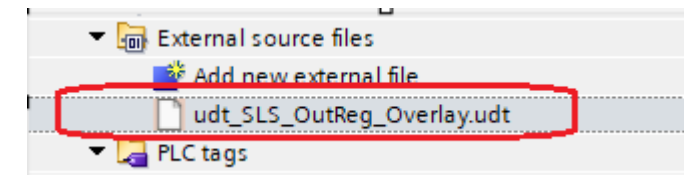
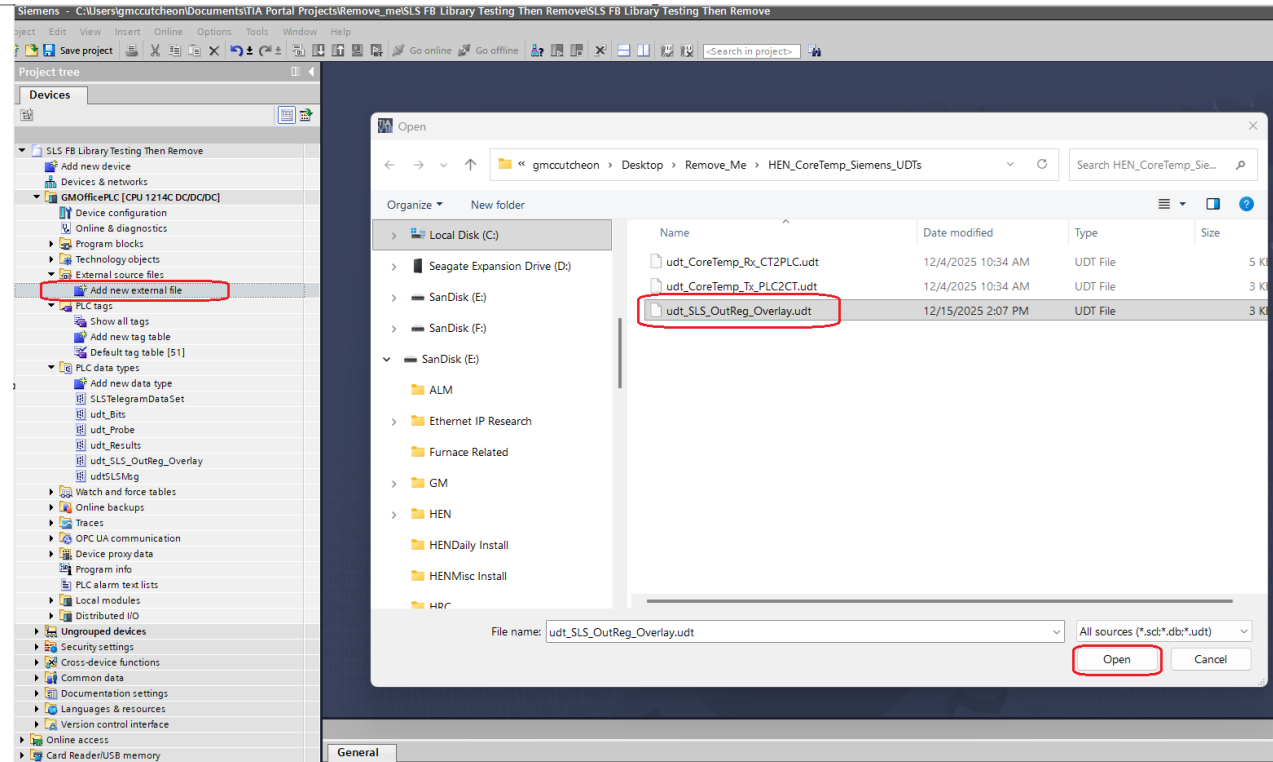


IM2/SensorLab Output Register Direct Overlay UDT

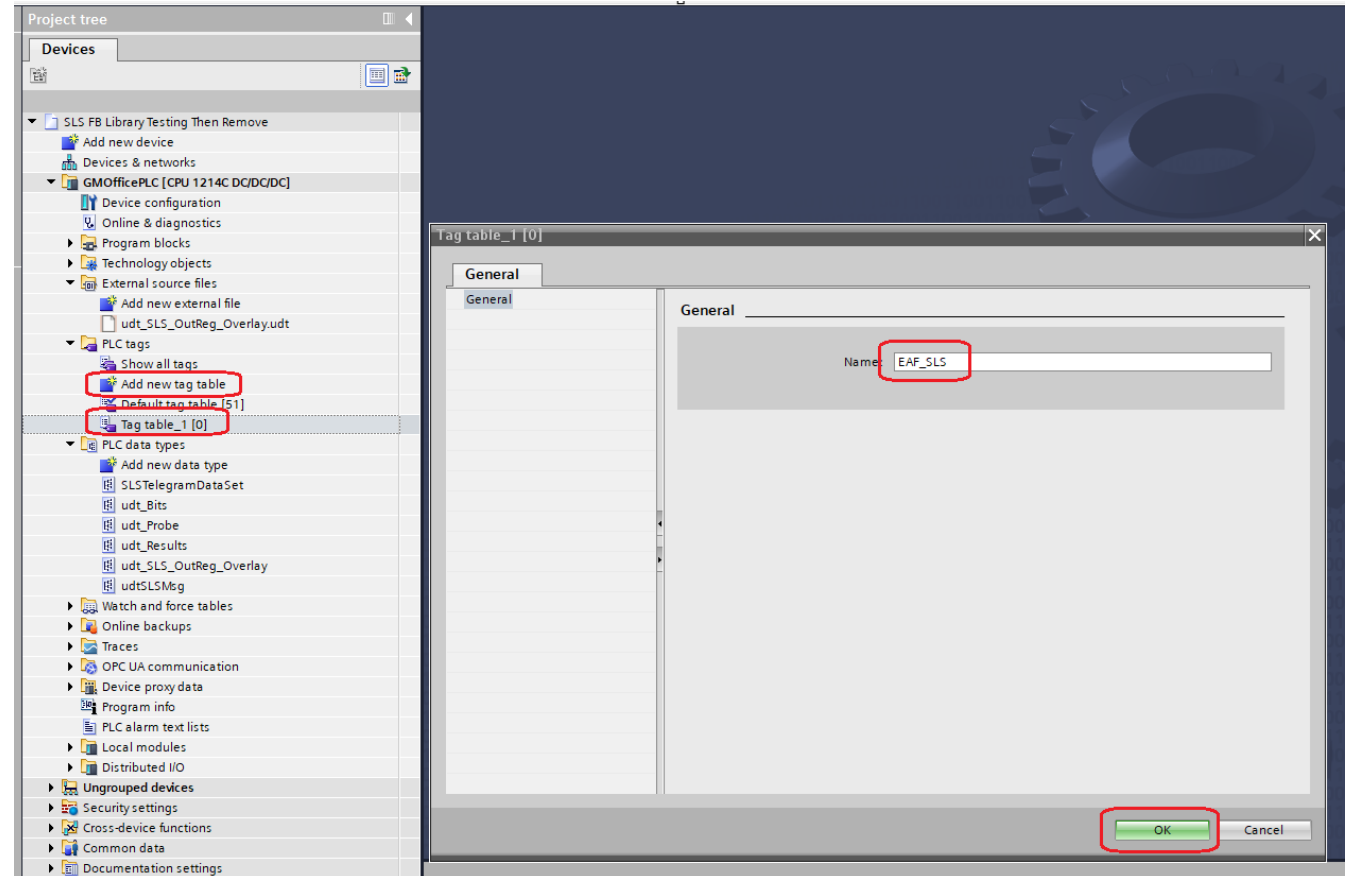
Import UDT

- 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

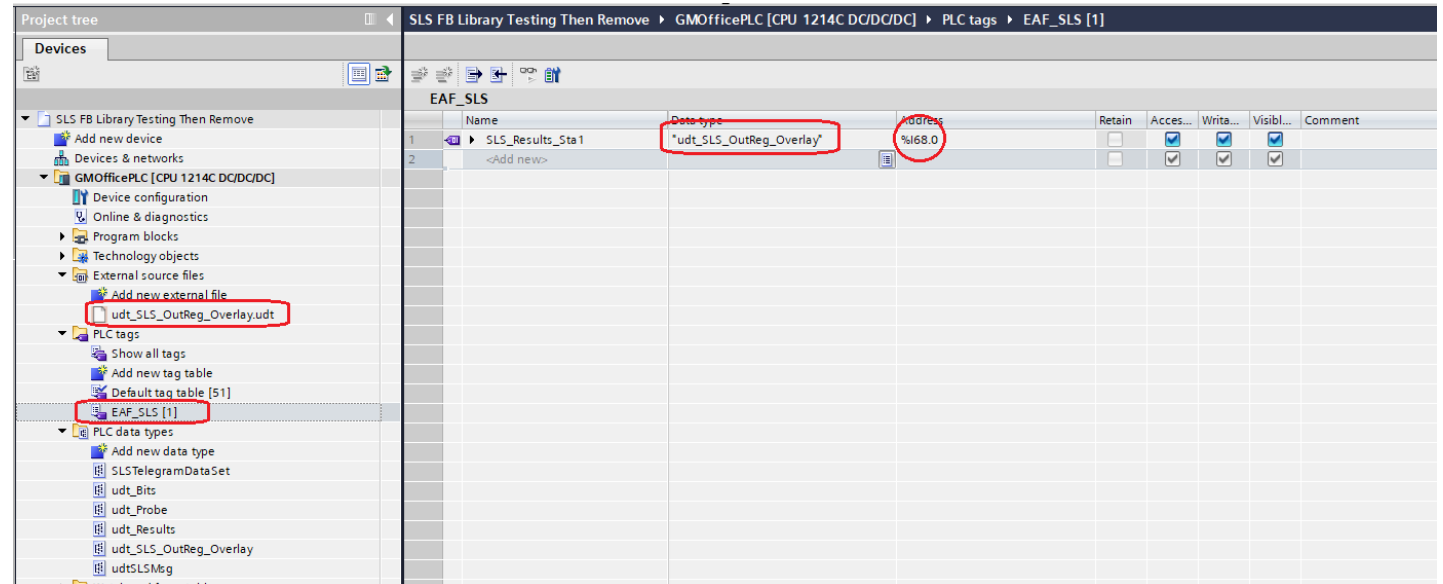
- In Project tree, expand Devices & networks.
- Click the PLC (CPU) node.
- Click Device configuration.
- In the workspace, select the target device/module (e.g., EAF_SLS) so its details load.
- In the right-hand pane, open Device overview tab.
- In the Device overview table, find the module row for 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.

The screenshot shows the Siemens TIA Portal interface. The Project tree on the left has 'Device configuration' selected. The main workspace shows a rack diagram with the 'EAF_SLS' device. The 'Device overview' table on the right is displayed, showing the '100 Word In- and Output_1' module with an I address of 68.

Module	Rack	Slot	I address	Q address	Type
EAF_SLS	0	0			EL6631-0010 V2.0
Interface	0	0			el6631-0010
100 Word In- and Output_1	0	1	68...267	64...263	100 Word In- and Output
	0	2			
	0	3			
	0	4			
	0	5			
	0	6			
	0	7			
	0	8			
	0	9			
	0	10			
	0	11			
	0	12			
	0	13			
	0	14			
	0	15			
	0	16			
	0	17			
	0	18			
	0	19			
	0	20			
	0	21			

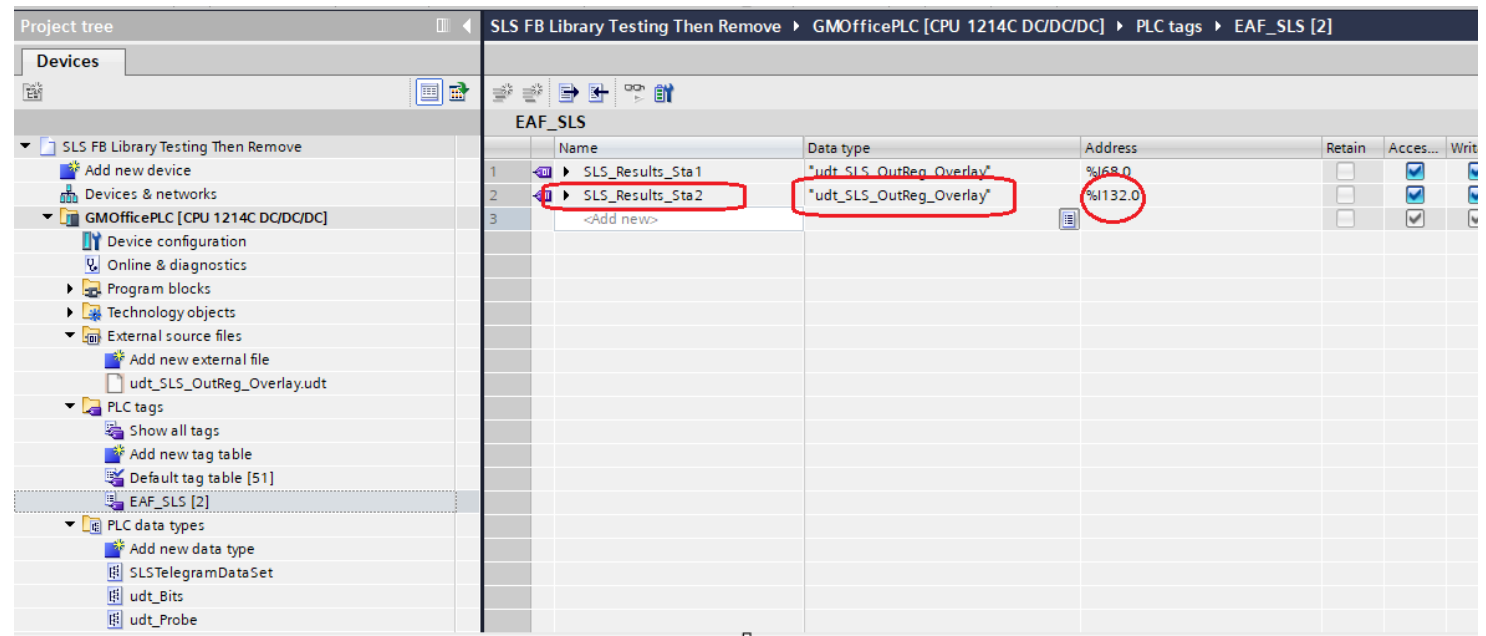
Add Station 1 Tags to New PLC Tag Table

- 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.



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.



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		SLS FB Library Testing Then Remove ▶ GMOFFICEPLC [CPU 1214C DC/DC/DC] ▶ PLC tags ▶ EAF_SLS [2]											
Devices		EAF_SLS											
		Name	Data type	Address	Retain	Access	Write	Visible	Monitor value	Comment			
<div> <div>SLS FB Library Testing Then Remove</div> <div> <div>Devices & networks</div> <div>GMOFFICEPLC [CPU 1214C DC/DC/DC]</div> <div>Device configuration</div> <div>Online & diagnostics</div> <div>Program blocks</div> <div>Technology objects</div> <div>External source files</div> <div>Add new external file</div> <div>udt_SLS_OutReg_Overlay.udt</div> <div>PLC tags</div> <div>Show all tags</div> <div>Add new tag table</div> <div>Default tag table [S1]</div> <div>EAF_SLS [2]</div> <div>PLC data types</div> <div>Add new data type</div> <div>SLSTelegramDataSet</div> <div>udt_Bits</div> <div>udt_Probe</div> <div>udt_Results</div> <div>udt_SLS_OutReg_Overlay</div> <div>udtSLSMsg</div> <div>Watch and force tables</div> <div>Online backups</div> <div>Traces</div> <div>OPC UA communication</div> <div>Device proxy data</div> <div>Program info</div> <div>PLC alarm text lists</div> <div>Local modules</div> <div>Distributed I/O</div> <div>Ungrouped devices</div> <div>Security settings</div> <div>Cross-device functions</div> <div>Common data</div> <div>Documentation settings</div> <div>Languages & resources</div> <div>Version control interface</div> <div>Online access</div> <div>Card Reader/USB memory</div> </div> </div>		1	SLS_Results_Sta1	*udt_SLS_OutReg_Overlay	%I68.0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
		2	Status4	Byte	%I68.0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	16#01			
		3	Status3	Byte	%I68.0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	16#4E	Probe type (4E = 'N' = None) Table 8 in ma...		
		4	StartMeasurementViewer	Bool	%I70.0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 2.0 - Start Measurement viewer		
		5	LinesOpen	Bool	%I70.1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	TRUE	Status Byte 2.1 - Lines Open		
		6	EndMeasurementViewer	Bool	%I70.2		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 2.2 - End Measurement viewer		
		7	ProbeTypeLevel	Bool	%I70.3		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 2.3 - Level Probe		
		8	ProbeTypeCeloxSlac	Bool	%I70.4		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 2.4 - Celox Slac Probe		
		9	InsulationWarning	Bool	%I70.5		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 2.5 - InsulationWarning - Insul...		
		10	BlinkingActive	Bool	%I70.6		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 2.6 - Blinking Active		
		11	Horn	Bool	%I70.7		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 2.7 - Horn Active		
		12	RedLight	Bool	%I71.0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 1.0 - Red - End of Measurement		
		13	YellowLight	Bool	%I71.1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 1.1 - Yellow - Measurement Bu...		
		14	GreenLight	Bool	%I71.2		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 1.2 - Green - Probe Detected		
		15	MeasurementError	Bool	%I71.3		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 1.3 - Error Measurement		
		16	CarbonMeasurement	Bool	%I71.4		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 1.4 - Carbon Measurement		
		17	BathLevelMeasurement	Bool	%I71.5		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 1.5 - Bath Level Measurement		
		18	CeloxMeasurement	Bool	%I71.6		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 1.6 - Celox(EMF) Measurement		
		19	TdxComplete	Bool	%I71.7		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Status Byte 1.7 - Tdx		
		20	ERR_NoCTemp	Bool	%I72.0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Error Byte 4.0 - No Cold Junction		
		21	ERR_TCBreak	Bool	%I72.1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Error Byte 4.1 - TC Break		
		22	ERR_Spare_4_2	Bool	%I72.2		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Error Byte 4.2 - Spare		
		23	ERR_Spare_4_3	Bool	%I72.3		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Error Byte 4.3 - Spare		
		24	ERR_RFLossWhileMeasuring	Bool	%I72.4		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Error Byte 4.4 - RF Link Wireless broken du...		
		25	ERR_RFBadSignal	Bool	%I72.5		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Error Byte 4.5 - Bad reception - RF link has ...		
		26	ERR_NoEvaluation	Bool	%I72.6		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Error Byte 4.6 - No evaluation		
		27	ERR_Spare_4_7	Bool	%I72.7		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	FALSE	Error Byte 4.7 - Spare		
		28	PlaceID_b3	Byte	%I873		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	16#00	PlaceID or Bath Level depending on drop...		
		29	Heatlumber	Array[0..7] of Char	%I74.0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
		30	UTC_Date_mns	Date	%I82		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0#2024-11-13			
		31	UTC_Time_days	Time	%I84		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	T#5H_40M_35S...			
		32	Temperature	Real	%I88		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2444.867	Temperature		
		33	EMF	Real	%I92		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-180.0175	EMF		
		34	aO	Real	%I96		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0.4725342	Oxygen PPM		
		35	Al	Real	%I100		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0.00380016	Aluminum %		
		36	C	Real	%I104		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.356316E-19	Carbon %		
		37	FeO	Real	%I108		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.356316E-19	FeO		
		38	SampleIndex	Real	%I112		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2.8	Sample Index (counter)		
		39	SampleCH0	Real	%I116		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2444.867	Sample CH0 (TMF) (with above sample)		
		40	SampleCH1	Real	%I120		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-180.0166	Sample CH1 (EMF) (with above sample)		
		41	ResCH0	Real	%I124		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2.308327E+08	Online Resistance CH 0		
		42	ResCH1	Real	%I128		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2.290712E+08	Online Resistance CH 1		
		43	SLS_Results_Sta2	*udt_SLS_OutReg_Overlay	%I132.0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
		44	<Add new>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				