M-TRONIX
BRAMCO
SAFETY INNOVATORS

nlm3 Neutral Earth RELAY

PRODUCT OVERVIEW

Legacy-generation NER integrity protection built on proven 2000-era Bramco technology

NLM3 Neutral Link Monitor provides legacy-generation NER integrity protection for mining and industrial power systems.

Engineered using proven Bramco technology developed in the early 2000s, NLM3 continuously monitors the resistance-grounded neutral point of a supply transformer and provides protection against NER failure, excess phase voltage rise, and neutral-earth leakage current.

APPLICATION

Our NLM3 is compliant with key statutory and industry standards and is designed to:

- Monitor the current-limiting system between transformer star-point and earth
- Detect NER resistance faults (open, short, drift)
- Detect excessive neutral-earth voltage rise
- Detect neutral-earth leakage current
- Monitor direct earth connection systems
- Provide individually adjustable protection timers for coordination

It is suitable for:

- Mining distribution systems
- Underground and surface substations
- HRG/LRG systems with NER
- Industrial plants with resistance-grounded systems

FEATURES

- Connects directly to AC supply systems up to **1100 V** — no barrier required
- Compatible with systems up to **4160 V** (with external barrier assembly)
- Monitors NER resistance integrity
- Monitors excess phase-voltage rise
- Monitors neutral-earth leakage current via external EL toroid (toroid not included)
- LED indication for:
  – Power On

– NER Integrity
– Excess Voltage
– Earth Leakage
• Unit configured as **fail-safe** with **latch-on-fault**
• Backup protection via voltage-rise detection across the NER
• Individually adjustable trip delay times for:
– Earth leakage
– NER integrity
– Over-voltage
• Adjustable earth leakage current trip
• Adjustable excess voltage trip
• Adjustable NER resistance limits
• Selectable earth leakage frequency response: **50–60 Hz** or **5–100 Hz**
• Open-circuit toroid protection
• Reset push-button input
• Timestamped event log
• Password protection for parameter setting

SPECIFICATIONS

Supply

Model	Min	Typ	Max	Unit
A01243	20	24	50	V AC/DC

Power: 4 VA ±20%
Operating Temperature: 0–60°C

Communications

- RS-485 serial port, Modbus ASCII / RTU
  (Hardware present — RS-485 not implemented)

Instrumentation Output

- 4–20 mA or 2–10 V

NER Resistance Values

- NER 10–650 Ω depending on system voltage and limiting current
- Consult m-tronix for system-specific requirements

EL System Voltages

- 415 / 1100 V
- 240 / 635 V phase

NER Trip Value Adjustment

- 50% to +100% (as required by AS/NZS 2081:2011)

Trip Tolerance

- +10% / 0%

Earth Leakage Current Range

- 30–500 mA

Trip Delay Timer

- **50–500 ms** for over-voltage & earth leakage
- **2–10 s** for NER integrity

Excess Voltage Trip

- Adjustable from **5–50%** of phase voltage

Relay Contacts

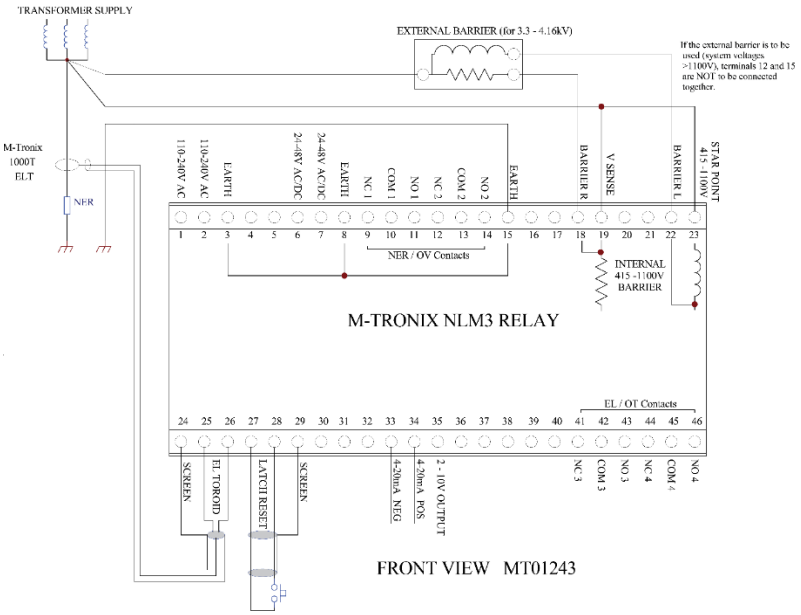
- **2 × changeover**, 5 A @ 250 V AC (100 VA max) — earth leakage
- **2 × changeover**, 5 A @ 250 V AC (100 VA max) — over-voltage & NER integrity

ENCLOSURE

Dimensions: 150 mm (W) × 75 mm (H) × 110 mm (D)

Material:
• High-impact polycarbonate construction
• IP20 rating

Mounting: DIN rail
Terminals: Cage screw terminals



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