

# ATQ SERIES

Three Phase Quarter Turn

Continuous position indicator

Product specification

Captive cover bolts to prevent loosening during installation

Direct mounting

Engage manual drive by pulling the lever & turn the handwheel.

Removable drive bush for valve adoption

Correct size of handwheel to ensure adequate strength



MODEL	: ATQ 20	<b>Cair</b>
SR. No.	:	
TYPE	: On-Off / Modulating	
POWER	: 0.06 kW	
VOLTAGE	: 415V AC	
OPEN / CLOSE TIME	: _____ SEC.	
Manufactured by:		
<b>Cair Euromatic Automation (INDIA)</b>		
www.cairindia.in		
"Actuate with Accuracy"		

actuate with accuracy | **KEY FEATURES**



**SUPPLY VOLTAGE**

415 V AC – (+ 10%), 50 / 60 Hz  
380 V AC, 460V AC (Available on request)

**ENCLOSURE – IP 67/68**

Weatherproof – IS / IEC 60529  
Flameproof or Ex-Proof – IS / IEC 60079 | Zone II, Gas Group IIB T4

**TORQUE RANGE**

50 Nm to 12000 Nm

**MANUAL OVERRIDE**

Advanced design with Auto Declutch Mechanism to prevent user from injury.

**INTEGRAL STARTER UNIT**

Selector Switches	Open / Stop / Close Auto / Manual or Remote / Local
Indicator Lamps	Open / Close / Error

**VARIOUS OPTIONS**

ON/OFF Type.  
Modulating Control (Signal Input - 4 ~ 20mA / 1 ~ 5V DC / 2 ~ 10V DC).  
Potentiometer Feedback (4 ~ 20mA).  
Auxiliary Limit Switches (2 Units).  
2 Wire for ON/OFF Operation.

# Three Phase

## Quarter Turn Electrical Actuators



### Design Approvals



### Widely Used in Fields Such as

- ~ Water Treatment
- ~ Municipal Water Supply Board
- ~ Petroleum
- ~ Chemical Industry
- ~ Power Plant
- ~ Metallurgy
- ~ Pharmacy
- ~ Paper Industry
- ~ Energy
- ~ Textile
- ~ Food Processing
- ~ Automation etc...

### Motorized Valves

- ~ Ball Valves
- ~ Butterfly Valves / Damper Valves
- ~ Fire Safe Ball Valves
- ~ Jacketed Ball Valves
- ~ Wafer Ball Valves
- ~ UPVC / PP Ball Valves



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## MANUFACTURING STANDARDS

- **Actuator Manufacturing Standard**  
IEC / EN 15714 – 2 (Electrical Actuator for Industrial Valves)
- **Actuator Enclosure Standard – IP 67 / 68**  
IS / IEC 60529 – 2009 (Degree of Protection provided by Enclosure)
- **Actuator Motor Standard**  
IEC- 60034 – 1 (Rotating Electrical Machines)  
IS-325 (Three Phase Induction Motor)
- **Actuator Mounting Standard**  
ISO 5211

## APPLICABLE DIRECTIVES

- **EC Machinery Directive – 2006 / 42 / EC**
- **Low Voltage Directive – 2006 / 95 / EC**
- **EMC Directive – 2004 / 105 / EEC**

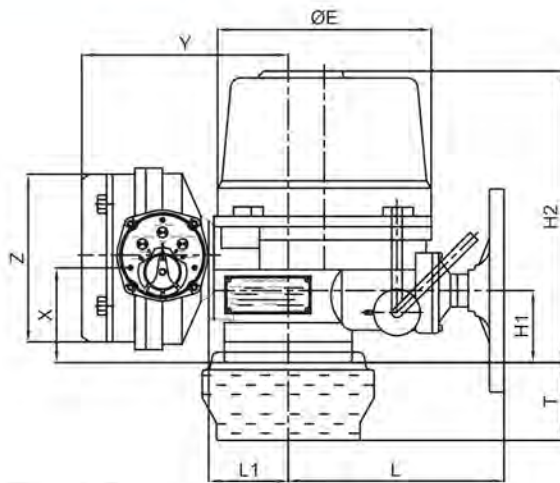
## TECHNICAL DATASHEET

STANDARD SPECIFICATIONS

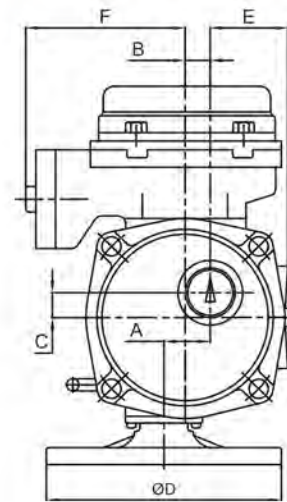
Model No.	Max Torque NM	Motor Kw	Actuator RPM	Rotation time Second / 90°	415 V AC Motor Current			Acceptable Stem Ø mm
					START (A)	RUN (A)	LOCK (A)	
ATQ 5	50	0.025	1	16	0.4	0.3	0.41	14
ATQ 10	100	0.025	1	16	0.4	0.3	0.41	22
ATQ 20	200	0.04/ 0.06	1	16	0.9	0.6	0.98	32
ATQ 40	400	0.06	1	14	0.9	0.6	0.98	32
ATQ 60	600	0.12	1	15	1.7	1.1	1.80	42
ATQ 80	800	0.18	0.5	27	2.4	1.5	1.80	42
ATQ 100	1000	0.18	0.5	28	2.4	1.5	2.49	42
ATQ 150	1500	0.18	0.3	45	2.4	1.5	2.49	50
ATQ 200	2000	0.20	0.3	45	2.8	1.7	2.92	50
ATQ 250	2500	0.20	0.3	45	2.8	1.7	2.92	50
ATQ 400	4000	0.55	0.5	60	8	2.2	8.40	63
ATQ 600	6000	1.1	0.5	60	17	3.1	17.52	63
ATQ 800	8000	1.5	0.5	60	21	4.3	22.00	90
ATQ 1200	12000	3	0.5	120	32	8.5	33.08	135

Note : Specifications mentioned here are subject to revision without notice due to continuous product improvements. (Rev.-1)

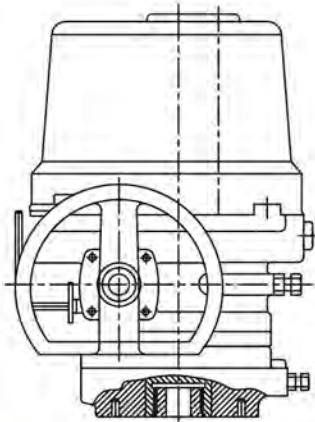
## DIMENSIONAL DETAILS



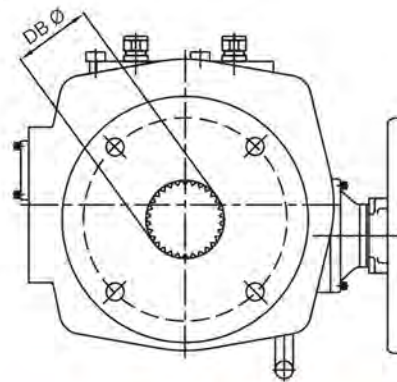
Side View



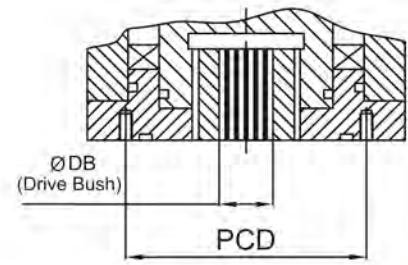
Top View



Front View



Bottom View



Mounting Flange View

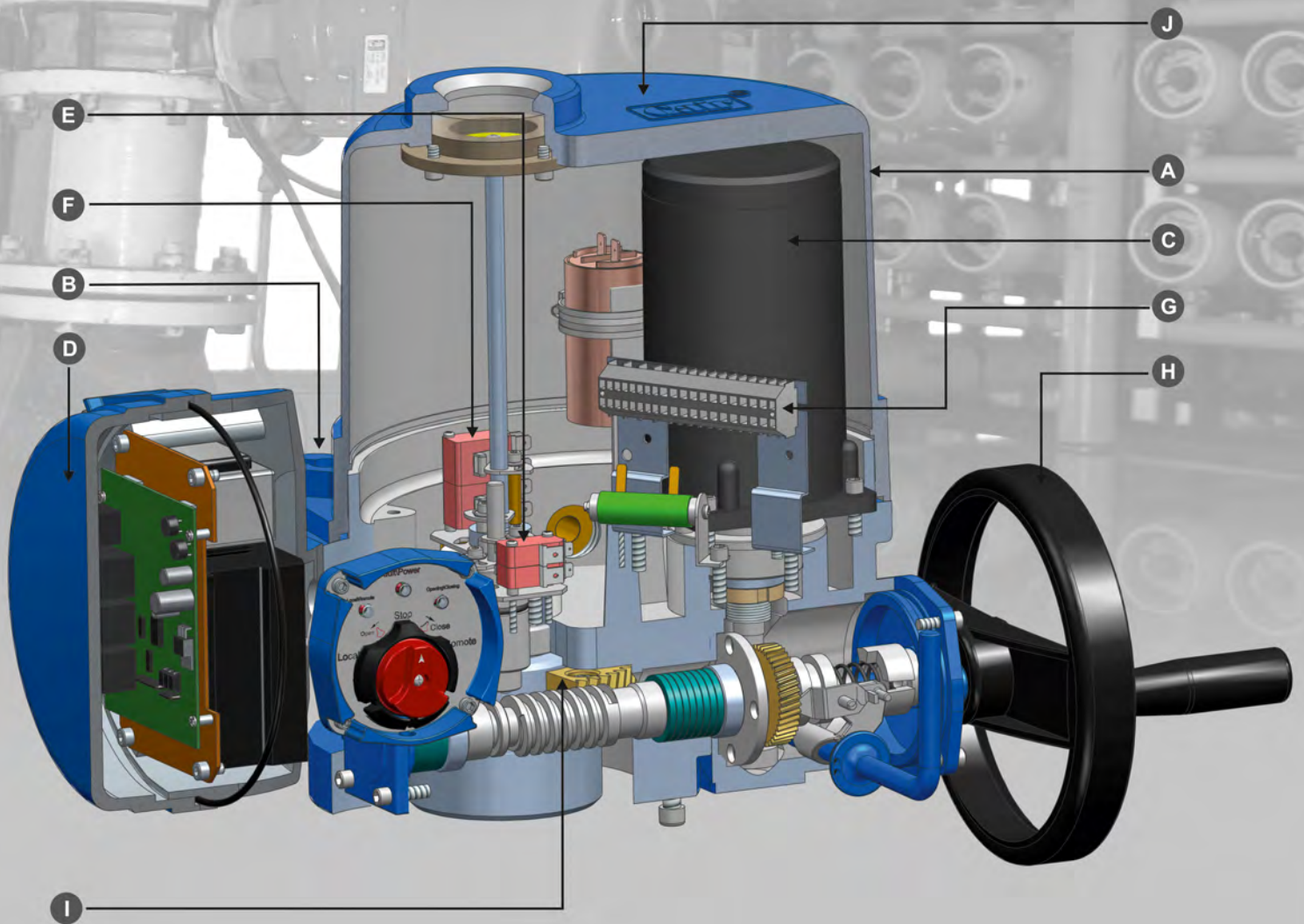
(ALL DIMENSIONS ARE IN MM)

Model No.	A	B	C	E	F	ØD	ØE	T	H1	H2	L	L1	X	Y	Z	Mounting PCD	ØDB (Drive Bush)
ATQ 05	49.5	22.5	30	77.5	150	200	200	27.5	64	263	190	85	113	198	190	F05, F07	22
ATQ 10	49.5	22.5	30	77.5	150	200	200	27.5	64	263	190	85	113	198	190	F07, F10	42
ATQ 20	49.5	22.5	30	77.5	150	200	200	27.5	64	263	190	85	113	198	190	F07, F10	42
ATQ 40	60	33	35	77	150	200	220	27.5	70	304	205	88	119	203	190	F10	58
ATQ 60	70	43	38	92	150	250	260	27.5	78	342	228	106	127	220	190	F10, F14	58
ATQ 80	70	43	38	92	150	250	260	27.5	78	342	228	106	127	220	190	F12, F14	58
ATQ 100	70	43	38	92	150	250	260	27.5	78	342	228	106	127	220	190	F12, F14	58
ATQ 150	70	43	38	92	150	250	260	112	78	342	228	106	127	220	190	F14	72
ATQ 200	70	43	38	92	150	250	260	112	78	342	228	106	127	220	190	F14, F16	72
ATQ 250	70	43	38	92	150	250	260	112	78	342	228	106	127	220	190	F14, F16	72



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### A ENCLOSURE

ATQ series actuators are available in both Weather Proof and Flame Proof (Ex-Proof) enclosures. These enclosures are watertight to IP 67 / IP 68. The enclosures are hard anodized Aluminium Alloy which provides resistance from high temperatures, acids, alkali and remain water proof and dust proof. All the joints on the enclosure are armed with a waterproofing seal making it suitable for mounting in extreme outdoor environment.

Enclosure types with ambient temperatures are indicated below :

<b>Weather Proof - (Standard)</b>		Rating	Ambient Temperature
Manufacturing Standard		IP68	-30°C to +70°C
<b>Flame Proof – (Ex-Proof)</b>		Rating	Ambient Temperature
Manufacturing Standard	Enclosure Code	IP68	-20°C to +70°C
IS/IEC 60079	Exd IIB T4		
	Exd IIC T4		

### B POWER SUPPLY

ATQ series actuators are suitable for operation with the following Three Phase power supplies.

Standard Supply Voltages

415 V AC : (± 10%), 50 / 60 Hz

Supply Voltages available on request

380 V AC : (± 10%), 50 / 60 Hz

460 V AC : (± 10%), 50 / 60 Hz

Voltage Tolerance

Frequency Tolerance

Maximum Starting Voltage Drop

Non Standard Tolerance

UPC Systems

- ± 10% Applies for rated torque performance; duty cycle and speed not guaranteed

- ± 5% Applies for rated torque performance; duty cycle and speed not guaranteed

- -15% Actuator can start and run up to speed

- Available on request

- UPS systems should confirm to recognised supply standards such as EN60160 The above tolerances should not be exceeded.

### C MOTOR

ATQ series actuators are fitted with specially designed motors integral to the actuator. These motors can be broadly classified on the basis of their duty.

On-Off Type / Modulating type (proportionate control)

- Three phase capacitor / run start squirrel cage induction type synchronized motor.
- Continuous duty (S2-15 mins).
- Class F insulation with temperature rise restricted to Class B.
- Thermostat protection : Thermostats embedded in the motor end windings will directly sense motor temperature. Thermostats will open circuit when set temperature is reached, thereby de-energising the motor and auto reset to continue operation once the motor has cooled off.
- Low inertia design.
- Nominal 50 starts per hour, 15 minutes rated based on a nominal torque of 33% of rated torque.
- Micro-processor based modulating control card.

#### DUTY RATING

ON-OFF / INCHING  
MODULATING

### D CONTROL – LOCAL / REMOTE CONTROL

Selector switches	: Open / Stop / Close.
Selector switches	: Auto / Manual or Local / Remote.
Indicating lamps	: Open / Close / Error.
Enclosure	: IP 67 weather proof & dust proof.

- Blinking LED lamp indication during open / close operation.  
| Red - Fully Open | Green - Fully Closed.
- Automatic phase rotation correction and phase loss protection.
- 24V DC voltage level is applied for remote control.
- Easy and flexible user connection way.
- Non-intrusive local control switch with hall effect device to improve water proof feature.
- Five passive contacts to indicate the working status of the electric actuator and facilitating the monitoring of the electric actuator by DCS system.
- Operating mode select switch can be locked with ordinary lock to prevent improper operation.

### E TORQUE SWITCH/SENSOR

Independent torque switches are provided, one for each direction of travel having 2NO + 2NC potential free contacts. Output torque is controlled by switching the motor off when the set torque limit has been reached. The entire torque switch drive assembly is individually replaceable.

### F POSITION SWITCH/SENSOR

Independent limit switches are provided, one for each direction of travel having 2NO + 2NC potential free contacts. Limit switches are operated by gear driven cams, which are mechanically linked to the driving devices. Easy setting of limit switches (counter-wheel-mechanism). If the switching point of limit switch gear has been overturned inadvertently by manual operation, the switching point itself does not change. No resetting is therefore required. All actuators have a continuous local mechanical position indicator.

### G TERMINALS

ATQ series actuators are provided with a separately sealed terminal compartment. Terminal screws and washers are supplied with the actuators

### H HANDWHEEL

Hand-wheel does not rotate during power operation. Manual drive is automatically disengaged when motor starts.

### I LUBRICATION

ATQ series actuators come with premium quality lubricants and enable smooth functioning of rotating components at a wide temperature range.

### J FINISH

The actuators are powder coated with corrosion proof epoxy coating.

### OPTIONAL

#### FIELD BUS CONTROL OPTION

ATQ series actuators are available with the network interface cards to enable remote control and indication using digital 'bus' network systems communication to the control systems. Network interface cards such as Modbus, Profibus and Foundation Fieldbus are compatible.

#### FAIL POSITION OPTION

In the event of loss of power supply a battery provides power to the control module/motor to update the valve position.



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## Motorized Valves



2 Way Ball Valve  
Electrical Actuator Operated

**SIZE :**  
1/2" TO 4" Screwed to BSP / NPT  
**MOC :**  
WCB / SS 304 / SS 316 / SS 316L  
**REPLACEABLE SEAT :**  
PTFE / Glass Filled PTFE / CFT  
**TEMP :**  
220° C / 400° C (On Request)  
**DESIGN & MANUFACTURING STD.:**  
BS 5351 / BS 6755



2 Piece Fire Safe Design Ball Valve  
Electrical Actuator Operated

**SIZE :**  
1/2" TO 12" Flanged End  
150# / 300# / 600# / 900# / 1500#  
**MOC :**  
WCB / SS 304 / SS 316 / SS 316L /  
Alloy Steel / Duplex  
**REPLACEABLE SEAT :**  
PTFE / Glass Filled PTFE / CFT  
**TEMP :**  
220° C / 400° C (On Request)  
**DESIGN & MANUFACTURING STD.:**  
BS 5351 / BS 6755



3 Way / 4 Way / 5 Way Ball  
Valve Electrical Actuator Operated

**SIZE :**  
1/2" TO 4" Screwed to BSP / NPT  
1/2" TO 8" Flanged End 150# / 300#  
**MOC :**  
WCB / SS 304 / SS 316 / SS 316L  
**REPLACEABLE SEAT :**  
PTFE / Glass Filled PTFE  
**TEMP :**  
220° C  
**PORT :**  
'L' Port / 'T' Port / 'X' Port  
**DESIGN & MANUFACTURING STD.:**  
BS 5351 / BS 6755



Jacketed Ball Valve  
Electrical Actuator Operated

**SIZE :**  
1/2" TO 10" Flanged End  
1" TO 4" Wafer Type  
**BODY / BALL :**  
WCB / SS 304 / SS 316 / SS 316L  
**JACKET :**  
MS / S.Steel  
**REPLACEABLE SEAT :**  
PTFE / Glass Filled PTFE / CFT  
**TEMP :**  
220° C / 400° C (On Request)  
**DESIGN & MANUFACTURING STD.:**  
BS 5351 / BS 6755



Wafer Type Butterfly Valve  
Electrical Actuator Operated

**SIZE :**  
1.1/2" TO 72"  
**MOC :**  
Cl / DI / WCB / SS 304 / SS 316 /  
Alloy Steel / Duplex  
**MOULDED / REPLACEABLE SEAT :**  
Nitrile (NBR) / EPDM / VITON /  
Teflon Muffler  
**ENDS :**  
Wafer / Lug Type  
**RATING :**  
PN 6 / PN 10 / PN 16 / PN 20 / PN 25  
**DESIGN & MANUFACTURING STD.:**  
API 609 Category A / BS 5155 /  
MSS SP-67 / AWWA C-504



Double Flanged Butterfly Valve  
Electrical Actuator Operated

**SIZE :**  
1.1/2" TO 72"  
**MOC :**  
Cl / DI / WCB / SS 304 / SS 316 /  
SS 316L / Alloy Steel / Duplex  
**SEAT :**  
Nitrile (NBR) / EPDM / VITON  
**ENDS :**  
Double Flanged / Lug Type  
**RATING :**  
PN 6 / PN 10 / PN 16 / PN 20 / PN 25  
**DESIGN & MANUFACTURING STD.:**  
API 609 Category A / BS 5155 /  
MSS SP-67 / AWWA C-504



High Performance Butterfly Valve  
Electrical Actuator Operated

**SIZE :**  
1.1/2" TO 72"  
**MOC :**  
Cl / WCB / SS 304 / SS 316 / SS 316L  
Alloy Steel / Duplex  
**REPLACEABLE SEAT :**  
PTFE / Glass Filled Teflon / VITON /  
Metal to Metal (Temp. 600° C)  
**ENDS :**  
Wafer / Double Flanged / Lug Type  
**RATING :**  
150# / 300#  
**DESIGN & MANUFACTURING STD.:**  
API 609 Category B / MSS SP-68 /  
AWWA C-504



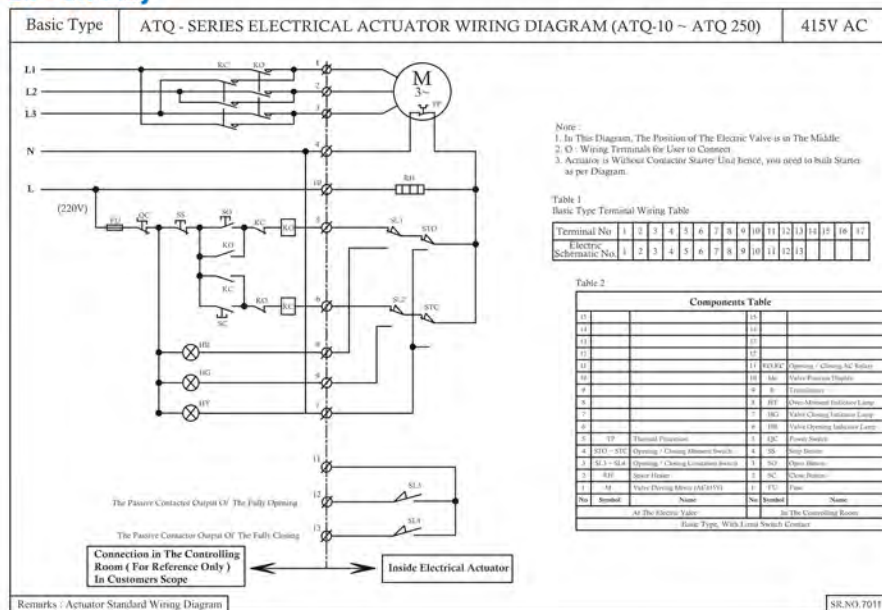
Fabricated Damper Valve  
Electrical Actuator Operated

**SIZE :**  
1.1/2" TO 108"  
**MOC :**  
IS 2062 MS /  
SS400 Galvanised Steel  
**SEAT :**  
Nitrile (NBR) / EPDM / VITON  
**LEAKAGE :**  
Upto 99% Sealing Efficiency  
CLASS II / III / IV (As per FCI 70-2)  
**TEMP :**  
-20°C TO 750°C (As per Requirement)  
**ENDS :**  
Wafer / Double Flanged DIN 24154  
PN6 / PN 10 / PN 16

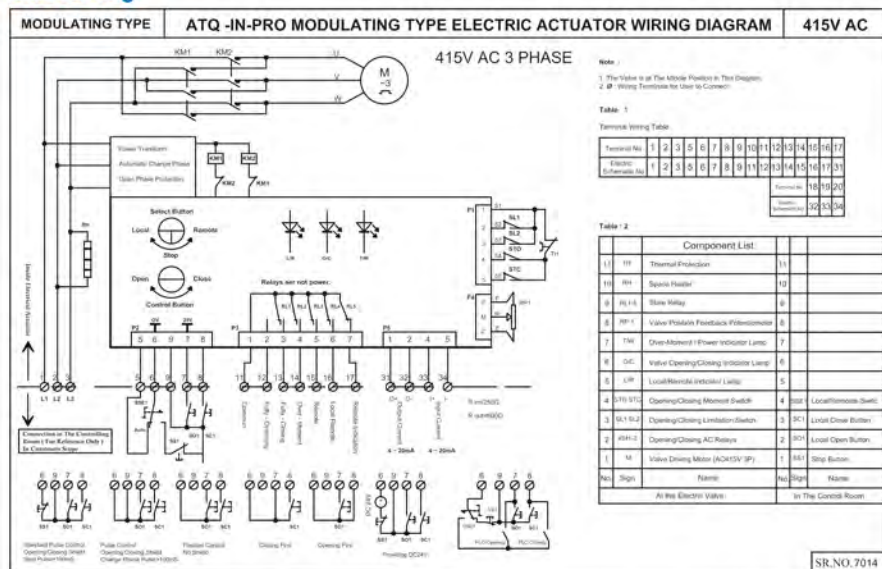


## Wiring Diagram

### On - Off Duty



### Modulating



## General Instructions

### Important Notices and Maintenance Guidelines

- Check for correct voltage prior to wiring.
- Turn off power before service or for maintenance purposes.
- Use sealant to seal conduit connections after power distribution to prevent from dust or water.
- The electric actuator must not be installed below the horizon or upside down.
- Avoid installing near explosive atmospheres.\*

- Not intended for vacuum spaces.
- Actuators should be stored at a clean and dry place, and protected with outer carton from being affected by great temperature difference or serious vibration.
- When more than one electric actuator is needed to operate simultaneously, please connect with individual cables to avoid parallel connection.
- Please connect the ground wire to PE inside the electric actuator.
- The warranty period is one year.

For any queries please contact : Cair Euromatic Automation Pvt. Ltd. - [info@cairindia.in](mailto:info@cairindia.in)