



# X30

## COMBINED OVERCURRENT & EARTH FAULT RELAY

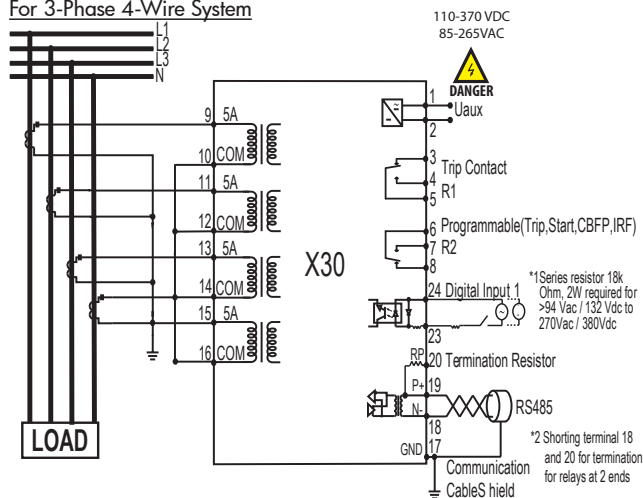


### FEATURES

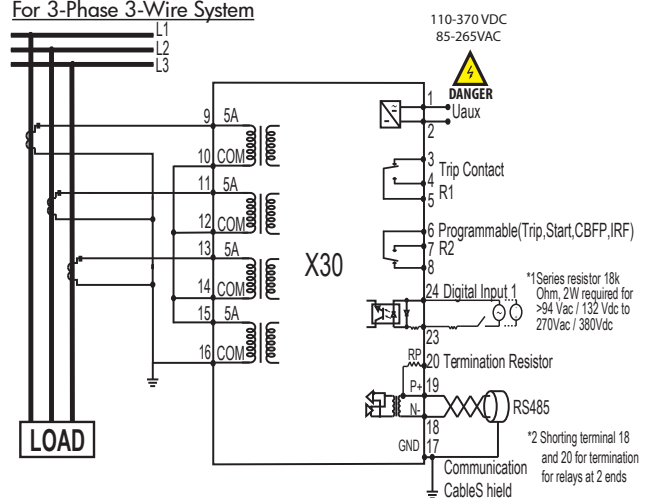
- Multifunction numerical relay
- 2 x 16 digits LCD Display
- Three-phase, three stages setting for phase overcurrent
- Two stages setting for earth fault
- IDMT and definite time
- Thermal overload protection
- Two independent group of protection settings
- Trip circuit supervision
- Circuit breaker failure protection
- RS485 MODBUS-RTU communication
- Event, fault, and alarm records with timestamp
- Multifunction programmable output contacts
- Programmable R2 (Trip, Start, CBFP & IRF)
- 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

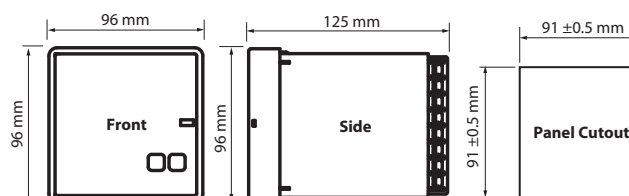
For 3-Phase 4-Wire System



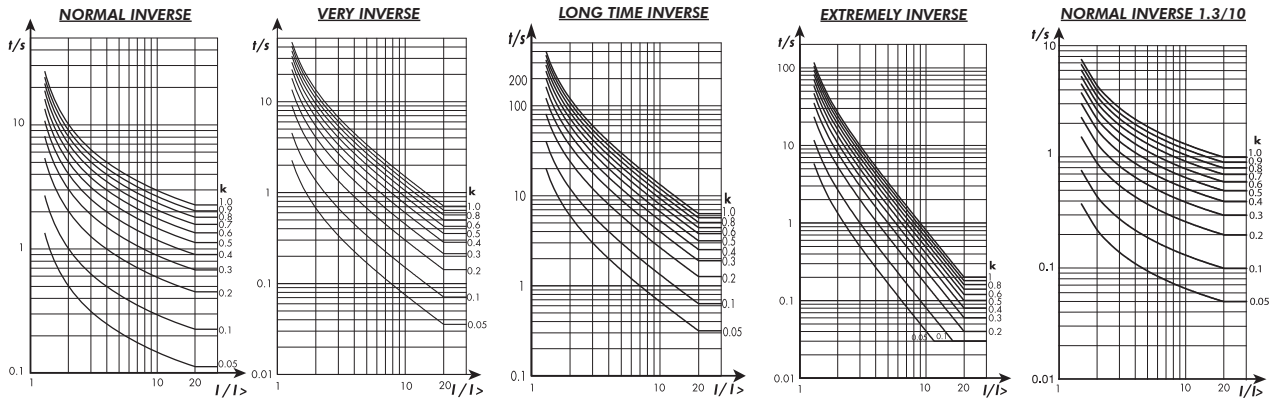
For 3-Phase 3-Wire System



### CASE DIMENSION



## IDMT GRAPH



## TECHNICAL DATA

### AUXILIARY SUPPLY

Model X30-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 : 6VA max

### CURRENT INPUTS

Rated current,  $I_n$ ,  $I_{on}$  : 5 A  
 Frequency : 50 or 60 Hz nominal  
 Burden : < 0.3 VA  
 Thermal withstand : 4 x  $I_n$  continuous  
 : 25 x  $I_n$  for 2s

### DIGITAL INPUTS

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

### OUTPUT CONTACTS

**Trip Contact Relay R1, R2 (Programmable)**  
 Rated voltage : 250V AC / DC  
 Continuous carry Expected : 5A  
 electrical life : 100,000 operations at rated load  
 Expected mechanical life : 5 X10<sup>6</sup> operations

### INDICATORS

Display : 2 x16 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 20 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 20 x  $I_n$  \*(Variable Steps)  
 $tI_{>>}$  : 0 to 100 s \*(Variable Steps)  
 $I_{>>>}$  : 0.5 to 20 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) \*(Variable Steps)  
 $I_{o>}$  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  
 $kI_{o>}$  : 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

$I_{\theta >}$  : 0.1 to 3 x  $I_n$  \*(Variable Steps)  
 $T_{\theta}$  : 1 to 200 minutes (Step 1)  
 $k$  : 1 to 1.5 (step 0.01)  
 $\theta$  Trip : 50 to 200% (Step 1%)  
 $\theta$  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  
**Earth Current Secondary:**  
 5 A input : 0 to 50 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) : 96(W) x 96(H) x 125(D)  
 Enclosure protection : IP54 at panel  
 Approximate weight : 0.8 kg

### ACCURACY

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

## ORDERING INFORMATION

**MODEL**  
 X30-OCEF-240AD

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