

MarinaGuard[®] MG-T

Ground Fault Monitoring Panel
For Marina Shore Power



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Device features

- Satisfies requirements of NEC Article 555.35, "Ground-Fault Protection"
- UL 1053 Listed Ground-fault Protection
- 12 channels with each preset to a 30 mA trip level, steplessly adjustable to required value; adjustable trip time for coordination
- TEST and RESET push buttons on front
- Ready & Alarm LEDs on front
- Strobe light for easily visible alarm indication; flashes on a ground fault or internal failure
- Contact outputs for connection to shunt-trip circuit breakers
- Type 4X rated, lockable enclosure with weep fitting
- Internal circuit breaker protection; suitable for connection to a feeder tap to minimize tampering

Certifications



Product description

To help prevent Electric-Shock Drownings, MarinaGuard UL Listed Ground-Fault Protection Panels detect ground faults in feeder and branch circuits of electrical systems in marinas, boat yards, docking facilities, floating buildings, and similar locations. MarinaGuard panels satisfy the 2023 edition requirements of National Electrical Code 555.35 (A) & (B)(1), 555.53 & 682.15 (B); and Canadian Electrical Code 78-052. The MG-T features a lockable Type 4X rated enclosure, with a test and reset buttons, power and alarm LEDs, and a strobe light on the enclosure for clear indication that a fault has occurred.

Applications

- Shore power for marinas
- Feeder and branch monitoring
- Systems which must satisfy the requirements of NEC, Article 555.3 (2017 & earlier); 555.35, 555.53, 682.15 (2020 & 2023 editions); and CE Code 78-052

Function

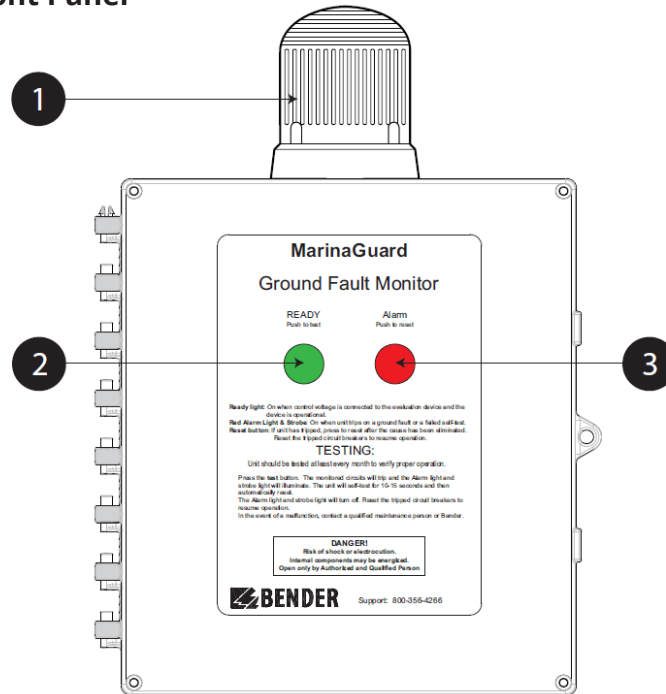
MarinaGuard panels detect ground faults with measuring current transformers (CT). One CT is required per feeder or branch to be monitored (see ordering information). The feeder / branch active conductors pass through the current transformer window. For example, in 240/120 V shore power applications, both line conductors and the neutral must be passed through the CT.

If a ground fault is detected, the MarinaGuard will trip the connected shunt-trip circuit breaker and the strobe light will flash. Once the fault has been cleared, holding the reset button for at least 2 seconds will clear the alarm lights and return the panel to the normal state, allowing the circuit breaker to be reset.

If an internal malfunction occurs, the strobe will flash but the connected circuit breaker may not trip.

The MG-T powered contact outputs must be connected to the shunt-trip circuit breakers protecting the monitored circuits.

MG-T MarinaGuard Front Panel



1	Strobe light: Flashes red when any circuit is tripped due to a ground fault, internal fuse has failed, or self-test has failed.
2	Ready light / Test button: Illuminates green when panel is powered and internal RCMS490 is in the normal condition. Press and hold the button for at least 1.5 s to initiate a functional test.
3	Alarm light / Reset button: Illuminates red when any circuit is tripped due to a ground fault, internal fuse has failed, or self-test has failed. Press and hold the button for > 1.5s to reset the system and return to the normal state. After the ground fault is eliminated, external trip devices can be reset.

Applying Power

To apply power, close the circuit breaker or disconnect to the 120 VAC control power entering the panel. The MarinaGuard will immediately power on. The green READY light will illuminate.



NOTE: During startup, the strobe may flash briefly. This is normal power-up operation.

Performing a Functional Test

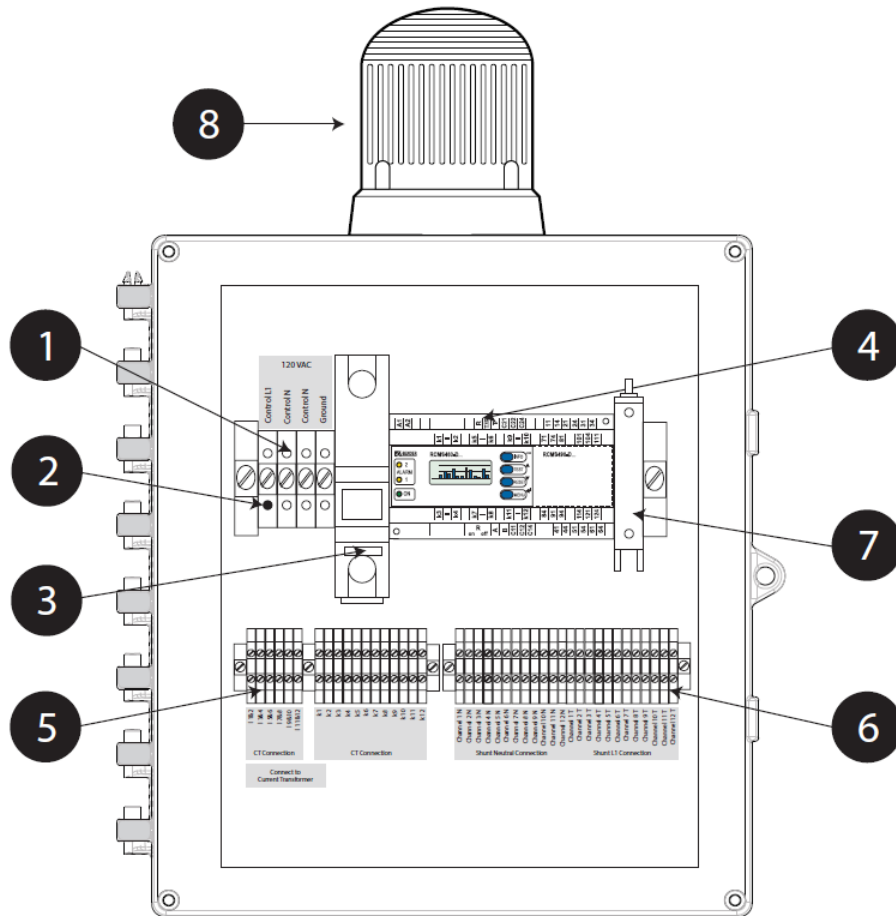
- Press and hold the TEST button for at least two seconds. The red Alarm light will illuminate and the strobe light will activate and the connected circuit breakers will trip.
- Wait 10 to 15 seconds until the internal self-test is completed.
- The RCMS490 will automatically reset when the self-test is completed.
- Manually reset the connected circuit breakers.



CAUTION: Performing a functional test will trip the circuit interrupting devices and de-energize the monitored circuits.

Wiring

- The MarinaGuard panel requires a 120 VAC supply voltage. Bring the supply conductors into the panel through a water-tight fitting and connect the line conductor (L) to the top of the terminal block labeled Control L1 and the neutral conductor (N) to the top of the terminal labeled Control N. Connect the ground conductor to the top of the terminal labeled Ground.
- Install separately purchased Bender measuring current transformers on up to 12 circuits in the site electrical equipment, passing the active line and neutral conductors through the CTs windows. Connect the CT-secondary terminals, through a water-tight fitting, to MG-T terminals k1 through k12 and l1 through l12. Use minimum AWG 24, maximum AWG 12 THHN wire.
- The MG-T output contacts at terminals labeled Channel 1T through 12 T and Channel 1N through 12N are normally open and powered with 120 Vac to operate shunt-trip protection devices such as shunt-trip circuit breakers. Connect these terminals, through a water-tight fitting, to the shunt-trip devices configured to de-energize the protected circuits.



1	Terminal blocks for external 120 VAC control power and ground
2	Power indicating light - illuminates when control voltage is applied to panel, even if internal circuit breaker is open
3	Branch-circuit-rated circuit breaker - protects internal components and external trip circuit
4	RCMS490 multi-channel ground fault relay
5	Terminal blocks for external current transformers
6	Terminal blocks for external trip circuits
7	Fuse holder - contains fuse protecting RCMS490
8	Strobe light - flashes when ground fault is detected and circuit has tripped, or RCMS490 malfunction

Post-Installation Adjustments

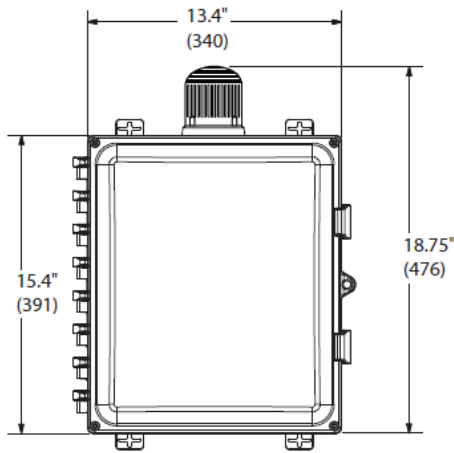
MG-T.3 protection uses the installed RCMS490-D-2 ground-fault monitor. Aside from possible field adjustments by a qualified person to disable unused channels or to the trip-level settings (default = 30 mA) and trip-delay settings (default = 100 ms), do not adjust the factory settings. For settings adjustment instructions, see the MG-T technical manual or the RCMS490 technical manual.



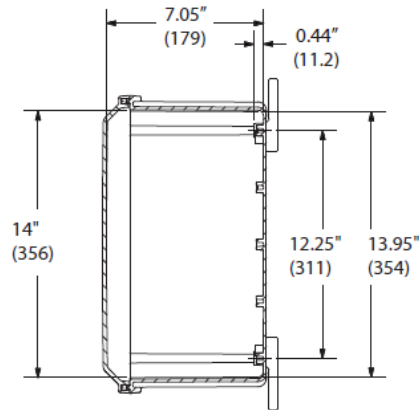
WARNING: Do not change any other settings other than what is shown in this chapter. Incorrect settings may result in death, personal injury, or damage to equipment.

Enclosure Dimensions

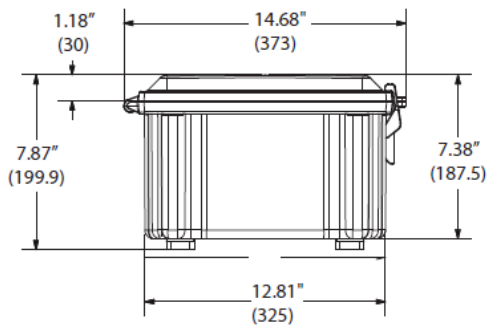
Dimensions shown in inches (mm). Mounting feet are shown installed. A weep hole is provided on the bottom of the panel to comply with NEC 555.32 (2020 & 2023 editions) and 555.11 (2017 and earlier editions). The enclosure is lockable.



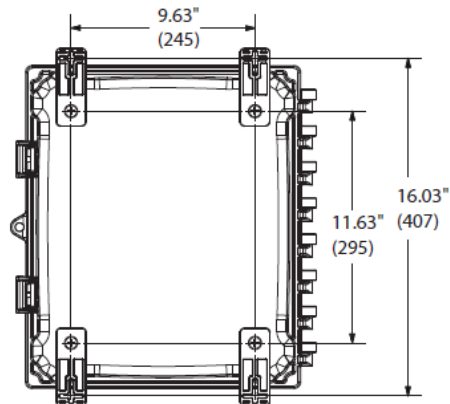
Front View with Strobe



Side View



Bottom View



Rear View

Model	Weight
MG-T.3	10 lb (4.4 kg)

Technical Specifications

Supply	120 VAC
Relay protection fuse	5 A type 3AG time delay
Internal overcurrent protection	15 A UL 489 circuit breaker
Ground-fault monitor	RCMS490-D-2
Pickup range	6 mA to 20 A (30 mA factory setting)
Trip delay range	0 to 999 s (100 ms factory setting)
Current	1 A RMS, 5 A peak
Maximum protected-circuit voltage	600 Vac
Current withstand rating	160 A, 1 s
Dimensions (W x H x D)	13.4 x 15.4 x 7.87" (340 x 391 x 290 mm)
Weight	10 lb (4.4 kg)
Shipping weight	12 lb (5.5 kg)
Compatible current transformers	CTAC series
Compatible trip device	shunt trip, 120 Vac , 1 mA to 5 A each, max 12 A total
Field connections	Copper wire only, 22 to 14 AWG, 60/70 C
CT-input and shunt-trip terminals, torque	4.2 to 4.6 lb-in (0.5 Nm)
All other terminals, torque	5.0 to 5.6 lb-in (0.6 Nm)

Ordering Information

Part No.	Channels	Outputs	Ordering No.
MG-T.3	12	12	B541300779

Current transformers

One current transformer is required for each circuit monitored by an MG-T. Current transformers must be large enough to accommodate all normally energized conductors (including the neutral if it is used) centrally though the opening.

Part No.	Shape	Core Type	Opening Size	Ordering No.
CTAC20	Circular	Solid	.79" (20 mm)	B 981 10005
CTAC35	Circular	Solid	1.38" (35 mm)	B 981 10007
CTAC60	Circular	Solid	2.36" (60 mm)	B 981 10017
CTAC120	Circular	Solid	4.72" (120 mm)	B 981 10019
CTAC210	Circular	Solid	8.27" (210 mm)	B 981 10020