



**Quick Start Guide: How to use the ICP100 Arithmetic Function, max()**

Purpose: This function is used to store the maximum value for any given variable. It maintains this value until it is reset using another variable (i.e. set point, digital input).

Procedure:

1. Open any module in ICP 100. We are using an A104 in this example, which is connected to a Type E thermocouple.

Infos	Variable Settings	Module Settings							
Type	Variable Name	Sensor	Type of	Connection	Terminals	Format/Adjustment	Range/Error	Additional	DP Real Cfg.
V1	AI	TC1	TC Type E	Cold Junc. comp.		Connector 1 f.f.f [ °C ]	-100.0 1,000.0	No Filter	93h

2. Create an arithmetic variable.

Infos	Variable Settings	Module Settings	
Type	Variable Name	Sensor	
V1	AI	TC1	TC Type E
V2			
V3			
V4			
V5			
V6			
V7			
V8			

3. We will name the arithmetic variable, MAX TC 1.

Infos	Variable Settings	Module Settings							
Type	Variable Name	Sensor	Type of	Connection	Terminals	Format/Adjustment	Range/Error	Additional	DP Real Cfg.
V1	AI	TC1	TC Type E	Cold Junc. comp.		Connector 1 f.f.f [ °C ]	-100.0 1,000.0	No Filter	93h
V2	AR	MAX TC 1				f.f.f.f.f		Formula	93h
V3									

4. Create a set point variable on the same module.

Infos	Variable Settings	Module Settings	
Type	Variable Name	Sensor	
V1	AI	TC1	TC Type
V2	AR	MAX TC 1	
V3			
V4			
V5			
V6			
V7			
V8			
V9			



- Rename the variable to RESET MAX TC 1. The source of the set point should be itself. The data direction of the variable should be input/output.

192.168.1.28 / 1 / 2									
Infos		Variable Settings			Module Settings				
Type	Variable Name	Sensor	Type of	Connection	Terminals	Format/Adjustment	Range/Error	Additional	DP Reel Ctg.
V1	AI	TC1	TC Type E Cold Junc. comp.		Connector 1 3 (AI1+) 4 (AI1-)	f.fff [°C]	-100.0 1,000.0	No Filter	93h
V2	AR	MAX TC 1				f.fff [°C]		max(V2)	B3h
V3	SP	RESET MAX TC 1				f.fff		Independent Host Source = Internal V3	B3h
V4									
V5									

- Double click on the cell called Formula under the Additional column. The formula edit window will appear.

- Click on the max( button.  
Click on the variable what you would like to monitor.  
Close the parentheses so the formula looks like this: max(V1)  
Click OK.

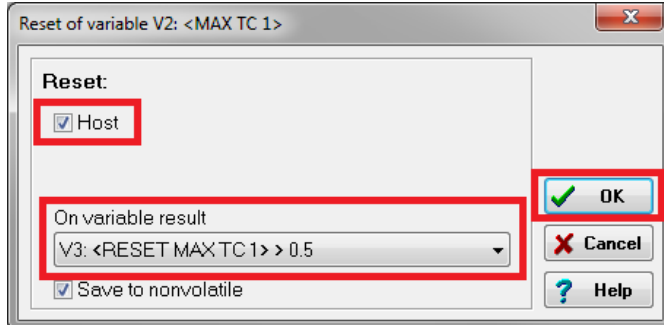
- Click on the cell under the Format/Adjustment column for the MAX TC 1 channel.

192.168.1.28 / 1 / 2									
Infos		Variable Settings			Module Settings				
Type	Variable Name	Sensor	Type of	Connection	Terminals	Format/Adjustment	Range/Error	Additional	DP Reel Ctg.
V1	AI	TC1	TC Type E Cold Junc. comp.		Connector 1 3 (AI1+) 4 (AI1-)	f.fff [°C]	-100.000 1,000.000	No Filter	93h
V2	AR	MAX TC 1				f.fff [°C]		max(V1)	B3h
V3									

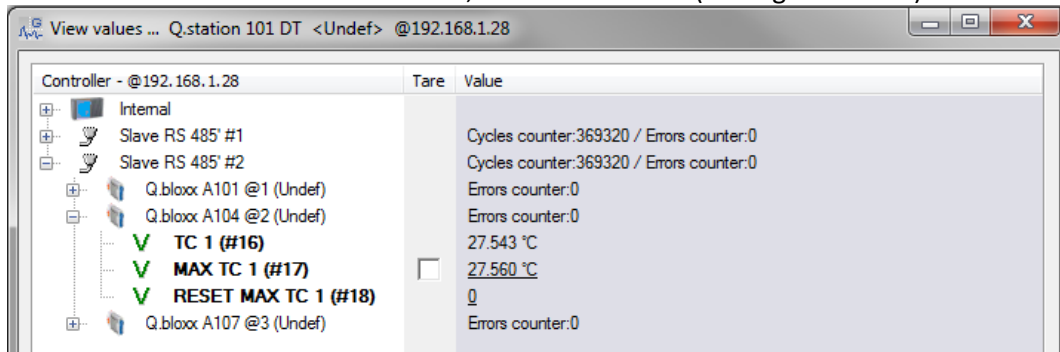
- Set the unit for the variable.  
Change data direction to 0.  
Click on the Reset button.



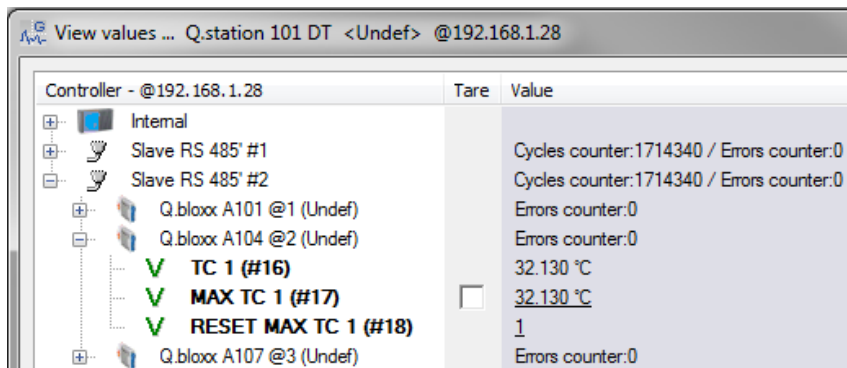
10. The reset button will bring up the following menu:  
We will reset the variable via Host.  
It will be reset when the variable chosen is activated (Save to nonvolatile).  
Click OK to apply changes.



11. Save the configuration to the A104.
12. Update the project to the controller.
13. After the update is finished, read online values from controller.  
TC 1: Type E thermocouple channel  
MAX TC 1: Records the maximum value of TC 1  
RESET MAX TC 1: Used to reset the value of the MAX TC 1.
  - When RESET MAX TC 1 = 1, reset activated
  - When RESET MAX TC 1 = 0, reset deactivated (storing max value)



14. When RESET MAX TC 1 = 1, the maximum value will always equal the TC 1 value, no matter if it is a max value.





15. When RESET MAX TC 1 = 0, the variable is being monitored and will save its maximum value.

Controller - @192.168.1.28		Tare	Value
Internal			
Slave RS 485' #1			Cycles counter:2853800 / Errors counter:0
Slave RS 485' #2			Cycles counter:2853800 / Errors counter:0
Q.bloxx A101 @1 (Undef)			Errors counter:0
Q.bloxx A104 @2 (Undef)			Errors counter:0
TC 1 (#16)			35.870 °C
MAX TC 1 (#17)	<input type="checkbox"/>		40.261 °C
RESET MAX TC 1 (#18)			0
Q.bloxx A107 @3 (Undef)			Errors counter:0

**Contact us today if you have any further questions!**