

Gemini Valve B.V.

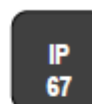
Zijperstraat 29, 1823CX Alkmaar, Netherlands
Tel.: +31(0) 161-227.909 / Mobile: +316 1358 2578

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www.geminivalve.nl



FEATURES

1150-1153 LT10 butterfly valves are intended for the automatic opening /closing of very diverse fluid pipes. The valve body is made of GS cast iron. The different configurations of the butterfly materials and of the liner make it suitable for many applications. Wafer mounting with centring ears between PN10/16 and ANSI 150 flanges. The ISO 5211 mounting pad enables the SA actuator to be directly assembled. This is perfectly adapted to both indoor and outdoor industrial use.



LIMITS OF USE

Fluid pressure: PS	10 bar
Test pressure: PT	30 bar
Fluid temperature: WT	According to the table below
Ambient temperature	-15°C / +70°C
Service factor	S4 - 70%



version SA-X 05



AVAILABLE MODELS

DN 32-40 to DN 100

Connection between flanges PN10/16 and ANSI 150 RF.

Supply voltages: 12 Vcc, 24 Vac-dc and 230 Vac.

Ref.	Butterfly	Liner	Example of applications	WT* min	WT* max
1150	316 SS / GS cast iron	EPDM	Cold water – warm water (110°C at peak) - ACS	-10°C	+110°C
1153	316 SS	EPDM	Demineralised water – alkalis (110°C at peak) - ACS	-10°C	+110°C

DIRECTIVES AND MANUFACTURING STANDARDS

OBJECT	Standard	ON	OBJECT	Standard
Pressure Equipment Directive 2014/68/EC	Cat. III modules B+C1	0409	Final test	ISO 5208
ATEX Directive	II 2G/D Tx zones 1,2,21 and 22	0038	Face-to-face dimension	ISO 5752 series 20
Sanitary conformity	ACS No. 07 ACC LY 504		Connection Motorisation	ISO 5211:
Flange dimension	EN 1092-1			
SIL 3 level (Valve)	IEC 61508	TÜV		

Information given as an indication only, and subject to possible modifications.

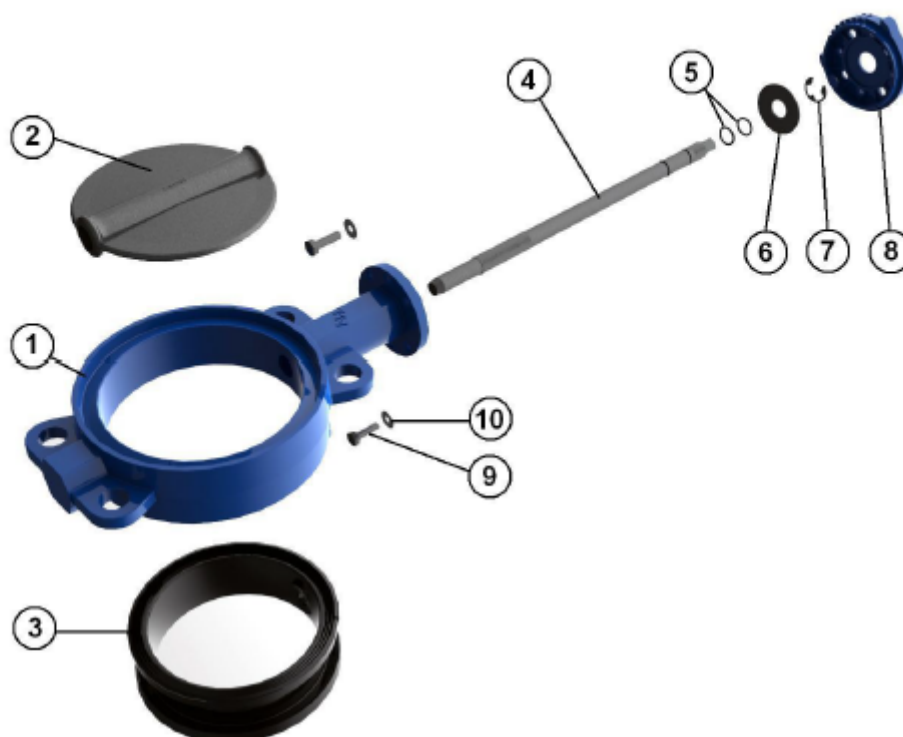
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CONSTRUCTION



No°	Name	1150	1153
1	Body	GS EN GJS-500-7 cast iron	
2	Butterfly DN32-100	1.4408 SS	
3	Butterfly DN125-400	GS EN GJS-500-7 cast iron	1.4408 SS
3	Liner	EPDM	EPDM
4	Stem	420 SS	304 SS
5	O-ring	EPDM	EPDM
6	Ring	Steel	
7	Circlips	Steel	
8	ISO mounting pad	aluminium	
9	Screw	5.6 Steel	
10	Washer	Steel	

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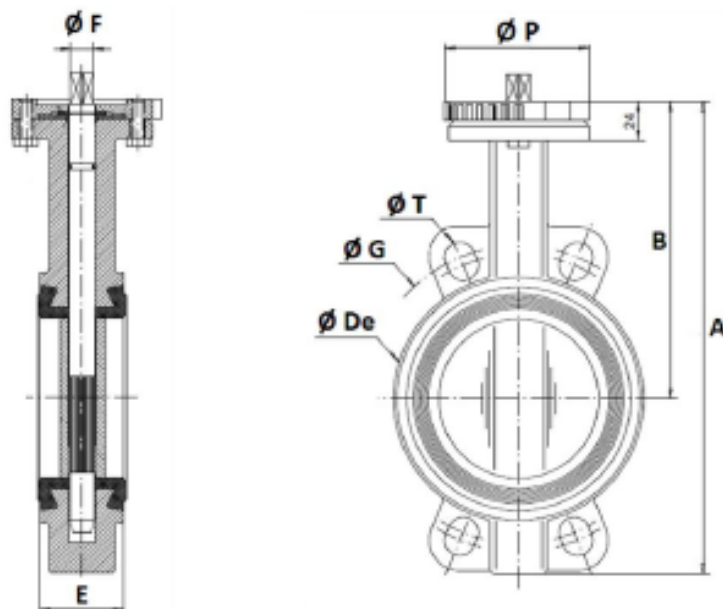
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DIMENSIONS [mm]



DN	32-40	50	65	80	100	125	150	200	250	300
A	206	228	248	265	298	331	349	430	461	524
B	140	156	161	169	187	206	215	255	248	280
$\varnothing De$	82	102	119	135	155	185	208	270	328	381
E	33	43	46	46	52	56	56	60	68	78
$\varnothing F$	9.5	9.5	12.5	14	14	17	17	21	23	26.5
$\varnothing G$	110	125	145	160	180	210	240	295	350	400
$\varnothing P$	88	88	88	88	88	105	105	105	150	150
$\varnothing T$	18	18	18	18	18	18	23	23	23	23
Weight (kg)	2,46	3,66	4,40	4,60	6	7,60	9,20	14,7	24,7	33

FLOW-RATE COEFFICIENT Kv (m³/h)

DN	32-40	50	65	80	100	125	150	200	250	300
Kv	70	109	200	334	551	901	1427	2383	3825	5659

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SA ELECTRICAL MOTORISATION

The SA motorisation proposed as a standard extends to:

- IP67 epoxy coated aluminium housing for actuator and steel gear box,
- safety coefficient of 1.3 minimum compared to the nominal torque of the valve,
- upstream / downstream pressure difference $\Delta P=10$ bar max,

The actuator assembly is of the direct type, with aluminium motorisation mounting pad.

DN	Actuator	Power	Intensity 230V AC	Intensity 24V AC-DC	Time	Standard equipment of the actuator
32-40	SA 05	6 W	28 mA	1.8 mA	17 s	2 adjustable limit switches 2 dry auxiliary contacts Anti-condensation heater 2W Thermal protection of the motor Stand-by manual control with key Backlit position indicator (apart from SA-X) Electrical connection: 2 P.E. M20x1.5
50	SA 05	6 W	28 mA	1.8 mA	17 s	
65	SA 05	6 W	28 mA	1.8 mA	17 s	
80	SA 05	6 W	28 mA	1.8 mA	17 s	
100	SA 05	6 W	28 mA	1.8 mA	17 s	
125	See 1150-LT10 + NA					
150						
200						
250						
300						
350						

For any other operating conditions, please contact us.

* indicative time for actuator running empty

MOTORISATION OPTIONS

There are many options for which you are invited to contact our sales service:

1	2	3	4	5
SA 05 S: slow actuator 100 s	SA 05 PCU: 4-20mA or 0-10V proportional control unit actuator	SA 05 SCP: super capacitor safety actuator	SA 05 X: zone ATEX 1 and 2 actuator	SR 05: spring return fail safe actuator
				
6	SA PUI actuator with feedback potentiometer			
7	actuator dimensioned for an upstream / downstream pressure difference ΔP greater than 10 bar			
8	NA actuator with override by handwheel			
OPTIONS ON THE VALVE				
1	Carbon steel body, 304 and 316 SS, bronze and aluminium			
2	Carbon steel butterfly, 304 and 316 SS, copper-alu, Uranus, Hastelloy			
3	Hypalon liner, silicone steam, white EPDM, natural rubber, neoprene, vulcanised			
4	Stems of 420, 304, 316 SS, Hastelloy			

INSTALLATION IN AN ATEX ZONE

For automatic valves 1150-LT10+SA-X to be installed in the ATEX 1 or 2 zones, this has to be specified when ordering. Our services will check of the assembly, the installation of an earthing braid, and will issue an assembly certificate. Our authorised technicians carry out these operations in the workshop. Please contact us.

The special assembly and maintenance instructions for motorised valves in the ATEX zones must be followed. The ATEX glands and plug are not included in the supply. Use the following codes:

Aluminium gland M20x1.5 ATEX	Code 980179	Aluminium plug M20x1.5 ATEX	Code 980180
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114x, 115x AND 116x VALVES + ELECTRICAL ACTUATOR ASSEMBLY AND MAINTAINANCE INSTRUCTIONS

1 / CAUTION



1.1 - Cutting or crushing hazard

Never operate an automatic butterfly valve before its full assembly on the installation. The accidental operation of the butterfly could lead to crushing cutting of the operator's hand or arm.



2 / CHECKS AT ACCEPTANCE

2.1 - order number check

The valve code is shown on the SECTORIEL label affixed on the electrical actuator. Check that the code is identical with that shown on the delivery slip and the acknowledgement receipt of your order.

2.2 - valve diameter check

The valve code is also shown on the SECTORIEL label affix on the electrical actuator. Check that the diameter match that of your pipe installation.

2.3 - flange standard check

114x and 115x +AP valves have smooth lugs for mounting between PN10/16 flanges as per the EN 1092-1 standard and ANSI 150 as per the ANSI B16.5 standard. Check that the flanges of the pipe installation correspond to one of these standards.

The 1160-61-62-63-64 valves have internally threaded lugs. They are compatible with PN10/16 flanges up to DN150 and PN10 from DN200 to DN300 as per the EN 1092-1 standard. Check that the pipe installation is as per the standard.

2.4 - fluid and ambient temperature parameter check

The pressure and temperature limits for the valve in service are shown in the table below. Check that, for your service, the pressure and temperature are compatible with the limits.

Fluid pressure: WP	16 bar up to DN 200 10 bar up to DN 400
Fluid temperature: WT	According to the table below
Ambient temperature	-15°C / +70°C

3 / STORAGE INSTRUCTIONS

Follow our "IMESTOCK" instructions for storage.

4 / ASSEMBLY INSTRUCTIONS

4.1 - Place of installation

The 114x, 115x and 116x + electrical actuator valves can be installed both indoors and outdoors, while complying with the limit temperatures given in § 3.6.

If the valve is equipped with accessories (switch box, pilot solenoid valve), check their service temperatures and their IP code depending upon the place of installation.

SECTORIEL
38230 - FRANCE

SERIAL NUMBER VALVE
CODE DN
ACTUA MO
Read the mounting and servicing
instructions carefully

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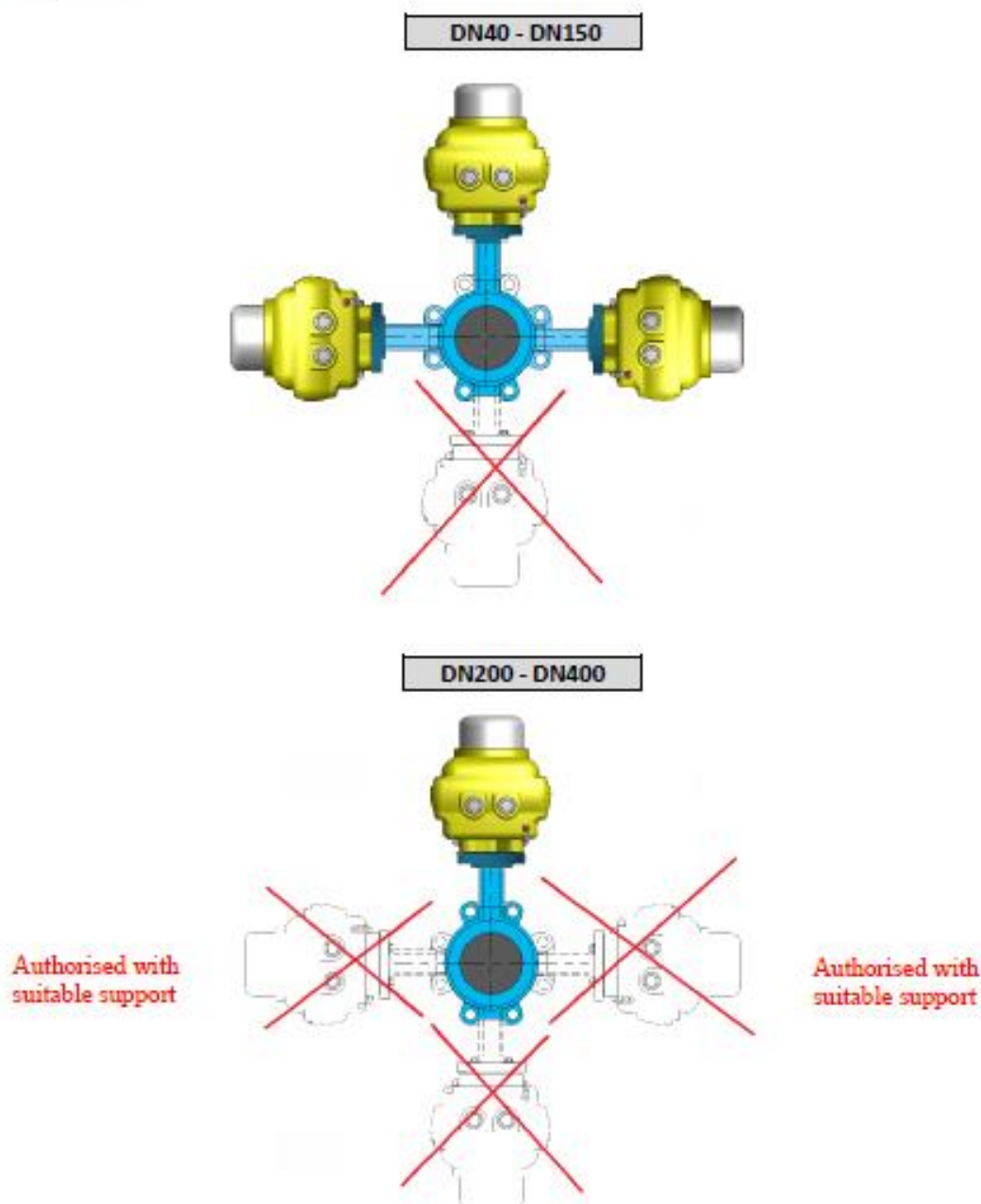
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4.2. - Connection to the pipe installation

4.2.1 - Mounting positions

The automatic valve has to be mounted either vertically or horizontally with an electrical actuator, as shown in the diagram below:



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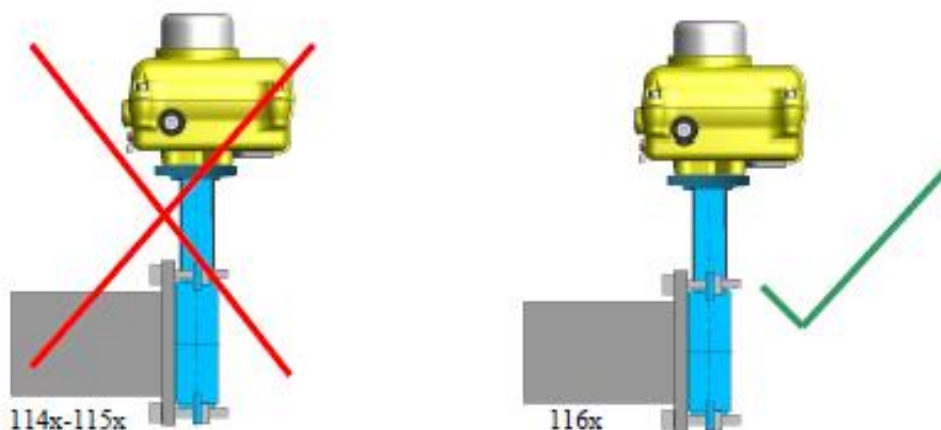
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4.2.2 - Mounting at the end of a line

114x and 115x butterfly valves must not be installed at the end of a line. Only the 116x valves can be installed at the end of a line.

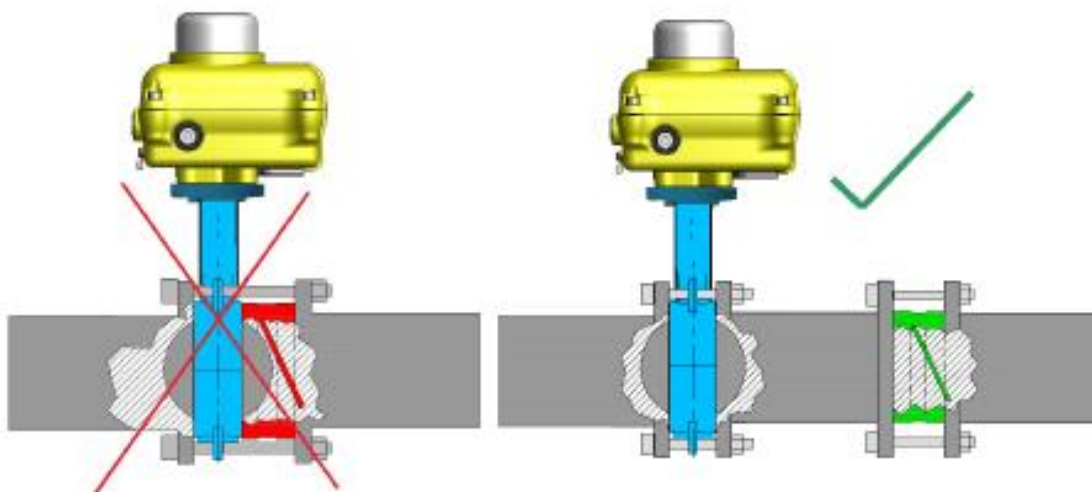


Possible blocking of the butterfly: protruding length.

At valve opening, the butterfly protrudes from the body according to the lengths shown in the table below.

DN	40	50	65	80	100	120	150	200	250	300	350	400
Protrusion (mm)	3,5	3,5	9,5	17	24	33,5	45,5	69	90	110,5	131	148

You must take it into account at mounting and not abut another valve element immediately upstream and downstream which could block the movement of the butterfly (e. g. a swing valve).



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4.2.3 - Mounting precautions:

Before any intervention on the valve, please follow the following indications:

Before installing the valve, clean the piping (brazing residues, metal swarf, sealing material, etc.).

Isolate the pipe installation upstream and downstream.

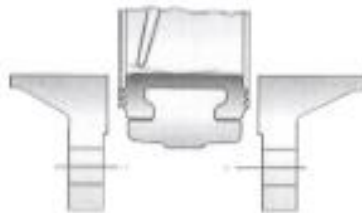
Bleed the pipe installation in order to bring it to ambient temperature and pressure.

Do not force the piping to align it so as to prevent applying stress on the valve body.

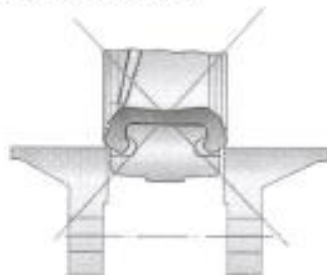
Wear the safety equipment required for this type intervention (gloves and goggles).

4.2.4 - Valve installation on the piping

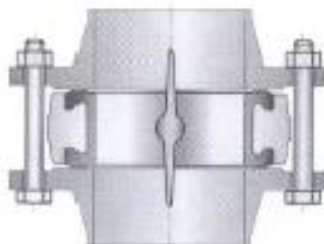
For all asymmetrical devices, check their orientation with regard to the normal direction of flow, and you must mount them in their operating position.



The gap in-between flanges has to be large enough to allow the valve be inserted without the elastic liner getting caught. The butterfly has to be in an almost closed position.



The liner can get damaged if the counter-flanges are not sufficiently spaced.



The butterfly has to be in the fully open position after positioning the valve in-between the counter-flanges and before tightening the bolts, otherwise the elastic liner might be deformed or deteriorated during the tightening of the first manoeuvre.

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4.2.5 - connection to the pipe installation

Nuts and bolts for PN10/16 114x and smooth lug 115x

DN	ØD		ØK		Hole number		Nuts and bolts	
	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16
40	150		110		4		M16x90	
50	165		125		4		M16x100	
65	185		145		4		M16x110	
80	200		160		8		M16x110	
100	220		180		8		M16x120	
125	250		210		8		M16x130	
150	285		240		8		M20x140	
200	340		295		8	12	M20x140	
250	395	405	350	355	12	12	M20x160	M24x
300	445	460	400	410	12	12	M20x160	M24x
350	505	520	460	470	16	16	M20x170	\
400	565	580	515	525	16	16	M24x200	\

Nuts and bolts for PN10/16 116x and threaded lug 118x

DN	ØD		ØK		Hole number		Nuts and bolts	
	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16
40	150		110		4		Zinc-plated M16x30 steel screw	
50	165		125		4		VAZ M16x35	
65	185		145		4		VAZ M16x35	
80	200		160		8		VAZ M16x40	
100	220		180		8		VAZ M16x40	
125	250		210		8		VAZ M16x45	
150	285		240		8		VAZ M20x45	
200	340		295		8	12	VAZ M20x45	
250	395	405	350	355	12	12	VAZ 20x45	VAZ 24x
300	445	460	400	410	12	12	VAZ 20x60	VAZ 24x
350	505	520	460	470	16	16	VAZ 20x	\
400	565	580	515	525	16	16	VAZ 24x	\

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5 / MAINTENANCE INSTRUCTIONS

5.1 - Before any intervention

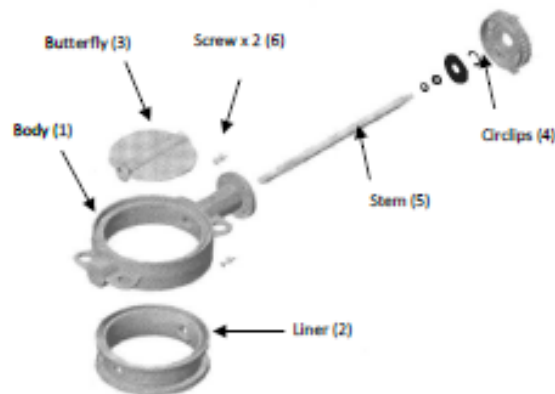
- 5.1.1 - Depressurize, drain and bring to ambient temperature, the pipe installation on which the valve is mounted.
- 5.1.2 - Close the compressed air supply to the actuator and depressurize the actuator. The valve will then close automatically.
- 5.1.3 - Turn off the electrical supply to the pilot solenoid valve.

Maintenance:

The absence of leak at the liner and at the valve stem should be regularly checked. If a leak occurs at the stem, replace the o-ring, if it occurs at the liner, the liner has to be replaced.

Important: All maintenance and servicing operations must be performed under the best safety conditions. Before any intervention, the valve has to be removed taking the above-mentioned precautions which apply both to mounting and removal.

Worn part replacement:



Remove the motor actuator. Unscrew the screws (6), remove the circlips (4). This frees the shaft (5), thus enabling the liner (2) and the butterfly (3) to be taken out of the body (1). Replace the worn parts: To obtain the list of spare parts for every valve, please contact our technical department at: +33 (0)474 94 90 70

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5.2 - Valve maintenance

In the event of a leak on the line, check the state of the butterfly (1) and of the liner (4). If need be, replace them.

Codes of spare parts:

DN	Liner					Butterfly		Stem
	EPDM	EPDM C	NBR	SILICONE	FKM	cast iron	Stainless steel	
40	985946	985966	985986		986026	9865030	9865020	9865040
50	985947	985967	985987	986007	986027	9865031	9865021	9865041
65	985948	985968	985988	986008	986028	9865032	9865022	9865042
80	985949	985969	985989	986009	986029	9865033	9865023	9865043
100	985950	985970	985990	986010	986030	9865034	9865024	9865044
125	985951	985971	985991	986011	986031	9865035	9865025	9865045
150	985952	985972	985992	986012	986032	9865036	9865026	9865046
200	985953	985973	985993	986013	986033	9865037	9865027	9865047
250	985954	985974	985994	986014	986034	9865038	9865028	9865048
300	985955					9865039	9865029	9865049

In the event of a leak at the stem, check the state of the o-rings of the stem.

6 / INSTRUCTION ON OUR PRODUCT DISPOSAL AND RECYCLING

Our valve does not contain any hazardous substance. At the valve end of life, after removing the equipment, the user's obligation is to call a scrap metal collector who will sort and recycle the different parts of the equipment. For your information, the following families of metal are present in our product: steel, stainless steel and aluminium.

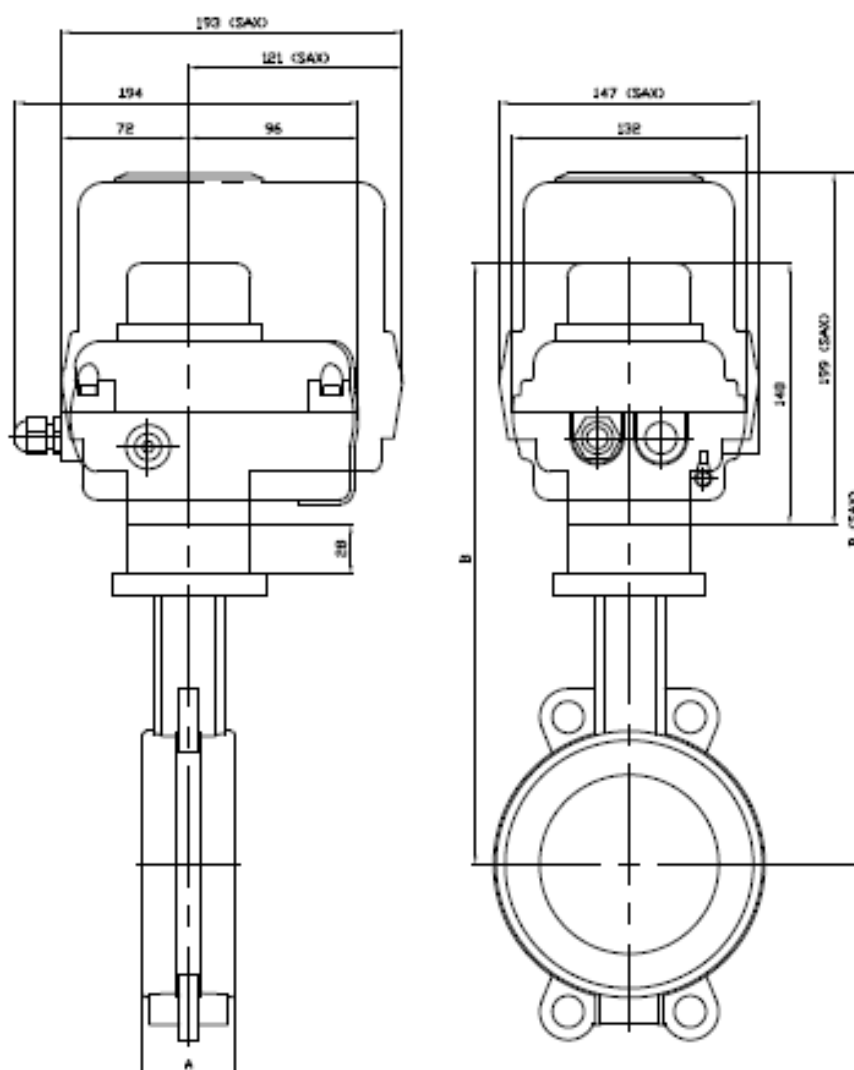
With regard to the electrical parts of the equipment, they have to be separated from the rest of the valve and given to a company specialised in recycling waste from electrical and electronic equipment, as per the directive 2002/96/EC.



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DN	40	50	65	80	100
A	33	43	46	46	52
B	301	317	323	331	346
B(SAX)	352	368	374	382	397
KG	5.6	6.5	7.2	7.7	9.1
KG(SAX)	7.8	8.7	9.4	9.9	11.3

Informations données à titre indicatif et sous réserve de modifications éventuelles
data subject to alteration

				Ajour SAX05	13/05/2011	A
Ech:	Date 05/10/2006	Dessiné par : LL	Tolérances générales : +/- 0.2	Modifications	Date	REV.
ROBINET A PAPILLON 1149-1158 + SERVOMOTEUR SA05-SAX05				Matériau :		
				Poids (Kg) :		

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FEATURES

The SA 05 electric actuator is intended for motorising industrial 1/4" turn valves. The torque is of 50 Nm. With a compact, robust construction and IP67 epoxy-coated aluminium housing, the SA actuator is especially well suited for motorising ball valves and butterfly valves installed in workshops or outdoors. The SA 05 has a manual key control and a 3D visual position indicator. Compliant with the EN 15714-2 standard.

AVAILABLE MODELS

Supply voltages: 230 Vac (50-60Hz), 24 Vac/dc and 12 Vdc.

Options: 110 Vac, feedback potentiometer, local command.



LIMITS OF USE

IP Code	IP 67
Ambient temperature	- 20°C / +70°C
Service factor	<u>S2</u> : 15mn - <u>S4</u> : 50%

MECHANICAL FEATURES

Gear box	treated steel pinions
Torque	50 Nm
Angle of rotation	90° +/- 5°
Decutching	Without
Override control	by key (except for SA 05 S)



Actuator	SA 05			SA 05 S	
Voltage	230V AC	24V AC/DC	12V DC	230V AC	24V AC/DC
Torque (Nm)	50				
Manoeuvring time (s)	17	10	11	100	100
ISO 5211	F03/F05/F07 star 14				

ELECTRICAL FEATURES

Motor protection	Thermal switch	Anti-condensation	5W heater
Limit switches	2 adjustable switches	Electrical connection	2 x P.E. M20x1.5
Auxiliary switches	2 adjustable dry switches		

Actuator	SA 05			SA 05 S	
Voltage	230V AC	24V AC/DC	12V DC	230V AC	24V AC/DC
Power (W)	6 W	15 W	6 W	6 W	6 W
Current (A)	0.23	1.8	3.2	0.23	1.8

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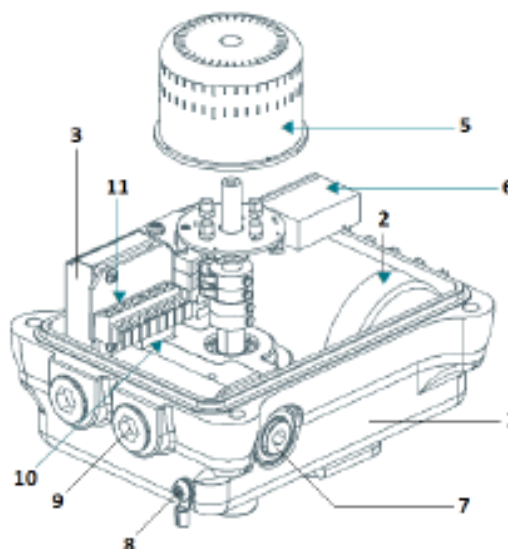
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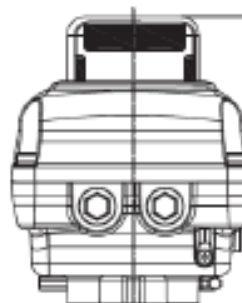
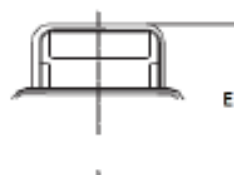
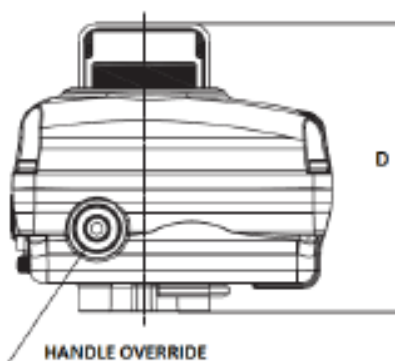
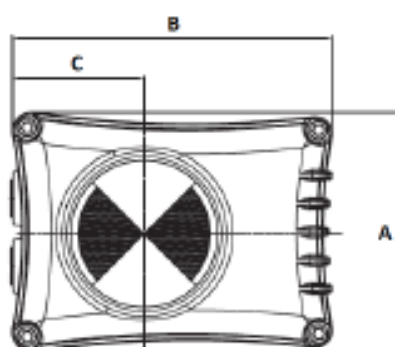
CONSTRUCTION

1	Housing	Polyester-coated aluminium
2	Electrical motor	
3	Gear box	Treated steel pinions
4	Cover	Polyester-coated aluminium
5	Position indicator	Polycarbonate plastic
6	Condenser	
7	Handle override	
8	Earthing	
9	Cable inlet	
10	Anti-condensation heater	
11	Terminal box	



DIMENSIONS (mm) AND WEIGHT (kg)

Dimensions (mm)	A	B	C	D	E	Weight (kg)
SA 05	127	170	70	153	80	3.2



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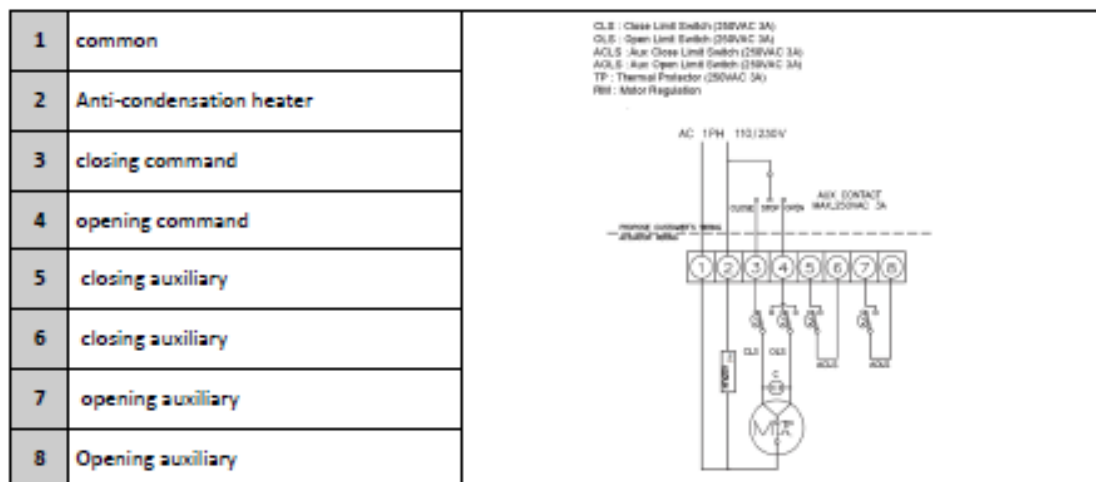
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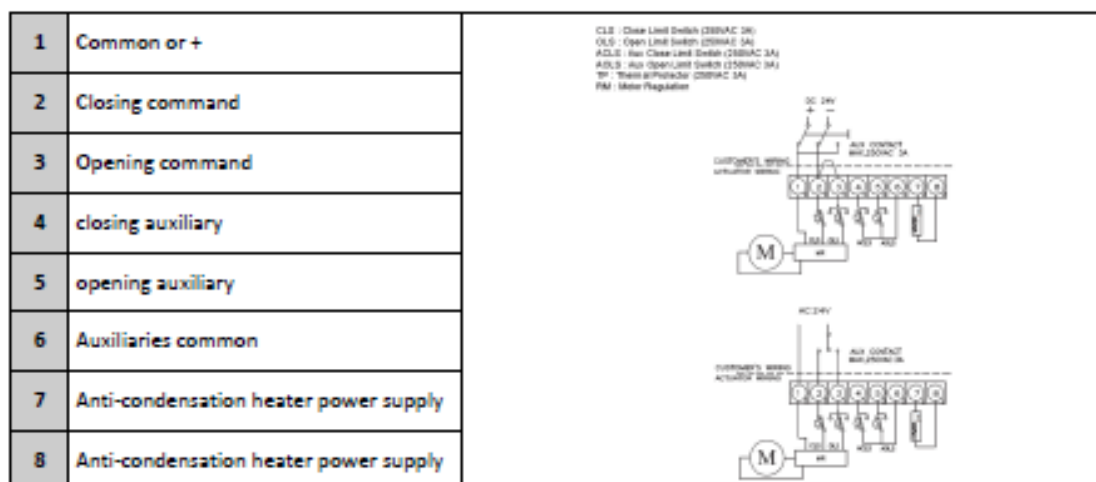
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WIRING DIAGRAM 230V AC 50Hz/60Hz



WIRING DIAGRAM 24V AC/DC-12V DC



OPTIONS

1	SA 05 X: version for ATEX zone
2	SA 05 PIU: version with feedback potentiometer
3	SA 05 CPT: version with position transmitter 4-20 mA
4	SA 05 PCU: version with adjustment card 0-10, 2-10V, 2-20 mA, 4-20 mA
5	SA 05 LCU: version with local control
6	SA 05 RBP: version with in-built fail safe/security

Gemini Valve B.V.

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FEATURES

SA05-X electric actuators are intended for motorising 1/4" turn valves in explosive zones. The torque is of 50 Nm. The protection mode is a "d" explosion-proof. With a compact, robust construction and IP67 epoxy-coated aluminium housing, the SA05-X actuator is especially well suited for motorising ball valves and butterfly valves installed in difficult atmospheres. The SA05-X has a manual key control and a 3D visual position indicator. Compliant with the EN 15714-2 standard.

AVAILABLE MODELS

Supply voltages: 230V AC (50-60Hz), 24V AC/DC.

LIMITS OF USE

IP Code	IP 67
Ambient temperature	- 20°C / +55°C
Service factor	<u>S2</u> : 15mn - <u>S4</u> : 50%



ATEX APPROVAL

Protection mode	"d" according to the EN 60079-1 standard
Category of material	2
Operation zones	1G and 2G
Marking	II 2 G Ex d IIB T4 (ON KEMA no. 0344)



MECHANICAL FEATURES

Gear box	treated steel pinions
Torque	50 Nm
Angle of rotation	90° +/- 5°
Decutching	Without
Override control	By key

Actuator	SA 05-X (50Hz)		SA 05-X (60Hz)
Voltage	230V AC	24V AC/DC	230V AC
Torque (Nm)	50		50
Manoeuvring time (s)	17	10	14
ISO 5211	F03/F05/F07 star 14		

Information given as an indication only, and subject to possible modifications.

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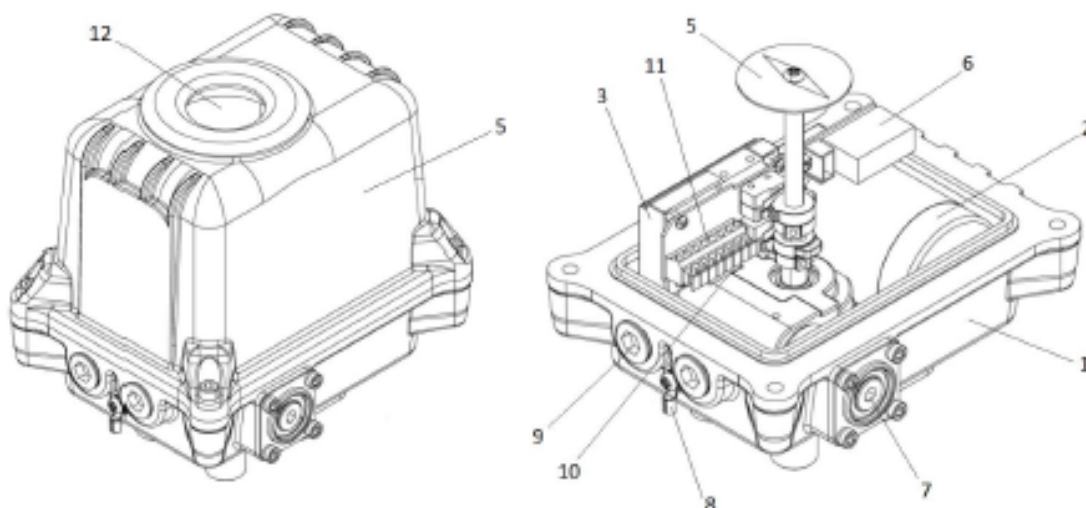
ELECTRICAL FEATURES

Motor protection	Thermal switch	Anti-condensation	5W heater
Limit switches	2 adjustable switches	Electrical connection	2 x C.G. M20x1.5 ATEX (NOT SUPPLIED on option)
Auxiliary switches	2 adjustable dry switches		

Actuator	SA 03 X	
Voltage	230V AC	24V AC/DC
Power (W)	6 W	6 W
Current (A)	0.23	1.8

CONSTRUCTION

1	Housing	Polyester-coated aluminium
2	Electrical motor	
3	Gear box	Treated steel pinions
4	Cover	Polyester-coated aluminium
5	Position indicator	Polycarbonate plastic
6	Condenser	
7	Handle override	
8	Earthing	
9	Cable inlet	
10	Anti-condensation heater	
11	Terminal box	
12	Indicator light	Toughened glass



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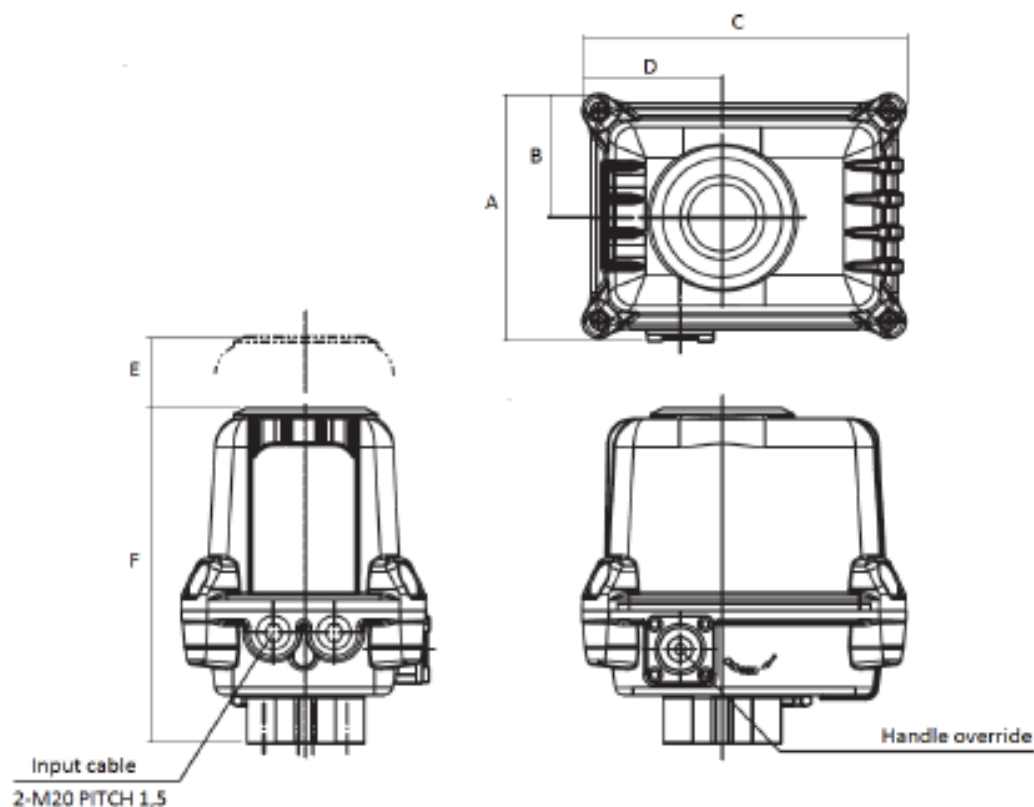
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DIMENSIONS (mm) AND WEIGHT (kg)

Dimensions (mm)	A	B	C	D	E	F	Weight (kg)
SA05-X	147	73	193	83	100	199	5



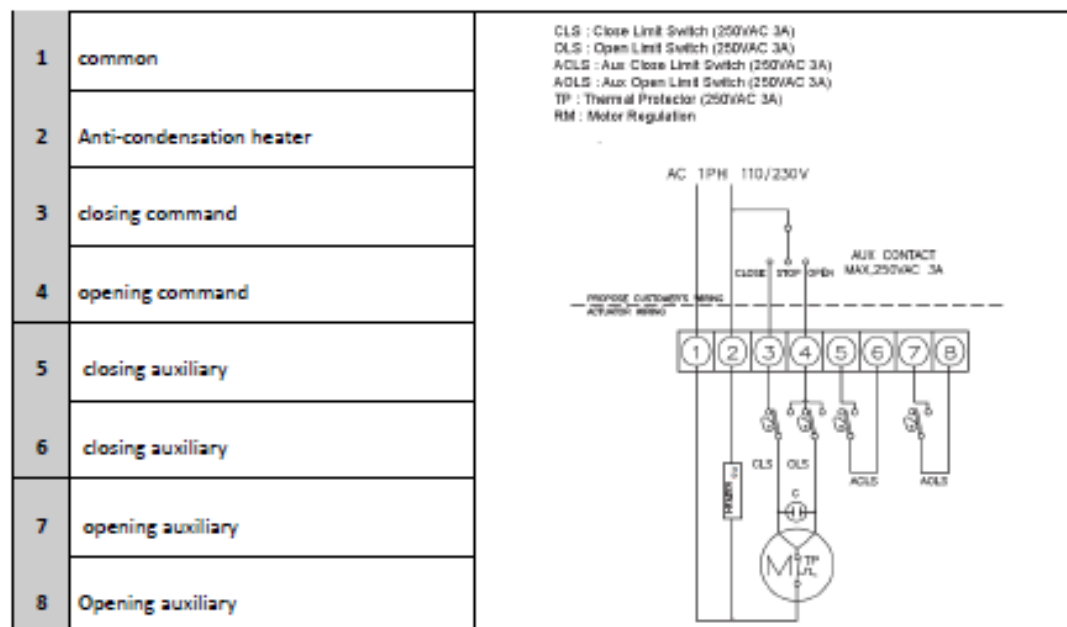
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WIRING DIAGRAM 230V AC 50Hz/60Hz



WIRING DIAGRAM 24V AC/DC

