Mikro®

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Combined Overcurrent & Earth Fault Relay

MK 2200L

MK2200L

Features

- Multifunction numerical relay
- Three-phase, three stages setting for phase overcurrent
- Two stages setting for earth fault
- IDMT and definite time
- Thermal overload protection
- Two groups of protection settings
- Trip circuit supervision
- Circuit breaker failure protection
- RS232 and RS485 MODBUS-RTU communication
- Fault, alarm and tripping records with timestamp
- Multifunction programmable outputs
- Multifunction digital inputs
- Complies with IEC 60255 standard
- ANSI code : 49RMS, 50P, 50G, 51P, 51G, CLP, 50BF, 74TC

Technical Data

AUXILIARY SUPPLY

Model MK2200L-150D

Rated voltage	: 30 ~ 120 V DC
Operating voltage	: 24 ~ 150 V DC

Model MK2200L-240AD

Rated voltage	: 100 ~ 240 V AC or 140 ~ 340 V DC
Operating voltage	: 85 ~ 265 V AC or 110 ~ 370 V DC
Rated frequency	: 50 or 60 Hz
Operating frequency	: 45 ~ 65 Hz
Power consumption	: 8 VA max

CURRENT INPUTS

Rated current, I_n, I_{on}	: 1 or 5 A by connection
Frequency	: 50 or 60 Hz nominal
Burden	: < 0.025 VA (1 A)
	: < 0.3 VA (5 A)
Thermal withstand	: 4 x I_n continuous
	: 40 x I_n for 2s
	: 100 x I_n for 1s

DIGITAL INPUTS

Input type	: Optically isolated
Rated voltage	: 20 ~ 380 V DC
	: 50 ~ 270 V AC

OUTPUT CONTACTS

Trip Contact Relay R1, R2, R3, R4, IRF Relay

Rated voltage	: 250 V AC / DC
Continuous carry	: 5 A
Expected electrical life	: 100,000 operations at rated load
Expected mechanical life	: 5 x 10^6 operations

RECORDS

Fault Record	: Up to 50 records
Event Record	: Up to 250 records
Alarm Record	: Up to 30 records

SETTING RANGES

GENERAL

Line CT primary	: 1 to 10,000 A
Earth CT primary	: 1 to 10,000 A
Frequency	: 50 or 60 Hz

PHASE OVERCURRENT

I>	: 0.1 to 25 x I_n (Recommended up to 2 x I_n for IDMT delay) *(Variable Steps)
I> Delay type	: IDMT or definite time
tI>	: 0 to 100 s *(Variable Steps)
I> IDMT curve	: NI, VI, EI, LTI, NI 1.3/10
ktI	: 0.01 to 1.00 (Step 0.01)
I>>	: 0.5 to 40 x I_n *(Variable Steps)
tI>>	: 0 to 100 s *(Variable Steps)
I>>>	: 0.5 to 40 x I_n *(Variable Steps)
I>>> Sample	: Yes or No
tI>>>	: 0 to 100 s *(Variable Steps)

EARTH FAULT

I_o>	: 0.02 to 2 x I_{on} (Recommended up to 0.5 x I_{on} for IDMT delay)
I_o> Delay type	: IDMT or definite time
tI_o>	: 0 to 100 s *(Variable Steps)
I_o> IDMT curve	: NI, VI, EI, LTI, NI 1.3/10
ktI_o	: 0.01 to 1.00 (Step 0.01)
I_o>>	: 0.1 to 10 x I_{on} *(Variable Steps)
tI_o>>	: 0 to 100 s *(Variable Steps)

THERMAL OVERLOAD

Iθ >	: 0.1 to 3 x I_n *(Variable Steps)
Tθ	: 1 to 200 minutes (Step 1)
k	: 1 to 1.5 (Step 0.01)
θ Trip	: 50 to 200% (Step 1%)
θ Alarm	: 50 to 200% (Step 1%)

** Variable Steps: 0.1-1.00: Step 0.01; 1.00-20: Step 0.1; >20: Step 1*

MEASUREMENT RANGES

Phase Current Secondary:

5 A input	: 0 to 200 A
1 A input	: 0 to 40 A

Earth Current Secondary:

5 A input	: 0 to 50 A
1 A input	: 0 to 10 A

ENVIRONMENTAL CONDITIONS

Temperature	: -10°C to 55°C
Humidity	: 5% to 95%, non-condensing

MECHANICAL

Mounting	: Panel mounting
Dimension (mm)	: 142(w) x 165(h) x 198(d)
Enclosure protection	: IP54 at the panel
Approximate weight	: 2.2 kg

ACCURACY

Current accuracy	: ± 3% of the set value or 20mA secondary
Timing accuracy	: ± 5% or ± 30ms

COMMUNICATION

RS232 (front)	: MODBUS-RTU
RS485 (back)	: MODBUS-RTU

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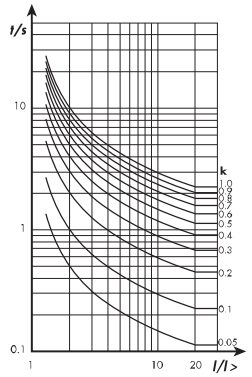
Normal Inverse

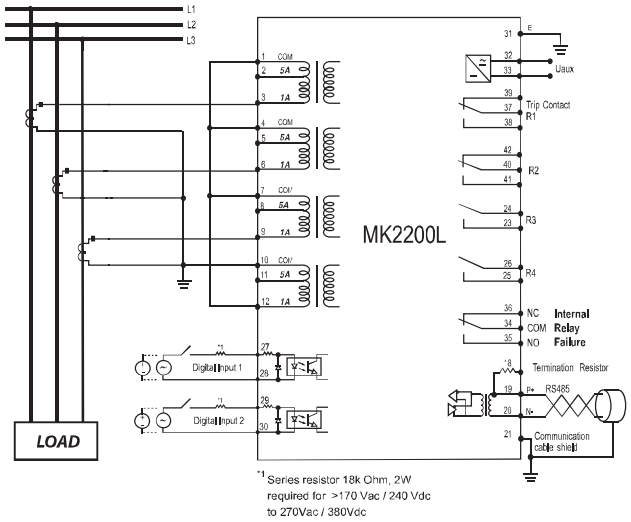


Very Inverse

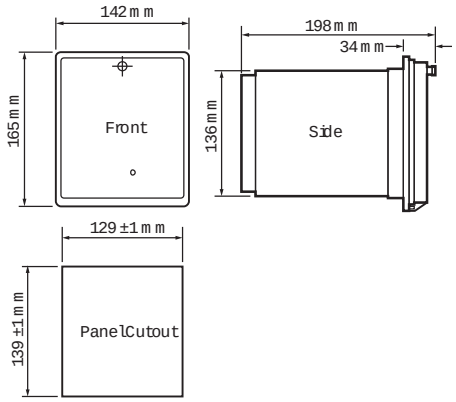
Long Time Inverse

Extremely Inverse

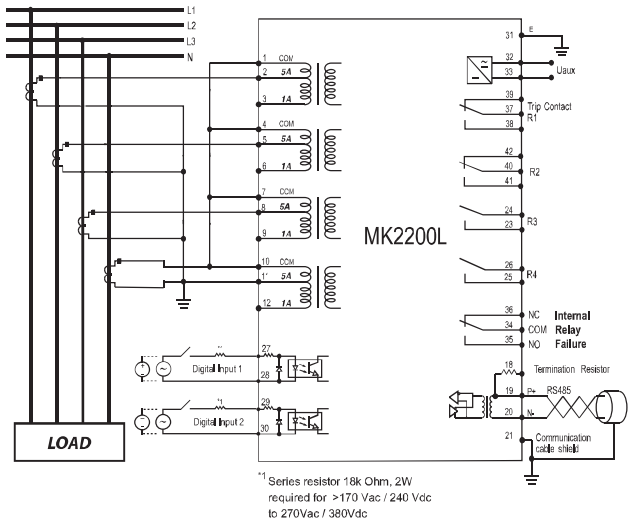
Typical Application Diagram 1



Case Dimensions



Typical Application Diagram 2



Ordering Information

MODEL	DESCRIPTION
MK2200L - 150D	For 50/60 Hz, auxiliary voltage 24 ~ 150 V DC
MK2200L - 240AD	For 50/60 Hz, auxiliary voltage 85 ~ 265 V A or 110 ~ 370 V DC