

8-16

ON/OFF Digital damper actuator GDA-20AD / 40AD



Summary

- Direct-coupling for connection
- Operating with ON/OFF contact signal
- Digital damper actuator to open or close the air-circulation damper
- Applicable to HVAC
- GDA-20AD / 40AD (A) : 3-Position
- GDA-20AD / 40AD (B) : 2-Position



Use

- GDA - 20AD : Nominal stroke - 20Nm / 4.6m² damper size available to the Max.
- GDA - 40AD : Nominal stroke - 40Nm / 8m² damper size available to the Max.
- For air-circulation and HVAC to operate damper
- To open and close(ON/OFF) damper
- For outside air-damper, Ventilation, circulation damper



Function

- Direction change available with DIP S/W for CW or CCW
- LCD display for the open position of damper by "%"
- (Reversed mounting position to be modified by DIP S/W)
- "0°" or "90°" movement in normal power supply
- Stop at the current position when power-off



Technical data

	GDA-20AD(A)	GDA-20AD(B)	GDA-40AD(A)	GDA-40AD(B)
Display of opening position	Digital LCD display- Open(100%) / Close(0%)			
power supply	24VAC ±10% 50/60HZ			
Consumption power	Operation / 5VA(4.5W), 2.9W usually		Operation / 5.5VA(5W), 2.9W usually	
Operation type	3-Position	2-Position	3-Position	2-Position
Norminal force	20Nm		40Nm	
Angle of rotation	90° / Max. 95° ±2°			
Turning direction	CW / CCW switching available			
Operation time for 90°	135sec(60Hz), 150sec(50Hz)			
Ambient Temp				
Ambient humidity	5 ~ 95%RH			
	35dB			
	IP54 (EN60529)			
	1.4kg	1.5kg	1.4kg	1.5kg

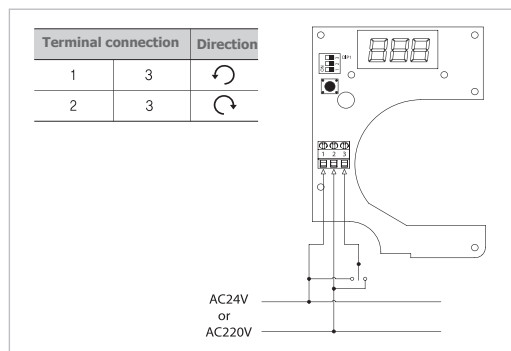


Mounting Notes

- Bracket must be used to mount actuator directly onto damper with bracket pin right on the angle of actuator
- Mounting location must be proper to dial-setting on the front side of actuator and to cable connection
- Manual operation : For the accurate switching location of on/off damper operation, press the button of manual operation and adjust the shaft adapter and position indicator(Do not supply the electric power when manual operation)



Wiring Diagram



(A) 3 – Position

Terminal No. 1 and 2 is always-on-power

→ Unavailable with Terminal No. 2 and 3

When using Terminal No. 1 and 3

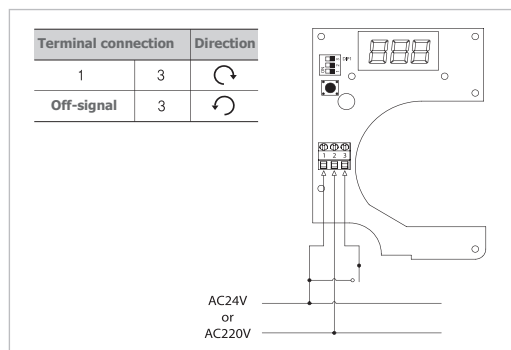
→ actuator rotates CCW("0", ↺)

When using Terminal No. 2 and 3

→ actuator rotates CW("1", ↻)

When no-using Terminal No. 1 or 2 with No. 3

→ actuator stops at current position



(B) 2 – Position

Terminal No. 1 and 2 is always-on-power

→ Unavailable with Terminal No. 2 and 3

When using Terminal No. 1 and 3

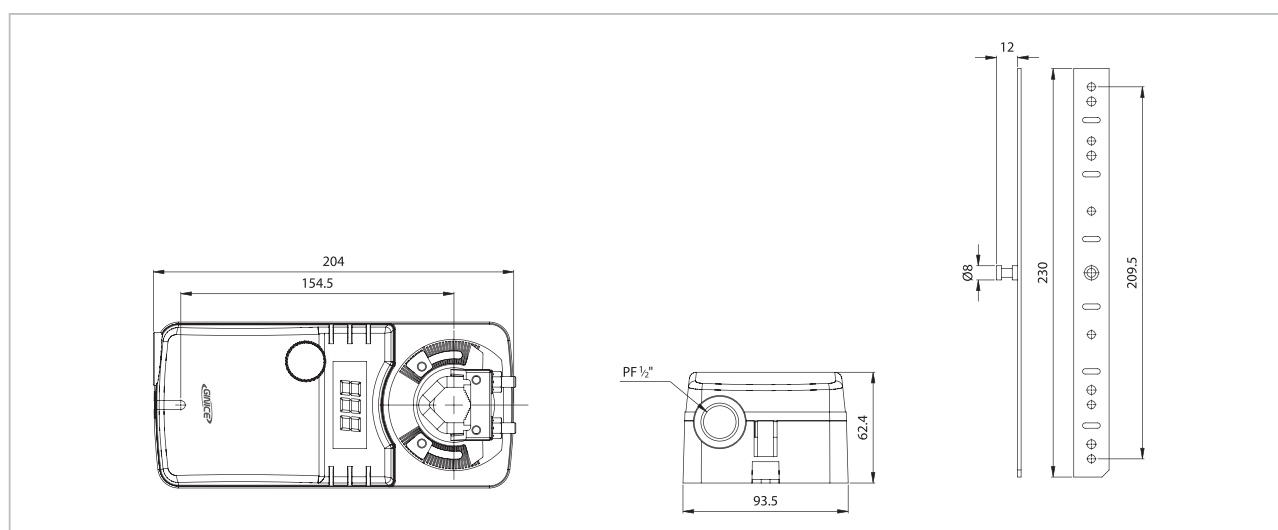
→ actuator rotates CW("1", ↻)

With Terminal No. 1 off from 3




→ actuator rotates CCW("0", ↺)



Dimensions



Digital Damper Actuator and Quarter turn Damper Actuators

MODEL		POWER (V)	TORQUE (Nm)	OPERATING TIME (sec)	INPUT SIGNAL	ENCLOSURE (IP)
	GDA-20PD	24Vac	20	135	0~10Vdc 4~20mA	IP54
	GDA-40PD	24Vac	40	135	0~10Vdc 4~20mA	IP54
	GDA-20AD	24Vac	20	135	3-Position 2-Position	IP54
	GDA-40AD	24Vac	40	135	3-Position 2-Position	IP54
	GQ-006	110/220Vac	60	15	Proportional On/Off	IP67
	GQ-008	110/220Vac	80	15	Proportional On/Off	IP67
	GQ-010	110/220Vac	100	18	Proportional On/Off	IP67
	GQ-016	110/220Vac	160	21	Proportional On/Off	IP67
	GQ-024	110/220Vac	240	21	Proportional On/Off	IP67
	GQ-035	110/220Vac	350	26	Proportional On/Off	IP67
	GQ-050	110/220Vac	500	26	Proportional On/Off	IP67
	GQ-080	110/220Vac	800	32	Proportional On/Off	IP67
	GQ-110	110/220Vac	1,100	32	Proportional On/Off	IP67
	GQ-200	110/220Vac	2,000	50	Proportional On/Off	IP67
	GQ-300	110/220Vac	3,000	50	Proportional On/Off	IP67

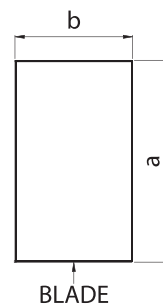
The Methods of Calculation to Damper Torque

1) CIRCLE DAMPER

$$T(\text{kg.m}) = \frac{d^3 \times P}{12 \times n \times 10^9} \times 1.8$$

2) RECTANGULAR DAMPER

$$T(\text{kg.m}) = \frac{a^2 \times b \times P}{8 \times n \times 10^9} \times 1.8$$



T - Torque(kgf.m)
 a - Width (mm)
 b - Length (mm)
 d - Damper diameter(mm)
 P - Pressure(mmAq) : standard 500mmAq)
 n - Number of blades
 12 - Coefficient
 8 - Coefficient
 1.8 - Safety Factor (W/Bearing)
 2.5 - Safety Factor (W/O Bearing)