Certificate No:
TAA00003AX

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Peripheral Equipment

with type designation(s)
IPC227G / IPC277G Series

Issued to
Siemens Industrial Automation Products Ltd., Chengdu
Chengdu City, Sichuan Province, P.R. China, China

is found to comply with
DNV rules for classification – Ships, offshore units, and high speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.
Location classes:

Temperature	**D**
Humidity	**B**
Vibration	**A**
EMC	**B***
Enclosure	**B***

*** see Application/Limitation**

Issued at **Hamburg** on **2023-12-21**
This Certificate is valid until **2028-12-20**.
DNV local unit: **Nanjing NB & CMC**

Approval Engineer: **Heinz Scheffler**

for **DNV**

Joannis Papanuskas
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.

Product description
SIMATIC IPC277G (Nanopanel PC)

The product designation of the device is made from combining the desired product characteristics in accordance with the following structure / nomenclature.

Nomenclature:

6AV7	8	8	6	-	0	**a**	**b**	**c**	**d**	-	**e**	**f**	**g**	0

Position	Characteristic	Characteristic value	Description
a	Front Panel	A	7" Multitouch (800 x 480)
		B	10" Multitouch (1280 x 800)
		C	12" Multitouch (1280 x 800)
		D	15" Multitouch (1920 x 1080)
		E	19" Multitouch (1920 x 1080)
		F	22" Multitouch (1920 x 1080)
		G	24" Multitouch (1920 x 1080)
		Q	7" (800 x 480) Multitouch neutral
		R	10" (1280 x 800) Multitouch neutral
		S	12" (1280 x 800) Multitouch neutral
		T	15" (1920 x 1080) Multitouch neutral
		U	19" (1920 x 1080) Multitouch neutral
		V	22" (1920 x 1080) Multitouch neutral
		W	24" (1920 x 1080) Multitouch neutral
b	Processor / TPM	A	Atom X6211E (2-Core)
		B	Atom X6413E (4-Core)
		C	Atom X6414RE (4-Core)
		D	Atom X6211E (2-Core) / TPM
		E	Atom X6413E (4-Core) / TPM
		F	Atom X6414RE (4-Core) / TPM
c	RAM / USB-Stick	1	4 GB RAM / with USB-Stick (Restore-Image; D&D
		2	8 GB RAM / with USB-Stick (Restore-Image; D&D)
		3	16 GB RAM / with USB-Stick (Restore-Image; D&D)
		4	4 GB RAM / w/o USB-Stick (Restore-Image; D&D)
		5	8 GB RAM / w/o USB-Stick (Restore-Image; D&D)
		6	16 GB RAM / w/o USB-Stick (Restore-Image; D&D)
d	Hardware configuration	1	without COM
		2	1x COM
		3	2x COM
		4	Slim housing - without COM
e	Drive	1	without drive
		2	256 GB Eco SSD
		3	240 GB SSD
		4	480 GB SSD
f	Hardware extension	A	without HW extension
		B	NVRAM
g	Software configuration	A	without Software
		B	Windows 10 IoT Enterprise 2019 LTSC
		C	Windows 10 IoT Enterprise 2021 LTSC

SIMATIC IPC227G (Nanobox PC)

The product designation of the device is made from combining the desired product characteristics in accordance with the following structure / nomenclature.

Nomenclature:

6ES7	6	4	7	-	8	C	**a**	**b**	**c**	-	**d**	**e**	**f**	**g**

Position	Characteristic	Characteristic value	Description
a	Processor / TPM	A	Atom X6211E (2-Core)
		B	Atom X6413E (4-Core)
		C	Atom X6414RE (4-Core)
		D	Atom X6211E (2-Core) / TPM
		E	Atom X6413E (4-Core) / TPM
		F	Atom X6414RE (4-Core) / TPM
b	RAM / USB-Stick	1	4 GB RAM / with USB-Stick (Restore-Image; D&D
		2	8 GB RAM / with USB-Stick (Restore-Image; D&D)
		3	16 GB RAM / with USB-Stick (Restore-Image; D&D)
		4	4 GB RAM / w/o USB-Stick (Restore-Image; D&D)
		5	8 GB RAM / w/o USB-Stick (Restore-Image; D&D)
		6	16 GB RAM / w/o USB-Stick (Restore-Image; D&D)
c	Hardware configuration	1	without COM
		2	1x COM
		3	2x COM4
d	Drive	1	without drive
		2	256 GB Eco SSD
		3	240 GB SSD
		4	480 GB SSD
e	Hardware extension	A	without HW extension
		B	NVRAM
		C	AI Accelerator
f	Software configuration	A	without Software
		B	Windows 10 IoT Enterprise 2019 LTSC
		C	Windows 10 IoT Enterprise 2021 LTSC
		E	SIMATIC Industrial OS
		W	Industrial Edge - SIMATIC
g	Mounting	0	without mounting
		1	DIN-Rail
		2	Wall-mount
		3	Book-mount

Application/Limitation

IPC 277G Location class EMC B: Only with EMC filter model FS20929-6-6
Location class Enclosure: IP 65 tested

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Product certificate
If specified in the Rules, ref. Pt.4 Ch.9 Sec.1, the control and monitoring system in which the above listed hardware is used shall be delivered with a product certificate. For each such delivery the certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. The test shall be done according to an approved test program. After the certification the clause for application software control will be put into force.

Clause for application software control
All changes in software are to be recorded as long as the system is in use on board. The records of all changes are to be forwarded to DNV for evaluation and approval. Major changes in the software are to be approved before being installed in the computer.

Type Approval documentation

Tests carried out

Applicable tests according to class guideline DNV-CG-0339, August 2021

Place of manufacture

Siemens AG - Digital Industries - Process Automation, Karlsruhe, Germany

Marking of product

The products to be marked with:

- Model name
- Manufacturer name
- Serial number

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer’s product type marking and the type approval certificate

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE