

Work with

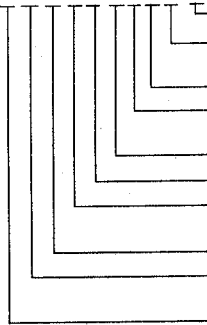
- * ATI
- * Barber coleman
- * Honeywell
- * Johnson
- * Landis & Gyr
- * Satchwell
- * Sauter
- * Staefa
- * T/A
- * TEG
- * Others

Electric Rotary Actuators

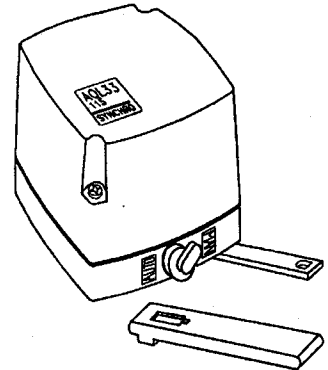
Synchronous motor drives, Modulating with Magnetic coupling safety system

AQL63.1.

AQL63.1212 0



- Aux. output 1=spt 2=140Ω 3=1000Ω 9=Converter
- Output Torque(Nm); 1=15 2=20 3=25 4=30 5=40 6=50 7=60
- 8=80 9=Options
- Running time; 1=125s 2=60s 3=30s 4=15s 5=10s 6=5s 9=Options
- Supply voltage
- 1=110Vac, 2=24Vac, 3=220Vac, 4=380Vac, 7=12Vdc, 8=24Vdc
- 1=Rotary 2=Linear 9=Options
- Version No.
- Input signal: 2=On/Off, 3=3-pos. 220Vac, 5=4..20mA 6=0..10Vdc
- 7=0..20Vdc, 8=3-pos. 24Vac, 9=0..135Ω
- L=Multi-purpose
- Type of drive motor
- I= Induction, Q= Synchronous, S= Servo, U= DC, Z= Stepper
- Product group: A= Actuator



Description

Electrical actuator, 0...10Vdc control, rotating angle is adjustable from 70 ~180° and magnetic coupling with switching limitation system without spring return.

Application

In heating, ventilating, air conditioning and other industrial installations for control of air dampers, Slippervalves, Butterfly valves, ball valves and other ventilating openings to be controlled by electrical remote control. Signals from other controllers are also acceptable.

Ordering Specification

When ordering, please give full designation and type reference of unit;

Ex: AQL63.12120 Electrical Rotary Actuator
Proportional, 0...10Vdc
Rotary type, 120s, 24Vac, 20Nm
for aux unit

STANDARD STOCK TYPE

AQL63.12120 AQL63.12150 AQL63.12130

Technical Data

Supply voltage	24V ac -15%, +20%
Frequency	50Hz, 60Hz
Power source	Synchronous motor
Power consumption	3VA...
Running time	125s at 60Hz. 150s at 50Hz
Model of control	Proportional(std)
Travel /angular rotation	90 (std)
Noise level	35[dB] max.
Nominal Torque	15Nm.constant
Control signal(Y)	
Voltage	0...10Vdc
Current	0.1mA max.
Control signal(R)	
Resistance	0...1000Ω (0...100%)
Control output(U)	
Voltage	0...10Vdc(std)
Current	0.5mA max.
Weight	1.Kg
Permissible amb.temp.	
Operation	-15...+50°C
Transport & storage	-30...+65°C
Permissible amb.humid.	class D to DIN 40040
Protection standard of housing	IP54 to DIN 40050
Max. medium temp.	+150 °C
Cable entry glands	PG11

Accessories;

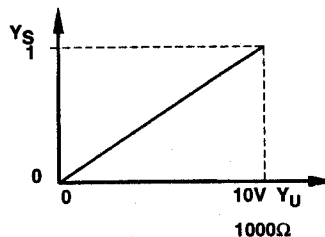
position indication unit	
-potentiometer	-0...140
-potentiometer	-0...1000
position alarm switch	
-snap action switch	10(3)A 24...250Vac

Estimated life time

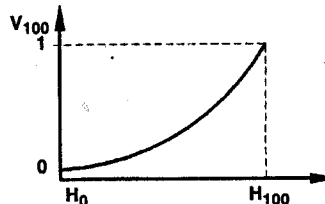
-Drive motor	40,000,000 cycles
-Gear train	80,000,000 cycles

Function

The actuator is controlled by a standard signal of 0...10Vdc received from conventional electronic controller or DDC unit. It provides electronic position control which, in conjunction with ATI or any compatible venturi type air dampers or air valves, gives an equal percentage valve characteristic.



Correlation between control signal and correcting variable



Correlation between travel and volumetric flow

- Ys = Correcting variable
- Yu = control signal 0...10Vdc
- Yr = correcting signal 0...10Vdc
- V100 = volumetric flow
- H.. = Output travel

Auxiliary units

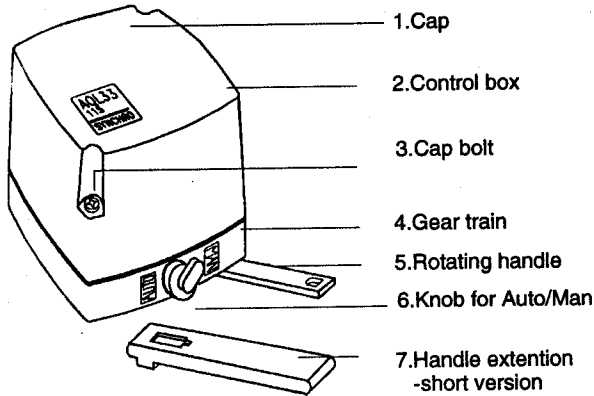
Control output U with a 0...10Vdc control signal allows control of the following units:

- Indication units
- On / Off switching units

Design Features

Actuator are supplied as separate units. Assembling them requires neither special tools nor adjustments.

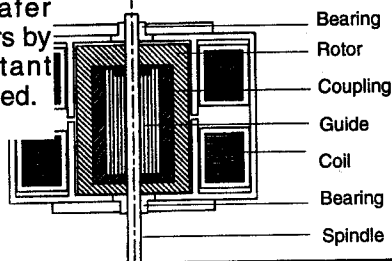
- Maintenance free electrical actuator with reversible synchronous motor
- A switch on PCB can reverse the rotation of the actuator.
- Blocking proof gear train with self-lubrication sintered bearings
- Quick mounting bracket make easy installation.
- Constant speed and constant power-torque.
- Contactless coupling insures long life and quite operation.
- Gear train is made of aluminum die-cast and specially coated for corrosion proof.
- Important gears are made of sintered metal or special tool steel and heat treatment.



Special features

Utilizing hysteresis coupling technology gives more safer operation of actuators by providing constant output force and speed.

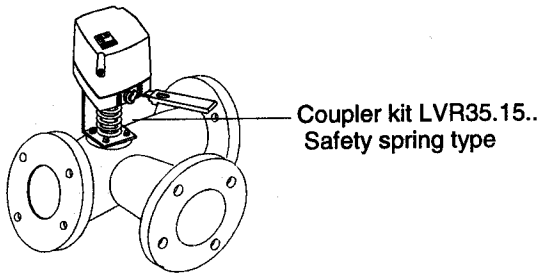
Structure of Synchronous motor integrated magnetic coupling



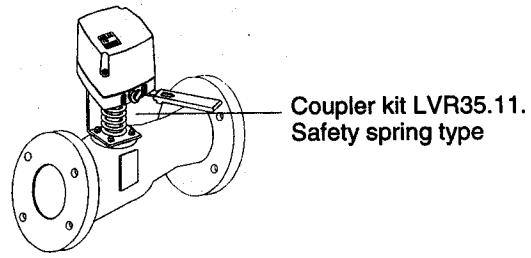
Summary of types

Type Nr.	Output Torque	Running time		Space for Aux. units			
		50Hz	60Hz	0	1	2	3
AQL63.12120	20Nm	150s	125s	0	SW	140Ω	1000Ω
AQL63.12130	25Nm	150s	125s	0	SW	140Ω	1000Ω
AQL63.12140	30Nm	150s	125s	0	SW	140Ω	1000Ω
AQL63.12150	40Nm	150s	125s	0	SW	140Ω	1000Ω
AQL63.12160	50Nm	150s	125s	0	SW	140Ω	1000Ω
AQL63.12170	60Nm	150s	125s	0	SW	140Ω	1000Ω
AQL63.12180	80Nm	150s	125s	0	SW	140Ω	1000Ω
AQL63.12190	Option						
AQL63.12220	20Nm	75s	62s	0	SW	140Ω	1000Ω
AQL63.12230	25Nm	75s	62s	0	SW	140Ω	1000Ω
AQL63.12240	30Nm	75s	62s	0	SW	140Ω	1000Ω
AQL63.12250	40Nm	75s	62s	0	SW	140Ω	1000Ω
AQL63.12260	50Nm	75s	62s	0	SW	140Ω	1000Ω
AQL63.12270	60Nm	75s	62s	0	SW	140Ω	1000Ω
AQL63.12280	80Nm	75s	62s	0	SW	140Ω	1000Ω
AQL63.12290	Option						
AQL63.12320	20Nm	37s	30s	0	SW	140Ω	1000Ω
AQL63.12330	25Nm	37s	30s	0	SW	140Ω	1000Ω
AQL63.12340	30Nm	37s	30s	0	SW	140Ω	1000Ω
AQL63.12350	40Nm	37s	30s	0	SW	140Ω	1000Ω
AQL63.12360	50Nm	37s	30s	0	SW	140Ω	1000Ω
AQL63.12370	60Nm	37s	30s	0	SW	140Ω	1000Ω
AQL63.12380	80Nm	37s	30s	0	SW	140Ω	1000Ω
AQL63.12390	Option						
AQL63.12420	20Nm	18s	15s	0	SW	140Ω	1000Ω
AQL63.12430	25Nm	18s	15s	0	SW	140Ω	1000Ω
AQL63.12440	30Nm	18s	15s	0	SW	140Ω	1000Ω
AQL63.12450	40Nm	18s	15s	0	SW	140Ω	1000Ω

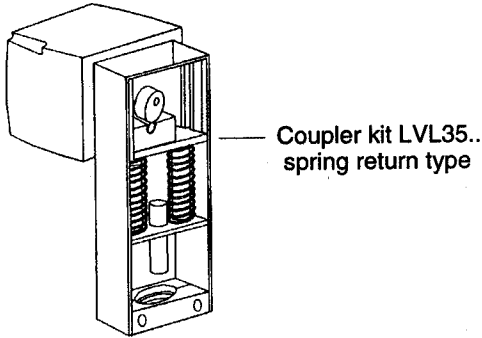
c. Slipper valve control



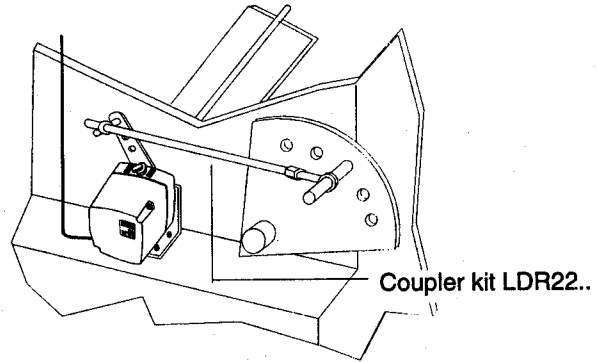
d. Ball valve control



e. Raise/lower valve control



f. Swing arm lever control



Accessories

Type Nr.	Linking to	Applications/ usage	Notes	Reference data
LVR21.1150 LVR22.1180 LVR22.1190 LVR22.1191 LVR22.1192	VKF41.150 VKF41.180 VKF41.190 VKF41.191 VKF41.192	Butterfly valve up to 50mm Butterfly valve up to 80mm Butterfly valve up to 100mm Butterfly valve up to 125mm Butterfly valve up to 150mm	Without safety spring Without safety spring Without safety spring Without safety spring Without safety spring	
LVR35.1000	VKF....	Butterfly valves up to 200mm	With safety spring	
LVR23.1150 LVR23.1180 LVR23.1190 LVR23.1193	BVF41.150 BVF41.180 BVF41.190 BVF41.193	Ball valve, flange type up to 50mm Ball valve, flange type up to 80mm Ball valve, flange type up to 100mm Ball valve, flange type up to 150mm	Without safety spring Without safety spring Without safety spring Without safety spring	
LVR35.1000		Ball valve, flanged type up to 150mm	With safety spring	
LVR23.1325 LVR23.1332 LVR23.1340 LVR23.1350	BVG41.125 BVG41.132 BVG41.140 BVG41.150	Ball valve ,screw type , 25mm Ball valve ,screw type , 32mm Ball valve ,screw type , 40mm Ball valve ,screw type , 50mm	Without safety spring Without safety spring Without safety spring Without safety spring	
LVR23.1525 LVR23.1532 LVR23.1540	VSF31.125 VSF31.132 VSF31.140	25mm slipper valve,3-way 32mm slipper valve,3-way 40mm slipper vave,3-way	Without safety spring Without safety spring Without safety spring	
LVL22.1310 LVL22.1315 LVL22.1320 LVL22.1325 LVL23.1330 LVL23.1340 LVL23.1350	Raise/Lower seat valves	Control valve ,stroke , 10mm Control valve ,stroke , 15mm Control valve ,stroke , 20mm Control valve ,stroke , 25mm Control valve ,stroke , 30mm Control valve ,stroke , 40mm Control valve ,stroke , 50mm	VTF..VDF..VTG..VDG.	
LDR22.1114 LDR22.1116 LDR22.1118 LDR22.1120 LDR22.1122 LDR22.1125	Air damper	Shaft dia.14mm Shaft dia.16mm Shaft dia.18mm Shaft dia.20mm Shaft dia.22mm Shaft dia.25mm	Without safety spring Without safety spring Without safety spring Without safety spring Without safety spring Without safety spring	

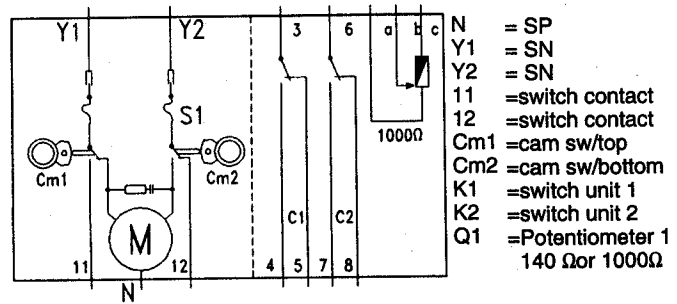
Application Advice

For further information on the complete regulating unit consist of actuator and equipment to be operated also refer to the Data Sheet of the various type of valves, 43000... 44999.

Observe the permissible temperatures. For details refer to <Application > and <Technical Data>

Data Sheet 34001 contains basic system data on **POLYTEK**. All hints and explanations given in this sheet must be observed.

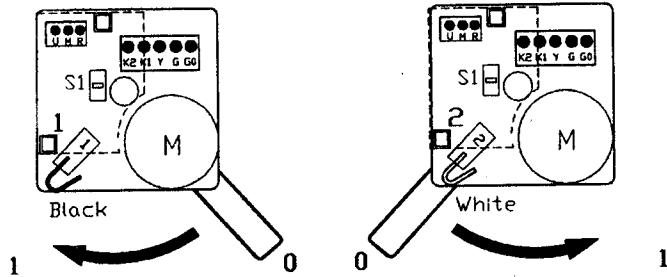
Wiring Diagram Internal Diagram



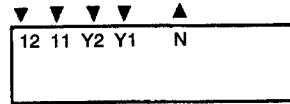
Commissioning Advice

When commissioning the installation, check the wiring and make a functional test.

Motor rotation can also be changed by changing the terminals as shown below.



Connecting terminals



Wiring diagram

The wiring diagram shows all possible connections. How many and which of these are used depends on the system involved.

Mounting and Installation Advice

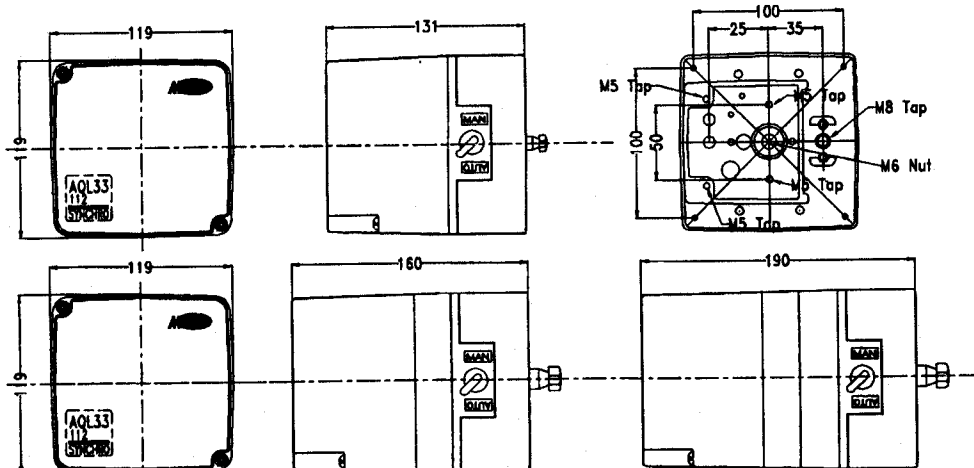
Mounting positions:

The actuator's mounting instructions are supplied in the box of the unit.

F1=frost protection unit
K1=on/off switch
N1=controller/ or DDC

P1=indication unit
R1=remote setting unit
Y1=actuator

Dimensions



Dimensions in mm

We reserve the right to make changes and improvements in our products which may affect the accuracy of the information contained in this leaflet.