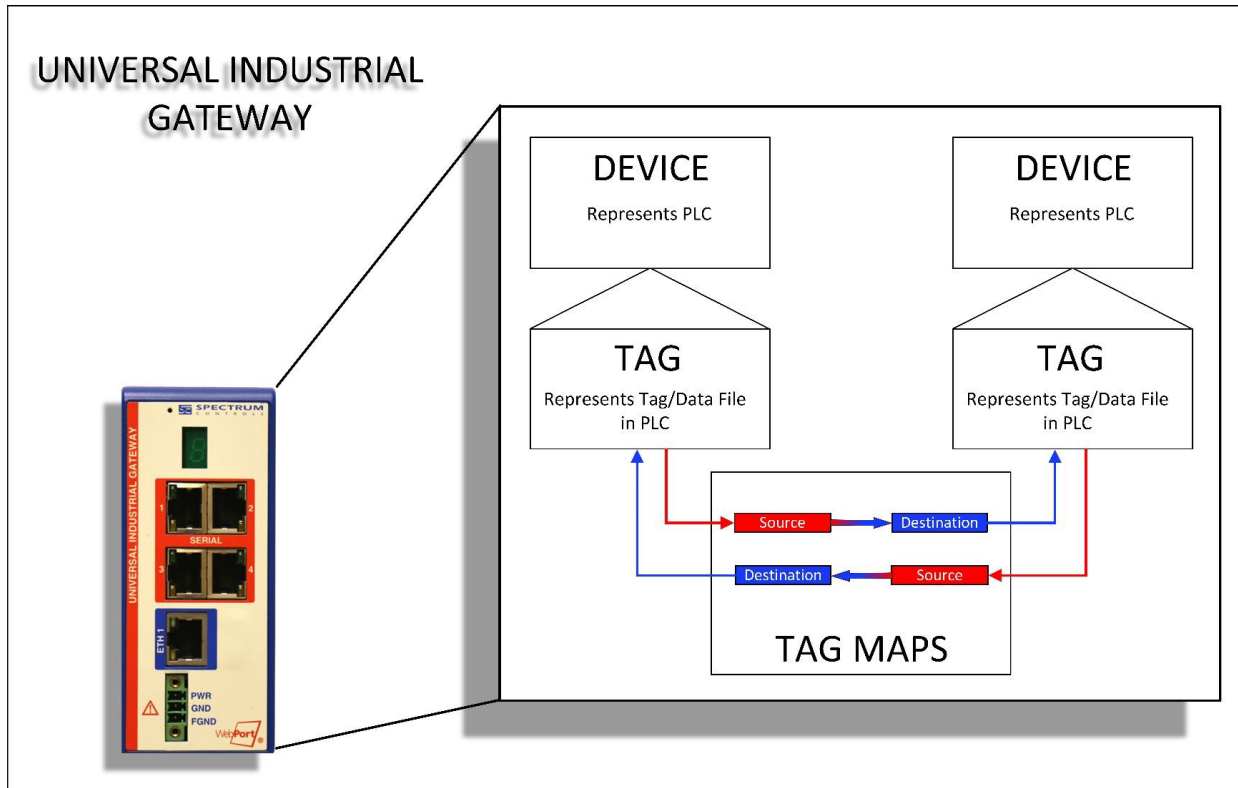## Basic Theory of Operation

The Universal Industrial Gateway is a bridging device that allows you to bridge multiple types of PLCs, with multiple types of protocols, using just one device. One advantage it offers is that it handles all communications so there isn't any PLC programming required to make it work.

There are three major components within the Gateway, the "Devices", "Tags" and "Tag Maps".
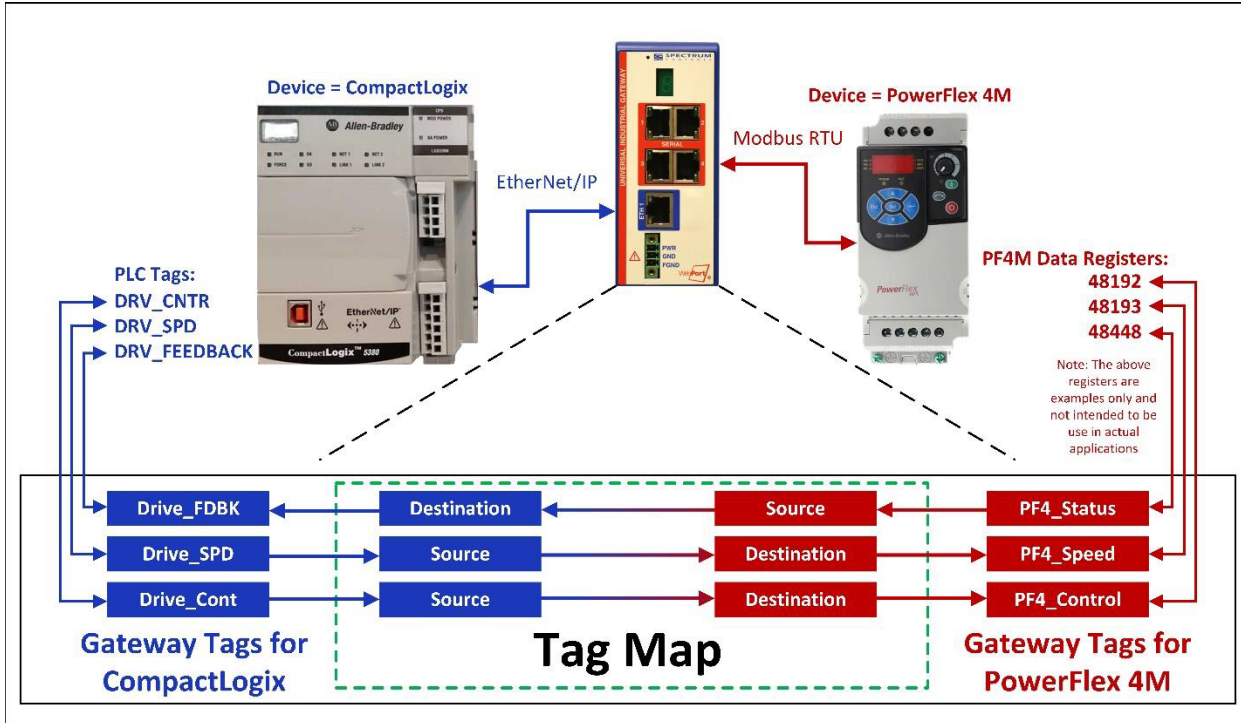
They operate as follows;

- Devices: Represents a PLC/Device that the Gateway will connect to and how it will connect.
- Tags: Defines where data will be read from, and/or written to, in the PLC/Device.
- Tag Maps: Defines what Gateway tag is the Source (read from) and what Gateway tag is the Destination (write to) as well as how, and when, the data is exchanged.

  The Gateway will support up to 50 Tag Maps with each Tag Map having a maximum of 100 pairs of Tags I.E. one source Tag and one destination Tag.

NOTE	The more Tag Maps and pairs of Tags within them, the longer it will take for a full circle of communications to take place (from the beginning of the first Tag Map to the end of the last Tag Map).

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Universal Industrial Gateway
Technical Note
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In the example below, the Gateway is passing control data from the CompactLogix to the PowerFlex drive and drive status data from the PowerFlex to the CompactLogix. Within the Gateway, two devices have been configured with three tags each. The Tags in the Gateway for the CompactLogix are linked to three Tags within the CompactLogix, and the Tags in the Gateway for the PowerFlex are linked to three Modbus holding registers within the PowerFlex. The Tag Map is configured to use two of the CompactLogix Tags as Source Tags, moving their data to two PowerFlex Tags used as Destination Tags. It is also using one of the PowerFlex Tags as a Source Tag, moving that data to a CompactLogix Tag being used as a Destination Tag.

It is worth noting that the Gateway Tags are not limited to being either a Source or Destination. They can act as a Source or Destination in the same Tag Map or in multiple Tag Maps.