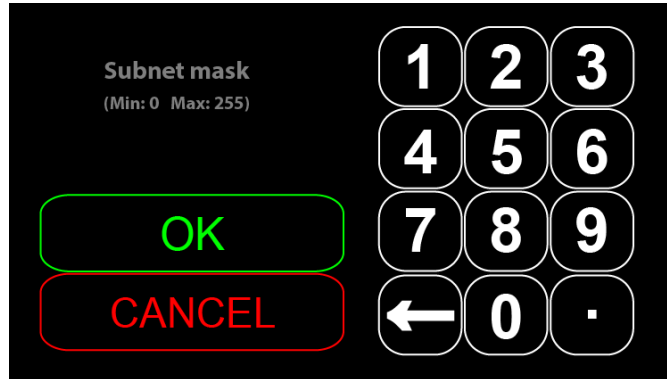
# IP Setup
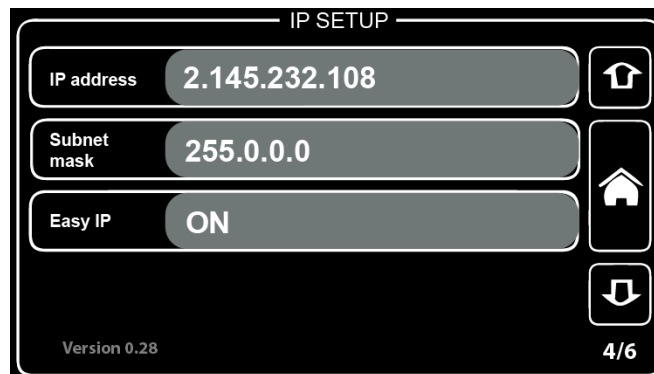


**IP address:**

By pressing the "**IP setup**" section, a new window will appear.

IP address for the ProPlex IQ may be set.

**Subnet mask:**

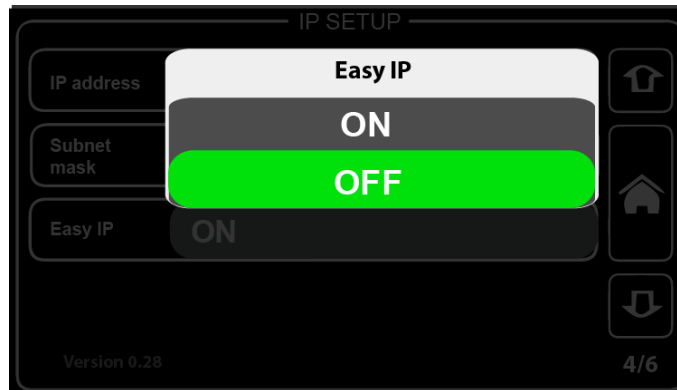By pressing the "**Subnet mask**" section, a new window will appear.



Subnet mask of the ProPlex IQ Two 416 may be set.

To exchange assigned subnetwork mask, replace the current network subnet mask to the desired mask.

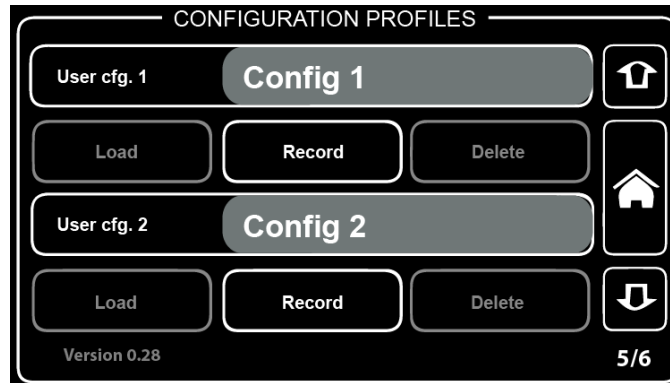**NOTE**:  When Easy IP setting is ON, mask settings may not be changed to custom ones.

**Easy IP:**

By pressing the "**Easy IP**" section, a new window will appear.



This setting ensures that software will search for all masks, not only for a specified one.
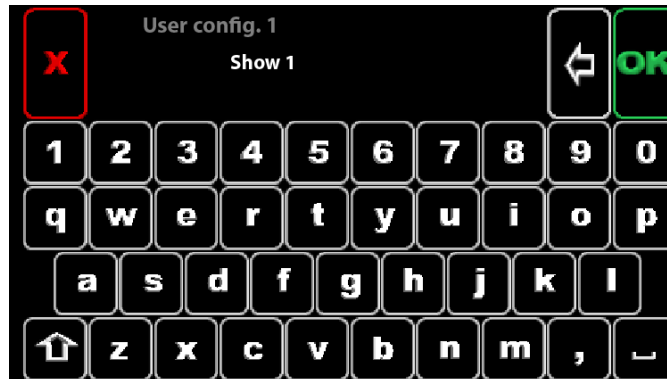When Easy IP setting is turned ON, the subnet mask may not be changed.

# Configuration Profiles



Configuration must be named in order to save.

Choose configuration to be saved:  **User cfg. 1** or **User cfg. 2**.

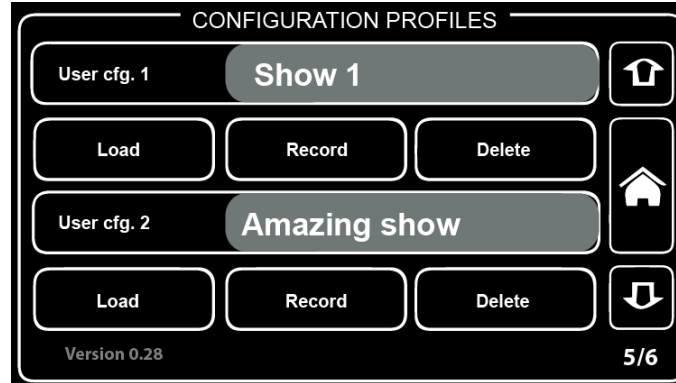For example, naming User config. 1 as "**Show 1**":



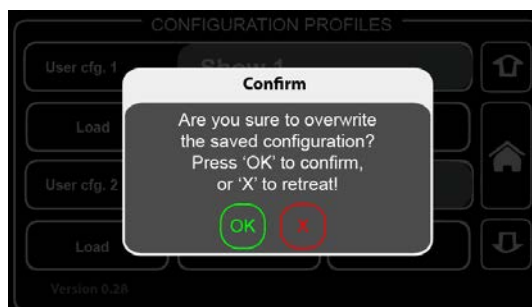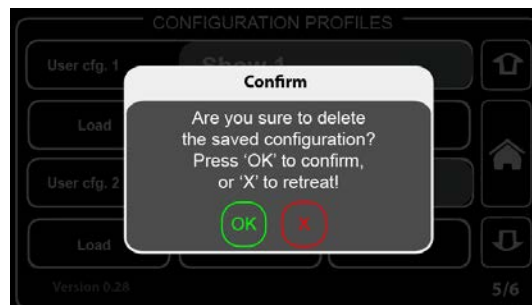And User config. 2 as "**Amazing show**":



Press the "**Record**" button in order to save the chosen configuration

The previous menu will appear.



Either **load** or **delete** the saved configuration.
By pressing "**Load**", "**Record**" or "**Delete**" buttons, a confirmation window will appear.  Press "**OK**" to confirm or "**X**" to retreat.

# Defaults
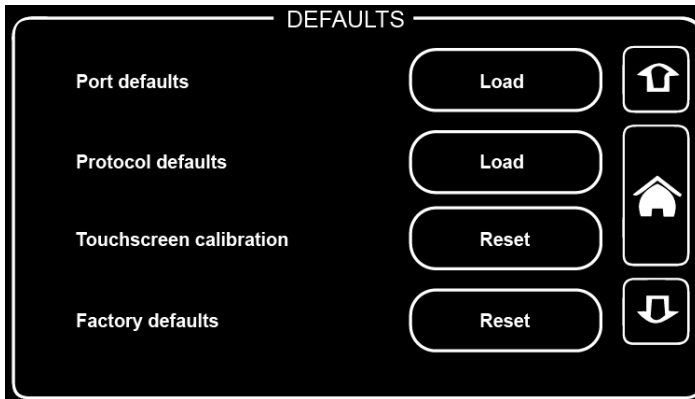


In this menu the user can load defaults:

**Port defaults**:  Resets all DMX port related settings (configuration as IN/OUT/ RDM settings, etc.)

**Protocol defaults**:  Resets all protocol related settings (sACN/ ArtNet settings).

**Touch screen calibration:**  Opens touch screen calibration menu.

**Factory defaults**:  Resets all settings and restarts the system.

After pressing Load/ Reset buttons, a new confirmation window will appear:
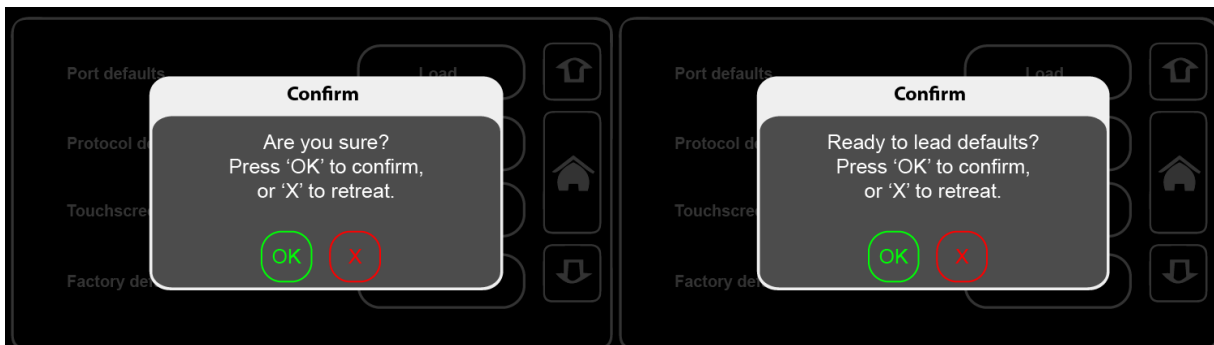


Press "**OK**" to confirm or "**X**" to retreat.

# Status menu

View DMX status for four outputs (A, B, C, D).

Select from four outputs (A, B, C, D) by pressing on the icons.
The green background of the icon identifies selected output.

Following is an example of port A DMX value status.
The four green bars display the DMX value depending on the DMX value (if DMX value is 255, then the green bar will be full; if DMX value is 0, there will be no green bar).
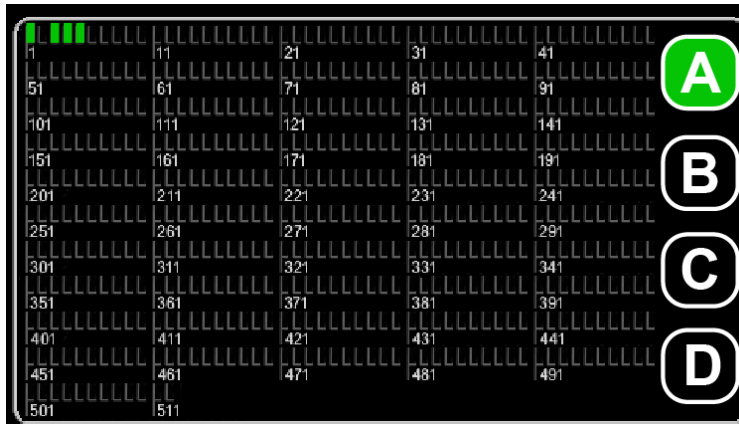


In this example, from channel 1 and 3-5, there is 100% value (255), but from channel 6-512 there are no DMX values.

By pressing touch screen once again, a new menu will appear.
Here the user can see basic information about the output chosen to view.
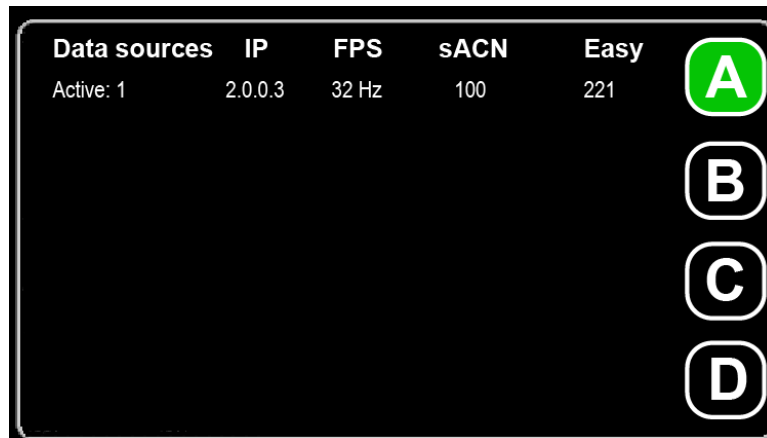


Press the screen once more to return to the main menu.

## OUTPUT configuration menu
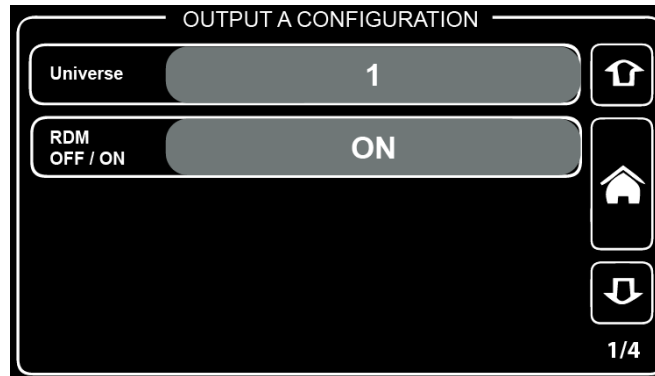


Change settings for outputs.  For each port the user can assign:

**Universe;**
**RDM (ON or OFF).**
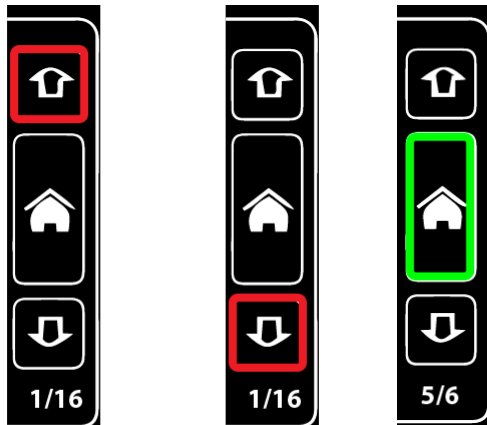


Change settings for four output groups:  universe, port direction, RDM status, and port priority setting.

Press the up-arrow to switch to the next port setting (e.g., if editing port 1 settings, press this button to switch to port 2).

Press the down-arrow to switch to the previous port settings (e.g., if editing port 2 settings, press this button to switch to port 1).

Press the green (home) button to return to the main menu.

Arrow up    Arrow down

**Universe:**

Assign the universe for selected DMX port.  By pressing this section, a new window will appear.
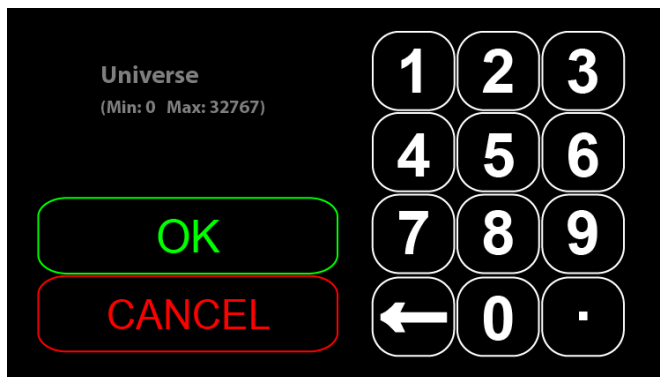


Set the universe (from 0 to 32767) for the selected DMX port.

**RDM OFF/ON**:

Set the RDM settings for selected DMX port.
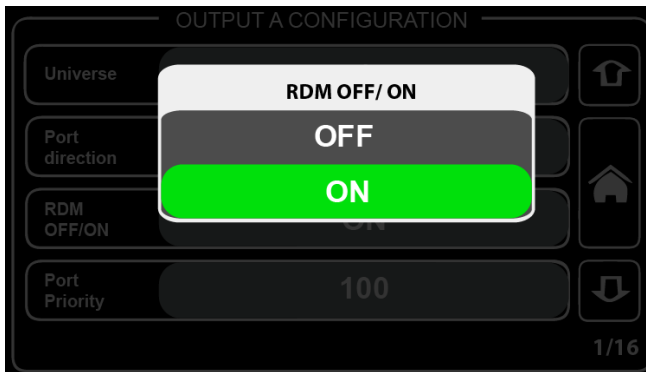


*What is RDM?*
*Remote Device Management or RDM is a protocol enhancement to DMX512 allowing bi-directional communication between a lighting or system controller, and attached RDM-compliant devices over a standard DMX line. This protocol allows configuration, status monitoring, and management of these devices in such a way that does not disturb the normal operation of standard DMX512 devices that do not recognize the RDM protocol. (source: http://www.rdmprotocol.org/)*

**Note**:  Use the RDM when using sACN protocol because sACN doesn't support it.  If using sACN and want to RDM functionality, switch to ArtNet for the moment RDM is needed.

## Touch screen calibration

There are two ways to open the touch screen calibration menu:

1) When booting up, press anywhere on the "ProPlex IQ Two 416" illustration.

2) Open device defaults settings where "touchscreen calibration" reset setting can be seen.
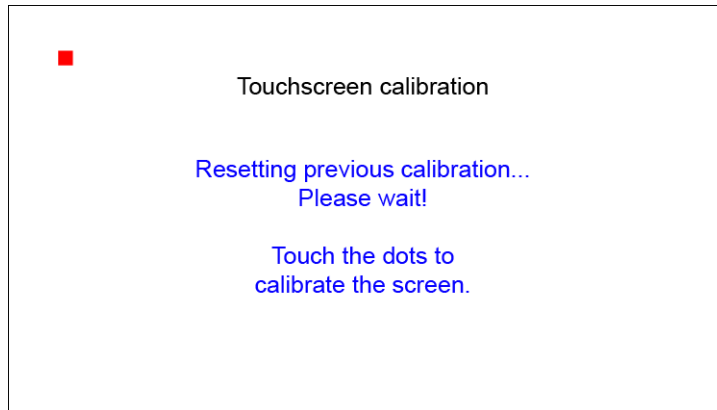


Now press the red dots to calibrate the touch screen.  There will be four dots total, one in each corner of the screen. Calibration has been completed when you see the message shown above.

**Unlocking the screen**

By default, the IQ Two 416 automatically locks the screen when idle for 60 seconds.

To unlock the screen, press and hold key symbol for four seconds.
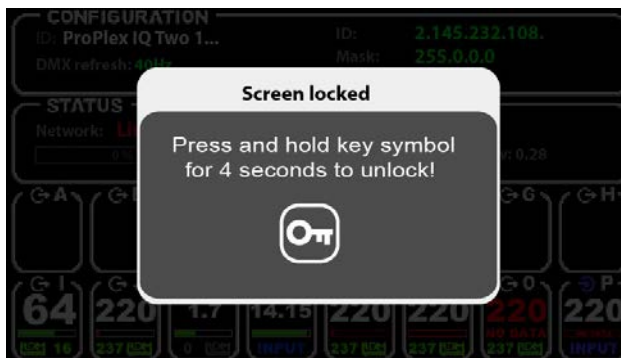
# APPENDIX

## Remote Configuration and Monitoring of IQ Nodes

ProPlex IQ Ethernet to DMX nodes can be configured and monitored via two methods: ProPlex Software and via a web browser.

The ProPlex Software is available as a free PC download from www.tmb.com . This software includes a full suite of configuration and monitoring features, and makes managing multiple nodes on a network extremely easy. The Software also includes a RDM management suite for devices connected the IQ nodes or via a ProPlex RDMigo Cable.
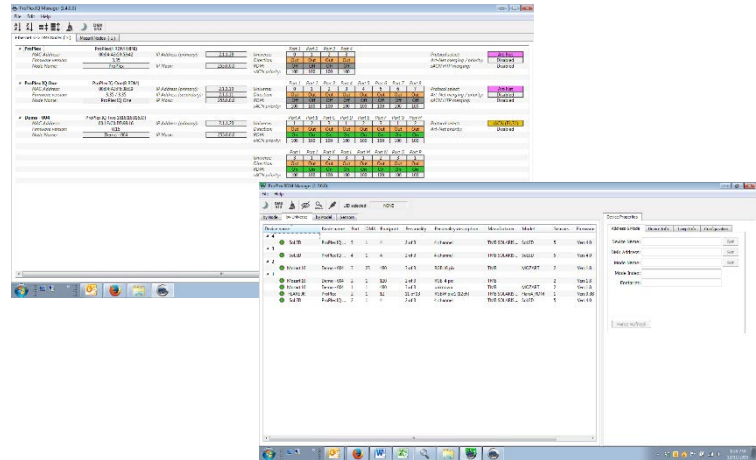


ProPlex IQ Ethernet to DMX nodes can also be remotely configured via their onboard webserver. Using a PC or Mac internet browser, connect to individual IQ nodes by typing their IP address into the internet address bar.

For more information on the ProPlex IQ RDM Manager software, RDMigo Cable, and other ProPlex IQ series products, please visit www.tmb.com
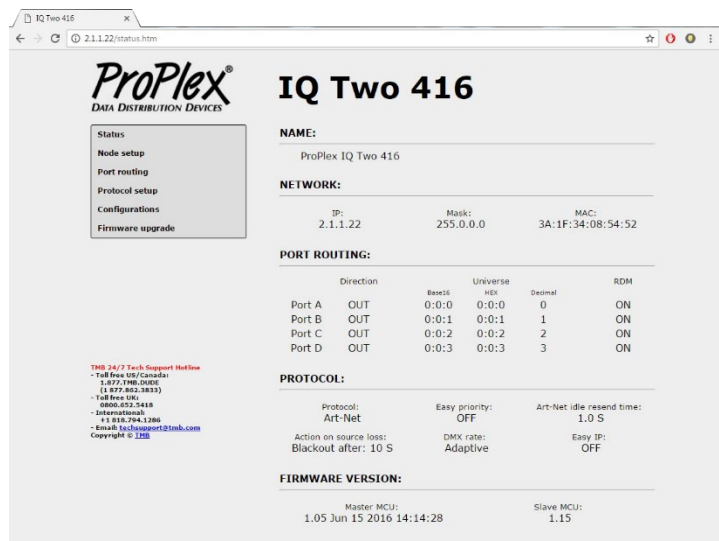
## Limited Warranty

ProPlex Data Distribution Devices are warranted by TMB against defective materials or workmanship for a period of two (2) years from the date of original sale by TMB.

TMB's warranty shall be restricted to the repair or replacement of any part that proves to be defective and for which a claim is submitted to TMB before the expiration of the applicable warranty periods.

This Limited Warranty is void if the defects of the Product are the result of:
- Opening the casing, repair, or adjustment by anyone other than TMB or persons specifically authorized by TMB
- Accident, physical abuse, mishandling, or misapplication of the product.
- Damage due to lightning, earthquake, flood, terrorism, war, or act of God.

TMB will not assume responsibility for any labor expended, or materials used, to replace and/or repair the Product without TMB's prior written authorization. Any repair of the Product in the field, and any associated labor charges, must be authorized in advance by TMB. Freight costs on warranty repairs are split 50/50: Customer pays to ship defective product to TMB; TMB pays to ship repaired product, ground freight, back to Customer.

This warranty does not cover consequential damages or costs of any kind.

A Return Merchandise Authorization (RMA) Number must be obtained from TMB prior to return of any defective merchandise for warranty or non-warranty repair. For all repairs please contact TMB Tech Support Repair using the contact information below or email TechSupportRepairNA@tmb.com.

| US | UK |
|---|---|
| 527 Park Ave. | 21 Armstrong Way |
| San Fernando, CA 91340 | Southall, UB2 4SD England |
| Tel: +1 818.899.8818 | Tel: +44 (0)20.8574.9700 |
| Fax: +1 818.899.8813 | Fax: +44 (0)20.8574.9701 |
| tmb-info@tmb.com | tmb-info@tmb.com |
| www.tmb.com | www.tmb.com |

## Return Procedure

Please send returned merchandise prepaid and in the original packing.  Freight call tags will not be issued for shipping the product to TMB, but TMB will pay the freight for return to the customer.  Clearly label package with a Return Merchandise Authorization Number (RMA #).  Products returned without an RMA # will delay service.  Please contact TMB and request an RMA # prior to shipping the unit.  Be prepared to provide the model number, serial number, and a brief description of the cause for the return.  Be sure to properly pack the unit; any shipping damage resulting from inadequate packaging is the customer's responsibility. TMB reserves the right to use its own discretion to repair or replace product(s).  Proper UPS packing or double-boxing will better ensure product integrity when shipped.

***Note:  If you are given an RMA #, please include the following information on a piece of paper inside the box:***
1) Your name
2) Your address
3) Your phone number
4) The RMA #
5) A brief description of the symptoms

# PROPLEX IQ TWO 416 – TECHNICAL SPECIFICATIONS

## WEIGHT & DIMENSIONS

WIDTH.................................................................................. 19 IN / 483 MM
DEPTH.................................................................................. 8.1IN / 203 MM
HEIGHT................................................................................. 3.5 IN / 90 MM
WEIGHT................................................................................ 9.25LB / 4.2 KG
EIA RACK UNITS......................................................................19" 1U

## POWER

OPERATING VOLTAGE ....................................................... 100-240V, 50-60Hz
FUSE.....................................................................................1A, 250V
POWER CONSUMPTION............................................................ TBD
MAINS CONNECTOR ..................................................POWERCON NAC3MPA

## THERMAL

MAXIMUM ambient temperature ............................................. +40°C
MINIMUM ambient temperature ............................................. - 20°C
COOLING ....................................................................... CONVECTION
OPERATING humidity................................................................. 10-80%

## CONTROL / PROGRAMMING

ETHERNET PORTS.................................................................... 1
ARTNET/SACN UNIVERSES ............................................... 4 MAX
DMX PORTS............................................................................. 16
DMX CONNECTORS. .................................................. NEUTRIK XLR-5 FEMALE
DMX PORT ISOLATION. ................................................OPTICAL, UP TO 1000V
ETHERNET CONNECTOR. ..........................................NEUTRIK ETHERCON RJ45
NETWORK PROTOCOLS. ..............................................ARTNET, SACN (E1.31)

## WARRANTY INFORMATION

WARRANTY ..............................................................2-YEAR LIMITED WARRANTY

## TMB 24/7 Technical Support
US/Canada:  +1 818.794.1286
Toll Free:  1 877.862.3833 (877.TMB.DUDE)
UK:  +44 (0)20.8574.9739
Toll Free:  0800.652.5418
e-mail:  techsupport@tmb.com