



X20

EARTH FAULT RELAY



FEATURES

- Multifunction numerical relay
- 2 x 16 digits LCD Display
- Low-set Earth Fault
- High-set Earth Fault
- Definite time for low-set and high-set
- Five selectable IDMT characteristic curves
- Two independent group of protection settings
- RS485 MODBUS-RTU communication
- Event, fault and alarm records with timestamp
- Multifunction programmable output contacts
- Internal relay failure
- Multifunction programmable digital input
- Complies with IEC 60255 standard
- ANSI Code: 50N, 51N
- Compatible with Mikrosafe Software

TECHNICAL DATA

AUXILIARY SUPPLY

Model X20-EFR-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	: 6VA max

Current Inputs

Rated current, I_{0n}	: 5 A
Frequency	: 50 or 60 Hz nominal
Burden	: < 0.3 VA
Thermal withstand	: 4 x I_n continuous : 25 x I_n for 10s

DIGITAL INPUTS

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

OUTPUT CONTACTS

Trip Contact Relay R1, R2, IRF Contact Relay R3	
Rated voltage	: 250V AC / DC
Continuous carry	: 5A
Expected electrical life	: 100,000 operations at rated load
Expected mechanical life	: 5 x 10 ⁶ operations

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
Frequency	: 50 or 60 Hz
Earth fault $I_{0>}$: 0.02 to 2 x I_{0n} (Recommended up to 0.5 x I_{0n} for IDMT delay) *(Variable Steps)

$I_{0>}$ Delaytype IDMT or definite time

$tI_{0>}$: 0 to 100 *(Variable Steps)
$I_{0>} IDMT curve$: NI, VI, EI, LTI, NI 1.3/10
$ktI_{0>}$: 0.01 to 1.00 (Step 0.01)
$I_{0>>}$: 0.1 to 10 x I_{0n} *(Variable Steps)
$tI_{0>>}$: 0 to 100 s *(Variable Steps)

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

MEASUREMENT RANGES

Earth current secondary: 0 to 50A

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

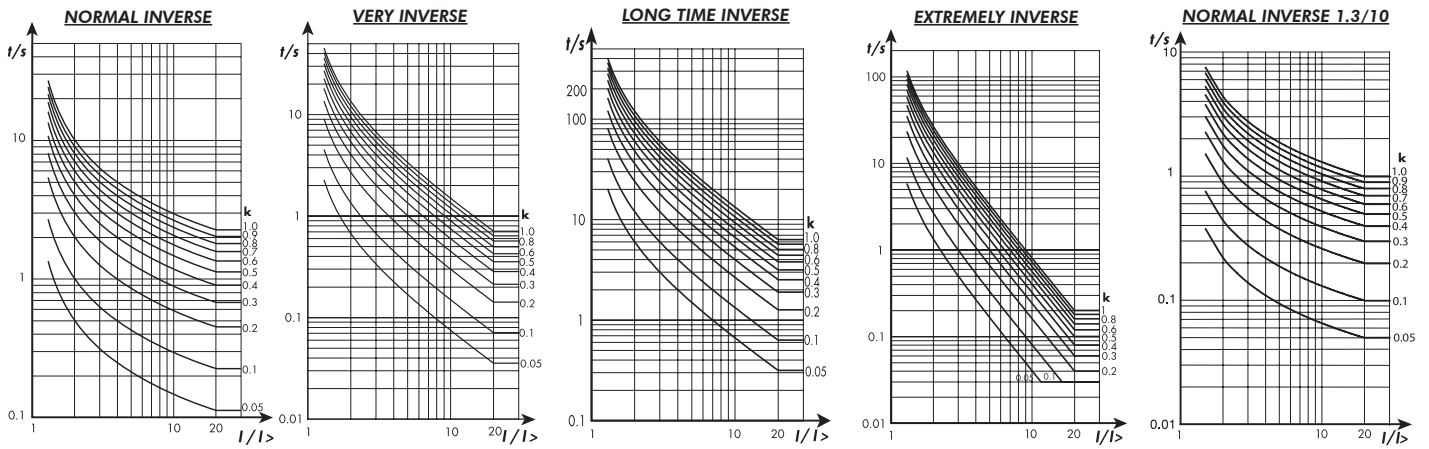
MECHANICAL

Mounting type	: Panel mounting
Dimension(mm)	: 96(W) x 96(H) x 125(D)
Enclosure protection	: IP54 at panel
Approximate weight	: 0.7 kg

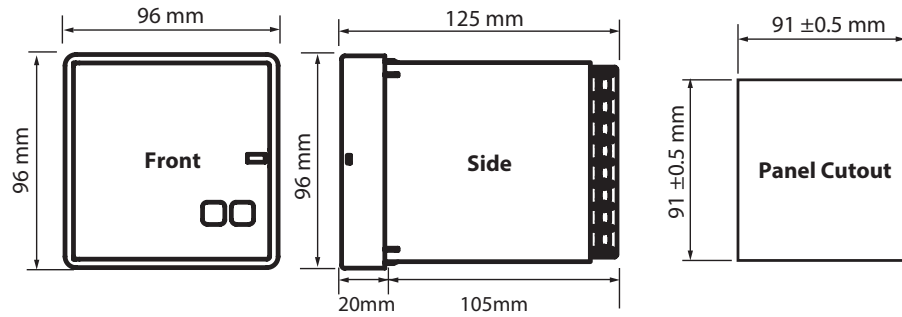
ACCURACY

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

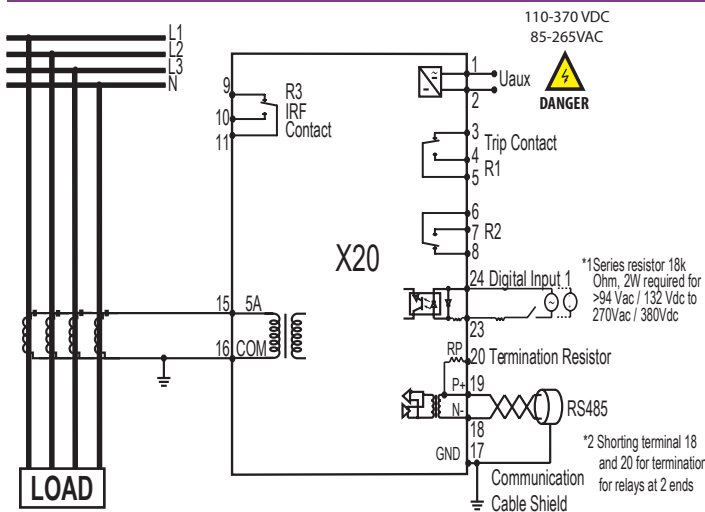
IDMT GRAPH



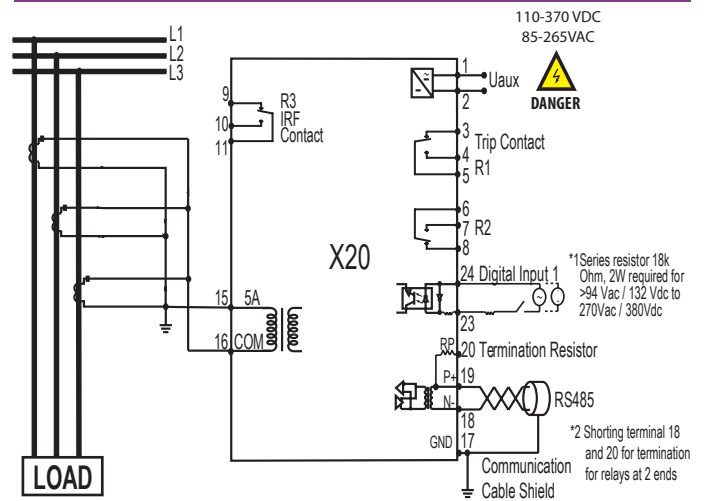
CASE DIMENSION



TYPICAL APPLICATION DIAGRAM 1



TYPICAL APPLICATION DIAGRAM 2



ORDERING INFORMATION

MODEL
X20-EFR-240AD

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