

Smart City & Municipal Hardware Catalog

Fire Safety / Environment / Surveillance / Occupancy / Lighting / Protection / Metering / Gateways

Municipal and public-building field hardware with open wired and wireless interfaces

A field-hardware catalog for municipal buildings and outdoor assets: electrical fire monitoring, fire supervision, environmental sensing, surveillance, occupancy, lighting control, surge protection, branch metering and gateways.



Electrical fire monitoring detector, rail mounted



Multi-parameter environmental monitoring node



Number-plate recognition camera



Waste bin fill-level sensor

Representative family visual; exact housing may vary by configuration.

Application layer	Hardware range
Electrical and life safety	Residual-current and temperature detection, fire supervision, fire-door and emergency systems
Environment and sensing	Air quality, gas, noise, occupancy, door status and waste fill level
Surveillance and control	Municipal cameras, lighting actuators, panels and remote switching
Protection and data	Surge protection, branch metering, acquisition and protocol gateways

SCOPE

Use the SG code when requesting a quotation. The quotation states the selected rating, aperture, interface and regional radio build.

SunGene

Industrial IoT hardware - remote monitoring & data acquisition | andy@sungeneiot.com | sungeneiot.com

Range overview and contents

SunGene Co., Ltd. supplies municipal field hardware under permanent SG codes. Selection starts with the point count, panel or asset type, electrical rating, environment and data interface.

Family	Products	Common interfaces
Electrical and fire	Rail and aperture detectors, hosts, door and lighting supervision	Serial field bus and two-wire fire bus
Environment	Air quality, gas, particulate, sound and climate instruments	Serial field bus, analogue current loop and LPWAN by product
City assets	Cameras, occupancy, waste, door and call-point sensors	ONVIF / RTSP, UART, PoE and LPWAN by product
Lighting	Switch and dimming actuators, wall panels and remote switching	Control bus, serial field bus, cellular and LoRa by product
Protection and metering	Surge protection, lightning monitoring, panel and branch metering	Serial field bus, Ethernet option and status contacts
Gateways	Breaker, LoRaWAN, edge, protocol and metering concentrators	Ethernet, Wi-Fi, cellular and serial interfaces

SELECTION INPUTS	DELIVERY PATH
- Point count and panel topology - Aperture, channel count and electrical rating - Site environment and mounting - Wired interface, radio profile and uplink	- Requirements - SG-coded shortlist - Bench or site evaluation - Supply against the quoted configuration

How the hardware fits your platform

Field devices connect over RS-485 Modbus, two-wire fire bus, 4-20 mA, contact, PoE or LPWAN. Host panels and gateways concentrate these signals for the customer's supervisory platform.



Breaker communication gateway

Representative family visual; exact housing may vary by configuration.

TECHNICAL DATA	
Field layer	Electrical safety, fire supervision, environment, occupancy, cameras, lighting and metering
Wired interfaces	RS-485 Modbus, two-wire fire bus, 4-20 mA, contact, PoE and UART by product
Wireless interfaces	LoRaWAN, NB-IoT, cellular, Wi-Fi and Bluetooth by product
Concentration	Host panels, breaker gateways, LoRaWAN gateways, edge gateways and data concentrators
Northbound	Modbus TCP, MQTT, Profinet, KNX/IP and ONVIF / RTSP by gateway or video product

FIELD
• Detectors and sensors • Cameras and lighting control • Meters and acquisition modules

CONCENTRATE
• Fire and door host panels • Breaker and LoRaWAN gateways • Edge and protocol gateways

CUSTOMER PLATFORM
• Supervisory system and historian • MQTT broker or network server • Alarm and dispatch workflow

Rail-mounted electrical fire monitoring detectors

Rail-mounted detectors for residual-current, cable-temperature and selected electrical measurements. Group the circuit schedule by channel count, metering depth and I/O before choosing an SG code.



Representative family visual for rail-mounted residual-current monitoring detectors

Representative family visual; exact housing may vary by configuration.

Additional detector configurations are listed in the model table and are not pictured as exact housings.

MODEL SELECTION - use the SG code in your enquiry

SG code	Product group	Selection focus
SG-EFD-125 / SG-EFD-126	Residual-current detector, four channels	Relay count, display and serial-bus layout
SG-EFD-127 / SG-EFD-128 / SG-EFD-129 / SG-EFD-130	Residual-current and temperature detector family	Residual-current channels, temperature channels and I/O
SG-EFD-131 / SG-EFD-133 / SG-EFD-134	High-channel detector family	Residual-current / temperature channels and serial ports
SG-EFD-132 / SG-EFD-137	Detector with three-phase metering	Metered quantities, I/O and serial ports
SG-EFD-135 / SG-EFD-136 / SG-EFD-139	Mixed and temperature-focused detectors	Circuit type, temperature channels and communication
SG-EFD-141 / SG-EFD-142 / SG-EFD-143 / SG-EFD-144 / SG-EFD-145 / SG-EFD-146	Integrated metering detector family	Single / three phase, transformer arrangement and I/O
SG-EFD-189 / SG-EFD-190	Fire-equipment power and early-warning devices	Monitored function and serial-bus integration

KEY FEATURES

- Rail-mount panel integration
- Residual-current and cable-temperature channel choices
- Metering and I/O options on selected devices

APPLICATIONS

- Municipal distribution boards
- Street cabinets and pump rooms
- Public-building risers

Aperture-type integrated residual-current and cable-temperature detectors

Integrated aperture detectors place the busbar or cable through the sensing body. Select the geometry first, then the circuit rating and host-bus layout.

MODEL SELECTION - use the SG code in your enquiry

SG code	Product group	Selection focus
SG-EFD-149 / SG-EFD-159 / SG-EFD-163 / SG-EFD-165	Round aperture, compact range	Compact round aperture class and circuit rating
SG-EFD-150 / SG-EFD-153	Round aperture, large range	Large round aperture class and circuit rating
SG-EFD-151 / SG-EFD-152 / SG-EFD-164	Rectangular aperture, low-to-medium rating	Opening dimensions and maximum detectable rated current
SG-EFD-154 / SG-EFD-155 / SG-EFD-156	Rectangular aperture, medium-to-high rating	Opening dimensions and busbar arrangement
SG-EFD-157 / SG-EFD-158 / SG-EFD-160 / SG-EFD-161 / SG-EFD-162	Rectangular aperture, large-frame range	Opening dimensions, circuit rating and panel clearance

KEY FEATURES

- Integrated current aperture
- Residual-current plus cable-temperature detection
- Round and rectangular geometries

APPLICATIONS

- Main switchboards
- Busbar risers
- Large feeder panels

Fire supervision panels and fire door monitoring

Host panels and field modules for electrical fire, fire-equipment power and fire-door supervision. Select by point capacity, bus topology and door hardware.



Electrical fire host panel with touchscreen

Fire equipment power supervision host panel

Fire door controller

Fire door linkage module

Representative family visual; exact housing may vary by configuration.

MODEL SELECTION - use the SG code in your enquiry

SG code	Product group	Selection focus
SG-EFD-105 / SG-EFD-106	Electrical fire host panels	Display size, serial-bus capacity and two-wire loops
SG-EFD-107 / SG-FPS-102	Repeater and display units	Host family, displayed events and uplink
SG-FPS-101 / SG-FPS-113	Fire-equipment power supervision hosts	Display size, bus count and expansion
SG-FDM-105 / SG-FDM-106	Fire-door controllers	Point capacity, zone expansion and linkage
SG-FDM-102 / SG-FDM-103 / SG-FDM-104	Fire-door zone sub-panels	Zone size and backup-power arrangement
SG-FDM-101 / SG-FDM-107 / SG-FDM-108	Fire-door linkage and monitoring modules	Door type, status points and linked output
SG-FDM-109 / SG-FDM-110 / SG-FDM-111	Integrated electric door closers	Door-leaf weight and mounting geometry

KEY FEATURES

- Host, repeater, controller and field-module layers
- Two-wire and RS-485 network families
- Door status and closure hardware

APPLICATIONS

- Electrical fire supervision
- Fire-equipment power monitoring
- Fire-door status and closure

Emergency lighting control and stairwell pressure regulation

Emergency-lighting supervision and stairwell-pressure control use separate field chains but share a structured host, module and detector architecture.



Representative family visual; exact housing may vary by configuration.

MODEL SELECTION - use the SG code in your enquiry

SG code	Product group	Selection focus
SG-EML-111 / SG-EML-112 / SG-EML-113	Emergency-lighting controllers	Point supervision, fault reporting and event storage
SG-CTL-109	Stairwell residual-pressure host	Point capacity, display and interlock
SG-PRS-101	Residual-pressure control module	Detector input, damper control and fan interface
SG-PRS-102 / SG-PRS-103	Residual-pressure detectors	Display option, sensing point and bus interface
SG-PRS-104 / SG-PRS-105	Auxiliary pressure probes	Probe role and pairing with the main detector
SG-PRS-106	Air-damper actuator	Actuator interface and air-supply control

KEY FEATURES

- Host-to-field supervision
- Emergency-lighting status and fault handling
- Pressure detector, module and damper chain

APPLICATIONS

- Emergency-lighting networks
- Pressurised stairwells
- Smoke-control systems

Air quality, gas and environmental noise monitoring

Air-quality, gas, sound and climate instruments for indoor, outdoor and plant environments. Select by measured parameter, mounting, power and wired or LPWAN interface.

			
Multi-parameter environmental node with e-paper display	Environmental sound level sensor	Ceiling-mount indoor air quality unit	Outdoor environmental node unit

Representative family visual; exact housing may vary by configuration.

MODEL SELECTION - use the SG code in your enquiry

SG code	Product group	Selection focus
SG-AQM-101 / SG-AQM-102 / SG-AQM-103 / SG-AQM-104 / SG-AQM-105 / SG-AQM-106 / SG-AQM-107 / SG-AQM-108	Multi-parameter and application air-quality instruments	Parameter set, mounting, display, logger and uplink
SG-AQM-109 / SG-AQM-110 / SG-AQM-111 / SG-AQM-112 / SG-AQM-113 / SG-AQM-114 / SG-AQM-115 / SG-AQM-116	Single-parameter and compact air-quality nodes	Gas / particulate parameter, enclosure and radio or serial bus
SG-AQM-117 / SG-AQM-118 / SG-AQM-119 / SG-AQM-120 / SG-AQM-121 / SG-AQM-122 / SG-AQM-123 / SG-AQM-124 / SG-AQM-125 / SG-AQM-126 / SG-AQM-127	Specialist gas and sound instruments	Sulfur-hexafluoride, ozone, sound or carbon-dioxide function and interface
SG-AQM-128 / SG-AQM-129 / SG-AQM-130 / SG-AQM-131 / SG-AQM-132 / SG-AQM-133 / SG-AQM-134	Configurable gas modules and probes	Gas type, module / probe format and host interface
SG-THS-111	Outdoor temperature and humidity node	Measurement range, battery and LPWAN profile
SG-THS-154 / SG-THS-155 / SG-THS-156 / SG-THS-157 / SG-THS-169	Outdoor temperature, humidity and pressure transmitters	Parameter set, radiation shield, power and output

KEY FEATURES

- Single- and multi-parameter instruments
- Wired and LPWAN device groups
- Indoor, outdoor and plant-room formats

APPLICATIONS

- Municipal air-quality points
- Public-building indoor environment
- Plant-room gas and noise monitoring

Municipal and building video surveillance cameras

Camera families for roads, compounds, public buildings and off-grid sites. Select by duty, field of view, night range, power and video interface.



Number-plate recognition bullet camera

Warning-light deterrence camera family

Long-range PTZ zoom camera

PoE dome camera

Representative family visual; exact housing may vary by configuration.

MODEL SELECTION - use the SG code in your enquiry

SG code	Product group	Selection focus
SG-CAM-121	Number-plate recognition camera	Lane geometry, lens, night range and metadata stream
SG-CAM-101 / SG-CAM-105 / SG-CAM-113	Fixed bullet, dome and turret cameras	Resolution, lens, illumination, PoE and video interface
SG-CAM-106 / SG-CAM-107 / SG-CAM-108	PTZ camera family	Optical zoom, pan / tilt range, night range and power
SG-CAM-102 / SG-CAM-104 / SG-CAM-117 / SG-CAM-118 / SG-CAM-119	Solar and autonomous outdoor cameras	Cellular / Wi-Fi build, panel, battery and detection method
SG-CAM-114	Indoor pan-and-tilt camera	Resolution, local storage and two-way audio
SG-CAM-110 / SG-CAM-111 / SG-CAM-112 / SG-CAM-115 / SG-CAM-116 / SG-CAM-120	Door-station and peephole cameras	Door geometry, display, view angle, battery and network

KEY FEATURES

- Fixed, PTZ, solar and door-station formats
- ONVIF or RTSP on selected camera groups
- PoE, Wi-Fi and cellular power / transport options

APPLICATIONS

- Road and entrance monitoring
- Unmanned compounds
- Public buildings and door stations

Occupancy, door status and waste fill-level sensing

Occupancy, ranging, door-status and waste-sensing hardware for public spaces and municipal assets. Select the sensing principle before the radio or wired interface.

			
Waste bin fill-level and tilt sensor	Waste bin fill-level sensor	Washroom occupancy sensor	Door contact sensor

Representative family visual; exact housing may vary by configuration.

MODEL SELECTION - use the SG code in your enquiry

SG code	Product group	Selection focus
SG-DST-101 / SG-DST-102 / SG-DST-103 / SG-DST-104 / SG-DST-105 / SG-DST-106	Waste and ultrasonic ranging sensors	Target range, fill / tilt function, enclosure and uplink
SG-OCC-101 / SG-OCC-102 / SG-OCC-103 / SG-OCC-105 / SG-OCC-108	Bus and washroom occupancy sensors	Occupancy principle, climate channels and lighting-bus integration
SG-OCC-110 / SG-OCC-111 / SG-OCC-112 / SG-OCC-113 / SG-OCC-114 / SG-OCC-115 / SG-OCC-116 / SG-OCC-117 / SG-OCC-118 / SG-OCC-119 / SG-OCC-120 / SG-OCC-121 / SG-OCC-122 / SG-OCC-123 / SG-OCC-124 / SG-OCC-125 / SG-OCC-126	Radar, PIR and presence sensor family	Sensing frequency, detection zone, module / enclosure and interface
SG-DOR-101 / SG-DOR-102 / SG-DOR-103 / SG-DOR-104	LoRaWAN door and climate contacts	Contact geometry, climate channel, battery and reporting
SG-DOR-105 / SG-DOR-106 / SG-DOR-107 / SG-DOR-108	Cellular and LPWAN door / indicator devices	Radio build, enclosure and alarm function
SG-DOR-109 / SG-DOR-110 / SG-DOR-111 / SG-DOR-112 / SG-DOR-113 / SG-DOR-114 / SG-DOR-115 / SG-DOR-116	Wireless, PoE and wired door contacts	Power source, contact form, local alarm and field interface
SG-CTL-123	Emergency call button	Press actions, mounting and LoRaWAN profile

KEY FEATURES

- Occupancy without image capture
- Waste, door and presence sensing
- Wired, PoE and LPWAN choices

APPLICATIONS

- Public washrooms and rooms
- Waste collection and street assets
- Cabinets, kiosks and call points

Lighting control actuators, panels and remote switching

Lighting actuators, wall controls and remote switching for streets, parks, tunnels and public buildings. Select by channel count, load type, local override and communication path.



Touch control panel

Representative family visual; exact housing may vary by configuration.

MODEL SELECTION - use the SG code in your enquiry

SG code	Product group	Selection focus
SG-DRV-103 / SG-DRV-104 / SG-DRV-105 / SG-DRV-108 / SG-DRV-109	DIN-rail switch actuators	Channel count, module width, load and manual override
SG-DRV-112 / SG-DRV-113	Analogue dimming actuators	Channel count, switching load and dimming interface
SG-DRV-114 / SG-DRV-118 / SG-DRV-125 / SG-DRV-127	Rail actuators with control-bus functions	Panel / sensor supply, linkage and serial bus
SG-CTL-110 / SG-CTL-111 / SG-CTL-112 / SG-CTL-118 / SG-CTL-119	Wall key and touch panels	Key count, mounting, display and paired actuator
SG-DRV-160	LoRaWAN low-voltage output controller	Supply, channel count and downlink control
SG-DRV-167 / SG-DRV-168 / SG-DRV-169 / SG-DRV-170 / SG-DRV-171 / SG-DRV-172 / SG-DRV-173 / SG-DRV-174 / SG-DRV-175 / SG-DRV-176 / SG-DRV-177 / SG-DRV-178 / SG-DRV-179 / SG-DRV-180 / SG-DRV-181 / SG-DRV-182 / SG-DRV-183 / SG-DRV-184 / SG-DRV-185	Cellular, LoRa and infrared remote switching	Supply, relay rating, channel count and range

Street cabinet surge protection and lightning monitoring

Surge-protection assemblies and monitoring devices for street, signal and telemetry cabinets. Select the protection stage from the electrical coordination study, then choose the monitoring interface.

MODEL SELECTION - use the SG code in your enquiry

SG code	Product group	Selection focus
SG-SPD-204 / SG-SPD-205	Type I surge protection, higher impulse class	Uc, limp waveform and Up
SG-SPD-202 / SG-SPD-203	Type I surge protection	Uc, limp waveform and Up
SG-SPD-192 / SG-SPD-193	Class II surge protection, high discharge class	Uc, In, I _{max} waveform and Up
SG-SPD-198 / SG-SPD-199 / SG-SPD-200 / SG-SPD-201	Class II surge protection, medium discharge class	Uc, In, I _{max} waveform and Up
SG-SPD-194 / SG-SPD-195 / SG-SPD-196 / SG-SPD-197	Class II / III surge protection	Protection stage and discharge rating
SG-LWM-105 / SG-LWM-106	Lightning early-warning monitors	Terminal count, local display and communication
SG-LWM-109 / SG-LWM-110	Surge-protector status monitors	Measured status points, alarm and serial bus

Municipal distribution, branch metering and plant monitoring

Panel meters, feeder modules and high-density branch acquisition for municipal distribution boards and plant rooms. Select by circuit type, channel density, I/O and uplink.

			
Three-phase panel meter with LED display	Three-phase panel meter with LCD display	Remote display unit for branch monitoring modules	Plant monitoring and control cabinet

Representative family visual; exact housing may vary by configuration.

MODEL SELECTION - use the SG code in your enquiry

SG code	Product group	Selection focus
SG-PM-166 / SG-PM-167	Three-phase panel meters	Display, metered quantities, I/O and serial bus
SG-PM-139 / SG-PM-140 / SG-PM-141 / SG-PM-142 / SG-PM-143 / SG-PM-144 / SG-PM-145 / SG-PM-146 / SG-PM-147 / SG-PM-148 / SG-PM-149 / SG-PM-150 / SG-PM-151 / SG-PM-152 / SG-PM-153 / SG-PM-154 / SG-PM-155 / SG-PM-156 / SG-PM-157 / SG-PM-158 / SG-PM-159	Feeder and single-circuit metering modules	AC / DC circuit, I/O, temperature inputs and uplink
SG-MCM-127 / SG-MCM-128	Three-circuit acquisition modules	AC current-transformer or DC Hall-sensor input
SG-MCM-156 / SG-MCM-157 / SG-MCM-158 / SG-MCM-159 / SG-MCM-160 / SG-MCM-161 / SG-MCM-162 / SG-MCM-163 / SG-MCM-164 / SG-MCM-165 / SG-MCM-166	High-density branch monitoring	AC / DC branch count, energy, switch state and serial bus
SG-DAQ-101 / SG-DAQ-102 / SG-DAQ-103 / SG-DAQ-104	Switch-input acquisition	Dry or wetted contact and channel count
SG-TMP-101 / SG-TMP-102	Multi-channel temperature acquisition	Channel count, probe type and serial bus
SG-HMI-103 / SG-HMI-111 / SG-CTL-108	Displays, operator panel and plant cabinet	Display, serial ports, Ethernet and control duty

Protocols, radio bands and concentration

Gateways concentrate field buses and radio devices for Ethernet, Wi-Fi or cellular uplink. Select by southbound protocol, device count and customer-platform interface.

TECHNICAL DATA	
Field-side options	RS-485, RS-422, CAN, KNX, ZigBee, LoRaWAN, optical and power-line carrier by gateway
Uplink options	Ethernet, Wi-Fi and cellular by gateway
Northbound options	Modbus TCP, MQTT, Profinet and KNX/IP by product
Selection inputs	Field protocol, device count, power, mounting and required uplink

GATEWAY SELECTION - use the SG code in your enquiry

SG code	Gateway group	Selection focus
SG-GW-127 / SG-GW-128 / SG-GW-129 / SG-GW-130	Breaker communication gateways	Serial field bus with Ethernet, Wi-Fi or cellular uplink
SG-GW-131	KNX/IP gateway	KNX bus size and Ethernet mode
SG-GW-144 / SG-GW-189 / SG-GW-190	LoRaWAN gateways	Channel plan, regional band, Ethernet / Wi-Fi / cellular uplink
SG-GW-187 / SG-GW-188	Industrial edge gateways	Serial, CAN, I/O, power and uplink
SG-GW-191 / SG-GW-192 / SG-GW-193	Profinet gateways	Profinet to serial / Modbus mapping
SG-GW-194	ZigBee to Ethernet gateway	Serial rate, ZigBee network and Ethernet
SG-GW-168	Metering data concentrator	Optical, serial, carrier, RF and cellular interfaces

NOTE

The quotation states the selected radio profile, field protocol and uplink for the chosen SG code.

Where this hardware is deployed

The catalog is organised by municipal duty so the same coded device can be reused across buildings, streets, plant sites and public spaces.

PUBLIC BUILDINGS

- Electrical and fire supervision
- Indoor environment and occupancy
- Lighting and branch metering

STREETS AND OUTDOOR ASSETS

- Lighting and cabinet protection
- Surveillance and waste sensing
- Outdoor air quality and door status

UTILITY AND PLANT SITES

- Distribution-board monitoring
- Gas, environment and perimeter surveillance
- Gateway and acquisition integration

TRANSPORT AND PUBLIC SPACE

- Tunnel and car-park lighting
- Station and concourse supervision
- Parks, plazas and assistance points

NOTE

A permanent SG code identifies the same hardware wherever it appears in a SunGene catalog.

From inquiry to supply

Start with the point list, panel topology and environment. The shortlist then uses permanent SG codes so the selected hardware remains traceable through quotation and repeat order.

Stage	Input	Output
Requirements	Application, point count, panel / asset and environment	Product-family shortlist
Selection	Electrical rating, aperture, channel count, interface and radio	SG-coded configuration
Evaluation	Customer bus, network server or video platform	Integration findings
Supply	Selected SG code and quoted configuration	Hardware and available model documentation

SELECTION CHECK

- Circuit and channel schedule
- Aperture or mounting geometry
- Field bus and uplink
- Regional radio profile where applicable

DOCUMENT SET

- Register map or payload description where applicable
- Configuration and wiring information
- Stable SG code for repeat ordering

NOTE

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