



# ***MOX Communication Device***

## ***User Guide***

***0809-606-2302***

## Preface

### Scope of the User Guide

This MOX Communication Device User Guide contains information for MoxNET Switches with the following part numbers:

<i>Part Number</i>	<i>Description</i>
606-3401	MoxNET Switch with 8 RJ45 ports and 1 Fiber port
606-3403	MoxNET Switch with 8 RJ45 ports

This guide has been organized for the operator, and it is expected that the user is an engineer, technician, electrician or similar with an understanding of the operating and programming requirements of related MOX products.

### Related Documents

These MoxNET switches can be used together with all of the MOX controllers. For this reason, a number of related documents are suggested to be read in conjunction with this user guide.

The related documents are noted below:

- MOX Unity Field Controller User Guide
- MOX IoNix Field Controller User Guide
- MOX Open Controller User Guide
- MOX 603 CP User Guide

## Conventions Used



*When you see the “exclamation mark” icon in the left-hand margin, the text to its immediate right will be a special note. Please ensure that you read this information to increase your understanding of the systems operation.*



*When you see the “stop sign” icon in the left-hand margin, the text to its immediate right will be a warning. This information could prevent injury loss of property or even death (in extreme cases). It is very important that you stop and read this information and ensure that you have complete understanding before continuing with the procedures.*

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# 1 Communication Devices

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## 1.1 MX606-3401 MoxNET Switch

The MX606-3401 MoxNET Switch is an Ethernet switch with 8 RJ45 ports and 1 fiber single mode port. All RJ45 ports support 10/100M and full/half duplex auto-negotiation. The fiber port is a duplex 100BASE-LX10 port.

The switch has 128k bytes of SRAM used to buffer the Ethernet frame data from all ports. It operates in store and forward mode.

### 1.1.1 Familiarization



Figure 1 MX606-3401 MoxNET Switch Familiarization

### 1.1.2 Key Features

<b>Ethernet Interface</b>	
RJ45 Port	8
Fiber Port	1
<b>RJ45 Port Characteristics</b>	
Speed	10/100M auto-negotiation
Duplex Mode	Full/Half Duplex auto-negotiation
Auto-MDIX	Support
Broadcast Storm Protection	5% broadcast frames allowed
Flow Control	802.3x, Back Pressure
TP Cable Length	0~100m
<b>Fiber Port Characteristics</b>	
Fiber Mode	Single Mode
Wavelength	1300nm
Speed	100Mbit/s
Duplex Mode	Full Duplex
Broadcast Storm Protection	5% broadcast frames Allowed
Flow Control	802.3x
Connector Type	SC
Fiber Cable Length	0~20000m @ 0.5DB/km
<b>Power Characteristics</b>	
Interface	3 Pin Socket
Input Voltage	Wide range, 9~36V
Power Dissipation	8W
<b>Mechanical Characteristics</b>	
Material	Aluminum
Dimension (L x W x H)	114mm x 40mm x 93mm
Installation	DIN-Rail, Wall Mounting (Optional)
<b>Environmental Conditions</b>	
Operating temperature	-20°C to 70°C
Storage temperature	-40°C to 85°C
Humidity	5 to 90% non-condensing

Table 1 MX606-3401 MoxNET Switch Key Features



### 1.1.3 LED Indication

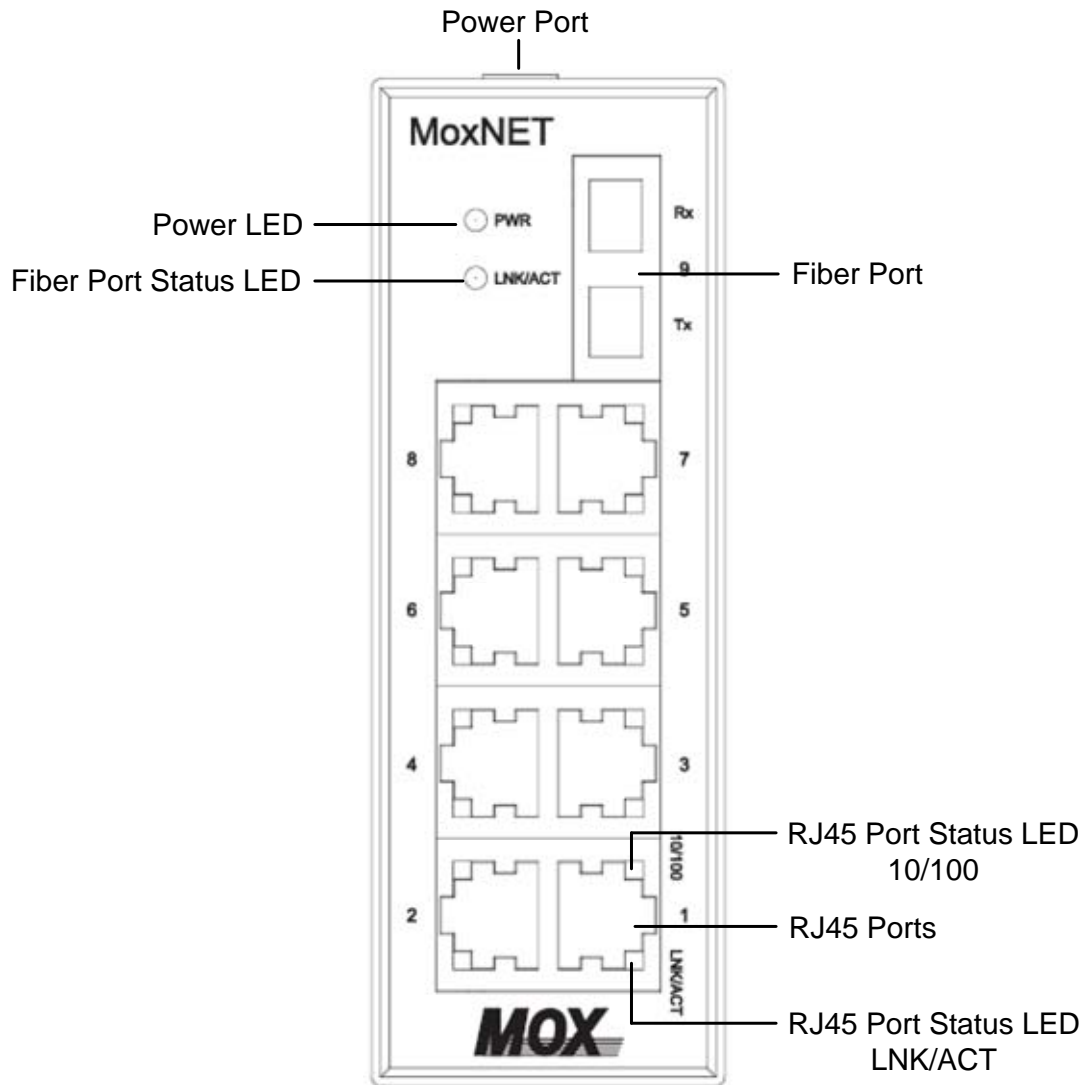


Figure 2 MX606-3401 MoxNET Switch LED Indication

#### 1.1.3.1. Power LED

Name	On	Off	Color
<b>PWR</b>	Power On	Power Off	Green

Table 2 MX606-3401 MoxNET Switch Power LEDs

#### 1.1.3.2. Status LEDs for the RJ45 Port

2 LEDs are provided for each RJ45 port and both of them are available on the RJ45 socket. Of the two LEDs, one indicates the speed - 10Mbit/s or 100Mbit/s, and the other shows the link and communication (LNK/ACT) status.

<i>Name</i>	<i>On</i>	<i>Off</i>	<i>Blink</i>	<i>Color</i>
<b>LNK/ACT</b>	Link On	Link Off	Communication	Green
<b>10/100</b>	100Mbit/s	10Mbit/s	N/A	Green

**Table 3 MX606-3401 MoxNET Switch RJ45 Status LEDs**

#### 1.1.3.3. Status LED for Fiber Port

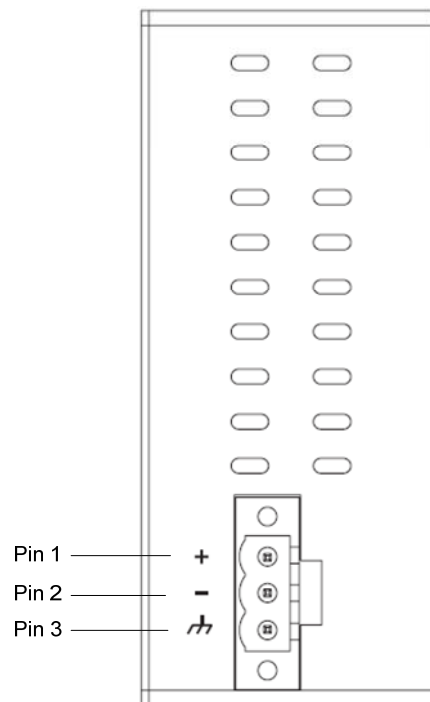
The MX606-3401 has a fiber port, a link and communication (LNK/ACT) status LED is provided for fiber port and the LED is available on the front panel of the case.

<i>Name</i>	<i>On</i>	<i>Off</i>	<i>Blink</i>	<i>Color</i>
<b>LNK/ACT</b>	Link On	Link Off	Communication	Green

**Table 4 MX606-3401 MoxNET Switch Fiber Port Status LED**

### 1.1.4 Terminal Definitions

#### 1.1.4.1. Power Port



**Figure 3 MX606-3401 MoxNET Switch Power Port Terminals**

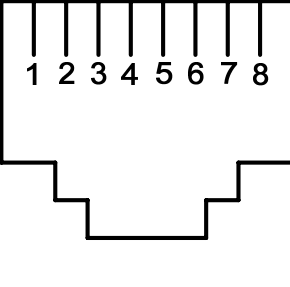
The table below gives detailed definitions of the power port:

<i>Name</i>	<i>Description</i>
Pin1	Power Supply ( + )
Pin2	Power Supply ( - )
Pin3	Earth Ground

**Table 5 MX606-3401 MoxNET Switch Power Port Terminal Definitions**

#### 1.1.4.2. RJ45 Port

The MX606-3401 has 8 RJ45 ports with each port having the same terminal definition as the following table shows.

<i>Pin</i>	<i>Signal</i>	<i>Function</i>	<i>IN/OUT</i>	<i>Terminal View</i>
1	TX+	Transmission +	OUT	
2	TX-	Transmission -	OUT	
3	RX+	Receive +	IN	
4	NC	Not connected	NC	
5	NC	Not connected	NC	
6	RX-	Receive -	IN	
7	NC	Not connected	NC	
8	NC	Not connected	NC	

**Table 6** MX606-3401 MoxNET Switch RJ45 Port Terminal Definitions

#### 1.1.4.3. Fiber Port

The duplex fiber port has two terminals; one is used to send data, and the other is used to receive. The following table shows the terminal definition of fiber port.

<i>Signal</i>	<i>Function</i>	<i>IN/OUT</i>
TX	Transmission	OUT
RX	Receiver	IN

**Table 7** MX606-3401 MoxNET Switch Fiber Port Terminal Definitions

## 1.2 MX606-3403 MoxNET Switch

The MX606-3403 is an Ethernet switch with 8 RJ45 ports. All RJ45 ports support 10/100M and full/half duplex auto-negotiation.

The switch has 128k bytes of SRAM used to buffer the Ethernet frame data from all ports. It operates in store and forward mode.

### 1.2.1 Familiarization



Figure 4 MX606-3403 MoxNET Switch Familiarization

### 1.2.2 Key Features

<b>Ethernet Interface</b>	
RJ45 Port	8
<b>RJ45 Port Characteristic</b>	
Speed	10/100M auto-negotiation
Duplex Mode	Full/Half Duplex auto-negotiation
Auto-MDIX	Support
Broadcast Storm Protection	5% broadcast frames Allowed
Flow Control	802.3x, Back Pressure
TP Cable Length	0~100m
<b>Power Characteristic</b>	
Interface	3 Pin Socket
Input Voltage	Wide range, 9~36V
Power Dissipation	6W
<b>Mechanical Characteristic</b>	
Material	Aluminum
Dimension (L x W x H)	114mm x 40mm x 93mm
Installation	DIN-Rail, Wall Mounting (Optional)
<b>Environmental Conditions</b>	
Operating temperature	-20° to 70° C
Storage temperature	-40 to 85° C
Humidity	5 to 90% non-condensing

Table 8 MX606-3403 MoxNET Switch Key Features

### 1.2.3 LED Indication

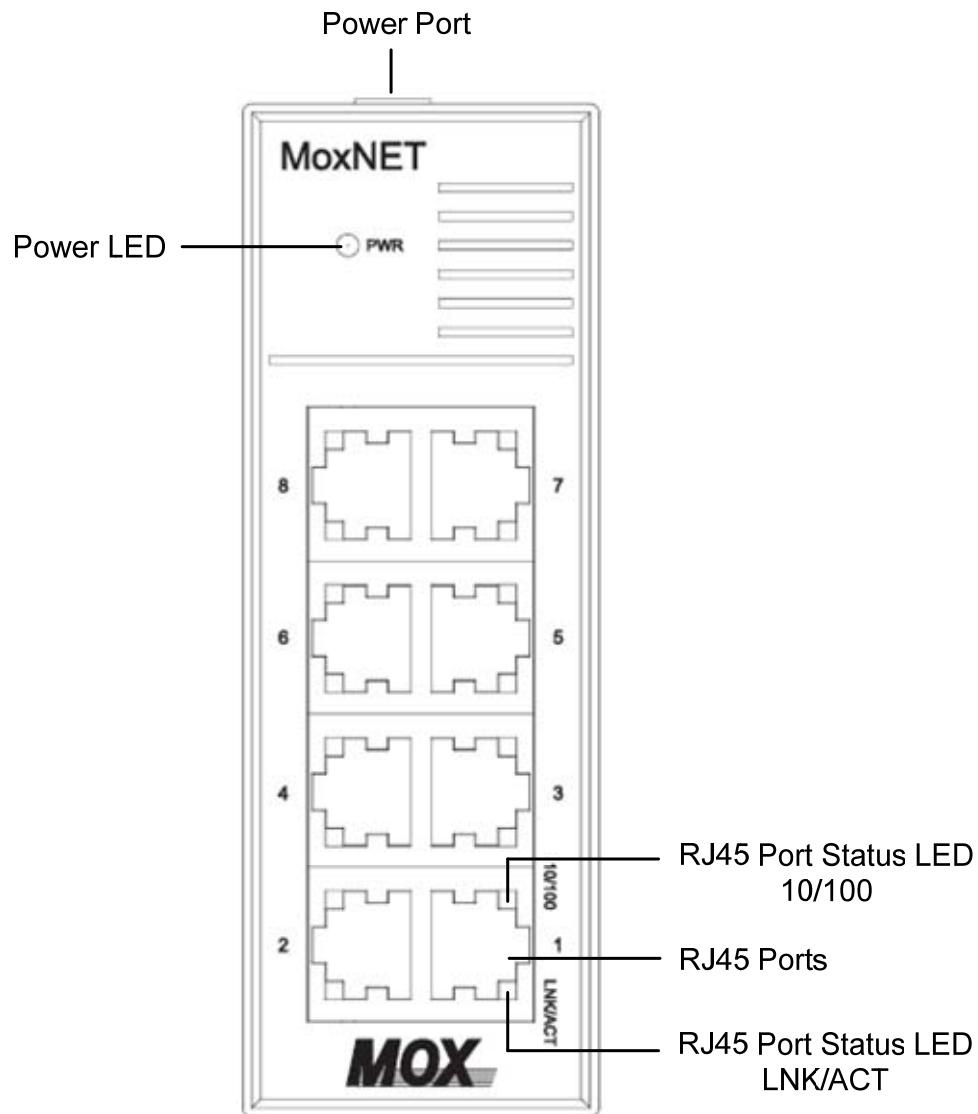


Figure 5 MX606-3403 MoxNET Switch LED Indication

#### 1.2.3.1. Power LED

Name	On	Off	Color
<b>PWR</b>	Power On	Power Off	Green

Table 9 MX606-3403 MoxNET Switch Power LEDs

#### 1.2.3.2. Status LED for the RJ45 Port

The MX606-3403 has 8 RJ45 ports where every port has 2 status LEDs which are available on the RJ45 socket. The LED functions are shown in the following table.

<i>Name</i>	<i>On</i>	<i>Off</i>	<i>Blink</i>	<i>Color</i>
<b>LNK/ACT</b>	Link On	Link Off	Communication	Green
<b>10/100</b>	100Mbit/s	10Mbit/s	N/A	Green

Table 10 MX606-3403 MoxNET Switch RJ45 Port Status LEDs

## 1.2.4 Terminal Definitions

### 1.2.4.1. Power Port

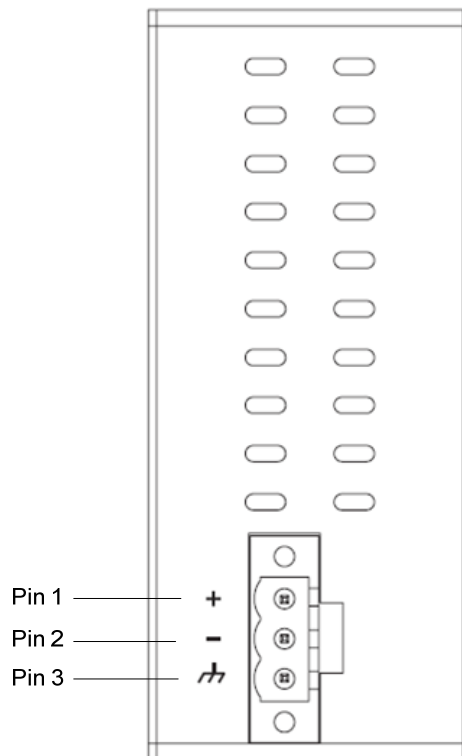


Figure 6 MX606-3403 MoxNET Switch Power Port Terminals

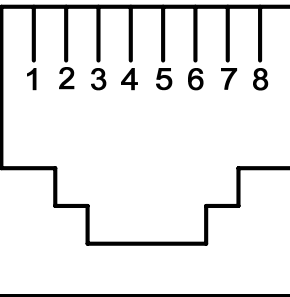
The following table shows the definitions for each terminal definition of the power port:

<i>Name</i>	<i>Description</i>
Pin1	Power Supply ( + )
Pin2	Power Supply ( - )
Pin3	Earth Ground

Table 11 MX606-3403 MoxNET Switch Power Port Terminal Definitions

#### 1.2.4.2. RJ45 Port

The MX606-3403 has 8 RJ45 ports with each port having the same terminal definition as the following table shows.

<i>Pin</i>	<i>Signal</i>	<i>Function</i>	<i>IN/OUT</i>	<i>Terminal View</i>
1	TX+	Transmission +	OUT	
2	TX-	Transmission -	OUT	
3	RX+	Receive +	IN	
4	NC	Not connected	NC	
5	NC	Not connected	NC	
6	RX-	Receive -	IN	
7	NC	Not connected	NC	
8	NC	Not connected	NC	

**Table 12**      **MX606-3403 RJ45 Port Terminal Definitions**



## 2 Installation Guide

Within this chapter is detailed information on dimension and installation of the MoxNET switch.

### 2.1 MoxNET Switch Dimensions

#### 2.1.1 MX606-3401 MoxNET Switch

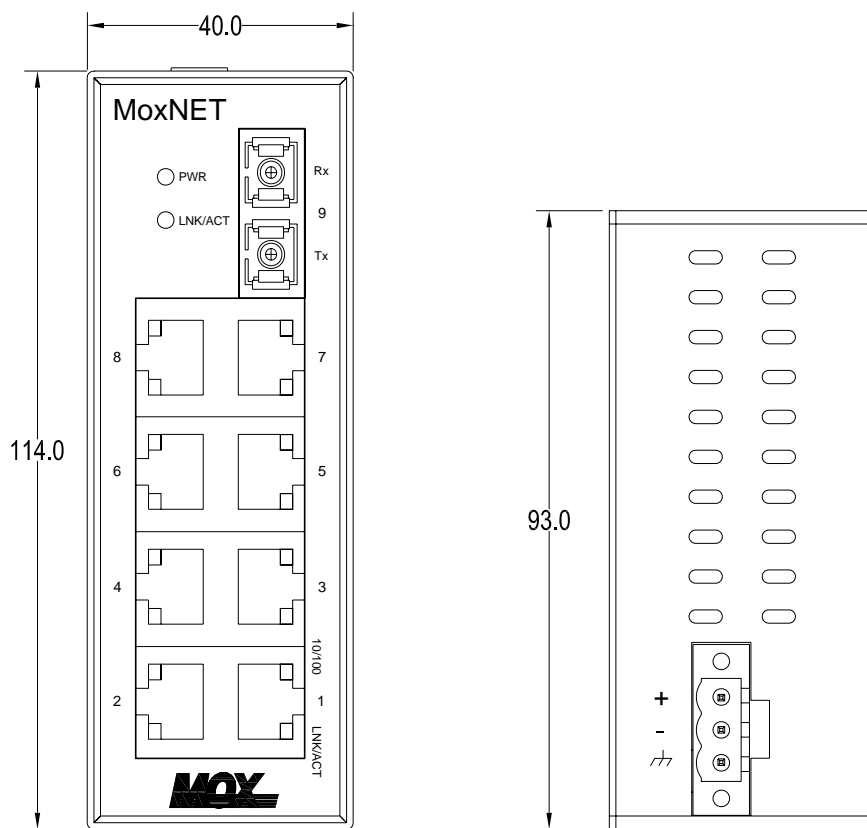


Figure 7 MX606-3401 MoxNET Switch Front View and Top View

### 2.1.2 MX606-3403 MoxNET Switch

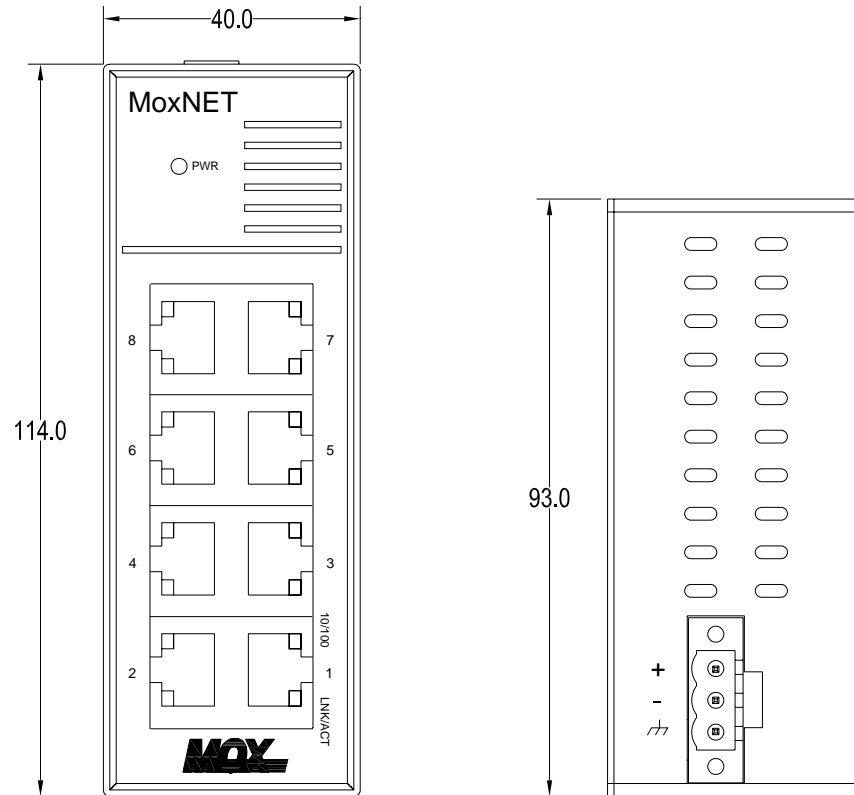
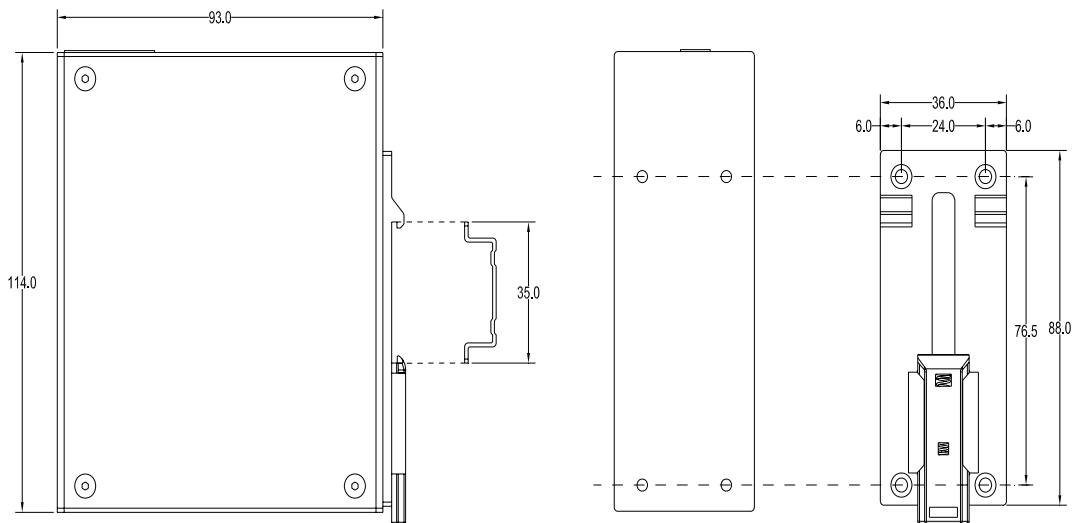


Figure 8 MX606-3403 MoxNET Switch Front View and Top View

## 2.2 MoxNET Switch Installation

Taking the MX606-3403 as an example, it can be seen that the MoxNET switch can be installed either from the back or from the side. Besides the optional installation direction, the installation method is also optional: that being Din Rail mounted or wall mounted. Please refer to the following demonstration figures.

### 2.2.1 Din Rail Mounted from the Back



**Figure 9** Side View + Back View + Installation Kit of Din Rail Mounted from the Back

### 2.2.2 Wall Mounted from the Back

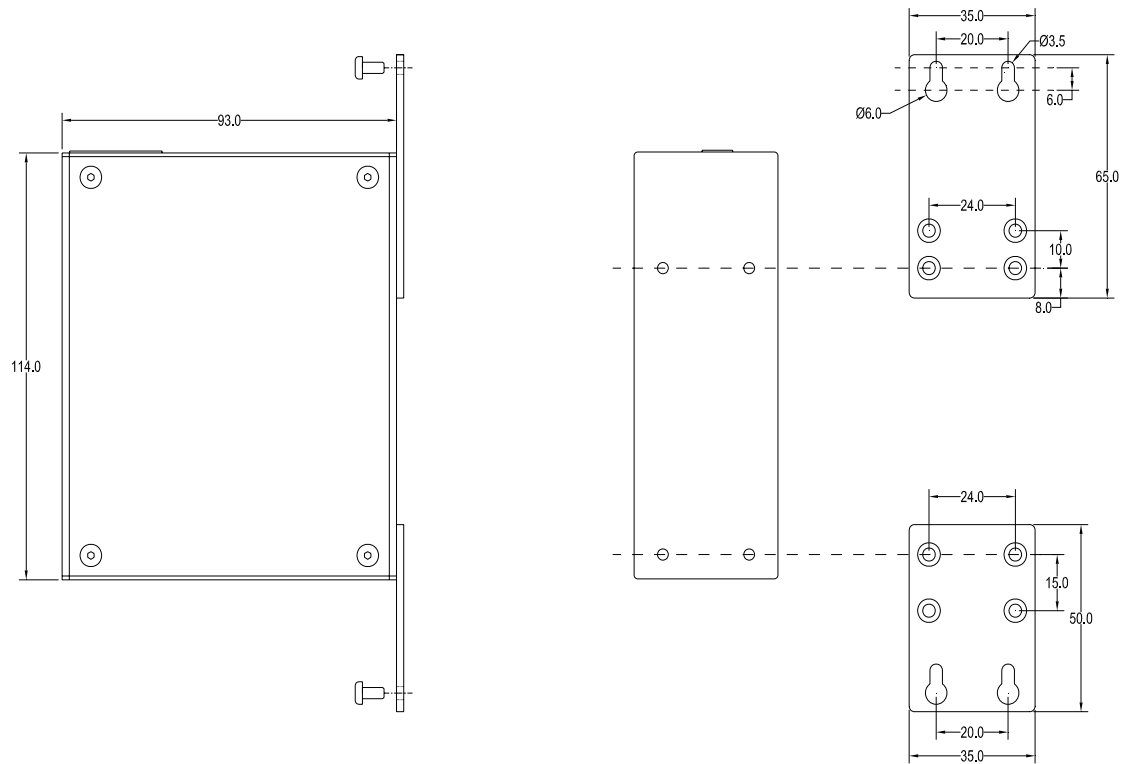


Figure 10 Side View + Back View + Installation Kit of Wall Mounted from the Back

### 2.2.3 Din Rail Mounted from the Side

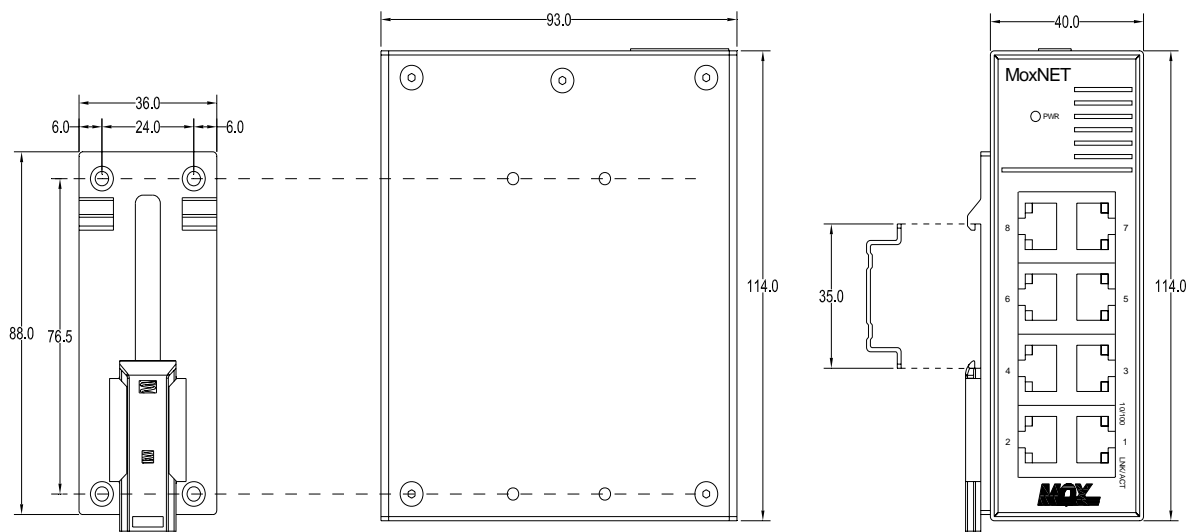
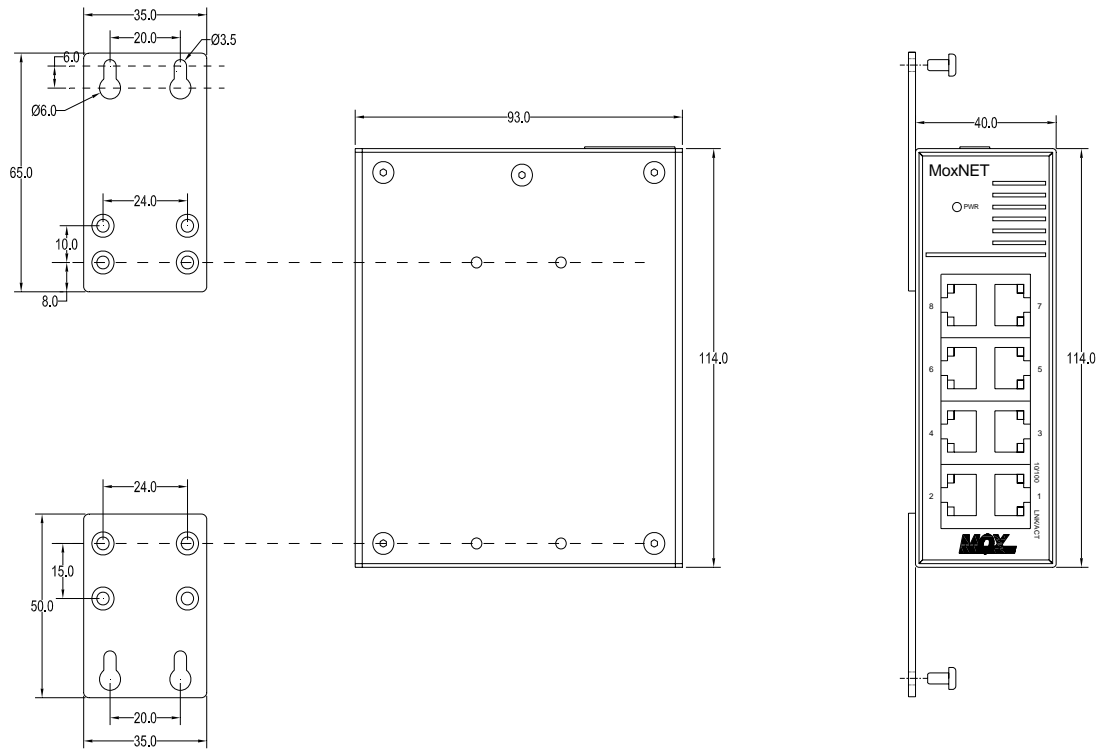


Figure 11 Installation Kit + Side View + Front View of Din Rail Mounted from the Side

## 2.2.4 Wall Mounted from the Side



**Figure 12** Installation Kit + Side View + Front View of Wall Mounted from the Side

## Appendix A Product Support

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### Warranty Information

All MOX manufactured products are warranted to be free from defects in material and workmanship. Our obligation under this warranty will be limited to repairing or replacing, at our option, the defective parts within 1 year of the date of installation, or within 18 months of the date of shipment from the point of manufacture, whichever is sooner. Products may only be returned under authorization. The purchaser will prepay all freight charges to return any products with a valid return authorization number to the designated repair facility.

This limited warranty does not cover loss or damage that may occur in shipment of the goods or due to improper installation, maintenance, misuse, neglect or any cause other than ordinary commercial or industrial use. This limited warranty is in lieu of all other warranties whether oral or written, expressed or implied.

Liability associated with all MOX products shall not exceed the price of the individual unit that is the basis of the claim. In no event will there be liability for any loss of profits, loss of use of facilities or equipment or other indirect, incidental or consequential damages.

### Contact Details

To obtain support for MOX products, call MOX Group on the following numbers, or your designated support provider and ask for MOX Support.

### E-mail Addresses

[support@mox.com.au](mailto:support@mox.com.au)

[sales@mox.com.au](mailto:sales@mox.com.au)

### Visit Our Web Page at

<http://www.mox.com.au>



## Service Information

If you require service, contact your local MOX Group representative. A trained specialist will help you to quickly determine the source of the problem. Many problems are easily resolved with a single phone call. If it is necessary to return a unit, an RMA (Return Material Authorization) number will be provided.

All returned materials are tracked with our RMA system to ensure speedy service. You must include this RMA number on the outside of the box so that your return can be processed immediately.

Your MOX Group authorized applications engineer will complete an RMA request for you. If the unit has a serial number, we will not need detailed financial information. Otherwise, be sure to have your original purchase order number and date purchased available.

We suggest that you provide a repair purchase order number in case the repair is not covered under our warranty. You will not be billed if the repair is covered under warranty.

Please supply us with as many details about the problem as you can. The information you supply will be written on the RMA form and supplied to the repair department before your unit arrives. This helps us to provide you with the best service, in the fastest manner. Most repairs are completed within two days. During busy periods, there may be a longer delay.

If you need a quicker turnaround, ship the unit to us by airfreight. We give priority service to equipment that arrives by overnight delivery. Many repairs received by midmorning (typical overnight delivery) can be finished the same day and returned immediately.

We apologize for any inconvenience that the need for repair may cause you. We hope that our rapid service meets your needs. If you have any suggestions to help us improve our service, please give us a call. We appreciate your ideas and will respond to them.

## For Your Convenience:

Please fill in the following information and keep this manual with your MOX system for future reference:

P.O. #: \_\_\_\_\_ Date Purchased: \_\_\_\_\_

Purchased From: \_\_\_\_\_



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