

MS1 & MS2

Earth Fault Relays



The MS range of earth fault relays are designed to provide fast-acting sensitive earth leakage protection of motors and cables.

Key Features:

- Manufactured and supported in South Africa
- MS1 is used on AC motors up to 60kW
- MS2 is used on all AC motors depending on required discrimination
- Requires auxiliary power supply
- LED status indication
- Positive discrimination up to 1000 mA with the MS2 relay
- Robust enclosure
- MS1 and MS2 suitable for chassis mounting
- Core and indicator combined in one unit
- Core diameter 50mm

Product Function:

- Sensitivity:
 - MS1 - Instantaneous: 125, 250, 500, 1000, 2000 mA
 - MS2 - Time delay: 375, 500, 1000, 2500 mA

Application:

This family of relays has been designed to provide co-ordinated discriminative fault isolation in distribution systems. MS2 relays afford "back-up" feeder protection to the type MS1 relay which, of course, provides instantaneous protection to the electrical apparatus.

System and auxiliary parameters

- Trip accuracy: = $\pm 20\%$.
- VOLTAGE:
 - Maximum voltage: through core = 690Vac.
 - Auxiliary supply: 110-220VAC or 380-550VAC $\pm 20\%$.
- Maximum auxiliary supply burden = 25VA @ 550V.
= 5VA @ 220V.
- Relay outputs: Contact form = 1 x N/O & 1 x N/C
Contact load = 5A 550V AC ($\cos\Phi @ 1$).
= 5A 48V DC (L/R = 0ms)
- Contactor coil operation. AC15 = 1.5A 480V AC
- Solenoid operation. DC13 = 2A 60V DC, 50ms
- Alarm period: Power backup = 3 Hrs

MS SERIES - MODEL TYPE NUMBERS			
Product name	Auxiliary power supply	Calibrated trip sensitivity	
MS1	A1-	250	<- Example model type number
CALIBRATED TRIP SENSITIVITIES			
MS1			Instantaneous trip <100ms – 125 (mA)
MS1			Instantaneous trip <100ms – 250 (mA)
MS1			Instantaneous trip <100ms – 500 (mA)
MS1			Instantaneous trip <100ms – 1000 (mA)
MS2		Curve 1	time delay trip - 375 (mA)
MS2		Curve 2	time delay trip - 500 (mA)
MS2		Curve 3	time delay trip - 1000 (mA)
MS2		Curve 3	time delay trip -2500 (mA)
<i>Special ranges considered on request</i>			
AUXILIARY POWER SUPPLY RANGES			
A1 = 110V to 220VAC 50Hz			
A4 = 380V to 550VAC 50Hz			

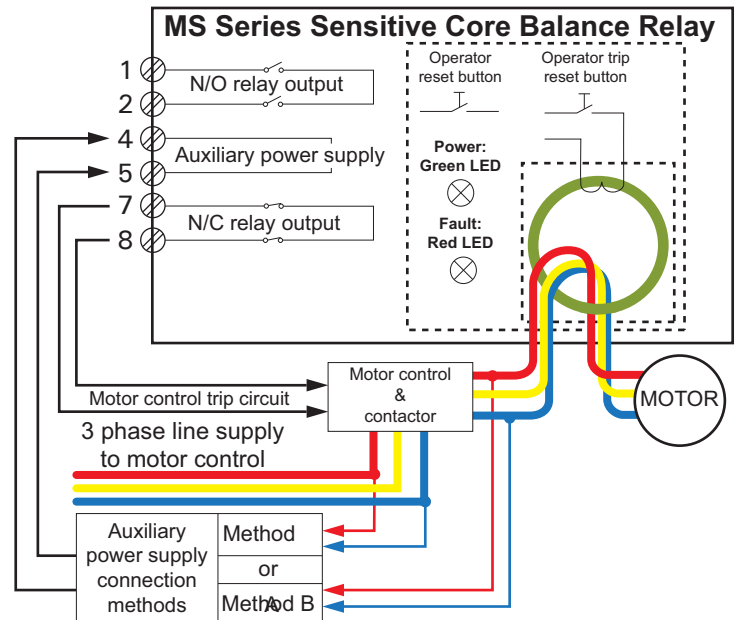
Standards Compliance

ELECTRICAL

- Radiated emissions: CISPR 11 Class B
- ESD (6kV) & case (8kV) immunity: IEC 61000-4-2.
- Radiated immunity: IEC 61000-4-3
- Fast transients: IEC 61000-4-4
- Surge immunity: IEC 61000-4-5
- Conducted immunity: IEC 61000-4-6
- Power frequency magnetic field: IEC 61000-4-8

ENVIRONMENTAL

- Cold temperature (-10 Deg C): IEC 60068-2-1
- Dry heat (+ 55 Deg C): IEC 60068-2-2
- Damp heat (40 Deg C @ 93% RH): IEC 60068-2-2
- IP (54) rating: IEC 60529
- Mechanical shock: IEC 255-21-2



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relay will trip its own auxiliary power supply.

Two methods can occur that will dictate the operation of the relay.

Method A: Trip condition - with auxiliary supply live and the MS relay in a fault condition.

- Relay contact output: will hold in trip condition until reset.
- Fault LED: continuously flashes until reset.

Method B: Trip condition - with MS relay in fault condition, the motor and the auxiliary supply tripped.

- Relay contact output: Will operate once then de-energise
- Relay contact output: On auxiliary power return, relay output will re-energise until reset.
- Fault LED: continuously flashes until reset.

Note: Method A is the preferred connection.