



Member of the FM Global Group

FM Approvals
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CERTIFICATE OF COMPLIANCE

HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT

This certificate is issued for the following equipment:

EDP300-AABCDEFGF. PositionMaster.

IS / I,II,III / 1 / ABCDEFG / T** Ta = *** – 901305; Entity; Type 4X

I / 0 / AEx ia IIC, T** Ta = ***; – 901305; Entity; Type 4X

NI / I / 2 / ABCD / T** Ta = ***; – 901305; Type 4X

S / II,III / 2 / EFG / T** Ta = ***; – 901305; Type 4X

I / 2 / IIC, T** Ta = ***; – 901305; Type 4X

Max Entity Parameters: Per Control Drawings

AA = Approval F1

B = Input Signal A, H

C = Pneumatic Output Type 1, 2

D = Safe Position S, F

E = Air Pipe Connection 1, 2

F = Cable Conduits A, B, C, D

G = Options

T** = T6, Ta*** = -40°C to +40°C

T** = T4, Ta*** = -40°C to +85°C (60°C maximum with natural gas)

Special Conditions of Use:

1) Acceptance for use with natural gas (IS version only).

Reference Installation Drawing 901305.

Equipment Ratings:

Intrinsically safe for Class I, II, III, Division 1 Groups A, B, C, D, E, F and G; Entity, T6 Ta = 40°C or T4 Ta = 85°C ; Intrinsically safe for Class I, Zone 0, Group IIC, T6 Ta = 40°C or T4 Ta = 85°C; Nonincendive for use in Class I Division 2 Groups A, B, C and D, T6 Ta = 40°C or T4 Ta = 85°C; Suitable for Class II and III Division 2, Groups E, F and G, T6 Ta = 40°C or T4 Ta = 85°C; Nonincendive for use in Class I, Zone 2, Group IIC, T6 Ta = 40°C or T4 Ta = 85°C Hazardous (Classified) Locations indoor/outdoor (NEMA Type 4X)

FM Approved for:

ABB Automation Products
32425 Minden, Germany

This certifies that the equipment described has been found to comply with the following Approval Standards and other documents:

| | |
|------------|------|
| Class 3600 | 2011 |
| Class 3610 | 2010 |
| Class 3810 | 2005 |
| Class 3611 | 2004 |
| NEMA-250 | 2003 |

Original Project ID: 3043773

Approval Granted: April 18, 2012

Subsequent Revision Reports / Date Approval Amended

| Report Number | Date | Report Number | Date |
|---------------|------|---------------|------|
|---------------|------|---------------|------|

FM Approvals LLC



J.E. Marquedant
Group Manager, Electrical

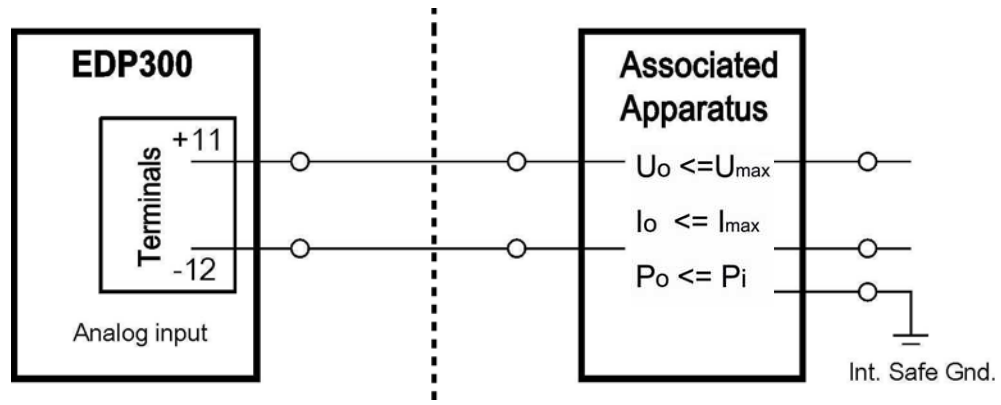
18 April 2012
Date

Hazardous area

Cl. I, Div 1, Gr. A, B, C, D
 Cl. II, Div. 1, Gr. E, F, G
 Cl. III, Div. 1
Class I Zone 0, AEx ia IIC T4 OR T6
 Cl. I, Div. 2, Gr. A, B, C, D
 Cl. II, Div. 2, Gr. E, F, G
 Cl. III, Div. 2
Class I Zone 2, AEx nA IIC T4 OR T6
 Enclosure IP64

Nonhazardous area

Model EDP300F1*****
 *****aa*****



| | T 1- 4 | T 6 |
|-----------|--------------------------------------|--------|
| U_{max} | 30 V | 28 V |
| I_{max} | 320 mA | 320 mA |
| P_i | 1,1 W | 0,8 W |
| C_i | 6,5 nF With pressure option 8,8nF | |
| L_i | negligible small | |

| | T 1- 4 | T 6 |
|-------|--------|------|
| T_a | 85°C | 40°C |

INTRINSICALLY SAFE, input rated 30V dc max, 4–20mA

- The Intrinsic Safety Entity concept allows the interconnection of two Intrinsically safe devices Approved by FM/CSA Approvals with entity parameters not specifically examined in combination as a system when: U_o or $V_t < V_{max}$, I_o or I_{sc} or $I_t < I_{max}$, C_a or $C_o > C_i + C_{cable}$, L_a or $L_o > L_i + L_{cable}$, $P_o < P_i$
- A dust tight seal must be used at the conduit entry when the positioner is used in a Class II & III Location.
- Control equipment connected to the Associated Apparatus must not use or generate more than 250 Vrms or Vdc.
- Installation should be in accordance with ANSI/ISA RP12.06.01 "Installation of Intrinsically Safe System for Hazardous (Classified) Locations" and the National Electrical Code® (ANSI/NFPA 70) Sections 504 and 505.
- The configuration of associated Apparatus must be Factory Mutual Research /Canadian Standards Association Approved under the associated concept.
- Associated Apparatus manufacturer's installation drawing must be followed when installing this equipment.
- No revision to drawing without prior Factory Mutual Research Approval/Canadian Standards Association.
- WARNING- EXPLOSION HAZARD – SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.
- WARNING- TO PREVENT IGNITION OF FLAMMABLE OR COMBUSTIBLE ATMOSPHERES, DISCONNECT POWER BEFORE SERVICING.
- Preventing electrostatic charging
 Due to the possibility of impermissible electrostatic charging of the housing occurring, the effects of high-voltage

| Rev. | Change | Date | Name | Date | Name | Title | Scale |
|------|--------|------|------|-----------------|---------|---------------------|----------------------|
| | | | | Drawn 15.03.11 | Kresse | Control Drawing | |
| | | | | Appr.. 28.09.11 | Schaeff | | |
| | | | | Std. | | | |
| | | | | ABB | | EDP 300 | |
| | | | | | | Automation Products | Draw.-No. (Part-No.) |
| | | | | | | 901305 | 1 / 6 |
| | | | | | | Supersedes Dwg. | Part. Class |

sources on the equipment must be prevented. Electrostatic charging can also occur if the device is wiped with a dry cloth or if large amounts of dust flow around the device in dusty environments. To prevent charging of this type from occurring, the device may only be cleaned using a damp cloth. Dust flowing round the device should be prevented by installing a flow restrictor or partition.

11. If the PositionMaster EDP300 is used according to temperature class T6, before the pressure supply is fully switched on, the pneumatic unit shall be operated with a maximum pressure of 1,4 bar for so long until no more explosive mixture is present, but at least 5 minutes. During this operation the EDP300 is to be fully loaded and vented for several-times.
12. The usage of the PositionMaster with natural gas is only permitted in type of protection "Intrinsic Safe".
13. If the PositionMaster is used with natural gas, the venting of the PositionMaster has to be routed safely to outside the hazardous area.
14. If the PositionMaster uses natural gas instead of compressed air, the maximum ambient temperature is 60 °C.
15. Limit switches are not permitted for use in this product.
16. Max. pressure of the attached pressure supply is 174 psi (12 bar absolute).

NON-INCENDIVE, CLASS I, DIVISION 2, GROUPS A, B, C, D; CLASS II DIVISION 2 GROUPS E, F, G; CLASS III T4 OR T6

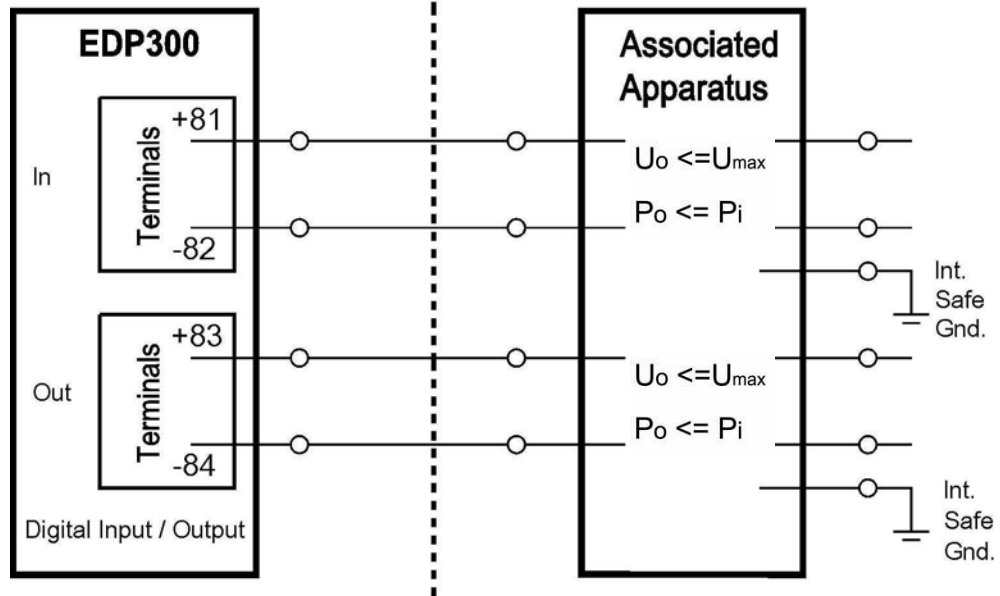
Input rated 30V dc max, 4–20mA

1. Nonincendive wiring concept: The Nonincendive wiring concept allows the interconnection of devices with Nonincendive wiring parameters: V_{max} , I_{max} , P_{max} see Table.
2. Nonincendive wiring parameters: U_o or V_{oc} or $V_t < V_{max}$, I_o or I_{sc} or $I_t < I_{max}$, C_a or $C_o > C_i + C_{cable}$, L_a or $L_o > L_i + L_{cable}$, $P_o < P_i$
3. The configuration of Associated Nonincendive Field Wiring Apparatus must be FM/CSA Approved under Nonincendive wiring concept.
2. Associated Nonincendive Field Wiring Apparatus manufacturer's installation drawing must be followed when installing this equipment.
3. **WARNING- EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR AREA IS KNOWN TO BE NON-HAZARDOUS.**
4. **WARNING- EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2.**
5. Preventing electrostatic charging
Due to the possibility of impermissible electrostatic charging of the housing occurring, the effects of high-voltage sources on the equipment must be prevented. Electrostatic charging can also occur if the device is wiped with a dry cloth or if large amounts of dust flow around the device in dusty environments. To prevent charging of this type from occurring, the device may only be cleaned using a damp cloth. Dust flowing round the device should be prevented by installing a flow restrictor or partition.
6. If the PositionMaster EDP300 is used according to temperature class T6, before the pressure supply is fully switched on, the pneumatic unit shall be operated with a maximum pressure of 1,4 bar for so long until no more explosive mixture is present, but at least 5 minutes. During this operation the EDP300 is to be fully loaded and vented for several-times.
7. This product is not permitted for use with natural gas.
8. With optional Limit Switches (aa, see coding)
aa = F2, Proximity switches (Normally Closed) Type SJ2-SN
aa = F3, Proximity switches (Normally Open) Type SJ2-S1N
aa = blank, without Limit Switches
9. If ordering option F3 is used the lower ambient temperature is reduced to -25 °C.
10. Max. pressure of the attached pressure supply is 174 psi (12 bar absolute).

| | | | | | | | | |
|------|--------|----------|---------|------------|----------|---------------------------------|---------------------|---------|
| | | | | Date | Name | Title Control Drawing | Scale | |
| | | | | Drawn | 15.03.11 | | | Kresse |
| | | | | Appr.. | 28.09.11 | | | Schaeff |
| | | | | Std. | | | | |
| | | | | ABB | | | EDP 300 | |
| | | | | | | | Automation Products | |
| 2 | | 16.01.12 | Lasar | | | | | |
| 1 | | 28.9.11 | Schaeff | | | | | |
| Rev. | Change | Date | Name | | | | | |

Hazardous area

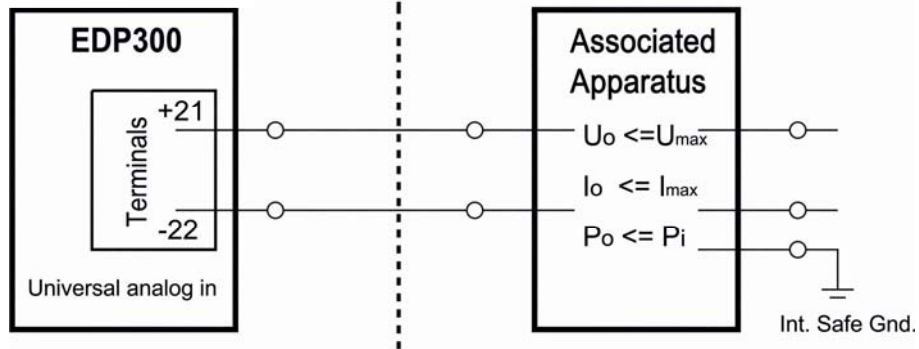
Nonhazardous area



| | T 1- 4 | T 6 |
|-----------|------------------|-------|
| U_{max} | 30 V | 28 V |
| P_i | 0,5 W | 0,4 W |
| C_i | 4,2 nF | |
| L_i | negligible small | |

| | T 1- 4 | T 6 |
|-------|--------|------|
| T_a | 85°C | 40°C |

Ordering option A3 or B3



| | T 1- 4 | T 6 |
|-----------|---------|--------|
| U_{max} | 30 V | 28 V |
| I_{max} | 320 mA | 320 mA |
| P_i | 1,0 W | 0,8 W |
| C_i | 11,3 nF | |
| L_i | 150µH | |

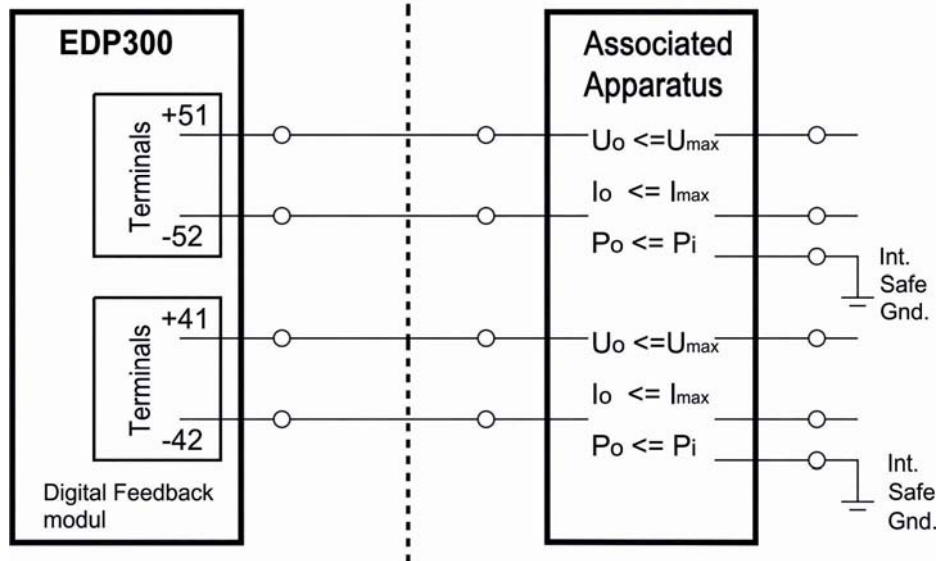
| | T 1- 4 | T 6 |
|-------|--------|------|
| T_a | 85°C | 40°C |

| | | | | | | | | |
|------|--------|----------|---------|-----------------------------------|----------|---------|---------------------------------------|-----------------------|
| | | | | Drawn | Date | Name | Title Control Drawing | Scale |
| | | | | Appr.. | 15.03.11 | Kresse | | |
| | | | | Std. | 28.09.11 | Schaeff | | |
| | | | | ABB Automation Products | | | EDP 300 | Sheet 3 / 6 |
| 2 | | 16.01.12 | Lasar | | | | Draw.-No. (Part-No.) 901305 | |
| 1 | | 28.9.11 | Schaeff | | | | | |
| Rev. | Change | Date | Name | | | | Supersedes Dwg. | Part. Class |

Hazardous area

Nonhazardous area

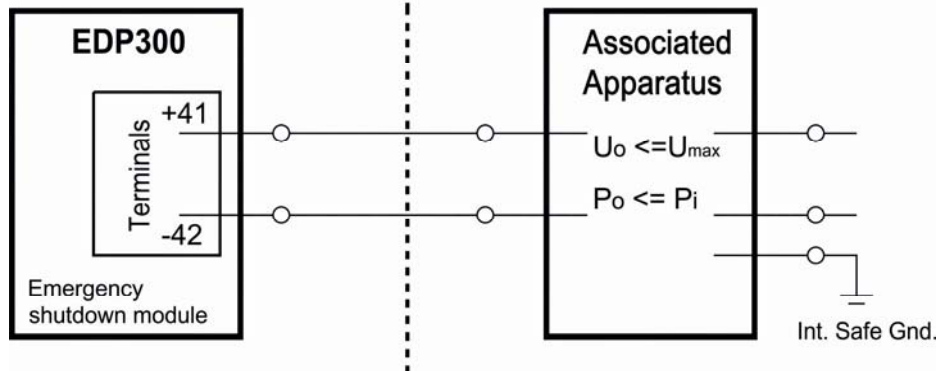
Ordering option A2 or B2



| | T 1- 4 | T 6 |
|-----------|--------------------|-------|
| U_{max} | 30 V | 28 V |
| P_i | 0,5 W | 0,4 W |
| C_i | 2,2 nF each output | |
| L_i | negligible small | |

| | T 1- 4 | T 6 |
|-------|--------|------|
| T_a | 85°C | 40°C |

Ordering option B4



| | T 1- 4 | T 6 |
|-----------|------------------|------|
| U_{max} | 30 V | 30 V |
| P_i | 1 W | 1 W |
| C_i | 5,3 nF | |
| L_i | negligible small | |

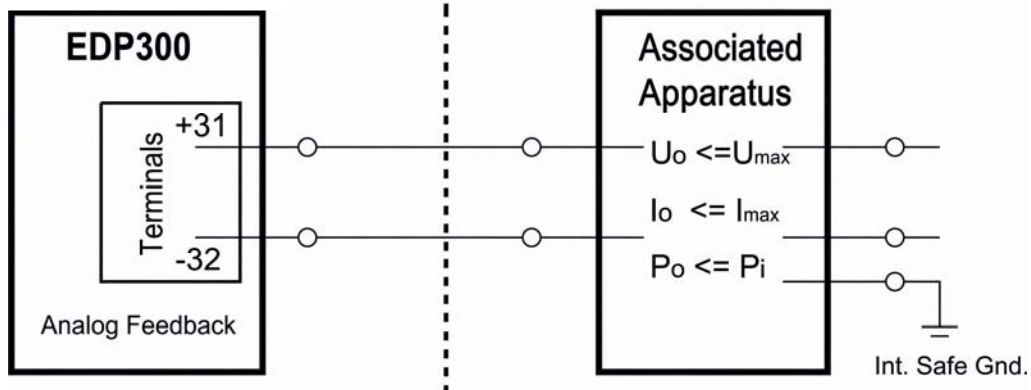
| | T 1- 4 | T 6 |
|-------|--------|------|
| T_a | 85°C | 40°C |

| | | | | | | | | |
|------|--------|----------|---------|-----------------------------------|----------|---------|---------------------------------------|----------------|
| | | | | Drawn | 15.03.11 | Kresse | Title Control Drawing | Scale |
| | | | | Appr.. | 28.09.11 | Schaeff | | |
| | | | | Std. | | | | |
| | | | | ABB Automation Products | | | EDP 300 | Sheet 4 / 6 |
| 2 | | 16.01.12 | Lasar | | | | Draw.-No. (Part-No.) 901305 | |
| 1 | | 28.9.11 | Schaeff | Supersedes Dwg. | | | Part. Class | |
| Rev. | Change | Date | Name | | | | | |

Hazardous area

Nonhazardous area

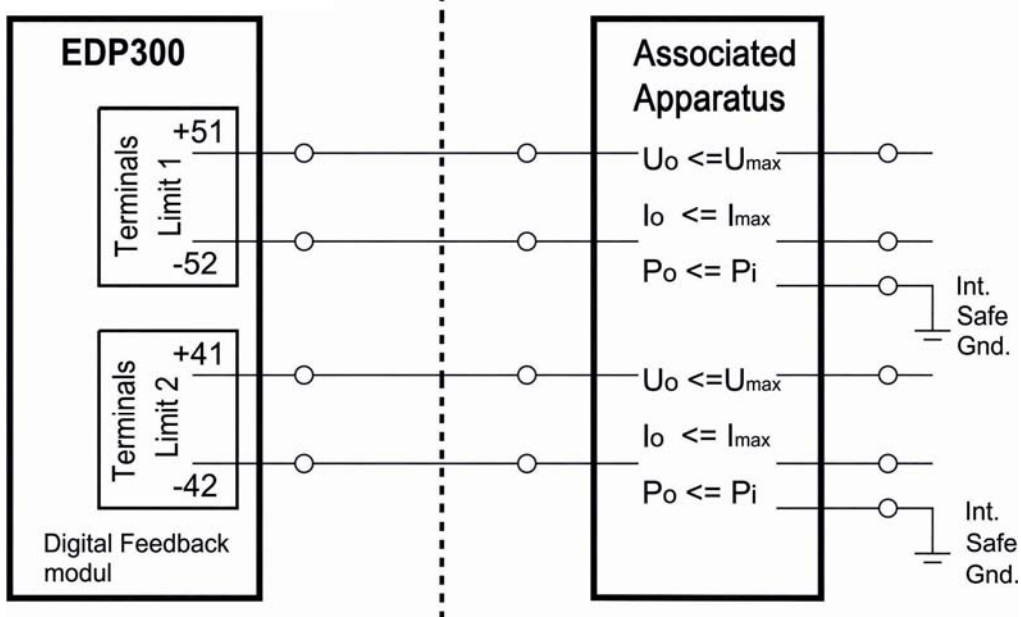
Ordering option A1 or B1



| | T 1- 4 | T 6 |
|-----------|-------------|--------|
| U_{max} | 30 V | 28 V |
| I_{max} | 320 mA | 320 mA |
| P_i | 1,0 W | 0,8 W |
| C_i | 11,3 nF | |
| L_i | 150 μ H | |

| | T 1- 4 | T 6 |
|-------|--------|------|
| T_a | 85°C | 40°C |

Ordering option F2 or F3



| T 1- 4 | T 6 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Pepperl+Fuchs, Inc. "NAMUR" output proximity sensor Type (NO) SJ2-SN or (NC) SJ2-S1N See Control Drawing "NAMUR SENSORS – FM" No. 116-0165 | |

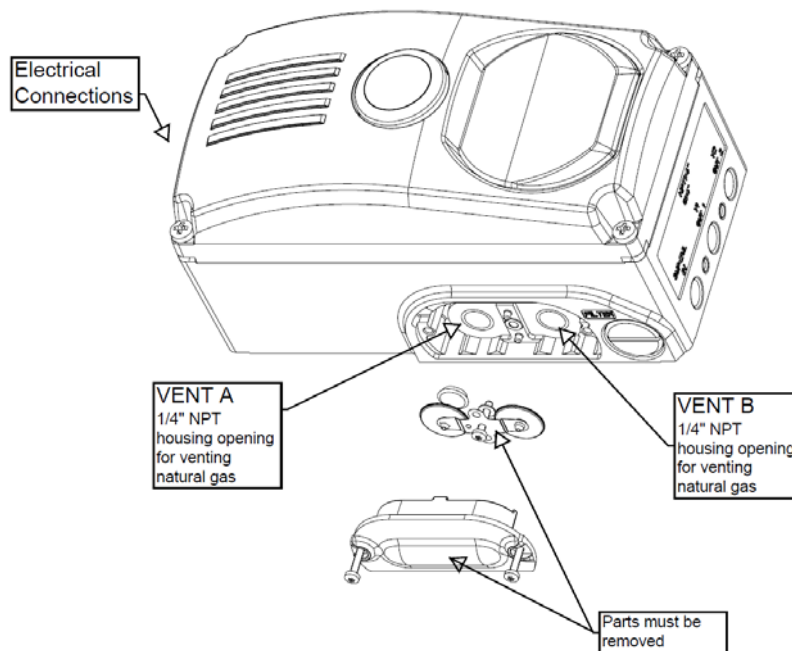
| Rev. | Change | Date | Name | Drawn | Date | Name | Title | Scale |
|------|--------|----------|---------|----------------------------|----------|---------|----------------------|--------------|
| | | | | Drawn | 15.03.11 | Kresse | Control Drawing | |
| | | | | Appr.. | 28.09.11 | Schaeff | | |
| | | | | Std. | | | | |
| | | | | ABB | | | EDP 300 | |
| 2 | | 16.01.12 | Lasar | Automation Products | | | Draw.-No. (Part-No.) | Sheet |
| 1 | | 28.9.11 | Schaeff | | | | 901305 | 5 / 6 |
| | | | | | | | Supersedes Dwg. | Part. Class |

EDP300 Natural Gas Operation

Ordering option P8

Notes:

1. The usage of the PositionMaster with natural gas is only permitted in type of protection "Intrinsic Safe".
2. If the PositionMaster is used with natural gas, the venting of the PositionMaster has to be routed safely to outside the hazardous area.
3. If the PositionMaster uses natural gas instead of compressed air, the maximum ambient temperature is 60 °C.
4. Only PositionMaster models with ordering option P8 may be operated with natural gas.
5. The natural gas operation can only be accomplished with clean, dry, non-sulfurous, additive-free natural gas.
6. Do not operate the PositionMaster with natural gas in closed or non-ventilated areas.
7. Natural gas continuously vent through the PositionMaster housing and must always be directed away from the PositionMaster to a safe discharge area outside the hazardous area, by piping or tubing connected to the PositionMaster vent ports.
8. Special care must be taken during maintenance activities at or near the positioner and actuator because of the presence of pressurized natural gas. Depressurize and vent actuators and devices connected to the pressurized natural gas supply carefully to a non-hazardous atmosphere, and wait several minutes for complete depressurization.



9. Vent tubing connection requirement, shown as VENT A & VENT B (above), is 1/4" NPT. The tubing size for Vent A & Vent B should match the supply tubing size.
10. The vent tubing system at VENT A must be designed and implemented to minimize the back pressure to less than 1 PSIG.

No revision to this document without prior FM / CSA authorization.

| | | | | | | | |
|------|--------|----------|------------|----------|---------|---------------------------------|-------------|
| | | | | Date | Name | Title Control Drawing | Scale |
| | | | Drawn | 15.03.11 | Kresse | | |
| | | | Appr.. | 28.09.11 | Schaeff | | |
| | | | Std. | | | EDP 300 | |
| | | | ABB | | | Draw.-No. (Part-No.) | Sheet |
| | | | | | | Automation Products | |
| 2 | | 16.01.12 | Lasar | | | | |
| 1 | | 28.9.11 | Schaeff | | | | |
| Rev. | Change | Date | Name | | | Supersedes Dwg. | Part. Class |