

Practice Quiz:



1_ In this graphic, what is the address (Controller Tag) of the designated input?

- *a. Local:1.I.Data.10
- b. Local:2.I.Data.10
- c. I:2/10
- d. I:1/10

Explanation: The address for this input is Local:1.I.Data.10. The Local means this input is on the same I/O chassis (in this case a DIN rail) as what the processor is, the a colon delimiter, then the slot number the input module is in, then a period delimiter, then an I to designate it as an input, then a period delimiter, then the term Data, then a period delimiter, and finally the bit number (10).

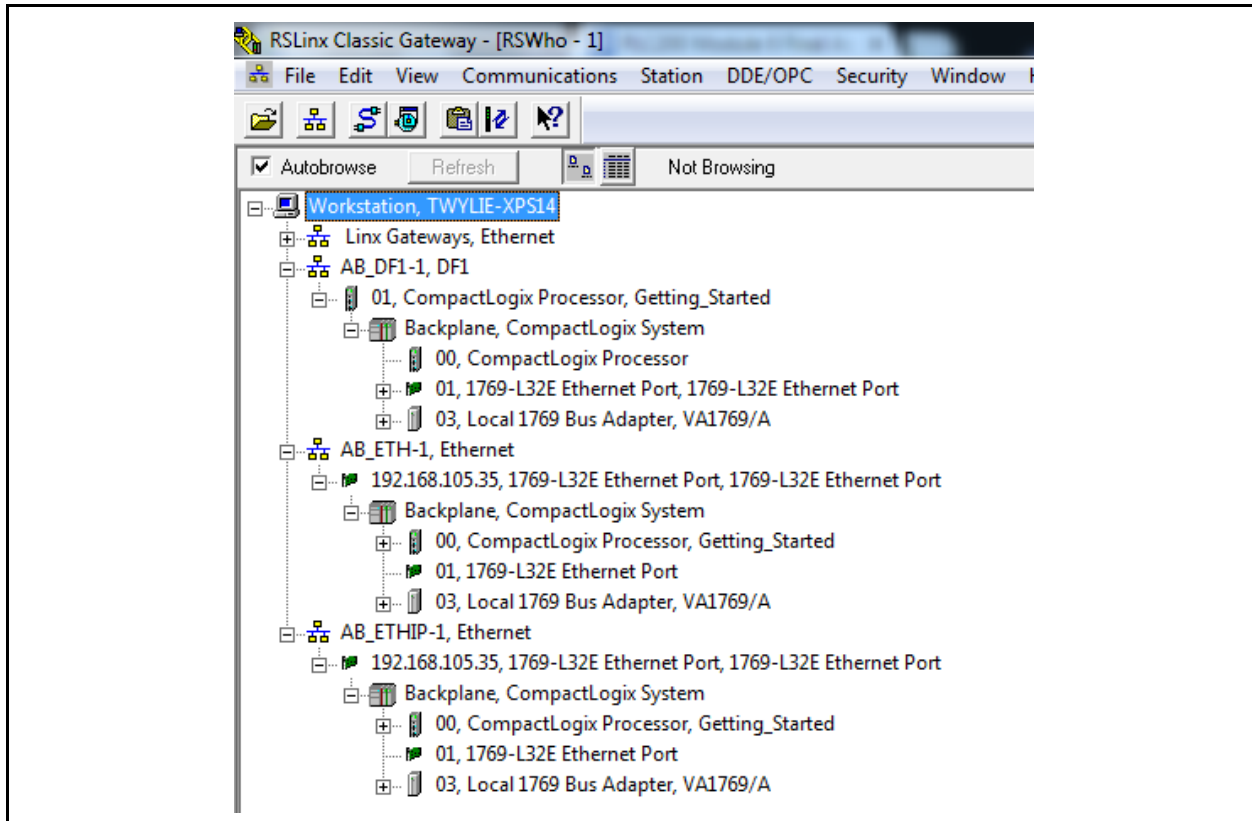
2. What file extension will a standard RSLogix5000 import/export file have?
- a. .ACD
 - b. .L5K**
 - c. .RSS
 - d. .CLX

Explanation: The project import/export file (similar to a backup file) for RSLogix5000 has a .L5K extension. The .ACD file is the standard RSLogix5000 project file. The .RSS file is an RSLogix500 project file. There is no .CLX file.

3_ What data type would a discrete input on a CompactLogix system be?

- *a. BOOL
- b. DISCRETE
- c. DINT
- d. IO_IMAGE

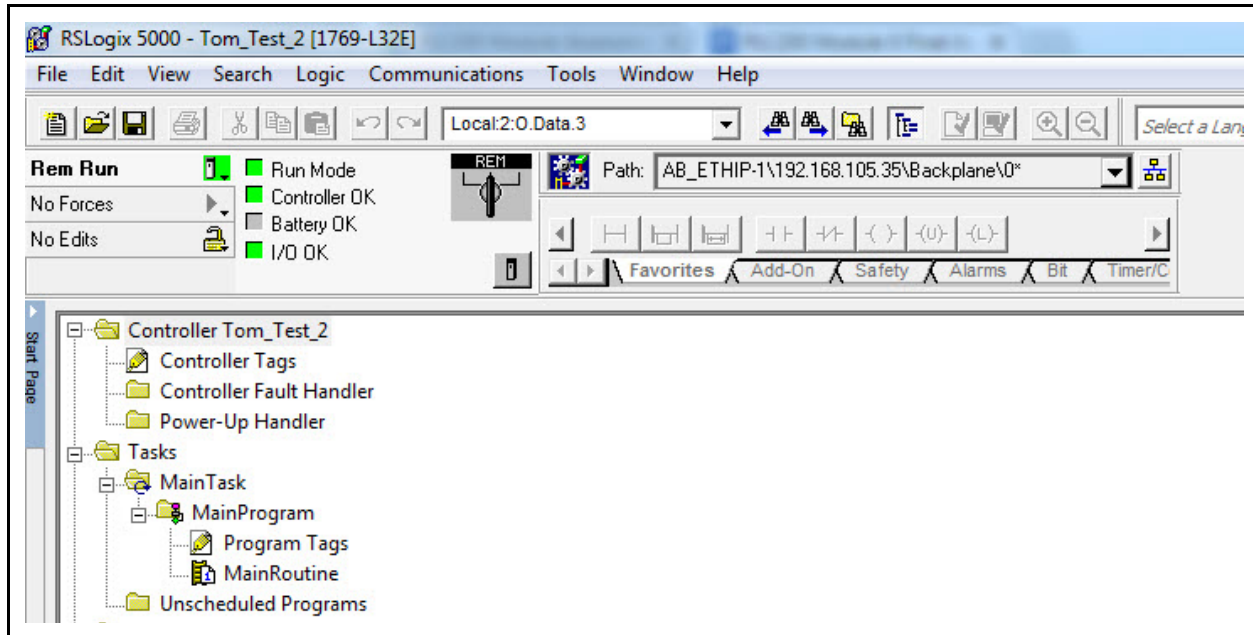
Explanation: The BOOL (short for Boolean) data type is for on/off type of data. This is for discrete I/O, Timer & Counter status bits.



4_ Which of the following RSLogix drivers would automatically determine the IP address of the Ethernet port on the CompactLogix processor?

- a. Linux Gateways, Ethernet
- b. AB_DF1-1, DF1
- c. AB_ETH-1, Ethernet
- *d. AB_ETHIP-1, Ethernet

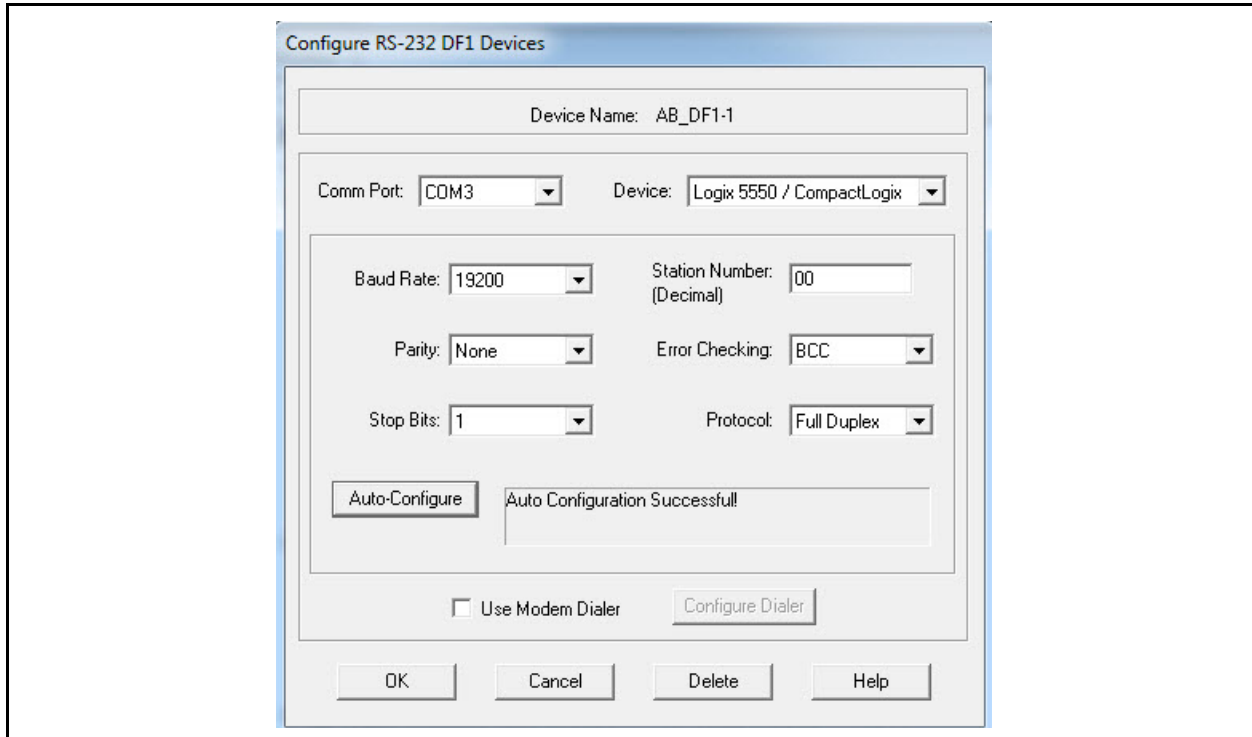
Explanation: The Ethernet IP (AB_ETHIP-1) driver and the Ethernet (AB_ETH-1) driver both are communicating with the same port on the CompactLogix processor (IP address: 192.168.105.35). The Ethernet IP driver will automatically detect any IP addresses on the same subnet as what the program panel is. The Ethernet driver will only communicate with the IP addresses that are entered into the RSLogix driver. The AB_DF1 driver is used to communicate with the RS-232 port on the front of the CompactLogix processor.



5_ Which one of the following option would be chosen if the user wishes to view the ladder logic program within CompactLogix processor?

- *a. Main Program
- b. Controller Tags
- c. Main Routine
- d. Main Task

Explanation: The ladder logic is stored in the Routines. In this example, there is Main Routine. Multiple routines can be stored in a Program. By default, there is a Main Program. Controller Tags is similar to the data files in an SLC-500.

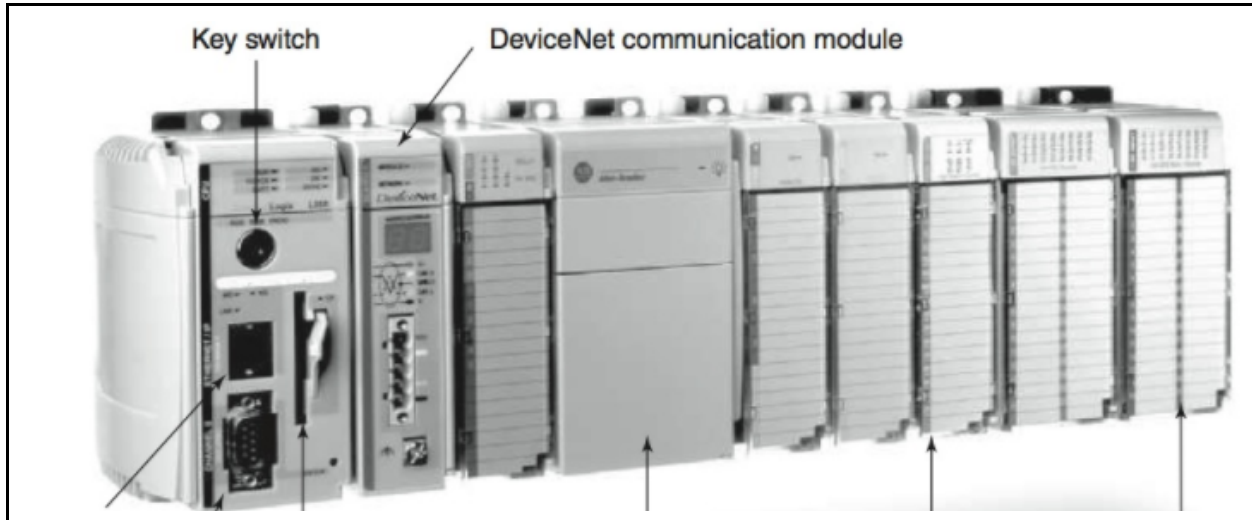


6. T F From the information of the this RSLogix screenshot, the computer this driver is setup on is a desktop or tower, found in the PLC lab.

Explanation: If this driver was on a desktop or tower in the PLC lab, the Comm Port would be COM1. This driver was setup on a laptop that is using a smart cable to communicate from the USB port on the laptop to the serial (RS-232) port on the PLC processor. With the Comm Port of COM3, the port would not be a real RS-232 port on the program panel.



7. T F On a CompactLogix hardware configuration, only the processor can be to the left of the power supply.



Explanation: Three I/O module can be mounted between the power supply and the processor. This illustration shows 2 module between the processor and the power supply. The maximum number of I/O modules to the right of the processor is eight. The processor needs to be near the middle to evenly distribute power to the processor and I/O modules. The processor will pull the most power.

8. T F RSLinx can be used to determine the firmware level of a CompactLogix processor.

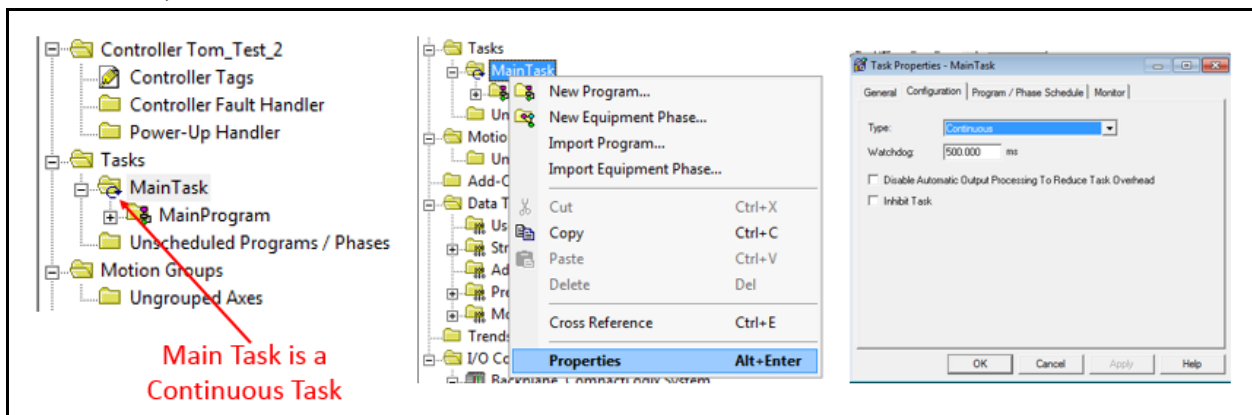
Right Click on the processor, then choose Device Properties

The processor has firmware revision 20.012

<https://sakai.northweststate.edu/access/content/group/7312-201830/Images/Test%20Images/Mod%206%20KAA%20Images%20092816/PLC200%20M6%20PQ%20Q8%20FB%20firmware%20rev.png>

Explanation: The processor firmware level and the RSLogix5000 software revision level must be the same, in order for the CompactLogix processor and RSLogix5000 to be compatible for communications and troubleshooting. The user can connect to the processor through either the serial or ethernet port with RSLinx, and view the properties of the processor to determine the firmware level of the processor. If the firmware level is less than the software level of RSLogix5000, the user may need to use ControlFlash to upgrade the firmware level of the processor.

9. T F The default Task that is created by default in RSLogix5000 to hold the programs and routines, will be an Event Driven Task.

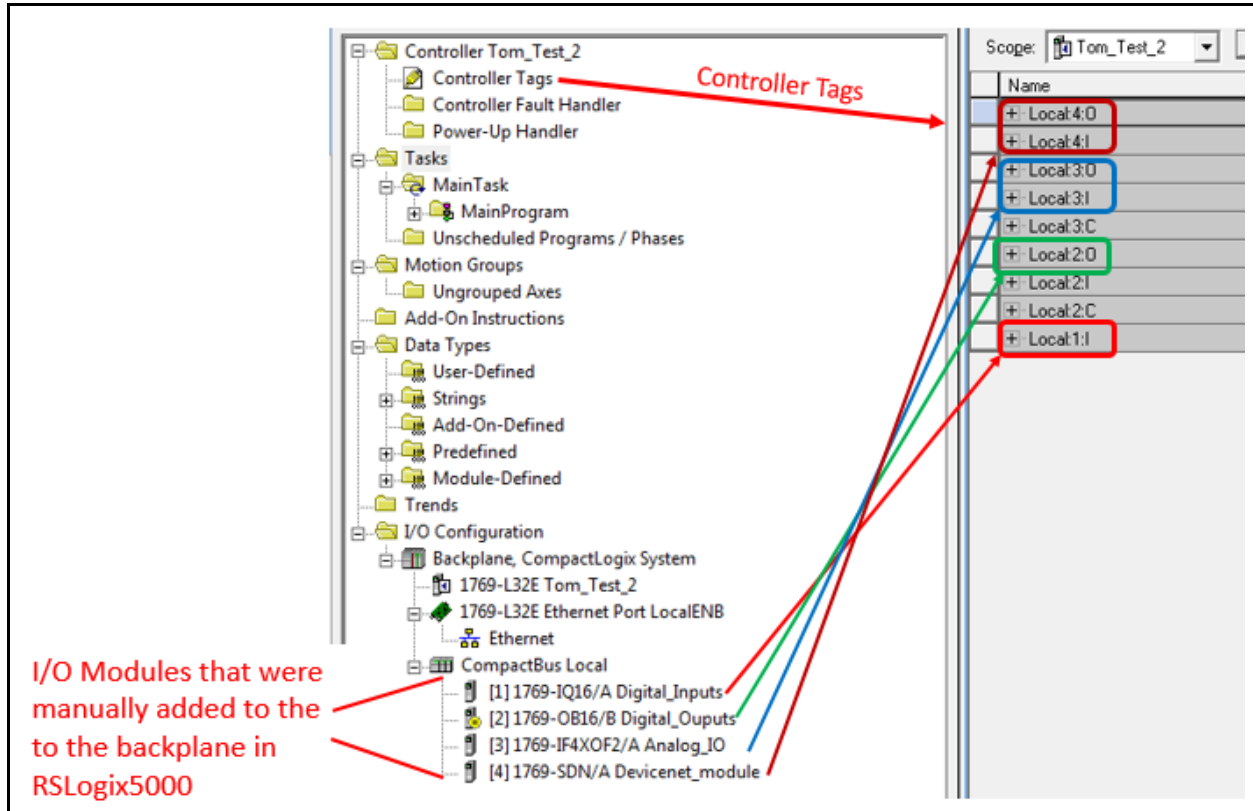


<https://sakai.northweststate.edu/access/content/group/7312-201830/Images/Test%20Images/Mod%206%20KAA%20Images%20092816/PLC200%20M6%20PQ%20Q9%20FB%20continuous%20task.png>

Explanation: A Continuous Task is the default type of task. There is only one Continuous Task. The other types of tasks that can be added is Periodic Tasks, which are scanned based on time. The other type of task is an Event Driven type, based on possibly a proximity switch being made, runs that task.

----- Put into Sakai, 1/27/18

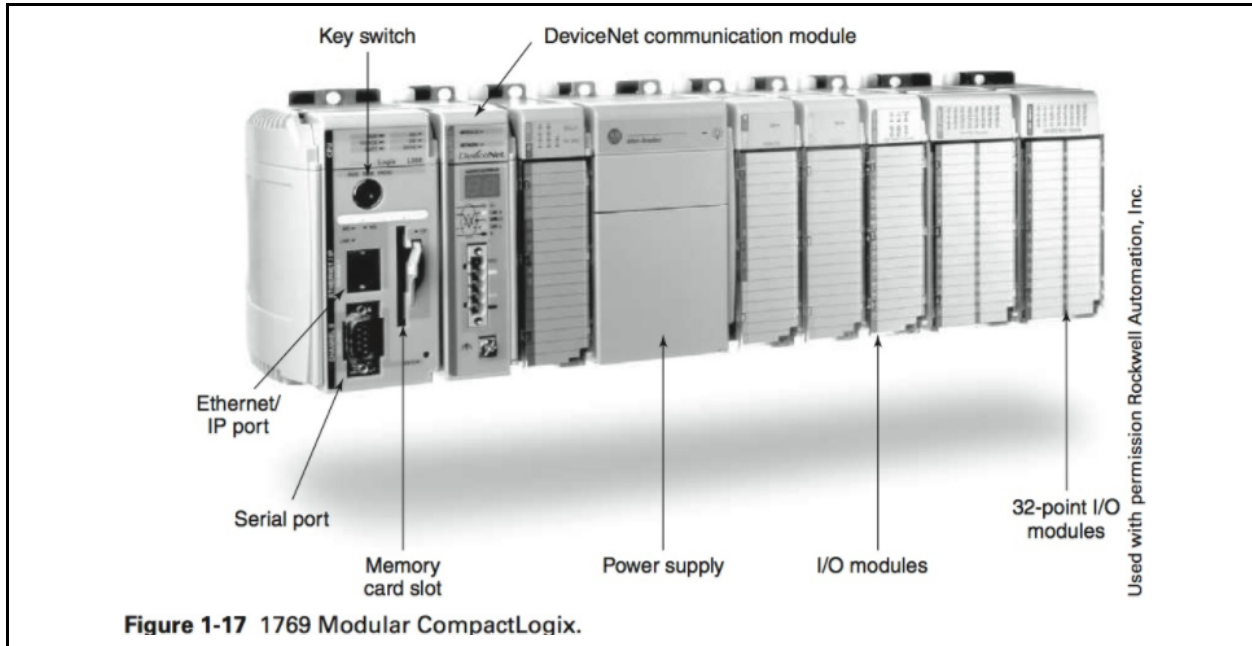
10. T F The Controller Tags folder in the RSLogix5000 project view is where the data structure is located that supports the I/O modules.



<https://sakai.northweststate.edu/access/content/group/7312-201830/Images/Test%20Images/Mod%20KAA%20Images%20092816/PLC200%20M6%20PQ%20Q10%20FB%20controller%20tags.png>

Explanation: Unlike RSLogix500 that has a “Read IO Config” command that will automatically read in the module of a chassis into an IO configuration, the user must manually add each module on a CompactLogix (and ControlLogix) system. When the module number is added to the project (under the CompactBus Local, part of the backplane configuration), the associated memory location is added to the Controller Tags. These are also referred to as the Base Tags. The tag structure for a real I/O is: Local:slot number. input or output, so the discrete DC output module in slot 2 would be addressed as Local:2.O. If the user drills down to the bit level, it would show as Local:2.O.Data.6.

11. T F In the 1769 Modular CompactLogix system used in the PLC lab, the processor can be located in any module slot on the I/O backplane.



<https://sakai.northweststate.edu/access/content/group/7312-201830/Images/Test%20Images/Mod%206%20KAA%20Images%20092816/PLC200%20M6%20PQ%20Q11%20FB%20compact%20logic%20backplane%20text.png>

Explanation: On a 1769 Modular CompactLogix system, the processor must always be in the left most slot on the I/O chassis. On a ControlLogix system, which uses an I/O chassis, the processor can be located in any card slot on the chassis. There can also be multiple processors in a ControlLogix chassis.

12. Which of the following would be a number stored in a REAL data type, viewed in a FLOAT (floating point) style?

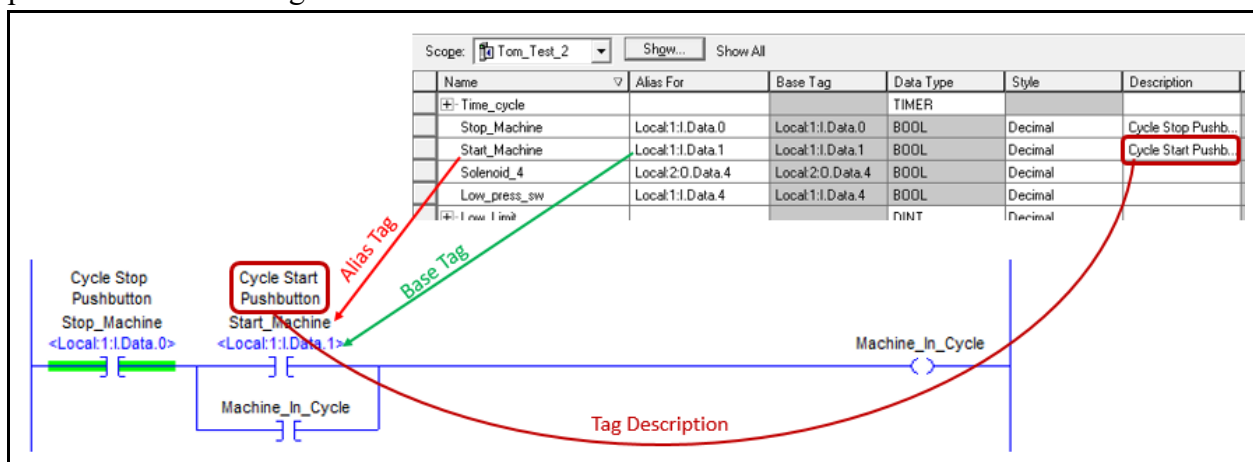
- a. 200
- b. -26.5**
- c. -300
- d. 5E-3

	Name ▾	Value ◀	Force Mask ◀	Style	Data Type	Description	Alias For
+	Time_cycle	{...}	{...}		TIMER		
	Stop_Machine	1		Decimal	BOOL	Cycle Stop Pushbutton	Local:1:I.Data.0
	Start_Machine	0		Decimal	BOOL	Cycle Start Pushbutton	Local:1:I.Data.1
	Solenoid_4	0		Decimal	BOOL		Local:2:O.Data.4
	Low_press_sw	0		Decimal	BOOL		Local:1:I.Data.4
+	Low Limit	3000		Decimal	DINT		
	Level_in_Tank	27.52		Float	REAL	Level in Water Tank	
+	Hi Limit	10000		Decimal	DINT		
	Enable_Logix	0		Decimal	BOOL		
	Alarm_10	0		Decimal	BOOL		Local:2:O.Data.7

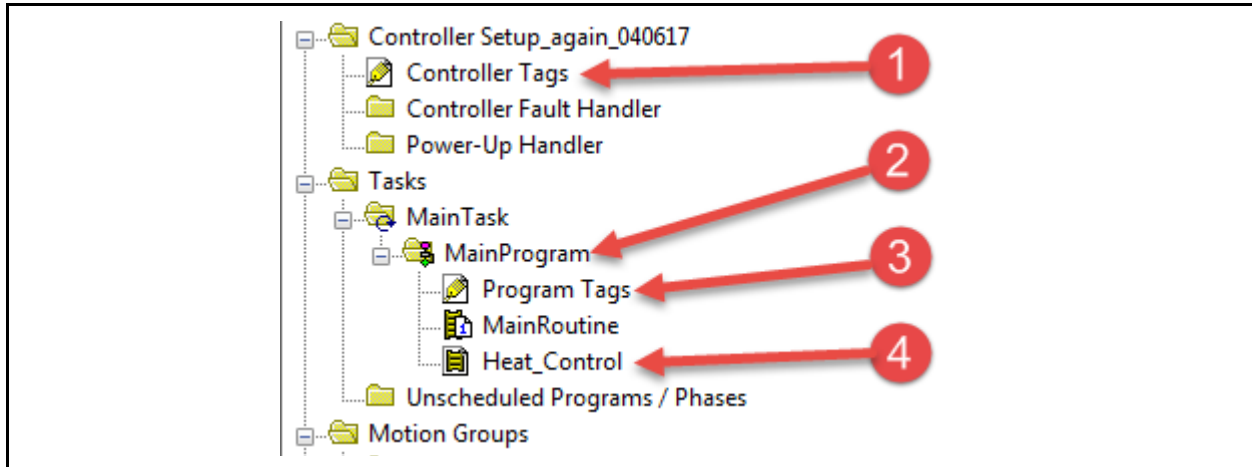
<https://sakai.northweststate.edu/access/content/group/7312-201830/Images/Test%20Images/Mod%206%20KAA%20Images%20092816/PLC200%20M6%20PQ%20Q12%20FB%20REAL%20numbers.png>

Explanation: A REAL number, or REAL data type will be a number that can be positive or negative, have a decimal point, and can have exponents (times 10 to the 3rd power). There are two styles: Float, which is displayed with a decimal point without exponents. The other Style for REAL is Exponential, and this style would show the exponents. A REAL number is used in a calculation to increase the accuracy.

13. T F Tag Descriptions are downloaded to the processor when a project download is performed with RSLogix5000.



Explanation: During a download, the tag descriptions are not downloaded, but linked when going online to the RSLogix5000 project located on the program panel hard drive. The ladder program, base tags and alias tags are all downloaded. The Alias Tag is a real advantage for the user, because if they are using a program panel to view the online program that does not have the RSLogix5000 project from the processor on it, they can at least see what the base tag is. In this case, they will see that the base tag: Local:1:I.Data.1 is Start Machine. The Alias could also be named as PB_Machine Start, to indicate it is a pushbutton. The large memory sizes of the CompactLogix and ControlLogix units will accommodate the alias tag downloads. The Alias Tag in a CompactLogix would be similar to an Address Symbol in an SLC-500, but in the SLC-500, the Address Symbols were not downloaded.

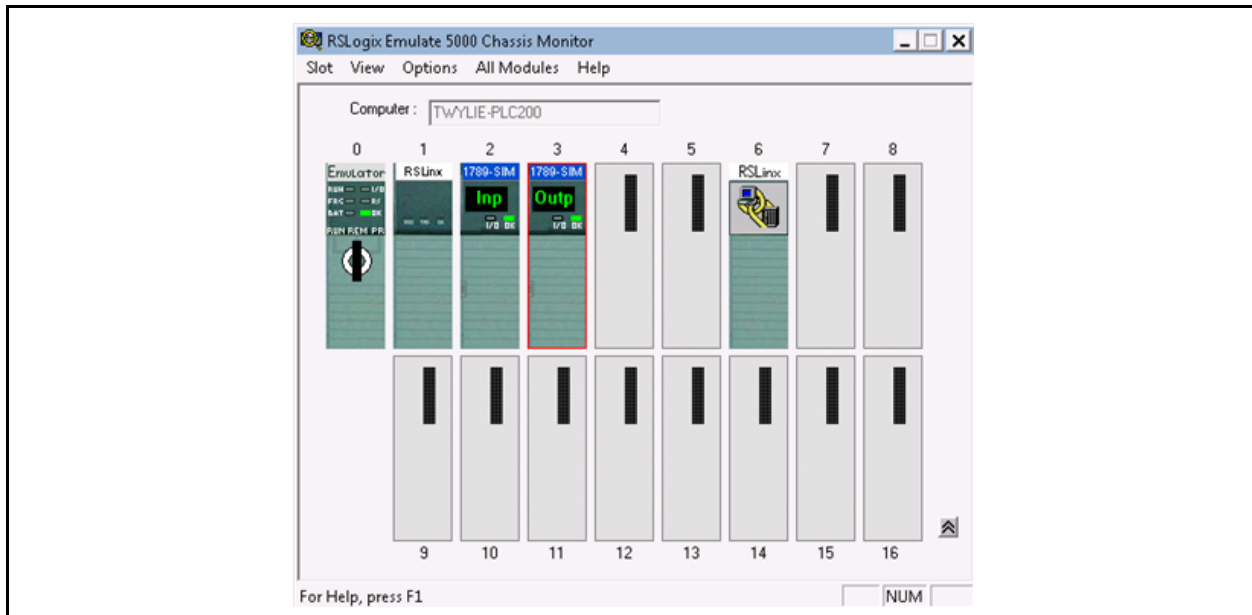


14. Which of the following objects in RSLogix5000 would store the I/O status information?

- Controller Tags**
- Main Program
- Program Tags
- Heat_Control Routine

Explanation: The Controller Tags object is where the base tag information is stored. This is the memory that is created when an I/O module is added to an RSLogix5000 project.

15. **T F** RSLogix Emulate 5000 is an application used to test an RSLogix5000 project, prior to downloading it to a processor.



Explanation: RSLogix 5000 Emulate is an application that can be used to test the program that was created in RSLogix5000 software before it is downloaded into the CompactLogix processor. This uses a virtual backplane. The processor is located in slot 0, the RSLinx connection to the virtual backplane is located in slot 6. There are I/O simulator modules (located in slot 2 & 3)

that can allow the user to actually test the program. This is the application that is used in the student's virtual machines.

16. Which one of the following would not be a programming language that could be used in a CompactLogix processor?

- a. **C# (C sharp) language**
- b. Function Block Diagram
- c. Ladder Logic
- d. Sequential Function Charts
- e. Structured Text

Explanation: C# is a programming language that can be used to interface to a PLC application, in fact it is used to build communications between the PLC virtual simulator that was used in PLC200, and the SLC-500 Emulator application. C# is not a standard PLC programming language.

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