Putting into service and maintenance instructions for electric coil protected by explosion-proof cover, C2 type **SE3120X-FT/D**

Manufactured by ERA-SIB : 17, rue Jean POULMARCH 95102 Argenteuil France
Marking includes: SEE LABEL

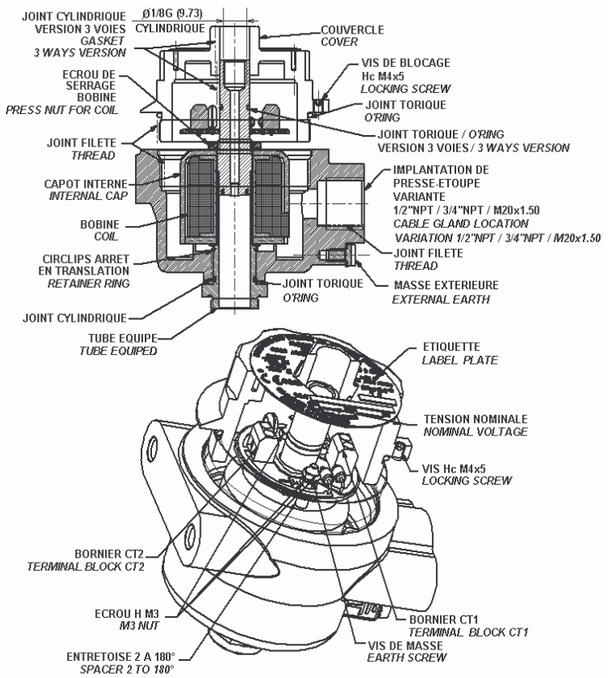
EC logo / (Ex) II2G/D logo
EEx d IIC T4 or T6 - IP65 T135°C or 85°C
Ambient temperature T4: -20°C to +60°C / Ambient temperature T6: -20°C to +40°C

General:
Non observance of points mentioned here-below may be the cause of malfunctions, damages and injuries.
This component is not a safety device, it is intended to be used only in accordance with the instructions, either individually or integrated in apparatus, machines and plants.
Erection, putting into service, operation and maintenance shall be performed by competent and duly authorized personnel.
Personnel working on these components shall be acquainted with safety rules and regulations in force regarding electric components, apparatus, machines and plants.
In case of a problem, please contact ERA-SIB or its official representatives.

Description:
Basic safety and health requirements: C2 type explosion-proof cover is designed in accordance with appendix I of European directive 94/9/CE and standards EN50014 (1997) + amendments 1 and 2, EN50018 (2000), EN50281-1-1 (1998), EN13463-1 (2001), EN13463-5 (2003)

Classification : (Ex) II 2 G/D EEx d IIC T6-T4
II 2 G/D IP65 T85°C – T135°C
T6-T4 surface temperature classification depends on power and ambient temperature indicated on the nameplate.

PUTTING INTO SERVICE:



IMPORTANT INSTRUCTIONS:

- C2 type explosion proof covers are intended to be installed in potentially explosive atmospheres, containing gases (group IIA, IIB and IIC), steam, mists of group II (category 2 G) and dust (category 2 D).
- Cabling shall be in accordance with local and national regulations for equipment installed in explosive atmospheres.
- Pipe size shall correspond to the connection size indicated in the instructions. Wrong pipe dimensioning can lead to malfunctions.
  Pay attention to the length of the fittings: do not overtighten when the fitting hits the bottom of the threading.
- To protect the equipment, install a suitable strainer or filter before the product, as close as possible to the product.
- In case of use of tape, paste, spray or other lubricant during tightening, make sure that no foreign particle goes in the circuit.
- Use suitable tools and place spanners as close as possible to the connection point. To avoid any damage, DO NOT OVERTIGHTEN the pipe fittings.

Connection pipes shall not exert any traction, torque or stress on the product. Never use the valve or magnetic head as a lever.

Erection:
Before erection, depressurize and clean the pipes internally.
For operating position and fastening method, please refer to table in appendix.
However, erection shall be done preferably on horizontal pipe (parallel to the ground), imperative in case of pressure assisted solenoid valve or membrane and plunger coupled pressure assisted solenoid valve.
- Check the direction of fluid: only one direction

Direction of fluid is indicated by an arrow on body or by following marking:
A= inlet =1
S= outlet =2
E= exhaust (pour EV 3/2) =3

Remove plastic protection plugs and proceed to connect the orifices

- Check the compatibility between the protection mode and the installation area
- Check the conformity of the supply voltage with the voltage indicated on the nameplate.
- DO NOT OPEN IN DUSTY ATMOSPHERE
- Release screw Hc M4x5.
- Unscrew cover.
- Bare cable on approximately 55 mm and each core on approximately 5 mm. Tin multi-strand wires.
- Pass cable in cable gland (not represented) and cable gland location.
  Use a certified cable gland compatible with standards EN50014 and EN50018, second edition.
- Connect both poles to CT1 terminal block; either position except for the version equipped with DC surge protection diode.
- Connect internal or external earth, or both if necessary.
  For internal earth: crimp earth wire on ∅ 3 eyelet to be mounted on M3 rod and tighten with M3 nut.
- Lubricate cover thread with silicon or graphite grease and screw against cover.
- Tighten screw Hc M4x5.
- Screw and tighten cable gland on cover (see cable gland instructions).
- Do not energize while cover is open.
- For three-ways versions, use only cylindrical gas thread fittings if a connection is necessary.

- **Special conditions for safe use:**
  When the temperature of the controlled fluid is higher than 60°C (T4) or 40°C (T6), the device shall not be used in an atmosphere likely to ignite at a temperature of 135°C (T4) or 85°C (T6) plus the difference between the fluid temperature and 60°C (T4) or 40°C (T6).

Temperature classification:
Voltage indicated on coil can only vary in a range of ±10% of the rated voltage.
Check that power is compatible with selected product.
Minimum ambient temperature: -10°C
Can be used up to –20°C in certain conditions; if need be, please contact ERA-SIB or its official representatives.

Electrical connection:
- Check the compatibility between the protection mode and the installation area
- Check the conformity of the supply voltage with the voltage indicated on nameplate
- Connect both poles (either position except for the version equipped with DC surge protection diode, non polarized coil) and earth in an enclosure compatible with the installation area .
- Tighten the coil on the pilot with the locking nut
- Do not remove coil from solenoid valve while the latter is energized.

To change the orientation of the coil electrical connection during cabling, follow instructions 10, 11 and 16 to 27 of paragraph CHANGE OF COIL.
Maintain a bit of play on the wires between the cable inlet and the coil to avoid excessive stress on the wires.

CAUTION:
Power supply and current type shall be in accordance with the indications of the nameplate. Non observance of the coil electrical characteristics limits can lead to damages or premature failure of the coil.
It will also invalidate its use in gaseous and dusty explosive atmospheres.
Warning:
Take care not to damage the coil surface, because it could invalidate the certification.

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MAINTENANCE

Maintenance:
For removal or reinstallation of the solenoid valve, strictly follow the « important instructions » as set in chapter PUTTING INTO SERVICE.
During maintenance stage, it is imperative that recommendations of standard EN50281-1-2 and directive 99/92/CE are followed.

CHANGE OF COIL

1- DO NOT OPEN COVER WHILE ENERGIZED
2- SWITCH OFF POWER SUPPLY
3- WAIT 30 MINUTES BEFORE OPENING, AFTER DE-ENERGIZING
4- DO NOT OPEN IN DUSTY ATMOSPHERE
5- Close the circuit of the fluid going through the solenoid valve
6- Dismantle the third way circuit (only for 3-ways versions)
7- Loosen screw HcM4x5
8- Unscrew cover
9- Disconnect the faulty coil conductors from terminal block CT2
10- Remove printed circuit after removal of both HM3 nuts
11- Unscrew coil locking nut
12- Remove internal cap and spacers
13- Remove faulty coil
14- Install new coil of same voltage as removed coil
15- Reinstall internal cap
16- Check that both spacers are correctly mounted on M3 bolts
17- Adjust cap and coil orientation
18- Tighten internal cap with coil press nut
19- Install printed circuit on spacers
20- Connect coil conductors to terminal block CT2
21- Tighten printed circuit with both HM3 nuts
22- Reinstall internal earth lug on M3 bolt, on earth symbol side, and tighten with HM3 nut
23- If necessary, lubricate cover threading with silicon or graphite grease
24- Replace cover and pole piece O-rings (for 3-ways version)
25- Screw cover on
26- Lock cover with screw HcM4x5
27- Reinstall the third way connection (only for 3-ways versions)

BE CAREFUL NOT TO DAMAGE CYLINDRICAL SEAL SURFACES AND THREADED SURFACES

Check code of replacement coil. Must be the same as code of replaced coil.
Note down the manufacturing date (ex: 10/05) indicated on the new coil to guarantee its traceability.
This operation must be performed by qualified personnel.
- Do not use grease in solenoid valves
- Protect solenoid valve from extreme cold

In case of a problem during erection/maintenance or when in doubt, contact the manufacturer or its official representatives.
To prevent all risks of physical injury or material damage, check that the solenoid valve works properly before putting it in service. Check also possible internal (seats/gaskets) or external leaks with a non explosive and non flammable fluid. Caution: improper assembly will invalidate the certification.
If an element is replaced by the user, traceability of the final product won't be guaranteed by ERA-SIB and shall be done by the user.

Preventive maintenance:
- Do periodic opening and closing operations (once a month, approximately), to avoid risks of sticking seals.
- Maintain the cleanliness of the electromagnetic enclosure to guarantee the proper dissipation of calories released by the coil, especially when the coil is permanently energized.
- MAKE SURE THAT:
  . solenoid valves are stored away from dust and humidity
  . solenoid valves are protected from impacts and thermal shocks
  . no foreign body goes into the solenoid valve
  Note: if exhaust is not connected, it must be fitted with an exhaust protector (ask ERA-SIB)

GUARANTEE
18 months following the manufacturing date indicated on the solenoid valve body or 12 months after putting into service (first of these dates).
This guarantee shall be suspended if operational conditions of the concerned solenoid valves are not respected and/or they have been opened and dismantled without ERA-SIB previous agreement.

STATEMENT
We hereby state that C2 type anti-explosive covers have been tested by our laboratory and have proved to be in conformity with basic health and safety requirements as detailed in European directive 94/9/CE and bear the EC certificate number of type:
LCIE 03 ATEX 6055X

SOLENOID VALVE TYPE	Operating position	Fastening method	Differential pressure min (bars)	Operational pressure Max (bars)
EV 2/2 direct operated				
20011	Any	2 screws M4	0	100
20014/15	Any		0	100
21031	Any	2 screws M4	0	0.65
20033	Any	2 screws M4	0	100
200201	Any	2 screws M4	0	30
200202	Any		0	0.6
W	Coil axis upward	2 screws M5/M6, SS version	0	200
WP	Coil axis upward	2 screws M5/M6, SS version	0	400
WF	Coil axis upward	2 screws M5/M6, SS version	0	200
WBF	Coil axis upward		0	200
Z150010	Coil axis upward	2 screws M6	0	400
Z250010	Coil axis upward	2 screws M6	0	400
EV 2/2 pressure assisted				
21126	Coil axis upward	2 screws M4	0,3	10
21140/41	Any	2 screws M4	0,5	50
21260	Any	2 screws M4	0,3	10
200206	Any		0,3	12
206244 to 47	Coil axis upward	NO 2 screws M5 / NC 2 screws M6	1	200
206252 to 59	Coil axis upward	2 screws M6	1	200
20740/41	Any	2 screws M4	1	80
212240 to 45	Coil axis upward		1	100
212247	Coil axis upward		2	200
212250 to 55	Coil axis upward	2 screws M4	1	100
212257	Coil axis upward	2 screws M8	2	200
220240 to 45	Coil axis upward		1	100
220250 to 55	Coil axis upward	2 screws M6	1	100
22056/57	Coil axis upward	2 screws M5	0,4	12
225240 to 45	Coil axis upward		1	100
225250 to 55	Coil axis upward	2 screws M8	1	100
22560 to 25060	Any		0,3	12
22663/64	Coil axis upward	2 screws M5	0,4	12
EV 2/2 **membrane and plunger coupled pressure assisted**				
21128	Coil axis upward	2 screws M4	0	10
21288	Coil axis upward	2 screws M4	0	10
22067	Coil axis upward	2 screws M5	0	12
22667	Coil axis upward	2 screws M5	0	12
200207/208	Any		0	14
EV 3/2 Direct operated				
30018/19	Any	2 screws M4	0	15
30029	Any	4 x Ø 4.3	0	12
30033/34	Any	2 screws M4	0	15
30043/45/47	Any	2 screws M4	0	20
30058	Any	2 x Ø 4.2	0	20
300201	Any	2 screws M4	0	15
Specific applications				
20646	Any	2 x Ø 3.3	0	1
21155	Coil axis upward	2 screws M4, self tapping	1	12
22055	Coil axis upward	2 screws M5	1	12
22155 to 25055	Coil axis upward		1	10
EN51200	Coil axis upward	2 screws M6	0.3	3.5
EN51300	Coil axis upward	2 screws M6	0.3	3.5
EN52000 to 05	Any	2 screws M4 **(without manual opening)**	0	300
EN53200/01	Coil axis upward		1	70
EN53300/01	Coil axis upward		1	100
EN53400/01	Coil axis upward		1	100