



X60

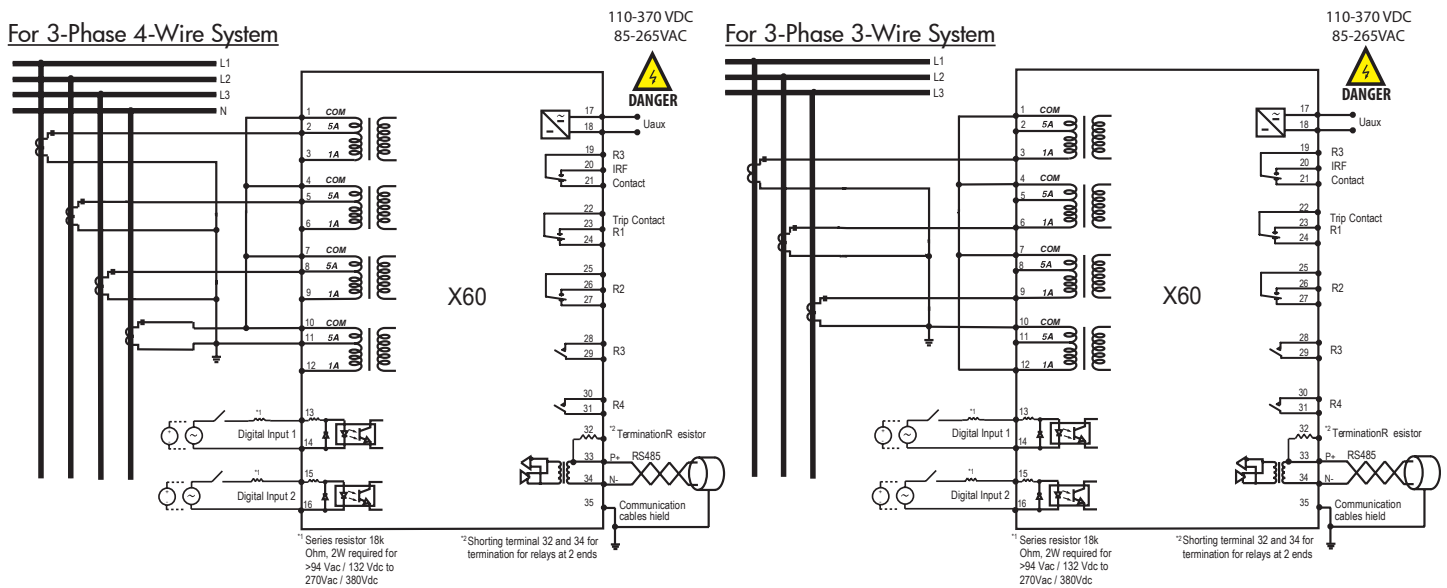
COMBINED OVERCURRENT & EARTH FAULT RELAY



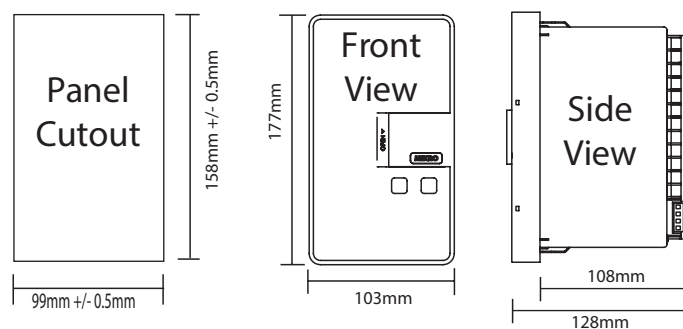
FEATURES

- Multifunction numerical relay
- 2 x 16 digits LCD Display
- Three-phase, three stages setting for phase overcurrent
- Two stages setting for earth fault
- IDMT and definite time
- Thermal overload protection
- Two independent group of protection settings
- Trip circuit supervision
- Circuit breaker failure protection
- RS232 and RS485 MODBUS-RTU communication
- Event, fault and alarm records with timestamp
- Multifunction programmable output contacts
- Multifunction programmable digital input
- Complies with IEC 60255 standard
- ANSI Code: 49RMS, 50P, 50N, 51P, 51N, CLP, 50BF, 74TC
- Compatible with Mikrosafe Software

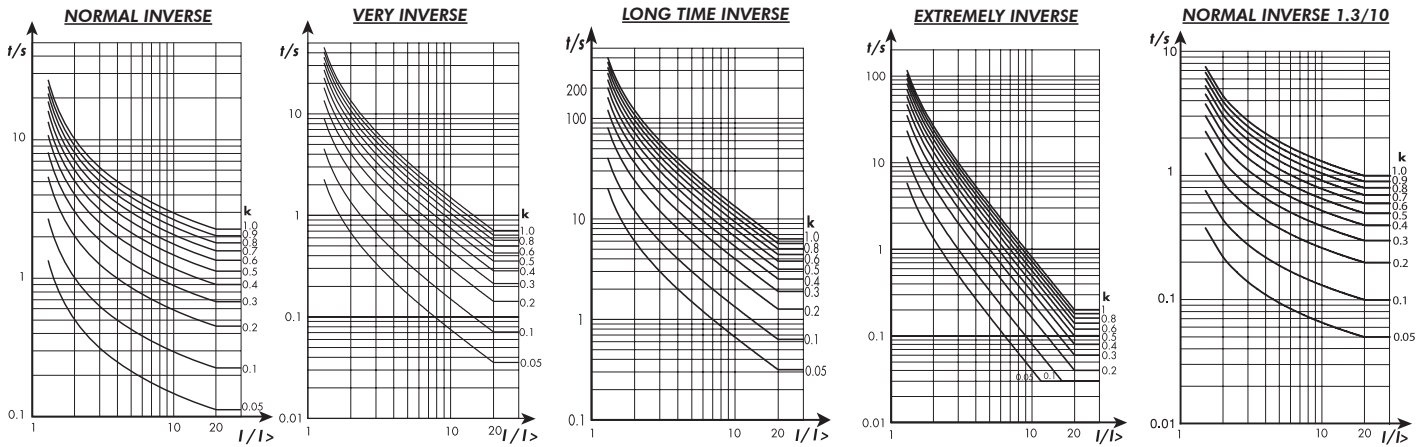
TYPICAL APPLICATION DIAGRAM



CASE DIMENSION



IDMT GRAPH



TECHNICAL DATA

AUXILIARY SUPPLY

Model X60-OCEF-240AD
 Rated voltage : 100~240V AC or 140~340V DC
 Operating voltage : 85~265V AC or 110~370V DC
 Rated frequency : 50 or 60 Hz
 Operating frequency : 45 ~ 65 Hz
 Power consumption : 8VA max

CURRENT INPUTS

Rated current, I_n , I_{0n} : 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 : 20~380V DC or 50~270V AC

OUTPUT CONTACTS

Trip Contact Relay R1, R2, R3,R4, IRF Contact Relay R5
 Rated voltage : 250V AC / DC
 Continuous carry : 5A
 Expected electrical life : 100,000 operations at rated load
 Expected mechanical life : 5 X10⁶ operations

INDICATORS

Display : 2 x 16 LCD Display
 Alarm : Yellow indicator
 Trip : Red indicator

RECORDS

Fault record : Up to 50 records, non-volatile
 Event record : Up to 250 records, non-volatile
 Alarm record : Up to 30 records, non-volatile

SETTING RANGES

Earth CT primary : 1 to 10,000 A
 Line 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
 kI> : 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<sub>0> : 0.02 to 2 x I_{0n} (Recommended up to 0.5 x I_{0n} for IDMT delay) *(Variable Steps)
 I<sub>0> Delay type : IDMT or definite time
 tI<sub>0> : 0 to 100 s *(Variable Steps)
 I<sub>0> IDMT curve : NI, VI, EI, LTI, NI 1.3/10
 kI<sub>0> : 0.01 to 1.00 (Step 0.01)
 I<sub>0>> : 0.1 to 10 x I_{0n} *(Variable Steps)
 tI<sub>0>> : 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 200A
 1 A input : 0 to 40A
Earth Current Secondary:
 5 A input : 0 to 50 A
 1 A input : 0 to 10 A

ENVIRONMENTAL CONDITIONS

Pollution degree : 2
 Operating temperature : -10 °C to 55 °C
 Storage temperature : -20 °C to 70 °C
 Humidity : 5% to 95%, non-condensing

MECHANICAL

Mounting type : Panel mounting
 Dimension(mm) : 103(W) x 177(H) x 128(D)
 Enclosure protection : IP54 at panel
 Approximate weight : 1.2 kg

ACCURACY

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

ORDERING INFORMATION

MODEL

X60-OCEF-240AD

DESCRIPTION

For 50/60 Hz, auxiliary voltage 85 ~ 265V AC or 110 ~ 370V DC