

1/4 turn ACTELEC OA3 to BS100 (BERNARD)

Type series booklet
8521.12/4-10



**Direct 1/4 turn electric actuators
ACTELEC BERNARD OA3 to BS100**

Output torques up to 1000 Nm

Applications

- All sectors of Water, Energy and industry markets.

General feature

- The range series direct 1/4 turn electric actuators ACTELEC OA 3 to BS 100 covers output values up to 1000 Nm.
- These actuators have been designed for all applications and for the operation of any type 1/4 turn valves (centred or double eccentric disc valves, ball valves,...).
- The mounting interface is in accordance with ISO 5211 standard.
- Equipped with an interchangeable insert, they can be easily fitted on different valve shaft (square end, flat end, key,...).
- The actuator is mounted directly or by means of an adaptor onto the valve mounting plate.
- Irreversible kinematic in any position.

Protection

- They are hose and fine dust proof and are protected against accidental immersion: protection level IP 67.
- Motor: insulation class F.

External coating

- Epoxy paint, thickness 60 µm, color blue RAL 5002.

Temperature range

- From -20° C up to +70° C.

Standard variant

- ATEX version in accordance with 94/9/EC directive.

Construction

- In standard version, ACTELEC actuators are designed to ensure the on-off function, intermittent duty S4 - 30%.
- Remote electric control.

Basic equipments

- Electric motor protection by:
 - integrated thermic protection,
 - 2 travel limit microswitches (1 microswitch on opening position and 1 on closing position)
 - Torque limit system (except on ACTELEC OA3 to OA15).
- Heating resistance anti-condensation.
- Manual emergency control by handwheel.
- Position indication.
- Mechanical adjustable end stop(s).

Other constructions

- Motor for continuous duty - Repetitive startings (S4 - 50% - 1200 startings/hour).
- Throttling duty with 4-20 mA integrated positioner.
- Integral electric control and remote control = INTEGRAL version.
- Explosion-proof protection EExe.

Power supply

- Standard version:
 - 3-phase 230 VAC / 400 VAC - 50 Hz,
 - 1-phase 230 VAC - 50 Hz.
- On request:
 - 24 or 48 VDC.

Options on request (Please, consult us)

- Additional microswitches adjustables on the whole travel for remote position signalisation (limit position and/or intermediate position).
- Position transmission by potentiometer 1000 Ω or 4-20 mA electronic transmitter.
- Communication interface - Intelligence - Fieldbus.
- Other power supplies.

ACTELEC OA3 to BS100 electric actuators are based on a direct 1/4 turn servomotor with a mounting interface in accordance with ISO 5211.

These actuators are available in on-off function or throttling duty.

On-off function

Production range

Type	Nominal output torque (Nm)	ISO 5211 mounting plate*	Maximal allowable dimension for shaft			Driving by key
			Height	Driving by square	Driving by flat	
OA3	45	F05-F07	30	16	14	Please, consult us
OA6	70	F05-F07	30	16	14	
OA8	100	F05-F07	32	19	19	
OA15	150	F05-F07	32	19	19	
AS18	200	F07-F10	40	25	22	
AS25	300	F07-F10	40	25	22	
AS50	600	F07-F10	45	25	22	
AS80	800	F12	50	30	27	
BS100	1000	F12	55	36	36	

* Direct adaptation onto identical mounting plate.

Adaptation by intermediate flange onto different plate (different size or shape).

Definition

ACTELEC	OA3	OA6	OA8	OA15	AS18	AS25	AS50	AS80	BS100	
Nominal torque (Nm)	45	70	100	150	200	300	600	800	1000	
Operating time in seconds	Standard	6	6	6	15	5	10	30	30	60
	Option			35 or 60	25		5, 30 or 50	60	60	

Basic equipments

Opening and closing travel limit switches	Standard								
Mechanical adjustable travel limit stops	Standard								
Opening and closing torque limit switches					Standard				
Heating resistance 6 W	Standard								
Emergency control Number of handwheel turns	20	20	20	20	11	11	8	14	14

Power supply

3-phase 230 or 400 VAC Wiring diagram		S 50000/04							
1-phase 230 VAC Wiring diagram	S 50250/01				S 50000/04				
24 V or 48 VDC		Option / Please, consult us							

Other constructions

Continuous duty	Yes								
Integral control: INTEGRAL version		Yes Wiring diagram S 20050/01			Yes Wiring diagram S 20000/04				
Explosion-proof protection	Yes / Please, consult us								

On/off function
Characteristics actuator

Electric actuator type	3-phase 400 VAC 50 Hz			
	Actuator output speed sec/90°	Nominal power	Nominal intensity	Starting intensity
		kW	A	A
OA6	6	0,03	0,3	0,5
OA8	6	0,10	0,6	1,1
OA15	15	0,03	0,3	0,5
AS18	5	0,10	0,6	1,1
AS25	10	0,10	0,8	1,6
AS50	30	0,06	0,3	0,8
AS80	30	0,06	0,3	0,8
BS100	60	0,06	0,3	0,8

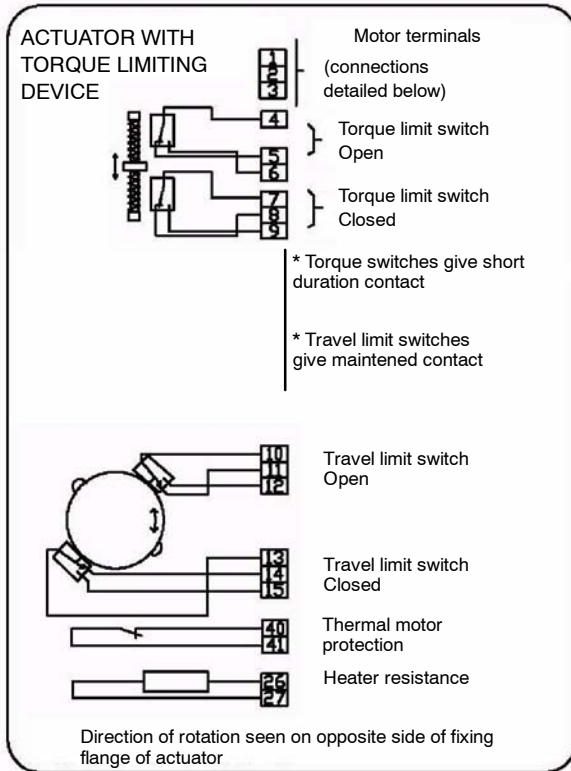
Electric actuator type	1-phase 230 VAC 50 Hz			
	Actuator output speed sec/90°	Nominal power	Nominal intensity	Starting intensity
		kW	A	A
OA3	6	0,03	0,8	0,9
OA6	6	0,03	0,6	0,9
OA8	6	0,06	1,2	1,7
OA15	15	0,03	0,6	0,9
AS18	5	0,20	2,5	3,5
AS25	10	0,10	1,8	2,5
AS50	30	0,06	1,2	1,7
AS80	30	0,15	2,0	3,0
BS100	60	0,06	1,2	1,7

On/off function:

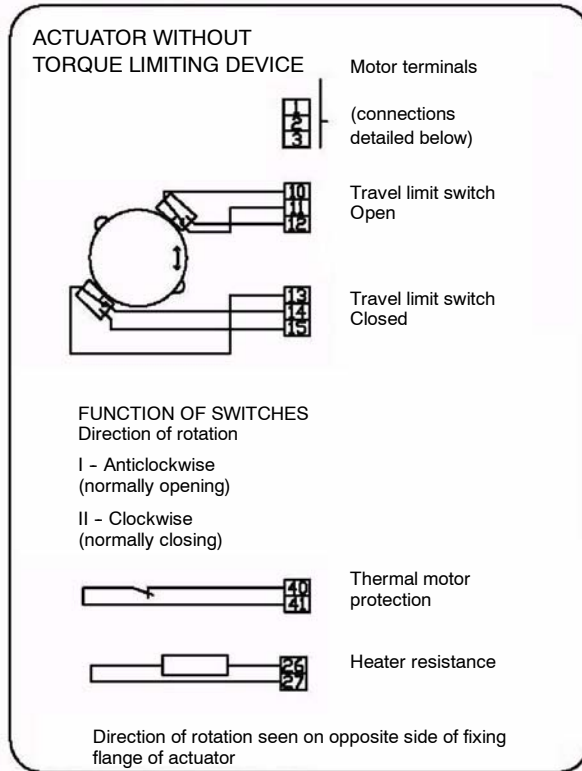
OA6 - OA8 - OA15 - AS18 - AS25 - AS50 - AS80 - BS100 - 3-phase 400 VAC 50 Hz
AS18 - AS25 - AS50 - AS80 - BS100 - 1-phase 230 VAC 50 Hz

Wiring diagram S 50000/04

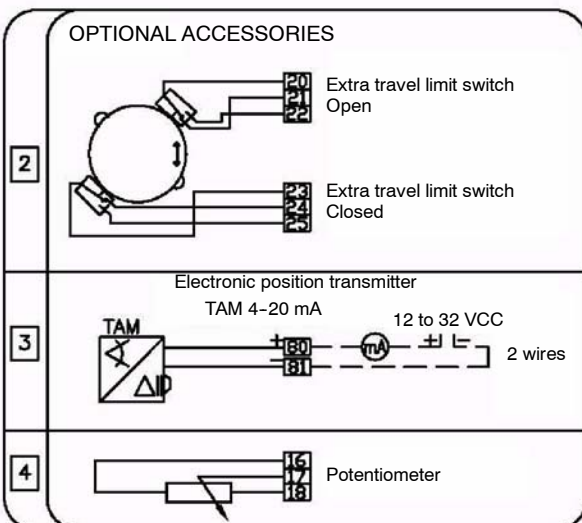
1/4 Turn: AS 18 - AS25 - AS50 - AS80 - BS100



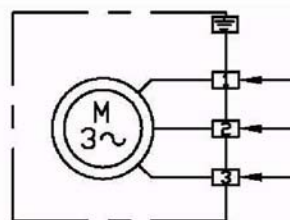
1/4 turn: OA6 - OA8 - OA15



OPTIONAL ACCESSORIES

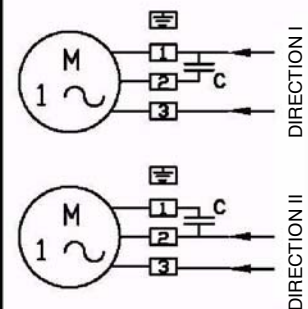


MOTOR THREE PHASE



NOTA : 3-phase direct = DIRECTION II

MOTOR SINGLE PHASE



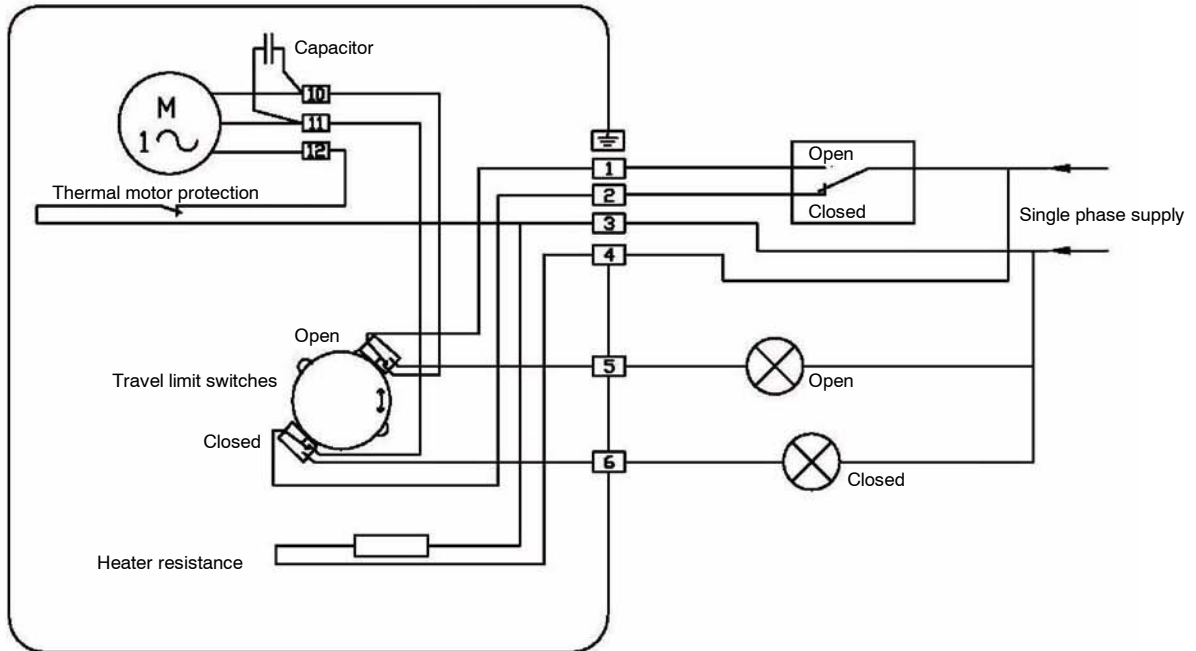
On/off function:

OA3 - OA6 - OA8 - OA15 - 1-phase 230 VAC 50 Hz

Prewired version - Wiring diagram S 50250/01

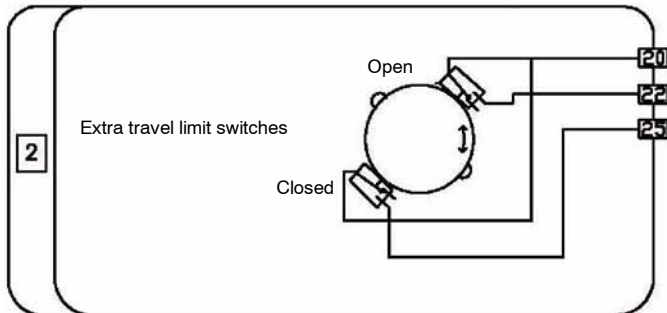
ACTUATOR WIRING

CUSTOMER WIRING

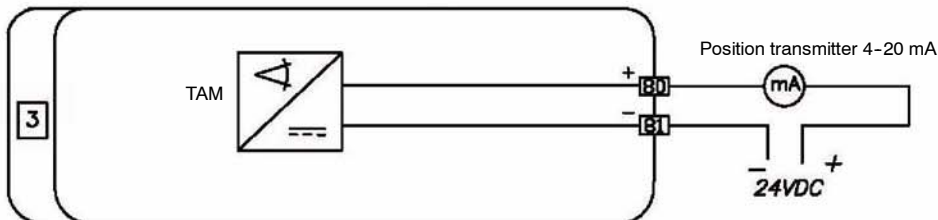


OPTIONS

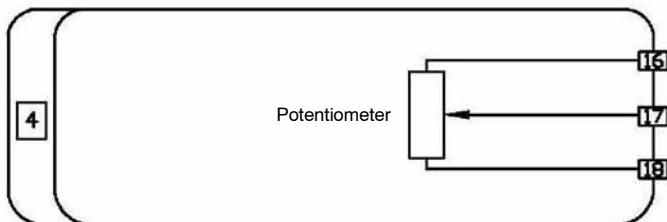
Extra travel limit switches



Position transmitter

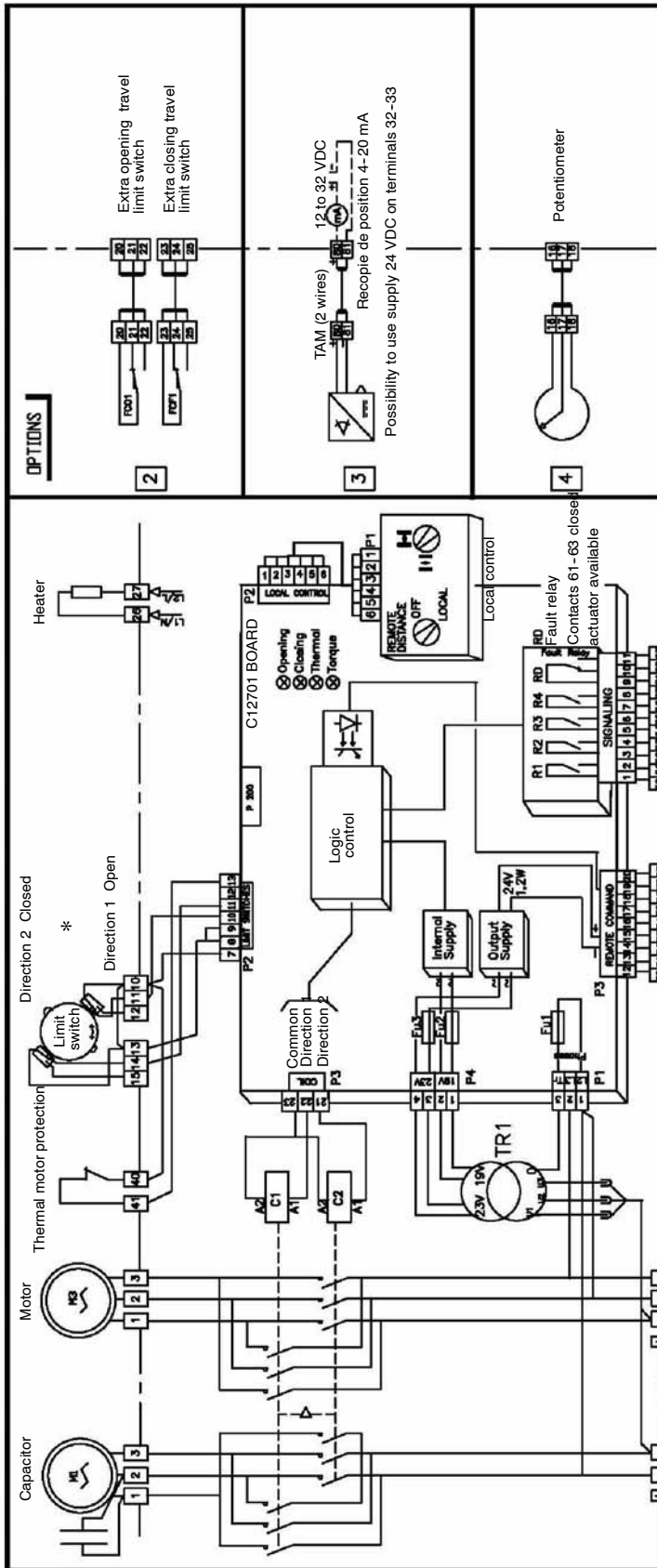


Potentiometer

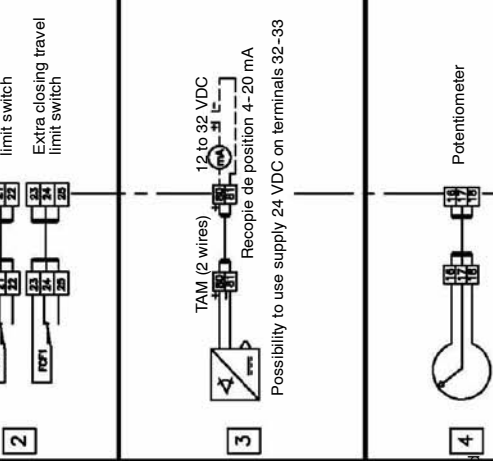


On/off function: INTEGRAL version
OA6 - OA8 - AO15

Wiring diagram S 20050/01 Integral version



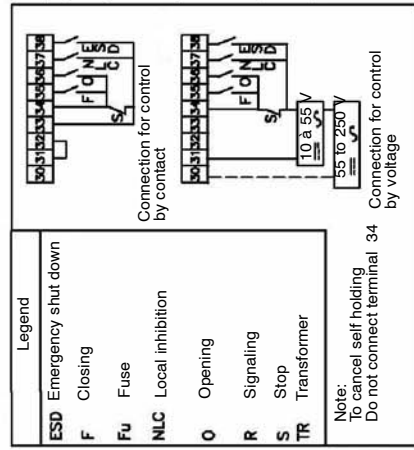
OPTIONS



Indication assignment see configuration table

Con- tact	Item	Designation	Repeats	Designation
R1	14	LSD	TSO	Torque switch open
R2	15	LSC	TSC	Torque switch closed
R3	16	LSO	TSO	Torque switch open
R4	17	Local	Remote	Selector on remote
R5	18	Running	Opening	Actuator opening electrically
R6	19	LSC	TSC	Torque switch closed
R7	20	ESD	Closing	Actuator closing electrically
R8	21	Local	Remote	Selector on remote

Each contact can be selected open or close (standard is open)
Only one option can be selected for each indication
Power off, contacts are open



Wiring according to actuator supply

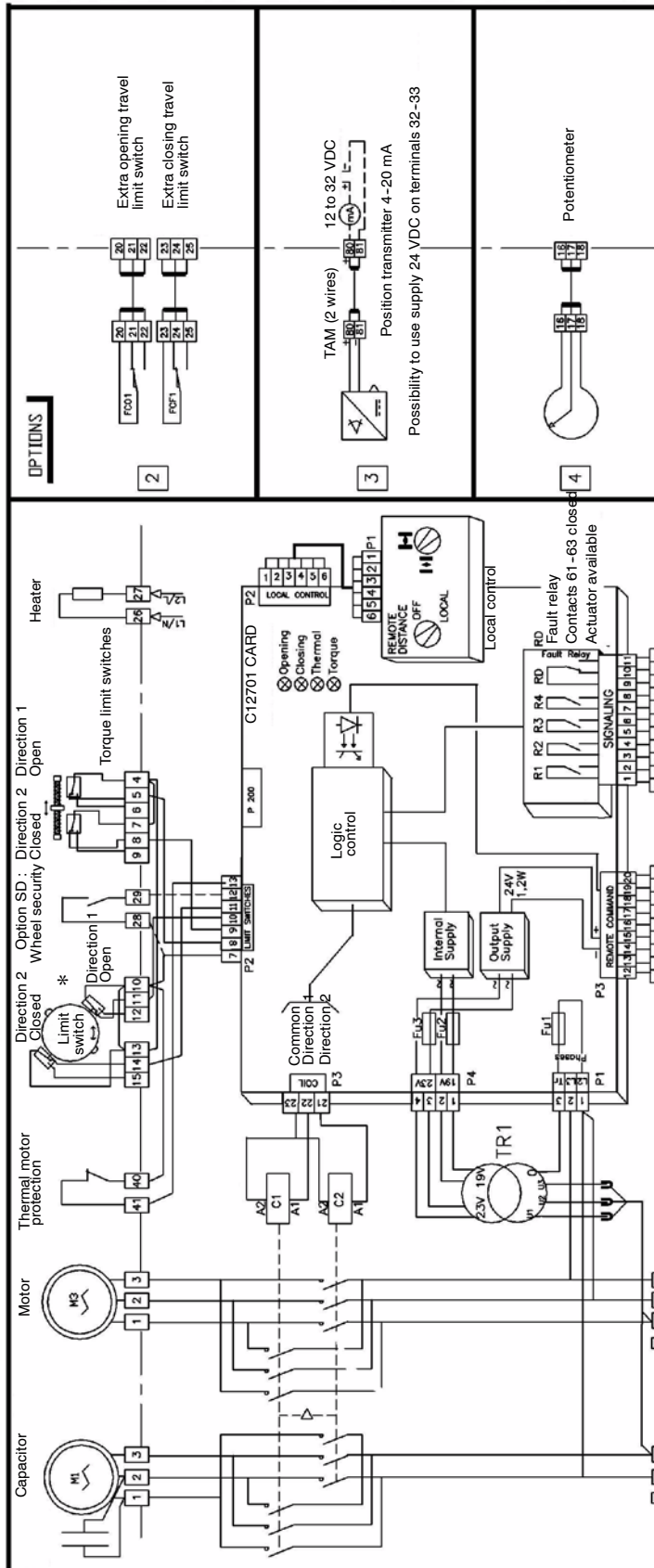
Configuration	7A	7B
Direction1	Opening	Closing
Direction2	Closing	Opening

* Supply type

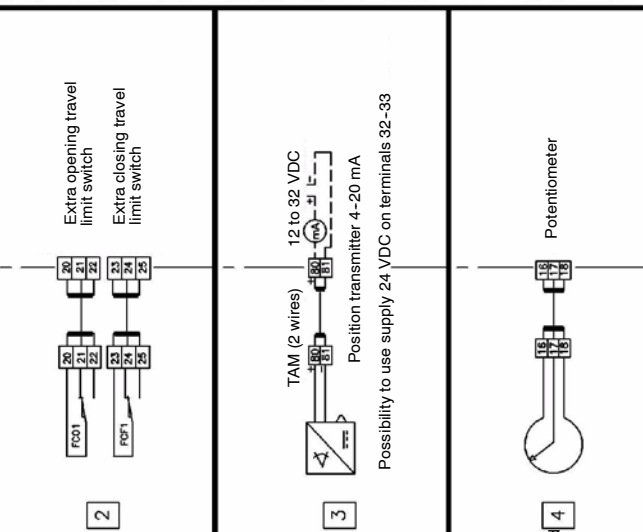
The order in phase is not important
if one phase is missing, the actuator will not start
and gives a signal (fault relay)

On/off function: INTEGRAL version
AS18 - AS25 - AS50 - AS80 - BS100

Wiring diagram S 20000/04 intégral version



OPTIONS



Indication assignment see configuration table

Item	Designation	Item	Designation
R1	LSO	TSO	Torque switch open
R2	LSC	TSC	Torque switch closed
R3	LSO	TSO	Torque switch open
R4	LSC	Remote	Selector on remote
		Opening	Actuator opening electrically
		TSC	Torque switch closed
		Closing	Actuator closing electrically
		Remote	Selector on remote

Connection for control by contact

Connection for control by voltage

Legend

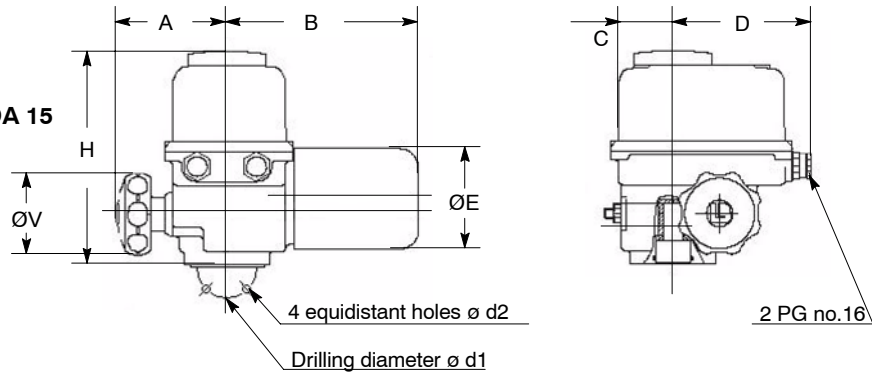
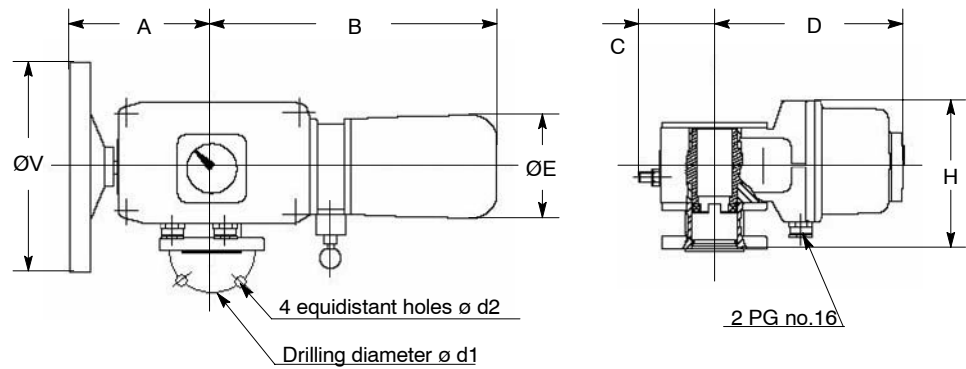
- ESD Emergency shut down
- F Closing
- FU Fuse
- NLC Local inhibition
- O Opening
- R Signaling
- S Stop
- TR Transformer

Note:
To cancel self holding
Do not connect terminal 34

Wiring according to actuator supply

Configuration	7A	7B
Direction1	Opening	Closing
Direction2	Closing	Opening

* Supply type
The order in phase is not important
If one phase is missing, the actuator will not start and gives a signal (fault relay)

On/off function - 3-phase supply
Overall dimensions (mm) and weight (kg)
ACTELEC OA3, OA6, OA8 and OA 15

**ACTELEC AS18, AS25,
AS50, AS80 and BS100**


Type	A	B	C	D	ø E	H	ø V	Mounting plate ISO 5211			Weight kg
								réf.	ø d1	ø d2	
ACTELEC OA3	116	148	65	150	106	224	90	F05	50	M6	6
								F07	70	M8	
ACTELEC OA6	116	260	65	150	106	224	90	F05	50	M6	6
								F07	70	M8	
ACTELEC OA8	116	260	65	150	106	224	90	F05	50	M6	7
								F07	70	M8	
ACTELEC OA15	116	260	65	150	106	224	90	F05	50	M6	7
								F07	70	M8	
ACTELEC AS18	167	312	89	226	139	177	100	F07	70	M8	16
								F10	102	M10	
ACTELEC AS25	167	312	89	226	139	177	160	F07	70	M8	18
								F10	102	M10	
ACTELEC AS50	169	340	89	226	139	177	250	F07	70	M8	17
								F10	102	M10	
ACTELEC AS80	169	340	89	226	139	208	250	F12	125	M12	18
ACTELEC BS100	172	392	133	284	139	167	250	F12	125	M12	26

Nota: For overall dimension On/Off function with integral control: Overall dimension idem throttling duty - Class III integral version with positioner.

Throttling duty - Class III Integral version with positioner 4-20 mA
Production range

Type	Nominal output torque (Nm)	ISO 5211 mounting plate*	Maximal allowable dimension for shaft			
			Height	Driving by square	Driving by flat	Driving by key
OAP	80	F05-F07	32	19	19	Please, consult us
OA15	150	F05-F07	32	19	19	
ASP	250	F07-F10	40	25	22	
AS50	520	F07-F10	45	25	22	
BS100	1000	F12	55	36	36	

* Direct adaptation onto identical mounting plate.

Adaptation by intermediate flange onto different plate (different size or shape).

Definition

ACTELEC	OAP	OA15	ASP	AS50	BS100
Nominal torque (Nm)	80	150	250	520	1000
Operating standard time in seconds	60	25	50	60	60
Basic equipments					
Opening and closing travel limit switches	Standard				
Mechanical adjustable travel limit stops	Standard				
Opening and closing torque limit switches			Standard		
Heating resistance 6 W	Standard				
Emergency control Number of handwheel turns	20	20	11	8	14
Integral control incorporated positioner 4-20 mA	Standard - Wiring diagram S 25050/01		Standard - Wiring diagram S 25000/04		
Power supply					
3-phase 230 or 400 VAC	Yes				
1-phase 230 VAC	Yes				
24 V or 48 VDC	Option / Please, consult us				
Other construction					
Explosion-proof protection	Yes / Please, consult us				

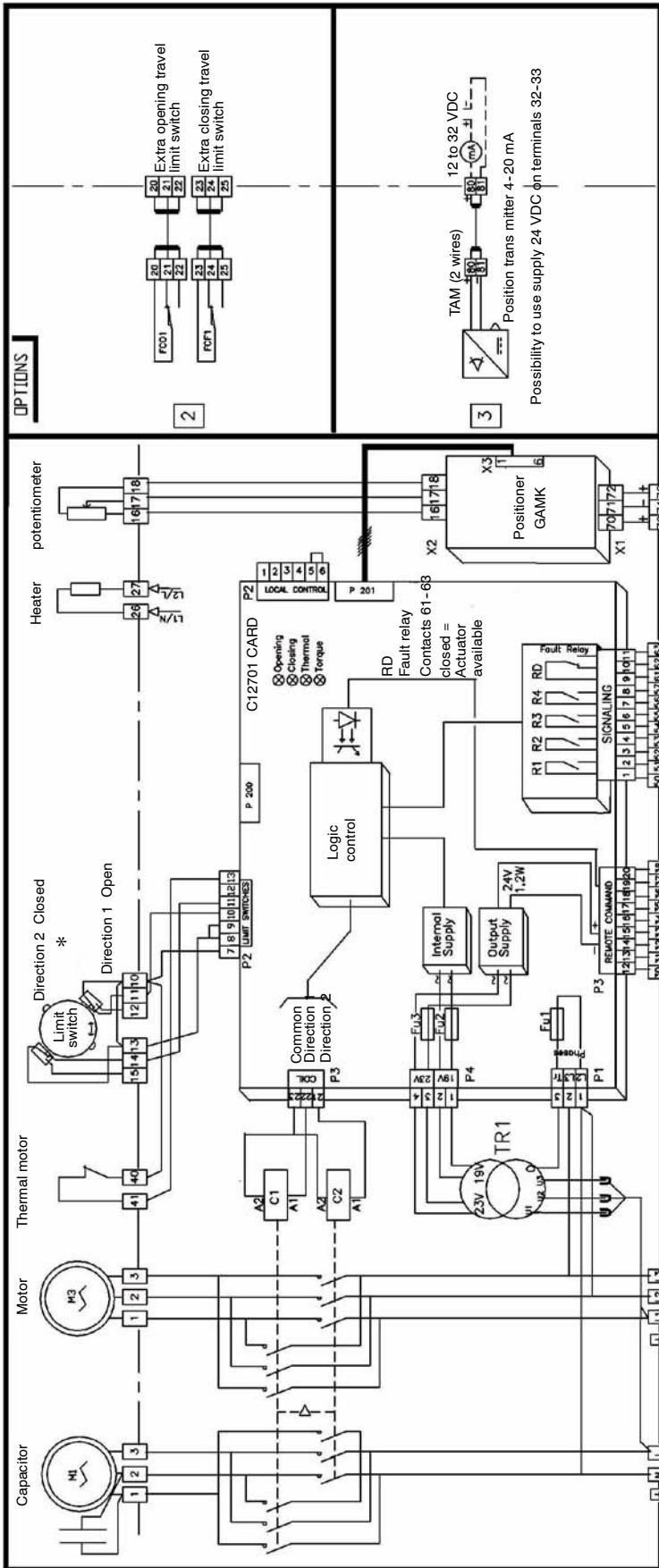
Throttling duty - Class III Integral version with positioner 4-20 mA
Characteristics actuator

Electric actuator type	3-phase 400 VAC 50 Hz			
	Actuator output speed sec/90°	Nominal power kW	Nominal intensity A	Starting intensity A
OAP	60	0,03	0,3	0,5
OA15	25	0,03	0,3	0,5
ASP	60	0,03	0,3	0,5
AS50	60	0,06	0,6	0,9
BS100	60	0,06	0,3	0,8

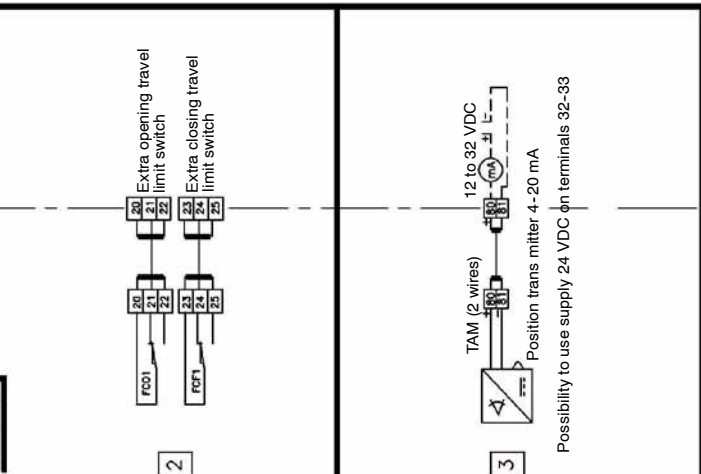
Electric actuator type	1-phase 230 VAC 50 Hz			
	Actuator output speed sec/90°	Nominal power kW	Nominal intensity A	Starting intensity A
OAP	60	0,03	0,6	0,9
OA15	25	0,03	0,6	0,9
ASP	60	0,03	0,6	0,9
AS50	60	0,08	1,5	2,4
BS100	60	0,06	1,2	1,7

Throttling duty - Class III Integral version with positioner 4-20 mA
OAP - OA15

Wiring diagram S 25050/01 integral version

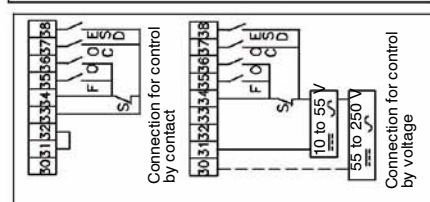
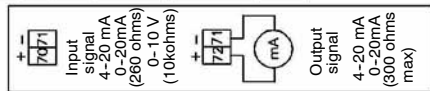


OPTIONS



Indication assignment see configuration table

Con- tact	Item	Designation	Item	Designation
R1	14	LSO	TSO	Torque switch open
R2	15	LSC	TSC	Torque switch closed
R3	16	LSO	TSO	Torque switch open
R4	17	Local	Remote	Selector on remote
	18	Running	Opening	Actuator opening electrically
	19	LSC	TSC	Torque switch closed
	20	ESD	Closing	Actuator closing electrically
	21	Local	Remote	Selector on remote



Legend

- ESD Emergency shut down
- F Closing
- Fu Fuse
- OC Closed contact = On/off control
- O Opening
- R Signaling
- S Stop
- TR Transformer

Note:
To cancel self holding
Do not connect terminal 34

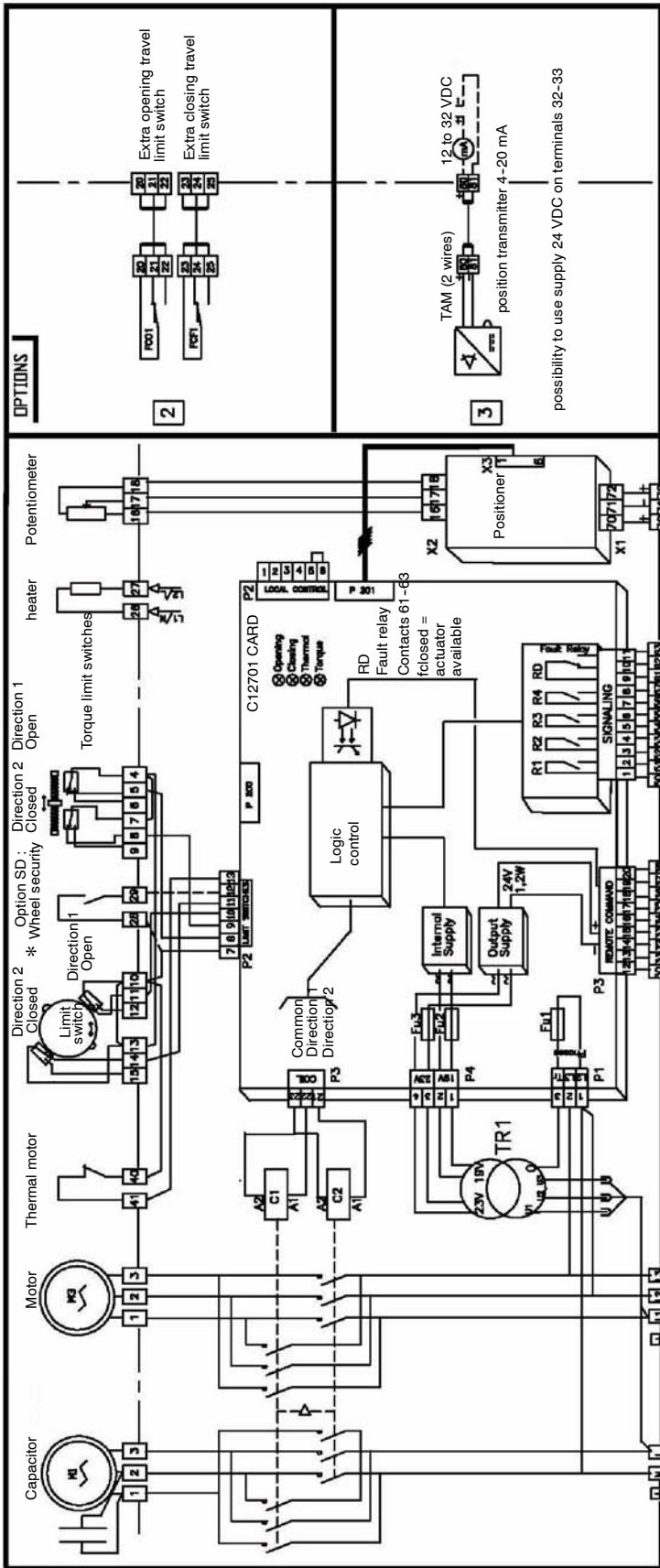
Wiring according to actuator supply

Configuration	7A	7B
Direction1	Opening	Closing
Direction2	Closing	Opening

* Supply type

The order in phase is not important.
If one phase is missing, the actuator will not start and gives a signal (fault relay)

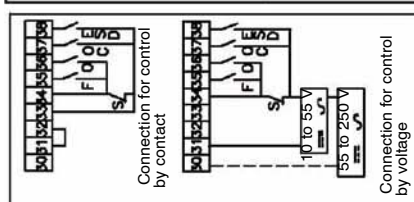
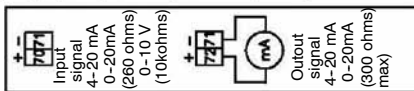
Throttling duty - Class III Integral version with positioner 4-20 mA
ASP - AS50 - BS100
Wiring diagram S25000/04 integral version



Indication assignment see configuration table

Con- tact	Item	Designation	Item	Designation
R1	14	L50	T50	Torque switch open
R2	15	L5C	T5C	Torque switch closed
R3	16	L50	T50	Torque switch open
	17	Local	Remote	Selector on remote
	18	Running	Opening	Actuator opening electrically
R4	19	L5C	T5C	Torque switch closed
	20	ESD	Closing	Actuator closing electrically
	21	Local	Remote	Selector on remote

Each contact can be selected open or close (standard is open)
 Only one option can be selected for each indication
 Power off, contacts are open



Legend

- ESD Emergency shut down
- F Closing
- Fu Fuse
- OC Closed contact On/off control
- O Opening
- R Signaling
- S Stop
- TR Transformer

Note:
 To cancel self holding
 Do not connect terminal 34

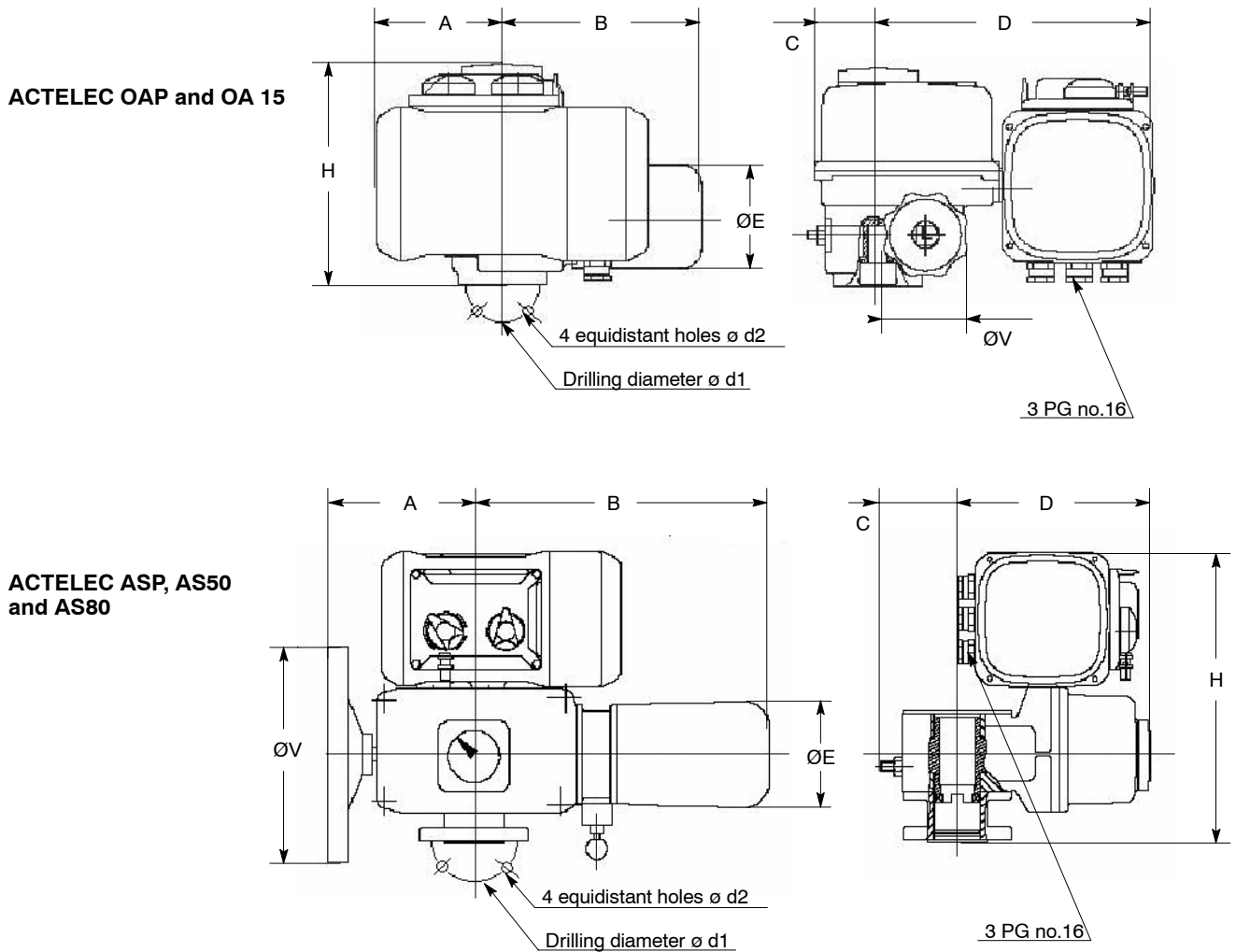
Configuration	7A	7B
Direction1	Opening	Closing
Direction2	Closing	Opening

* Supply type

The order in phase is not important
 if one phase is missing, the actuator will not start
 and gives a signal (fault relay)

Throttling duty - Class III Integral version with positioner 4-20 mA

Overall dimensions (mm) and weight (kg)



Type	A	B	C	D	Ø E	H	Ø V	Mounting plate ISO 5211			Weight kg
								ref	Ø d1	Ø d2	
ACTELEC OAP	128	260	65	283	106	224	90	F05	50	M6	11
								F07	70	M8	
ACTELEC OA15	128	260	65	283	106	224	90	F05	50	M6	11
								F07	70	M8	
ACTELEC ASP	167	340	89	226	139	335	160	F07	70	M8	22
								F10	102	M10	
ACTELEC AS50	169	340	89	226	139	335	250	F07	70	M8	21
								F10	102	M10	
ACTELEC BS100	172	392	133	353	139	167	250	F12	125	M12	34

