

**Question****Answer**

Q What is ORB 2.0?

A ORB 2.0 is a complete communications integration system that interfaces with KM instruments and internet/intranet networks. It transforms ordinary data into useful information that offers logistical / material management, capacity utilization and system reliability which affects Quality, Delivery and Cost (QDC). With ORB 2.0 you get information that you need, when you need it, where you need it. No matter what your job function, you can pull the information that is relevant to you whether you're in accounting, purchasing, operations, maintenance, etc. without programming, special drivers or software.

Q How do I get my information from the ORB 2.0?

A ORB 2.0 connects you to a LAN/WAN using a standard TCP/IP Ethernet connection. You then use your Internet browser to view the information.

Q What kind of data is available with an ORB 2.0 system?

A The data consists of the last current reading (time and date of the data is indicated), a one-day trend, long term historical trends, current alarm conditions and historical alarms and acknowledges. Raw data can be downloaded for use with a program such as Excel.

- Q Are all current KM products ORB 2.0 capable?
- Q Can I use ORB to alert my control system to shutoff the fill?
- Q There was an earlier ORB product, the ICPU. What are the differences between this and ORB 2.0?
- Q What is a TCP/IP Ethernet connection? Isn't all Ethernet the same?
- A Yes, all current KM products with a serial interface port will communicate as a part of a KM ORB 2.0 system. New KM products will incorporate advanced features and diagnostics for ORB.
- A ORB 2.0 is not suited for this type of control. KM controllers feature a variety of interfaces such as set points and digital interfaces that are better suited to this task.
- A The ICPU was an earlier product that provided basic bulk inventory functions. Customer feedback directed many changes, such as an Ethernet capability in addition to the modem connection, built-in web server to eliminate special programming needs, additional KM interconnectivity, more data storage, direct system access, self-learning, plus the ability to update in the field as new features are added.
- A **TCP/IP** is a computer "protocol", a method for computers to talk to one another. It is the "language" of the Internet. With over 300 million computers connected, it is the dominate protocol in the world, one with more than a 30 year history, first used by education concerns (universities), adopted by the Dept. of Defense and then used by the public as the method of moving information among computers. It is also referred to as a "transport" method of moving information among computers. This means that it defines the world in a way that you can get information from point "A" to point "B" through an addressing scheme, the "IP" part of the TCP/IP. TCP/IP provides for the movement of information, but it is not responsible for the information that is moved. It is possible to move information from computer to computer, but it is also possible for the receiving computer to not be able to process the information received due to format.

Q Can someone get into my network through the 2.0 ORB? How secure is it?

An "IP" address looks like xxx.xxx.xxx.xxx with the "x's" representing numbers having 256 possibilities (0-255). This method of addressing creates 4 billion combinations on the public internet (256x256x256x256). These 4 billion numbers are managed by the InterNIC, a US government granted business. The InterNIC makes sure that two users do not have the same number. The InterNIC also provides for names to be assigned to the numbers to make them easier for people to use.

Note that TCP/IP may be used internal to a company with or without public Internet connection. It is a common and growing method for computer-to-computer connection on private Internets or "intranets" as it is normally referred.

**Ethernet** is connectivity "pipeline". It is a way of connecting computers together using a variety of protocols, such as TCP/IP, IPX/SPX, NetBEUI, etc (the infamous "etc."). There are different speeds available for Ethernet, 10mps, 100mps and the recently introduced 1000mps or "gigabit" Ethernet. Due to its popularity it continues to be improved on, so we can expect even faster speeds in the future. Note that Ethernet is NOT the protocol (or language) for computer-to-computer information transfers; it is only the connection method.

A The public Internet is plagued with (and benefited by) hackers and crackers, who attempt to get into computers and, occasionally, have some mischief with them. The media mentions these from time to time. If you put your computer on the Internet, or make it available to the Internet, you expose yourself to this risk.

Our Engineers have chosen Linux/Unix as the operating system for the ORB 2.0. This choice reduces the risk due to simple reduction of the number of "hackers" and "crackers" who go after Microsoft based systems, and due to the inherent security in a Unix based system. Simply put, they are much more difficult to hack/crack, although not impossible. Kistler-Morse recommends you consider the services of a security professional when putting your ORB 2.0 on the public Internet

Q How hard is it to connect ORB 2.0 to my network?

A Due to the popularity of Ethernet-TCP/IP based networks, we believe you'll find this connection is quite simple. Most likely you have someone skilled at your own plant with what is required to make this connection. If you can network your home computers, or the computers in your "front office", you may already know how to connect the ORB 2.0 to your network. The network administrator or consultant who handles your "back office" is more than competent to connect the device to your network, and, perhaps the Internet as well. If you don't currently have the services of a network administrator or consultant, we would be pleased to help you find one local to your installed site.

The mechanics of the connection are: locate the ORB 2.0 in an area near your network connection. Be aware that Ethernet network segments may not exceed 300 ft., so if the tank(s) are "way out back", run RS485 cabling the long distances (up to 4,000 ft.) from instrumentation to your "locally placed" ORB 2.0. Note the environment considerations when placing the ORB 2.0. Use the procedure described in the manual to "crosslink" connect a computer with web browsing capability to the ORB 2.0 and set the "IP". Alternatively, you may connect a computer to the ORB 2.0 serially and use Microsoft Hyperterminal to set the "IP". Once the "IP" is set, plug the CAT-5 Ethernet cable from the ORB 2.0 to your network segment. Type in the "IP" you set in the format "http://xxx.xxx.xxx.xxx" in a web browser (IE4.0 or higher) on any computer on your network and look at your information through the web served up by the ORB 2.0.  
It's that easy!

Q Will the ORB 2.0 work with a firewall?

A The ORB 2.0 is a device designed with consideration to the public internet, TCP/IP and Ethernet connectivity rules. As such, it may be used with a firewall, and other devices including routers, bridges, hubs, switches and any other network hardware used on TCP/IP/Ethernet based networks. The use of a firewall requires understanding of certain issues that would be best handled by a network security professional when using a firewall with an ORB 2.0.

Q I am doing bulk inventory monitoring right now. My operators tape the vessels when we think we are running low and write down the data. We then give the data to operations that schedule another delivery when we need it. Why do I need ORB?

A There are many reasons to upgrade. In many plants, as long as demand and delivery are predictable, past history using mass balance can be adequate. This method does rely heavily on the experience of typically very few people and a very strong supplier. But changes can wreck havoc. Providing a reliable means of obtaining inventory information can open up the data to a number of departments that previously relied on old data. It eliminates mistakes from measuring the wrong vessels, transposing numbers, keying errors as well as possible contamination from opening up the vessel and accidents from having operators climbing vessels in all kinds of weather. ORB 2.0 becomes the heart for the access and distribution of the data to whomever you require.

