Modulating, Spring Return, 24 VAC/DC, for 2 to 10 VDC or 4 to 20 mA Control Signal









us Protes	
DC, ±10%	

	REG. EQUIP.
Technical Data	
Power Supply	24 VAC, ±20%, 50/60 Hz, 24 VDC, ±10%
Power Consumption Running	2.5 W
Power Consumption Holding	1 W
Transformer Sizing	5 VA (class 2 power source)
Shaft Diameter	3/8" to 1/2" round, centers on 1/2"
Electrical Connection	3ft [1m], 18 GA plenum cable with 1/2" conduit connector
Overload Protection	electronic throughout 0° to 95° rotation
Electrical Protection	actuators are double insulated
Operating Range Y	2 to 10 VDC, 4 to 20 mA w/ ZG-R01 (500 Ω , 1/4 W resistor)
Input Impedance	100 k Ω for 2 to 10 VDC (0.1 mA), 500 Ω for 4 to 20 mA
Feedback Output U	2 to 10 VDC (max 0.7 mA) for 95°
Angle of Rotation	Max. 95°,
Torque motor	Min. 35 in-lbs [4 Nm]
Direction of Rotation (Motor)	reversible with built-in switch
Direction of Rotation (Fail-Safe)	reversible with CW/CCW mounting
Position Indication	visual indicator, 0° to 95° (0° is full spring return position)
Running Time (Motor)	150 sec
Running Time (Fail-Safe)	<25 sec @ -4°F to 122°F [-20°C to 50°C], <60 sec @ -22°F [-30°C]
Ambient Humidity	max. 95% RH non-condensing
Ambient Temperature Range	-22°F to 122°F [-30°C to 50°C]
Storage Temperature Range	-40°F to 176°F [-40°C to 80°C]
Housing	NEMA 2, IP54
Housing Material	zinc coated steel
Agency Listings†	cULus acc. To UL 873 and CAN/CSA C22.2 No. 24-93
Noise Level (Motor)	<30 dB (A)
Noise Level (Fail-Safe)	<62 dB (A)
Servicing	maintenance free
Quality Standard	ISO 9001
Weight	3.1 lb [1.4 kg]

†Rated Impulse Voltage 800V, Type of action 1.AA, Control Pollution Degree 3

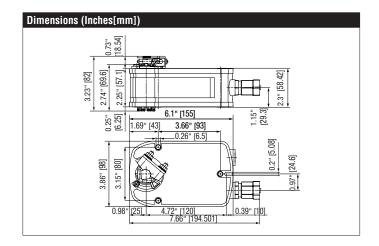
Torque min. 35 in-lb, for control of air dampers.

Application

For fail-safe, modulating control of dampers in HVAC systems. Actuator sizing should be done in accordance with the damper manufacturer's specifications. 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. The actuator operates in response to a 2 to 10 VDC, or with the addition of a 500Ω resistor, a 4 to 20 mA control input from an electronic controller or positioner. A 2 to 10 VDC feedback signal is provided for position indication.

Operation

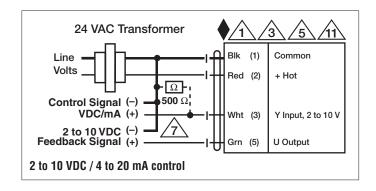
The LF series actuators provide true spring return operation for reliable fail-safe application and positive close-off on air tight dampers. The spring return system provides consistent torque to the damper with, and without, power applied to the actuator. The LF series provides 95° of rotation and is provided with a graduated position indicator showing 0 to 95°. The LF24-SR US uses a brushless DC motor which is controlled by an Application Specific Integrated Circuit (ASIC) and a microprocessor. The microprocessor provides the intelligence to the ASIC to provide a constant rotation rate and to know the actuator's exact fail-safe position. The ASIC monitors and controls the brushless DC motor'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. Power consumption is reduced in holding mode.





LF24-SR US - Damper Actuator Modulating, Spring Return, 24 VAC/DC, for 2 to 10 VDC or 4 to 20 mA Control Signal

AV6-206.7" shaft extension for 1/4" to 3/4" diameter shafts.IND-LFLF position indicator.K6 USStandard LF clamp (3/8" to 1/2").K6-1LF clamp (1/2" to 3/4").KG10ABall joint for 3/8" diameter rod, zinc plated.KG6Ball joint for 5/16" diameter rod, 20°, galvanized steel.KH12Univ. crankarm, slot 21/64" w, for 3/4" to 1" dia. shafts.KH12Univ. crankarm, slot 1/4" w, for 3/8" to 11/16" dia. shafts.KH8Univ. crankarm, slot 1/64" w, for 3/8" to 11/16" dia. shafts.KH8Univ. crankarm, slot 1/64" w, for 3/8" to 11/16" dia. shafts.KH-LFLF crankarm (with 1/2" diameter shaft pass through).KH-LFVV-bolt Kit for KH-LF.LF-PAnti-rotation bracket LF.SH10Push rod for KG6 & KG8 ball joint (36" L, 3/8" diameter).SH8Push rod for KG6 & KG8 ball joints (36" L, 5/16" diameter).TO0L-068 mm and 10 mm wrench.ZD8-LFAngle of rotation Limiter for LF.ZG-109Right angle bracket for ZS-260.ZG-110Stand-off bracket for ZS-260.ZG-111Stand-off bracket for ZS-260.ZG-112LF right angle bracket (4-1/2" H x 5-1/2" W x 2-1/2" D).ZG-DC2Damper clip for damper blade, 3.5" width.ZG-LF2LF crankarm adaptor kit (includes ZG-112).ZG-LF2LF crankarm adaptor kit (includes ZG-112).ZG-LMSA-1Shaft extension for 3/8" diameter shafts (5" L).ZS-100Weather shield - galvaneal (13" L x 8" W x 6" D).ZS-150Weather shield - galvaneal (13" L x 8" W x 6" D). <t< th=""><th>Accessories</th><th></th></t<>	Accessories	
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KG-1 LF clamp (1/2" to 3/4"). KG10A Ball joint for 5/16" diameter rod, zinc plated. KG6 Ball joint for 5/16" diameter rod, zinc plated. KG8 Ball joint for 5/16" diameter rod, 2inc plated. KG8 Ball joint for 5/16" diameter rod, 90°, galvanized steel. KH12 Univ. crankarm, slot 21/64" w, for 3/8" to 11'/16" dia. shafts. KH6 Univ. crankarm, slot 1/4" w, for 3/8" to 11/16" dia. shafts. KH8 Univ. crankarm, slot 12/64" w, for 3/8" to 11/16" dia. shafts. KH8 Univ. crankarm (with 1/2" diameter shaft pass through). KH-LFV V-bolt Kit for KH-LF. LF-P Anti-rotation bracket LF. SH10 Push rod for KG10A ball joint (36" L, 3/8" diameter). SH8 Push rod for KG6 & KG8 ball joints (36" L, 5/16" diameter). TOOL-06 8 mm and 10 mm wrench. ZDB-LF Angle of rotation Limiter for LF. ZF8-LF 8x8 mm form fit adaptor for LF. ZG-109 Right angle bracket for ZS-260. ZG-110 Stand-off bracket for ZS-260. ZG-1112 LF right angle bracket (4-1/2" H x 5-1/2" W x 2-1/2" D). ZG-DC1 Damper clip for damper blade, 3.5" width. ZG-DC2 Damper clip for damper blade, 8.5" width. ZG-LF12 LF crankarm adaptor kit (Includes ZG-112). ZG-LF2 LF crankarm adaptor kit (T bracket included). ZG-LMSA-1/2-5 Shaft extension for 3/8" diameter shafts (4" L). ZG-LMSA-1/2-5 Shaft extension for 1/2" diameter shafts (5" L). ZS-100 Weather shield - PC w/ foam seal (16" L x 8-3/8" W x 4" D). ZS-260 Explosion proof housing. ZS-300-5 NEMA 4X, 304 stainless steel enclosure. ZS-300-6 NEMA 4X, 304 stainless steel enclosure. ZS-300-1 1/2" shaft adaptor, standard with ZS-300(-5). ZS-300-2 3/4" shaft adaptor for ZS-300(-5). ZS-300-3 1" shaft adaptor for ZS-300(-5). ZS-300-3 1" shaft adaptor for ZS-300(-5). ZS-300-C3 1" shaft adaptor for DS-300(-5). ZS-300-C3 1" shaft adaptor for DS-300(-5). ZS-300-C3 1" shaft adaptor for DS-300(-5). ZS-300-C3 1" shaft adaptor for SS-300(-5). ZS-300-C3 1" shaft adaptor for SS-300(-5). ZS-300-C3 1" shaft adaptor for SS-300(-5). ZS-300-C4 Positioner control for modulating actuators (flush mount). PG-24 Positioner control	IND-LF	LF position indicator.
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KG6 Ball joint for 5/16" diameter rod, zinc plated. KG8 Ball joint for 5/16" diameter rod, 90°, galvanized steel. KH12 Univ. crankarm, slot 21/64" w, for 3/4" to 1" dia. shafts. KH6 Univ. crankarm, slot 21/64" w, for 3/8" to 11/16" dia. shafts. KH8 Univ. crankarm, slot 121/64" w, for 3/8" to 11/16" dia. shafts. KH8 Univ. crankarm, slot 121/64" w, for 3/8" to 11/16" dia. shafts. KH9 LF CF	K6-1	LF clamp (1/2" to 3/4").
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KH12 Univ. crankarm, slot 21/64" w, for 3/4" to 1" dia. shafts. KH6 Univ. crankarm, slot 1/4" w, for 3/8" to 11/16" dia. shafts. KH8 Univ. crankarm, slot 21/64" w, for 3/8" to 11/16" dia. shafts. KH8 Univ. crankarm, slot 21/64" w, for 3/8" to 11/16" dia. shafts. KH-LF LF crankarm (with 1/2" diameter shaft pass through). KH-LFV V-bolt Kit for KH-LE. LF-P Anti-rotation bracket LF. SH10 Push rod for KG10A ball joint (36" L, 3/8" diameter). SH8 Push rod for KG6 & KG8 ball joints (36" L, 5/16" diameter). TOOL-06 8 mm and 10 mm wrench. ZDB-LF Angle of rotation Limiter for LF. ZF8-LF 8x8 mm form fit adaptor for LF. ZG-109 Right angle bracket for ZS-260. ZG-110 Stand-off bracket for ZS-260. ZG-112 LF right angle bracket (4-1/2" H x 5-1/2" W x 2-1/2" D). ZG-DC1 Damper clip for damper blade, 3.5" width. ZG-DC2 Damper clip for damper blade, 6" width. ZG-LF2 LF crankarm adaptor kit (includes ZG-112). ZG-LF2 LF crankarm adaptor kit (includes ZG-112). ZG-LMSA-1 Shaft extension for 3/8" diameter shafts (4" L). ZG-LMSA-1/2-5 Shaft extension for 1/2" diameter shafts (5" L). ZS-100 Weather shield - galvaneal (13" L x 8" W x 6" D). ZS-101 Base plate for ZS-100. ZS-150 Weather shield - PC w/ foam seal (16" L x 8-3/8" W x 4" D). ZS-260 Explosion proof housing. ZS-300-5 NEMA 4X, 304 stainless steel enclosure. ZS-300-1 1/2" shaft adaptor, standard wtih ZS-300(-5). ZS-300-C2 3/4" shaft adaptor for ZS-300(-5). ADS-100 Analog to digital switch for modulating actuators. RM-100 Input rescaling module for modulating actuators. RM-100 Input rescaling module for modulating actuators. RM-100 Input rescaling module for modulating actuators. PS-100 Actuator power supply and control simulator. PTA-250 Pulse width modulation interface for modulating actuators. GGA24 Positioner control for modulating actuators (flush mount). ZG-RO1 4 to 20 mA adaptor, 50052, 1/4 W resistor w 6" pigtail wires. ZG-RO2 ZG-SGF	KG6	Ball joint for 5/16" diameter rod, zinc plated.
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KH-LFLF crankarm (with 1/2" diameter shaft pass through).KH-LFVV-bolt Kit for KH-LF.LF-PAnti-rotation bracket LF.SH10Push rod for KG10A ball joint (36" L, 3/8" diameter).SH8Push rod for KG6 & KG8 ball joints (36" L, 5/16" diameter).TOOL-068 mm and 10 mm wrench.ZDB-LFAngle of rotation Limiter for LF.ZF8-LF8x8 mm form fit adaptor for LF.ZG-109Right angle bracket for ZS-260.ZG-110Stand-off bracket for ZS-260.ZG-112LF right angle bracket (4-1/2" H x 5-1/2" W x 2-1/2" D).ZG-DC1Damper clip for damper blade, 6" width.ZG-DC2Damper clip for damper blade, 6" width.ZG-UF112LF crankarm adaptor kit (includes ZG-112).ZG-LF2LF crankarm adaptor kit (T bracket included).ZG-LMSA-1Shaft extension for 3/8" diameter shafts (4" L).ZG-LMSA-1/2-5Shaft extension for 1/2" diameter shafts (5" L).ZS-100Weather shield - galvaneal (13" L x 8" W x 6" D).ZS-101Base plate for ZS-100.ZS-150Weather shield - PC w/ foam seal (16" L x 8-3/8" W x 4" D).ZS-260Explosion proof housing.ZS-300-5NEMA 4X, 304 stainless steel enclosure.ZS-300-5NEMA 4X, 316L stainless steel enclosure.ZS-300-C23/4" shaft adaptor, standard with ZS-300(-5).ZS-300-C31" shaft adaptor for ZS-300(-5).ZS-300-C31" shaft adaptor for ZS-300(-5).ZS-300-C31" shaft adaptor for ZS-300(-5).ZS-300-C31" shaft adaptor for ZS-300(-5).AD	KH6	
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LF-P Anti-rotation bracket LF. SH10 Push rod for KG10A ball joint (36" L, 3/8" diameter). SH8 Push rod for KG6 & KG8 ball joints (36" L, 5/16" diameter). TOOL-06 8 mm and 10 mm wrench. ZDB-LF Angle of rotation Limiter for LF. ZF8-LF 8x8 mm form fit adaptor for LF. ZG-109 Right angle bracket for ZS-260. ZG-110 Stand-off bracket for ZS-260. ZG-112 LF right angle bracket (4-1/2" H x 5-1/2" W x 2-1/2" D). ZG-DC1 Damper clip for damper blade, 3.5" width. ZG-DC2 Damper clip for damper blade, 6" width. ZG-LF112 LF crankarm adaptor kit (includes ZG-112). ZG-LF2 LF crankarm adaptor kit (T bracket included). ZG-LMSA-1 Shaft extension for 3/8" diameter shafts (4" L). ZG-LMSA-1/2-5 Shaft extension for 1/2" diameter shafts (5" L). ZS-100 Weather shield - galvaneal (13" L x 8" W x 6" D). ZS-101 Base plate for ZS-100. ZS-150 Weather shield - PC W/ foam seal (16" L x 8-3/8" W x 4" D). ZS-260 Explosion proof housing. ZS-300-5 NEMA 4X, 304 stainless steel enclosure. ZS-300-C1 1/2" shaft adaptor, standard wtih ZS-300(-5). ZS-300-C2 3/4" shaft adaptor for ZS-300(-5). ZS-300-C3 1" shaft adaptor for ZS-300(-5). ZS-300-C3 1" shaft adaptor for ZS-300(-5). RM-100 Input rescaling module for modulating actuators. RM-100 Input rescaling module for modulating actuators. RM-100 Input rescaling module for modulating actuators. PS-100 Actuator power supply and control simulator. PTA-250 Pulse width modulation interface for modulating actuators. SGA24 Positioner control for modulating actuators (flush mount). SGF24 Positioner control for modulating actuators (flush mount). ZG-R01 4 to 20 mA adaptor, 500Ω, 1/4 W resistor w 6" pigtail wires. ZG-R02 50% voltage divider kit (resistors with wires).	KH-LF	LF crankarm (with 1/2" diameter shaft pass through).
SH10Push rod for KG10A ball joint (36" L, 3/8" diameter).SH8Push rod for KG6 & KG8 ball joints (36" L, 5/16" diameter).TOOL-068 mm and 10 mm wrench.ZDB-LFAngle of rotation Limiter for LF.ZF8-LF8x8 mm form fit adaptor for LF.ZG-109Right angle bracket for ZS-260.ZG-110Stand-off bracket for ZS-260.ZG-112LF right angle bracket (4-1/2" H x 5-1/2" W x 2-1/2" D).ZG-DC1Damper clip for damper blade, 3.5" width.ZG-DC2Damper clip for damper blade, 6" width.ZG-LF112LF crankarm adaptor kit (includes ZG-112).ZG-LF2LF crankarm adaptor kit (T bracket included).ZG-LMSA-1Shaft extension for 3/8" diameter shafts (4" L).ZG-LMSA-1/2-5Shaft extension for 1/2" diameter shafts (5" L).ZS-100Weather shield - galvaneal (13" L x 8" W x 6" D).ZS-101Base plate for ZS-100.ZS-150Weather shield - Pow / foam seal (16" L x 8-3/8" W x 4" D).ZS-260Explosion proof housing.ZS-300-SNEMA 4X, 304 stainless steel enclosure.ZS-300-C11/2" shaft adaptor for ZS-300(-5).ZS-300-C23/4" shaft adaptor for ZS-300(-5).ZS-300-C31" shaft adaptor for ZS-300(-5).ZS-300-C31" shaft adaptor for ZS-300(-5).ZS-300-C31" shaft adaptor for ZS-300(-5).ZS-300-C31" shaft adaptor for ZS-300(-5).ADS-100Analog to digital switch for modulating actuators.PS-100Actuator power supply and control simulator.PTA-250Pulse width modulation interface	KH-LFV	V-bolt Kit for KH-LF.
SH8Push rod for KG6 & KG8 ball joints (36" L, 5/16" diameter).TOOL-068 mm and 10 mm wrench.ZDB-LFAngle of rotation Limiter for LF.ZF8-LF8x8 mm form fit adaptor for LF.ZG-109Right angle bracket for ZS-260.ZG-110Stand-off bracket for ZS-260.ZG-112LF right angle bracket (4-1/2" H x 5-1/2" W x 2-1/2" D).ZG-DC1Damper clip for damper blade, 6" width.ZG-DC2Damper clip for damper blade, 6" width.ZG-LF112LF crankarm adaptor kit (includes ZG-112).ZG-LF2LF crankarm adaptor kit (T bracket included).ZG-LMSA-1Shaft extension for 3/8" diameter shafts (4" L).ZG-LMSA-1/2-5Shaft extension for 1/2" diameter shafts (5" L).ZS-100Weather shield - galvaneal (13" L x 8" W x 6" D).ZS-101Base plate for ZS-100.ZS-150Weather shield - PC w/ foam seal (16" L x 8-3/8" W x 4" D).ZS-260Explosion proof housing.ZS-300NEMA 4X, 304 stainless steel enclosure.ZS-300-5NEMA 4X, 316L stainless steel enclosure.ZS-300-C11/2" shaft adaptor for ZS-300(-5).ZS-300-C23/4" shaft adaptor for ZS-300(-5).ZS-300-C31" shaft adaptor for ZS-300(-5).ADS-100Analog to digital switch for modulating actuators.PS-100Actuator power supply and control simulator.PTA-250Pulse width modulation interface for modulating actuators.SGA24Positioner control for modulating actuators (flush mount).SGF24Positioner control for modulating actuators (flush mount). <t< td=""><td>LF-P</td><td></td></t<>	LF-P	
TOOL-06 8 mm and 10 mm wrench. ZDB-LF Angle of rotation Limiter for LF. ZF8-LF 8x8 mm form fit adaptor for LF. ZG-109 Right angle bracket for ZS-260. ZG-110 Stand-off bracket for ZS-260. ZG-112 LF right angle bracket (4-1/2" H x 5-1/2" W x 2-1/2" D). ZG-DC1 Damper clip for damper blade, 6" width. ZG-DC2 Damper clip for damper blade, 6" width. ZG-LF112 LF crankarm adaptor kit (includes ZG-112). ZG-LF2 LF crankarm adaptor kit (T bracket included). ZG-LMSA-1 Shaft extension for 3/8" diameter shafts (4" L). ZG-LMSA-1/2-5 Shaft extension for 1/2" diameter shafts (5" L). ZS-100 Weather shield - galvaneal (13" L x 8" W x 6" D). ZS-101 Base plate for ZS-100. ZS-101 Weather shield - PC w/ foam seal (16" L x 8-3/8" W x 4" D). ZS-260 Explosion proof housing. ZS-300 NEMA 4X, 304 stainless steel enclosure. ZS-300-5 NEMA 4X, 316L stainless steel enclosure. ZS-300-C1 1/2" shaft adaptor, standard wtih ZS-300(-5). ZS-300-C2 3/4" shaft adaptor for ZS-300(-5). ZS-300-C3 1" shaft adaptor for ZS-300(-5). ADS-100 Analog to digital switch for modulating actuators. IRM-100 Input rescaling module for modulating actuators. PS-100 Actuator power supply and control simulator. PTA-250 Pulse width modulation interface for modulating actuators. SGA24 Positioner control for modulating actuators (flush mount). SGF24 Positioner control for modulating actuators (flush mount). ZG-R01 4 to 20 mA adaptor, 500Ω, 1/4 W resistor w 6" pigtail wires. ZG-R02 50% voltage divider kit (resistors with wires).	SH10	Push rod for KG10A ball joint (36" L, 3/8" diameter).
ZDB-LFAngle of rotation Limiter for LF.ZF8-LF8x8 mm form fit adaptor for LF.ZG-109Right angle bracket for ZS-260.ZG-110Stand-off bracket for ZS-260.ZG-112LF right angle bracket (4-1/2" H x 5-1/2" W x 2-1/2" D).ZG-DC1Damper clip for damper blade, 6" width.ZG-DC2Damper clip for damper blade, 6" width.ZG-LF112LF crankarm adaptor kit (includes ZG-112).ZG-LF2LF crankarm adaptor kit (T bracket included).ZG-LMSA-1Shaft extension for 3/8" diameter shafts (4" L).ZG-LMSA-1/2-5Shaft extension for 1/2" diameter shafts (5" L).ZS-100Weather shield - galvaneal (13" L x 8" W x 6" D).ZS-101Base plate for ZS-100.ZS-103Weather shield - PC w/ foam seal (16" L x 8-3/8" W x 4" D).ZS-260Explosion proof housing.ZS-300NEMA 4X, 304 stainless steel enclosure.ZS-300-5NEMA 4X, 316L stainless steel enclosure.ZS-300-C11/2" shaft adaptor, standard with ZS-300(-5).ZS-300-C23/4" shaft adaptor for ZS-300(-5).ZS-300-G31" shaft adaptor for ZS-300(-5).ZS-300-G31" shaft adaptor for DS-300(-5).ZS-300-C31 shaft adaptor for DS-300(-5).RM-100Input rescaling module for modulating actuators.PS-100Actuator power supply and control simulator.PTA-250Pulse width modulation interface for modulating actuators.SGA24Positioner control for modulating actuators (flush mount).ZG-R014 to 20 mA adaptor, 500Ω, 1/4 W resistor w 6" pigtail wires.<	SH8	
ZF8-LF8x8 mm form fit adaptor for LF.ZG-109Right angle bracket for ZS-260.ZG-110Stand-off bracket for ZS-260.ZG-112LF right angle bracket (4-1/2" H x 5-1/2" W x 2-1/2" D).ZG-DC1Damper clip for damper blade, 3.5" width.ZG-DC2Damper clip for damper blade, 6" width.ZG-LF112LF crankarm adaptor kit (includes ZG-112).ZG-LF2LF crankarm adaptor kit (T bracket included).ZG-LMSA-1Shaft extension for 3/8" diameter shafts (4" L).ZG-LMSA-1/2-5Shaft extension for 1/2" diameter shafts (5" L).ZS-100Weather shield - galvaneal (13" L x 8" W x 6" D).ZS-101Base plate for ZS-100.ZS-150Weather shield - PC w/ foam seal (16" L x 8-3/8" W x 4" D).ZS-260Explosion proof housing.ZS-300NEMA 4X, 304 stainless steel enclosure.ZS-300-5NEMA 4X, 316L stainless steel enclosure.ZS-300-C11/2" shaft adaptor, standard wtih ZS-300(-5).ZS-300-C23/4" shaft adaptor for ZS-300(-5).ZS-300-C31" shaft adaptor for ZS-300(-5).ADS-100Analog to digital switch for modulating actuators.PS-100Actuator power supply and control simulator.PTA-250Pulse width modulation interface for modulating actuators.SGA24Positioner control for modulating actuators (flush mount).SGF24Positioner control for modulating actuators (flush mount).ZG-R014 to 20 mA adaptor, 500Ω, 1/4 W resistor w 6" pigtail wires.ZG-R0250% voltage divider kit (resistors with wires).ZG-SGFMoun	T00L-06	8 mm and 10 mm wrench.
ZG-109Right angle bracket for ZS-260.ZG-110Stand-off bracket for ZS-260.ZG-112LF right angle bracket (4-1/2" H x 5-1/2" W x 2-1/2" D).ZG-DC1Damper clip for damper blade, 3.5" width.ZG-DC2Damper clip for damper blade, 6" width.ZG-LF112LF crankarm adaptor kit (includes ZG-112).ZG-LF2LF crankarm adaptor kit (T bracket included).ZG-LMSA-1Shaft extension for 3/8" diameter shafts (4" L).ZG-LMSA-1/2-5Shaft extension for 1/2" diameter shafts (5" L).ZS-100Weather shield - galvaneal (13" L x 8" W x 6" D).ZS-101Base plate for ZS-100.ZS-150Weather shield - PC w/ foam seal (16" L x 8-3/8" W x 4" D).ZS-260Explosion proof housing.ZS-300NEMA 4X, 304 stainless steel enclosure.ZS-300-5NEMA 4X, 316L stainless steel enclosure.ZS-300-C11/2" shaft adaptor, standard wtih ZS-300(-5).ZS-300-C23/4" shaft adaptor for ZS-300(-5).ZS-300-C31" shaft adaptor for ZS-300(-5).ADS-100Analog to digital switch for modulating actuators.PS-100Actuator power supply and control simulator.PTA-250Pulse width modulation interface for modulating actuators.SGA24Positioner control for modulating actuators (flush mount).SGF24Positioner control for modulating actuators (flush mount).ZG-R014 to 20 mA adaptor, 500Ω, 1/4 W resistor w 6" pigtail wires.ZG-R0250% voltage divider kit (resistors with wires).ZG-SGFMounting plate for SGF.	ZDB-LF	Angle of rotation Limiter for LF.
ZG-110Stand-off bracket for ZS-260.ZG-112LF right angle bracket (4-1/2" H x 5-1/2" W x 2-1/2" D).ZG-DC1Damper clip for damper blade, 3.5" width.ZG-DC2Damper clip for damper blade, 6" width.ZG-LF112LF crankarm adaptor kit (includes ZG-112).ZG-LF2LF crankarm adaptor kit (T bracket included).ZG-LMSA-1Shaft extension for 3/8" diameter shafts (4" L).ZG-LMSA-1/2-5Shaft extension for 1/2" diameter shafts (5" L).ZS-100Weather shield - galvaneal (13" L x 8" W x 6" D).ZS-101Base plate for ZS-100.ZS-150Weather shield - PC w/ foam seal (16" L x 8-3/8" W x 4" D).ZS-260Explosion proof housing.ZS-300NEMA 4X, 304 stainless steel enclosure.ZS-300-5NEMA 4X, 316L stainless steel enclosure.ZS-300-C11/2" shaft adaptor, standard wtih ZS-300(-5).ZS-300-C23/4" shaft adaptor for ZS-300(-5).ADS-100Analog to digital switch for modulating actuators.IRM-100Input rescaling module for modulating actuators.PS-100Actuator power supply and control simulator.PTA-250Pulse width modulation interface for modulating actuators.SGA24Positioner control for modulating actuators (surface mount).SGF24Positioner control for modulating actuators (flush mount).ZG-R014 to 20 mA adaptor, 500Ω, 1/4 W resistor w 6" pigtail wires.ZG-R0250% voltage divider kit (resistors with wires).ZG-SGFMounting plate for SGF.	ZF8-LF	8x8 mm form fit adaptor for LF.
ZG-112LF right angle bracket (4-1/2" H x 5-1/2" W x 2-1/2" D).ZG-DC1Damper clip for damper blade, 3.5" width.ZG-DC2Damper clip for damper blade, 6" width.ZG-LF112LF crankarm adaptor kit (includes ZG-112).ZG-LF2LF crankarm adaptor kit (T bracket included).ZG-LMSA-1Shaft extension for 3/8" diameter shafts (4" L).ZG-LMSA-1/2-5Shaft extension for 1/2" diameter shafts (5" L).ZS-100Weather shield - galvaneal (13" L x 8" W x 6" D).ZS-101Base plate for ZS-100.ZS-150Weather shield - PC w/ foam seal (16" L x 8-3/8" W x 4" D).ZS-260Explosion proof housing.ZS-300NEMA 4X, 304 stainless steel enclosure.ZS-300-5NEMA 4X, 316L stainless steel enclosure.ZS-300-C11/2" shaft adaptor, standard wtih ZS-300(-5).ZS-300-C23/4" shaft adaptor for ZS-300(-5).ADS-100Analog to digital switch for modulating actuators.IRM-100Input rescaling module for modulating actuators.PS-100Actuator power supply and control simulator.PTA-250Pulse width modulation interface for modulating actuators.SGA24Positioner control for modulating actuators (surface mount).SGF24Positioner control for modulating actuators (flush mount).ZG-R014 to 20 mA adaptor, 500Ω, 1/4 W resistor w 6" pigtail wires.ZG-R0250% voltage divider kit (resistors with wires).ZG-SGFMounting plate for SGF.	ZG-109	Right angle bracket for ZS-260.
ZG-DC1Damper clip for damper blade, 3.5" width.ZG-DC2Damper clip for damper blade, 6" width.ZG-LF112LF crankarm adaptor kit (includes ZG-112).ZG-LF2LF crankarm adaptor kit (T bracket included).ZG-LMSA-1Shaft extension for 3/8" diameter shafts (4" L).ZG-LMSA-1/2-5Shaft extension for 1/2" diameter shafts (5" L).ZS-100Weather shield - galvaneal (13" L x 8" W x 6" D).ZS-101Base plate for ZS-100.ZS-150Weather shield - PC w/ foam seal (16" L x 8-3/8" W x 4" D).ZS-260Explosion proof housing.ZS-300NEMA 4X, 304 stainless steel enclosure.ZS-300-5NEMA 4X, 316L stainless steel enclosure.ZS-300-C11/2" shaft adaptor, standard wtih ZS-300(-5).ZS-300-C23/4" shaft adaptor for ZS-300(-5).ZS-300-C31" shaft adaptor for ZS-300(-5).ADS-100Analog to digital switch for modulating actuators.IRM-100Input rescaling module for modulating actuators.PS-100Actuator power supply and control simulator.PTA-250Pulse width modulation interface for modulating actuators.SGA24Positioner control for modulating actuators (surface mount).SGF24Positioner control for modulating actuators (flush mount).ZG-R014 to 20 mA adaptor, 500Ω, 1/4 W resistor w 6" pigtail wires.ZG-R0250% voltage divider kit (resistors with wires).ZG-SGFMounting plate for SGF.	ZG-110	Stand-off bracket for ZS-260.
ZG-DC2Damper clip for damper blade, 6" width.ZG-LF112LF crankarm adaptor kit (includes ZG-112).ZG-LF2LF crankarm adaptor kit (T bracket included).ZG-LMSA-1Shaft extension for 3/8" diameter shafts (4" L).ZG-LMSA-1/2-5Shaft extension for 1/2" diameter shafts (5" L).ZS-100Weather shield - galvaneal (13" L x 8" W x 6" D).ZS-101Base plate for ZS-100.ZS-150Weather shield - PC w/ foam seal (16" L x 8-3/8" W x 4" D).ZS-260Explosion proof housing.ZS-300NEMA 4X, 304 stainless steel enclosure.ZS-300-5NEMA 4X, 316L stainless steel enclosure.ZS-300-C11/2" shaft adaptor, standard wtih ZS-300(-5).ZS-300-C23/4" shaft adaptor for ZS-300(-5).ZS-300-C31" shaft adaptor for ZS-300(-5).ADS-100Analog to digital switch for modulating actuators.IRM-100Input rescaling module for modulating actuators.PS-100Actuator power supply and control simulator.PTA-250Pulse width modulation interface for modulating actuators.SGA24Positioner control for modulating actuators (surface mount).SGF24Positioner control for modulating actuators (flush mount).ZG-R014 to 20 mA adaptor, 500Ω, 1/4 W resistor w 6" pigtail wires.ZG-R0250% voltage divider kit (resistors with wires).ZG-SGFMounting plate for SGF.	ZG-112	LF right angle bracket (4-1/2" H x 5-1/2" W x 2-1/2" D).
ZG-LF112LF crankarm adaptor kit (includes ZG-112).ZG-LF2LF crankarm adaptor kit (T bracket included).ZG-LMSA-1Shaft extension for 3/8" diameter shafts (4" L).ZG-LMSA-1/2-5Shaft extension for 1/2" diameter shafts (5" L).ZS-100Weather shield - galvaneal (13" L x 8" W x 6" D).ZS-101Base plate for ZS-100.ZS-150Weather shield - PC w/ foam seal (16" L x 8-3/8" W x 4" D).ZS-260Explosion proof housing.ZS-300NEMA 4X, 304 stainless steel enclosure.ZS-300-5NEMA 4X, 316L stainless steel enclosure.ZS-300-C11/2" shaft adaptor, standard wtih ZS-300(-5).ZS-300-C23/4" shaft adaptor for ZS-300(-5).ZS-300-C31" shaft adaptor for ZS-300(-5).ADS-100Analog to digital switch for modulating actuators.PS-100Actuator power supply and control simulator.PTA-250Pulse width modulation interface for modulating actuators.SGA24Positioner control for modulating actuators (surface mount).SGF24Positioner control for modulating actuators (flush mount).ZG-R014 to 20 mA adaptor, 500Ω, 1/4 W resistor w 6" pigtail wires.ZG-R0250% voltage divider kit (resistors with wires).ZG-SGFMounting plate for SGF.	ZG-DC1	Damper clip for damper blade, 3.5" width.
ZG-LF2LF crankarm adaptor kit (T bracket included).ZG-LMSA-1Shaft extension for 3/8" diameter shafts (4" L).ZG-LMSA-1/2-5Shaft extension for 1/2" diameter shafts (5" L).ZS-100Weather shield - galvaneal (13" L x 8" W x 6" D).ZS-101Base plate for ZS-100.ZS-150Weather shield - PC w/ foam seal (16" L x 8-3/8" W x 4" D).ZS-260Explosion proof housing.ZS-300NEMA 4X, 304 stainless steel enclosure.ZS-300-5NEMA 4X, 316L stainless steel enclosure.ZS-300-C11/2" shaft adaptor, standard wtih ZS-300(-5).ZS-300-C23/4" shaft adaptor for ZS-300(-5).ADS-100Analog to digital switch for modulating actuators.IRM-100Input rescaling module for modulating actuators.PS-100Actuator power supply and control simulator.PTA-250Pulse width modulation interface for modulating actuators.SGA24Positioner control for modulating actuators (surface mount).SGF24Positioner control for modulating actuators (flush mount).ZG-R014 to 20 mA adaptor, 500Ω, 1/4 W resistor w 6" pigtail wires.ZG-R0250% voltage divider kit (resistors with wires).ZG-SGFMounting plate for SGF.	ZG-DC2	Damper clip for damper blade, 6" width.
ZG-LMSA-1Shaft extension for 3/8" diameter shafts (4" L).ZG-LMSA-1/2-5Shaft extension for 1/2" diameter shafts (5" L).ZS-100Weather shield - galvaneal (13" L x 8" W x 6" D).ZS-101Base plate for ZS-100.ZS-150Weather shield - PC w/ foam seal (16" L x 8-3/8" W x 4" D).ZS-260Explosion proof housing.ZS-300NEMA 4X, 304 stainless steel enclosure.ZS-300-5NEMA 4X, 316L stainless steel enclosure.ZS-300-C11/2" shaft adaptor, standard wtih ZS-300(-5).ZS-300-C23/4" shaft adaptor for ZS-300(-5).ZS-300-C31" shaft adaptor for ZS-300(-5).ADS-100Analog to digital switch for modulating actuators.IRM-100Input rescaling module for modulating actuators.PS-100Actuator power supply and control simulator.PTA-250Pulse width modulation interface for modulating actuators.SGA24Positioner control for modulating actuators (surface mount).SGF24Positioner control for modulating actuators (flush mount).ZG-R014 to 20 mA adaptor, 500Ω, 1/4 W resistor w 6" pigtail wires.ZG-R0250% voltage divider kit (resistors with wires).ZG-SGFMounting plate for SGF.	ZG-LF112	LF crankarm adaptor kit (includes ZG-112).
ZG-LMSA-1/2-5Shaft extension for 1/2" diameter shafts (5" L).ZS-100Weather shield - galvaneal (13" L x 8" W x 6" D).ZS-101Base plate for ZS-100.ZS-150Weather shield - PC w/ foam seal (16" L x 8-3/8" W x 4" D).ZS-260Explosion proof housing.ZS-300NEMA 4X, 304 stainless steel enclosure.ZS-300-5NEMA 4X, 316L stainless steel enclosure.ZS-300-C11/2" shaft adaptor, standard wtih ZS-300(-5).ZS-300-C23/4" shaft adaptor for ZS-300(-5).ZS-300-C31" shaft adaptor for ZS-300(-5).ADS-100Analog to digital switch for modulating actuators.IRM-100Input rescaling module for modulating actuators.PS-100Actuator power supply and control simulator.PTA-250Pulse width modulation interface for modulating actuators.SGA24Positioner control for modulating actuators (surface mount).SGF24Positioner control for modulating actuators (flush mount).ZG-R014 to 20 mA adaptor, 500Ω, 1/4 W resistor w 6" pigtail wires.ZG-R0250% voltage divider kit (resistors with wires).ZG-SGFMounting plate for SGF.	ZG-LF2	LF crankarm adaptor kit (T bracket included).
ZS-100Weather shield - galvaneal (13" L x 8" W x 6" D).ZS-101Base plate for ZS-100.ZS-150Weather shield - PC w/ foam seal (16" L x 8-3/8" W x 4" D).ZS-260Explosion proof housing.ZS-300NEMA 4X, 304 stainless steel enclosure.ZS-300-5NEMA 4X, 316L stainless steel enclosure.ZS-300-C11/2" shaft adaptor, standard wtih ZS-300(-5).ZS-300-C23/4" shaft adaptor for ZS-300(-5).ZS-300-C31" shaft adaptor for ZS-300(-5).ADS-100Analog to digital switch for modulating actuators.IRM-100Input rescaling module for modulating actuators.PS-100Actuator power supply and control simulator.PTA-250Pulse width modulation interface for modulating actuators.SGA24Positioner control for modulating actuators (surface mount).SGF24Positioner control for modulating actuators (flush mount).ZG-R014 to 20 mA adaptor, 500Ω, 1/4 W resistor w 6" pigtail wires.ZG-R0250% voltage divider kit (resistors with wires).ZG-SGFMounting plate for SGF.	ZG-LMSA-1	Shaft extension for 3/8" diameter shafts (4" L).
ZS-101Base plate for ZS-100.ZS-150Weather shield - PC w/ foam seal (16" L x 8-3/8" W x 4" D).ZS-260Explosion proof housing.ZS-300NEMA 4X, 304 stainless steel enclosure.ZS-300-5NEMA 4X, 316L stainless steel enclosure.ZS-300-C11/2" shaft adaptor, standard wtih ZS-300(-5).ZS-300-C23/4" shaft adaptor for ZS-300(-5).ZS-300-C31" shaft adaptor for ZS-300(-5).ADS-100Analog to digital switch for modulating actuators.IRM-100Input rescaling module for modulating actuators.PS-100Actuator power supply and control simulator.PTA-250Pulse width modulation interface for modulating actuators.SGA24Positioner control for modualting actuators (surface mount).SGF24Positioner control for modulating actuators (flush mount).ZG-R014 to 20 mA adaptor, 500Ω, 1/4 W resistor w 6" pigtail wires.ZG-R0250% voltage divider kit (resistors with wires).ZG-SGFMounting plate for SGF.	ZG-LMSA-1/2-5	Shaft extension for 1/2" diameter shafts (5" L).
ZS-150Weather shield - PC w/ foam seal (16" L x 8-3/8" W x 4" D).ZS-260Explosion proof housing.ZS-300NEMA 4X, 304 stainless steel enclosure.ZS-300-5NEMA 4X, 316L stainless steel enclosure.ZS-300-C11/2" shaft adaptor, standard wtih ZS-300(-5).ZS-300-C23/4" shaft adaptor for ZS-300(-5).ZS-300-C31" shaft adaptor for ZS-300(-5).ADS-100Analog to digital switch for modulating actuators.IRM-100Input rescaling module for modulating actuators.PS-100Actuator power supply and control simulator.PTA-250Pulse width modulation interface for modulating actuators.SGA24Positioner control for modulating actuators (surface mount).SGF24Positioner control for modulating actuators (flush mount).ZG-R014 to 20 mA adaptor, 500Ω, 1/4 W resistor w 6" pigtail wires.ZG-R0250% voltage divider kit (resistors with wires).ZG-SGFMounting plate for SGF.	ZS-100	Weather shield - galvaneal (13" L x 8" W x 6" D).
ZS-260 Explosion proof housing. ZS-300 NEMA 4X, 304 stainless steel enclosure. ZS-300-5 NEMA 4X, 316L stainless steel enclosure. ZS-300-C1 1/2" shaft adaptor, standard wtih ZS-300(-5). ZS-300-C2 3/4" shaft adaptor for ZS-300(-5). ZS-300-C3 1" shaft adaptor for ZS-300(-5). ADS-100 Analog to digital switch for modulating actuators. IRM-100 Input rescaling module for modulating actuators. PS-100 Actuator power supply and control simulator. PTA-250 Pulse width modulation interface for modulating actuators. SGA24 Positioner control for modualting actuators (surface mount). SGF24 Positioner control for modulating actuators (flush mount). ZG-R01 4 to 20 mA adaptor, 500Ω, 1/4 W resistor w 6" pigtail wires. ZG-R02 50% voltage divider kit (resistors with wires). ZG-SGF Mounting plate for SGF.	ZS-101	· ·
ZS-300 NEMA 4X, 304 stainless steel enclosure. ZS-300-5 NEMA 4X, 316L stainless steel enclosure. ZS-300-C1 1/2" shaft adaptor, standard wtih ZS-300(-5). ZS-300-C2 3/4" shaft adaptor for ZS-300(-5). ZS-300-C3 1" shaft adaptor for ZS-300(-5). ADS-100 Analog to digital switch for modulating actuators. IRM-100 Input rescaling module for modulating actuators. PS-100 Actuator power supply and control simulator. PTA-250 Pulse width modulation interface for modulating actuators. SGA24 Positioner control for modulating actuators (surface mount). SGF24 Positioner control for modulating actuators (flush mount). ZG-R01 4 to 20 mA adaptor, 500Ω, 1/4 W resistor w 6" pigtail wires. ZG-R02 50% voltage divider kit (resistors with wires). ZG-SGF Mounting plate for SGF.	ZS-150	Weather shield - PC w/ foam seal (16" L x 8-3/8" W x 4" D).
ZS-300-5 NEMA 4X, 316L stainless steel enclosure. ZS-300-C1 1/2" shaft adaptor, standard wtih ZS-300(-5). ZS-300-C2 3/4" shaft adaptor for ZS-300(-5). ZS-300-C3 1" shaft adaptor for ZS-300(-5). ADS-100 Analog to digital switch for modulating actuators. IRM-100 Input rescaling module for modulating actuators. PS-100 Actuator power supply and control simulator. PTA-250 Pulse width modulation interface for modulating actuators. SGA24 Positioner control for modulating actuators (surface mount). SGF24 Positioner control for modulating actuators (flush mount). ZG-R01 4 to 20 mA adaptor, 500Ω, 1/4 W resistor w 6" pigtail wires. ZG-R02 50% voltage divider kit (resistors with wires). ZG-SGF Mounting plate for SGF.	ZS-260	Explosion proof housing.
ZS-300-C1 1/2" shaft adaptor, standard with ZS-300(-5). ZS-300-C2 3/4" shaft adaptor for ZS-300(-5). ZS-300-C3 1" shaft adaptor for ZS-300(-5). ADS-100 Analog to digital switch for modulating actuators. IRM-100 Input rescaling module for modulating actuators. PS-100 Actuator power supply and control simulator. PTA-250 Pulse width modulation interface for modulating actuators. SGA24 Positioner control for modulating actuators (surface mount). SGF24 Positioner control for modulating actuators (flush mount). ZG-R01 4 to 20 mA adaptor, 500Ω, 1/4 W resistor w 6" pigtail wires. ZG-R02 50% voltage divider kit (resistors with wires). ZG-SGF Mounting plate for SGF.	ZS-300	NEMA 4X, 304 stainless steel enclosure.
ZS-300-C2 3/4" shaft adaptor for ZS-300(-5). ZS-300-C3 1" shaft adaptor for ZS-300(-5). ADS-100 Analog to digital switch for modulating actuators. IRM-100 Input rescaling module for modulating actuators. PS-100 Actuator power supply and control simulator. PTA-250 Pulse width modulation interface for modulating actuators. SGA24 Positioner control for modulating actuators (surface mount). SGF24 Positioner control for modulating actuators (flush mount). ZG-R01 4 to 20 mA adaptor, 500Ω, 1/4 W resistor w 6" pigtail wires. ZG-R02 50% voltage divider kit (resistors with wires). ZG-SGF Mounting plate for SGF.	ZS-300-5	
ZS-300-C3 1" shaft adaptor for ZS-300(-5). ADS-100 Analog to digital switch for modulating actuators. IRM-100 Input rescaling module for modulating actuators. PS-100 Actuator power supply and control simulator. PTA-250 Pulse width modulation interface for modulating actuators. SGA24 Positioner control for modulating actuators (surface mount). SGF24 Positioner control for modulating actuators (flush mount). ZG-R01 4 to 20 mA adaptor, 500Ω, 1/4 W resistor w 6" pigtail wires. ZG-R02 50% voltage divider kit (resistors with wires). ZG-SGF Mounting plate for SGF.	ZS-300-C1	
ADS-100 Analog to digital switch for modulating actuators. IRM-100 Input rescaling module for modulating actuators. PS-100 Actuator power supply and control simulator. PTA-250 Pulse width modulation interface for modulating actuators. SGA24 Positioner control for modulating actuators (surface mount). SGF24 Positioner control for modulating actuators (flush mount). ZG-R01 4 to 20 mA adaptor, 500Ω, 1/4 W resistor w 6" pigtail wires. ZG-R02 50% voltage divider kit (resistors with wires). ZG-SGF Mounting plate for SGF.	ZS-300-C2	
IRM-100 Input rescaling module for modulating actuators. PS-100 Actuator power supply and control simulator. PTA-250 Pulse width modulation interface for modulating actuators. SGA24 Positioner control for modulating actuators (surface mount). SGF24 Positioner control for modulating actuators (flush mount). ZG-R01 4 to 20 mA adaptor, 500Ω, 1/4 W resistor w 6" pigtail wires. ZG-R02 50% voltage divider kit (resistors with wires). ZG-SGF Mounting plate for SGF.	ZS-300-C3	
PS-100 Actuator power supply and control simulator. PTA-250 Pulse width modulation interface for modulating actuators. SGA24 Positioner control for modulating actuators (surface mount). SGF24 Positioner control for modulating actuators (flush mount). ZG-R01 4 to 20 mA adaptor, 500Ω, 1/4 W resistor w 6" pigtail wires. ZG-R02 50% voltage divider kit (resistors with wires). ZG-SGF Mounting plate for SGF.	ADS-100	Analog to digital switch for modulating actuators.
PTA-250 Pulse width modulation interface for modulating actuators. SGA24 Positioner control for modulating actuators (surface mount). SGF24 Positioner control for modulating actuators (flush mount). ZG-R01 4 to 20 mA adaptor, 500Ω , $1/4$ W resistor w 6" pigtail wires. ZG-R02 50% voltage divider kit (resistors with wires). ZG-SGF Mounting plate for SGF.	IRM-100	-
$\begin{array}{ccc} SGA24 & Positioner control for modulating actuators (surface mount). \\ SGF24 & Positioner control for modulating actuators (flush mount). \\ ZG-R01 & 4 to 20 mA adaptor, 500\Omega, 1/4 W resistor w 6" pigtail wires. \\ ZG-R02 & 50% voltage divider kit (resistors with wires). \\ ZG-SGF & Mounting plate for SGF. \\ \end{array}$	PS-100	
$ \begin{array}{cccc} SGF24 & Positioner control for modulating actuators (flush mount). \\ ZG-R01 & 4 to 20 mA adaptor, 500\Omega, 1/4 W resistor w 6" pigtail wires. \\ ZG-R02 & 50% voltage divider kit (resistors with wires). \\ ZG-SGF & Mounting plate for SGF. \\ \end{array} $	PTA-250	Pulse width modulation interface for modulating actuators.
ZG-R014 to 20 mA adaptor, 500Ω , $1/4$ W resistor w 6" pigtail wires.ZG-R0250% voltage divider kit (resistors with wires).ZG-SGFMounting plate for SGF.		_ ` ` ,
ZG-R02 50% voltage divider kit (resistors with wires). ZG-SGF Mounting plate for SGF.	SGF24	
ZG-SGF Mounting plate for SGF.		
		_ ,
ZG-X40 120 to 24 VAC, 40 VA transformer.		= :
	ZG-X40	120 to 24 VAC, 40 VA transformer.



LF24-SR US - Damper Actuator





Typical Specification

Spring return control damper actuators shall be direct coupled type which require no crank arm and linkage and be capable of direct mounting to a shaft up to a 3/4" diameter and center on a 1/2" shaft (default). Actuator shall deliver a minimum output torque of 35 in-lbs. The actuator must provide modulating damper control in response to a 2 to 10 VDC or, with the addition of a 500Ω resistor, a 4 to 20 mA control input from an electronic controller. Actuators shall use a brushless DC motor controlled by a microprocessor and be protected from overload at all angles of rotation. Run time shall be constant, and independent of torque. A 2 to 10 feedback signal shall be provided for position feedback. The actuator must be designed so that they may be used for either clockwise or counter clockwise failsafe operation. Actuators shall be cULus listed, have a 5 year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams



WARNING! LIVE ELECTRICAL COMPONENTS!

During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.



Meets cULus requirements without the need of an electrical ground connection.



Provide overload protection and disconnect as required.



Actuators may also be powered by 24 VDC.



Only connect common to negative (-) leg of control circuits.



A 500 Ω resistor (ZG-R01) converts the 4 to 20 mA control signal to 2 to 10 VDC.



Actuators may be connected in parallel if not mechanically linked. Power consumption and input impedance must be observed.