

Cloud capable and communicating Non Fail-Safe damper actuator for controlling dampers in typical commercial HVAC applications.

- Torque motor 5 Nm
- Nominal voltage AC/DC 24 V
- Control modulating, communicative, Hybrid, Cloud
- Conversion of sensor signals
- Ethernet 10/100 Mbit/s, TCP/IP, integrated web server
- Communication via BACnet IP, Modbus TCP and Cloud



5-year warranty


**Technical data**

<b>Electrical data</b>	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2...28.8 V / DC 21.6...26.4 V
	Power consumption in operation	3 W
	Power consumption in rest position	3 W
	Transformer sizing	4.5 VA
	Electrical Connection	18 GA appliance cable, 1/2" conduit connector and RJ45 socket (ethernet)
	Overload Protection	electronic throughout 0...95° rotation
<b>Data bus communication</b>	Communicative control	Cloud BACnet IP Modbus TCP
	Number of nodes	BACnet / Modbus see interface description
<b>Functional data</b>	Torque motor	5 Nm
	Operating range Y	2...10 V
	Operating range Y note	Hybrid via 2...10 V
	Operating range Y variable	0.5...10 V
	Position accuracy	±5%
	Direction of motion motor	selectable with switch 0/1
	Manual override	external push button
	Angle of rotation	95°
	Angle of rotation note	adjustable with mechanical stop
	Running Time (Motor)	150 s / 95°
	Running time motor variable	70...220 s
	Adaptation Setting Range	manual
	Noise level, motor	35 dB(A)
	Mechanical interface	Universal shaft clamp 6...20 mm
Position indication	Mechanical, 30...65 mm stroke	
<b>Safety data</b>	Protection class IEC/EN	III, Safety Extra-Low Voltage (SELV)
	Power source UL	Class 2 Supply
	Degree of protection IEC/EN	IP54
	Degree of protection NEMA/UL	NEMA 1
	Enclosure	UL Enclosure Type 1
	EMC	CE according to 2014/30/EU

<b>Safety data</b>	Agency Listing	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02 CE acc. to 2014/30/EU and 2014/35/EU
	Quality Standard	ISO 9001
	UL 2043 Compliant	Suitable for use in air plenums per Section 300.22(C) of the NEC and Section 602 of the IMC
	Type of action	Type 1
	Ambient humidity	Max. 95% RH, non-condensing
	Ambient temperature	-22...122°F [-30...50°C]
	Storage temperature	-40...176°F [-40...80°C]
	Servicing	maintenance-free
<b>Weight</b>	Weight	1.5 lb [0.68 kg]
<b>Materials</b>	Housing material	UL94-5VA

**Product features**

**Converter for sensors** Connection option for two sensors (passive sensor, active sensor or switching contact). The actuator serves as an analog/digital converter for the transmission of the sensor signal to the higher level system.

**Communication** The configuration can be carried out through the integrated web server (RJ45 connection to the web browser), by communicative means or via the Cloud.  
Additional information regarding the integrated web server can be found in the separate documentation.

**Control signal inversion** This can be inverted in cases of control with an analogue control signal. The inversion causes the reversal of the standard behavior, i.e. for control signal 0%, the actuator is opened to max and for control signal 100%, the actuator is closed.

**Simple direct mounting** Simple direct mounting on the damper shaft with a universal shaft clamp, supplied with an anti-rotation device to prevent the actuator from revolving.

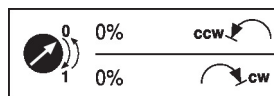
**Data recording** The recorded data (integrated data recording for 13 months) can be used for analytical purposes.  
Download csv files via web browser.

**Manual override** Manual override with push-button possible (the gear train is disengaged for as long as the button is pressed or remains locked).

**Adjustable angle of rotation** Adjustable angle of rotation with mechanical end stops.

**High functional reliability** The actuator is overload protected, requires no limit switches and automatically stops when the end stop is reached.

**Home position** The first time the supply voltage is switched on, i.e. at the time of commissioning, the actuator carries out an adaptation, which is when the operating range and position feedback adjust themselves to the mechanical setting range.  
The actuator then moves into the position defined by the control signal.



**Adaptation and synchronisation** An adaption can be triggered manually by pressing the “Adaption” button. Both mechanical end stops are detected during adaption for setting the mechanical working range. The actuators operating range and runtime are scaled to this working range.

**Accessories**

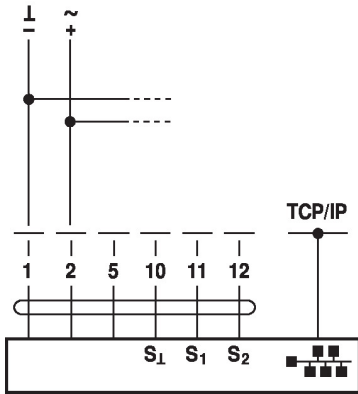
Electrical accessories	Description	Type
	Positioner for front-panel mounting	SGF24
	Positioner for wall mounting	SGA24
	Resistor, 500 Ω, 1/4" wire resistor with 6" pigtail wires	ZG-R01
	Cable Gland (NEMA 4 models)	43442-00001
	Cable conduit connector 1/2"	TF-CC US
	Transformer, AC 120 V to AC 24 V, 40 VA	ZG-X40
	Battery, 12 V, 1.2 Ah (two required)	NSV-BAT
	Battery backup system, for non-spring return models	NSV24 US
	Feedback potentiometer 15 kΩ gray	P15000A-F GR
	Feedback potentiometer 10 kΩ add-on, grey	P10000A GR
	Feedback potentiometer 5 kΩ add-on, grey	P5000A GR
	Feedback potentiometer 2.8 kΩ add-on, grey	P2800A GR
	Feedback potentiometer 1 kΩ add-on, grey	P1000A GR
	Feedback potentiometer 500 Ω add-on, grey	P500A GR
	Feedback potentiometer 140 Ω add-on, grey	P140A GR
	Auxiliary switch, mercury-free	P475-1
	Auxiliary switch, mercury-free	P475
	Auxiliary switch 2 x SPDT add-on	S2A
	Auxiliary switch 1 x SPDT add-on	S1A
Mechanical accessories	Description	Type
	Damper crank arm Slot width 6.2 mm, clamping range ø10...18 mm	KH6
	Damper crank arm Slot width 8.2 mm, clamping range ø10...18 mm	KH8
	Damper crank arm Slot width 8.2 mm, clamping range ø14...25 mm	KH10
	Damper crank arm Slot width 8.2 mm, for ø1.05"	KH12
	Ball joint suitable for damper crank arm KH8, Multipack 10 pcs.	KG6
	Ball joint suitable for damper crank arm KH8, Multipack 10 pcs.	KG8
	Ball joint suitable for damper crank arm KH8 / KH10, Multipack 10 pcs.	KG10A
	Push rod for KG6 & KG8 ball joints (36" L, 5/16" diameter).	SH8
	Push rod for KG10A ball joint 36" L, 3/8" diameter	SH10
	Damper clip for damper blade, 3.5" width.	ZG-DC1
	Damper clip for damper blade, 6" width.	ZG-DC2
	Weather shield 13x8x6" [330x203x152 mm] (LxWxH)	ZS-100
	Base plate, for ZS-100	ZS-101
	Weather shield 406x213x102 mm [16x8-3/8x4"] (LxWxH)	ZS-150
	Shaft extension 240 mm ø20 mm for damper shaft ø8...22.7 mm	AV8-25
	Anti-rotation bracket TF/NKQ/AM/NM/LM.	TF-P
	Mounting bracket for AF..	ZG-100
	Mounting bracket	ZG-101
	Wrench 0.32 in and 0.39 in [8 mm and 10 mm]	TOOL-06
	Adapter for auxiliary switch and feedback potentiometer	Z-SPA
	LMB(X) clamp (3/8")	K-LM10
	LMB(X) clamp (1/2").	K-LM12
	Standard LMB(X) clamp (5/8").	K-LM16
	LMB(X) clamp (3/4").	K-LM20
	Shaft extension for 1/2" diameter shafts (3" L).	ZG-LMSA
	Shaft extension for 3/8" diameter shafts (4" L).	ZG-LMSA-1
	Shaft extension for 1/2" diameter shafts (5" L).	ZG-LMSA-1/2-5
	Shaft extension 170 mm ø10 mm for damper shaft ø6...16 mm	AV6-20
	Mounting plate for SGF.	ZG-SGF
Tools	Description	Type
	Signal simulator, Power supply AC 120 V	PS-100

**Electrical installation**

**Supply from isolating transformer.**
**Parallel connection of other actuators possible. Observe the performance data.**

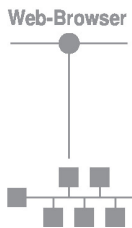
**Wiring diagrams**

AC/DC 24 V



**Cable colors:**

- 1 = black
- 2 = red
- 5 = orange
- 10 = yellow-black
- 11 = yellow-pink
- 12 = yellow-grey



Connection of a notebook for parametrisation and manual control via RJ45.

Optional connection via RJ45 (direct connection Notebook / connection via Intranet or Internet) for access to the integrated web server

**Functions**



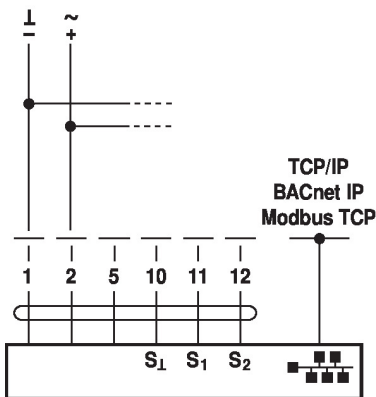
The connection diagrams shows connections for the first sensor on terminal S1, while the second sensor can be connected identically on terminal S2.

Parallel use of different sensor types is permitted.

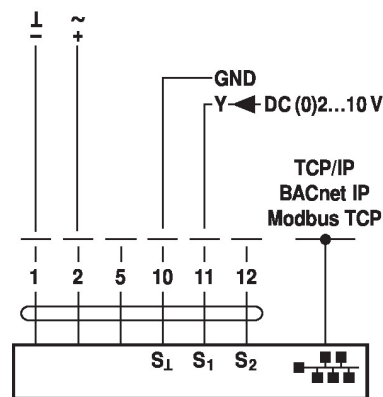
For hybrid operation, S1 is used for the control signal Y and must be configured as an active sensor.

**Functions with specific parameters (parametrization necessary)**

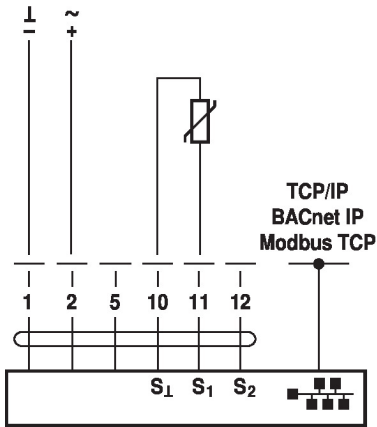
TCP/IP (Cloud) / BACnet IP / Modbus TCP



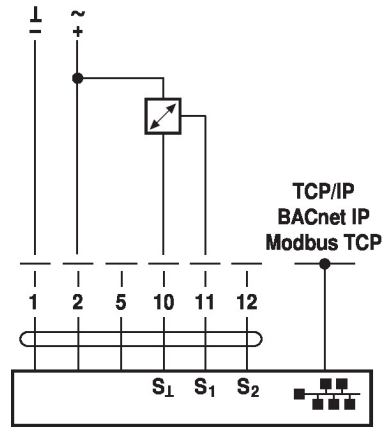
TCP/IP (Cloud) / BACnet IP / Modbus TCP with analogue setpoint (hybrid operation)



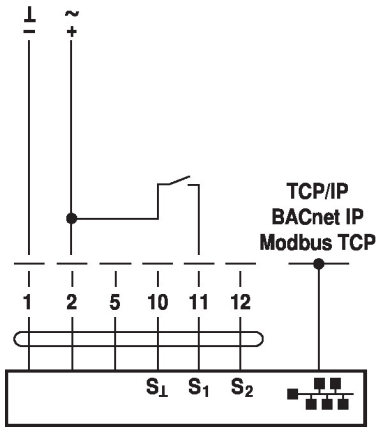
Connection of passive sensors



Connection of active sensors



Switching contact connection



**Dimensions**

- ∅ 1/4" to 3/4" [6 to 20]
- 5/16" to 3/4" [8 to 26]

