

Designo™

CFG3.F100

Product Datasheet



CFG3.F100 is an embedded hardware solution built on Designo Optic, powered by FIN Framework. It provides monitoring, control, scheduling, alarming, visualization, integration, and analytics capabilities.

- Designed to be open, supports all major protocol standards used in buildings today.
- Enables integration with a variety of building systems and Internet of Things (IoT) deployments using the latest technology.
- The software uses several open-source programming libraries that enable the utilization of AM Charts for dashboards and React UI tools for improved functionality.
- Utilizing the Template Wizard, allows for the easy integration of DXR controllers supporting variable air volume terminal units, fan coil units, heat pumps, and chilled water beam applications.
- Semantic tagging, designed using the latest Project Haystack standards, supports the full integration of points and devices offering advanced workflow efficiencies as it relates to graphic creation, summaries, and programming.

Description

The Haystack open-source project is a major component of Desigo Optic. Haystack uses tagging to automate the configuration process and deliver context-sensitive information to give users more detail to make better-informed decisions in their system operation.

Desigo Optic offers many features to improve system performance, deployment, and security. Using the Folio 3.0 database, Desigo Optic supports clustering and replication while offering a faster and larger query performance. The new DB Builder UI for database creation has multiple tree views with the ability to drag-and-drop gives the user greater engineering efficiency. Features such auto-generated configuration from spreadsheets enable the faster and easier creation of an entire project. This is supported by increased Templating support for Siemens controllers and devices. Desigo Optic has passed ISTS penetration testing and is designed to comply with the IEC62443 security standard.

Features

- Ability to integrate 1000 data points with capacity to trend up to 400 data points on interval or COV.
- On-board library of DXR templates allowing for simple integration of devices with graphics, trending, global programming, and documentation pre-defined.
- Web responsive, mobile friendly design with no additional graphics or programming.
- HTML5 and CSS3 that allows support with many common web browsers, such as Chrome
- Enhanced 3D equipment graphics and charts.
- Haystack tagging for efficient integration helping to automate configuration, provide more detail, and lower setup time.
- Support of nHaystack integration of legacy Niagara systems.
- Customized Templating to assist in integration of DXRs and other Siemens branded devices.
- Ability to clone and replicate common devices for simplified database creation and user interface rollout.
- Ability to email alarms and reports to users for quick response and review of system operation.
- Notes App allows documentation of system issues and maintenance to improve communication amongst users.
- Through global programming in Logic Builder, integrated points can be programmed together for improved sequence of operation and energy savings.
- Built-in Scheduler allows the system to be scheduled for day-to-day, special events, and holidays from the user interface.

Functions

- System functions (alarming, scheduling, trending, access protection with individually definable user profiles and categories)
- Built on Haystack semantic tagging model for data normalization and relativization
- System controller for system networks communicating with IP based protocols (BACnet, Modbus and SNMP) with other advanced protocols (Haystack, OPC and SQL)
- Engineering and commissioning through Chrome browser
- HTML5 graphical user interface
- Integrates third-party devices and systems
- Applications for graphical user interface, scheduling, trending, and alarming

Technical and mechanical design

The compact build allows for mounting the devices on a standard rail or a wall.

	1	Plastic housing	
	2	Front cover	
	3	LED display for communication and state	
	4	Service pin (network login)	
	5	2-port Ethernet switch with 2 LEDs per port for display purposes	
	6	Plug-in terminal block with screw terminals KNX, PL-link, for future use	
	7	Plug-in terminal block with screw terminals Power supply	
	8	Plug-in terminal blocks with screw terminals Digital input, for future use	
	9	Plug-in terminal block with screw terminals M-bus, for future use	
	10	Plug-in terminal block with screw terminals - planned for future	
11	DIP switches for bus termination and polarization EIA-485, not used	14	Holes for wall mounting
12	Slider for mounting on standard mounting rails	15	Date / Series and Serial number
13	Eyelets for cable ties		

LED displays

Activity	LED	Color	Activity	Function
	Ethernet 1/2	Green	Continuously ON Continuously OFF Flashing	Link active No connection Network traffic
		Yellow	Continuously ON Continuously OFF	Link 100 Mbps Link 10 Mbps
	RUN	Green	Continuously ON Continuously OFF Flashing	Device operational Device not operational Start-up or program halted
		Red	Continuously OFF Continuously ON Rapid flashing	OK HW or SW fault Firmware or application missing/corrupted
	Cloud	Blue	Continuously ON Continuously OFF	Connection to the cloud OK No connection to the cloud
	BAT	Red	Continuously OFF Continuously ON	Optional battery OK Optional battery empty - replace
	SVC	Red	Continuously OFF Continuously ON Flashing Flashing per wink command	OK No connection to switch or DHCP server No IP address configured Physical ID of system controller after receipt of wink command

Activity	LED	Color	Activity	Function
SVC	Service pin		Short press (< 1 s)	Identification on the network

Type summary

Type	Order number	Description
CFG3.F100	S55842-Z132	System controller for the integration of: <ul style="list-style-type: none"> • up to 1000 data points • 400 trendable points (COV, Interval)

Product documentation

Topic	Title	Document ID:
Optic Tools	Tools User Guide	A6V11890766
End User Apps	End User Apps	AV611890769
System Integrator Apps	System Integrator Apps	A6V11890771

Related documents such as environmental declarations, CE declarations, etc., can also be downloaded at the following Internet address:

www.siemens.com/bt/download

Notes

The subsections include important information that is either decisive for the sale or essential for engineering.



Security

CAUTION	
	<p>National safety regulations</p> <p>Failure to comply with national safety regulations may result in personal injury and property damage.</p> <ul style="list-style-type: none"> • Observe national provisions and comply with the appropriate safety regulations.

Mounting position and ambient temperature

You can snap the devices onto standard rails or screw them onto a flat surface. Plug-in screw terminals connect power and interfaces (except for Ethernet).

Ambient temperature – 23...122 °F (-5...50 °C)	Ambient temperature – 23...113 °F (-5...45° C)
<ul style="list-style-type: none"> ● Wall, horizontal <ul style="list-style-type: none"> – From left to right – From right to left 	<ul style="list-style-type: none"> ● Overhead ● Wall, vertically <ul style="list-style-type: none"> – From top to bottom – From bottom to top ● On a horizontal surface

 CAUTION	
	<p>Risk of overheating for failure to comply with ambient temperature</p> <p>Burning and damage to the device</p> <p>Ensure sufficient ventilation to comply with the permissible ambient temperature within the panel or installation box. The temperature must be 18 °F (10 °C) = lower outside the installation box.</p>

Technical data

Function data

Hardware information	
Processor	NXP i.MX8 DualX
Storage	1 GByte RAM 8 GByte eMMC

Response to power/communication failure
Energy reserve (Supercap) to support real-time clock (7 days).
Energy reserve can be extended using optional battery CR2032 (lasts min. 1 month)
Data available only if stored to flash memory. Occurs every 10 minutes.

Conformity

Ambient conditions and protection classification	
Classification as per EN 60730	Type 1
Automatic action	Class A
Control function	2
Degree of pollution	III
Overvoltage category	
Design	Suitable for use in protection class I or II systems

Ambient conditions and protection classification	
Degree of protection of housing to EN 60529 Front parts in DIN cut-out Terminal part	IP30 IP20
Climatic ambient conditions <ul style="list-style-type: none"> Storage / Transport (packaged for transport) as per IEC EN 60721-3-2 Operation as per IEC/EN 60721-3-3 	<ul style="list-style-type: none"> Class 1K22 / 2K21 Temperature -25...70 °C (-13...158 °F) Air humidity 5...95 % (non-condensing) Class 3K22 Temperature -5...50 °C (23...122 °F) <i>(for details see chapter Mounting)</i> Air humidity 5...95 % (non-condensing)
Mechanical ambient conditions <ul style="list-style-type: none"> Transport per IEC/EN 60721-3-2 Operation as per IEC/EN 60721-3-3 	<ul style="list-style-type: none"> Class 2M11 Class 3M11

Standards, directives and approvals	
Product standard	EN 60730-1
Product family standard	EN 50491-x
Electromagnetic compatibility (EMC)	For residential, commercial, and industrial environments
EU conformity (CE)	See CE declaration ¹⁾
EAC compliance	Eurasian compliance
UL/cUL approbation (US / Canada)	UL916; http://ul.com/database
CSA certification	C22.2, http://csagroup.org/services-industries/product-listing
FCC	CFR 47 Part 15 Class B
BACnet.	B-BC
Environmental compatibility ¹⁾	The product environmental declaration ¹⁾ contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).

¹⁾ Documents can be downloaded at <http://siemens.com/bt/download>.

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. this device must accept any interference received, including interference that may cause undesired operation

FCC Caution: Changes or modifications not expressly approved by Siemens Switzerland Ltd. could void user authority to operate the equipment. United States representative <https://new.siemens.com/us/en/products/buildingtechnologies/home.html>

Industry Canada statement

This device complies with ISED's license-exempt RSSs. Operation is subject to the following two conditions:

1. This device may not cause interference, and
2. this device must accept any interference received, including interference that may cause undesired operation.

Housing

Housing

Color top/bottom	RAL 7035 (light grey) / RAL 7016 (anthracite)
Dimensions	per DIN 43 880, see dimensions
Weight with/without packaging	351 g / 391 g

FCC NOTE for USA: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC rules. Changes or modifications not expressly approved by Siemens Switzerland Ltd. could void the user's authority to operate the equipment. United States representative:

<https://new.siemens.com/us/en/products/buildingtechnologies/home.html>

RSS-GEN note for Canada: This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the follow-in two conditions:

This device complies with Industry Canada license-exempt RSS --standard(s)

- (1) This device may not cause interference.
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

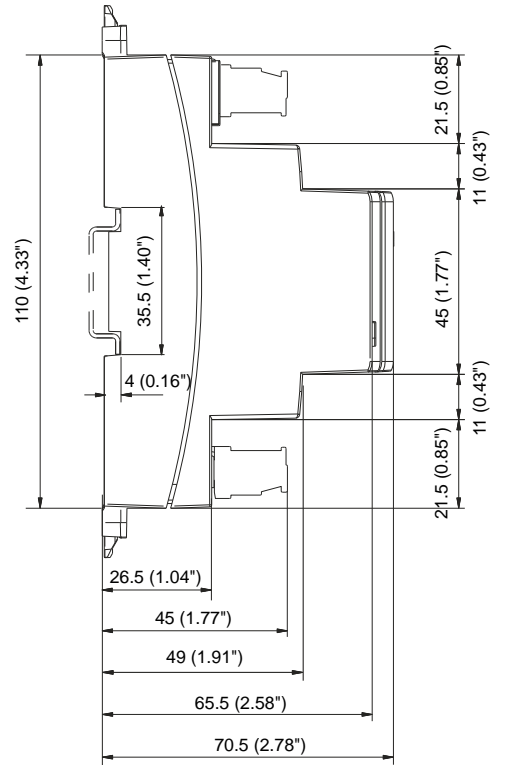
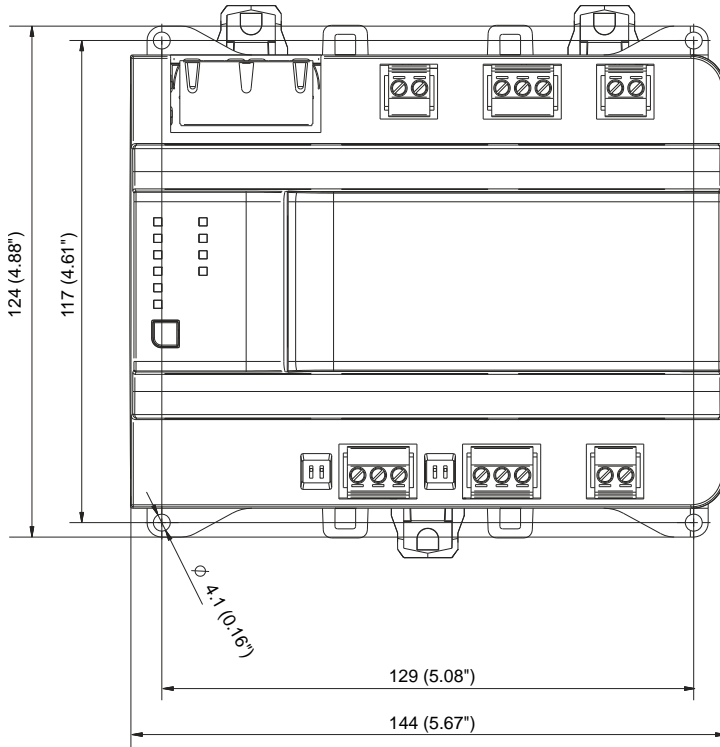
- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Warranty

Technical data on specific applications are valid only together with Siemens products listed under "Equipment combinations". Siemens rejects any and all warranties in the event that third-party products are used.

Dimensions

All dimensions in mm (inches).



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Siemens Industry, Inc.
Smart Infrastructure
1000 Deerfield Pkwy
Buffalo Grove IL 60089
+1 847-215-1000

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