



M-TRONIX
BRAMCO
SAFETY INNOVATORS



EFX Earth Leakage Lockout (ELL) and Frozen Contactor (FC) protection

PRODUCT OVERVIEW

Leaders in innovative protection systems, the EFX is compliant with the latest statutory and industry standards. The EFX provides next-generation Earth Leakage Lockout (ELL) and Frozen Contactor (FC) protection. In addition, it also monitors Phase Rotation, Phase Loss and Undervoltage.

EFX is compliant to AS2081:2011.

APPLICATION

Earth Leakage Lockout (ELL)

Monitors earth leakage on conductors in the outgoing load circuit before the load contactor closes. Prevents contactor closure if earth-leakage resistance is below the pre-selected level (1 MΩ).

Frozen Contactor (FC)

Monitors voltage on the outgoing load circuit when the load contactor is open. Detects leaky vacuum contactors or welded contactors, then initiates isolation of incoming supply via circuit breaker back-tripping.

UV, Phase Loss, Phase Rotation

Incorrect phase rotation, phase loss or undervoltage causes the UV relay to close with **no latch**.

FEATURES

Frozen Contactor (FC)

- Non-failsafe operation – relay closes on fault
- Adjustable timer inhibit for motor loads
- >25 VAC / 60 VDC on any phase triggers trip

- Common AR interlock contact input
- Two separate contacts provided

UV, Phase Loss, Phase Rotation

- Phase rotation detection CW/CCW down to 30% phase voltage
- UV trip <70% of present phase voltage on any phase
- UV trip – 1 sec, non-failsafe, no latch
- LED indicators for UV / Phase Loss / Rotation
- One separate contact

Isolation Barrier Monitoring

- Isolation Barrier and AR contact inputs are common to the GLF3
- Barrier monitored for integrity
- Causes trip if not connected or if no phase voltage present during normal operation

SPECIFICATIONS

Supply

- **A01220** — 110–240 VAC (50/60 Hz)
- **A01222** — 24–50 VAC/DC

Power: 2 VA ±20%

Operating Temperature: 0–60°C

System Voltage: 415 V or 1100 V

ELL Range

- 1 MΩ threshold
- 2 × C/O contacts (5A 250 VAC General / 5A 30 VDC Resistive — 100 VA max)

FC – Leakage Voltage

- Trip above 25 VAC or 60 VDC
- 2 × C/O contacts (5A 250 VAC General / 5A 30 VDC Resistive — 100 VA max)

UV, Phase Loss, Phase Rotation

- Trip time: 1 sec
- 1 × C/O contact (5A 250 VAC General / 5A 30 VDC Resistive — 100 VA max)

FC Timer

- Inhibit range: 1–20 seconds

ORDERING INFORMATION

Part Number	Description
A01220	EFX Relay – 110–240 VAC
A01222	EFX Relay – 24–48 VAC/DC
A01180	BAR3 – 415–1100 VAC Isolation Barrier

ENCLOSURE DIMENSIONS

Enclosure

Dimensions: 75mmW x 100mmH x 109.5mmD

Material:

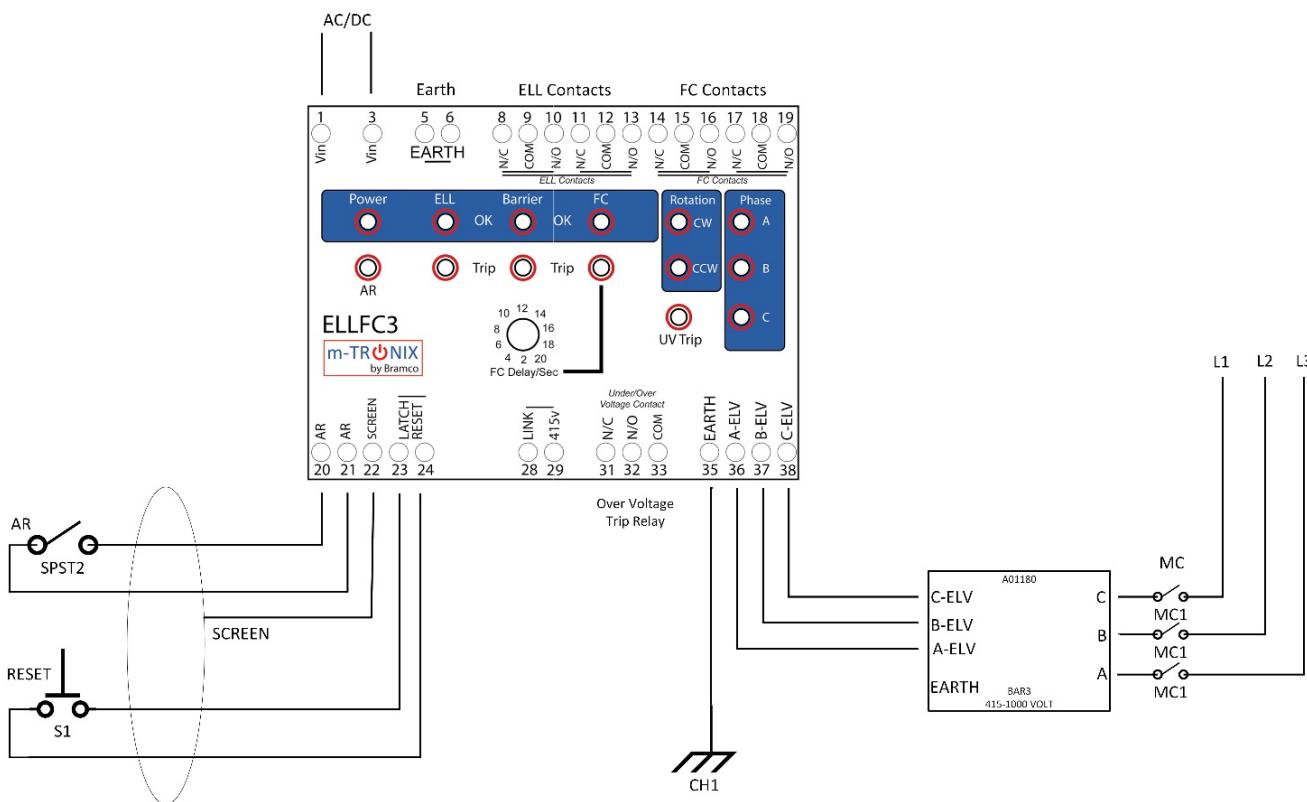
- High impact resistant polycarbonate construction
- IP20 Rating

Mounting: DIN rail

Terminals: Cage screw terminals

Weight: 333gms

ELLFC3 Wiring Diagram



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