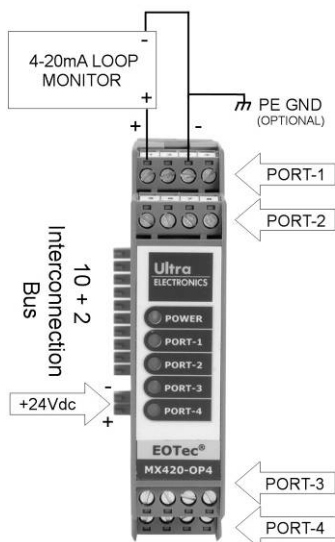
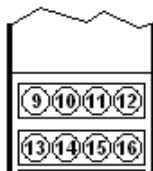
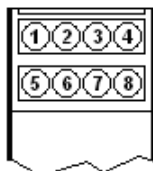


## Connections

**POWER:** The MX420-OP modules obtain power from the 10+2 interconnection bus. Power originates from an MX Base Module (see specification section).

**4 to 20mA OUTPUT:** The Port-1 I/O terminal block is at the top-front of the unit. Port-2 is directly below it. On a 4 port model, Port-3 is at the bottom-front of the unit with Port-4 directly below and behind it. Screw terminal blocks are numbered from left-to-right as follows:

PORT	TERMINAL			
PORT-1	1	2	3	4
PORT-2	5	6	7	8
PORT-3	9	10	11	12
PORT-4	13	14	15	16
	4 - 20mA (+)	No connection	4 - 20mA (-)	No connection



**NOTE:** Internally, this module's negative (-) input terminals are connected to the modules interconnection bus negative (-) terminal (circuit common).

## Safety and Warning Information



Connect the DIN Rail, via the Model 2A09 End Clamp, to Protective Earth (PE) ground with low impedance.

### ATEX Specific Conditions of Use

Modules shall be installed in an enclosure which maintains an ingress protection rating of IP54 and meets the enclosure requirements of EN60079-0 and EN60079-15. The EOTec modules shall be installed in DIN rail with DIN end clamps mounted on both sides of the module set. The DIN rail must be connected to Protective Earth in order to provide modules with a Protective Earth connection. Do not disconnect equipment connections or modules when energized.

**Important Notice** - Before utilizing the product, the user should determine the suitability of the product for its intended use. The user assumes all risk and liability in connection with such use. ULTRA ELECTRONICS' WRITTEN WARRANTY FOR THE PRODUCT IS MADE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. The user's exclusive remedy for breach of Ultra Electronics' written warranty shall be the repair or replacement of such quantity of product which is proven to be defective. In no case shall Ultra Electronics be liable for any special, incidental, or consequential damages based upon breach of contract, negligence, strict liability or other legal theory.

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**Ultra**  
ELECTRONICS

Nuclear Sensors &  
Process Instrumentation

EOTec MX Multiplexer Models

**MX420-OP2 / MX420-OP4**

2 & 4 Port 4-20mA Output Modules

## Installation Instructions

*Original Instructions*



**MX 4-20mA Output Modules**

**For use ONLY with the  
EOTec MX Multiplexer Line**

## Operation & Installation

**Description:** 4 to 20mA, Analog Output Modules, Models MX420-OP2 and MX420-OP4, are designed to provide two or four channels of process loop outputs. The input signals from the mated MX420-IP2 or MX420-IP4, 4 to 20mA Input Module on the opposite end of the fiber link are digitized and passed to its MX Base Module where they are multiplexed and converted to a fiber optic signal. The MX Base Module at the output end of the fiber link demultiplexes the signals and passes them to a Model MX420-OP2 or MX420-OP4, 4 to 20mA, Analog Output Modules for conversion back to their original 4 to 20mA format. Or use MX010-OP2 and MX010-OP4, 0 to 10Vdc, Analog Output Modules for conversion to the 0 to 10Vdc format.

Absolutely no field adjustments are required as all units deliver the highest degree of accuracy over their entire specified ambient temperature range.

**Assembly:** Place the top lip of the module's mounting channel onto the DIN rail. Push the lower portion of the module towards the mounting surface until it "clicks" and locks into place. Firmly slide the modules together such that the module sides are touching ensuring a good connection of the 10+2 integrated BUS interconnection at the rear of the modules. Install End Clamps (Model 2A09) to both sides of the module bundle to prevent accidental unplugging of the BUS interconnections. The End Clamps can provide convenient screw terminals for connecting the DIN rail to Protective Earth (PE) ground.

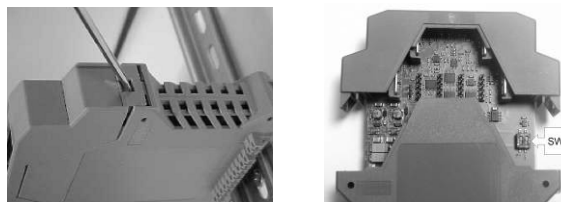
**Dismantle:** Remove the End Clamps from the DIN rail. Disconnect the BUS interconnections by sliding the modules at least 1/2" apart from each other. Insert a screwdriver into the rectangular hole in the metal mounting latch at the bottom of the module. Pushing up on the screwdriver's handle causes the latch to move downward and disengages it from the DIN rail. Tilt the module up and lift it off of the DIN rail.

## Service

Service of this equipment is to be performed by Ultra Electronics, NSPI only. This unit has no scheduled replacement of parts. For installation manuals in a community language other than English please contact Ultra Electronics, NSPI.

## Settings & Indicators

Use a small screwdriver to press on the latches (indentations) at the top and bottom of the front housing cover. Slide housing forward to open.



**MODULE ADDRESS SETTING:** A two position DIP switch, SW1, is used to set the **address** of the module and it must **match** the address of its mating module at the **opposite** end of the fiber link. **Do not** set two modules at the **same** end of the fiber link in one stack to the same address setting. Each module in a stack must have a different address to function properly. The 4 possible address settings are:

Address	SW1-1	SW1-2
00	OFF	OFF
01	OFF	ON
10	ON	OFF
11	ON	ON

LED	Color	Description
Power	Green	Power Applied
	Off	No Power
I/O Ports	Green	Normal Operation
	Off	No Input/Output Data

## Regulatory Information

### INDUSTRIAL CONTROL EQUIP. FOR HAZ. LOC. CLASS I, DIVISION 2, GROUPS A,B,C, & D, T4

Do not disconnect equipment unless area is known to be non-hazardous. Certified components for use in a suitable enclosure. Substitution of components or other equipment modification may impair suitability. Ambient Temperature: -40 .. 85C Max  
Electrical Rating: 24Vdc, 130mA



FM11ATEX0067X  
II 3 G Ex nA IIC T4 Ta = -40 °C to 85 °C

## Specifications

### Power Requirements

15 to 30VDC via the interconnection Bus from an MX Base Module (MXB-MM2, MXB-SM15, MXB-SM40 or MXB-SM80)

MX420-OP2	90mA @ 24Vdc
MX420-OP4	130mA @ 24Vdc

### Connections

Pluggable, Cage Clamp Screw Terminal Blocks, Accept 12 to 24 AWG

MX420-OP2	2 – 4-20mA Process Loop Ports
MX420-OP4	4 – 4-20mA Process Loop Ports

### Update Rate

57.6KHz, independent of number of modules or ports utilized

### Operating Range 3.8 to 20.5mAdc

< 3.36mA = Saturation  
< 3.52mA = LED Off  
< 3.8mA = Under Range; LED flashing red  
> 20.5mA = Over Range; LED solid red  
> 21.6mA = Saturation

### Conversion – Voltage to Current

4mA = 0Vdc; 20mA = 10Vdc  
Scale: 1mA = 0.625Vdc

### Ambient Conditions

-40 to 85°C  
0 to 95% Humidity (Non-condensing)

Reference Accuracy	0.01% @ 25°C
Ambient Temp. Effect	0.08% / 50°C Change
Max. Loop Resistance	600 Ohms
Signal Resolution	16 bit
Sensitivity	2 <sup>16</sup> or 65,536 Steps

Mounting	35mm DIN Rail
Weight	< 9oz
Enclosure Material	Polyamide
Flammability Rating	UL 94V-0

Fuse	500mA 125V
Replacement fuses can be purchased from your Schurter distributor. Part number 3403.0163.11	