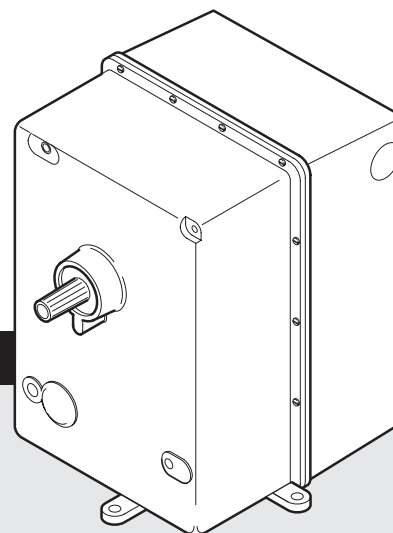


Table of Contents

Table of Contents	Page 1
Approvals	Page 1
Attention	Page 1
Specification	Page 2
Dimensions	Page 2
Wiring & Mounting.....	Page 3
Adjustment.....	Page 3
Accessories & Replacement	Page 4



Approvals



UL Listed: UL 873 and CSA C22.2 No. 24-93

Attention



The installation and maintenance of this product must be done under the supervision of an experienced and trained specialist. Never perform work if gas pressure or power is applied, or in the presence of an open flame.

**Safety
first
O.K.**

On completion of installation on the EMP, perform a function test.



Please read the instruction before installing or operating. Keep the instruction in a safe place. You find the instruction also at www.dungs.com. If these instructions are not heeded, the result may be personal injury or damage to property.



Any adjustment and application-specific adjustment values must be made in accordance with the equipment manufacturers instructions.

Explanation of symbols

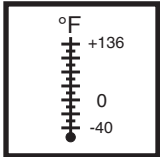
- 1, 2, 3 ... = Action
- = Instruction

Specification

EMP-9xxx These position proportionating actuators meet the requirements for damper control or valve control applications where it is desirable to move the crank arm in either, or to stop it at any point in the stroke by shorting two contacts.



Electrical Ratings
120 VAC (+10 % / -15 %); 60 Hz
Electrical Connection
1/2" NPT conduit knockout
Power Consumption 190 W
Auxiliary Switch Ratings
5.8 A Running; 34.8 A locked rotor



Ambient Temperature
-40 °F to +136 °F (-40 °C to +58 °C)
Note: Surface temperature during normal operation can reach 40 °F above ambient.



Environment and Mounting Position
NEMA Type 1; multipoised (best not to have shaft pointing downwards)

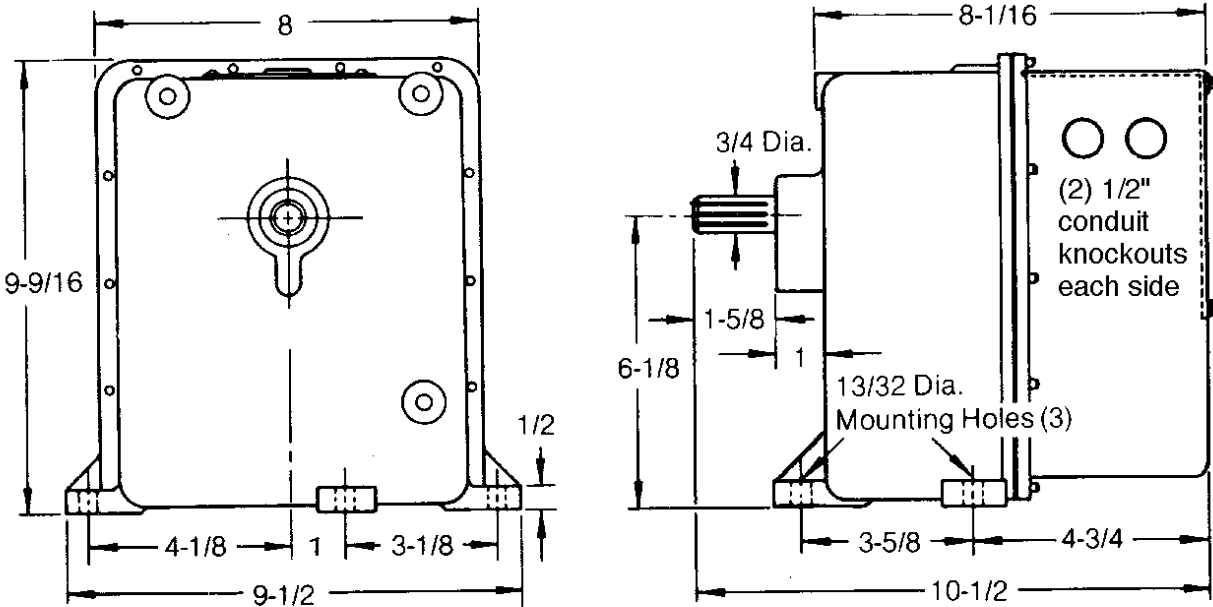
Feedback
100 ohm slidewire, standard

Cycling Rate:
EMP is rated for 100 % duty cycling & continuous cycling. Cycle life rating is 100,000 cycles (0-90°/cycle).

Model No.	Order No.	Travel	Description	Timing (s)	Torque (in.- lbs.)	Weight Lbs. (actual/shipping)
EMP-9430	267245	90°	Fixed timing	20 s	550	9/10
EMP-9630	267246	90°	Fixed timing	33 s*	1100	9/10
EMP-9830	267243	90°	Fixed timing	57 s	1300	9/10

* up to ten times the set timing

Dimensions

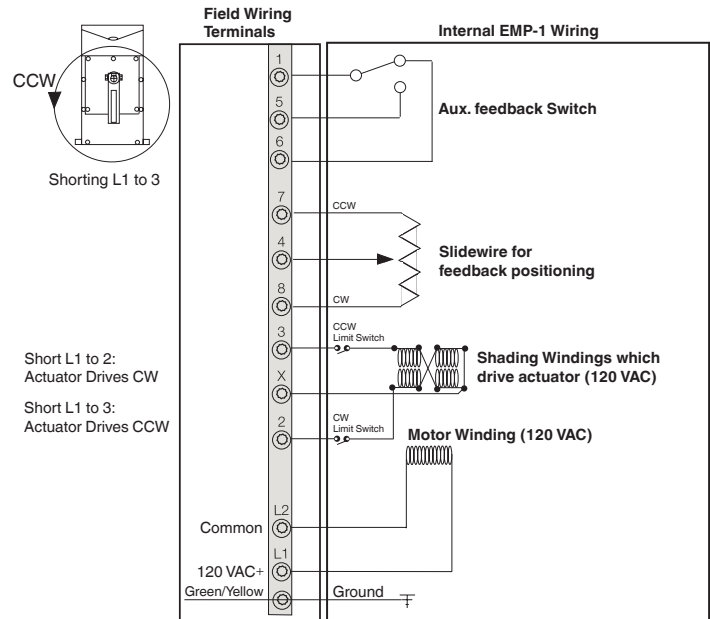


Wiring & Mounting

1. Preferred: mount in upright position.
2. When mounting, allowed 10" of clearance above the actuator cover.
Inspect unit before installing, look for broken parts or leaks.
3. Disconnect all power to the actuator before wiring to prevent electrical shock and equipment damage.
4. Do not exceed the electrical ratings given in the specifications and on the actuator.
5. Attach a flexible 1/2" NPT conduit to the actuator.
6. All connections are line voltage and must be made with Class 1 wiring.
7. Connect the wiring to the appropriate terminals.
8. **When reversing the drive from CCW to CW, exchange wires 7 & 8, and then exchange 2 & 3.**
9. Short L1 to 2 to drive CW
Short L1 to 3 to drive CCW
One option is to use a SPDT switch with center off.



All wiring must comply with local electrical codes, ordinances and regulations.



• This wiring diagram shows clockwise rotation to LOW fire, counterclockwise rotation to HIGH fire. As viewed from the front.

- Terminal # 1 is COMMON of the SPDT auxiliary switch
- Terminal # 5 is HIGH FIRE contact
- Terminal # 6 is LOW FIRE contact

Adjustment

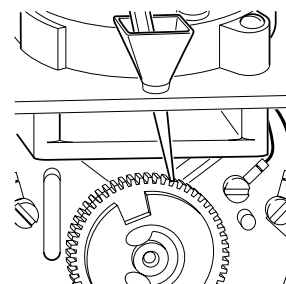
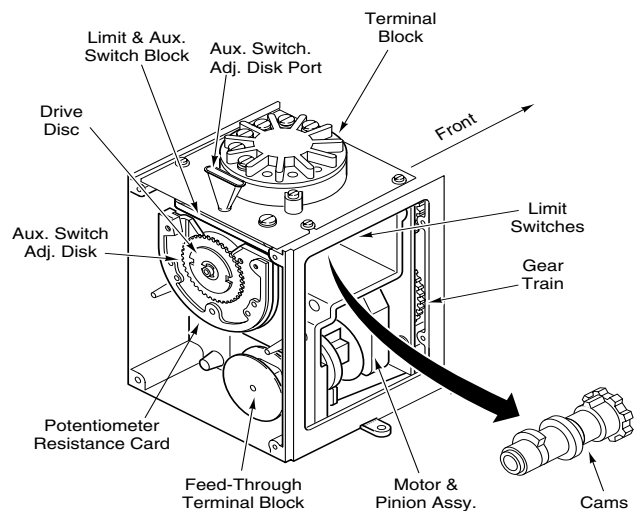
Limit Switch

The counterclockwise limit switch is factory set to stop the actuator after 90° of travel. This setting can be changed in the field. To adjust the limit switch, removing the top metal cover, and locate the small opening next to the terminal block and positioned **between terminals 3 and 4**. Insert a flathead screwdriver through this opening and turn the cam clockwise as seen from the shaft end of the actuator to increase the degree of actuator rotation up to a maximum of 320°. Each click of the cam represents about 3° change in actuator rotation. Attempting to adjust for more than 320° rotation will result in both limit switches opening in the clockwise end of the actuator rotation, and the unit will no longer operate. The clockwise limit switch is fixed and cannot be field adjusted.

Do not adjust the limit switch beyond 90°.

Auxiliary Switch

An adjustable cam operated SPDT switch is built into each actuator. The switch is factory set to operate at the clockwise end of the actuator rotation, making terminal 1 to terminal 6. As the cam turns counterclockwise from this point, the cam follower drops, breaking 1 to 6 and making 1 to 5. To adjust the auxiliary switch, removing the top metal cover, and locate the small opening next to the terminal block and positioned **next to terminal 1**. Insert a flathead screwdriver through this opening and turning the disc clockwise as seen from shaft end of the actuator causes the switch to operate nearer the counterclockwise end of actuator rotation. Each click of the cam represents about 3° change in operating point. **NOTE:** After turning the disc, remove back plate and reposition the wiper; it will need to be repositioned back to zero.



Accessories & Replacement

Model #	Description	Order No.
AM 392	3/4" crank arm	267239
AM 369	NEMA 4	269243

We reserve the right to make modifications in the course of technical development.

Karl Dungs, Inc.
3890 Pheasant Ridge Drive NE
Suite 150
Blaine, MN 55449, U.S.A.
Phone 763 582-1700
Fax 763 582-1799
e-mail info@karldungsusa.com
Internet <http://www.dungs.com/usa/>

Karl Dungs GmbH & Co. KG
P.O. Box 12 29
D-73602 Schorndorf, Germany
Phone +49 (0)7181-804-0
Fax +49 (0)7181-804-166
e-mail info@dungs.com
Internet <http://www.dungs.com>