



Substation automation user group meeting 2023 Automation and technical showcase



Powering Business Worldwide

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Agenda

- Supply chain / Challenges
- SMP product line
- Group discussion

Supply chain Issue (Jan '23)

August 29th, 2022

Dear Valued customer,

This is an update on the supply chain situation affecting our Substation Automation products lead-time. As everyone is now aware, the global supply chain has been disrupted for over a year now, with no signs of improvement yet. Eaton continues to experience unprecedented global supply chain disruptions resulting in shortages of raw materials and components. While we remain committed to qualifying alternative suppliers and alternative materials/components, we continue to face additional challenges: extended material lead-time to a level we have never seen before are adding to shipping and transportation disruptions and labor shortages. According to most analysts, we could be in the same situation for another year or so.

Redesign activities to replace problematic components of the SMP SG-4260 is currently being evaluated. Those components include the CPU module, Ethernet Controller and FPGA. We expect changes to be effective in the mid term (2023), with the hope that those changes will significantly reduce the lead time on the SMP SG-4260.

In the meantime, here are our current product lead-times:

Product	Lead-time (valid for quantities up to 10)
SMP SG-4260	40 weeks
SMP 4/DP	33 weeks
SMP IO-2230	33 weeks
SMP IO-2330	36 weeks

We sincerely apologize for any inconvenience this ongoing situation may have with your business. This is a temporary issue, and we are hoping to see an improvement on lead-time in a near future. We appreciate your understanding and cooperation during this challenging time. As always, thank you for your business and continued support of Eaton products.

- Eaton constantly working directly with Intel to force our product into allocation
- Project launch to redesign CPU and find alternates.
- CPU module supplier (congatec) mentioned that 2023 should be back to normal
- AEM card Intel FPGA are still an issue but working on software solution. We are still pushing intel for allocation Q4 22-Q1 23
 - Solution found for ST and LC option
 - Copper(RJ45) still not available



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SMP Gateway Automation

Francois Turcotte

Agenda

- What is new in SMP Gateway 8.2
- SMP DA-3050 Update
- SMP IO-2230/2330 Update
- Lifecycle review
- New gridsolutions portal – replace cybectec.com
- Questions / Comments from customer

What is new – SMP Manager

- Local Configuration column (v8.1R1)

Status	Local Configuration	Platform	Version	
Started (Exp:12/2021)	Older	SMP SG-4250	8.2R1	10.
Started (Exp:12/2021)		SMP SG-4250	8.0R2	10.
On standby	Older	SMP SG-4250	8.2R1	10.
Protocol(s) failed		SMP 16/SG-PM	6.3R6 SP1	10.
Started (Exp:06/2019)		SMP 16/SG-PM	7.2R3 SP1	10.
Started (Exp:12/2021)	Older	SMP SG-4250	8.2R1	10.
Started (Exp:12/2021)	Older	SMP SG-4260	8.2R1	10.
Started (Exp:12/2021)	Synchronized	SMP SG-4250	8.1R2	10.
.....	Synchronized	SMP IO-2330-C1	1.6R1	10.
Started (Exp: 01/01/2022)	Not found	SMP IO-2230	2.0B4	10.
Started (Exp:12/2021)	Older	SMP SG-4260	8.2R1	10
Started (Exp:12/2021)		SMP SG-4250	7.0R6 SP3	10.
Started (Exp:12/2021)	Older	SMP SG-4250	8.1R3	10
MAX SAFEMODE	Older	SMP SG-4250	8.1R3	10
Started		SMP 16/SG-PM	8.0R5 SP1	10
Started (Exp:12/2021)	Not found	SMP SG-4260	8.2R1	10
Started (Exp:12/2021)	Synchronized	SMP SG-4260	8.1R2	10.
Started (Exp:12/2021)	Synchronized	SMP SG-4250	8.2R1	10

When the SMP device supports this feature, Manager will fill the « Local Configuration » column with different statuses.

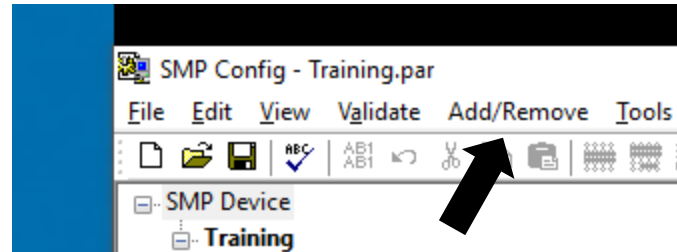
- If the local file match the one on the SMP device, the status will be « **Synchronized** ».
- If there is no match, the status will be « **Older** » or « **Newer** », depending if the local file is older or newer.
- If the device supports the feature but no configuration file has been defined in the properties of the SMP device, or when the SMP doesn't support this feature, the column will be **empty**.
- If the local file is not found, the status will be « **Not found** ».
- Any situation where the information can't be process normally with display « **Unknown** » status.
- The last configuration information received from the SMP is persisted locally. So, the « Local Configuration » will be updated even when the polling is not enabled or when the device is not reachable.

Based on this, a new restart mechanism has been added in the SMP Gateway. When a configuration file is sent alone on the SMP gateway, SMP Manager will request the SMP to only copy the file, without any restart require. This prevent useless restart of the system.

What is new – Embedded configuration file (8.1R2)

Add/Remove menu

- Add Embedded SMP Device Configuration...
- Add Embedded SMP Device connection...



What is new – Embedded configuration file (8.1R2)

- Specify the device name
- Select the SMP IO-2000 series version patch
- Specify the IP of the device

New Embedded SMP Device Configuration

New Configuration

Name

SMP IO-2000 Series

Version

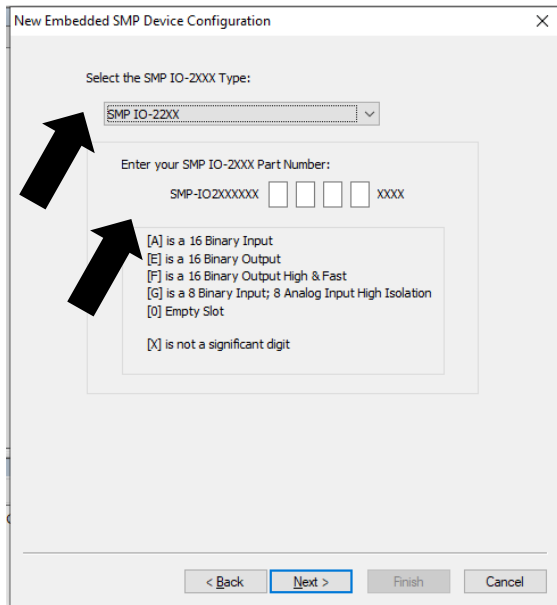
SMP Device connection settings

IP Address

< Back Next > Finish Cancel

What is new – Embedded configuration file (8.1R2)

- Select the IO model and the Hardware configuration



New Embedded SMP Device Configuration

Select the SMP IO-200X Type:

SMP IO-22XX

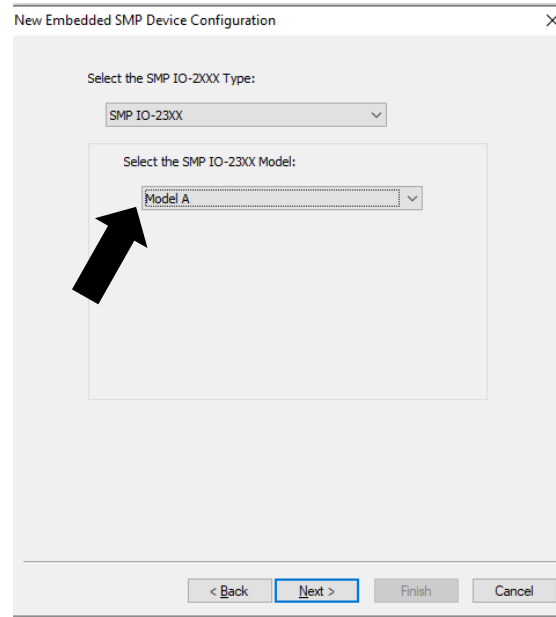
Enter your SMP IO-200X Part Number:

SMP-IO2XXXXX XXXX

[A] is a 16 Binary Input
[E] is a 16 Binary Output
[F] is a 16 Binary Output High & Fast
[G] is a 8 Binary Input; 8 Analog Input High Isolation
[D] Empty Slot
[X] is not a significant digit

< Back Next > Finish Cancel

This screenshot shows the first step of the configuration process. A dropdown menu is set to 'SMP IO-22XX'. Below it, there are four input boxes for the part number, followed by a legend for the letters A, E, F, G, D, and X. The 'Next >' button is highlighted with a blue border.



New Embedded SMP Device Configuration

Select the SMP IO-200X Type:

SMP IO-23XX

Select the SMP IO-23XX Model:

Model A

< Back Next > Finish Cancel

This screenshot shows the second step of the configuration process. The dropdown menu is now set to 'SMP IO-23XX'. Below it, there is a legend for the letters A, E, F, G, D, and X. The 'Next >' button is highlighted with a blue border.

What is new – Embedded configuration file (8.1R2)

- Select to add an DNP3 master/server pair or not.
- If DNP3 selected, you can update the Names and Device prefixes

New Embedded SMP Device Configuration

Select a communication protocol for linking the Master instance of the SMP Gateway with the Slave instance of the embedded SMP Device

DNP3
 None

Master instance identification

Name: IO Traning.dnp3
Device Prefix: IO Traning.dnp3_

Embedded Server instance identification

Name: IO Traning.dnp3
Device Prefix: IO Traning.dnp3_

< Back Next > Finish Cancel

What is new – Embedded configuration file (8.1R2)

- The standard DNP3 master import points dialog is presented.
- You can edit data point list if you wish. Push update when done. If you select Cancel, the master will contains do points from the DNP3 server,
- Note .The GEN and REQ are used to indicate that the DNP3 master General and Request settings have been updated to match DNP3 server settings.

Update Data Points

Select the data points to be updated in the site configuration:

Points to add: Points to remove: Points to modify:

<input checked="" type="checkbox"/>	Al: _smp_avgCpuLoad
<input checked="" type="checkbox"/>	Al: _smp_clockDay
<input checked="" type="checkbox"/>	Al: _smp_clockHour
<input checked="" type="checkbox"/>	Al: _smp_clockMinute
<input checked="" type="checkbox"/>	Al: _smp_clockMonth
<input checked="" type="checkbox"/>	Al: _smp_clockSecond
<input checked="" type="checkbox"/>	Al: _smp_clockYear
<input checked="" type="checkbox"/>	Al: _smp_cpuLoad
<input checked="" type="checkbox"/>	Al: _smp_memoryLoad
<input checked="" type="checkbox"/>	Al: _smp_memorySize
<input checked="" type="checkbox"/>	Al: _smp_numPwrUp
<input checked="" type="checkbox"/>	Al: _smp_phyHealth

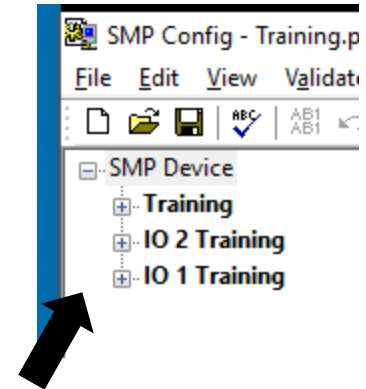
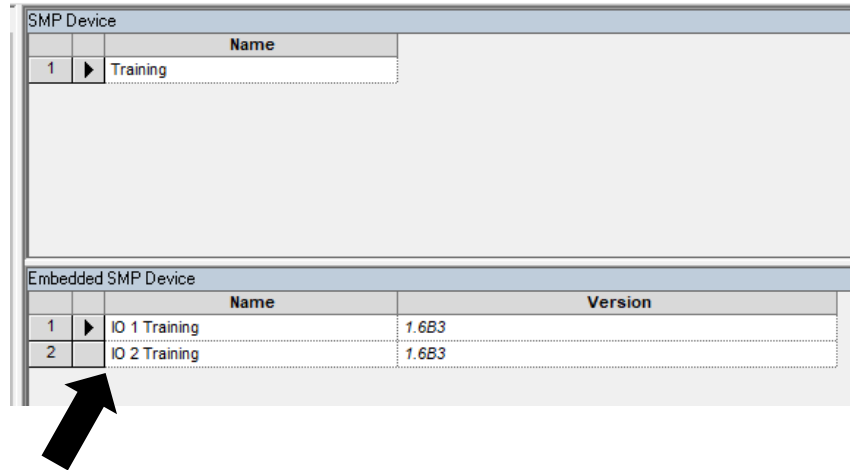
<input checked="" type="checkbox"/>	GEN: General Parameters
<input checked="" type="checkbox"/>	REQ: Time Synchronization

Attribute	Value

The points to be added that are not selected will be added, but will be disabled.

What is new – Embedded configuration file (8.1R2)

- The list of embedded SMP Device are visible in the root of the tree (SMP Device) or directly in the tree.
- You can delete an embedded device from the list.
- You can modify the embedded device settings from the tree, like you can doing using normally SMP Config. Only a few limitations applies (import/export, find/select point/subscribe, microplc editor, cut/copy/paste)



Dem
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OPC DA vs OPC UA

OPC DA :

1. Based on Microsoft DCOM (Windows 95 style)
2. Nightmare to configure
3. No Interoperability between different system
4. Use random TCP Ports , IT want to get rid of it , hard to manage

OPC UA :

1. Based on an **open** standard defined by OPC Foundation
2. Easy to configure with URL style connection
3. Full Interoperability between system based on standard protocol
4. Use unique standard TCP port for communication

61850 vs OPC UA

Does IEC-61850 and OPC UA compete to be the “new protocol”?

No

- **IEC-61850** is focused on electricity generation, transmission, distribution, and consumption
- **OPC UA** is more used in non-electrical industrial process activities. Users require integration of the electrical aspects of a plant with non-electrical aspects.

OPC UA **can** use IEC-61850 model representation for data implementation.

This way we can use OPC UA for communication exchange and use IEC-61850 electrical model.



OPC UA Master/Slave (8.2)

OPC UA Slave (8.2R1)

- Replace your SMP OPC Server
- Replace any intermediate PC software to convert to OPC
- Support secure communication with Certificates

OPC UA Master(8.2R2)

- Migrate your OPC DA to OPC UA
- Support browsing feature to automatically populate your master with server list.

Firmware issue (High CPU)

- **[8.2R3]** Performance issue identified in these version (High CPU)
 - 8.1R3/8.1R4
 - 8.2R1/8.2R2
- Specifically if you were using multiple DNP Master + SMPIO
- Root cause : In the affected version we upgraded to Windows Embedded Compact 2013 to resolve stability issue with TCP IP Stack. In this new OS Microsoft reimplemented the `sprintf_function`. We found that this function was responsible for all performance problem. We reimplemented the function and now all system goes from 80% to 20% CPU avg.

DNP3 Master

- **[8.2R3]** Added the "Session Timeout" timer which sets the maximum delay between the transmission of a frame and the receipt of the first response packet, in milliseconds. Also, the "Rx Timeout" timer is renamed to "Frame Timeout".
- **[8.2R3]** Added the parameter "Scan Disabled At Startup" which allows starting the protocol instance in "Scan Disabled".
 - *This is useful when many masters are sharing the same link. This allows the customer to implement his own logic to decide when to start each instance using control requests.*

IEC 61850

- Fixed an issue that caused the “Link 1 Test Interval” to be used instead of “Keep Alive” on the standby SMP Device when link redundancy was inactive.
- GI and BRCB are **now activated by default**
 - Changed the default value for the General Interrogation (GI) command with a URCB and a BRCB, instead of doing a manual read of the dataset.
 - Default activation of BRCB following the "Get Config" or "Get Config From File" operation.
- **[8.2R2]** Added support for BRCB "EntryId" synchronization when link redundancy on separate IEDs or SMP Gateway redundancy is used.
- Fixed the copy of "Double Point" type points from a GOOSE master when importing an SCL file.
 - Added a support data point types for a GOOSE instance in the documentation.

[8.2R2] IEC 104

- The IEC 60870-5-104 (and DNP3 slave) protocol now support network socket sharing between different protocol instances.
 - Different ASDU Address (in 104)
 - Different Link Address (in DNP3)
- The IEC 60870-5-104 slave protocol now supports redundant links on the same protocol instance.

TCP/IP Slave Connections Definition							
Name	Port Number	Socket Bind Address	Accessible From	Specific Computer or Subnet	Sharing	TLS Protocols	Cipher S
tcp0	123		Any Computer		<input type="checkbox"/>	Disabled	Strong Cp

	TCP/IP Slaves	
	tcp0	tcp1
	slave1	<input type="checkbox"/>
slave2	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	TCP/IP Slaves		Serial Ports Asynchronous
	tcp0	tcp1	COM1
	slave1	<input type="checkbox"/>	<input type="checkbox"/>
slave2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

ION

- **[8.2R2]** Now supports **advanced security**:
 - Password can now contains **letters and symbols**;
 - Up to **50 users** are supported.

OPC UA Slave (server)

- **New supported protocol!**
 - An asynchronous protocol that defines exchange of messages via secured sessions.
 - Only binary messages are supported.
 - A meta-model for information modeling.
 - Based on standard services that interact with the information model of the server.
- **[8.2R2]** Now displayed in the Communication Dashboard;
- **[8.2R2]** The quality provided by the OPC UA slave is now **"BadNumericOverflow"** for the RTDX **"Over Range"** quality.
- **DEMO and/or features/configuration review (Tomorrow with Kee)**

[8.2R2] OPC UA Master (client)

- **New supported protocol!**
 - An asynchronous protocol that defines exchange of messages via secured sessions.
 - Only binary messages are supported.
 - A meta-model for information modeling.
 - Based on standard services that interact with the information model of the server.
- **[8.2R3]** Added support for **double**-precision floating-point type and 64-bit (signed and unsigned) integers. However, these types are limited to 32 bits in RTDX.
- **DEMO and/or features/configuration review (Tomorrow with Kee)**
 - Auto-configuration feature!

SoftPLC (CODESYS)

- Added a parameter to force a restart of an SMP Device if an exception occurs in a SoftPLC task.
 - For example, an exception can be caused by a division by zero or when the CODESYS watchdog is triggered. When an exception happens, an entry is added to the **Reset** log, indicating that an exception occurred, regardless of the status of the **Restart SMP when Exception Occurs** setting.

[8.2R3] SoftPLC (CODESYS)

- New integration with SMP Config !!!

Mode	CODESYS Workbench Version Used	Behavior
Legacy	3.5 SP2 or older than 3.5 SP16	Same behavior than before
New	3.5 SP17 or greater	New toolbar

New Technical Note

- *“SMP Gateway flash memory writing, a guide to good practice”*
- *Version 4 available*
 - **Verifying** the statistics on the SMP SG-42xx platform
 - **Identifying extensive** writing and **recommendations**
 - Allows writing logs in **volatile memory**
- The optimization suggested apply to all SMP Gateway platforms and firmware versions (SMP 4/DP, SMP 16 and SMP SG-42xx).

SG-42xx Platform : PTP

- **[8.2R2]** VLAN tagging is now supported for PTPv2 (IEEE-1588) for the profile Power Systems Profile IEEE/IEC 61850-9-3:2016.
- Available on **SG-4250** and **SG-4260** with an **Advanced Ethernet Module (AEM)**.

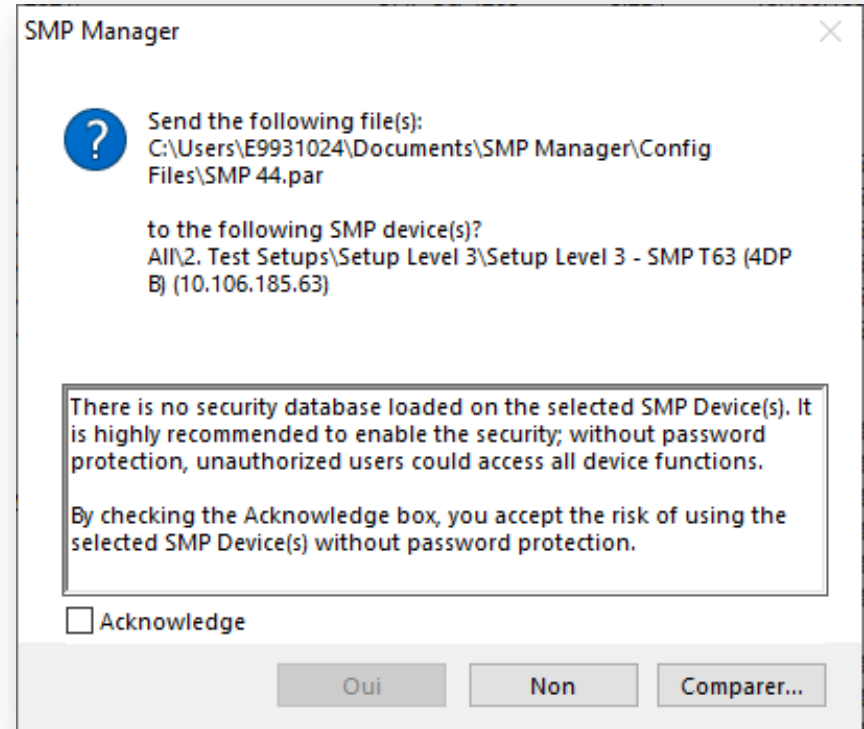
PTPv2 (IEEE-1588) Ports										
		Port	Enabled	Profile	Clock Domain	Path Delay Mechanism	VLAN Enabled	VLAN ID	802.1Q Priority	
1		ENETD1	<input type="checkbox"/>	Power Systems Profile IEEE/IEC 61850-9-3:2016	0	P2P	<input type="checkbox"/>	0	4	
2	▶	ENETD3	<input type="checkbox"/>	Power Systems Profile IEEE/IEC 61850-9-3:2016	0	P2P	<input type="checkbox"/>	0	4	
				Power Systems Profile IEEE/IEC 61850-9-3:2016						
				Default Ethernet 802.3 IEEE 1588-2008						
				Legacy Power Systems Profile (IEEE C37.238:2011)						

[8.2R3] SMP Manager : Forgetting the past

- SMP Gateway firmware 6.3Rx and newer are supported;
- VNP connection is disabled;
- Second IP Address concept is removed.

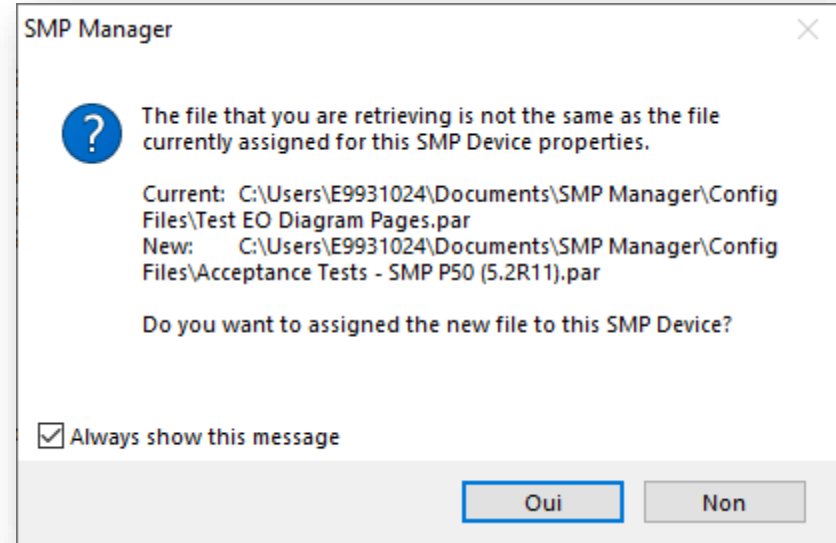
Enforcement of the Local Security

- When sending a configuration file (.par) to a SMP Device with **no local security**.
- To meet California Title 1.81.26 section 1798.91.04 (b)(2).



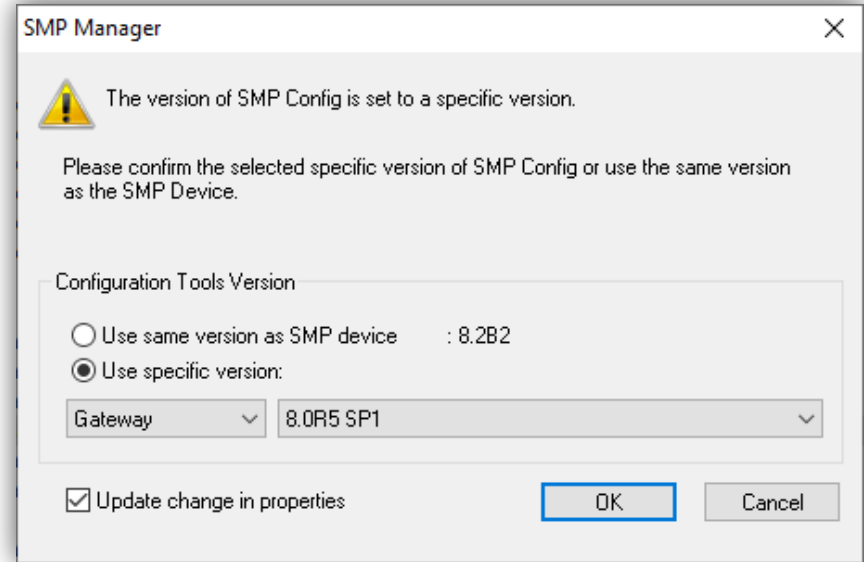
Configuration File Path Property

- Added an invitation to update the configuration file described in the properties of an SMP Device when downloading its configuration file, if it differs from the one currently configured.



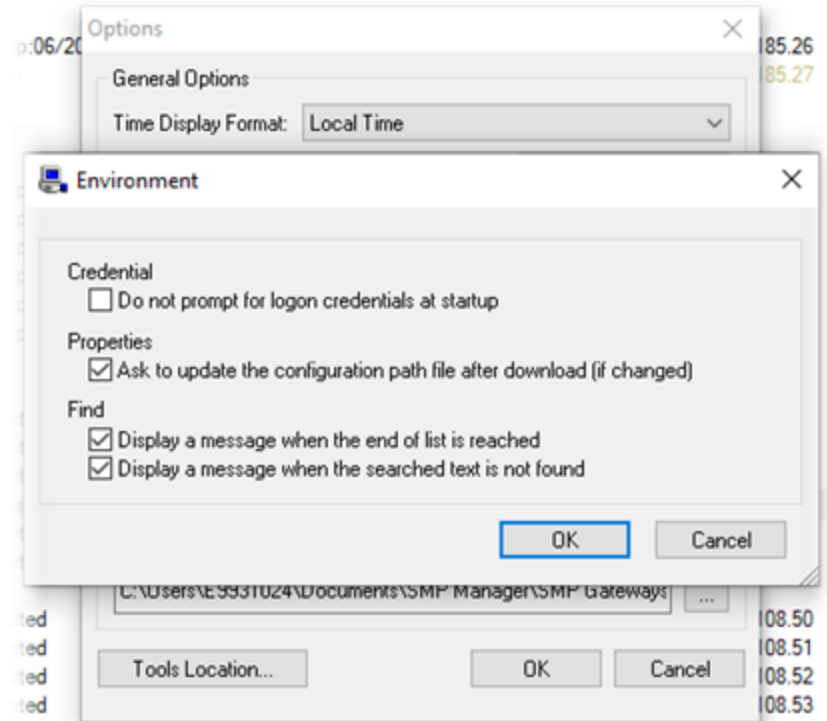
VP Management Improvement

- Added a warning when a configuration tool is launched (SMP Config, 61850 Config or SMP Diagram) when a specific version as been selected in the properties dialog.



Environment Parameters

- Added a panel to reset the “Do Not Ask Again” checkboxes
- Under : Tools / Options / Environment

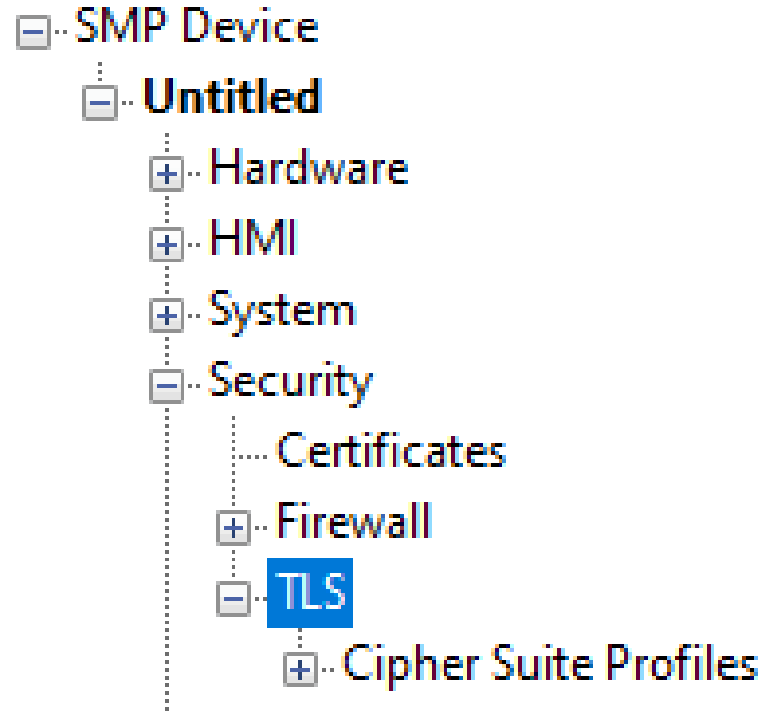


Security

- **[8.2R1]** No security fix in this version.
- **[8.2R2]** No security fix in this version.
- **[8.2R3]** No security fix in this version.

TLS

- **[8.2R2]** Removed the support of SSL 3.0 secured communication protocol (deprecated).
- **[8.2R2]** “SSL/TSL” was renamed for “TLS”.



Certificates

- **[8.2R2]** SGUM was updated for X.509 certificates.
- **[8.2R2]** Added “**SecurityCertificatesV1**” in the REST API to manage certificates.
 - The Security Management privilege is required;
 - See usage and samples in the API SDK.

Known Limitations / Risks

- The HMI takes longer to boot
 - *Fixed, released in 8.2R3 and 8.1R5(Q2 2023)*



HMI

- The **shape animation console** during an active commissioning session is now accessible for all diagrams created by the user in the Web HMI.
- Modification to generate an alarm when the point is of good quality or in test. The alarm is also generated when the point quality is "TEST" or when the commissioning tool is active (in "Simulated Allowed" or "Simulated Device" mode). In such a situation, the "[TEST]" indicator is added in the alarm history.

[8.2R3] Web REST API

- Python API
 - Added support for multiple connections.
 - This change affects the SMP API (Python) interface and breaks the compatibility with existing scripts.
 - Refer to the "ReadMe.md" file for more details.

Firmware release (2022)

- 8.0R8
 - SMP Logs correction
 - +23 Bug fixes (8.0R7)
- 8.1R4
 - +38 bug fixes (8.1R3)
- 8.2R3 - Sept 30th
 - Official Windows 11 support
 - Performance fix with DNP Master (String issue)
 - +70 bug fixes (8.2R2)

The SMP Gateway Platforms

Provide flexible, evolutive, scalable and performing platforms for all electrical utility **substation automation and integration** projects

SMP SG-4260



- Up to 128 IEDs
- Up to 64 Control Centers
- 20,000 tags
- Local and Remote HMI
- Up to 33 Serial ports
- Up to 10 Ethernet ports

SMP 4/DP

END OF DELIVERY 2024
REPLACEMENT



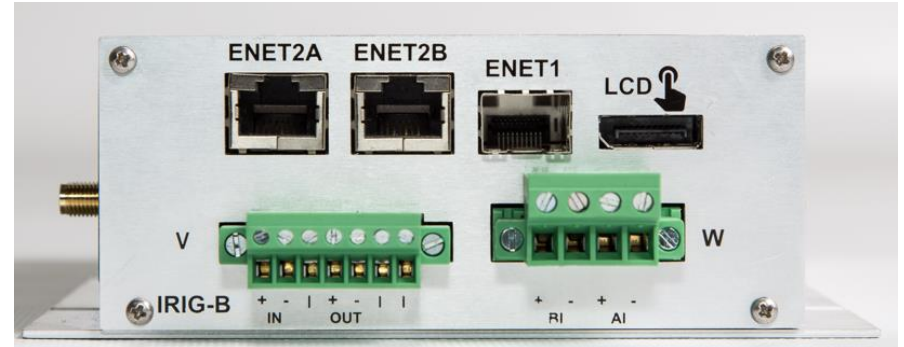
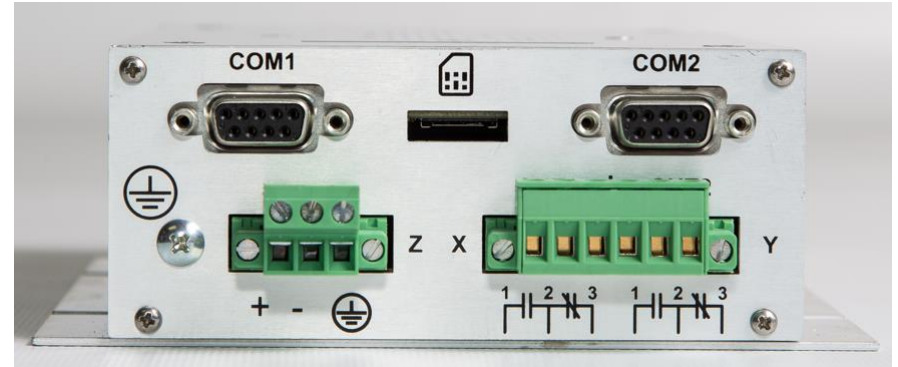
- Up to 32 IEDs
- Up to 8 Control Centers
- 10,000 tags
- Remote HMI
- 4 Serial ports
- 2 Ethernet ports

Good looking DA-3050



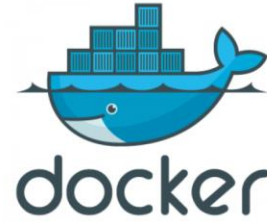
HW Features SMP DA-3050

- Direct SMP 4/DP replacement
- Integrated Cell Modem
- 1 SFP for network connectivity + 2 fix Ethernet (RJ45)
- Built-in BI/BO/AI
- Video port for HMI display
- Substation Grade



DA-3050 - Platform

- Linux YOCTO Build
- Docker support for running core engine
- Open platform with programmable interface to customize application (C#,C++, Python,..)



DA-3050 - Protocols

- DNP3 Client/Server SAv5
- IEC-61850 Ed.2 Client
- IEC 101/104
- OPC UA Client/Server
- Modbus Client



DA-3050 - Fonctionnalités

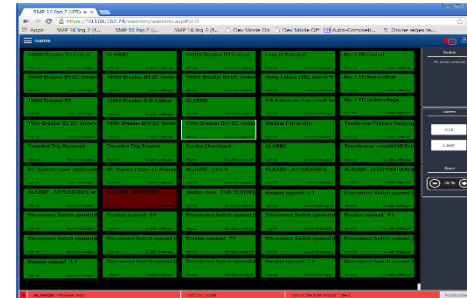
- SoftPLC CODESYS (upgraded)
- Passthrough
- Web HMI with real-time value and SLD
- Local HMI with 7" LCD for local control and status (auto generated)



A screenshot of the CODESYS software interface showing a table of variable declarations. The table has columns for Instance, Type, Name, Value, Set Value, State, Quality, Date, and Time. The data is as follows:

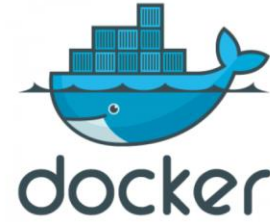
Instance	Type	Name	Value	Set Value	State	Quality	Date	Time
SEL_301	AI	sel181__ChaqueEmpCount	0.00	0	OK		Jul 15, 2015	10:52:37.373 -0400
DECL_301	AI	sel181__CommTimeauCount	494.00	#94	OK		Jul 15, 2015	10:52:37.374 -0400
DECL_301	AI	sel181__CommLinauCount	82.00	82	OK		Jul 15, 2015	10:52:37.374 -0400
SEL_301	AI	sel181_PNE	0.000 Hz	0	OK		Jul 15, 2015	10:52:37.374 -0400
SEL_301	AI	sel181_cbat	0.00 V	0	OK		Jul 15, 2015	10:52:37.374 -0400
DECL_301	AI	sel181_la	0.00 A	0	OK		Jul 15, 2015	10:52:37.374 -0400
DECL_301	AI	sel181_lb	100.00 A	100	OK		Jul 15, 2015	10:51:00.987 -0400
SEL_301	AI	sel181_lc	0.00 A	0	OK		Jul 15, 2015	10:52:37.374 -0400
SEL_301	AI	sel181_lh	0.00 A	0	OK		Jul 15, 2015	10:52:37.374 -0400
DECL_301	AI	sel181_li	0.00 A	0	OK		Jul 15, 2015	10:52:37.374 -0400
DECL_301	AI	sel181_la	0.00 V	0	OK		Jul 15, 2015	10:52:37.374 -0400
SEL_301	AI	sel181_lb	0.00 V	0	OK		Jul 15, 2015	10:52:37.374 -0400
SEL_301	AI	sel181_lc	0.00 V	0	OK		Jul 15, 2015	10:52:37.374 -0400
DECL_301	AI	sel181_lv	0.00 V	0	OK		Jul 15, 2015	10:52:37.374 -0400

At the bottom of the screenshot, there is a red status bar with the text "1 Alarm active" and "Acknowledge".

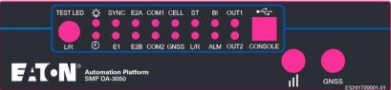
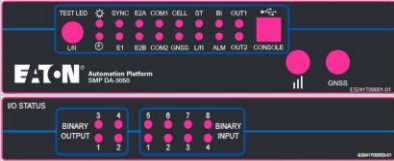
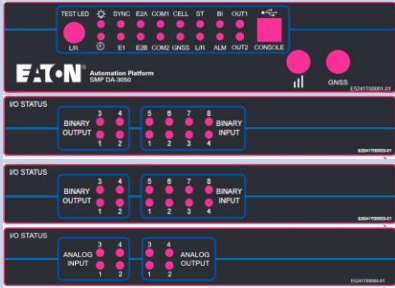
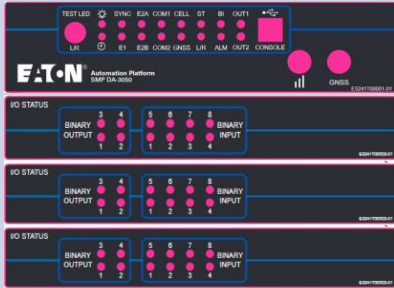


DA-3050 – Functionalities (next)

- Syslog
- SNMP
- SNMP v3
- SSH
- IMS Support
- Local Security
- Full SMP Tools Integration



Hardware Options DA-3050

Standalone unit SMP DA-3050	DA Cabinet SMP DA-3051	Full I/O SMP DA-3052	DA Cabinet – Ex SMP DA-3053
			
<ul style="list-style-type: none"> • 1 BI / 2 BO / 1 AI 	<ul style="list-style-type: none"> • 1 BI / 2 BO / 1 AI • +8 BI / 4 BO 	<ul style="list-style-type: none"> • 1 BI / 2 BO / 1 AI • +16 BI / 8 BO • +4 AI / 4 AO 	<ul style="list-style-type: none"> • 1 BI / 2 BO / 1 AI • +24 BI / 12 BO

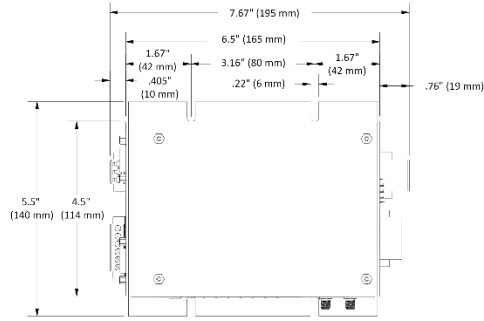
Scope SMP DA-3050 with additional I/O (2023)

- Stackable I/O modules
- Multiple options for I/O combination
- Din Rail/Wall mount/Rack mount arrangement

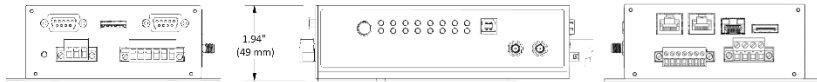


Mechanical – Form Factor

- **Wall mount** with bracket – direct fit with 4/DP bracket
- **Din-rail** option with bracket
- **Rackmount** with din rail



Top view



Left view

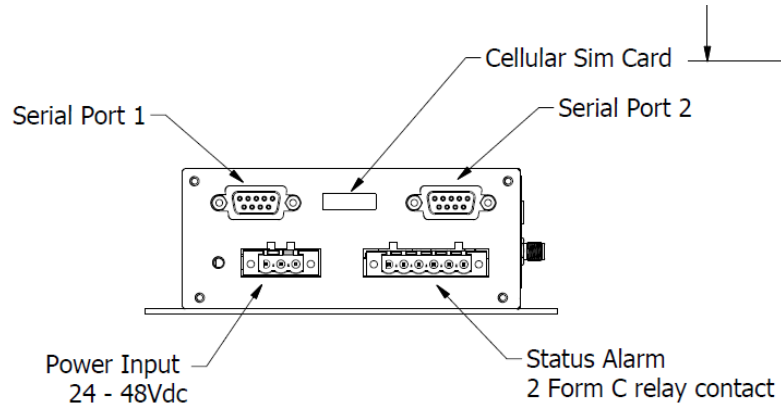
Front view

Right view



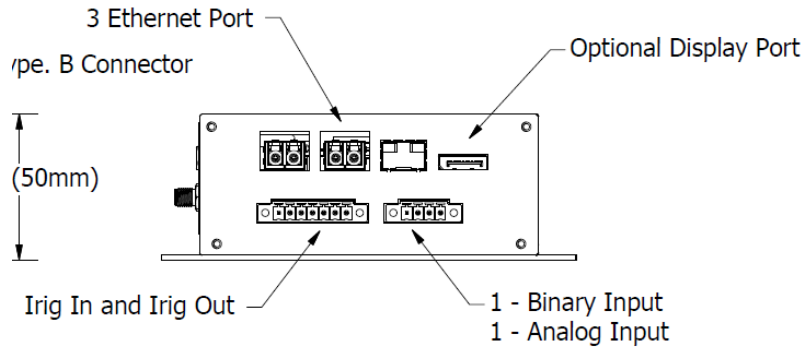
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DA-3050 - Back



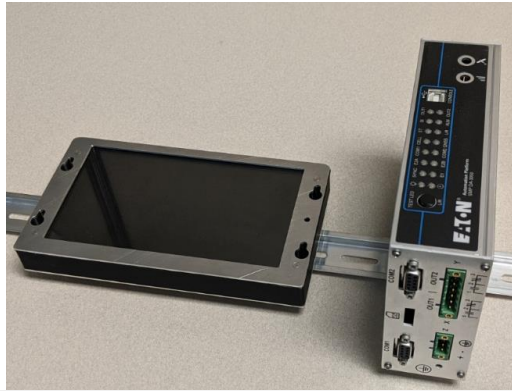
- **Two** Serial port RS-232/RS-485 (2-wire)
- Power input DC only 24-48 Vdc
- **Two** form-C relay contact
- Slot for Cellular Sim card

DA-3050 - Front



- 1 SFP port (LC or RJ45) / 1000/100/10 Mbps
- 2 fixed Ethernet ports in switch (100 Mbps) RJ45
- Optional External HMI 7" LCD Screen
- IRIG B In and IRIG B Out (Demodulated)
- 1 BI (24-48v) / 1 AI (0-48v)

7" Touchscreen Local HMI



- Resolution 1024 x 600
- Capacitive technology for advance gesture
- Multiple mounting option
- Local HMI display for Alarms and Controls

DA-3050 - Side



- USB port for maintenance
- LED for status
- Test LED and Local/Remote Control
- Cell Antenna SMA



Under the hood – Core components

- 1.6 Ghz Quad-Core CPU
- 1 GB RAM
- 8 GB FLASH (Storage)
- Secure boot
- Datasheet and Flyer available



Schedule

Phase	Target	
Phase 0	Q2 2023	Product Alpha prototype, for customer evaluation
Phase 1	Q4 2023	MVP product DA-3050

Scope SMP DA-3010 Preview (2024) TBD

Market segment

- Secure existing cabinet enclosure for remote access
- Energy monitoring and optimization for buildings
- IoT integration with Eaton Brightlayer cloud support

Industrial IoT small footprint device

- Optional Integrated cell modem
- 2 Ethernet port
- Expandable Remote I/O
- 24 Vdc supply
- WIFI / Bluetooth / GPS
- Stripped hardware for very attractive price ~500 USD

Embedded Software

- VPN Tunneling with L2TP and IPSEC encryption
- Key Management
- DNP, IEC-61850, Modbus, IEC-101/104, OPC UA
- 5 Clients / 1 Server / 10,000 Tags
- Integrated Firewall



SMP IO-2330 Launch (SG-4260 + SMP IO-2330)



HMI



Secure remote
access



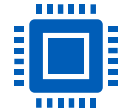
Fleet
Management



No re-wiring or
cable labelling



Save 50% on
replacement cost

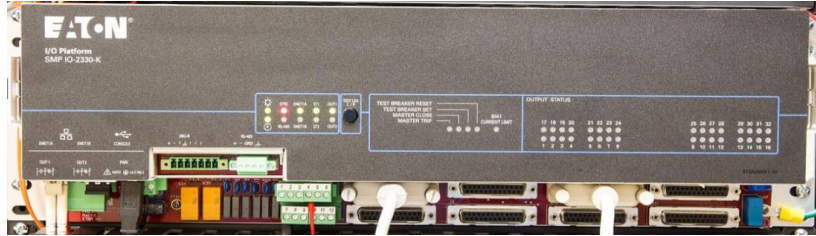


Linux based OS

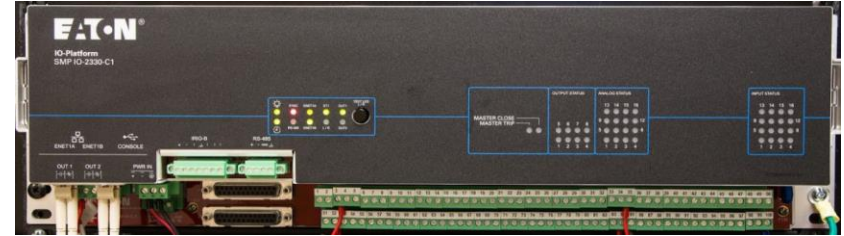


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SMP IO-2330 Model Presentation



SMP IO-2330 KR(DB25) / K(TB)



SMP IO-2330 C1



SMP IO-2330 A



SMP IO-2330 S

SMP IO-2230/2330 - Update

1.6R1 :

- Support SMP IO-2330
- Embedded Configuration support

1.6R2 :

- Enable embedded MicroPLC to send command (output) to a device

2.0R1 :

- TLS/SSL Support for Scada communication
- Certificate management
- Possibility to disable ENET1a/b if not used
- Revisit the Local security enforcement

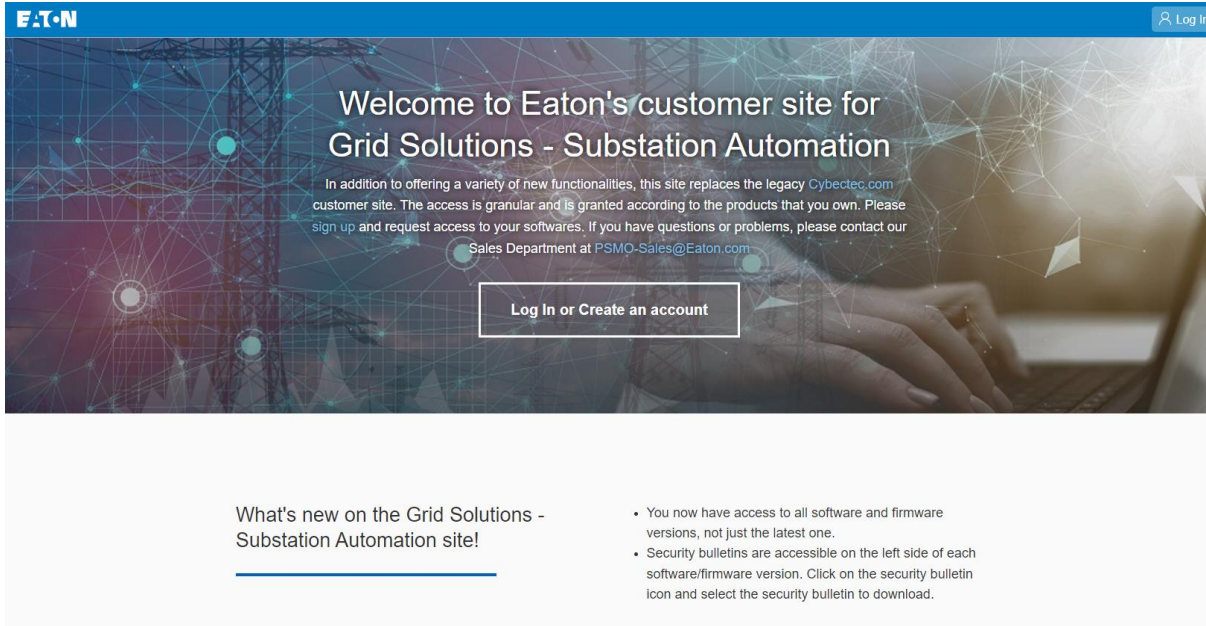
2.0R2 :

- Important correction for IO-2330 AI scaling issue when using Current mode
- 61850 Server improvement , logical points and statistics



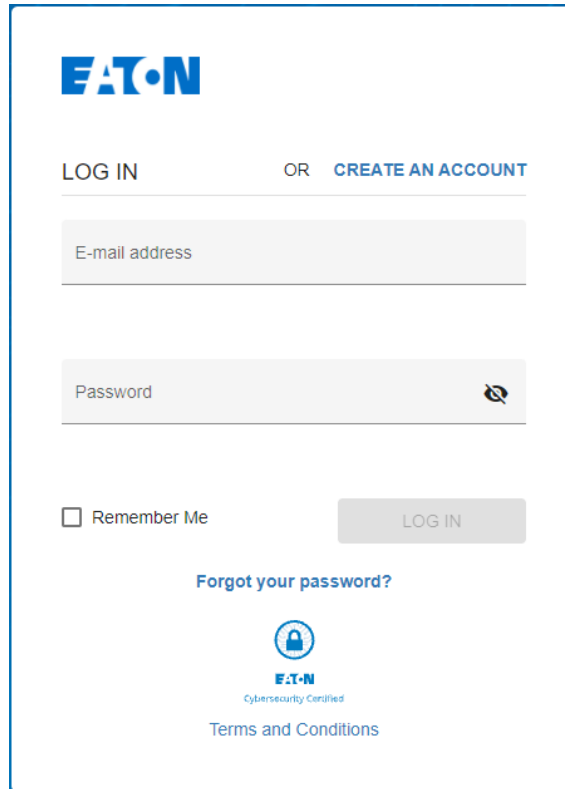
New Customer Portal – Home Page

<https://gridsolutions.eaton.com>



The screenshot shows the home page of the Eaton Grid Solutions - Substation Automation customer portal. The page features a blue header with the Eaton logo and a 'Log In' button. The main content area has a background image of a power substation with a network overlay. The text reads: 'Welcome to Eaton's customer site for Grid Solutions - Substation Automation'. Below this, it states: 'In addition to offering a variety of new functionalities, this site replaces the legacy [Cybetec.com](#) customer site. The access is granular and is granted according to the products that you own. Please sign up and request access to your softwares. If you have questions or problems, please contact our Sales Department at PSMO-Sales@Eaton.com'. A central button says 'Log In or Create an account'. Below the main content, there is a section titled 'What's new on the Grid Solutions - Substation Automation site!' followed by a list of updates: '• You now have access to all software and firmware versions, not just the latest one.' and '• Security bulletins are accessible on the left side of each software/firmware version. Click on the security bulletin icon and select the security bulletin to download.'

New Customer Portal – Create account




The screenshot shows a web form for logging in or creating an account. At the top left is the Eaton logo. Below it are two links: "LOG IN" and "OR CREATE AN ACCOUNT". There are two input fields: "E-mail address" and "Password". The "Password" field has a toggle icon for visibility. Below the fields is a checkbox for "Remember Me" and a "LOG IN" button. At the bottom, there is a link for "Forgot your password?", a "Cybersecurity Certified" logo, and a link for "Terms and Conditions".

EATON


LOG IN OR [CREATE AN ACCOUNT](#)

E-mail address

Password 

Remember Me [LOG IN](#)

[Forgot your password?](#)


EATON
Cybersecurity Certified

[Terms and Conditions](#)

New Customer Portal

Grid Solutions
Substation Automation

Software downloads

Product life cycle

Software Downloads

FT

My Software

SMP IO-2000 series Distributed I/O and RTU Upgrade solution

SMP Gateway automation platform

The commodities, technology, or software provided to you here with are subject to the united state export administration regulations (EAR). Any export or re-export of this technology must comply with EAR. Diversion contrary to U.S. law is prohibited. ECCN:EAR99

Version 8.2 [\(View Release Notes\)](#)

Compatible with the following SMP Gateway platforms:

- SMP SG-4260
- SMP SG-4250
- SMP 4/DP



8.2R1
2021-07-07

Version 8.1 [\(View Release Notes\)](#)

Compatible with the following SMP Gateway platforms:

- SMP SG-4260
- SMP SG-4250
- SMP 4/DP








8.1R3
2021-07-30



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New Customer Portal

-   **Grid Solutions**
Substation Automation
-  Downloads
-  Life Cycle
-  Technical Bulletins

Software Downloads

FT

My Products

	CoDeSys Workbench	 
	IED Management Suite	 
	SMP IO-2000 series Distributed I/O and RTU Upgrade solution	 
	SMP Gateway automation platform	 
	Visual T&D	 

Available Products

New Customer Portal



Software downloads

Product life cycle

Products Life Cycle

[SMP IO Platform Life Cycle Table - Jan 2020](#)

[SMP IO Software Life Cycle Table - March 2021](#)

[SMP Gateway Platform Life Cycle Table - April 2018](#)

[SMP Gateway Software Life Cycle Table - Aug 2021](#)



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Gateway report analyzer (File Analytics)

- Provide recommendation
- Detect obvious configuration error
- Detect security compliance
- Suggest new firmware with fixes

!	10:52:27 2022-07-14	Abnormal Restart Cause - Assert
!	10:52:40 2022-07-14	Abnormal Restart Cause - Software Exception
!	10:51:57 2022-07-14	Abnormal Restart Cause - Software Watchdog
!	10:51:38 2022-07-14	Flash - Read Disturbance Issue
!	10:52:06 2022-07-14	Security - Firewall Disabled
i	10:52:33 2022-07-14	Fix available for DNP3 server version 8.1R2 and below
✓	10:52:44 2022-07-14	Abnormal Restart Cause - Bad power Status
✓	10:52:37 2022-07-14	Abnormal Restart Cause - Hardware Watchdog
✓	10:51:48 2022-07-14	Abnormal Restart Cause - Kernel Watchdog
✓	10:52:23 2022-07-14	Abnormal Restart Cause - Software Exception - HTTP Server (Prototype)
✓	10:51:45 2022-07-14	Communication - IP Network - Default Gateways
✓	10:52:14 2022-07-14	Communication - Serial Port - Reception Errors

SMP Platform Lifecycle 2023

Last Update: August 2022

Hardware Release Date (HR)
Not recommended for new design (NRND)
Last time buy announcement (LTBA)
Last time buy (LTB)
End of delivery (EoD)
End of hardware support (EoHS)
Last supported software version
End of new software features development
End of software support (EoSS)
End of cyber-security watch (EoCSW)

SMP SG-4200 Product family	
SMP SG-4260 Intel® Atom E3845 Quad Core 1.91 GHz	SMP SG-4250 Atom D525 1.8 GHz
Oct 2017	Jun 2014
Dec 2026	Dec 2017
Mar 2027	Sep 2019
Mar 2028	Mar 2020
2038-12-31 ²	2027-12-31 ²
To Be Determined ¹	To Be Determined ¹
Dec 2027	Dec 2027
Dec 2032	Dec 2032
Dec 2037	Dec 2037

SMP 16 Product family		
SMP 16/CP-PM SMP 16/SG-PM Pentium 1.4 GHz	SMP 16/CP-CM SMP 16/SG-CM Celeron 600 MHz	SMP 16/CP SMP 16/SG Geode 266 MHz
Mar 2007	Feb 2013	May 2005
Jun 2015	Jun 2015	Aug 2010
Mar 2017	Mar 2017	Mar 2011
Jul 2017	Jul 2017	Jul 2011
2025-06-30 ²	2025-06-30 ²	Mar 2020
8.0	8.0	6.3
Apr 2018	Apr 2018	Mar 2013
Apr 2023	Apr 2023	Mar 2018
Apr 2028	Apr 2028	Mar 2023

SMP 4 Product family	
SMP 4/DP OMAP35x 600 MHz	SMP 4 Geode 266 MHz
Mar 2011	May 2005
Sep 2022	Aug 2010
Dec 2023	Oct 2010
Jun 2024	Dec 2010
2029-09-30 ²	Dec 2020
To Be Determined ¹	6.3
Dec 2023	Mar 2013
Dec 2028	Mar 2018
Dec 2033	Mar 2023

Note 1: To Be Determined means that the life-cycle of this model is not near the end.

Note 2: Or with compatible hardware if not available



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SMP Software Lifecycle 2023

SMP Gateway - Life Cycle and compatibilities												Last Update: October 2022	
Versions	Release Date (SR)	End of Support (EoS)	End of Cyber-Security Watch	Last Revision	Windows Server Operating System Supported	Windows Client Operating System Supported	MS SQL Version Supported	Web Browser Supported	JAVA Runtime Required	SMP Gateway supported by SMP Manager	SMP Gateway supported models	SMP I/O Supported	
Version 8													
8.2	juil 2021	juil 2024	juil 2029	8.2R3	2019 2016	11 10 x64 b1909	2019 Express LocalDB 2014 Express LocalDB (others)	Chrome Edge	None	Any model: Version 5.2 to 8.2	SG-4260 SG-4250 SMP 4/DP	2.0 & 3.0	
8.1	juil 2020	juil 2023	juil 2028	8.1R4	2019 2016 2012 R2	10 8.1	2014 Express LocalDB (others) 2008 R2 Express (2003)	Chrome Edge	None	Any model: Version 5.2 to 8.1	SG-4260 SG-4250 SMP 4/DP	2.0 & 3.0	
8.0	avr 2018	avr 2023	avr 2028	8.0R8	2016 2012 R2 2008 R2	10 8.1 7	2014 Express LocalDB (others) 2008 R2 Express (2003)	IE 11 IE 10 IE 9 Chrome	None	Any model: Version 5.0 to 8.0	SG-4260 SG-4250 SMP 4/DP SMP 16/XX-CM SMP 16/XX-PM	2.0 & 3.0	
Version 7													
7.2	avr 2017	avr 2020	avr 2025	7.2R6	2012 R2 2008 R2	10 8.1 7	2014 Express LocalDB (others) 2008 R2 Express (2003)	IE 11 IE 10 IE 9 Chrome	None	Any model: Version 5.0 to 7.2	SG-4250 SMP 4/DP SMP 16/XX-CM SMP 16/XX-PM	2.0 & 3.0	
7.1	août 2015	août 2018	août 2023	7.1R5	2012 R2 2008 R2 2003 R2	10 8.1 7	2014 Express LocalDB (others) 2008 R2 Express (2003)	IE 11 IE 10 IE 9 Chrome	None	Any model: Version 5.0 to 7.1	SG-4250 SMP 4/DP SMP 16/XX-CM SMP 16/XX-PM	2.0 & 3.0	
7.0	juin 2014	juin 2017	juin 2022	7.0R7	2012 R2 (>= 7.0R5) 2008 R2 2003 R2	8.1 (>= 7.0R5) 7	2008 R2 Express (others) 2000 MSDE (2003)	IE 11 IE 10 IE 9	8 (>= 7.0R5) 6 (< 7.0R5)	Any model: Version 5.0 to 7.0	SG-4250 SMP 4/DP SMP 16/XX-CM SMP 16/XX-PM	2.0 & 3.0	
Version 6													
6.3	juil 2013	juil 2018	juil 2023	6.3R7	2012 R2 (>= 6.3R5) 2008 R2 2003 R2	8.1 (>= 6.3R5) 7	2008 R2 Express (others) 2000 MSDE (2003)	IE 9 IE 8 IE 7	8 (>= 6.3R5) 6 (< 6.3R5)	Any model: Version 4.0 to 6.3	SMP 4/DP SMP 4 SMP 16	2.0 & 3.0	



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SMP Roadmap

Short term	Mid term	Long term
<p>Firmware 8.1</p> <p>Configuration file integration</p> <ul style="list-style-type: none">• Automatic Passthrough(proxy)• Embedded file in .par file <p>Firmware 8.2</p> <ul style="list-style-type: none">• OPC UA Server Q2 2021• OPC UA Client Q4 2021• Windows Embedded 2013 upgrade <p>Firmware 8.3+</p> <ul style="list-style-type: none">• New CODESYS runtime with more capabilities• And more	<p>DA-3050 (2023)</p> <ul style="list-style-type: none">• SMP4/DP + I/O <p>DA-3010 (2024)</p> <ul style="list-style-type: none">• IoT Plaform – Industrial Grade <p>Configuration Tool</p> <ul style="list-style-type: none">• SMP Config/61850 Redesign• Integrated Logic (SoftPLC) <p>PTP/PRP Software development</p> <ul style="list-style-type: none">• Develop a software only solution <p>Virtual SMP (2023)</p> <ul style="list-style-type: none">• Linux Container with Docker using new SMP architecture	<p>SG-5000 (2024-2025)</p> <ul style="list-style-type: none">• Improved hardware capacity (CPU, RAM) <p>Online Service</p> <ul style="list-style-type: none">• Testing Services <p>Customer-oriented testing</p> <p>Automated reporting</p> <p>Specific upgrade test</p> <ul style="list-style-type: none">• Development Services







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