

**Trusted 8000 - Series B:
International Safety & Environmental Approvals**

Trusted 8000 Series International Safety and Environmental Approvals

Issue Record

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B	5 th June 2018	S. Brookes	Phil Agar	Dan Watley

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Modification Record

Revision	Comments
Revisions under legacy document number 552517	
02	General document updates.
03	UL508 and ATEX sections added. Document branded.
04	Standards definitions added.
05	Magnetic Immunity IEC 61000-4-8 corrected
06	Formatting corrections and GOST certification
07	Logo change and list of standards updated
08	ATEX certification lapsed due to changes in standards
09	Revised to show current approvals met
Revisions under doc ref: ICSTT-TD003-EN-P	
B	Update & reformat for Trusted Refresh including T8111. Revised Publication Number format.

Environmental Specification.


Attribute	Value
Temperature, operating IEC 60068-2-1:2007 (Test Ad, Operating Cold) IEC 60068-2-2:2007 (Test Bd, Operating Dry Heat) IEC 60068-2-14:2009 (Test Nb, Operating Thermal Shock)	0 to 60 °C (32 ° to 140 °F)
Temperature surrounding air, max	60 °C (140 °F)
Temperature, non-operating IEC 60068-2-1:2007 (Test Ab, Unpackaged Non-operating Cold) IEC 60068-2-1:2007 (Test Bb, Unpackaged Non-operating Dry Heat) IEC 60068-2-14:2009 (Test Na, Non-operating Thermal Shock)	-25°C to +70 °C (-13 ° to +158 °F)
Relative humidity IEC 60068-30: 2005 (Test Db, Unpackaged Damp Heat)	5 to 95 % RH
Vibration IEC 60068-2-6: 2008 (Test Fc, Operating)	5 to 8.4 Hz, 3.5 mm 8.4 to 150 Hz, 1g
Shock, operating IEC 60068-2-27:2009 (Test Ea, Unpackaged Shock)	15 g, 11 ms
Radiated & Conducted Emissions	CISPR 11, Class A (Radiated to 6 GHz)
ESD Immunity IEC 61000-4-2:2009	± 6 kV contact ± 8 kV air
Radiated RF Immunity IEC 61000-4-3:2006, A1, A2	10 V/m. 80 Mhz - 2.7 GHz, 1 kHz 80 % AM sine 3 V/m. 2.7 GHz - 6 GHz, 1 kHz 80 % AM sine 10 V/m. 80 Mhz - 2.7 GHz, 1 Hz pulsed
EFT/Burst Immunity IEC 61000-4-4:2012	D.C. Power: ± 4 kV A.C. Power (field): ± 4 kV I/O & comms (shielded): ± 1 kV Functional earth: ± 2 kV [5 kHz repetition]
Surge Immunity IEC 61000-4-5:2014, A1	D.C. Power: ± 4 kV line-earth (CM); ± 2 kV line-line (DM) A.C. Power (field): ± 4 kV line-earth (CM); ± 2 kV line-line (DM) I/O (shielded): ± 2 kV line-earth (CM) Comms (shielded): ± 2 kV line-earth (CM)
Conducted RF Immunity IEC 61000-4-6:2014	10 V rms, 150 kHz - 100 MHz, 1 kHz sine 80 % AM 10 V rms, 150 kHz - 100 MHz, 1 Hz pulsed
Magnetic Immunity IEC 61000-4-8:2010	30 A/m

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Certification

Certification	Standards and description
Functional safety TÜV: SIL3	<p>Inspected and tested for compliance by TÜV Rheinland A-FS against the following standards.</p> <p>IEC 61508:2010, parts 1 - 7 Functional safety of electrical/electronic/programmable electronic safety related systems</p> <p>IEC 61511-1:2016 + A1:2017 Functional safety – Safety instrumented systems Part 1 for the process industry sector</p> <p>EN 61131-2:2017 Industrial-process measurement and control – Programmable controllers – Part 2: Equipment requirements and tests</p> <p>EN 61326-3-1:2017 Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 3-1: Immunity requirements for safety-related systems and for equipment intended to perform safety-related functions (functional safety) – General industrial applications</p> <p>EN 50156-1:2015 Electrical equipment for furnaces and ancillary equipment (§4.2)</p> <p>NFPA 72:2016 National Fire Protection Association, part 72 Fire suppression system</p> <p>NFPA 85:2015 National Fire Protection Association, part 85 Standard for single burner operation</p> <p>NFPA 86:2015 National Fire Protection Association, part 86 Standard for the prevention of furnace explosions/implosions in multiple burner boilers</p> <p>EN 298:2012 Automatic burner control systems for burners and appliances burning gaseous or liquid fuels</p> <p>EN 50130-4:2011 Immunity requirements for components of fire, intruder, hold up, CCTV, access control and social alarm systems</p> <p>EN 54-2:1997 +A1:2006 Fire detection and fire alarm systems — Part 2: Control and indicating equipment</p>
UL North America & Canada	<p>UL Listed Industrial Control Equipment. UL File: E341697, Vol. 2</p> <p>UL 61010-1: Ed. 3 Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use - Part 1: General Requirements.</p> <p>UL 61010-2-201: Ed. 1 Standard for Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use - Part 2-201: Particular Requirements for Control Equipment.</p> <p>UL Listed Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations UL File: E251761, Vol. 1</p> <p>ANSI/ISA-12.12.01-2015 Non-incendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations</p> <p>CAN/CSA C22.2 No. 213-16, Ed. 2 Non-incendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations</p>
IECEX	<p>International Electrotechnical Commission System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres</p> <p>Marking: Ex nA IIC T4 Gc; 0 °C to +60 °C</p> <p>Certificate Number: IECEX ULD 17.0001X</p> <p>IEC 60079-0:2011, Ed. 6 Explosive atmospheres Part 0: Equipment — General requirements</p> <p>IEC 60079-15:2010, Ed. 4 Explosive atmospheres Part 15: Equipment protection by type of protection "n"</p>

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Certification	Standards and description
CE (ATEX)	<p><i>European Union Directive: 2014/34/EU</i> Equipment or Protective System intended for use in Potentially Explosive Atmospheres.</p> <p>Marking:  II 3 G Ex nA IIC T4 Gc</p> <p>Certificate Number: DEMKO 17 ATEX 1821X</p> <p>EN 60079-0:2012 Explosive atmospheres Part 0: Equipment — General requirements +A11:2013</p> <p>EN 60079-15:2010 Explosive atmospheres Part 15: Equipment protection by type of protection "n"</p>
CE (EMC)	<p><i>European Union EMC Directive: 2014/30/EU.</i></p> <p>EN 61131-2:2007. Industrial-process measurement and control – Programmable controllers – Part 2: Equipment requirements and tests (Clause 8: Zone A/B)</p> <p>EN 61326-1:2013 Electrical equipment for measurement, control and laboratory use — EMC requirements Part 1: General requirements</p> <p>EN 61000.6-2:2005 Generic standards – Immunity for industrial environments</p> <p>EN 61000.6-4:2007 + A1 2011 Emission standard for industrial environments</p> <p>EN 50130-4:2011 Immunity requirements for components of fire, intruder, hold up, CCTV, access control and social alarm systems</p>
CE (LVD)	<p><i>European Union Low Voltage Directive 2014/35/EU</i></p> <p>EN 61010-2-201 :2013 Safety requirements for electrical equipment for measurement, control, and laboratory use Part 2-201: Particular requirements for control equipment</p> <p>EN 61010-1:2010 Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements</p>
CE (RoHS)	<p><i>European RoHS Directive 2011/65/EU</i></p> <p>EN 50581:2012 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances.</p>
KCC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3. Registration Number: R-EM-RAA-Trusted-8000.
Corrosive mixed gas	Trusted 8000 series products tested by ERA for use in a harsh G3 atmosphere defined by ANSI/ISA S71.04-1985 condition G3. Tests conducted according to BS EN 60068-2-60 (mixed flowing gas tests) as S71.04 does not defined a test methodology.
Conformal coating	HumiSeal® 1B73 coating is MIL-I-46058C qualified, IPC-CC-830 and RoHS Directive 2011/65/EU compliant, and recognized under UL File Number E105698 ANSI/UL 746E (meets the requirements of EN 61010-1 Annex H)
Altitude	Operating: 0 to 2,000 m (0 to 6,600 ft.) Storage: 0 to 3,000 m (0 to 10,000 ft.) This equipment must not be transported in unpressurized aircraft flown above 10,000 ft.

Compliance - by Trusted Catalogue Number

Model	Description	Compliance			
		OrdLoc/LVD	HazLoc	ATEX/IECEx	RoHS
T8100	Processor Chassis	Y	Y	Y	Y
T8300	Expander Chassis	Y	Y	Y	Y
T8111	Main Processor	Y	Y	Y	Y
T812x	Processor Interface Adaptor	Y	Y	Y	Y
T8131	ICS 2000 IRIG-B and Modbus Master	Y	Y	Y	Y
T8151B	Communications Module	Y	Y	Y	Y
T8153	Comms Interface Adaptor	Y	Y	Y	Y
T8191	Trusted Shield Single Slot Width	Y	Y	Y	Y
T8193	Trusted Shield Three Slot Width	Y	Y	Y	Y
T8270	Trusted Fan Tray (chassis)	Y	Y	Y	Y
T8271	Trusted Roof Fan Assembly	TBA	N	N	Y
T8290	Trusted Output Power Distribution Unit	Y	Y (SELV)	Y (SELV)	Y
T8292	Trusted Power Distribution Unit MCB 24Vdc	Y	N	N	Y
T8293	Power Distribution Unit (Fused)	Y	Y	N	Y
T8297	Trusted Output Power Distribution Unit (DP)	Y	Y	Y	Y
T8310	Expander Processor	Y	Y	Y	Y
T8311	Expander Interface	Y	Y	Y	Y
T8312-x	Expander Interface Adaptor	Y	Y	Y	Y
T8314	Trusted Fibre Tx/Rx Unit	Y	Y	Y	Y
T8402	Digital Input Dual 60 channel	Y	Y	Y	Y
T8403	Digital Input TMR 40 channel	Y	Y	Y	Y
T8423	Digital Input TMR 40 channel 120 Vdc	Y	N	N	Y
T8424	Digital Input TMR 40 channel 120 Vac	Y	N	N	Y
T8431	Analogue Input TMR 40 channel	Y	Y	Y	Y
T8432	Analogue Input Dual 60 channel	Y	Y	Y	Y
T8433	Analogue Input TMR – 20 channel, Isolated	Y	Y	Y	Y
T8442	Speed Monitor Module	TBA	N	N	Y
T8448	Zone Interface Module	Y	Y	Y	Y
T8449	Valve Monitor Module	Y	Y	Y	Y
T8451	Digital Output TMR 24 Vdc 40 channel	Y	Y	Y	Y
T8461	Digital Output TMR 48 Vdc 40 channel	Y	Y	Y	Y
T8471	Digital Output TMR 120 Vdc 32 channel	Y	N	N	Y
T8472	Digital Output TMR 120 Vdc 16 channel	Y	N	N	Y
T8480	Analogue Output TMR 40 channel	Y	Y	Y	Y
T8800	Digital Input FTA 40 channel fused	Y	Y	Y	Y
T8801	Digital Input FTA 40 channel. Non Incendive	Y	Y	Y	Y
T8802	Digital Input FTA 60 channel Fused	Y	Y	Y	Y
T8805	Digital Input FTA 60 channel. Non Incendive	Y	Y	Y	Y
T8821	Digital Input FTA, 40 Channel 120Vdc	Y	N	N	Y
T8824	Digital Input FTA, 40 Channel 120Vac	Y	N	N	Y
T8830	Analogue Input FTA 40 channel fused	Y	Y	Y	Y
T8831	Analogue Input FTA 40 channel. Non Incendive	Y	Y	Y	Y
T8832	Analogue Input FTA 60 Channel	Y	Y	Y	Y
T8833	Analogue/Digital Input 20ch, Isolated	Y	Y	Y	Y
T8835	Analogue Input FTA 60 channel. Non Incendive	Y	Y	Y	Y
T8842	Versatile FTA	Y	Y	Y	Y
T8846	Speed Input Field Terminal Assy (SIFTA)	TBA	N	N	Y
T8850	Analogue/Digital Output FTA 40 channel	Y	Y	Y	Y
T8870	Digital Output FTA, 32 Channel 120Vdc	Y	N	N	Y
T8871	Digital Output FTA, 16 Channel 120Vac	Y	N	N	Y
T8891	Speed Output Field Terminal Assy (SOFTA)	TBA	N	N	Y
Cables	See Product Datasheet for more information	Y	Y (SELV)	Y (SELV)	Y

For Declarations of Conformity, Certificates, and other certification details, see the Product Certification link at <http://www.rockwellautomation.com/global/certification/overview>.