

## **DNP 3 DEVICE PROFILE DOCUMENT**

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### **Overview:**

The purpose of this document is to give a description of tests performed and results on a RTU (Slave) device that will be connected to the IESO Spider EMS System. The protocol implemented is DNP3. The device must meet or exceed requirement specified by the IESO, in order to be certified.

Testing and certification will only be performed and issued for the RTU or VRTU portions of multi functional devices. The intended use of the Quantum RTU System with IESO is strictly as a Data Collection Device.

**Vendor Name:** Schneider Electric

**Device Name:** Quantum PLC System with a DNP3 Processor,

**Device Function:** RTU or Slave.

<b>Device Configuration:</b>	Slave Address	180
	Master Address:	111
	Binary Inputs:	0-15, Obj. 1, Var. 2, Qual. 01
	Analog Inputs:	0-39, Obj. 30, Var. 2, Qual. 01 with Application Confirm.
	Direct Operate	Not configured.
	Binary Outputs:	Not configured.
	Communications:	DNP3.

**Device Tests:**

**Read Binary Inputs**                      Obj. 1, Var. 2, Qual. 01                       **Pass**     **Fail**

**Read Analog Inputs**                      Obj. 30, Var. 2, Qual. 01                       **Pass**     **Fail**

**Direct Operate  
Binary Output**                      Not Tested.                       **Pass**     **Fail**

**DNP 3 Frame Structure of Response,  
Response < 2 seconds**                       **Pass**     **Fail**

**Check Data Flags**                       **Pass**     **Fail**

**RTU Restart  
Proper Com. After Restart**                       **Pass**     **Fail**

**Analog Scale Range Check**                       **Pass**     **Fail**

**Data Latency Check < 2 seconds**                       **Pass**     **Fail**

**IESO EMS Test Over Frame Relay**                       **Pass**     **Fail**

**Comments:**

IESO tested the Quantum data collection system as a RTU communication with our EMS system as part of the IESO certification.

RTU data was tested using a discrete onboard simulator that emulated data from the field. Flags were also tested using the simulator.

Overall the Quantum System performed very well as a RTU device communicating with the IESO EMS system. DNP3 was used for all tests.

**Summary:**

The Quantum data collection System was tested and is “Certified” for operation with the IESO EMS.

**Date of Certification:** November 16<sup>th</sup> 2005.

**Location:** IESO System Control Centre

**Certified By:** Ivo Pazzelli

**Ivo Pazzelli**  
*Engineer/Officer – Telecom & Computer  
Networks.*

**Approved By:** David Chong Tai

**David Chong Tai**  
**IMO IT&I**  
**Team Leader, Infrastructure**