

## I/A Series<sup>®</sup> Remote Terminal Unit (RTU) C50 Type Testing



## FOXBORO TYPE TESTS

Type Tests are intended to document conformance of equipment with the Electromagnetic Compatibility (EMC) requirements.

Type Tests are typically carried out on each product line using selected standard test cases, with the following tests being performed:

• Functional

a series of tests are carried out to ensure the correct operation of the assembled equipment, including power supply, short and power cycling tests.

• Environmental Heat and cycling tests while monitoring for correct operation.

- EMC
  - High frequency disturbance
  - Inpulse voltage withstand
  - Insulation resistance
  - Power frequency withstand tests in common and traverse mode, as applicable on the relay outputs, analog and digital inputs, and power supplies
  - Electrostatic Discharge
  - Radiated field susceptibility
  - Electrical fast transients burst
  - Radiated field emissions



## **Test Standards**

Tests are carried out in accordance with the following standards:

- AS 2481 (IEC 255-4, IEC 255-22)
- AS 4252.2 (IEC 801, IEC 1000-4, and EN 55022)
- AS3548 (EN 55022)

Additional contract specific tests are performed if specified. Other functional tests and performance tests are carried out on all production equipment in accordance with the appropriate inspection and test plan.

## **Evidence of Type Testing**

The C50 RTU equipment has been type tested in accordance with selected standard Foxboro Level 1 test cases. Post requisite test cases specified in each Level 1 test are conducted to confirm that no damage to the equipment occurred during the test procedure. The equipment is certified to the following standards:

EQUIPMENT CERTIFICATION STANDARDS					
Standard	Class	Title			
IEC 801-1		Electromagnetic Compatibility to Industrial Process Measurement and Control Equipment			
IEC 801-2: 1991	Level 2 (4*)	Electrostatic Discharge Requirements (* denotes in enclosure)			
IEC 801-3: 1984	Level 3	Radiated Electromagnetic Field Requirements			
IEC 801-4: 1988	Level 3	Electrical Fast Transient/Burst Requirements			
IEC 801-5: 1.5/50 μs		Surge Immunity Requirements			
IEC 255-4		Impulse Voltage Withstand and High Frequency Disturbance			
MIL-STD-462:RS03	Section 5	Electrostatic Interference Characteristics, measurement of			
prEN 5 50082-2		General Immunity Standards for Heavy Industry			
EN 55022		Emission Standard for Information Technology Equipment			

LEVEL 1 TEST CASES						
Test Case	Description	Pre- Requisite Test Cases	Post- Requisite Test Cases	Test Procedure		
3010221	Power Supply short circuit test with equipped load and nominal input voltage	3010206, 3010207, 3010802				
3010241	RTU behavior under complete power failure and restoration conditions	3010802		3012380		
3010270	Impulse voltage withstand, common mode, for power supply inputs	3010241	3010241	3012363		
3010271	Impulse voltage withstand, transverse mode for power supply inputs	3010241	3010241	3012364		
3010273	High frequency disturbance tests, common mode for power supply inputs	3010241	3010241	3012378		
3010274	High frequency disturbance tests, transverse mode for power supply inputs	3010241	3010241	3012379		
3010276	Insulation resistance, common mode for power supply inputs	3010241	3010241			
3010278	Power frequency withstand voltage, common mode for power supply inputs	3010241	3010241			
3010310	Non-volatile point value preservation	3010802				
3010370	Input voltage withstand, common mode for analog inputs	3010300, 3010510	3010300, 3010510	3012362		
3010371	Input voltage withstand, transverse mode for analog inputs	3010300, 3010510	3010300, 3010510	3012364		
3010372	High frequency disturbance tests, common mode for analog inputs	3010300, 3010510	3010300, 3010510	3012365		
3010373	High frequency disturbance tests, transverse mode for analog inputs	3010300, 3010510	3010300, 3010510	3012368		
3010570	Input voltage withstand, common mode for digital inputs	3010300, 3010510, 3010556	3010300, 3010510, 3010556	3012362		
3010571	Input voltage withstand, transverse mode for digital inputs	3010300, 3010510, 3010556	3010300, 3010510, 3010556	3012364		
3010572	High frequency disturbance tests, common mode for digital inputs	3010300, 3010510, 3010556	3010300, 3010510, 3010556	3012365		
3010573	High frequency disturbance tests, transverse mode for digital inputs	3010300, 3010510, 3010556	3010300, 3010510, 3010556	3012368		
3010574	Insulation resistance, common mode for digital inputs	3010300, 3010510, 3010556	3010300, 3010510, 3010556			
3010575	Power frequency withstand voltage, common mode for digital inputs	3010300, 3010510, 3010556	3010300, 3010510, 3010556			
3010670	Impulse voltage withstand, common mode for control relay outputs	3010605	3010605	3012362		
3010671	Impulse voltage withstand, transverse mode for control relay outputs	3010605	3010605	3012364		

LEVEL 1 TEST CASES (CONTINUED)							
Test Case	Description	Pre- Requisite Test Cases	Post- Requisite Test Cases	Test Procedure			
3010672	High frequency disturbance tests, common mode for control relay outputs	3010605	3010605	3012366			
3010673	High frequency disturbance tests, transverse mode for control relay outputs	3010605	3010605	3012367			
3010674	Insulation resistance, common mode for control relay outputs	3010605	3010605				
3010675	Power frequency withstand voltage, common mode for control relay outputs	3010605	3010605				
31003-106-04	Environmental tests						

The Foxboro Company 33 Commercial Street Foxboro, Massachusetts 02035-2099 United States of America <u>http://www.foxboro.com</u> Inside U.S.: 1-508-543-8750 or 1-888-FOXBORO (1-888-369-2676) Outside U.S.: Contact your local Foxboro Representative.

Foxboro and I/A Series are registered trademarks of The Foxboro Company.

Copyright 1997 by The Foxboro Company All rights reserved

MB 021

An Invensys company