MC0A
MULTIFUNCTION ZERO SEQUENCE OVERCURRENT EARTH FAULT / SENSITIVE EARTH FAULT RELAY

Earth fault relay with 4 programmable definite time elements for protection of power distribution systems with insulated, resistance earthed or compensated neutral.

Rated input current selectable 1A or 5A, 50/60 Hz.

3rd harmonic filter on the neutral input current.

Protective Functions
- F50N/51N : Four Earth Fault elements.
- F51BF   : Breaker Failure protection

Measurements
- Real Time Measurements
- Maximum Demand and Inrush Recording
- Trip Recording (last 20 trips with date & time)

Control
- 4 Output Relays (programmable)
- 3 Digital Inputs
- Time tagged multiple event recording
- Oscillographic wave form capture
- Blocking Outputs and Blockings Input for pilot wire selectivity coordination

Technical Characteristics
- Complete autodiagnostic program
- Display LCD 16 (2x8) characters
- 4 Leds for signalization

Communications
- 1 RS485 Serial communication port on rear side
- 1 RS232 Serial communication port on front panel
- Modbus RTU / IEC870-5-103 Communication Protocols

Mounting
- 1 Module box (2 modules with expansion), totally draw-out execution
- IP44 protection case (on request IP54)

Power Supply Ratings
- Type 1 : 24V(-20%) / 110V(+15%) a.c. - 24V(-20%) / 125V(+20%) d.c.
- Type 2 : 80V(-20%) / 220V(+15%) a.c. - 90V(-20%) / 250V(+20%) d.c.

Software
- MSCom2 Program interface for device management

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Protection Relays

Programmable Input Quantities		
Fn: System frequency	: (50 ÷ 60) Hz	
HI: Rated primary current of the CTs	: (1 ÷ 9999)A	step 1A
LI: Rated primary current of the CTs	: (1 ÷ 9999)A	step 1A

50N/51N (I1o): First Low-set Earth Fault Element		
Function enabling	: Enable/Disable	
Setting range	: $I1o> = (0.001 ÷ 0.2)Ion$	step $0.001Ion$
Trip time delay	: $tI1o = (0 ÷ 60)s$	step 0.01s
Instantaneous output	: $\leq 0.04s$	
50N/51N (I2o): Second Low-set Earth Fault Element		
Function enabling	: Enable/Disable	
Setting range	: $I2o> = (0.001 ÷ 2)Ion$	step $0.001Ion$
Trip time delay	: $tI2o = (0 ÷ 60)s$	step 0.01s
Instantaneous output	: $\leq 0.04s$	
50N/51N (I3o): Third Low-set Earth Fault Element		
Function enabling	: Enable/Disable	
Setting range	: $I3o> = (0.1 ÷ 10)Ion$	step $0.01Ion$
Trip time delay	: $tI3o = (0 ÷ 60)s$	step 0.01s
Instantaneous output	: $\leq 0.04s$	
50N/51N (I4o): Fourth Low-set Earth Fault Element		
Function enabling	: Enable/Disable	
Setting range	: $I4o> = (0.1 ÷ 10)Ion$	step $0.01Ion$
Trip time delay	: $tI4o = (0 ÷ 60)s$	step 0.01s
Instantaneous output	: $\leq 0.04s$	
51BF: Breaker Failure Element		
Trip time delay	: $tBF = (0.05 ÷ 0.75)s$	step 0.01s

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Protection Relays

Connection Diagram
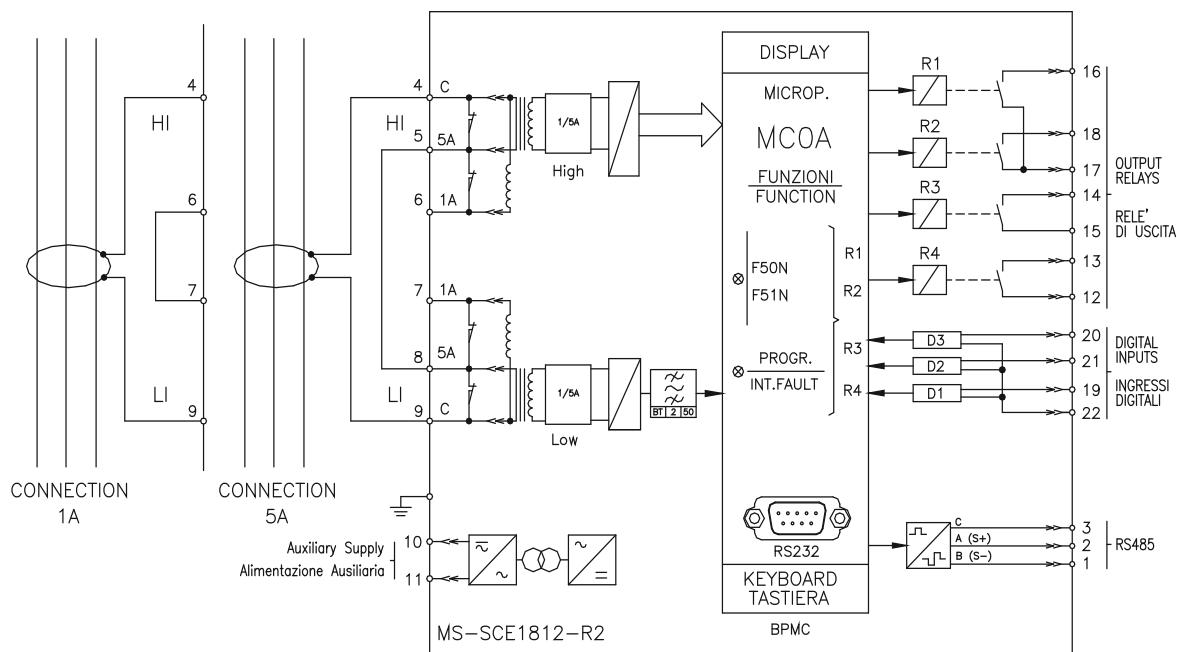
Typical Characteristics

Accuracy at reference value of influencing factors	0.05%On	for measurements
	2% + (to = 20 ÷ 30ms @ 2xIs)	for times
Rated Current	On = 1A/5A	
Current Overload	80 On for 1 sec; 2On continuous	
Burden on current input	0.05VA at On=1A; 0.2VA at On=5A	
Averange power supply consumption	≤ 7 VA	
Output relays	rating 6A; Vn = 250V	
	A.C. resistive switching = 1500W (400V max)	
	make = 30 A (peak) 0.5 sec.;	
	break = 0.3 A, 110 Vcc,	
	L/R = 40 ms (100.000 op.)	

Order code - Example :

MC0A	1
	Power Supply
	1 = Type 1
	2 = Type 2

The performances and the characteristics reported in this document are not binding and can modified at any moment without notice.