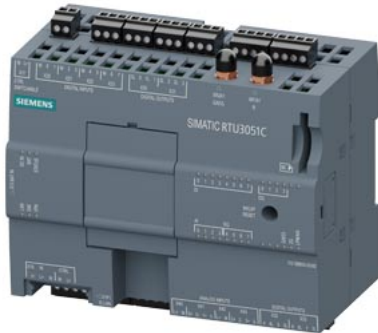


### product type designation



### RTU3051C

SIMATIC RTU3051C compact low-power RTU; battery or solar-operated; connection external power supply 10.8 V to 28.8 V DC; integrated modem for LTE-M/NB-IoTV2; GNSS; connection to TeleControl Server Basic; loadable protocols: DNP3, IEC 60870-5-104, SINAUT ST7 or MQTT; onboard I/Os: 8 DI, 8 DO, 4 AI; FTP client; Ethernet port, configuration/diagnostics via web server, time-of-day synchronization, SMS, email, SD card slot. observe national approvals!

### product brand name

SIMATIC NET

### Technical Product Detail Page

<https://i.siemens.com/1P6NH3112-5BB00-0XX0>

### operating mode

Standby mode (Sleep mode), Actualization mode, Communication mode

### transfer rate

#### transfer rate

• for Industrial Ethernet	10 ... 100 Mbit/s
• for GPRS transmission	
— with downlink / maximum	264 kbit/s
— with uplink / maximum	210 kbit/s
• for LTE-M transmission	
— with downlink / maximum	588 kbit/s
— with uplink / maximum	1000 kbit/s
• for NB-IoT transmission	
— with downlink / maximum	120 kbit/s
— with uplink / maximum	160 kbit/s

### interfaces

#### number of interfaces / according to Industrial Ethernet

1

#### number of electrical connections

- at the 1st interface / according to Industrial Ethernet
- for external antenna(s)
- for power supply

1

2

1

#### number of slots

- for SIM cards
- for memory cards

1

1

#### type of electrical connection

- at the 1st interface / according to Industrial Ethernet

RJ45 port

#### type of electrical connection

- for external antenna(s)
- for power supply

SMA socket (50 ohms)

5-pole plugable terminal block

#### type of antenna

- at connection 1 / connectable
- at connection 2 / connectable

mobile wireless antenna

active GNSS antenna

#### slot version

- for SIM card
- of the memory card

Mini SIM card, with adapter Micro SIM card also

SD 1.0, SD 1.1, SDHC, Siemens SMC

#### storage capacity / of the memory card / maximum

32 Gbyte

#### design of the removable storage

- C-PLUG

No

signal inputs/outputs	
number of electrical connections / for digital input signals	8
type of electrical connection / for digital input signals	pluggable screw terminal block
digital input version	Suitable for open-drain transistor or switch, 2-wire-technique
number of electrical connections / as counter inputs / for digital input signals	2
pulse duration / at counter input / minimum	0.1 ms
pulse frequency / at counter input / maximum	5000 Hz
number of electrical connections / for digital output signals	8
type of electrical connection / for digital output signals	pluggable screw terminal block
digital output version	4DO bistable relay, 2-wire technology 4DO solid-state relay
output current / at digital output	300 mA; Limiting continuous current, with solid-state relays 60 mA
number of analog inputs / integrated	4
connector type / at the analog input	pluggable screw terminal block
type of analog input	2-/3-/4-wire-technique
product function / parameterizable analog inputs	Yes; Current 0/4..20mA, Voltage 0..5/10V, Temperature (Pt1000) -80..+140°C
A/D resolution / at the analog input	12 bit
wireless technology	
type of mobile wireless service / is supported	
• SMS	Yes
• GPRS	Yes
•	GPRS (Multislot Class 10)
• LTE-M	Yes
• NB-IoT	Yes
type of wireless network / is supported	
• GSM	Yes
operating frequency / for GSM transmission	850 MHz, 900 MHz, 1800 MHz, 1900 MHz
operating frequency / for LTE-M transmission	band 1 (2100 MHz), band 2 (1900 MHz), band 3 (1800 MHz), band 4 (1700 MHz), band 5 (850 MHz), band 8 (900 MHz), band 12 (700 MHz), band 13 (700 MHz), band 18 (850 MHz), band 19 (850 MHz), band 20 (800 MHz), band 26 (850 MHz), band 28 (700 MHz)
operating frequency / for NB-IoT transmission	band 1 (2100 MHz), band 2 (1900 MHz), band 3 (1800 MHz), band 5 (850 MHz), band 8 (900 MHz), band 12 (700 MHz), band 13 (700 MHz), band 18 (850 MHz), band 19 (850 MHz), band 20 (800 MHz), band 26 (800 MHz), band 28 (700 MHz)
supply voltage, current consumption, power loss	
type of voltage / of the supply voltage	DC
supply voltage / external / at DC	12 ... 24 V
supply voltage / external / at DC / rated value	10.8 ... 28.8 V
type of output voltage / for the supply of external devices	DC 12 V or 24 V
supply voltage / for GPS antenna / maximum	3.8 V; Nominal 3.8 V (3.575 V @5 mA, 3.35 V @ 10 mA, 3.125 V @ 15 mA)
consumed current / note	without connected consumers
consumed current	
• from external supply voltage / at 24 V DC	
— in standby mode / typical	14 mA
— in update mode / typical	35 mA
— in communication mode / typical	83 mA
• with battery operation / at 7.2 V DC	
— in standby mode / typical	0.28 mA
— in update mode / typical	71 mA
— in communication mode / typical	208 mA
output current / for GPS antenna / maximum	15 mA
power loss [W]	without connected consumers
power loss [W] / with external supply voltage / at 24 V DC	
• in standby mode / typical	0.34 W
• in update mode / typical	0.85 W
• in communication mode / typical	2 W
power loss [W] / with battery operation / at 7.2 V DC	
• in standby mode / typical	0.002 W
• in update mode / typical	0.51 W
• in communication mode / typical	1.5 W

ambient conditions	
ambient temperature	
<ul style="list-style-type: none"> <li>for vertical installation / during operation</li> <li>for horizontally arranged busbars / during operation</li> <li>during storage</li> <li>during transport</li> </ul>	-40 ... +60 °C -40 ... +70 °C -40 ... +70 °C -40 ... +70 °C
relative humidity	
<ul style="list-style-type: none"> <li>at 30 °C / without condensation / during operation / maximum</li> </ul>	95 %
protection class IP	IP20; IP68 with protective housing (see accessories)
design, dimensions and weights	
module format	Compact module
width	130 mm
height	100 mm
depth	75 mm
net weight	0.37 kg
fastening method	
<ul style="list-style-type: none"> <li>35 mm DIN-rail mounting</li> <li>wall mounting</li> </ul>	Yes Yes
product features, product functions, product components / general	
product function	
<ul style="list-style-type: none"> <li>DynDNS client</li> <li>no-ip.com client</li> </ul>	Yes Yes
product functions / cloud connectivity	
protocol / is supported	
<ul style="list-style-type: none"> <li>Message Queuing Telemetry Transport (MQTT)</li> <li>HTTP</li> </ul>	Yes Yes
product function / for cloud connectivity	
<ul style="list-style-type: none"> <li>trigger management</li> <li>time stamping</li> </ul>	Yes Yes
product feature / for cloud connectivity / buffered message frame memory	Yes
performance data	
number of users/telephone numbers/email addresses / definable / maximum	20
number of user groups / definable / maximum	10
number of program block types	46
number of configurable program blocks	48
number of digital bit memories / maximum	48
number of analog bit memories / maximum	24
performance data / IT functions	
number of possible connections	
<ul style="list-style-type: none"> <li>as client / by means of FTP / maximum</li> </ul>	1
number of entries / in the FTP buffer / maximum	12
number of possible connections	
<ul style="list-style-type: none"> <li>as server / by means of HTTP / maximum</li> <li>as server / by means of HTTPS / maximum</li> </ul>	2 2; http and https can be combined (max. number of 2 connections cannot be exceeded). Max. one connection via https is possible on the mobile wireless interface.
<ul style="list-style-type: none"> <li>as email client / maximum</li> </ul>	1
number of free texts / for emails and SMS / maximum	20
number of characters / per free text for emails or SMS / maximum	160
number of entries / in the email buffer / maximum	12
performance data / telecontrol	
suitability for use	
<ul style="list-style-type: none"> <li>node station</li> <li>substation</li> <li>TIM control center</li> </ul>	No Yes No
control center connection	IEC 60870-5-104, DNP3-capable control centers, SINAUT ST7cc/sc, ST7 ScadaConnect, TeleControl Server Basic

<ul style="list-style-type: none"> <li>• by means of a permanent connection</li> </ul>	supported
<ul style="list-style-type: none"> <li>• by means of demand-oriented connection</li> </ul>	supported
protocol / is supported	
<ul style="list-style-type: none"> <li>• DNP3</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• IEC 60870-5</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• SINAUT ST1 protocol</li> </ul>	No
<ul style="list-style-type: none"> <li>• SINAUT ST7 protocol</li> </ul>	Yes
product function / data buffering if connection is aborted	Yes; number of telegrams for: IEC 60870: approx. 5,000, DNP3: approx. 10,900, SINAUT ST7: approx. 7,700, TeleControl Server Basic: approx. 10.900
data volume / as user data per station / in telecontrol mode / maximum	256 Kibyte
product feature / buffered message frame memory	Yes
<b>performance data / teleservice</b>	
diagnostics function / online diagnostics with SIMATIC STEP 7	No
product function	
<ul style="list-style-type: none"> <li>• program download with SIMATIC STEP 7</li> </ul>	No
<ul style="list-style-type: none"> <li>• remote firmware update</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• remote configuration</li> </ul>	Yes
<b>product functions / management, configuration, engineering</b>	
configuration software	
<ul style="list-style-type: none"> <li>• required</li> </ul>	No, configuration by using the integrated webserver
product function / gateway / for SIMATIC PDM	
<ul style="list-style-type: none"> <li>• with Modbus TCP</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• with HART-IP protocol</li> </ul>	Yes
<b>product functions / diagnostics</b>	
product function / web-based diagnostics	Yes
<b>product functions / security</b>	
operating mode / Virtual Private Network (VPN)	Yes; OpenVPN client
product function / with VPN connection	OpenVPN
type of encryption algorithms / with VPN connection	AES-128, AES-256
type of authentication procedure / with VPN connection	certificate based
type of authentication / with Virtual Private Network / PSK	No
type of hashing algorithms / with VPN connection	SHA-256
number of possible connections / with VPN connection	2; one simultaneous productive connection only
product function	
<ul style="list-style-type: none"> <li>• password protection for Web applications</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• password protection for teleservice access</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• password protection for VPN</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• encrypted data transmission</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• switch-off of non-required services</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• SysLog</li> </ul>	Yes
<b>product functions / time</b>	
protocol / is supported	
<ul style="list-style-type: none"> <li>• NTP</li> </ul>	Yes
product component / hardware real time clock	Yes
product feature / hardware real time clock w. battery backup	Yes
accuracy / of the hardware real time clock / per day / maximum	1.8 s
time synchronization	
<ul style="list-style-type: none"> <li>• from NTP-server</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• from GPS-signal</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• from control center</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• from mobile network provider</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• PC</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• manual setting</li> </ul>	Yes
<b>product functions / position detection</b>	
product function	
<ul style="list-style-type: none"> <li>• position detection with GPS</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• pass on position data</li> </ul>	Yes
<b>standards, specifications, approvals</b>	

certificate of suitability / CE marking	Yes
certificate of suitability / UKCA marking	Yes
certificate of suitability / cULus approval	Yes
certificate of suitability / Regulatory Compliance Mark (RCM)	Yes
certificate of suitability / RoHS conformity	Yes

**standards, specifications, approvals / hazardous environments / header**

certificate of suitability / ATEX	Yes
certificate of suitability / IECEx	Yes
certificate of suitability / ULhazloc approval	Yes
certificate of suitability / CCC / for hazardous zone according to GB standard	Yes
certificate of suitability / FM registration	Yes

**standards, specifications, approvals / Environmental Product Declaration**

Environmental Product Declaration	Yes
global warming potential [CO2 eq]	
• total	37.97 kg
• during manufacturing	28.1 kg
• during operation	9.4 kg
• after end of life	0.47 kg

**further information / internet links**

internet link	
• to website: Selection guide for cables and connectors	<a href="https://support.industry.siemens.com/cs/ww/en/view/109766358">https://support.industry.siemens.com/cs/ww/en/view/109766358</a>
• to web page: selection aid TIA Selection Tool	<a href="https://www.siemens.com/tstcloud">https://www.siemens.com/tstcloud</a>
• to website: Industrial communication	<a href="https://www.siemens.com/simatic-net">https://www.siemens.com/simatic-net</a>
• to web page: SiePortal	<a href="https://sieportal.siemens.com/">https://sieportal.siemens.com/</a>
• to website: Image database	<a href="https://www.automation.siemens.com/bilddb">https://www.automation.siemens.com/bilddb</a>
• to website: CAx-Download-Manager	<a href="https://siemens.com/cax">https://siemens.com/cax</a>
• to website: Industry Online Support	<a href="https://support.industry.siemens.com">https://support.industry.siemens.com</a>

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**Approvals / Certificates**

**General Product Approval**



[Type Examination Certificate](#)



General Product Approval	For use in hazardous locations	Radio Equipment Type Approval Certificate
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[China RoHS](#)



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