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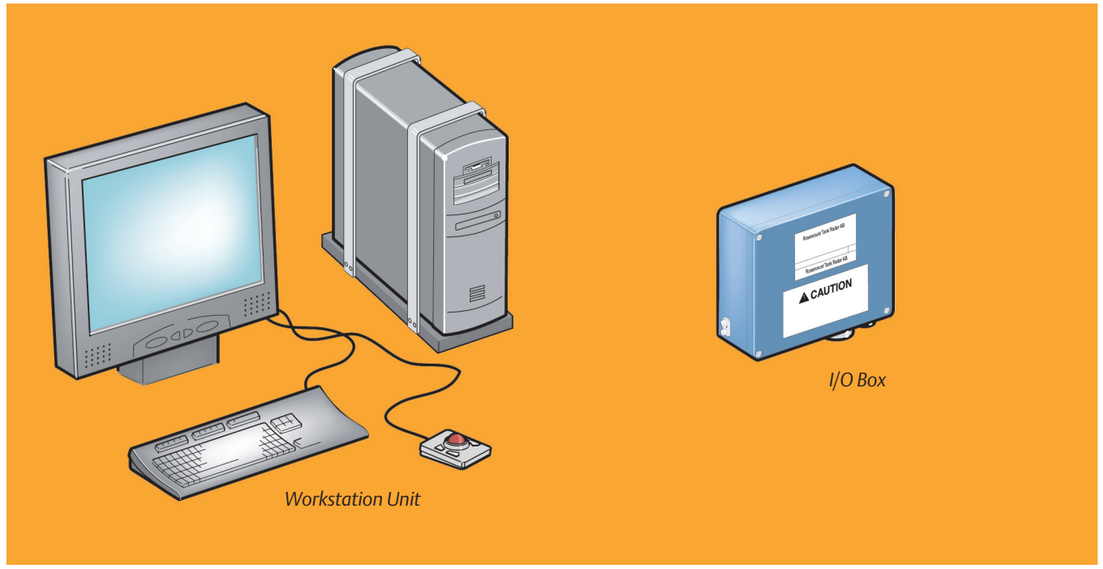
Rosemount® CTS - WSU 51 and IOB 51

Workstation Unit and I/O Box



Rosemount® CTS is a Custody Transfer Measurement System for LNG. Tank data is measured by Tank Gauge Units (TGU 53), processed and transferred to the Supply & Communications Unit (SCU) that acts as the connection hub where the data is further processed and made available for clients. The I/O Box and the Workstation Unit provides interfaces to other computer based systems onboard enabling easy access of data and the operators to access and control the system.

- Robust and trouble free user interface with all the required CTS functions
- Software customized for each project and customer needs
- Full flexibility to select sensor inputs from both Primary and Secondary CTS channels
- Secondary CTS sensor data fully integrated into the CTS report system
- Full communication redundancy options available

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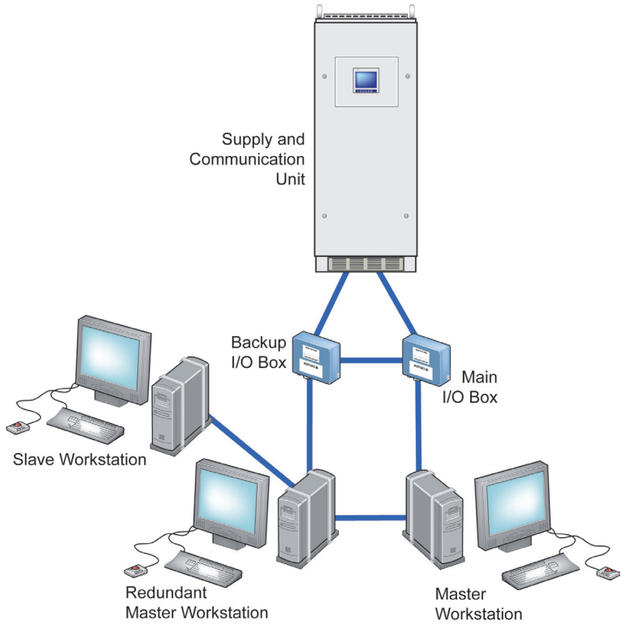
Operator and Computer Interfaces

The Workstation Unit is a PC based graphical user interface for monitoring data and controlling the Custody Transfer Report System. Each Workstation Unit consists of a Marine Type Approved PC, a Marine Type Approved Monitor, a Keyboard and a Mouse or Trackball.

The I/O Box is the primary connection point of the Rosemount Custody Transfer System, where internal communication in the system passes from the SCU and other data sources to the Workstation Unit. External serial communication interfaces are provided in the I/O Box. System Failure, Common Alarm and additional configurable relays are also available in the I/O Box. Multiple I/O Boxes may be provided for redundancy. Each I/O Box is controlled by a Workstation Unit.



Standard Features

The Workstation Unit and I/O Box provide the required interfaces to various types of measured data. The Workstation Unit includes standard software and customized mimics for Tank Level, Liquid and Vapor Temperature and Vapor Pressure monitoring. The workstation also includes volume calculation based on correction tables and tank capacity tables. The Custody Transfer report system provides calculated cargo quantity data. Data logging, reports and certificates printouts are also included.

Optional Features

- Handling of dual channel configurations, with Primary and Secondary CTS gauging. The user can select which measurement data that is used on screens and in CTS reports.
- Flexible Cargo Report System, enabling reports to be configured for different Buyer/Seller contracts
- Draft gauging inputs or Trim/List inclinometer input.
- Field bus modules for analog and digital inputs and outputs.
- Time synchronization with ship's master clock.
- Display of data from Independent Overfill and High Level Alarm, either with float switch or radar sensor technology.
- Tank display unit communication interfaces.
- CTS measurement with offshore filtering of level readings.
- Integration with IAS system -including customized features for control of CTS software from IAS.

Workstation and I/O Box Redundancy

Custody Transfer Systems are typically using the optional redundancy functionality available for Workstation Units and I/O Boxes. A redundant Workstation system can be established with two Workstations in a network. They are both configured as masters, and each has the full capability of running the entire system in case of failure of the other unit. Each master Workstation is also connected to one I/O Box. It is also possible to add more slave Workstations in the system.

Technical Data – Workstation Unit	
Computer	Type approved PC
Monitor	Type approved, 19"standard
Pointer Device	Mouse or trackball
Mounting, Computer	Horizontal or vertical
Mounting, Monitor	Desk mounting or console mounting
Operating system	QNX RTOS
Power Supply	115 VAC or 230 VAC
Project specific data	Exact dimensions, weights, power consumption data and heat dissipation data depending on the exact models of computer, monitor, keyboard and pointer devices.

Technical Data – I/O Box	
Dimensions	280 x 230 x 110 mm (W x H x D)
Weight	5 kg
Serial communication interfaces	Up to seven galvanically isolated RS-232 (max. 15m) or RS-485/RS-422 (max. 400 m) interface ports of which one is dedicated for the SCU communication.
Communication protocols	TankRadar Master/slave protocol, Modbus protocol, NMEA, SIOX, inclinometer etc.
Relays	System failure, common alarm and up to six configurable relays for alarms or general output signals. Rated 250 VAC, 8A.
Connection to WSU	RS-232 max. 15 m Cable supplied by Rosemount Tank Radar AB
Power Supply	115 VAC or 230 VAC
Power consumption	Maximum 15 VA
Sealing	IP22

Mechanical Installation

The I/O Box and the Workstation Unit is placed indoors in a non-hazardous and ventilated area. The I/O Box is mounted on a wall or inside a console. The Workstation Unit and the Monitor may be desktop mounted or console mounted.