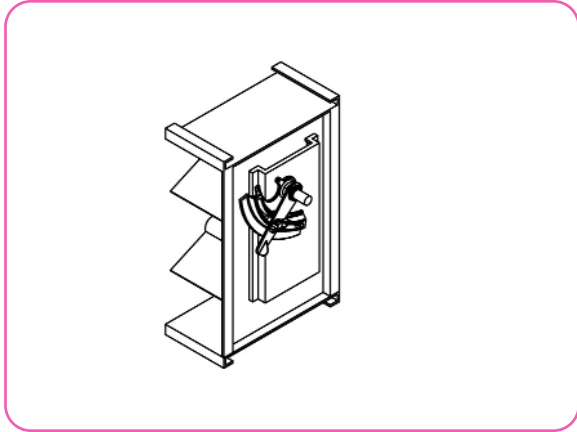
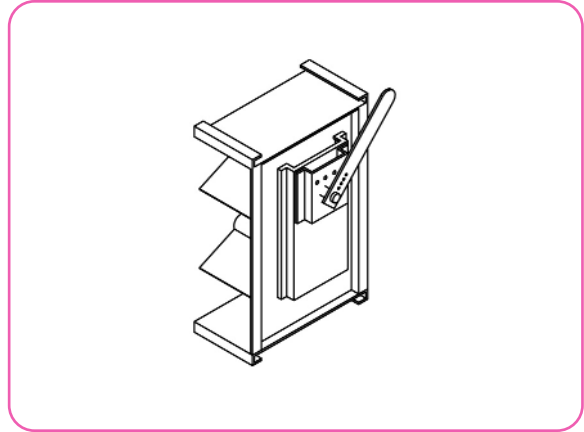


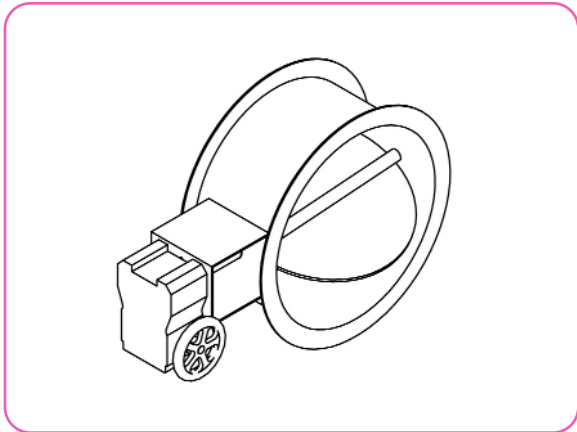
Manual Operators for Louvers & Dampers



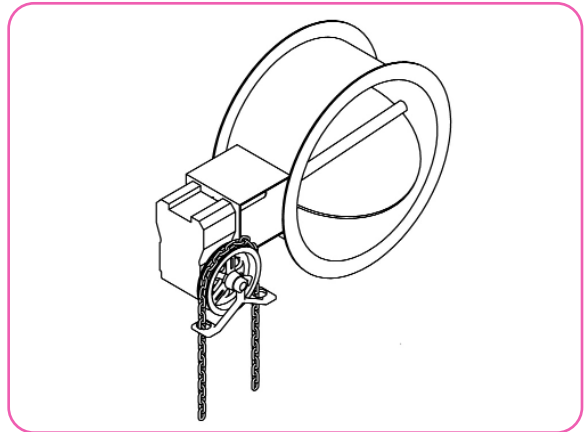
**Hand Quadrant Operator #1**  
1/2" round shaft only



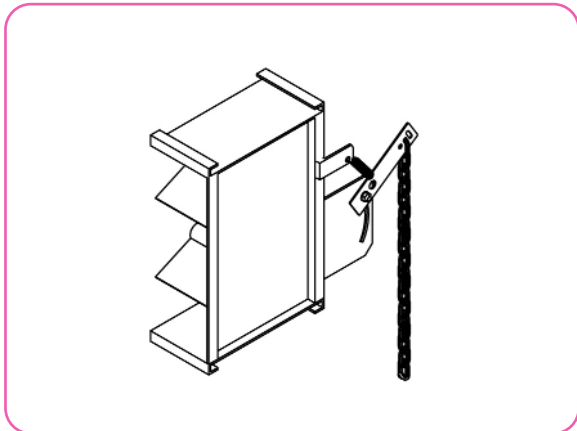
**Hand Quadrant Operator #2**  
Heavy Duty  
1/2" and 3/4" round shafts



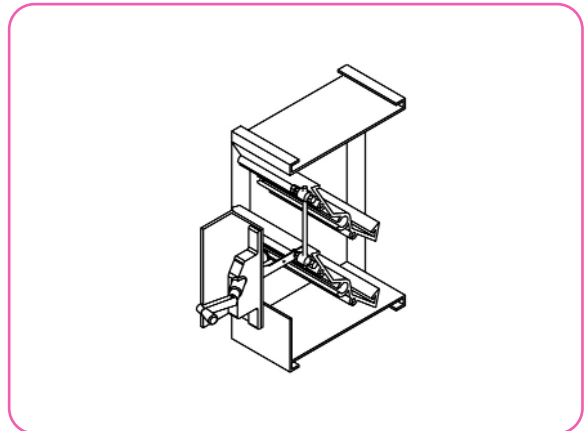
**Worm Gear with Hand Wheel Operator #3**  
Heavy Duty  
1/2" and 3/4" round shafts



**Worm Gear with Chain Wheel Operator #4**  
Heavy Duty  
1/2" and 3/4" round shafts



**Pull Chain Operator #5**  
10 ft. chain standard



**Heavy Duty Rotary Hand Crank Operator #6**  
Mounted in the airstream  
Primarily used on louvers

## Actuator Sizing Chart Opposed Blade Control Dampers

WITH JAMB SEALS	WITHOUT JAMB SEALS
<p><input type="checkbox"/> <b>Type A Actuator</b></p> <p>Models: Max. Sq. Ft. - 3 S.F.                      FXMBB (120V) Spring Return                      FXMBC (24V) 18# Torque</p>	<p><input type="checkbox"/> <b>Type A Actuator</b></p> <p>Models: Max. Sq. Ft. - 7 S.F.                      FXMBB (120V) Spring Return                      FXMBC (24V) 18# Torque</p>
<p><input type="checkbox"/> <b>Type B Actuator</b></p> <p>Models: Max. Sq. Ft. - 6 S.F.                      FXMBD (120V) Spring Return                      FXMBE (24V) 35# Torque</p>	<p><input type="checkbox"/> <b>Type B Actuator</b></p> <p>Models: Max. Sq. Ft. - 14 S.F.                      FXMBD (120V) Spring Return                      FXMBE (24V) 35# Torque</p>
<p><input type="checkbox"/> <b>Type C Actuator</b></p> <p>Models: Max. Sq. Ft. - 14 S.F.                      FXMBF (120V) Spring Return                      FXMBG (24V) 60# Torque</p>	<p><input type="checkbox"/> <b>Type C Actuator</b></p> <p>Models: Max. Sq. Ft. - 30 S.F.                      FXMBF (120V) Spring Return                      FXMBG (24V) 60# Torque</p>
<p><input type="checkbox"/> <b>Type D Actuator</b></p> <p>Models: Max. Sq. Ft. - 36 S.F.                      FXMBH (120V) Spring Return                      FXMBJ (24V) 133# Torque</p>	<p><input type="checkbox"/> <b>Type D Actuator</b></p> <p>Models: Max. Sq. Ft. - 65 S.F.                      FXMBH (120V) Spring Return                      FXMBJ (24V) 133# Torque</p>
<p><input type="checkbox"/> <b>Type E Actuator</b></p> <p>Models: Max. Sq. Ft. - 50 S.F.                      FXMBK (120V) 175# Torque                      FXMBL (230V)                      FXMBM (24V)</p>	<p><input type="checkbox"/> <b>Type E Actuator</b></p> <p>Models: Max. Sq. Ft. - 85 S.F.                      FXMBK (120V) 175# Torque                      FXMBL (230V)                      FXMBM (24V)</p>

**Options for Actuators:**

1. End switch
2. Explosion-proof housing
  - CSA and UL Class I, II, III, Group C, D, E, F, G
  - Nema 7 Class 1, Group C and D
  - Nema 9 Class II, Group E, F, G

**Consult Factory for other actuators.**

Sq. ft. based on under 2" w.g. or 1200 FPM. For applications at 3" w.g. or 2500 FPM torque loading, reduce sq. ft. by 25%. At 4" w.g. or 3000 FPM, reduce sq. ft. by 35%.

**Actuator Sizing Chart  
Parallel Blade Control Dampers & Louvers**

WITH JAMB SEALS	WITHOUT JAMB SEALS
<p><input type="checkbox"/> <b>Type A Actuator</b>                      Models: Max. Sq. Ft. - 2.5 S.F.                      FXMBB (120V) Spring Return                      FXMBC (24V) 18# Torque</p>	<p><input type="checkbox"/> <b>Type A Actuator</b>                      Models: Max. Sq. Ft. - 5 S.F.                      FXMBB (120V) Spring Return                      FXMBC (24V) 18# Torque</p>
<p><input type="checkbox"/> <b>Type B Actuator</b>                      Models: Max. Sq. Ft. - 5 S.F.                      FXMBD (120V) Spring Return                      FXMBE (24V) 35# Torque</p>	<p><input type="checkbox"/> <b>Type B Actuator</b>                      Models: Max. Sq. Ft. - 10 S.F.                      FXMBD (120V) Spring Return                      FXMBE (24V) 35# Torque</p>
<p><input type="checkbox"/> <b>Type C Actuator</b>                      Models: Max. Sq. Ft. - 12 S.F.                      FXMBF (120V) Spring Return                      FXMBG (24V) 60# Torque</p>	<p><input type="checkbox"/> <b>Type C Actuator</b>                      Models: Max. Sq. Ft. - 22 S.F.                      FXMBF (120V) Spring Return                      FXMBG (24V) 60# Torque</p>
<p><input type="checkbox"/> <b>Type D Actuator</b>                      Models: Max. Sq. Ft. - 25 S.F.                      FXMBH (120V) Spring Return                      FXMBJ (24V) 133# Torque</p>	<p><input type="checkbox"/> <b>Type D Actuator</b>                      Models: Max. Sq. Ft. - 50 S.F.                      FXMBH (120V) Spring Return                      FXMBJ (24V) 133# Torque</p>
<p><input type="checkbox"/> <b>Type E Actuator</b>                      Models: Max. Sq. Ft. - 33 S.F.                      FXMBK (120V) 175# Torque                      FXMBL (230V)                      FXMBM (24V)</p>	<p><input type="checkbox"/> <b>Type E Actuator</b>                      Models: Max. Sq. Ft. - 65 S.F.                      FXMBK (120V) 175# Torque                      FXMBL (230V)                      FXMBM (24V)</p>

**Options for Actuators:**

1. End switch
2. Explosion-proof housing
  - CSA and UL Class I, II, III, Group C, D, E, F, G
  - Nema 7 Class 1, Group C and D
  - Nema 9 Class II, Group E, F, G

**Consult Factory for other actuators.**

Sq. ft. based on under 2" w.g. or 1200 FPM. For applications at 3" w.g. or 2500 FPM torque loading, reduce sq. ft. by 25%. At 4" w.g. or 3000 FPM, reduce sq. ft. by 35%.

# Louver and Damper Actuators

**CARNES®**

## Louver and Damper Actuators

Model: FXMBB

Type A (120VAC) Belimo



On-off, spring return safety,  
100 to 240 VAC Torque min. 18 in-lb,  
for control of air dampers

### ▼ Application

For on-off, fail safe control of louvers and dampers in HVAC systems. Actuator sizing should be done in accordance with the damper manufacturer's specifications. Control is on-off from an auxiliary contact, or a manual switch.

The actuator is mounted directly to a damper shaft from 1/4" up to 1/2" in diameter by means of its universal clamp, 1/2" shaft centered at delivery. A crank arm and several mounting brackets are available for applications where the actuator cannot be direct coupled to the damper shaft.

### Operation

The FXMBB series actuators provide true spring return operation for reliable fail-safe application and positive close off on air tight louvers and dampers. The spring return system provides consistent torque to the damper with, and without, power applied to the actuator. The FXMBB series provides 95° of rotation and is provided with a graduated position indicator showing 0° to 90°. The actuator may be stalled anywhere in its normal rotation without the need of mechanical end switches. Power consumption is reduced in holding mode. The actuator is double insulated so an electrical ground connection is not necessary.

**Safety Note:** Screw a conduit fitting into the actuator's bushing. Jacket the actuator's input and output wiring with suitable flexible conduit. Properly terminate the conduit in a suitable junction box.

### TECHNICAL DATA FXMBB

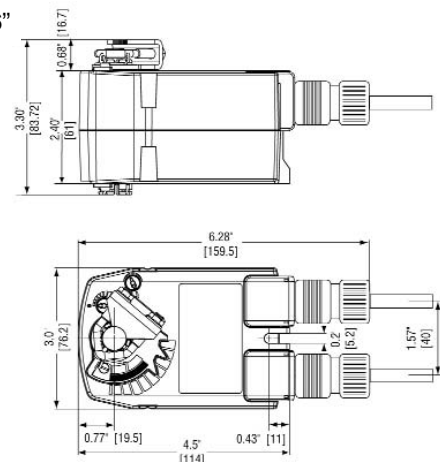
Power supply (nominal)	100 to 240 VAC, 50/60 Hz
Power supply (tolerance)	85 to 265 VAC, 50/60 Hz
Power consumption	running: 2.5 W holding: 1.3 W
Transformer sizing	4 VA (class 2 power source)
Electrical connection	3ft, 18 GA appliance cable 1/2" conduit connector
Overload protection	electronic throughout 0° to 95° rotation
Electrical protection	actuators are double insulated
Angle of rotation	max 95°, adjust. with mechanical stop
Torque	min. 18 in-lb [2 Nm]
Direction of rotation	reversible with cw/ccw mounting
Position indication	visual indicator, 0° to 95° (0° spring return position)
Running time (nominal)	motor: < 75 sec (0 to 18 in-lb) spring: < 25 sec @ -4°F to +122°F [-20°C to +50°C] < 60 sec @ -22°F [-30°C]
Humidity	5 to 95% RH non-condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA type 2 / IP42
Housing material	UL94 - 5VA
Agency listings	cULus listed acc. to UL 60730-1
Noise level	max: running < 50 db (A) spring return 62 db (A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	1.5 lbs (0.7 kg)

### Dimensions (All numbers in brackets are mm)

#### Standard:

Ø 1/4" to 1/2"

□ 1/4" to 5/16"



## Louver and Damper Actuators

Model: FXMBC

Type A (24VAC) Belimo



On-off, spring return safety,  
24V Torque min. 18 in-lb,  
for control of air dampers

### ▼ Application

For on-off, fail safe control of louvers and dampers in HVAC systems. Actuator sizing should be done in accordance with the damper manufacturer's specifications. Control is on-off from an auxiliary contact, or a manual switch.

The actuator is mounted directly to a damper shaft from 1/4" up to 1/2" in diameter by means of its universal clamp, 1/2" shaft centered at delivery. A crank arm and several mounting brackets are available for applications where the actuator cannot be direct coupled to the damper shaft.

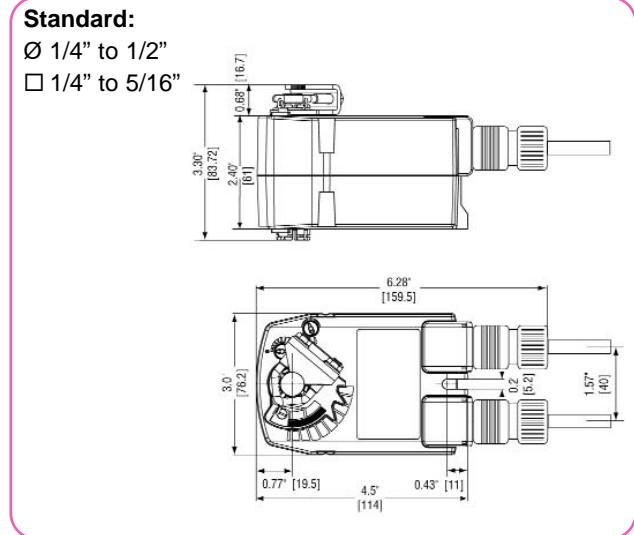
### Operation

The FXMBC series actuators provide true spring return operation for reliable fail-safe application and positive close off on air tight louvers and dampers. The spring return system provides consistent torque to the damper with, and without, power applied to the actuator. The FXMBC series provides 95° of rotation and is provided with a graduated position indicator showing 0° to 90°. The actuator may be stalled anywhere in its normal rotation without the need of mechanical end switches. Power consumption is reduced in holding mode.

**Safety Note:** Screw a conduit fitting into the actuator's bushing. Jacket the actuator's input and output wiring with suitable flexible conduit. Properly terminate the conduit in a suitable junction box.

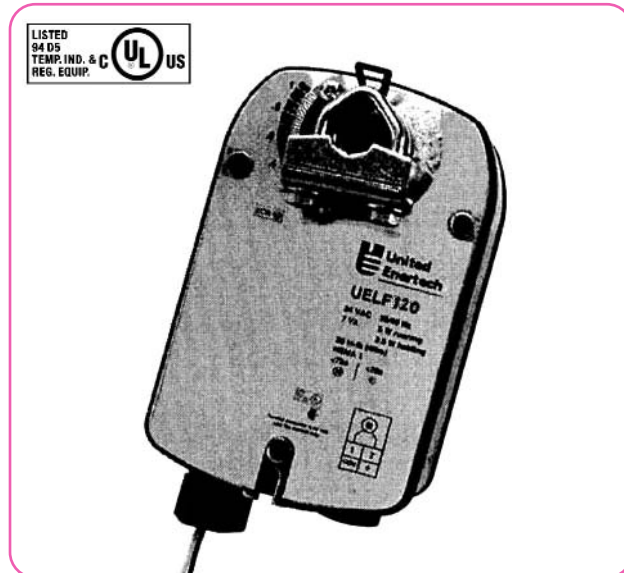
TECHNICAL DATA	FXMBC
Power supply	24VAC ± 20%, 50/60 Hz 24VDC ± 10%
Power consumption	running: 2.5 W holding: 1.3 W
Transformer sizing	4 VA (class 2 power source)
Electrical connection	3ft, 18 GA appliance cable 1/2" conduit connector
Overload protection	electronic throughout 0° to 95° rotation
Angle of rotation	max 95°, adjust. with mechanical stop
Torque	min. 18 in-lb [2 Nm]
Direction of rotation	reversible with cw/ccw mounting
Position indication	visual indicator, 0° to 95° (0° spring return position)
Running time (nominal)	motor: < 75 sec (0 to 18 in-lb) spring: < 25 sec @ -4°F to +122°F [-20°C to +50°C] < 60 sec @ -22°F [-30°C]
Humidity	5 to 95% RH non-condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA type 2 / IP42
Housing material	UL94 - 5VA
Agency listings	cULus listed acc. to UL 60730-1
Noise level	max: running < 50 db (A) spring return 62 db (A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	1.5 lbs (0.7 kg)

### Dimensions (All numbers in brackets are mm)



## Louver and Damper Actuators

Model: FXMBD  
Type B (120VAC)



On-off, spring return safety,  
120 VAC Torque min. 35 in-lb,  
for control of air dampers

### Application

For on-off, fail safe control of louvers and dampers in HVAC systems. Actuator sizing should be done in accordance with the damper manufacturer's specifications. Control is on-off from an auxiliary contact, or a manual switch.

The actuator is mounted directly to a damper shaft from 3/8" up to 1/2" in diameter by means of its universal clamp, 1/2" shaft centered at delivery. For shafts up to 3/4" use K6-1 accessory. A crank arm and several mounting brackets are available for applications where the actuator cannot be direct coupled to the damper shaft.

### Operation

The FXMBD series actuators provide true spring return operation for reliable fail-safe application and positive close off on air tight louvers and dampers. The spring return system provides consistent torque to the damper with, and without, power applied to the actuator. The FXMBD series provides 95° of rotation and is provided with a graduated position indicator showing 0° to 90°. The actuator may be stalled anywhere in its normal rotation without the need of mechanical end switches. Power consumption is reduced in holding mode. The actuator is double insulated so an electrical ground connection is not necessary.

### Five Year Warranty

Two Year "unconditional" warranty from date of installation. For the following three years, a conditional warranty applies. Under this conditional warranty, the consequences of ordinary wear and tear, damage due to negligence or improper use, or other causes beyond our control are excluded from warranty coverage. Attempts at field repair or modifications will null and void warranty. Products found defective will be replaced or repaired at seller's discretion. Seller is not responsible for any field labor.

TECHNICAL DATA	FXMBD
Power supply	120 VAC ±10% 50/60 Hz
Power consumption	running: 5.5 W holding: 3.5 W
Transformer sizing	7.5 VA (class 2 power source)
Electrical connection (2)	18", 18 GA single conductors 1/2" conduit connector
Overload protection	electronic throughout 0° to 95° rotation
Electrical protection	actuators are double insulated
Angle of rotation	max 95°, adjust. with mechanical stop
Torque	35 in-lb [4 Nm] constant torque
Direction of rotation	reversible with cw/ccw mounting
Position indication	visual indicator, 0° to 95° (0° spring return position)
Running time (nominal)	motor: < 40 to 75 sec spring: < 25 sec @ -4°F to +122°F [-20°C to +50°C] < 60 sec @ -22°F [-30°C]
Humidity	5 to 95% RH non-condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA type 2 / IP54
Housing material	zinc coated steel
Agency listings	UL 873, CSA 4813 02
Noise level	max: running < 50 db (A) spring return 62 db (A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	3.4 lbs (1.54 kg)

### Dimensions (All numbers in brackets are mm)

#### Standard:

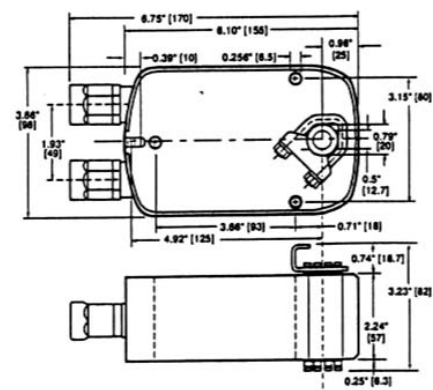
Ø 3/8" to 1/2"

□ 1/4" to 5/16"

#### Optional:

Ø 1/2" to 3/4"

w/K6-1 accessory



## Louver and Damper Actuators

Model: FXMBE  
Type B (24VAC)



On-off, spring return safety,  
24V Torque min. 35 in-lb,  
for control of air dampers

### ▼ Application

For on-off, fail safe control of louvers and dampers in HVAC systems. Actuator sizing should be done in accordance with the damper manufacturer's specifications. Control is on-off from an auxiliary contact, or a manual switch.

The actuator is mounted directly to a damper shaft from 3/8" up to 1/2" in diameter by means of its universal clamp, 1/2" shaft centered at delivery. For shafts up to 3/4" use K6-1 accessory. A crank arm and several mounting brackets are available for applications where the actuator cannot be direct coupled to the damper shaft.

### Operation

The FXMBE series actuators provide true spring return operation for reliable fail-safe application and positive close off on air tight louvers and dampers. The spring return system provides consistent torque to the damper with, and without, power applied to the actuator. The FXMBE series provides 95° of rotation and is provided with a graduated position indicator showing 0° to 90°. The actuator may be stalled anywhere in its normal rotation without the need of mechanical end switches. Power consumption is reduced in holding mode.

### Five Year Warranty

Two Year "unconditional" warranty from date of installation. For the following three years, a conditional warranty applies. Under this conditional warranty, the consequences of ordinary wear and tear, damage due to negligence or improper use, or other causes beyond our control are excluded from warranty coverage. Attempts at field repair or modifications will null and void warranty. Products found defective will be replaced or repaired at seller's discretion. Seller is not responsible for any field labor.

TECHNICAL DATA	FXMBE
Power supply	24 VAC ±20% 50/60 Hz 24 VDC ±10%
Power consumption	running: 5 W holding: 2.5 W
Transformer sizing	7 VA (class 2 power source)
Electrical connection (2)	18", 18 GA single conductors (-S models use appliance cable for switch) 1/2" conduit connector
Overload protection	electronic throughout 0° to 95° rotation
Angle of rotation	max 95°, adjust. with mechanical stop
Torque	35 in-lb [4 Nm]
Direction of rotation	reversible with cw/ccw mounting
Position indication	visual indicator, 0° to 95° (0° spring return position)
Running time (nominal)	motor: < 40 to 75 sec spring: < 25 sec @ -4°F to +122°F [-20°C to +50°C] < 60 sec @ -22°F [-30°C]
Humidity	5 to 95% RH non-condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA type 1
Housing material	zinc coated steel
Agency listings	UL 873 listed, CSA 4813 02 certified
Noise level	max: running < 50 db (A) spring return 62 db (A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	3.1 lbs (1.40 kg)

### Dimensions (All numbers in brackets are mm)

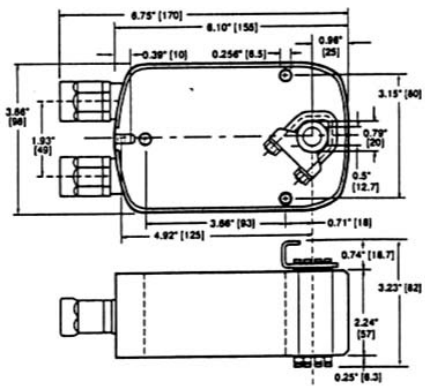
#### Standard:

Ø 3/8" to 1/2"

□ 1/4" to 5/16"

#### Optional:

Ø 1/2" to 3/4"  
w/K6-1 accessory



## Louver and Damper Actuators

Model: FXMBF  
Type C (120VAC)



On-off, spring return safety,  
120 VAC Torque min. 60 in-lb,  
for control of air dampers

### ▼ Application

For on-off, fail safe control of louvers and dampers in HVAC systems. Actuator sizing should be done in accordance with the damper manufacturer's specifications. Control is on-off from an auxiliary contact, or a manual switch.

The actuator is mounted directly to a damper shaft up to 1/2" in diameter by means of its universal clamp, or up to a 1.05" jackshaft by removing the clamp insert. A crank arm and several mounting brackets are available for applications where the actuator cannot be direct coupled to the damper shaft.

### Operation

The FXMBF series actuators provide true spring return operation for reliable fail-safe application and positive close off on air tight louvers and dampers. The spring return system provides consistent torque to the damper with, and without, power applied to the actuator. The FXMBF series provides 95° of rotation and is provided with a graduated position indicator showing 0° to 95°. The actuator may be stalled anywhere in its normal rotation without the need of mechanical end switches.

TECHNICAL DATA	FXMBF
Power supply	120 VAC ±10% 50/60 Hz
Power consumption	running: 6 W holding: 3.5 W
Transformer sizing	7 VA (class 1 power source)
Electrical connection (3)	18", 18 GA single conductors 1/2" conduit connector
Overload protection	electronic throughout 0° to 95° rotation
Angle of rotation	95°, adjust. 30 to 95° w/accessories
Torque	60 in-lb [7 Nm] constant torque
Direction of rotation	spring return can be selected by cw/ccw mounting
Position indication	visual indicator, 0° to 95° (0° spring return position)
Running time (nominal)	motor: < 75 sec spring: < 60 sec
Humidity	5 to 95% RH non-condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA type 1
Housing material	zinc coated steel
Agency listings	UL 873 listed, CSA 4813 02 certified
Noise level	max: 45 db (A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	7.3 lbs (3.3 kg)

### Five Year Warranty

Two Year "unconditional" warranty from date of installation. For the following three years, a conditional warranty applies. Under this conditional warranty, the consequences of ordinary wear and tear, damage due to negligence or improper use, or other causes beyond our control are excluded from warranty coverage. Attempts at field repair or modifications will null and void warranty. Products found defective will be replaced or repaired at seller's discretion. Seller is not responsible for any field labor.

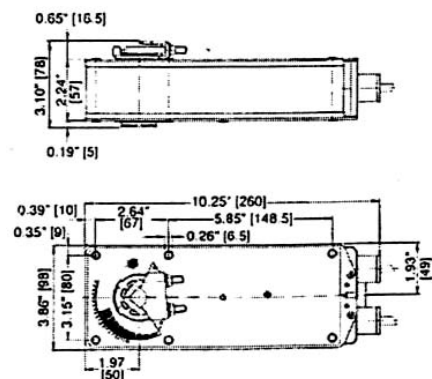
### Dimensions (All numbers in brackets are mm)

#### Standard:

Ø 1/2" to 1.05"

#### Optional:

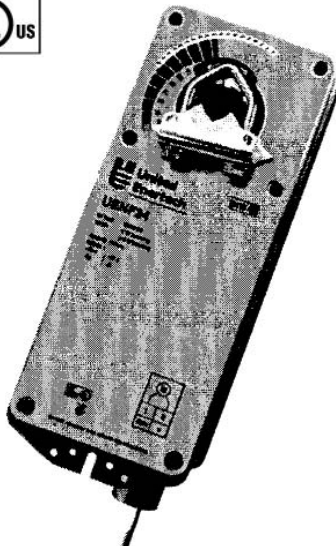
Ø 3/8" to 3/4"  
w/K4 US clamp





## Louver and Damper Actuators

Model: FXMBG  
Type C (24VAC)



On-off, spring return safety,  
24 V Torque min. 60 in-lb,  
for control of air dampers

### ▼ Application

For on-off, fail safe control of louvers and dampers in HVAC systems. Actuator sizing should be done in accordance with the damper manufacturer's specifications. Control is on-off from an auxiliary contact, or a manual switch.

The actuator is mounted directly to a damper shaft up to 1/2" in diameter by means of its universal clamp, or up to a 1.05" jackshaft by removing the clamp insert. A crank arm and several mounting brackets are available for applications where the actuator cannot be direct coupled to the damper shaft.

### Operation

The FXMBG series actuators provide true spring return operation for reliable fail-safe application and positive close off on air tight louvers and dampers. The spring return system provides consistent torque to the damper with, and without, power applied to the actuator. The FXMBG series provides 95° of rotation and is provided with a graduated position indicator showing 0° to 95°. The actuator may be stalled anywhere in its normal rotation without the need of mechanical end switches.

TECHNICAL DATA	FXMBG
Power supply	24 VAC ±20% 50/60 Hz 24 VDC ±10%
Power consumption	running: 5 W holding: 2.6 W
Transformer sizing	8 VA (class 1 power source)
Electrical connection (2)	18", 18 GA single conductors 1/2" conduit connector
Overload protection	electronic throughout 0° to 95° rotation
Angle of rotation	max 95°, adjust. with mechanical stop
Torque	60 in-lb [7 Nm] constant torque
Direction of rotation	spring return can be selected by cw/ccw mounting
Position indication	visual indicator, 0° to 95° (0° spring return position)
Running time (nominal)	motor: < 75 sec spring: < 60 sec
Humidity	5 to 95% RH non-condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA type 1
Housing material	zinc coated steel
Agency listings	UL 873 listed, CSA 4813 02 certified
Noise level	max: 45 db (A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	6.6 lbs (3.0 kg)

### Five Year Warranty

Two Year "unconditional" warranty from date of installation. For the following three years, a conditional warranty applies. Under this conditional warranty, the consequences of ordinary wear and tear, damage due to negligence or improper use, or other causes beyond our control are excluded from warranty coverage. Attempts at field repair or modifications will null and void warranty. Products found defective will be replaced or repaired at seller's discretion. Seller is not responsible for any field labor.

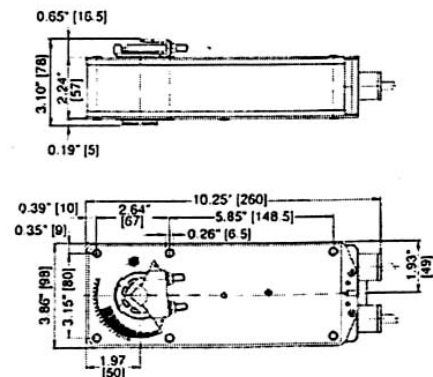
### Dimensions (All numbers in brackets are mm)

#### Standard:

Ø 1/2" to 1.05"

#### Optional:

Ø 3/8" to 3/4"  
w/K4 US clamp



## Louver and Damper Actuators

Model: FXMBH  
Type D (120VAC)



On-off, spring return safety,  
120 VAC Torque min. 133 in-lb,  
for control of air dampers

### ▼ Application

For on-off, fail safe control of louvers and dampers in HVAC systems. Actuator sizing should be done in accordance with the damper manufacturer's specifications. Control is on-off from an auxiliary contact, or a manual switch.

The actuator is mounted directly to a damper shaft up to 1/2" in diameter by means of its universal clamp, or up to a 1.05" jackshaft by removing the clamp insert. A crank arm and several mounting brackets are available for applications where the actuator cannot be direct coupled to the damper shaft.

### Operation

The FXMBH series actuators provide true spring return operation for reliable fail-safe application and positive close off on air tight louvers and dampers. The spring return system provides consistent torque to the damper with, and without, power applied to the actuator. The FXMBH series provides 95° of rotation and is provided with a graduated position indicator showing 0° to 95°. The actuator may be stalled anywhere in its normal rotation without the need of mechanical end switches.

The FXMBH uses a brushless DC motor which is controlled by an Application Specific Integrated Circuit (ASIC). The ASIC monitors and controls the actuator's rotation and provides a digital rotation sensing function to prevent damage to the actuator in a stall condition. The actuator may be stalled anywhere in its normal rotation without the need of mechanical end switches.

TECHNICAL DATA	FXMBH
Power supply	120 VAC ±10% 50/60 Hz
Power consumption	running: 6 W holding: 2.3 W
Transformer sizing	10 VA (class 1 power source)
Electrical connection (3)	18", 18 GA single conductors 1/2" conduit connector
Overload protection	electronic throughout 0° to 95° rotation
Angle of rotation	95°, adjust. 30 to 95° w/accessories
Torque	133 in-lb [7 Nm] constant torque
Direction of rotation	spring return can be selected by cw/ccw mounting
Position indication	visual indicator, -0° to 95° (-0° spring return position)
Running time	150 sec. constant, independent of load, spring return < 20 sec
Humidity	5 to 95% RH non-condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA type 1
Housing material	zinc coated steel
Agency listings	UL 873 listed, CSA 4813 02 certified
Noise level	max: 45 db (A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	6.9 lbs (3.1 kg)

### Five Year Warranty

Two Year "unconditional" warranty from date of installation. For the following three years, a conditional warranty applies. Under this conditional warranty, the consequences of ordinary wear and tear, damage due to negligence or improper use, or other causes beyond our control are excluded from warranty coverage. Attempts at field repair or modifications will null and void warranty. Products found defective will be replaced or repaired at seller's discretion. Seller is not responsible for any field labor.

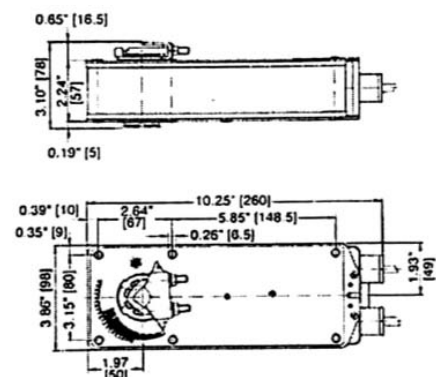
### Dimensions (All numbers in brackets are mm)

#### Standard:

Ø 1/2" to 1.05"

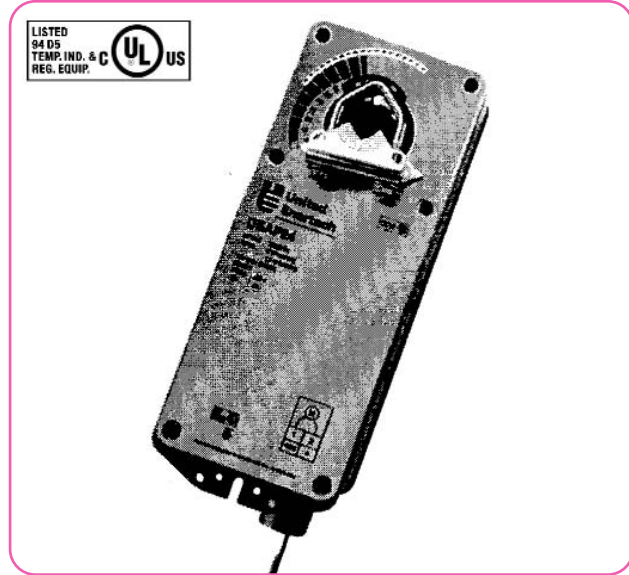
#### Optional:

Ø 3/8" to 3/4"  
w/K4 US clamp



## Louver and Damper Actuators

Model: FXMBJ  
Type D (24VAC)



On-off, spring return safety,  
24V Torque min. 133 in-lb,  
for control of air dampers

### Application

For on-off, fail safe control of louvers and dampers in HVAC systems. Actuator sizing should be done in accordance with the damper manufacturer's specifications. Control is on-off from an auxiliary contact, or a manual switch.

The actuator is mounted directly to a damper shaft up to 1/2" in diameter by means of its universal clamp, or up to a 1.05" jackshaft by removing the clamp insert. A crank arm and several mounting brackets are available for applications where the actuator cannot be direct coupled to the damper shaft.

### Operation

The FXMBJ series actuators provide true spring return operation for reliable fail-safe application and positive close off on air tight louvers and dampers. The spring return system provides consistent torque to the damper with, and without, power applied to the actuator. The FXMBJ series provides 95° of rotation and is provided with a graduated position indicator showing 0° to 95°. The actuator may be stalled anywhere in its normal rotation without the need of mechanical end switches.

The FXMBJ uses a brushless DC motor which is controlled by an Application Specific Integrated Circuit (ASIC). The ASIC monitors and controls the actuator's rotation and provides a digital rotation sensing function to prevent damage to the actuator in a stall condition. The actuator may be stalled anywhere in its normal rotation without the need of mechanical end switches.

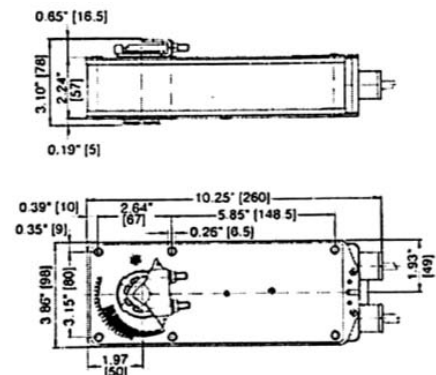
TECHNICAL DATA	FXMBJ
Power supply	24 VAC ±20% 50/60 Hz 24 VDC ±10%
Power consumption	running: 5 W holding: 1.5 W
Transformer sizing	10 VA (class 1 power source)
Electrical connection (2)	18", 18 GA single conductors 1/2" conduit connector
Overload protection	electronic throughout 0° to 95° rotation
Angle of rotation	95°, adjust. 30 to 95° w/accessories
Torque	133 in-lb [7 Nm] constant torque
Direction of rotation	spring return can be selected by cw/ccw mounting
Position indication	visual indicator, -0° to 95° (-0° spring return position)
Running time	150 sec. constant, independent of load, spring return < 20 sec
Humidity	5 to 95% RH non-condensing
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing	NEMA type 1
Housing material	zinc coated steel
Agency listings	UL 873 listed, CSA 4813 02 certified
Noise level	max: 45 db (A)
Servicing	maintenance free
Quality standard	ISO 9001
Weight	6.0 lbs (2.7 kg)

### Five Year Warranty

Two Year "unconditional" warranty from date of installation. For the following three years, a conditional warranty applies. Under this conditional warranty, the consequences of ordinary wear and tear, damage due to negligence or improper use, or other causes beyond our control are excluded from warranty coverage. Attempts at field repair or modifications will null and void warranty. Products found defective will be replaced or repaired at seller's discretion. Seller is not responsible for any field labor.

### Dimensions (All numbers in brackets are mm)

**Standard:**  
Ø 1/2" to 1.05"  
**Optional:**  
Ø 3/8" to 3/4"  
w/K4 US clamp



## Louver and Damper Actuators

Model: FXMBK (120V), FXMBL (230V), FXMBM (24V)

Type E Honeywell

LISTED  
84 DS  
TEMP. IND. & C  
REG. EQUIP. 



### Fast-acting, two position actuators

#### ▼ Application

The FXMBK, FXMBL and FXMBM Fast-Acting, Two Position Actuators are spring return direct coupled actuators (DCA) for on/off signal from a single-pole, single-throw (spst) controller. Reversible mounting allows actuator to be used for either clockwise (cw) or counterclockwise (ccw) spring rotation.

The FXMBK, FXMBL and FXMBM DCA are designed to operate reliable in smoke control systems requiring Underwriter's Laboratories Inc. UL555S ratings up to 350°F.

#### Features

- 175 lb-in. (20 N•m) minimum driving torque at 350°F (176°C)
- Reversible mounting facilitates use in either clockwise (cw) or counterclockwise (ccw) spring rotation
- Integral spring return ensures level of return torque
- Stainless steel internal sprint
- Fifteen-second spring return timing
- No special cycling required during long-term holding (See operation section)
- No audible noise during holding
- Patent pending design eliminates need for limit switches to reduce power consumption
- Models available for 24, 120, and 230 Vac applications
- Ninety-five degree angle of rotation
- Actuator holds rated torque at reduced power level
- Die-cast aluminum housing
- Housing design allows flush mounting to damper
- High-temperature indicator included
- Self-centering shaft adapter (SCSA), patent pending

#### FXMBK and FXMBL

- High temperature Teflon® lead wires
- Designed to operate reliable in smoke control systems requiring Underwriter's Laboratories Inc. UL555S ratings up to 350°F
- Models available with integral high temperature (350°F) SPST position-indicating switches (7°, 85° stroke)

#### FXMBM

- Double-insulation rating
- Halogen-free, silicone-free leadwires
- Models available with integral high temperature (350°F) SPST position-indicating switches (7°, 85° stroke)