allow a particular controller to interface with a specific type of control equipment. It is now recognized that traditional systems typically include coupling configurations between automation controllers and related modules that constrain certain functionalities and arrangements. Accordingly, it is now recognized that it is desirable to develop an interlocking system for securing modules that provides flexibility with regard to configuration and functionality while facilitating assembly.

BRIEF DESCRIPTION

[0003a] According to an aspect of the present invention, there is provided a control system, comprising: an automation controller; and a module bay of the automation controller comprising a plurality of bay connectors configured to communicatively couple with module connectors, wherein the module bay and the plurality of bay connectors are configured to coordinate to facilitate communicative coupling with one or more of a plurality of scalable modules, wherein the module bay comprises an open end configured to enable one of the scalable modules to couple with one or more bay connectors and extend past an edge of the open end.

[0004] ~~In one embodiment of the present disclosure, a control system includes an automation controller, such as a PLC, with a module bay configured to facilitate coupling with scalable modules. The module bay of the automation controller includes a plurality of bay connectors configured to communicatively couple with the scalable module connectors.~~ Further, the plurality of bay connectors may be arranged with respect to one another such that a first quantity of standard-sized modules or a second quantity of larger than standard-sized modules can be communicatively coupled with the automation controller and disposed within the module bay, wherein the second quantity is less than the first quantity. ~~Additionally, the module bay may include an open end such that a portion of a larger than standard-sized module coupled with one or more of the plurality of bay connectors can extend outside of the bay module through and beyond an edge of the open end.~~

[0004a] According to another aspect of the present invention, there is provided a control system, comprising: an automation controller; a module bay of the automation controller comprising a plurality of bay connectors configured to communicatively couple with module connectors; and one or more of a plurality of scalable modules coupleable with the plurality of bay connectors, wherein the module bay comprises an open end configured to enable one of the scalable modules to couple with one or more bay connectors and extend past an edge of the open end.

[0005] ~~In another embodiment of the present disclosure, a control system includes an automation controller and one or more scalable modules. The automation controller includes a module bay with a plurality of bay connectors configured to communicatively couple with module connectors. Correspondingly, the one or more scalable modules are coupleable with the plurality of bay connectors.~~ The plurality of bay connectors may be arranged with respect to one another such that a first quantity of standard-sized modules or a second quantity of larger than standard-sized modules can be communicatively coupled with the automation controller and disposed within the module bay, wherein the

second quantity is less than the first quantity. ~~Further, the module bay may include an open end such that a portion of a larger than standard sized module coupled with one or more of the plurality of bay connectors can extend outside of the bay module through and beyond an edge of the open end.~~

[0006] ~~In yet another embodiment of the present disclosure, a method of manufacturing a control system is provided. The method includes manufacturing an automation controller and manufacturing one or more scalable modules. The automation controller may be manufactured to include a module bay, wherein the module bay includes a plurality of bay connectors configured to communicatively couple with module connectors. The one or more scalable modules may be manufactured such that they are coupleable with the plurality of bay connectors.~~ According to another aspect of the present invention, there is provided a method of manufacturing a control system, comprising: manufacturing an automation controller including a module bay, wherein the module bay includes a plurality of bay connectors configured to communicatively couple with module connectors; and manufacturing one or more of a plurality of scalable modules coupleable with the plurality of bay connectors, wherein manufacturing the automation controller comprises manufacturing the module bay to include an open end configured to enable one or more of the scalable modules to couple with one or more bay connectors and extend past an edge of the open end.

DRAWINGS

[0007] These and other features, aspects, and advantages of the present disclosure will become better understood when the following detailed description is read with reference to the accompanying drawings in which like characters represent like parts throughout the drawings, wherein:

[0008] FIG. 1 illustrates a block diagram of an industrial automation and control system in accordance with an embodiment of the present technique;

[0009] FIG. 2 illustrates a perspective view of an automation controller and attached standard-sized modules in accordance with an embodiment of the present technique;

[0010] FIG. 3 illustrates a perspective view of the automation controller and attached greater than standard-sized modules in accordance with an embodiment of the present technique;

[0011] FIG. 4 illustrates a perspective view of the automation controller without any modules attached in accordance with an embodiment of the present technique;