



IG60 Industrial Controller

Datasheet



OVERVIEW

Managed by Samsara’s secure web-based dashboard, the IG60 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 make the IG60 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
- Powerful processing** Powerful onboard processor provides low-latency local control, independent of network bandwidth
- 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 \pm 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
LAN Ethernet	10/100/1000 Mbps
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

LICENSE

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

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DIGITAL AND ANALOG I/O ACCESSORY MODULES

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)

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

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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

Backplane Power Supply

ACC-IGM-PSBack

General

Certification CE, FCC class A, UL 508, Energy Star

Input

Rated Voltage: 115/230 VAC

Voltage Range 90 to 264 VAC

Rated Input Current 1.5 A (at rated load)

Rated Input Frequency 50/60 Hz

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DIGITAL AND ANALOG I/O ACCESSORY MODULES

Backplane Power Supply

ACC-IGM-PSBack (Continued)

General

Certification CE, FCC class A, UL 508, Energy Star

Input

Rated Voltage: 115/230 VAC

Voltage Range 90 to 264 VAC

Rated Input Current 1.5 A (at rated load)

Rated Input Frequency 50/60 Hz

Input Frequency Range 47 to 63 Hz

Inrush Current Limit: Less than 50 A

Output

Output Power: 72 W

Power Loss: ~ 8 to 9 W (at rated load)

Efficiency: Greater than 88% (at rated load)

Rated Voltage: 24 VDC

Rated Output Current: 3 A

Output Current Limit: 3.5 to 4.3 A

Residual Ripple: Less than 240 mVpp

Startup Delay: Less than 3 seconds

Voltage Rise: 60 ms (typical)

Protection

Isolation Protection: 42/42 VDC

Output Over Voltage: Shutdown as approximate 25 to 27 VDC, latch off mode

Over Load Protection: Auto-recovery mode

Short Circuit Protection: Auto-recovery mode