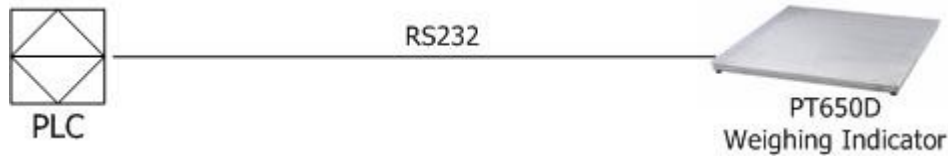How to use IS800A box in multiple weighing indicator environment

In one industrial environment we may have PLC to connect with weighing indicator (ex, PT650D) via RS232 connection. This weighing indicator may send weight data to PLC periodically.


Originally we may have such weight data to PLC only and re-transmit such data to other destination for process. But we can't confirm such data modified or not modified between weighing indicator and final destination system. Because there are only one way from weighing indicator to final system, so we can not confirm integrity later. Our customer may ask RAYON Technology to support solution for such condition. For the first solution we suggest to use S272 serial port sharer box between weighing indicator and PLC. We can connect weighing indicator to master port of S272 box. Then we can have PLC and other system to connect with slave port of S272 box. So we can have all systems with same data from weighing indicator. The other solution we suggest to use APORT100P serial to network converter box. We can let weighing indicator to connect with serial port of APORT100P box and the local pass-through port of APORT100P box to connect with PLC. Then the weighing indicator data will send same data to PLC and the other remote host. In this condition we can have both system to check each other for data integrity.
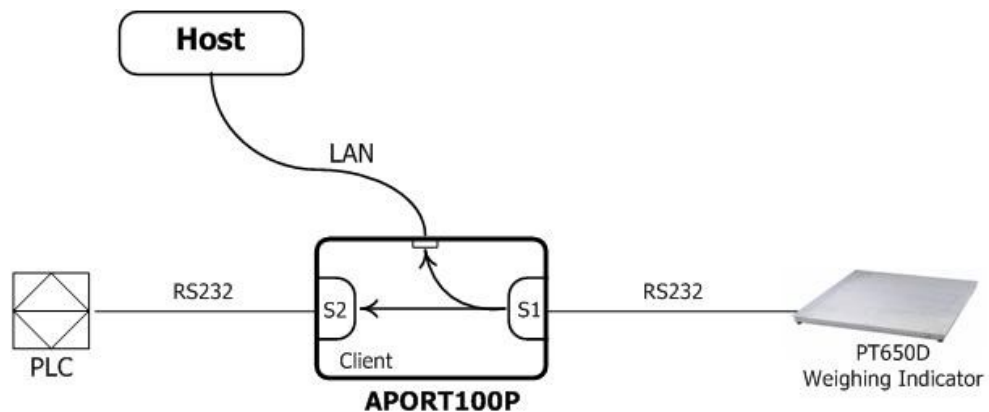
But some customer may worry about function correct or not in one weighing indicator. When you just have one weighing indicator, then you can not confirm the

abnormal condition in this weighing indicator. For example we may have sensor drift problem for time and environment changed. Or we may change some setting in weighing indicator man-made dedicatedly. So we may need to connect multiple weighing indicators to PLC. But PLC may just have one RS232 serial port to connect. In this condition RAYON Technology suggest to use IS800A addressable intelligent serial port sharer box. The master port of IS800A box may connect with PLC. The slave port of IS800A box will connect with all weighing indicators. In this condition we can let PLC to receive weight data from all weighing indicators. Firstly IS800A box need to solve the problem for collision between different weighing indicators to send data simultaneously. We will let one weighing indicator to send weight data to PLC firstly and the other weighing indicator's data kept in buffer. When the current one weighing indicator's data packet is finished, then we can send the other weighing indicator's data to PLC. The other function IS800A box need to support is to identify which weighing indicator's data packet to PLC. Because all weighing indicators may send similar data to PLC and there are no indicator in data packet to differentiate each weighing indicator, so we need to add ID code in weight data packet from weighing indicator firstly before send to PLC. Originally the weight data from weighing indicator may be 18 bytes for each packet. Now we will add ID code (ID1—ID7 code) before each packet to differentiate such data is from which slave port to PLC. Then PLC will know each weight packet is received from which weighing indicator to connect with slave port of IS800A box.
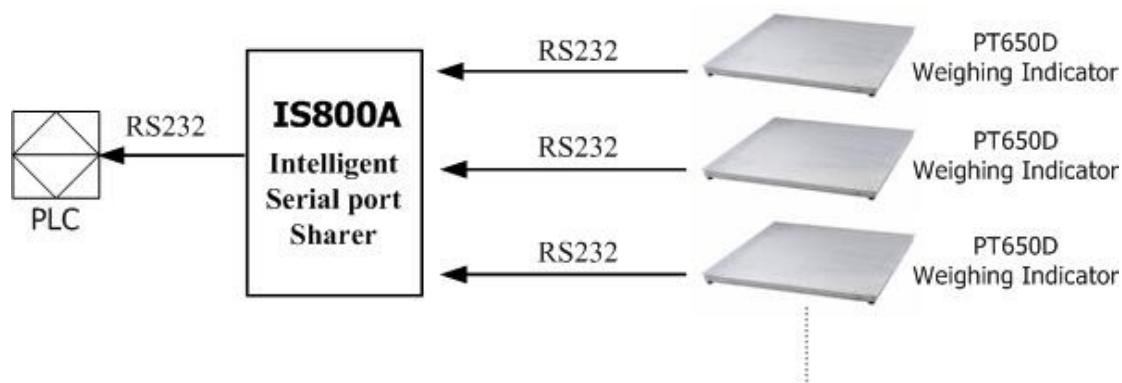
In this condition any device without ID code to differentiate can use IS800A to let multiple devices to work with PLC. If there were ID code in device to differentiate device, then we can use standard IS800 box to work with PLC. In IS800 box we will not modify any data from slave port to PLC. In IS800A box we will add ID code in data from slave to PLC.