

Installation, Operation and Maintenance Instructions



**UNICON
CONTROLLER
1-15 AMP
MODEL NEMA 12 AND
CHASSIS MOUNT 115
OR 230 VOLT AC**

ERIEZ MAGNETICS HEADQUARTERS: 2200 ASBURY ROAD, ERIE, PA 16506-1402 U.S.A.
WORLD AUTHORITY IN SEPARATION TECHNOLOGIES

Introduction

This manual details the proper steps for installing, operating and maintaining the Eriez Unicon Controller.

Careful attention to these requirements will assure the most efficient and dependable performance of this equipment.

If there are any questions or comments about the manual, please call Eriez at 814-835-6000 for Unicon Controller assistance.

 **CAUTION**

**Safety labels must be affixed to this product.
Should the safety label(s) be damaged, dislodged
or removed, contact Eriez for replacement.**

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MODEL NEMA 12 AND CHASSIS MOUNT 115 OR 230 VOLT AC

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General Description

Electronic control units for stepless adjustment of vibratory feeder throughput. The control units are suitable for feeders with a vibrating frequency of 60 Hz (50 Hz) and 120 Hz (100 Hz). The frequency is selected by using an internal link-switch on the printed circuit board. The feeder throughput can be adjusted by using the integrated potentiometer. An enable input is available for Stop/Start operation from contacts or a supervisory control system. Umin and Umax trimmers are provided to limit the throughput adjustment range.

An integral soft-start reduces jolting when the unit is switched on or enabled.

The enclosed version includes mains input and feeder output cables. In the front panel there is a mains switch and a throughput adjustment potentiometer. The potentiometer can be used to set the feed rate from 10...100%, it's also possible to reduce the range of output voltage by using the internal Umin and Umax trimmers.



NEMA 12 UNICON CONTROL



CHASSIS MOUNT UNICON CONTROL



Technical Data

	UNICON 115/230VAC 15A MAX. 50/60 Hz	
Supply Voltage	115V, +/- 10%, 230V, +/- 10%	115V, +/- 10%, 230V, +/- 10
Mains Frequency	50/60 Hz	50/60 Hz
Output Voltage	20...110V, 40...220V	20...110V, 40...220V
Output Current	0,2...15A max.	0,2...15A max.
Vibrating Frequency	3000/3600 (3600/7200)	3000/3600 (3600/7200)
Set Point Source	Internal Potentiometer 0...10 VDC, 22 kR 0...20 mA, 250 R	Internal Potentiometer 0...10 VDC, 22 kR 0...20 mA, 250 R
Enable	24 V, DC, 5mA Contacts	24 V, DC, 5 mA Contacts
Construction	IP54 / NEMA 12 TYPE	1P 20 / NEMA 1 TYPE
Operating Temperature	0...45°C / 32...113°F	0...45°C / 32...113°F
Storage Temperature	20...+70°C / -4...158°F	20...+70°C / -4...158°F

Declaration of Conformity

We declare that these products conform with the following:

Directives:

Low Voltage Directive 2014/35/EN
Electromagnetic Compatibility 2014/30/EN

Standards:

EN 50178
EN 61000-6-2
EN 61000-6-4

Commissioning

INSTALLATION

Ensure that the control units are mounted in a vibration free environment and ensure that sufficient air circulation is provided for cooling purposes

Preliminary Steps

- Check that the unit is correct for the local mains supply (rating plate information) and that it is correctly rated for the feed system.
 - Connect the controller according to the connection diagram
-

IMPORTANT POINTS

When applications with frequently on and off cycles are required, use the enable control Input provided. It is prohibited to open the current circuit with a switch or a contactor while the feeder is running, as this may cause damage to the controller

Operating Current of the Feeder Coil

The RMS current should be checked to ensure that the feeder/coil combinations are operating within their rated tolerance.

The different iterations of the UNICON control will be fused at specific levels to provide protection for specific feeder drive needs.

The coil should be designed for the correct operating frequency to prevent excessive current draw and the consequential overloading of the coil.

Settings

Check the input voltage before switching on the controller. The control is set to the voltage specified by the user at the factory. Be sure to use the same voltage specified. If voltage must be changed, see schematic for proper setting.

Check the Frequency of the Feeder to ensure that the frequency selection switch is in the correct setting.

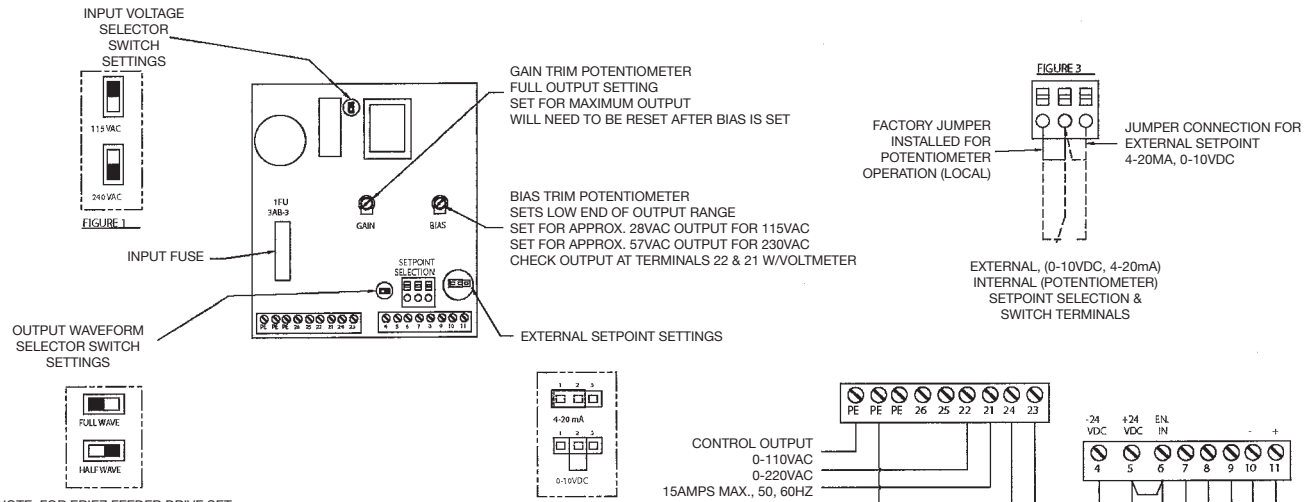
Umin and Umax trimmers are provided to limit the throughput adjustment range, they are also located inside the controller.



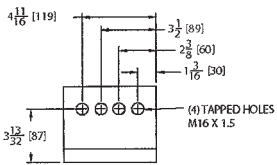
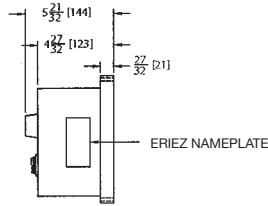
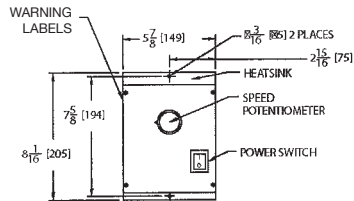
Connections, Dimensions and Set-up Instructions

N12 Version

Definable Settings and Connection Information



NOTE: FOR ERIEZ FEEDER DRIVE SET TO FULLWAVE FOR OTHER CONSULT FACTORY



SET-UP INSTRUCTIONS

230VAC, POTENTIOMETER ONLY
SET INPUT VOLTAGE 230VAC, FIG. 1
SET EXTERNAL SETPOINT PIN 2, FIG. 2
INTERNAL SETPOINT JUMPER INSTALLED, FIG. 3

230VAC, 4-20MA OPERATION
SET INPUT VOLTAGE 230VAC, FIG. 1
SET EXTERNAL SETPOINT JUMPER PINS 1&2, FIG. 2
EXTERNAL SETPOINT JUMPER INSTALLED, FIG. 3

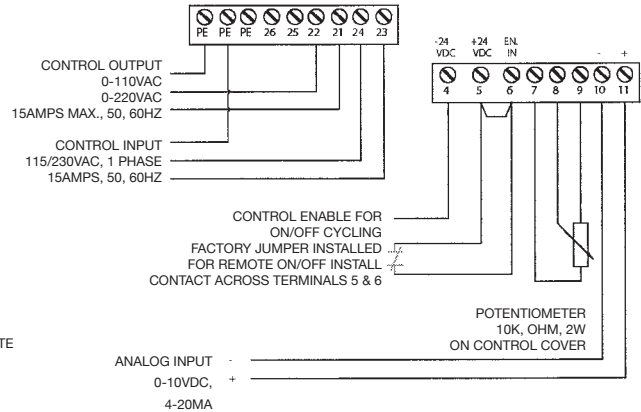
230VAC, 0-10VDC OPERATION
SET INPUT VOLTAGE 230VAC, FIG. 1
SET EXTERNAL SETPOINT JUMPER PIN 2, FIG. 2
EXTERNAL SETPOINT JUMPER INSTALLED, FIG. 3

SET-UP INSTRUCTIONS

115VAC, POTENTIOMETER ONLY
SET INPUT VOLTAGE 115VAC, FIG. 1
SET EXTERNAL SETPOINT PIN 2, FIG. 2
INTERNAL SETPOINT JUMPER INSTALLED, FIG. 3

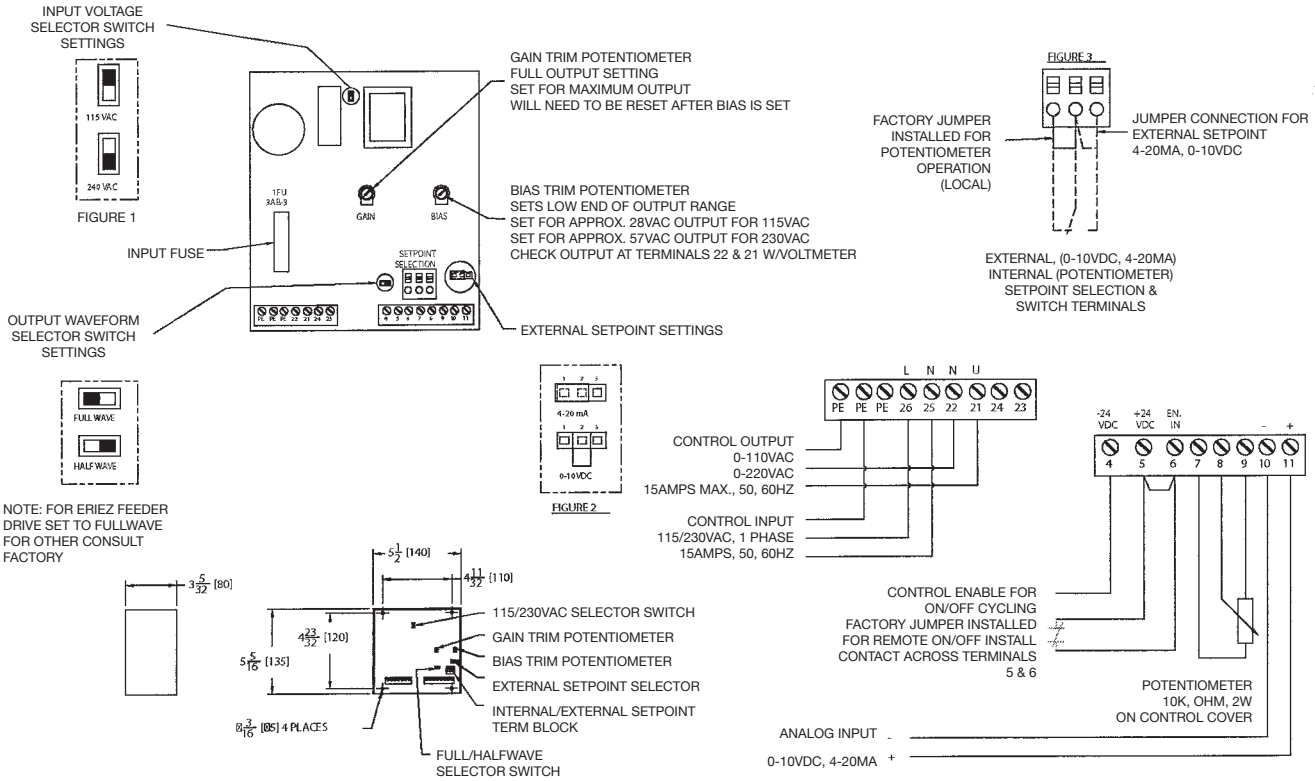
115VAC, 4-20MA OPERATION
SET INPUT VOLTAGE 115VAC, FIG. 1
SET EXTERNAL SETPOINT JUMPER PINS 1&2, FIG. 2
EXTERNAL SETPOINT JUMPER INSTALLED, FIG. 3

115VAC, 0-10VDC OPERATION
SET INPUT VOLTAGE 115VAC, FIG. 1
SET EXTERNAL SETPOINT JUMPER PIN 2, FIG. 2
EXTERNAL SETPOINT JUMPER INSTALLED, FIG. 3



Connections, Dimensions and Set-up Instructions

Chassis Mount Version



SET-UP INSTRUCTIONS

230VAC, POTENTIOMETER ONLY
SET INPUT VOLTAGE 230VAC, FIG. 1
SET EXTERNAL SETPOINT PIN 2, FIG. 2
INTERNAL SETPOINT JUMPER INSTALLED, FIG. 3

230VAC, 4-20MA OPERATION
SET INPUT VOLTAGE 230VAC, FIG. 1
SET EXTERNAL SETPOINT JUMPER PINS 1&2, FIG. 2
EXTERNAL SETPOINT JUMPER INSTALLED, FIG. 3

230VAC, 0-10VDC OPERATION
SET INPUT VOLTAGE 230VAC, FIG. 1
SET EXTERNAL SETPOINT JUMPER PIN 2, FIG. 2
EXTERNAL SETPOINT JUMPER INSTALLED, FIG. 3

SET-UP INSTRUCTIONS

115VAC, POTENTIOMETER ONLY
SET INPUT VOLTAGE 115VAC, FIG. 1
SET EXTERNAL SETPOINT PIN 2, FIG. 2
INTERNAL SETPOINT JUMPER INSTALLED, FIG. 3

115VAC, 4-20MA OPERATION
SET INPUT VOLTAGE 115VAC, FIG. 1
SET EXTERNAL SETPOINT JUMPER PINS 1&2, FIG. 2
EXTERNAL SETPOINT JUMPER INSTALLED, FIG. 3

115VAC, 0-10VDC OPERATION
SET INPUT VOLTAGE 115VAC, FIG. 1
SET EXTERNAL SETPOINT JUMPER PIN 2, FIG. 2
EXTERNAL SETPOINT JUMPER INSTALLED, FIG. 3



Parts List

3N-9966960

Item No.	DWG No.	Description	UN-230-1A	UN-230-3A	UN-230-8A	UN-230-15A	UN-115-2A	UN-115-6A	UN-115-15A
			Reqd.	Reqd.	Reqd.	Reqd.	Reqd.	Reqd.	Reqd.
1	446874	Potentiometer	1	1	1	1	1	1	1
2	446876	Output Semiconductor	1	1	1	1	1	1	1
3	446875	Control PCB	1	1	1	1	1	1	1
4	446861	Fuse 20A 3AB 250VAC				1			1
5	446859	Fuse 8A 3AB 250VAC						1	
6	446857	Fuse 3A 3AB 250VAC					1		
7	446861	Fuse 20A 3AB 250VAC				1			
8	446860	Fuse 12A 3AB 250VAC			1				
9	446858	Fuse 5A 3AB 250VAC		1					
10	446856	Fuse 1.5A 3AB 250VAC	1						
11	442311	Warning Read IOM	1	1	1	1	1	1	1
12	445482	Warning Electric Shock	1	1	1	1	1	1	1
13	442298	Danger Hazardous Voltage	1	1	1	1	1	1	1
14	3N-9966569	Schematic & Outline UN-115-15A-FW							1
15	3N-9966949	Schematic & Outline UN-115-6A-FW						1	
16	3N-9966950	Schematic & Outline UN-115-2A-FW					1		
17	3N-9966954	Schematic & Outline UN-230-15A-FW				1			
18	3N-9966953	Schematic & Outline UN-230-8A-FW			1				
19	3N-9966952	Schematic & Outline UN-230-3A-FW		1					
20	3N-9966951	Schematic & Outline UN-230-1A-FW	1						
21	446893	Switch - Main Power	1	1	1	1	1	1	1
22	451757	Knob	1	1	1	1	1	1	1
23	456648	Face Plate	1	1	1	1	1	1	1

Parts List

4N-9966960

Item No.	DWG No.	Description (Specification)	UN-230-1A	UN-230-3A	UN-230-8A	UN-230-15A	UN-115-2A	UN-115-6A	UN-115-15A
			Reqd.	Reqd.	Reqd.	Reqd.	Reqd.	Reqd.	Reqd.
1	445598	Control IP 45, 15A 115/230 (REOVIB 604-15)	1	1	1	1	1	1	1
2	446861	Fuse 20A 3AB 250VAC (LITTLEFUZE 326020)							1
3	446859	Fuse 8A 3AB 250VAC (LITTLEFUZE 326008)						1	
4	446857	Fuse 3A 3AB 250VAC (LITTLEFUZE 326003)					1		
5	446861	Fuse 20A 3AB 250VAC (LITTLEFUZE 326020)				1			
6	446860	Fuse 12A 3AB 250VAC (LITTLEFUZE 326012)			1				
7	446858	Fuse 5A 3AB 250VAC (LITTLEFUZE 326005)		1					
8	446856	Fuse 1.5A 3AB 250VAC (LITTLEFUZE 32601.5)	1						
9	3N-9966569	Schematic & Outline UN-115-15A-FW							1
10	3N-9966949	Schematic & Outline UN-115-6A-FW						1	
11	3N-9966950	Schematic & Outline UN-115-2A-FW					1		
12	3N-9966954	Schematic & Outline UN-230-15A-FW				1			
13	3N-9966953	Schematic & Outline UN-230-8A-FW			1				
14	3N-9966952	Schematic & Outline UN-230-3A-FW		1					
15	3N-9966951	Schematic & Outline UN-230-1A-FW	1						
16	190012	Eriez Nameplate	1	1	1	1	1	1	1
17	442311	Warning Read IOM	1	1	1	1	1	1	1
18	445482	Warning Electric Shock	1	1	1	1	1	1	1
19	442298	Danger Hazardous Voltage	1	1	1	1	1	1	1



Parts List

4N - 9967157

Item No.	DWG No.	Description (Specification)	UN-230-1A	UN-230-3A	UN-230-8A	UN-230-15A	UN-115-2A	UN-115-6A	UN-115-15A
			Reqd.	Reqd.	Reqd.	Reqd.	Reqd.	Reqd.	Reqd.
1	446895	Control, Chassis, 15A 115/230 (REOVIB 604350)	1	1	1	1	1	1	1
2	446861	Fuse 20A 3AB 250VAC (LITTLEFUZE 326020)				1			1
3	446859	Fuse 8A 3AB 250VAC (LITTLEFUZE 326008)						1	
4	446857	Fuse 3A 3AB 250VAC (LITTLEFUZE 326003)					1		
5	446861	Fuse 20A 3AB 250VAC (LITTLEFUZE 326020)				1			
6	446860	Fuse 12A 3AB 250VAC (LITTLEFUZE 326012)			1				
7	446858	Fuse 5A 3AB 250VAC (LITTLEFUZE 326005)		1					
8	446856	Fuse 1.5A 3AB 250VAC (LITTLEFUZE 32601.5)	1						
9	3N-9967156	Schematic & Outline UN-115-15A							1
10	3N-9967169	Schematic & Outline UN-115-6A						1	
11	3N-9967170	Schematic & Outline UN-115-2A					1		
12	3N-9967171	Schematic & Outline UN-230-15A				1			
13	3N-9967172	Schematic & Outline UN-230-8A			1				
14	3N-9967173	Schematic & Outline UN-230-3A		1					
15	3N-9967174	Schematic & Outline UN-230-1A	1						
16	190012	Eriez Nameplate	1	1	1	1	1	1	1
17	442311	Warning Read IOM	1	1	1	1	1	1	1
18	445482	Warning Electric Shock	1	1	1	1	1	1	1



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