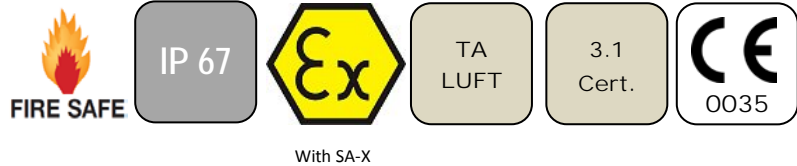


# 737-747XS VALVE WITH SA05 ELECTRIC ACTUATOR

## CHARACTERISTICS

The 737XS (steel) and 747XS (stainless steel) + SA 2-way ball valves are dedicated to the automatic shut-off of pipes carrying high temperature fluids such as steam below a 15 bar pressure. With their 3-piece and external bolts construction, they are easy to dismantle for maintenance. This full bore ball valve has an antistatic device, a gland pack double tightness and is certified according to the ATEX (with SA-X), EC, Firesafe and TA-LUFT standards. The ISO 5211 pad enables the direct mounting of the SA05 electric actuator. It is perfectly adapted for an indoor or outdoor industrial use.



With SA-X

## AVAILABLE ITEMS

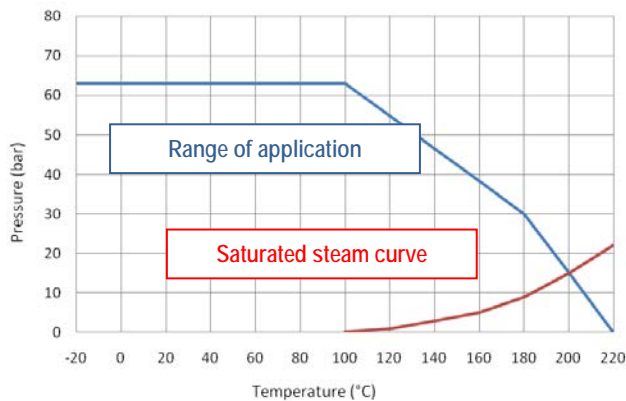
Size ½" to 2"

Voltages: 24 V DC, 24 V AC and 230 V AC

| Attachment      | BSP   | SW    | BW    |
|-----------------|-------|-------|-------|
| Steel           | 737XS | 739XS | 738XS |
| Stainless steel | 747XS | 749XS | 748XS |

## LIMITS OF USE

| Material                             | Steel            | Stainless steel  |
|--------------------------------------|------------------|------------------|
| Max. allowable pressure (PS)         | 63 bar (20 °C)   |                  |
| Min./max. allowable temperature (TS) | -25 °C / +220 °C | -40 °C / +220 °C |
| Use on steam                         | 15 bar / +200 °C |                  |
| Room temperature                     | -20 °C / +70 °C  |                  |
| Service                              | S2 – 70%         |                  |



## DIRECTIVES AND DEVELOPMENT STANDARDS APPLICABLE

|                                       | Standard                  | Notified bodies |                                       | Standard               |
|---------------------------------------|---------------------------|-----------------|---------------------------------------|------------------------|
| 97/23/EC Pressure Equipment Directive | ½" to 1" : excluded       |                 | Valve testing                         | EN 12266               |
|                                       | 1" ¼ to 2" : category III | TÜV #0035       | Material certificate                  | EN 10204               |
| Size                                  | EN 12516-1                |                 | Actuator attachment                   | ISO 5211               |
| Alloy grade                           | EN 1503-1                 |                 | Firesafe                              | API 607/5 – ISO10497-5 |
| ATEX Directive                        | Valve                     | SIRA #0518      | II 2G/D Tx for zones 1,2,21 and 22    |                        |
|                                       | Actuator (SA-X option)    | KEMA #0344      | II 2G EEx d II C T4 for zones 1 and 2 |                        |

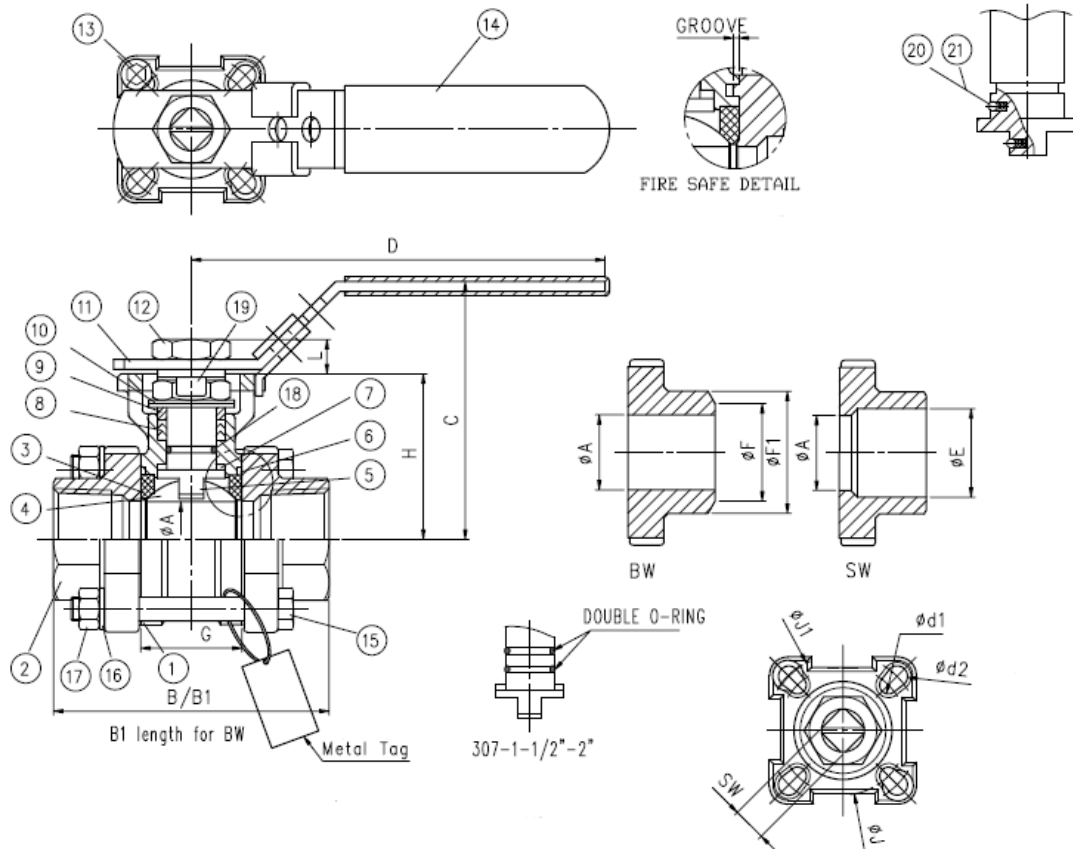
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|  |   | Rev.       | 2           |
|  |   | Date       | 05/2012     |

# 737-747XS VALVE WITH SA05 ELECTRIC ACTUATOR

## CONSTRUCTION


| #  | Item        | Carbon steel                    | Stainless steel                      | #                                      | Item           | Carbon steel | Stainless steel |
|----|-------------|---------------------------------|--------------------------------------|--|----------------|--------------|-----------------|
| 1  | Body        | Carbon steel<br>A216 WCB/1.0619 | Stainless steel<br>A351 CF8M /1.4408 | 12                                     | Nut            | SS 304       | SS 304          |
| 2  | Ends        | Carbon steel<br>A216 WCB/1.0619 | Stainless steel<br>A351 CF8M /1.4408 | 13                                     | End stop       | SS 304       | SS 304          |
| 3* | Seats       | PTFE+50% SS                     | PTFE+50% SS                          | 14                                     | Sleeve         | PVC          | PVC             |
| 4  | Ball        | CF8M / 316                      | CF8M / 316                           | 15                                     | Bolts          | SS 304       | SS 304          |
| 5  | Stem        | SS 316                          | SS 316                               | 16                                     | Washer         | SS 304       | SS 304          |
| 6* | Body gasket | Graphite                        | Graphite                             | 17                                     | Nuts           | SS 304       | SS 304          |
| 7* | Washer      | PTFE+15%Graphite                | PTFE+15%Graphite                     | 18*                                    | O-ring         | FKM          | FKM             |
| 8* | Packing     | Graphite                        | Graphite                             | 19                                     | Retaining ring | SS 304       | SS 304          |
| 9  | Spacer      | SS 301                          | SS 301                               | 20                                     | Antistatic     | SS 316       | SS 316          |
| 10 | B washer    | SS 301                          | SS 301                               | 21                                     | Spring         | SS 304       | SS 304          |
| 11 | Lever       | SS 304                          | SS 304                               | *Items provided in the maintenance kit |                |              |                 |



## DIMENSIONS(mm)

| DN    | A    | B (BSP) | B (SW) | B1 (BW) | C     | D   | E    | F  | F1   | G    | H    | J1 | SW |
|-------|------|---------|--------|---------|-------|-----|------|----|------|------|------|----|----|
| ½"    | 16   | 75      | 75     | 75      | 70.9  | 110 | 21.9 | 17 | 22.4 | 25.2 | 42.3 | 42 | 9  |
| ¾"    | 20   | 80      | 80     | 90      | 73.4  | 110 | 27.2 | 22 | 28.2 | 27.7 | 44.8 | 42 | 9  |
| 1"    | 24.5 | 90      | 90     | 100     | 84.1  | 135 | 34.0 | 28 | 33.7 | 33.0 | 54.0 | 50 | 11 |
| 1" ¼" | 32   | 110     | 110    | 110     | 89.3  | 135 | 42.7 | 37 | 44.0 | 41.2 | 59.2 | 50 | 11 |
| 1" ½" | 38   | 120     | 120    | 125     | 109.5 | 165 | 48.8 | 43 | 50.8 | 49.3 | 73.5 | 70 | 14 |
| 2"    | 50   | 140     | 140    | 150     | 118.9 | 165 | 61.3 | 54 | 62.6 | 63.6 | 82.9 | 70 | 14 |

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|   |   | Date       | 05/2012     |

# 737-747XS VALVE WITH SA05 ELECTRIC ACTUATOR

## ACTUATION WITH SA

Suggested standard actuation for SA under the following conditions:

- Electric actuator with an IP 67 epoxy coated aluminium enclosure and steel gears
- A minimum 1.3 safety factor compared with the valve nominal torque rating
- A maximum pressure differential up/downstream of 10 bar (=ΔP)

The actuator is mounted with a stainless steel bracket and coupler according to the EN 15081 standard






| DN   | Actuator | Power | Intensity<br>230 V AC | Intensity<br>24 V AC/DC | Operating time* | Standard equipment of the actuator  |
|------|----------|-------|-----------------------|-------------------------|-----------------|---|
| ½ "  | SA05     | 6 W   | 28 mA                 | 1.8 mA                  | 17 s            | 2 adjustable limit switches<br>2 dry auxiliary switches<br>2 W anti-condensation heater<br>Actuator thermal cut-out<br>Declutching lever<br>Manual override by key<br>Backlit position indicator<br>Electrical connection: 2 gland packs. M20x1.5 |
| ¾ "  | SA05     | 6 W   | 28 mA                 | 1.8 mA                  | 17 s            |   |
| 1"   | SA05     | 6 W   | 28 mA                 | 1.8 mA                  | 17 s            |   |
| 1" ¼ | SA05     | 6 W   | 28 mA                 | 1.8 mA                  | 17 s            |   |
| 1" ½ | SA05     | 6 W   | 28 mA                 | 1.8 mA                  | 17 s            |   |
| 2"   | SA05     | 6 W   | 28 mA                 | 1.8 mA                  | 17 s            |   |

\*Unloaded operating time given for information purpose only. May vary depending on the medium

For any other working conditions, please contact us.

## ACTUATION OPTIONS

There are many different options, please contact our commercial department.

| 1   | 2   | 3   | 4  | 5   |
|---|---|---|--|---|
| SA05S:<br>Slow closing electric<br>actuator 100 s                                   | SA05PCU:<br>Regulation actuator<br>4-20 mA or 0-10 V  | SA05RBP:<br>Safety actuator with<br>an integrated battery<br>emergency shutdown     | SA05X:<br>Actuator for use in<br>ATEX zones 1 and 2                                  | SR05:<br>Safety spring return<br>actuator   |
|  |          |  |  |  |
| 6   | SAPUI electric actuator with feedback potentiometer   |   |  |   |
| 7   | Thermal dispersion bracket for high temperature fluids                                      |   |  |   |
| 8   | 100 mm stem extension for pipe insulation   |   |  |   |
| 9   | Electric actuator sized for a maximum pressure differential up/downstream over 10 bar (=ΔP) |   |  |   |
| 10  | NA electric actuator with a declutchable manual override by handwheel                       |   |  |   |

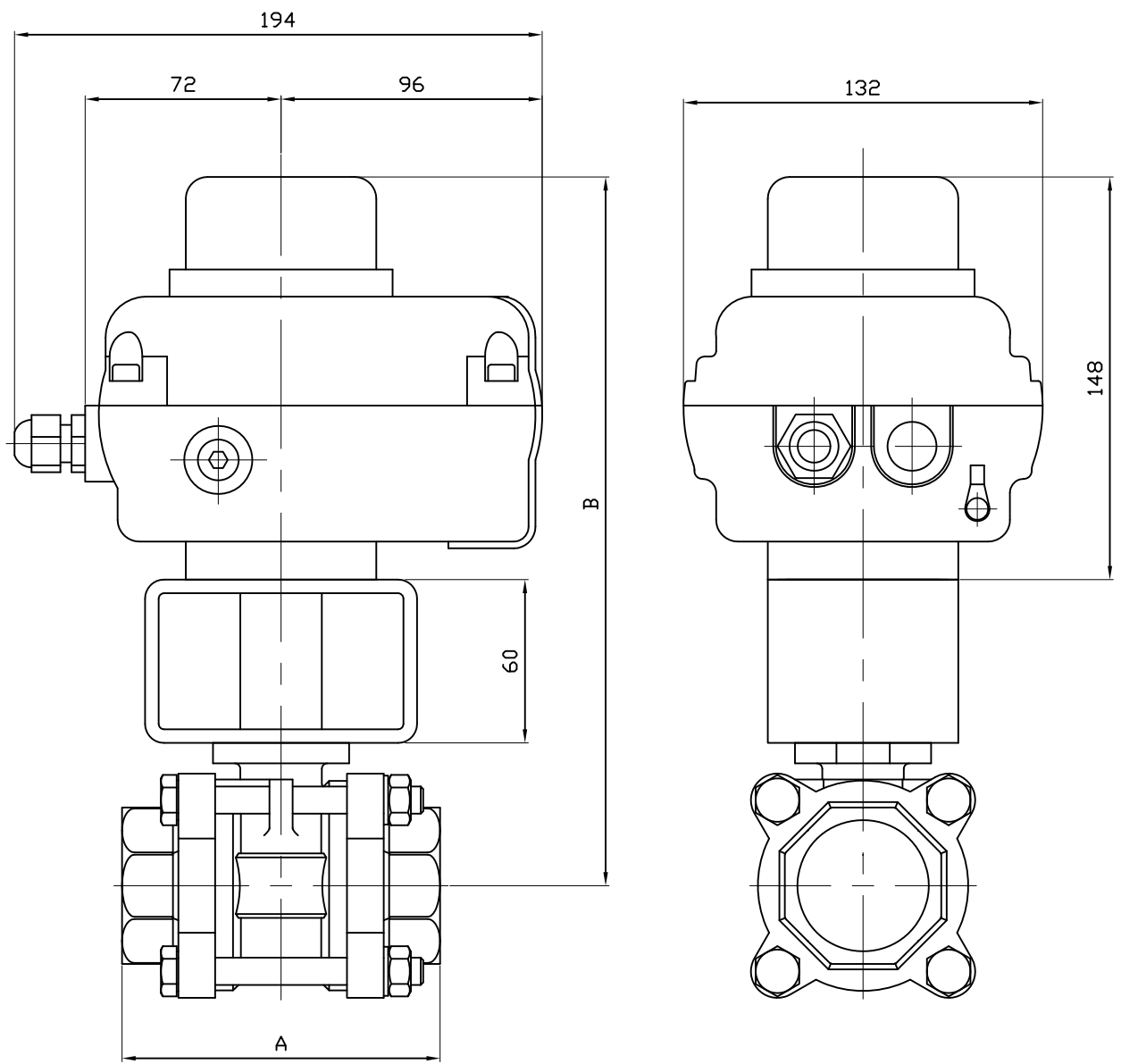
## ATEX ZONES INSTALLATION

It is compulsory to specify if the installation of the automatic valve 737-747XS+SA-X05 will take place in ATEX zones 1 or 2 while making the order. Our services will proceed to the mounting check, to a grounding strip installation and will edit a mounting certificate. Those operations are performed by our proper engineers. Please contact us for further details. It is also compulsory to follow the ATEX zone mounting and maintenance special instructions for motorized valves. The ATEX gland packs and sealing plugs are not provided. Please use the following codes:


|                                   |             |                                      |             |
|-----------------------------------|-------------|--------------------------------------|-------------|
| ATEX aluminium gland pack M20x1.5 | Code 980179 | ATEX aluminium sealing plugs M20x1.5 | Code 980180 |
|-----------------------------------|-------------|--------------------------------------|-------------|

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| DN | 1/2"  | 3/4" | 1"   | 1 1/4" | 1 1/2" | 2"  |
|----|-------|------|------|--------|--------|-----|
| A  | 75    | 80   | 90   | 110    | 120    | 140 |
| B  | 250.3 | 253  | 262  | 267    | 281.5  | 291 |
| KG | 3.82  | 4.02 | 4.57 | 5.27   | 5.9    | 7.8 |

|  |            |     |         |                   |            |      |
|--|------------|-----|---------|-------------------|------------|------|
| Ech/   | Date       | E.D | +/- 0.2 | Modifications     | 05/07/2012 | A    |
|  | 23/05/2011 |     |         |                   | Date       | REV. |
| 737XS-747XS/BALL VALVE 737XS-747XS + SA05/ELECTRIC ACTUATOR SA05   |            |     |         | Poids (Kg) :      |            |      |
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|  |            |     |         | Plan n° Ens 1108A |            |      |

# ELECTRIC ACTUATOR SA05

## GENERAL DESCRIPTION

The SA05 electric actuator is dedicated to the actuation of industrial ¼ turn valve. The torque value is 50 Nm. With a compact design, an IP 67 cast aluminium enclosure and an epoxy protection, the SA electric actuator is especially adapted to the actuation of ball valves and butterfly valves in outdoor or indoor areas. The SA05 is equipped with a visual 3D position indicator and a manual override driven by an Allen key. It complies with the EN 15714-2 standard.

## AVAILABLE ITEMS

Voltage: 230 V AC (50-60 Hz), 24 V AC/DC and 12 V DC



## LIMITS OF USE

|                   |                 |
|-------------------|-----------------|
| Protection rating | IP 67           |
| Temperature range | -20 °C / +70 °C |
| Service           | S2 - 70%        |

## MECHANICAL CHARACTERISTICS

|                 |                              |
|-----------------|------------------------------|
| Gears           | Treated steel pinions        |
| Torque          | 50 Nm                        |
| Rotation angle  | 90° +/-5°                    |
| Decutching      | N/A                          |
| Manual override | Allen key (except for SA05S) |




|                   |                     |            |         |          |            |
|-------------------|---------------------|------------|---------|----------|------------|
| Electric actuator | SA05                |            |         | SA05S    |            |
| Voltage           | 230 V AC            | 24 V AC/DC | 12 V DC | 230 V AC | 24 V AC/DC |
| Torque            | 50 Nm               |            |         |          |            |
| Operating time    | 17 s                | 17 s       | 17 s    | 100 s    | 100 s      |
| ISO 5211 pad      | F03/F05/F17 star 14 |            |         |          |            |

## ELECTRICAL CHARACTERISTICS

|                    |                           |                       |                          |
|--------------------|---------------------------|-----------------------|--------------------------|
| Motor protection   | Thermal cut-out           | Anti-condensation     | 2 W heater               |
| Limit switches     | 2 adjustable switches     | Electrical connection | 2 gland packs<br>M20x1.5 |
| Auxiliary switches | 2 adjustable dry switches |                       |                          |

|                   |          |            |         |          |            |
|-------------------|----------|------------|---------|----------|------------|
| Electric actuator | SA05     |            |         | SA05S    |            |
| Voltage           | 230 V AC | 24 V AC/DC | 12 V DC | 230 V AC | 24 V AC/DC |
| Power             | 6 W      | 15 W       | 15 W    | 6 W      | 6 W        |
| Intensity         | 0.24 A   | 1.8 A      | 3.6 A   | 0.24 A   | 1.8 A      |

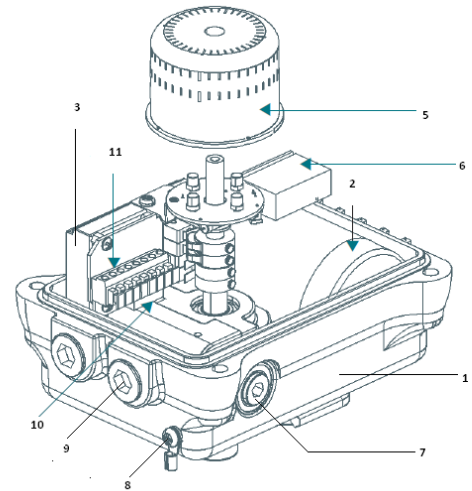
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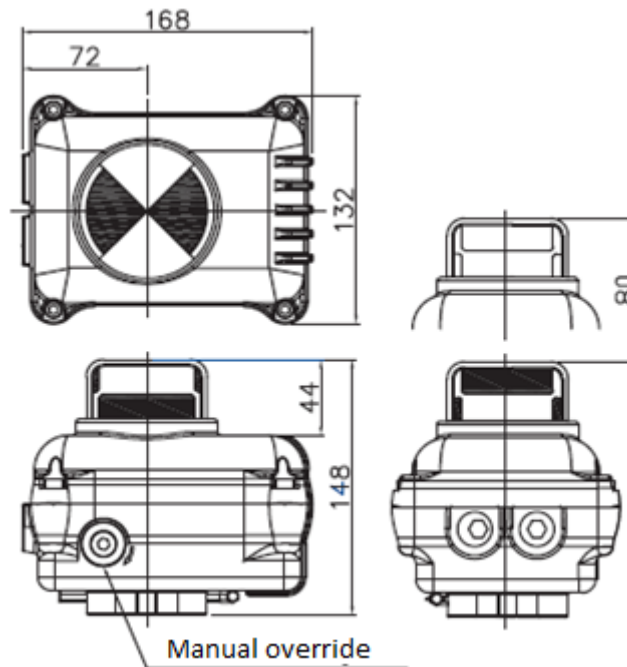
# ELECTRIC ACTUATOR SA05

## CONSTRUCTION

|    |                          |                            |
|----|--------------------------|----------------------------|
| 1  | Enclosure                | Polyester coated aluminium |
| 2  | Electric motor           |                            |
| 3  | Gear                     | Treated steel pinions      |
| 4  | Cover                    | Polyester coated aluminium |
| 5  | Position indicator       | Polycarbonate plastic      |
| 6  | Condenser                |                            |
| 7  | Manual override          |                            |
| 8  | Connection to ground     |                            |
| 9  | Cable inlet              |                            |
| 10 | Anti-condensation heater |                            |
| 11 | Terminal block           |                            |



## DIMENSIONS (mm)



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# ELECTRIC ACTUATOR SA05

## WIRING SCHEME 230 V AC

|   |                          |   |
|---|--------------------------|---|
| 1 | Common                   | <p>                     CLS : CLOSE LIMIT SWITCH (250VCA 3A)<br/>                     OLS : OPEN LIMIT SWITCH (250VCA 3A)<br/>                     ACLS : AUX. CLOSE LIMIT SWITCH (250VCA 3A)<br/>                     AOLS : AUX. OPEN LIMIT SWITCH (250VCA 3A)<br/>                     TP : THERMAL PROTECTOR                 </p> |
| 2 | Anti-condensation heater |   |
| 3 | Closing control          |   |
| 4 | Opening control          |   |
| 5 | Auxiliary switch closing |   |
| 6 | Auxiliary switch closing |   |
| 7 | Auxiliary switch opening |   |
| 8 | Auxiliary switch opening |   |

## WIRING SCHEME 24 V AC/DC

|     |                                       |  |
|-----|---------------------------------------|--|
| 1   | Common or +                           | <p>                     CLS : CLOSE LIMIT SWITCH (250VCA 3A)<br/>                     OLS : OPEN LIMIT SWITCH (250VCA 3A)<br/>                     ACLS : AUX. CLOSE LIMIT SWITCH (250VCA 3A)<br/>                     AOLS : AUX. OPEN LIMIT SWITCH (250VCA 3A)<br/>                     TP : THERMAL PROTECTOR<br/>                     RM : MOTOR REGULATION                 </p> |
| 2   | Closing control                       |  |
| 3   | Opening control                       |  |
| 4   | Auxiliary switch closing              |  |
| 5   | Auxiliary switch opening              |  |
| 6   | Auxiliary common                      |  |
| 7-8 | Anti-condensation heater power supply |  |

## OPTIONS

|   |   |
|---|---|
| 1 | SA05X: ATEX area version  |
| 2 | SA05PIU: feedback potentiometer version                         |
| 3 | SA05CPT: 4-20 mA position transmitter version                   |
| 4 | SA05PCU: 0-10, 2-10 V, 2-20 mA, 4-20 mA regulation card version |
| 5 | SA05LCU: local control version                                  |
| 6 | SA05RBP: integrated battery emergency shutdown device version   |

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