# 2. Platform Environmental Specifications

## 2.1. General Environmental Characteristics

This section relates to the physical characteristics applicable to Series 8 C300 controller and all Series 8 I/O components. Where applicable, specifications state limits within an approved cabinet and to the cabinet skin.

| Consideration | Operating Limit [1] | Transportation and Storage Limits [1a] |
|---|---|---|
| Ambient Temp Range | External: 0 to +50°C [2]<br>Internal: 0 to +60°C [3] | -40 to 85°C |
| Temp. Rate of Change | <= 1°C/min | <=5°C/min |
| Relative Humidity [3] | 5 to 95% (non-condensing) [4] | 5 to 95% (non-condensing) [4] |
| Barometric Pressure Altitude | -300 to +3000 m | Any |
| Corrosives | G3 Standard (ISA S71.04) - Denoted by “8C-“ model number in this doc | G3 Standard (ISA S71.04) - Denoted by “8C-“ model number in this doc |
| Vibration (3 axes) | Sinusoidal (5 to 10 Hz) 2.54mm/0.100in<br>Max (10 to 150 Hz) 0.5 g max. (0-Pk) | Random<br>Vertical Shipping Axis 5 to 300 Hz 1.07 g (rms)<br>Longitudinal and Transverse 10 to 500 Hz, 0.74 g (rms)<br>60 Minutes each axis |
| Mechanical Shock (3 Axes) | Site Induced: Terminal Peak Sawtooth waveform 4g max. @25ms | N/A |

Note 1 – Operating Limits define the range of operating conditions within which the system is designed to operate. Performance characteristics are defined when operating in this state. Please see ANSA/ISA D 51.1 Process Instrumentation Terminology for more information.

Note 1a – Transportation and Storage Limits define the range of conditions to which the system may be subjected without permanent damage to the equipment. Performance is not guaranteed in this state. Please see ANSA/ISA D 51.1 Process Instrumentation Terminology for more information.

Note 2 – This rating applies to the external ambient temperature of the Standard 2000mm enclosure with doors closed.

Note 3 – This rating applies to the internal ambient temperature of the Standard 2000mm enclosure with the doors closed.

Note 4 – The maximum relative humidity spec applies up to 40°C. Above 40°C the RH spec is de-rated to 55% to maintain constant moisture content.

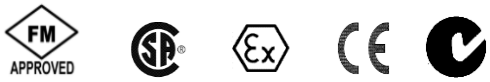
**A note on the transportation of Batteries:**

Some Government agencies have regulations that may prohibit air transport of Lithium Batteries.

## 2.2. Approval Bodies

| Approval Body | Certification Category | Description |
|---|---|---|
| **Factory Manual** | Division 2 Approvals | All models are approved as non-incendive for use in Class I, Division 2, Group A, B, C, D hazardous (classified) locations. |
| | Zone 2 Approvals | All models are approved as normally non-sparking apparatus for use in Class I, Zone 2, AEx nA IIC hazardous (classified) locations. Temperature rating of all individual models as well as cabinet configurations is rated T4. |
| **Canadian Standards Association (CSA)** | Division 2 Certifications | All models are certified as suitable for use in Class I, Division 2, Group A, B, C, D hazardous locations. |
| | Zone 2 Certifications | All models are certified as normally non-sparking apparatus, Ex nA IIC, for use in Zone 2 hazardous locations. Temperature rating of all individual models as well as cabinet configurations is not to exceed T4. |
| **ATEX** | Zone 2 Certifications | All models are certified as normally non-sparking apparatus, II 3G Ex nA IIC T4 GC, for use in Zone 2 hazardous locations. Temperature rating of all individual models as well as cabinet configurations are rated T4. |
| **IECEx** | Zone 2 Certifications | All models are certified as normally non-sparking apparatus, Ex nA IIC T4 GC, for use in Zone 2 hazardous locations. Temperature rating of all individual models as well as cabinet configurations are rated T4. |
| **European Compliance (CE)** | EMC, LVD | • European EMC Directive 2014/30/EU<br>• EN 61326-1 2013 Electrical equipment for measurement, control and laboratory use - EMC requirements.<br>• European LVD Directive 2014/35/EU<br>• IEC/EN 61010-1:2010 Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use. Part 1: General Requirements |
| **Others** | | C-Tick |

## 2.3. Detailed Specification- Approvals

| Consideration | Approval |
|---|---|
| Agency Approvals |  <br>**Cabinet:**<br>Class I, Division 2, Grp. ABCD, T4<br>Class I, Zone 2, AEx/Ex nA IIC T4 GC<br>ATEX II 3G Ex nA IIC T4 GC<br>IECEx Ex nA IIC T4 GC |

| Item | Specification | | |
|---|---|---|---|
| **CE Conformity** | This product is in conformity with the protection requirements of the following European Council Directives: 2014/35/EU, the Low Voltage Directive, and 2014/30/EU, the EMC Directive. Conformity of this product with any other “CE Mark” Directive(s) shall not be assumed. | | |
| | **LVD Directive:** | | |
| | Title | Number | Issue date |
| | Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements | EN 61010-1 | 2010 |
| | **EMC directive:** | | |
| | Title | Number | Issue date |
| | Electrical equipment for measurement, control and laboratory use - EMC requirements -- Part 1: General requirements | EN 61326-1 | 2006 |
| | Industrial, scientific and medical (ISM) radio-frequency equipment – Electromagnetic disturbance characteristics – Limits and methods of measurement | CISPR 11:2009+A1 | 2010 |
| | Electromagnetic compatibility (EMC) – Part 3-2: Limits –Limits for harmonic current emissions (equipment input current ≤ 16A per phase) | IEC 61000-3-2 | 2009 |
| | Electromagnetic compatibility (EMC) – Part 3-3: Limits –Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection | IEC 61000-3-3 | 2005 |
| | Electromagnetic compatibility (EMC) – Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test | IEC 61000-4-2 | 2008 |
| | Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test | IEC 61000-4-3:2006 +A1:2007 +A2 | 2010 |
| | Electromagnetic compatibility (EMC) – Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test | IEC 61000-4-4 | 2004 |
| | Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test | IEC 61000-4-5 | 2005 |
| | Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields | IEC61000-4-6 | 2008 |