iSmartGate SE

Intelligent Gateway

www.cet-global.com

Overview

iSmartGate SE is an Intelligent Gateway that provides one 10Base-T/100Base-TX Ethernet port, two RS-485 ports, one optional built-in 4G modem as well as one optional wireless LoRa port with configurable ISM Bands. Featuring DIN-Rail mounting and compact construction, it is an ideal equipment that serves as a gateway to connect RS-485 and/or LoRa-enabled devices to an IP-based Ethernet LAN over an Ethernet network or 4G network for any SCADA or Automation applications. With extensive protocols such as Modbus RTU, Modbus TCP, IEC 60870-5-104 (IEC 104), AnyPolling and optional BACnet/IP, etc., the iSmartGate SE facilitates access to various end devices, and data storage and upload for efficient and reliable data management. Further, the iSmartGate SE has been specifically designed with industrial automation in mind and therefore provides un-surpassed performance and reliability under the harshest industrial or commercial environments.

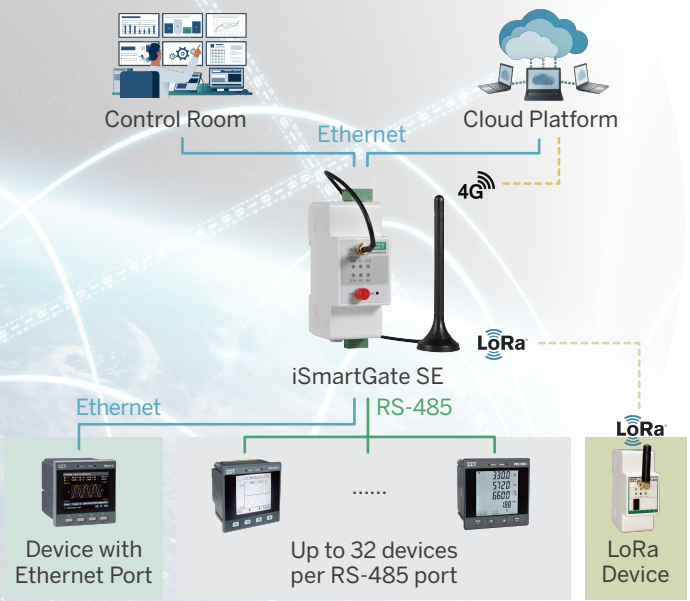
Basic Features

- 1x10Base-T/100BaseTX (RJ45) with MDI/MDIX auto-detect and 2xRS-485 port are designed to withstand the harshest industrial environments
- One optional built-in 4G LTE CAT1 modem
- One optional LoRa port with configurable ISM Bands for EU863-870, RU864-870, IN865-867, US902-928, AU915-928, AS920-923 and AS923-925
- Built-in Web Server for access to Data, Config. and Maintenance
- Automatic IP assignment using DHCP and DNS domain name resolution
- Transparent Gateway & Modbus TCP to RTU Gateway between Ethernet port and RS-485/LoRa
  - TCP Server and TCP Client modes
  - Maximum 32 downstream LoRa devices per iSmartGate SE
  - 32 Slave IEDs per RS-485 port
  - Maximum 4 Masters per RS-485/LoRa port
- One-key Reset to Factory Default
- DIN-Rail Mounting
- Extended operating temperature

Data Concentration and Management

- Up to 2 Data Caches
- Data collection via Ethernet, RS-485 or LoRa
  - Maximum 128 downstream devices per iSmartGate SE
  - Modbus RTU, Modbus TCP, IEC 104 and Anypolling
- Support Data Recording of AI parameters and Energy parameters per Data Cache
  - Configurable interval from 1min to 60min
  - 15 days @ 1min, 900 days @ 60min
- Data push to external via Ethernet or 4G
  - 4096xAI, 4096xDI, 2048xEnergy, 1024xAO, 1024xDO, 2048xSOE
  - Extensive protocols support: Modbus TCP, IEC 104, MQTT + JSON, HTTP + JSON, AliCloud, Amazon AWS and optional BACnet/IP, etc.
  - Resumable Transfer for historical data
- Support creating virtual devices, as well as performing calculations on virtual data
  - Maximum 32 virtual devices
  - 1024xAI, 1024xDI, 512xVirtual Energy, 64xCustom SOE
- Simple configuration and commissioning via PMC-EasyCom

Typical Application Diagram



Technical Specifications

Communication

Ethernet Port	Speed		10/100 Mbps
	Protocol		TCP, HTTP, MQTT, BACnet/IP, IEC 104
RS-485	Baudrate		300/600/1200/2400 /4800/9600/19200/38400 bps
	Data Bits		5, 6, 7, 8
	Stop Bits		1, 2
4G LTE CAT1 modem	Type		4G LTE: B1/B3/B5/B7/B8/B20/B28/B38/B40/B41 2G GSM: 900/1800 MHz
	Applicable to	EU	Belgium, Britain, Cambodia, Denmark, Finland, France, Germany, Holland, Hong Kong (China), Indonesia, Italy, Japan, Korea, Lithuania, Norway, Macao (China), Malaysia, New Zealand, Pakistan, Philippines, Poland, Russia, Serbia, Singapore, South Africa, Spain, Sweden, Vietnam, Thailand, Switzerland, Tanzania, Zimbabwe, Nigeria, Algeria, etc.
		SA	Argentina, Australia, Brazil, Chile, Saudi Arabia, Taiwan (China), Turkey, United Arab Emirates
		NA	America, Canada, Mexico and Paraguay
LoRa (Optional)	RF Range		860-935 MHz
	ISM Bands		EU863-870, RU864-870, IN865-867, US902-928, AU915-928, AS920-923, AS923-925 and Custom
	RF Output Power		18 dBm (Maximum)
	Receiver Sensitivity		-136 dBm (Maximum)
	Output Watts		0.03 (Typical)
	FCC Part 15C		Certified by TCB

Power Supply (L/+, N/-)

Standard	95-250VAC/DC ±10%, 47-440Hz
Optional	12-36VDC
Burden	≤3W

Protection

ESD Protection	15kV (Air) & 8kV (Contact)
Isolation Protection	3kV for RS-485 1.5kV for Ethernet Port

Environmental Conditions

Operating Temperature	-25°C to +70°C
Storage Temperature	-40°C to +85°C
Humidity	5% to 95% non-condensing
Atmospheric Pressure	70kPa to 106kPa

Mechanical Characteristics

Unit Dimensions	36x65x90mm
Mounting	DIN-Rail Mounting

Antennas

	LoRa	4G
Frequency Range	860-935MHz	699-960/1710-2690 MHz
Band Width	75MHz	--
Impedance	50Ω	50Ω
Power Capability	50W	--
Height	239.5±5mm	105±3mm
VSWR (Voltage Standing Wave Ratio)	≤2	≤2.5
Gain	2dBi	>3.0dBi

Standards of Compliance

Safety Requirements

Audio/Video, Information and Communication Technology Equipment-Part 1: Safety Requirements	IEC 62368-1: 2014 + A1: 2017

EMC Compatibility

CE EMC Directive 2014/30/EU (EN 55035: 2017 + A11: 2020)

Immunity Tests

Electrostatic Discharge	EN 61000-4-2: 2009
Radiated Fields	EN IEC 61000-4-3: 2020
Fast Transients	EN 61000-4-4: 2012
Surges	EN 61000-4-5: 2014 + A1: 2017
Conducted Disturbances	EN 61000-4-6: 2014
Magnetic Fields	EN 61000-4-8: 2010
Voltage Dips and Interruptions	EN IEC 61000-4-11: 2020

Emission Tests

Electromagnetic Compatibility of Multimedia Equipment-Emission Requirements	EN 55032: 2015 + A11: 2020
Electromagnetic Compatibility of Multimedia Equipment-Immunity Requirements	EN 55035: 2017 + A11: 2020
Limits for Harmonic Current Emissions for Equipment with Rated Current ≤16 A	EN IEC 61000-3-2: 2019 + A1: 2021
Limitation of Voltage Fluctuations and Flicker in Low-Voltage Supply Systems for Equipment with Rated Current ≤16 A	EN 61000-3-3: 2013 + A1: 2019 + A2: 2021
Radiated Emission and Conducted Emission	ETSI EN 301 489-1 V2.2.3 ETSI EN 301 489-3 V2.3.2

Radio Equipment Directive (RED) 2014/53/EU

Assessment of Electronic and Electrical Equipment Related to Human Exposure Restrictions for Electromagnetic Fields (0 Hz-300 GHz)	EN IEC 62311: 2020
Determination of RF Field Strength, Power Density and SAR in the Vicinity of Radio Communication Base Station for the Purpose of Evaluating Human Exposure	EN 62232: 2017
Short Range Devices (SDR) Operating in the Frequency Range 25 MHz to 1000 MHz	ETSI EN 300 220-1 V3.1.1: 2017 ETSI EN 300 220-2 V3.1.1: 2017

Mechanical Tests

Freefall	IEC 60068-2-31: 2008
Vibration	IEC 60068-2-6: 2007
Shock	IEC 60068-2-27: 2008

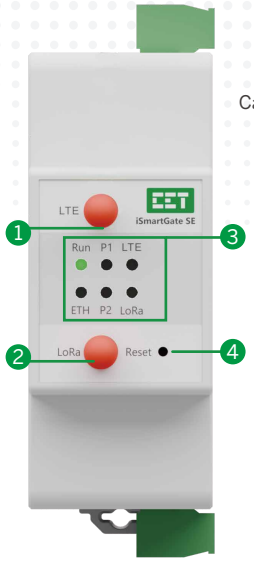
Ordering Information

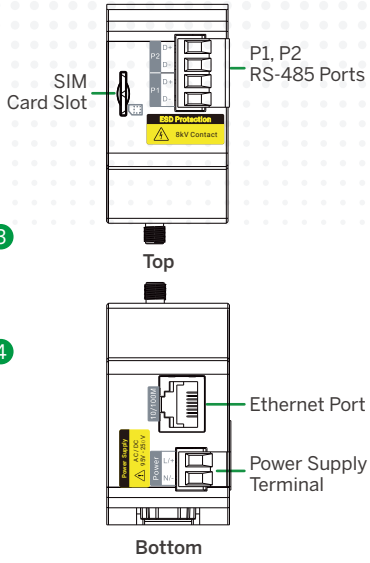
Product Code

iSmartGate SE Intelligent Gateway											
Basic Function	R										• Modbus TCP/RTU Gateway and Transparent Gateway • Modbus Mastering with large 8GB On-Board memory and Max. number of data in Data Cache: 4096xAI, 4096xDI, 2024xEnergy, 1024xAO, 1024xDO, 2048xSOE Logs • Supports protocol conversion with ∘ Client protocols: Modbus RTU, Modbus TCP, IEC 104, Anypolling ∘ Server protocols: IEC 104, Modbus TCP, MQTT + JSON, HTTP + JSON, AliCloud, Amazon AWS
	B*										R option + BACnet/IP
Comm. Ports		T102									1x10Base-T/100Base-TX + 2xRS-485
LoRa			N								None
			7*								LoRa (860-935 MHz) configurable for EU863-870, RU864-870, IN865-867, US902-928, AU915-928, AS920-923, AS923-925
4G~[1]				NN							None
				CN*							Applicable to India
				EU*							Applicable to Europe and Southeast Asia Region
				SA*							Applicable to South America
				NA*							Applicable to North America
Power Supply					2						95-250VAC/DC ± 10%
					3*						12-36V DC
Language						E					English
iSmartGate SE	- R	- T102	- N	- NN	- 2	E					iSmartGate SE-R-T102-N-NN-2E (Standard Model)

* Additional charges apply.
~ Applicable to 4G/3G/2G networks.
1. The 4G options EU, SA and NA are applicable to the following countries:
EU: Belgium, Britain, Cambodia, Denmark, Finland, France, Germany, Holland, Hong Kong (China), Indonesia, Italy, Japan, Korea, Lithuania, Macao (China), Malaysia, NewZealand, Norway, Pakistan, Philippines, Poland, Russia, Serbia, Singapore, South Africa, Spain, Sweden, Switzerland, Thailand, Tanzania, Vietnam, Zimbabwe, Nigeria, Algeria, etc.
SA: Argentina, Australia, Brazil, Chile, Saudi Arabia, Taiwan (China), Turkey, United Arab Emirates
NA: America, Canada, Mexico and Paraguay
2. SIM Card requires Micro SIM.

Front Panel & Terminal

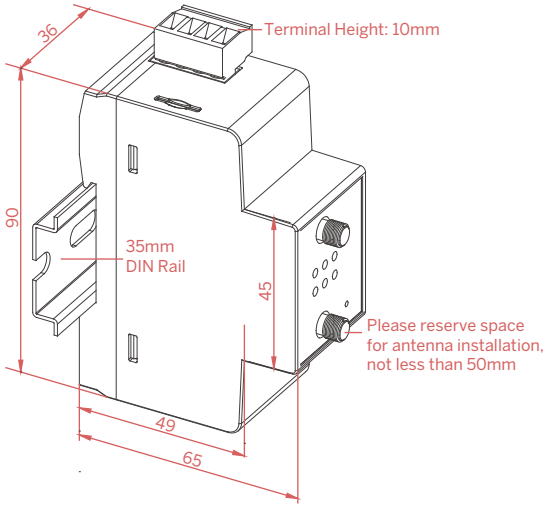




1. LTE: 4G Antenna Interface
2. LoRa: LoRa Antenna Interface
3. LED Indicators
   - Run-Device Running Status
   - P1/P2- RS-485 Comm. Status
   - LTE- 4G Comm. Status
   - ETH- Ethernet Comm. Status
   - LoRa - LoRa Comm. Status
4. Reset Key

Dimensions & Installation

Unit: mm



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Your Local Representative

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