Gallagher Command Centre

Underwriters' Laboratory Inc. - Configuration Requirements

This document provides unit compatibility information and specific configuration requirements to ensure the installed system complies with the license requirements applicable to Gallagher Command Centre software and associated hardware.

☑ Mandatory requirement to comply with the associated standard.

☒ Not permitted for use for the associated standard.

✓ Optional. Allowed for use for the associated standard.

Application Software	Version	Models	UL2610	UL294
Gallagher Command Centre	vEL8.xx.xxx vEL9.xx.xxx	C201311	☑	☑
Gallagher Controller software	vGR8.1x.xxx vCR8.xx.xxxxxxx vCR9.xx.xxxxxxx	C300100 C300101 C305101 C400020 C400021 C400010 C400011	✓	✓

Server and Workstation Hardware	Models	UL2610	UL294
IBM Server - Two Required. Redundant computer platforms consisting of computer, Listed (NWGQ), IBM, Model MT-M 8315-61U and monitor, KDS, Model VS-7b. Details are as follows: CPU: Windows XP Professional, OS Version 5.01 Genuine Intel Pentium 4 CPU, 1.8 GHz 1800 36130 MB Hard Drive 512 MB RAM	IBM MT-M61U	✓	✓
Comark Server	Duramobile	✓	✓
Stratus HA Server	FTServer 5700	✓	✓
Any ITE60950 compliant computer	Various	☒	✓
Any ITE60950 listed printer	Various	✓	✓

Network Equipment	Models	UL2610	UL294
Any ITE60950 and/or UL62368-1 compliant equipment	Various	✓	✓

DC Power Supply	Models	UL2610	UL294
Units shall be connected to a UL294, UL 2610 Listed power supply or control panel which is capable of supplying a minimum 4 hour standby power utilizing standby batteries. The power supply shall provide an output voltage compatible with the input voltage range of the units being energized under normal and standby conditions	Various	✓	✓
Units to be powered by a PSE shall be connected to a UL 60950-1, and/or UL 62368-1, compliant PSE. The PSE must be a Type 2 (PoE+) power source or better. The connector config shall either be A or B ethernet termination.	Various	☒	✓
UL evaluated with Altronix Netway1E (Type 2 only) Rated Primary 115VAC 50/60 Hz 1.5 A; Secondary Rated 55VDC, 85W		☒	✓

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Cabinets	Models	UL2610	UL294
Gallagher Cabinet	C200100	✓	✓
Gallagher Dual Cabinet	C200104	✓	✓
Gallagher Dual Cabinet, reinforced door	C200107	✓	✓
UL tested with Life safety enclosure models E5 an E6. For C7000 Single Door Controllers	C4000xx	✓	✓

Gallagher Controller hardware installed in C200100 Cabinets	Models	UL2610	UL294
Controller 6000 x* equipment, PCB with protective covers	C3001xx	✓	✓
Controller 6000 Enhanced x* equipment, PCB with protective covers	C3001xx	✓	✓
Controller 6000NU x* equipment, PCB with protective covers	C3001xx	✓	✓
Controller 6000HS High Security x* equipment, PCB with protective covers	C3051xx	✓	✓
Controller 7000 equipment, PCB with protective covers	C4001xx	✓	✓
Controller 7000 High Security equipment, PCB with protective covers	C405101	✓	✓
Controller 7000 Single Door variants with mounting plate accessory	C4000xx	✓	✓
Controller 7000 Single Door variants with mounting plate accessory PoE (Wiegand / RS485)	C4000xx	✓	✓

Gallagher Controller hardware installed in C200104 Dual Cabinets	Models	UL2610	UL294
Controller 6000 x* equipment, PCB with protective covers	C3001xx	✓	✓
Controller 6000HS x* equipment, PCB with protective covers	C3001xx	✓	✓
Controller 6000NU x* equipment, PCB with protective covers	C3001xx	✓	✓
Controller 6000HS PIV x* equipment, PCB with protective covers	C3051xx	✓	✓
Controller 7000 equipment, PCB with protective covers	C4001xx	✓	✓
Controller 7000 High Security equipment, PCB with protective covers	C405101	✓	✓
Controller 7000 Single Door variants with mounting plate accessory (DC) Wiegand / RS485	C4000xx	✓	✓
Controller 7000 Single Door variants with mounting plate accessory PoE (Wiegand / RS485)	C4000xx	☒	✓

* x refers to variations incorporating software imits

Gallagher Reader Modules associated with Gallagher 6000 and 7000 Standard variant Controllers	Models	UL2610	UL294
4H Module	C300142	✓	✓
8H Module	C300182	✓	✓

Gallagher Devices installed in either C200100 cabinets or C200104 Dual Cabinets	Models	UL2610	UL294
HBUS 8 In 2 Out Door Module	C300660	✓	✓
HBUS 8 In Board	C300680	✓	✓
HBUS 8 In 4 Out Board	C300684	✓	✓
HBUS 16 In 16 Out Board	C300688	✓	✓
HBUS 8 Port Hub	C300698	✓	✓
PSTN Dialler	C200620	✓	✓

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UL have evaluated the below listed 3rd party cabinets to be compatible with the selected Gallagher products to meet UL 2610 and UL294. Refer to the listed manufacturers UL294 & UL2610 rated classifications.

Gallagher Product	Model	3rd Party UL compliant Cabinet
Controller 7000 Equipment	C4001xx	• Life Safety Power FPO150-E4M PSU & E4 Enclosure Kit • Altronix Trove M2 PSU & Enclosure Kit
Controller 7000 High Security	C405101	
QuickSwitch ME02	C300700	
QuickSwitch ME52	C300701	
QuickSwitch ME16IN	C300706	
QuickSwitch ME16OUT	C300707	

Gallagher T Series Readers	Models	UL2610	UL294
T10 MIFARE Reader	C300400 C300401	✓	✓
T10 MIFARE Reader, High Security	C305400 C305401	✓	✓
T11 MIFARE Reader	C300410 C300411	✓	✓
T11 MIFARE Reader, High Security	C305410 C305411	✓	✓
T11 Multi Tech Reader	C300430 C300431	✓	✓
T11 Multi Tech Reader, High Security	C305430 C305431	✓	✓
T12 MIFARE Reader	C300420 C300421	✓	✓
T12 Multi Tech Reader	C300440 C300441	✓	✓
T15 MIFARE Reader	C300470 C300471	✓	✓
T15 MIFARE Reader, High Security	C305470 C305471	✓	✓
T15 Multi Tech Reader	C300480 C300481	✓	✓
T15 Multi Tech Reader, High Security	C305480 C305481	✓	✓
T20 MIFARE Terminal	C300450 C300451	✓	✓
T20 Multi Tech Terminal	C300460 C300461	✓	✓
T20 MIFARE Terminal, High Security	C305450 C305451	✓	✓
T20 Multi Tech Terminal, High Security	C305460 C305461	✓	✓
T21 MIFARE Reader, High Security	C305500 C305501	✓	✓
T21 High Security Reader REV1	C305505 C305506	✓	✓
T21 Multi Tech Reader, High Security	C305510 C305511	✓	✓
T30 Multi Tech Keypad Reader	C300490 C300491	✓	✓
T30 MIFARE Keypad Reader	C300495 C300496	✓	✓

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HID Readers	Models	UL2610	UL294
HID Reader	5355A	☒	✓
UL has evaluated R10E-R40E and RPK10E-RPK/RP40E Readers for 7K Contoller using Wiegand protocol.	5365	☒	✓

Voltage / Current Measurements

The following table lists Gallagher hardware voltage and current limits to meet UL specifications:

Module	Input		Output			
	Voltage	Current	Relay		Vout	
			Voltage	Current	Voltage	Current
Tamper Board	5 Vdc	30 mA	N/A	N/A	N/A	N/A
HBUS 8 In 2 Out Reader Module	13.6±15% Vdc	50 mA (relays off) 135 mA (relays on)	24V DC/AC	3A resistive, 1A inductive	10-16 Vdc	500 mA
HBUS 4 In 2 Out Module, Wiegand	13.6±15% Vdc	50 mA (relays off) 135 mA (relays on)	24V DC/AC	3A resistive, 1A inductive	13.6 Vdc	750 mA
HBUS 8 In Module	13.6±15% Vdc	50 mA	N/A	N/A	N/A	N/A
HBUS 8 In 4 Out Module	13.6±15% Vdc	45 mA (relays off) 200 mA (relays on)	24V DC/AC	3A resistive, 1A inductive	N/A	N/A
HBUS 16 In 16 Out Module	13.6±15% Vdc	73 mA (relays off) 674 mA (relays on)	24V DC/AC	3A resistive, 1A inductive	N/A	N/A
HBUS 8 Port Hub	13.6±15% Vdc	20 mA	N/A	N/A	N/A	N/A
PSTN Dialler	13.6±15% Vdc	300mA	24V DC/AC	3A resistive, 1A inductive	N/A	N/A
QuickSwitch ME02	13.6±15% Vdc	50 mA (relays off) 200 mA (relays on)	24V DC/AC	3A resistive, 1A inductive	Output is off-set from input by 0.5VDC	600 mA per reader port
QuickSwitch ME52	13.6±15% Vdc	50 mA (relays off) 275 mA (relays on)	24V DC/AC	3A resistive, 1A inductive	Output is off-set from input by 0.5VDC	600 mA per reader port
QuickSwitch ME16IN	13.6±15% Vdc	40 mA (relays off) 115 mA (relays on)	24V DC/AC	3A resistive, 1A inductive	N/A	N/A
QuickSwitch ME16OUT	13.6±15% Vdc	30 mA (relays on) 650 mA (relays off)	24V DC/AC	3A resistive, 1A inductive	N/A	N/A

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Module	Input		Output			
	Voltage	Current	RS485 1		RS485 2	
			Voltage	Current	Voltage	Current
6000 Controller 6000NU Controller	13.6 +15% Vdc	1.94 A	VDC Output is offset from input by 0.4VDC	750 mA	VDC Output is offset from input by 0.4VDC	750 mA
6000HS Controller 6000HS High Security Controller	13.6±15% Vdc	2.0 A	VDC Output is offset from input by 0.4VDC	750 mA	VDC Output is offset from input by 0.4VDC	750 mA
Controller 7000 Standard (C400100)	13.6±15% Vdc	130m A	VDC Output is offset from input by 0.4VDC	750 mA	VDC Output is offset from input by 0.4VDC	750 mA
Controller 7000 Enhanced (C400101)	13.6±15% Vdc	200 mA	VDC Output is offset from input by 0.4VDC	750 mA	VDC Output is offset from input by 0.4VDC	750 mA
Controller 7000 High Security (C405101)	13.6±15% Vdc	200 mA	VDC Output is offset from input by 0.4VDC	750 mA	VDC Output is offset from input by 0.4VDC	750 mA

Module	Input		Output							
	Voltage	Current	Vout 1		Vout 2		Vout 3		Vout 4	
			Voltage	Current	Voltage	Current	Voltage	Current	Voltage	Current
4H Module	13.6 +15% Vdc	2.09 A	9-16 Vdc	750 mA	9-16 Vdc	750 mA	N/A	N/A	N/A	N/A
8H Module	13.6 +15% Vdc	3.96 A	9-16 Vdc	750 mA	9-16 Vdc	750 mA	9-16 Vdc	750 mA	9-16 Vdc	750 mA

CONTROLLER 7000 SINGLE DOOR

Module	Input		Output				Battery Charge	
	Voltage	Current/ Watts	Lock Output / AUX		Reader Output		Voltage	Current/ Watts
			Voltage	Current/ Watts	Voltage	Current/ Watts		
Controller 7000 Single Door PoE+, RS485 (C400020) (PoE is not UL2610 compliant)	PoE configured PSE Type 2 only	1.5A/ 19.3 W	13.6Vdc	0.5A/6.8 W	13.6Vdc	0.5A/6.8 W	13.6Vdc	0.2A/2.7 W
	DC configured 13.6±15% Vdc	1.8 Amps	13.6±15% Vdc	1A	13.6±15% Vdc	0.6A	N/A	N/A
Controller 7000 Single Door PoE+, Wiegand (C400021) (PoE is not UL2610 compliant)	PoE configured PSE Type 2 only	1.5A/ 19.3 W	13.6Vdc	0.5A/6.8 W	13.6Vdc	0.5A/6.8 W	13.6Vdc	0.2A/2.7 W
	DC configured 13.6±15% Vdc	1.8 Amps	13.6±15% Vdc	1A	13.6±15% Vdc	0.6A	N/A	N/A
Controller 7000 Single Door, RS485 (C400010)	13.6±15% Vdc	1.8 Amps	13.6±15% Vdc	1A	13.6±15% Vdc	0.6A	N/A	N/A
Controller 7000 Single Door, Wiegand (C400011)	13.6±15% Vdc	1.8 Amps	13.6±15% Vdc	1A	13.6±15% Vdc	0.6A	N/A	N/A
Controller 7000 Single Door Relay Board (C400910)	13.6±15% Vdc	50 mA	N/A	N/A	N/A	N/A	N/A	N/A

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OUTPUTS (Dry)

Model	Voltage	Current
Controller 7000 Single Board Relay Board (C400910)	24 VAC/VDC	3 A (Resistive) (S)
		1 A (Inductive) (S)
Controller 7000 Single Door PoE+, RS485 (C400020) Controller 7000 Single Door PoE+, Wiegand (C400021) Controller 7000 Single Door, RS485 (C400010) Controller 7000 Single Door, Wiegand (C400011)	24 VAC/VDC	3 A (Resistive) (S)
		1 A (Inductive) (S)

(S) = separately energized

OUTPUTS (Wet)

Model	Voltage (Output)	Current	Circuit
Controller 7000 Single Door PoE+ (RS485 or Wiegand) With PoE input	13.6Vdc (+/-15%)	1 Amp total combined between all the outputs. 500 mA max per port	Reader +ve power out
			Relay +ve power out
			Open collector output

Notes:

- Combined load on outputs not to exceed 1.0 Amps (Reader output fused at 0.6 Amps and Relay circuit fused @ 1 Amps @ 13.6Vdc (+/-15%).
- When battery charger is active for PoE configuration only, this adds 0.2 Amps to the load on the unit. This is in addition to the 1 Amp output.
- The PoE configuration is not listed to UL2610.

Input Secondary: (Battery) Standby for UL 294 In standalone mode

	Model	Voltage	AH
Input Standby Power	Controller 7000 Single Door, PoE+, RS485 (C400020)	12 VDC	7 AH
	Controller 7000 Single Door, PoE+, Wiegand (C400021)	12 VDC	7 AH

UL Verified with PSE power supply Altronix model Netway 1

Rated Primary 115VAC 50/60 Hz 1.5 A Secondary rated 55VDC, 85W.

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Reader Model	Part No.	9 Volts Supply		16 Volts Supply	
		Normal standby (mA)	Operate (mA)	Normal standby (mA)	Operate (mA)
T10 MIFARE Reader	C300400 (Black) C300401 (White)	73.2	123.2	43.3	70.1
T10 PIV Reader	C305400 (Black) C305401 (White)	82.5	158.2	47.4	72.3
T11 MIFARE Reader	C300410 (Black) C300411 (White)	63.2	110.4	40.5	61.1
T11 Multi Tech Reader	C300430 (Black) C300431 (White)	72.5	127.7	43.9	68.1
T11 High Security MIFARE Reader	C305410 (Black) C305411 (White)	79	125	44.75	77
T11 High Security Multi Tech Reader	C305430 (Black) C305431 (White)	116.6	210.2	99.1	176
T11 High Security Custom Multi Tech Reader	C305830 (Black) C305831 (White)	111.3	200.6	94.3	169.4
T12 MIFARE Reader	C300420 (Black) C300421 (White)	63.2	110.4	40.5	61.1
T12 Multi Tech Reader	C300440 (Black) C300441 (White)	72.5	127.7	43.9	68.1
T15 MIFARE Reader	C300470 (Black) C300471 (White)	70	115	50	77
T15 Multi Tech Reader	C300480 (Black) C300481 (White)	110	168	81	136
T15 MIFARE Reader, High Security	C305470 (Black) C305471 (White)	70	115	50	77
T15 Multi Tech Reader, High Security	C305480 (Black) C305481 (White)	110	168	81	136
T20 MIFARE Terminal	C300450 (Black) C300451 (White)	262	420	168	257
T20 Multi Tech Terminal	C300460 (Black) C300461 (White)	246	450	157	283
T20 MIFARE Terminal, High Security	C305450 (Black) C305451 (White)	262	420	168	257
T20 Multi Tech Terminal, High Security	C305460 (Black) C305461 (White)	246	450	157	283
T21 MIFARE Reader, High Security	C305500 (Black) C305506 (White)	233	357	149	218
T21 PIV Reader REV1	C305505 (Black) C305501 (White)	293	464	200	257
T21 Multi Tech Reader, High Security	C305510 (Black) C305511 (White)	255	464	164	281
T30 Multi Tech Keypad Reader	C300490 (Black) C300491 (White)	165	266	111	173
T30 MIFARE Keypad Reader	C300495 (Black) C300496 (White)	166	267	111	174

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Line Security, Destructive Attack, Endurance and Standby Power Test Levels

Model	Access Control Line Security	Destructive Attack	Endurance	Standby Power
Access control unit and burglar alarm card readers: T10 (C300400; Black Colour), T10 (C300401; White Colour), T10 High Security (C305400; Black Colour), T10 High Security (C305401; White Colour), T11 MIFARE (C300410; Black Colour), T11 MIFARE (C300411; White Colour) T11 Multi (C300430; Black Colour) T11 Multi (C300431; White Colour) T11 High Security MIFARE (C305410 Black Colour) T11 High Security MIFARE (C305411 White Colour) T11 High Security Multi (C305430; Black Colour) T11 High Security Multi (C305431; White Colour) T11 High Security Multi, BLe (C305830; Black Colour) T11 High Security Multi, BLe (C305831; White Colour) T12 MIFARE (C300420; Black Colour), T12 MIFARE (C300421; White Colour), T12 Multi (C300440; Black Colour), T12 Multi (C300441; White Colour), T15 MIFARE (C300470; Black Colour), T15 MIFARE (C300471; White Colour), T15 Multi (C300480; Black Colour), T15 Multi (C300481; White Colour), T15 High SecurityMIFARE (C305470; Black Colour) T15 High SecurityMIFARE (C305471; White Colour) T15 High Security Multi (C305480; Black Colour) T15 High SecurityMulti (C305481; White Colour) T15 High Security Multi BLE (C305870; Black Colour) T15 High Security Multi BLE (C305871; White Colour) T20 MIFARE (C300450; Black colour) T20 MIFARE (C300451; White colour) T20 Multi (C300460; Black colour) T20 Multi (C300461; White colour)) T20 High Security Multi (C305860 Black Colour) T20 High Security Multi (C305861 White Colour) T21 High Security (C305500; Black Colour) T21 High Security (C305501; White Colour) T21 High Security Reader REV1 (C305505; Black Colour) T21 High Security Reader REV1 (C305506; White Colour) T21 High Security Multi (C305510; Black Colour) T21 High Security Multi (C305511; White Colour) T30 Multi (C300490; Black) T30 Multi (C300491; White) T30 MIFARE (C300495; Black) T30 MIFARE (C300496; White)	Level II (Note 2) (Note 4)	Level 1 (Note 3)	Level IV	Level IV (Note 1)

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Line Security, Destructive Attack, Endurance and Standby Power Test Levels (continued…)

Model	Access Control Line Security	Destructive Attack	Endurance	Standby Power	Notes
Controllers: 6000HS, 6000HS-PIV, 6000NU, or 6000. 7000 Standard 7000 Enhanced 7000 High Security **Access control system subassemblies:** 4H, 8H Reader Modules HBUS 8 in Board HBUS 16 In 16 Out Board HBUS 8 In 4 Out Board HBUS Door Module 8 in 2 out HBUS Door Module 4 in 2 out (Wiegand) HBUS 8 port Hub QuickSwitch ME02 QuickSwitch ME52 QuickSwitch ME16IN QuickSwitch ME16OUT	Level II (Note 2) (Note 4)	Level I (Note 3)	Level IV	Level IV (Note 1)	
Controller 7000 Single Door PoE+, RS485 (C400020)	Level I	Level I	Level IV	Level IV	PoE configured power source may only be used for UL294 applications in a standalone mode
Controller 7000 Single Door PoE+, Wiegand (C400021)					
Controller 7000 Single Door, RS485 (C400010)	Level I	Level I	Level IV	Level IV	When powered via a UL294 / UL2610 Power Supply
Controller 7000 Single Door, Wiegand (C400011)					
Cabinet, dual cabinet enclosures	Level I	Level I (Note 3)	Level I	Level I	
Tamper Interface Module	Level I	Level I (Note 3)	Level IV	Level IV (Note 1)	

Note 1: For 4 Hour Standby power duration, the following power supply models have been UL evaluated with Gallagher products:

- Altronix AL4000UL
- Altronix Netway1E Type 2 only) when supplied shall be supplied with LifeSafety enclosure E5, E6.
- Altronix eFlow4NB
- LifeSafety Power FP075
- LifeSafety Power FP0150
- Can be powered with any UL294 / UL2610 compliant power source with tamper protection and minimum of 4 hours of standby power DC units.

Note 2: Encrypted line security
To achieve Level III UL 294 access control encrypted line security requirements between the PIV reader and PIV control panel a local visual/ audible sounding device is required to indicate a compromise attempt to the user. For line security between the control panel and monitoring station the monitoring station is required to provide the appropriate visual and audible indication to the user. At minimum, the command centre monitoring station, one control panel and one reader with 128 bit encryption enabled, is required to achieve this rating.

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Note 3: Attack Requirements

(a) All the above devices are located inside the protected premise. The only devices outside of the protected premise are the reader terminals.

(b) To achieve the Level 3 UL 294 attack requirements at minimum all devices shall be connected to a controller and the controller shall be connected to the command centre monitoring station.

Note 4: The Non PIV readers and controllers are Listed for Line security Level II.

Note 5: For BLE enabled readers, the following credentials maybe used that need to be installed on a smart device such as a smart phone:

- Mobile credential software Gallagher Mobile Connect version 14.xx.xxx or higher
- BLE 4.0 xx or higher
- Mobile software compatible with smart devices running Apple version iOS 10 or higher and Google android version 5.0 or higher.

Configuration requirements applicable to all USA UL Installations:

(a) The control unit is powered from a UL 294 and/or UL 2610 Listed power supply with minimum standby power. The supervision of the supply's primary power is accomplished by monitoring the AC loss contacts of the power supply. A tamper switch is provided to monitor the control's front cover removal. For either the AC loss or tamper conditions, a resultant status change must occur at the central supervisory station.

(b) Should the total equipment power requirement plus power to recharge the battery exceed the rating of a single power supply system, then additional power supplies must be provided.

(c) A minimum spacing of 5mm (¼ inch) must be provided between power limited and non-power limited wiring.

(d) Products and systems listed in the User Guide are not listed as having UL certification unless included in this UL Configuration Requirements section.

(e) Any cables providing signalling from outside the protected area must be supervised using dual 4k7 ohm resistors, connected as shown in the respective hardware Installation Notes.

(f) If a Dual Cabinet is used without either a Gallagher Controller 6000 variant, Gallagher Controller 7000 variant or a Gallagher High Density I/O Interface, then a tamper board must be installed to provide anti-tamper protection.

(g) Interlocked doors configuration has not been evaluated by UL.

(h) All signaling cables to be 22 AWG or larger. All power cables to be 18 AWG or larger.

(i) The Watch Dog relay function has not been evaluated by UL**.**

(j) The processor temperature monitor (Controller 6000HS and 6000HS PIV) has not been evaluated by UL.

(k) If configured to partition, acknowledgement signal must be present at all arming stations and all power supplies to be continuously monitored.

(l) Products and systems that are not UL Listed for Burglar Alarm or Access Control cannot be connected in an UL Listed Burglar Alarm or Access Control system.

(m) Supervision of field devices must use UL listed end -of-line resistors.

(n) The control unit shall be mounted in a protected area.

(o) All knockouts on the Gallagher Dual Cabinet shall be connected to conduit in UL installations.

(p) The Gallagher Dual Cabinet shall not be mounted on an electrical outlet. The unit shall be flush mounted to prevent access to the back of the enclosure.

(q) The two Ethernet connections available on the Controller 6000HS and 6000HS PIV are referred to by Gallagher as "primary" and "secondary" Ethernet connections. This terminology does not infer Supplementary or Secondary (dual) communication circuits as defined in the UL Standard. The second Gallagher Ethernet port provides an alternative Controller communication path only should the first circuit fail.

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(r) Refer to the 'Configuring Local Overrides at Card Readers' topic in the Gallagher Command Centre help file, for instructions for arming/disarming alarm zones at a reader. This feature is only available when the system is installed for burglar alarm or burglar alarm and access applications.

(s) T Series Readers have not been evaluated in 'daisy chain' configuration for UL approved installations.

(t) T20 Terminals shall not be installed outdoors for UL approved installations.

(u) The models 7000 Controllers PoE versions are listed to UL294 only when configured and installed with a PoE power source.

(v) The models 7000 SDC Controllers RS485 PoE/DC RS485 and all QuickSwitch module variant communication lines are limited to max cable length of 98 feet (30 meters) to be installed in the same room.

Configuration requirements applicable to UL2610 installations:

(a) A UL2610 Listed power supply must be configured to supply 4 hours of standby power. Loss of AC signal is transmitted to the central supervising station before the capacity of standby power has decreased below 4 hours.

(b) Supervision of field devices must use UL listed end -of-line resistors.

(c) The priority of signals must be configured from highest to lowest priority as follows:
Burglar Alarm
Burglar-alarm supervision
Unauthorised card read
Other signals with Burglar Alarm system signals having the highest priority.

(d) Communication medium to a central monitoring station:

i The communication medium between the protected property and the central monitoring station shall be for the exclusive use of the protected property and is not to be shared with other subscribers.

ii With the PSTN dialler, a maximum delay time for signals reaching the monitoring console is 90s.

iii For Grade 2 compliance with the PSTN dialler, the minimum number of required characters for access by memorized information only shall be 5 characters numeric.

iv The PSTN dialler shall wait for 3 to 7 seconds after going off-hook before beginning the dialling process.

v Periodic test signals must be configured for:

- PSTN: 24 hours
- TCP/IP (PSDN): 1 minute

vi If dual path communication is present (i.e. PSTN & TCP/IP) the primary means of communication must report communication failure/loss via the secondary path to the central monitoring station.

vii When multiplex system signals are transmitted directly from the protected systems to the central supervising station and the loss of the channel prevents the receipt of signals from protective circuits beyond the fault, the number of separate signals (i.e. control units) on a single channel is limited to 1000.

viii If the Ethernet (PSDN) communication fails or a compromise attempt is detected the following message will be displayed at the monitoring station:

Controller '[Name]' Offline

ix For security levels III and IV, a means to communicate via cellular transmission as an alternative and be equipped with 24-hour standby power must be supplied. Otherwise, the customer must provide 24-hour UPS backup across their networking equipment between the controller and the alarm receiving station.

- UL have evaluated the PSTN dialler and the DACR equipment, DSC's Cellular Universal Wireless Alarm Communicator (DSC LE4010-AT) as compatible with transmitting messages to a UL compliant central monitoring station.

(e) When multiplex system signals are transmitted directly from the protected systems to the central supervising station and the loss of the channel prevents the receipt of signals from protective circuits beyond the fault, the number of separate signals (i.e. control units) on a single channel is limited to 1000.

(f) If the Ethernet (PSDN) communication fails or a compromise attempt is detected the following message will be displayed at the monitoring station:

Controller '[Name]' Offline

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(g) The Gallagher Remote Arming Terminal has been verified by UL only for arming and disarming the system.

(h) When arming the system from the protected premise, a Tomar model 250LS-12-80-W strobe light must be installed in a position adjacent to and visible from a Gallagher unit used for arming an Alarm Zone. Follow the instructions next in Appendix A to setup the required macro at the central station to enable the strobe to illuminate when the central station receives the arming signal from the protected premise. The strobe shall remain illuminated for approximately 5 seconds.

(i) The entry delay must be configured to be less than 60 seconds.

(j) User cannot force arm the system unless open zones are required to be manually bypassed.

(k) The supervision of the supply's primary power is accomplished by the Gallagher Controller 6000, 6000NU, 6000 Enhanced and 6000HS High Security, 7000 Standard and 7000 Single Door DC configured only controllers monitoring the AC loss contacts of the power supply. A tamper switch is provided to monitor the control's front cover removal. For either the AC loss or tamper conditions, a resultant status change occurs at the central supervisory station.

(l) All receiving equipment shall be completely duplicated with provision for switchover to the backup system within 30 seconds. The backup system shall be fully operational within 6 minutes of the loss of the primary system. This allows 330 seconds for the backup system to be fully energized and connected to necessary communication lines and other devices, followed by 5-1/2 minutes for the system to boot up, conduct memory tests, file system check, security verifications, and prepare for full system operation. The backup computer shall have the capabilities of the primary, such as memory, speed, and the like.

(m) In addition to the main power supply and secondary power supply that are required to be provided at the central supervisory station, the system shall be provided with an uninterruptible power supply (UPS) with sufficient capacity to operate the computer equipment for a minimum of 15 minutes. If more than 15 minutes is required for the secondary power supply to supply the UPS input power, the UPS shall be capable of providing input power for at least that amount of time.

(n) The UPS shall comply with the Standard for Uninterruptable Power Supply Equipment, UL 1778, or the Standard for Fire Protective Signaling Devices, UL 1481. In order to perform maintenance and repair service, a means for disconnecting the input to the UPS while maintaining continuity of power to the automation system shall be provided.

The following points are only applicable to the central supervisory (receiving) station:

(o) Line transient protection complying with the Standard for Transient Voltage Surge Suppressors, UL 1449, with a maximum marked rating of 330 V.

(p) Signal line transient protection complying with the Standard for Protectors for Data Communications and Fire Alarm Circuits, UL 497B, with a maximum marked rating of 50 volts.

(q) Communication circuits and network components connected to the telecommunications network shall be protected by secondary protectors for communication circuits. These protectors shall comply with the Standard for Secondary Protectors for Communications Circuits, UL 497A. These protectors shall be used only on the protected side of the telecommunications network.

(r) The central supervisory equipment shall be installed in a temperature controlled environment. A temperature controlled environment is defined as one that can be maintained between 13 – 35ºC (55 – 95ºF) by the HVAC system. 24 h of standby power shall be provided for the HVAC system. The standby power system for the HVAC system may be supplied by an engine driven generator alone. A standby battery is not required to be used.

(s) For 7000 Single Door Controllers and 7000 Standard Controllers: When armed from the protected premise the Listed Tomar, Model 270LS-12-80-W steadyburn warning light, must be employed. It may be mounted inside the protected premise (if visible from outside the protected premise) or outside the protected premise. The installation instructions shall include instructions to create the macro which configures the strobe and turns it off after 5 seconds.

(t) PoE power source configuration of the 7000 Single Door Controllers are not listed to UL2610.

(u) For the models 7000 Single Door Controllers RS485 versions the communication Port A/B wire leads installer is not permitted to connect cables greater that 98.5 feet (30 meters) long to the product or to specific circuits of the product.

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Configuration requirements applicable to UL294 installations:

(a) The minimum system configuration consists of:
Model Gallagher Controller 6000 or 7000 variants, Listed (ALVY), (APOU) power supply, reader and lock.

(b) The system shall not be installed in the fail secure mode unless permitted by the local authority having jurisdiction and shall not interfere with the operation of panic hardware.

(c) The control unit shall be mounted and secured inside the protected area.

(d)

(e) Elevators connected to the Gallagher Command Centre system must be configured “fail safe” and the elevator and elevator control unit must not be UL Listed.

Additional to the above for C22.2 only.....

(f) Subsequent to installation, the cable entry opening into the Gallagher Dual Cabinet must have cover plates fitted to reduce the opening to less than 12.7mm (0.5 inch) in any dimension.

(g) The exit device and wiring must be contained within the secured area.

(h) Gallagher Command Centre versions vEL6.10.xxx or vEL7.00.xxx and above have not been tested or approved to meet the C22.2 standard.

(i) Gallagher Controllers 6000, 6000NU, 6000HS and 6000HS-PIV have not been tested or approved to meet the C22.2 standard.

(j) Gallagher R Board and H Board expansion modules have not been tested or approved to meet the C22.2 standard.

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Appendix A:

Configuration required confirming that the central station is notified of system arming.

The UL requirement is to ensure an Alarm Zone cannot be armed should the receiving station (server) be off-line. As a general rule, all Gallagher Controller activity is managed on the Controller and will continue to function should the Controller go off-line. To meet the UL requirement, the Controller must attempt to contact a function which is only server based to verify that the server is present, before allowing the Alarm Zone to set.

The configuration described below operates as follows:

(i) A request to arm is presented to a "pre-arm" Alarm Zone.
(ii) The output status of the pre-arm Alarm Zone is used to initiate a server based macro.
(iii) When contacted, the macro requests the main Alarm Zone to arm.
(iv) The main Alarm Zone arms.
(v) If the server is not on-line, then the macro cannot be initiated, therefore the main Alarm Zone will not arm.
It must be noted that should an attempt to arm or disarm an Alarm Zone whilst the server is off-line will require an arm/disarm cycle of the Alarm Zone to confirm its exact status once the server is back on-line. This is not applicable should a server go off-line and then return to on-line without any arm/disarm state change requests while the server is off-line.

Prior to configuring for this requirement, a <Controller> is configured "Controller" and an <Alarm Zone> "Controller Default Alarm Zone" is associated. Carry out the following configuration.

1. Create the <Door> or <Remote Arming Terminal> required to arm and disarm the Alarm Zone.
   a. Assign "Controller Default Alarm Zone" as the default Alarm Zone for all events.
   b. For the door <Entry Reader>, ensure that <Double Card Overrides>, <Arm Alarm Zone> is checked.

2. Create an <Output> "Office Alarm Zone Armed".
   a. Assign "Controller Default Alarm Zone" as the default Alarm Zone for all events.
   b. Save and exit.

3. Create an <Output> "Strobe lamp".
   a. Assign "Controller Default Alarm Zone" as the default Alarm Zone for all events.
   b. On the <Advanced tab>, check <Output is pulsed when activated>.
   c. Set the <Pulse Time> to 1 or more seconds.
   d. Save and exit.

4. Create an <Output> "Office Alarm Zone Disarmed"
   a. Assign "Controller Default Alarm Zone" as the default Alarm Zone for all events.
   b. On the <Advanced> tab, change the <Mapping to an input state> to "On is Closed, Off is Open".
   c. Save and exit.

5. Create a <Macro> "Office Armed"
   a. On the <Action Tab>, drag and drop the "Strobe Lamp" into the window.
   b. Select the "Strobe Lamp" within the macro window.
   c. Set the <Override> to <Pulse>.
   d. Save and exit.

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6. Create an <Action Plan> named “Intruder Alarm”.
    a. Select the <Disarmed> tab.
    b. Drag and drop the “Office Armed” macro from the macro window, into the <Cameras, Macros, and External System Items> window.
    c. Set the <Alarm Priority> to <Not an Event>.
    d. Save and exit.

7. Create an <Output> “Office Alarm Zone pre-arm status”
    a. Assign “Controller Default Alarm Zone” as the default Alarm Zone for all events.
    b. On the <Event Response> tab, change the <Closed/On> Action Plan to “Intruder Alarm”.
    c. Save and exit.

8. Create an <Alarm Zone> “Pre-arm Office Alarm Zone”.
    a. On the <Connections> tab, assign this Alarm Zone to the “Controller”.
    b. On the <Reflect Outputs> tab, drag and drop the Office Alarm Zone pre-arm status output into the <Armed State> window.
    c. Drag and drop the “Office Alarm Zone disarm” output into the <Disarmed State> window.
    d. Save and exit.

9. For the <Door Access Zone> associated with the door required to arm/disarm the Alarm Zone, configure the <Event Response>, <Alarm Zone for All Events> to use the “Pre-arm Office Alarm Zone”
    a. Save and exit.

10. For a <Remote Arming terminal>, assign the “Pre-arm Office Alarm Zone” to <Alarm Zones>.
    a. Save and exit.

11. Create an <Alarm Zone> “OFFICE ALARM ZONE”
    a. On the <Connections> tab, assign it to the “Controller”
    b. On the <Push Buttons> tab, drag and drop the “Strobe lamp” output into the <Armed State> window.
    c. Drag and drop the “Office Alarm Zone Disarmed” output into the <Disarmed State> window.
    d. On the <Reflect Outputs> tab, drag and drop the “Office Alarm Zone Armed” output into the Armed State window.
    e. Save and exit.

12. Create a <Cardholder>
    a. Assign the <Cardholder> access to either the “door” or the “Remote Arming terminal”.
    b. Ensure that the <Cardholder> has the ability to override the “Pre-arm Office Alarm Zone” state to either Armed or Disarmed.

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