

Unlisted Components UL508A, Appendix B

- Application requirements
- Principle sketch
- Remarks
- Power supply
- Input signals
- Output signals
- Documents
- GFCI / GFPE

Unlisted Components

Application Requirements acc. to UL508A, Appendix B



Scope of Appendix B

For components neither „listed“ nor „recognized“

Appendix B shall NOT be applicable for components,

- a) Which interrupts circuits due to overload, Motor overload, Short circuit, Ground fault
- b) If further safety aspects shall be considered,
e.g. flammable gases and liquids, high pressure, vacuum tubes, etc.
- c) Already inspected and for other applications and/or with other ratings approved components.
- d) Which are directly connected to the power circuits
- e) Which are completely located inside an isolated circuit or protected by an GFCI

Possible components

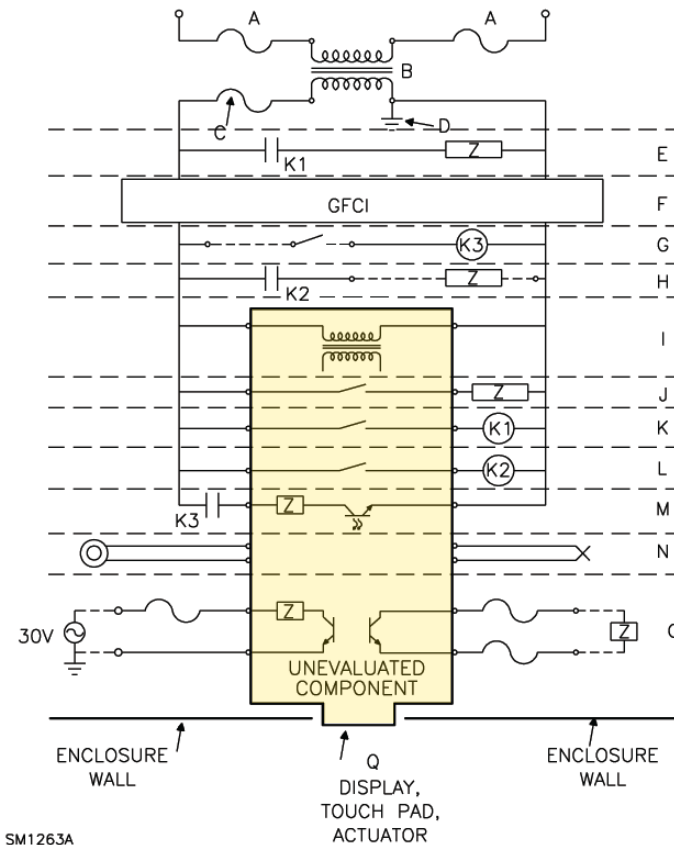
Switch, Relay, Measuring device, Recording devices or similar, which are controlling only loads or signals inside the control circuit, but which do not have any direct connection to other circuits

Unlisted Components

UL508A, Appendix B

Figure B2.1
Required connections to a component evaluated to the requirements of Appendix B

Figure B2.1 effective April 25, 2003



SM1263A

- A – Primary overcurrent protection for isolation transformer
- B – Isolation transformer
- C – Secondary overcurrent protection for isolation transformer
- D – Secondary ground connection
- E – Control of load inside control panel and not protected by GFCI. Also see K.
- F – Ground-fault circuit interrupter (GFCI)
- G – Coil of isolating relay input from switching device operating at over 30 Vrms. Also see M.
- H – Control of load outside control panel from isolating relay contacts. Also see L.
- I – Power supply input to component under evaluation
- J – Control of control circuit load inside control panel and on load side of GFCI
- K – Control of internal load on line side of GFCI via isolating relay
- L – Control of external load operating at over 30 Vrms via isolating relay
- M – Input from external switching device operating at over 30 Vrms
- N – Low-voltage connections without fusing
- O – Low-voltage connections with fusing
- Q – Accessible part of component under evaluation

For Use B
294 : 1/3/20

Unlisted Components

Remarks and Warnings acc. to UL508A, Appendix B

- If unlisted components are used a clear warning shall be made to indicate this and how these components shall be protected by an Protection Device.

Example:

"WARNING – Use of the following components is dependent upon the additional protection afforded by the ground fault circuit interrupter and the overcurrent protective device provided. Do not remove or defeat these protective devices."

plus an additional table which devices need to be protected by an GFCI

Example:

Component

Identification

Relay, K1

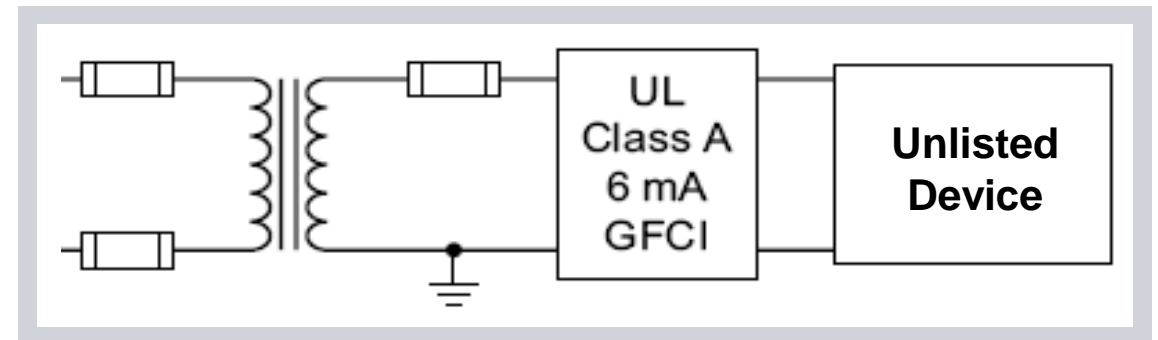
Acme, p/n 508

- All documents of how this components shall be applied have to be kept safe in place

Unlisted Components

Powersupply acc. to UL508A, Appendix B

- Transformer with isolated secondary
- Secondary voltage of 115-120V or 230-240V
- Secondary winding shall be solidly grounded
- Secondary circuits shall be protected by an GFCI (Ground Fault Circuit Interrupter acc. to UL943 -- Class A, 6mA or receptacle type)
- If a Receptacle Type is used,
 - The component shall be connected directly, not via an plug. Components having a cord with plug, the plug needs to be cut off.
 - A mark shall be made adjacent to the receptacle that this receptacle shall not be used for devices outside the panel
 - The receptacle shall be installed that it is not accessible from outside



Ground Fault Protection acc. to UL

1. Ground Fault Circuit Interrupters (GFCI) acc. to UL943

- Application for personal protection
- Application only in grounded networks
- Application mainly in the residential sector (up to 120/240 VAC)
- Tripping between 4 - 6 mA

2. Ground fault sensing and relaying equipment acc. to UL1053 (GFPE)

- Application for system protection
- Application as *detector* for fault currents against ground (low currents)
- Application together with, e.g. circuit breakers, fused circuit breakers, fused switches or separately (depending on type)
- Application range from 150 VAC to max. 600VAC
- Application for conventional tasks

UL provides different types of “ground fault interrupters”

Ground Fault Circuit Protection by Siemens

Ground fault circuit interrupter (GFCI) acc. to UL943

- 1-pole 120V AC and 2-pole 120V / 240 V AC
- 1-pole from 15 – 30 A, 10kA IR
- 2-pole from 15 – 60 A, 22kA IR
- Class A, 5mA

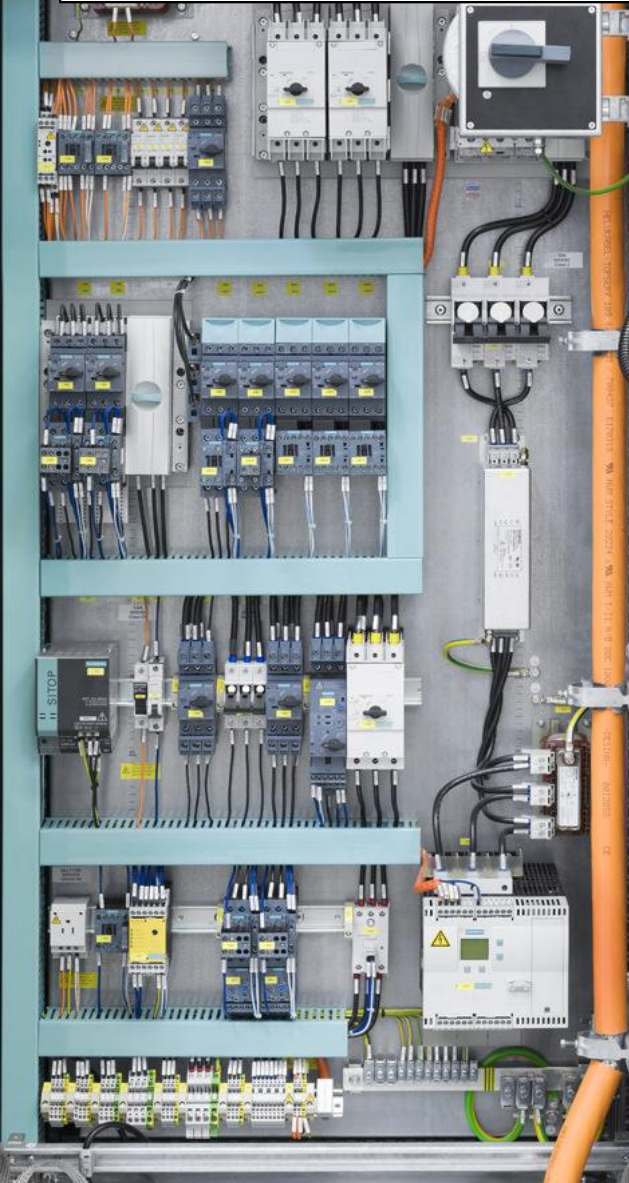


Ground fault equipment protection (30mA) acc. to UL1053 (GFPE)

- 1-pole 120V AC and 2-pole 120V / 240 V AC
- 1-pole from 15 – 30 A, 10kA IR
- 2-pole from 15 – 60 A, 22kA IR



Questions?



Note / Disclaimer

The circuit examples and interpretations of the standard are non-binding and do not claim completeness concerning configuration, equipping and contingencies. They do not represent customized solutions but merely provide support for typical tasks.

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