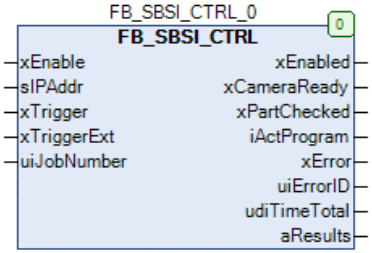
Basic description for the use of SBSI Function block

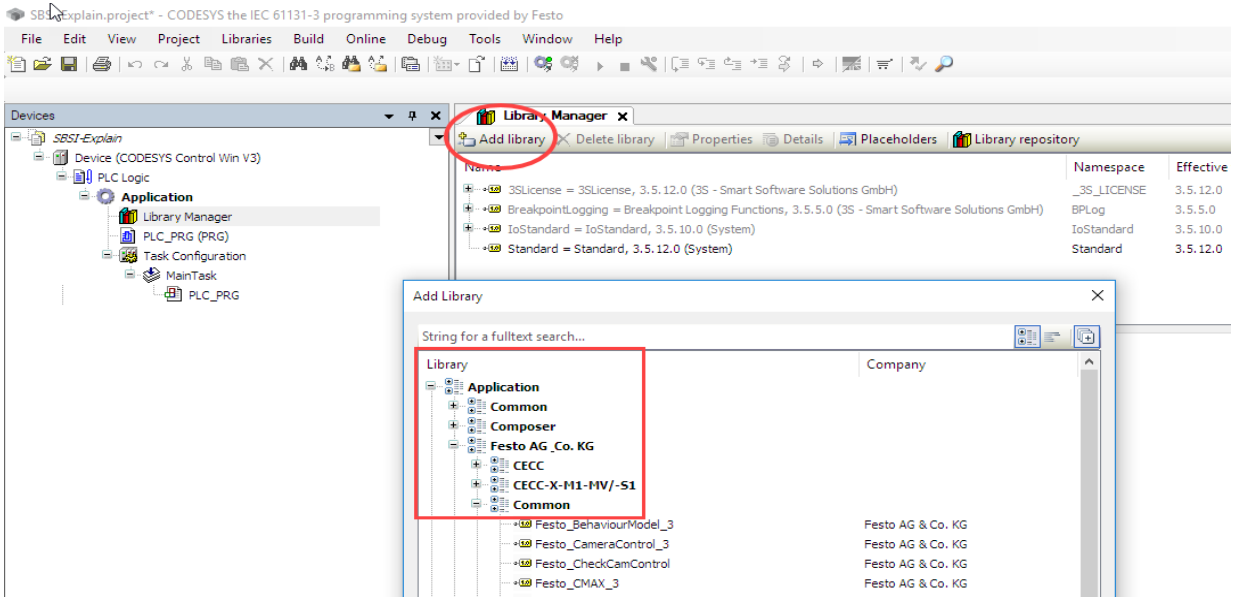
The fb support to establish TCP/IP connection, change active job no., send a trigger signal and receive result string from SBS-vision sensors.
Independent from the model. Based on firmware 1.23.

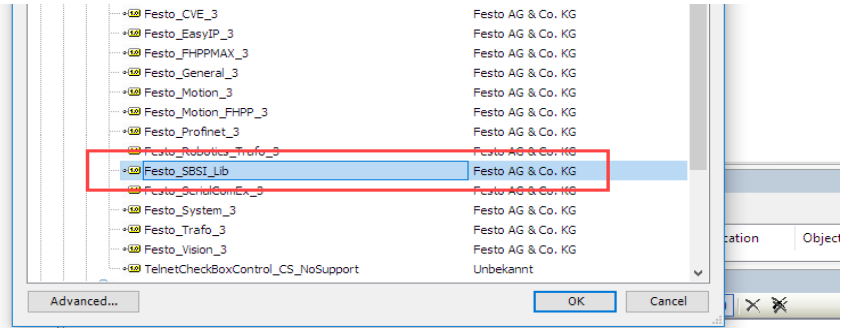


Set TRUE to Enable the function block. Connection to camera will be established	**BOOL**	xEnabled	**BOOL**	
IP of the Camera	**BOOL**	xCameraReady	**BOOL**	
Triggers the Camera to take a picture, Software Trigger	**BOOL**	xPartChecked	**BOOL**	
TRUE: External Trigger from Camera can be used; FALSE: Software Trigger only	**BOOL**	iActProgram	**INT**	active Job number
Job number	**UINT**	xError	**BOOL**	
		uiErrorID	**UINT**	See SBSI Error list in library documentation Codesys project
		udiTimeTotal	**UDINT**	
		aResults	**STRING**	aResults: Every trigger to the Sensor create new results at the FB output array, due to configured payload!

Add the Library:

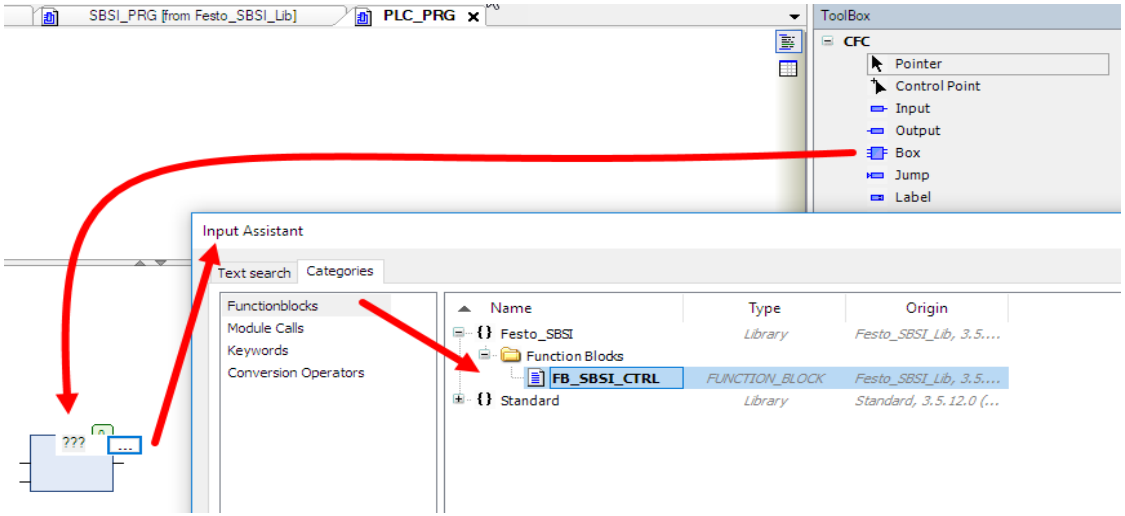
First you have to install the library to the repository of your Codesys. Then add the library to your project.



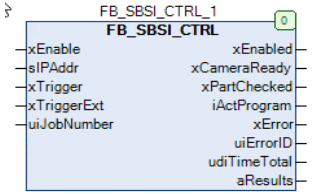


Then you can use the FB as a usual FB in Codesys

Place a new Box, use the Input Assitant with the Auto Declaration and instance no.



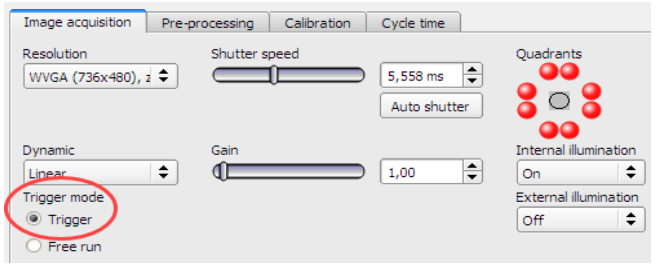
Now the FB is inserted:



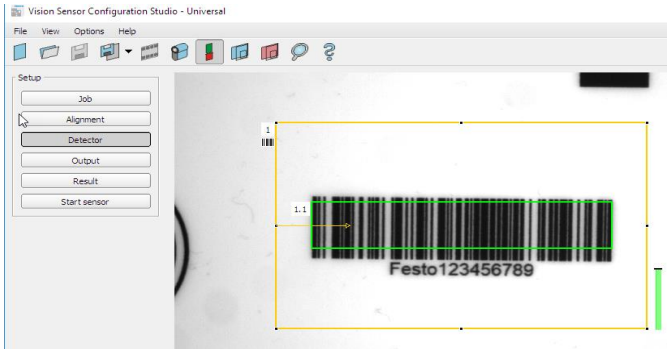
Prepare the Vision Sensor for communication

Configure the vision sensor with Vision Sensor Configuration Studio. The following description is not intendet to show all possibilities of the sensor. It show the the important settings.

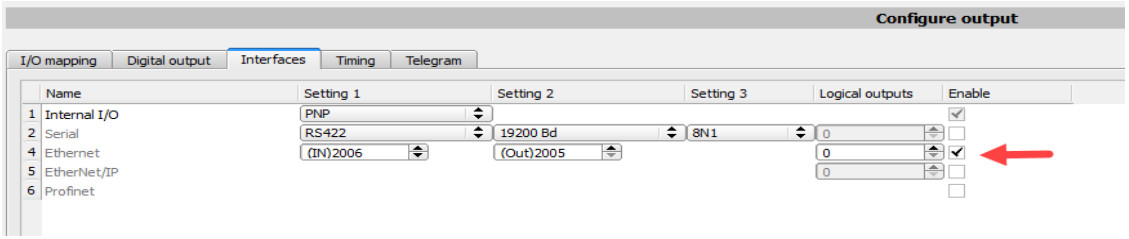
Set the sensor to Trigger mode!



Set up a detector e.g Bar Code

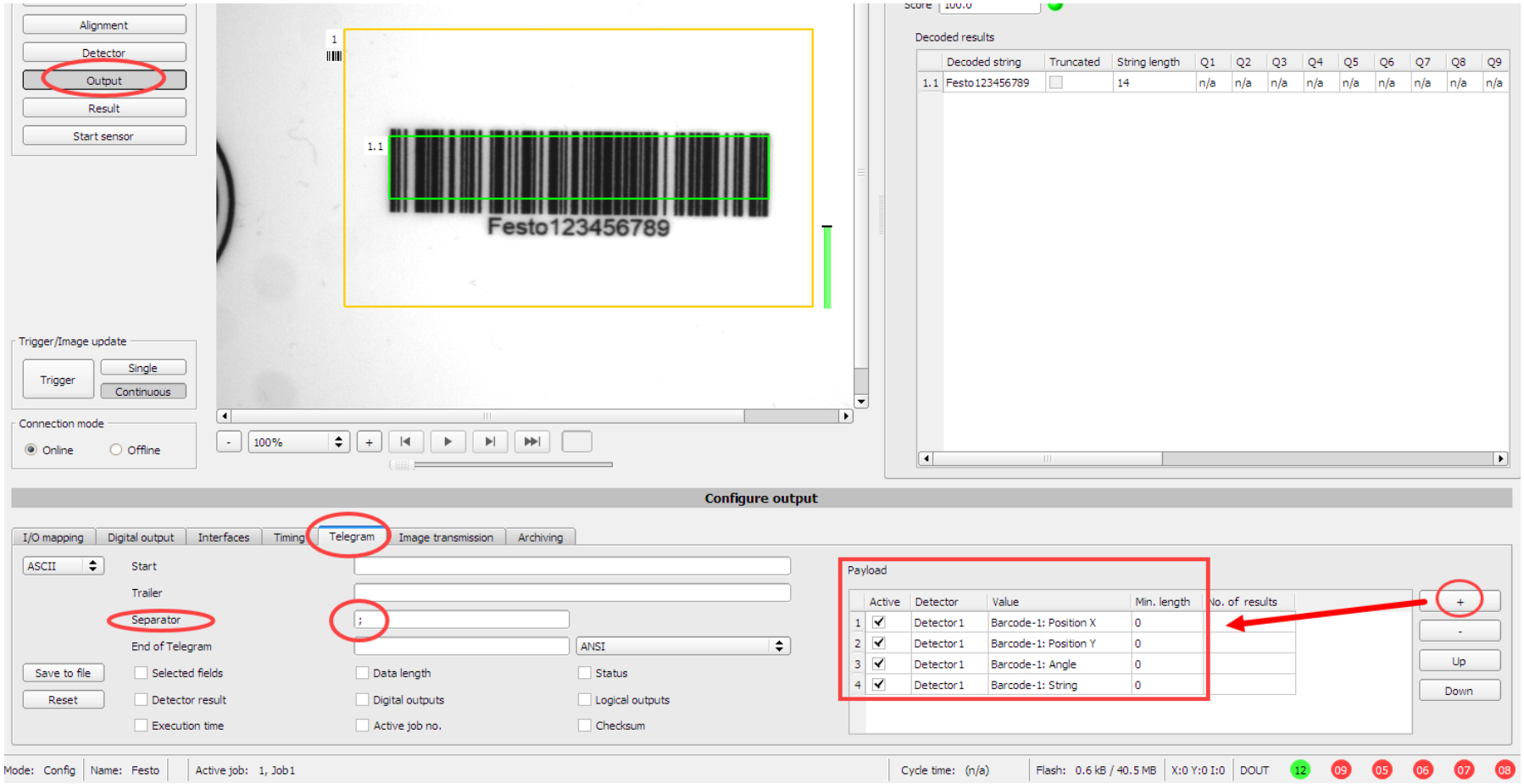


Activate the ETH interface in the Vision Sensor Configuration Studio.



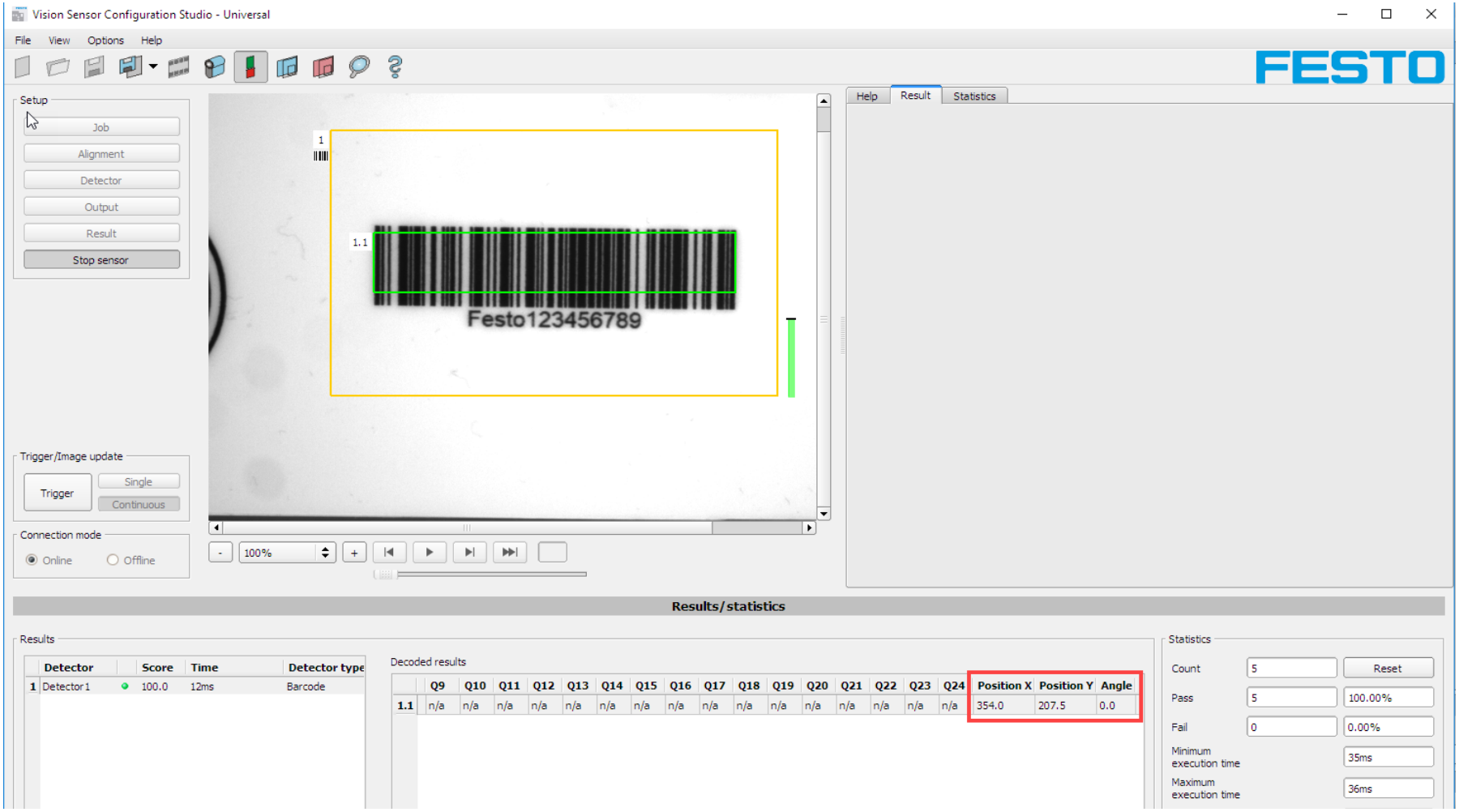
Configure the payload for the data.

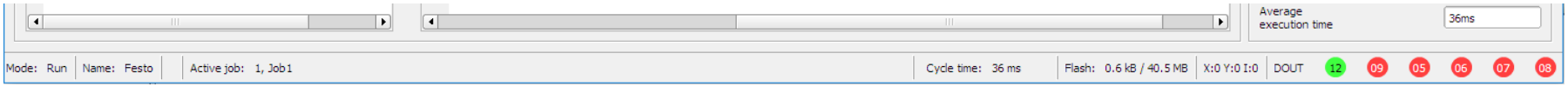
The FB is build for max. 100 result string. In this demo we transfer 4 values. Position of the Bar code x, y, angle and the string of a barcode. Important is to insert the semicolon as a separator sign. By clicking the + it is possible to add more entry in the payload list.



To store and activate the setting in the sensor you have to "START sensor"
Communication will only start when the sensor is in run mode! Every time when sensor is stopped by Config software, the connection has to be established anew.

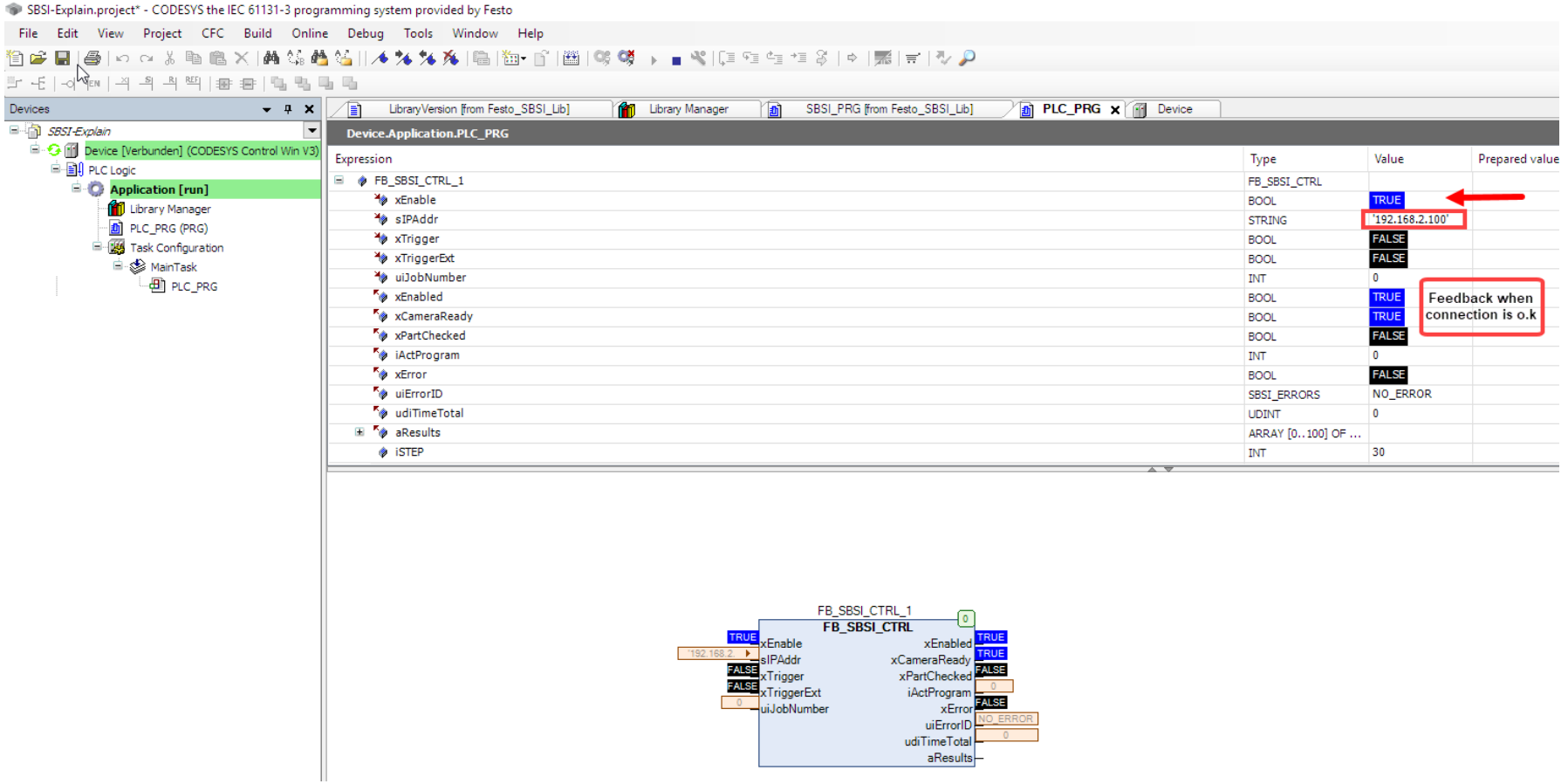
After a trigger to the Sensor the following result will be calculated:



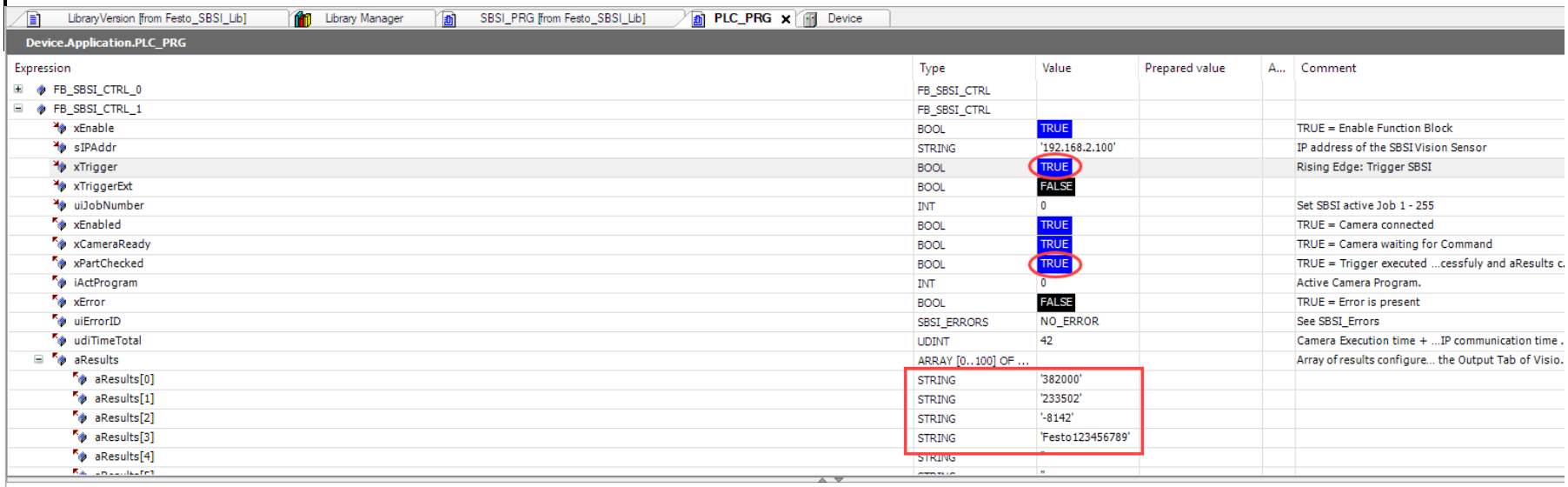


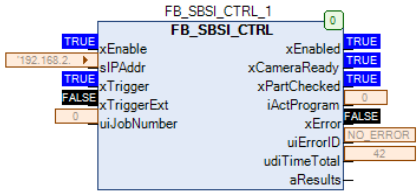
Control of the FB

Force the ip address of the sensor and then force "True" to the xEnable input. Then the connection will be established, and if all is o.k, the FB set the output xEnabled and XCameraReady. If not then the Error output occur. Error Id could be checked in the library dokumentation in Codesys.



Now the FB is ready for trigger input.



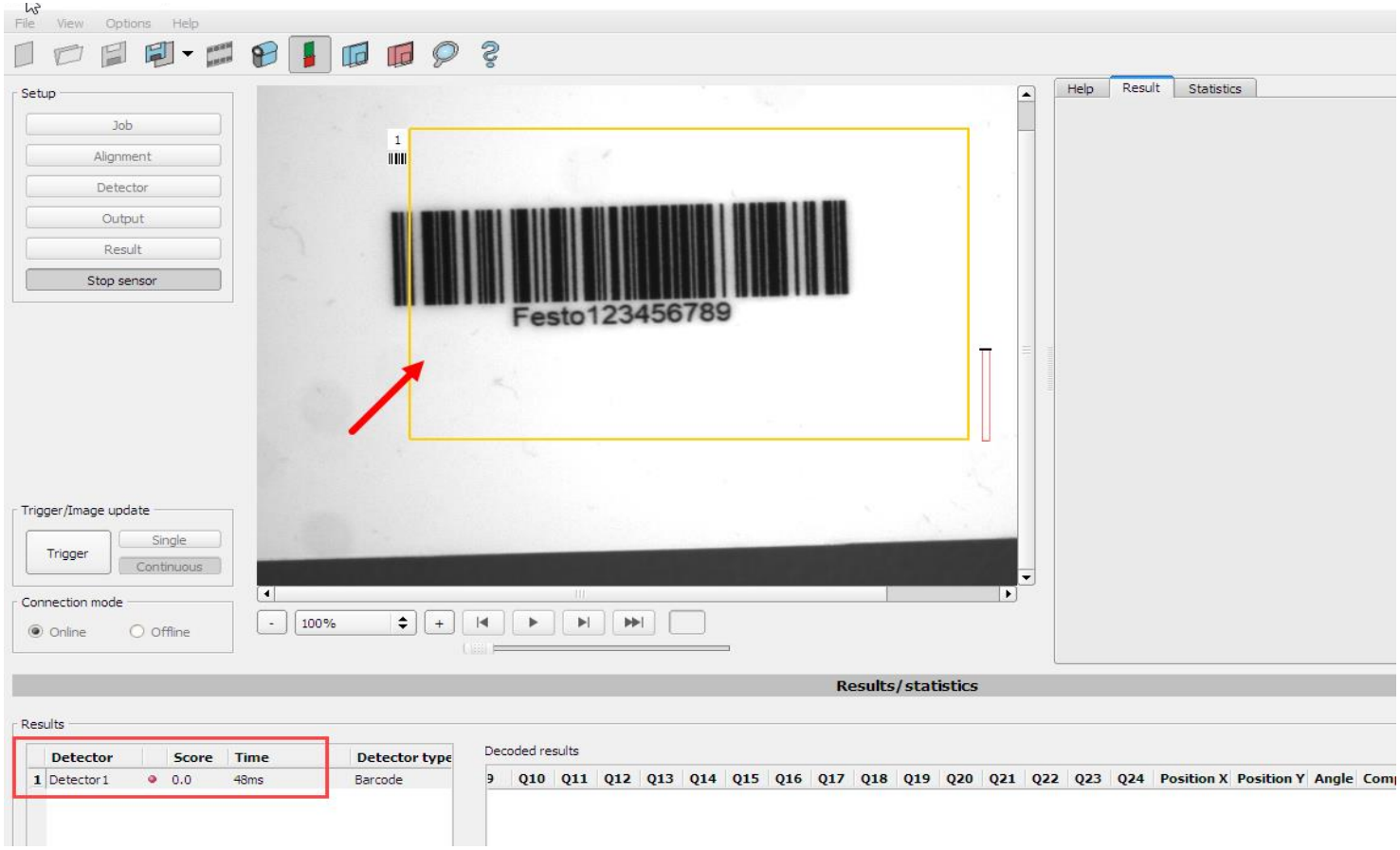


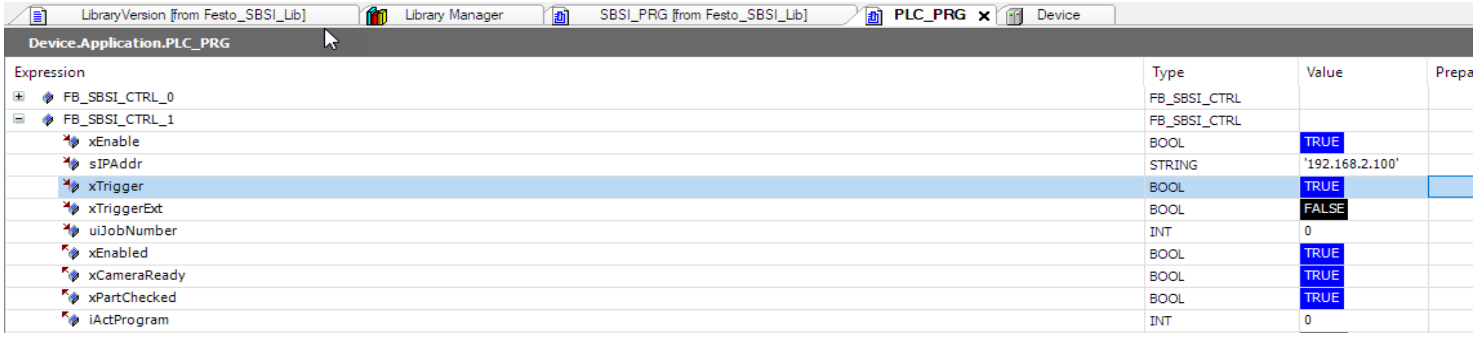
All result value x 1000 !!

354000 = 354,0
207500 = 207,5
-8142 = -8,1

The sensor transmitt the results multiplied by 1000! So for further processing in Codesys the values have to be divided!

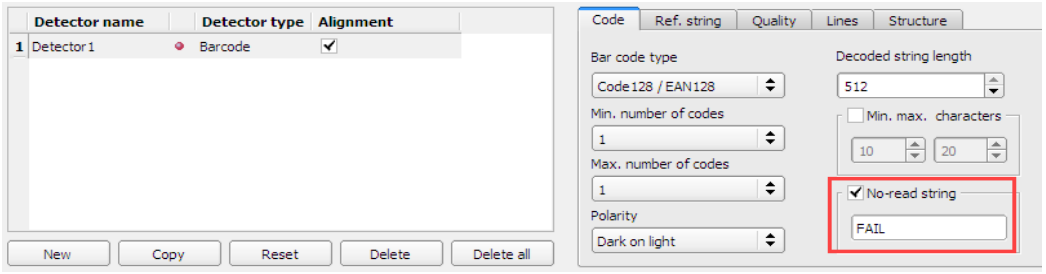
If result is not possible or calculated. The String is empty and the value is 0.


File
View
Options
Help
Setup
Job
Alignment
Detector
Output
Result
Stop sensor
Festo123456789
Help
Result
Statistics
Trigger/Image update
Trigger
Single
Continuous
Connection mode
Online
Offline
100%
Results/statistics
Results
Detector
Score
Time
Detector type
1
Detector 1
0.0
48ms
Barcode
Decoded results
Q10
Q11
Q12
Q13
Q14
Q15
Q16
Q17
Q18
Q19
Q20
Q21
Q22
Q23
Q24
Position X
Position Y
Angle


LibraryVersion [from Festo_SBSI_Lib]
Library Manager
SBSI_PRG [from Festo_SBSI_Lib]
PLC_PRG
Device
Device.Application.PLC_PRG
Expression
Type
Value
FB_SBSI_CTRL_0
FB_SBSI_CTRL
FB_SBSI_CTRL_1
FB_SBSI_CTRL
xEnable
BOOL
TRUE
sIPAddr
STRING
'192.168.2.100'
xTrigger
BOOL
TRUE
xTriggerExt
BOOL
FALSE
uiJobNumber
INT
0
xEnabled
BOOL
TRUE
xCameraReady
BOOL
TRUE
xPartChecked
BOOL
TRUE
iActProgram
INT
0

xError	BOOL	FALSE
uiErrorID	SBSI_ERRORS	NO_ERROR
udiTimeTotal	UDINT	60
aResults	ARRAY [0..100] OF ...	
aResults[0]	STRING	'0'
aResults[1]	STRING	'0'
aResults[2]	STRING	'0'
aResults[3]	STRING	''
aResults[4]	STRING	''

To get also a string for a "no read" It is possible to give an own text.



result in Codesys:

ARRAY [0..100] OF ...	
STRING	'0'
STRING	'0'
STRING	'0'
STRING	'FAIL'
STRING	''
STRING	''

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