



IG61 Industrial Controller

Datasheet



OVERVIEW

Managed by Samsara's secure web-based dashboard, the IG61 provides the same universal connectivity, easy setup, and global analytics and control that are standard across the IG-family. Expandable I/O, high-capacity onboard storage, and an advanced processor for low-latency control make the IG61 a great fit for the most demanding large-scale operations.

HIGHLIGHTS

- | | |
|------------------------------|--|
| Modular I/O | Expand deployments with analog input, analog output, and digital input/output modules |
| Built-in cellular | Gain visibility and control into hard to wire locations with built in 4G LTE |
| High-capacity storage | Large storage capacity prevents data loss in the event of a network outage |
| Security | All Internet connectivity secured via SSL with 256-bit AES encryption (military-grade) |

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POWER

Power Requirement	24 VDC ± 20%
Typical Power Consumption	28 W
Maximum Power Consumption	72 W
Power connector	Dual power input and UPS support

Controller Power Supply

ACC-IGM-PS

General

CE, FCC class A, UL 508, Energy Star

Input

Rated Voltage: 48 VDC
Voltage Range: 36 to 58 VDC
Rated Input Current: 2.2A (Max.) at 48 VDC

Output

Output Power: 96 W
Efficiency: Greater than 88% (at rated load)
Rated Voltage: 24 VDC
Rated Output Current: 4A
Output Current Limit: 4.8 A
Reverse Voltage Protection (RVP): Yes

Input Protection

Over Voltage Protection (OVP): 58 VDC
Under Voltage Protection (UVP): 36 VDC
Over Current Protection (OCP): 3.33 A

Output Protection

Over Current Protection (OCP): 4.8A
Shout Current Protection: Yes

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ENCLOSURE

Dimensions (W x H x D)	117 × 148.5 × 106 mm
Weight	1.4 kg (4.0 lbs)
Mounting	DIN-rail, Wall mount
Operating Temperature	-10 to 60°C (-4 to 140°F) at 5 to 85% RH with 0.7m/s Airflow
Relative Humidity	10 to 95% RH @ 40°C, non-condensing
Shock Protection	Operating, IEC 60068-2-27, 50G, half sine, 11 ms
Vibration Protection	Operating, IEC 60068-2-64, 2 Grms, random, 5 ~ 500 Hz, 1hr/axis (mSATA)

PROCESSING, STORAGE, AND SECURITY

Edge Processing	Powerful edge processor for low-latency local control
Real-time Connectivity	Streams data to the Samsara cloud in real-time
Data Security	Data secured via SSL (256-bit, military-grade encryption)
Storage	Onboard storage for offline data logging when internet connectivity is unavailable; uploads data to the cloud when connectivity is restored to ensure no data interruptions

CONNECTIVITY

Serial Port	1 x RS-232/422/485, DB9, 50 to 115.2kbps
USB	2 x USB 2.0 ports, 2x USB 3.0 ports, 1x internal USB
Protocols	Modbus/RTU, Modbus/TCP, EtherNet/IP, OPC-UA, MQTT
LAN Ethernet	2 x RJ45, 10/100/1000 Mbps IEEE 802.3u 1000BASE-T Fast Ethernet
Wi-Fi	802.11 b/g/n
Cellular	4G LTE cellular connectivity, with 3G fallback where LTE coverage is unavailable LTE: quad band 2/4/5/12. 3G: dual band 2/5. Operating area: United States, Canada, Mexico

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LICENSE

Requires IG license. License includes cloud software, mobile apps, ongoing firmware updates, maintenance, and support

DIGITAL AND ANALOG I/O ACCESSORY MODULES

12-Channel Analog Input

ACC-IGM-AI

General

Certification: CE, FCC class A

Power Consumption: 4 W @ 24 VDC (typical)

Input

Channels: 12 (differential)

Input Type: V, mV, mA

Voltage/Current Range: ± 150 mV, ± 500 mV, ± 1 V, ± 5 V, ± 10 V, ± 20 mA, 0 to 20 mA, 4 to 20 mA

Resolution: 16-bit

Accuracy: $\pm 0.1\%$ FSR (voltage), $\pm 0.2\%$ FSR (current)

Sampling Rates: 12 sample/second (total)

Input Impedance: >10 M Ω (voltage), 120 Ω (current)

Common Mode Voltage: 200 VDC

Protection

2500 VDC isolation between channels and backplane

Over voltage protection

8-Channel Analog Output

ACC-IGM-AO

General

Certification: CE, FCC class A

Power consumption: 3.5 W at 24 VDC (typical)

Output

Channels: 8

Output type: V, mA

Output range: ± 2.5 V, ± 5 V, ± 10 V, 0 to 2.5 V, 0 to 5 V, 0 to 10 V, 0 to 20 mA, 4 to 20 mA

Resolution: 14-bit

Accuracy: $\pm 0.1\%$ FSR

Settling time: ~ 500 μ s

Slew Rate: 0.7 VDC/ μ s (per channel)

Span Drift: ± 60 ppm/ $^{\circ}$ C

Zero Drift ± 275 mV/ $^{\circ}$ C (Voltage), ± 250 mV/ $^{\circ}$ C (Current)

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DIGITAL AND ANALOG I/O ACCESSORY MODULES

8-Channel Analog Output

ACC-IGM-AO (continued)

Output (continued)

Drive voltage: 15 VDC

Load range: 0-500 Ω

Protection

Short circuit protection

2,500 VDC isolation between channels and backplane

24-Channel Digital Input/Output

ACC-IGM-DIO

General

Certification: CE, FCC class A

Power consumption: 2.5 W at 24 VDC (typical)

As Input

Channels: 12

Type: Sink or source load

Input voltage:

- Rated value: 24 VDC

- For "0" signal: -5 to 5 VDC

- For "1" signal: 15 to 30 VDC and -15 to -30 VDC

Input impedance: 10 K Ω

Input delay: 0.2 ms

Operating frequency: 3 kHz

Input filter: 3 ms

Span Drift: ± 60 ppm/ $^{\circ}$ C

Zero Drift ± 275 mV/ $^{\circ}$ C (Voltage), ± 250 mV/ $^{\circ}$ C (Current)

Drive voltage: 15 VDC

Load range: 0-500 Ω

Protection

Short circuit protection

2,500 VDC isolation between channels and backplane

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DIGITAL AND ANALOG I/O ACCESSORY MODULES

24-Channel Digital Input/Output

ACC-IGM-DIO (continued)

As Output

Channels: 12

Voltage range: 8 to 35 VDC

Rated current output: 0.5 A

Permitted current output: Max of 0.75 A

Leakage current: 0.1 mA

Switch rate:

- Resistive load: 300 Hz (max)
- Inductive load: 20 Hz (max)
- Lamp load: 200 Hz (max)

Protection

2,500 VDC isolation between channels and backplane

Over voltage protection (for DI channel)

Short circuit protection (For DO channel)

Thermal shutdown protection (For DO channel)

2-Slot Initial Expansion Backplane

ACC-IGM-Back

Initial backplane required for the initial addition of I/O and other modules, backplane supports two modules

2-Slot Additional Expansion Backplane

ACC-IGM-BackExp

Expansion backplane required for the addition of more than two modules; 2-Slot Initial Expansion Backplane must be installed prior to installing Additional Expansion Backplanes; each additional backplane supports an additional two expansion modules