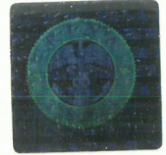




TYPE APPROVAL CERTIFICATE

N. ELE398617CS001



This is to certify that the product below is found to be in compliance with the applicable requirements of the RINA type approval system.

Description	Distributed I/O modules
Type	Digital I/O module: CAT. ID Code 234-0275-03 RTD Scanner module: CAT. ID Code 234-1645-06 Thermocouple Scanner module: CAT. ID Code 234-1644-05
Applicant	Axiomatic Technologies Corporation 5915 Wallace Street L4Z 1Z8 Mississauga, Ontario CANADA
Manufacturer	Axiomatic Technologies Corporation 5915 Wallace Street L4Z 1Z8 Mississauga, Ontario CANADA
Testing Standards	Rules for the Classification of Ships - Part C - Machinery, Systems and Fire protection - Ch.3, Sect.6, Tab.1.

Issued in Genova on December 22, 2017

This certificate is valid until December 21, 2022



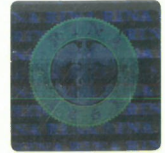
RINA Services S.p.A.

Valerio Bonanni



TYPE APPROVAL CERTIFICATE

N. ELE398617CS001



General Description:

Acquisition modules in a CAN Network

Digital I/O modules:

234-0275-03 (SAE J1939) - CAT ID Code

Nominal Power supply: 12 / 24Vdc (9 to 32Vdc)

Up to 12 active-low digital inputs with pull-up resistors and 8 relay outputs

The DIO is designed to work either as a stand-alone module, or on CAN network

Power supply, digital inputs and power supply are isolated each other

Provided Isolation: between I/O, power supply, CAN, Protective Ground

I/O wiring: Shielded cable is required

CAN 2.0 A-B port: Shielded CAN cable is required

Mechanical protection: IP56 (IEC 60529)

RTD Scanner modules;

234-1645-06 (SAE J1939) – CAT ID code

Nominal Power supply: 12 / 24Vdc (9 to 32Vdc)

Up to Eight channels independently configurable for 2, 3 or 4 wire RTDs (support Std. IEC, JIS, US, Legacy, Sama)

Input range: 10 to 350 Ohms

Each RTD channel could be configured to send diagnostic messages to the network if temperature goes out of range.

Functions associated with each RTD channel:

H.T. Shut-down; H.T. / L.T. warning; RTD Open / Short circuit warning; Frozen data detection.

Provided Isolation: between Input, power supply, CAN, Protective Ground

RTD input wiring : Shielded cable is required

CAN 2.0B port: Shielded cable is required

Mechanical protection: IP56 (IEC 60529)

Thermocouple Scanner modules:

234-1644-05 (SAE J1939) – CAT ID code

Nominal Power supply: 12 / 24Vdc (9 to 32Vdc)

Up to 20 channels, independently configurable for J, or K Thermocouple

Input range:

J= -8.095 to 69.553mV, K= -6.458 to 54.886 mV,

Each T/C channel could be configured to send diagnostic messages to the network if temperature goes out of range.

Functions associated with each T/C channel:

H.T. Shut-down; H.T. / L.T. warning; T/C Open circuit warning; Frozen data detection.

Provided Isolation: between Input, power supply, CAN, Protective Ground

T/C input wiring: Shielded cable is required

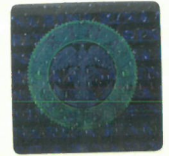
CAN 2.0B port: Shielded cable is required

Mechanical protection: IP56 (IEC 60529)



TYPE APPROVAL CERTIFICATE

N. ELE398617CS001



AXIOMATIC Specifications:

User Manual UM2340275A dated December 1, 2017 :
Discrete Input/Output , SAE J1939 - 12 Digital Inputs, 8 Relay Outputs

User Manual UM2341645A dated December 20, 2017 ver. 1.0.1A:
RTD Scanner , Eight Channel with CAN , SAE J1939

User Manual UM2341644A dated December 20, 2017 ver. 1.0.1A:
Thermocouple Scanner, Twenty Channel with CAN, SAE J1939

White paper Ver. 1 (17/11/2017)

ELITE Test Reports:

- n. 1201614-01 (13 September 2012) Environmental tests RTD_T/C_DIO
- n. 1201612-01 (18 September 2012) Thermocouple Module - EMC tests_
- n. 1201612-02 (18 September 2012) RTD Module - EMC tests
- n. 1201612-03 (18 September 2012) Discrete I/O module - EMC tests

Installation remarks:

Protective Earth must be connected to the module's earthing lug.

Installation in *hazardous area* is to be in compliance with the relevant Ex Safety certificate requirements

Fail to Safe operation will be evaluated on a case by case bases, according to the specific application.

Verification of Accuracy in accordance to manufacturer specification (in the Standard environmental condition) is not part of this approval.

Note:

This certificate annuls and replaces the previous n. ELE398617CS issued on Dec 18 /2017