

G405 Edge Computing Gateway



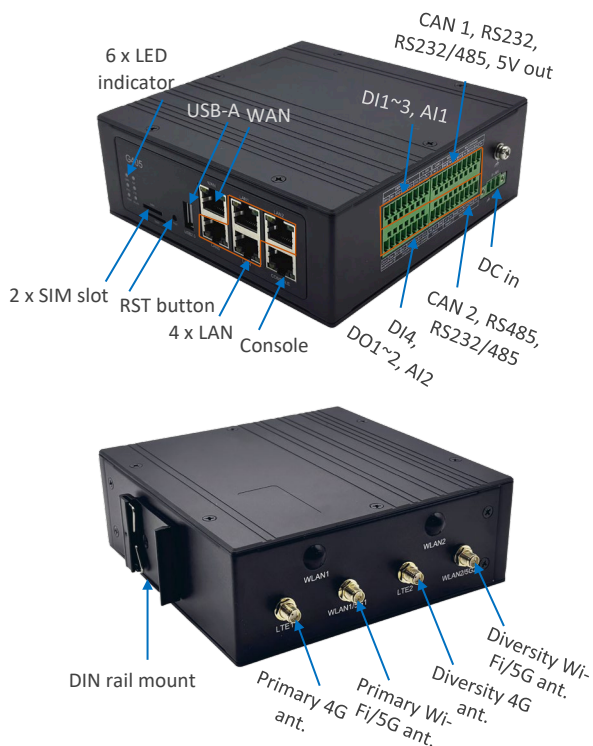
Product Overview

Vantron G405 industrial edge computing gateway is an Arm®-based high-performance solution built for industrial applications. The gateway features dual-SIM 4G connectivity, Wi-Fi, bluetooth, five Ethernet jacks, while supporting virtual private network (VPN) to address diversified networking requirements. It also offers multiple DI, DO, and AI channels for status monitoring, control, and data visualization.

G405 features edge computing capabilities, enabling data processing and analysis directly at the edge for faster decision-making. It supports various southbound protocols, including Modbus TCP, Modbus RTU, EtherNet/IP, ISO-on-TCP, and CC-Link, ensuring seamless communication with industrial devices. The MQTT northbound protocol allows for flexible transfer of edge data to cloud servers. Meanwhile it supports interfacing with prevailing cloud platforms, including the self-developed BlueSphere GWM platform, for remote management to ease the efforts of users by real-time monitoring, OTA updates, remote maintenance, and task assignment.

Optional industrial interfaces such as RS232, RS485, DI, DO, AI, and CAN FD enable communication with a wide range of peripherals, while the DIN rail mount offers compact and efficient space utilization in cabinets, automation systems, and industrial control panels. G405 is an ideal solution for industrial applications such as industrial automation, grid infrastructure, and water management.

Exterior and Features



- ❖ Low power, complete industrial design
- ❖ DI/DO/AI, isolated CAN buses & RS232/RS485
- ❖ Five Gigabit ETH, dual SIM backup, Wi-Fi, Bluetooth
- ❖ Southbound and northbound protocols for data transfer
- ❖ Local edge computing support
- ❖ SDK available with system-level API
- ❖ Optional BlueSphere GWM support for remote control
- ❖ Industrial extended temperature and input voltage
- ❖ Space-efficient design for flexible installation

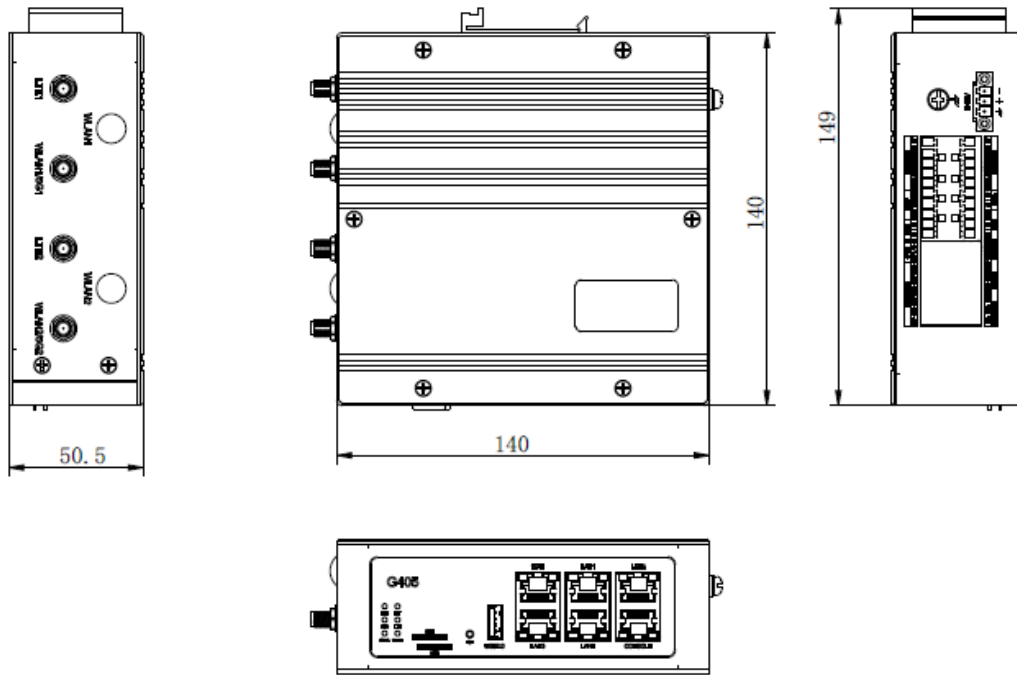
G405 Edge Computing Gateway Specifications (Hardware)

G405				
System	CPU	Single-core 64-bit Arm Cortex-A53 microprocessor, 1.0GHz (Max.) Dual-core Arm Cortex-R5F MCU, 800MHz (Max.) Single-core Arm Cortex-M4F MCU, 400MHz (Max.)		
	Memory	1GB DDR4		
	Storage	16GB eMMC		
Cellular	Modem	4G LTE, CAT 4	Optional: 5G	
	SIM	2 x Micro SIM slot		
	Antenna	2 x Antenna (SMA-K connector)		
Ethernet	Port	5 x RJ45, 10/100/1000Mbps		
	Configuration	1 x WAN + 4 x LAN		
Wi-Fi	Standard	IEEE 802.11 b/g/n/ac		
	Frequency band	2.4GHz, 5GHz		
	Working mode	AP, Station		
	Antenna	2 x Antenna (RPSMA-K connector)		
Bluetooth	Security	AES, WPS		
	Bluetooth	Bluetooth 5.2		
I/O	Serial port	1 x RS232 (isolated), Max. 200kbps	1 x RS485 (isolated), Max. 500kbps	
		2 x RS232/RS485 (isolated), Max. 250kbps	1 x 5V output	
	USB	1 x USB 2.0 Type-A		
	DI	4 x DI (dry / wet contact)		
	DO	2 x DO, 5A @30V DC		
	AI	2 x AI (measurement signal: 0~20mA or 4~20mA / 0~10V or 0~5V)		
	CAN	2 x CAN FD (isolated)		
System Control	Debug	1 x RJ45 console port (Baud rate: 115200)		
	Button	1 x Reset button ([2, 6s): Restart; [6, 12s): Configuration clear; [12, 20s): Factory reset; [20s,+∞): Initial state)		
		LED indicator	1 x Power indicator	1 x Internet indicator
			1 x Status indicator	1 x 4G LTE indicator
	1 x Error indicator		1 x WLAN indicator	
	Watchdog timer	Hardware watchdog		
RTC	Supported			
Power	Input	9V~36V DC		
	Socket	1 x 3-pin x 3.81mm		
	Protection	Over-current protection, Reverse polarity protection		
Physical Characteristics	Dimensions	149mm x 140mm x 50.5mm		
	Enclosure	Metal		
	Weight	841g (not including accessories)		
	Installation	DIN rail mounting		
	IP rating	IP40		
	Cooling mode	Heat sink		
	Mechanical test	Drop: IEC60068-2-32	Shock: IEC60068-2-27	
Vibration: IEC60068-2-6				
EMC	ESD	IEC 61000-4-2 (Contact: 6kV, Air: 8kV)		
Environmental Condition	Temperature	Operating: -40°C ~ +80°C	Storage: -40°C ~ +85°C	
	Humidity	5%-95% RH (non-condensing)		
Certification	Compliance	FCC, ISED, CE		
	Carrier certification	AT & T, Verizon, T-Mobile		

G405 Edge Computing Gateway Specifications (Software)

G405		
Edge Computing	Edge computing script	JavaScript, MicroPython
	Southbound protocol	Modbus TCP, Modbus RTU, EtherNet/IP, ISO-on-TCP, CC-link, etc.
	Northbound protocol	MQTT
Custom Development	IPK import	Supported
	Documentation support	SDK available, API documentation
Device Management	Operating system	Web-based VantronOS
	Configuration	VantronOS, SSH, console port, cloud-based BlueSphere GWM (Optional)
	Remote management	BlueSphere GWM (Optional)
	Upgrade	VantronOS, BlueSphere GWM (Optional)
Routing & Network Reliability	Network protocol	IPV4, HTTPS, TCP & UPD, NTP client and server, ARP, TLS
	Link detection & report	Address: IP, URL Protocol: ICMP, TCP, HTTP
	Failover	Auto routing, Auto reconnection Network priority: Ethernet > Wi-Fi client > Cellular (def.)
	Dual SIM	Dual SIM failover, automatic switch
	NAT	Dynamic, Static
	WAN protocol	DHCP client, PPPoE, Static IP
	Network management	SNMP v1/v2c/v3
	IP application	Ping, Traceroute, Nslookup, DHCP Server/Client, DDNS
Network Diagnostics	IP routing	Static routing
	Network capture	By time or packet count
	Statistics	Traffic data and up time at Ethernet WAN, Wi-Fi client WAN, cellular WAN Cellular and Wi-Fi signal strength; SIM card switch frequency
	Health check	Usage of CPU, memory, disk Service running status Alarm on Ethernet/Wi-Fi/cellular hardware abnormality
	Log	System log, diagnostic log Log export supported
Security	Firewall	Stateful, whitelist control, port mapping
	Access control	MAC address filtering, IP address filtering
	VPN	PPTP, L2TP, GRE, IPSec, OpenVPN
	Firmware validation	SHA256 checksum

Product Outlines



Ordering Information

Ordering No.	Ethernet	Wi-Fi	Cellular	I/O
G405	1 x WAN, 4 x LAN	IEEE 802.11 b/g/n/ac	4G LTE	RS232/RS485, 5V output, CAN, DI, DO, AI
G405-NI	1 x WAN, 4 x LAN	IEEE 802.11 b/g/n/ac	4G LTE	RS232/RS485, 5V output, CAN
G405-5G	1 x WAN, 4 x LAN	IEEE 802.11 b/g/n/ac	5G	RS232/RS485, 5V output, CAN, DI, DO, AI

Packing List	
G405 Edge computing gateway	1
Wi-Fi antenna	2
Cellular antenna (4G)	2
Mating connector for CAN, COM, 5V out	2
DC power connector	1

Optional Accessories	
12V DC Power adapter	1
Power cord	1
5G antenna	2
Mating connector for DI, DO, AI	2