Certificate of Compliance

Certificate: 70179239 **Master Contract:** 248285

Project: 80089850 **Date Issued:** 2021-10-21

Issued to: PROGNOST Systems GmbH
Daimlerstrasse 10
Rheine
48432
Nordrhein-Westfalen
GERMANY

Attention: Mr. Christian Koers

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only

Issued by: Oong Lee

PRODUCTS

CLASS 2258 03 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe and Non - Incendive Systems - For Hazardous Locations

Ex ec nC [ia Ga] IIC T4 Gc or [Ex ia Da] IIIC
Class I, Division 2, Groups A, B, C, D T4 associated device for IS Class I, Division 1
or Associated device for IS Class I, II, III, Div 1, Groups A to G
Machine Monitoring System, Type PROGNOST-SILver, 2nd generation

CLASS 2258 83 - PROCESS CONTROL EQUIPMENT-Intrinsically Safe and Non-Incendive - Systems-For Hazardous Locations-Certified to U.S. Standards

Class I, Zone 2, AEx ec nC [ia Ga] IIC T4 Gc or Class II, III [AEx ia Da] IIIC
Class I, Division 2, Groups A, B, C, D T4 associated device for IS Class I, Division 1
or Associated device for IS Class I, II, III, Div 1, Groups A to G
Machine Monitoring System, Type PROGNOST-SILver, 2nd generation

Electrical rating:

Power supply: Um = 60 Vdc, Un = 18 ~ 32 Vdc
Input/Relay: Um = 30 Vdc
Ambient temperature: –25 °C ~ +65 °C

Intrinsic safety parameters at the IS interfaces:

TI1, Trigger

Characteristic Curve				Linear		
Max. output voltage Uo or Voc				10.8 V		
Max. output current Io or Isc				11.1 mA		
Max. output power Po or Pout				34 mW		
Group				IIC	IIB / IIIC	IIA
Max. external inductance Lo or La				288 mH	1154 mH	2308 mH
Max. external capacitance Lo or La				2.1 µF	15 µF	66 µF
Group IIC, if concentrated inductance or capacitance is connected						
Lo (mH)	0.5	1	2	3	4	5
Co (nF)	1	0.9	0.8	0.75	0.7	0.68
Group IIB/IIIC, if concentrated inductance or capacitance is connected						
Lo (mH)	0.5	1	2	3	4	5
Co (µF)	5.6	4.9	4.2	3.9	3.7	3.4

AI1, ICP

Characteristic Curve				Linear		
Max. output voltage Uo or Voc				27.5 V		
Max. output current Io or Isc				91 mA		
Max. output power Po or Pout				630 mW		
Group				IIC	IIB / IIIC	IIA
Max. external inductance Lo or La				4.0 mH	16.9 mH	34.0 mH
Max. external capacitance Lo or La				85 nF	671 nF	2.2 µF
Group IIC, if concentrated inductance or capacitance is connected						
Lo (mH)	0.15	0.25	0.5	0.75	1	2
Co (nF)	79	70	62	54	48	42
Group IIB/IIIC, if concentrated inductance or capacitance is connected						
Lo (mH)	0.15	0.5	1	2	3	5
Co (µF)	510	410	345	300	280	250

AI2, 4 – 20 mA

Characteristic Curve				Linear		
Max. output voltage Uo or Voc				27.5 V		
Max. output current Io or Isc				96 mA		
Max. output power Po or Pout				652 mW		
Group				IIC	IIB / IIIC	IIA
Max. external inductance Lo or La				3.6 mH	15.2 mH	30.6 mH
Max. external capacitance Lo or La				85 nF	671 nF	2.2 µF
Group IIC, if concentrated inductance or capacitance is connected						
Lo (mH)	0.15	0.25	0.35	0.5	0.75	1.6
Co (nF)	78	67	65	60	54	42
Group IIB/IIIC, if concentrated inductance or capacitance is connected						
Lo (mH)	0.15	0.5	1	2	3	5
Co (µF)	500	400	340	300	280	250

AI3, Eddy Current

Characteristic Curve				Linear		
Max. output voltage Uo or Voc				27.5 V		
Max. output current Io or Isc				112 mA		
Max. output power Po or Pout				765 mW		
Group				IIC	IIB / IIIC	IIA
Max. external inductance Lo or La				2.4 mH	10.9 mH	22.2 mH
Max. external capacitance Lo or La				85 nF	670 nF	2.2 µF
Group IIC, if concentrated inductance or capacitance is connected						
Lo (mH)	0.2	0.3	0.5	0.7	0.9	1
Co (nF)	63	58	54	50	46	42
Group IIB/IIIC, if concentrated inductance or capacitance is connected						
Lo (mH)	0.6	1.6	4.6	-	-	-
Co (µF)	370	280	230	-	-	-

AI4, Voltage

Characteristic Curve				Linear		
Max. output voltage Uo or Voc				6.6 V		
Max. output current Io or Isc				0.5 mA		
Max. output power Po or Pout				0.5 mW		
Max. external inductance Lo or La				142 H		
Max. external capacitance Lo or La				22 µF		
Group IIC, if concentrated inductance or capacitance is connected						
Lo (mH)	1	2	5	10	20	50
Co (nF)	2.2	2	1.7	1.6	1.5	1.4

AI5, Eddy Current

Characteristic Curve				Linear		
Max. output voltage Uo or Voc				27.5 V		
Max. output current Io or Isc				104 mA		
Max. output power Po or Pout				711 mW		
Group				IIC	IIB / IIIC	IIA
Max. external inductance Lo or La				2.87 mH	10.9 mH	22.2 mH
Max. external capacitance Lo or La				85 nF	670 nF	2.2 µF
Group IIC, if concentrated inductance or capacitance is connected						
Lo (mH)	0.4	0.5	0.7	0.9	1.1	1.2
Co (nF)	63	58	54	50	46	42
Group IIB/IIIC, if concentrated inductance or capacitance is connected						
Lo (mH)	0.6	1.6	4.6	-	-	-
Co (µF)	380	290	240	-	-	-

AI6-2 Temperature card:

Uo or Voc = 7.2 V, Io or Isc = 12 mA, Po or Pout = 21 mW, Lo or La = 5mH, Co or Ca = 10 µF

Conditions of Acceptability:

1. The equipment shall be supplied with a SELV circuit or PELV supply only.
2. The equipment shall be used in an area of at least pollution degree 2 defined in IEC 60664-1
3. When installed in Zone 2 area or equivalent, the equipment shall be installed in an enclosure which provides a degree of protection not less than IP54 in accordance with IEC60079-0 or IEC60079-15.
4. The equipment shall be installed in an enclosure for protection against electric shock and for the containment of fire where the suitability of the combination is to be determined in the end application.
5. The enclosure in use shall be able to safely dissipate the generated heat, and the temperature inside shall not exceed 65 °C.
6. For Digital input and Relay output, the transient protection device shall be provided externally to limit the transient at less than 140 % of the peak rated voltage value of 85 V.
7. Equipment has only been tested for safety. No evaluation of functional safety and performance characteristics has been conducted.
8. An individual IS interface card could be connected to either IS signals or non-IS signals, but the signals shall not be mixture of both IS and non-IS signals.
9. The switches on PS1-2 (Power supply) shall not be used in Hazardous area.
10. “Config” connector on the DC1-2 (Data Control) card may only be used temporarily by authorized personnel. This interface shall not be used in Hazardous area.
11. When system boards are used, the segregation between system boards shall be evaluated accordingly in the end application.

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APPLICABLE REQUIREMENTS

CAN/CSA-C22.2 No. 0-10	General requirements — Canadian Electrical Code, Part II
CAN/CSA C22.2 No. 61010-1-12 (reaffirmed 2017)	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 1: General Requirements – Third Edition
CAN/CSA-C22.2 No. 60079-0:19	Explosive atmospheres – Part 0: Equipment – General requirements – Fourth Edition
CAN/CSA C22.2 No. 60079-7:16	Explosive atmospheres – Part 7: Equipment protection by increased safety "e" – Second Edition
CAN/CSA-C22.2 No. 60079-11:14	Explosive atmospheres – Part 11: Equipment protection by intrinsic safety "i" – Second Edition
CAN/CSA-C22.2 No. 60079-15:18	Explosive atmospheres – Part 15: Equipment protection by type of protection "n" – Second Edition
ANSI/UL-61010-1-2016	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 1: General Requirements – Third Edition (April 29, 2016)
ANSI/UL 60079-0-2019	Explosive atmospheres – Part 0: Equipment – General requirements – Sixth Edition (October 20, 2017)
ANSI/UL 60079-11-2013	Explosive Atmospheres – Part 11: Equipment Protection by Intrinsic Safety "i" – Sixth Edition (March 28, 2014)
ANSI/UL 60079-15-2020	Explosive Atmospheres – Part 15: Equipment protection by type of protection "n" – Fourth Edition (May 5, 2017)

MARKINGS

The manufacturer is required to apply the following markings:

- Products shall be marked with the markings specified by the particular product standard.
- Products certified for Canada shall have all Caution and Warning markings in both English and French.

Additional bilingual markings not covered by the product standard(s) may be required by the Authorities Having Jurisdiction. It is the responsibility of the manufacturer to provide and apply these additional markings, where applicable, in accordance with the requirements of those authorities.

The products listed are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US (indicating that products have been manufactured to the requirements of both Canadian and U.S. Standards) or with adjacent indicator 'US' for US only or without either indicator for Canada only.

The following markings appear on the product:

- The CSA Mark with adjacent C_US qualifiers
- Manufacturer’s name or CSA Master Contract Number adjacent to CSA mark.
- The hazardous location designation (both Zone and Div)
- Temperature class
- Intrinsic safety parameters*
- Maximum ambient temperature range
- Model Number
- Serial Number and Year of manufacture.
- CSA certificate number: CSA18CA70179239

Note) * - this information will be in the instruction manual