

W700

Auto Recloser Controller



w700 is a powerful microcontroller based system which connects to a recloser switch. Capability to detect various types of faults is implemented so suitable commands can be directed. Communicating via standard protocols along side with the potential to configure properties of objects makes this device convenient to use.

Hardware

CPU

Cortex M7

Memory

Non Volatile Memory : 2*16 Mbytes Flash Memory

16-bit A/D Converter

Sampling Rate : 128 Samples / Cycle

HMI

Display

160*160 Graphic Lcd (B/W)

Keyboard

17 Button

Indicator

40 LED Indicator

Communication Port

Serial Port

Front Panel : HMI Connection

Side Panel : DNP3.0, IEC60870-5-101, AES 128

Ethernet

DNP3.0, IEC 60870-5-104, HMI Connection, AES 128

RS485

Modbus RTU

Digital Input

10 Points

Open, Close, Mechanical Locked, Gas Low, Door Open, etc.

Opto-Isolation

Debounce

Chattering

Digital Output

5 Points

Open, Close, Auxiliary, Alarm

Dry Relay

Analog Input

10 Points

6 Voltage (A,B,C/R,S,T)

4 Current (A,B,C,N)

Network Frequency

50/60 HZ

Rated Voltage

1.7 – 40000 V

Rated Current

1-20 A

Measurement

Voltage

Source, Load
Phase, Line, Average
RMS, Fundamental Harmonic & 2nd Harmonic

Current

Phase, Neutral, Calculated Neutral, Average
Fundamental Harmonic & 2nd Harmonic

Power Active

Phase, Total

Power Reactive

Phase, Total

Power Apparent

Phase, Total

Power Factor

Phase, Average

Phasor

Frequency

Temperature

Power Quality Monitoring

Sag, Swell, Interruption Detection

Status
Events : Time stamp, Magnitude, Duration
Counters : Statistics For Each Phase, Duration Classified by IEEE 1159.
Accumulated Interruption Time
Waveform Recording On Events

THD

Voltage
Current

Sequence Components

Voltage
Current

Harmonics

Components Up to 40th Harmonics (Odd/Even)

Displacement Power Factor

Phase, Average

Demand

Fixed Window, Sliding

Maximum Demand Profile

Time Tag

Reset Time

Manual: HMI
Scheduled: Daily, Weekly, Monthly, Yearly

Parameter

Phase Current, Neutral
Active Power (Phase, Total)
Reactive Power (Phase, Total)

Energy Metering

4-Quadrant Metering, Import / Export Active Energy, Inductive / Capacitive Energy

Reset

Manual : HMI

Event/Fault Recording

Event History Buffers Are Categorized by Group

I/O Events, Function Events, System Events
Fault Current Events, Fault Location
PQM Events
Demand I,P,Q
Counter : Switch Open, Fault, Restart

Fault waveform Recording

8 Faults, 6 PQM Waveforms Can be Stored On Non Volatile Memory
1 Manual Triggered Waveform
Events by Threshold Setting
Counter

Load Profile

Status Monitoring

Open/Close

Mechanical Locked

Gas pressure Low

Door Open

External AC Power

Fault Indicators

Ia, Ib, Ic, In
SEF
Over Voltage
Under Voltage
Frequency

Live Line

Source, Load

Phase Sync

Recloser Status

Reset
Cycle
Lockout

Analog Hi/Low Alarm

Digital Input/Output

Controller Status(Battery & Battery Charger Test Result)

Battery Low
Battery Fail
Battery Over voltage
Battery Charger Failed
Grounded Battery
Battery Voltage
Battery Test

Control Status

Operator Place (Local / Remote)
Control Lock / Unlock
Recloser On/Off
Protection On/Off
Ground Protection On/Off
SEF On/Off
Hot Line Tag On/Off

Switch Control

Operator Place : Remote, Local (Front Panel/PC Tool)
Interlocks : Control Lock, Gas Low, Mechanical Lock, Current Switch
Close interlock Conditions (Selective) : Live Load, Phase Sync. Fail

SBO (Select Before Operate)

Secure Switch Operation
SBO Timeout (Settable)

Protection Function

Inverse Over Current

Fast and Delayed TC Trip Elements.

67 Types Of Built In TC Curves (IEC, ANSI, Recloser Curves) and 4 Customized TC Curves Definite Time

Phase

Negative

Earth

Definite Over Current

Phase

Negative

Earth

Instantaneous Over Current (2 Elements)

Phase

Negative

Earth

SEF (Sensitive Earth Fault) Detection

IEF (Intermittent Earth Fault)

Broken Conductor

Synchronism Check

Over Voltage

Under Voltage

Ground Over Voltage

Over Frequency

Under Frequency

Hot Line Tag

Direction Detection

Phase

Negative

Earth

Cold Load

Inrush Restraints

Sequence Coordination

Auto Reclosing Sequence

Phase

Negative

Earth

2nd Harmonic Detection

Open Line Detection

Automation

Auto Sectionalizing

Loop Automation

Automatic Source Transfer Switch

Auxiliary Function

PC Software For Setting & Maintenance

Waveform Evaluation Software

Firmware Upgradable

Accuracy

Voltage

$\pm 0.5\%$ or $\pm 0.1\text{kv}$

Current

$\pm 0.5\%$ or $\pm 1\text{A}$

Power Factor

$\pm 0.5\%$

Power (Active, Reactive, Apparent)

$\pm 1\%$

Energy (Active, Reactive)

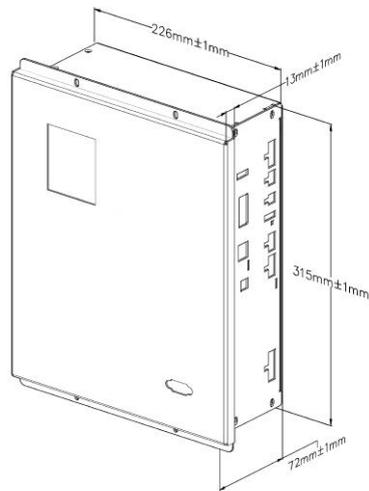
$\pm 2\%$

Frequency

$\pm 0.02\%$

Installation

Front Panel Mount



Environment Conditions

Operating temperature

-25 ~ +70 °C

Humidity < 95% RH

Altitude < 2000m
