



## Quick Start Guide: How to configure the test.con Data Logger in a Q.gate-IPT or Q.pac-ECT

Purpose: This guide will review how to setup the data logger inside a Q.gate-IPT or Q.pac-ECT using test.con. The controller must be a “T” type controller in order to load a test.con program. The data files will be saved to an attached USB stick.

### Software Required:

test.commander – Used to setup the settings inside the controller and configure the channels of the measurement module. This will also be used to setup the arithmetic/virtual variables to initiate the logging.

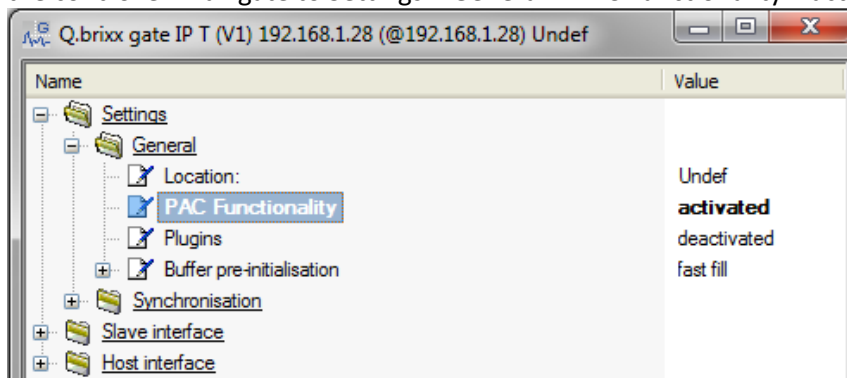
test.con – Can be downloaded directly from our website and can be used to develop a complete program for any type of Gantner controller. However, a test.con program can only be downloaded to “T” type controller (i.e. license is built into the controller).

### Hardware Required:

- PC
- Gantner “T” type controller
- Gantner measurement module(s)
- Ethernet cable
- USB thumb drive or hard drive (formatted as FAT32 or NTFS)

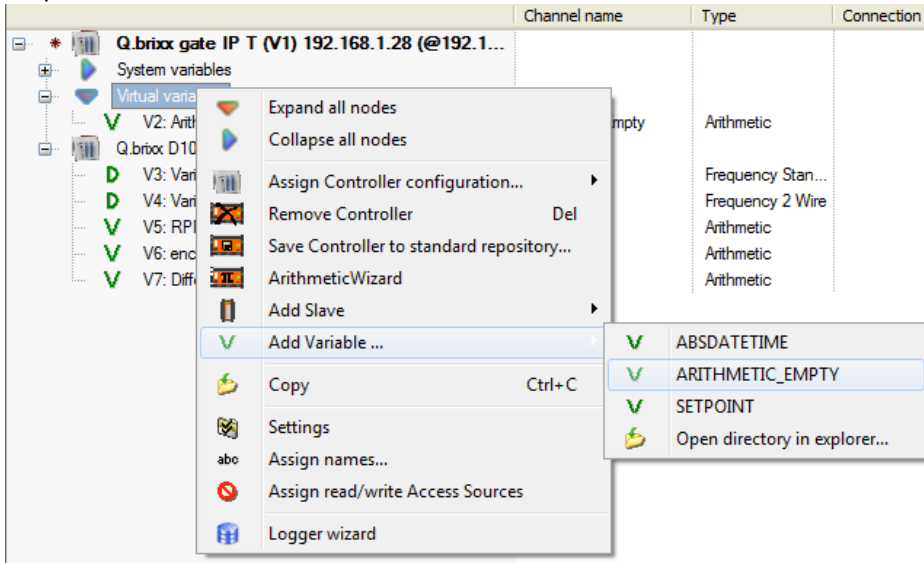
### Procedure:

1. Have PC installed with test.commander and test.con
2. Power on hardware and connect to PC using Ethernet cable
3. Verify connection to controller using test.commander (check that the static IP address of PC is properly configured and the firewall is deactivated, if a firewall cannot be deactivated, make sure that all Gantner software have exceptions)
4. Configure the controller settings and channels. See the quick start guide for more information or check out our Library of Tools section on the Gantner website:  
<http://www.gantnerinstruments.com/library.html>
5. With test.commander open and the hardware has been added to the project, double-click on the controller. Navigate to Settings > General > PAC Functionality > activated.





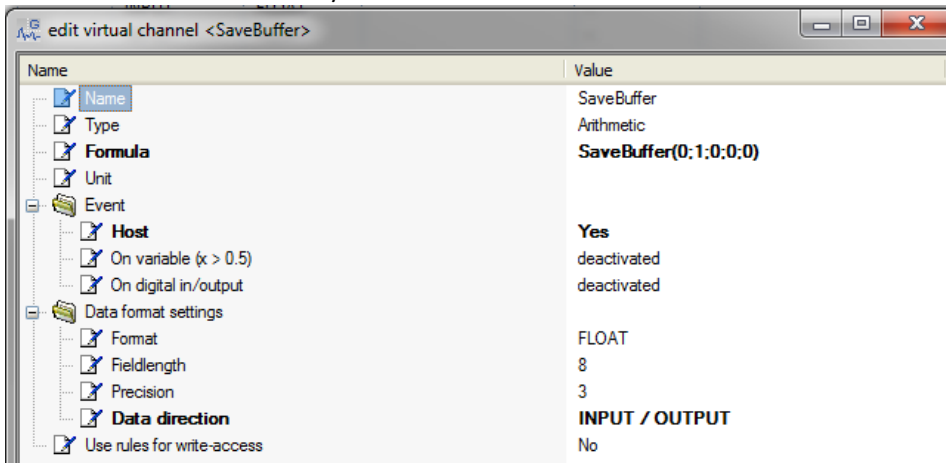
6. There are many ways to setup a trigger to start logging. We will cover 2 x methods in this guide, first is to trigger based on a manual configured set point (option 1) and the second is to trigger based on a user specified threshold of a real variable (option 2). To use option 1, move onto step 7. To use option 2, move onto step 21.
7. Option 1: Under the Virtual variables section of the controller add 1 x Arithmetic channel and 2 x Setpoints:



Give the channels the following names:

Channel name	Type
V2: Trigger	Setpoint
V3: Reset	Setpoint
V4: SaveBuffer	Arithmetic

8. Double-click on the Arithmetic channel. Modify the Formula to SaveBuffer(0;1;0;0;0). Set the Host to Yes. Set Data direction to INPUT/OUTPUT.





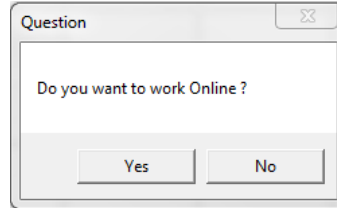
9. Update the configuration to the controller.



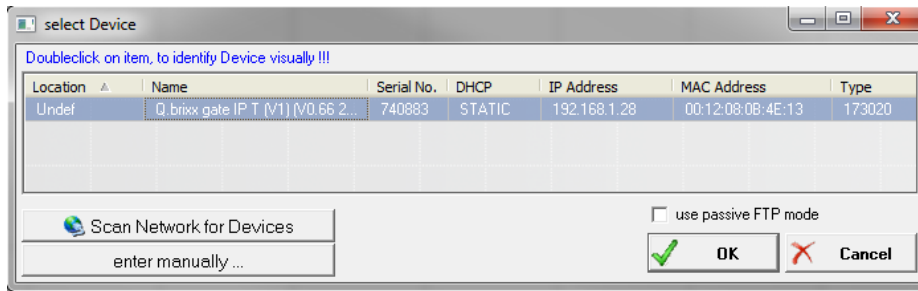
10. Open test.con and create a new blank project.

11. Tools > Select Device.

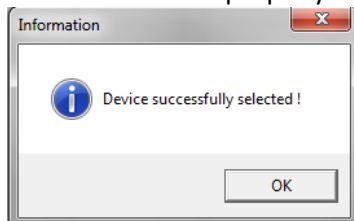
12. Do you want to work Online, click Yes.



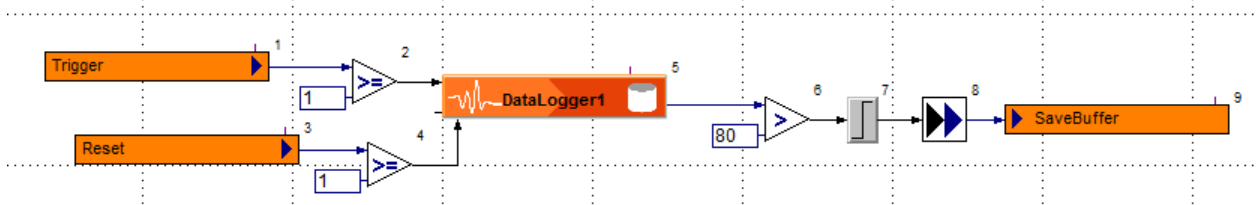
13. Select the connected controller and click OK.



14. If the controller is properly connected, the following window will appear, click OK.



15. Within the Program block, create the following program using the following function blocks:

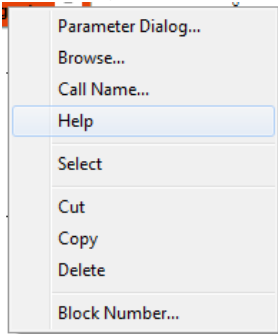


Block #	Function Block Type	Function Block Purpose
1	Read Access	Read the Trigger variable Setpoint
2	Comparator	Compares the Trigger variable to "1", when Trigger value is greater or equal to "1", the comparator outputs a high bit, otherwise a low bit.
3	Read Access	Read the Reset variable Setpoint
4	Comparator	Compares the Reset variable to "1", when Trigger value is greater or equal to "1", the comparator outputs a high bit, otherwise a low bit.
5	Data Logger	This block contains the channels to save. Right-click > Parameter

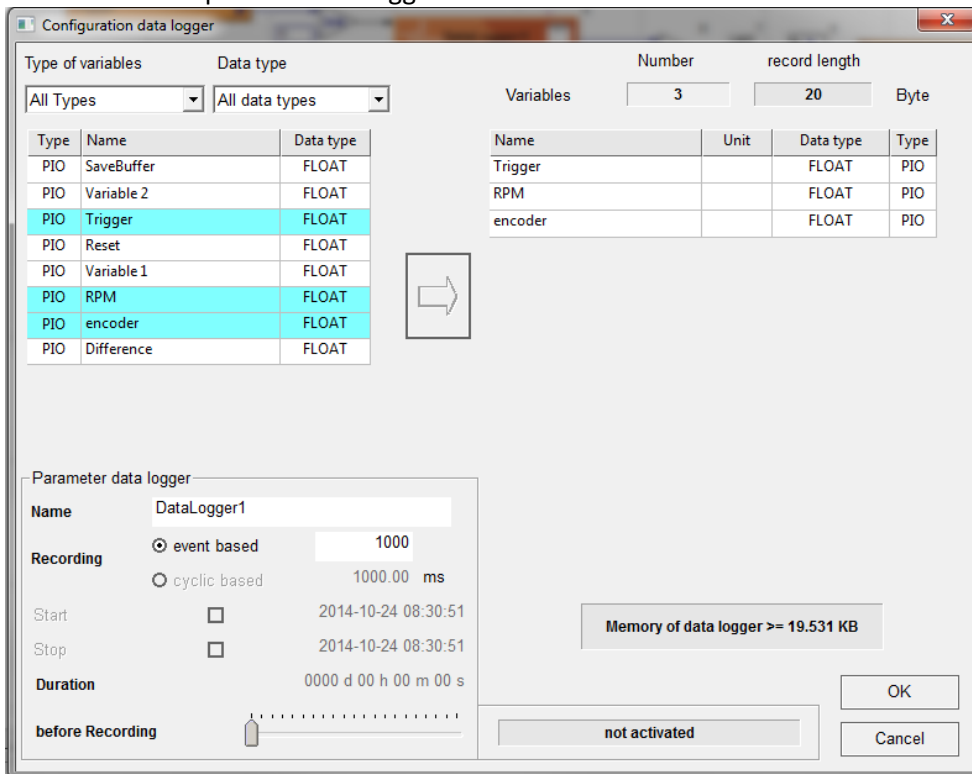


		Dialog to select channels.
6	Comparator	Compares the % of the buffer filled. When the buffer is 80% full, the comparator outputs a high bit, otherwise a low bit.
7	Rising Edge Detection	Detects a positive transition. A positive pulse is generated during one cycle.
8	Converter	Converts a bit to a Float.
9	Write Access	Sends the command to the SaveBuffer channel to save the data logger file to the attached USB.

To obtain more information about any function block, right-click on the block and select help (if available).

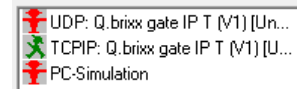


16. When right-clicking on the Data Logger function block > Parameter Dialog. Add the variables to save within the specified data logger.

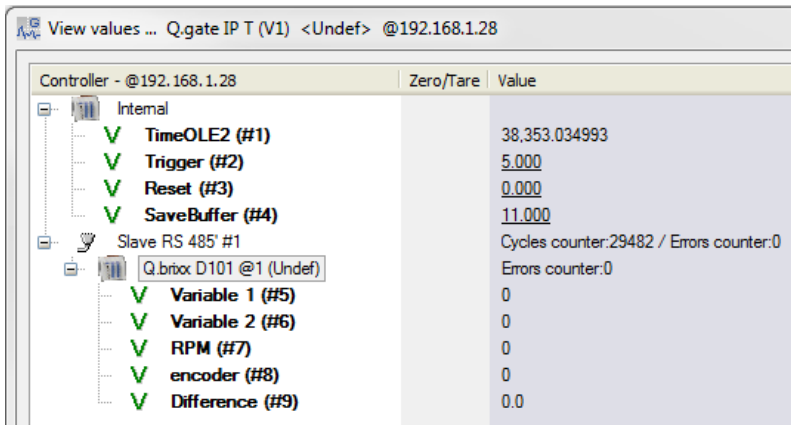




- Download the project to the controller:  
Run > Enter.  
Run > Logon to Target System.  
Highlight TCPIP > Connect. The red icon will turn green, click OK.  
Run > Download. Shall the project be saved before the download? Yes.  
The light bulb will turn yellow when the project successfully loads.



- In test.commander > Read Online Values from Controller. Set the Trigger variable greater than "1":

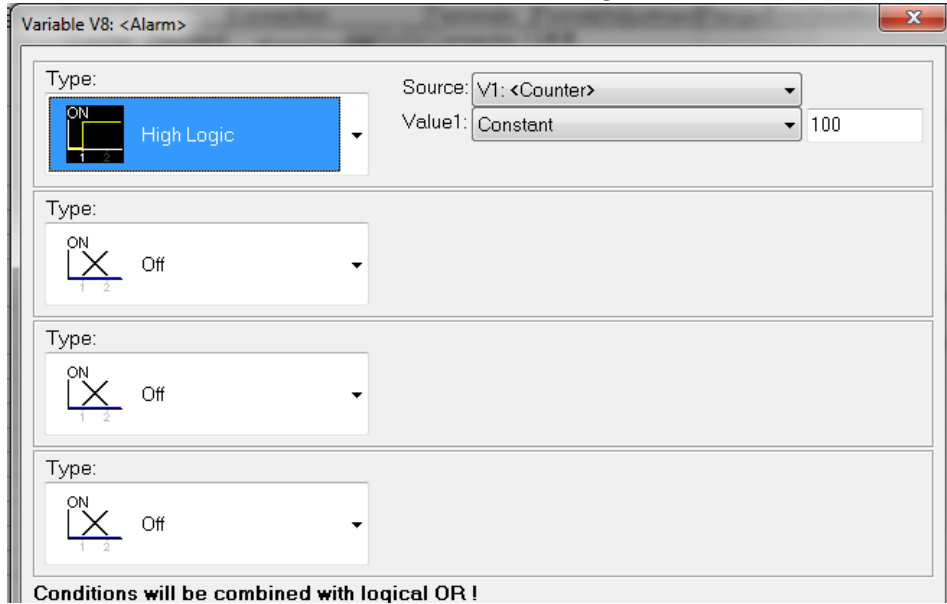


- The system will continue to save data as long as the Trigger variable is greater than "1". To stop logging, change the Trigger variable to "0".
- Connect the USB to the PC to obtain the data files. The files are saved in .dat format and can be opened using test.viewer. Multiple .dat files can be appended together within test.viewer and saved into other formats (i.e. CSV).
- Option 2: To trigger based on a threshold, create an Alarm channel within the same measurement module where the real variable is present. For this example we will monitor a Counter channel inside a D101. The Alarm channel will monitor the Counter and will switch from 0 to 1 when the threshold is reached.

Infos		Variable Settings		Module Settings						
Type	Variable Name	Sensor	Type of	Connection	Terminals	Format/Adjustment	Range/Error	Additional	DP	Real Cfg.
V1	DI Counter		Counter . Standard		Connector 1 6 (DI1)	f,fff,fff				93h
V2	DI Variable 2		Frequency . 2 Wire		Connector 1 8 (DI3) 9 (DI4)	f,fff,fff		TimeBase = 1 ms		93h
V3	AR RPM					f,fff,fff		V1*60/32		93h
V4	AR encoder					f,fff,fff		V2*60/100		93h
V5	AR Difference					fff,fff,f		V4-V3		93h
V6	SP Trigger					f,fff,fff	Independent	Host	Source = Internal: V6	B3h
V7	SP Reset					f,fff,fff	Independent	Host	Source = Internal: V7	B3h
V8	AL Alarm					f		Threshold		93h



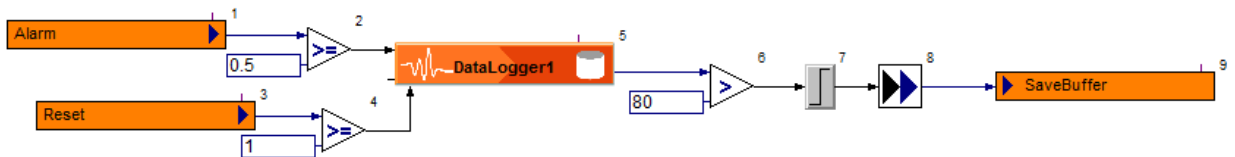
Click on the Threshold under the Additional column for the Alarm channel. The type of threshold is high logic, the source is the variable to monitor, and value1 is the variable or constant to compare to. For this example we will set a constant of 100. When the counter channel exceeds 100, this alarm channel will change to 1.



Make sure to save settings to the module and update the configuration to the controller.

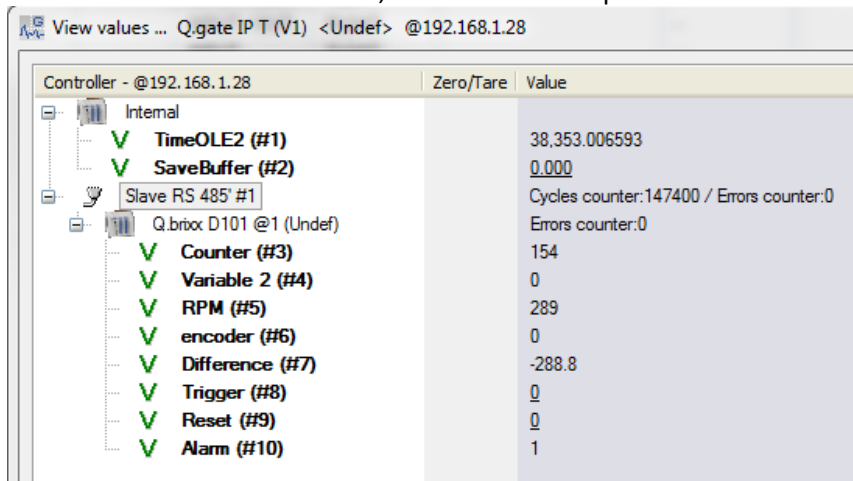


- Open test.con. Instead of triggering based on the manually adjusted trigger channel, use the Alarm channel. (see steps 10-14)



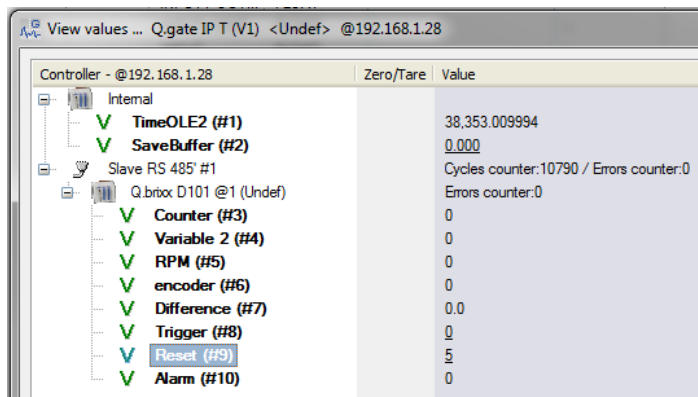
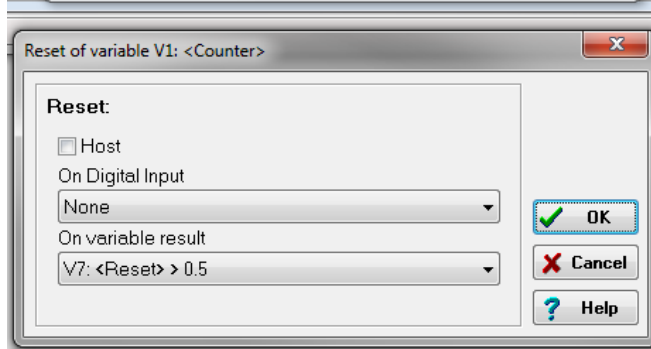
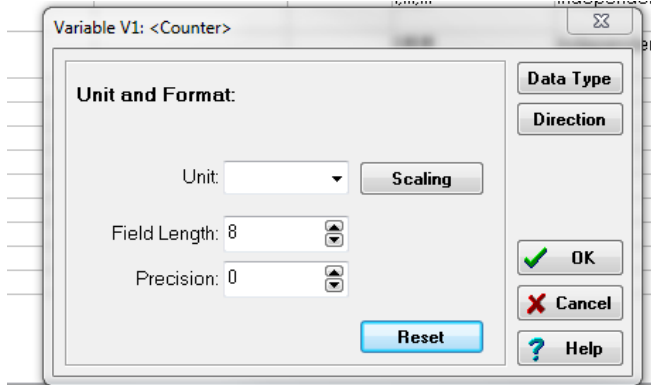
Save the project to the controller (see step 17).

- When the counter exceeds 100, the alarm will output a 1.





- 24. The system will continue to log as long as this alarm is high.
- 25. The counter channel can be reset (on a variable result for example).



- 26. The data files that are logged and saved on the USB stick.
- 27. The data files can be transferred from the controller via FTP if the USB stick cannot be detached.