

Direct Coupled, Non-Spring Return LON Actuators



GA-LON-024

DESCRIPTION

Electronic, motor-driven, reversible, noiseless, direct coupled actuators for direct link to LONWORKS® network.

APPLICATION

Actuators may be easily installed by direct shaft mounting on air dampers, shutters, and butterfly valves in ventilation and air conditioning systems. May be controlled by any compatible LON controller or automation system.

FEATURES

- LONWORKS® interfacing
- LONWORKS® functional profile 8110
- Multi-parameter programming
- Self adjustment to the damper stops
- Direct coupled, easy to install
- Ridged V-clamp connector for better shaft gripping
- Tested for 60,000+ full operations
- Manual override
- Overload protected
- Maintenance-free
- Five-year warranty



CE
ISO 9001

LONWORKS®
ECHELON®



UL
LISTED
"Pending"

SPECIFICATIONS

Communication & Control

LONWORKS®	LONMARK®, functional Profile 8110 for damper actuators
- processor	Neuron 3150
- transceiver	FTT-10A
- memory	32 kB flash EPROM
Firmware programs	
- angle of rotation between 0-91°	Selectable
- CCW/CW rotation	Selectable
- safety position at communication loss	Selectable
- metering	Run time
- detecting	Abnormal running
- reporting	Stalled damper
- service key and status LED	Conforming to LonMark® guide
Digital position signals	0 to 100% proportional
Electrical	
Power supply	24 VAC, ± 20%, 50/60 Hz
	24 VDC, -15%/+20%
Over voltage	Up to 40 V, max. 5 sec.

Power consumption

- standby	1.5 W
- idle	3.0 W
- load, max.	5.0 W
- transformer size	10.0 VA
- peak, inrush	8.3 A @ 5 msec. max.

Performance

Torque	Refer to table
Damper size	Refer to table
Angle of rotation	0-91°/91-0°
- limiting, direction and safety	Selectable
Rotation time	Refer to table
Power failure	Stays in last position of operation
Position indicator	0-90° and adj. visual indicator
Synchronization	± 1%
Overload protection	Electronic throughout rotation
Manual override	Built-in disengage button
Motor type	Brushless DC motor
Noise level	Max. 40 dB(A)

Environmental

Permissible ambient	
- working temperature	-22°F to 122°F (-30°C to 50°C)
- storage temperature	-40°F to 176°F (-40°C to 80°C)
- humidity	5-95% RH, non-condensing

Torque	180 in-lb (20 Nm)
Damper size, max.	45 sq.ft. (4 m ²)
Rotation time 0-90°	< 160 sec.
Ordering information	GA-L180-024

LONWORKS®, LONMARK® and ECHELON® are registered Trademarks of Echelon Corporation

Phone (858) 578-7887 & (888) GO INTEC Fax (858) 578-4633 & (888) FX INTEC
INTEC Controls, Inc., P.O. Box 12506, La Jolla, CA 92039 www.intecccontrols.com

Specification subject to change without notice.
Printed in USA 090928

SPECIFICATIONS

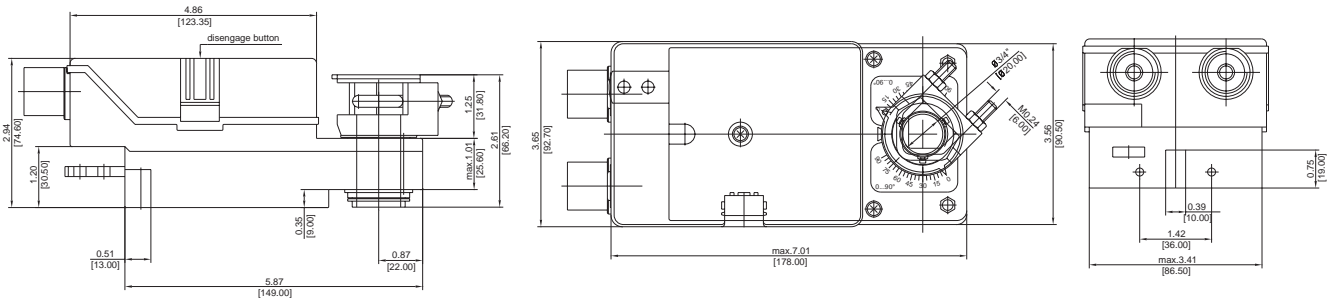
Physical

Enclosure	
- cover	ABS, UL 94-5V
- base	PA 6.6
- color	Gray and black
- protection	NEMA 2
Mounting position	Any position
Anti-rotation bracket	Included w/actuator
- round shaft	Ø 3/8" to 3/4" (9 to 20 mm)
- square shaft	□ 3/8" to 5/8" (9 to 16 mm)
Wire connection	Terminal block, screw type for lead wire

Wire size	Min. 24 AWG (0.25 mm ²) Max. 14 AWG (2.5 mm ²)
Conduit connector	1/2", built-in
Dimensions	7.01 x 3.65 x 2.95 in. (178 x 92.7 x 75 mm)
Weight	3.3 lbs. (1.5 kg)
Manufacturing	ISO 9001 certified
Listings/Approvals	CE UL and CSA pending
Warranty	Five-year material and workmanship (Two-year standard, three-year conditional)

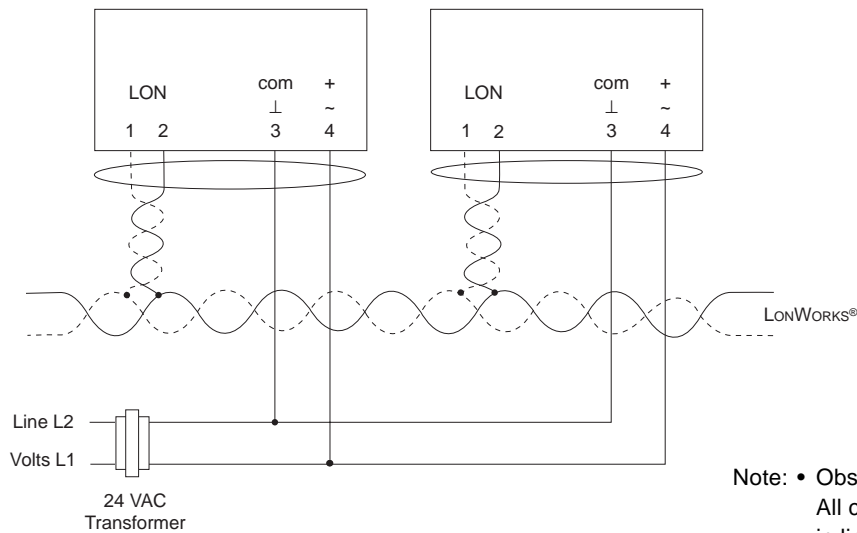
DIMENSIONS

inches (mm)



Note: Anti-rotation mounting bracket supplied w/actuator

WIRING CONFIGURATION



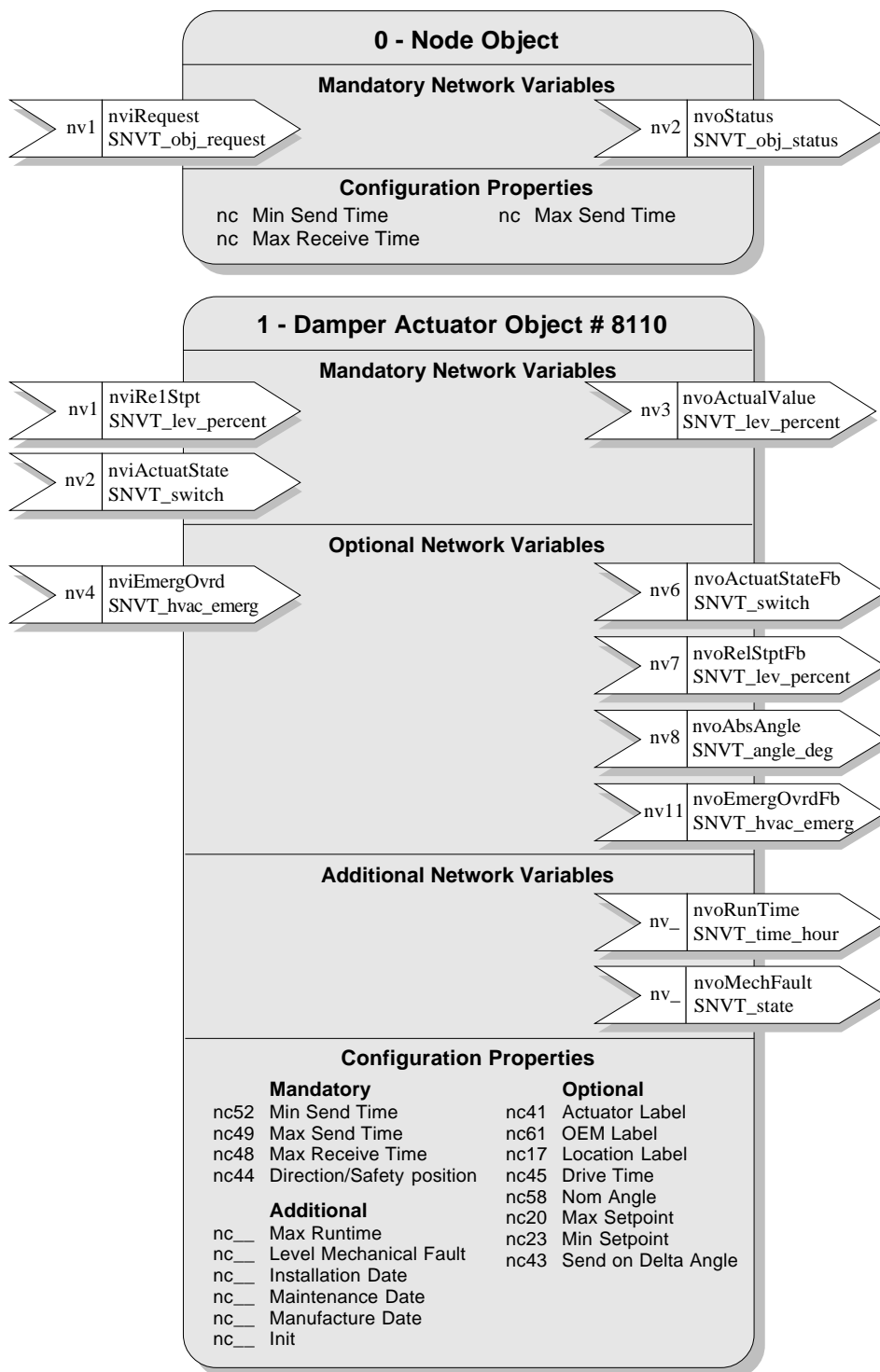
Note:

- Observe polarity on secondary of transformers. All common and signal (-) must be connected in line. Incorrect polarity can cause controller damage or operation error.

- Provide overload protection for line voltage and disconnect as required.

Functional Profile

The GA-LON actuators are for direct link to LONWORKS® network. The actuator functions are made available to the LONWORKS® network as standard network variables according to LONMARK®. Node object (0) and damper actuator object # 8110 (1) are implemented in all actuators.



0 - Node Object

The node object contains the functions object status and object request.

1 - Damper Actuator Object # 8110

The actuator object shows the functions of the LON actuators from the point of view of the LonWorks® network.

Network Variables

The actuator is factory set for a 0-90° angle of rotation. The input variable and the feedback of actual angle of rotation position is measured in 0 to 100%.

Assembly to damper without final stops:

If the angle of damper rotation is less than 90°, the two SCPTs* (nciMinSetpoint and nciMaxSetpoint) will set up the angle of rotation limiting.

Assembly to damper with end stops:

If the angle of damper rotation is less than 90°, the SCPT*(nciInit) must implement a full position run to both sides of final damper stops. Afterwards, the input variable and the feedback of actual angle of rotation position will be measured in 0-100%.

Network communication loss:

In case of communication loss, the actuator will automatically move into the customer defined safety angle of rotation position.

Note:

After using the manual override a new full 0 to 100% position run is required.

***SCPT =**

Standard Configuration Property Type

SNVT =

Standard Network Variable Type

nviRelStpt	input variable in percent (example; for a controller)
nviActuatState	software-override function with predefined damper positions
nvoActualValue	reflects the current position in percent (example; control loop)
nviEmergOvrd	input variable with the highest priority for incidents like fire and smoke (no replacement for fire dampers)
nvoRelStptFb	mirrors the actual value of the input variable nviRelStpt
nvoActuatStateFb	mirrors the actual value of the input variable nviActuatState
nvoEmergOvrdFb	mirrors the actual value of the input variable nviEmergOvrd
nvoAbsAngle	reflects the current position of the actuator shaft in degrees
nciMinSendTime	minimum period between output network variable transition
nciMaxSendTime	maximum period of time that expires before the actuator object automatically updates all its output variables
nciRcvTime	maximum receive time for the network input variables before changing to default values
nciDirection	bit 0: is used to set sense of rotation bit 1: is used to set safety position
nciSendOnDltAnagl	minimum delta on the damper angle to send a new value on nvoAbsAngle
nciActuatType	exact actuator type
nciOemType	OEM description of the actuator
nciLocation	describes the location of the actuator
nciDriveTime	running time on nominal rotating angle
nciNomAngle	nominal rotating angle
nciMaxSetpoint	maximum rotating angle
nciMinSetpoint	minimum rotating angle
nvoRunTime	hours in service
nvoMechFault	bit 0: actuator is blocked bit 1: actuator is hard-running
nciMaxRunTime	life expectancy
nciLevMechFault	deviation of the desired rotational speed until bit 1 of nvoMechFault will be activated
nciInstallDate	date of installation
nciMaintDate	date of maintenance
nciManufDate	date of production
nciInit	Call-in of the adjustment to the damper. After this position run both variables nviRelStpt and nvoActualValue refer within 0...100% to this new angle sector