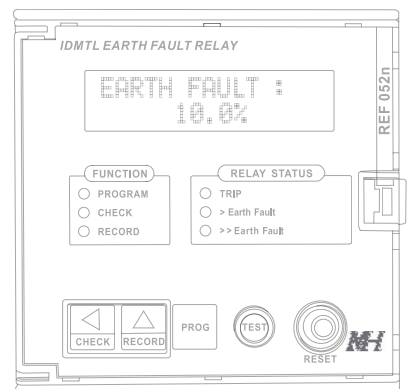
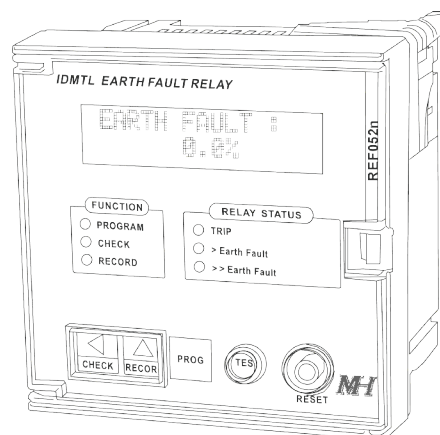


## A Protection Class of its Own

IDMTL Earth Fault Relay • REF052n



### REF 052n

ANSI 86 LOCKOUT RELAY  
ANSI 51N/51G IDMTL EARTH FAULT RELAY  
ANSI 50N/50G DTL EARTH FAULT RELAY

# MH Protection Relays

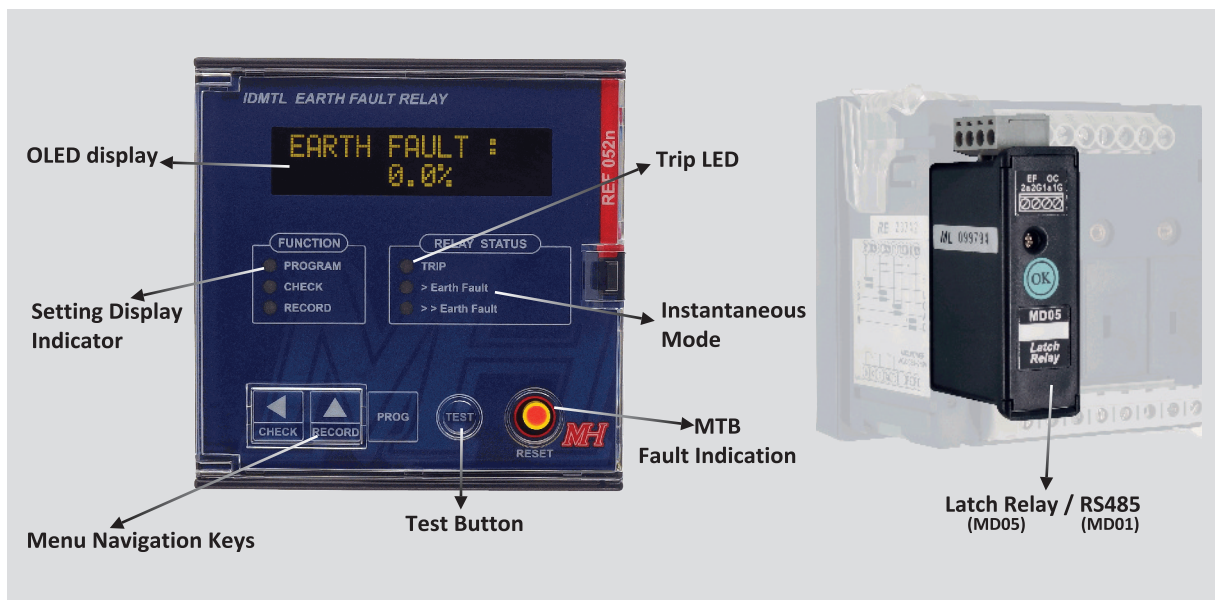
**MH** Represents a legacy of design and development, specializing in power management and power quality solutions and its core expertise, electrical protection relays. The MH Protection Relays has its heritage dated since 1981 where, designed by Mun Hean and OEM by Kasuga of Japan, developed a range of electronic relays that dominated the market for decades. The range of relays were marketed under the brand name "Kasuga-MH".

Today, with its own R&D wing, Mun Hean Technology Pte Ltd, MH continues this tradition. Anchored on the exclusive MTB fault indication system, we proudly bring to you this state-of-the-art protection relay series that is truly, A Protection Class of its Own.

## Features

- Microprocessor-based with highest accuracy
- Mechanical Trip Button (MTB) fault indication system
- No requirement for auxiliary power supply for fault indication
- Safeguard against automatic reset before fault rectification
- Curve selection in accordance with ANSI, IAC, IEC, 1.3/10, Hong Kong Utilities Curve
  - Normally Inverse (NI)
  - Very Inverse (VI)
  - Extremely Inverse (EI)
  - Short Time Inverse (STI)
  - Moderate Inverse (MI)
- Trip value recording (4-memory)
- Date and time stamping for tripping
- Integrated surge arrester against transient overvoltages
- High set mode is incorporated for instantaneous protection
- Tamper-proof design for settings protection
- Serial interface RS485 for Modbus RTU communication (optional)
- Type tested\* for EMC compliance in acc. with IEC 61000
- High immunity to electrical interference (tested to 2.5GHz)
- Type tested in acc. with IEC 60255\*
- Comply to ANSI 86, ANSI 51N/51G, and ANSI 50N/50G

\* Type test report issued by independent testing laboratory is available upon request



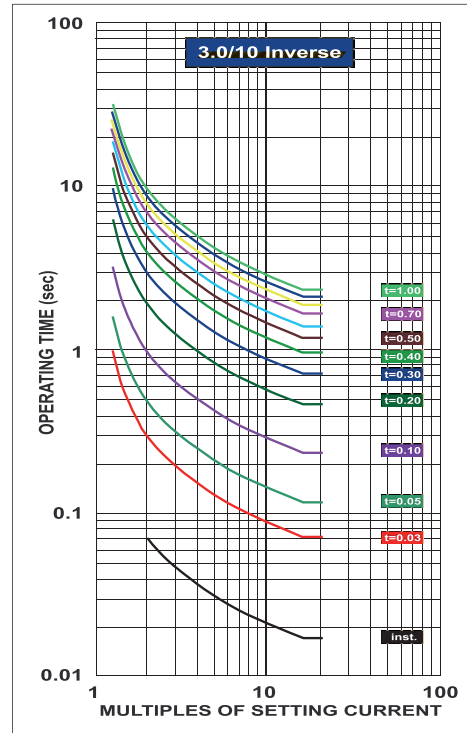
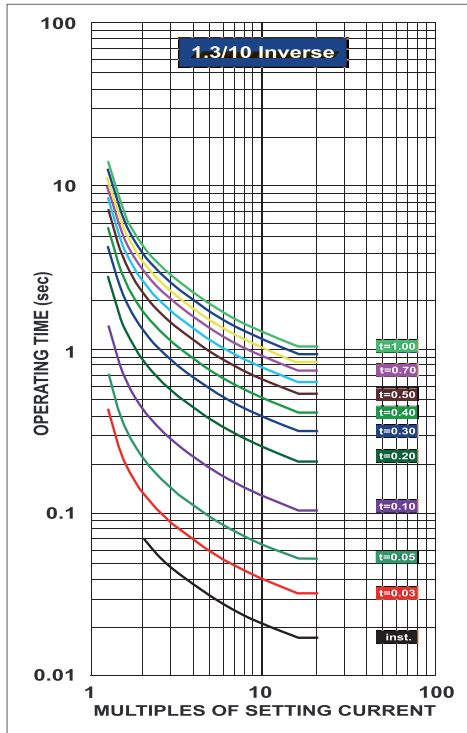
# Technical Data

Characteristics		
Power supply		AC / DC 85-265V (other voltages available on request)
Operating frequency		50 / 60Hz
Earth fault setting		2.0 - 50.0% in step of 0.1%
Time multiplier setting		0.03 - 2.00 in step of 0.01 (IEC, 1.3/10)
		0.3 - 20.0 in step of 0.1 (ANSI, IAC)
Definite time delay setting (DTL)		0.03 - 2.00 sec in step of 0.01 sec
Instantaneous Mode (High-set)		2.0 - 10.0 times setting current in step on 0.1
Pick-up current		100 - 115% of the setting current in step of 1%
Reset current value		≤ 90% of the operating value
Working temperature range		- 10°C to 55°C
Storage temperature range		- 20°C to 65°C
Relative humidity (IEC 60068-2-30)		95% at + 40°C
Protection Class (IEC 60529)		IP54 (optional with IP65 front cover)
Overcurrent withstandability		20 times $I_{rated}$ for 3 sec (20A)
Power consumption		≤ 6VA
Output	Relay Output	1 x C/O (Changeover), 1 x N/O (Normally Open)
	Contact Rating	5A at 250VAC
	Electrical Life	1 x 10 <sup>5</sup>
	Mechanical Life	5 x 10 <sup>6</sup>
Optional interface		RS485 to Modbus RTU/Slave
LED status indication		Normal operation, fault current detected
Safety feature		Mechanical Trip Button (MTB) complying with ANSI 86
Housing material		ABS resin complying with UL94VO
Net weight		Approx. 390g
Dimensions		Height 96mm x Length 96mm (front panel)
Panel cut-out		Height 91 <sup>±0.5</sup> mm x Length 91 <sup>±0.5</sup> mm

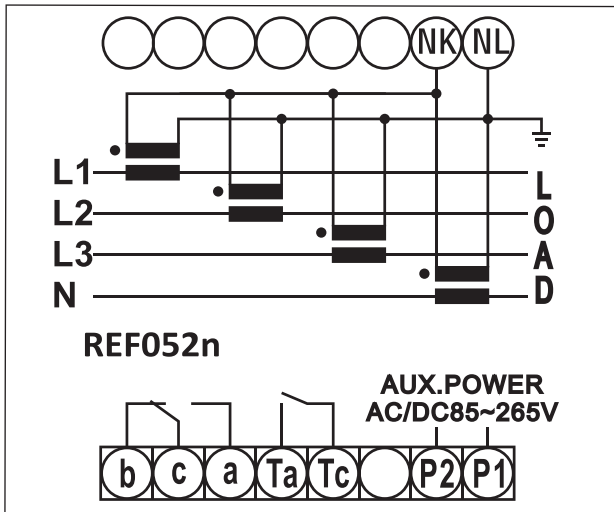
Compliance with standards	
IEC/EN 61000-4-2	Electrostatic discharge immunity test
IEC/EN 61000-4-3	Radiated, radio-frequency, electromagnetic field immunity test
IEC/EN 61000-4-4	Electrical fast transient / burst immunity test
IEC/EN 61000-4-5	Surge immunity test
IEC/EN 61000-4-6	Immunity to conducted disturbances, induced by radio-frequency fields
IEC/EN 61000-4-8	Power frequency magnetic field immunity test
IEC/EN 61000-4-11	Voltage dips, short interruptions and voltage variations immunity tests
IEC/EN 60255-1	Measuring relay and protection equipment
IEC/EN 60255-21-1	Vibration tests
IEC/EN 60255-21-2	Shock and bump tests
IEC/EN 60255-26	Electromagnetic compatibility requirements
IEC/EN 60255-27	Product safety requirements
CISPR 11/EN 55011	Electromagnetic compatibility (EMC)

# Characteristics Curve

Time Current Characteristics in accordance with IEC 60255



## Connection Diagram



## About MTB Fault Indication System

MTB, or Mechanical Trip Button is a fault indication system incorporated in advanced protection relaying for electrical power networks. The MTB does not require auxiliary supply to provide a fault indication. The MTB is designed to prevent power circuits from re-energising before a fault is completely rectified. This is an essential safety feature which protection relays using electrical latching mechanisms are not able to provide.

Authorized Dealer: