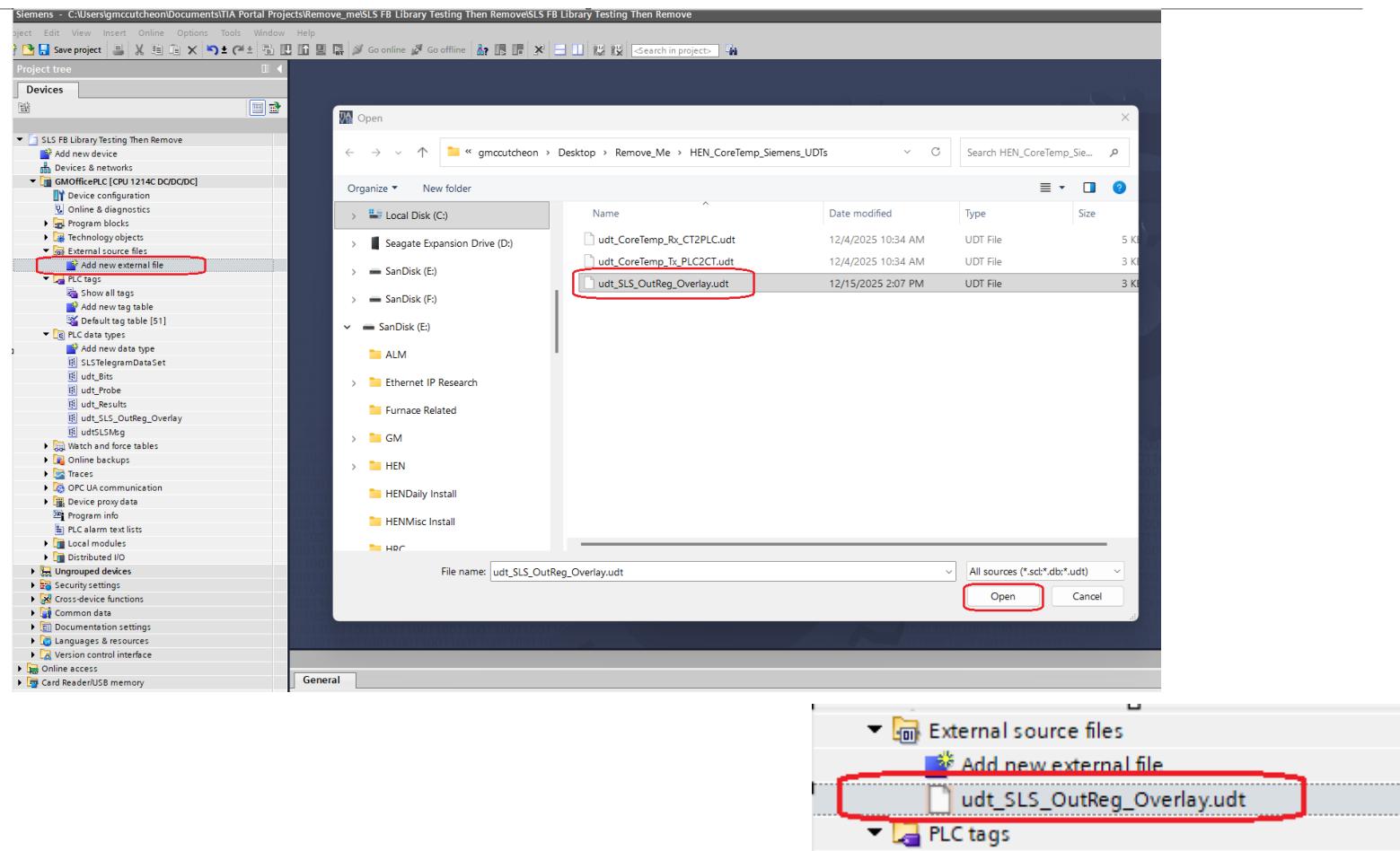


IM2/SensorLab Output Register Direct Overlay UDT

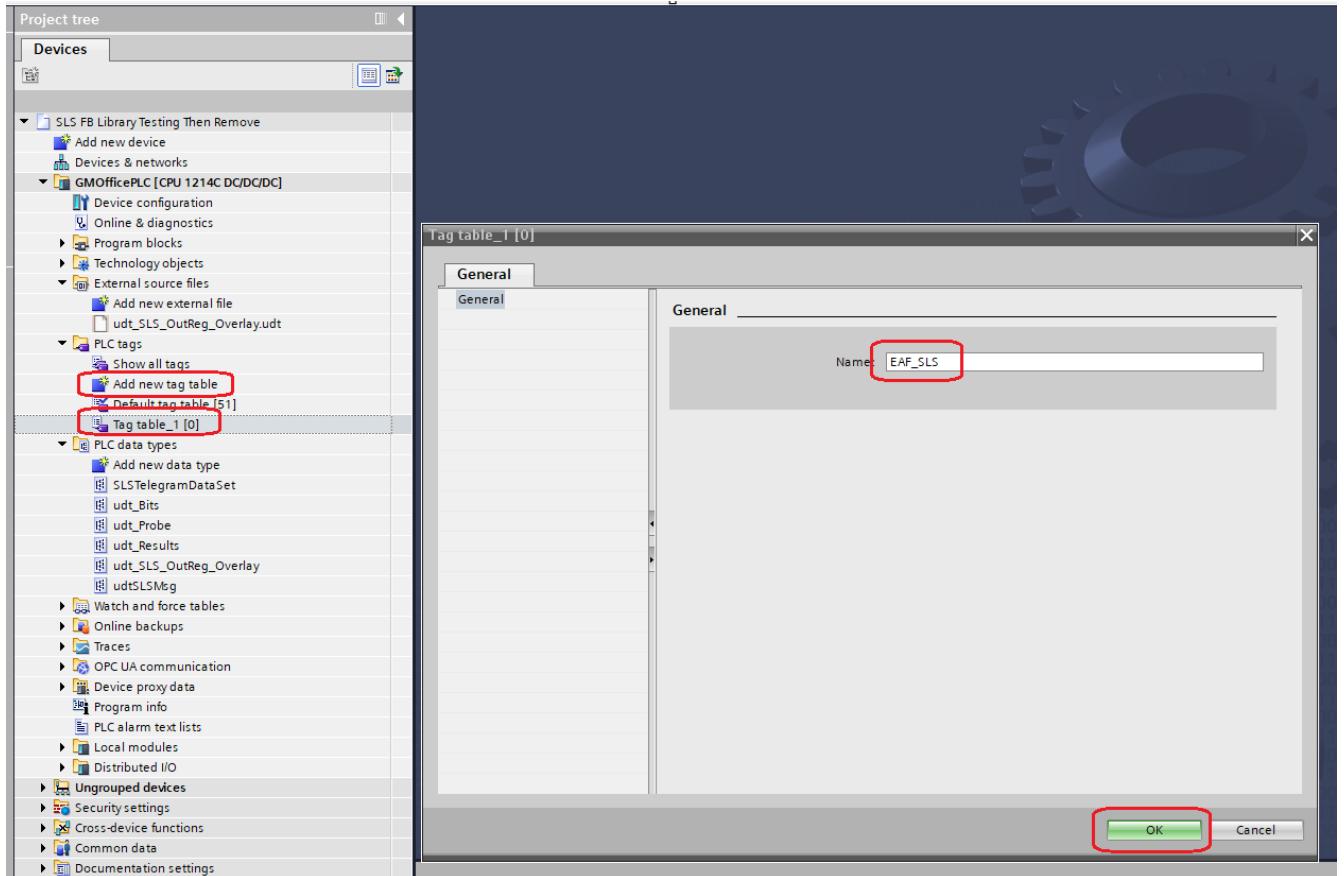
Import UDT

- In TIA Portal, go to Project tree.
- Expand External source files.
- Click Add new external file.
- Browse to the SensorLab overlay UDT file (e.g., udt_SLS_OutReg_Overlay.udt).
- Click Open to import it into your project.
- Confirm the file now appears under External source files.
- (Optional) Drag the file into PLC data types to keep UDTs organized with the rest of your data types.
- Compile the project so the imported UDT is available for use in tag tables and program blocks.



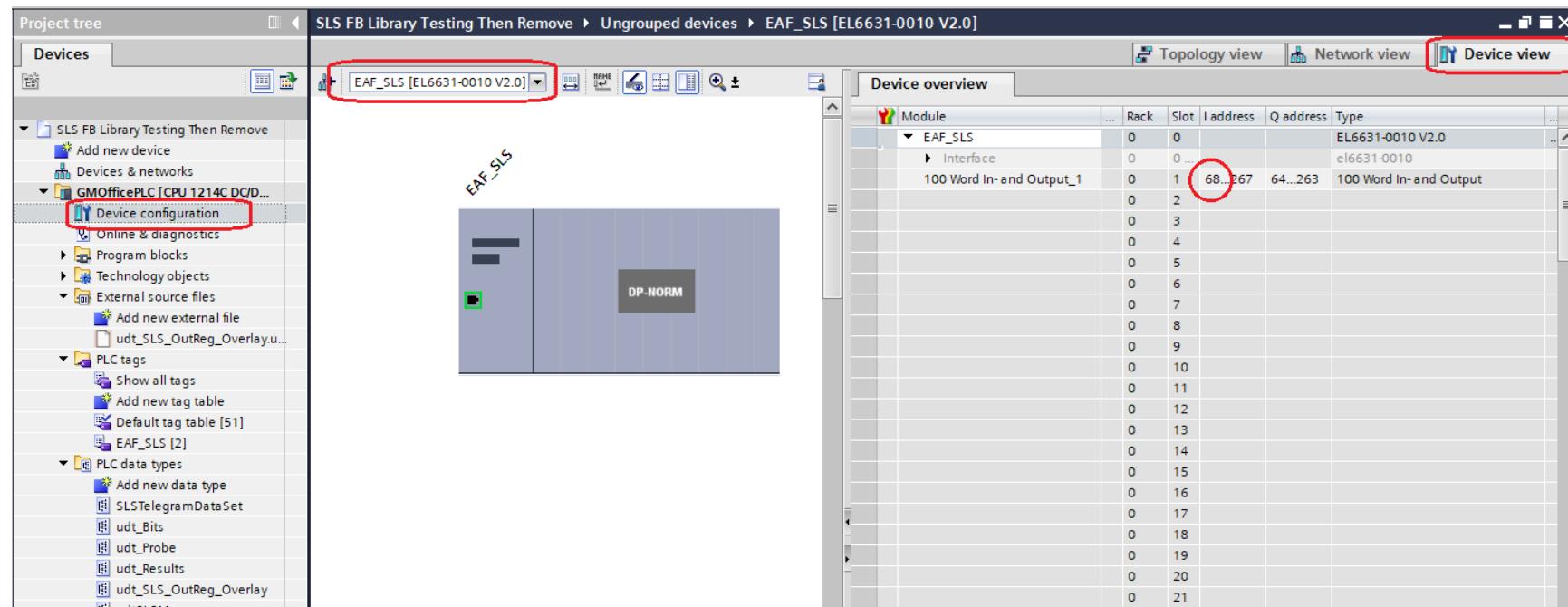
Create a PLC Tags Table

- In TIA Portal, open Project tree.
- Expand PLC tags.
- Click Add new tag table.
- Confirm the new tag table appears under the PLC tags folder.
- Right-click the new tag table and select Properties.
- In the Name field, enter a relevant name (e.g., EAF_SLS).
- Click OK.



Record Starting SLS Input Address from Device Config

- In Project tree, expand Devices & networks.
- Click the PLC (CPU) node.
- Click Device configuration.
- In the workspace, select the target device/module (e.g., EAF_SLS) so its details load.
- In the right-hand pane, open Device overview tab.
- In the Device overview table, find the module row for the SLS I/O module (e.g., 100 Word In- and Output_1).
- Read the I address column on that row... the first value shown is the input start address (in this screenshot it's 68).
- Record that input start address for the tag/UDT mapping.



Add Station 1 Tags to New PLC Tag Table

- In Project tree, expand PLC tags.
- Click the tag table you just created (named EAF_SLS) to open it in the editor.
- In the first empty row, enter a tag Name (example from screenshot: SLS_Results_Sta1).
- In the Data type column, select the imported UDT:
 - udt_SLS_OutReg_Overlay.
- In the Address column, enter the input start address recorded from Device overview (example shown: %I68.0).
- Press Enter to accept the entry and save the row.

The screenshot shows the GMOfficePLC software interface. On the left, the Project tree is expanded to show the project structure, including the GMOfficePLC device, its configuration, programs, technology objects, and external source files. Under External source files, the file 'udt_SLS_OutReg_Overlay.udt' is selected. Below it, the PLC tags folder contains the tag table 'EAF_SLS [1]'. The main right pane displays the 'EAF_SLS' tag table editor. The table has columns for Name, Data type, Address, Retain, Access, Write, Visibility, and Comment. A single row is present, with the Name column containing 'SLS_Results_Sta1', the Data type column containing 'udt_SLS_OutReg_Overlay' (which is highlighted with a red box), and the Address column containing '%I68.0' (also highlighted with a red box). The other columns for Retain, Access, Write, Visibility, and Comment have checkmarks in their respective columns. The entire tag table row is also highlighted with a red box.

Name	Data type	Address	Retain	Access	Write	Visibility	Comment
1 SLS_Results_Sta1	udt_SLS_OutReg_Overlay	%I68.0					
2 <Add new>							

Add Station 2 Tags to New PLC Tag Table

- With the EAF_SLS tag table still open, click the next empty row (Row 2).
- In the Name column, enter:
 - SLS_Results_Sta2.
 - Use your preferred tag name.
- In the Data type column, select:
 - udt_SLS_OutReg_Overlay.
- In the Address column, enter the Station 2 start address.
 - By default, TIA Portal will auto-fill the next available input address after the previous tag... this is the correct behavior in this case. In this example, that value is %I132.0.
- Press Enter to accept the row.

Name	Data type	Address	Retain	Access	Write
SLS_Results_Sta1	"udt_SLS_OutReg_Overlay"	%I68.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SLS_Results_Sta2	"udt_SLS_OutReg_Overlay"	%I132.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Monitor Data in New PLC Tag Table

- Save the project.
- Compile and Download to device.
- Connect to the PLC, then click Go online.
- Open the tag table PLC tags\EAF_SLS.
- Expand the first tag (e.g., SLS_Results_Sta1) to show its UDT members.
- Monitor the values (enable monitoring/“glasses” in the tag table) and confirm the fields are updating as the device sends data.

Project tree

Devices

SLS FB Library Testing Then Remove > GMDOfficePLC [CPU 1214C DC/DC/DC] > PLC tags > EAF_SLS [2]

EAF_SLS

Name	Data type	Address	Retain	Access	Write	Visible	Monitor value	Comment
1 SLS_Results_Sta1	*udt_SLS_OutReg_Overlay*	%I68.0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	16#01	
2 Status4	Byte	%I68		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	16#4E	Probe type (4E = 'N' None) Table 8 in ma...
3 Status3	Byte	%I69		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 2.0 - Start Measurement viewer
4 StartMeasurementViewer	Bool	%I70.0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	TRUE	Status Byte 2.1 - Lines Open
5 LinesOpen	Bool	%I70.1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 2.2 - End Measurement viewer
6 EndMeasurementViewer	Bool	%I70.2		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 2.3 - Level Probe
7 ProbeTypeLevel	Bool	%I70.3		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 2.4 - CeloxSlac Probe
8 ProbeTypeCeloxSlac	Bool	%I70.4		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 2.5 - InsulationWarning - Insu...
9 InsulationWarning	Bool	%I70.5		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 2.6 - Blinking Active
10 BlinkingActive	Bool	%I70.6		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 2.7 - Horn Active
11 Horn	Bool	%I70.7		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 1.0 - Red -End of Measurement
12 RedLight	Bool	%I71.0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 1.1 - Yellow - Measurement Bu...
13 YellowLight	Bool	%I71.1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 1.2 - Green - Probe Detected
14 GreenLight	Bool	%I71.2		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 1.3 - Error Measurement
15 MeasurementError	Bool	%I71.3		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 1.4 - Carbon Measurement
16 CarbonMeasurement	Bool	%I71.4		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 1.5 - Bath Level Measurement
17 BathLevelMeasurement	Bool	%I71.5		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 1.6 - Celox(EMF) Measurement
18 CeloxMeasurement	Bool	%I71.6		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 1.7 - TxD
19 TDxComplete	Bool	%I71.7		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Error Byte 4.0 - No Cold Junction
20 ERR_NoCTemp	Bool	%I72.0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Error Byte 4.1 - TC Break
21 ERR_TCbreak	Bool	%I72.1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Error Byte 4.2 - Spare
22 ERR_Spare_4_2	Bool	%I72.2		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Error Byte 4.3 - Spare
23 ERR_Spare_4_3	Bool	%I72.3		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Error Byte 4.4 - RF Link Wireless broken du...
24 ERR_RFLostWhileMeasuring	Bool	%I72.4		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Error Byte 4.5 - Bad reception - RF link has ...
25 ERR_RFBadSignal	Bool	%I72.5		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Error Byte 4.6 - no evaluation
26 ERR_NoEvaluation	Bool	%I72.6		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Error Byte 4.7 - Spare
27 ERR_Spare_4_7	Bool	%I72.7		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	PlaceID or Bath Level depending on dropd...
28 PlaceID_b3	Byte	%I873		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	16#00	D#2024-11-13
29 HeatNumber	Array[0..7] of Char	%I74.0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	00	T#5H_40M_35S....
30 UTC_Date_ms	Date	%I882		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2444.867	Temperature
31 UTC_Time_days	Time	%I884		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-180.0175	EMF
32 Temperature	Real	%I888		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0.4725342	Oxygen PPM
33 EMF	Real	%I92		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0.00380016	Aluminum %
34 aO	Real	%I96		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.35631E-19	Carbon %
35 AI	Real	%I100		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.35631E-19	FeO
36 C	Real	%I104		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2.8	Sample Index (counter)
37 FeO	Real	%I108		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2444.867	Sample Ch0 (MP) (with above sample)
38 SampleIndex	Real	%I112		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-180.0166	Sample Ch1 (EMF) (with above sample)
39 SampleCh0	Real	%I116		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2.308327E+08	Online Resistance Ch 0
40 SampleCh1	Real	%I120		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2.290712E+08	Online Resistance Ch 1
41 ResCh0	Real	%I124		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
42 ResCh1	Real	%I128		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
43 SLS_Results_Sta2	*udt_SLS_OutReg_Overlay*	%I132.0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	00	00
44 <Add new>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		