



The AF24-SR and AFR24-SR are 24 V AC modulating damper actuators intended for modulating dampers that perform a safety function (e.g. frost and smoke protection, hygiene, etc.), of up to approximately 3 m<sup>2</sup> (32 ft<sup>2</sup>) cross sectional area.

Either direction of rotation can be selected.

Control is effected by means of an electronic controller with a signal of 0–10 V DC and a continuous position feedback of 2–10 V DC.

The spring return operates as a safety function if the power supply fails or is interrupted. The spring pretensioning can be manually adjusted.

The actuator incorporates an electronic positioning relay. The measuring range Y (output signal of 2–10 V DC) allows electrical indication of damper position 0–100% and also the master-slave control of additional AF24-SR/AFR-24 actuators.

The AF24-SR can be manually operated, whereas the AFR24-SR has no facility for manual operation.

### TECHNICAL DATA

#### Part numbers

AF24-SR ..... 877-0000-010  
AFR24-SR ..... 875-1043-000

Power supply ..... 24 V AC  $\pm 20\%$ , 50–60 Hz

#### Power consumption:

Opening ..... 6 W  
Open ..... 2.5 W

For wire sizing ..... 10 VA

Connection cable ..... 1.0 m (3.3 ft), 5x0.75 mm<sup>2</sup> (AWG18)

#### Control signal:

X1 ..... 0–10 V DC

Input resistance ..... 100 k $\Omega$  (0.1 mA), 8 k $\Omega$  (50 mW)

#### Operating range:

X1 ..... 2–10 V DC

Measuring voltage Y ..... 2–10 V DC  
(max. 0.5 mA) for 0–100% angle of rotation

Angle of rotation ..... max. 95°  
(adjustable 26–95%  $\angle$  with additional limit stop ZDB-AF)

#### Torque:

Actuator ..... min. 15 Nm (11 ft-lbf) (at rated voltage)  
Spring return ..... min. 15 Nm (11 ft-lbf)

#### Running time:

Actuator ..... 150 s  
Spring return ..... approx. 16 s

#### Direction of rotation:

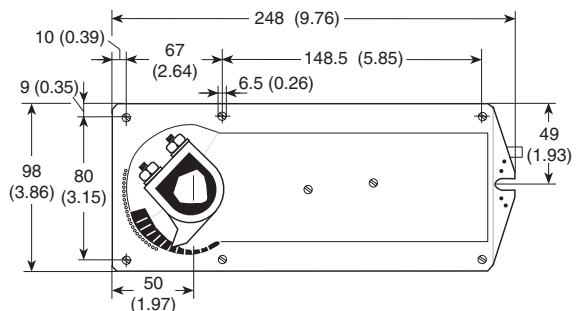
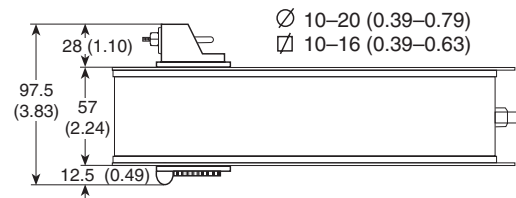
Actuator ..... selected with switch L/R  
Spring ..... selected by L/R mounting

Position indication ..... mechanical

#### Standard conformity:

EMC, emission ..... EN 50081-1  
EMC, immunity ..... EN 50082-1

mm (in.):



Protection class ..... III (safety extra-low voltage)

Enclosure rating ..... IP 54

Ambient humidity ..... EN 60335-1

#### Ambient temperature:

Operation ..... –30 to +50 °C (–22 to +122 °F)  
Storage ..... –40 to +80 °C (–40 to +176 °F)

#### Sound power level:

Actuator ..... max. 45 dB (A)  
Spring return ..... approx. 62 dB (A)

Service life ..... approx. 60 000 operations

Maintenance ..... maintenance-free

Weight ..... 2.7 kg (6.0 lb.)

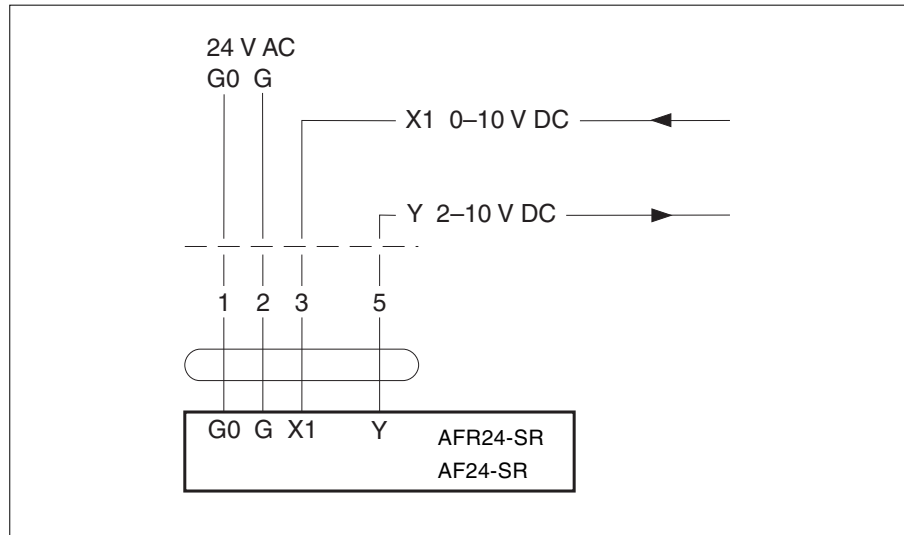
## WIRING DIAGRAM



Connect via safety isolating transformer.

Measuring voltage Y for position indication or as master-slave control signal.

Parallel connection of several actuators is possible. Power consumption must be observed.



## MODE OF OPERATION

The actuator is fitted with a universal spindle clamp for quick and easy mounting directly onto the damper spindle. The actuator is also supplied with an anti-rotation strap for fixing it in position. The direction of rotation can be selected with the L/R switch. The direction of rotation for the spring is selected by mounting left or right.

The AF24-SR model can be operated manually and locked in the required position. Release of the locking mechanism can be achieved manually or automatically by applying the supply voltage.

If manual operation is used while the power supply is still switched on, the actuator will check itself by running first to start position and then to the position dictated by the control signal X.

The actuator moves the damper to its normal working position while tensioning the return spring at the same time.

If the power supply is interrupted, the energy stored in the spring moves the damper back to its safe position  $\leq 0^\circ$ .

The actuator is supplied from factory with  $5^\circ$  of pretensioning. The pretensioning can be unlocked manually by means of a crank or electrically by connecting the power supply. The actuator will then be moved back to its safe position  $\leq 0^\circ$ .

The actuator is overload-proof and needs no limit switches. It stops automatically at the end stops.

## NOTE

When calculating the torque required to operate dampers, it is essential to take into account all the data supplied by the damper manufacturer concerning cross sectional area, design, mounting and air flow conditions.

## ACCESSORIES

Please refer to data sheet G-30-90 "Accessories Damper Actuators" (part no. 0-003-2251).

