

LifeGuard[®] LG2-Series

Protection Panels



LifeGuard® LG2-Series Protection Panels



Device features

- For solidly grounded and resistance-grounded systems
- All models rated for use up to 600 V
- Single-phase and three-phase AC circuits
- Works on circuits with DC components and systems with adjustable-speed drives (ASD)
- Available inverse-time trip characteristic to help prevent nuisance trips
- Filtering to avoid nuisance tripping from harmonic noise
- Models with adjustable trip level and time settings
- On and Trip indication
- Test and Reset pushbuttons
- Stainless steel and polycarbonate Type 4X enclosed models
- Open type (non-enclosed) models

Certifications



Product description

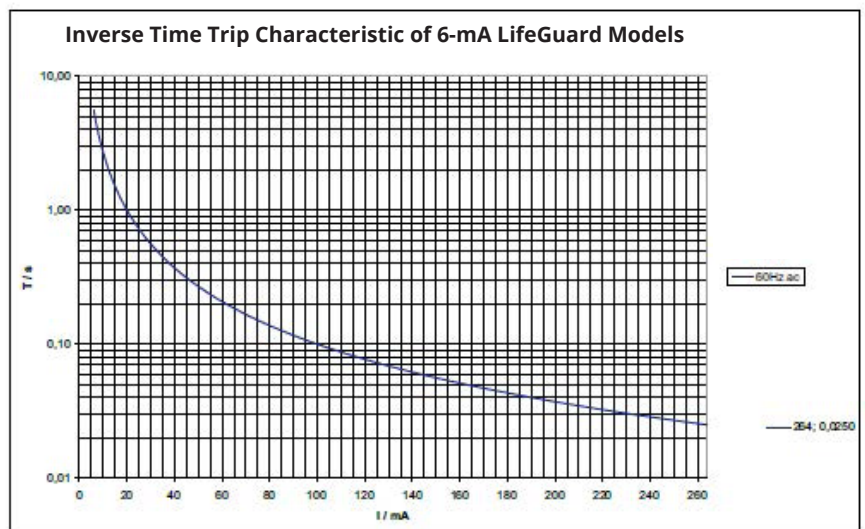
Bender LifeGuard® LG2-series protection panels detect ground-leakage current and interrupt the supply when levels exceed the setting. AC and DC detection protects all stages of power conversion equipment, such as adjustable speed drives and uninterpretable power supplies. LG2-series protection panels are available in a wide range of current ratings and are suitable for use in circuits up to 600 Vac. They are simple to install and require a minimal amount of field connections. LifeGuard LG2-series protection panels are UL 508A Listed Industrial Control Panels.

Applications

- Ground fault interruption in single- or three-phase AC systems up to 600 Vac and 100 A
- Systems with DC components
- Systems with Adjustable Speed Drives (ASDs, VFDs)

Trip level

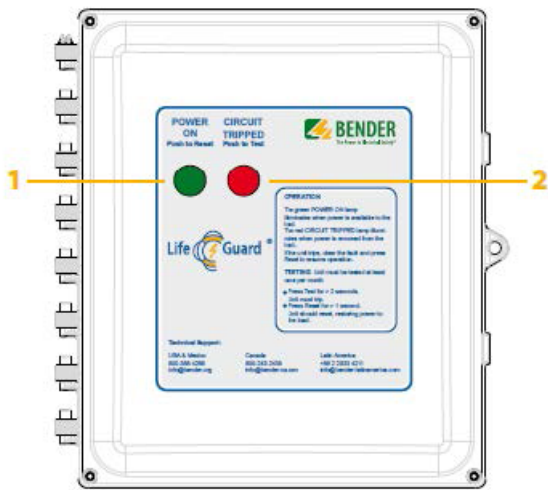
Certain LifeGuard LG2 models feature a non-adjustable 6-mA pickup and an inverse-time characteristic (faster trip on higher current) consistent with the UL 943 Standard, including 25-ms response at 250 mA. Filtering helps to prevent nuisance tripping, particularly in circuits with long cables or ASDs.



Enclosure

Enclosure options include Type 4X polycarbonate, Type 4X stainless steel, and non-enclosed open styles.

Standard Polycarbonate Enclosure



- 1- POWER LED / RESET button: Illuminates when the panel is powered and is not tripped / Resets the panel if fault has been cleared (momentary push).
- 2- TRIPPED LED / TEST button: Illuminates when the panel is tripped / Performs a functional test (hold for at least 2 seconds).

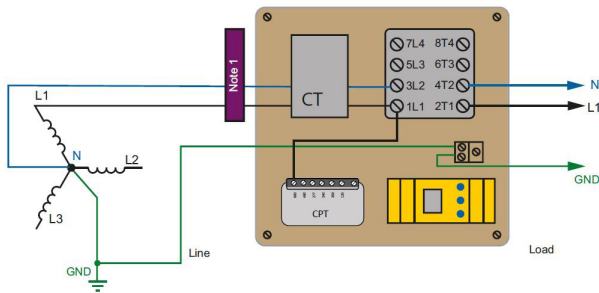
Example Wiring Diagrams

LifeGuard panels are easy to install and simple to wire. Typical installations only require forming an opening for the line and load cables, wall-mounting the panel, connecting the cables including the ground conductors, and making a connection to select the circuit voltage.

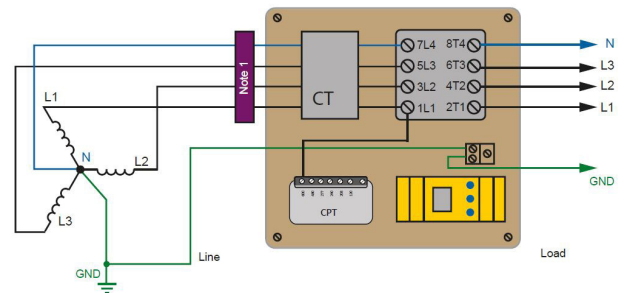
All models can be used for single-phase and three-phase applications up to 600 V.

Consult the LifeGuard Quickstart guide, the Bender ground-fault relay manuals, or a Bender representative for more information.

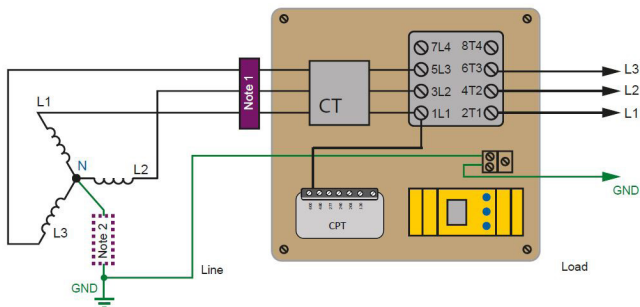
Single-Phase, Two-Wire Configurations (L1, N)



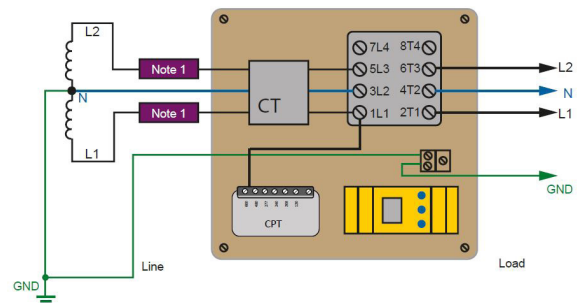
Three Phase, Four Wire Configurations (L1, L2, L3, N)



Three Phase, Three Wire Configurations (L1, L2, L3)



240/120 V Configurations (L1, L2, N)



- Note 1:** Disconnect switch, branch circuit protection and/or overload relay to be provided by installer
- Note 2:** Three-phase three-wire supplies can be solidly or resistance grounded

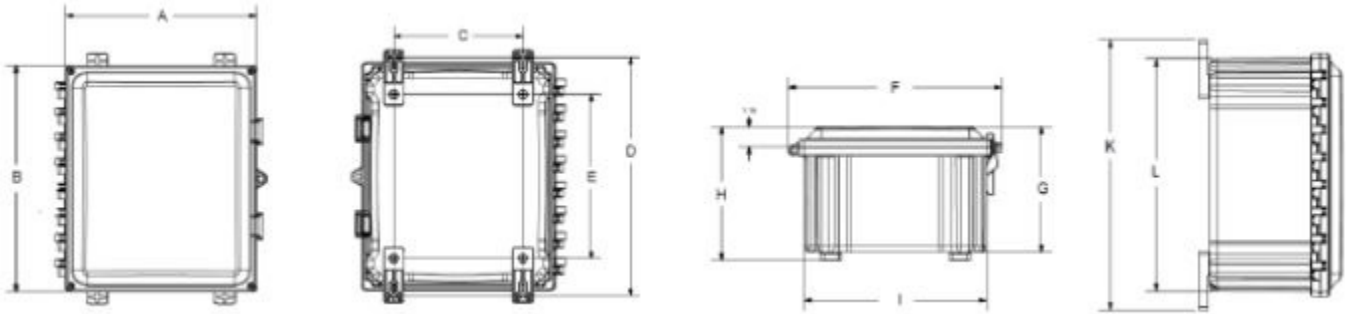
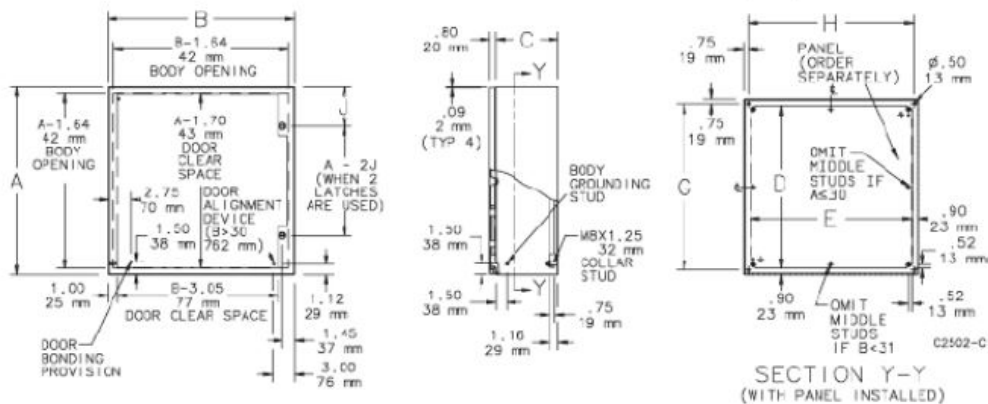


Figure 1 - Dimensions of NEMA 4X polycarbonate enclosure

Models	Nominal	A x B	C	D	E
< 100 A	12" x 10" x 6"	11.41" x 13.41"	7.63"	14.03"	10.25"
	305 x 254 x 152 mm	290 x 340 mm	194 mm	357 mm	260 mm
100 A	16" x 14" x 8"	15.41" x 17.41"	11.63"	18.03"	14.25"
	406 x 356 x 203 mm	391 x 442 mm	296 mm	458 mm	362 mm

Models	F	G	H	I	K	L
< 100 A	12.68"	7.38"	7.87"	10.81"	14.88"	12.81"
	322 mm	187 mm	200 mm	275 mm	378 mm	325 mm
100 A	16.68"	9.40"	9.98"	14.79"	18.88"	16.79"
	424 mm	239 mm	253 mm	376 mm	480 mm	426 mm

Table 1: Polycarbonate Enclosure dimensions in inches (mm)



Type	Enclosure	A x B x C	D x E	G x H
Standard	16 x 12 x 6	16" x 12" x 6"	14.2" x 10.2"	14.5" x 10.5"
		(406 x 305 x 152)	(361 x 259)	(368 x 267)

Figure 2: Dimensions of Type 4X stainless steel enclosure

Standard LG2-series LifeGuard model numbers have the following format:

LG2-	100-	F-	P
	Current Rating	Trip Type	Enclosure

With the following choices:

Current rating: 20 A, 60 A, 100 A

Trip Type: F = Fixed 6-mA AC/DC inverse-time curve per UL 943
A = Adjustable 10 to 500 mA AC/DC, adjustable 0 to 10 s definite time

Enclosure: N = No enclosure, backplane only
P = type 4X Polycarbonate
S = type 4X Stainless steel

Model Number	Description	Order Number
LG2-20-A-N	LifeGuard 20 A, field adjustable, open style	B541301001
LG2-20-A-P	LifeGuard 20 A, field adjustable, type 4X polycarbonate	B541301002
LG2-20-A-S	LifeGuard 20 A, field adjustable, type 4X stainless steel	B541301003
LG2-20-F-N	LifeGuard 20 A, fixed 6 mA, open style	B541301004
LG2-20-F-P	LifeGuard 20 A, fixed 6 mA, type 4X polycarbonate	B541301005
LG2-20-F-S	LifeGuard 20 A, fixed 6 mA, type 4X stainless steel	B541301006
LG2-60-A-N	LifeGuard 60 A, field adjustable open style	B541301007
LG2-60-A-P	LifeGuard 60 A, field adjustable, type 4X polycarbonate	B541301008
LG2-60-A-S	LifeGuard 60 A, field adjustable, type 4X stainless steel	B541301009
LG2-60-F-N	LifeGuard 60 A, fixed 6 mA, open style	B541301010
LG2-60-F-P	LifeGuard 60 A, fixed 6 mA, type 4X polycarbonate	B541301011
LG2-60-F-S	LifeGuard 60 A, fixed 6 mA, type 4X stainless steel	B541301012
LG2-100-A-N	LifeGuard 100 A, field adjustable open style	B541301013
LG2-100-A-P	LifeGuard 100 A, field adjustable, type 4X polycarbonate	B541301014
LG2-100-A-S	LifeGuard 100 A, field adjustable, type 4X stainless steel	B541301015
LG2-100-F-N	LifeGuard 100 A, fixed 6 mA, open style	B541301016
LG2-100-F-P	LifeGuard 100 A, fixed 6 mA, type 4X polycarbonate	B541301017
LG2-100-F-S	LifeGuard 100 A, fixed 6 mA, type 4X stainless steel	B541301018

	LG2-20-x-x	LG2-60-x-x	LG2-100-x-x
Protected Circuit Voltage ratings (Vac)	120, 208, 240, 277, 480, 600		
Protected Circuit Phase Configuration	1 ph, 2 wire; 1 ph, 3 w; 3 ph, 3 w; 3 ph, 4 w		
Current and Power Ratings:			
AC-1 (A)	45	100	125
AC-3 (A)	26	53	75
NEMA Thermal (A)	27	45	90
UL General Purpose (A)	40	80	105
Max. 3-ph motor switching (A)	28	54	80
UL max. HP, 1 phase, 115 V	2	3	7.5
230 V	5	7.5	15
UL max. HP, 3 phase, 208 V	7.5	15	25
240 V	10	20	30
480 V	20	40	60
600 V	25	50	75
Short-Circuit Current Rating (SCCR) (kA)*	5	5	5
Internal control voltage	120 Vac		
Control transformer primary fuse	Class CC, 0.8 A, time delay (2)		
Enclosure type P	Type 4X polycarbonate		
Enclosure type S	Type 4X stainless steel		
	LG2-xx-F-x	LG2-xx-A-x	
Internal protection relay	RCMA421H-D-2	RCMA420-D-2	
Internal current sensor	WN35BS	CTUB101-CTBC35	
Trip pickup level (mA)	6, fixed	10 - 500, adjustable (factory setting: 30)	
Trip time	$\leq (20/I)^{1.43}$ s; min. 25 ms	0 to 10 s, adjustable (factory setting: 0 s)	
Frequency response	0 to 150 Hz	0 to 2,000 Hz	
*Suitable overcurrent protection may increase the full-circuit SCCR. Contact factory for details.			

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