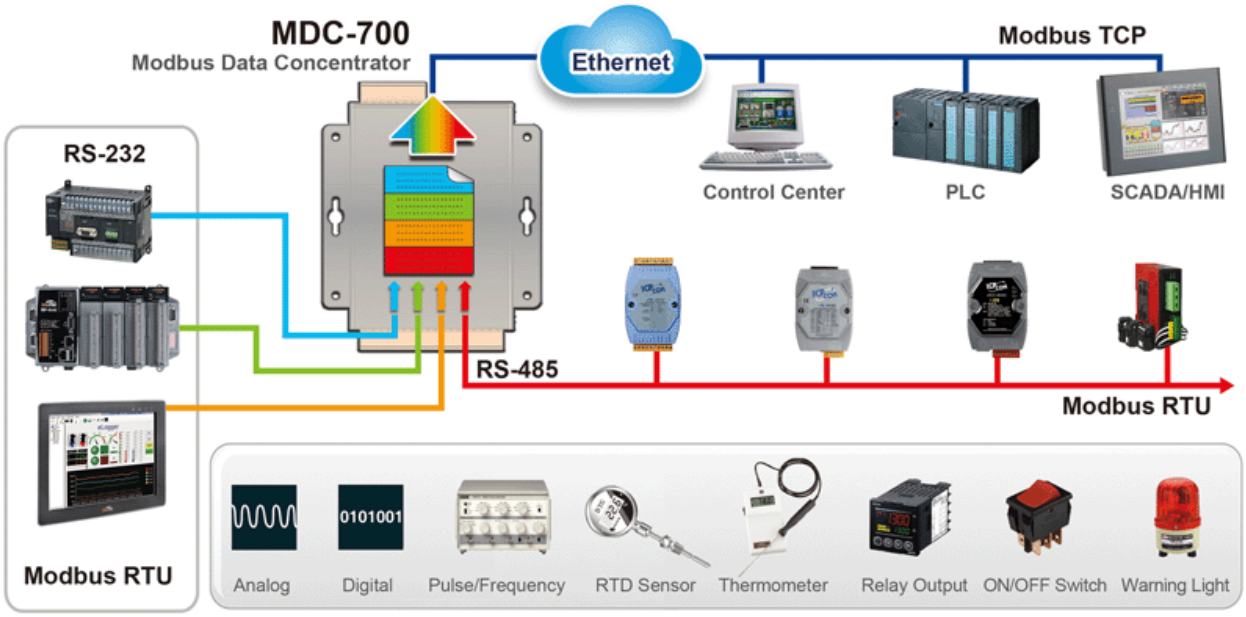
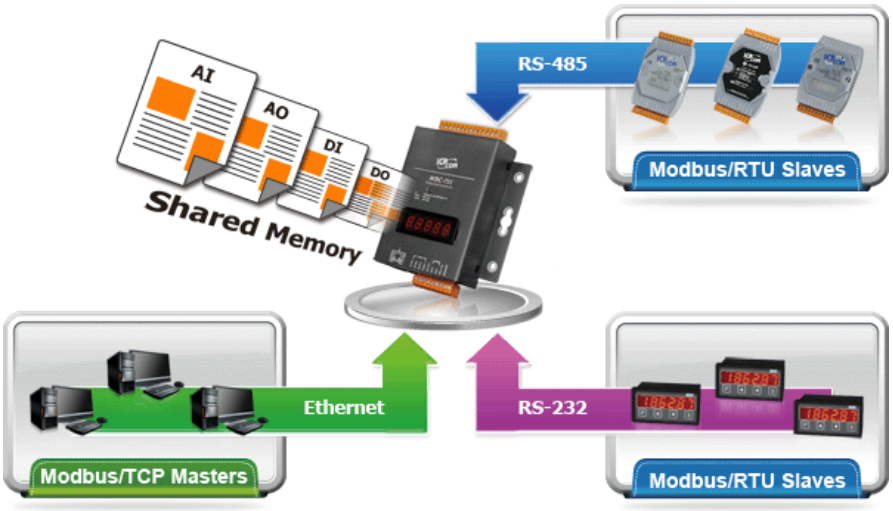
How to Optimize Data Collection with Modbus Data Concentrators

In today's world, information is the key to keeping manufacturing processes efficient and profitable. An automotive plant can produce hundreds of cars in a day. To do this, there is a lot of coordination and planning that needs to be done on a continual basis. How many black cars need to be made? How many seatbelts will go into these and other cars? How many trucks will be needed to transport these cars to the dealer? Assembly lines help to automate the process. I imagine that just by the press of a button, an operator can begin the process of manufacturing a single black car. Once it is done being manufactured, it must be tested. If all tests are completed successfully, the vehicle can be sent to the transportation department to be shipped to the dealer that has ordered it. The process seems easy and efficient. What happens if the operator pushes the wrong button and creates a white car? What happens if a seatbelt is defective? Is the entire car and all of the parts that went into making it scrapped?

Machines help prevent these mistakes in manufacturing. Automated machine tied to a central SCADA computer can help in all aspects of planning and manufacturing. The problem with this is that when the process is large or spread out data collection becomes less efficient and slower.



Our solution for this is to add in a **Modbus Data Concentrators** (MDC) for each group of machines or location. Modbus is the most common Industrial protocol and most PLC, Controllers, and industrial software can communicate via this protocol. These MDC improve the efficiency of the SCADA computer by significantly reducing number of devices that are polled and makes data collection more efficient.



An MDC module takes the place of a Modbus master and is programmed to poll many serial Modbus slave devices and store their values into shared memory. Because serial communication is a slow process in general, many MDC modules polling serial devices one at a time is much more efficient than one main computer polling them one at a time. Then the SCADA computer can poll the MDC for the data from several machines at once; making the process much more efficient. When additional locations or equipment is introduced, they can add additional MDC at each location and only minimally slow down the data collection process.

ICP DAS USA has 2 versions of Modbus Data Concentrators to help optimize the process of data collection.

MDC-711

Modbus Data Concentrator with 1 Ethernet, 1 RS-232, 1 RS-485 Modbus RTU Protocol.

MDC-714

Modbus Data Concentrator with 1 Ethernet, 1 RS-232, 4 RS-485 Modbus RTU Protocol.