

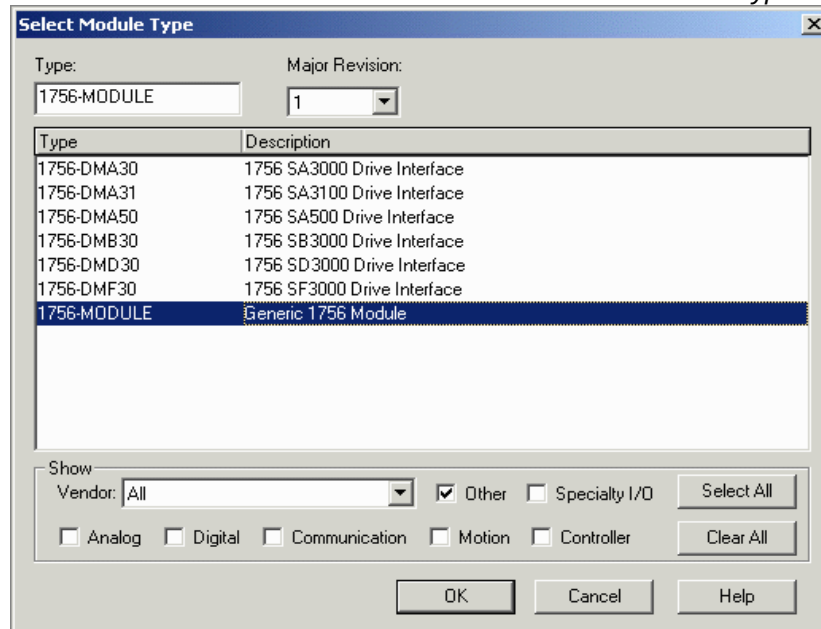
GETTING STARTED for HM1756-WEIGH MODULE

MODULE I/O CONFIGURATION

This shows the preliminary setup and operation required before the module can function in a 1756 I/O system using RSLogix5000

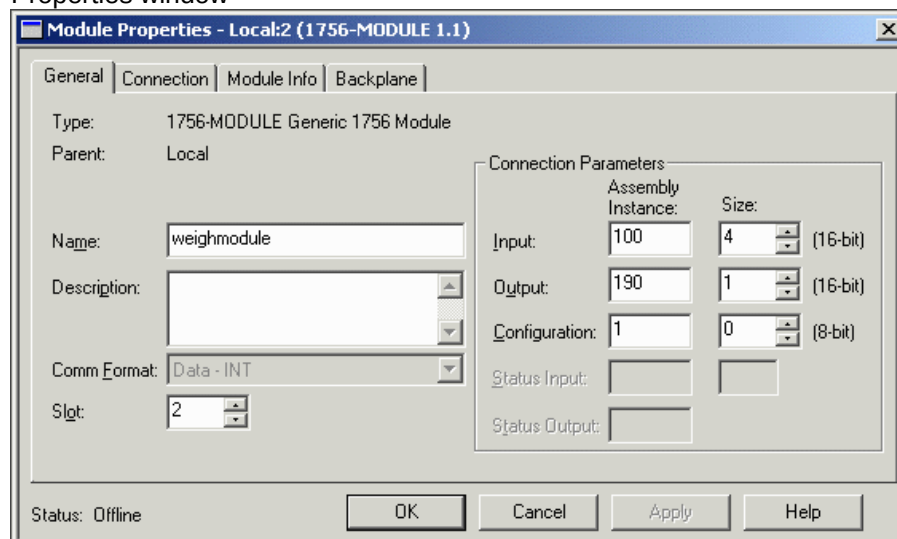
Adding Module to I/O Configuration

Select **1756-MODULE Generic Module** from *Select Module Type* window



Configuring Module's Properties

From the Controller Organizer, right click on the added module and open up Module Properties window

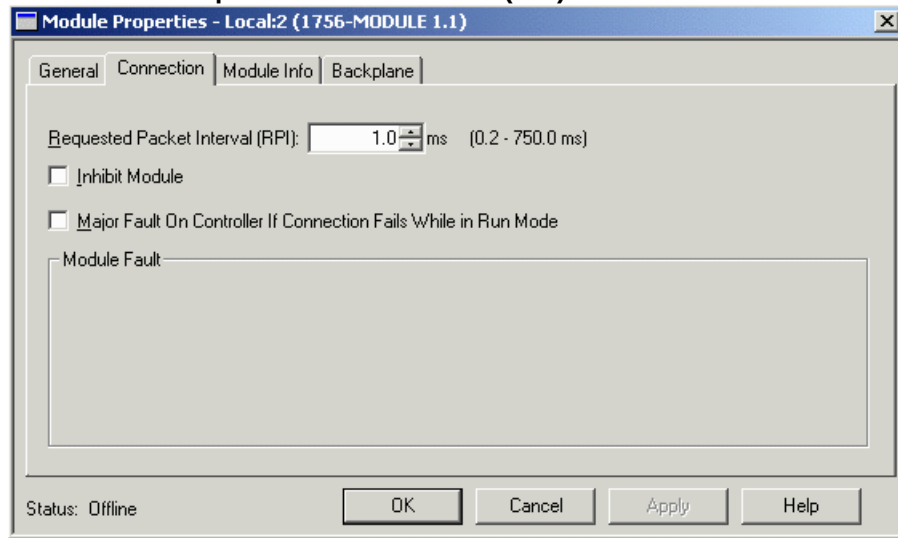


Type in a name for the module and select a slot number

General: Connection Parameters

	Assembly Instance	Size
Input	100	4
Output	190	1
Configuration	1	0

Connection: Requested Packet Interval(RPI): 1.0ms



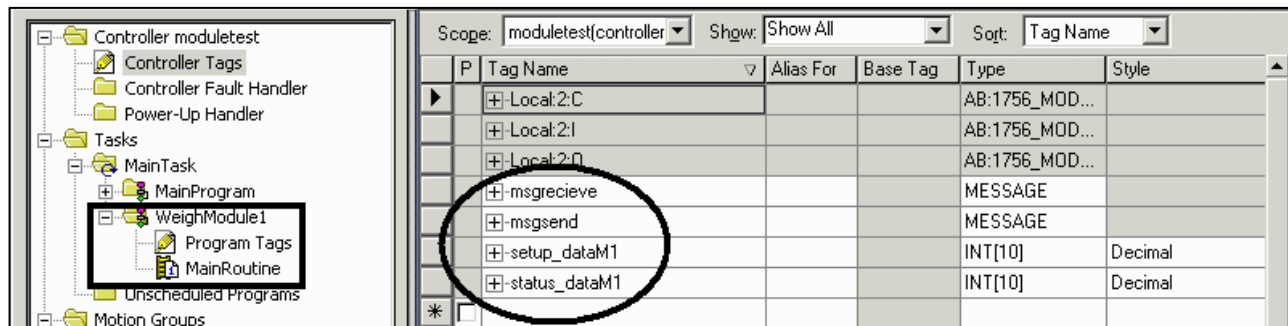
ADDING LADDER PROGRAM

HM1756 Weigh Module requires the ladder program that comes with the module. You need to copy the Tags and programs to your existing ladder program.

Open *Hm1756Weigh_Module.ACD* file using RSLogix5000 program and copy the tags below from the Controller Tags section into your program.

Tag Name	Type
msgreceive	MESSAGE
msgsend	MESSAGE
setup_dataM1	INT[10]
status_dataM1	INT[10]

Also copy *WeighModule1* program into the MainTask section of your program.



MODULE INPUT /OUTPUT

INPUT IMAGE DATA TAGS

Data Tags Local:x.I	Data Type	Bit	Description
.Data[0]	INT	-	ASIC Scan Update Counter
.Data[1]	INT	-	Ch1 Weight Value
.Data[2]	INT	-	Ch2 Weight Value
.Data[3]	Bit	0 1 2 3	Ch1 Sign Bit (0 = positive, 1 = negative) Ch2 Sign Bit (0 = positive, 1 = negative) AD Trim Mode Bit (0 = Run Mode, 1 = Trim Mode, Factory Use only) Sample Complete Bit

ASIC Scan Update Counter: Updates every RPI to show the Module is working properly.

Ch1,2 Weight Value: Displays the actual weigh read from sensor as an unsigned word (0 – 65535). Proper scale and mV/V settings are required for the accurate reading,

Ch1,2 Sign Bit: Indicates the polarity of the weigh value in .Data[1], .Data[2]. (0 = Positive, 1 = negative)

Sample Complete Bit: indicates the sampling (averaging) of the Weigh value has been completed since the Clear Average Bit (Local:x.O.Data[0].9) has been toggled, The number of samples to average can be set at CONFIGURATION DATA tags.

OUTPUT IMAGE TAGS

Data Tags Local:x.O	Data Type	Bit	Description
.Data[0]	Bit	0	Write Config Data Bit
	Bit	1	Run Mode Bit (1 = Run Mode, 0 = Config Data Mode)
	Bit	2	Read Config Data Bit
	Bit	3	Zero Stabilize On Bit (1 = On, 0 = Off, in Run Mode Only)
	Bit	4	No Flicker On Bit (1 = On, 0 = Off, in Run Mode Only)
	Bit	5	Vibration Filter On Bit (1 = On, 0 = Off, in Run Mode Only)
	Bit	6	-
	Bit	7	Up Course Zero Bit (Use Bit 15 for channel select in Run Mode)
	Bit	8	-
	Bit	9	Clear Average Bit (in Run Mode)
	Bit	10	-
	Bit	11	-
	Bit	12	Down Course Zero Bit (Use Bit 15 for channel select in Run Mode)
	Bit	13	Clear Tare Offset Bit (Use Bit 15 for channel select in Run Mode)
	Bit	14	Set Tare Offset Bit (Use Bit 15 for channel select in Run Mode)
	Bit	15	Channel Select Bit (0 = Ch1, 1 = Ch2, in Run Mode only)

Write Config Data Bit: Toggle this bit to download *CONFIGURATION DATA* to EEPROM of the module. This is required for the module to take on any changes you made from the *CONFIGURATION DATA* tags. This bit must stay on for at least 100ms and .Data[0].1 bit needs to be at 0 during this operation.

Run Mode Bit : When reading or downloading the module's configuration data using .Data[0].0 and .Data[0].2, this bit needs to be at 0. For any other operation, such as reading weigh value, leave the bit at 1.

Read Config Data Bit: Toggle this bit to read current configuration values from the module's memory into STATUS REPORT DATA tags. This bit must stay on for at least 100ms and .Data[0].1 bit needs to be at 0 during this operation.

Zero Stabilize On Bit: Enables module feature to display “0” when Weigh scale is empty.

No Flicker On Bit: When On, it masks the LSB (least significant bit) of the weigh value to reduce any flickering of the value. This feature is useful for low speed application.

Vibration Filter Bit : Enables vibration filter to cancel out load variation due to vibration of the product weighted.

Up Course Zero Bit : Used to increase the offset range of the A/D for the channel selected.

Down Course Zero Bit : Used to decrease the offset range of the A/D for the channel selected.

Clear Average Bit: Toggle this bit to clear the previous sample(average) weigh value and read a new sample (average) weigh value. If this bit stays 0 all the time, the weigh value (**Local:x.I.Data[1]**, **Local:x.I.Data[1]**) will continually update a new sampled weigh value in every given sample count, set at **setup_dataM1.data[6]**

*Note: When you toggle this bit, the bit must be off before the sampling is completed.
For example, if the sample count is set to 100, then the time that takes to complete sampling is 100ms (1ms RPI x 100). Therefore, the interval of the toggle has to be less than 100 ms. If the bit stays on longer than the actual sampling time, the weigh value will display 0.

Clear Tare Offset Bit: Resets or removes tare value from module for the channel selected.

Set Tare Offset Bit : Sets current weight reading to zero for the channel selected.

Channel Select Bit : Use this bit to select between Channel 1 and Channel 2 for the following functions - *Up Course Zero Bit, Down Course Zero Bit, Clear Tare Offset Bit, Set Tare Offset Bit*

CONFIGURATION DATA TAG

Data Tags setup_dataM1	Data Type	Bit	Description
.Data[0]	INT	-	-
.Data[1]	INT	-	Set Ch1 Scale value
.Data[2]	INT	-	Set Ch1 mV/V value (mV/V x 1000)
.Data[3]	INT	-	Set Ch1 AD Trim value (Factory use only)
.Data[4]	INT	-	Set Ch2 mV/V value (mV/V x 1000)
.Data[5]	INT	-	Set Ch2 AD Trim value
.Data[6]	INT	-	Set Sample Count
.Data[7]	INT	-	Set Ch2 Scale value
.Data[8]	INT	-	-
.Data[9]	INT	-	-

Set Ch1 Scale Value: Enter a scale value of load cell for channel 1.

Set Ch2 Scale Value: Enter a scale value of load cell for channel 2.

Set Ch1 mV/V Value: Enter 4 digit mV/V setting from load cell mV/V specification for channel1.
Example) If 2.034mV/V, then enter 2034

Set Ch2 mV/V Value: Enter 4 digit mV/V setting from load cell mV/V specification for channel2.

Set Ch1 AD Trim Value: This is only used for factory setting. Leave it as 0.

Set Ch2 AD Trim Value: This is only used for factory setting. Leave it as 0.

Set Sample Count: Enter the number of weigh readings you wish to average before it updates to INPUT IMAGE DATA TAG

Note: Toggle Write *Config Data Bit* (Local:x.O.Data[0].1) in Config Data Mode to download the new configuration values to the module.

STATUS REPORT DATA TAG

Data Tags status_dataM1	Data Type	Bit	Description
.Data[0]	INT	-	-
.Data[1]	INT	-	Current Ch1 Scale value
.Data[2]	INT	-	Current Ch1 mV/V value (mV/V x 1000)
.Data[3]	INT	-	Current Ch1 AD Trim Value (Factory Use Only)
.Data[4]	INT	-	Current Ch2 mV/V value (mV/V x 1000)
.Data[5]	INT	-	Current Ch2 AD Trim value (Factory Use Only)
.Data[6]	INT	-	Current samples count
.Data[7]	INT	-	Current Ch2 Scale value
.Data[8]	INT	-	-
.Data[9]	INT	-	-

This is an image of the CONFIGURATION DATA tag values stored in the module's internal memory.

Toggle *Read Config Data Bit* (Local:x.O.Data[0].2) in Config Data Mode to update the latest configuration values from module.

MODULE INITIAL SETUP PROCEDURE

You must make the following adjustments for proper operation:

Balance sensor input(s)
Set Calibration numbers

Step 1. Balance Sensor Input.

1. Set mV/V to 2000.
2. Set Scale to 10000.
3. Download the values to module.
4. Toggle Tare Offset bit to clear any offset value stored in memory.
5. Toggle Up and Down Course Zero bit to set amplifier to low range of A/D (20,000 counts)
6. Toggle Set Tare Offset bit to zero the balance.

Step 2. Set Calibration Numbers

1. Change the scale to capacity of load cell.
2. Set mV/V to load cell specification.
Example)
100 ton load cell, 2.025 mV/V
For scale set, enter 100
For mV/V set, enter 2025
3. Download the values to module.

HM-1756 WEIGH MODULE DATA TAGS

Rev. 1.00.1

INPUT IMAGE DATA TAGS

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	Bit	15	Channel Select Bit (0 = Ch1, 1 = Ch2) (in Run Mode)

CONFIGURATION DATA

Data Tags Message	Data Type	Bit	Description
.Data[0]	INT	-	-
.Data[1]	INT	-	Set Ch1 Scale value
.Data[2]	INT	-	Set Ch1 mV/V value (mV/V x 1000)
.Data[3]	INT	-	Set Ch1 AD Trim value
.Data[4]	INT	-	Set Ch2 mV/V value(mV/V x 1000)
.Data[5]	INT	-	Set Ch2 AD Trim value
.Data[6]	INT	-	Set Samples count
.Data[7]	INT	-	Set Ch2 Scale value
.Data[8]	INT	-	-
.Data[9]	INT	-	-

STATUS REPORT DATA

Data Tags Message	Data Type	Bit	Description
.Data[0]	INT	-	-
.Data[1]	INT	-	Current Ch1 Scale value
.Data[2]	INT	-	Current Ch1 mV/V value (mV/V x 1000)
.Data[3]	INT	-	Current Ch1 AD Trim value (Factory Use Only)
.Data[4]	INT	-	Current Ch2 mV/V value(mV/V x 1000)
.Data[5]	INT	-	Current Ch2 AD Trim value (Factory Use Only)
.Data[6]	INT	-	Current Samples count
.Data[7]	INT	-	Current Ch2 Scale value
.Data[8]	INT	-	-
.Data[9]	INT	-	-