

Software House

iSTAR Edge G2 UL Addendum

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This UL addendum provides important information for UL-qualified installations of the iSTAR Edge G2.

Models

Table 1 outlines the various iSTAR Edge G2 systems and subassemblies.

Table 1: iSTAR Edge G2 Models

Model #s	Description	Wall Enclosure	Rack Enclosure	GCM/ Motherboard	ACM SE	ACM	PoE+ Module	PoE++ Module	LCD	Tamper Switch
Systems										
GSTAR 004	iSTAR Edge G2, 4-reader with enclosure	Yes	No	Yes	No	No	No	No	No	Yes
GSTAR004-POE	iSTAR Edge G2, 4-reader w/Encl & PoE module	Yes	No	Yes	No	No	Yes	No	Yes	Yes
GSTAR004-POE2	iSTAR Edge G2, 4-reader, w/Encl & PoE++	Yes	No	Yes	No	No	No	Yes	Yes	Yes
Sub-assemblies										
0650-1340-01	iSTAR Edge G2, RM-DCM-CAN Tamper Switch Assembly	No	No	No	No	No	No	No	No	Yes
ESTAR-LCD	iSTAR Edge, Edge G2 LCD (spare part)	No	No	No	No	No	No	No	Yes	No
GSTAR004-MB	iSTAR Edge G2, 4-reader, motherboard only, 4 readers (2 Wiegand), board only, includes LCD	No	No	Yes	No	No	No	No	Yes	No
GSTAR004-MBP	iSTAR Edge G2 4-reader, motherboard w/PoE module	No	No	Yes	No	No	Yes	No	Yes	No
ESTAR-CAN	iSTAR Edge, Edge G2 Enclosure	Yes	No	No	No	No	No	No	No	Yes
GSTAR004-MBP2	iSTAR Edge G2, 4-reader, motherboard w/PoE++, no enclosure	No	No	Yes	No	No	No	Yes	Yes	No
ESTAR-POE1	iSTAR Edge, Edge G2 PoE module	No	No	No	No	No	Yes	No	No	No
ESTAR-POE2	iSTAR Edge G2 PoE++ module	No	No	No	No	No	No	Yes	No	No

General notes

- For maintenance, programming, and troubleshooting information, see *the C•CURE 9000 2.90 Installation Quick Start Guide* (8200-1950-28). See www.swhouse.com for the latest documentation.
- It is recommended that maintenance procedures be performed at least once a year.
- iSTAR Edge G2 controller is supported with firmware version 6.8.0.xxxx
- Operational humidity range: 0-93%
- GSTAR004-RM is not evaluated by UL.
- Remote connection has not been evaluated by UL.
- GSTAR-CAN is a UL Listed model.
- All output circuits are power limited class 2.

- UL 294 performance levels are as follows:
 - Destructive Attack: 1
 - Line Security: 1
 - Endurance: 4
 - Standby Power: 1

- UL testing was evaluated with the following:
 - Card formats: MiFare, iClass, Desfire
 - Communication Protocols: Wiegand, RM, RS485 (OSDP)
 - Readers and reader/keypad models: RM2L-4000, KPD6, PRD6 (see [Table 2: Evaluated Communication Protocols and Readers](#) for more information).

Notes for a UL-qualified installation

The iSTAR Edge G2 is intended to be installed in accordance with the following:

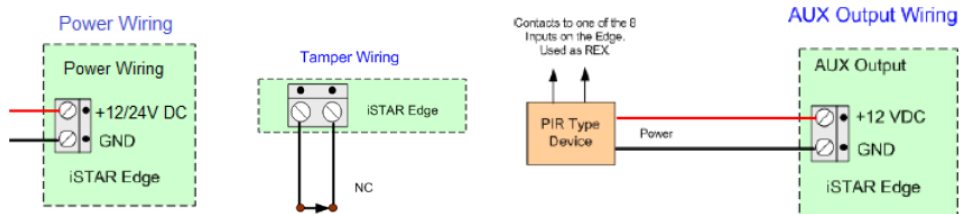
- Manufacturer's installation instructions.
- NFPA 70 – National Electrical Code, local electrical codes, and local authority having jurisdiction.
- CSA C22.1-02 – Canadian Electrical Code, Part 1, Safety Standard for Electrical Installations.
- UL 681 – Standard for installation and classification of burglar and holdup alarm systems (for UL 1076 and UL 2610 installations).
- UL 827 – Standard for central-station alarm services (for UL 2610 installations).
- Power over Ethernet (PoE) applications:
 - For a UL installation of GSTAR004-POE and GSTAR004-MBP for access control applications use only UL294, UL2610 and UL603 Listed injectors.
 - PoE installations are not for use in burglar alarm applications.
 - PoE injector may be used without a UL Listed surge protector.

- Per UL 2610/36.1.2 PoE installations are intended to comply with the following National Electrical Code requirement:
 - a) Where the power supplied over a communications cable is less than or equal to 60 watts: Article 725.121, Power Sources for Class 2 and Class 3 Circuits.

- iSTAR Edge G2 must be powered by an External DC Power Supply, such as the Software House apS, and it must be approved to UL 603 or UL 2610 for burglar alarm applications. It must also be power-limited with appropriate ratings and contain minimum 4-hour standby battery capability.
- For access control applications, the iSTAR Edge G2 must be powered from the specific PoE injectors noted above or an external DC power supply which is UL 294, UL 603, or UL 2610 Listed. It must also be power-limited with appropriate ratings and standby battery capability.
- Do not install outdoors or in an unprotected premises.
- Wiring methods must be in accordance with:
 - National Electrical Code, NFPA 70
 - Standard for Installation and Classification of Burglar and Holdup Alarm Systems, UL 681.
 - Standard for Central-Station Alarm Services, UL 827, as applicable.

- All circuits are power-limited.
- An NRTL listed switch between the panel and PC is required for installation
- Accessories must be NRTL listed to:
 - UL 634
 - UL 639
 - UL 1076 and/or UL 2610 for burglar alarm applications.
- Do not connect USB for UL installations.
- RM and RS-485 follows the same wiring protocol.
- The iSTAR Edge G2 is suitable for arming/disarming with the Model RM2L-4000 Reader and the proprietary monitoring station.
- Per UL 2610/40.1.5: Loss of communication with the monitoring station shall be treated as an alarm condition by monitoring station personnel when the burglar alarm system is in the armed state, and as a trouble condition while the system is disarmed.
- The motherboard contains a replaceable Panasonic ML-621 (3V/5mAh) battery.
- See Figure 1 for information on power, tamper, and request-to-exit wiring.

Figure 1: Power, Tamper, and Request-to-Exit (ReX) Wiring Diagrams



Complying with NRTL and UL requirements for Power over Communications cable equipment (UL 294 and UL 2610)

- The equipment is intended to comply with the following sections of the National Electrical Code, ANSI/NFPA 70: a) Where the power supplied over a communications cable is less than or equal to 60 watts: Article 725.121, Power Sources for Class 2 and Class 3 Circuits; b) Where the power supplied over a communications cable is greater than 60 watts: Article 725.144, Transmission of Power and Data.
- The power sourcing equipment (PSE) shall comply with the Standard for Information Technology Equipment, UL 60950-1, or the Standard for Audio/Video, Information and Communication Technology Equipment, UL 62368-1.
- A power-over-communications circuit must be power-limited and shall not exceed 60 V DC, 8.0 amperes, and/or 100 watts. Products shall be evaluated at the marked input/output circuit ratings.
- Where the product is intended to, or under normal use conditions can come in contact with the equipment users, the product shall comply with requirements for Protection of Equipment Users From Over-Voltages on Telecommunication Networks, described in the Standard for Information Technology Equipment, UL 60950-1, or the Standard for Audio/Video, Information and Communication Technology Equipment, UL 62368-1.
- Products that utilize power over communications cable are typically connected through standard eight-pin RJ-45 connectors. The connector configuration shall be supplied in the product documentation with the power over communications equipment.
- The equipment shall be provided with information concerning the PSE, connector configuration (e.g., Alternative A or Alternative B or both), and the maximum power class supported by the PSE.

Evaluated Communication Protocols and Card Formats

UL testing was evaluated with Wiegand 26, MiFare, iClass, and Desfire card formats.

Table 2, below, provides information on the communication protocols and readers evaluated for UL installations.

Table 2: Evaluated Communication Protocols and Readers

Model	Manufacturer	Communication Protocol	Electrical Rating
RM2L-4000 (This must be used as the arming keypad in burglar alarm installations).	Software House	Wiegand	12 VDC
KPD6	Deister Electronics USA Inc.	RM	9.5 – 25.5 VDC
PRD6	Deister Electronics USA Inc.	Wiegand	9.5 – 25.5 VDC

Table 3: Edge G2 ETH1 and ETH2 Port Descriptions

Edge G2 (and Ultra G2 GCM) ETH1 Port Description	Edge G2 (and Ultra G2 GCM) ETH2 Port Description
Pin 1 DataPair0_P	Pin 1 DataPair0_P
Pin 2 DataPair0_N	Pin 2 DataPair0_N
Pin 3 DataPair1_P	Pin 3 DataPair1_P
Pin 4 DataPair1_N	Pin 4 DataPair1_N
Pin 5 DataPair2_P	Pin 5 DataPair2_P
Pin 6 DataPair2_N	Pin 6 DataPair2_N
Pin 7 DataPair3_P	Pin 7 DataPair3_P
Pin 8 DataPair3_N	Pin 8 DataPair3_N

Specification updates

Table 4, below, provides an update to the iSTAR Edge G2 power specifications.

Table 4: Power Specifications Update

Circuit	Voltage	Current
DC power input*	12 or 24 VDC	5A
PoE++ module power input**	45.5 VDC to 57 VDC	51 W (max load)
RM/RS485 (4 provided)	12 VDC input = 9.56-12 VDC 24 VDC input = 12 VDC PoE input = 12 VDC	1.2 A each
Wiegand*** (2 provided)	12 VDC input = 9.37-12 VDC 24 VDC input = 12 VDC PoE input = 12 VDC	750 mA each****
Wet Relay*** (4 provided)	12 VDC input = 8.99-12 VDC 24 VDC input = 12 VDC or 21.79-24 VDC PoE input = 12 VDC or 24 VDC	750mA each
Dry Relay (4 provided)	30 VDC	3A inductive
Aux Power*** (2 provided)	12 VDC input = 9.71-12 VDC 24 VDC input = 12 VDC PoE input = 12 VDC or 24 VDC	350 mA combined

* For 12 and 24 VDC input power, output must not exceed 4.5 A input rating (not including board logic) or 5 A input rating (including board logic).

** For PoE input power, output is not to exceed 2A input rating not including board logic. Total input 2.5A including board logic.

