

## **User Instructions Add-On Instruction (AOI) : IND131\_IntDiv\_Input\_Data**

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This AOI is intended to be used with a Mettler Toledo IND131/331 terminal. The AOI was created using Allen-Bradley RSLogix5000 version 16 and is intended for use with RSLogix5000 version 16 or greater.

### **User requirements**

Users will need an understanding of the IND131/33 Terminal PLC Interface Data Formats and the data layout for Integer or Divisions Data Format.

### **Applicable Mettler Toledo Terminal PLC interfaces**

- Allen Bradley Remote I/O (RIO)
- EtherNet/IP (using the RSLogix5000 generic module profile only, input data INT)
- DeviceNet
- ControlNet

### **Applicable Mettler Toledo PLC Data Formats**

- Integer
- Divisions

### **AOI provides**

The AOI converts the integer weight value from the terminal into an RSLogix5000 Data Type Real and the scale status integer from the terminal into separate RSLogix5000 Data Type Bool Bits.

If the IND131 Data Format is set up to send data to the PLC as an Integer, set the AOI parameter input *Use\_Divisions* to "0". If the IND131 is setup to send data to the PLC as Divisions, set the AOI parameter input *Use\_Divisions* to "1".

The AOI converts the weight data into an RSLogix5000 Data Type REAL using the AOI parameter input *Increment\_Size*; the *Increment\_Size* must be the same as used for scale calibration.

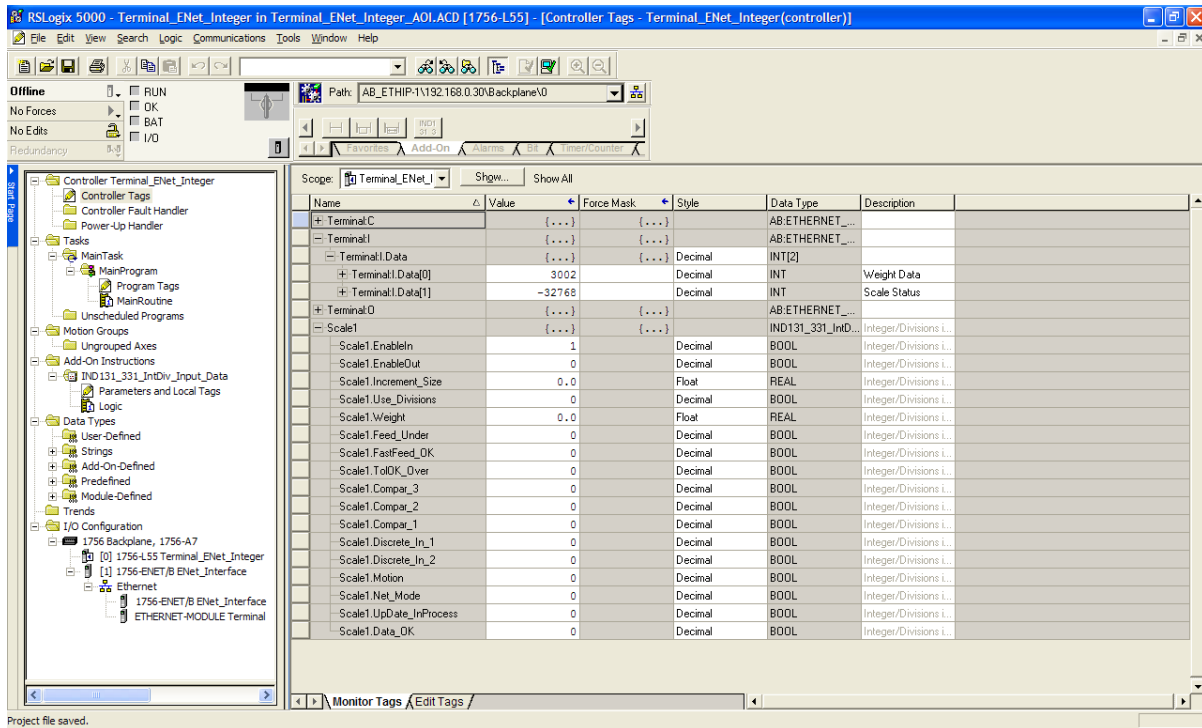
The RSLogix5000 application program uses one AOI for each IND131/331 input.

### **Adding the AOI to the RSLogix5000 application**

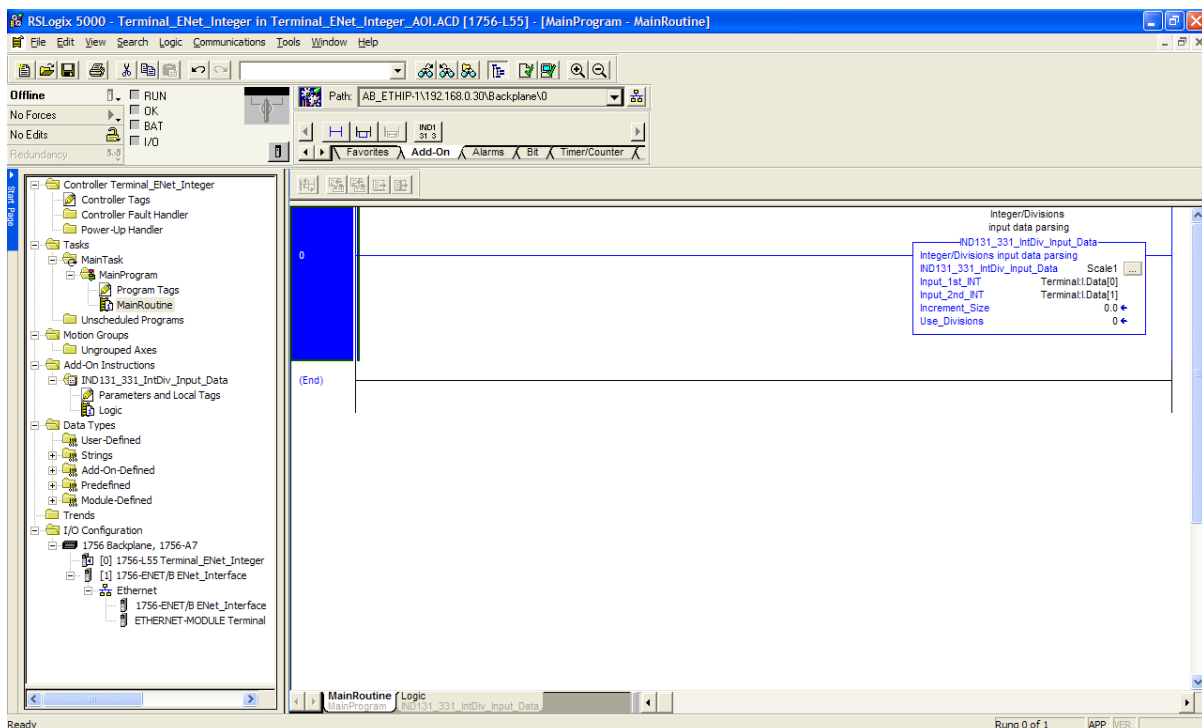
Within the RSLogix5000, in the Configuration window, right click on Add-On Instructions; click on Import Instruction; a new window will open, click on IND131\_331\_IntDiv\_Input\_Data.L5X; click on Import button. The AOI will load, creating the Add-On Instruction, a Data Type of the same name as the AOI and a new Tab to the Instruction Types over the programming screen window. The new Data Type will be included in any screen requiring Data Type entry. The Instruction will also appear in the window screen when keyboard inserting a new instruction to the program logic.

## Adding AOI to RSLogix5000 application program

Within the RSLogix5000 application program one AOI is used for each input message. A Tag must be associated to the AOI when inserting into the application program; this tag must use the RSLogix5000 Data Type of the same name as the AOI (IND131\_331\_IntDiv\_Input\_Data). In the example below, the Tag is Scale1.



Within the RSLogix5000 application program insert the AOI where desired. The first requirement for the AOI block will be the entry of the Tag created earlier. In the example below the Tag is Scale1.



## Input Parameters

*Input\_1st\_INT* and *Input\_2nd\_INT* are required Input Parameters. *Increment\_Size* and *Use\_Divisions* are also Input Parameters but need not be an entry when the AOI is inserted in the application program; these two Parameters are visible in the AOI Tag as elements of the Tag. The parameter *EnableIn* is a system parameter and is part of every AOI.

*Input\_1st\_INT* is the Data Type INT and should be selected to point to the first Input data INT of the input message from the IND131/331 terminal to the PLC.

*Input\_2nd\_INT* is the Data Type INT and must be pointed to the second input data INT of the input message from the IND131/331 terminal to the PLC.

*Increment\_Size* is the Data Type REAL. The increment size entered must match the scale calibration size to assure correct conversion of the input weight data to a REAL.

The increment size may be entered when the AOI is inserted and it will be a constant unless the PLC logic changes the increment size. The increment size may be entered at the Tag monitor screen and will be a constant unless the PLC logic changes the increment size. Be sure to save the program to assure the constants are saved as part of the program. The increment size may be entered into the Tag element *Increment\_Size* by the program logic if desired.

*Use\_Divisions* is the Data Type BOOL. This parameter must be set to one (1) or ON if the weight input data from the terminal is Data Format Divisions. The *Use\_Divisions* parameter may be entered when the AOI is inserted and it will be a constant unless the PLC logic changes the state of *Use\_Divisions*. The *Use\_Divisions* parameter may be entered at the Tag monitor screen and will be a constant unless the PLC logic changes the state of *Use\_Divisions*. Be sure to save the program to assure the constants are saved as part of the program. The state of *Use\_Divisions* may be controlled by the program logic if desired.

## Output Parameters

Output Parameters are weight and the scale status bits.

The parameter *EnableOut* is a system parameter and is part of every AOI.

The AOI *Weight* is the Data Type REAL. This Output Parameter is the math result of the data from the Input Parameters *Input\_1st\_INT*, *Increment\_Size*, and the state of *Use\_Divisions*.

*Feed\_Under* is the Data Type BOOL. This Output Parameter matches the state of bit 0 of the Input Parameter *Input\_2nd\_INT*.

*FastFeed\_OK* is the Data Type BOOL. This Output Parameter matches the state of bit 1 of the Input Parameter *Input\_2nd\_INT*.

*ToIOK\_Over* is the Data Type BOOL. This Output Parameter matches the state of bit 2 of the Input Parameter *Input\_2nd\_INT*.

*Compar\_3* is the Data Type BOOL. This Output Parameter matches the state of bit 5 of the Input Parameter *Input\_2nd\_INT*.

*Compar\_2* is the Data Type BOOL. This Output Parameter matches the state of bit 6 of the Input Parameter *Input\_2nd\_INT*.

*Compar\_1* is the Data Type BOOL. This Output Parameter matches the state of bit 7 of the Input Parameter *Input\_2nd\_INT*.

*Discrete\_in\_1* is the Data Type BOOL. This Output Parameter matches the state of bit 9 of the Input Parameter *Input\_2nd\_INT*.

*Discrete\_in\_2* is the Data Type BOOL. This Output Parameter matches the state of bit 10 of the Input Parameter *Input\_2nd\_INT*.

*Motion* is the Data Type BOOL. This Output Parameter matches the state of bit 12 of the Input Parameter *Input\_2nd\_INT*.

*Net\_Mode* is the Data Type BOOL. This Output Parameter matches the state of bit 13 of the Input Parameter *Input\_2nd\_INT*.

*UpDate\_inProcess* is the Data Type BOOL. This Output Parameter matches the state of bit 14 of the Input Parameter *Input\_2nd\_INT*.

*Data\_OK* is the Data Type BOOL. This Output Parameter matches the state of bit 15 of the Input Parameter *Input\_2nd\_INT*.

## User edit of the AOI

The AOI was created using RSLogix5000 version 16; there are no imbedded AOI's or non-standard data types within the AOI. The AOI is not protected; the Parameters, Local Tags and Logic may be edited by the user if desired. The user must assume responsibility for the operation and usability of the AOI when editing.

Contact Rockwell Software Support for questions about AOI development programming and editing; Mettler Toledo Technical Support is unable to provide assistance with AOI development programming and editing. Below is a screen capture of the AOI Parameter screen.

